

Basic Guide

# JobCenter

R15.2

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# Introduction

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This manual describes the basic functions and operating methods of JobCenter. Much of its content is devoted to presenting operating procedures that use the GUI displays that JobCenter offers to the user. Note that the sample screens shown herein may differ from the actual screens.

Note that this document is subject to change without prior notice.

## 1. How to read this manual

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If you are installing JobCenter or upgrading it

→ Read the JobCenter Installation Guide.

If you are using JobCenter for the first time

→ Read the Quick Start Guide in the order of its contents.

If you wish to understand the basic operating methods of JobCenter

→ Read this manual in the order of its contents.

If you wish to understand the construction of environments and the setting of various functions

→ Refer to the Environment Guide.




If you wish to know about other functions

→ Read the related manuals, referring to the manuals pertaining to particular functions to be used.

## 2. Legend

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The legend used in this manual is explained below.

	Information that you should pay attention to.
	Supplementary information about a description in the text.
	Supplementary tip about a description in the text.
Note	Explanation of a note that appears in the text.
—	The underlined parts in the descriptions for the installation window for UNIX mean inputs from a keyboard.

### 3. Related manuals

The following are manuals related to JobCenter. They are contained in JobCenter Media.

For information on the latest manuals, refer to the download page of the JobCenter product site.

<https://www.nec.com/en/global/prod/masterscope/jobcenter/en/support.html>

Document title	Overview
JobCenter Installation Guide	Describes how to newly install JobCenter or upgrade it.
JobCenter Quick Start Guide (Japanese only)	Describes the basic functions of JobCenter, as well as a complete set of operations, for first-time users of JobCenter.
JobCenter Basic Guide	Describes the basic functions of JobCenter, as well as how to operate it.
JobCenter Environment Guide	Describes various setting methods on the construction of environments required for using JobCenter, transferring of environment, linkage with other products, etc.
JobCenter Guide for using NQS function (Japanese only)	Describes methods of using NQS functions, the basis of JobCenter, from JobCenter.
JobCenter Guide for using operation logs and execution logs	Describes the functions for acquiring operation logs and job network execution logs from JobCenter CL/Win, as well as how to set the functions.
JobCenter Command Reference	Describes JobCenter commands for performing job network entry and execution state referencing, etc. from the command line like a GUI.
JobCenter Guide for using Cluster function	Describes linkage methods for operating JobCenter in the cluster system.
JobCenter Guide for using Helper function (Japanese only)	Describes the following three functions that enable efficient operation of JobCenter using Excel: JobCenter Definition Helper (definition information maintenance), JobCenter Report Helper (business report creation), and JobCenter Analysis Helper (performance analysis).
JobCenter Guide for using SAP function (Japanese only)	Describes how to link JobCenter and SAP.
JobCenter Guide for using WebOTX Batch Server linkage function (Japanese only)	Describes how to link JobCenter and WebOTX Batch Server.
JobCenter Guide for Using the Web Function	Describes JobCenter CL/Web that is a function to monitor jobs by using a web browser.
JobCenter Guide for using the text definition function (Japanese only)	Describes how to define a job network, schedule, calendar, custom job template by using a text file.
JobCenter Guide for upgrading the version and applying the patches in a cluster environment (Japanese only)	Describes how to upgrade the version of JobCenter and apply the patches in a cluster environment.
JobCenter R15.2 Release Notes	Provides the information specific to JobCenter R15.2.

## 4. Revision history

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Edition	Date of revision	Item	Format	Contents of revision
1	July 20, 2018	New	-	First Edition

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# Table of Contents

Introduction .....	iii
1. How to read this manual .....	iv
2. Legend .....	v
3. Related manuals .....	vi
4. Revision history .....	vii
1. Introducing JobCenter .....	1
1.1. What is the Key Feature? .....	2
1.2. What is the JobCenter Product Suite? .....	3
1.3. JobCenter Support Matrix: Products and OS .....	4
2. Operating Instructions of JobCenter CL/Win (GUI display) .....	5
2.1. Fundamental Operating Instructions of GUI Display .....	6
2.2. Starting GUI Display .....	7
2.3. Connecting Server .....	8
2.3.1. Connecting Server under Manager Account .....	8
2.3.2. Connecting Server with General User Account .....	9
2.3.3. GUI Display Mode per Login User, Login Mode when Connecting Server .....	10
2.3.4. Setting a Connection Time-out Period for Servers .....	11
2.3.5. Setting a Timeout Period for Operations Through CL/Win After Connecting to Server .....	12
2.4. Disconnecting Server .....	14
2.5. Changing Frame (Display) for Purposes of Operation .....	16
2.5.1. Displaying User Frame .....	16
2.5.2. Displaying Manager Frame .....	18
2.5.3. Displaying NQS (Network Queuing System) Frame .....	19
2.5.4. Displaying ERP Frame .....	20
2.5.5. Displaying Other User Frame .....	21
2.5.6. Selecting a Frame from the Drop-down Menu on the Toolbar .....	24
3. Operating Instructions for Job Network .....	26
3.1. Creating a Job Network .....	27
3.1.1. Creating/Deleting a Group .....	27
3.1.2. Creating/Deleting a Job Network .....	29
3.1.3. Displaying Job Network .....	31
3.1.4. Adding Unit Job Icon .....	33
3.1.5. Editing Script of Unit Job Icon .....	34
3.1.6. To Save the Flow of the Created Job Network .....	37
3.1.7. To Finish Creating the Flow of the Job Network .....	37
3.1.8. Checking a Job Network .....	38
3.2. Executing a Job Network .....	40
3.2.1. To Submit a Job Network Immediately .....	40
3.2.2. Confirming the Result of an Immediate Submission (Unit Job Being Executed) .....	44
3.2.3. Confirming the Result of an Immediate Submission (Unit Job Already Finished) .....	46
3.2.4. Submitting Job Network Based on Schedule .....	47
3.3. Operating a Job Network .....	48
3.3.1. Copying a Job Network / a Group .....	49
3.3.2. Moving a Job Network / a Group .....	53
3.3.3. Creating/Deleting a Shortcut of Job Network .....	54
3.3.4. Setting Parameters of a Job Network .....	56
3.3.5. Grouping Job Networks .....	65
3.3.6. Displaying the Job Network Settings List .....	66
3.4. Creating a Menu Button to Execute a Job Network .....	68
3.4.1. Creating User Menu Button .....	68
3.4.2. Operating a User Menu Button (Immediate submission) .....	71
4. Usage of Part Objects .....	73
4.1. Placing a Part Object .....	76



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4.2. Execution Parts .....	78
4.2.1. Setting an Execution Script of a Unit Job .....	78
4.2.2. Setting up Conditions (Parameters) for Executing a Unit Job .....	79
4.2.3. Passing Information Between Unit Jobs .....	93
4.2.4. Loading the User Profile When Executing the Unit Job .....	96
4.2.5. Writing an Execution Script of ERP Job .....	96
4.2.6. Setting Up Conditions (Parameters) for Executing an ERP Job .....	97
4.2.7. Setting Execution Conditions (Parameters) of BI Job .....	97
4.2.8. Setting the Execution Conditions (Parameters) of PC Job .....	98
4.2.9. Allocating a Sub Job Network .....	99
4.2.10. Browsing a Sub Job Network .....	102
4.3. Branch Part .....	103
4.3.1. Adding/Deleting a Flow of Parallel .....	103
4.3.2. Adding/Deleting a Flow of Condition Branch .....	104
4.3.3. Setting Branch Conditions of a Condition Branch .....	106
4.3.4. Setting a Schedule of a Calendar Branch .....	107
4.3.5. Setting to repeat processing in a flow .....	108
4.3.6. Specifying an OR Branch .....	110
4.4. Waiting Part .....	116
4.4.1. Setting a Dialog .....	116
4.4.2. Setting a Job Waiting .....	117
4.4.3. Setting a Job Network Waiting (JNW Waiting) .....	118
4.4.4. Setting a File Waiting .....	120
4.4.5. Setting a Time Waiting .....	125
4.5. Event Transmission and Event Reception .....	127
4.5.1. Setting an Event Transmission .....	127
4.5.2. Setting Up an Event Reception .....	131
4.6. Custom Job Parts .....	140
5. Using Custom Jobs .....	141
5.1. Viewing a Custom Job Definition .....	142
5.2. Creating or Deleting a Custom Job Definition Group .....	144
5.2.1. Creating a Custom Job Definition Group .....	144
5.2.2. Deleting a Custom Job Definition Group .....	145
5.3. Creating or Deleting a Custom Job Definition .....	146
5.3.1. Creating a Custom Job Definition .....	146
5.3.2. Deleting a Custom Job Definition .....	148
5.4. Manipulating a Custom Job Definition .....	149
5.4.1. Moving a Custom Job Definition or Custom Job Definition Group .....	149
5.4.2. Setting a Comment on a Custom Job Definition .....	150
5.4.3. Renaming a Custom Job Definition .....	151
5.4.4. Setting Execution Conditions (Parameters) of a Custom Job Definition .....	152
5.4.5. Editing a Custom Job Definition Script .....	154
5.4.6. Script Preview Function .....	157
5.5. Placing a Custom Job as a Part .....	159
5.5.1. Placing a Custom Job Part .....	159
5.5.2. Setting Execution Conditions (Parameters) of a Custom Job Part .....	161
5.5.3. Script Preview Function .....	162
6. Schedule Operation Method .....	163
6.1. Creating a Schedule .....	164
6.1.1. Creating or Deleting Schedule Groups .....	165
6.1.2. Creating or Deleting a Schedule .....	166
6.1.3. Creating a Schedule Rule .....	168
6.1.4. Checking a Scheduled Job Network .....	177
6.2. Manipulating a Schedule .....	180
6.2.1. Moving a Schedule or Schedule Group .....	180
6.2.2. Specifying a Comment for a Schedule .....	181

6.2.3. Changing the Schedule Name .....	182
6.2.4. Enabling or Disabling a Schedule .....	183
7. Submitting the Job Network Independently of the Schedule .....	185
7.1. Usage .....	186
7.1.1. Creating a trigger definition .....	186
7.1.2. Operating the trigger definition .....	189
7.2. Usage Example .....	195
7.2.1. Submitting the Job Network When the Specific Keyword is Output to the Text Log .....	195
7.3. Supported regular expression .....	214
7.4. Caution .....	215
7.4.1. Caution when monitoring a text log .....	215
7.5. Restrictions .....	218
7.5.1. Restrictions on the trigger .....	218
7.5.2. Restrictions on monitoring a text log .....	218
8. Monitoring and Management of Jobs (Usage of Tracker) .....	219
8.1. Relation between job status and tracker's color .....	220
8.1.1. List of Relation Between Job Status and Tracker's Color .....	220
8.1.2. Displaying Job Network Trackers in Parent-child Relationship .....	222
8.1.3. Relation Between Group Icon's Display Color and Job Network Tracker .....	223
8.2. Displaying Tracker List by Gantt/List Mode .....	225
8.2.1. Tracker List in the Job Network Window .....	225
8.2.2. Tracker List in User Frame Window .....	227
8.2.3. Tracker List@all_machine in the Manager Frame Window .....	228
8.2.4. Simple Display of Status Statistics .....	230
8.3. Displaying Only the Latest Trackers .....	231
8.3.1. Using a Latest Tracker Display Mode .....	231
8.3.2. Setting a Latest Tracker Display Mode .....	233
8.4. Displaying Tracker List in Tree .....	235
8.4.1. Tracker List in User Frame Window .....	235
8.4.2. Tracker List@all_machine in the Manager Frame .....	236
8.4.3. Expanding only the Hierarchies of Groups Where a Tracker Exists .....	237
8.5. Displaying Tracker List in the Ascending Order of the Expected Start Time .....	239
8.5.1. Job Network Tracker List .....	239
8.5.2. Tracker List in User Frame Window .....	240
8.5.3. Tracker List@all_machine in the Manager Frame .....	241
8.6. Sorting the Tracker List by Machine .....	242
8.6.1. Tracker List@all_machine in the Manager Frame .....	242
8.7. Displaying the Tracker List with a Period Specified .....	243
8.8. Switching the Period in the Tracker List Automatically .....	245
8.9. Displaying the Tracker List with the Display Start Time Specified .....	248
8.10. Filtering the Tracker List Before Displaying It .....	250
8.11. Printing the Tracker List .....	255
8.12. Refreshing the Tracker List .....	257
8.13. Displaying Only Unfinished Trackers .....	258
8.14. Reflecting Changes on the Tracker List .....	259
8.15. Not Refreshing the Tracker List Window After Tracker Control .....	260
8.15.1. Description of the Operations .....	261
8.15.2. Caution .....	261
8.16. Operating Job Network Tracker .....	262
8.16.1. Opening Job Network Tracker .....	262
8.16.2. Monitoring and Controlling Execution of the Job .....	263
8.16.3. Browsing Details about Execution of the Job .....	266
8.16.4. Browse job network environment variables .....	267
8.16.5. Browsing Histories of Execution and Operation of the Job .....	267
8.16.6. Selects Multiple Trackers and Executes an Operation at Once .....	268

8.16.7. Archiving and Saving the Tracker Information .....	270
8.16.8. Changing Submission Time of a Scheduled Tracker .....	272
8.16.9. Adding/Deleting Objects of a Job Network .....	272
8.16.10. Displaying a Job Network Definition Flow from a Tracker .....	274
8.16.11. Printing a Job Network Tracker Flow .....	275
8.16.12. Manually Archiving the Tracker .....	276
8.16.13. Controlling trackers from the [Action] menu .....	278
8.17. Operating a Unit Job Tracker Icon .....	279
8.17.1. Operating a Unit Job Tracker Icon .....	279
8.17.2. Referring to Detail Information of Unit Job Tracker Window .....	281
8.18. Operating a Sub Job Network Tracker .....	284
8.19. Responding to a Dialog (Deciding a completion status) .....	286
8.20. Skipping Waiting Part and Event Transmission/Reception Jobs .....	287
8.21. Doing a Part Search .....	288
8.21.1. Setting the Part Search Items .....	288
8.21.2. Viewing the Job Searching Results .....	291
8.21.3. Refreshing the Job Searching Frame .....	292
8.21.4. Sorting the Job Searching Results .....	292
8.21.5. Referencing a Tracker from the Job Searching Frame .....	293
8.21.6. Outputting the Job Searching Results .....	294
8.22. Displaying an Anteroposterior Relation of a Tracker .....	296
8.22.1. Displaying the Anteroposterior Relationship of a Tracker .....	296
8.22.2. Defining the Preceding Relation for a Tracker .....	300
8.22.3. Defining the Succeeding Relation for a Tracker .....	300
8.22.4. Example of an Anteroposterior Relation .....	301
8.23. Viewing the Tracker Schedule and Results .....	304
8.23.1. Month Schedule Viewing .....	305
8.23.2. Month Tracker Viewing .....	308
8.23.3. Daily Schedule Viewing .....	308
8.23.4. Daily Tracker Viewing .....	309
8.23.5. Comparison Viewing .....	310
8.23.6. Printing the Comparison Viewing Window .....	311
9. Tracker Archive Offline Reference Function .....	317
9.1. Downloading Tracker Archive Information .....	318
9.2. Referring to Tracker Archive Files .....	319
9.2.1. List of Tracker Archives .....	319
9.2.2. Checking the Tracker Flow on Tracker Archive .....	320
9.2.3. Checking the Job Details on the Tracker Archive .....	320
10. Usage of Network Queuing System (NQS) .....	322
10.1. Adding a Machine to Machine List .....	323
10.1.1. Adding a Machine to Machine List .....	323
10.1.2. Deleting a Machine from Machine List .....	326
10.1.3. Switching between view formats on Machine List Screen .....	326
10.2. Queues the JobCenter Creates by Default .....	328
10.3. Creating a Batch Queue .....	330
10.4. Setting Parameters of a Batch Queue .....	331
10.5. Creating a Pipe Queue .....	333
10.6. Setting Parameters of a Pipe Queue .....	334
10.7. Setting a Destination of a Pipe Queue .....	336
10.8. Creating a Queue on a Remote Machine .....	337
11. Monitoring and Management of the JobCenter Usage Status .....	338
11.1. Monitoring and Management with a Queue List .....	339
11.1.1. Displaying a Queue List in the Manager Frame Window .....	339
11.1.2. Displaying a Queue List in the NQS Frame Window .....	340
11.2. Monitoring and Management with a Request List .....	342
11.2.1. Displaying a Request List in the Manager Frame Window .....	342

---

11.2.2. Displaying a Request List in the NQS Frame Window .....	344
11.3. Monitoring and Management of Events with an Event List .....	347
11.3.1. Displaying an Event List .....	347
11.3.2. Transmitting an Event .....	348
11.3.3. Deleting an Event .....	350
11.4. Monitoring Clients from the Client List .....	352
11.4.1. Displaying the Client List .....	352
12. Upload and Download Functions .....	354
12.1. Downloading Definition Information/Configuration Information/Tracker Archive Information (JPF File) .....	355
12.1.1. Downloading Definition Information .....	355
12.1.2. Downloading Configuration Information .....	358
12.1.3. Downloading Tracker Archive Information .....	359
12.2. Uploading Definition Information (JPF File) .....	361
12.3. Checking Definition Information (JPF File) .....	366
12.4. Dependency Errors .....	368
12.4.1. List of Dependency Error Messages .....	369
13. Prepared Release Function .....	371
13.1. Overview of Prepared Release Function .....	372
13.2. Creating a Release Plan .....	374
13.2.1. Creating an Empty Release Plan .....	375
13.2.2. Create a Release Plan Based on a Master Definition .....	375
13.2.3. Create a Release Plan from JPF file with Definition Format .....	376
13.3. Updating a Release Plan .....	378
13.4. Operating a Release Plan .....	380
13.4.1. Copying a Release Plan .....	380
13.4.2. Deleting a Release Plan .....	381
13.4.3. Downloading a Release Plan .....	381
13.4.4. Enabling/Disabling a Release Plan .....	381
13.4.5. Changing the Expected Release Time of a Release Plan .....	382
13.4.6. Setting a Comment of a Release Plan .....	382
13.4.7. Immediate Release of a Release Plan .....	383
13.4.8. Checking a Release Plan .....	383
13.4.9. Confirming Detail Information of Release Plan .....	383
14. Authority Setting of General User (Permission) .....	386
14.1. Setting Authority Groups .....	387
14.1.1. Adding a User to an Authority Group .....	387
14.1.2. Moving a User to Another Authority Group .....	389
14.2. Creating an Authority Group .....	391
14.2.1. Adding a New Authority Group .....	391
14.2.2. Setting the Authority of an Added Authority Group .....	392
14.3. Restricting the Permission to Access Other Users' Job Networks and Trackers .....	393
14.4. Getting the Changed Authority Settings Reflected .....	395
15. Setting the Mail Transmission Function for Errors .....	396
15.1. Setting up the SMTP Server to Use .....	397
15.2. Reporting an Error to a Specified Destination by Mail .....	399
15.3. Notes on the Mail Transmission Function .....	402
15.3.1. Behavior If an Error Occurs in a Sub Job Network .....	402
15.4. Restrictions on the Mail Transmission Function .....	403
15.5. List of Macros That Can Be Used in Subjects and Messages .....	404
15.6. Lists of Operations To Be Performed in Case of an Error .....	407
15.7. Lists of Correspondence between Tracker Operations and Mail Transmission Operations .....	410
16. How to Check the Execution Results of Preceding Job Parts .....	415
16.1. Usage .....	416
16.1.1. Data reference parameter .....	416

16.1.2. Data reference by the direct reference method .....	418
16.1.3. Data reference by the indirect reference method .....	419
16.2. Sample Usage .....	421
16.2.1. [Direct reference method] Referring to the execution result (JSON) of the preceding job part using the extended custom job part .....	421
16.2.2. [Indirect reference method] Referring to the execution result (JSON) of the preceding job part using the unit job .....	423
16.2.3. [Indirect reference method] Referring to the execution result (JSON) of the preceding job part using the custom parameter of the custom job .....	424
16.3. Caution .....	427
16.3.1. Cautions when executing the job network .....	427
16.3.2. Cautions common to the data format .....	428
16.3.3. Cautions about the data format (JSON) .....	428
16.4. Restrictions .....	430
16.4.1. Restrictions on the execution environment .....	430
16.4.2. Restrictions on the data check parameter .....	430
16.4.3. Restrictions on the data format (JSON) .....	430
16.5. Error message .....	431
16.5.1. Error message common to the data formats .....	431
16.5.2. Error message for the data format (JSON) .....	432

---

## List of Tables

1.1. JobCenter Product Suite .....	3
2.1. Fundamental Operating Instructions of GUI display .....	6
2.2. Difference between UMS Mode and EUI Mode .....	10
2.3. Login Mode and operable range .....	11
2.4. A list of the tab items in the User Frame .....	17
2.5. A list of the tab items in the Manager Frame .....	19
2.6. A list of the tab items in the NQS Frame .....	20
2.7. A list of the tab items in the ERP Frame .....	21
2.8. A list of the tab items in the other user's frame .....	23
3.1. Limitations on the entry of the variable name and variable value .....	43
3.2. Notes when automatically starting a job network according to a schedule .....	47
3.3. A List of operations of the job network .....	48
3.4. Restrictions on specifying environment variable parameters .....	64
4.1. List of part objects .....	73
4.2. Destination event holding status list .....	139
5.1. Terms used for the custom job function .....	141
5.2. Custom job icon list .....	142
5.3. Custom job definition operation list .....	149
5.4. Restrictions on a custom variable .....	153
6.1. Schedule Operation List .....	180
7.1. Triggers to submit the job network and trigger type .....	185
7.2. List of operations of the trigger definition .....	190
7.3. File encoding that can be selected for the target text log .....	202
7.4. Supported regular expression .....	214
8.1. Relationship between job status and tracker color .....	220
8.2. List of Unit Job Tracker icons .....	221
8.3. A list of Sub Job Network Tracker icons .....	221
8.4. Priority and status of job network .....	222
8.5. Job Network Statuses and Priorities In Relation to the Display Color of Group Icon .....	223
8.6. Tab List of [Unit Job Tracker] window .....	282
8.7. A List of waiting job part trackers and event transmission/reception trackers .....	287
8.8. Anteroposterior relation of parts of RootJNW (parent job network) .....	301
8.9. Anteroposterior relation of parts of subJNW .....	302
10.1. List of initial values which queues created by default have .....	328
10.2. List of batch queue attributes that can be configured .....	331
11.1. Request Status List .....	341
11.2. Request Status List .....	345
11.3. List of message dialogs displayed during event transmission .....	350
13.1. Terms used for the prepared release function .....	371
13.2. List of release plan statuses .....	373
13.3. List of release plan operations .....	380
15.1. Macros that can be used in subjects and messages .....	404
15.2. Tracker statuses at the time of mail transmission .....	407
15.3. Job parts that may enter the error status and what is displayed after they are replaced by a macro .....	407
15.4. Tracker operation menu and mail transmission operation .....	410
15.5. Tracker flow window operation and mail transmission operation .....	411
16.1. Data format list .....	416
16.2. Output destination list .....	416
16.3. List of the format of the part name that can be specified .....	417
16.4. How to specify the JSON key .....	417
16.5. Elements supported by direct reference method .....	418
16.6. Elements supported by indirect reference method .....	419

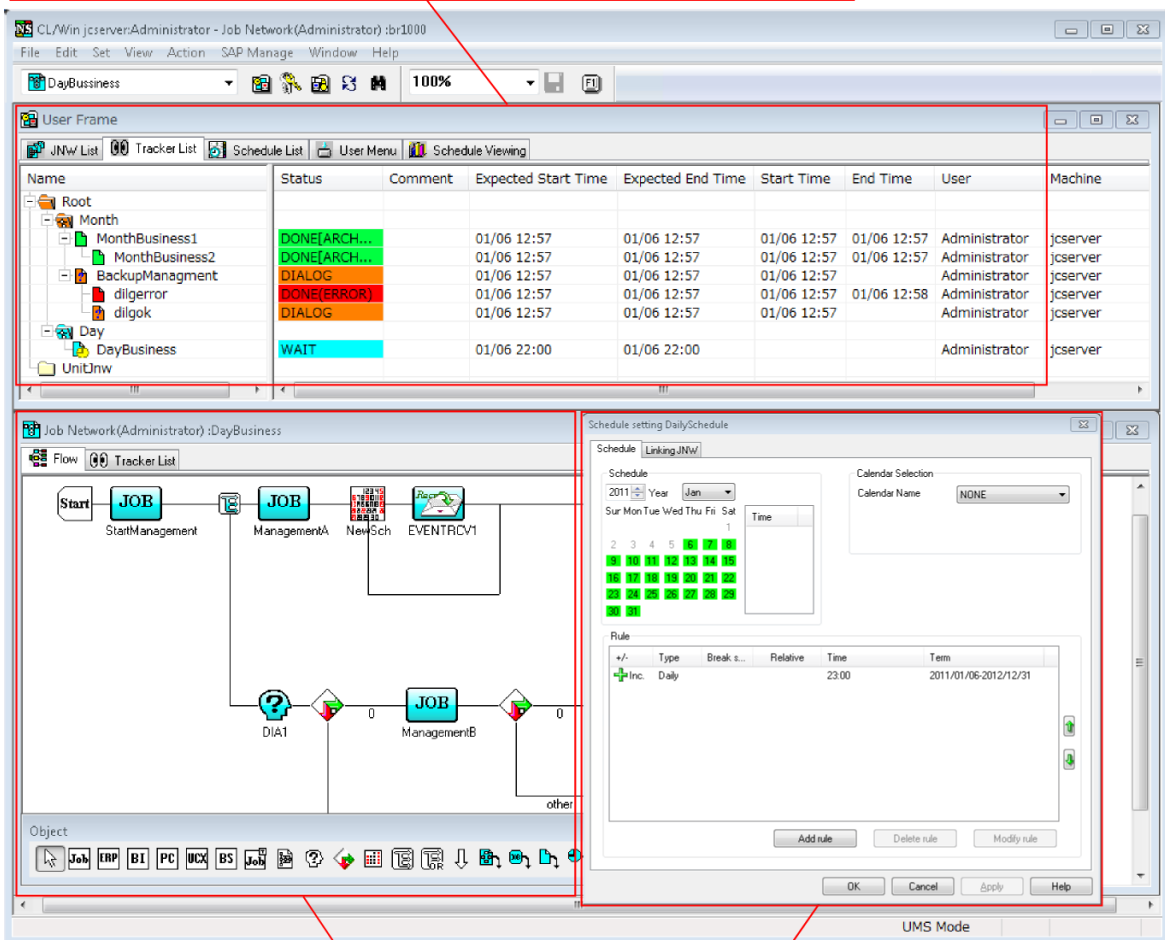
# 1 Introducing JobCenter

JobCenter is the schedule and job management software to automate routine tasks and batch processing.

JobCenter can monitor executions of business process in an integrated fashion and be easily operated by drag and drop operations with GUI. Settings done by Operating Day Calendar and schedule function realize reliable automatic executions of business processes. In addition, operation on the clustered environment and linkage with SAP ERP, SAP BI are available.

JobCenter's GUI makes it easy to understand for user to automate job execution monitoring, operate and define jobs.

Monitoring job execution status in an integrated fashion



Scheduling settings for job auto-executions

Creation, deletion, and modification of job network

Figure 1.1. Image of JobCenter GUI display

## 1.1. What is the Key Feature?

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The key features of JobCenter are as follows:

■ **Reliable job automatic execution function supported by schedule function and GUI**

The job network can be defined through simple drag&drop operation from the GUI screen. Various job execution conditions such as condition branching, queuing, etc. can also be set from GUI. The job execution order is controlled automatically by the job network. Linkage definition between job networks enables efficient construction of massive job networks.

Operating Day Calendar and schedule settings realize reliable automatic execution of jobs. By Defining the Operating Day Calendar, schedules suited to the job (i.e. execute avoiding holidays, etc.) can be created.

■ **Central management of job execution state with GUI**

Job execution states in network distributed environments can be centrally monitored in a GUI. As job states are differentiated by color, the occurrence of failures can also be identified immediately. Since jobs can also be re-executed from the same GUI as the monitoring screen, prompt recovery from failures is possible.

■ **High availability by clustering function**

The mission critical business processes mainframe had can be realized as job operations on the clustered environment. Making the monitoring manager clustered prevents interruption of monitoring job execution state caused by a node down. On another hand, clustering the job execution servers ensures continuity of job execution by job migration.

■ **SAP ERP, BI linkage function**

ERP jobs and BI jobs can be defined in the job network, and like normal jobs, job input, results referencing and control can also be performed.

■ **Job execution linkage function with other products**

JobCenter is based on NQS (Network Queuing System) that realize job execution linkage with other products which also support NQS protocol.

■ **Multi-platform/Multi-vendor compatibility**

Jobs can be executed on main platforms; Windows, Linux, HP-UX, and AIX.



## 1.2. What is the JobCenter Product Suite?

The JobCenter Product Suite consists of the following products: JobCenter Manager (MG), Server (SV), CL/Win, and SAP option

Table 1.1. JobCenter Product Suite

Function	Product Name	Key Function
Manager	JobCenter MG	Provides centralized management for constructing the job execution environment and monitoring of job execution status.
Server	JobCenter SV	Provides NQS-based job execution functions.
Viewer	JobCenter CL/Win	Provides a Windows client GUI for JobCenter users. Connects to the manager and server.
Linkage with SAP ERP and SAP BI	JobCenter for ERP Option	Submits jobs to the SAP ERP and SAP BI system.

Building a JobCenter network environment (see [Figure 1.2, "Image of the product structure of JobCenter"](#)) allows centralized management including monitoring the states of queues and requests, and operating of several machines on the network from the JobCenter CL/Win.

On the Windows platform, you can make a small system on the machine in which JobCenter MG, JobCenter SV, and JobCenter CL/Win are installed.

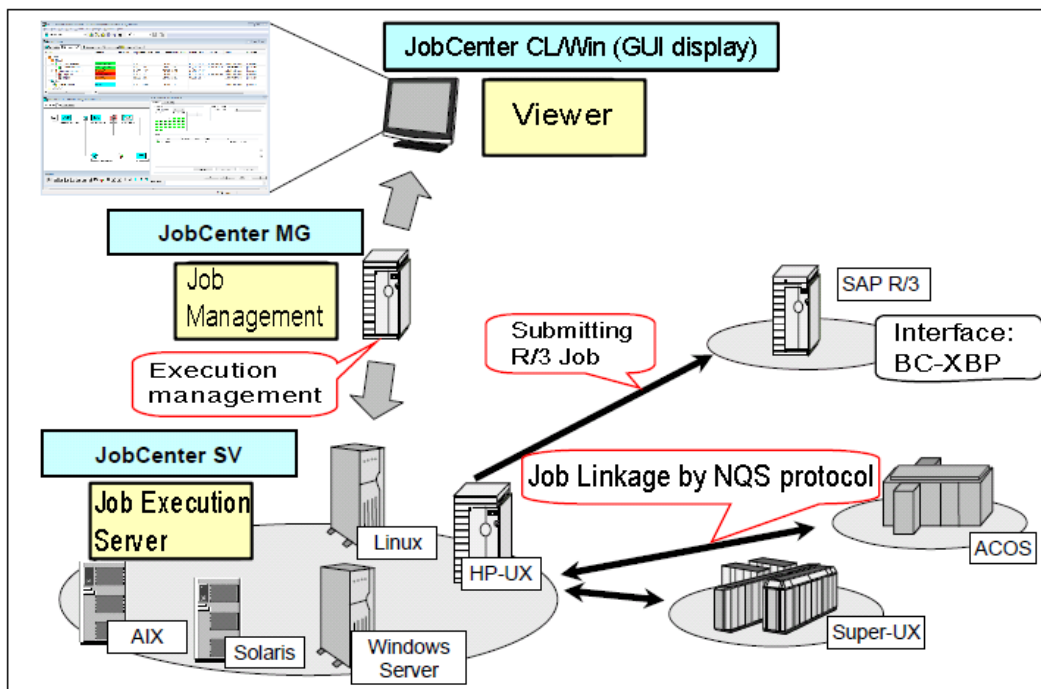


Figure 1.2. Image of the product structure of JobCenter

## 1.3. JobCenter Support Matrix: Products and OS

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For information about the operating systems supported by the individual JobCenter products, see in <Release Notes>Chapter 3, 「Operating Environment」 .

---

## 2 Operating Instructions of JobCenter CL/Win (GUI display)

---

JobCenter CL/Win (GUI display) is a viewer to connect JobCenter MG (Manager) or JobCenter SV (Server).


A user can build a job execution environment and monitor job execution status with the GUI display.

## 2.1. Fundamental Operating Instructions of GUI Display

The fundamental operation in the display of JobCenter is just like the operations for other Windows applications.

The following explain some examples of the fundamental operating instructions this guide uses.


Table 2.1. Fundamental Operating Instructions of GUI display

Operation	Operating Instructions
Displaying menu	Point the cursor to an item on the menu bar, and click the button. A drop-down menu appears, and then select an operation command.
Selecting icon	Single-click an icon that is subject to operate the JobCenter.
Opening a file (Job network, Tracker, etc.)	Double-click an icon that is subject to operate the JobCenter.
Displaying shortcut menu	Select an icon that is subject to operate the JobCenter, and then right-click the icon. This guide mainly explains the operating instructions from the menu which appears by right-clicking an object.  A user can achieve the same target by selecting a command from the menu bar in a similar way.
Completion of setting, Application	Click [OK] or [Apply] button.
Cancellation of setting	Click [Cancel] button.
Terminating display	Click  button on the upper right-hand corner of its window or dialog.  Otherwise on the menu bar, select [File], and then click [Close] or [Exit] to terminate the display.

## 2.2. Starting GUI Display

Start below to activate a GUI display, connect a server and operate JobCenter.

1. On the Windows desktop, start JobCenter Client by clicking [Start], [All Programs], [JobCenter], [CL XX.YY], and then [JobCenter Client XX.YY].

 XX.YY represents the version number.

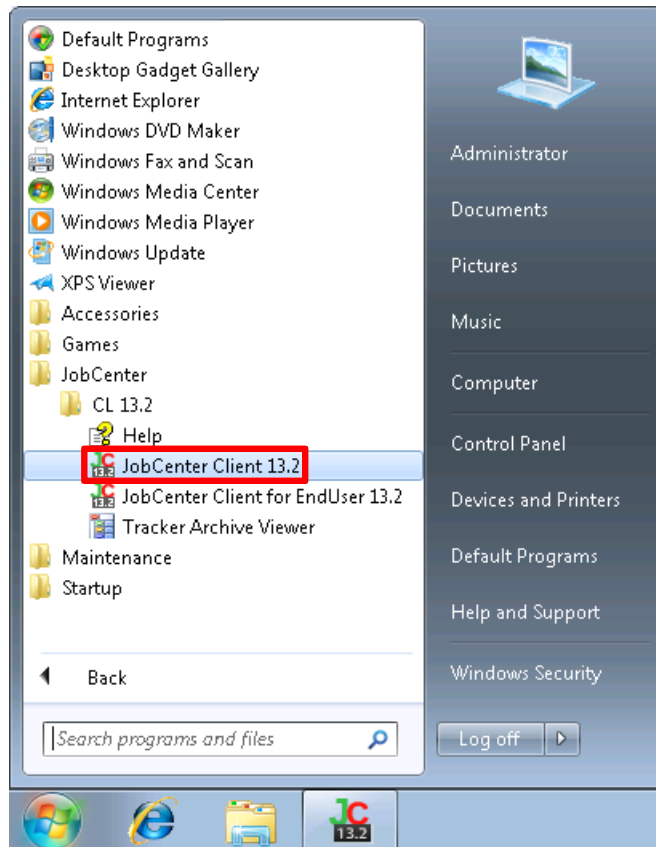


Figure 2.1. How to start GUI display

2. If the GUI display successfully started, [Connection to server] dialog box appears.

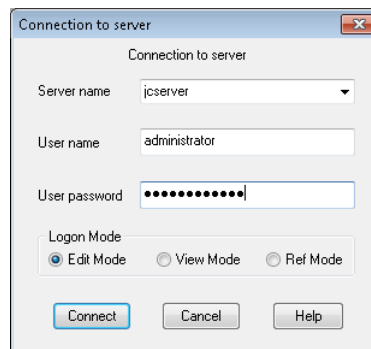


Figure 2.2. Screenshot of the [Connection to server] dialog box

## 2.3. Connecting Server

Connect a server with a Manager Account or a General user account. General user accounts are for users other than the JobCenter administrator.



- To connect the server, services of JobCenter must be in running status.
- Make sure that the versions of JobCenter MG and JobCenter SV are consistent. A compatibility error occurs and login fails when attempting to connect to MS/SV R12.10 or earlier from a client with R13.1 or later.
- Some of the operations, menus, and buttons explained in this guide cannot be selected with some authorities that JobCenter has allocated to the general user account. For details, refer to [Chapter 14, 「Authority Setting of General User \(Permission\)」](#).

### 2.3.1. Connecting Server under Manager Account

The following explain how to connect the server under a manager account with Edit Mode that can create, delete, and modify job networks. Always use nsumsmgr in UNIX. In Windows, use the account specified during setup.



Be sure to use nsumsmgr instead of root (OS super user) in UNIX.

1. Start the GUI display. [Connection to server] dialog box appears.

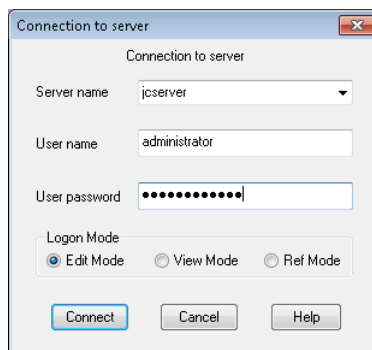


Figure 2.3. Screenshot of the [Connection to server] dialog box (under manager account)

2. Enter the [Server name], [User name], and [User password]. Select the [Logon Mode].

- In the pull-down box for [Server name], enter the name of the server. In the case of using domain environment, enter the name in machine name.domain name format.
- Enter the manager account in the [User name] field.
- Enter a password of the manager account above in the [User password] field.
- Verify the Edit Mode option button is selected in the [Logon Mode].

3. After filling all fields and verifying selections. Click [Connect].

4. If successfully connected, User Frame will display. [UMS Mode] is displayed at the bottom right corner of the following screen:

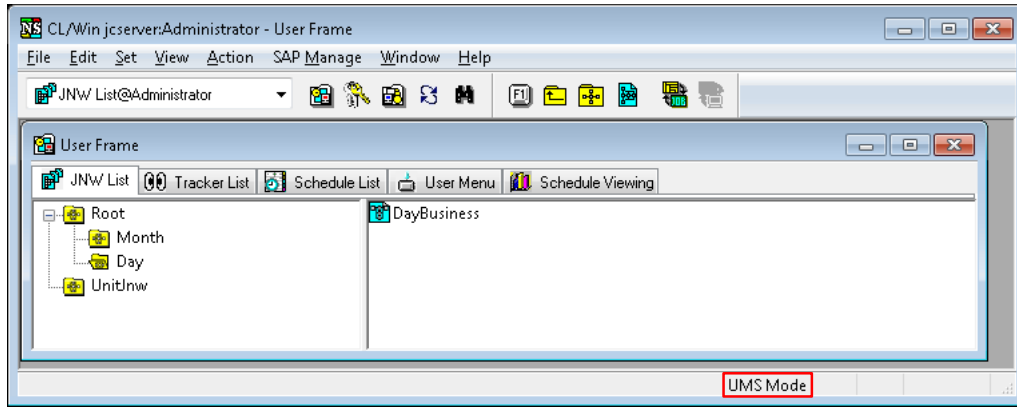


Figure 2.4. Screenshot of the display (User Frame) after connecting the server

### 2.3.2. Connecting Server with General User Account

The following explain how to connect the server under general user account with Edit Mode that can create, delete, and modify job networks. Note that utilizable functions under general user account is partially limited compared to manager account.

1. Start the GUI display. [Connection to server] dialog box appears.

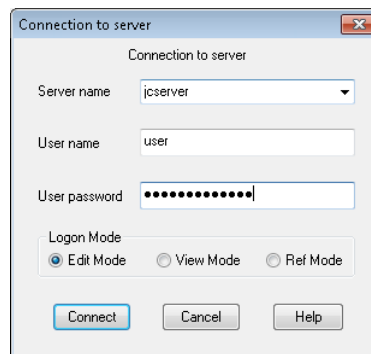


Figure 2.5. Screenshot of the [Connection to server] dialog (with general user account)

2. Enter the [Server name], [User name], and [User password]. Select the [Logon Mode].

- In the pull-down box for [Server name], enter the name of the server. In the case of using domain environment, enter the name in "machine name.domain name" format. Specify the official host name on the network.

In combo boxes, names of machines which succeeded connection previously can be selected.

- Enter the general user account in the User name field.

- Enter a password of the general user account above in the [User password] field.

- Verify the Edit Mode option button is selected in the [Logon Mode].

3. After filling all fields and verifying selections. Click [Connect].

4. If successfully connected, User Frame will display. "UUI Mode" is displayed at the bottom right corner of the following screen:

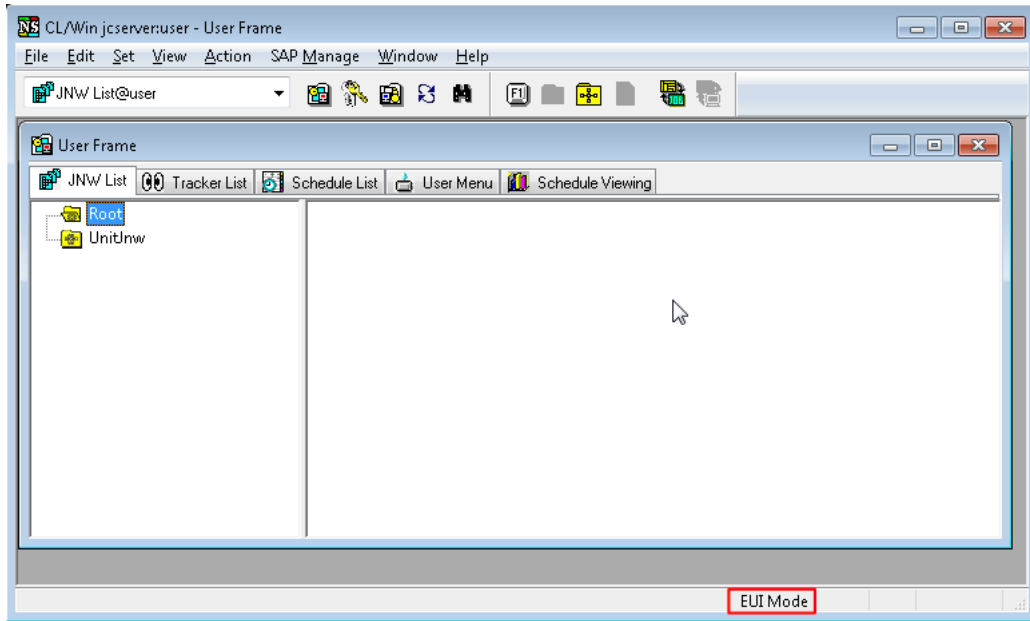


Figure 2.6. Screenshot of the display (User Frame) after connecting the server

### 2.3.3. GUI Display Mode per Login User, Login Mode when Connecting Server

Either [UMS Mode] or [EUI Mode] is displayed at the right bottom of the CL/Win screen depending on the login user.

UMS Mode is a GUI display when the user connects as the JobCenter administrator. In UMS Mode, the user can make the environment settings of the whole site (creation of Operating Day Calendar, addition/deletion of other machine's icon, machine group setting, creation/deletion of queue, and all other operations).

EUI Mode is a GUI display for general user account. In this mode, the system configuration including the environment settings of the whole site is for reference only although the user can create or set up the job network or schedule and operate the tracker.



When connecting to a member machine (child) in the machine group rather than the scheduler machine (parent), EUI Mode is used even when the JobCenter administrator connects to it. If it is absolutely necessary to connect to a member machine in UMS Mode, remove that machine from the machine group.

This manual mainly describes operation instructions in UMS Mode.

Table 2.2. Difference between UMS Mode and EUI Mode


Logon Mode	Description
UMS Mode	A GUI display for manager. A user can perform all operations such as system environment setting and operation and deletion of queue.
EUI Mode	A GUI display for general user account. The system environment and queues are for reference only.

In addition, the operable ranges of job network and tracker are different depending on the [Logon Mode] selected when connecting to the server with CL/Win.



Table 2.3. Login Mode and operable range

Logon Mode	Creation, deletion, and modification of job network	Control of job network
Edit Mode	○	○
View Mode	×	○
Ref Mode	×	×

 ○ is operable, × is inoperable (reference only).

By using a permission setting function, JobCenter Manager can set the authority of users under general user account regarding to operations such as reference, creation, and execution for job network, or reference and control for trackers. The setting is done by the each authority group. For details, refer to [Chapter 14, 「Authority Setting of General User \(Permission\)」](#) .

### 2.3.4. Setting a Connection Time-out Period for Servers

A user can set a connection time-out period from the viewer to JobCenter servers.

If connection processing takes a long time due to many jobs being executed or a heavy load on the network, a connection error might occur. To prevent this error, modify the connection timeout period. The default is 30 seconds.

1. Click [Cancel] in the [Connection to server] dialog box to clear all settings.
2. A window with [CL/Win] displayed on the title bar opens. In this window, select the [Set] menu and then [Socket Time Out].

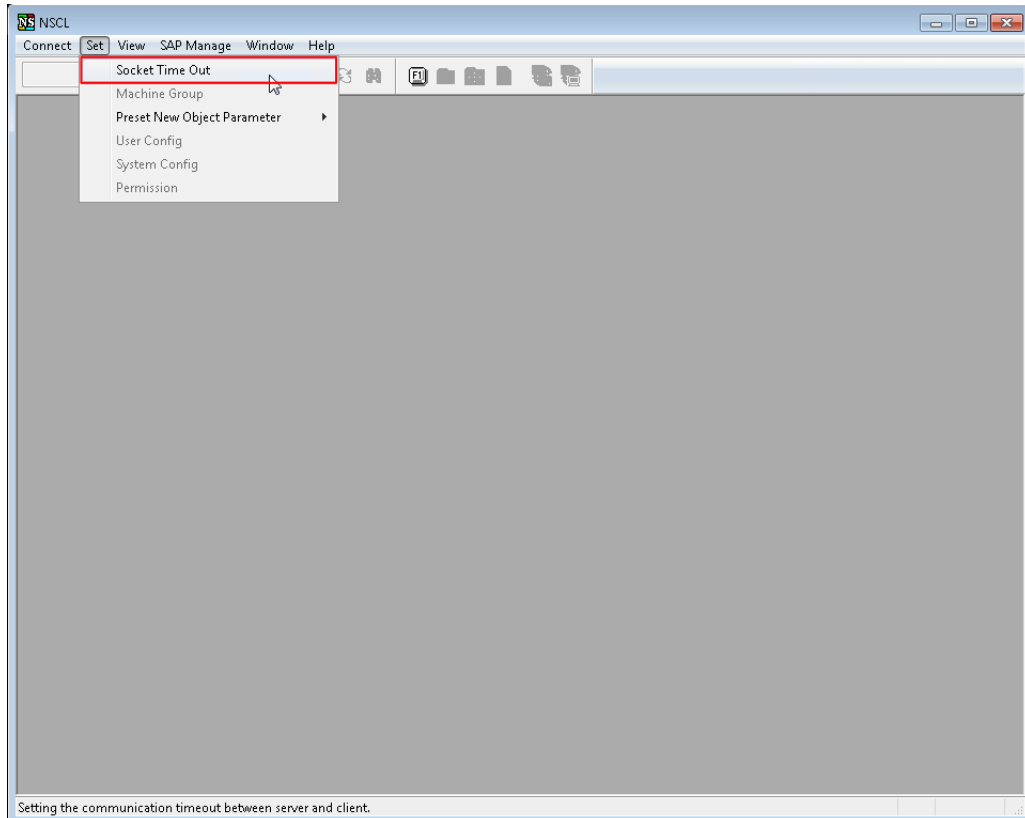


Figure 2.7. Screenshot that shows the [Socket Time Out] is selected

3. [Socket Timeout setting] dialog box opens, specify timeout. (The default is 30 seconds.)

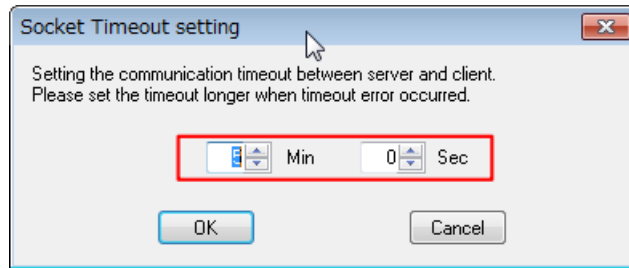


Figure 2.8. Setting example of Socket Timeout setting

4. After configuration, click [OK].



#### Cautions when you're setting the connection time-out to servers

The timeout specified here applies to various operations for the server after a connection is established, such as saving job network definitions and referencing trackers. This differs from the timeout period specified for connecting to the server. If no communication is established with CL/Win for a week after logging in, the server automatically logs you out. If this occurs, reconnect to the server.

### 2.3.5. Setting a Timeout Period for Operations Through CL/Win After Connecting to Server

A user can specify how long it takes to time out for operations on the server through CL/Win after a connection is established.

If there are many trackers, job network definitions, or schedule definitions and it takes long time to display them, a timeout error might occur in CL/Win and a timeout error message might appear. To prevent this error, modify the connection timeout period. The default is 5 minutes.

1. Connect to the server according to [Section 2.3.1, "Connecting Server under Manager Account"](#) or [Section 2.3.2, "Connecting Server with General User Account"](#).
2. Open the window with [CL/Win hostname:username] displayed on the title bar, select the [Set] menu, and then select [Socket Time Out].

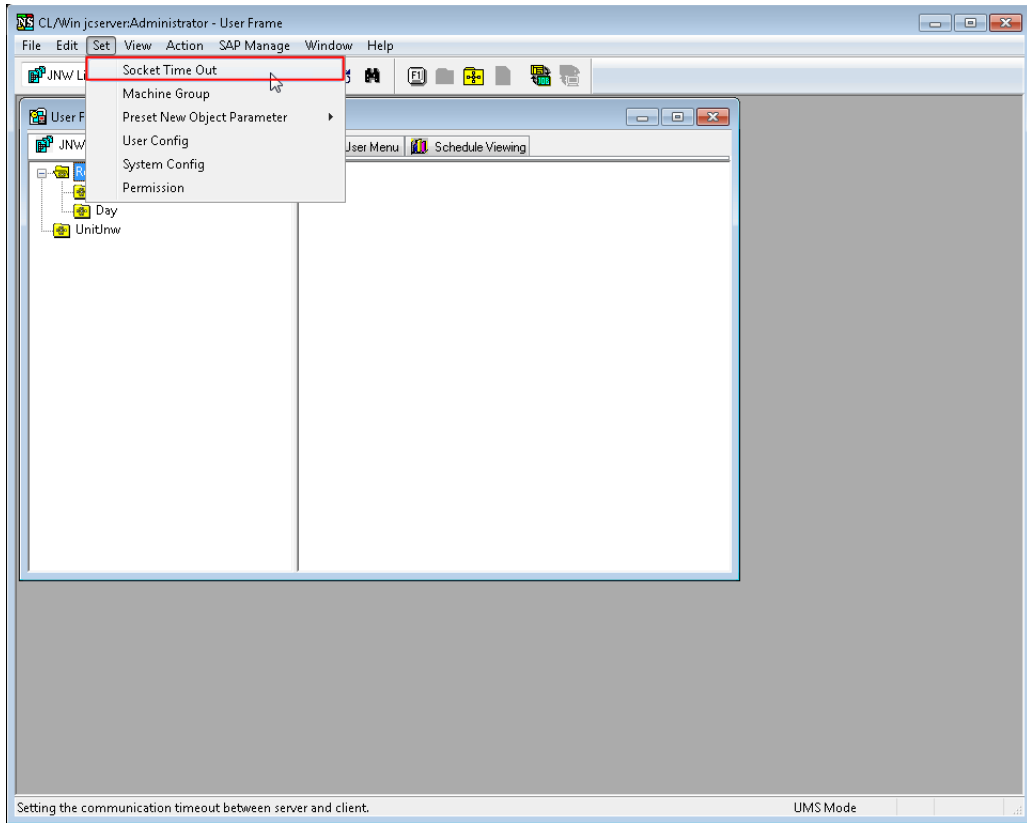


Figure 2.9. Selecting [Socket Time Out]

3. The [Socket Timeout setting] dialog box opens. Specify the timeout period. (The default is 5 minutes.)

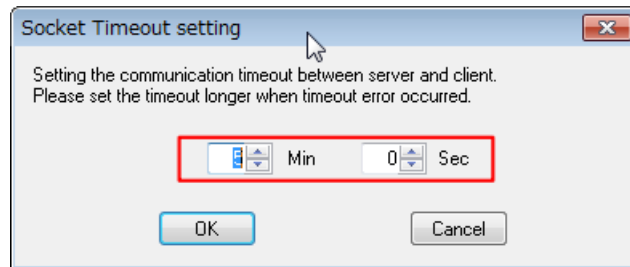


Figure 2.10. Specifying Socket Timeout

4. Click [OK].



Cautions when specifying a timeout period for operations through CL/Win after connecting to the server

The timeout specified here applies to various operations for the server after a connection is established, such as saving job network definitions and referencing trackers. This differs from the timeout period specified for connecting to the server. If no communication is established with CL/Win for a week after logging in, the server automatically logs you out. If this occurs, reconnect to the server.

## 2.4. Disconnecting Server

The following explain how to disconnect the server when a user finishes using the viewer of JobCenter CL/Win.

1. On the menu bar, select [File] and then click [Disconnect].

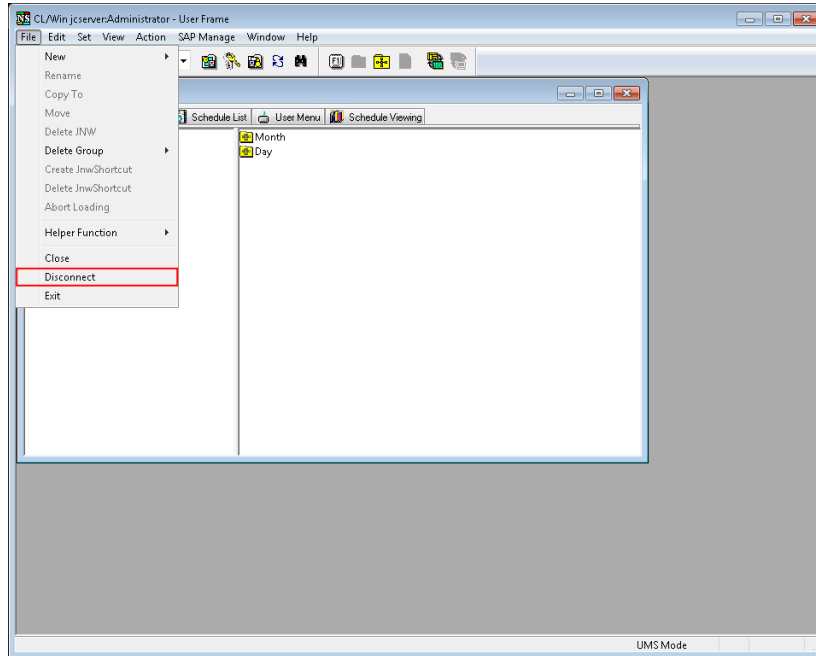


Figure 2.11. Screenshot that shows the [Disconnect] is selected

2. After the completion of disconnection, the display looks like [Figure 2.12, "Screenshot after the completion of disconnection"](#) appears. According to need, reconnect a server or close the GUI display.

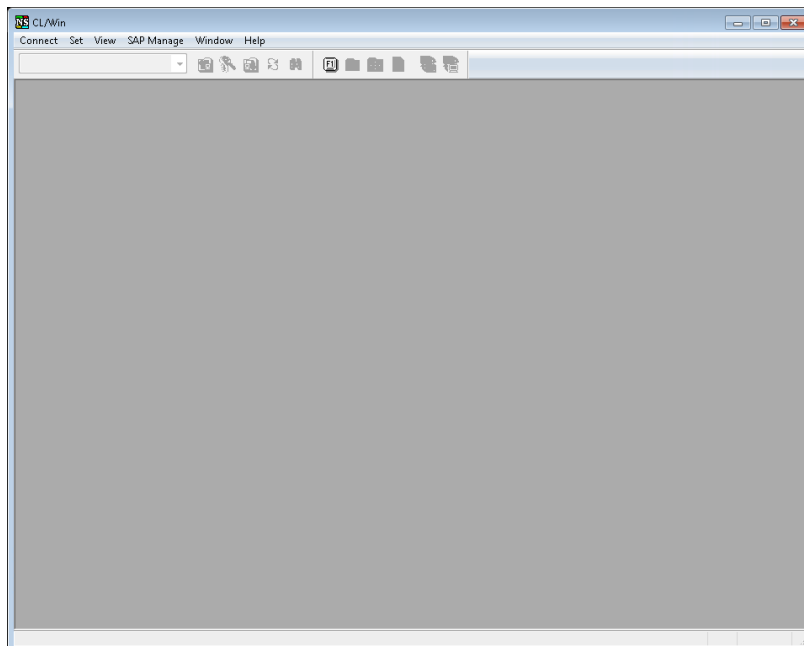


Figure 2.12. Screenshot after the completion of disconnection

The connection is automatically closed when the "CL/Win" window is closed.

## 2.5. Changing Frame (Display) for Purposes of Operation

GUI displays mainly consist of 4 types of frame.

Switch the frames by selecting [Window] and click one of the frames on the menu bar, or click an icon on the toolbar.

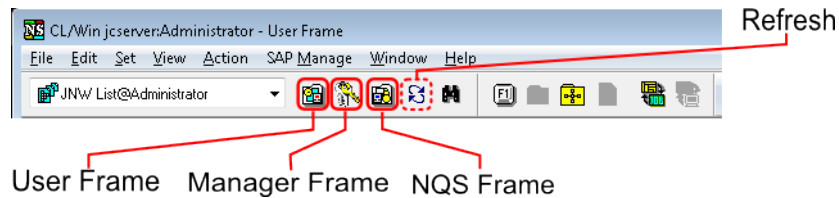



Figure 2.13. Frame changing-over icons

In addition, other user's frame allowed by Permission settings can be accessed by clicking [Window] on the menu bar and then choosing [Other User Frame].




Some of the tabs displayed in the each frame cannot be shown due to the rights the login user of JobCenter has. For details, refer to [Chapter 14, 「Authority Setting of General User \(Permission\)」](#).

In addition, the  icon in the same row is to refresh the display. For example, utilizes the button to update the display of the Tracker List window.

### 2.5.1. Displaying User Frame

User Frame is the window to create job networks and schedules, and monitor job execution status in the machine you logged in.

Developers and Operators mainly use this display.

1. On the toolbar, click the  icon, or on the menu bar, select [Window] and then click [User Frame].
2. The [User Frame] window opens in the CL/Win window.

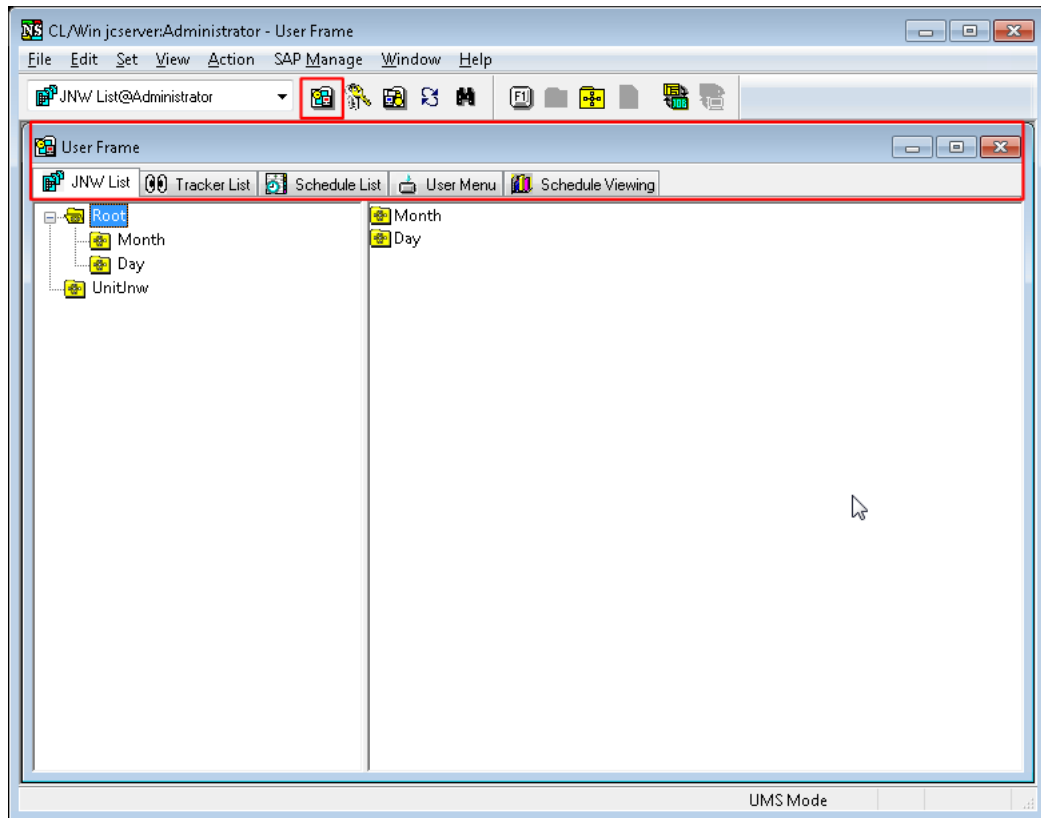



Figure 2.14. Screenshot of the User Frame

To open the User Frame window after it is closed, click the  icon, or on the menu bar, select [Window] and then click [User Frame].

The content of each tab in the User Frame is as follows:

Table 2.4. A list of the tab items in the User Frame


Tab Name	Contents	Chapter
JNW List	The JNW List window allows operations, such as reference, creation, deletion, and execution, of the job network the user has.	Chapter 3, 「Operating Instructions for Job Network」 Chapter 4, 「Usage of Part Objects」
Tracker List	The Tracker List window allows reference, deletion, or other various operations of the trackers the user has.	Section 8.2.2, 「Tracker List in User Frame Window」
Schedule List	The Schedule List window allows reference, creation, deletion, and change settings of the schedule the user has.	Chapter 6, 「Schedule Operation Method」
Trigger List	The Trigger List window allows reference, creation, deletion, and change settings of the trigger that the user has.	Chapter 7, 「Submitting the Job Network」

		Independently of the Schedule]
User Menu	The User Menu window allows reference and execution of the menu button the user created, or creation and deletion of the button.	Section 3.4, "Creating a Menu Button to Execute a Job Network"
Schedule Viewing	The Schedule Viewing window allows the user to refer the user having scheduled or completed trackers displayed by the hour or day.	Section 8.23, "Viewing the Tracker Schedule and Results"
Release Plan List	The Release Plan List window allows the predefined job network and schedule to be released at a specified time.	Chapter 13, "Prepared Release Function]

### 2.5.2. Displaying Manager Frame

Manager Frame is the window to do the configuration management of the machine and set the Operating Day Calendars.

Developers and Operators mainly use this display.

1. On the toolbar click the  icon, or on the menu bar, select [Window] and then click [Manager Frame].
2. The [Manager Frame] window opens in the CL/Win window.

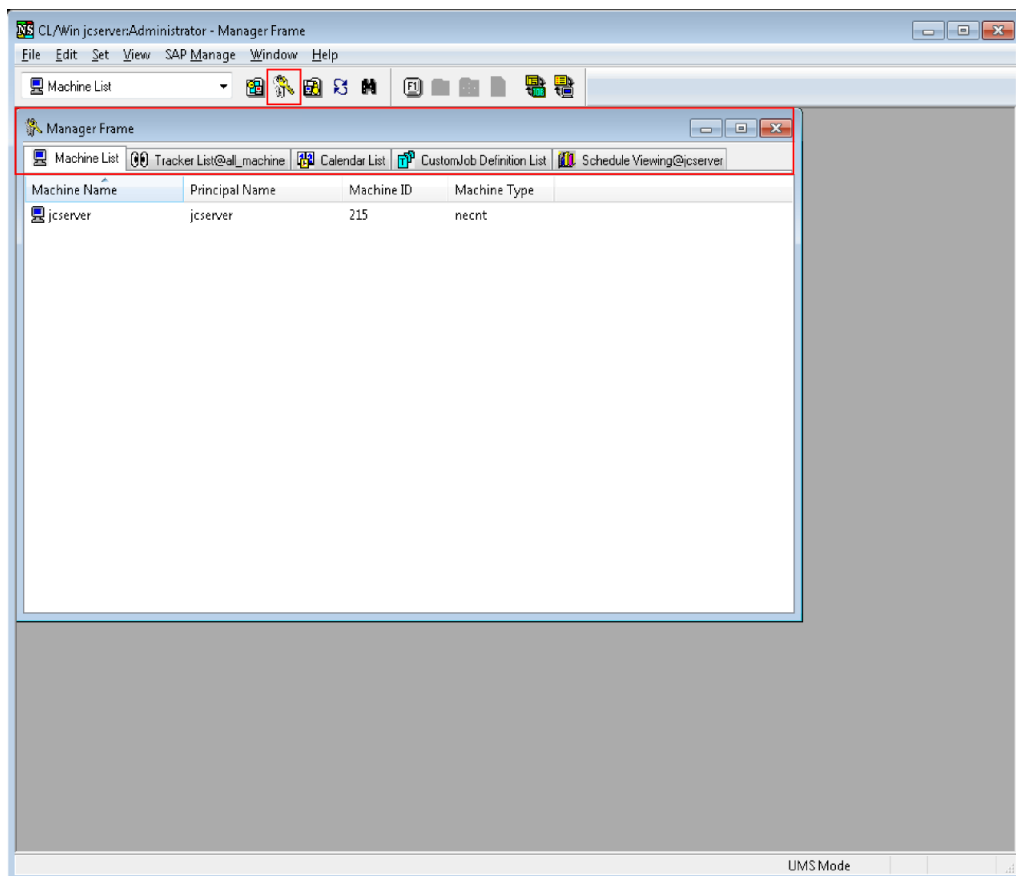



Figure 2.15. Screenshot of Manager Frame



To open the Manager Frame window after it is closed, click the  icon, or on the menu bar, select [Window] and then click [Manager Frame].

The content of each tab in the Manager Frame as follows:

Table 2.5. A list of the tab items in the Manager Frame

Tab Name	Contents	Chapter
Machine List	The Machine List window lists all machine icons in the machine group.	Section 10.1, "Adding a Machine to Machine List"
Tracker List@all_machine	The Tracker List@all_machine window lists all trackers in the machine group.	Section 8.2.3, "Tracker List@all_machine in the Manager Frame Window"
Calendar List	in <Environment Guide>Chapter 7, 「Operating Day Calendar Setup」	—
Schedule Viewing@machine name	The Schedule Viewing@machine name window displays all machine's schedules in the machine group.	Section 8.23, "Viewing the Tracker Schedule and Results"
Client List	The Client List window lists the clients currently connected to the server.	Section 11.4, "Monitoring Clients from the Client List"


For details about machine groups, refer to in <Environment Guide>Section 3.1.3, "Machine Group Configuration (Registering Another Machine from JobCenter CL/Win)".

### 2.5.3. Displaying NQS (Network Queuing System) Frame

NQS Frame is the window to monitor and control queues and requests of the machine. Configuration management of queues is also available in this window.

Developers and Operators mainly use this display.

If a machine group is set up, a queue of any member machine can be referenced using an NQS frame of the scheduler machine.

1. On the toolbar click the  icon, or on the menu bar, select [Window] and then click [NQS Frame].
2. The [NQS Frame] window opens in the CL/Win window.

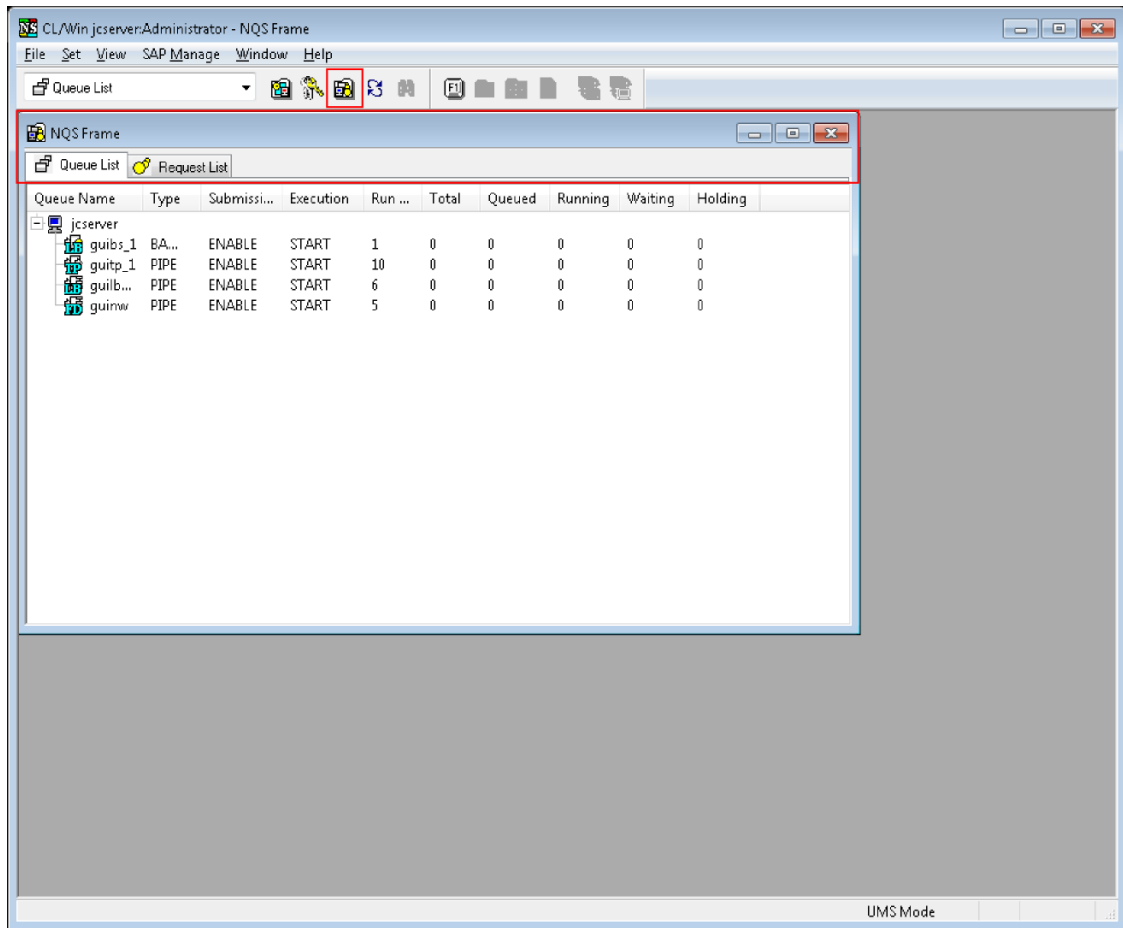


Figure 2.16. Screenshot of NQS Frame

To open the NQS Frame window after it is closed, click the  icon, or on the menu bar, select [Window] and then click [NQS Frame].

The content of each tab in the NQS Frame is as follows:

Table 2.6. A list of the tab items in the NQS Frame

Tab Name	Contents	Chapter
Queue List	The Queue List window lists queues the machine has.	Section 10.2, "Queues the JobCenter Creates by Default"
Request List	The Request List window lists requests the machine has.	Section 10.2, "Queues the JobCenter Creates by Default"

### 2.5.4. Displaying ERP Frame

The ERP Frame window displays waiting ERP jobs.

When the name of a connection destination is clicked, ERP jobs at that destination appear.

For details, refer to 1.8 "ERP Frame" in <JobCenter Guide for using SAP function> (Japanese only).

1. On the menu bar, select [Window] and then click [ERP Frame].
2. The [ERP Frame] window opens in the CL/Win window.

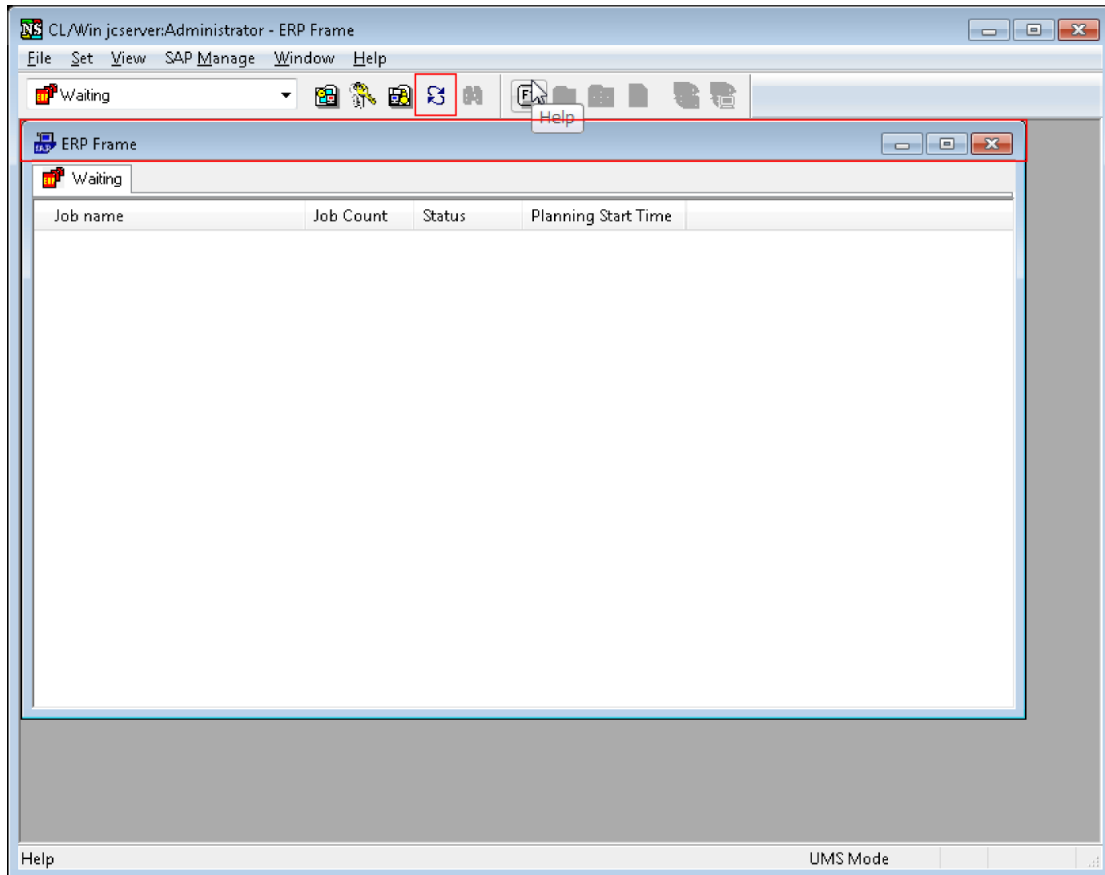


Figure 2.17. Screenshot of ERP Frame

To open the ERP Frame window after it is closed, select [Window] and then click [ERP Frame] again.

Table 2.7. A list of the tab items in the ERP Frame

Tab Name	Contents	Reference
Waiting	The Waiting window displays waiting ERP jobs. By clicking the Destination icon, ERP jobs under the icon appears.	JobCenter Guide for using SAP function (Japanese only)

### 2.5.5. Displaying Other User Frame

Other User Frame is the window to create the job networks and schedules, which are owned by users other than login user, and monitor those job execution statuses. Developers and Operators mainly use this display.

To open Other User Frame window, the login user needs to have an appropriate user authority. Only users permitted by Permission settings can access other users.

For details about user authority and access permission, refer to [Chapter 14, 「Authority Setting of General User \(Permission\)」](#) .

1. On the menu bar, select [Window] and then click [Other User Frame].

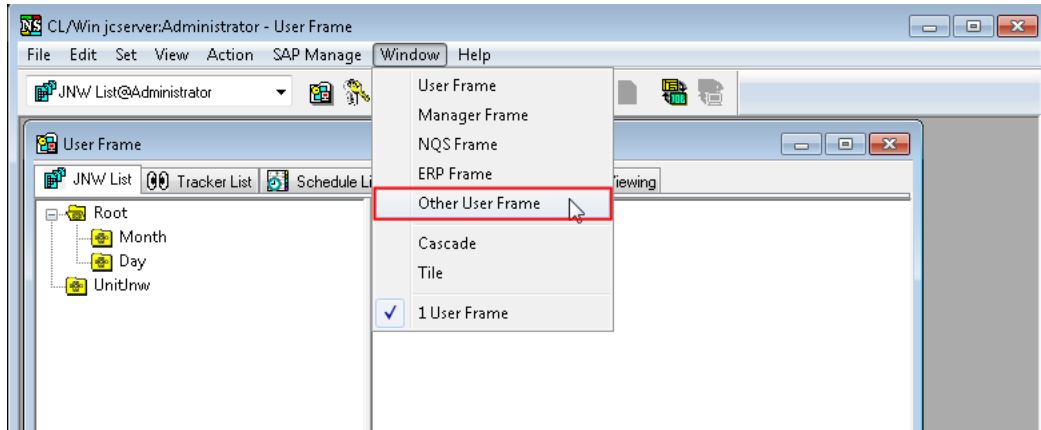


Figure 2.18. Screenshot that shows the [Other User Frame] is selected

2. [Select User] dialog opens and then choose the user name you want to operate. In addition, when no dialog is opened in [CL/Win] window, select [Window], on the menu bar, and then click [Other User Frame], [Select User] dialog will appear.

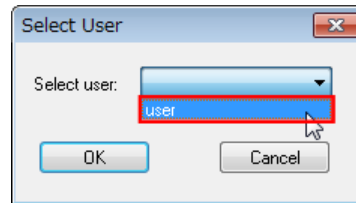


Figure 2.19. Screenshot of the [Select User] dialog box

3. After configuration, click [OK].
4. The selected other user's frame opens.

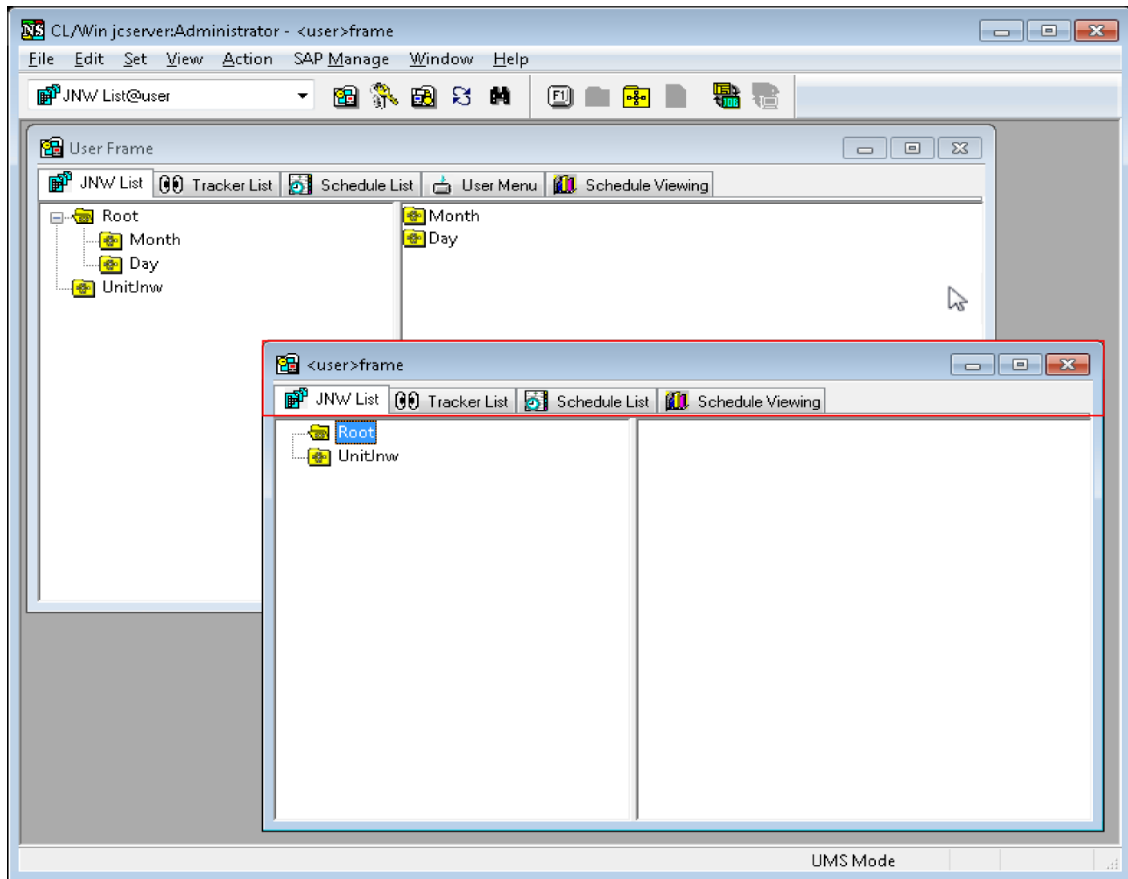


Figure 2.20. Screenshot of the other user's frame

In other user's frame window, the title of the frame is showed as "<user name>frame" (in the screenshot, it is <user01> frame).

In addition, other user's frame is different from User Frame owned by the login user, and there is no [User Menu] tab. Regarding the other tabs, the user can do the same operations such as in one's User Frame.

The content of each tab in the other user's frame is as follows:

Table 2.8. A list of the tab items in the other user's frame

Tab Name	Contents	Chapter
JNW List	The JNW List window allows operations, such as reference, creation, deletion, and execution, of the job network the user has.	Chapter 3, 「Operating Instructions for Job Network」 Chapter 4, 「Usage of Part Objects」
Tracker List	The Tracker List window allows reference, deletion, or other various operations of the trackers the user has.	Section 8.2.2, "Tracker List in User Frame Window"
Schedule List	The Schedule List window allows reference, creation, deletion, and change settings of the schedule the user has.	Chapter 6, 「Schedule

		Operation Method
Trigger List	The Trigger List window allows reference, creation, deletion, and change settings of the trigger the user has.	Chapter 7, 「Submitting the Job Network Independently of the Schedule」
Schedule Viewing	The Schedule Viewing window allows the user to refer the user having scheduled or completed trackers displayed by the hour or day.	Section 8.23, 「Viewing the Tracker Schedule and Results」
Release Plan List	The Release Plan List window allows the predefined job network and schedule to be released at a specified time.	Chapter 13, 「Prepared Release Function」

### 2.5.6. Selecting a Frame from the Drop-down Menu on the Toolbar

In addition to selecting a frame name from the [Window] menu or clicking each frame's icon on the toolbar, a frame can be displayed by selecting one of its tabs from the drop-down menu on the toolbar. In the menu, the tab name of the each frame is displayed, so you can directly open the objective tab.

Secondly, screenshots are showed below. When [Other User Frame] is opened, the tab name of [Other User Frame] will also appear.

#### 1. Drop-down menu when other user's frame is not open

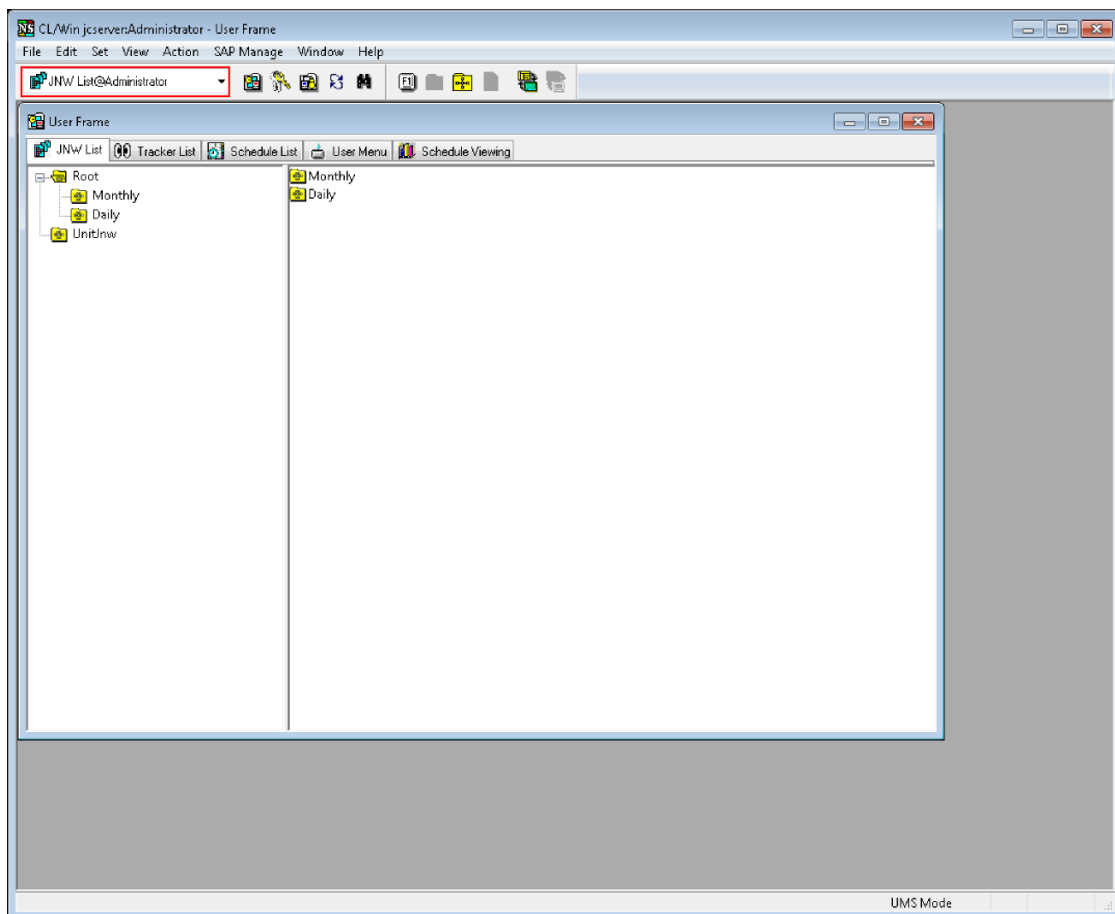


Figure 2.21. Screenshot that shows the drop-down menu when other user's frame is not open

2. Drop-down menu when opening other user (user)'s User Frame

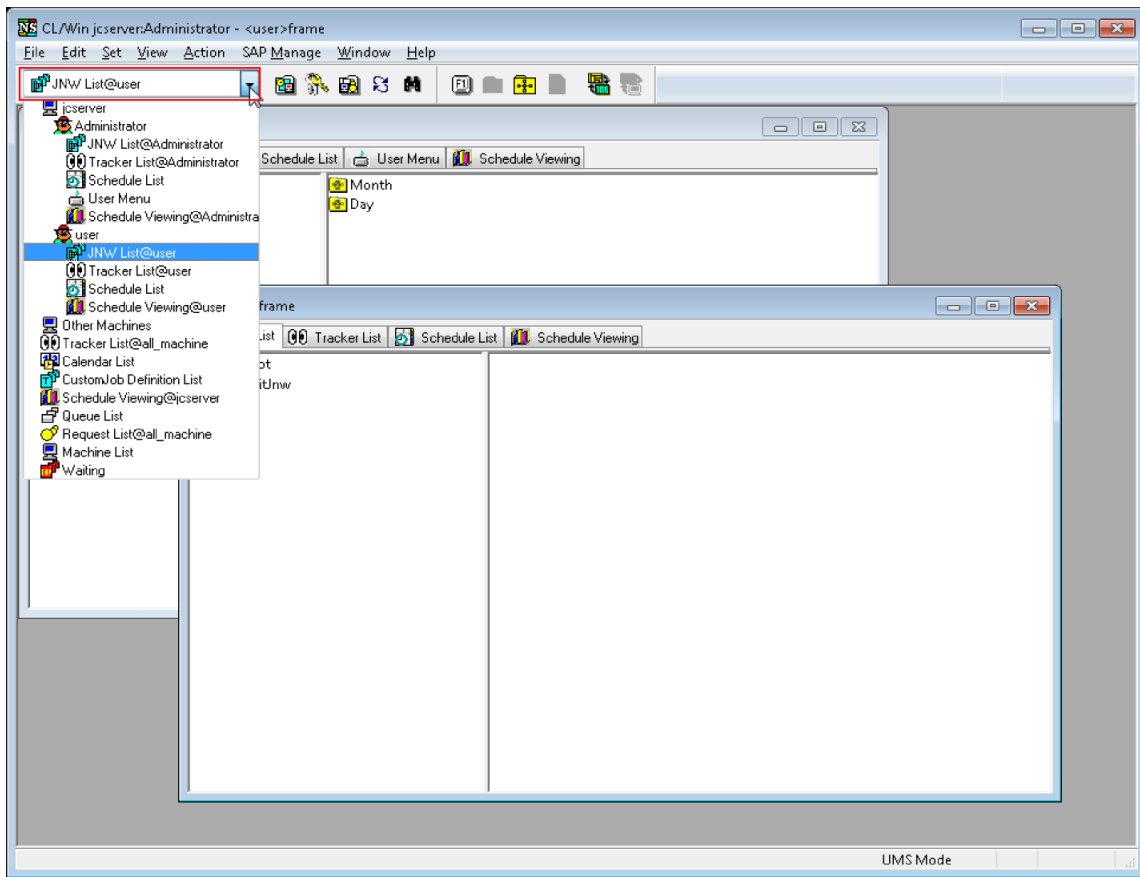


Figure 2.22. Screenshot that shows the drop-down menu when opening other user (user)'s User Frame

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## 3 Operating Instructions for Job Network

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The job network which groups jobs is the most fundamental unit to control business processes. In JobCenter, the operations of jobs, such as ordering jobs, immediate submissions, and scheduled submissions, are done by the fundamental unit, job network.



## 3.1. Creating a Job Network

In this section, the way of creating a job network and then saving it will be explained. After the save, please make sure to check nest structure and information update.

Here, this guide shows how to create a job network with an example of a unit job icon.

### 3.1.1. Creating/Deleting a Group

When creating a job network, it is useful to start with creation of a new group as this facilitates management.

Open the JNW List tab of the User Frame window and then create a new group immediately below the Root group.

A comment can be added to the group.



- A job network cannot be created immediately below the Root group. In addition, a new group cannot be created in the UnitJnw group.
- Job network and group names are subject to the specifications of the OS used. In UNIX, names are case-sensitive. In Windows, however, names are not case-sensitive and JobCenter does not differentiate job networks or groups that have the same name but different cases.
- The attempt to create a job network fails if any character outside the JIS90-compatible character range is entered in the group name or job network name. "?" in the error message represents the out-of-range character. Change it to a character within the range.

#### 3.1.1.1. Creating a group

1. On the menu bar, select [File] and then click [New] and then [Group]. Alternatively, on the right view in the [User Frame] window, right-click without selecting other groups and then click [New Group] in the shortcut menu appeared to create a new group.
2. A new group is created. Name the group.

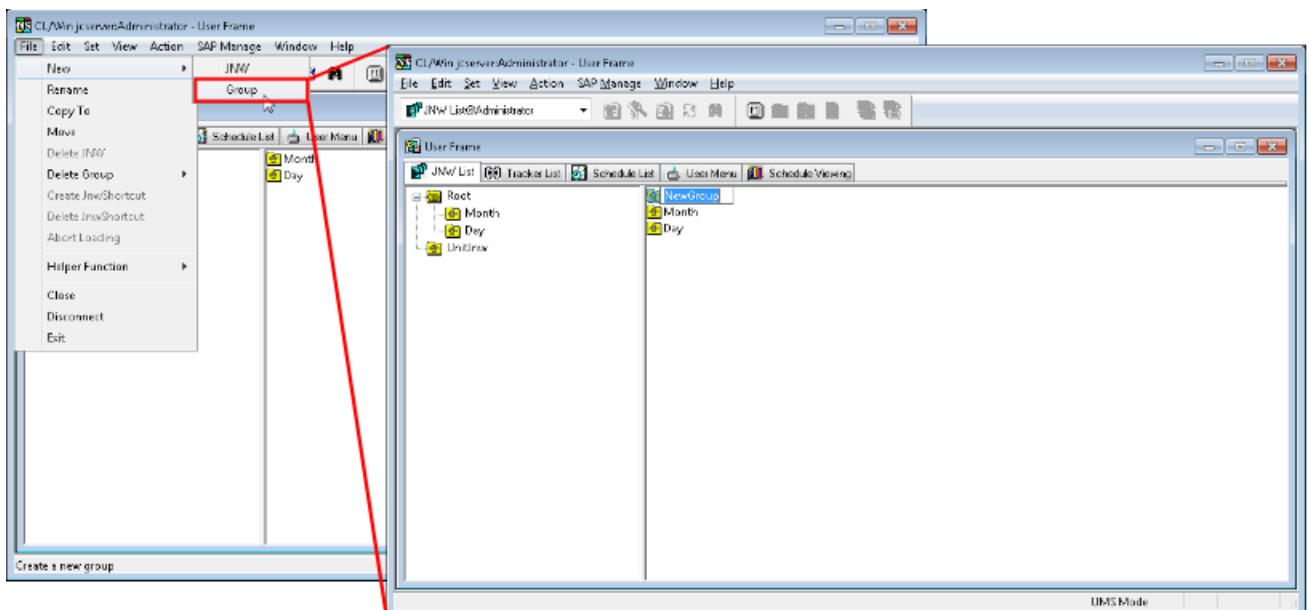


Figure 3.1. Screenshots of creating a group



**Cautions when naming a group**

- The name cannot exceed 40 single-byte (alphanumeric) characters or 20 double-byte (Asian) characters.
- For the first character, only alphabet, underscore, number, or double-byte (Asian) characters can be used. Furthermore, space, tab, special characters, !, ", #, \$, %, &, ', (, ), \*, ,, /, :, ;, <, =, >, ?, @, [, \, ], ^, `, {, |, }, and ~ are not allowed to use.
- You cannot name the same group name as an existed one in the group.

**3.1.1.2. Editing a comment**

1. Right-click on the group that has a comment you want to edit, and then select [Modify Comment] from the context menu.
2. Now the comment is editable, edit it within 256 bytes.

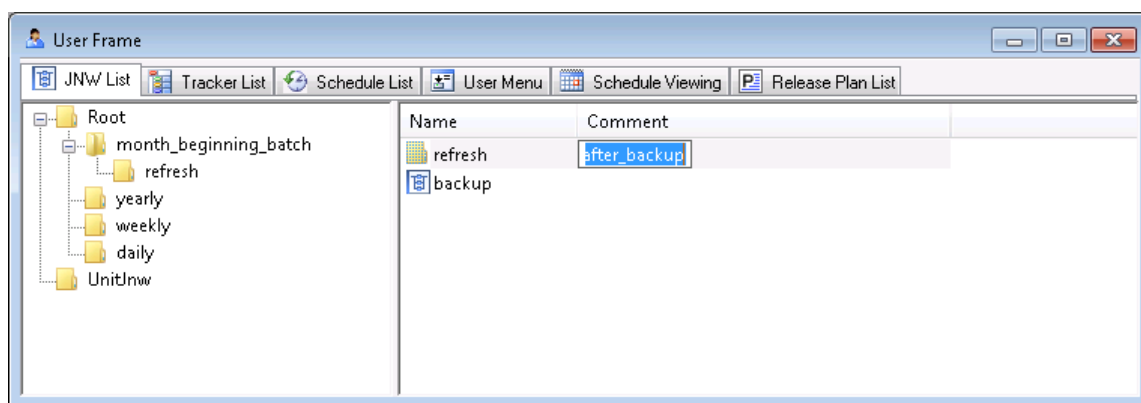


Figure 3.2. Editing a comment

The names or comments can be sorted in ascending or descending order by clicking the corresponding column name.



The following characters cannot be used: ^, #, \$, ;, (, ), [, ], {, }, \, |, <, >, ", &, and '.

**3.1.1.3. Deleting a group**

To delete a group, please follow the instructions below. Those steps are only valid to a group.

1. Select a group to be deleted.
2. Select [Delete Group] from the shortcut menu which appears by right-clicking, and then click [Forced Delete] or [Normal Delete].

Forced Delete	Deletes the job networks in the group at the same time as the group.
Normal Delete	Deletes the group only. The job networks in the group are not deleted but moved to UnitJnw.



When multiple selections are made, take note of the following.

- When [Forced Delete] is selected, all subgroups under the concerned group, job network, and job network shortcuts will be deleted.
- When [Normal Delete] is selected, groups, subgroups, and all job network shortcuts will be deleted. However, the job network in the concerned group will not be deleted but moved to the UnitJnw group.
- When multiple job network/job network shortcuts/groups are selected and "Delete Group" is executed, only the group is deleted and not the JNW/JNW shortcuts.

### 3.1.2. Creating/Deleting a Job Network

To create a job network in the created group, please follow the instructions below.



Job network and group names are subject to the specifications of the OS used. In UNIX, names are case-sensitive. In Windows, however, names are not case-sensitive and JobCenter does not differentiate job networks or groups that have the same name but different cases.

#### 3.1.2.1. Creating a new job network

1. Select the group which is created in [Section 3.1.1, "Creating/Deleting a Group"](#). Then, move in the group by double-clicking or selecting [Open] from the shortcut menu which appears by right-clicking.

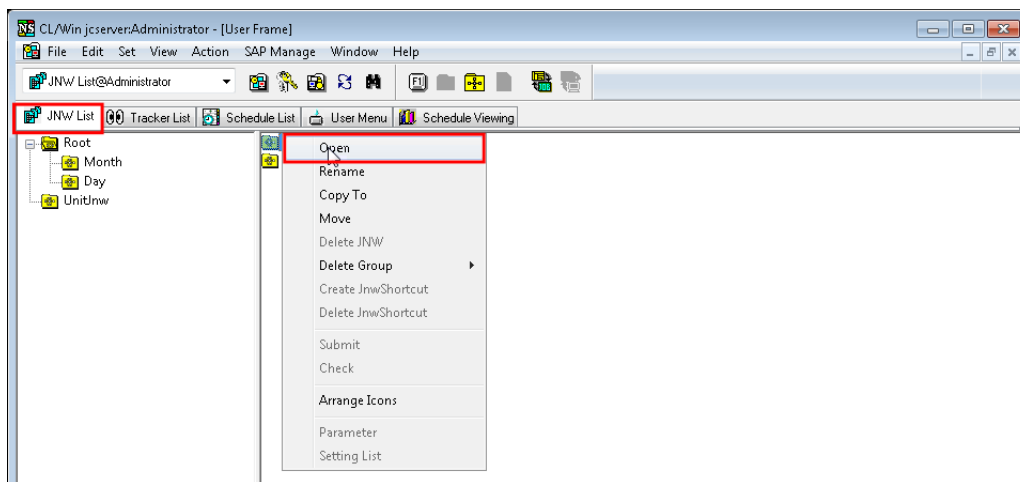


Figure 3.3. Move to the group

2. On the menu bar, select [File] and then click [New] and then [JNW]. Alternatively, on the right view in the User Frame window, right-click without selecting other job networks and then click [New JNW] in the shortcut menu appeared to create a new job network.
3. Name the new job network.

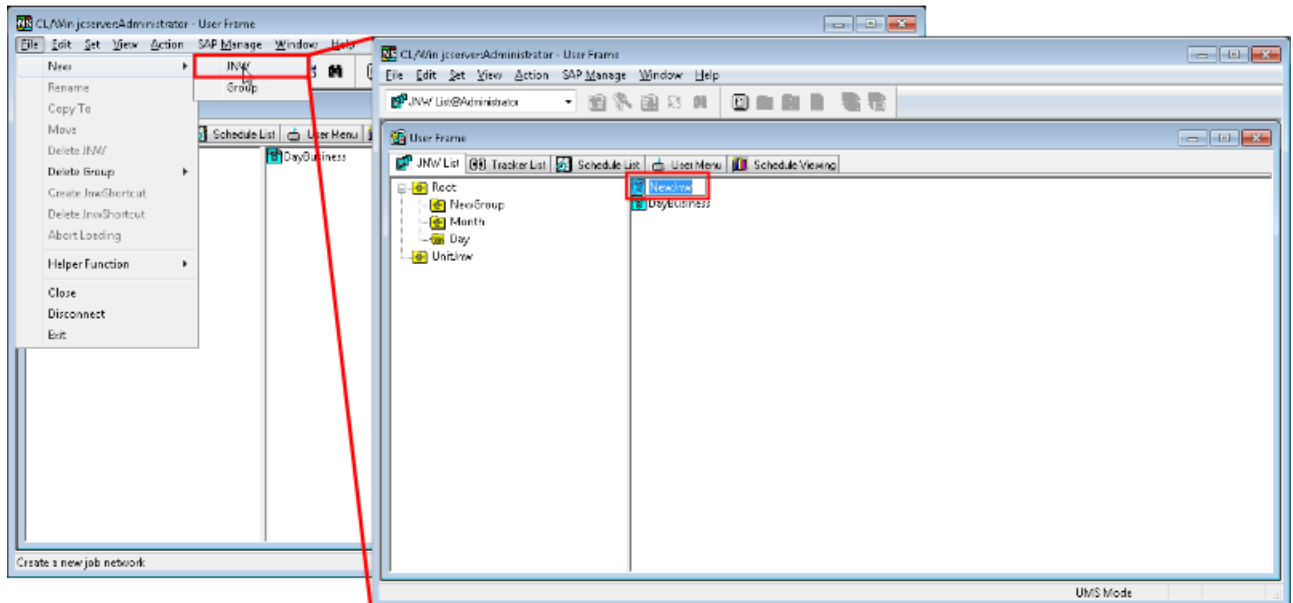


Figure 3.4. New creation of the job network



#### Cautions when naming a job network

- The name cannot exceed 40 single-byte (alphanumeric) characters or 20 double-byte (Asian) characters. Regarding the job network name restriction in combination with the number of sub job network name's characters, please refer to cautions about the sub job network object in [Section 4.2.9, "Allocating a Sub Job Network"](#).
- Do not use one-byte Katakana characters for a job name or a job network name. One-byte Katakana characters cannot be used for title or body text of the email.
- For the first character, only alphabet, underscore, number, or double-byte (Asian) characters can be used. Furthermore, space, tab, special characters, +, !, ", #, \$, %, &, ', (, ), \*, ,, ., /, :, ;, <, =, >, ?, @, [, \, ], ^, ` , {, |, }, and ~ are not allowed to use.
- You cannot name the same job network name as an existed one in the user.

#### 3.1.2.2. Editing a comment

1. Right-click on the job network that has a comment you want to edit, and then select [Modify Comment] from the context menu.
2. Now the comment is editable, edit it within 256 bytes.

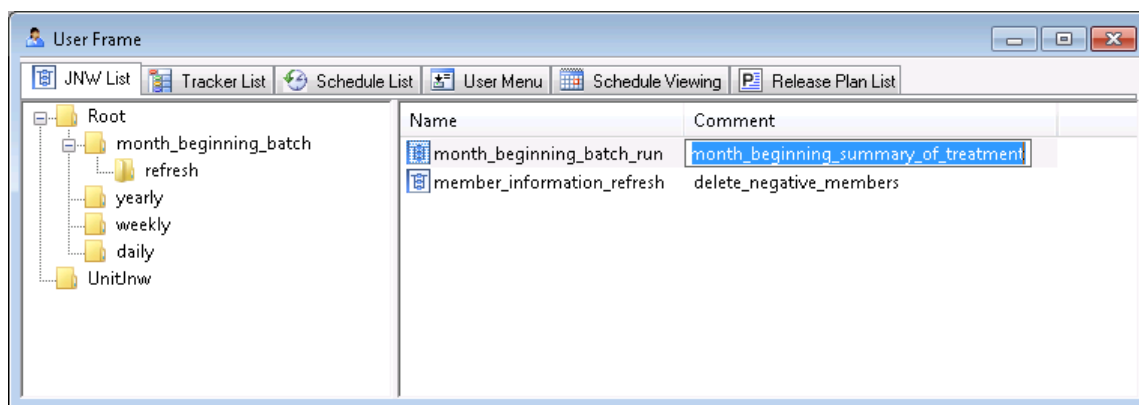


Figure 3.5. Editing a comment

The names or comments can be sorted in ascending or descending order by clicking the corresponding column name.



The following characters cannot be used: ^, #, \$, ;, (, ), [, ], {, }, \, |, <, >, ", &, and '.

### 3.1.2.3. Deleting a Job Network

To delete a job network, please follow the instructions below.

1. Select the job network to be deleted.
2. Select [Delete JNW] from the shortcut menu which appears by right-clicking.



A caution when deleting a job network

- If the deleted job network is linked to other job networks, it will also be deleted from the flow of the link source job network.

### 3.1.3. Displaying Job Network

To display the created job network, please follow the instructions below.

#### 3.1.3.1. Browsing a Job Network

1. Select the job network to be browsed.
2. Double-click the selected job network or select [Open] from the shortcut menu which appears by right-clicking.
3. The selected Job Network window opens.

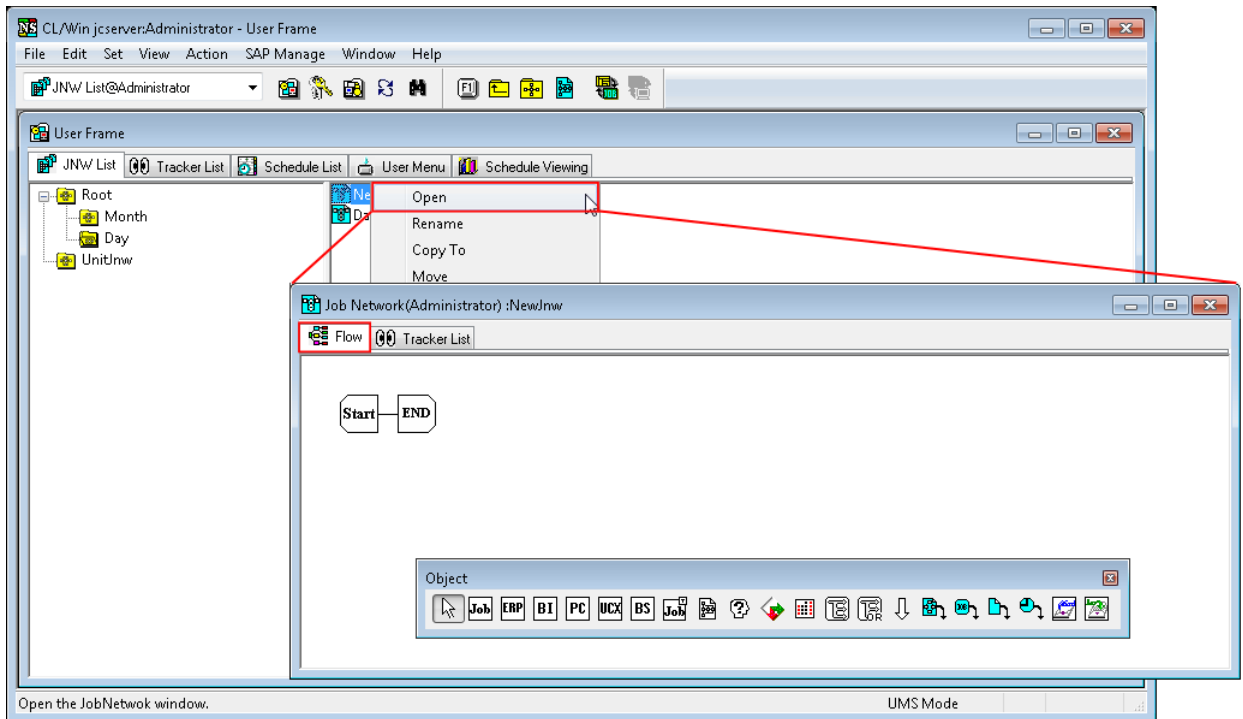


Figure 3.6. Display of a job network

### 3.1.3.2. Changing the Magnification of Job Network Flow

You can change the magnification of the job network flow. Change the magnification of the flow within the range of 10 to 100%.

- The magnification can be changed on the Job network flow screen. Use the red rectangle area below.

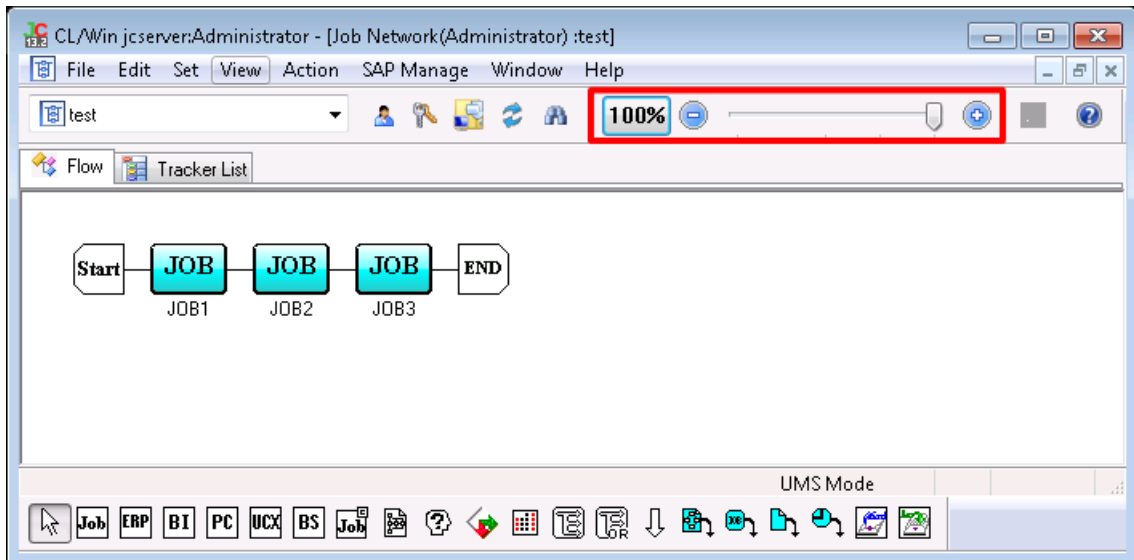


Figure 3.7. Changing the magnification on the Job network flow screen.

- Pressing the magnification ratio button opens a dialog for changing the magnification.

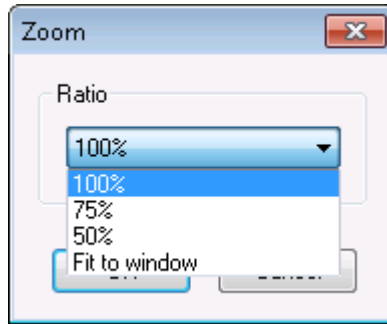


Figure 3.8. Dialog box of the Change magnification ratio screen



The default magnification ratio can be changed on the User environment configuration screen. For details, refer to in <Environment Guide>Section 6.2, "Changing User Environment Settings".

### 3.1.4. Adding Unit Job Icon

The following steps describe how to add a unit job icon to the opened job network. "Start" and "End" icons are prepared by default.

1. On the [Object] toolbar, select [Unit Job] object icon, move the cross cursor to the point to place the unit job, and then click.

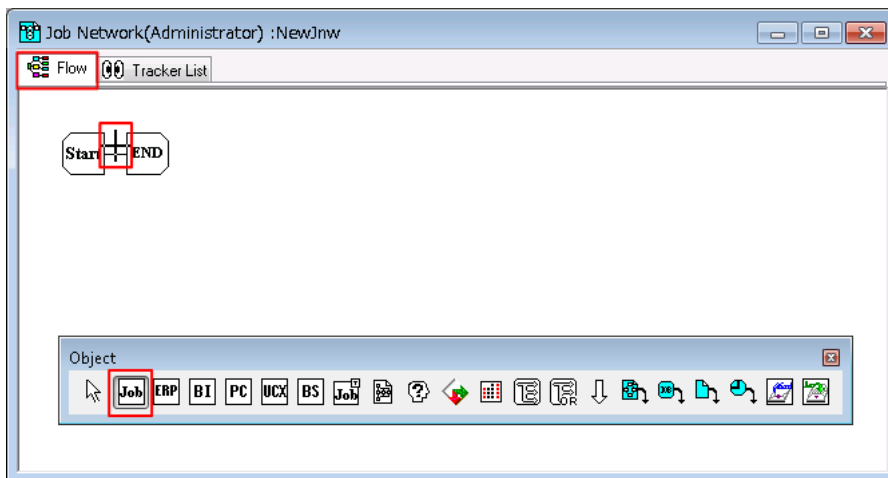


Figure 3.9. Addition of a Unit Job



If the [Object] toolbar is not displayed, click [View] on the menu bar, and then select [Object Box].

2. The [Job name setting] dialog box opens. Then, enter a job name.

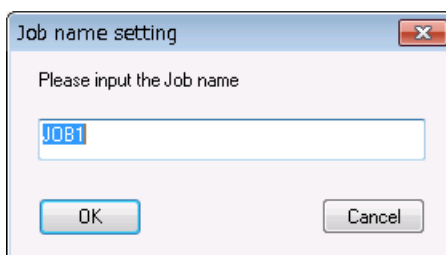


Figure 3.10. Entering a New Unit Job Name



#### Cautions when naming a job

- The name cannot exceed 40 single-byte (alphanumeric) characters or 20 double-byte (Asian) characters.
- Do not use one-byte Katakana for a job name or a job network name. One-byte Katakana cannot be used for title or body text of the email.
- For the first character, only alphabet, underline, number, or double-byte (Asian) characters can be used. Furthermore, space, tab, special characters, !, ", #, \$, %, &, ', (, ), \*, ,, /, :, ;, <, =, >, ?, @, [, \, ], ^, `, {, |, }, and ~ are not allowed to use.
- You cannot name the same job name as an existed one in the job network.

3. After configuration, click [OK].

4. The job network in which the new unit job is added will be displayed.

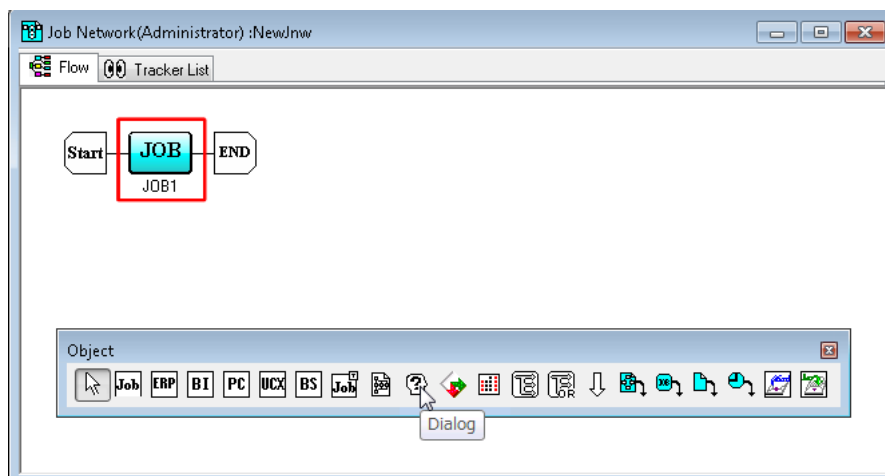


Figure 3.11. Screenshot that shows the addition of the unit job

### 3.1.5. Editing Script of Unit Job Icon

The following steps describe how to edit a script of the Unit Job icon created in [Section 3.1.4, "Adding Unit Job Icon"](#).

1. Double-click the selected Unit Job icon or select [Script] from the shortcut menu which appears by right-clicking.



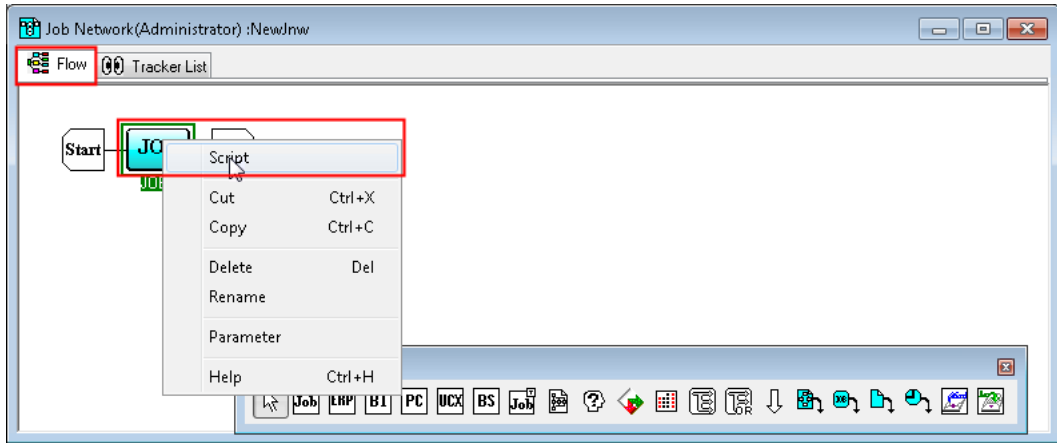


Figure 3.12. Screenshot that shows the [Script] menu is selected

2. The window to write a script opens.
3. Write a script (here, "hostname" is used) in the displayed window which is a dedicated script editor.

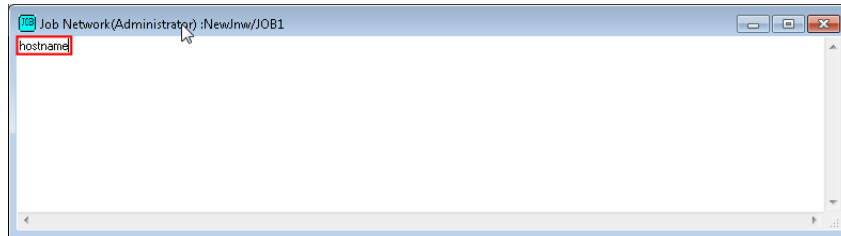



Figure 3.13. Screenshot of editing a script



During actual operation, input the user's business process program.

4. After editing the script, select [Save] on the menu bar or click the  icon on the toolbar to save the content of the script.

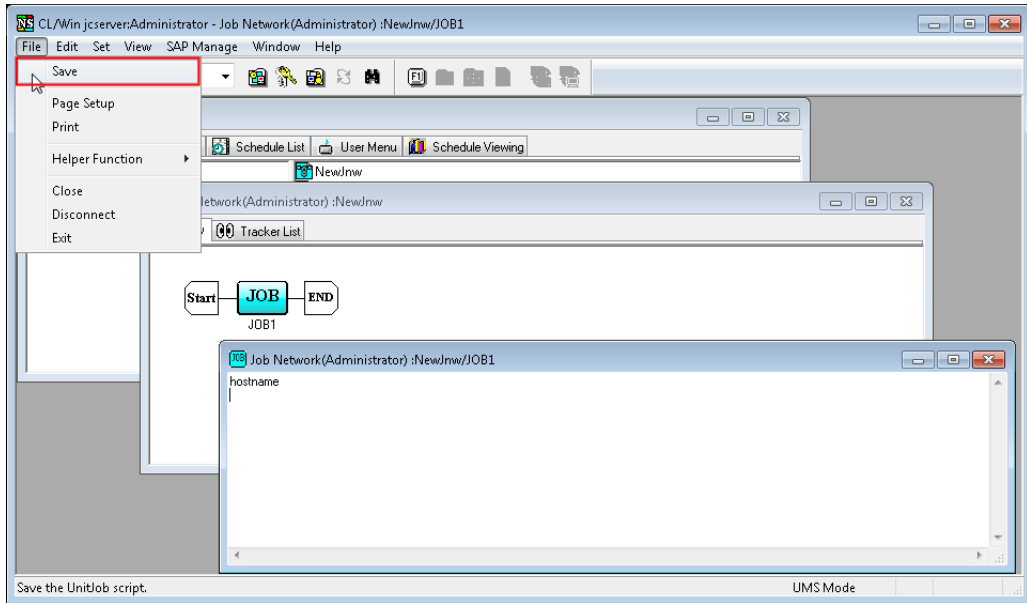


Figure 3.14. Screenshot that shows the Save menu is selected to preserve the script content

5. On the menu bar, select [File] and then click [Close]. The dedicated script editor closes and editing of the script is done.

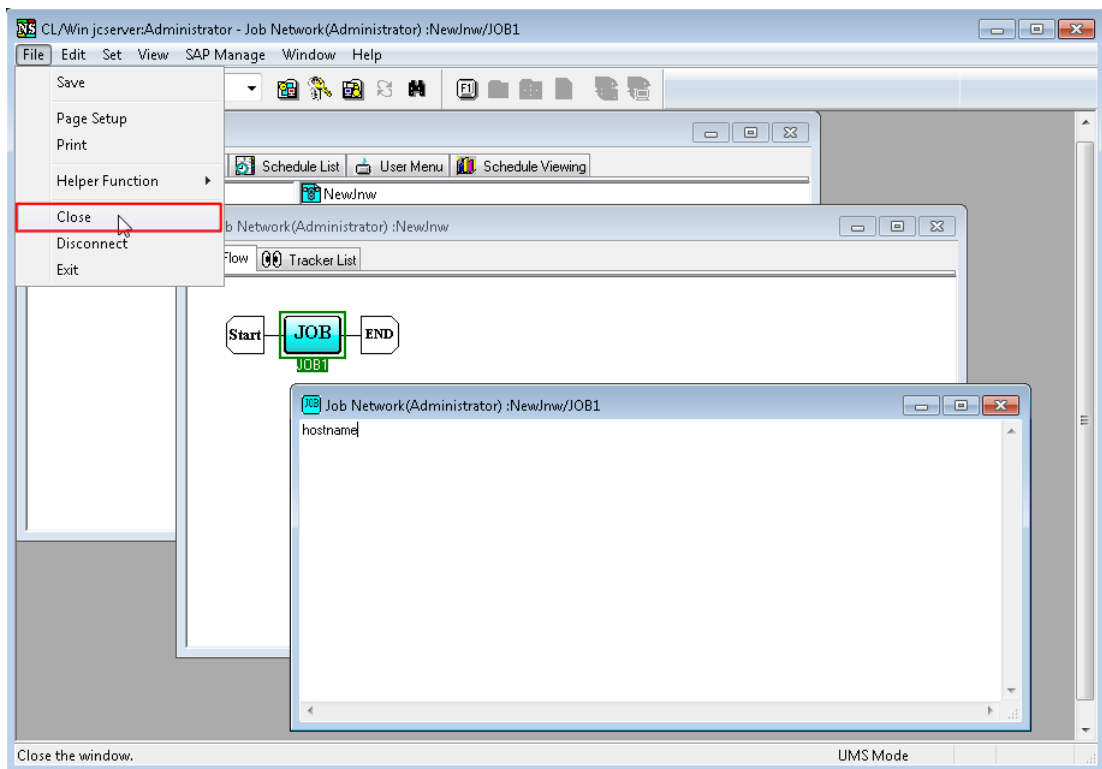


Figure 3.15. Screenshot to finish editing the Script



If you try to close the dedicated script editor without save, the following dialog box opens. Please make sure to save the script before close the window.

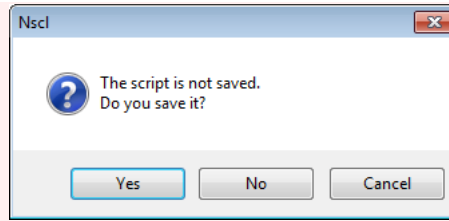



Figure 3.16. Screenshot when closing the dedicated script editor without save

For the notes regarding script settings of the Unit Job, refer to [Section 4.2.1, "Setting an Execution Script of a Unit Job"](#).

### 3.1.6. To Save the Flow of the Created Job Network

The following steps describe how to save the flow of the created job network.

1. On the menu bar, select [File] and then click [Save], or on the toolbar click  icon. The flow of the created job network is saved.

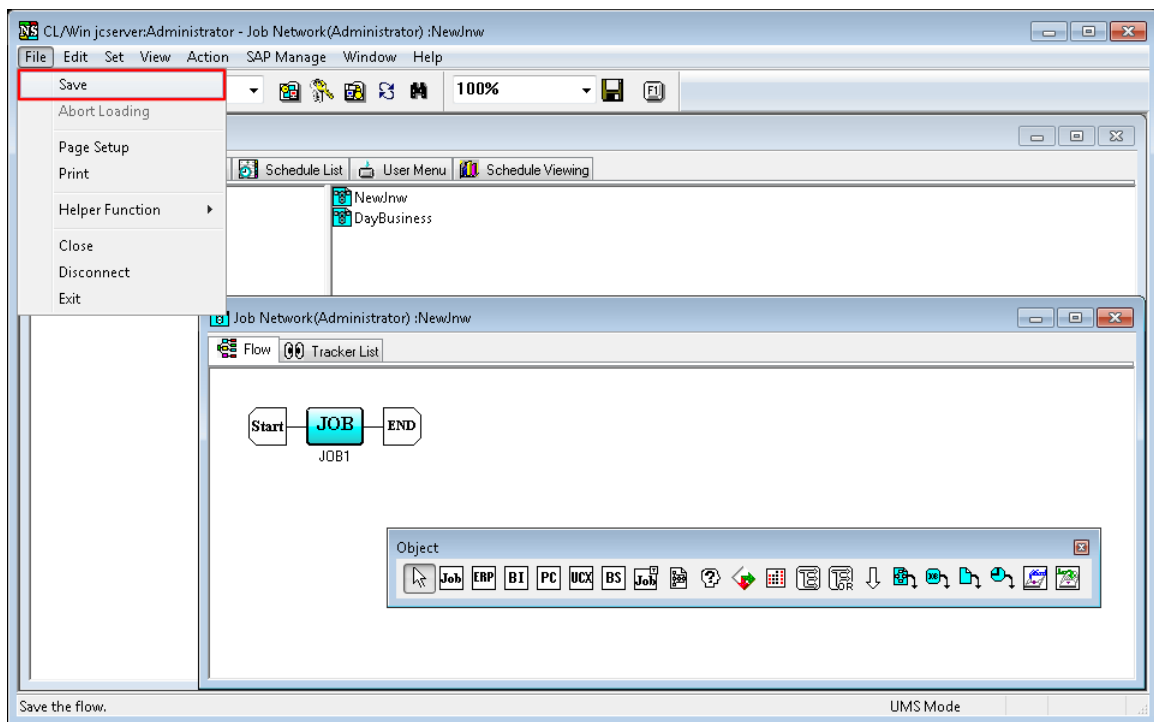


Figure 3.17. Screenshot of saving the flow of the job network

### 3.1.7. To Finish Creating the Flow of the Job Network

By closing the job network window which is saved, creation of the job network flow completes.

1. On the menu bar, select [File] and then click [Close]. The job network window closes.

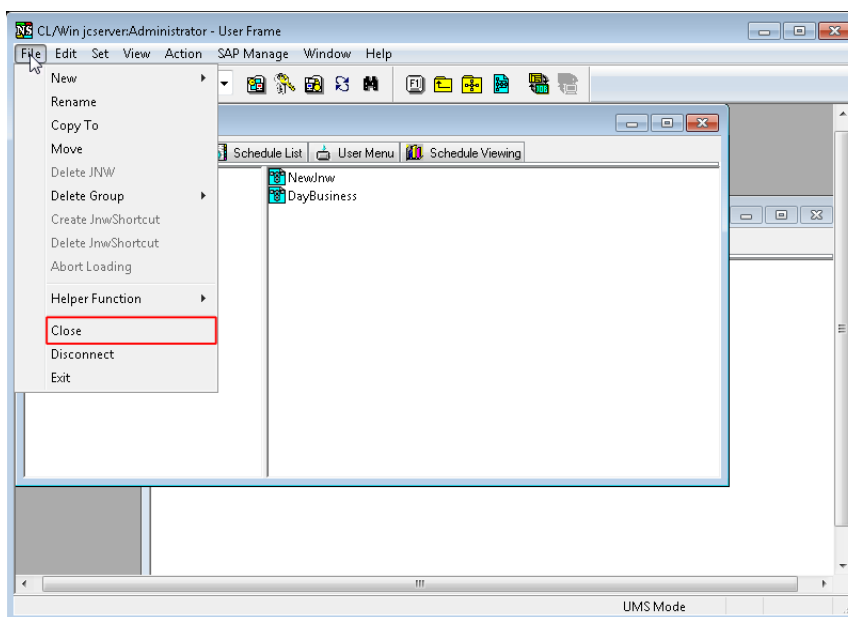


Figure 3.18. Screenshot of completion of the job network flow's creation



If you try to close the job network window without saving, the dialog box below appears. Click [Yes] to save the changes. Click [No] to cancel the changes and close the job network window.

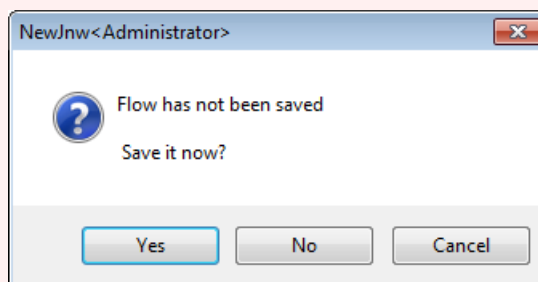


Figure 3.19. Screenshot when closing the job network window without save

### 3.1.8. Checking a Job Network

The steps below describe how to check whether a sub job network is recursively nested through multiple levels of a job network.

In the case that the job network is used as a sub job network, the check starts from the topmost parent job network which includes the job network as a child or descendant.



A job network cannot be executed normally if the inclusive relationship with one of its sub job networks is invalid. After editing a job network flow, therefore, be sure to perform a check specifying the topmost parent job network.

1. In the [User Frame] window, select the [JNW List] tab.
2. Right-click the [Job Network] icon and then select [Check]. Alternatively, click the [Job Network] icon and then, on the menu bar, select [Action] and then click [Check].

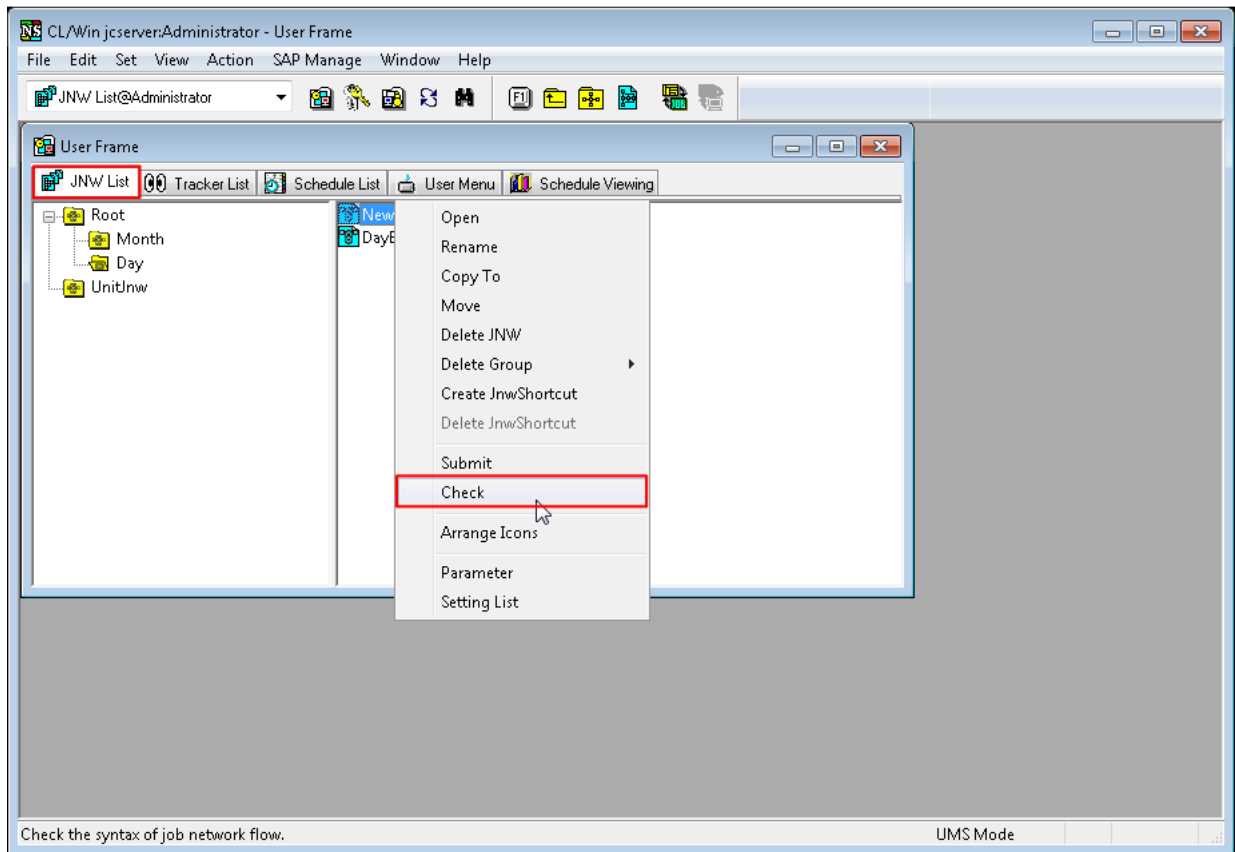


Figure 3.20. Screenshot that shows the [Check] menu is selected

3. If there is no problem about the existence of sub job networks, the following dialog box will be displayed.

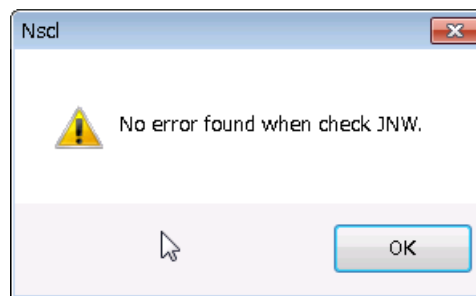


Figure 3.21. Result of the check

## 3.2. Executing a Job Network

There are two ways to execute job networks, one is "immediate submission", and the other is "scheduled submission".

### 3.2.1. To Submit a Job Network Immediately

The following steps describe how to submit and execute a job network independently of schedules.

Here, for the explanation of the immediate submission, the instructions use the job network created at [Section 3.1, "Creating a Job Network"](#).

1. Click the job network icon in the JNW List window.
2. Select [Submit] from the shortcut menu which appears by right-clicking, or on the toolbar, select [Action] and then click [Submit].

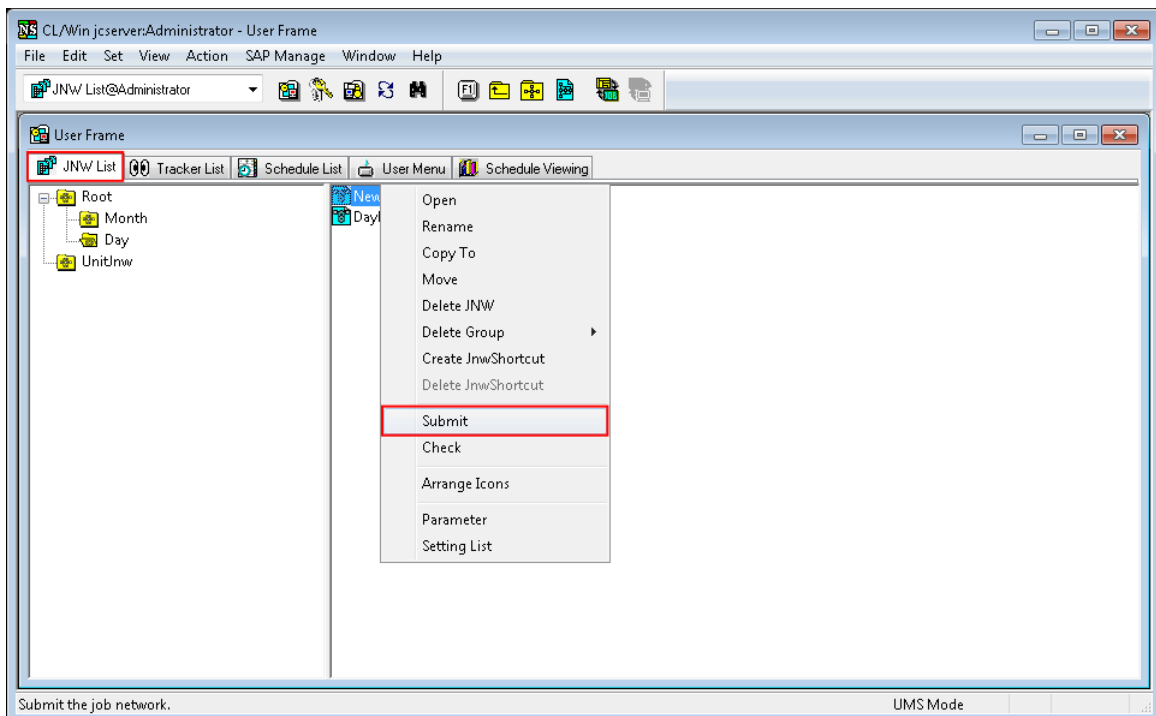


Figure 3.22. Screenshot that shows the [Submit] menu is selected

3. The [Submit JNW] dialog box opens.
4. Tick the box of [Open Job Network Tracker Window] and then click [OK].

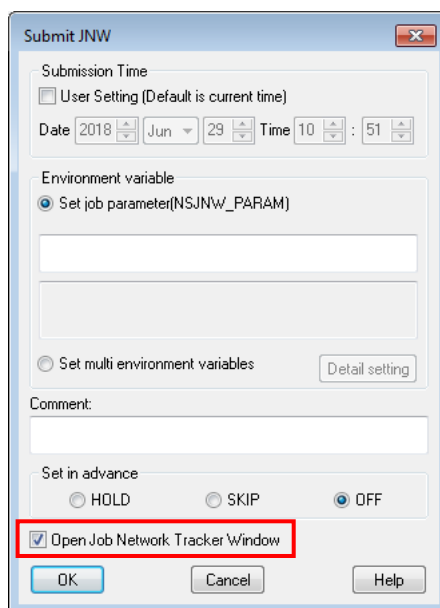




Figure 3.23. Screenshot of the Submit dialog

5. The Tracker window opens. When the display of Unit Job icon changes from  into , the execution is completed.

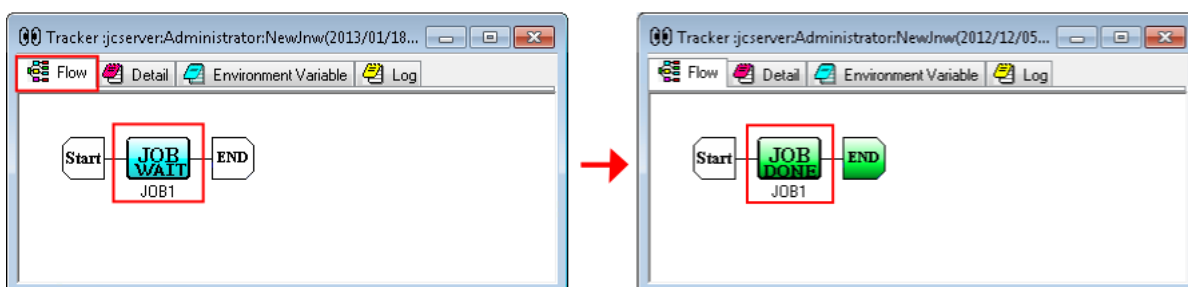


Figure 3.24. Screenshots of Job Network Tracker window after the immediate submission

In the [Submit JNW] dialog box, settings to submit a job network are as follows:

■ Submission Time

This sets the time to submit a job network. If [User Setting (Default is current time)] check box is not checked, the job network is submitted immediately.

If the check box is checked, virtual submission time can be set.


■ Environment variable


Set the environment variable to be delivered to the script of each unit job of the job network. The character string specified here is set to the environment variable for each unit job, and it is delivered to the script for each unit job. There are two methods of setting as described below.

▪ Setting the job parameter (NSJNW\_PARAM)

To set or change the environment variable NSJNW\_PARAM only, select this method. If the environment variable NSJNW\_PARAM is set as the job network parameter, the value is displayed

in the upper text box, and you can change this value to the desired one. In the lower text box, a description of the environment variable is displayed.

 In the version R12.7 or earlier, only one environment variable can be set as the job network parameter, and this value is regarded as the job parameter (environment variable NSJNW\_PARAM). In later versions, the desired environment variables can be set as the job network parameter. If the environment variable NSJNW\_PARAM is set, this variable is displayed as the job parameter value.

 After clearing the value displayed as the initial value and submitting while the value is null, the existing value [Job parameter] is valid.

■ Setting more than one environment variable

To set more than one environment variable, select this method. Press the [Detail setting] button to display the [Environment variable setting] dialog box, and set the desired environment variable at this time.

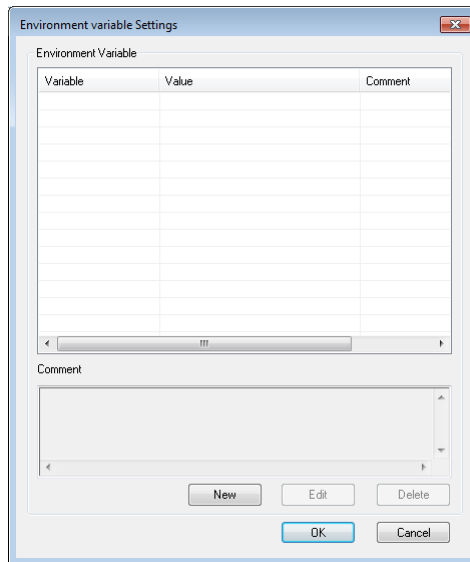


Figure 3.25. [Environment variable setting] dialog box

• New

Click the [New] button to open the [New environment variable] dialog box, and enter the variable name and variable value.

• Edit

Select the desired environment variable from the list and click the [Edit] button. The [Edit environment variable] dialog box is displayed. For an environment variable previously set as the environment variable of the job network parameter, only the variable value can be changed. For an environment variable newly set in this [Environment variable setting] dialog box, the variable name and variable value can be changed.

• Delete

You can delete the environment variable selected from the list. The environment variable newly set in this [Environment variable setting] dialog box can be deleted, while the environment



variable previously set as the environment variable of the job network parameter cannot be deleted.

The variable name and variable value that can be entered have limitations. For details, refer to [Table 3.1, "Limitations on the entry of the variable name and variable value"](#) described below.

Table 3.1. Limitations on the entry of the variable name and variable value

Variable name	51 bytes	1. Leaving the variable name blank is prohibited. 2. Use of spaces, tabs, special characters, and the following characters is prohibited. =#'''
Variable value	256 bytes	Use of tabs, special characters, and the following characters is prohibited. #'''

■ Comment

A comment can be specified during immediate submission. If a comment is already specified, only the parts related to the tracker that was submitted immediately are modified.

The text input field accepts the characters, that are not over 256 single-byte characters or 128 double-byte characters, written in alphanumeric, Japanese characters, or Kana characters (double bytes/single byte) (can be mixed). Tabs, special characters, and the following characters cannot be used:

^#\$( ) [ ] { } \ | < > " & ' &#39;

■ Set in advance

Holds or skips the job network in advance.

HOLD	The status of the job network is set to hold at its submission.
SKIP	The status of the job network is set to skip at its submission.
OFF	The status of the job network is not set to hold or skip at its submission.

■ Open Job Network Window

If this check box is checked, when a job network is submitted, the window for the corresponding Job Network Tracker opens.



Notes when executing the immediate submission

- When other user's job network is done by immediate submission, its tracker is made after the execution by the authority of the owner of the job network.
- At the execution of other user's job network, environment variables of the owner of the job network are applied to the job network. For details, refer to in <Environment Guide>Section 14.1.3, "Setting Environment Variables".
- If no submission queue is specified for the job network or unit job parameter, the queue specified for "Submission Queue" in the "Default Job Network parameter" field on the [User Config] tab is automatically used. Note that the default number of jobs executed simultaneously for the guibs\_1 batch queue, for which the job request is actually executed, is 1 if the default queue is specified.

### 3.2.2. Confirming the Result of an Immediate Submission (Unit Job Being Executed)

This section describes how to confirm the detailed information of the ongoing unit job that was set in [Section 3.2.1, "To Submit a Job Network Immediately"](#).

1. Click the unit job icon and select [Detail] from the shortcut menu which appears by right-clicking.

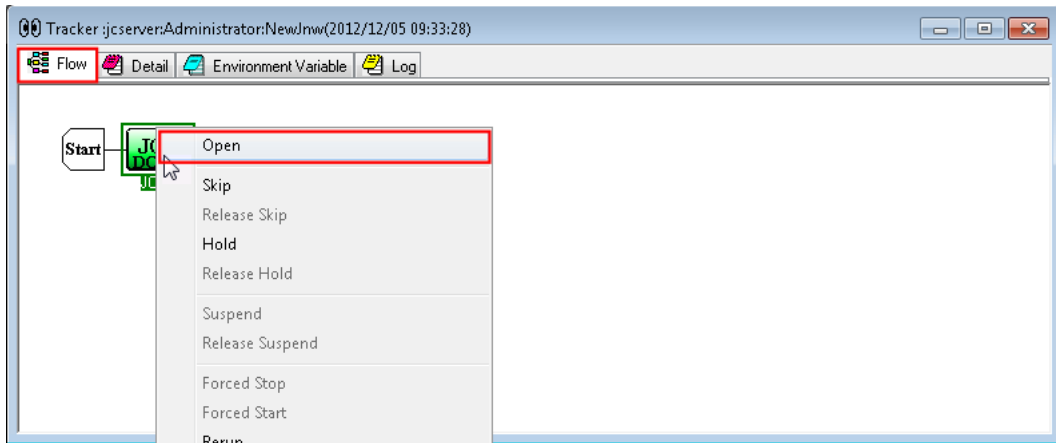


Figure 3.26. Screenshot that shows the [Detail] menu is selected

2. The window for the detail information opens. The [Detail] tab is selected by default. Verify the content.

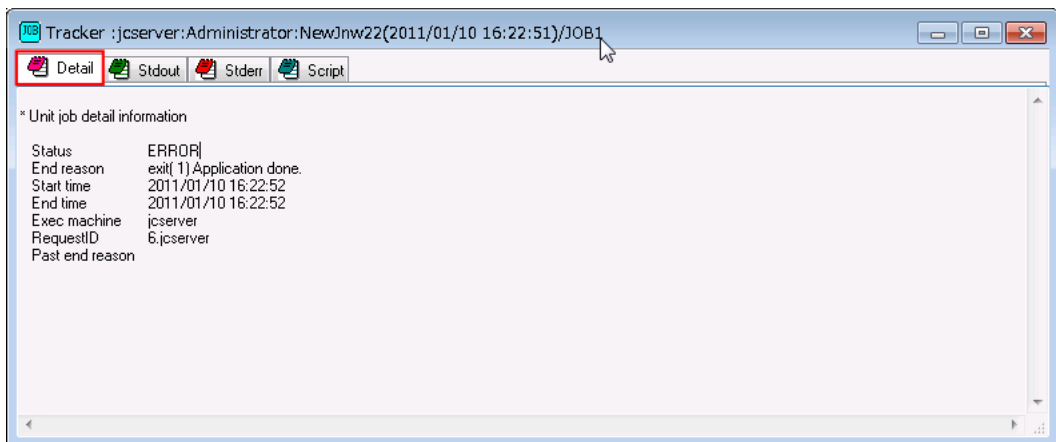


Figure 3.27. Screenshot that shows Detail window

3. Select the [Stdout] tab in the window. The output result of the unit job in the middle appears.

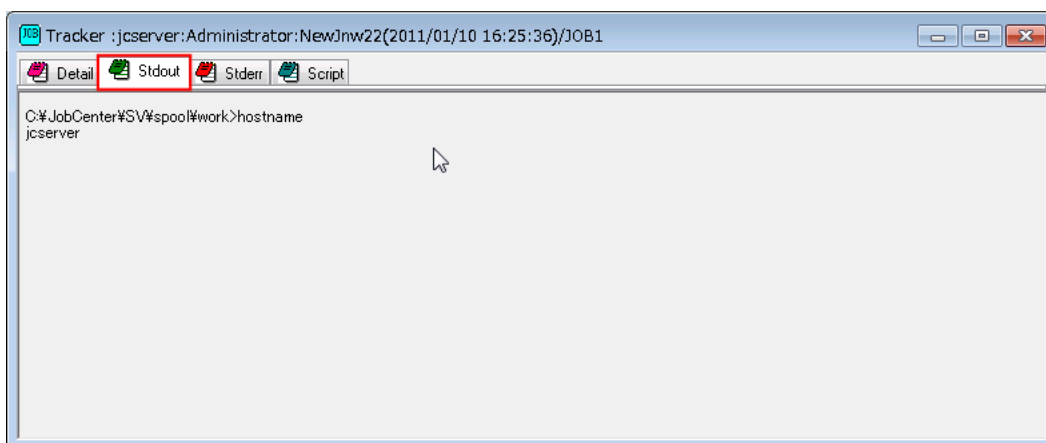


Figure 3.28. Screenshot that shows Stdout window



In order to describe this function, the image [Figure 3.28, "Screenshot that shows Stdout window"](#) displays the output of the script executed from the host "hostname" for a long time.

The contents are not updated automatically. Press the [F5] function key to update the displayed contents.



- You can watch the output of the job part in progress only when you execute the unit job. For other execution parts, only the output results of finished jobs can be checked.

- To confirm the output result of the unit job being executed between the MG and the SV, the JobCenter version must be R15.1 or higher for both the MG and the SV.

If the SV version is earlier than R15.1, the following error message appears in the [Stdout] tab or [Stderr] tab.

```
Can't get the output of running job, the execute machine doesn't support this method.
```

- If the unit job is executed again under an environment where "NQSDAEMON\_OPT=-x trkappend=ON" is set in the daemon setting file, only the output result of the unit job being executed again appears. After the unit job, the output result of the job executed again is added to the previous output result display.

Check the details of "NQSDAEMON\_OPT=-x trkappend=ON" in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

- If the display is updated at a certain timing, the output result of the unit job in the middle of executing may not appear. In this case, the following error message appears in the [Stdout] tab or [Stderr] tab.

```
Getting the job result failed. Please retry later.
```

The occurrence conditions and response method are described below.

- Communication between the MG and the SV is discontinued when the unit job is being executed

Confirm the network conditions between the MG and the SV. In case of a temporary communication failure, the result appears by updating the display again.

- The display is updated at the time when the unit job exits  
Update the display again. The output results of finished jobs can be displayed.
- A unit job request is submitted to the machine immediately after the UNIX-version JobCenter has been added to the machine list, and the execution user of the submitted job is the user other than root user  
  
Confirm the output result after the unit job finishes. The next time and later, the result appears correctly even if the unit job is being executed.
- For the behavior at the time when the job is executed again, refer to 'Restart' in [Section 4.2.2.5, "\[MISC Parameters\] tab"](#).

### 3.2.3. Confirming the Result of an Immediate Submission (Unit Job Already Finished)

This section describes how to confirm the result of the unit job that was set in [Section 3.2.1, "To Submit a Job Network Immediately"](#).

1. Select the unit job icon, and select [Detail] from the popup menu that appears when you right-click it.

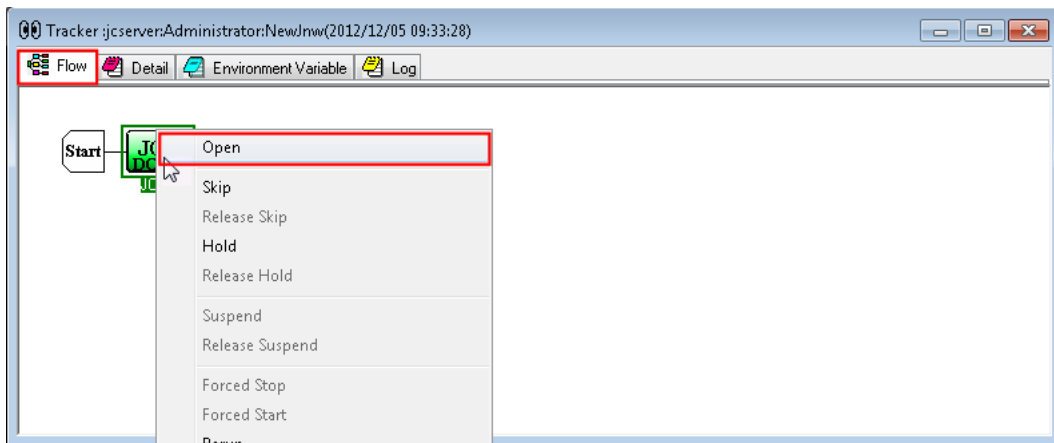


Figure 3.29. Example of selecting [Detail]

2. The [Detail] window appears. The [Detail] tab is selected by default. Check the contents.

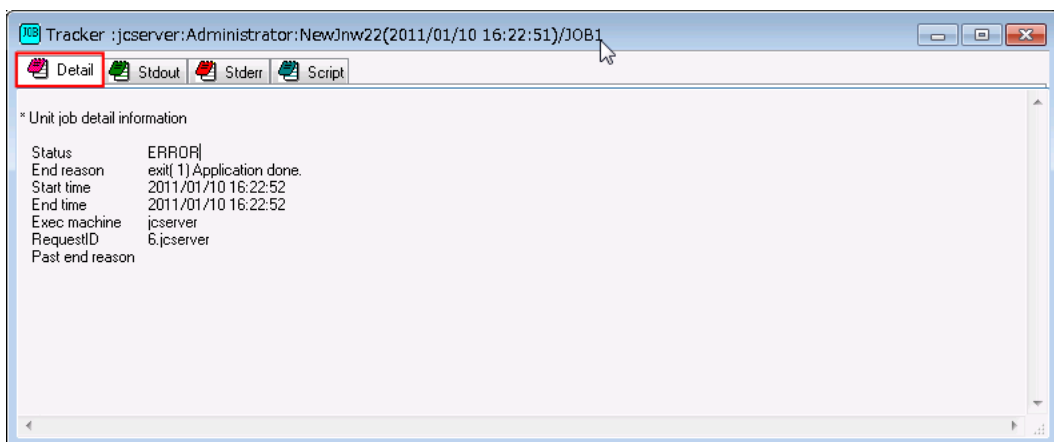


Figure 3.30. Example of displaying the detailed information

3. Select the [Stdout] tab in the window. The output of the script, the "hostname" command, is displayed.

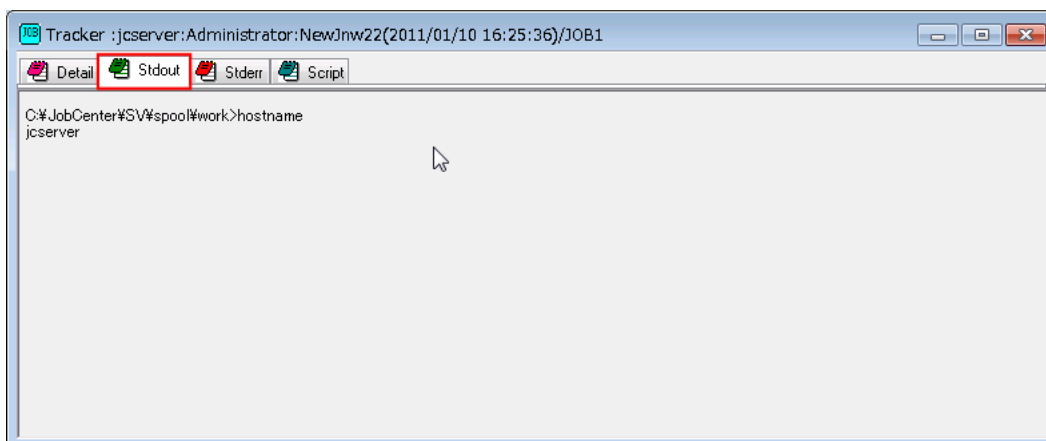


Figure 3.31. Screenshot that shows the Stdout window

### 3.2.4. Submitting Job Network Based on Schedule

The job network can be automatically started at specified date and time by setting up a schedule.

There are two ways to create a schedule: one is "creating a scheduling directly"; the other is "creating a schedule from an independent Operating Day Calendar". For the way of schedule creation and its settings, refer to [Chapter 6, 「Schedule Operation Method」](#).

When automatically starting a job network according to a schedule, the following cautions should be note.

Table 3.2. Notes when automatically starting a job network according to a schedule

Condition	Result
The system is down at the time of execution	The scheduled job network is executed when the system starts. However, the operation is different when SCLAUNCHD_FORGET is specified in daemon.conf.  For details, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".
The job flow or parameter has been changed after the schedule is set up	The job network is executed according to the changed schedule.
A date earlier than the system date is specified	"Failed to create a rule" message is displayed.
The same date as the system date is specified, but it is a past date	While the rule is successfully created, the schedule does not take effect.
A job network is submitted based on a schedule	Environment variable JNW_SUBMITTIME is always set.
Another user's job network is submitted based on a schedule	The environment variables of the job network's owner are applied to any job that is started in that job network.  For details, refer to in <Environment Guide>Chapter 14, 「Handling Environment Variables at Job Execution」.

### 3.3. Operating a Job Network

The job network can be operated with the shortcut menu appeared by right-clicking the target job network.

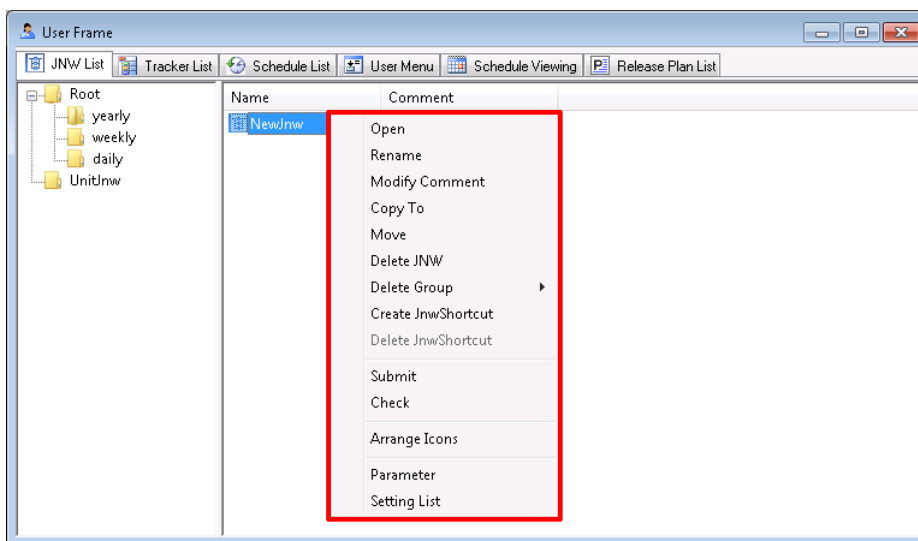


Figure 3.32. Operation menu of the job network

Table 3.3. A List of operations of the job network

Menu item	Description	Reference
Open	Opens the [Job Network] window.	Section 3.1.3, "Displaying Job Network"
Rename	Renames the job network name.	Section 3.1.2, "Creating/Deleting a Job Network"
Modify Comment	Modifies the job network comment.	Section 3.1.2.2, "Editing a comment"
Copy To	Copies a job network to its own or any other user's group.	Section 3.3.1, "Copying a Job Network / a Group"
Move	Moves a job network to the user's own group.	Section 3.3.2, "Moving a Job Network / a Group"
Delete JNW	Deletes a job network.	Section 3.1.2, "Creating/Deleting a Job Network"
Delete Group	Deletes a group.	Section 3.1.1, "Creating/Deleting a Group"
Create JnwShortcut	Creates a JnwShortcut.	Section 3.3.3, "Creating/Deleting a Shortcut of Job Network"
Delete JnwShortcut	Deletes a JnwShortcut.	Section 3.3.3, "Creating/Deleting a Shortcut of Job Network"
Submit	Submits a job network.	Section 3.2.1, "To Submit a Job Network Immediately"

Check	Checks nesting of job networks and updates information.	<a href="#">Section 3.1.8, "Checking a Job Network"</a>
Arrange Icons	Changes the order of job networks in a group to display.	-
Parameter	Sets up job networks.	<a href="#">Section 3.3.4, "Setting Parameters of a Job Network"</a>
Setting List	Displays a list of configurations about the job network.	<a href="#">Section 3.3.6, "Displaying the Job Network Settings List"</a>

### 3.3.1. Copying a Job Network / a Group

The following describes ways to copy a job network or a group.

Copying between users is possible if the user has the permissions to create a job network for other users.

#### 3.3.1.1. Copying in the same login user

A job network can be copied by two methods: by using the shortcut menu or by dragging and dropping the job network.

##### ■ Copying using the shortcut menu

1. Select [Copy To] from the shortcut menu which appears by right-clicking.
2. The [Group Selection(user name)] dialog box opens.
3. Specify a group for the copy destination.

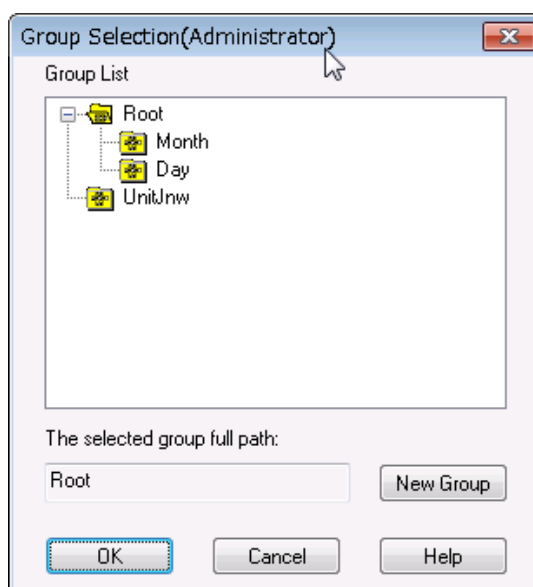


Figure 3.33. Screenshot of [Group Selection(user name)] dialog box when copying in the same group

4. After configuration, click [OK].

##### ■ Copying by dragging and dropping a job network

1. Drag the job network to the copy destination group, and then drop it while holding down the "Ctrl" key.
2. Alternatively, right-click the job network, drag and drop it to the copy destination group, and then select [Copy Here] from the shortcut menu.

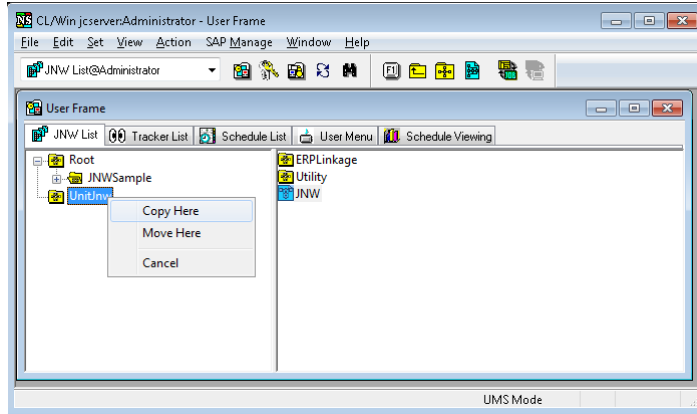


Figure 3.34. Copying a job network by dragging and dropping it after right-clicking it



You cannot select [Copy Here] from the shortcut menu when selecting multi job networks.

### 3.3.1.2. Copying between the different users

The following steps describe how to copy a job network from the other user to the login user. A job network can be copied by two methods: by using the shortcut menu or by dragging and dropping the job network.

#### ■ Copying using the shortcut menu

1. Select [Copy To] from the shortcut menu which appears by right-clicking.
2. First, the [Select User] dialog box opens.
3. Select another user name, then the [Group Selection(user name)] dialog box for the user opens.
4. Specify the other user's group for the copy destination.



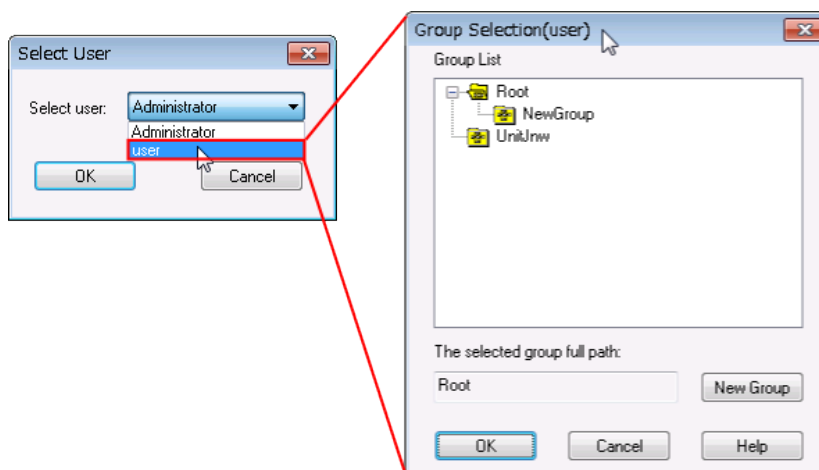


Figure 3.35. Screenshots that shows how to specify the destination of copying a job network/group

5. After configuration, click [OK].

■ Copying by dragging and dropping a job network

1. Display the user frame to which the job network is to be copied. (For details, refer to [Section 2.5.5, "Displaying Other User Frame"](#).)
2. Drag the job network to the copy destination group, and then drop it while holding down the "Ctrl" key.

### 3.3.1.3. Notes when copying a job network

1. When a job network is copied in the same login user

- If a job network is copied, the copied job network has the source name with `_copy1`, `_copy2`, etc. appended to the original name.

2. When a job network is copied between different users

- When the copy destination user has a job network with the same name

The copy operation cannot be performed. Normally, job networks are copied with their names unchanged.

- When a job network having a sub-job network is copied

The sub job network is copied at the same time. Make sure to specify the parent job network when doing the copy.

- When the copy destination user has a job network with the same name as a sub job network of the copy source

The copy operation cannot be performed. In this case, avoid the problem by taking one of the steps described below, instead of deleting the job network of the copy destination.

- When you want to copy the job networks with their parent-child relationship unchanged

Rename the job network having the same name as the sub job network of the copy source before performing the copy operation.

- When you want to use the sub job network that already exists in the copy destination

First, move the job network you want to copy to another group, and then copy that group. Normally, this results in an error because the sub job network resides in a different network. In this case, however, the copy destination user has the sub job network that the job network needs and, therefore, the parent-child relationship can be established properly without causing an error.

- When a job network of another user is copied

The login user and the job network owner are the only users who can be selected as the copy destination. A job network cannot be copied directly to a third-party user.

- When a job network containing a calendar branch is copied

The copy destination needs to have a schedule that is used by the calendar branch. If the schedule used by the calendar branch does not exist, the copy operation results in an error.

- When a job network and a schedule are copied at the same time

Use the Helper function. For information about the Helper function, refer to [Chapter 12, 「Upload and Download Functions」](#).

#### 3.3.1.4. Notes when copying a group

##### 1. When a group is copied in the same user

- When there is a group having the same name in the same layer of the copy destination

You need to rename the group after specifying the copy destination. Normally, groups are copied with their names unchanged.

- When the group has a job network or shortcut

A job network or shortcut in a group is copied as well. In this case, the copied job network will have `_copy1`, `_copy2`, etc. appended to its original name.

##### 2. When a group is copied between different users

- When there is a group having the same name in the same layer of the copy destination

The copy operation cannot be performed. Normally, groups are copied with their names unchanged.

- When an attempt is made to copy a shortcut

A shortcut is not copied. Note that a job network in a group is copied.

- When a job network with a sub job network is copied

When the job network has a sub job network, you need to have that sub job network in the group you want to copy.

- When the copy destination user has a job network with the same name

The copied job network will have `_copy1`, `_copy2`, etc. appended to its original name.

- When the copy destination user has a job network whose name is identical to that of a sub job network of the copy source user

If you want to keep the copy source's parent-child relationship unchanged in the copy destination, you need to rewrite the flow of the parent job network after the copy operation.

### 3.3.2. Moving a Job Network / a Group

The following steps describe how to move a job network or a group to the own job network list. A job network can be moved by two methods: by using the shortcut menu or by dragging and dropping the job network.

■ Movement using the shortcut menu

1. Select [Move] from the shortcut menu which appears by right-clicking.
2. The [Group Selection(user name)] dialog box for the user opens.
3. Specify a destination.

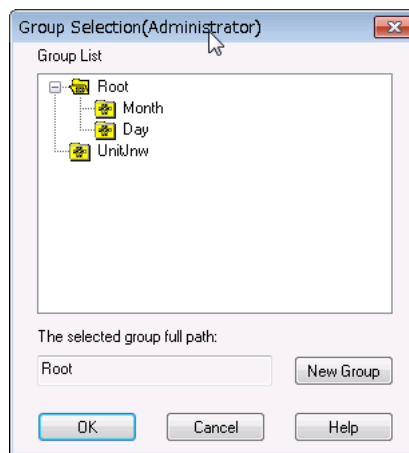


Figure 3.36. Specifying a destination for a job network / a group

4. After configuration, click [OK].

■ Moving a job network by dragging and dropping it

1. Drag the job network to the destination group, and then drop it.

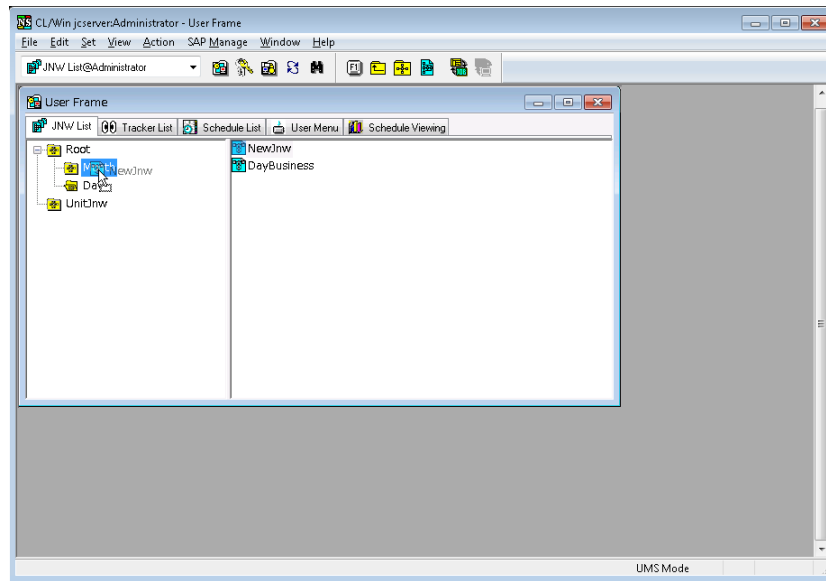


Figure 3.37. Moving a job network by dragging and dropping it

2. Alternatively, right-click the job network, drag and drop it to the copy destination group, and then select [Move Here] from the shortcut menu.



#### Notes when moving a job network or group

- A job network or group can be moved only in the same user.
- A job network or job network shortcut cannot be moved under the Root group. However, a job network or job network shortcut can be moved to another group.
- A job network shortcut or group cannot be moved under the UnitJnw group. However, a job network shortcut or group can be moved to another job network.
- A sub group of the destination group cannot have the same name as the moved group.
- The group to be moved cannot be selected as the destination group.

### 3.3.3. Creating/Deleting a Shortcut of Job Network

The following steps describe how to create a shortcut of a job network. By using shortcuts, a job network can belong to more than one group.

#### 3.3.3.1. Creating a shortcut of a job network

1. Select [Create JnwShortcut] from the shortcut menu which appears by right-clicking.
2. The [Group Selection(user name)] dialog box for the user opens.
3. Specify the destination group to create the shortcut.

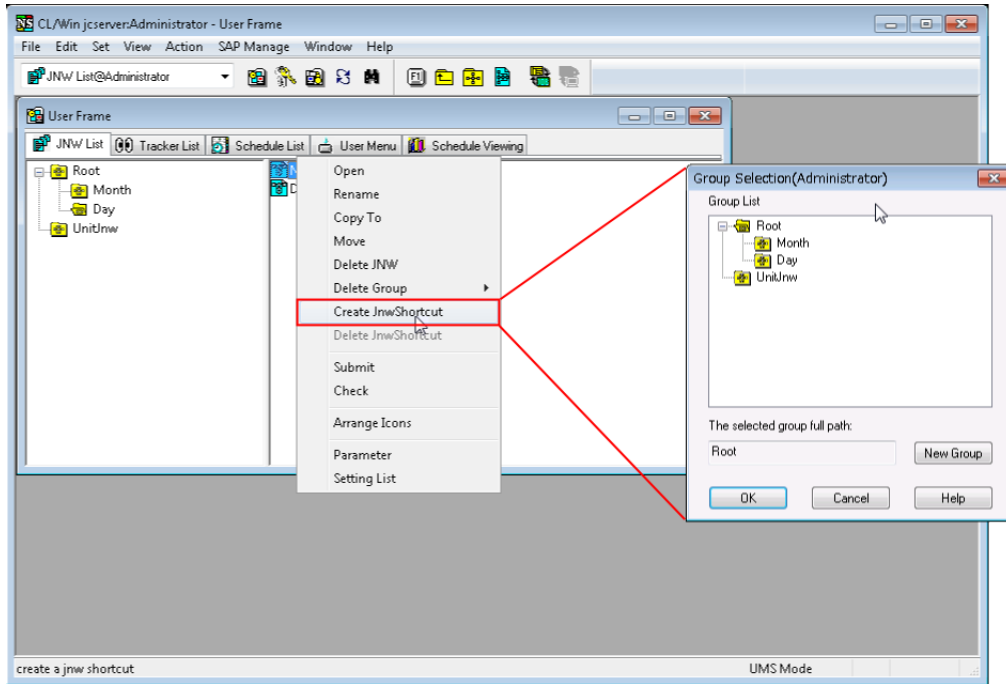


Figure 3.38. Specifying a destination to create a shortcut

4. After configuration, click [OK].
5. Open the destination group to create the shortcut, and verify the shortcut has created.

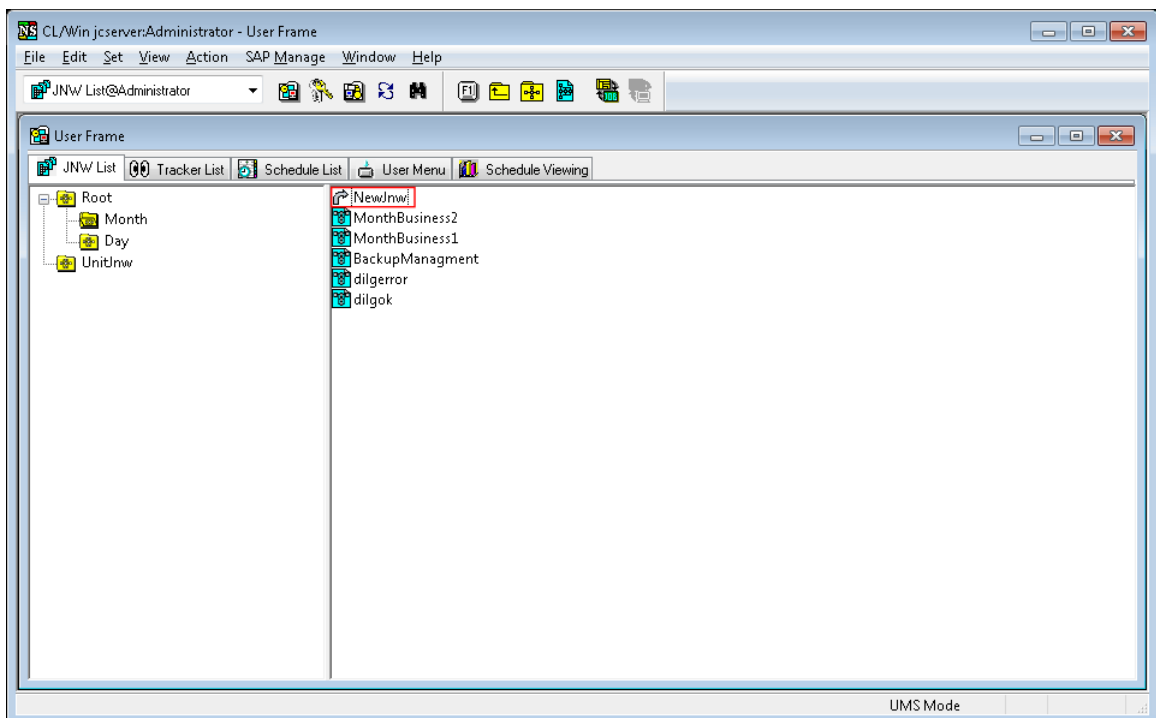


Figure 3.39. A result of creation of a shortcut



■ The created shortcut can be edited like a job network. Note that edits on a shortcut are reflected to the original job network.

■ Notes when creating a shortcut of a job network

- No shortcut can be created in the UnitJnw group.
- No shortcut can be created in the group of its original job network.
- When multiple selections are made, take note of the following.
  - Shortcuts can only be created for job network.
  - Shortcuts of the same name cannot be created in the same group.
  - It is not possible to create shortcuts in the Root and UnitJnw groups.

### 3.3.3.2. Deleting a shortcut of a job network

1. Select a shortcut to be deleted.
2. Select [Delete JnwShortcut] from the shortcut menu which appears by right-clicking.

### 3.3.4. Setting Parameters of a Job Network

The following describes parameters regarding the job network.

1. Select [Parameter] from the shortcut menu which appears by right-clicking.
2. The [Parameter] dialog box opens.

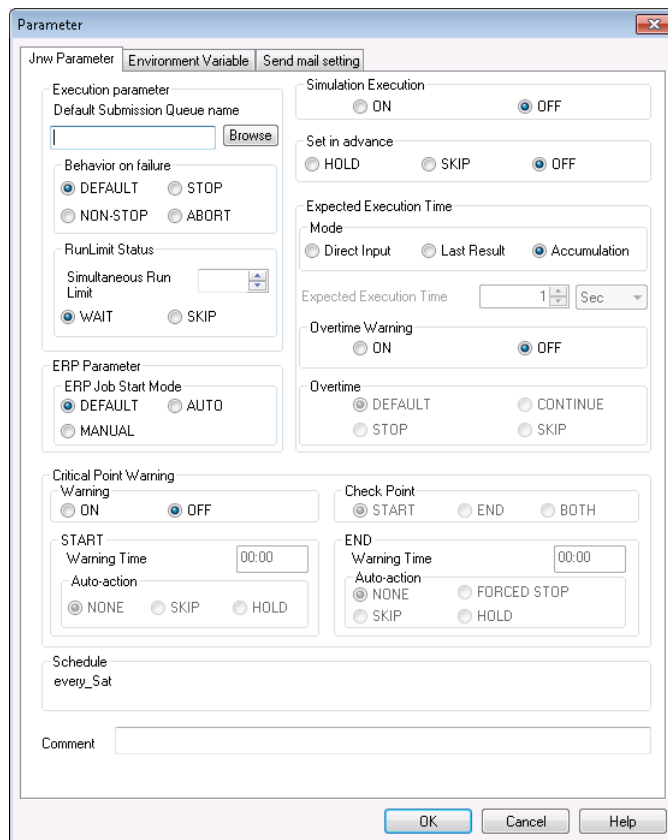


Figure 3.40. Screenshot of the Parameter dialog box

3. Configure parameters regarding the job network in the [Jnw Parameter], [Critical Point Warning], [Environment Variable], and [Send mail setting] tabs.

4. After configuration, click [OK].

The configuration items of [Jnw Parameter], [Critical Point Warning], [Environment Variable], and [Send mail setting] are shown below.

### 3.3.4.1. Jnw Parameter tab

In the [Jnw Parameter] tab, the parameters of the current job network can be browsed and changed.

#### ■ Default Submission Queue

Specifies the queue that belongs to the job network.

Clicking the [Browse] button pops up the [Submission Queue setting] dialog box, in which a queue can be selected by clicking the [OK] button.

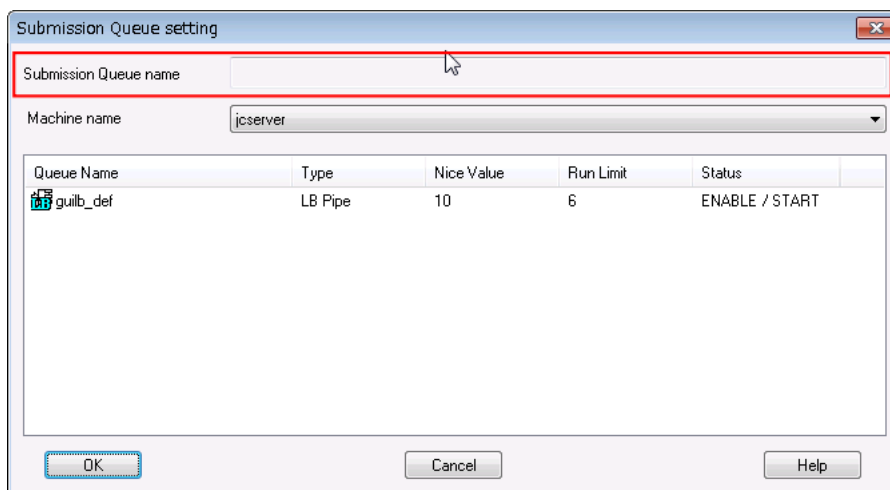


Figure 3.41. Screenshot of the [Submission Queue setting] dialog box

If the field indicated by the red rectangle is empty, a queue specified by the parent job network is used when the job network is a sub job network; otherwise, a queue specified in the [User Config] tab is used when the job network is not a sub job network.

#### ■ Behavior on failure

This control specifies whether to stop the job network when an error occurs during its execution. This control should be set from the following according to the usage of the job network.

DEFAULT	The job network is executed according to the [User Config] tab. However, if the job network is executed as a sub job network, uses the parameters of the parent job network.
STOP	Stops the job network when an error occurs.
NON-STOP	Does not stop the job network when an error occurs.
ABORT	Aborts execution of the job network when an error occurs. (And skips the following jobs.)

#### ■ RunLimit Status

Specifies the maximum number of job networks that can be run simultaneously as trackers, and defines action to take when the number of running job networks exceeds the limit. If this box is left blank, there is no limit in the number of job networks. Note that this setting applies to the topmost parent job network only, not to sub job networks. If submitted job network exceeds the maximum number of job networks, there are two selections.

WAIT	The submitted job network will be run after execution of a currently running job network completes.  If more than one job networks are waiting, the one with the earliest start time executed first. The tracker state of the waiting job networks is "Wait".
SKIP	If the number of job networks exceeds the limit, execution of that and the following job networks will be skipped. The tracker state of the skipped job networks is indicated "SKIP."



The trackers that are "stopped due to an error" are recognized to be under execution and included in the maximum number of job networks that can run simultaneously. Specify that unnecessary trackers be "skipped" or "removed" in advance.

■ Simulation Execution

Executes a blank job (script) instead of the scheduled job scripts for all job execution.

It is performed when "ON" is selected.



Because it is not possible to submit empty ERP and BI jobs to the SAP system, the defined contents will be executed instead of an empty script during simulation.

■ Set in advance

Sets the job status to "HOLD" or "SKIP" in advance.

HOLD	The status of the job is set to HOLD when the job network is submitted.
SKIP	The status of the job is set to SKIP when the job network is submitted.
OFF	The status of the job is not set to HOLD or SKIP when the job network is submitted.

■ Expected Execution Time

Set the expected execution time of the job network and the behavior to be taken upon expiry of the expected execution time.

[Mode]

Select how to calculate the expected time for job network execution, from the options shown below. This expected time is reflected on overtime warnings in the tracker list graphic mode (Gantt chart), etc.

Direct Input	Uses the value specified by the user in the parameter of a job network as the expected end of time.
Last Result	Calculates the expected end of time of all job networks using the last result of successful job network execution.
Accumulation	Calculates the expected end of time of all job networks from the expected end of time of the jobs in the latest job network or the sub job network unit.



	The expected end of time depends on the settings of the unit job or sub job network.
--	--

[Expected Execution Time]

This parameter specifies the value of time and its unit when Direct Input is selected in Mode described above. A time and a unit are set. One of the following units can be selected. Values in parentheses indicate the allowable range.

Second	(0 to 31536000)
Minute	(0 to 525600)
Hour	(0 to 8760)
Day	(0 to 365)

[Overtime Warning]

Specifies whether to display a warning message in the Unified Monitoring Services or Windows Event Log when the job does not completes after the expected end time.

The warning message is output when set to "ON". The message is not output when set to "OFF", and the following operation when the Overtime is also not performed.

[Overtime]

When Overtime warning is set to "ON", select the behavior to be taken if the job network does not end until the expected end of time, from the options shown below.

DEFAULT	Performs the operation defined in the [User Config] tab.
CONTINUE	Continues execution of the unit job.
STOP	Stops execution of the unit job.
SKIP	Skips execution of the unit job.

■ ERP Parameter

Set whether to have an ERP job run automatically when it is submitted. The following options are available.

DEFAULT	Determined by the [User Config] setting. If the job is run as a sub job network, whether to run the job automatically is determined by the parameter of the parent job network.
AUTO	The job is automatically switched to the run state from the submitted state.
MANUAL	The job is not automatically started.

■ Schedule

If the job network is linked to a schedule, this control displays the name of the schedule.

If the job network is not linked to a schedule, "The JNW has no liked schedule."

■ Comment

Attaches a comment to the job network. The comment appears in the [Comment] field in the [Submit JNW] dialog box when performing an immediate submission.

The text input field accepts the characters, that are not over 256 single-byte characters or 128 double-byte characters, written in alphanumeric, Japanese characters, or Kana characters (double

bytes/single byte) (can be mixed). Tabs, special characters, and the following characters cannot be used:

^#\$( ) [ ] { } \ | < > " & ' &#x2013;

### 3.3.4.2. Critical Point Warning

[Critical Point Warning] tab allows you to set Critical Point Warning to ON/OFF and specify the other operations.

Critical Point Warning outputs the warning message and performs the specified operation when the job does not start or end at the specified time.



#### Cautions on specifying critical point warning setting

- If a unit job is being held, no critical point warning occurs because job holding takes precedence.
- A critical point warning occurs if a job network for which the execution end point is specified is held in advance and enters the "PREPARE[HOLD]" state. After this, if the job network being held is released, the subsequent processing is executed normally because a critical warning message has already been output. If a job network that is held in advance in the "PREPARE[HOLD]" state due to the occurrence of a critical point warning is released, the subsequent processing is executed normally because a warning message has already been output.
- A critical point warning occurs if the execution end point is specified for a unit job and the corresponding job network is held in advance in the "PREPARE[HOLD]" state. After this, if the job network being held is released, the subsequent processing is executed normally without another warning because a critical point warning message has already been output.
- No critical point warning occurs if the execution end point is specified for a unit job and the corresponding job network is in the "PREPARE" state.
- A critical point warning occurs if such a job is executed again.
- If Customized change-of-day time for Base Time is set to "OFF", a critical point warning occurs at the specified time on the next day. If it is set to "ON", a critical point warning occurs at the specified time on the current day.

For details, refer to "Critical Point Warning on the [Time Config] Tab" in in <Environment Guide>Section 6.5, "Changing System Environment Settings".

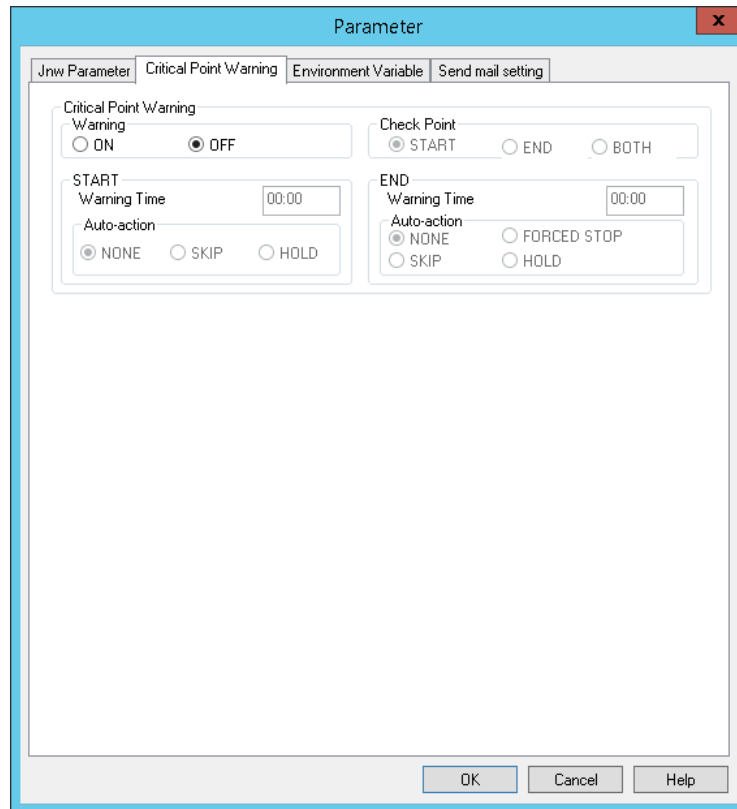


Figure 3.42. Critical Point Warning setting dialog box

■ [Warning]

When "ON" is selected, the Critical Point Warning function is enabled. When "OFF" is selected, the function is disabled.

■ [Check Point]

Select the check point from the options shown below (when the Critical Point Warning function is enabled).

START	Generates a warning message when execution of a part does not start at a specified time.
END	Generates a warning message when execution of a part does not end at a specified time.
BOTH	Checks at both START and END.

■ START

In this area, the following parameters specify the expected start time of the part and operation performed on the part when the part is not started before the time.

[Warning Time]

Absolute time	00:00 to 23:59
Relative time	+00:00 to +999:59

Specify the 24-hour system time (HH:MM) or relative time (+HH:MM) (time lapsed from the start of execution) for the test execution time.

When the unit job network critical point warning is set to relative time, the reference time will be the uppermost parent job network expected start time.

[Auto-action]

From the following items, specify the operation automatically performed on the job when a warning occurs.

NONE	Does not perform auto action when a warning occurs.
SKIP	Skips the part when a warning occurs.
HOLD	Holds the part when a warning occurs.

■ END

In this area, the following parameters specify the expected end time of the part and operation performed on the part when the part is not ended before the time.

[Warning Time]

Absolute time	00:00 to 23:59
Relative time	+00:00 to +999:59

Specify the 24-hour system time (HH:MM) or relative time (+HH:MM) (time lapsed from the start of execution) for the test execution time.

When the unit job network critical point warning is set to relative time, the reference time will be the uppermost parent job network expected start time.

[Auto-action]

From the following items, specify the operation automatically performed on the job when a warning occurs.

NONE	Does not perform auto action when a warning occurs.
FORCED STOP	Forcibly stops of the part when a warning occurs.
SKIP	Skips the part when a warning occurs.
HOLD	Holds the part when a warning occurs.



■ Cautions when FORCED STOP is specified

- If the tracker is in the "PREPARE" state, a warning occurs on the sub job networks only until the scheduled start time is reached.
- After the scheduled start time has passed, a warning might occur if the job network is not executed due to exceeding the number of jobs that can be executed simultaneously, overload, or other causes.

If a warning occurs on a job network, the job network enters the "PREPARE[HOLD]" state. At this time, the job network is indicated with a "Hold" mark in the tracker flow.

If a warning occurs on a sub job network, the parent job network enters the "HOLD" state and waits for a response.

- If the tracker is in the "PREPARE[HOLD]" state, the corresponding job network is indicated with a "Hold" mark in the tracker flow. At this time, the tracker remains in the "PREPARE[HOLD]" state.

If a warning occurs on a sub job network, the parent job network enters the "HOLD" state and waits for a response.

■ Cautions when SKIP is specified

- If the tracker is in the "PREPARE" state, a warning occurs on the sub job networks only until the scheduled start time is reached.
- After the scheduled start time has passed, a warning might occur if the job network is not executed due to exceeding the number of jobs that can be executed simultaneously, overload, or other causes.

If a warning occurs on a parent job network, the parent job network is indicated with a "SKIP" mark on the tracker flow, and the corresponding sub job networks are indicated as "KILLED" in the [Tracker List] window.

If a warning occurs on a sub job network, the sub job network is indicated with a "SKIP" mark on the tracker flow, and is indicated as "DONE[SKIP]" in the [Tracker List] window. At this time, the parent job network continues processing in the "RUN" state, and enters the "DONE" state when it finishes the processing.

- If a warning occurs while the tracker is in the "PREPARE[HOLD]" state, the state of the tracker in the [Tracker List] window changes from "PREPARE[SKIP]" to "DONE[SKIP]".

If a warning occurs on a sub job network, the parent job network continues processing in the "RUN" state, and then enters the "DONE" state.

■ Cautions when HOLD is specified

- If the tracker is in the "PREPARE" state, a warning occurs on the sub job networks only until the scheduled start time is reached.
- After the scheduled start time has passed, a warning might occur if the job network is not executed due to exceeding the number of jobs that can be executed simultaneously, overload, or other causes.

If a warning occurs on the parent job network, the parent job network is indicated with a "HOLD" mark on the tracker flow, and is indicated as "PREPARE[HOLD]" in the [Tracker List] window.

If a warning occurs on a sub job network, the parent job network continues processing in the "RUN" state, and then enters the "HOLD" state and waits for a response.

- If a warning occurs while the tracker is in the "PREPARE[HOLD]" state, the state of the tracker remains "PREPARE[HOLD]" in the [Tracker List] window.

If a warning occurs on a sub job network, the parent job network continues processing in the "RUN" state, and then enters the "HOLD" state and waits for a response.

### 3.3.4.3. Environment Variable tab

On the Environment Variable tab, the environment variables to add during unit job execution can be specified.

The job parameter for the environment variable NSJNW\_PARAM, which was specified through the job network parameter settings in R12.7 or earlier, has been moved from the Jnw Parameter tab to this tab. The settings specified as job parameters in R12.7 or earlier are displayed on this tab with the variable name NSJNW\_PARAM.



Figure 3.43. Environment Variable tab

■ [New] button

Click this button to open the [New environment variable] dialog box. The character strings used for the variable name, value, and comment are restricted as shown in [Table 3.4, “Restrictions on specifying environment variable parameters”](#).

The scroll bars on the bottom and right of the Comment text box are enabled if the entered text is too long to display.

■ [Edit] button

If this button is clicked while an environment variable in the list is selected, the [Edit environment variable] dialog box is displayed. If the variable name is changed and then the [OK] button is clicked, a confirmation window for overwriting the variable appears. Click the [OK] button to overwrite the variable.

The same variable name cannot be used for multiple variables.

The [Edit environment variable] dialog box can also be displayed by double-clicking an environment variable in the environment variable list.

■ [Delete] button

If this button is clicked while an environment variable in the list is selected, a confirmation window for deleting the variable is displayed.

Table 3.4. Restrictions on specifying environment variable parameters

Variable	51 bytes	1. This cell cannot be left blank.
----------	----------	------------------------------------

		2. Spaces, tabs, special characters, and the following characters cannot be used: ,=#"
Value	256 bytes	1. This cell cannot be left blank. 2. Tabs, special characters, and the following characters cannot be used: ,=#"
Comment	256 bytes	The following characters cannot be used: #"



From R15.1, "," can be input in the environment variable name, environment variable value, and description.



**Caution**

Some environment variables are overwritten by specific values during job execution and set up again even if they have been set up on this Environment Variable tab.

For details about the environment variables that are set up during job execution, how to set up an environment variable, and the priority in relation to the Environment Variable tab, refer to in <Environment Guide>Chapter 14, 「Handling Environment Variables at Job Execution」.

### 3.3.4.4. Send mail setting tab

In the [Send mail setting] tab, you can refer to/change settings to send email when an error occurs in the job network.

For details, refer to [Chapter 15, 「Setting the Mail Transmission Function for Errors」](#).

### 3.3.4.5. Correction time

This tab is displayed only when the job network specific setting function for the correction time is enabled.

Here, the correction time for the job network can be set, displayed, or changed.

For details, refer to in <Environment Guide>Section 6.5, "Changing System Environment Settings".

## 3.3.5. Grouping Job Networks

Job networks can be categorized in an easily understood manner by creating a new group and then grouping job networks and shortcuts of job networks, or stratifying groups.

Grouping job networks or shortcuts of job networks, and stratifying groups can be defined in the [JNW List] tab of the [User Frame] window.

#### 1. Creating a group

For the way to create a group, refer to [Section 3.1.1, "Creating/Deleting a Group"](#).

#### 2. Creating a shortcut of a job network

For the way to create shortcut of a job network, refer to [Section 3.3.3, “Creating/Deleting a Shortcut of Job Network”](#).

### 3. Stratifying groups

By making a new group in another group, the groups can be hierarchized.

For the way to create a group, refer to [Section 3.1.1, “Creating/Deleting a Group”](#).

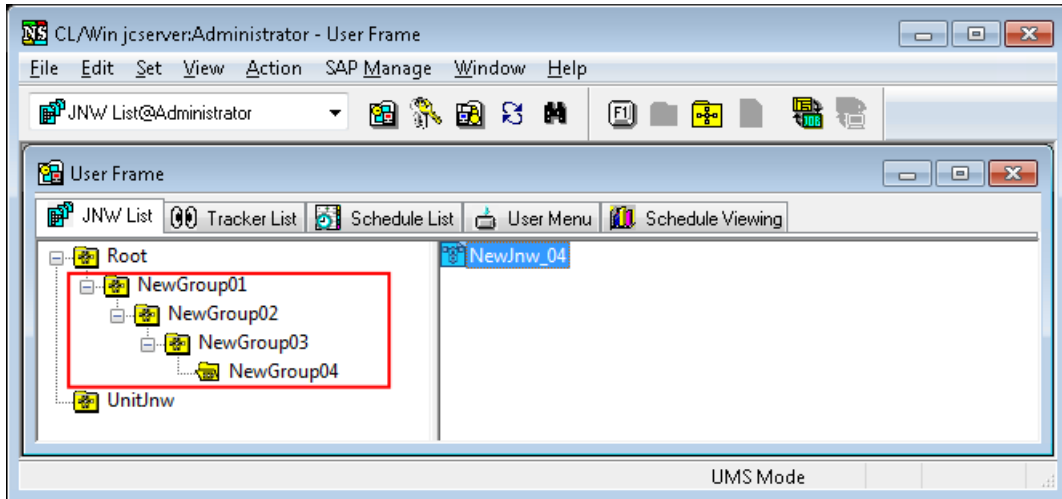


Figure 3.44. Example of hierarchized groups

### 3.3.6. Displaying the Job Network Settings List

Job network parameters, as well as parameters and scripts for unit jobs defined in a flow, can be displayed in a list. (Note, however, that the displayed list cannot be output to a text file.)



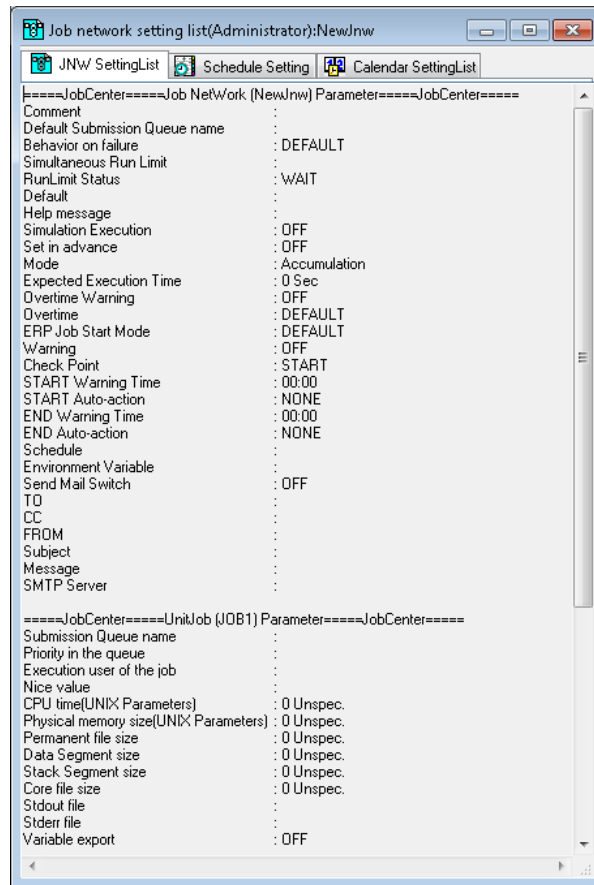


Figure 3.45. Example of a Job Network Settings List

## 3.4. Creating a Menu Button to Execute a Job Network

On the GUI, there is a function to immediately submit a job network done by clicking a menu button which is created by each user.

In the [User Menu] tab of the [User Frame] window, a [User Menu] Button can be defined or deleted.

### 3.4.1. Creating User Menu Button

1. In the [User Frame] dialog box, open the [User Menu] tab. On the menu bar, select [File], and then click [New Button].

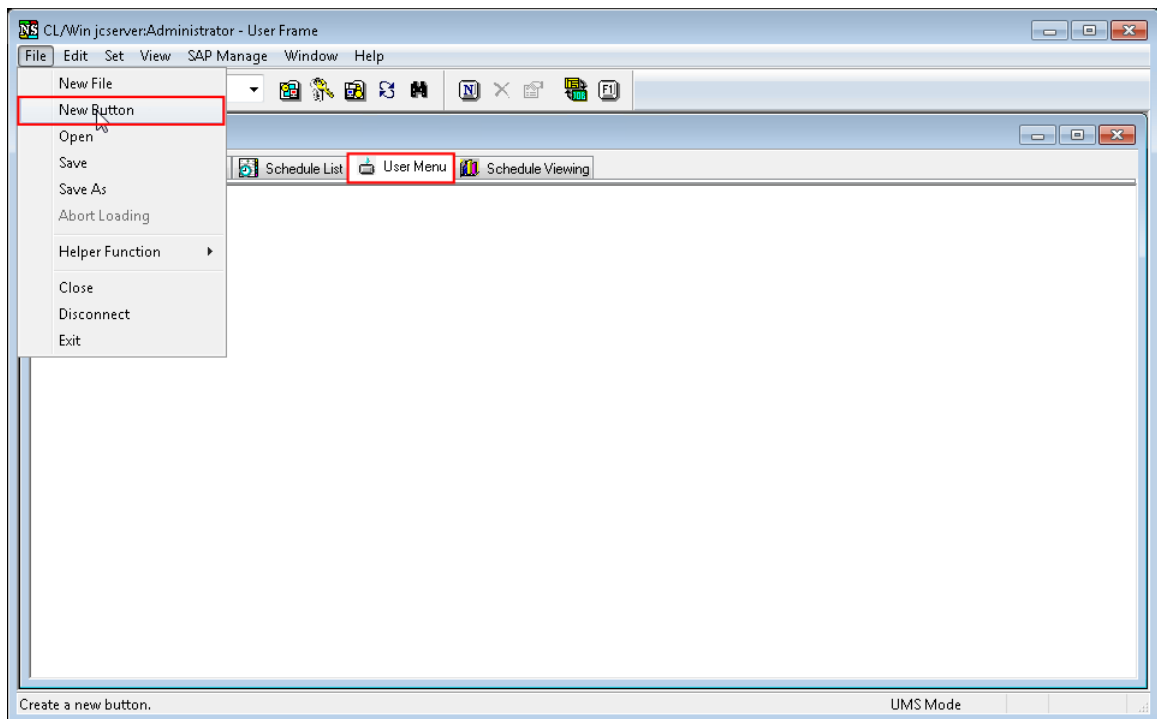


Figure 3.46. Screenshot that shows New Button is selected

2. The [Property setting] dialog box displays.

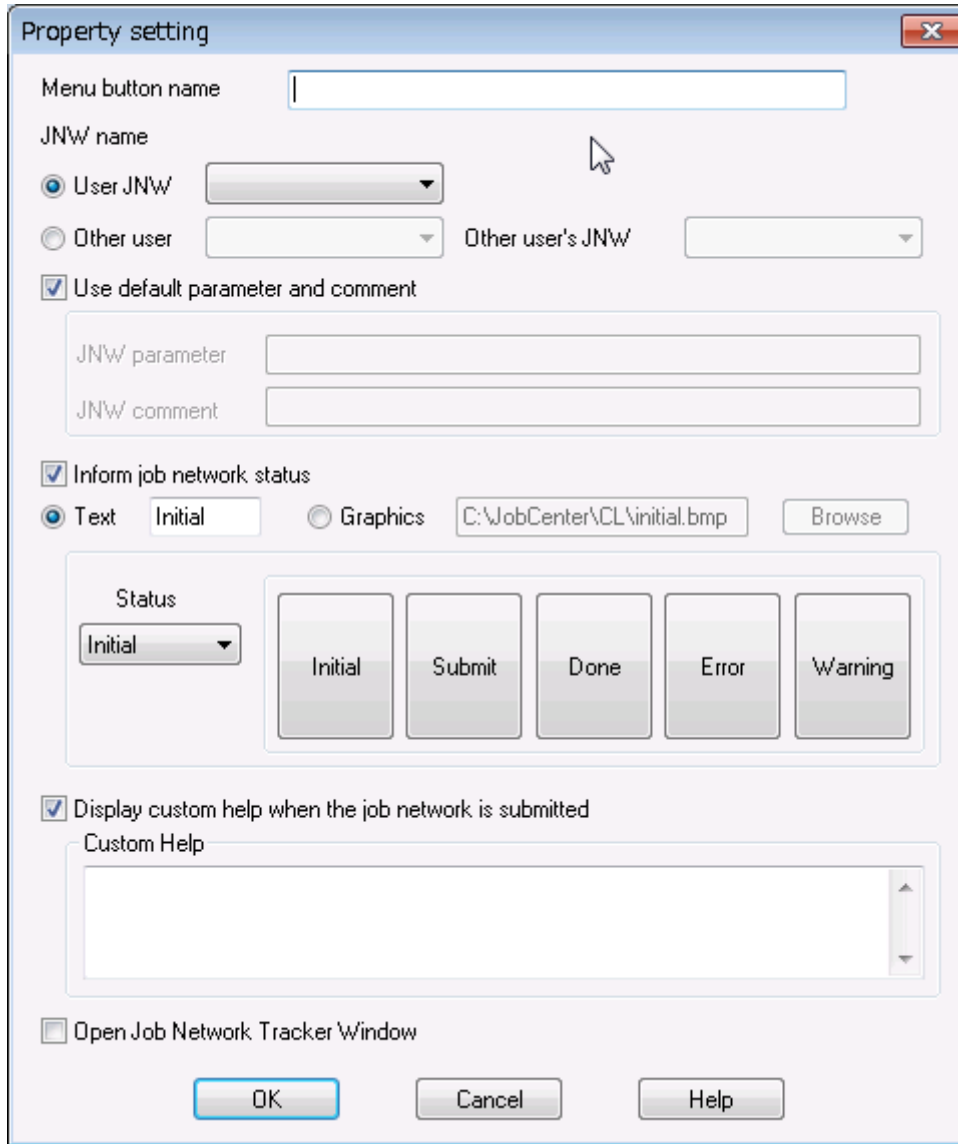


Figure 3.47. Screenshot of the [Property setting] dialog box of the menu button

Configuration items in the [Property setting] dialog box are as follows:

■ Menu button name

The name of the button displayed on the screen.

■ JNW name

The job network name related to the Menu button.

Select a job network which is owned by the login user from [User JNW] list, otherwise, select other user's job network, which is done by selecting a user from the user list of "Other user" and then choosing a job network from the list of "Other user's JNW."

■ Use default parameter and comment

Parameters and comment when submitting the job network can be configured.

If the [Use default parameter and comment] check box is selected, a value set in the parameter of the job network is utilized.

■ Inform job network status

If this item is ticked, the user is informed of the job network execution status.

The status of menu button changes from "Initial" to "Submit," "Done," "Error," "Warning" or other status, indicating the job network status. You can allocate and display any text or bitmap image to each status.

■ Display custom help when the job network is submitted

If this item is ticked, the content input in the Custom Help field is displayed in the [Custom Help] dialog box when clicking the menu button.

■ Open Job Network Tracker Window

If this item is ticked, a tracker window opens when submitting a job network by clicking the menu button.

3. After configuration, click [OK].

4. A newly created [User Menu] button will be displayed in the [User Menu] tab of User Frame.

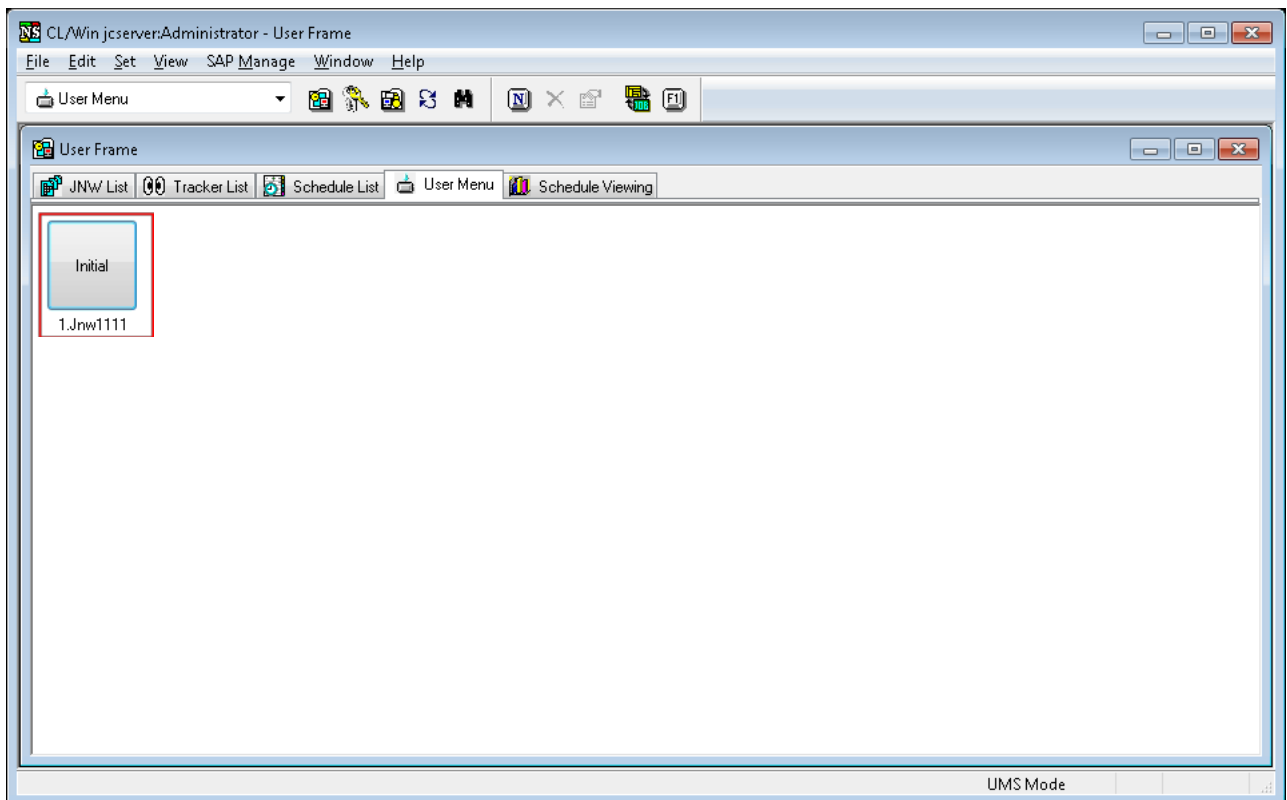



Figure 3.48. Screenshot of the created [User Menu] Button

5. When done with creating the user menu, choose [File] and then [Save] or click the  icon on the toolbar to save the user menu. The user menu will be saved in a file named UserMenu.mnu in the installation folder of CL/Win.

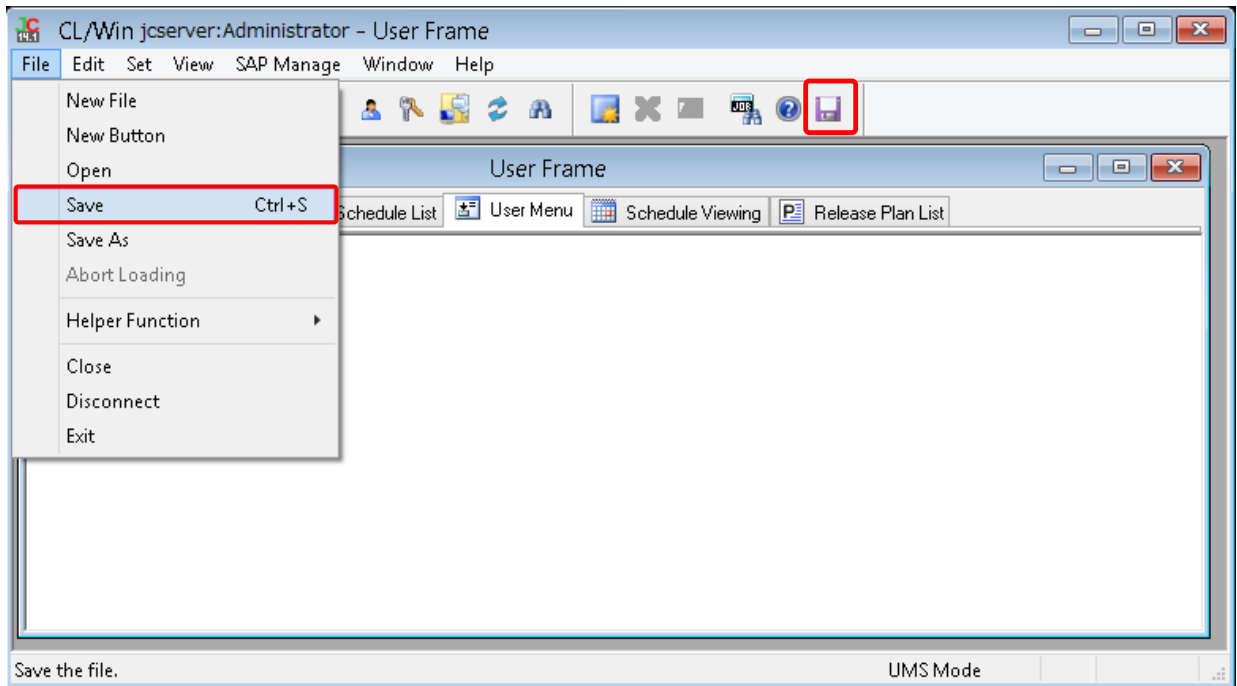


Figure 3.49. Saving a user menu



To display the saved user menu, choose [File] and then [Open] and select the file (.mnu) storing the saved user menu.

To create a new user menu, choose [File] and then [New].

To save the created user menu with a new name, choose [File] and then [Save As].

### 3.4.2. Operating a User Menu Button (Immediate submission)

1. Point the cursor to the User Menu Button, "1.Jnw001", created in [Section 3.4.1, "Creating User Menu Button"](#) and then select [Submit] from the shortcut menu which appears by right-clicking, alternatively, click the created [User Menu] Button.

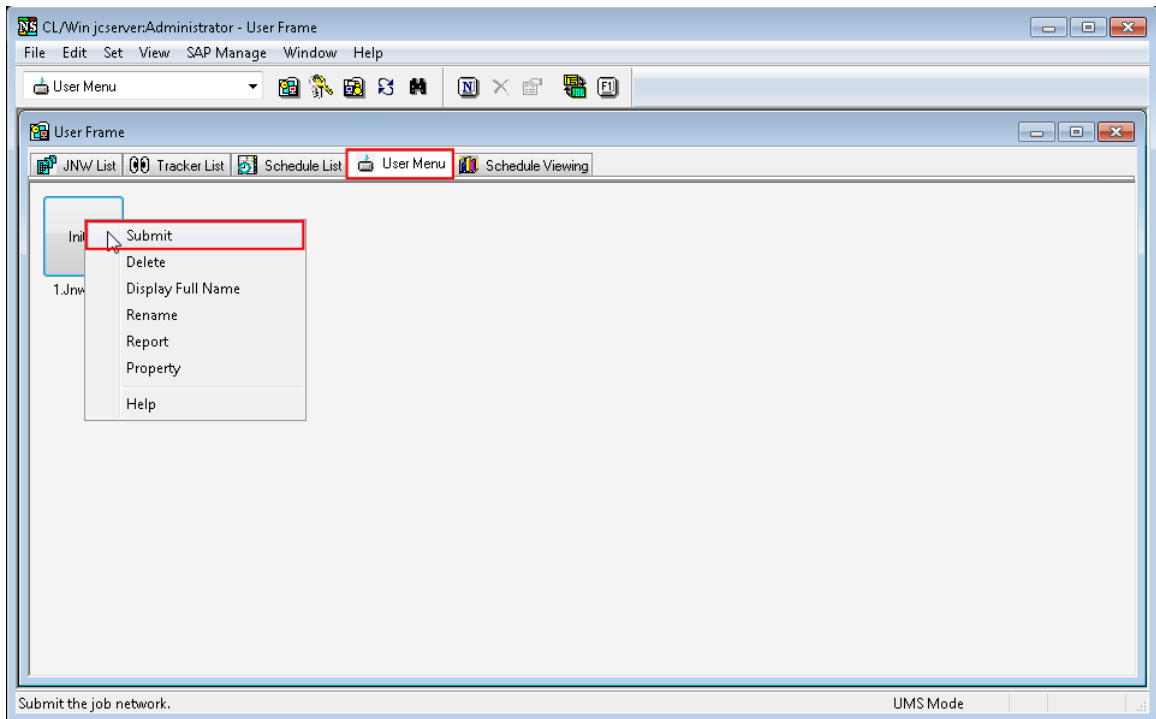


Figure 3.50. Screenshot that shows how to submit the [User Menu] Button

2. The [Custom Help] dialog box opens.
3. Click the [Submit] button. The job network is submitted.

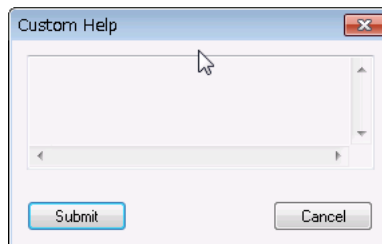


Figure 3.51. Screenshot of the [Custom Help] dialog box












- Up to 100 user menu buttons can be defined.
- Cautions when using the user menu with CL/Win installed in View mode
  - The user menu can be created and edited only if CL/Win was installed in [View Mode]. The user menu cannot be created if CL/Win was installed in [Edit Mode].
  - To apply the definitions for the user menu specified using CL/Win, install CL/Win in [Edit Mode], create a user menu, uninstall CL/Win, and then install CL/Win into the same folder in [View Mode]. This method is useful when it is necessary to prevent users from changing the JNW definitions and user menu definitions.











## 4 Usage of Part Objects

To create a job network flow, multiple part objects are provided as appropriate for the functions needed.

Part objects can be placed using the drag and drop feature, making it easy to create a job network.

Table 4.1. List of part objects

Icon	Name	Function	Chapter
■ Execution Parts			Section 4.2, "Execution Parts"
	Unit Job	The smallest component that is executed as a job.  The unit job is described by the UNIX shell script or Windows batch file format.	Section 4.2.1, "Setting an Execution Script of a Unit Job" to Section 4.2.4, "Loading the User Profile When Executing the Unit Job"
	ERP Job	The smallest component that is executed as SAP ERP.  For an ERP job, job steps are described in the script.	Section 4.2.5, "Writing an Execution Script of ERP Job", Section 4.2.6, "Setting Up Conditions (Parameters) for Executing an ERP Job"
	BI Job	The smallest component that is executed as SAP BI job.	Section 4.2.7, "Setting Execution Conditions (Parameters) of BI Job"
	PC Job	The smallest component that is executed as SAP PC job.	Section 4.2.8, "Setting the Execution Conditions (Parameters) of PC Job"
	Sub Job Network	The smallest component that is executed as a job network. Job networks can be defined hierarchically by being placed in the job network flow.  Please specify a job network created in advance, or create a new job network when allocating the object.	Section 4.2.9, "Allocating a Sub Job Network", Section 4.2.10, "Browsing a Sub Job Network"
	WOBS job	WebOTX Batch Server job can be executed at any time from JobCenter by using the WebOTX Batch Server control command.	-
	Custom job	The smallest component that is executed as a custom job.  Making a common script a template enables that script to be shared.	Section 4.6, "Custom Job Parts"
■ Branch Part			Section 4.3, "Branch Part"
	Parallel Branch	Executes several jobs or sub job networks.	Section 4.3.1, "Adding/Deleting a Flow of Parallel"
	Condition Branch	A part used for changing the following job network flow according to the exit code of a unit job or sub-job network.	Section 4.3.2, "Adding/Deleting a Flow of Condition Branch"

		It is possible to define the range of end code for each branch.	
	Calendar Branch	<p>A calendar branch is a part that executes a flow according to a schedule. If the specified schedule condition is satisfied, the right flow is selected. If not, the downside flow is selected.</p> <p>Whether the planned date for starting the job network matches the scheduled workday (operating day) is checked (The time is not examined).</p>	<a href="#">Section 4.3.4, "Setting a Schedule of a Calendar Branch"</a>
	Continuity	<p>Jumps to the pre-specified unit job, ERP job, BI job, PC job, WOBS job, custom job, or dialog part and re-executes the process after that job.</p> <p>In general, the Continuity is selected as the path for abnormal end at the conditional branch. It is used to re-executes processing if a unit job has ended abnormally.</p>	<a href="#">Section 4.3.5, "Setting to repeat processing in a flow"</a>
	OR Branch	The subsequent parts are executed if one of multiple OR Branch flows finishes.	<a href="#">Section 4.3.6, "Specifying an OR Branch"</a>
<b>■Waiting Part</b>			<a href="#">Section 4.4, "Waiting Part"</a>
	Dialog	<p>A part for waiting a response from the user.</p> <p>The following processing waits for a response from the user.</p>	<a href="#">Section 4.4.1, "Setting a Dialog"</a>
	Job Waiting	<p>Waits for end of a specified job.</p> <p>It is used to define any complicated order. It is also used to insert another job between a job and a conditional branch.</p>	<a href="#">Section 4.4.2, "Setting a Job Waiting"</a>
	JNW Waiting	<p>Waits for end of a specified job network.</p> <p>It is used to set a complex order.</p>	<a href="#">Section 4.4.3, "Setting a Job Network Waiting (JNW Waiting)"</a>
	File Waiting	<p>Waits for existence of a specified file.</p> <p>If the file does not exist, check for its existence at a regular interval.</p>	<a href="#">Section 4.4.4, "Setting a File Waiting"</a>
	Time waiting	Waits for a specified time to reach.	<a href="#">Section 4.4.5, "Setting a Time Waiting"</a>
<b>■Event Transmission and Reception</b>			<a href="#">Section 4.5, "Event Transmission and Event Reception"</a>
	Event Transmission	<p>A unit for transmitting an event from a job network to another job network.</p> <p>It describes information for transmitting from a job network to another.</p>	<a href="#">Section 4.5.1, "Setting an Event Transmission"</a>
	Event Reception	A unit for receiving an event at a job network from another job network.	<a href="#">Section 4.5.2, "Setting Up an Event Reception"</a>



	It describes information for receiving at a job network from another.	
--	---	--



- If any character outside the JIS90-compatible character range is entered in the part name, the creation of that part fails. "?" in the error message represents the out-of-range character. Change it to a character within the range. (The same error also occurs if an out-of-range character is entered in the part comment or script.)

## 4.1. Placing a Part Object

All parts objects are displayed on the [Object] toolbar. If they are no objects displayed on the [Object] toolbar, select [View] on the menu bar and then click [Object Box].



Figure 4.1. [Object] toolbar

How to place a part object is described below, using an example of a unit job icon.

1. Click the Unit Job object icon on the [Object] toolbar. Move the cross cursor to the location where you want to place the object, and then click the mouse.

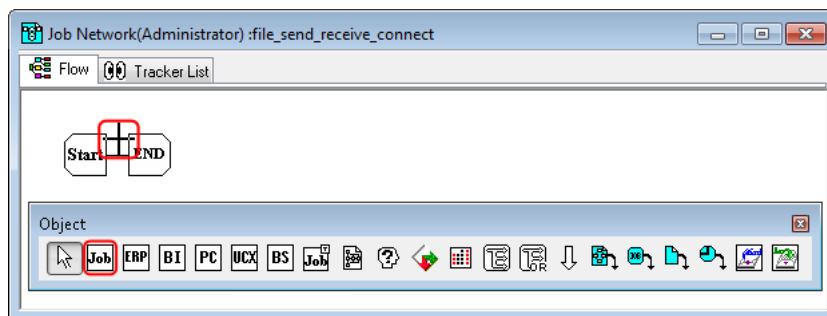


Figure 4.2. Adding a unit job icon

2. The [Job name setting] dialog box opens. Then, enter a job name.

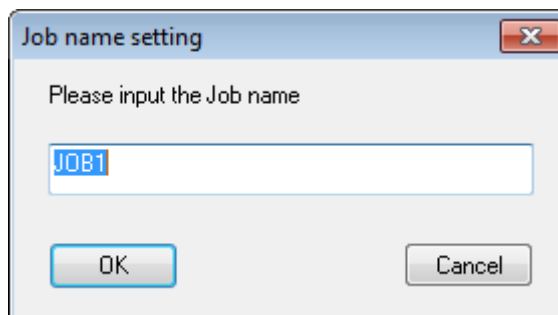


Figure 4.3. Example of setting a new unit job name



### Cautions when naming a job

- The name cannot exceed 40 single-byte (alphanumeric) characters or 20 double-byte (Asian) characters.
- Do not use one-byte Katakana for a job name.
- For the first character, only alphabet, underscore, number, or double-byte (Asian) characters can be used. Furthermore, space, tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, ,, ., /, :, ;, <, =, >, ?, @, [, \, ], ^, ` {, |, }, and ~ are not allowed to use.
- You cannot name the same job name as an existed one in the job network.

3. After configuration, click [OK].

4. The job network is displayed with the new unit job added to it.

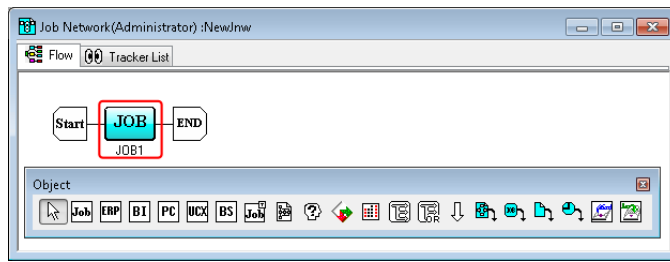


Figure 4.4. Screenshot that shows the addition of the unit job

The setting dialog box that is displayed after a part object is placed differs depending on the type of the part object placed. Refer to the description of the setting dialog box of the part object concerned.

## 4.2. Execution Parts

A job network consists of one or more execution parts.

### 4.2.1. Setting an Execution Script of a Unit Job

A unit job is the smallest component that is executed as a job. A unit job defines conditions for executing including a shell script/a batch file to be executed, queue for submission, and resource limitations.

The script is described in the UNIX shell script or Windows batch file format according to the platform of the input destination of the concerned job. By describing the full path of the file here, it is possible to call created shell script/batch file to the desired place.

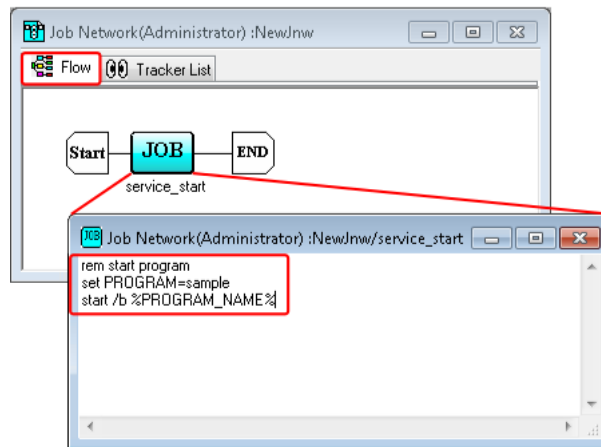


Figure 4.5. Example of a Unit job batch file (Windows)

For the actual way to edit an execution script of a unit job, refer to [Section 3.1.5, “Editing Script of Unit Job Icon”](#).

The following describes notes for the configuration of Unit Job's script.



#### Notes for setting a script of the Unit Job

- In the text editor, the max bite size per line is 1023 bytes whether the script is a shell script or a batch file.
- The max total seize of a script created by a text editor is 1 MB including the bite size of the linefeed code.
- When the GUI of Notepad, etc. is started from the unit job, the job will currently be executed until the concerned GUI is closed.
- If the machine requested to execute a job is a Windows Server 2008 machine or a later machine, a GUI application of NotePad or other editor or an Excel macro directly set in the script of the unit job cannot be executed normally because of the impact of Session 0 isolation. In this case, the GUI application or Excel macro can be executed using the JCSession command. For details, refer to in <Command Reference>Section 3.16, “jdh\_trkget (Getting Tracker Information)”.
- JobCenter sets all processes started from the concerned unit job to the same process group, and forcibly stops all processes of the concerned process group when the concerned job completes. For this reason, in order to start resident process from the unit job of JobCenter, it is necessary to start the concerned process as a different process group using the command below.

- For UNIX

nqsbg command (Refer to in <Command Reference>Section 3.5, “nqsbg (Starting a Process Not Terminated at the End of a Job from within the Job)”.)

- For Windows

start command (The /b option is required. Refer to Help of Windows.)

- When executing VBScript from a unit job, execute the script on a command line by using cscript.exe as a script host.

If the default wscript.exe is used, a window may be created on the Windows session in which the unit job is being executed and the unit job may not end even after the process of the script is complete.

- JobCenter starts the process that executes the unit job with the standard input closed. Therefore, normal operation is not guaranteed if a specified command uses the standard input.

## 4.2.2. Setting up Conditions (Parameters) for Executing a Unit Job

1. Select and right-click a unit job icon. Click [Parameter] from the shortcut menu.
2. The [UnitJob parameter setting/job name] dialog box is displayed.

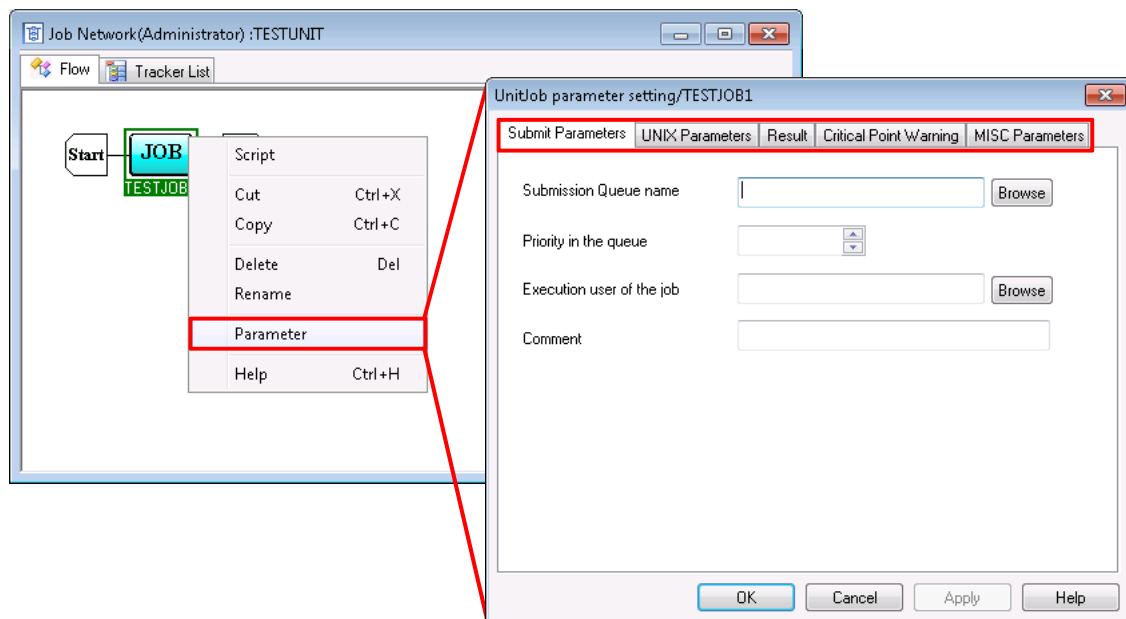


Figure 4.6. Screenshot of Unit Job parameter setting dialog box

3. Configure parameters in the each tab such as [Submit Parameters], [UNIX Parameters], [Result], [Critical Point Warning], [MISC Parameters].
4. After configuration, click [OK].

In the [UnitJob parameter setting/job name] dialog box, the following configurations are available by the each tab such as [Submit Parameters], [UNIX Parameters], [Result], [Critical Point Warning], and [MISC Parameters].

## 4.2.2.1. [Submit Parameters] tab

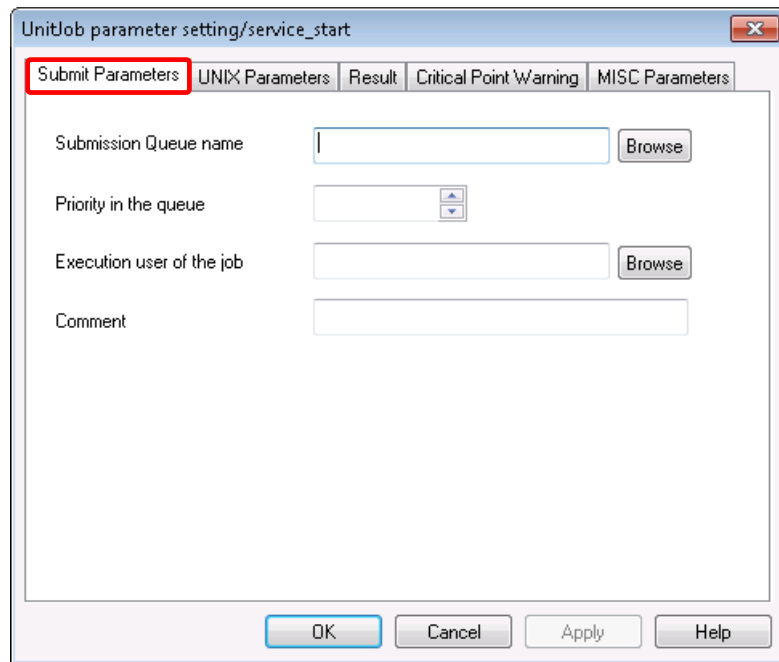


Figure 4.7. Screenshot of [Submit Parameters] in the [UnitJob parameter setting] dialog box

■ Submission Queue name

Specifies the name of the queue to which the job is submitted.

Clicking the [Browse] button pops up the [Submission Queue setting] dialog box, in which a queue can be selected. If this text job is left blank, the job is submitted to the queue that is defined in the job network parameter.

■ Priority in the queue

Specifies the priority of the job in the queue.

The allowable range is 0 to 63. The larger the number, the higher the priority is.

■ Execution user of the job

Specifies the user who executes the job.

Clicking the [Browse] button pops up the [Select the execution user of the job] dialog box, in which the user who executes the job can be selected.

If this text box is left blank, the owner of the job network is assumed.

For an example of the job execution user setting operation, refer to [Figure 4.8, "Example of the job execution user setting \(MG-SV configuration\)"](#).

■ Comment

Attach a comment to the unit job.

The text input field accepts the characters, that are not over 256 single-byte characters or 128 double-byte characters, written in alphanumeric, Japanese characters, or Kana characters (double bytes/single byte) (can be mixed). The tab, special characters, and the following characters cannot be used:

^#\$(O[[]{}]\|<>'&

An example of the job execution user setting operation (MG-SV configuration) is shown below.

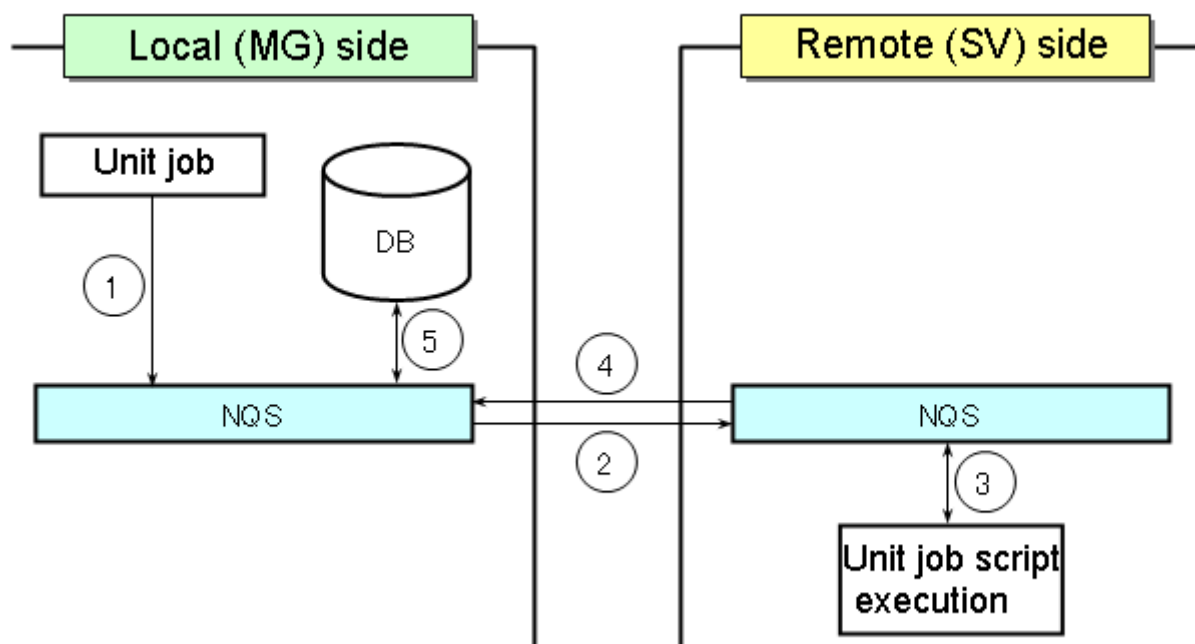


Figure 4.8. Example of the job execution user setting (MG-SV configuration)

[Explanation of the operation]

1. Give the permission to execute the unit job to the user specified as the job execution user, and submit the unit job to the NQS on the local (MG) side.
2. Transfer the job to the NQS on the remote (SV) side.
3. Have the script of the unit job executed by the user on the remote (SV) side to whom the job execution user is mapped (the environment variables of the job network owner on the local (MG) side are used).
4. Transmit the execution result of the unit job to the local (MG) side.
5. Save the execution result of the unit job in the tracker directory of the job network owner.



#### Cautions about specifying the job execution user

- When the server connected with JobCenter CL/Win is a Windows version JobCenter MG or JobCenter SV, the user specified as the job execution user must set a user password using [User Manage] of the [JobCenter Server Environment Setting] dialog box. Also, the user must connect to the server using JobCenter CL/Win.

For details about how to add a user and modify a password, refer to in <Environment Guide>Section 12.4, "Setting Up a User".

- Setting the job execution user requires access permissions for "creating, modifying, and deleting other users' job networks." Permissions for "creating, modifying, and deleting job

networks" are also necessary to change the job execution user setting of the unit job parameter for temporarily changing the tracker.

For details of access permission, refer to [Chapter 14, 「Authority Setting of General User \(Permission\)」](#) .

- When a unit job is executed with the job execution user changed, the environment variables of the job network owner are used. As for environment variables HOME, LOGNAME, USER, and MAIL, however, those of the new job execution user are used. When the new job execution user needs any environment variables other than the four mentioned above, those environment variables must be defined in the script of the unit job. For the usage of environment variable in JobCenter, refer to in <Environment Guide>Chapter 14, 「Handling Environment Variables at Job Execution」 .

- When setting a standard output or standard error output file for unit job part parameters, do not specify nstrk as the directory name two levels before the file name.

(Example) <arbitrary-path>/nstrk/<directory-name>/<file-name> If such a file is specified, the owner and group of the specified file will not be those of the user who has executed the unit job part. Instead, the owner and group of <arbitrary path>/nstrk/<directory name> will be assumed.

- When the unit job for which the job execution user is set is transferred to the remote (SV) side, user ID mapping between the local (MG) side user who is set as the job execution user and the remote (SV) side user must be performed on the remote (SV) side machine.

For details, refer to in <Environment Guide>Section 3.2, "Associating Users (User Mapping)".

- For example, to execute a job transferred to the remote (SV) side with root user permissions, it is recommended to perform user ID mapping between a general user on the local (MG) side and a root user on the remote (SV) side and specify the general user on the local (MG) side as the job execution user. If this recommended method is not available and the job needs to be transferred to the remote (SV) side with the job execution user on the local (MG) side being the root user, write "NQSDAEMON\_OPT= -x ofauth=COMPAT" in the daemon configuration file "daemon.conf." For details of daemon configuration file, refer to in <Environment Guide>Chapter 5, 「Changing Startup Settings for JobCenter」 .

#### 4.2.2.2. [UNIX Parameters] tab

UNIX parameters [Per-process] can be specified. Valid only on a UNIX platform.

For the specific value of each limit of UNIX parameter, refer to the manual of the operating system.



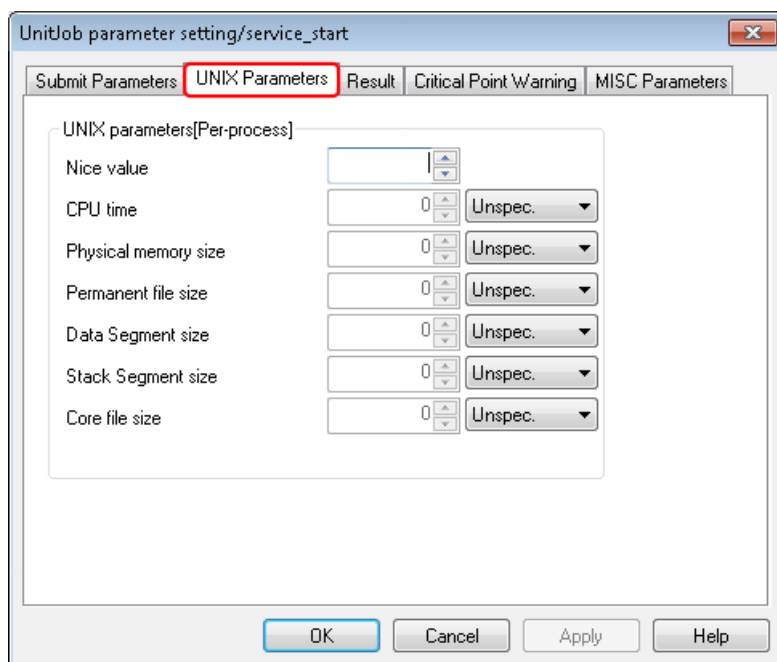


Figure 4.9. Screenshot of [UNIX Parameters] in the [UnitJob parameter setting] dialog box

#### ■ Nice value

Specifies the nice limit set for the queue.

The allowable range is [-127 to 127]. The default is 0.



During unit job execution, this value is rounded off to the upper (or lower) limit that can be specified in the used OS.

#### ■ CPU time

Specifies the CPU time limit for each process.

#### ■ Physical memory size

Specifies the memory size limit for each process.

#### ■ Permanent file size

Specifies the permanent file size limit for each process.

#### ■ Data Segment size

Specifies the data segment size limit for each process.

#### ■ Stack Segment size

Specifies the stack segment size limit for each process.

#### ■ Core file size

Specifies the core file size limit for each process.

### 4.2.2.3. [Result] tab

Allows you to specify the destination to which to output the result, as well as the setting related to the export of variables.

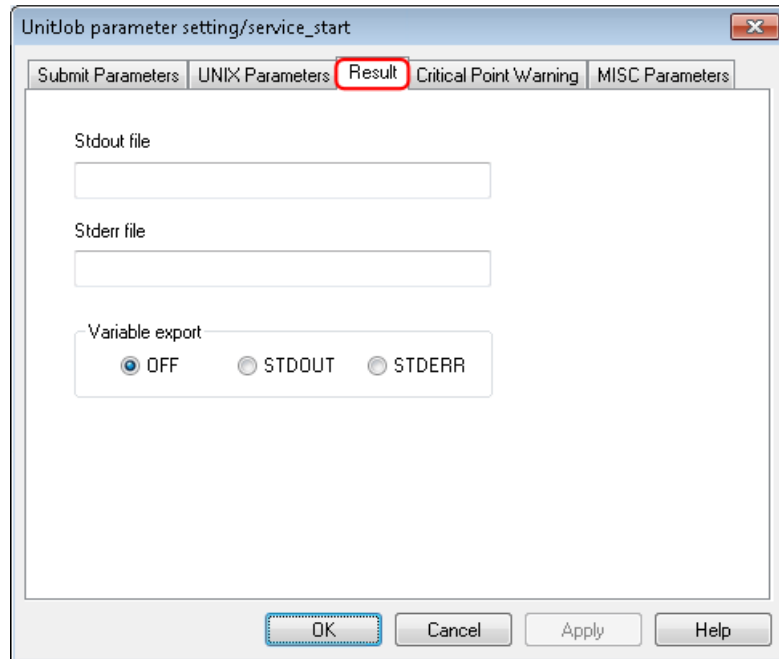


Figure 4.10. Screenshot of [Result] in the [UnitJob parameter setting] dialog box



If a particularly large amount of data is output to the standard job output and standard error output in a unit job script, not only does it take a long time for the results to be displayed in the tracker window in CL/Win, but it also slows down search processing on the server side due to insufficient memory resources.

Also, even if [Stdout file] and [Stderr file] are temporarily changed to arbitrary files on the [Results] tab in the [UnitJob parameter setting] dialog box, a large amount of data still has to be handled by the JobCenter NQS before being written to these files, slowing down the processing.

For these kinds of output files, take measures such as preventing them from being handled by JobCenter by coding the unit job script so that the file is redirected to a file directly under the directory (as an application or command log).

#### ■ Stdout file

Specifies the file name of the standard output.

Specify the desired file in the full path on the host connected by CL/Win (host defining JNW).

If Stdout is changed, the results from JobCenter CL/Win (GUI screen) and jnwsummary cannot be browsed, and [Output file is lost or redirected to somewhere] is displayed on the unit job output results tab of the tracker.

#### ■ Stderr file

Specifies the file for Stderr.

Specify the desired file in the full path on the host connected by JobCenter CL/Win (host defining JNW).

If Stdout is changed, the results from JobCenter CL/Win (GUI screen) and jnwsummary cannot be browsed, and [Output file is lost or redirected to somewhere] is displayed on the unit job output results tab of the tracker.



- Stdout and Stderr cannot be specified by using a relative path. If only a file name is specified without a path, an output file will be created in the directory that stores the tracker and then deleted when that directory is archived.

Also, in the case of a UNIX machine (and if the mask value when JobCenter starts up is 000), read permission will be assigned to the created output file, but in the case of a Windows machine, only the user who executed the job will have access to the file, and the file will not be able to be referenced from other user accounts. If it is necessary for other users to be able to reference this output file, do not specify this parameter. Instead, code the unit job script so that the file is redirected to a file directly under the directory.

- If a unit job already executed with a continuity part or any other part is rerun, the standard output or standard error output file is overwritten by the result of the last executed one of this unit job. To have the content of the standard output or standard error output appended to the previous results of a unit job when it is rerun, JobCenter needs to be started with the following JobCenter start option specified in the daemon configuration file:

```
NQSDAEMON_OPT=-x trkappend=ON
```

For details about options, refer to <Environment Guide>. If an already executed unit job is rerun when JobCenter has started with the above option specified, the delimiter character string shown below is first output in the standard output or standard error output, which is then followed by the rerun result of this unit job.

```
=====< JNW RERUN YYYY/MM/DD hh:mm:ss >=====
```

"YYYY/MM/DD hh:mm:ss" represents the time when the unit job was rerun.

■ Variable export

Specifies how to export variable information specified in the current job to the next job.

Select one of the following ways.

OFF	Does not export variables.
STDOUT	Exports variables through Stdout.
STDERR	Exports variables through Stderr.



Refer to the notes in [Section 4.2.3.3, "Notes on the variable export between unit jobs"](#).

4.2.2.4. [Critical Point Warning] tab

This parameter specifies whether to display a warning message when execution of a part does not start or end at a specified time. It also selects forced stop, skip, or hold operation of the part.

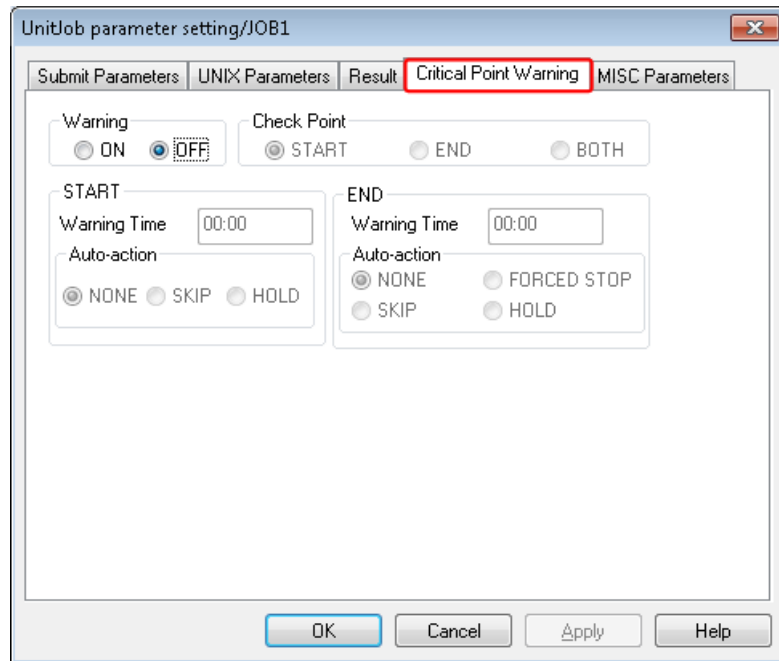


Figure 4.11. Screenshot of [UnitJob parameter setting] - [Critical Point Warning]



#### Cautions on specifying critical point warning setting

- Even if a unit job is being held, a critical point warning still occurs.
- A critical point warning occurs if a job network for which the execution end point is specified is held in advance and enters the "PREPARE[HOLD]" state. After this, if the job network being held is released, the subsequent processing is executed normally because a critical warning message has already been output. If a job network that is held in advance in the "PREPARE[HOLD]" state due to the occurrence of a critical point warning is released, the subsequent processing is executed normally because a warning message has already been output.
- A critical point warning occurs if the execution end point is specified for a unit job and the corresponding job network is held in advance in the "PREPARE[HOLD]" state. After this, if the job network being held is released, the subsequent processing is executed normally without another warning because a critical point warning message has already been output.
- No critical point warning occurs if the execution end point is specified for a unit job and the corresponding job network is in the "PREPARE" state.
- A critical point warning occurs if such a job is executed again.
- If Customized change-of-day time for Base Time is set to "OFF", a critical point warning occurs at the specified time on the next day. If it is set to "ON", a critical point warning occurs at the specified time on the current day.

For details, refer to "Critical Point Warning on the [Time Config] Tab" in in <Environment Guide>Section 6.5, "Changing System Environment Settings".

#### ■ Warning

When this item is set to "ON", the critical point warning function is enabled.

When this item is set to "OFF", the critical point warning function is disabled.

#### ■ Check Point

Select the check point from the following options (when the critical point warning function is enabled).

START	Generates a warning message when execution of a part does not start at a specified time.
END	Generates a warning message when execution of a part does not end at a specified time.
BOTH	Generates a warning message and takes a specified action when execution of a part does not start or end at a specified time.

#### ■ START

In this area, the following parameters specify the expected start time of the part and operation performed on the part when the part is not started before the time.

[Warning Time]

Absolute time	00:00 to 23:59
Relative time	+00:00 to +999:59

Specify the 24-hour system time (HH:MM) or relative time (+HH:MM) (time lapsed from the start of execution) for the test execution time.

When the unit job network critical point warning is set to relative time, the reference time will be the uppermost parent job network expected start time.

[Auto-action]

From the following items, specify the operation automatically performed on the part when a warning occurs.

NONE	Does not perform auto action even when a warning occurs.
SKIP	Skips the part when a warning occurs.
HOLD	Holds the part when a warning occurs.

#### ■ END

In this area, the following parameters specify the expected end time of the part and operation performed on the part when the part is not ended before the time.

[Warning Time]

Absolute time	00:00 to 23:59
Relative time	+00:00 to +999:59

Specify the 24-hour system time (HH:MM) or relative time (+HH:MM) (time lapsed from start of execution) for the test execution time.

When the unit job network critical point warning is set to relative time, the reference time will be the uppermost parent job network expected start time.

[Auto-action]

From the following items, specify the operation automatically performed on the part when a warning occurs.

NONE	Does not perform auto action even when a warning occurs.
FORCED STOP	Forcibly stops of the part when a warning occurs.
SKIP	Skips the part when a warning occurs.
HOLD	Holds the part when a warning occurs.



#### ■ Cautions when FORCED STOP is specified

- If the tracker is in the "PREPARE" state, a warning occurs on the sub job networks only until the scheduled start time is reached.
- After the scheduled start time has passed, a warning might occur if the job network is not executed due to exceeding the number of jobs that can be executed simultaneously, overload, or other causes.

If a warning occurs on a unit job, the unit job is indicated as "STOP(ERROR)" in the tracker flow, while the corresponding job network remains "PREPARE" in the [Tracker List] window.

If a warning occurs on a unit job of a sub job network, the state of the parent job network changes from "RUN[ERROR]" to "STOP(ERROR)."

- If a warning occurs while the tracker is in the "PREPARE[HOLD]" state, the unit job for which the warning occurred is indicated as "STOP(ERROR)" in the tracker flow, while the corresponding job network remains "PREPARED[HOLD]" in the [Tracker List] window.

If a warning occurs on a unit job of a sub job network, the state of the parent job network changes from "RUN[ERROR]" to "HOLD."

#### ■ Cautions when SKIP is specified

- If the tracker is in the "PREPARE" state, a warning occurs on the sub job networks only until the scheduled start time is reached. The unit job and the parent job network for which a warning occurs are indicated as "DONE."
- After the scheduled start time has passed, a warning might occur if the job network is not executed due to exceeding the number of jobs that can be executed simultaneously, overload, or other causes.

The unit job for which a warning occurs is indicated as "SKIP", while the corresponding job network is indicated as "DONE" in the [Tracker List] window.

If a warning occurs on a unit job of a sub job network, the state of the parent job network is also "DONE."

- If a warning occurs while the tracker is in the "PREPARE[HOLD]" state, the unit job for which the warning occurred is indicated with a "SKIP" mark in the tracker flow, while the corresponding job network remains "PREPARED[HOLD]" in the [Tracker List] window.

If a warning occurs on a unit job of a sub job network, the state of the parent job network changes to "HOLD."

#### ■ Cautions when HOLD is specified

- If the tracker is in the "PREPARE" state, a warning occurs on the sub job networks only until the scheduled start time is reached.

If a unit job is not executed, a warning occurs and the unit job is "held" on the tracker flow. At this time, the corresponding job network and the parent job network are indicated as "HOLD" in the [Tracker List] window.

- After the scheduled start time has passed, a warning might occur if the job network is not executed due to exceeding the number of jobs that can be executed simultaneously, overload, or other causes.

If a warning occurs on a unit job, the unit job is "held" in the tracker flow, while the corresponding job network remains "HOLD" in the [Tracker List] window.

If a warning occurs on a unit job of a sub job network, the state of the parent job network changes to "HOLD."

- If a warning occurs while the tracker is in the "PREPARE[HOLD]" state and the job network that contains a unit job is being "held", the unit job is also "held." (double hold)

If a warning occurs on a unit job, the unit job is "held" in the tracker flow, while the corresponding job network remains "PREPARE[HOLD]" in the [Tracker List] window.

If a warning occurs on a unit job of a sub job network, the state of the parent job network changes to "HOLD."

- If a warning occurs while the tracker is in the "PREPARE[HOLD]" state and a unit job is being "held", the unit job for which the warning occurred is "held" in the tracker flow, while the corresponding job network remains "PREPARED[HOLD]" in the [Tracker List] window.

If a warning occurs on a unit job of a sub job network, the state of the parent job network changes to "HOLD."

## 4.2.2.5. [MISC Parameters] tab

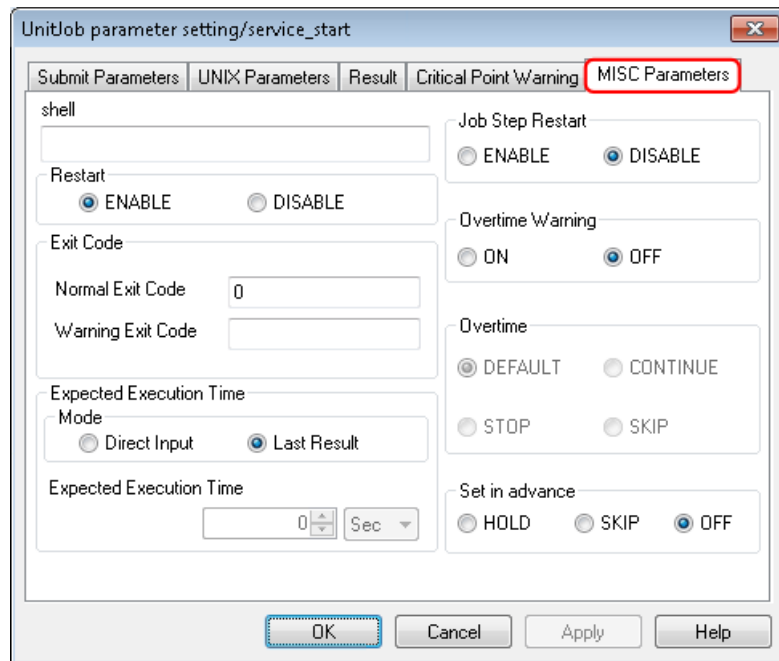


Figure 4.12. Screenshot of [UnitJob parameter setting] - [MISC Parameters]

## ■ shell

Specify the absolute path of the shell that executes the unit job script as the shell script.

(This setting is valid for UNIX only. The Windows version runs independently of this parameter because it is designed to start cmd.exe.)

Specify the absolute path of a shell installed in the OS, such as /bin/sh, /bin/csh, /bin/bash, or /bin/tcsh.

If this text box is left blank, the shell is automatically selected according to the setting of NQS shell strategy.



Do not specify a user-defined shell script or command. JobCenter tries to execute the specified shell without checking whether it is based on the OS, but such usage is not guaranteed.

## ■ Restart

This control specifies whether to automatically re-execute the job when the system is restarted.

It must be guaranteed by the executor through an appropriate programming technique that the job is executed normally when the system is restarted.

The job reruns when "ENABLE" is selected. When "DISABLE" is selected, the job does not rerun.



When the job is executed again, the following message appears in the [Stdout] tab of the part executed again.

```
%NQS(WARN): Request restarted at <date_of_restart>.
```





There is a difference in what the [Stdout] tab shows between the JobCenter MG/SV platforms that run the job.

- In UNIX

The [Stdout] tab of the part shows the output results before re-execution.

- In Windows

If `trkappend=ON` is set for `NQSDAEMON_OPT` in the daemon configuration file, the [Stdout] tab of the part shows the output results before re-execution. If this is not set, the [Stdout] tab of the part does not show the output results before re-execution.

Check the details in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

### ■ Exit Code

This control specifies the ranges of the done, warning, and error exit codes. The result of job execution is determined according to the settings here. An exit code that matches neither the done exit code nor the warning exit code indicates an abnormal end. An exit code that matches both the ranges of done exit code and warning exit code is regarded as a warning or error exit code. The exit code can be specified in the range from 0 to 255.

Multiple values (separated with commas (,)) or a range (concatenated with a hyphen (-)) can be specified as the exit code. In the example below, 1, 3 or 5 through 10 exit codes are matched (including 5 and 10).

Example) 1, 3, 5-10

Normal Exit Code	Specifies the range of the done exit code.
Warning Exit Code	Specifies the range of the warning exit code.



If both of the done and warning exit codes are empty, an abnormal end is always shown.

### ■ Expected Execution Time

This control specifies the predicted value to execute the job. The time entered here is reflected in the Gantt mode (Gantt chart). This setting is used to calculate execution time of a job network.

[Mode]

Select one of the following ways.

Direct Input	Allows the user to directly specify the expected execution time for this job.
Last Result	Uses the last result of job execution that ended successfully as the expected execution time of the job.

[Expected Execution Time]

This parameter specifies the value of time when "Direct Input" is selected in "Mode" described above. A time and a unit are set. One of the following units can be selected. Values in parentheses indicate the allowable range.

Second	(0 to 31536000)
--------	-----------------

Minute	(0 to 525600)
Hour	(0 to 8760)
Day	(0 to 365)

#### ■ Job Step Restart (valid only in the UNIX version)

This control specifies whether to re-execute the job from the last check point passed in the script after the machine down. This control is valid only in the UNIX version.

Select "ENABLE" or "DISABLE" for the job step restart function.



To use the Job Step Restart function, choose the "Jnw Parameter" tab for "Parameter" for the job network and set "Behavior on failure" to "STOP."

#### ■ Overtime Warning

Specifies whether to display a warning message in the Unified Monitoring Services or Windows Event Log when the job does not complete after the expected end time.

The warning message is output when set to "ON."

The message is not output when set to "OFF", and the following operation when the Overtime is also not performed.

#### ■ Overtime

Specifies operation when the unit job does not complete when the expected end time has passed. In the case that Overtime Warning is "ON", this setting becomes valid. Select one of the following operations.

DEFAULT	Performs the operation defined in the user environment.
CONTINUE	Continues execution of the unit job.
STOP	Stops execution of the unit job.
SKIP	Skips execution of the unit job.

#### ■ Set in advance

Sets the job status to HOLD or SKIP in advance.

HOLD	The status of the job is set to HOLD when the job network is submitted.
SKIP	The status of the job is set to SKIP when the job network is submitted.
OFF	The status of the job is not set to HOLD or SKIP when the job network is submitted.



Cautions about differences between versions regarding "Set in advance"

- The setting of Hold in advance to "ON" in JobCenter R12.5 or earlier is equivalent to the setting of Set in advance to "HOLD."
- The setting of Hold in advance to "OFF" in JobCenter R12.5 or earlier is equivalent to the setting of Set in advance to "OFF."

## 4.2.3. Passing Information Between Unit Jobs

### 4.2.3.1. Passing parameters to a following job (variable export)

The variable export function enables you to pass an environment variable between arbitrary unit jobs on the flow or in any sub job network as long as they are in the same root job network.

It is required to output the value to pass to [Stdout] or [Stderr] for the unit job in a specific format so that JobCenter can see that the value should be passed. The value is set to the environment variables of all subsequent unit jobs.

1. Set the Variable export to "STDOUT" or "STDERR" on the [Result] tab of the [UnitJob parameter setting/job name] dialog box. If "STDOUT" is selected, the information on the [Stdout] tab for the unit job is referenced. If "STDERR" is selected, the information on the [Stderr] tab for the unit job is referenced.
2. Select and read the data output in the format below from [Stdout] (or [Stderr]) for the unit job.

```
EXPORTVAR
VAR1=VAL1
VAR2=VAL2
VAR3=
VAR4
VAR5:VAL5
EXPORTVAR
```

3. The lines in the format of "VAR=value" are interpreted as "specifying "value" to the environment variable VAR" and passed to subsequent unit jobs in the range from the first EXPORTVAR line to the next EXPORTVAR above.

In the above example, "VAL1" is set to the environment variable VAR1, "VAL2" is set to VAR2, and the NULL value is set to VAR3 in subsequent unit jobs. VAR4 is deleted in subsequent unit jobs. The VAR5:VAL5 line is not interpreted because the format is different.

4. If EXPORTVAR is output multiple times as in the example below, the lines between odd EXPORTVARs and even EXPORTVARs are interpreted.

```
EXPORTVAR
VAR1=VAL1
EXPORTVAR
VAR2=VAL2
EXPORTVAR
VAR3=VAL3
EXPORTVAR
```

In the above case, the VAR1 and VAR3 values are passed while VAR2 is ignored.

If there are odd number of EXPORTVARs, all the lines after the last EXPORTVAR are interpreted.

#### ■ Sample Usage (UNIX)

Set the Variable export to "STDOUT" on the [Result] tab with the JOB1 parameter so that the subsequent JOB2 references the value.

- Script of JOB1

```
.....
echo EXPORTVAR
echo VAR1=12345
```

```
echo VAR2=321
echo EXPORTVAR
```

- [Stdout] tab for JOB1

```
.....
EXPORTVAR
VAR1=12345
VAR2=321
EXPORTVAR
```

- Script of JOB2

```
env | grep VAR
```

- [Stdout] tab for JOB2

```
...
VAR1=12345
VAR2=321
...
```

#### ■ Sample Usage (Windows)

Set the Variable export to "STDOUT" on the [Result] tab with the JOB1 parameter so that the subsequent JOB2 references the value.

- Script of JOB1

```
.....
echo off
@echo EXPORTVAR
@echo VAR1=12345
@echo VAR2=321
@echo EXPORTVAR
```

- [Stdout] tab for JOB1

```
.....
EXPORTVAR
VAR1=12345
VAR2=321
EXPORTVAR
```

- Script of JOB2

```
echo %VAR1%
echo %VAR2%
```

- [Stdout] tab for JOB2

```
12345
321
```

#### 4.2.3.2. Parameters for Each Job

The information passing function enables the preceding job to set the values of the environment variables. In addition, the NSJNW\_PARAM environment variable can be set to a different value for each job. In this case, specify the value to pass in the "NSJNW\_PARAM (job identifier) =value" format.

To pass different values to different unit jobs, use multiple lines. The job identifier can be a unit job name or sub job network name, or both delimited with colon ( : ). If one of the identifiers matches a part of the job hierarchical path, it is recognized as the job parameter.

If more than one identifier matches, the last value in the EXPORTVAR output is used.

#### ■ Sample Usage (UNIX)

- [Stdout] tab for JOB1

```
EXPORTVAR
NSJNW_PARAM(JOB2)=123
NSJNW_PARAM(SUBJNW1)=67 89
NSJNW_PARAM(SUBJNW1:JOB2)="aa bb"
EXPORTVAR
```

- Value passed to the subsequent JOB2

```
NSJNW_PARAM=123
```

- Value passed to JOB1, JOB3, JOB4... in the subsequent SUBJNW1

```
NSJNW_PARAM=67 89
```

- Value only passed to JOB2 in the subsequent SUBJNW1

```
NSJNW_PARAM="aa bb"
```

#### 4.2.3.3. Notes on the variable export between unit jobs

- The precedent unit job for which EXPORTVAR is specified must have normally ended. Note that variables are not exported if it has abnormally ended.

- Specify the unit job script processing so that processing may not stop between EXPORTVARs. If an incomplete format is output to [Stdout] (or [Stderr]), the value is not correctly interpreted. As a result, an unexpected value may be passed or no value could be passed.

Exercise extra care if `trkappend=ON` is set to `NQSDAEMON_OPT` in `daemon.conf` (Refer to (2), "NQSDAEMON\_OPT" in in <Environment Guide>Section 5.2.1, "Common in Windows and UNIX").

- Because the output lines between EXPORTVARs finally recorded in [Stdout] (or [Stderr]) for the unit job are interpreted, the value can be directly included in the unit job script with the echo statement or the output from the user command or shell/batch script can be interpreted.

- Variables starting with LANG, HOME, LOGNAME, USER, TZ, ENVIRONMENTQSUB, and NSJNW cannot be used. However, NSJNW\_PARAM can be used.

- Values are not passed if [Stdout file] or [Stderr file] is changed to an arbitrary file. Properly specify "Variable export" for the unit job parameter to output the value to the output destination for which the output destination file is not specified (Refer to [Section 4.2.2.3](#), "[Result] tab").

- If the job networks have a parent-child relationship, the same variable name cannot be used in the same root job network range. If the same variable name is used, it will be overwritten by the value of a variable for which variable inheritance has been specified.

- An abnormal operation occurs if [Stdout file] or [Stderr file] contains a control code other than line feed or the Kanji code different from the user setting.

- While the variable specified in the precedent unit job is changed in a subsequent unit job, the variable is not restored by re-executing the tracker. That is, the subsequent unit jobs retain the changed value.

- Be sure to set echo off before the first echo EXPORTVAR line when exporting variables in Windows so that unnecessary command lines are not output to the output result (or error output result).
- EXPORTVAR can pass the environment variable name of up to 51 bytes.
- The maximum size of line acceptable as the output result of "variable name=value" is 1023 bytes.
- The number and total size of the environment variables is restricted in accordance with the OS environment.

For details, refer to in <Environment Guide>Chapter 14, 「Handling Environment Variables at Job Execution」 .

#### 4.2.4. Loading the User Profile When Executing the Unit Job

In the Windows version (R12.7 or earlier and R12.10 or later), the user profile is loaded by default when the unit job is executed. However, if the loading of the user profile fails, for example, because of file contention with the virus scan software or some other process, the start of the unit job execution is canceled and the batch queue is stopped.

Therefore, you can configure the setting not to load the user profile. For details about the setting, refer to in <Environment Guide>Section 12.3.3, "Specifying job execution settings".



If the user command that is executed from the unit job requires the loading of the user profile, changing this setting may affect the behavior of the command.

In that case, instead of changing this setting, some other setting must be made on the system side, such as one intended to make the virus scan software exclude profile data from the scan target.

#### 4.2.5. Writing an Execution Script of ERP Job

The smallest component that is executed as SAP ERP. For an ERP job, the job steps to be executed, execution host, user name under which the ERP job is executed, and other execution conditions are defined.

For details of ERP jobs, refer to <JobCenter Guide for using SAP function> (Japanese only).

1. Double-click the selected ERP job icon, or select [Script] from the shortcut menu which appears by right-clicking.
2. The window to write a script opens.

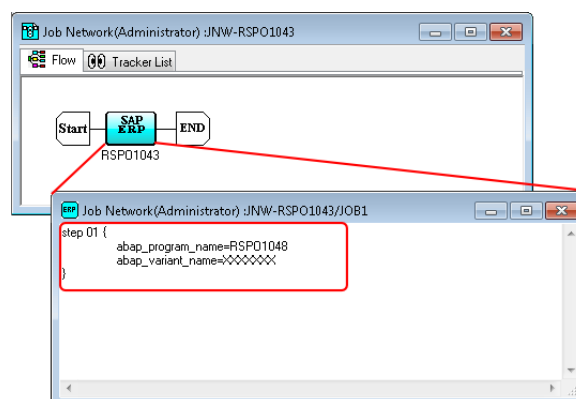


Figure 4.13. An example of a batch file of ERP job (Windows)

3. Input the script.

- After configuration, close the dedicated script editor to complete editing the script by selecting [File] in the menu bar, and then clicking [Close].



If you try to close the dedicated script editor without save, the following dialog box opens. Please make sure to save the script before close the window.

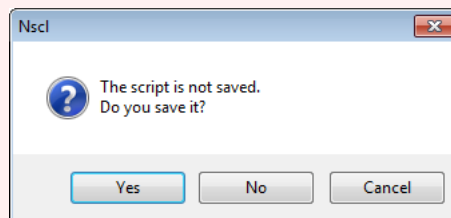


Figure 4.14. Screenshot when closing the dedicated script editor without save

#### 4.2.6. Setting Up Conditions (Parameters) for Executing an ERP Job

- Select [ERP Job Parameter] from the shortcut menu displayed by right-clicking a selected ERP job icon.
- The [ERP Job Parameter] dialog box opens.

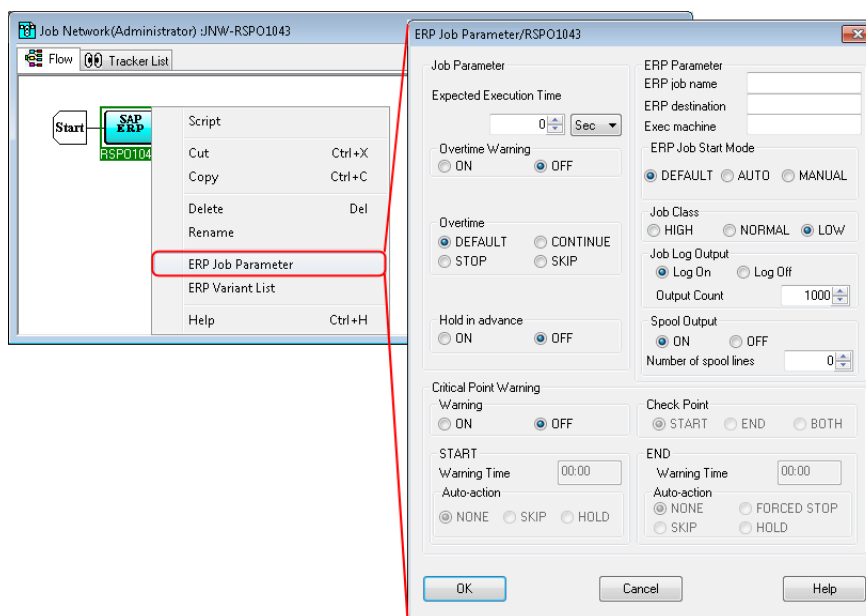


Figure 4.15. Screenshot of ERP Job Parameter dialog box

- After configuration, click [OK].

For details of setting items in the [ERP Job Parameter] dialog, refer to 1.5.1.4. "Setting parameters of SAP ERP job" in <JobCenter Guide for using SAP function> (Japanese only).

#### 4.2.7. Setting Execution Conditions (Parameters) of BI Job

The smallest component that is executed as SAP BI. For a BI job, the BI destination and logical info package variant ID.

For details of BI jobs and setting items in the [BI Job Parameter] dialog, refer to 2.2.1.2. "Parameter of SAP BI Job" in <JobCenter Guide for using SAP function> (Japanese only).

1. To set parameters for execution conditions, double-click the selected BI job icon, or select [Setting] from the shortcut menu which appears by right-clicking.
2. The [BI Job Parameter] dialog box opens.

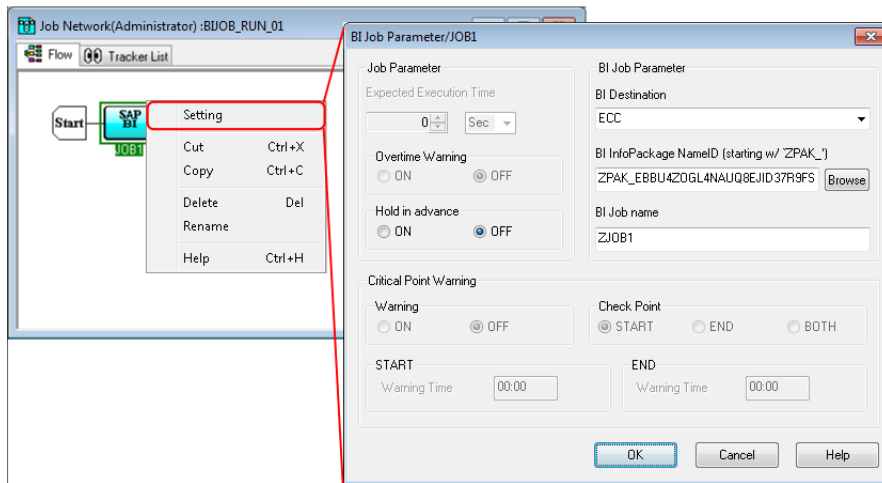


Figure 4.16. Screenshot of BI Job Parameter dialog box

3. After configuration, click [OK].

#### 4.2.8. Setting the Execution Conditions (Parameters) of PC Job

The PC job is the smallest component that is executed as SAP PC. Set the connection destination name and process chain name in the PC job.

For details on the PC job and setting items in [PC Job Parameter], refer to 2.3.1. (2), "Specifying the SAP PC job parameter" in <JobCenter Guide for using SAP function> (Japanese only).

1. To set parameters for execution conditions, double-click the selected PC job icon, or select [Parameter] from the shortcut menu which appears by right-clicking.
2. The [PC Job Parameter] dialog box opens.

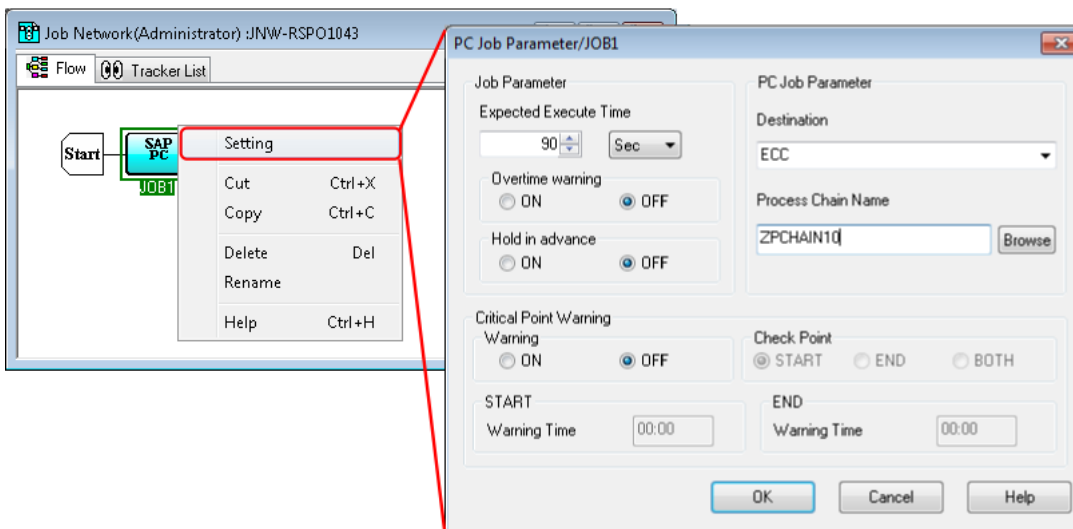


Figure 4.17. Screenshot of [PC Job Parameter] dialog box

3. After configuration, click [OK].



## 4.2.9. Allocating a Sub Job Network

Job networks can be defined hierarchically by placing an object executed as a job network in the different Job network flow. A sub job network can be positioned by two methods: by positioning a sub job network object, or by dragging and dropping a job network displayed on the [JNW List] tab to its position.

### ■ Positioning a sub job network object

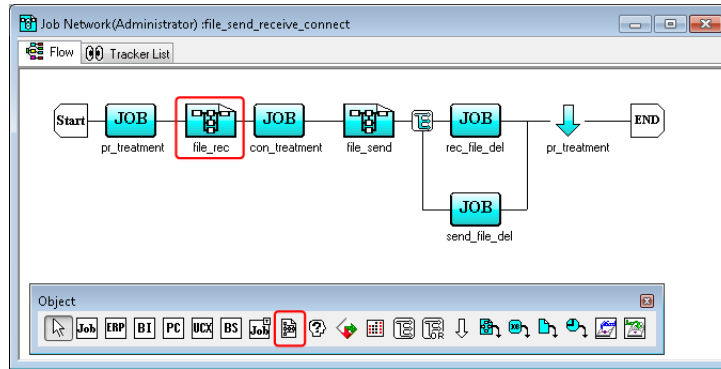


Figure 4.18. Screenshot that shows placing a sub job network

1. Place a sub job network object.
2. The [Create SubJNW] dialog box opens.
3. Select a job network name to be executed. There are two ways in the selection, one is selecting a job network from the existing job networks, and the other is creating a new job network.

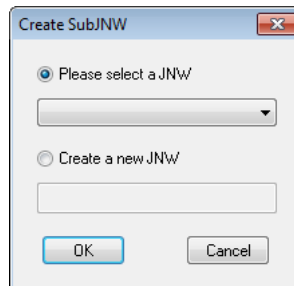


Figure 4.19. Screenshot of the job network selection dialog box

### ■ Selecting a job network from the existing job networks.

Choose [Please select a JNW], and click the [Browse] button. In the [Search string], specify the name of the job network to be executed and select a job network.



#### Notes on the search string

- A search is conducted for a job network that includes the specified character string.
- The specified character string is not case sensitive.
- A wildcard [\*] can be specified anywhere in the character string.

The selectable job networks are only those of the same machine and the same user. You cannot place more than one sub job network having the same name in the same job network.

■ Creating a new job network.

Choose [Create a new JNW], and enter the name of the new job network in the text box that you are going to create. The job network is created in the same machine and the same user. You cannot create more than one sub job network having the same name in the same job network.

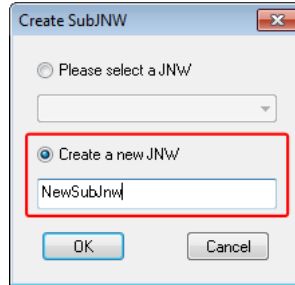


Figure 4.20. Screenshot of the job network selection dialog box

4. After configuration, click [OK].

5. The [Group Selection(user name)] dialog box opens.

6. Select the group to which you want the created job network to belong. You can also create a new group. To create a new group, click the [New Group] button.

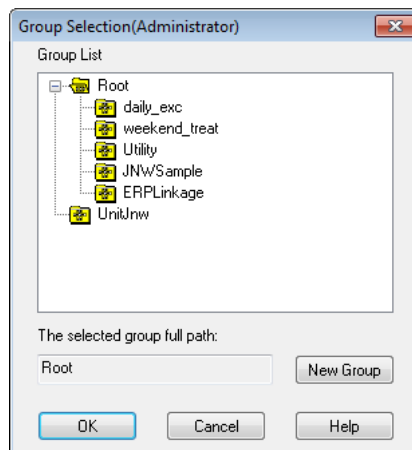


Figure 4.21. Screenshot of [Group Selection(user name)] dialog box

7. After configuration, click [OK].

■ Dragging and dropping a job network displayed on the JNW List tab to its position

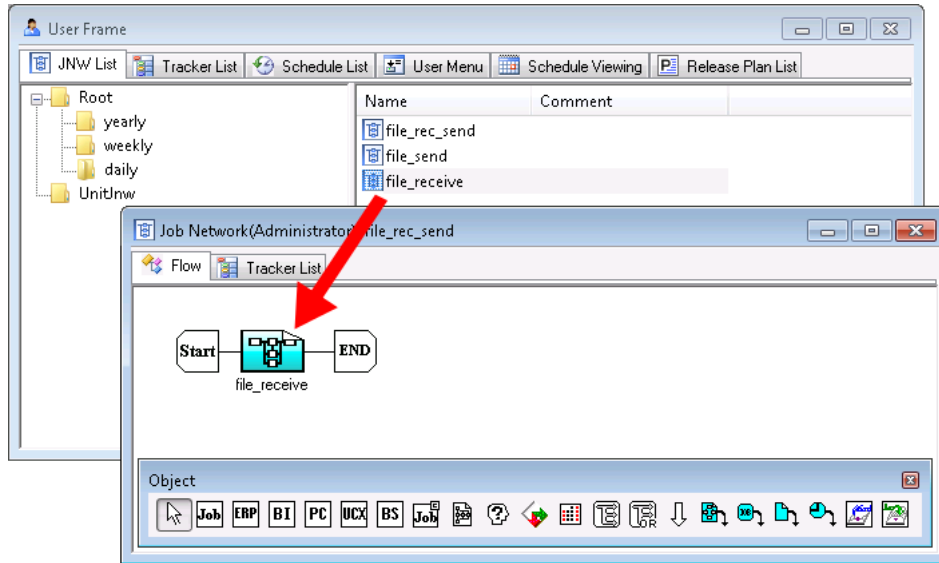


Figure 4.22. Dragging and dropping a sub job network to its position

1. Drag a job network displayed on the [JNW List] tab.
2. Drop the sub job network onto a desired location in the job network flow.



#### Cautions about the sub job network

When creating the sub job network for multi-level job networks, each job network name/sub job network name must meet all the following conditions.

However, if a condition below (such as the 80-byte restriction on the length of the character string including the level delimiters) is not satisfied as a result of any operation, such as changing the job network name, an error might not be detected during that operation. In this case, the error occurs when the job network is executed.

- For each sub job network, the following character string must be within 80 Bytes (40 two-byte characters, 80 one-byte characters) including level partition character ":" (one-byte character).

Uppermost position job network name:sub job network name:....:sub job network name

- Maximum levels must be within 10 levels.
- The concerned job network name, each sub job network name, and each part name must be within 40 bytes.
- The execution user name of the concerned job network must be within 15 bytes.
- The execution host name of the concerned job network must be within 60 bytes.
- The concerned job network name and each sub job network comment must be within 40 bytes.
- The concerned job network and each sub job network must satisfy the following conditions.
  - 190 [Byte] > (host name [Byte] + user name [Byte] x 2 + JNW level name [Byte])
- The relevant job network and each sub job network must satisfy the following conditions.

260 [Byte] > (host name [Byte] + user name [Byte] + JNW level name [Byte] + comment [Byte])

- All jobs under the concerned job network must satisfy the following conditions.

180 [Byte] > (host name [Byte] x 2 + user name [Byte] + JNW level name [Byte] + job name [Byte] + input destination host name [Byte])

- All dialog parts under the concerned job network must satisfy the following conditions.

200 [Byte] > (host name [Byte] + user name [Byte] + JNW level name [Byte] + parts name [Byte] + dialog message [Byte])

- All continue parts under the concerned job network must satisfy the following conditions.

200 [Byte] > (host name [Byte] + user name [Byte] + JNW level name [Byte] + parts name [Byte] + jump destination parts name [Byte])

- All Event Transmission/Reception parts under the concerned job network must satisfy the following conditions.

210 [Byte] > (host name [Byte] + user name [Byte] + JNW level name [Byte] + parts name [Byte] + send/receive destination host name [Byte] + event ID [Byte] + event message [Byte])

- All Event Transmission/Reception parts under the concerned job network must satisfy the following conditions.

85 [Byte] > JNW level name [Byte] + parts name [Byte]

#### 4.2.10. Browsing a Sub Job Network

1. Double-click the selected sub job network icon, or select [Open] from the shortcut menu which appears by right-clicking.
2. The flow of the sub job network opens.

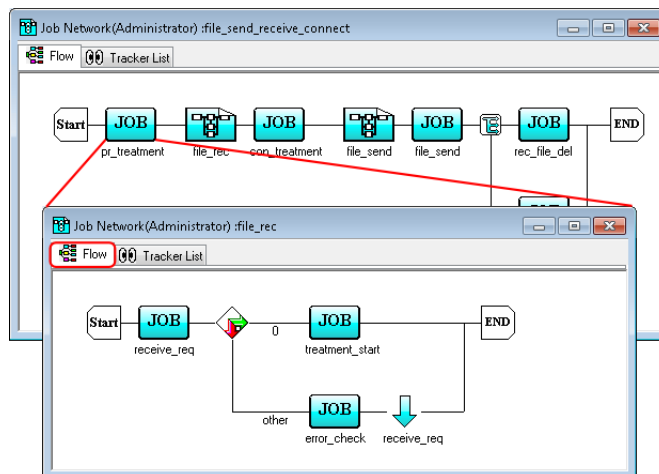


Figure 4.23. Screenshot when referring to the sub job network

## 4.3. Branch Part

A flow of a job network can be branched by utilizing parts such as Parallel Branch, Condition Branch, Calendar Branch, and Continuity.

### 4.3.1. Adding/Deleting a Flow of Parallel

A parallel branch part is an object that executes multiple-job or sub job networks in parallel.

By default, two flows are prepared in advance.

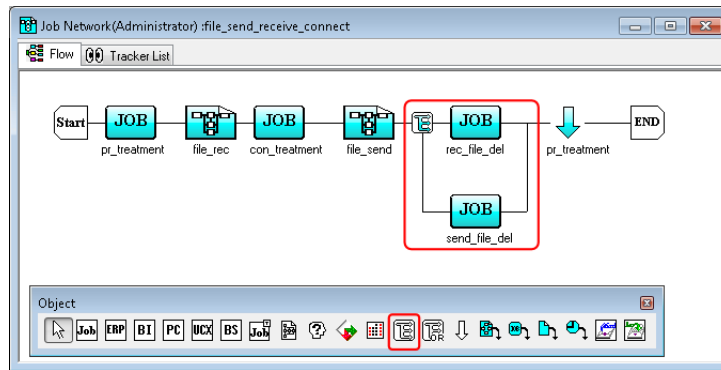


Figure 4.24. Screenshot of the window for parallel branch object placement

Parallel branch flows can be added and deleted. It is also possible to delete all the parallel branch flows of a specific parallel branch part.

#### 4.3.1.1. Adding a flow of Parallel

1. Point the cursor to a Parallel branch icon, and select [Add Flow] from the shortcut menu which appears by right-clicking.

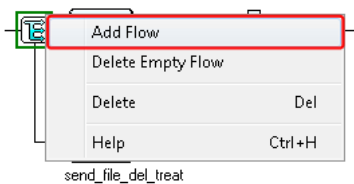


Figure 4.25. Adding a parallel branch flow

2. A parallel branch flow is added.

#### 4.3.1.2. Deleting a flow of Parallel

1. This procedure deletes all the objects on the flow you delete.
2. Point the cursor to a Parallel branch icon, and select [Delete Empty Flow] from the shortcut menu which appears by right-clicking.

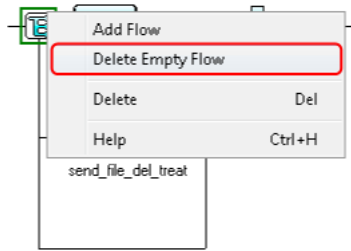


Figure 4.26. Deleting a parallel branch flow

3. The parallel branch flow is deleted.

#### 4.3.1.3. Delete a Parallel object

1. Point the cursor to a Parallel branch icon, and select [Delete] from the shortcut menu which appears by right-clicking.

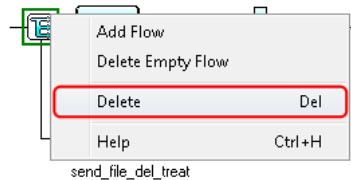


Figure 4.27. Deleting a parallel branch part

2. The parallel branch part is deleted.



- All the objects on the parallel branch flow are deleted.

- The unit jobs allocated in parallel are executed in an undefined order. The branch flow is analyzed sequentially from the top to the bottom. However, if a unit job is actually submitted to a queue, it is internally passed to another process, so the unit jobs might be executed in another order.

Use Job Waiting parts to execute unit jobs in a fixed order.

- Unit jobs and sub job networks in a parallel flow are processed as one group.

Therefore, if an error occurs on a part of a parallel branch flow, the result of all the parallel processing is regarded as an error regardless of the execution order.

#### 4.3.2. Adding/Deleting a Flow of Condition Branch

A condition branch part is an object intended to change the subsequent flow of a job network by using an exit code of a unit job or sub job network.

Condition branch flows can be added and deleted. It is also possible to delete all the condition branch flows of a specific condition branch part.

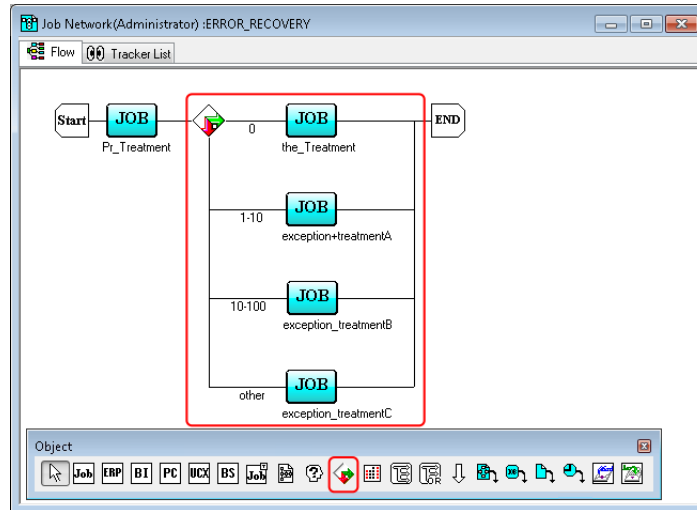


Figure 4.28. Screenshot of the condition branch placement window

#### 4.3.2.1. Adding a flow of Condition Branch

1. Point the cursor to a Condition Branch icon, and select [Add Flow] from the shortcut menu which appears by right-clicking.

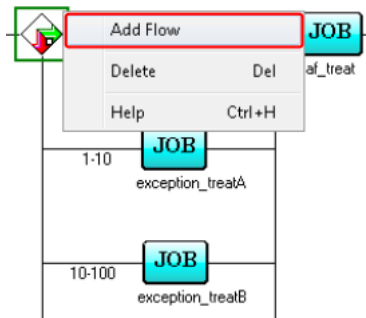


Figure 4.29. Adding a condition branch flow

2. A flow is added.

#### 4.3.2.2. Deleting a flow of Condition Branch

1. Point the cursor to the number under the flow line, and select [Delete] from the shortcut menu which appears by right-clicking. The numbers below the flow indicate the range of exit codes. Refer to [Section 4.3.3, "Setting Branch Conditions of a Condition Branch"](#).

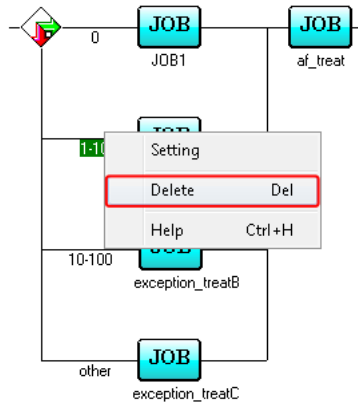


Figure 4.30. Deleting a condition branch flow

2. The selected flow is deleted.



Note that the objects on the selected flow are also deleted.

#### 4.3.2.3. Deleting a Condition Branch

1. Point the cursor to a Condition Branch icon, and select [Delete] from the shortcut menu which appears by right-clicking.

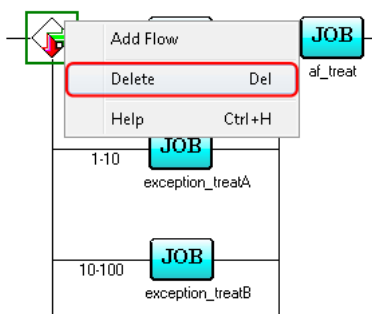


Figure 4.31. Deleting a condition branch part

2. The condition branch part is deleted.



All the objects on the condition branch flow are deleted.

#### 4.3.3. Setting Branch Conditions of a Condition Branch

With a condition branch part, you can break a flow into multiple flows and set an exit code range for each of those flows. By default, exit code 0 and "other" are prepared in advance.

1. Double-click the selected numerical number under the flow line, or select [Setting] from the shortcut menu which appears by right-clicking.

2. The [Condition setting] dialog box appears.



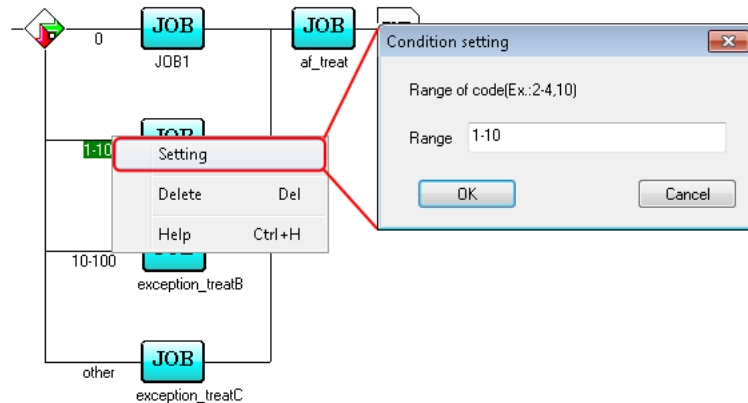


Figure 4.32. Screenshot of the branch condition setting dialog box

3. Enter the range of the condition branch. The range is specifying with a single number or two numbers connected with a hyphen. Several ranges can be specified by delimiting them.
4. After configuration, click [OK].



Cautions about the setting of branch conditions of a condition branch

- Flows of a condition branch may have overlapping conditions.

(Ex.) Flow A range: 1-20; Flow B range: 10 to 25

In this case, the highest flow that matches the condition is used.

- For the exit code of a sub job network, the exit code of the last unit job in the sub job network is used. The end code of parallel parts is the maximum value of the end code of the last part in all paths.
- If a unit job or sub job network immediately before a condition branch is skipped in advance or during execution, it is judged to be "other".

#### 4.3.4. Setting a Schedule of a Calendar Branch

A calendar branch is a part that executes a flow according to a schedule. The flow proceeds to the right when the calendar condition is met. Otherwise, the flow goes downward. Whether a calendar condition is met is judged by whether the planned date for starting the job network is set as the execution date in the calendar.

The operation reference time of this part changes according to the correction time. For details, refer to in <Environment Guide>Section 6.5, "Changing System Environment Settings".



The calendar branch schedule needs to be created in advance. For information about how to create a schedule, refer to [Chapter 6, 「Schedule Operation Method」](#).

1. Place a Calendar Branch object.
2. The [Schedule] dialog box opens. (After allocation of the object, Double-click the [Calendar Branch] icon, or select [Open] from the shortcut menu which appears by right-clicking. The [Schedule] dialog box opens.)

3. Select the calendar branch schedule created in advance.

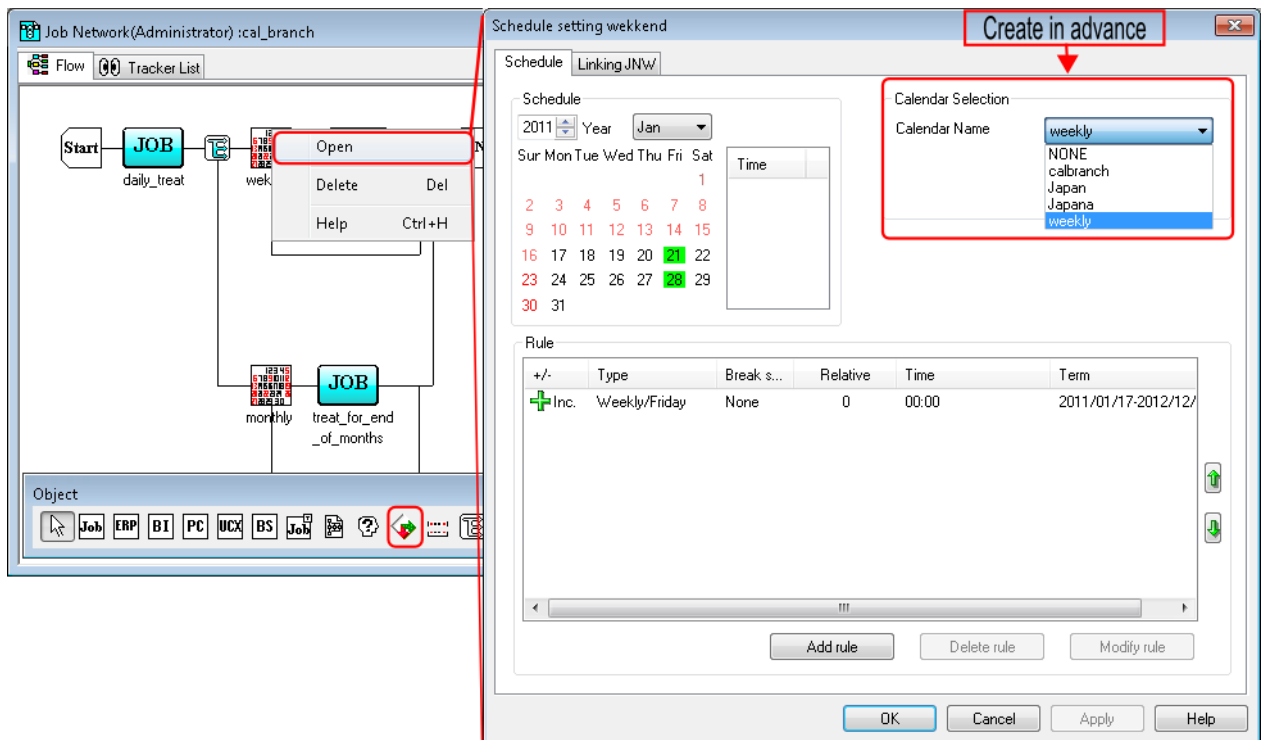


Figure 4.33. Screenshot of the schedule setting window

4. After configuration, click [OK].



- If a job network is saved with a schedule (other than NONE) selected for the "Schedule selection" parameter and the schedule is deleted later, executing the job network results in successful submission and the state becomes "PREPARE." In this case, an error is recorded in the tracker log.
- The calendar branch itself does not have a function to branch according to where the month is odd or even. To use this condition, create and select a schedule setting "Daily" to [Type] and "Jan 01 to Jan 31, Mar 1 to March 31 ... Nov 1 to Nov 30" to [Term].

#### 4.3.5. Setting to repeat processing in a flow

This part causes a jump to a specified unit job, dialog box, custom job, ERP job, BI job, PC job, or WOBS job, and re-executes the subsequent processing of that job. Normally, it is set on the abnormal end flow of a condition branch and used to re-execute processing if a unit job ends abnormally.

1. Place a Continuity part.
2. The [Continuity setting] dialog box opens. (After allocation of the Continuity part, double-click the Continuity part, or select [Setting] from the shortcut menu which appears by right-clicking. The [Continuity setting] dialog box opens.)
3. Configure the Continuity part.

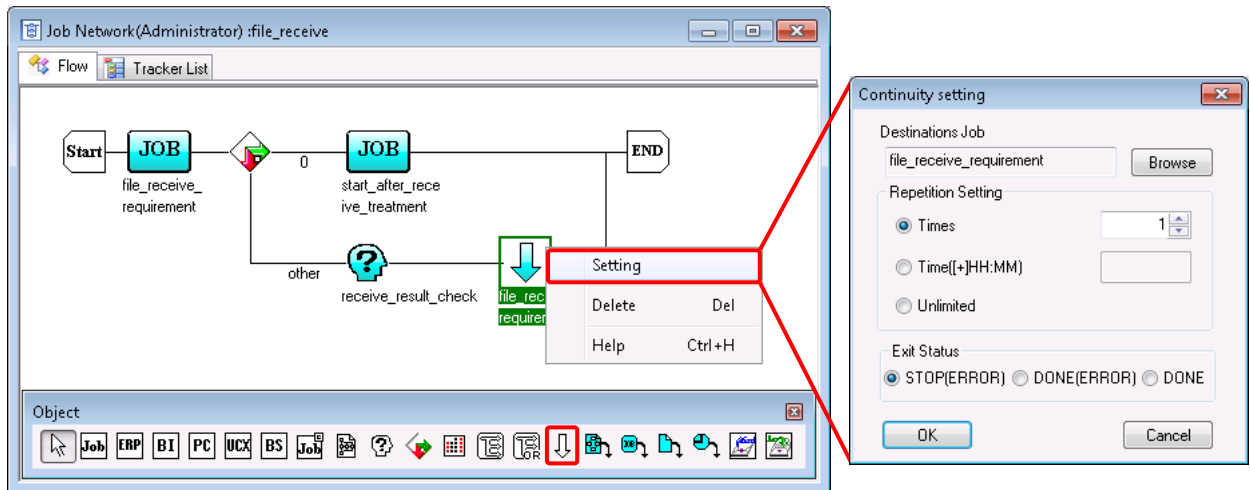


Figure 4.34. Screenshot of the continuity part setting window

4. After configuration, click [OK].



Figure 4.34, “Screenshot of the continuity part setting window” shows how a continuity part can be combined with a condition branch part to achieve retry processing.

Configuration Items in the [Continuity setting] dialog box are as follows:

#### ■ Jump destination part

Specify the jump destination part on the job network flow.

As the jump destination part, the unit job, dialog, custom job, ERP job, BI job, PC job, or WOBS job can be selected.

A search can be conducted for the jump destination part by using the part name as the key.



#### Notes on the search string

- A search is conducted for a part that includes the specified character string.
- The specified character string is not case sensitive.
- A wildcard [\*] can be specified anywhere in the character string.

#### Notes on the jump destination part

- It is not possible to reach a part spanning parallel part flows or a part following the continuity part. Specifying a jump destination unreachable with the continuity part displays an error dialog when saving the flow. In this case, change it to a reachable jump destination, and then save it again.

Note that, if the jump destination is specified anywhere outside the parallel part, those parts being executed on other flows are skipped when the jump occurs.

#### ■ Repeat Setting

- Times

Repeat up to the specified count. The upper limit of repeat count is 99999.

- Time([+]HH:MM)

Repeat until the specified time. The specifiable range is as follows:

- Absolute time: 00:00 to 35:59
- Relative time: +000:00 to +999:59



For the relative time, the reference time is the job network start time.

- Unlimited

Repeat infinitely.

If the repeat count exceeds the upper limit 99999, it is reset to 1.

- Exit Status

Select [STOP(ERROR)], [DONE(ERROR)], or [DONE].

If the repeat count is exceeded, the continuity part enters the status set to [Exit Status].

If "Unlimited" is specified for the repeat count, this item does not need to be set.

## 4.3.6. Specifying an OR Branch

### 4.3.6.1. Specifying an OR Branch

An OR Branch part is an object that executes the subsequent parts if one of multiple branch flows finishes.

By default, two flows are prepared in advance.

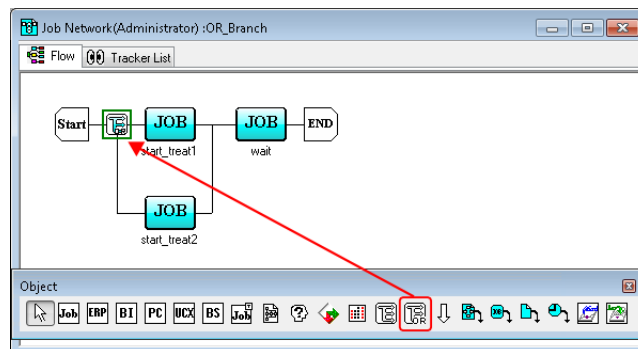


Figure 4.35. Positioning an OR Branch object

OR Branch flows can be added and deleted. It is also possible to delete all the OR Branch flows for a specific OR Branch part.

OR Branch parts are set up in the same way as Parallel Branch parts.

For details about the setup procedure, refer to [Section 4.3.1, "Adding/Deleting a Flow of Parallel"](#).

### 4.3.6.2. OR Branch operation

The subsequent parts are executed if one of multiple OR Branch flows finishes.

The end of the OR Branch flow is determined based on whether the last part in the flow finishes.

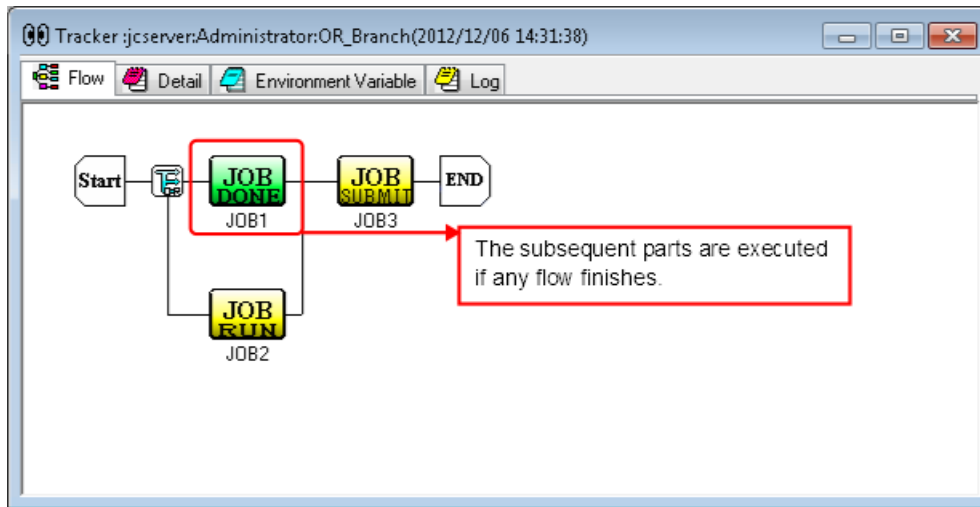


Figure 4.36. OR Branch example

If the last part has a parent-child relationship, the end of the flow is determined depending on the status of the last part as shown below.

Type of Last Part	End of Flow Is Determined Based on:
Sub Job Network	Status of the sub job network (The flow also finishes if the sub job network is "waiting for the end.")
Condition Branch	Status of the last part in the selected branch flow
Calendar Branch	Status of the last part in the selected branch flow
Parallel Branch	Status of the last part in all the branch flows
OR Branch	Status of the last part in the branch flow that finished

If an OR Branch part is followed by a Condition Branch part, the end of the flow is determined based on the status of the last part in the branch that finishes first.



#### Caution

- For an OR branch, even if [Stop automatically when an error occurs] is specified for the job network parameter, if the unit job executing on one of the flows stops due to an error but the part on the flow of the other branch ends normally, the part that follows the OR branch is executed. This is because an OR branch judges whether the part executing on the flow has finished, but not the end status. To execute subsequent parts only after all the parts on the flow have ended normally, use a parallel branch instead of an OR branch, and change the setting of the job network parameter from [Stop automatically when an error occurs] to [Stop].
- A branch flow that contains no parts is processed as if it does not exist. Therefore, even if an OR Branch that has a branch flow containing no parts is executed, the subsequent parts execution does not start immediately. However, if no branch flows in an OR Branch have parts, the OR Branch finishes and the subsequent parts are executed immediately.

#### 4.3.6.3. Waiting for the end of each branch flow

Even if one OR Branch flow finishes, the parts in other branch flows are continuously executed. If any branch flow in an OR Branch part is still being executed when all subsequent parts following the

OR Branch part have finished, the entire job network does not finish until all branch flows have been processed.

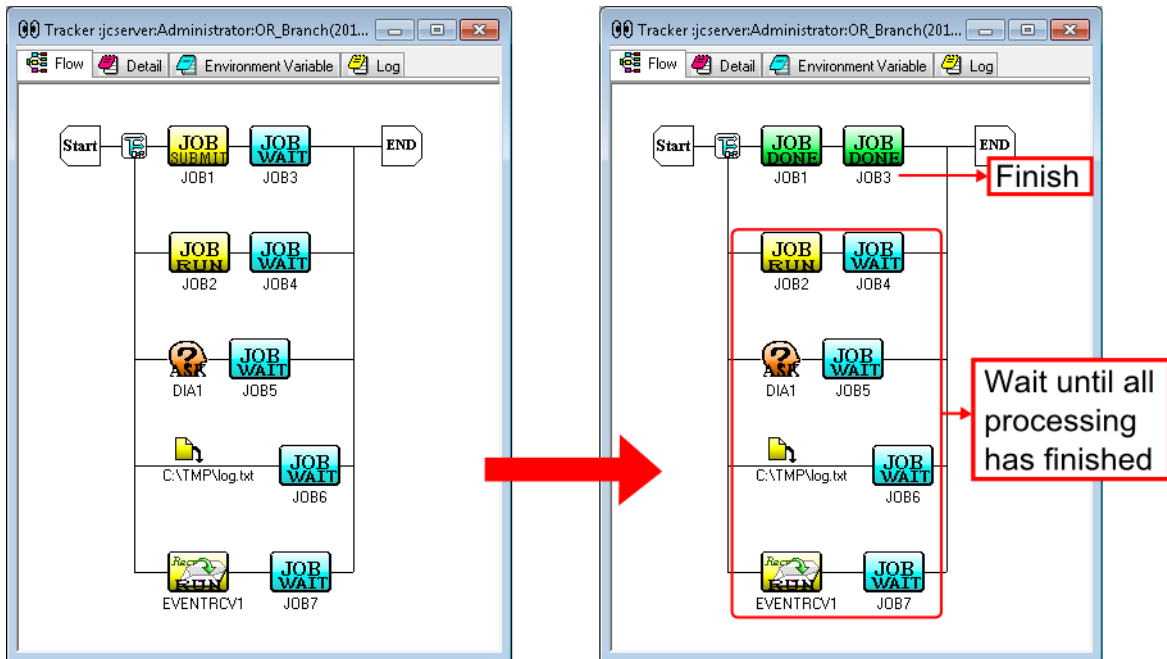


Figure 4.37. Operation example when one OR Branch flow has finished

#### 4.3.6.4. Status of tracker that includes OR Branch

The status of a tracker that includes OR Branch flows is changed as follows, depending on the status of the branch flows.

##### ■ Status display when no OR Branch flow has finished

The status is displayed according to the default priority order of the display.

For details about this order, refer to [Section 8.1.2, "Displaying Job Network Trackers in Parent-child Relationship"](#).

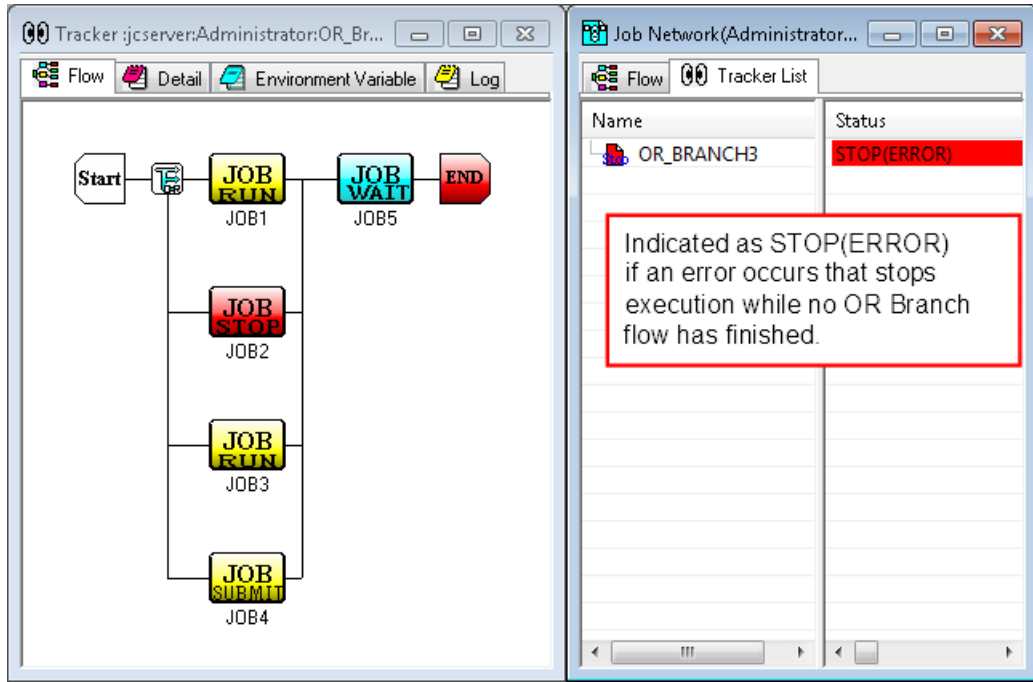


Figure 4.38. Tracker status display example when no OR Branch flow has finished

■ Status display when one OR Branch flow has finished

The job network tracker status is determined based on the status of the parts in the finished OR Branch flow only.

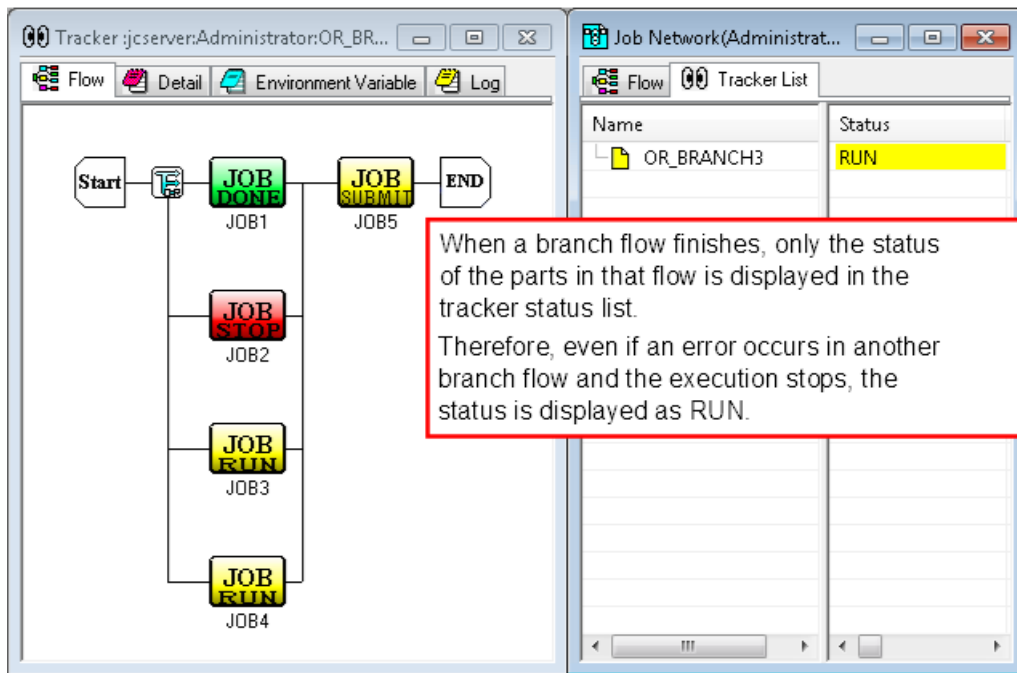


Figure 4.39. Tracker status display example when one OR Branch flow has finished

■ Status display when multiple OR Branch flows have finished

If multiple OR Branch flows have finished, one of their statuses is displayed in the tracker status list according to the priority order of the display.

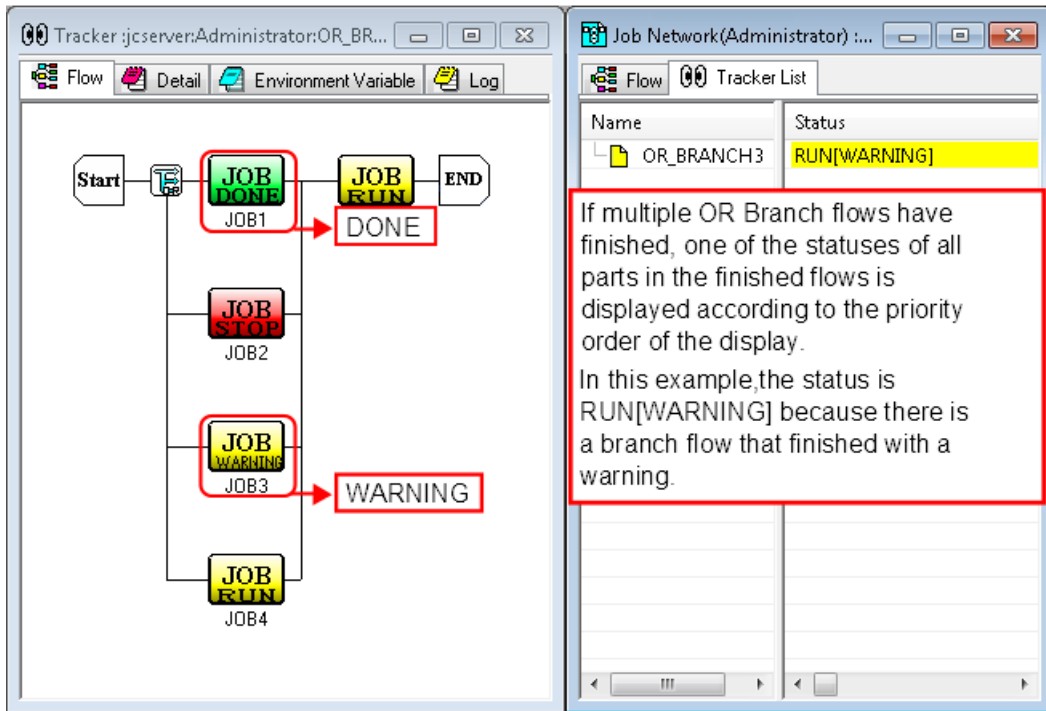


Figure 4.40. Tracker status display example when multiple OR Branch flows have finished

■ Status display when the job network including an OR Branch has finished

If an unfinished OR Branch flow includes the unit job currently executed, "RUN[HOLD]" status is displayed in the tracker list. Similarly, the status is "RUN[HOLD]" if a sub job network under execution exists in an unfinished OR Branch flow. The status of the parent job network reflects the "RUN[HOLD]" status of a sub job network.

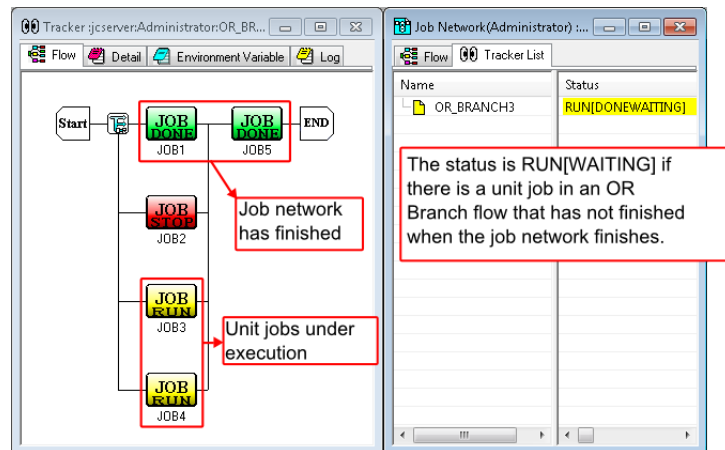


Figure 4.41. Tracker status display example if a unit job is being executed when the job network finishes

Figure 4.41, "Tracker status display example if a unit job is being executed when the job network finishes" shows that [DONE] is displayed in the tracker list when the unit job currently executed in the OR Branch finishes.



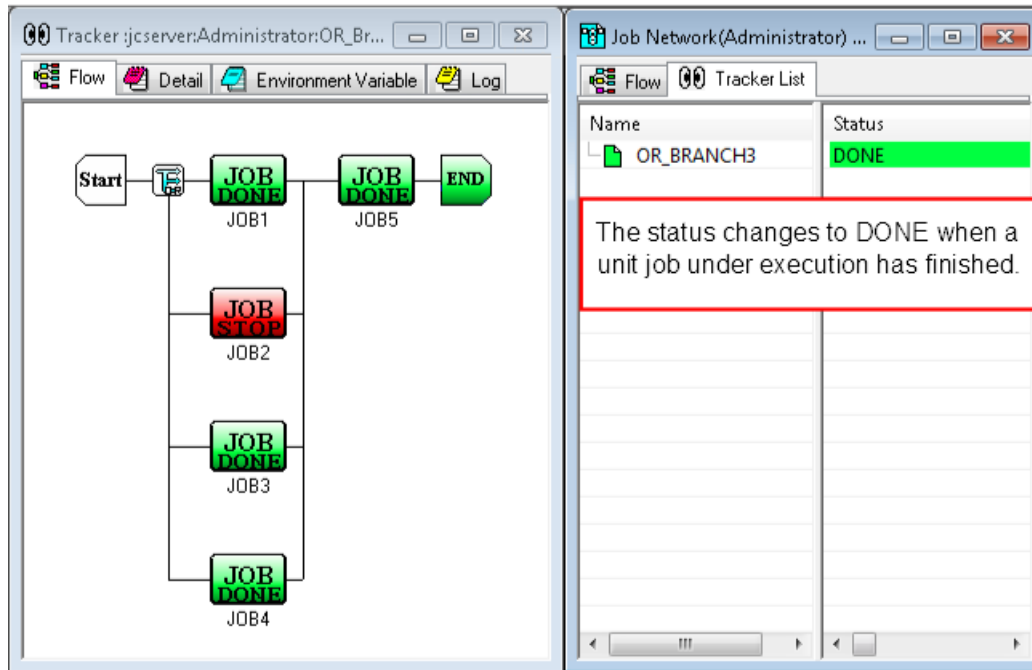


Figure 4.42. Tracker status display example when all unit jobs have finished

Archive processing is performed after the archive waiting time passes for the tracker for which "DONE" is displayed in the tracker list. Although the status of unit job is STOP(ERROR) in the above example, the same operation applies to other parts.



- After the tracker is archived, the unit job in the STOP(ERROR) status included in the OR branch cannot be skipped, re-executed or otherwise operated.
- If the job network including an OR branch has finished, the job network itself is regarded as finished even though the status of a unit job in the OR branch is the STOP(ERROR) status. Therefore, this is not counted in [Simultaneous Executions].

## 4.4. Waiting Part

An execution in a flow of the job network can wait for another action or process by utilizing Dialog, Job Waiting, JNW Waiting, File Waiting, or Time Waiting.

### 4.4.1. Setting a Dialog

A Dialog is the part to wait for a response from the user. Until the user respond, the following processes remain in the WAIT status.

1. Place a Dialog icon.
2. Select the placed Dialog icon and then double-click it. Alternatively, select [Setting] from the shortcut menu which appears by right-clicking.
3. The [Dialog setting] dialog box opens.
4. Configure the Dialog.

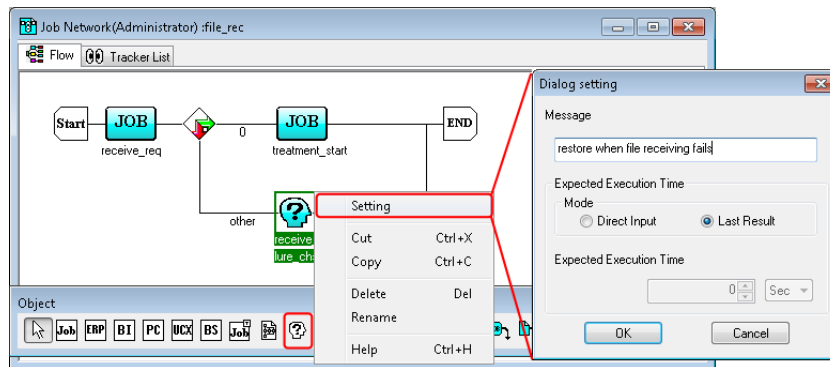


Figure 4.43. Screenshots of Dialog setting

5. After configuration, click [OK].

For the way of response from a user, refer to [Section 8.19, "Responding to a Dialog \(Deciding a completion status\)"](#).

Configuration Items in the [Dialog setting] dialog box are as follows:

#### ■ Message

Specifies a message for inquiring the user.

The text input field accepts the characters, that are not over 256 single-byte characters or 128 double-byte characters, written in alphanumeric, digits, Japanese characters, or double-byte Kana characters (can be mixed).

#### ■ Expected Execution Time

This control specifies the predicted value to execute the job. The predicted value is reflected in the Gantt mode (Gantt chart). This setting is used to calculate the job network execution time.

Select one of the following ways to calculate the Expected Execution Time.

Direct Input	Allows the user to directly specify the expected execution time for this job.
Last Result	Uses the last result of job execution that ended successfully as the expected execution time of the job.

The expected execution time is set by user when [Direct Input] is selected.

A time and a unit are set. One of the following units can be selected. Values in parentheses indicate the allowable range.

Second	(0 to 31536000)
Minute	(0 to 525600)
Hour	(0 to 8760)
Day	(0 to 365)

#### 4.4.2. Setting a Job Waiting

This object waits for a specified unit job to end. It is used to set a complex order. It is also used to insert another unit job between a unit job and a condition branch.

This part can wait for a job that belongs to the same job network, as well as for a unit job of a job network other than the job network or sub job network to which the Job Waiting part belongs or a unit job of another user's job network. SAP ERP jobs and SAP PC jobs can also be specified. (SAP BI jobs cannot be specified.)



Even if the specification is invalid, no particular warning is output when the setting is saved. In this case, the flow proceeds to the next processing without waiting.

##### 4.4.2.1. Waiting for a unit job that belongs to the same job network

1. Place a Job Waiting object.
2. The [Job Waiting setting] dialog box opens. (After allocation of the object, double-click the Job Waiting icon, or select [Setting] from the shortcut menu which appears by right-clicking. The [Job Waiting setting] dialog box opens.)
3. Configure the Job Waiting by the following instructions.

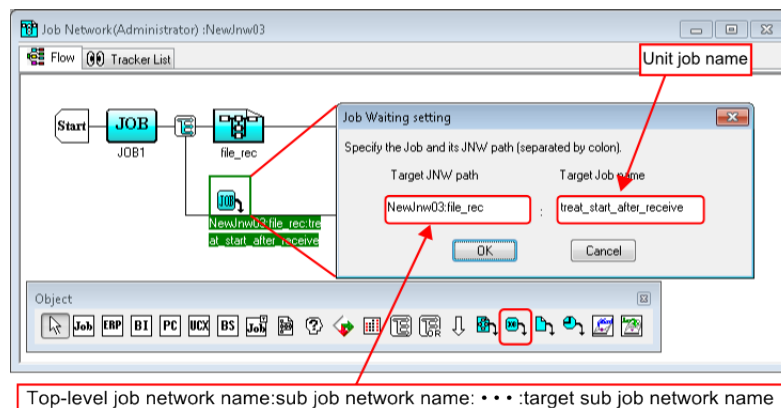


Figure 4.44. Screenshots of Job Waiting setting

4. The right box specifies the name of the unit job to be waited.
5. The left box specifies the name of the job network to which the unit job belongs. Enter the path in [Top-level job network name(to which the target job network belongs):Sub job network name:...:Target Sub job network name] format. If no job network name is specified, the job network in which the Job Waiting part was defined becomes the target of this object.

6. After configuration, click [OK].

#### 4.4.2.2. Waiting for a unit job of a job network other than the job network or sub job network to which the Job Waiting part belongs or a unit job of another user's job network

In <4> of 1, enter the job network name in the left box in the Job Waiting setting dialog box in the [[:User name:top-level job network name:...:lowest-level sub job network name]] format.

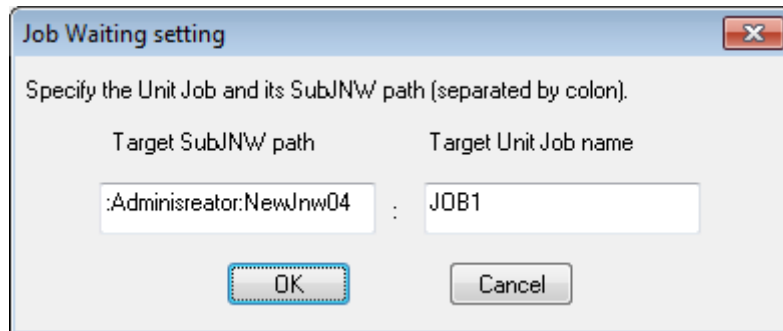


Figure 4.45. Job Waiting setting example for a job network other than the one to which the Job Waiting part belongs



#### Cautions when waiting for a unit job that belongs to another job network

- A tracker that satisfies all the following conditions is subject to waiting.
  - A tracker whose status is PREPARE, RUN, DONE, or DONE[ERROR].
  - A tracker that has not been archived.
  - The tracker that was submitted most recently before the tracker to which the Job Waiting part belongs was submitted.
- When the Job Waiting part is waiting for a unit job in another tracker, if multiple trackers that have the same name as the target are found, the Job Waiting part waits for a unit job in the tracker that was submitted most recently before the tracker to which the Job Waiting part belongs was submitted.
- When the Job Waiting part is waiting for a unit job in another tracker, if no target tracker is found, the Job Waiting part stops waiting and finishes normally, and then the next part on the flow is executed. At this time, the result can be detected using a Condition Branch because the returned exit code is 1.

#### 4.4.3. Setting a Job Network Waiting (JNW Waiting)

This object waits for a specified job network to end. It is used to set a complex order.

The object can wait for a sub job network that belongs to the same job network, another sub job network in a sub job network, a job network that does not exist in the job network to which the JNW Waiting part belongs, or another user's job network.



If the specification is invalid, the flow proceeds to the next processing without waiting.

#### 4.4.3.1. Waiting for a sub job network that belongs to the same job network or another sub job network in a sub job network

1. Place a JNW Waiting.
2. The [JNW Waiting setting] dialog box opens. (After allocation of the object, double-click the JNW Waiting icon, or select [Setting] from the shortcut menu which appears by right-clicking. The [JNW Waiting setting] dialog box opens.)
3. Configure the JNW Waiting.

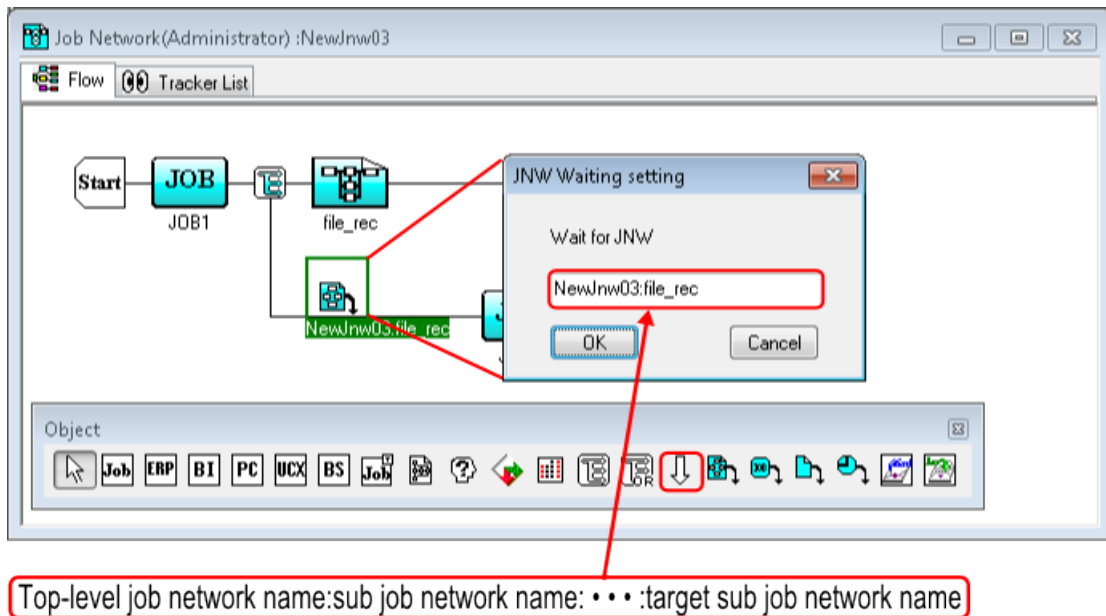


Figure 4.46. Screenshots of JNW Waiting setting

4. The box specifies the name of the job network to be waited. Enter the path in [Top-level job network name(to which the target job network belongs):Sub job network name:....:Target Sub job network name] format.
5. After configuration, click [OK].

#### 4.4.3.2. Waiting for a job network that does not exist in the job network to which the JNW Waiting part belongs or another user's job network

At <4> of 1, in the [JNW Waiting setting] dialog box, enter in [:User name:Top-level job network name:....:Target Sub job network name] format.



##### Cautions when waiting for another job network

- A tracker that satisfies all the following conditions is subject to waiting.
  - A tracker whose status is PREPARE, RUN, DONE, or DONE[ERROR].
  - A tracker that has not been archived.
  - The tracker that was submitted most recently before the tracker to which the Job Waiting part belongs was submitted.

- If multiple trackers that have the same name as the target are found, the Sub Job Network Waiting part waits for a job network in the tracker that was submitted most recently before the tracker to which the Sub Job Network Waiting part belongs was submitted.
- If no target tracker is found, the Sub Job Network Waiting part stops waiting and finishes normally, and then the next part on the flow is executed. At this time, the result can be detected using a Condition Branch because the returned exit code is 1.

#### 4.4.4. Setting a File Waiting

This part waits for a specified file to exist, not to exist, or to be updated. If the specified file does not pass the condition, it checks the file state at regular intervals.

The operation reference time of this part changes according to the correction time. For details, refer to in <Environment Guide>Section 6.5, "Changing System Environment Settings".



The interval for checking local files on the machine running the MG/SV in which the job network definitions are specified is 5 seconds. This value cannot be changed.

The interval for checking files on another JobCenter server can be changed by specifying daemon.conf (to be described later).

1. Place a File Waiting part.
2. The [File Waiting setting] dialog box opens. (After allocating the File Waiting part, double-click the File Waiting part, or select [Setting] from the shortcut menu that appears by right-clicking the part. The [File Waiting setting] dialog box opens.)
3. Configure the File Waiting part.

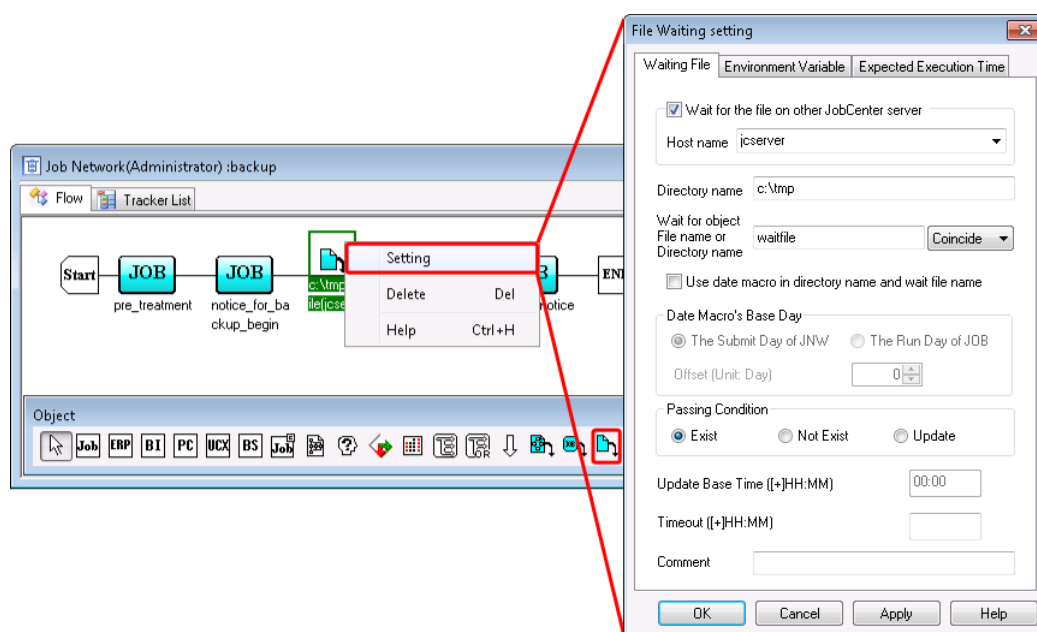


Figure 4.47. Screenshot of File Waiting part setting

4. After configuration, click [OK].

The configuration items on the [Waiting File] tab are as follows:

### ■ Wait for the file on other JobCenter server

Select the check box to wait for a file on a remote machine. The [Host name] text box becomes available when this check box is selected. Enter the host name of a remote machine that is recognized using a machine icon in the Manager Frame window.

If this check box is cleared, the File Waiting object waits for a file on the machine that executed the job network.



- The following conditions must be satisfied when waiting for a file on another JobCenter server.
  - A remote machine name that can be resolved normally is specified for the host name.
  - The time specified for the OS on the remote machine matches that on the local machine. When the File Waiting object is waiting for a file to be updated on the remote machine, the passing condition depends on the time specified for the remote machine.
  - When using a multi-byte character for the file name, the same language is specified for JobCenter during installation on the remote and local machines.
- When waiting for a file on another JobCenter server, the default settings are as follows. When changing the settings, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".
  - The interval for checking the files on a remote machine is 20 seconds.
  - When waiting for a file on a remote machine, up to 30 File Waiting objects can be executed simultaneously. If 31 or more File Waiting objects are being executed simultaneously, the remote file wait processing enters the RUN[HOLD] status. The remote file wait processing resumes when the number of File Waiting objects being executed simultaneously decreases to 30 or less.
  - The timeout period for returning a processing result packet from when a file check query packet is sent to the remote machine can be changed.
  - If the communication failure state continues for 900 seconds (15 minutes) or longer, the command ends with an error.

### ■ Directory name

Enter the directory that contains the wait target file using an absolute path.

- For the Windows version, enter the path starting with the drive name. (Example: C:\tmp)
- For the UNIX version, enter the path starting with the root directory. (Example: /tmp)

### ■ Wait for object File name or Directory name

Enter the name of the file or directory to execute wait processing.

Select one of the following wait conditions:

Match full	The File Waiting object waits for a file that has the same name as the specified target file name.
Match partial	The File Waiting object waits for a file that has a name partially matching the specified target file name.

Start from	The File Waiting object waits for a file that has a name whose first character string matches that of the specified target file name.
------------	---



If there are multiple files that satisfy the wait conditions, the File Waiting object waits for the file that was updated last.

■ Use date macro in directory name or wait file name

Select this check box to use a date macro for the directory or file name. Date macros such as "%YYYY %" can be used for the [Directory name] and [Wait for object File name or Directory name] text boxes. The following macros can be used:

Macro	Description	Example
%YYYY%	Year (4-digit calendar year)	2013
%YY%	Year (Last 2 digits of calendar year)	13
%M%	Month	1, 11
%MM%	Month (2 digits)	01 (January), 11 (November)
%D%	Day	1, 30
%DD%	Day (2 digits)	01 (one day), 30 (30 days)

■ Date Macro's Base Day

Specifies the criterion for the date macro.

- The Submit Day of JNW
  - Uses the job network submission date as the reference time for date macro conversion.
- The Run Day of JOB
  - Uses the file-waiting part execution date as the reference time for macro conversion.
- Offset(Unit: Day)
  - Offsets the date of the date macro by the specified days from the reference time for date macro conversion.
  - The specifiable range is -365 to 365.

■ Passing Condition

Specifies the passing condition for the File Waiting object from the following.

Exist	If the specified file exists, allows the file waiting part to pass.
Not Exist	If the specified file does not exist, allows the file waiting part to pass.
Update	Allows the File Waiting part to be passed if the specified file has been updated after the update reference time.

■ Update Base Time ([+]HH:MM)

This value is valid if Update is specified for the passing condition.

The system operates deeming that any files before the time in the same day have not been update.

■ Timeout ([+]HH:MM)



Specifies timeout time for File Waiting part from the following range.

Absolute time	00:00 to 23:59
Relative time	+00:00 to +99:59

#### ■Comment

Attach a comment to the File Waiting part.

The text input field accepts the characters, that are not over 256 single-byte characters or 128 double-byte characters, written in alphanumeric, Japanese characters, or Kana characters (double bytes/single byte) (can be mixed). ■The tab, special characters, and the following characters cannot be used:

^ # \$ ; ( ) [ ] { } \ | < > " & ' "

The items on the [Environment Variable] tab are as follows.

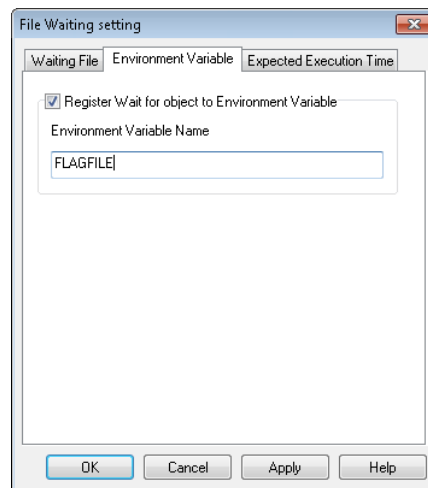


Figure 4.48. Example of Environment Variable setting screen

#### ■Register Wait for object to Environment Variable

The file path to be kept waiting can be registered to an environmental variable and then referenced in a later flow. The [Environment Variable Name] text box is enabled when this check box is selected. Enter the environment variable name here.

The environment variable names that can be entered are restricted as follows.

1. The maximum length of a variable name is 51 bytes.
2. Spaces, tabs, special characters, and the following characters cannot be used.

= # ' "

3. Variables starting with NSJNW or QSUB cannot be used. (However, variables called NSJNW and QSUB can be used.)

The items on the [Expected Execution Time] tab are as follows.

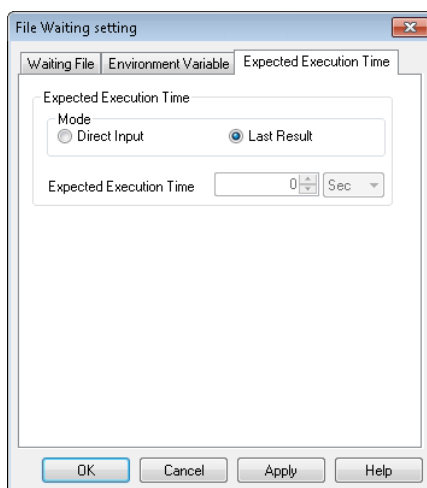


Figure 4.49. Example of Expected Execution Time setting screen

### ■ Expected Execution Time

Specify the expected time it will take to execute the job. The predicted value is reflected in the Gantt mode (Gantt chart). This setting is used to calculate execution time of a job network.

Select one of the following ways to calculate the Expected Execution Time.

Direct Input	User sets the Expected Execution Time of this object.
Last Result	Uses the last result of job execution that ended successfully as the expected execution time of the job.

[Expected Execution Time]

The expected execution time is set by user when [Direct Input] is selected in [Mode].

A time and a unit are set. One of the following units can be selected. Values in parentheses indicate the allowable range.

Second	(0 to 31536000)
Minute	(0 to 525600)
Hour	(0 to 8760)
Day	(0 to 365)



■ The wait target file must satisfy the following conditions:

- When waiting for a file on the local machine, the JobCenter administrator must have the "List Folder Contents" read permission for the folder that contains the specified file.
- When waiting for a file on a network path, a user that has the same name and password as the JobCenter administrator set up in the local machine must be created on the remote machine that contains the wait target file.

Note that a drive letter cannot be used when specifying a file name. Specify a file name in the format "\\server name\common folder\file name." The user must have read permission for common folder.

- When the server is HP-UX or AIX, the wait target file size must be 2 GB or less.

- The relative time specified by Update Base Time and Timeout of the Event Valid Period is based on the starting time of the uppermost job network normally. However, by specifying option, it is also possible to set the starting time of the concerned part as the base time, as well as to specify whether to stop the flow and how the status of the tracker icon is displayed when a timeout occurs.

For details, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

- If you want the file waiting part to wait for a file transferred by FTP or other means, the file waiting part, by default, does not wait for the file to arrive and judges that the wait condition is met when a file entry is created on the disk. Note, however, that you can change this behavior and have the part wait for the file to arrive.

For details, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

#### 4.4.5. Setting a Time Waiting

The Time Waiting part waits until the indicated time. Time can be specified in Absolute time (in HH:MM format) or Relative time (in +HH:MM format).

The operation reference time of this part changes according to the correction time. For details, refer to in <Environment Guide>Section 6.5, "Changing System Environment Settings".

1. Place a Time Waiting part.
2. The [Time Waiting setting] dialog box opens. (After allocating the time waiting part, double-click the Time Waiting part, or select [Setting] from the shortcut menu which appears by right-clicking. The [Time Waiting setting] dialog box opens.)
3. Configure the Time Waiting.

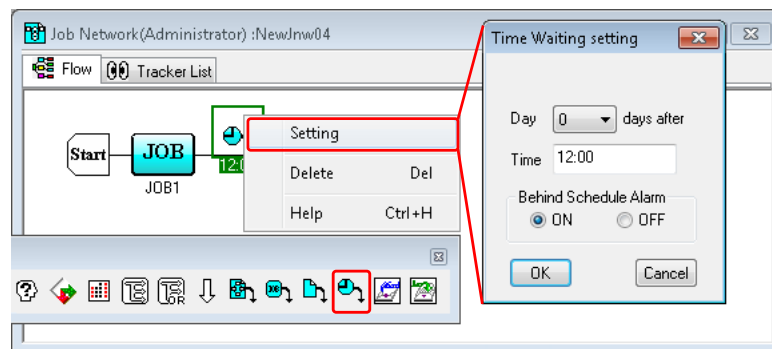


Figure 4.50. Screenshot of Time Waiting part setting

4. After configuration, click [OK].

Configuration Items in the [Time Waiting setting] dialog box are as follows.

##### ■ Day

Set the date and time to wait.

The date can be selected from 0 day to 9 days later.

##### ■ Time

Set the time to wait in the following range.

Absolute time	00:00 to 23:59
Relative time	+00:00 to +23:59

- When using absolute time

Enter the time in HH:MM format. The time of starting execution will be the time corresponding to the date set from the expected starting time of the job network.



#### Behavior when an absolute time is used

Example: If the date is after 0 day for the job whose expected start time is 8:00 am, "15:00" indicates 3:00 pm and "03:00" indicates 3:00 am next day. (If the date is after 0 day and time in the past is specified, the operation is the same when the date is after 1 day.)

- When using relative time

Enter the time in +HH:MM format. The allowable range of relative time is +00:00 to +23:59. The time to start execution is the point the specified time after the estimated start time of the job network. For the sub-job network, the estimated start time of the parent job network is used as the reference. Specifying option allows the starting time of the concerned part to be set as the standard.

For details, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

- Behind Schedule Alarm

If execution of the Time Waiting part does not start after the time specified in the part, an alarm message is output to the event log. Select user or nonuse of the alert function from the following. The default is On.

On	The alarm function works.
Off	No alarm is generated as usual.



#### Behavior during Daemon Restarting

The JobCenter daemon checks the part waited during restarting. If there is a part waited that has the alarm attribute and it has not been executed, an alarm is generated. Therefore, if the system is restarted after alarm generation, several other warnings can be generated.

- Comment

Attach a comment to the Time Waiting part.

The text input field accepts the characters, that are not over 256 single-byte characters or 128 double-byte characters, written in alphanumeric, Japanese characters, or Kana characters (double bytes/single byte) (can be mixed). The tab, special characters, and the following characters cannot be used:

^#\$( ) [ ] { } \ | < > " & ' &#x2011; &#x2013; &#x2014; &#x2018; &#x2019;

## 4.5. Event Transmission and Event Reception

Using Event Transmission parts and Event Reception parts, it is possible to perform waiting between different job networks. Event linkages can be established between different users or between different machines. There are two models for Event Transmission and Reception; the Chain Linkage Model and the Star Linkage Model.

### ■ Chain Linkage Model

Transmits and receives events between different users or between different machines.

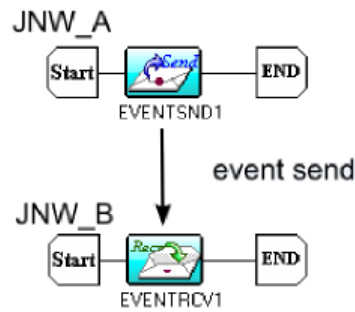


Figure 4.51. Example of Chain Linkage Model

### ■ Star Linkage Model

Transmits an event to several Event Reception parts on the same machine.

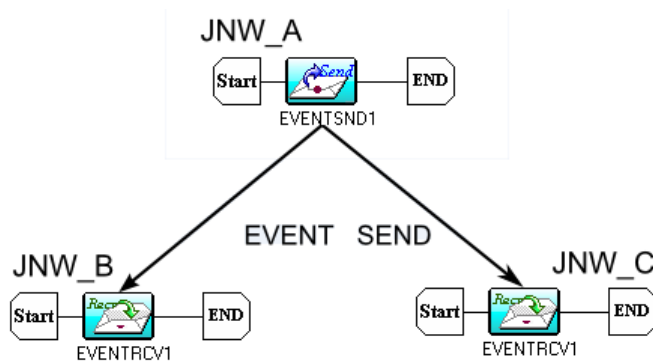


Figure 4.52. Example of Star Linkage Model



If the receiving side is not running, waiting may not be performed depending on the setting even if an event is transmitted.

### 4.5.1. Setting an Event Transmission

The object is a unit to transmit an event from the inside of a job network to other job network. By utilizing the Event Transmission part, a process in the flow of job network can wait for other processes in the different one.

First, place an Event Transmission part.

1. Place an Event Transmission part.

2. The [Event Transmission Job naming] dialog box opens. Enter the Event Transmission name.

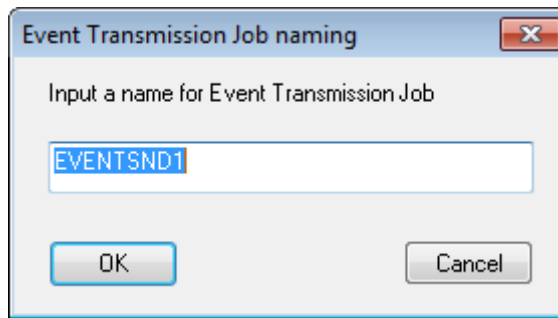


Figure 4.53. Screenshot of [Event Transmission Job naming] dialog box

3. After configuration, click [OK] and then the job network in which Event Transmission part is added opens.



The name of Event Transmission/Reception part must satisfy the following number of characters.

85 [Byte] > JNW level name [Byte] + parts name [Byte]

Second, configure the Event Transmission.

4. Double-click the Event Transmission part, or select [Setting] from the shortcut menu which appears by right-clicking.

5. The [Event Transmission Job setting] dialog box opens.

6. Configure the Event Transmission.

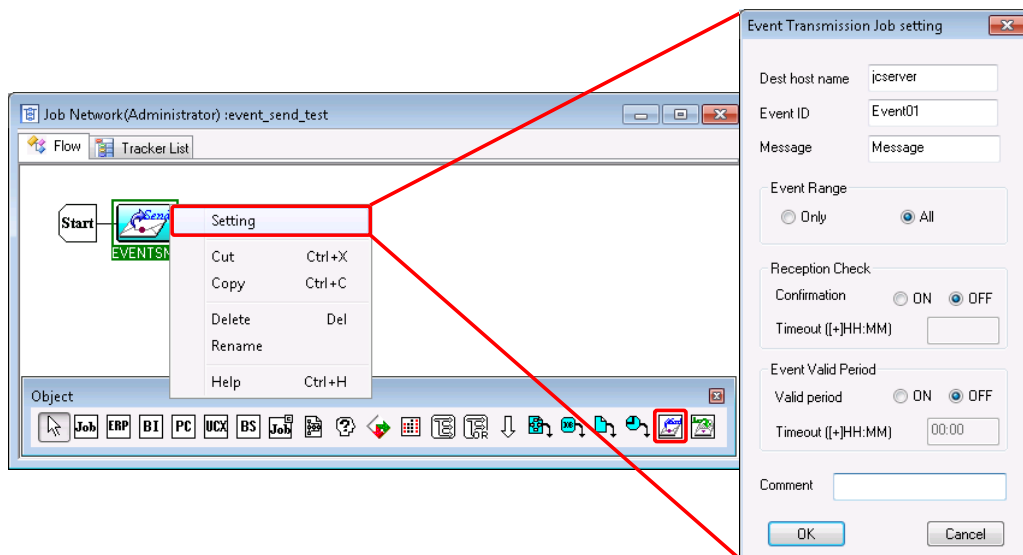


Figure 4.54. Screenshot of Event Transmission setting

7. After configuration, click [OK].

Configuration Items in the [Event Transmission Job setting] dialog box are as follows:

■ Dest host name (Required)

Enter the host name of the destination to send the event. The host name must be a formal host name that is recognized on the network.



Reception does not function properly with an alias.

■ Event ID (Required)

Enter the identifier (ID) of the event sent. Specify within 100 bytes using alphanumeric, Japanese characters, double-byte Kana characters (can be mixed). Note that spaces, tabs, special characters, and the following symbols cannot be used for an event ID.

!"#\$%&'()\*+,./:;<=>?@[ \ ] ^ ` { | } ~

To set up Event Reception by the destination of Event Transmission object, enter the name of the source host and the Event ID specified here.

If the Event ID and destination host name of the event reception part match, the event is received.

■ Message

Specifies a message sent to the destination. Limitations on the message are described below.

- A message must be in 40 bytes or less.
- A message must begin with an alphabetical character, an underscore, a numeric character, and a two-byte character.
- Use of spaces, tabs, special characters, and the following characters is prohibited.

!"#\$%&'()\*+,./:;<=>?@[ \ ] ^ ` { | } ~

■ Event Range

Specify the range of Event Transmission.

[Only]

If there is more than one reception part having the same Event ID, the event is transmitted only to the part that enters the WAIT state first.

[All]

Notifies event to all parts with the same Event ID in the WAIT state.

■ Reception Check

Specifies whether to confirm that the destination has received the event.

[Confirmation]

If "ON" is selected, the Event Transmission waits for the destination to receive the event. If the event is not received within the specified period, timeout occurs and the transmission ends with an error.

If "OFF" is selected, the Event Transmission does not wait for the destination no matter whether the event is received.

[Timeout ([+]HH:MM)]

Specifies timeout for above-cited Reception from the following range.

Absolute time	00:00 to 23:59
Relative time	+00:00 to +99:59



If no data specified (left blank), the event transmission job waits endlessly.

#### ■ Event Valid Period

Specifies the period to wait for the destination to start but not for the source. If no corresponding Event Reception part is started in the destination, the part holds the event until the specified time. If the Event Reception part is started within the specified period, the event is released at the time of starting.

[Valid period]

If "ON" is selected, the event waits for the destination to start.

If "OFF" is selected, the event does not wait for the destination to start. The destination does not hold the event.

[Timeout ([+]HH:MM)]

Specifies timeout for Reception from the following range.

Absolute time	00:00 to 23:59
Relative time	+00:00 to +99:59

The relative time specified by [Reception Check] and timeout of the [Event Valid Period] is based on the starting time of the uppermost job network normally. However, by specifying option, the starting time of the concerned part can be set as the standard, and also the displayed status of the tracker icon or exit code when the timeout occurred can be set.

For details, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

#### ■ Comment

Attach a comment to the Event Transmission part.

The text input field accepts the characters, that are not over 256 single-byte characters or 128 double-byte characters, written in alphanumeric, Japanese characters, or Kana characters (double bytes/single byte) (can be mixed). The tab, special characters, and the following characters cannot be used:

^ # \$ ; ( ) [ ] { } \ | < > " & '

#### ■ Condition branch at the end of event transmission

The subsequent processing can be changed by adding a condition branch after the event transmission part.

If the event transmission ends due to the following errors, the processing branches to the condition branch other:

- The transmission destination host cannot be found on the network.
- Reception times out.



## 4.5.2. Setting Up an Event Reception

### 4.5.2.1. Setting Up Event Reception

The object is a unit to receive an event from the inside of a job network to other job network. By utilizing the Event Reception part, a process in the flow of job network can wait for other processes in the different one.

1. Place an Event Reception part.
2. The [Event Reception Job naming] dialog box opens. Enter the Event Reception name.

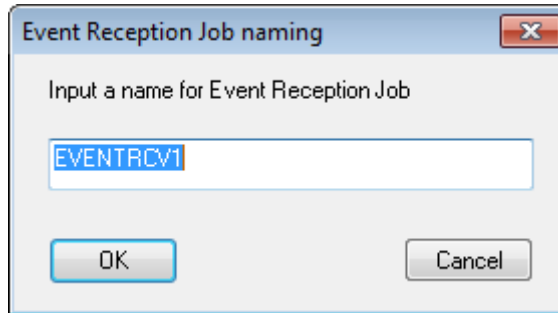


Figure 4.55. Screenshot that shows setting Event Reception name

3. After configuration, click [OK] and then the job network in which Event Reception part is added opens.
4. Double-click the Event Reception part, or select [Setting] from the shortcut menu which appears by right-clicking.
5. The [Event Reception Job setting] dialog box opens.

The settings on the [Condition Setting] tab are as follows.

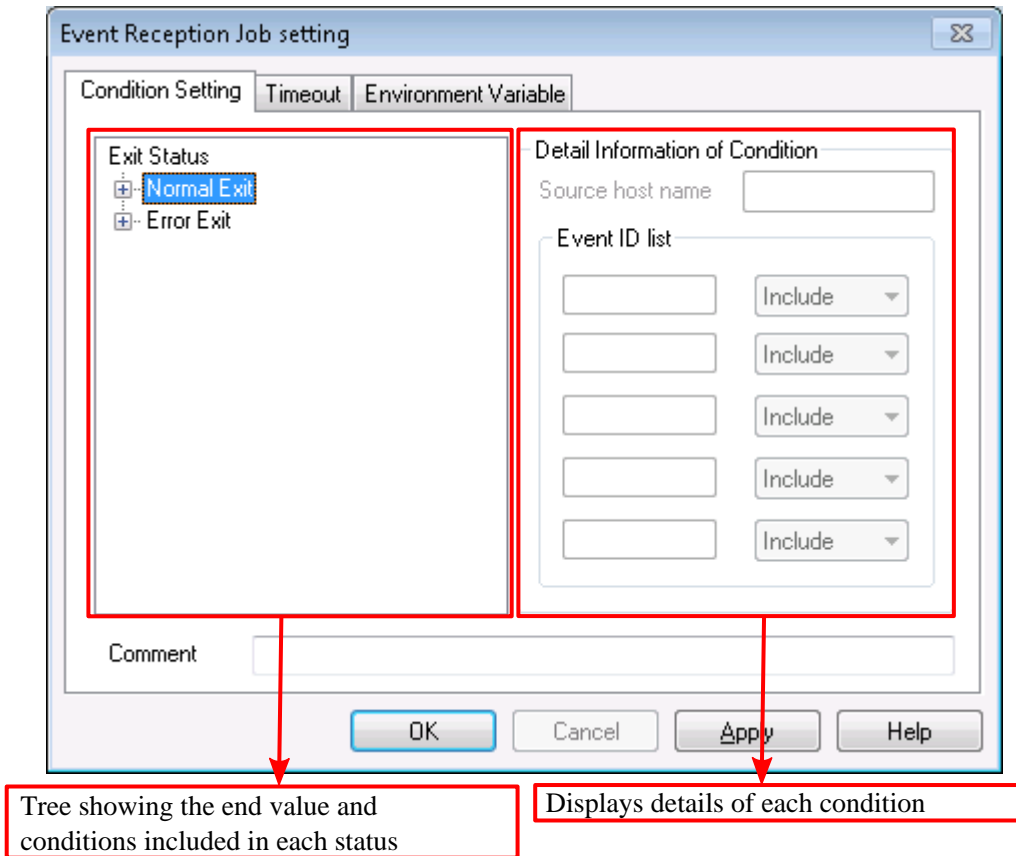


Figure 4.56. Setting Up Event Reception

#### ■ Exit status

The end condition and exit code can be specified for a normal or abnormal end.

##### ■ Specifying an exit code

Click a number to specify, or right-click a number, select [Modify Exit Code] from the shortcut menu, and then enter the exit code.

The default exit code for a normal end is 0, and that for an abnormal end is 1. The specifiable values are 0 to 255.



Figure 4.57. Entering the exit code

##### ■ Adding a condition

Right-click a number, and then select [Add Condition] from the shortcut menu. Since you can enter a condition name, set one that is not longer than 40 bytes. Up to ten conditions can be specified for normal end and abnormal end, respectively. The default condition names are Condition1 to Condition10. Note that spaces, tabs, special characters, and the following symbols cannot be used for a condition name:

! " # \$ % & ' ( ) \* , . / : ; < = > ? @ [ \ ] ^ ` { | } ~

For details about added conditions, refer to the next section titled "Condition details".

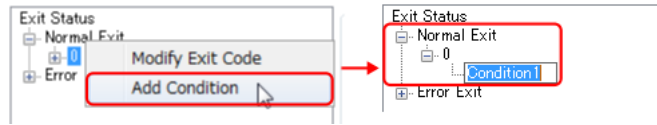


Figure 4.58. Adding a condition

- Changing a condition name

Click a condition to rename, or right-click a condition and select [Rename Condition] from the shortcut menu, and then rename the condition.

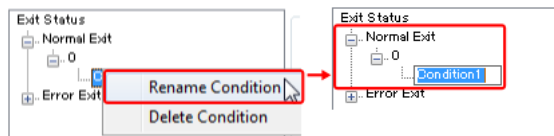


Figure 4.59. Changing a condition name

- Deleting a condition

Right-click a condition to delete, and then select [Delete Condition] from the shortcut menu.

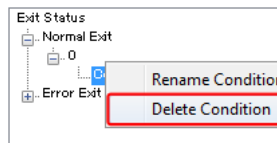



Figure 4.60. Deleting a condition

- Condition details

Set the following items to added conditions.

- Source host name (Required)

Specifies the name of the host from which events are transmitted. The host name must be a formal host name that is recognized using a machine icon in the Manager Frame window.



Reception does not function properly with an alias.

- Event ID list (Required)

Enter the identifier (ID) of the event received. Up to five event IDs can be registered. As the ID matching condition, "Begin", "Include", or "Coincide" can be specified for each ID. The default setting is "Include". The size of an event ID must be 100 bytes or less. Note that spaces, tabs, special characters, and the following symbols cannot be used for an event ID:

! " # \$ % & ' ( ) \* , . / : ; < = > ? @ [ \ ] ^ ` { | } ~

The condition will not be used if no event ID is specified.

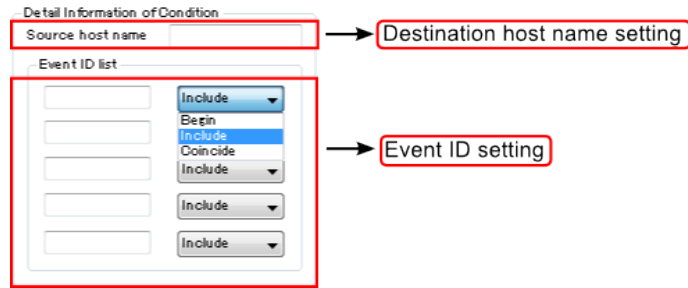


Figure 4.61. Specifying condition details

#### ■ Comment

Attach a comment to the Event Reception part.

The text input field accepts the characters, that are not over 256 single-byte characters or 128 double-byte characters, written in alphanumeric, Japanese characters, or Kana characters (double bytes/single byte) (can be mixed). Tabs, special characters, and the following characters cannot be used:

^ # \$ ; ( ) [ ] { } \ | < > " & '

The settings on the [Timeout] tab are as follows.

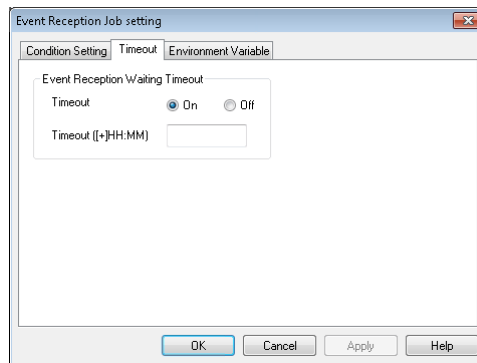


Figure 4.62. Timeout settings

#### ■ Event Reception Waiting Timeout

Specifies the period the source waits for the Event Reception part to receive the event if it could not immediately receive the event. If the event has been transmitted and this attribute is ON, timeout does not occur and the event is received immediately even if the reception timeout condition is satisfied.

**[Timeout].** If "ON" is selected, the event reception part waits for the destination to receive the event. If the event is received within the specified period, the transmission ends normally. If the event is not received within the specified period, timeout occurs and the transmission ends with an error.

If "OFF" is selected, the Event Reception part tries to receive the event immediately and ends normally regardless of the result. Regardless of received or not received, sets into the normal end state.

**[Timeout ([+]:HH:MM)].** Specifies timeout for waiting from the following range.

Absolute time	00:00 to 23:59
Relative time	+00:00 to +99:59



If no data specified (left blank), the event transmission job waits endlessly.

The relative time specified by Reception Check and Timeout of the Event Valid Period is normally based on the starting time of the uppermost job network. However, by specifying options, the starting time of the concerned part can be set as the standard, and the displayed status of the tracker icon or exit code when the timeout occurred can also be set.

For details, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

The items on the [Environment Variable] tab are as follows.

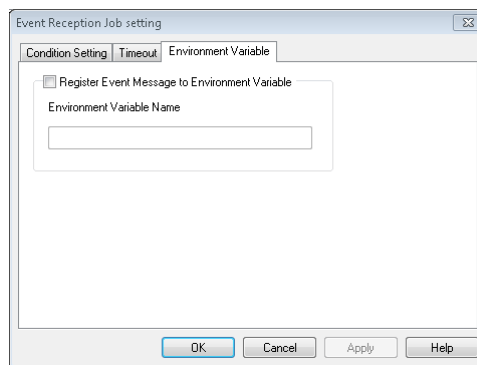


Figure 4.63. Example of Environment Variable setting screen

#### ■ Register Event Message to Environment Variable

An event message for an received event can be registered to an environmental variable and then referenced in a later flow. The [Environment Variable Name] text box is enabled when this check box is selected. Enter the environment variable name here.

The environment variable names that can be entered are restricted as follows.

1. The maximum length of a variable name is 51 bytes.
2. Spaces, special characters, and the following characters cannot be used.  
= # ' " ' "
3. Variables starting with NSJNW or QSUB cannot be used. (However, variables called NSJNW and QSUB can be used.)



#### Notes for Using Event Transmission and Event Reception Parts

##### ■ If both [Reception Check] and [Event Valid Period] are set to "on"

The operation depends on the times specified for these parameters.

- The time specified for [Reception Check] is longer:

The source waits for the time specified for [Reception Check] and holds the event during this period.

- The time specified for [Event Valid Period] is longer:

The event is held for the period specified for [Event Valid Period]. However, if the event is not received for the time specified for [Reception Check], timeout occurs at the source.

- If another event is transmitted from the same host with the same Event ID to the same Event ID

The current event is overwritten with the new event. If the overwritten part was waiting, overwriting is notified and waiting is stopped.

- If an error occurs during event transmission

The error is recorded to the job network log.

- If an Event Transmission part is skipped during execution

In the case that the event has been transmitted, that event has the transmitted state without being cancelled. In addition, the state in which the Event Transmission part is being executed includes the state in which the source is waiting for the destination to return confirmation of reception.

- If event transmission and reception parts are used

Any logical contradiction (deadlock) cannot be detected. When waiting in the same job network, use Job Waiting and JNW Waiting parts.

- If the number of events exceeds 5000

The oldest event is overwritten. Up to 5000 events can be held. However, by specifying option, overwriting can be prohibited to end Event Transmission abnormally.

For details, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

- If two-byte characters are used in Event IDs and messages

Make sure that the LANG setting is the same on both the source and destination hosts (for the Windows version, the setting is fixed to Shift JIS).

- If JobCenter is not running on the destination host

The Event Transmission part ends with an error, regardless of whether Reception Check is set to "ON" or "OFF."

- If [Event Valid Period] is set to "ON"

Events are stored in the destination host. Even if the source host fails after Event Transmission, the destination host retains events until a timeout occurs. Even if the destination host is restarted, events are retained until the Event Valid Period expires.

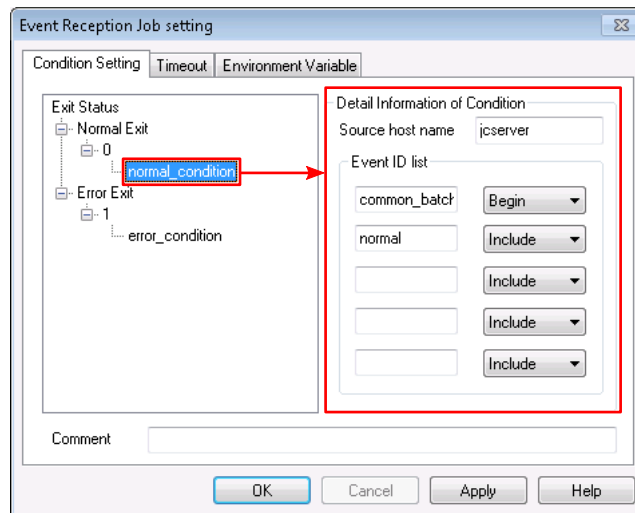
- If the LANG setting (character code) differs between the source and destination hosts

If the LANG setting (character code) differs between the source and destination hosts, do not use two-byte characters in the Event Transmission part name or a job network name in any level leading up to the job network that includes that part.

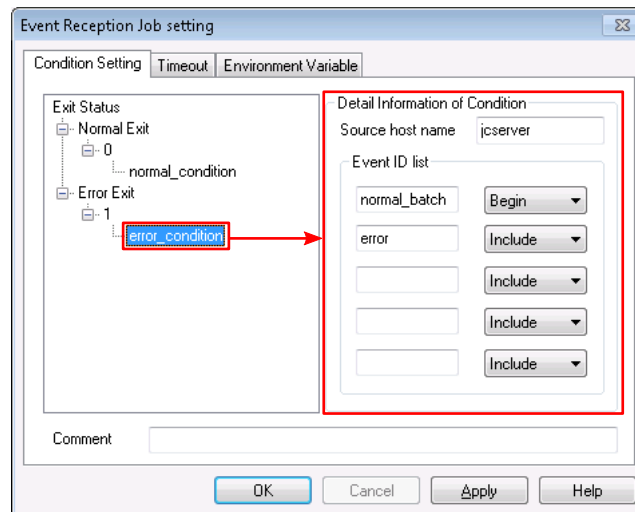
#### 4.5.2.2. Performing Event Reception

If all the event ID matching conditions registered for a condition are satisfied, that condition is considered to be satisfied and the Event Reception part ends. Even when there is more than one condition, the Event Reception part ends if one of them is satisfied. The end status is the status that the satisfied condition has. The subsequent processing can be made to branch at a condition branch by specifying an exit code.

How Event Reception is performed is described below, using an example where a job network that includes an Event Reception part with the following settings is submitted.



Settings of normal condition



Setting of error condition

Figure 4.64. Settings for Event Reception

The Event Reception status can be determined according to the received event.

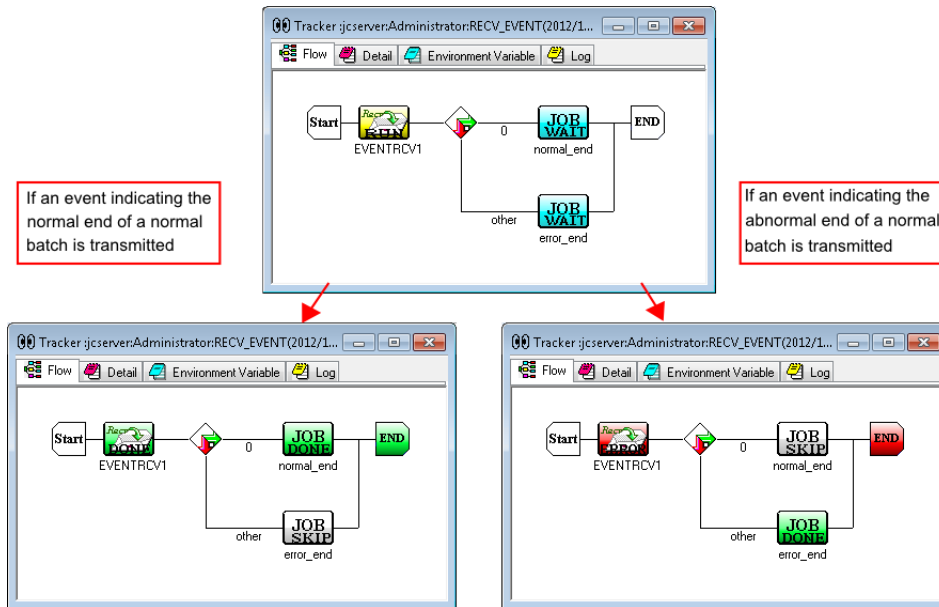


Figure 4.65. Operation when a condition is satisfied

The set conditions can be displayed on the tracker as shown below.

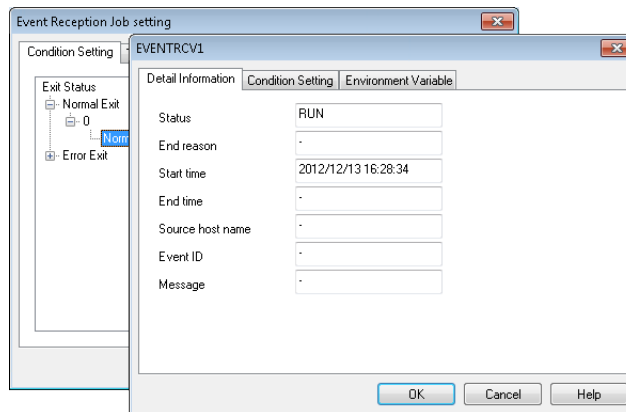


Figure 4.66. Display when an Event Reception part on the tracker is double-clicked

The satisfied conditions are recorded in the job network log.

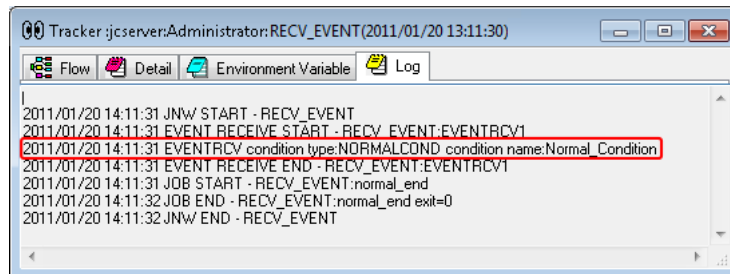


Figure 4.67. Job network log example



If an event matches both the normal and abnormal conditions, the event is handled as matching the normal condition.



## 4.5.2.3. Event holding status

The following table shows the event holding status of the destination that changes according to the combination of the [Reception Check] and [Valid Period] settings of the Event Transmission part. Based on the information given below, design the system appropriately in terms of the timeout and reception timing of the Event Transmission part.

Table 4.2. Destination event holding status list

Whether Reception Check is on or off	Reception Check timeout	Whether Valid Period is on or off	Valid Period timeout	Destination event holding status
OFF	Not specified	OFF	Not specified	Not held
OFF	Not specified	ON	Time specified	Held until the valid period timeout occurs
ON	Not specified (= infinite)	OFF	Not specified	Held infinitely
ON	Time specified	OFF	Not specified	Held until the reception check timeout occurs
ON	Not specified (= infinite)	ON	Time specified	Held infinitely
ON	Time specified	ON	Time specified	Held until the reception check timeout or valid period timeout (whichever is the longer) occurs  When the reception check time is shorter than the valid period, the event part ends in the event source as the reception check timeout occurs, while the destination holds the event until the valid period expires. <sup>Note 1</sup>



Note 1 When the reception check time is shorter than the valid period, if the transmission part is executed after the shorter reception check time has elapsed, the shorter reception check time is considered to be a time of the following day, in which case the event is held until the following day.

## 4.6. Custom Job Parts

---

By using custom jobs, common scripts can be turned into templates.

For information about how to create these templates (custom job definitions) and how to configure custom job parts, refer to [Chapter 5, 「Using Custom Jobs」](#) .

# 5 Using Custom Jobs

Custom jobs are defined to turn common scripts into templates. Created templates can be placed in a job network as part objects.

■ Use case of a custom job

A job is to be used in multiple job networks.

the general job:



- 1.add a unit job
- 2.edit a script with sleep operation

while to use the script with sleep operation in multi-jnw Environment, the above steps must be done in every jnw.



the custom job:



- 1.add a custom job

the definition of the custom job needs to be created only once,and then,the job can be used in every jnw.There is no use to edit the script in every jnw again.

In addition ,by using some special icon can strengthen the recognition degree during the monitoring.



Figure 5.1. Use case screen

■(Example) Normally, it is necessary to create 100 unit jobs that each executes sleep for 500 seconds. When you use a custom job, all you need to do is to create one unit job that executes sleep for 500 seconds.

The following table lists the terms used in this chapter.

Table 5.1. Terms used for the custom job function

Term	Description
Custom job definition	A custom job definition is a template created from a common script.
Custom job part	A custom job is a custom job definition that is placed in a job network as a part object.
Extended custom job	An extended custom job, unlike a regular custom job, is a definition that provides JobCenter with an extended function. An extended custom job has a sub-icon displayed at the upper right corner of a basic icon.

## 5.1. Viewing a Custom Job Definition

To view, create, and edit a custom job definition, use the [Custom Job Definition List] tab.

Connect using the administrator account. For information about how to connect using the administrator account, refer to [Section 2.3.1, “Connecting Server under Manager Account”](#).

Choose [Custom Job Definition List] tab in the Manager Frame.

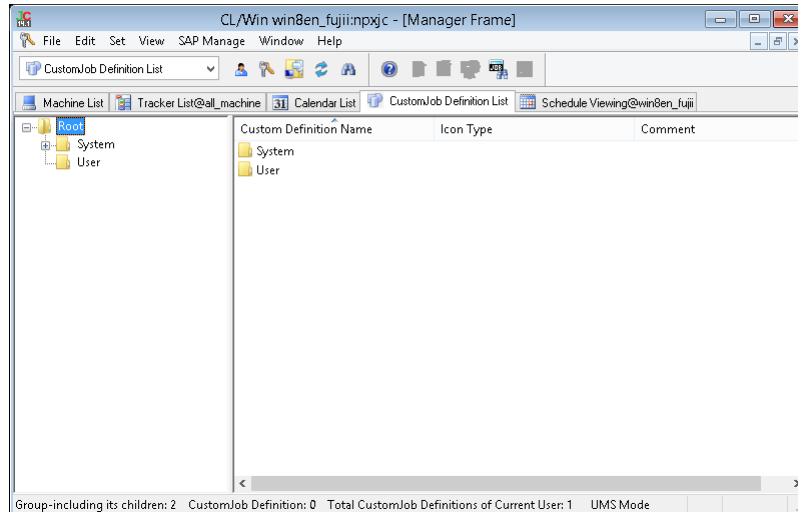


Figure 5.2. Screenshot of the [Custom Job Definition List] tab

The items displayed in [Custom Job Definition List] are as follows:

■ Definition name

This column displays the custom job definition name.

■ Icon type

This column displays the icon type set for the custom job definition. The available icons are listed below.

Table 5.2. Custom job icon list

Icon	Icon type
	Triangle
	Hexagon
	Pentagon
	Diamond
	Ellipse
	Wave
	Star
	Cloud

	Cube
	Cylinder

■ Comment

This column displays the comment for the custom job definition.

You can sort the columns in [Custom Job Definition List] individually. Click the name of the column you want to sort.

## 5.2. Creating or Deleting a Custom Job Definition Group

You can put together custom job definitions into groups for management.

If you open the custom job definition list in the Manager Frame, the default [System] and [User] groups are displayed.

### ■ System group

[Extended custom job definitions] provided as extended functions are placed.

### ■ User group

The JobCenter administrator can freely create groups and custom job definitions. To customize a custom job definition of the System group, copy the custom job definition to the User group and edit it.

Create a new custom job definition group under the User group.



Custom job definition names and custom job definition group names are treated according to the specifications of the OS in use. In the UNIX version, names are case sensitive. In the Windows version, names are not case sensitive and the OS treats names consisting of the same combination of letters in different cases as identical ones. JobCenter does not distinguish between such names, either.

### 5.2.1. Creating a Custom Job Definition Group

1. To create a new custom job definition group, choose [File], [New], and then [Custom Job Definition Group] on the menu bar, or choose [New Custom Job Definition Group] from the popup menu that appears when you right-click without selecting any other group or custom job definition in the right view.
2. Specify the name of the group.

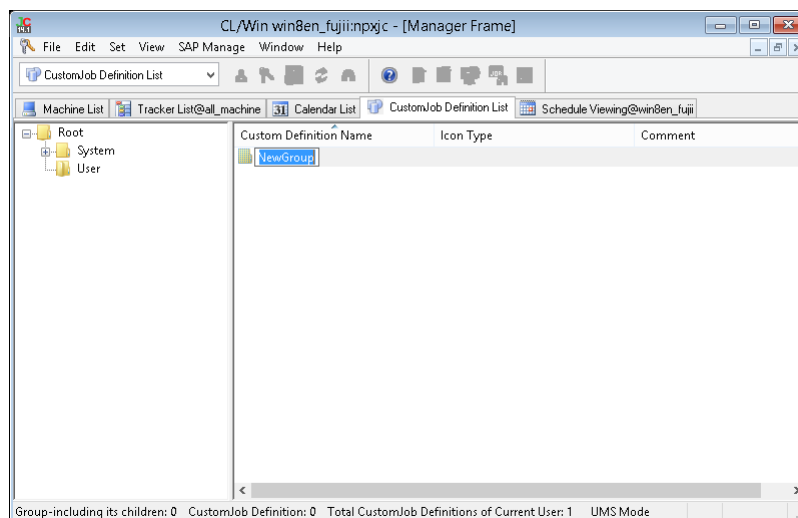


Figure 5.3. Creating a new custom job definition group



Notes on naming a custom job definition group

- You cannot create a group in the System group or a sub-group of the System group.

- Up to 40 one-byte characters or 20 two-byte characters can be specified.
- There can be up to five layers of groups.
- The following characters cannot be used: spaces, tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, commas, ., /, :, ;, <, =, >, ?, @, [, \, ], ^, `, {, |, }, and ~.
- You cannot specify a custom job definition group name that already exists in the same custom job definition group.

### 5.2.2. Deleting a Custom Job Definition Group

To delete a custom job definition group, perform the procedure below. This procedure takes effect only for a custom job definition group.

1. Select the custom job definition group you want to delete.
2. Right-click the group. From the popup menu, choose [Delete Group] and then [Forced Delete] or [Normal Delete].

Forced Delete	The custom job definition group is deleted together with the custom job definitions in that group.
Normal Delete	Only the custom job definition group is deleted. The custom job definitions in the custom job definition group are not deleted and moved under User.



#### Notes on deleting a custom job definition group

- You cannot delete the User group, System group, or a sub-group of the System group.

#### Notes on deleting more than one selected custom job definition groups

- If [Forced Delete] is selected, all the sub-groups and custom job definitions of the specified custom job definition group are deleted.
- If [Normal Delete] is selected, the custom job definitions of the specified group are not deleted and moved under User. Custom job definition groups and sub-groups are deleted.
- If multiple custom job definitions and custom job definition groups are selected simultaneously, only the custom job definition groups are deleted. The custom job definitions are not deleted.

## 5.3. Creating or Deleting a Custom Job Definition

Create a custom job definition in the newly created custom job definition group.



Custom job definition names and custom job definition group names are treated according to the specifications of the OS in use. In the UNIX version, names are case sensitive. In the Windows version, names are not case sensitive and the OS treats names consisting of the same combination of letters in different cases as identical ones. JobCenter does not distinguish between such names, either.

### 5.3.1. Creating a Custom Job Definition

1. Connect using the administrator account. For information about how to connect using the administrator account, refer to [Section 2.3.1, “Connecting Server under Manager Account”](#).
2. Choose [Custom Job Definition List] tab in the Manager Frame.

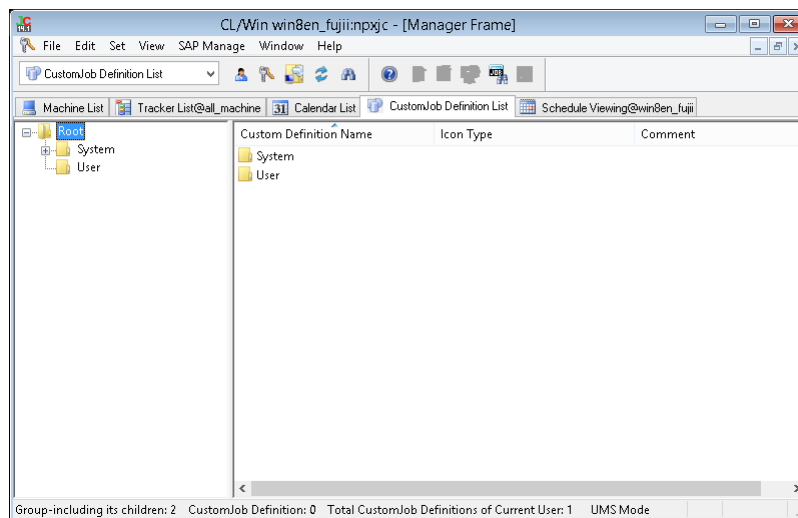


Figure 5.4. Screenshot of the [Custom Job Definition List] tab

3. Select the group created in [Section 5.2, “Creating or Deleting a Custom Job Definition Group”](#), double-click it, and then move it to the group.
4. Choose [File], [New], and then [Custom Job Definition] on the menu bar, or choose [New Custom Job Definition] from the popup menu that appears when you right-click on the window without selecting any other definition.



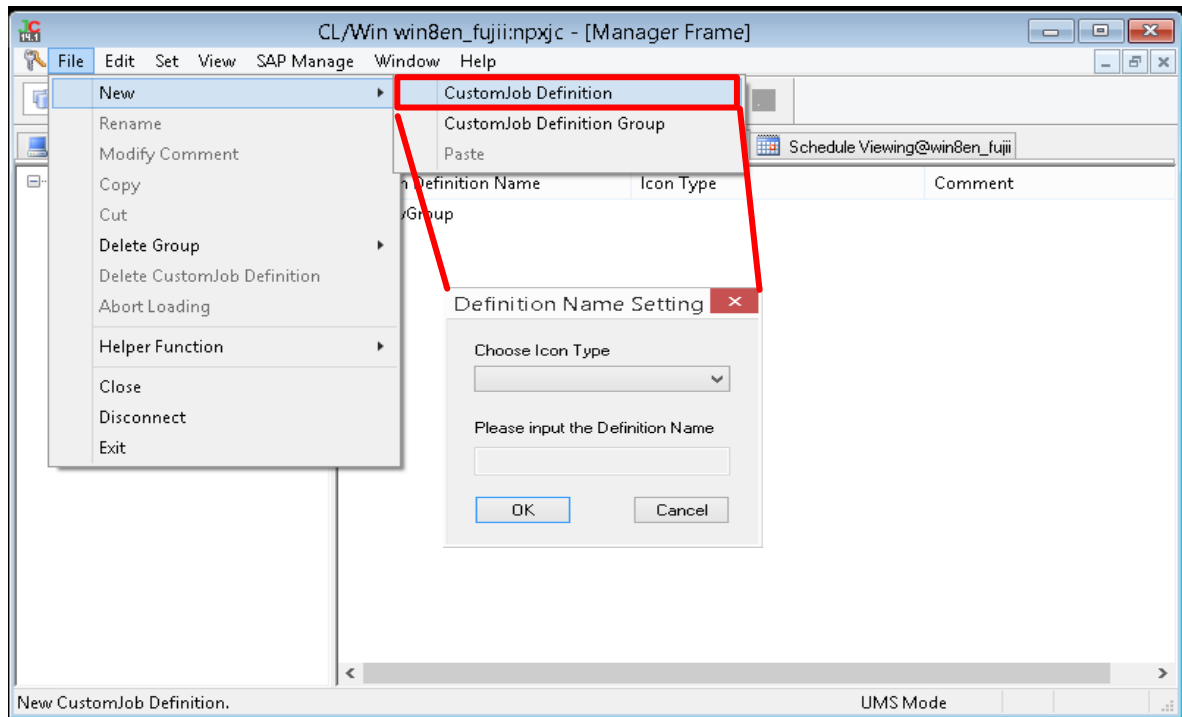


Figure 5.5. Creating a new custom job definition

5. When the [Definition Name Setting] dialog box appears, select an icon from the [Choose Icon Type] drop-down menu.

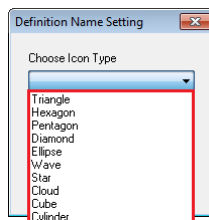


Figure 5.6. Icon selection window

6. After selecting an icon, enter a desired definition name in the blank [Please input the Definition Name] field and click [OK].

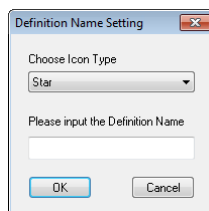


Figure 5.7. Definition name setting window



Notes on naming a custom job definition

- Up to 40 one-byte characters can be specified.

- Only single-byte alphanumeric characters, underline (\_), and hyphens (-) can be used in a custom job definition name.
- You cannot specify a custom job definition name that already exists in the same site.

7. The custom job definition is added to the Manager Frame.

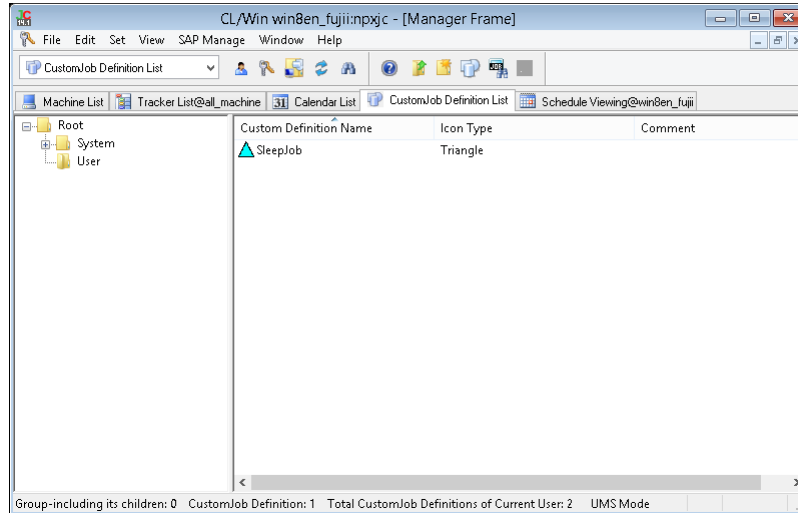


Figure 5.8. Custom job addition window

### 5.3.2. Deleting a Custom Job Definition

To delete a custom job definition, perform the procedure below.

1. Select the custom job definition you want to delete.
2. Right-click on the definition and then choose [Delete Custom Job Definition] from the popup menu.

## 5.4. Manipulating a Custom Job Definition

You can manipulate a custom job definition by using the popup menu that appears when you select and right-click a desired custom job definition.

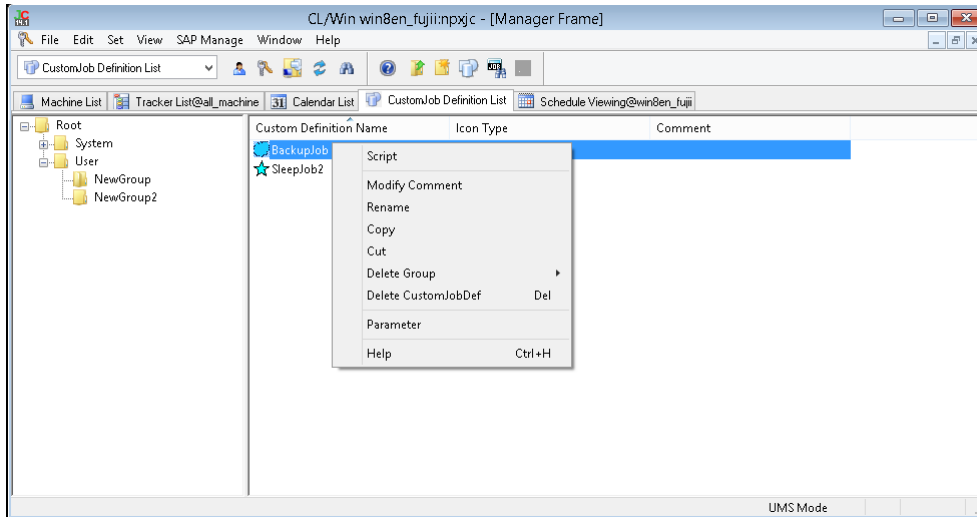


Figure 5.9. Custom job definition operation menu

Table 5.3. Custom job definition operation list

Menu	Description	Reference
Script	This opens the window for editing a custom job definition script.	<a href="#">Section 5.4.5, "Editing a Custom Job Definition Script"</a>
Modify Comment	This is used to modify a comment on a custom job definition.	<a href="#">Section 5.4.2, "Setting a Comment on a Custom Job Definition"</a>
Rename	This is used to rename a custom job definition.	<a href="#">Section 5.4.3, "Renaming a Custom Job Definition"</a>
Copy	This is used to select a custom job definition as the copy source.	-
Cut	This is used to select a custom job definition to move it to another group.	-
Delete Custom Job Definition	This deletes a custom job definition.	<a href="#">Section 5.3.2, "Deleting a Custom Job Definition"</a>
Parameter	This is used to set the default parameter of a custom job definition.	<a href="#">Section 5.4.4, "Setting Execution Conditions (Parameters) of a Custom Job Definition"</a>

### 5.4.1. Moving a Custom Job Definition or Custom Job Definition Group

To move a custom job definition or custom job definition group, drag and drop it into a specified group.

1. Hold down the left mouse button to drag the custom job definition or custom job definition group you want to move, and drop it onto the destination custom job definition group.
2. Alternatively, hold down the right mouse button to drag the custom job definition you want to move, drop it into the destination custom job definition group, and then choose [Move Here].

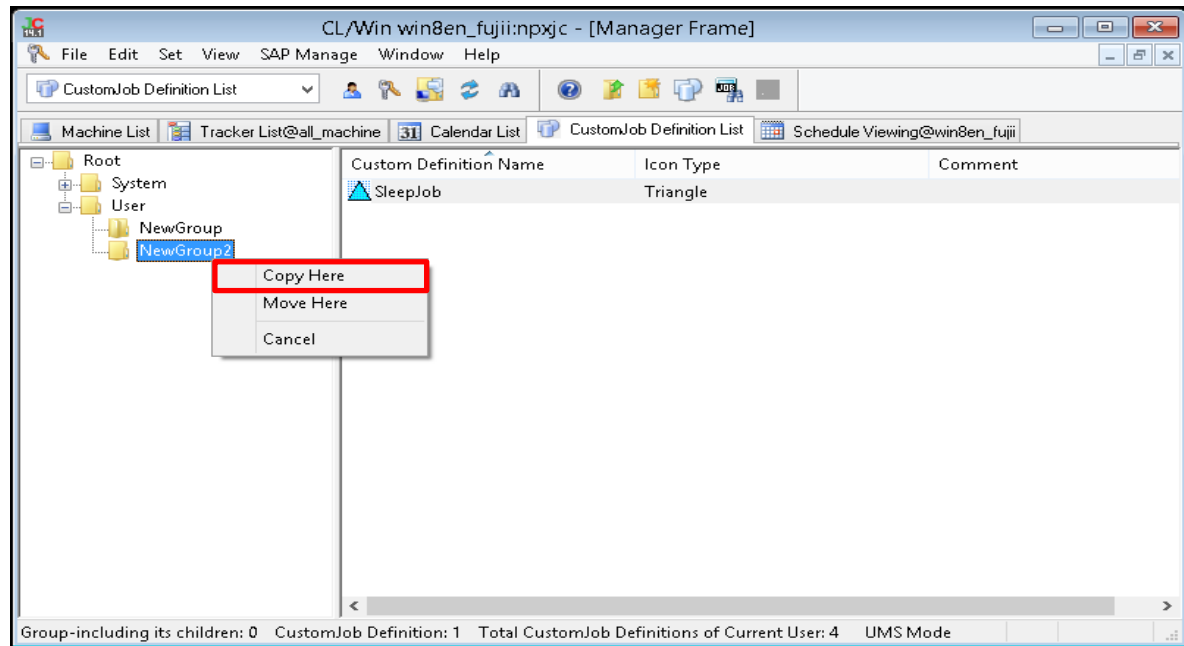


Figure 5.10. Moving a custom job definition



#### Notes on moving a custom job definition or custom job definition group

- You cannot move a custom job definition or custom job definition group into the System group or a sub-group of the System group.
- You cannot move custom job definition group if the number of layers exceeds five after it is moved into the destination custom job definition group.
- You cannot move a custom job definition group if a sub-group of the destination custom job definition group contains any custom job definition group that has the same name as the group you want to move.
- You cannot select the custom job definition group you want to move as the destination custom job definition group.

### 5.4.2. Setting a Comment on a Custom Job Definition

Set a comment on a specified custom job definition.

1. Select and right-click a single custom job definition, and then choose [Modify Comment] from the popup menu.
2. Set a comment on the custom job definition.

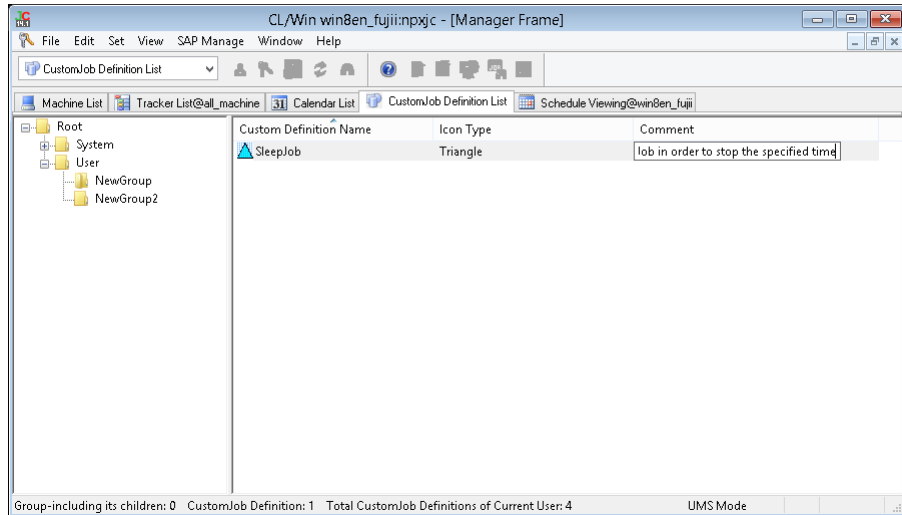


Figure 5.11. Setting a comment on a custom job definition



Notes on setting a comment on a custom job definition

- A comment must be within 256 bytes in Japanese or alphanumeric characters (these may be mixed).
- The following characters cannot be used: tabs, special characters, ^, #, \$, ;, (, ), [, ], {, }, \, |, <, >, ", &, '.

### 5.4.3. Renaming a Custom Job Definition

Rename a specified custom job definition.

1. Select and right-click a single custom job definition, and then choose [Rename] from the popup menu.
2. Set a new name of the custom job definition.

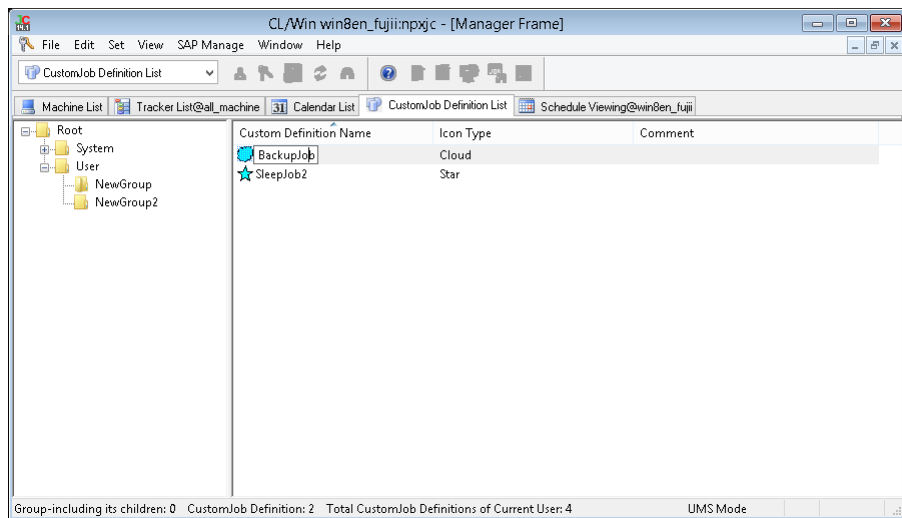


Figure 5.12. Renaming Custom Job Definition Name



#### Notes on renaming a custom job definition

- Up to 40 one-byte characters can be specified.
- Only alphanumeric characters, underlines (\_), and hyphens (-) can be used in a custom job definition.
- You cannot specify a custom job definition name that already exists in the same site.

### 5.4.4. Setting Execution Conditions (Parameters) of a Custom Job Definition

Select and right-click a custom job icon and then choose [Parameter] from the popup menu.

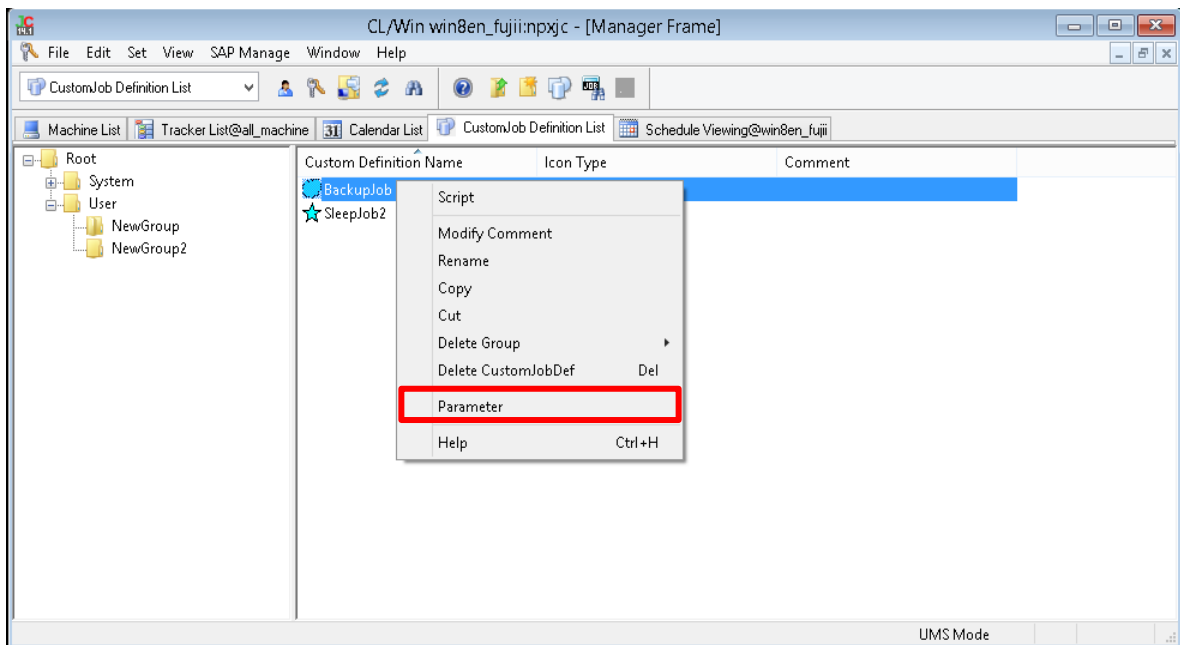


Figure 5.13. Custom job definition parameter setting window

Except for [Custom Param Setting], details are the same as the unit job. For details, refer to [Section 4.2.1, “Setting an Execution Script of a Unit Job”](#). The content of [Custom Param Setting] is described below.

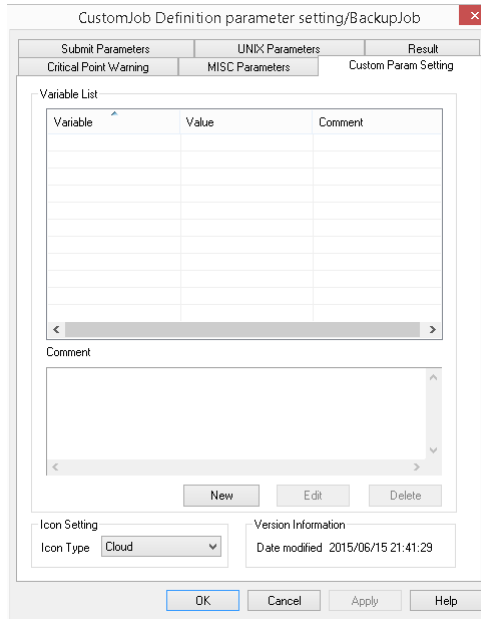


Figure 5.14. Screenshot of [Custom Param Setting] tab on the [CustomJob Definition parameter setting] window

In [Custom Param Setting], you can define custom variables that can be embedded in a custom job script. For information about how to embed the custom variables you set here in a script, refer to [Section 5.4.5, “Editing a Custom Job Definition Script”](#).

■ Variable List

The defined custom variables are listed.

■ New

You can define a new custom variable. There are restrictions on the characters that you can enter in the Variable name, Variable value, and Comment.

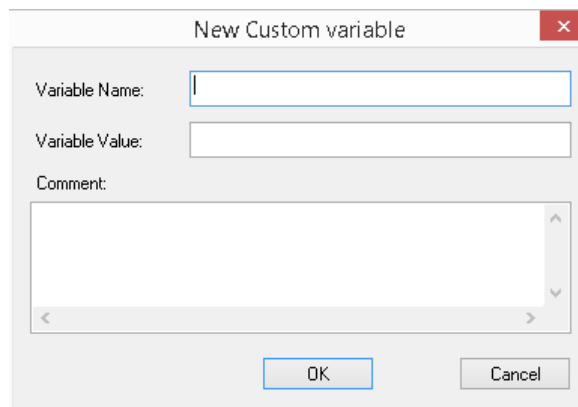


Figure 5.15. [New custom variable] dialog box

Table 5.4. Restrictions on a custom variable

Variable name	51 bytes	<ol style="list-style-type: none"> <li>1. The variable name field must not be left blank.</li> <li>2. Spaces, special characters, and the following characters cannot be used.</li> </ol>
---------------	----------	---

		< = > # ' "
Variable value	256 bytes	1. The variable value field must not be left blank. 2. Spaces, special characters, and the following characters cannot be used. # ' "
Comment	256 bytes	The following characters cannot be used. # ' "

#### ■ Edit

Change the existing custom variable you selected in [Variable List].

#### ■ Delete

Delete the custom variable you selected in [Variable List].

#### ■ Icon Setting

Select a custom job type from the [Icon Type] drop-down menu. For the available types, refer to [Table 5.2, "Custom job icon list"](#).

#### ■ Version Information

This section displays the time when the script or any parameter of a custom job template was changed.



Even if you change a custom job definition template, the change is not reflected on the custom job parts that have already been added to the flow. It is necessary to apply the change to each custom job part individually or to delete the parts and then add them back.

To use an extended custom job, it is necessary to set a [custom queue] or a [pipe queue] for which the transfer to a [custom queue] is set as the submission queue. For information about how to create a custom queue, refer to [Section 10.4, "Setting Parameters of a Batch Queue"](#) or "6.1.3.9. Custom Queue Attribute" in <JobCenter Guide for using NQS function> (Japanese only).

### 5.4.5. Editing a Custom Job Definition Script

1. Select the custom job definition whose script you want to edit, and then double-click it or choose [Script] from the right-click menu.



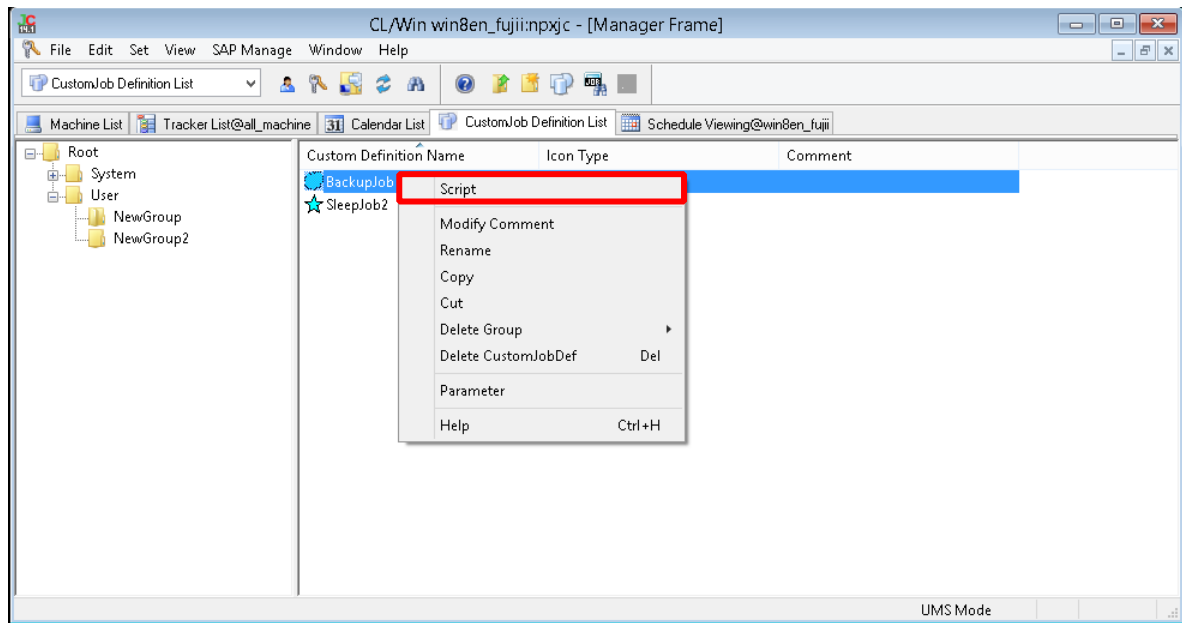


Figure 5.16. Screenshot of the window where [Script] is selected for a custom job definition

2. The window for script description appears.
3. In the script description window, describe a desired script. When describing a custom variable, enclose it inside [`<<VAR>>`].

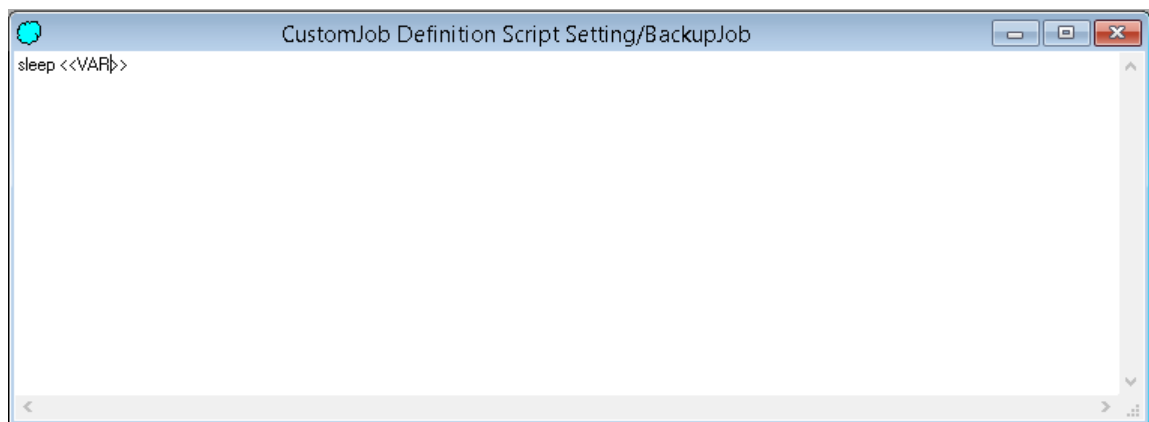



Figure 5.17. Example of editing a custom job definition script

4. When done with editing the script, choose [File] and then [Save] on the menu bar or click the  icon on the toolbar to save the script.

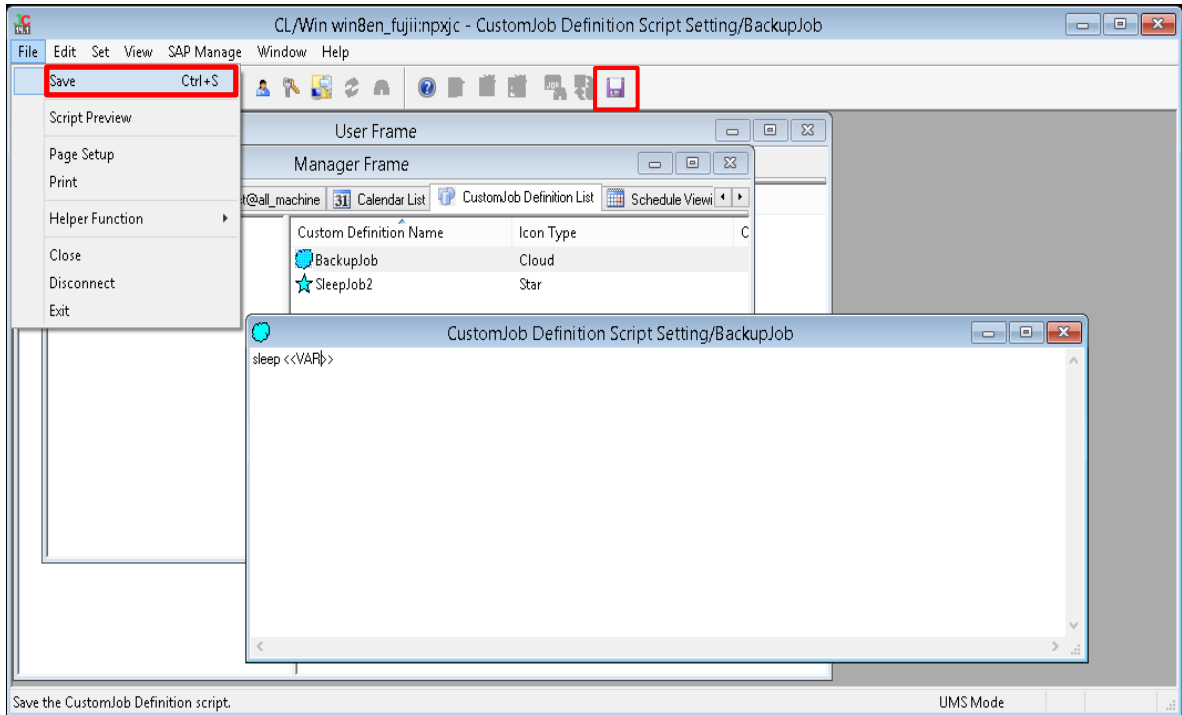


Figure 5.18. Screenshot of the window for saving a custom job definition script

5. Choose [File] and then [Close] on the menu bar to close the script description window and finish editing the script.

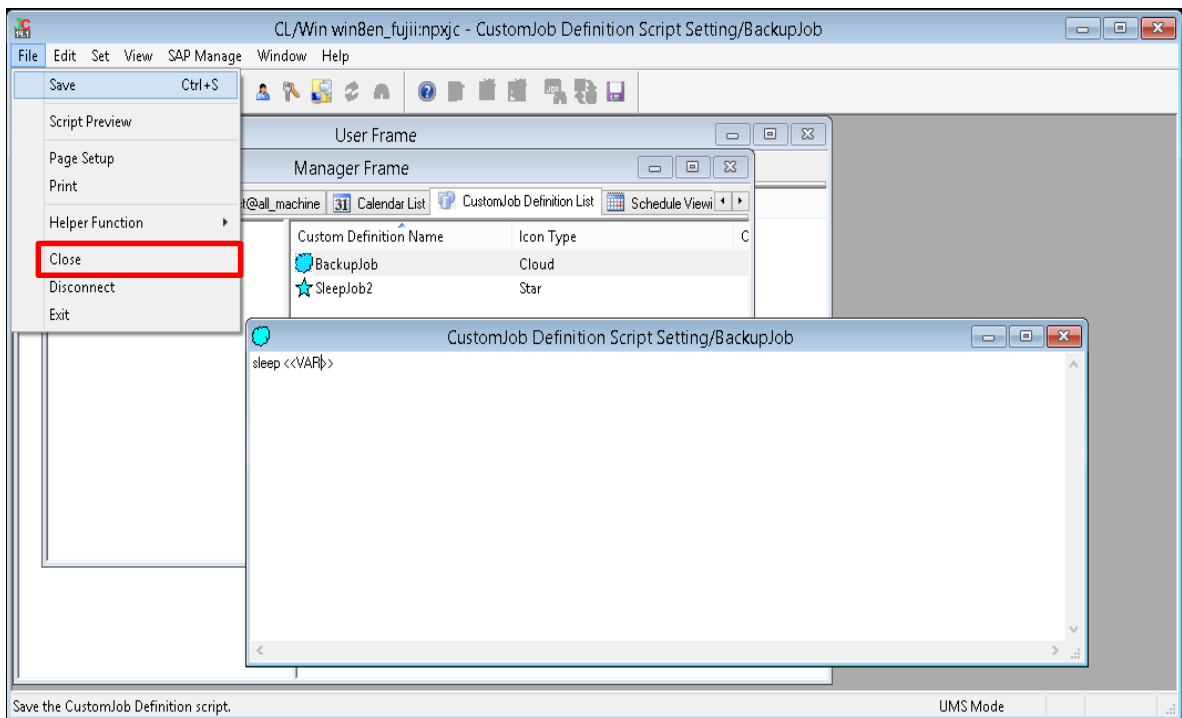


Figure 5.19. Screenshot of the window for finishing the editing of a custom job definition script

A custom job definition script can be set in the same way as the unit job. For the notes on the setting of a custom job definition script, refer to [Section 3.1.5, "Editing Script of Unit Job Icon"](#).



Even if you change a custom job definition template, the change is not reflected on the custom job parts that have already been added to the flow. It is necessary to apply the change to each custom job part individually or to delete the parts and then add them back.

## 5.4.6. Script Preview Function

The script preview function allows you to check that the variable set in [Section 5.4.4, “Setting Execution Conditions \(Parameters\) of a Custom Job Definition”](#) has been converted to the value you want to use.

### ■ Setting example

Variable name	Variable value
VAR	123

1. Select the custom job definition whose script you want to edit, and then double-click it or choose [Script] from the right-click menu .

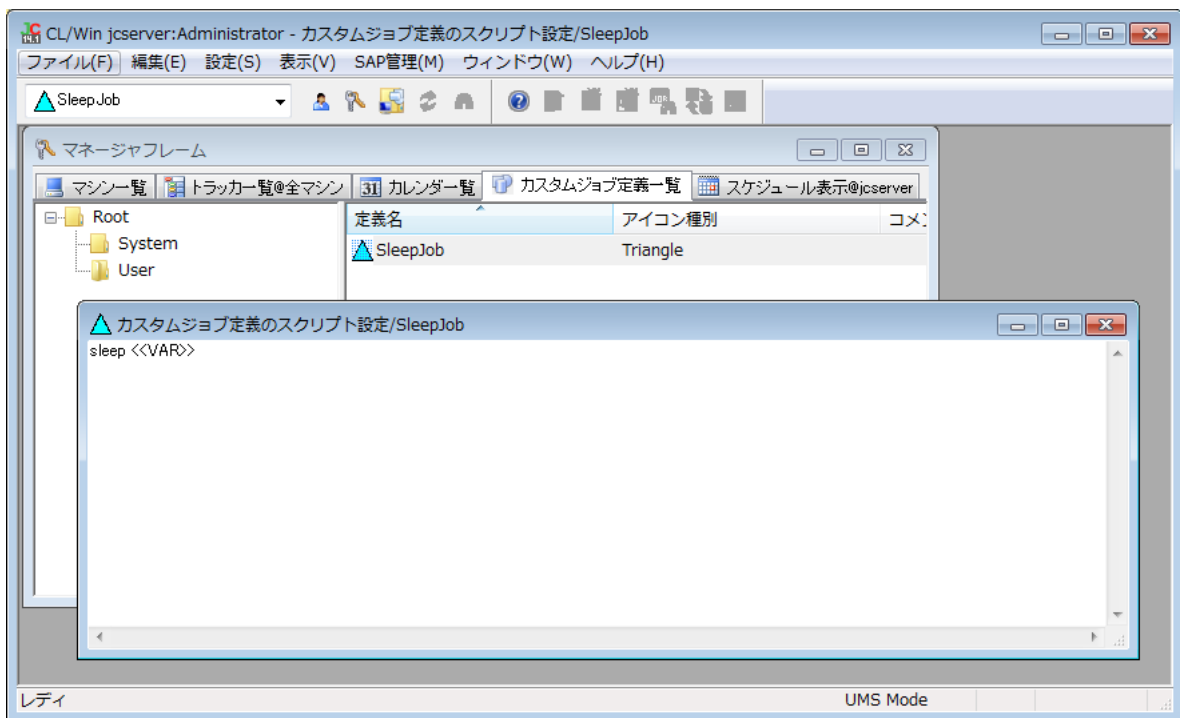


Figure 5.20. Screenshot of the window before a custom job definition script preview

2. On the menu bar, choose [File] and then [Script Preview].

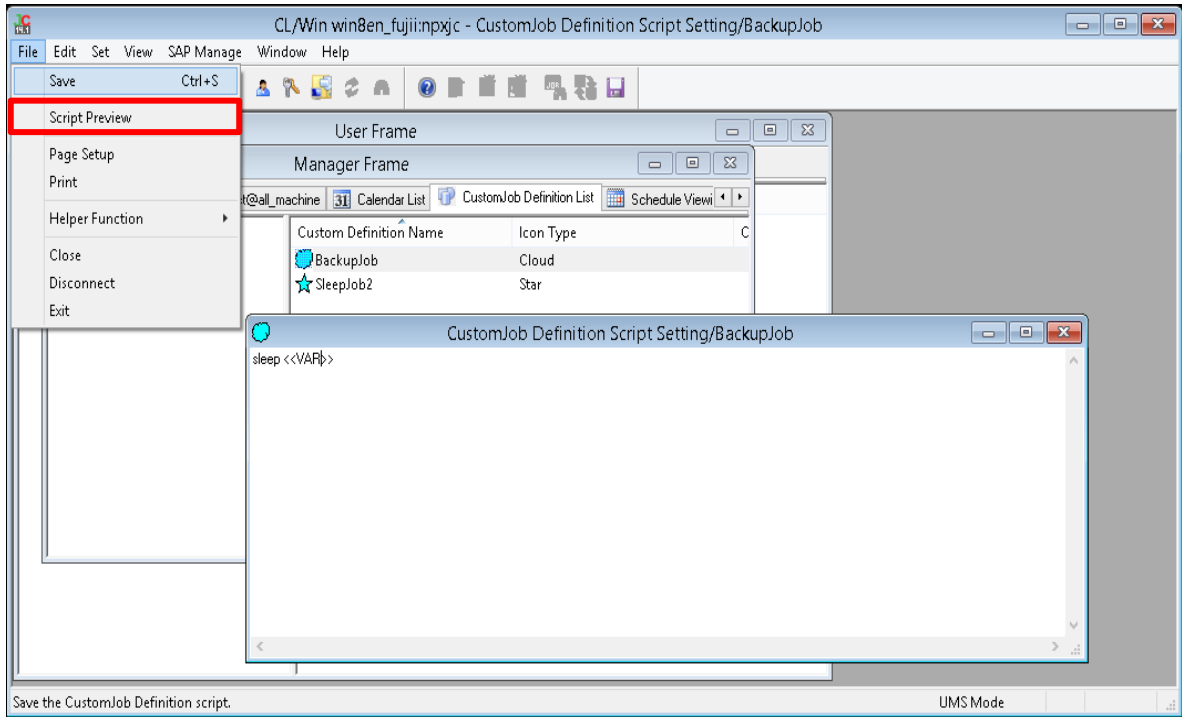


Figure 5.21. Screenshot of the window for choosing [Script] for a custom job definition

3. The script preview appears. It displays the variable that has been converted to the value you want to use.

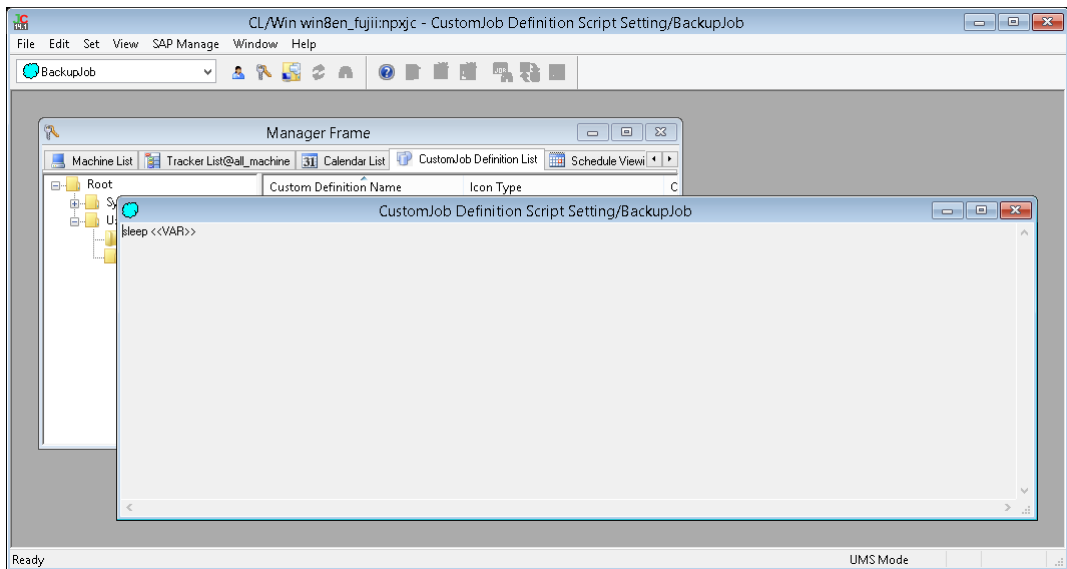


Figure 5.22. Custom job definition script preview window

## 5.5. Placing a Custom Job as a Part

### 5.5.1. Placing a Custom Job Part

Add a custom job icon to the open job network.

1. On the [Object] toolbar, click the [Custom Job] object icon. Move the cross cursor to the location where you want to place the object, and then click the mouse.

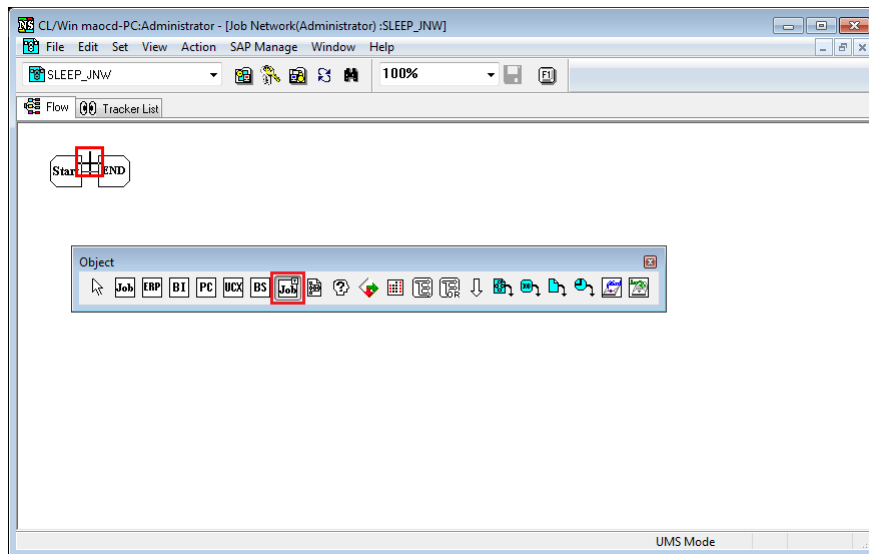


Figure 5.23. Adding a custom job icon



If the [Object] toolbar is not displayed, choose [View] on the menu bar and then [Object Box].

2. When the [Add new Custom Job] dialog box appears, click the [Browse] button.

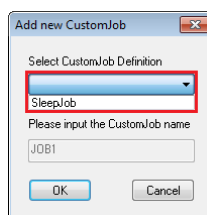


Figure 5.24. Adding a custom job

3. [Custom Job Definition Selection] dialog box appears. Select the custom job definition, and click the [OK] button.

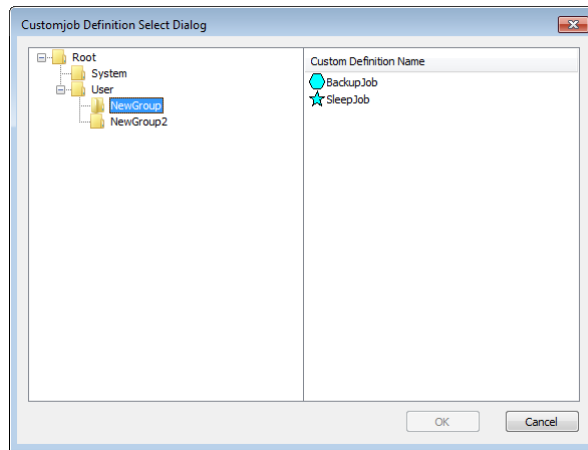


Figure 5.25. Selecting a custom job definition

The custom jobs created in [Section 5.3, “Creating or Deleting a Custom Job Definition”](#) are listed in the Select Custom Job Definition dialog box.

4. The custom job definition selected in the [Add new Custom Job] dialog box is set. Enter a desired job name.

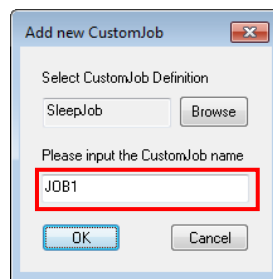


Figure 5.26. Entering a job name

The notes on the job name are the same as the notes on the unit job. For details, refer to "Cautions when naming a job" in [Section 3.1.4, “Adding Unit Job Icon”](#).

5. After specifying the settings, click the [OK] button. The job network to which the custom job has been newly added is displayed.

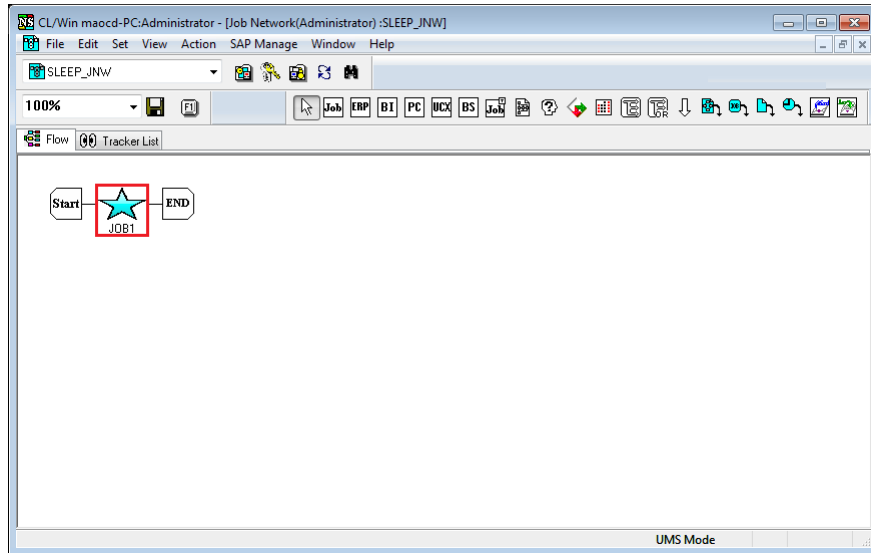


Figure 5.27. Screenshot of the window for adding a new custom job

### 5.5.2. Setting Execution Conditions (Parameters) of a Custom Job Part

The values of the custom job definition applied when the part is placed in the flow are used as the default parameter values of a custom job part. To change any of these values, perform the procedure below.

1. Select a custom job icon, right-click it and then choose [Parameter] from the popup menu.
2. The [CustomJob Definition parameter setting] dialog box appears.

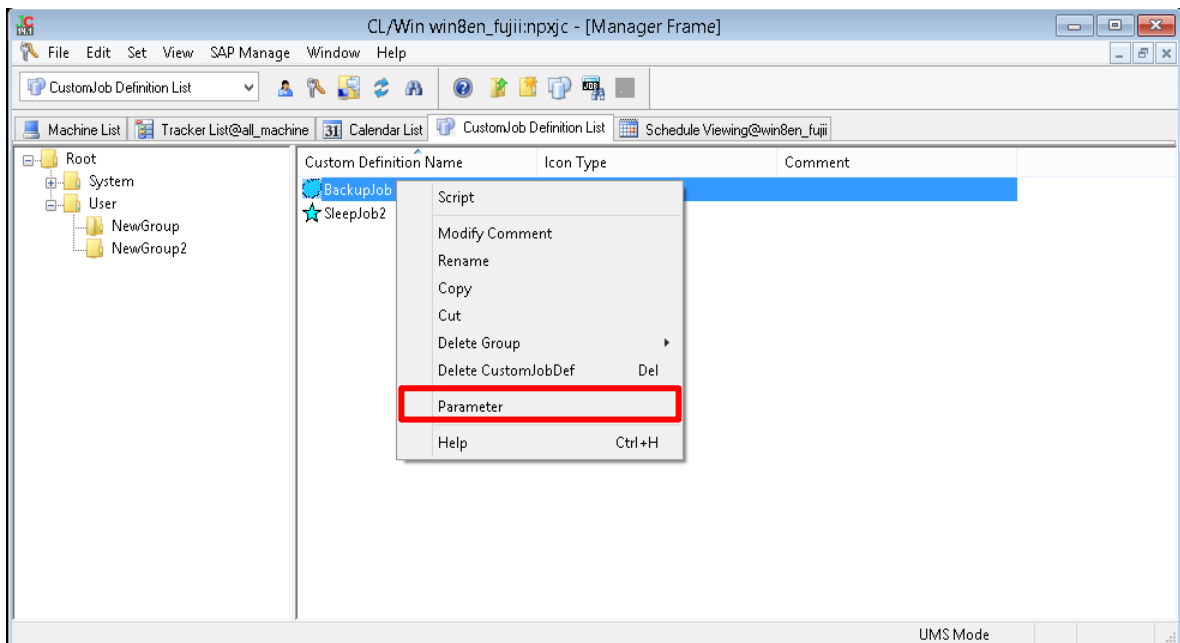


Figure 5.28. Custom job parameter setting window

3. Set the necessary items in the [Submit Parameters], [UNIX Parameters], [Result], [Critical Point Warning], [MISC Parameters], and [Custom Param Setting] tabs.

Except for [Custom Param Setting], details are the same as the unit job. For details, refer to [Section 4.2.1, “Setting an Execution Script of a Unit Job”](#). For information about [Custom Param Setting], refer to [Section 5.4.4, “Setting Execution Conditions \(Parameters\) of a Custom Job Definition”](#).

4. After specifying the settings, click the [OK] button.



For the custom parameters of a custom job part placed in the flow, only variable values can be changed. To add or delete a variable or change a comment, you need to change the custom job definition.

To use an extended custom job, it is necessary to set a [custom queue] or a [pipe queue] for which the transfer to a [custom queue] is set as the submission queue. For information about how to create a custom queue, refer to [Section 10.4, “Setting Parameters of a Batch Queue”](#) or "6.1.3.8. LSA Queue Attribute" in <JobCenter Guide for using NQS function> (Japanese only).

### 5.5.3. Script Preview Function

The script preview function allows you to check that the variable set in [Section 5.5.2, “Setting Execution Conditions \(Parameters\) of a Custom Job Part”](#) has been converted to the value you want to use.

1. Double-click the selected custom job icon, or choose [Script] from the right-click menu.
2. The Custom job script preview window appears.

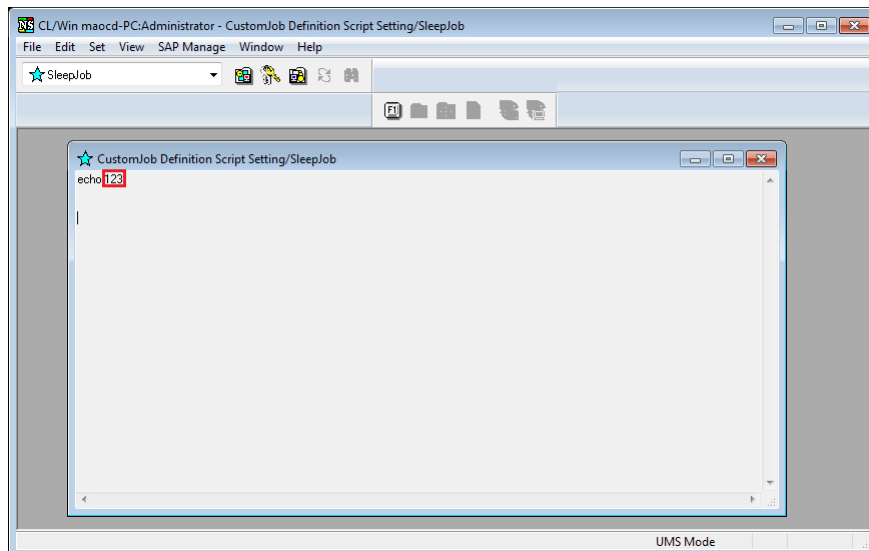


Figure 5.29. Custom job script preview window

3. After checking the script, select [File] and then [Close] on the menu bar to close the custom job script screen.



The script of a custom job part placed in the flow cannot be changed. To change the script, you need to change the custom job definition.

Note that you can change the script for the extended custom job parts.



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## 6 Schedule Operation Method

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By linking a schedule definition with a job network definition, it is possible to automatically execute the job network on the date that has been set in the schedule definition.

## 6.1. Creating a Schedule

Schedules are managed from [Schedule List] in the user frame.

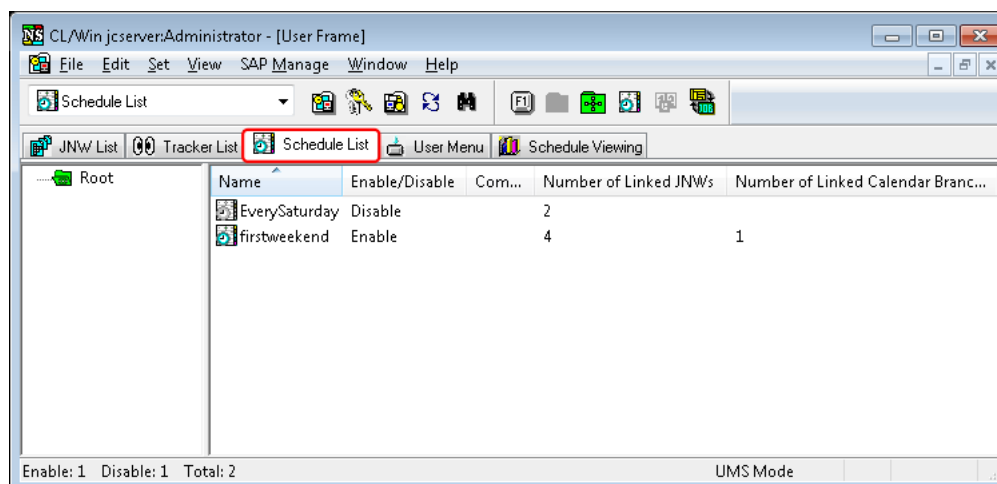


Figure 6.1. [Schedule List] Window Example

The items displayed in [Schedule List] are as follows:

### ■ Name

This column displays the schedule name.

### ■ Enable/Disable

This column displays whether the schedule is enabled or disabled.

### ■ Comment

This column displays the comment specified for the schedule.

### ■ Number of Linking JNWs

This column displays the number of job networks specified as linked job networks on the [Linking JNW] tab in the [Schedule setting] dialog box of the corresponding schedule.

### ■ Number of Linked Calendar Branch Jobs

This displays the number of job networks specified as calendar branch parts for the corresponding schedule.



- The number of linking JNWs and the number of linked calendar branch jobs are only displayed if [Show Linking Object List] is selected. This check box is not selected by default.
- If [Show Linking Object List] is selected, processing to check all JNW data is performed, so displaying the schedule list window might take a while.

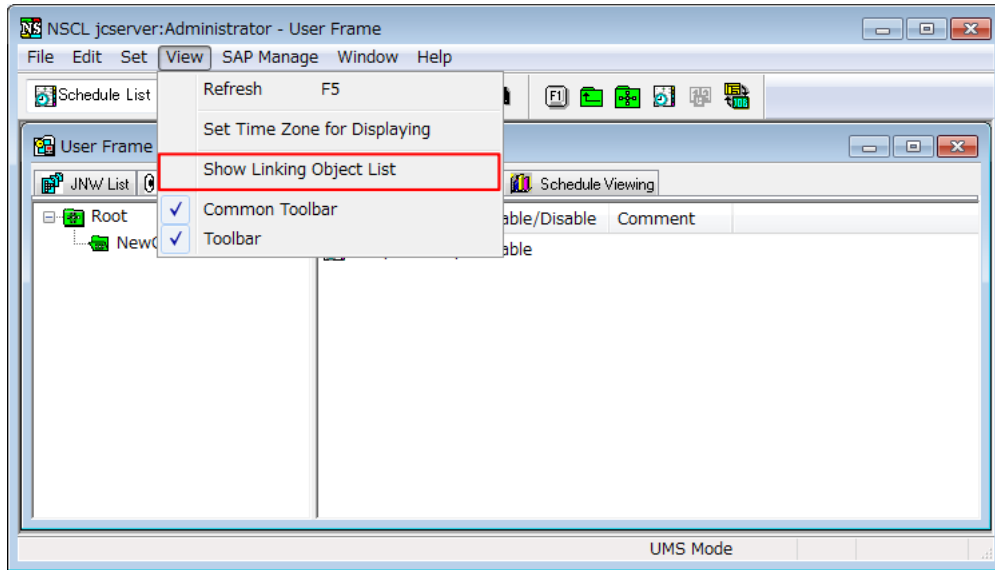


Figure 6.2. Show Linking Object List

Each column in [Schedule List] can be sorted. Click the column you want to sort.

### 6.1.1. Creating or Deleting Schedule Groups

In the same way as job networks, schedules are easier to manage if groups are created.

Open the schedule list in the user frame, and then create a schedule group directly under the Root group.

#### 6.1.1.1. Creating a Schedule Group

1. Select the [File] menu, [New], and then [Schedule Group], or right-click the right view of the user frame without selecting a different group, and then select [New Schedule Group] from the shortcut menu to create a schedule group.
2. Specify the name of the new group.

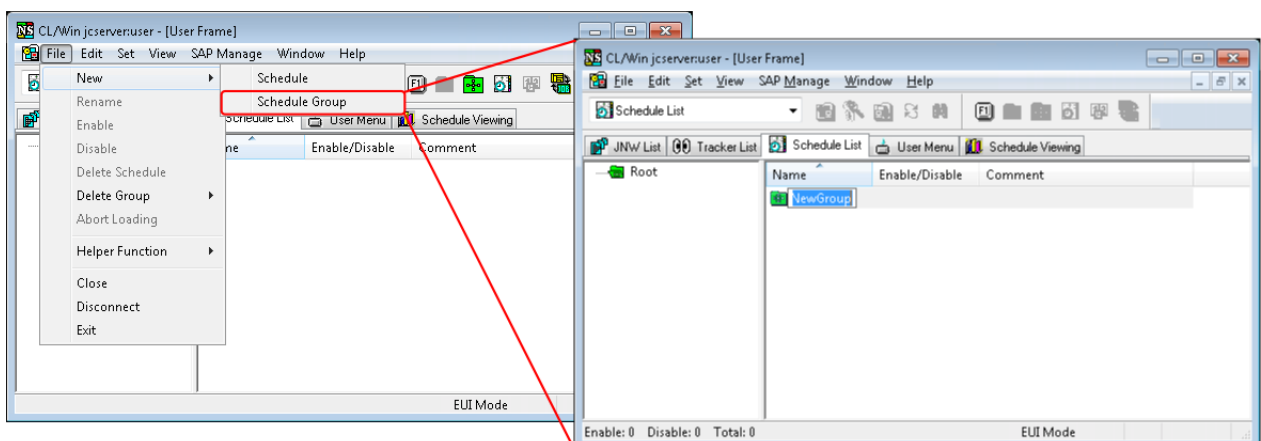


Figure 6.3. Creating a Schedule Group

Notes on specifying the name of a schedule group

- Up to 40 one-byte characters or 20 two-byte characters can be specified.
- There can be up to five layers of groups.
- The following characters cannot be used: spaces, tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, commas, ., /, :, ;, <, =, >, ?, @, [, \, ], ^, `, {, |, }, and ~.
- The name of a schedule group that already exists cannot be specified.

### 6.1.1.2. Deleting a Schedule Group

To delete a schedule group, perform the operation below. The processing is only valid for a schedule group.

1. Select the schedule group you want to delete.
2. Right-click, and then select [Delete Group] followed by [Forced Delete] or [Normal Delete] from the displayed shortcut menu.

Forced Delete	If a schedule group is deleted, schedules in the group are deleted as well.
Normal Delete	Only the schedule group is deleted. Schedules in the group are not deleted and are moved under Root.



#### Notes on Deleting Multiple Selected Groups

- If [Forced Delete] is selected, all sub-groups and schedules in the corresponding schedule groups are deleted.
- If [Normal Delete] is selected, the schedules in the corresponding groups are not deleted and are moved to Root. Note that schedule groups and sub-groups are deleted.
- If multiple schedules and schedule groups are selected at the same time, only the schedule groups are deleted. The schedules are not deleted.

### 6.1.2. Creating or Deleting a Schedule

Create a schedule in the created schedule group.



The schedule and schedule group name are handled according to the OS specifications. For the UNIX version, the names are case sensitive. However, note that, for the Windows version, the names are not case sensitive for the OS or JobCenter.

#### 6.1.2.1. Creating a Job Network

1. Select the group created in [Section 6.1.1, "Creating or Deleting Schedule Groups"](#), double-click or right-click, and then select [Open] from the displayed shortcut menu to move to the group.

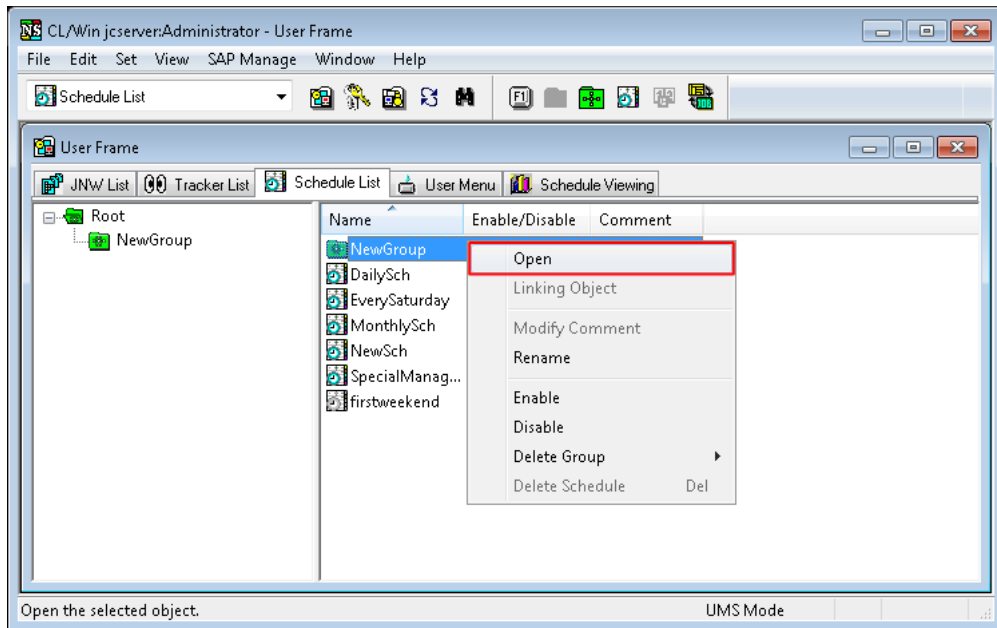


Figure 6.4. Moving to a Schedule Group

2. Select the [File] menu, [Create], and then [Schedule], or right-click the right view of the user frame without selecting a different schedule, and then select [New Schedule] from the shortcut menu to create a schedule.
3. Specify the name of the new schedule.

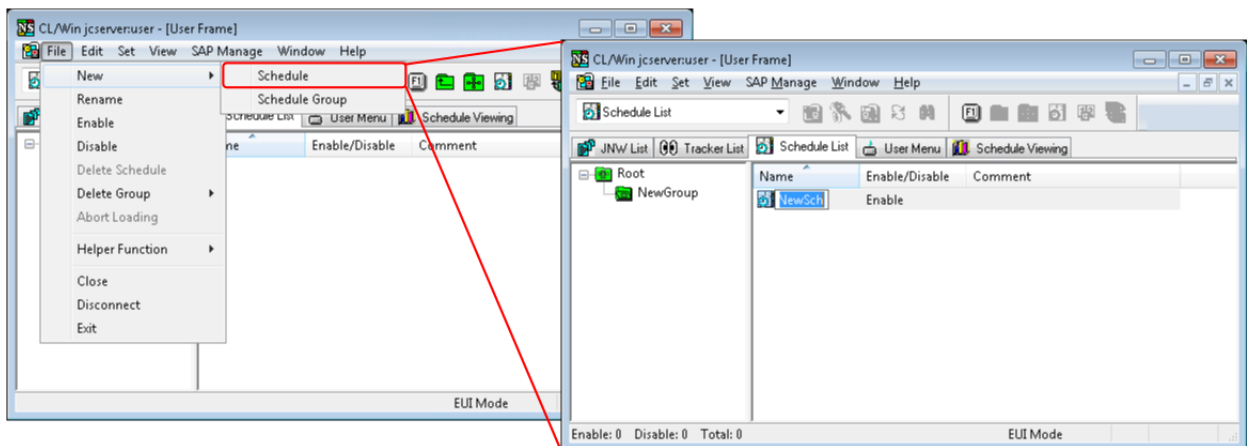


Figure 6.5. Creating a Schedule



Notes on specifying the name of a schedule

- Up to 128 one-byte characters or 64 two-byte characters can be specified.
- Only letters, underscores, numbers, and two-byte characters can be used as the first character of the name. The following characters cannot be used: spaces, tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, commas, ., /, :, ;, <, =, >, ?, @, [, \, ], ^, ` , {, |, }, and ~.
- The name of a schedule that already exists for a given user cannot be specified.

■ Up to 200 schedules can be created.

### 6.1.2.2. Deleting a Schedule

To delete a schedule, perform the operation below.

1. Select the schedule you want to delete.
2. Right-click, and then select [Delete Schedule] from the displayed shortcut menu.



You cannot delete a schedule that is referenced by a calendar branch part. Before deleting a schedule check that the number of branches for the calendar is 0.

For information about how to view the number of branches for the calendar, refer to [Section 6.1, "Creating a Schedule"](#).

### 6.1.3. Creating a Schedule Rule

Schedules are created by combining rules such as "Weekly, on XXday".

Schedules include individually specified schedules and separate operating day calendars.

Note that specified schedule and job network linkage can be checked in the list.

(For details about operating day calendars, refer to in <Environment Guide>Chapter 7, 「Operating Day Calendar Setup」.)

Yellow-green background dates: Automatic execution day

Red dates: non-operation day

Scheduled execution time on the selected date

Rules applied to this schedule

+/-	Type	Break s...	Relative	Time	Term
+/- Inc.	Weekly/Saturday	None	0	03:00	2011/01/12-2012/12/28

Figure 6.6. [Schedule setting] Dialog Box Example

#### 6.1.3.1. Direct Schedule Creation

As an example, the following shows how to create a schedule rule that executes the job network every week at 12:00 on Saturday.

Settings

- Schedule name: "Weekly, on Saturday"
- Schedule execution rule: "Weekly", "Saturday", "12:00"
- Linked job network: "NewJnw"

1. Create the "Weekly, on Saturday" schedule by performing the procedure in [Section 6.1.2, "Creating or Deleting a Schedule"](#).

2. Next, specify the created "Weekly, on Saturday" schedule.

Select the created schedule, right-click, and then select [Open] from the displayed shortcut menu.

3. The [Schedule setting] dialog box is displayed.

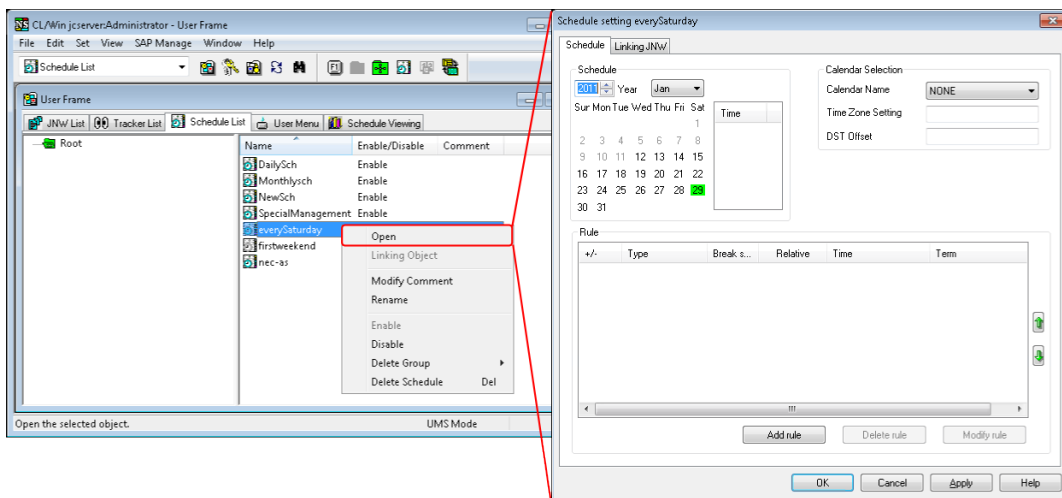


Figure 6.7. Displaying the [Schedule setting] Dialog Box

4. Next, specify the schedule rule.

Click the [Add rule] or [Modify rule] button in the [Schedule setting] dialog box.

5. Enter the rule in the displayed [Rule setting] dialog box.

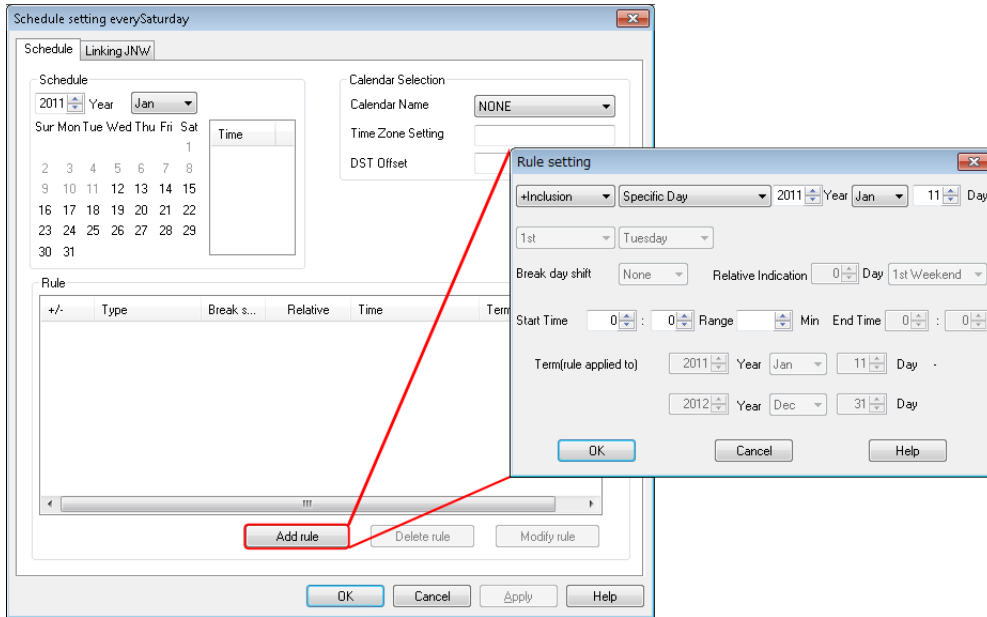


Figure 6.8. Displaying the [Rule setting] Dialog Box

6. Leave [+Inclusion/-Exclusion] set to [+Inclusion] because a job execution plan is to be added to the schedule.
7. For [Specific Day], select [Weekly] because jobs are to be executed every week on Saturday.

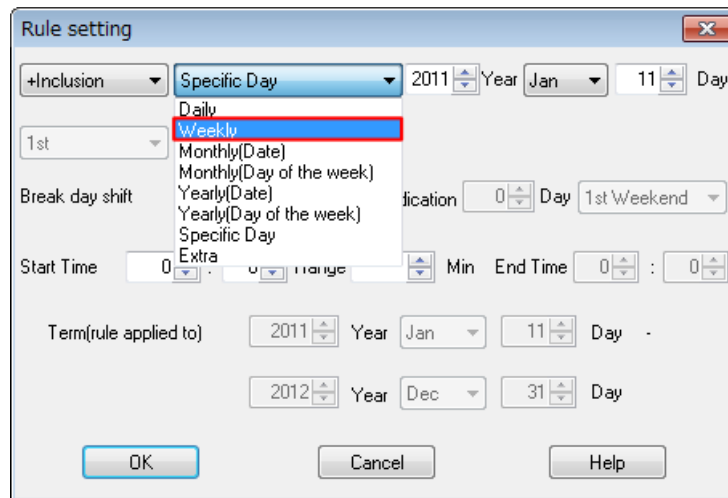


Figure 6.9. Example Dialog Box When [Weekly] Is Selected

8. Part of the setup dialog box changes to the display for "Weekly" specification. Select [Saturday] because jobs are to be executed every week on Saturday.



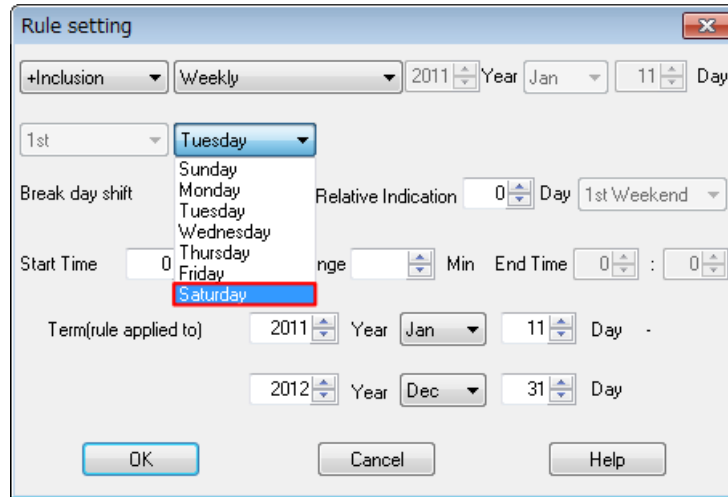


Figure 6.10. Example Day Selection Dialog Box for "Weekly" Specification

- Specify [12:0] as the start time because jobs are to be automatically executed at 12:00 AM. Specify [Term(rule applied to)] at the same time.

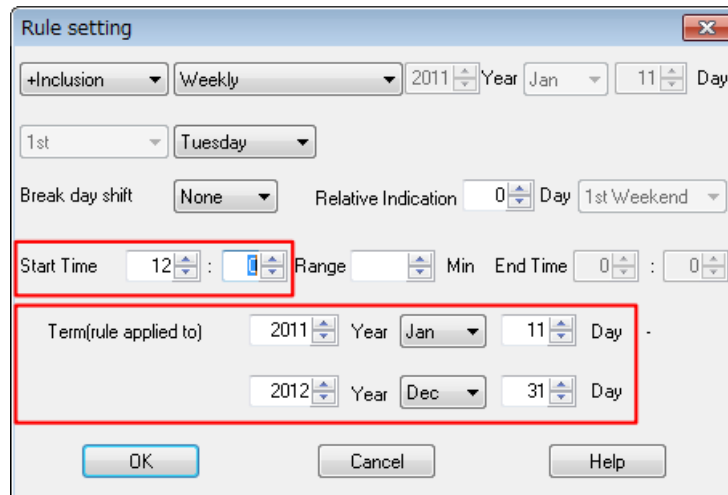
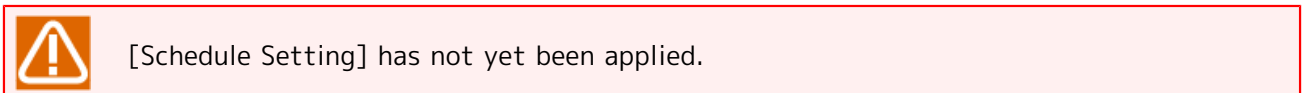


Figure 6.11. Start Time and Term(rule applied to) Selection Dialog Box Example

- Check the settings, and then click the [OK] button in the [Rule setting] dialog box.
- The [Rule setting] dialog box is closed, and the rule specified in the [Rule] area of the [Schedule setting] dialog box is added.



- To finish the procedure, apply the specified schedule.  
Click the [Apply] or [OK] button in the [Schedule setting] dialog box.

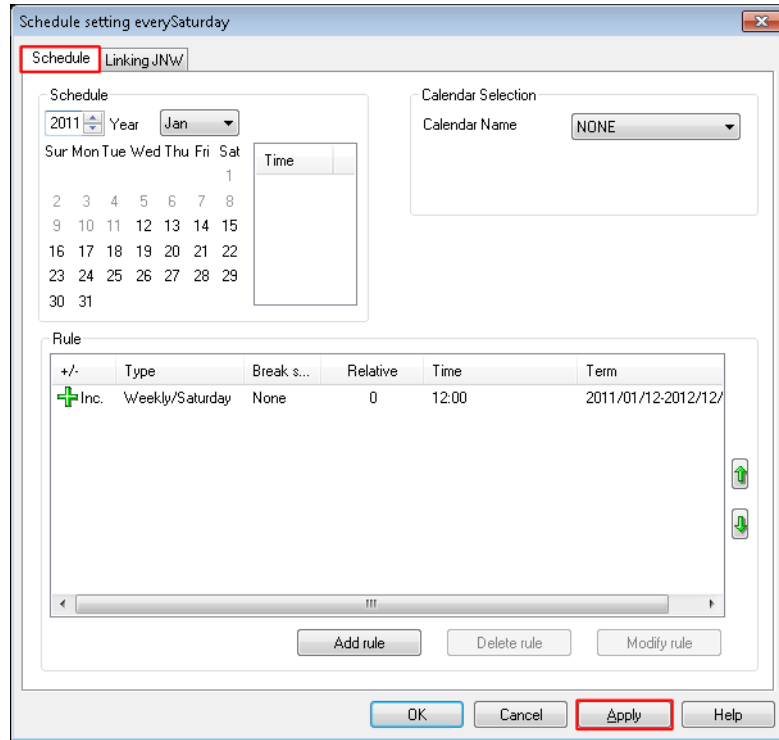


Figure 6.12. Pre-Schedule-Setting-Application Dialog Box Example

- The background of the date in the [Schedule] area to which the specified rule was applied becomes yellowish green. When this date is clicked, the schedule list for that day is displayed in the [Time] box.

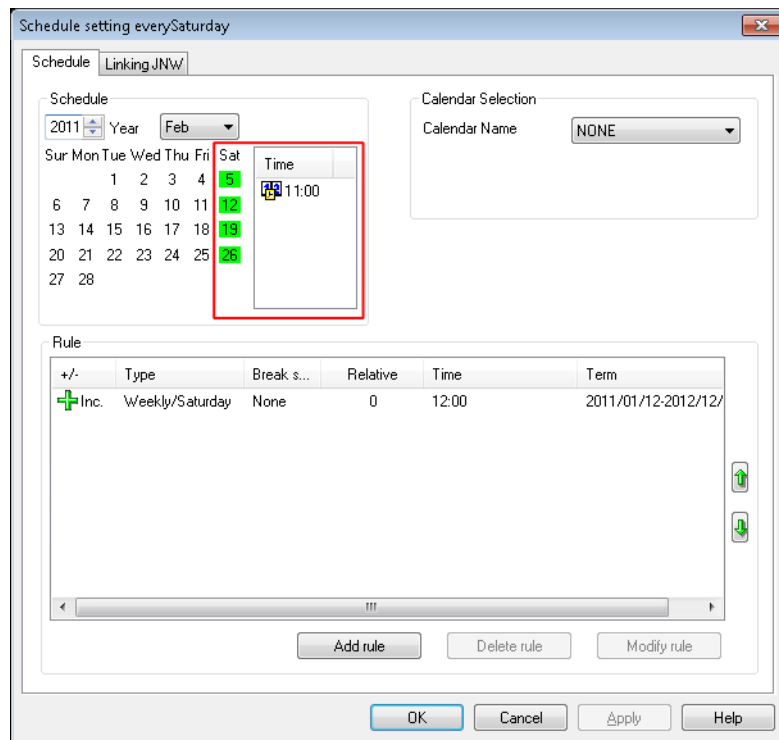




Figure 6.13. Post-Schedule-Setting-Application Dialog Box Example

Note that, if multiple rules were applied, the calendar is calculated in the order that the rules were specified. To change the order of the rules, select the corresponding rule from the rule-area list, and then use  or .

[Schedule] area is used to display schedules defined using [Rule] area. The background of a date for which automatic execution is already planned is displayed in yellowish green. Similarly, a date specified as an inactive day by the operating day calendar is displayed in red. When a [Schedule] area date is clicked, the schedule list for that day is displayed in the list area to the right of [Schedule] area.

As an example, the following sorts of rules can be specified using the [Rule setting] dialog box.

■ 1st-weekend-of-the-month rules

One type of calendar specification rule that can be used is a first-weekend-of-the-month rule.

This rule is used to execute jobs on the first weekend of every month. This rule is almost the same as the rule that executes jobs on the first Saturday of every month plus the previous shift, but, when the previous shift is during the previous month, it is delayed until the next weekend.

To specify this rule, select "Special" as the calendar rule, and then select "First weekend of the month".

■ Yearly(Day of the week) rules

One type of calendar specification rule that can be used is a yearly (day) rule.

This rule is used to execute jobs during the month "MM" on the specified day of the 1st, 2nd, 3rd, 4th, 5th, or last week.

The [Rule setting] settings are as follows.

■ Inclusion/Exclusion

Specify whether to add or delete a schedule.

+Inclusion	This means that the specified rule date and time are added to the schedule as a planned job execution date.
-Exclusion	This means that the specified rule date and time are added to the schedule as a date on which jobs are not executed.

■ Type

Specify a rule according to the selected type.

Daily	None
Weekly	Select which day after specification.
Monthly(Date)	Select the date after specification, or specify the date in the text entry area.  To specify the last day of every month, enter the capital letter "L" in the date text entry area.
Monthly(Day of the week)	After specification, specify the 1st, 2nd, 3rd, 4th, 5th, or last week and the day of execution.
Yearly(Date)	After specification, specify the month (MM) and the date (DD).  To specify the last month, enter the capital letter "L" in the date text entry area.
Yearly(Day of the week)	After specification, specify the month (MM), the 1st, 2nd, 3rd, 4th, 5th, or last week, and the day of execution.

Specific Day	After specification, specify the year (YYYY), month (MM), and date (DD). When a specific date is specified, there is no effect on the operating day calendar.
Extra	After specification, if the first weekend of the month is selected, specify the setting relative to the operating day. This has almost the same meaning as the rule that executes jobs on the first Saturday of every month plus the previous shift, but, when the previous shift is during the previous month, it is delayed until the next weekend.
Specified Interval	Day After specification, specify every how many days jobs are executed. When [Specified Day Interval] is specified, the setting is not affected by the operating day calendar. [Specified Day Interval] cannot be selected as [Type] for the operating day calendar.

■ Break day shift

Specify whether to shift the planned execution date if the specified execution date corresponds to an inactive day defined by the operating day calendar.

Before	Specify this to shift the schedule to the operating day that is closest to the execution day specified using the previous or an earlier operating day.
After	Specify this to shift the schedule to the operating day that is closest to the execution day specified using the following or a later operating day.
None	Jobs are not executed.

■ Relative Indication

Specify the number of days to shift away from the initially specified date, relative to the operating day. Precede the number of days with a minus to shift the original date to the past or a plus to shift the date to the future.

■ Start Time

Specify the job execution start time. Direct entry in the text entry area is also possible. The range for the hour is 0 to 35, and the range for the minute is 0 to 59.

■ Range

Specify the job execution cycle. The range is 1 to 1,440 minutes. However, if [Specified Day Interval] is specified as [Type], the range is 1 to 365 days. If you do not want to enter a cycle, delete the value.

■ End Time

Specify the job end time. If a cycle is specified, this setting is required.

■ Term(rule applied to)

Specify the application period (start date to end date) for the applied rules. For the application period date, specify a date up to 12-31-2037.




If an extremely large number of schedule items are specified (such as an application period of many years with a several minute interval), the next time the [Schedule setting] dialog box is opened, an error might occur due to a timeout.

### 6.1.3.2. Linking a Schedule With a Job Network

As an example, the following describes how to link the schedule created in Section 6.1.3.1, "Direct Schedule Creation" with "NewJnw", which was created in Section 3.1, "Creating a Job Network".

1. In the [Schedule setting] dialog box, select the [Linking JNW] tab. The dialog box for linking a schedule with a job network is displayed.
2. Select [NewJnw] from the [Other JNW] area list, and then click the [Add rule] button. [NewJnw] is added to the [Linking JNW] area list.

 A list of job networks of the schedule owner is displayed in the [Other JNW] area. It is possible to delete a job network from the [Linking JNW] area list by selecting the job network for which you want to remove the linkage with the schedule from the list and then clicking the [Delete] button.

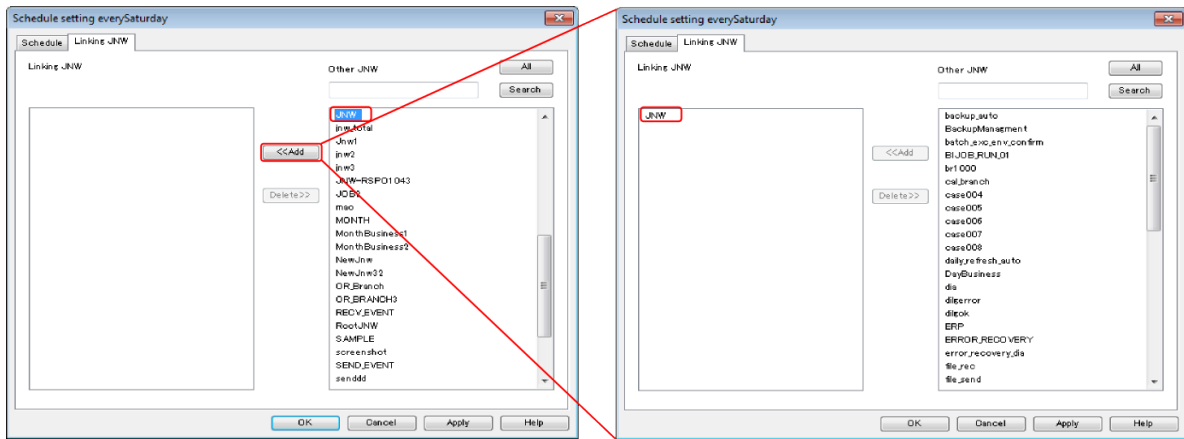


Figure 6.14. Example of Linking JNW

3. After specifying the settings, click the [Apply] button.
4. Click the [OK] button. This concludes setting up a linkage between a schedule and job network.
5. Make sure that "1" is displayed in the [Number of Linking JNWs] field, which is on the line of the "Weekly, on Saturday" schedule icon displayed in [Schedule List], which is in the user frame.

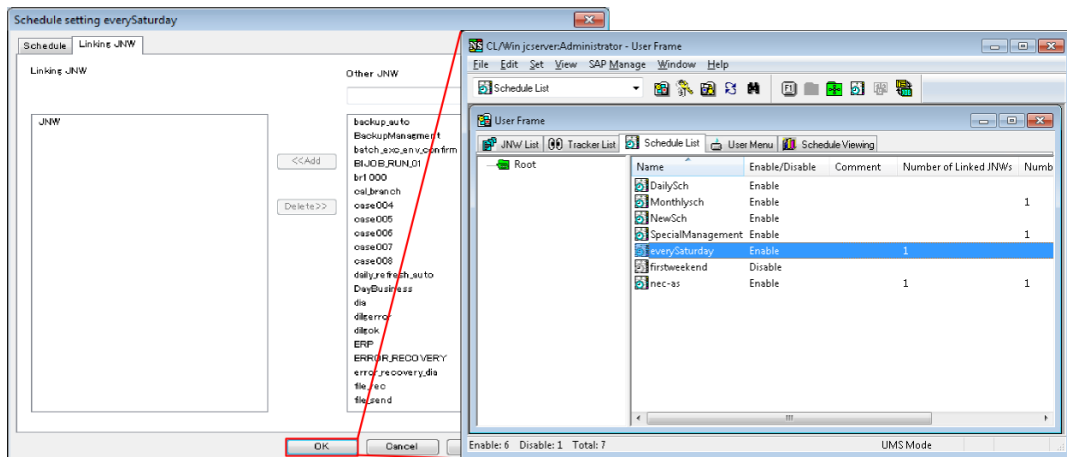


Figure 6.15. Schedule Setup Completion Dialog Box Example

### 6.1.3.3. Creating a Schedule Based On a Separate Operating Day Calendar

An operating day calendar is used to define the dates on which to perform job operations (operating days) and those on which not to perform job operations (inactive days).

By applying an operating day calendar to a schedule, it is possible to set up an automatic job execution schedule for which inactive days are considered.

1. Select the schedule icon, right-click, and then select [Open] from the displayed shortcut menu.

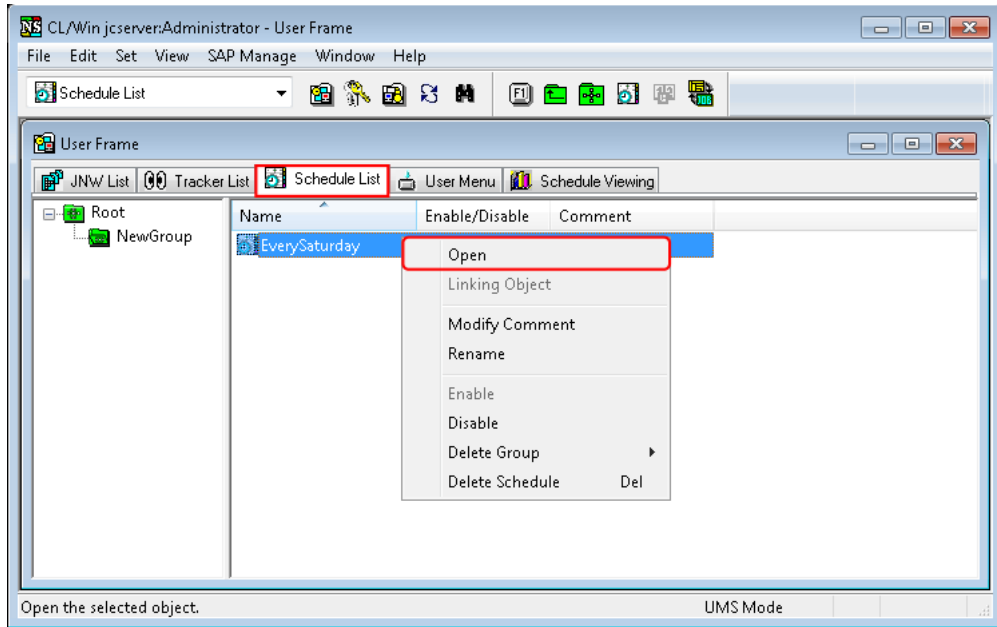


Figure 6.16. Displaying the Schedule Settings Dialog Box

2. The [Schedule setting] dialog box is displayed.
3. Select the operating day calendar from the [Calendar Selection] area ([Japan] in this case).

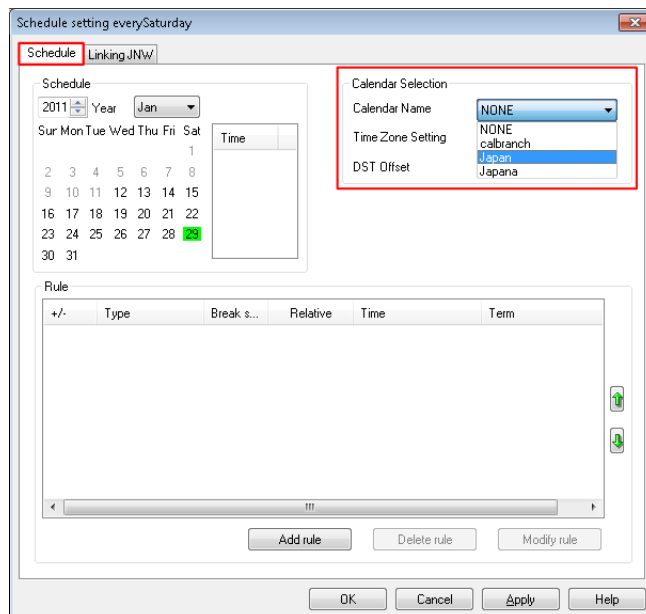



Figure 6.17. Operating Day Calendar Selection Dialog Box Example

4. After selecting the calendar, click the [OK] or [Apply] button.

To cancel the operating day calendar selection, select "NONE" from the combo box.

When an operating day calendar is applied or canceled, the schedule is recalculated, and a schedule for which the operating day calendar is considered is displayed in the schedule area.



- If use of the time zone setting function is specified for the calendar, the time zone setting is added to the calendar selection field. For details, refer to in <Environment Guide>Section 15.2.4, "Specifying a Calendar for which a Time Zone Has Been Specified for the Schedule".
- Operating day calendars are created or updated by using an administrator account. For details, refer to in <Environment Guide>Chapter 7, 「Operating Day Calendar Setup」 .

### 6.1.4. Checking a Scheduled Job Network

Make sure that the job network "NewJnw" has been linked to the schedule.

This can be checked using [Tracker List], [Schedule Viewing], or [Schedule List], all of which are in the user frame, depending on your purpose.

#### 6.1.4.1. Checking Using [Tracker List]

Schedule details such as the [Status], [Expected Start Time], and [Expected End Time] values for "NewJnw" can be checked.

1. Select the [Tracker List] tab in the user frame.

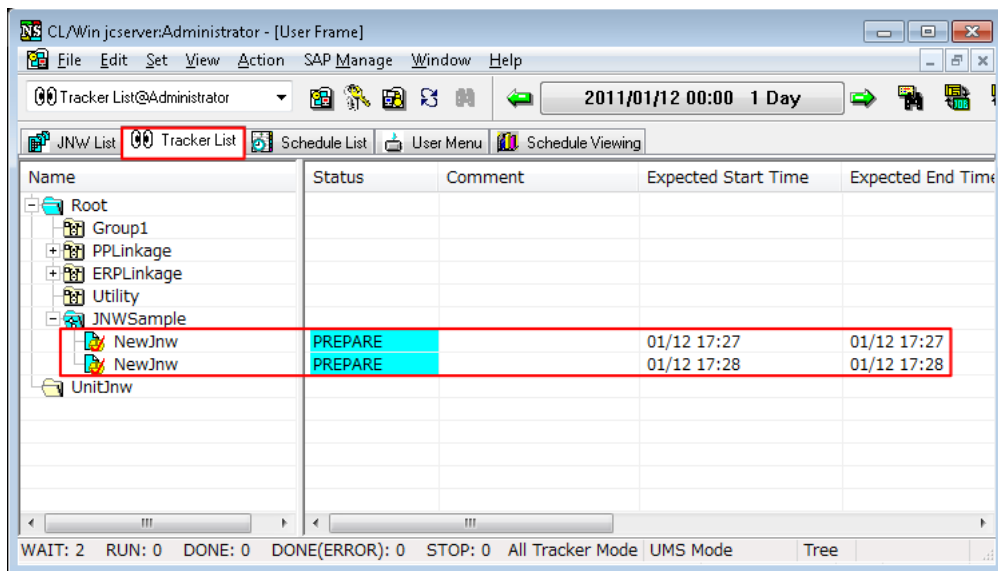


Figure 6.18. [Tracker List] Confirmation Dialog Box Example

Note that, because the initially specified display period is one day, a schedule specified as described in Figure 6.18, "[Tracker List] Confirmation Dialog Box Example" might not be displayed. Change the date or day specified for the schedule to a date or day in the display period.

For details about how to change the display period, refer to Section 8.7, "Displaying the Tracker List with a Period Specified".

### 6.1.4.2. Checking Using [Schedule Viewing]

The [Schedule Name] value linked to "NewJnw" and the execution date can be checked.

1. Select the [Schedule Viewing] tab in the user frame.

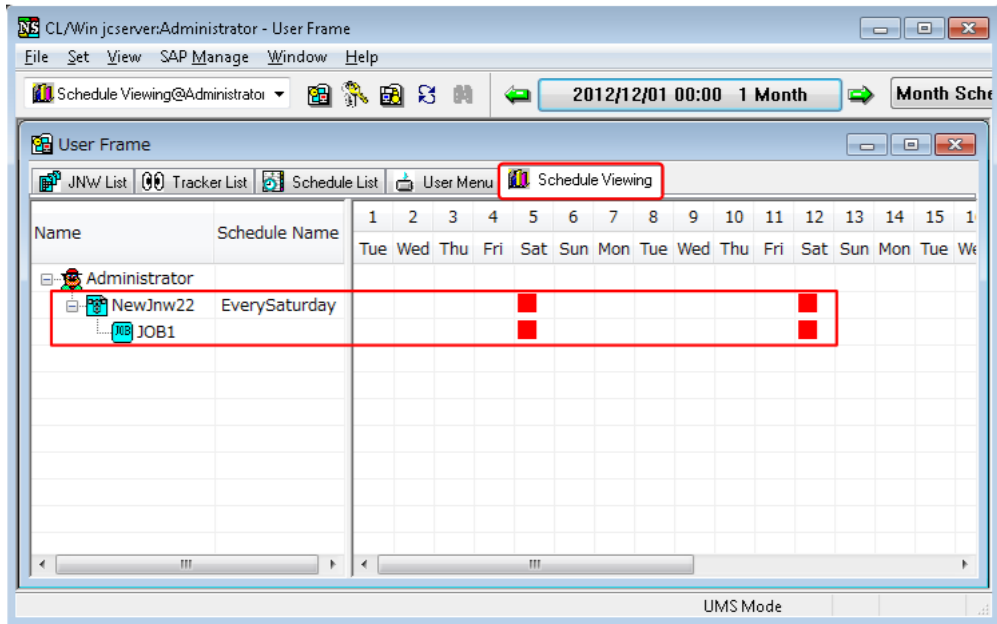


Figure 6.19. [Schedule Viewing] Confirmation Dialog Box Example

### 6.1.4.3. Checking Using [Linking Object]

Job networks linked to each schedule can be displayed in a list format.

1. Select the [Schedule List] tab in the user frame.
2. Select the [View] menu, and then click [Show Linking Object List].

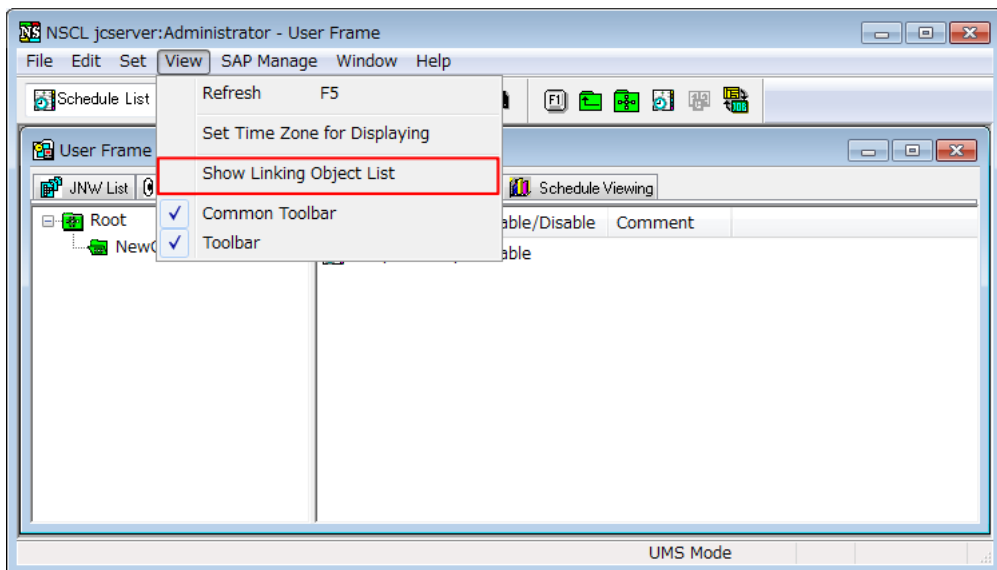


Figure 6.20. Show Linking Object List

3. Select [Linking Object] from the shortcut menu displayed by right-clicking a schedule.



4. The linking object dialog box of the selected schedule is displayed.

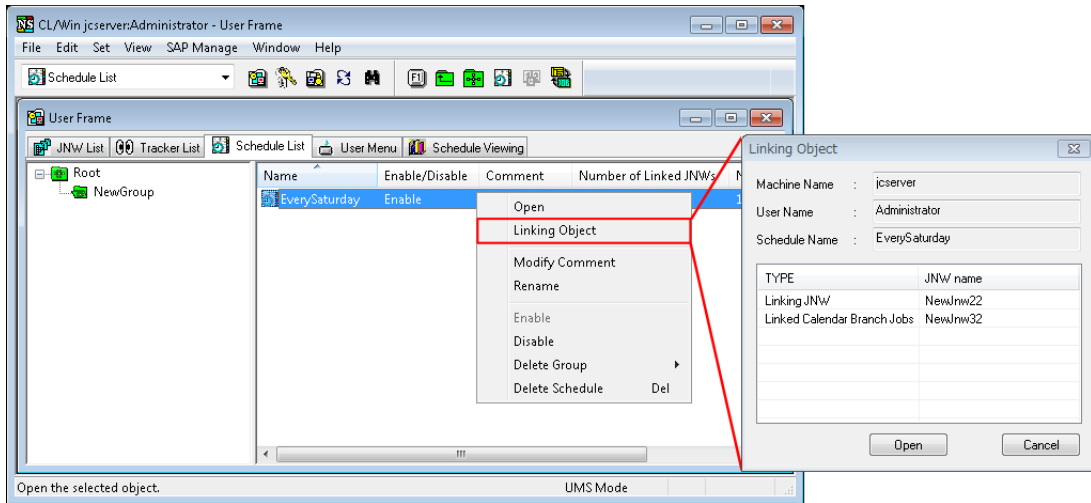


Figure 6.21. [Linking Object] Dialog Box Example

■ TYPE [Linking JNW]

The job networks specified as linked job networks of the corresponding schedule are displayed.

■ TYPE [Linked Calendar Branch Jobs]

The job networks specified as calendar branch parts of the corresponding schedule are displayed.



- If [Show Linking Object List] is not selected, [Linking Object] cannot be selected from the menu displayed by right-clicking the schedule.
- For a schedule for which [Linking JNW] and [Linked Calendar Branch Jobs] do not exist, [Linking Object] cannot be selected from the menu displayed by right-clicking the schedule.

## 6.2. Manipulating a Schedule

A schedule can be manipulated by using the menu displayed when the target schedule is right-clicked.

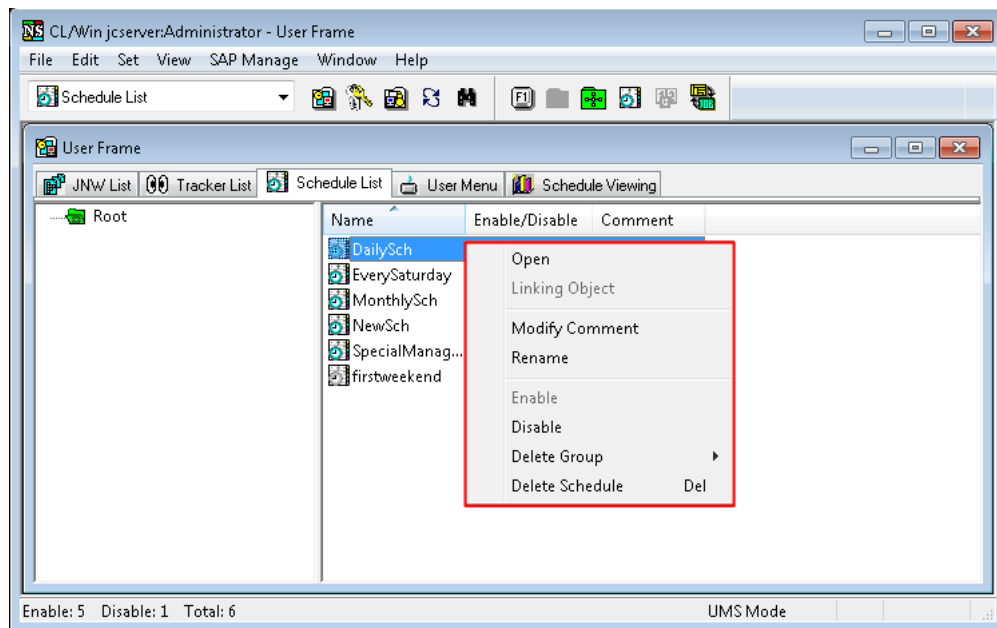


Figure 6.22. Schedule Operation Menu

Table 6.1. Schedule Operation List

Menu name	Description	Reference
Open	This opens the [Schedule] window.	<a href="#">Section 6.1.3, "Creating a Schedule Rule"</a>
Linking Object	This displays the job network objects linked to the schedule.	<a href="#">Section 6.1.4.3, "Checking Using [Linking Object]"</a>
Modify Comment	This is used to change the schedule comment.	<a href="#">Section 6.2.2, "Specifying a Comment for a Schedule"</a>
Rename	This is used to change the schedule name.	<a href="#">Section 6.2.3, "Changing the Schedule Name"</a>
Enable	This enables the schedule.	<a href="#">Section 6.2.4, "Enabling or Disabling a Schedule"</a>
Disable	This disables the schedule.	<a href="#">Section 6.2.4, "Enabling or Disabling a Schedule"</a>
Delete Schedule	This deletes the schedule.	<a href="#">Section 6.1.2.2, "Deleting a Schedule"</a>

### 6.2.1. Moving a Schedule or Schedule Group

To move a schedule or schedule group, drag and drop the schedule into the specified group.

#### ■ Movement by dragging and dropping

1. Hold down the left button to drag the schedule or schedule group you want to move, and drop it into the movement-destination schedule group.

2. Alternatively, hold down the right button to drag the schedule you want to move, drop it into the movement-destination schedule group, and then select "Move Here".

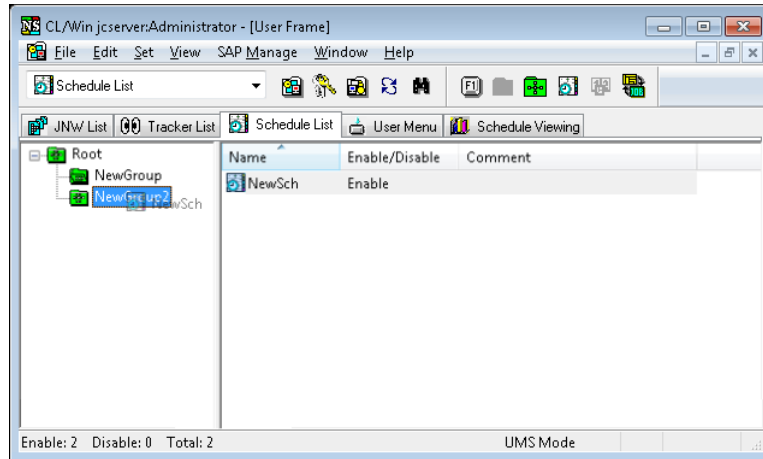


Figure 6.23. Moving a Schedule



#### Notes on moving schedules and schedule groups

- Only movement within the same user is possible.
- If the number of layers will exceed five after moving a schedule group, the movement is not possible.
- If one of the sub-groups in the movement-destination schedule group has the same name as the schedule group being moved, the movement is not possible.
- The schedule group being moved cannot be selected as the movement-destination schedule group.

### 6.2.2. Specifying a Comment for a Schedule

The following describes how to specify a comment for a schedule.

1. Select a schedule, right-click, and then select [Modify Comment] from the displayed shortcut menu.
2. Specify the schedule comment.

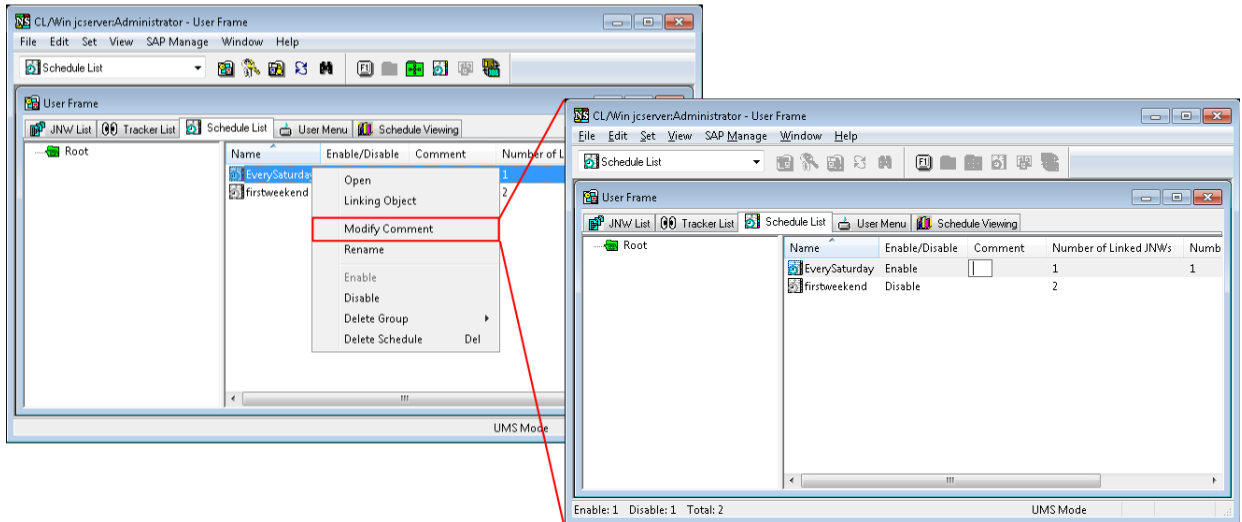


Figure 6.24. Specifying a Comment for a Schedule



Notes on specifying a comment for a schedule

- Comments can be specified by using within 256 bytes of Japanese and/or alphanumeric characters.
- The tabs, special characters, and the following characters cannot be used: ^, #, \$, ;, (, ), [, ], {, }, \, |, <, >, ", &, and '.

### 6.2.3. Changing the Schedule Name

The following describes how to change the schedule name.

1. Select a schedule, right-click, and then select [Rename] from the displayed shortcut menu.
2. Specify the new schedule name.

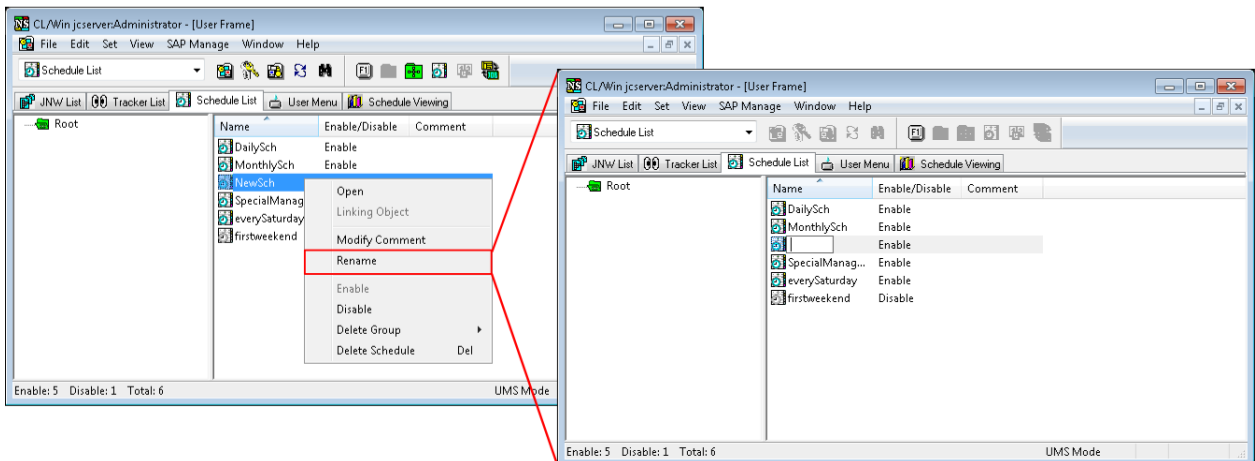


Figure 6.25. Changing the Schedule Name



Notes on changing the schedule name

- Up to 128 one-byte characters or 64 two-byte characters can be specified.
- Only letters, underscores, numbers, and two-byte characters can be used as the first character of the name. The following characters cannot be used: spaces, tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, commas, ., /, :, ;, <, =, >, ?, @, [, \, ], ^, ` , {, |, }, and ~.
- A schedule name that already exists for the same user cannot be specified.

### 6.2.4. Enabling or Disabling a Schedule

The following describes how to enable or disable a specified schedule. It is possible to start operating a registered schedule or stop an operating schedule. In addition, by performing operations on a schedule group, all the schedules in the group can be managed at the same time.

Whether a schedule is enabled or disabled is displayed for [Enable/Disable] in the [Schedule List] dialog box.



- Enabling or disabling a schedule is a function used to schedule submission of job networks linked to the corresponding schedule. This has no effect on branch operations of calendar branch parts.
- Job networks linked to a disabled schedule are not displayed for [Tracker List] or [Schedule Viewing].

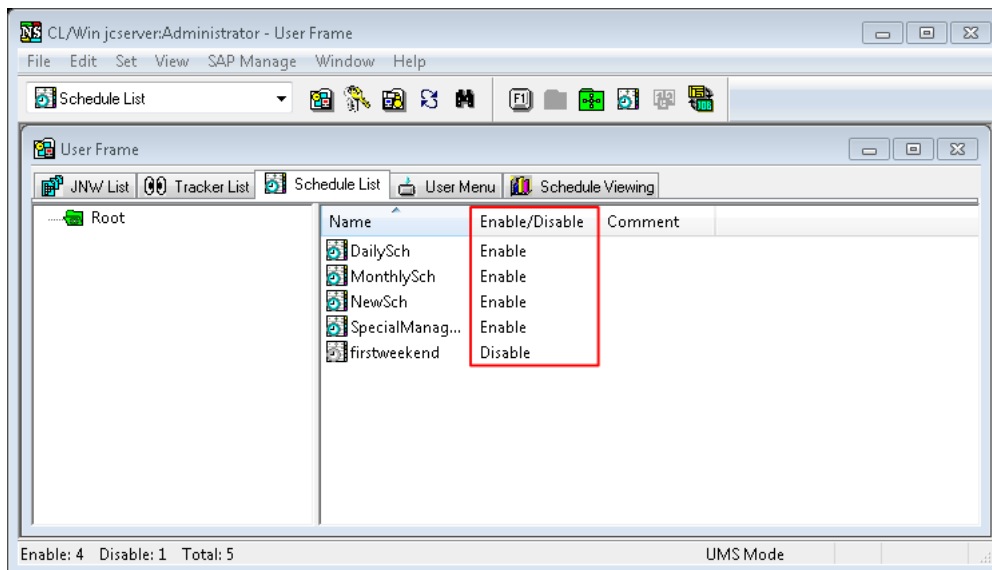


Figure 6.26. Schedule Enabled/Disabled Status

#### ■ [Enable]

Select one or more schedules and/or schedule groups, and then either select the [File] menu followed by [Enable] or select [Enable] from the shortcut menu displayed by right-clicking.

#### ■ [Disable]

Select one or more schedules and/or schedule groups, and then either select the [File] menu followed by [Disable] or select [Disable] from the shortcut menu displayed by right-clicking.



Notes on enabling or disabling a schedule

- Even if a schedule is disabled, trackers for which schedule submission has already been performed are not forcibly stopped and continue processing.
- Even if a schedule related to a tracker that has changed from the planned status to the plan-confirmed status, such as due to a hold operation, is disabled, the tracker is not deleted.

---

## 7 Submitting the Job Network Independently of the Schedule

---

JobCenter can submit the job network automatically triggered by specific events and independently of the schedule.

This function is referred to as the trigger.

For example, when an error log containing the specific message is output to the text log file, you can submit the job network and execute the error handling process by using the trigger.

The trigger is classified into several types, and the type affects how the job network is submitted.

Triggers to actually submit the job network using the trigger and the trigger type corresponding to the triggers are listed below.

Table 7.1. Triggers to submit the job network and trigger type

Triggers to submit the job network	Trigger type
A specific keyword is output to the text log	Text Log Monitoring

## 7.1. Usage

---

To use the trigger, the trigger to submit the job network and job network to be actually submitted must be defined.

This definition is referred to as the trigger definition.

The trigger to submit the job network that will be defined as the trigger is referred to as the startup condition, while the job network that is actually submitted is referred to as the linked job network.

By creating a trigger definition and setting the startup condition and linked job network, the job network can be submitted automatically if an event to be the trigger occurs.



- One job network can be set as the linked job network of more than one trigger definition.
- The environment variable "NSJNW\_TRG\_NAME" is defined in the job network submitted by the trigger, and the name of the trigger definition that submits the job network is stored to this variable.



To use the trigger, monitor the startup condition defined by each trigger definition. Therefore, if many trigger definitions are created and operated, the trigger operation may be affected. For details, refer to [Section 7.4, "Caution"](#).

### 7.1.1. Creating a trigger definition

Start creating a trigger from [Trigger List] in the user frame.

1. Select [New] according to either procedure in [Trigger List].

- [File] - [New] on the menu bar
- [New] on the popup menu that appears when you right-click on the user frame view without selecting the trigger definition



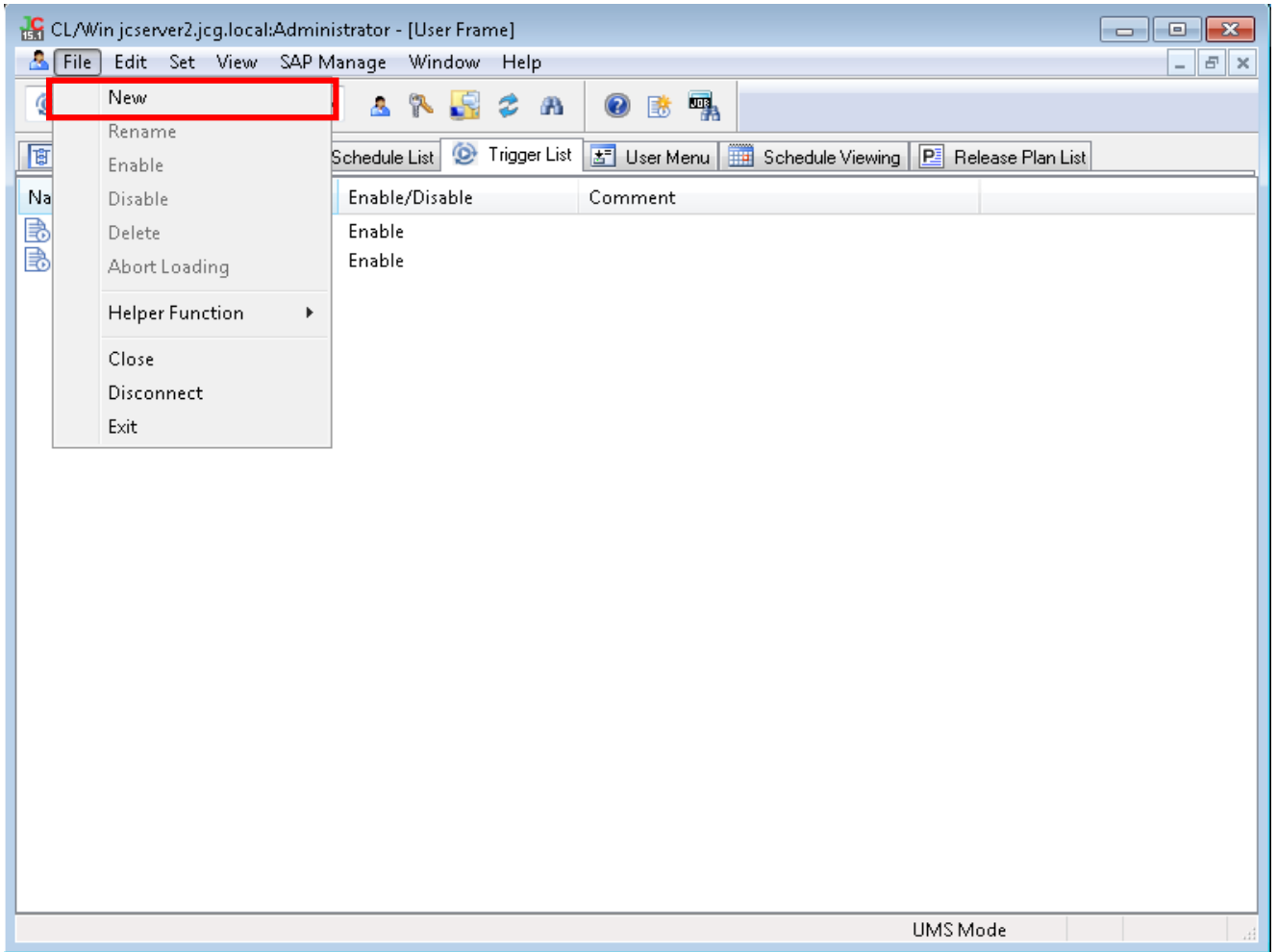


Figure 7.1. Creating a new trigger definition (Example on the menu bar)

2. The [Create Trigger List] dialog box appears.

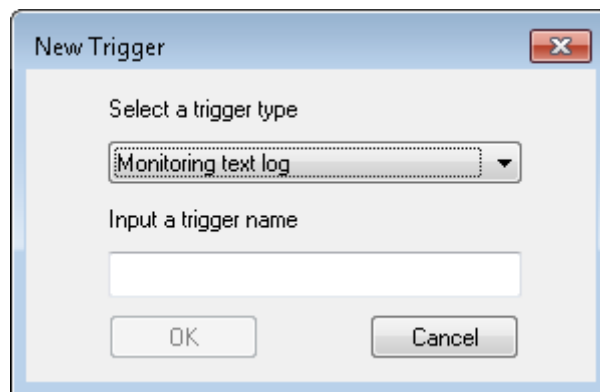


Figure 7.2. Example of the [Create Trigger List] dialog box

3. Select the trigger type corresponding to the trigger to enter the job network from the [Choose Type] dropdown menu.

For the trigger to submit the job network and corresponding trigger type, refer to [Table 7.1, "Triggers to submit the job network and trigger type"](#).

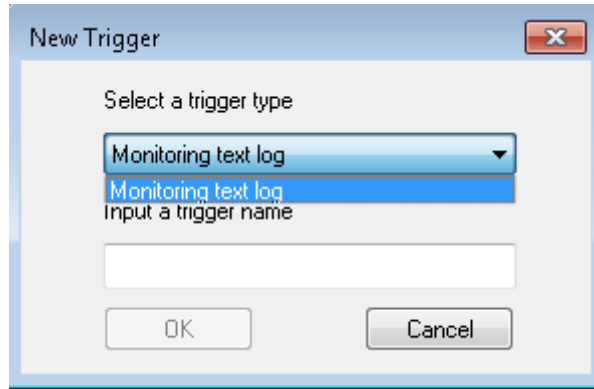


Figure 7.3. Selecting the trigger type

4. Set the name of the trigger type definition to be created as desired, and click the [OK] button.

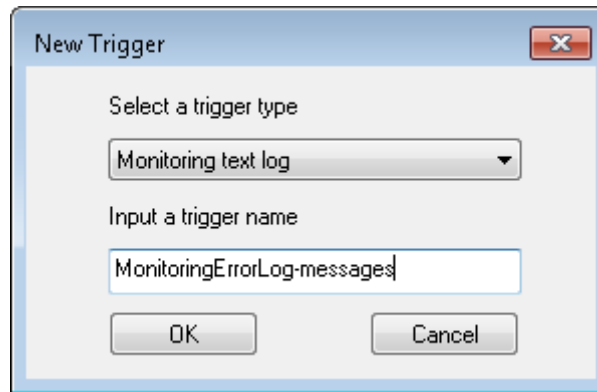


Figure 7.4. Entering the name of the trigger type definition



- A name must be within 128 bytes.
- "+" or "-" cannot be added at the top of a name. The following characters cannot be used: spaces, tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, , (comma), . (period), /, :, ;, <, =, >, ?, @, [, \, ], ^, `, {, |, }, ~.
- Leaving a name blank is prohibited.
- You cannot use the same trigger definition name as the existing one already used by the same user.

5. The new trigger definition is now available.

By setting the startup condition and linked job network for the created trigger definition, the job network can be submitted automatically if an event to be the trigger occurs. For details of setting the trigger definition, refer to [Section 7.1.2.1, "Checking and editing the trigger definition settings"](#).

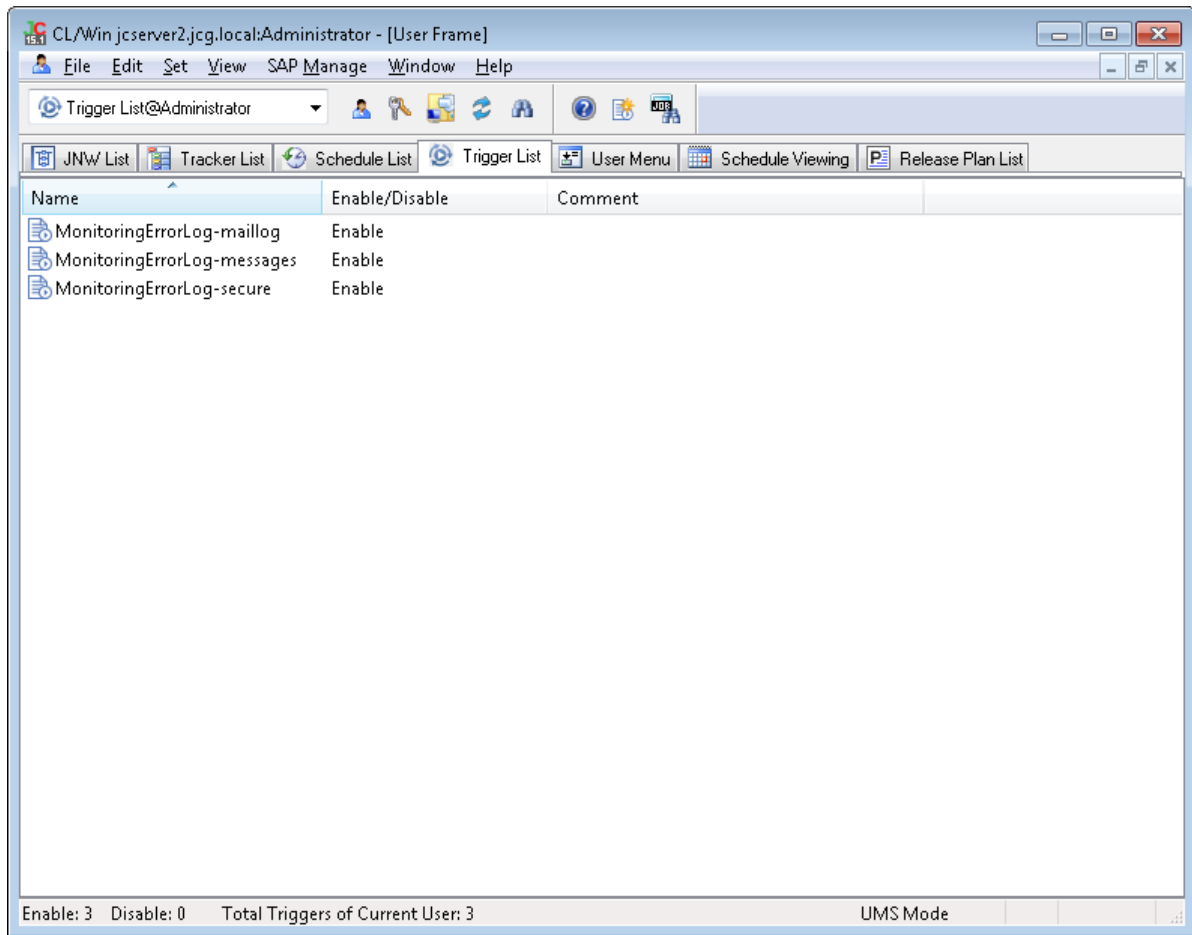


Figure 7.5. Created trigger definition

### 7.1.2. Operating the trigger definition

You can operate the trigger definition from the popup menu that appears when you select the target trigger definition and right-click it.

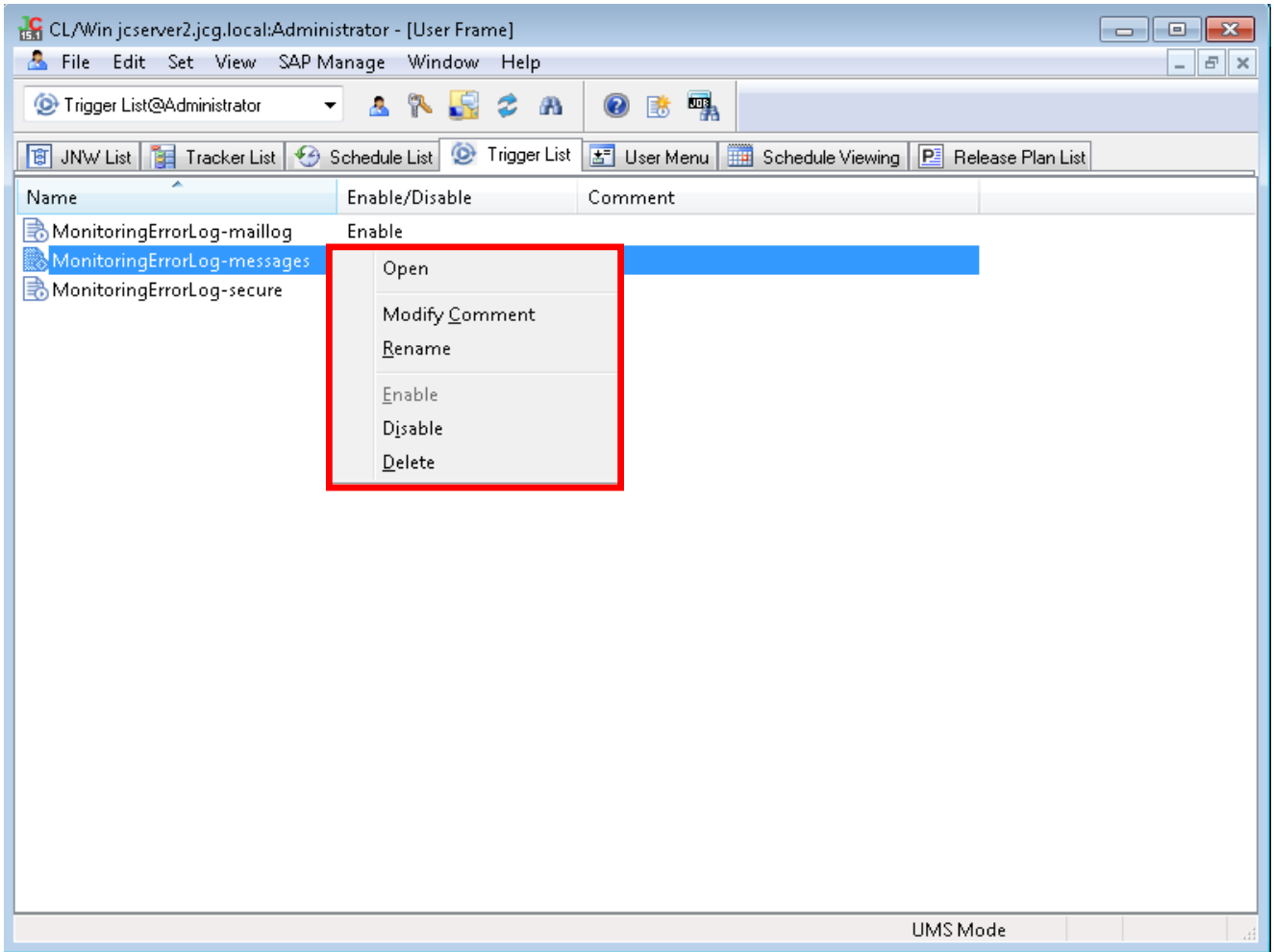


Figure 7.6. Operation menu of the trigger definition

Table 7.2. List of operations of the trigger definition

Menu item	Description	Reference
Open	Opens the setting dialog box of the trigger definition.	<a href="#">Section 7.1.2.1, "Checking and editing the trigger definition settings"</a>
Modify Comment	Modifies the trigger definition comment.	<a href="#">Section 7.1.2.2, "Setting a comment on a trigger definition"</a>
Rename	Renames the trigger definition name.	<a href="#">Section 7.1.2.3, "Renaming the trigger definition name"</a>
Enable	Enables the trigger definition.	<a href="#">Section 7.1.2.4, "Enabling or disabling a trigger definition"</a>
Disable	Disables the trigger definition.	<a href="#">Section 7.1.2.4, "Enabling or disabling a trigger definition"</a>
Delete	Deletes the trigger definition.	<a href="#">Section 7.1.2.5, "Deleting a trigger definition"</a>

### 7.1.2.1. Checking and editing the trigger definition settings

Open the setting dialog box to check and edit the settings of the created trigger definition.

1. Select the trigger definition whose settings you want to check or edit.

2. Double-click the selected trigger definition or select [Open] from the popup menu that appears when you right-click the trigger definition.
3. The trigger definition setting dialog box opens. Check and edit the settings.



The items to be set in the trigger definition setting dialog box opened at this time vary in accordance with the trigger type of the selected definition.

For details of specific setting items for each trigger type, refer to [Section 7.2, "Usage Example"](#).

### 7.1.2.2. Setting a schedule comment on a trigger definition

You can set a comment on a trigger definition. To add supplementary notes on the trigger definition, utilize the comment function.

1. Select the trigger definition on which you want to set a comment.
2. Select [Modify Comment] from the popup menu that appears when you right-click the trigger definition.
3. Set the trigger definition comment.

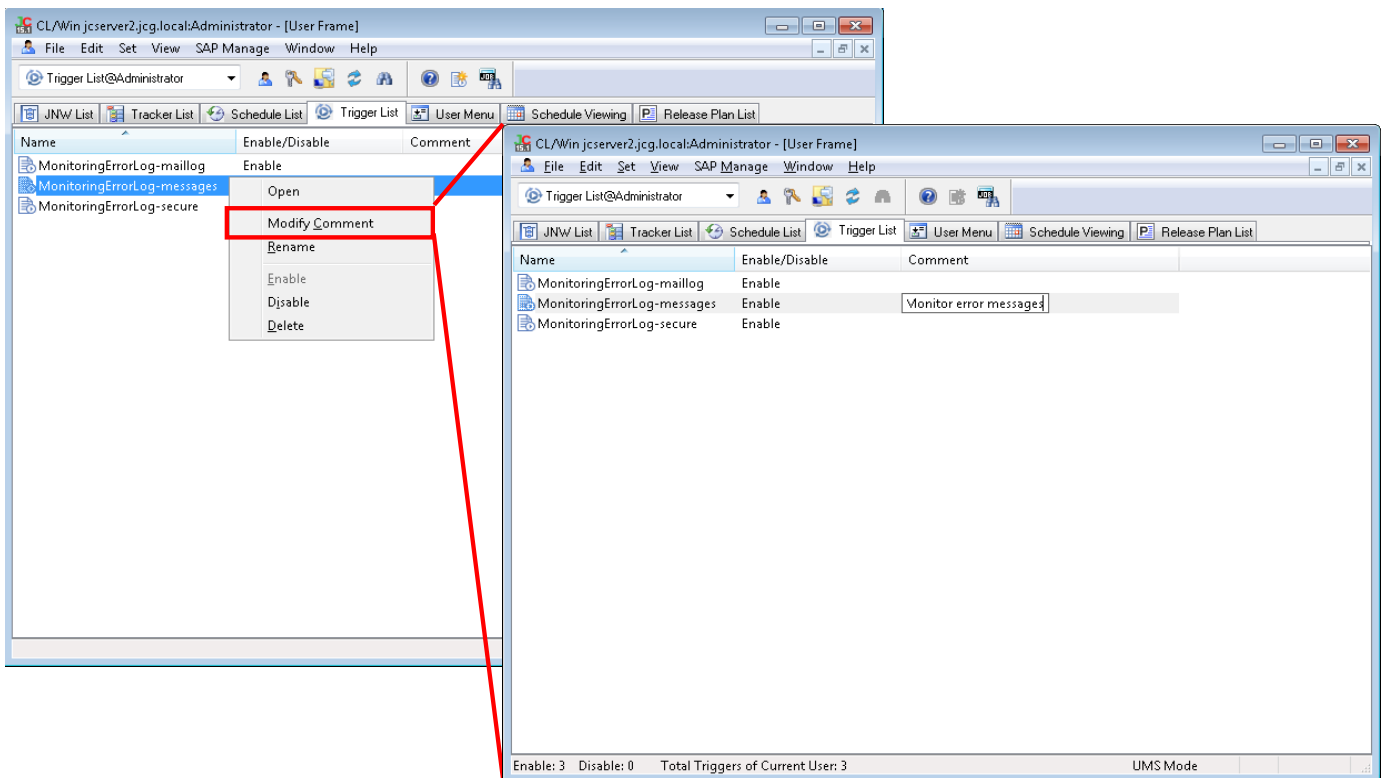


Figure 7.7. Setting the trigger definition comment



■ A comment must be within 256 bytes.

■ The following characters cannot be used: tabs, special characters, ^, #, \$, ;, (, ), [, ], {, }, \, |, <, >, ", &, '.

### 7.1.2.3. Renaming the trigger definition name

You can rename the trigger definition name.

1. Select the trigger definition that you want to rename.
2. Select [File] and then [Rename] on the menu bar, or select [Rename] from the popup menu that appears when you right-click the trigger definition.
3. Rename the trigger definition name.

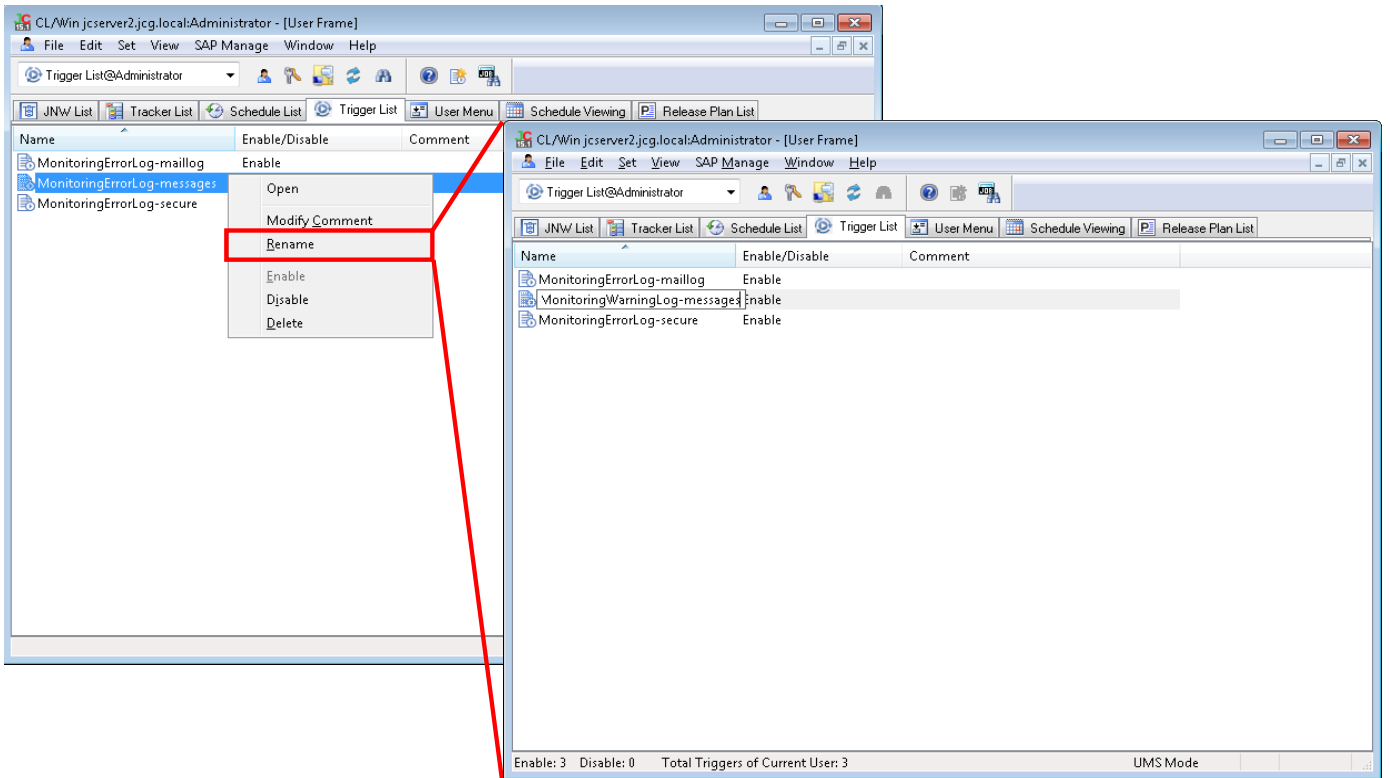


Figure 7.8. Renaming the trigger definition name



- A name must be within 128 bytes.
- "+" or "-" cannot be added at the top of a name. The following characters cannot be used: spaces, tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, , (comma), . (period), /, :, ;, <, =, >, ?, @, [, \, ], ^, `, {, |, }, ~.
- Leaving a name blank is prohibited.
- You cannot use the same trigger definition name as the existing one already used by the same user.

### 7.1.2.4. Enabling or disabling a trigger definition

You can enable or disable the specified trigger definition. It is possible to stop an operating trigger definition or start operating a stopped trigger definition.

Whether a trigger definition is enabled or disabled is displayed in the [Enable/Disable] column on the trigger definition list screen.

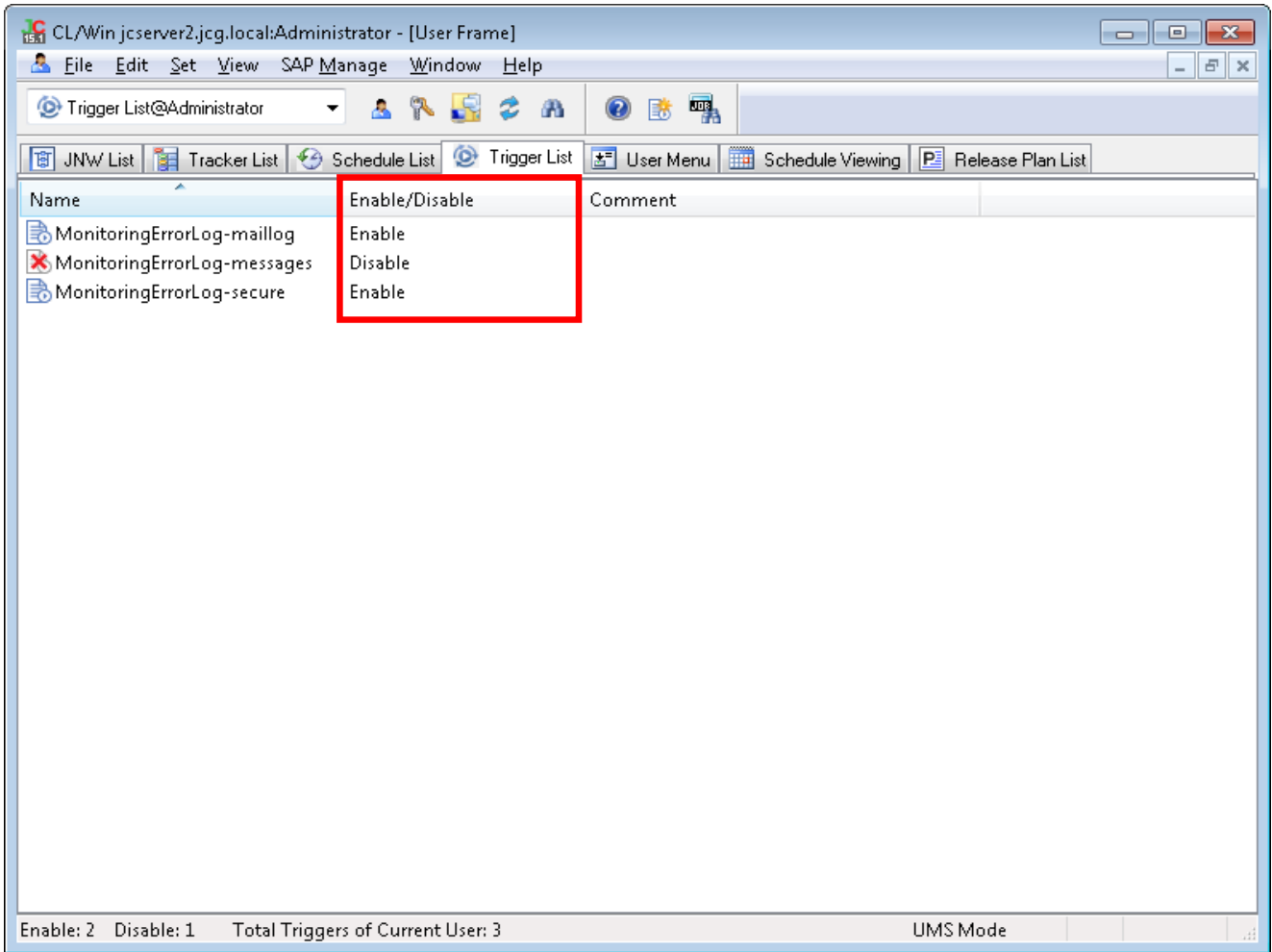


Figure 7.9. Trigger definition enabled/disabled status

■ [Enable]

1. Select the trigger definition that you want to enable. To enable more than one trigger definition, you can select them as a whole.
2. Select [File] and then [Enable] on the menu bar, or select [Enable] from the popup menu that appears when you right-click the trigger definition.

■ [Disable]

1. Select the trigger definition that you want to disable. To disable more than one trigger definition, you can select them as a whole.
2. Select [File] and then [Disable] on the menu bar, or select [Disable] from the popup menu that appears when you right-click the trigger definition.



- Even if a trigger definition is disabled, trackers for which trigger definition has already been submitted are not forcibly stopped but continue processing.
- All the triggers to submit the job network that occurred when the trigger definitions were disabled are ignored. If the trigger definition is enabled, only the triggers that occurred at the time of enabling the definition and after are detected.

### 7.1.2.5. Deleting a trigger definition

To delete an unnecessary trigger definition, perform the procedure below.

1. Select the trigger definition that you want to delete. To delete more than one trigger definition, you can select them as a whole.
2. Select [File] and then [Delete] on the menu bar, or select [Delete] from the popup menu that appears when you right-click the trigger definition.
3. The "Confirm" dialog box appears. If there is no problem, click the [Continue] button.

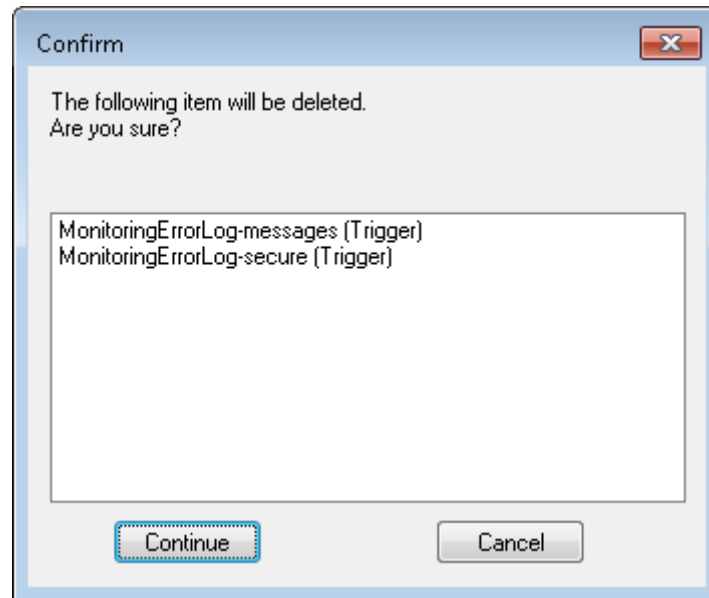


Figure 7.10. Deleting a trigger definition



## 7.2. Usage Example

This section describes the procedure for submitting the job network triggered by a specific event, using an example.

### 7.2.1. Submitting the Job Network When the Specific Keyword is Output to the Text Log

This section describes the procedure for submitting the job network automatically when a log containing a specific keyword is output to the target text log file.

#### 7.2.1.1. Creating the trigger definition

To submit the job network automatically when a log containing a specific keyword is output to the target text log file, create the trigger definition while the trigger type is set to [Monitoring text log]. For details of creating a trigger definition, refer to [Section 7.1.1, "Creating a trigger definition"](#).

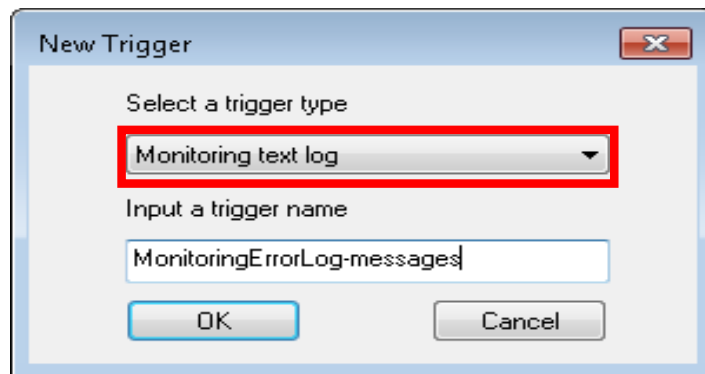


Figure 7.11. Example of creating a new [Monitoring text log]

#### 7.2.1.2. Opening the setting dialog box of the trigger definition

To set the startup condition of the trigger definition and linked job network, open the setting dialog box of the created trigger definition. For how to open the setting dialog box of the trigger definition, refer to [Section 7.1.2.1, "Checking and editing the trigger definition settings"](#).

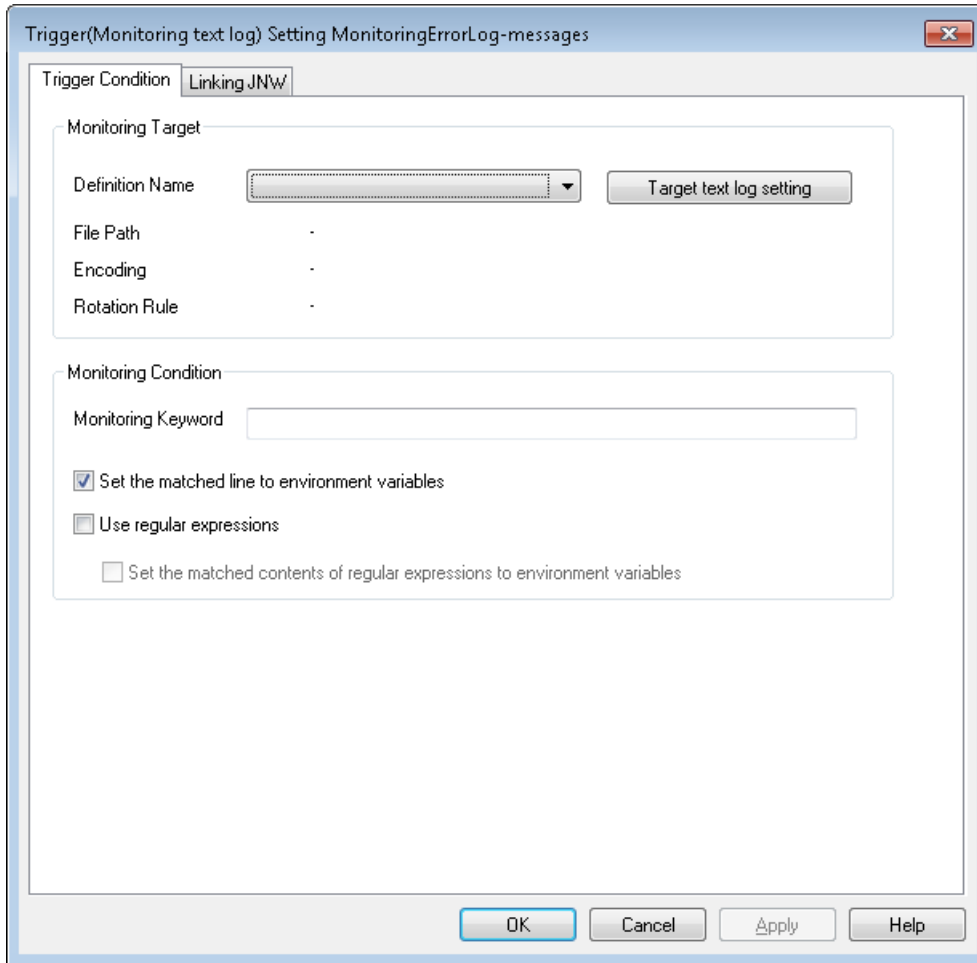


Figure 7.12. [Trigger (Monitoring text log) Setting] dialog box

### 7.2.1.3. Defining the information on the text log file to be monitored

To submit the job network automatically when a log containing a specific keyword is output to the target text log file, define the information on the text log file to be monitored in advance.

This definition is referred to as the target text log.

To directly use a target text log that has been created, set the startup condition by referring to [Section 7.2.1.4, "Setting the startup condition"](#).

1. Click the [Target text log setting] button in the [Trigger (Monitoring text log) Setting] dialog box.

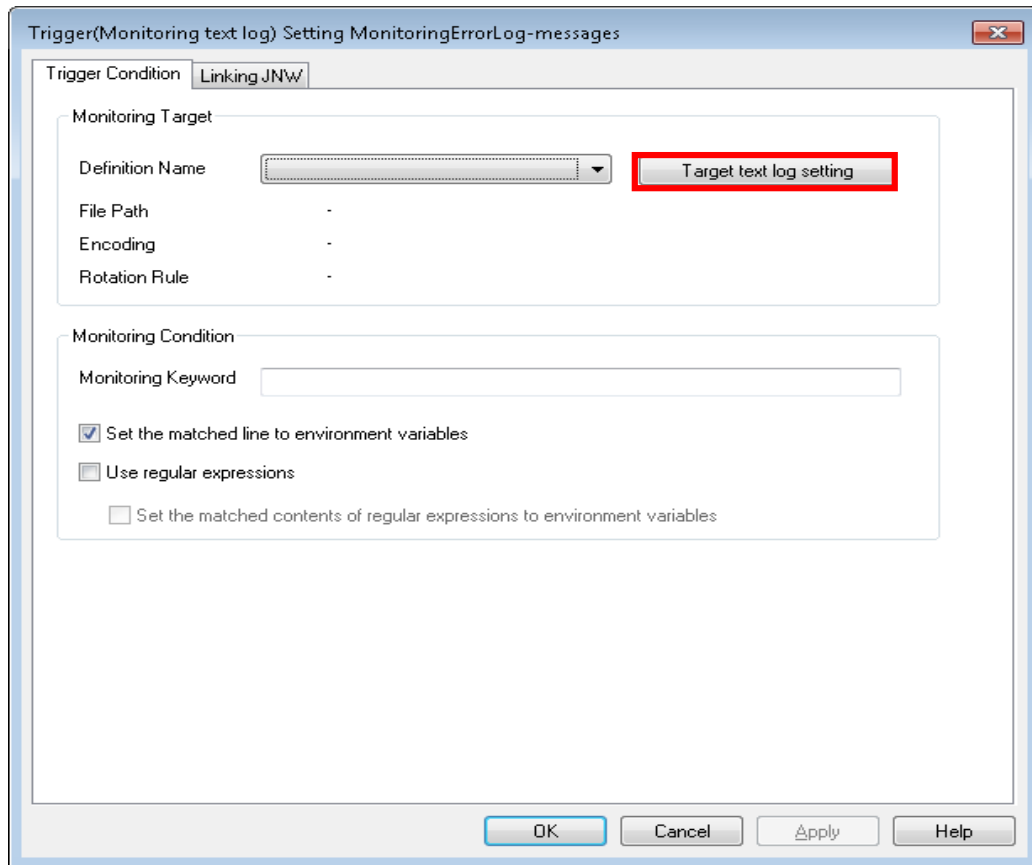


Figure 7.13. Setting the target text log in the [Trigger (Monitoring text log) Setting] dialog box

2. The [Target text log settings] dialog box appears.

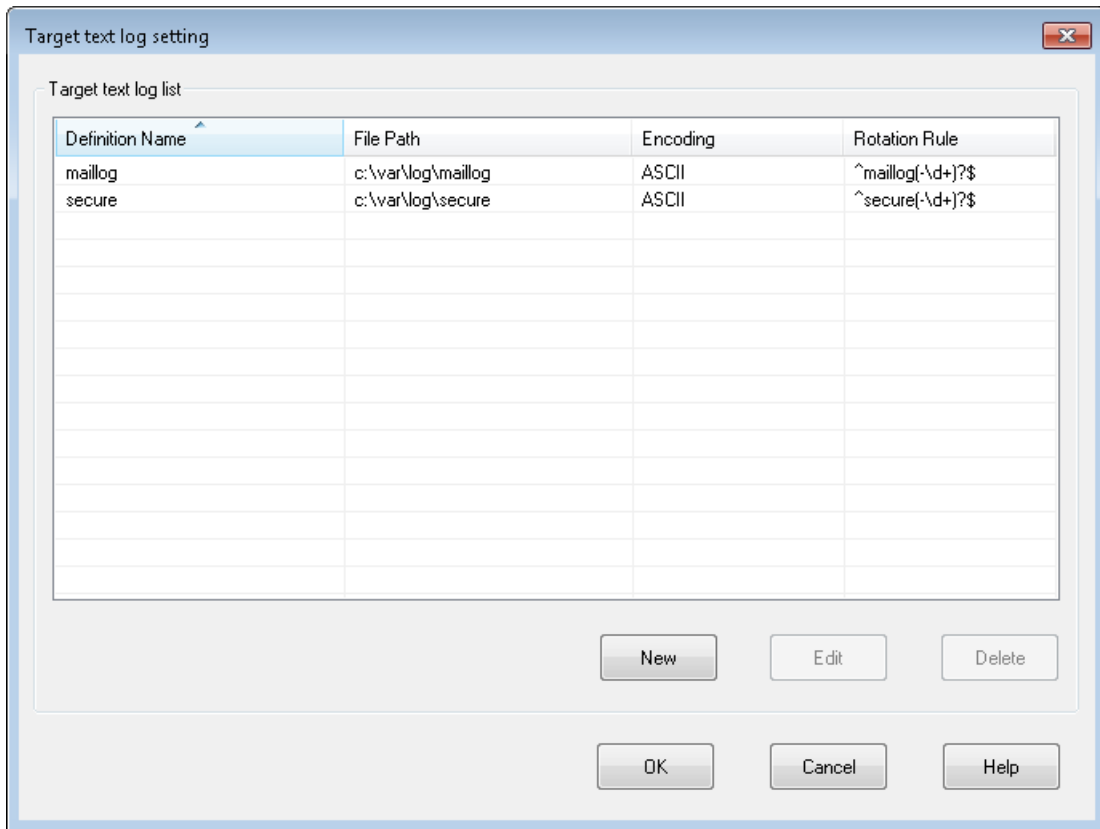



Figure 7.14. Example of the [Target text log settings] dialog box

3. Click the [New] button to create a new target text log. To correct and use the existing target text log, select the related definition from the list and click the [Edit] button.

 To delete the existing target text log, select the related definition from the list and click the [Delete] button. The confirmation dialog box appears. If there is no problem, click the [OK] button. If you click the [OK] button, the selected definition is deleted.

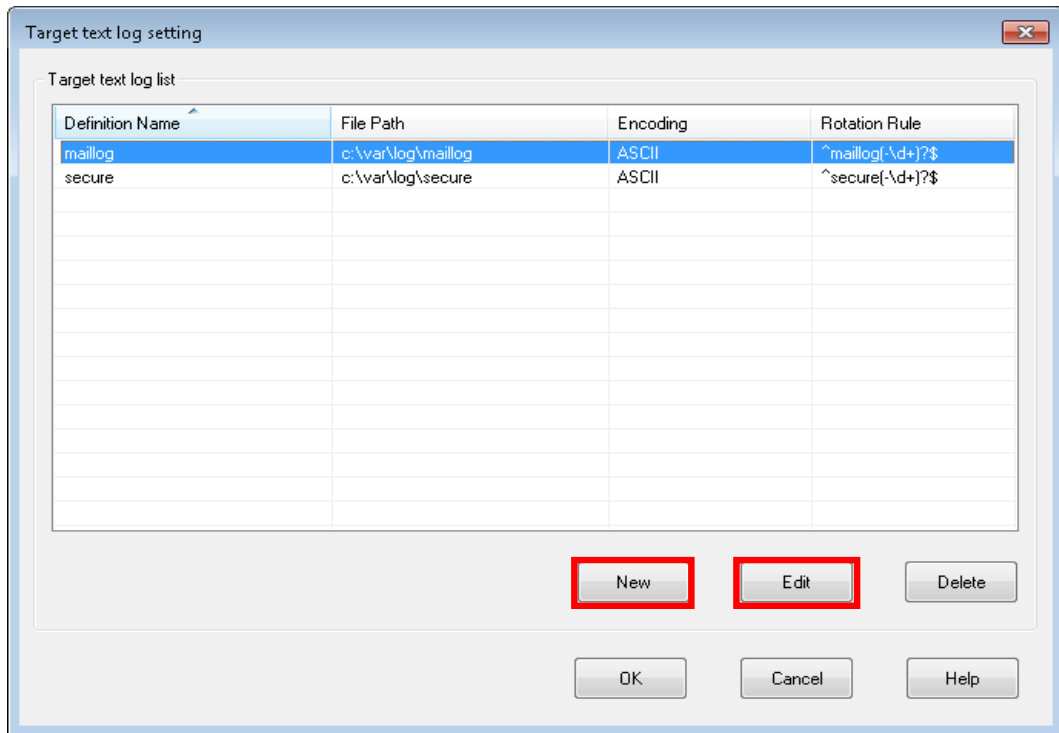


Figure 7.15. Newly creating or editing a target text log

4. The [Target text log definition] dialog box appears.

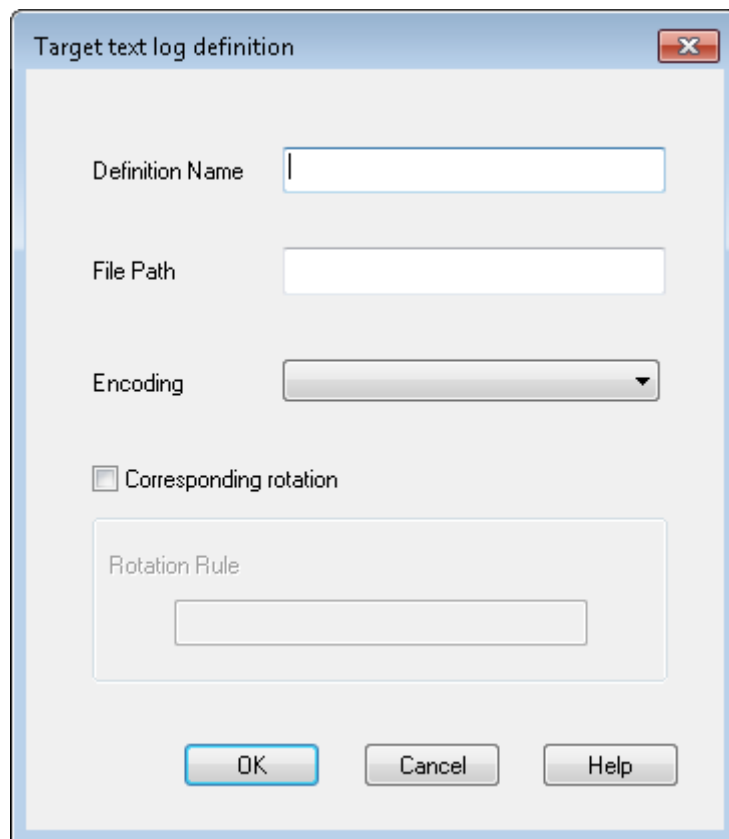


Figure 7.16. Example of the [Target text log definition] dialog box

5. Set the definition name of the target text log that you want to create.

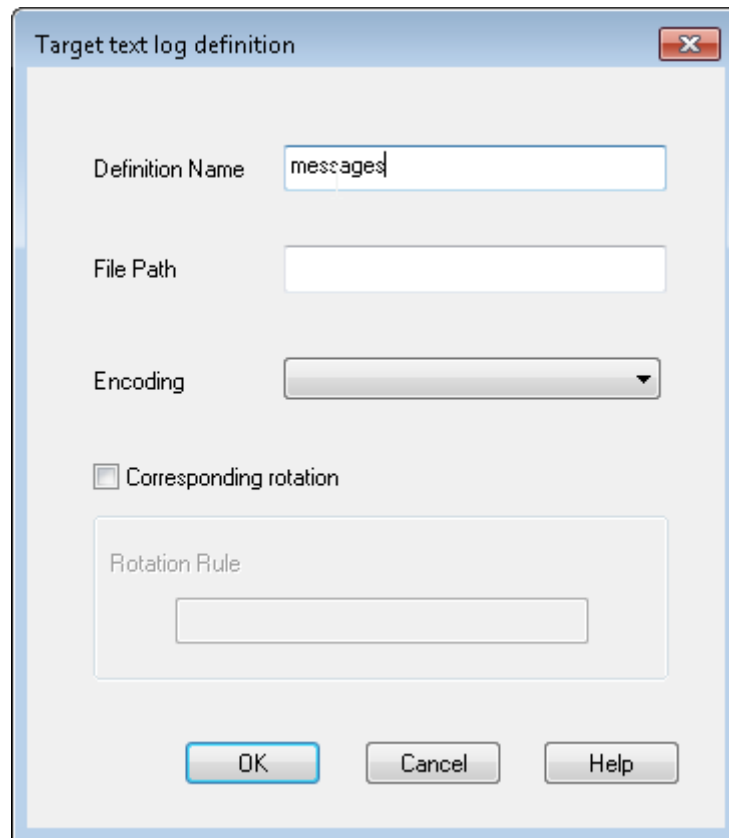


Figure 7.17. Setting the definition name



- A definition name must be within 128 bytes.
- The following characters cannot be used for a definition name: spaces, tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, , (comma), . (period), /, :, ;, <, =, >, ?, @, [, \, ], ^, `, {, |, }, ~.
- Leaving a definition name blank is prohibited.
- You cannot use the same definition name for the target text log as the existing one already used by the same user.

6. Set the text log file that you want to monitor in the full path.

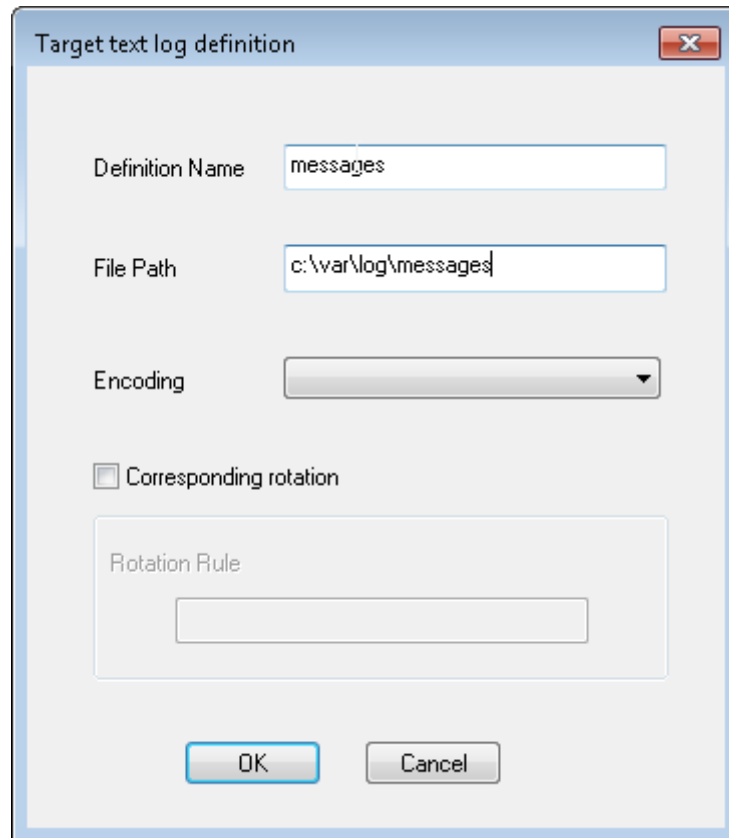


Figure 7.18. Setting a file path



- Describe the file path in accordance with the OS of the server.

Example of Windows

`C:\log\messages.txt`

Example of UNIX/Linux

`/var/log/messages`

- A file path must be within 254 bytes.
- The following characters cannot be used for a file path: tabs, special characters, !, ", #, \$, %, &, ', (, ), \*, ,, ;, <, =, >, ?, [, ], ^, \, {, |, }, ~.
- Leaving a file path blank is prohibited.
- You cannot specify the same file path as an existing target text log used by the same user.

7. Specify the file encoding of the text log file whose file path has been specified.

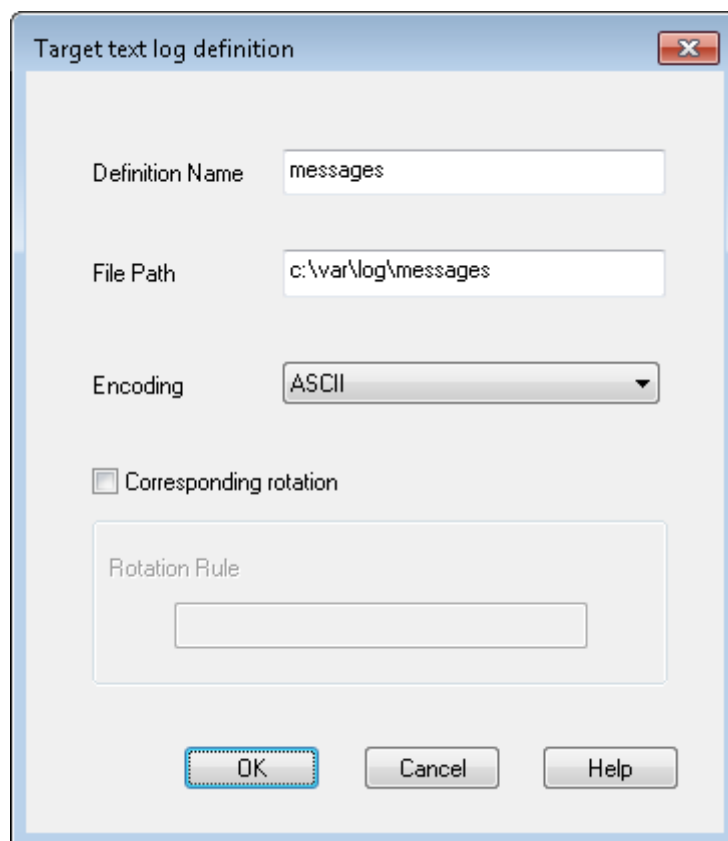


Figure 7.19. Setting file encoding



Please note that the selectable file encoding type varies according to the environment of CL/Win connected to the server.

Table 7.3. File encoding that can be selected for the target text log

CL/Win environment	Selectable file encoding
Japanese environment	ASCII, SHIFT-JIS, EUC, UTF-8
English environment	ASCII, UTF-8
Chinese environment	ASCII, GB18030, UTF-8

8. If the text log file to be rotated has been specified using a file path, select the [Corresponding Rotation] check box to set [Rotation Rule].

For [Rotation Rule], set the regular expression that expresses the target text log file name and the file name after rotation uniformly.

■ If the target text log file name is "messages" and the file name after rotation is "messages.1"

```
^messages(\\.d+)?$
```

■ If the target text log file name is "secure" and the file name after rotation is "secure-20160101"

```
^secure(-d+)?$
```



For details of the regular expression that JobCenter supports, refer to [Section 7.3, “Supported regular expression”](#).



The text log monitoring function checks whether the specified text log file contains the output with the keyword or not at a certain interval.

If the target log file is switched in the middle, the contents that have been output during the time from the previous confirmation to the change of the text log files cannot be checked. If a log that contains the keyword is output within this time range, the job network cannot be submitted.

To prevent this failure from occurring, the rotation rule must be set.

Target text log definition

Definition Name: messages

File Path: c:\var\log\messages

Encoding: ASCII

Corresponding rotation

Rotation Rule: ^messages(-\d+)?\$

OK Cancel

Figure 7.20. Setting the rotation rule



■ Under the following conditions, text log files may not be monitored correctly or the job network may not be submitted even if a log that contains the keyword is output.

- The rotation rule has not been set although the text log file to be rotated is selected in the file path field
- The target text log file name and file name after rotation are not expressed uniformly in accordance with the rotation rule

■ Do not use an expression that matches an irrelevant file name in the rotation rule. If a regular expression representing an irrelevant file name is specified, an unrelated file is recognized as the file after rotation, and this may result in a malfunction.

- For the above reasons, it is recommended to add "^" which indicates the line head, and "\$" which indicates the line end.
- Specify the regular expression using the correct grammar.
- The rotation rule must be set within 254 bytes.
- You cannot specify the rotation rule only with "-".

9. Set each item in the [Target text log setting] dialog box, and then click the [OK] button.
10. Information on the target text log edited or created appears in [Target text log list] in the [Target text log setting] dialog box.

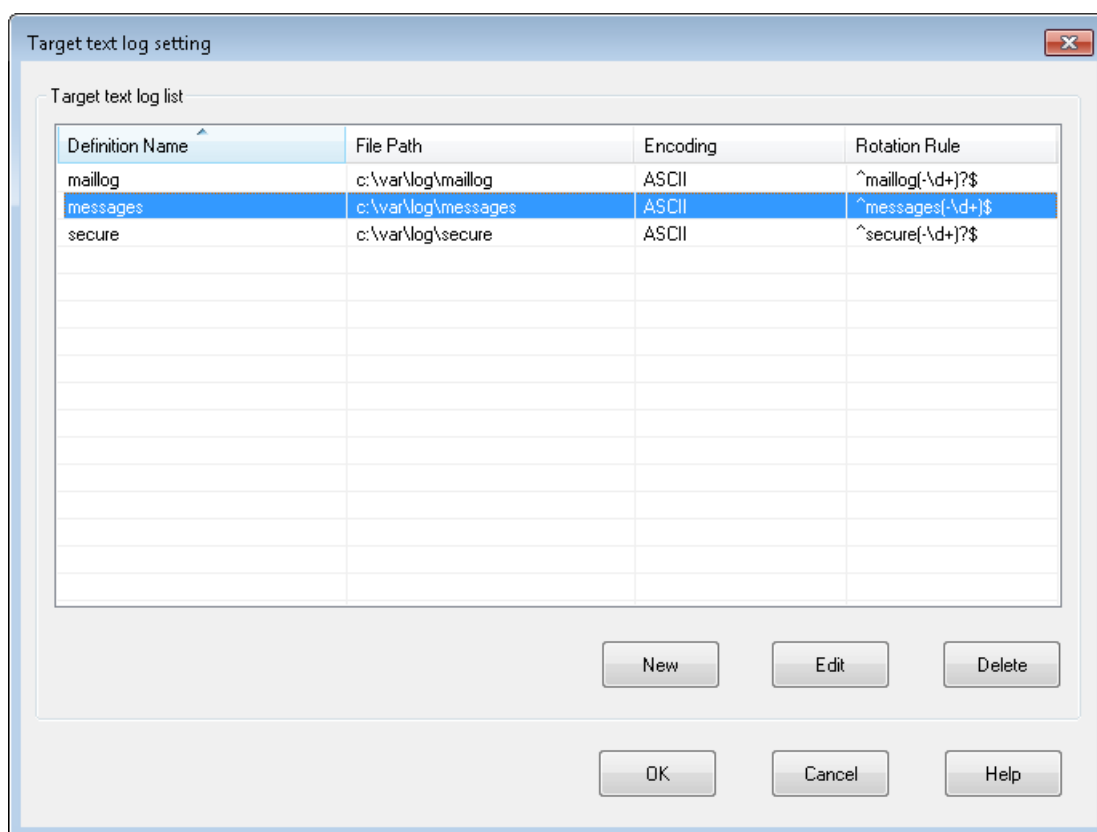


Figure 7.21. Confirming the created or edited target text log

11. Select the created or edited target text log from [Target text log list], and click the [OK] button. The selected target text log is reflected to [Monitoring target] in the [Trigger (Monitoring text log) Setting] dialog box.

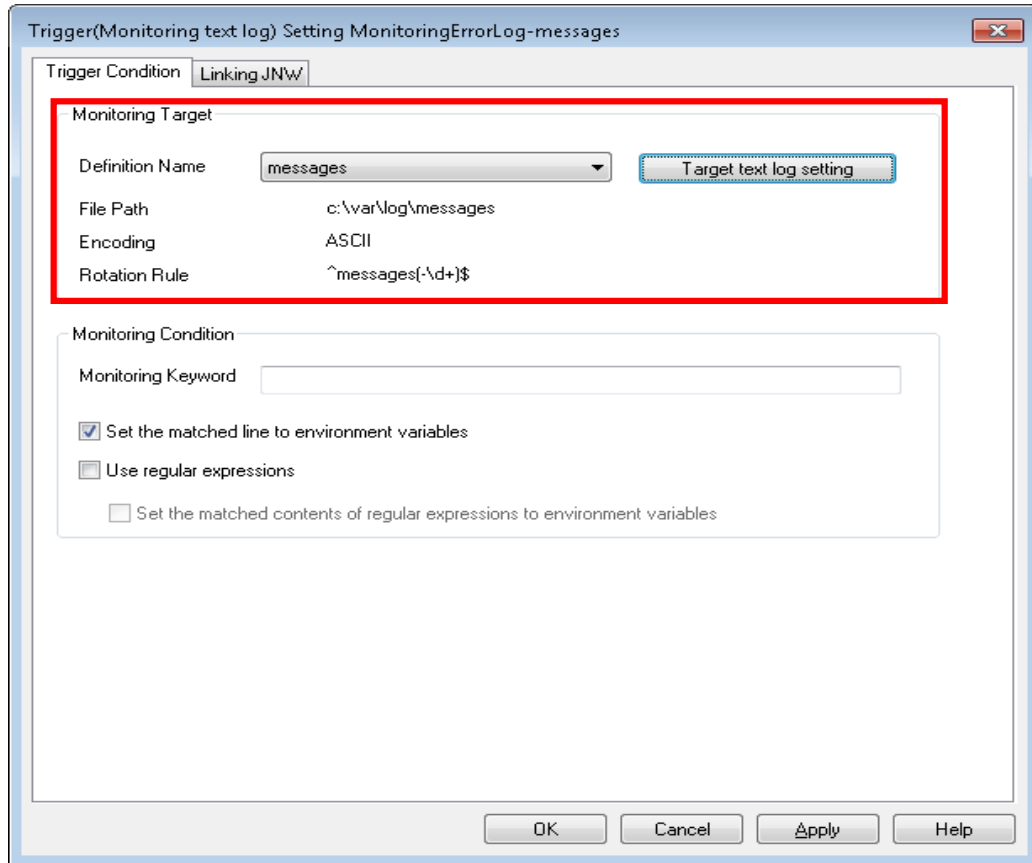


Figure 7.22. Reflecting the target text log to [Monitoring target]

#### 7.2.1.4. Setting the startup condition

Set [Monitoring target] and [Monitoring condition] in the [Startup condition] tab in the [Trigger (Monitoring text log) Setting] dialog box.

Set the information on the target text log file in [Monitoring target], and set the keyword to be monitored in [Monitoring condition].

1. Select the target text log whose information on the text log file to be monitored has been defined. You can select the target text log from [Definition name] in [Monitoring target]. To add, edit, and confirm the target text log, refer to [Section 7.2.1.3, "Defining the information on the text log file to be monitored"](#).

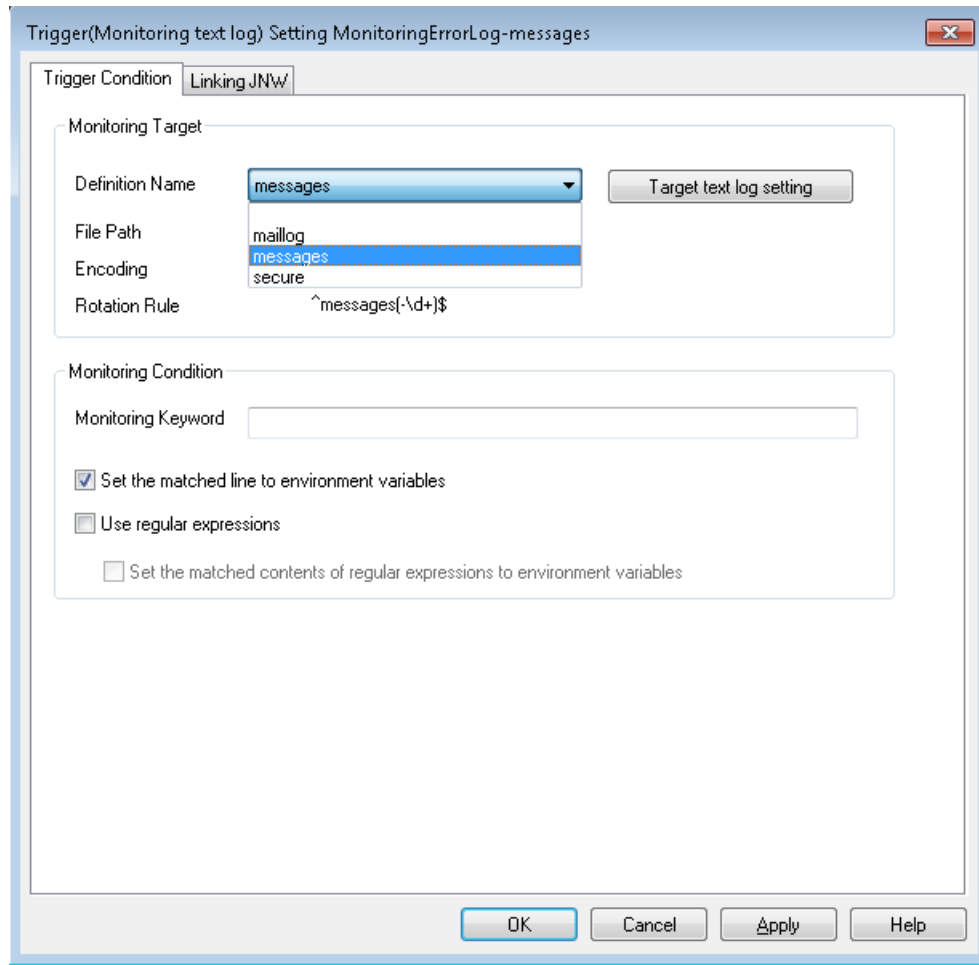


Figure 7.23. Selecting the target text log

2. Set the keyword to be monitored in [Monitored keyword]. When the line containing the keyword specified here is output to the target text log file, the linked job network is submitted.

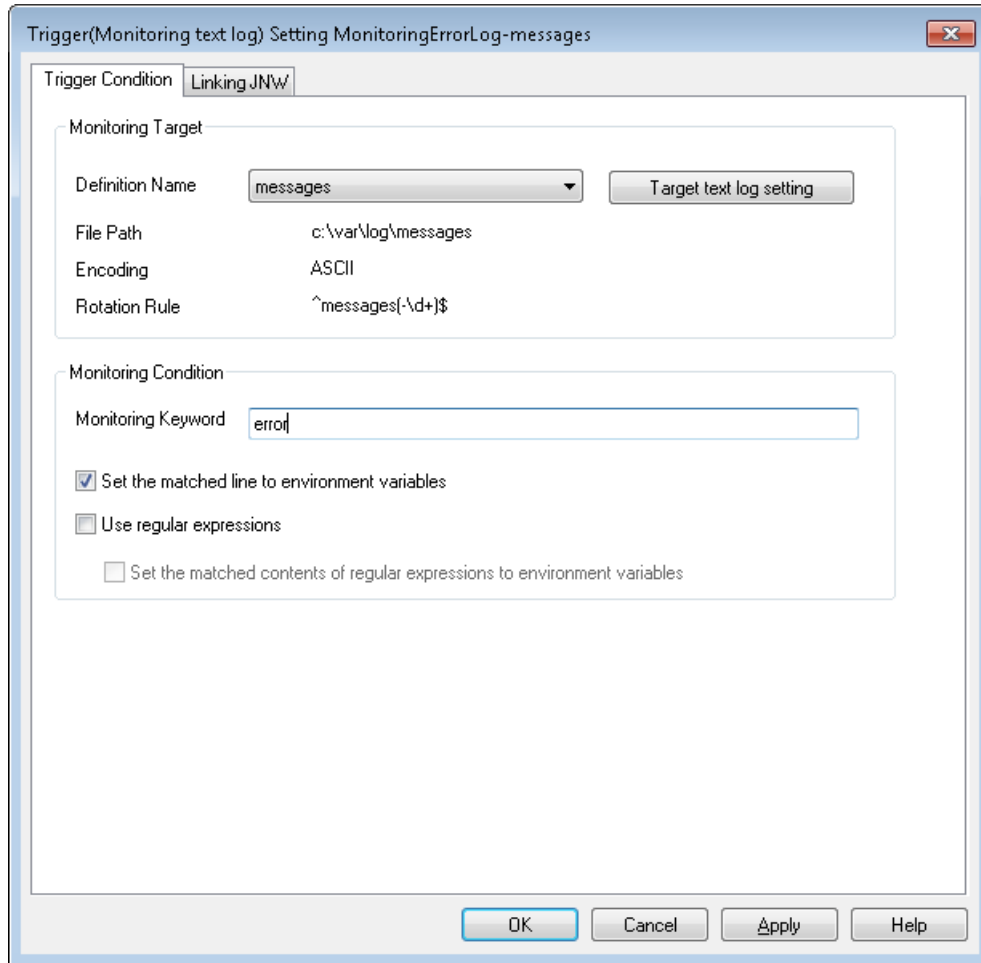


Figure 7.24. Setting the monitored keyword



A monitored keyword must be within 256 bytes.

- When a log matching the monitored keyword is output, place a check mark next to [Set the matching line in environment variable] to check the contents of the related log in the job network to be submitted .

When a check mark is placed next to [Set the matched line in environment variables], the line containing the monitored keyword is stored to the environment variable "NSJNW\_TRG\_LOG\_MATCH\_LINE" of the job network to be submitted.

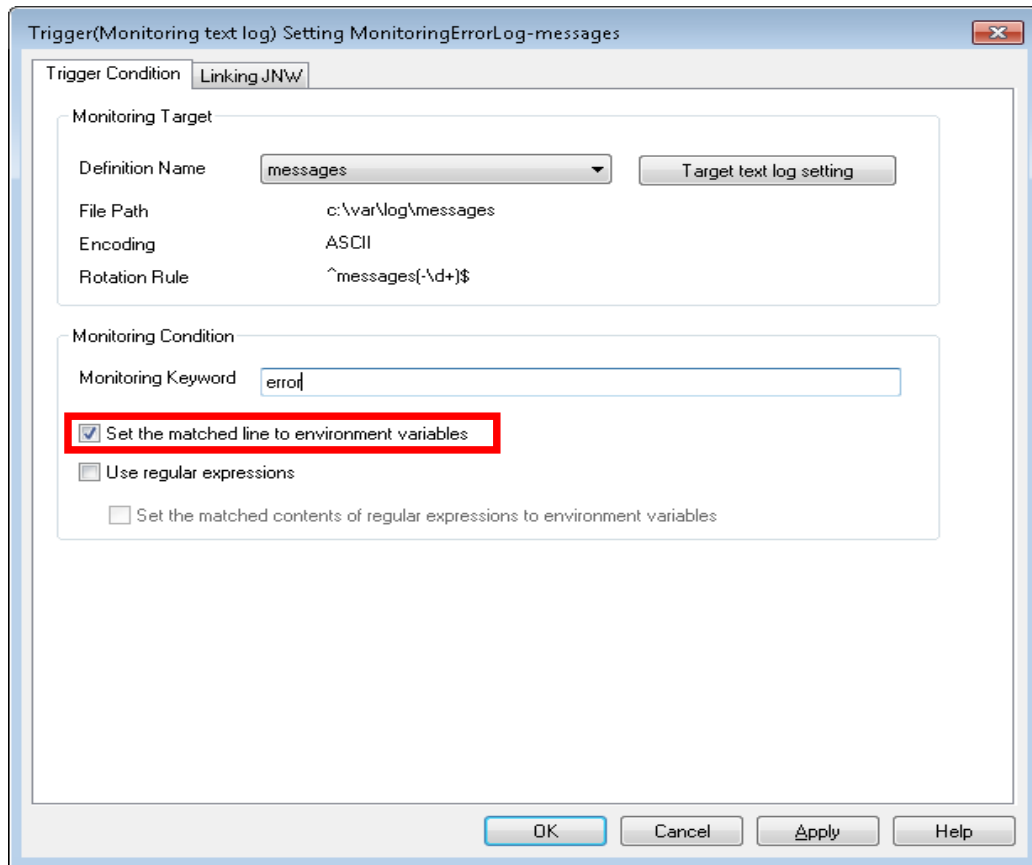


Figure 7.25. Setting [Set the matched line in environment variables]

4. Select the [Use regular expressions] check box to use the regular expression for the monitored keyword.

When the [Use regular expressions] check box is selected, the monitored keyword is set with the regular expression.

For details of the regular expression that JobCenter supports, refer to [Section 7.3, "Supported regular expression"](#).

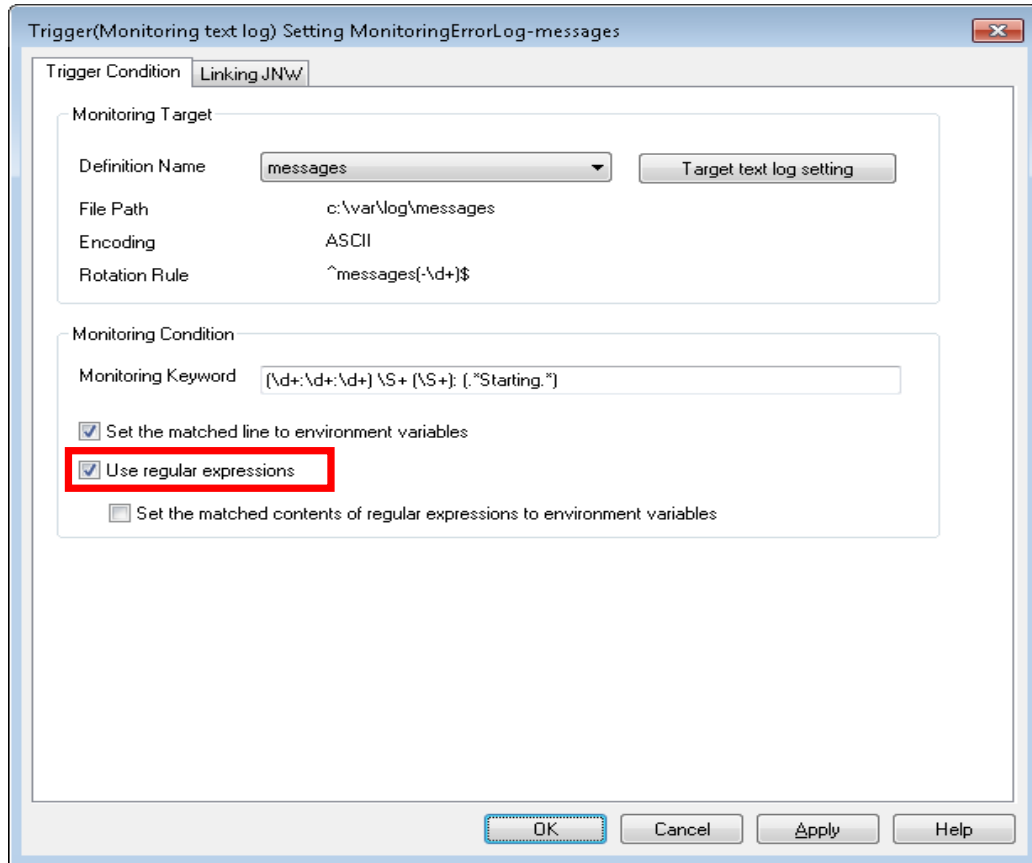


Figure 7.26. Setting [Use regular expressions]



When selecting the [Use regular expressions] check box, specify the monitored keyword according to the regular expression using the correct grammar.

- If you check the character string that satisfies the regular expression for the job network to be submitted when a log that satisfies the regular expression of the monitored keyword is output, select the [Set the partially matching character strings to environment variable] check box.

When the [Set the matched contents of regular expressions to environment variables] check box is selected, the character string that satisfies the regular expression of the monitored keyword is stored in the environment variable "NSJNW\_TRG\_LOG\_MATCH\_0" of the job network to be submitted.

If a regular expression that contains parentheses "(" and ")" is used, the character substrings that match the character strings in these parentheses are stored in "NSJNW\_TRG\_LOG\_MATCH\_1 - 9".

■ Example of setting of the regular expression of the monitored keyword

Regular expression of the monitored keyword

```
(\\d+:\\d+:\\d+) \\S+ (\\S+): (.\"Starting.\")
```

Contents of a log that has been output

```
May 8 10:13:50 jobmanager systemd: Starting Cleanup of Temporary Directories...
```

Environment variable to be stored in the job network to be submitted

```

NSJNW_TRG_LOG_MATCH_0=May 8 10:13:50 jobmanager systemd: Starting Cleanup of Temporary
Directories...
NSJNW_TRG_LOG_MATCH_1=10:13:50
NSJNW_TRG_LOG_MATCH_2=systemd
NSJNW_TRG_LOG_MATCH_3=Starting Cleanup of Temporary Directories...
    
```

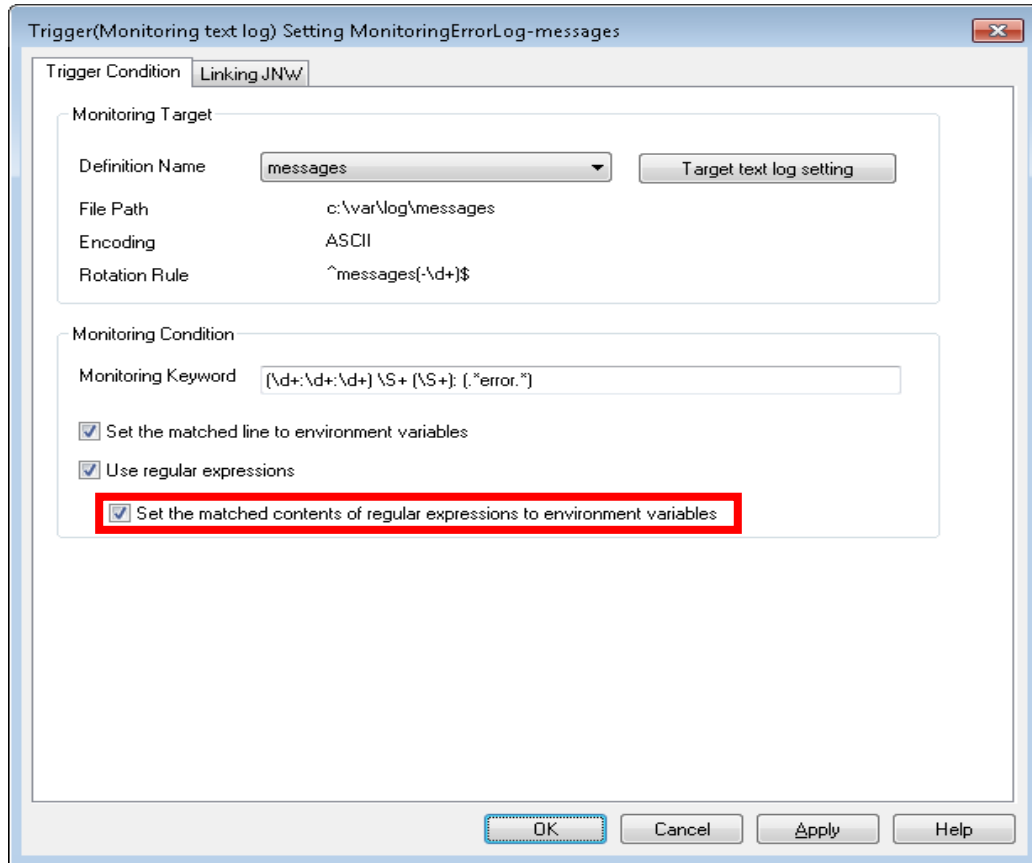


Figure 7.27. Setting [Set the matched contents of regular expressions to environment variables]



If there are character strings in parentheses at 10 or more locations in the regular expression, the character substrings that match the character strings in the parentheses after the 10th location are not stored in the environment variable but discarded.

6. When setting the startup condition is completed, click the [Apply] button or [OK] button to save the settings.

### 7.2.1.5. Setting the linked job network

If the specified keyword is output to the target text log file, specify the job network to be actually submitted.

1. Click the [Linking JNW] tab at the top of the [Trigger (Monitoring text log) Setting] dialog box. The dialog box that specifies the job network linked with the startup condition appears.



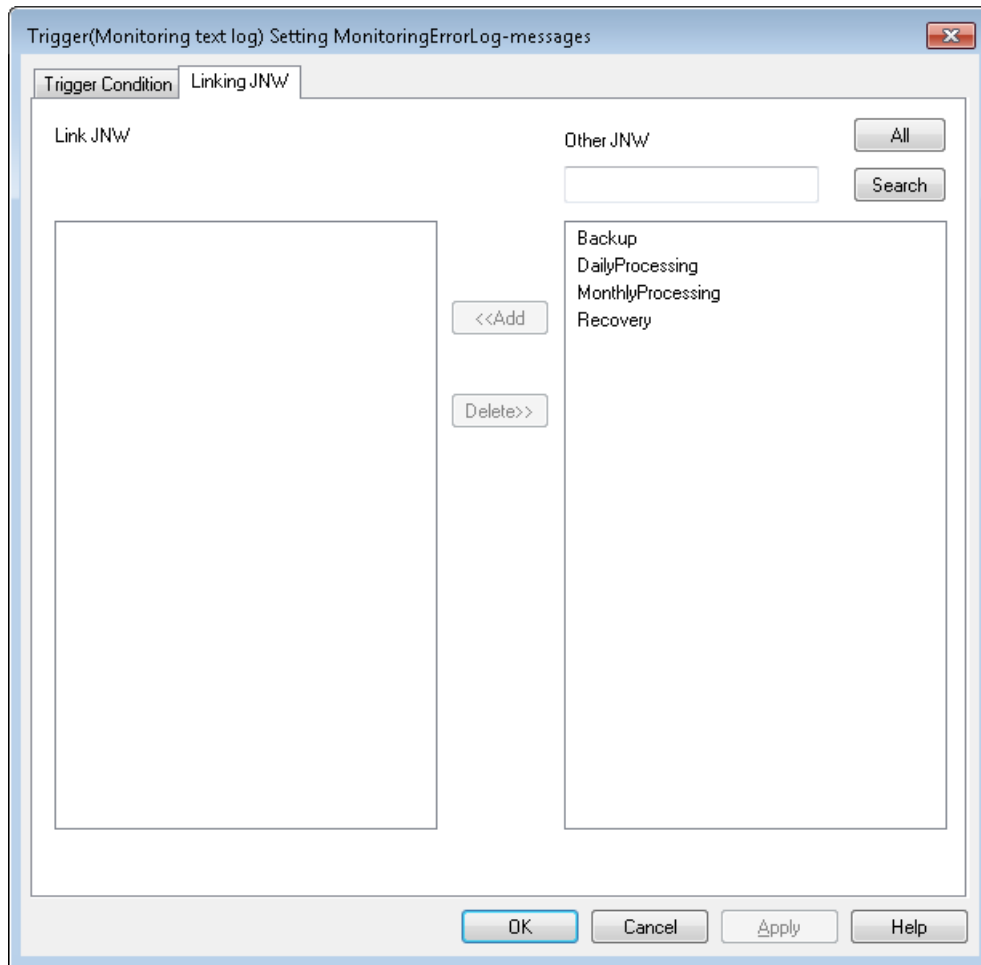



Figure 7.28. Linking JNW tab

2. Select the job network to be linked from the [Other JNW] list, and then click the [<< Add] button.

 The [Other JNW] list shows the job networks of the owner of the trigger definition.

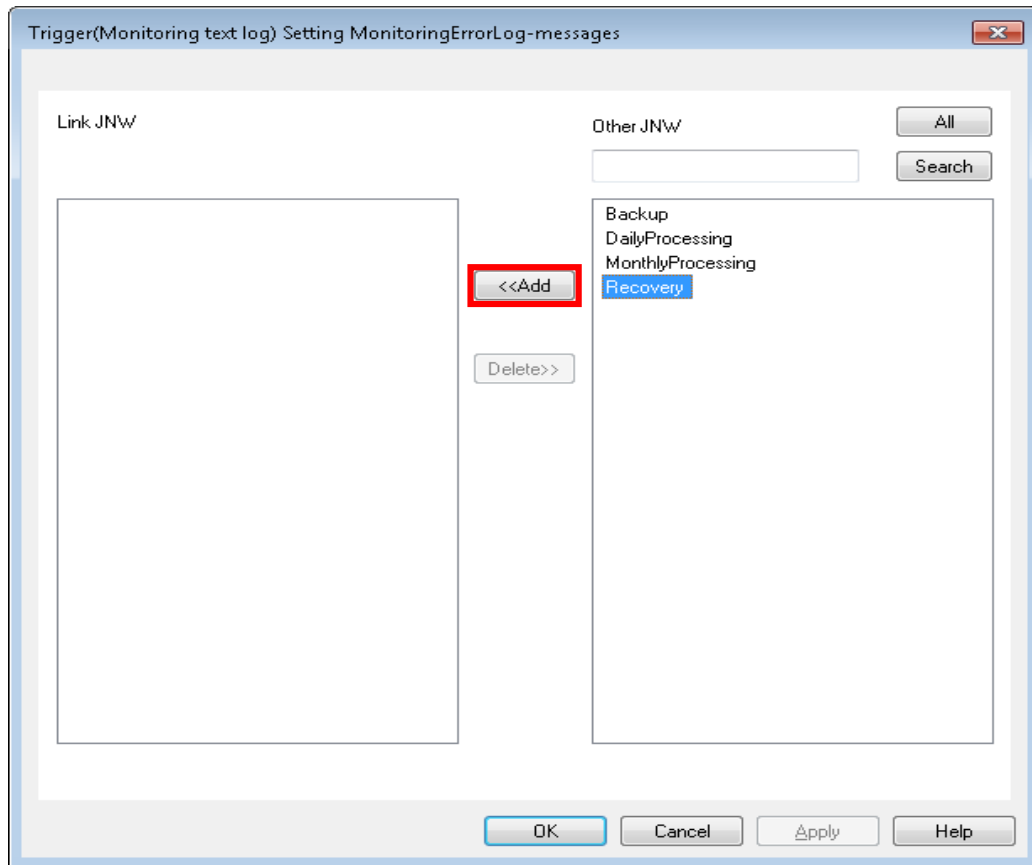


Figure 7.29. Adding the linked job network

3. The selected job network is added to the [Linking JNW] area list.



To remove the linkage, select the job network from which the linkage is removed from the [Linking JNW] area list, and then click the [Delete >>] button.

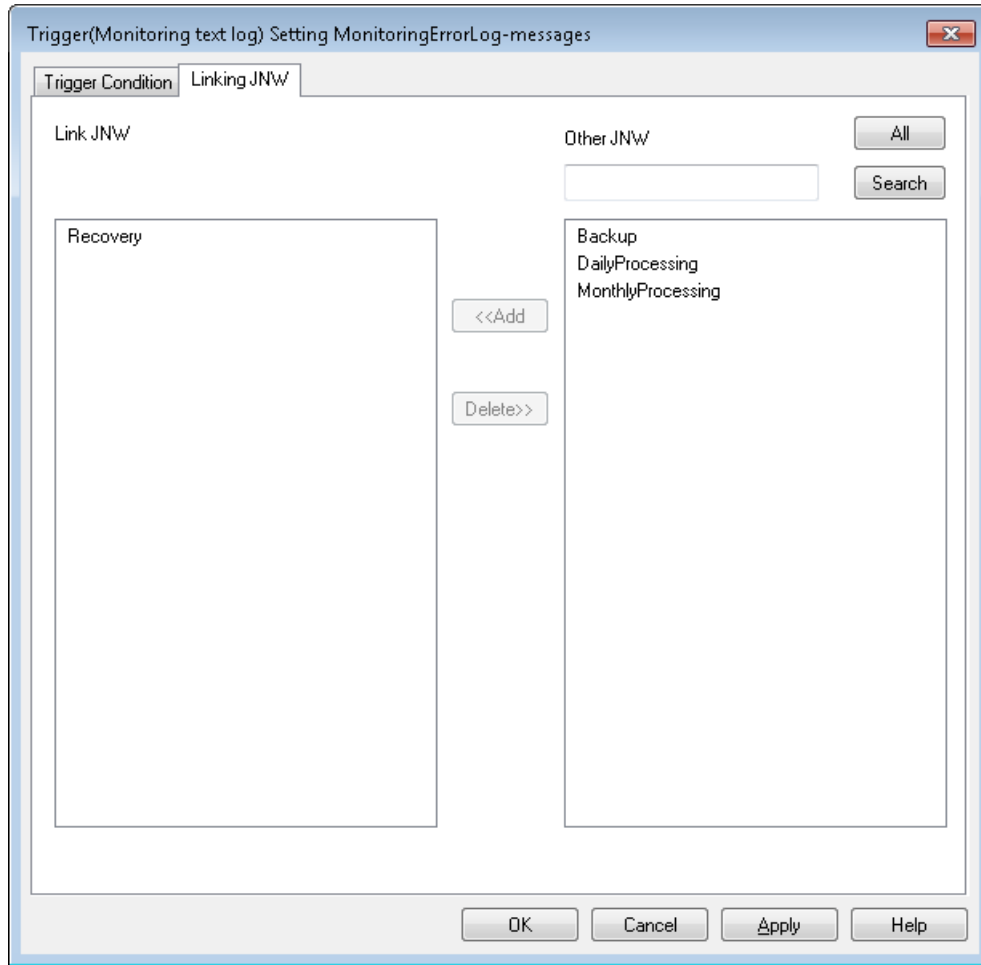


Figure 7.30. Confirming the linked job network

4. When setting the [Linking JNW] is completed, click the [Apply] button or [OK] button to save the settings.
5. After reflecting the settings of [Trigger condition] and [Linking JNW], a log that satisfies [Trigger condition] is output.



If the trigger definition and the target text log is created, edited, and deleted, a delay of up to 10 seconds may occur by default until the new settings are reflected. For details, refer to [Section 7.4.1.1, "Caution about the interval for monitoring a text log"](#).

6. JNW set in [Linking JNW] is submitted.



A delay of up to 10 seconds by default may occur during the time from when a log containing the keyword is actually output until it is detected. For details, refer to [Section 7.4.1.1, "Caution about the interval for monitoring a text log"](#).

## 7.3. Supported regular expression

The regular expression which JobCenter supports is described below.

Table 7.4. Supported regular expression

Category	Format	Description
Basic element	\	Escape characters
		Selector
	(...)	Group
	[...]	Character set (character class)
Character type	.	Arbitrary characters (excluding line feeds)
	\w	Word-constituent character
	\W	Non-word-constituent character
	\s	Space character
	\S	Non-space character
	\d	Decimal number
	\D	Non-decimal number
	\h	Hex number
	\H	Non-hex number
Quantifier	?	Once or zero
	*	Zero or more times
	+	Once or more
	{n,m}	n or more times but m or less times
	{n,}	n times or more
	{,n}	Zero or more times but n or less times ({0,n})
	{n}	n times
Anchor	^	The beginning of a line
	\$	The end of a line
Character set	^...	Negative (lowest-priority operator)
	x-y	Range (from x to y)
		* A range of multi-byte characters is not supported.



A regular expression that is not described in [Table 7.4, "Supported regular expression"](#) can be input as well.

If a regular expression that is not supported is mixed, please note that CL/Win does not detect such expression.

## 7.4. Caution

### 7.4.1. Caution when monitoring a text log

#### 7.4.1.1. Caution about the interval for monitoring a text log

- Text log monitoring function confirms the trigger definition and monitor target text log settings at 10-second monitoring intervals, and checks whether or not a log containing the keyword is output to the defined text log file.

Therefore, take note of the following.

- A delay of up to the monitoring interval may occur during the time from when a log containing the keyword is output until it is detected and a job network is submitted.
- After the trigger definition and the target text log is created, edited, and deleted, a delay of up to the monitoring interval may occur until the new settings are reflected. The previous settings are enabled until the new settings are reflected.

To change the monitoring interval, add "JL\_LOGMONITOR\_INTERVAL=<Second>" to the daemon setting file "daemon.conf." You can set the monitoring interval in units of seconds.

Check the details of the daemon setting file in <Environment Guide>Chapter 5, 「Changing Startup Settings for JobCenter」.

- The time taken for confirmation of the output log may exceed the monitoring interval depending on the number of trigger definitions, number of target text logs, and log output frequency.

In this case, the next confirmation process does not start even in a monitoring interval until confirmation of all the text log files defined in the target text log is completed.

The next confirmation process starts after all the text log files are confirmed.

Therefore, the time at which the job network is submitted after a log is actually output may be greatly delayed.

In order to reduce the likelihood that such performance problem occurs, it is recommended to operate the number of trigger definitions, number of target text logs, and monitoring intervals within the following range.

Number of trigger definitions	100 or less
Number of target text logs	100 or less
Monitoring interval	10 seconds or longer

#### 7.4.1.2. Cautions when monitoring a large volume of logs that are output in a short period of time

In monitoring text log files (message rush files) for which a large amount of log data is output in a short period of time, a problem such as a delay in submitting the job network or loss of the trigger to submit may occur.

- Delay in submitting the job network
  - If a log that exceeds the maximum number of lines of the log to be confirmed once in a monitoring interval is output, detection of the lines exceeding the maximum number of lines in the log to be output to the message rush file will be delayed.

Confirmation of the contents of the log that exceeds the maximum number of lines is carried over to the next confirmation. Therefore, a submission of a job network will be delayed by the monitoring interval at least.

- If detection of the message rush file takes longer time, detection of the log may be delayed due to a delay in the start time to confirm the logs of text log files other than the message rush file.

#### ■ Loss of trigger to submit the job network

If the text log file is deleted due to reaching the upper limit of the rotation generation management as a result of output of a large amount of log data in a short period of time, the deleted log cannot be detected.

If a delay in submitting or loss of the trigger to submit occurs, the frequency of such problem may be decreased by setting the maximum number of lines to an appropriate value.

Although the maximum number of lines is 10,000 by default, the arbitrary line number can be set by adding "JL\_LOGMONITOR\_MAXLINE=<Maximum number of lines>" in the daemon setting file "daemon.conf."

For details of "JL\_LOGMONITOR\_MAXLINE", refer to in <Environment Guide>Chapter 5, 「Changing Startup Settings for JobCenter」.

### 7.4.1.3. Cautions about the target

- When the server is UNIX/Linux, do not change "inode" in the monitored text log file.

JobCenter of the UNIX/Linux version determines whether the monitored text log file is the same as the file that has been confirmed previously according to "inode."

If "inode" is changed, it is determined that a monitored text log file is newly created, and log confirmation starts from the beginning of the file.

Therefore, if "inode" of the monitored text log file is accidentally changed, the job network may be submitted again by detecting a log that was output previously.

- When the server is HP-UX and AIX, files larger than 2 GB cannot be monitored.
- Do not edit or update the contents of the file after rotation. Editing or updating may cause malfunction such as the job network being submitted again due to a reaction to a log that was output previously.
- If there is more than one backup file that matches the regular expression formula specified in the rotation rule, the backup file with the later update time is judged to be the new one.

If the update time is the same, the backup file whose name has a higher character string in alphabetical order is judged to be the new one.

### 7.4.1.4. Cautions on restarting

- If the log has been added to the text log file while JobCenter stops, the contents of the log that have been output after the stop will be confirmed automatically after restarting JobCenter.

If a large amount of log data is output while JobCenter stops, operation of the trigger may be affected.

If you want to ignore a log output while JobCenter stops after restarting it, add "JL\_LOGMONITOR\_FORGET=ON" in the daemon setting file "daemon.conf."

This setting enables you to ignore a log output while JobCenter stops after restarting it.

Check the details of the daemon setting file in <Environment Guide>Chapter 5, 「Changing Startup Settings for JobCenter」 .

- If the trigger detected an event before stop of JobCenter but some job networks were not submitted, such job networks are submitted automatically after restarting.

## 7.5. Restrictions

### 7.5.1. Restrictions on the trigger

- Trigger names, target text log names, and file paths are handled according to the specifications of the OS in use. Therefore, the case sensitiveness may vary according to the OS of the server. The case sensitiveness for each OS is listed below.

OS of the server	Case sensitiveness
Windows	Not case sensitive
UNIX/Linux	Case sensitive

### 7.5.2. Restrictions on monitoring a text log

- A text log file with a name that is changed dynamically, such as a name that contains a date, cannot be monitored.
- Monitoring of text log files on the network drive is not supported.
- When the [Set the matched line in environment variables] checkbox or both the [Use regular expressions] and [Set the matched contents to environment variables] checkboxes are selected, character strings are stored in the related environment variables respectively. The length of each character string that can be stored has an upper limit. The upper limit of the length of a character string that can be stored in the environment variable is listed below.

OS of the server	Upper limit of the length of a character string that can be stored
Windows	8161 bytes
UNIX/Linux	8167 bytes

If the length of a character string to be stored in the environment variable exceeds the upper limit, the excessive character strings are removed before storing. If a character string to be stored in the environment variable contains a multi-byte character, the character may become garbled.



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## 8 Monitoring and Management of Jobs (Usage of Tracker)

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After a job network is submitted or automatic execution is registered, the execution state of that job network can be changed or monitored and the result can be referenced using a list or window called a tracker.

A tracker displays the processes of the executed job network and their results.

The job statuses are distinguished by colors and labels, enabling errors to be recognized readily. The job status colors are common to the Job Network Tracker icons as well as to the Tracker List text mode and graphic mode. This makes the job statuses easy to identify.

The following three types of frames and dialogs display the Tracker List.

### ■ Tracker List in the Job Network Window

Trackers are listed on an individual job network basis.

The job execution status can be identified from the unit job icons and sub job network icons. Using these icons, operations such as Skip and Hold can be performed.

### ■ Tracker List in the User Frame Window

Trackers related to login users are listed.

### ■ Tracker List@all\_machine in the Manager Frame

All trackers in a machine group are listed.

The trackers of other users to whom access is permitted can also be referenced.

## 8.1. Relation between job status and tracker's color

The Job Network Tracker icons, as well as the Tracker List text mode and graphic mode, allow the job status to be identified by color.

Also, the [Flow] tab in the [Job Network Tracker] window contains icons representing the unit job execution trackers. The execution status of each unit job can also be identified by the labels or colors of these icons.

Note that, when a job network has a parent-child relationship, the parent job network tracker in the Tracker List reflects the status of its child job network tracker.

### 8.1.1. List of Relation Between Job Status and Tracker's Color

The relation between job status and tracker's color is shown in the following table.

The color can be configured. For details, refer to in <Environment Guide>Section 6.6, "Changing Color Settings".

Table 8.1. Relationship between job status and tracker color

Status	Color	Name
WAIT	Light Blue	Execution is scheduled (The tracker is not yet created).
PREPARE	Light Blue	Execution is scheduled and the tracker is created. "PREPARE" is displayed in the following cases. <ul style="list-style-type: none"> <li>■ Execution of the parent job network has started but execution of the corresponding job network has not started.</li> <li>■ Execution is confirmed after conditional branch with the calendar and hold operation is performed.</li> <li>■ A future time is specified for submission.</li> <li>■ The script or any parameter of a job network has been updated from a scheduled tracker.</li> <li>■ Hold or Release Hold has been performed for a scheduled tracker.</li> </ul>
RUN	Yellow	Currently running.
RUN[WAIT]	Yellow	Currently running but waiting for a part.
RUN[WARNING]	Yellow	Execution is continued although a warning has occurred.
RUN[WARNING][WAIT]	Yellow	Running in warning state and waiting for a part.
WARNING	Yellow	Warning was occurred.
DONE	Green	Execution ended normally.
DONE[SKIP]	Green	The sub job network was not executed and skipped.
KILLED	Green	The execution was aborted by the skip process.
STOP(ERROR)	Red	Execution is stopped due to an error.
RUN(ERROR)	Red	Execution is continuing despite an error.
RUN[ERROR][WAIT]	Red	Running in error state and waiting for a part.

DONE(ERROR)	Red	Execution ended with an error.
KILLED	Red	The job was aborted because of an error.
SKIPPED ON BRANCH	Light Grey	Execution was skipped by a calendar branch.
DIALOG	Orange	Execution is stopped to wait for a response (selection from [Ok] and [Error]) from the user.
HOLD	Orange	The flow has reached a job that is in the Hold status.

When the job is to be skipped, [SKIP] is displayed to the right of the [Status] indication. [HOLD] is displayed for those that are held, and [ARCHIVED] for those that have been archived.



In the case of a "scheduled" tracker that has been skipped or held in advance, the Tracker List window does not show [SKIP] or [HOLD]. It is therefore necessary to open the tracker flow to check the status.












The list of Unit Job Tracker icons and Sub Job Network Tracker icons, which are displayed on the [Flow] tab of the [Job Network Tracker] window, are shown below.

Table 8.2. List of Unit Job Tracker icons

Icon	Label	Description
	WAIT	The sub job network is waiting.
	SUBMIT	The job has submitted. It is now waiting in the queue.
	RUN	The job is running.
	SUSPEND	The job execution is suspended.
	WARNING	A warning was output.
	DONE	The job ended normally.
	SKIP	Execution was skipped.
	KILLED	Execution was aborted by the skip process.
	STOP	The job ended abnormally with the flow stopped at the job.
	ERROR	The job ended abnormally. The flow is continued.
	ABORT	The job was aborted because of an error.
	SKIPPED	The job was skipped without being executed.

Table 8.3. A list of Sub Job Network Tracker icons

Icon	Label	Description
	WAIT	The sub job network is waiting.
	PREPARE	The sub job network has yet to be executed but is waiting while an execution entry is being created.

	RUN	The sub job network is being executed. While the icon is normally displayed in yellow, it turns orange when a held job or dialog part is waiting for a user operation.
	WARNING	A warning was output.
	DONE	The sub job network ended normally.
	SKIP	Execution was skipped.
	KILLED	Execution was aborted by the skip process.
	STOP	There is a stopped job by an error.
	RUN (in red)	The icon turns red if an error occurs while the sub job network is being executed. The execution of the sub job network is continuing.
	ERROR	The sub job network ended abnormally.
	SKIPPED	The sub job network was skipped.
	DIALOG	The sub job network has stopped to wait for a user response ("OK" or "Error").
	HOLD	A held job exists in the sub job network.

### 8.1.2. Displaying Job Network Trackers in Parent-child Relationship

If job networks have parent-child relationship, the priority order of the display is as the following [Table 8.4, "Priority and status of job network"](#).

Table 8.4. Priority and status of job network

Job Network Status	Priority
STOP(ERROR)	High
Dialog	↑
HOLD	
RUN[ERROR][WAIT]	
RUN(ERROR)	
RUN[WARNING][WAIT]	
RUN[WARNING]	
RUN[WAIT]	
RUN	
DONE	↓
PREPARE	Low

There are two types of job network parent-child relationship - parallel and cascade. The child job network status is reflected on the parent job network according to the order of priority shown in [Figure 8.1, "Tracker List display example when the parent-child relationship is parallel"](#) and [Figure 8.2, "Tracker List display example when the parent-child relationship is cascaded"](#).

### 8.1.2.1. Parallel

If there are child jobs executed in parallel, the highest priority of the child jobs is reflected to the parent job.

For example, in the [Figure 8.1, "Tracker List display example when the parent-child relationship is parallel"](#), SUB13, the highest priority of SUB11 to SUB14 is indicated as TEST01.

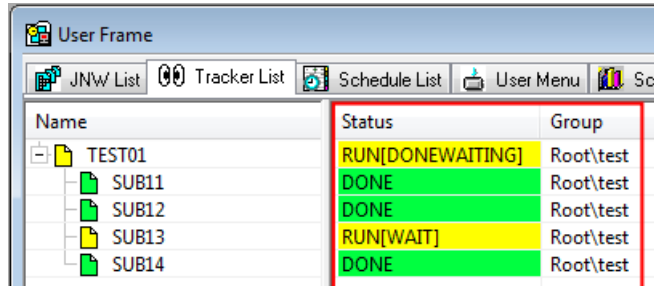


Figure 8.1. Tracker List display example when the parent-child relationship is parallel

### 8.1.2.2. Cascade

If there are child jobs in cascade, the upstream status does not affect the downstream and the downstream status is reflected to the upstream.

For example, in the [Figure 8.2, "Tracker List display example when the parent-child relationship is cascaded"](#), state of SUB22 "RUN[WAIT]" is reflected to TEST02 and SUB21. However, not to SUB23 or SUB24.

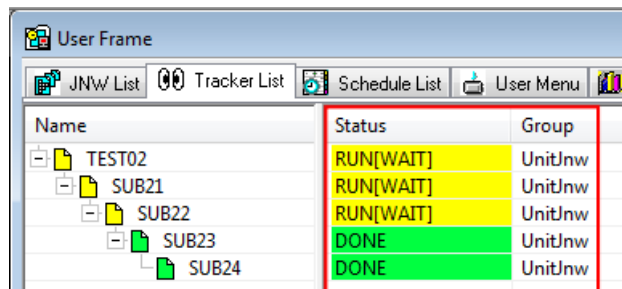


Figure 8.2. Tracker List display example when the parent-child relationship is cascaded

### 8.1.3. Relation Between Group Icon's Display Color and Job Network Tracker

If a group contains the job network tracker, the group icon is displayed in the color corresponding to the status of job network tracker. If the group contains multiple job network trackers, the display color of group icon is recursively determined as described below.

1. If the group does not contain any child group, the color is the one corresponding to the status of the job network tracker in the group with the top priority.
2. If the group contains a child group, the color is the one corresponding to the status of a child group or the job network tracker in the group with the top priority.

The priorities of the job network tracker's statuses in relation to the display color of group icon are shown in [Table 8.5, "Job Network Statuses and Priorities In Relation to the Display Color of Group Icon"](#).

Table 8.5. Job Network Statuses and Priorities In Relation to the Display Color of Group Icon

Job Network Status	Priority
--------------------	----------

KILLED	High
DONE(ERROR)/STOP(ERROR)/RUN[ERROR]/RUN[ERROR][WAIT] (The display color of group icon is equal to the one for DONE(ERROR).)	↑
WARNING	
RUN[WARNING]/RUN[WARNING][WAIT]	
DIALOG	
HOLD	
DONE	
RUN/RUN[WAIT]	
WAIT/PREPARE	↓
SKIPPED[RUNLIM]	Low

For example, refer to [Figure 8.3, “Example of Display Color of Group Icon”](#). SubGroup 1 within the red frame has the job network tracker jnw2 (RUN[WAIT]) and jnw3 (DIALOG). Because DIALOG has a higher priority than RUN[WAIT], the display color of SubGroup 1's group icon is the same as jnw3 (DIALOG). Group 2 within the blue frame has the child group SubGroup 2 (RUN) and jnw4 (DONE). Because DONE has a higher priority than RUN, the display color of Group 2's group icon is the same as jnw4 (DONE).

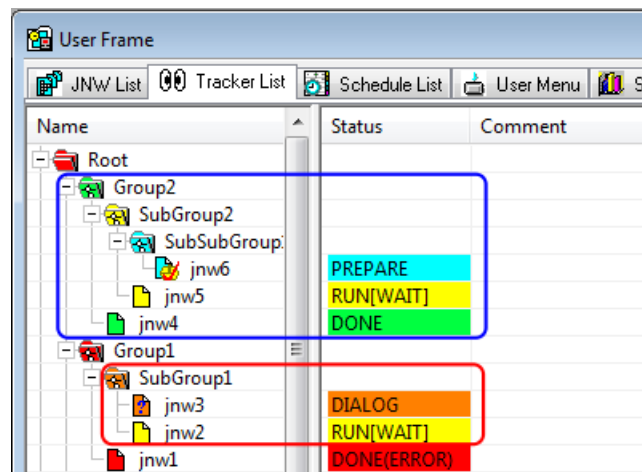



Figure 8.3. Example of Display Color of Group Icon


## 8.2. Displaying Tracker List by Gantt/List Mode

In the List mode, job states can be browsed in table format.

In the Gantt mode, scheduled trackers, running trackers, and trackers that have ended execution are indicated in a bar chart.

To switch between list format or Gantt chart format, click  button on the toolbar, or select [View] on the menu bar and then click [Gantt/List].

### 8.2.1. Tracker List in the Job Network Window

1. Select the job network from the job network list in the User Frame dialog box to open the Job Network window, then click the [Tracker List] tab.
2. A list of trackers related to that job network is displayed. It shows the status by the job network basis.
3. Click the  button on the toolbar, or select [View] on the menu bar and then click [Gantt/List].

#### 8.2.1.1. Gantt Mode

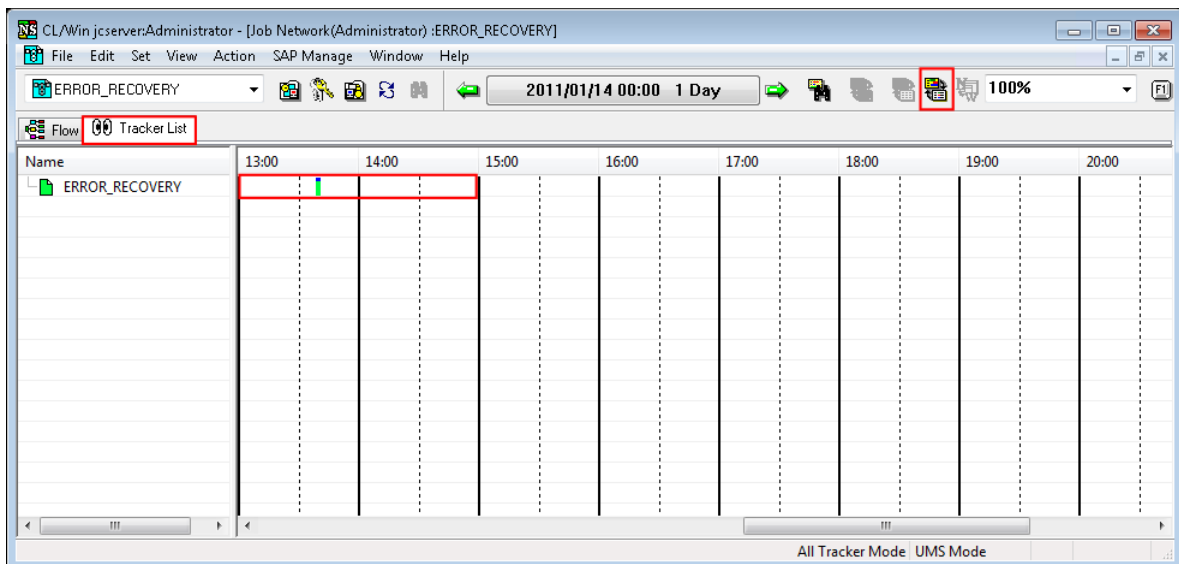


Figure 8.4. Screenshot of Tracker List in the Job Network window (Gantt Mode)

The content of each item of Gantt Mode is as follows:

#### ■ Name

Displays the name of a job network with its icon.

Clicking the plus sign "+" indicated at the beginning of a job network name lists sub job networks under it. Clicking the minus sign "-" hides sub job networks under it.

#### ■ Bar Chart

- Usually a two-stage bar chart is displayed for each tracker. Upper Stage: Indicates the execution schedule of the job network. Lower Stage: Indicates the execution state of the job network.
- Bar colors are the same as the colors of [Status] in the List mode. For a job network that has not started, no execution status is indicates.

- The bar graph can be zoomed. To zoom in or zoom out, select a zoom ratio in the zoom combo box in the tool bar, or select [View] and [Zoom] and choose a zoom ration from the list. It is also possible to enter a zoom ratio directly into the zoom combo box in the tool bar. The allowable zoom range is 25% to 200%.

### 8.2.1.2. List Mode

Name	Status	Group	Co...	Expected S...	Expected ...	Start Time	End Time	User	Machine
ERROR_RECOVERY	DONE	UnitInw		01/14 13:38	01/14 13:38	01/14 13:38	01/14 13:38	Administrator	jcservr

Figure 8.5. Screenshot of Tracker List in the Job Network window (List Mode)

The content of each item of List Mode is as follows:

#### ■ Name

Displays the name of a job network together with its icon.

Clicking the plus sign "+" indicated at the beginning of a job network name lists sub job networks under it. Clicking the minus sign "-" hides sub job networks under it.

#### ■ Status

Indicates the status of a Job Network Tracker. The content of [Table 8.1, "Relationship between job status and tracker color"](#) in [Section 8.1, "Relation between job status and tracker's color"](#) will be displayed.

#### ■ Group

Indicates a group name. It is displayed in the Time mode.

#### ■ Comment

Specifies a comment appended to the job network.

#### ■ Expected Start Time

Indicates the time scheduled in the calendar. For immediate submission, the submitted time is displayed.

#### ■ Expected End Time

Indicates estimated end time calculated from settings in the parameter windows of a job network and unit job.



### ■ Start Time

Indicates the time when the job network actually started. If the job network is re-executed, the time of re-execution is indicated.

### ■ End Time

Indicates the time when the job network actually ended. "-" is indicated for groups.


### ■ User

Indicates the user who executed the job network. For a group, the name of the user to which the group belongs is displayed.

### ■ Machine

Indicates the machine on which the job network was executed.

## 8.2.2. Tracker List in User Frame Window

1. In the User Frame window, click the [Tracker List] tab.
2. Tracker List in the User Frame window displays. It shows the trackers that relate to the login user.
3. Click the  button on the toolbar, or select [View] on the menu bar and then click [Gantt/List].

### 8.2.2.1. Gantt Mode

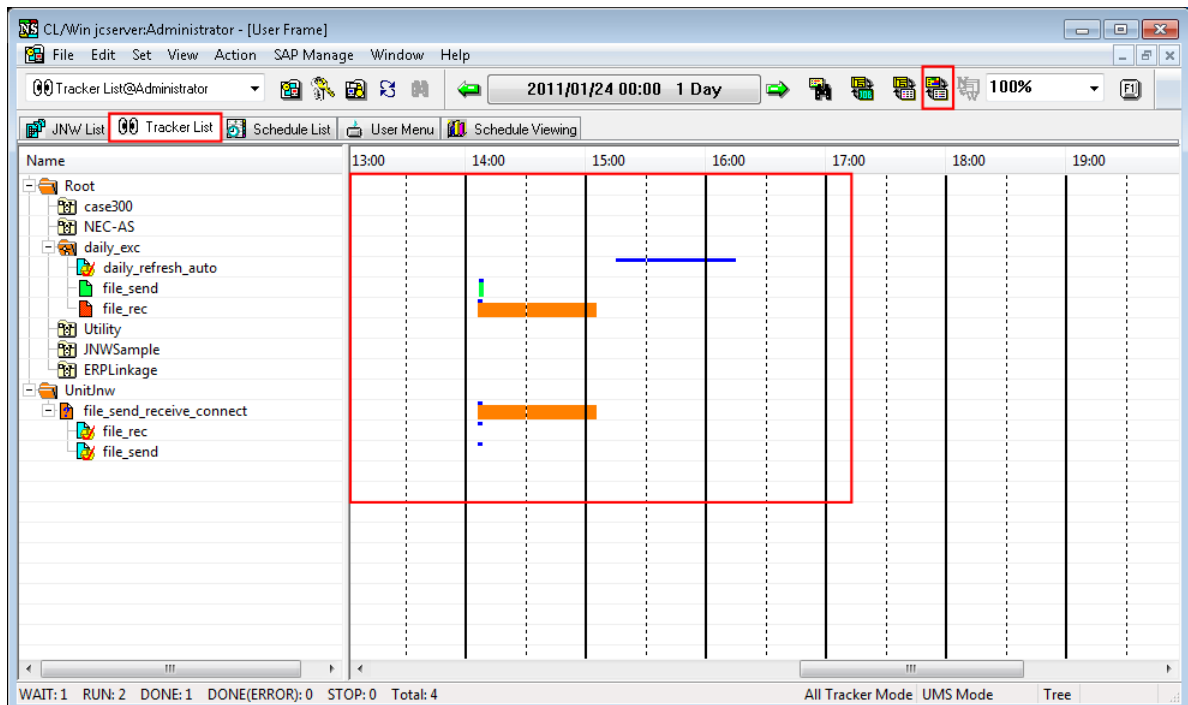


Figure 8.6. Screenshot of Tracker List in the User Frame (Gantt Mode)

For the description of each item in the Gantt Mode, refer to [Section 8.2.1.1, "Gantt Mode"](#).

### 8.2.2.2. List Mode

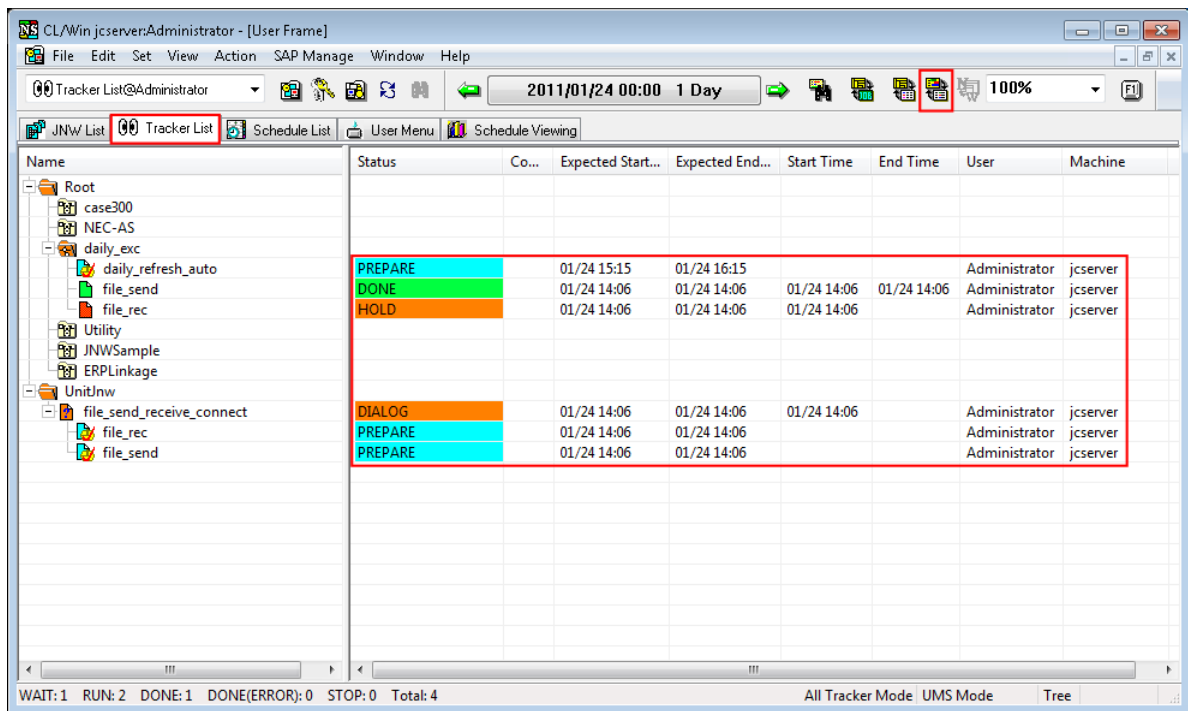



Figure 8.7. Screenshot of Tracker List in the User Frame (List Mode)

For the description of each item in the List Mode, refer to [Section 8.2.1.2, "List Mode"](#).

### 8.2.3. Tracker List@all\_machine in the Manager Frame Window

1. In the Manager Frame window, select the [Tracker List@all\_machine] tab.
2. Tracker List in the Manager Frame window displays. Trackers related to the logged in user are displayed.
3. Click the  button on the toolbar, or select [View] on the menu bar and then click [Gantt/List].

### 8.2.3.1. Gantt Mode

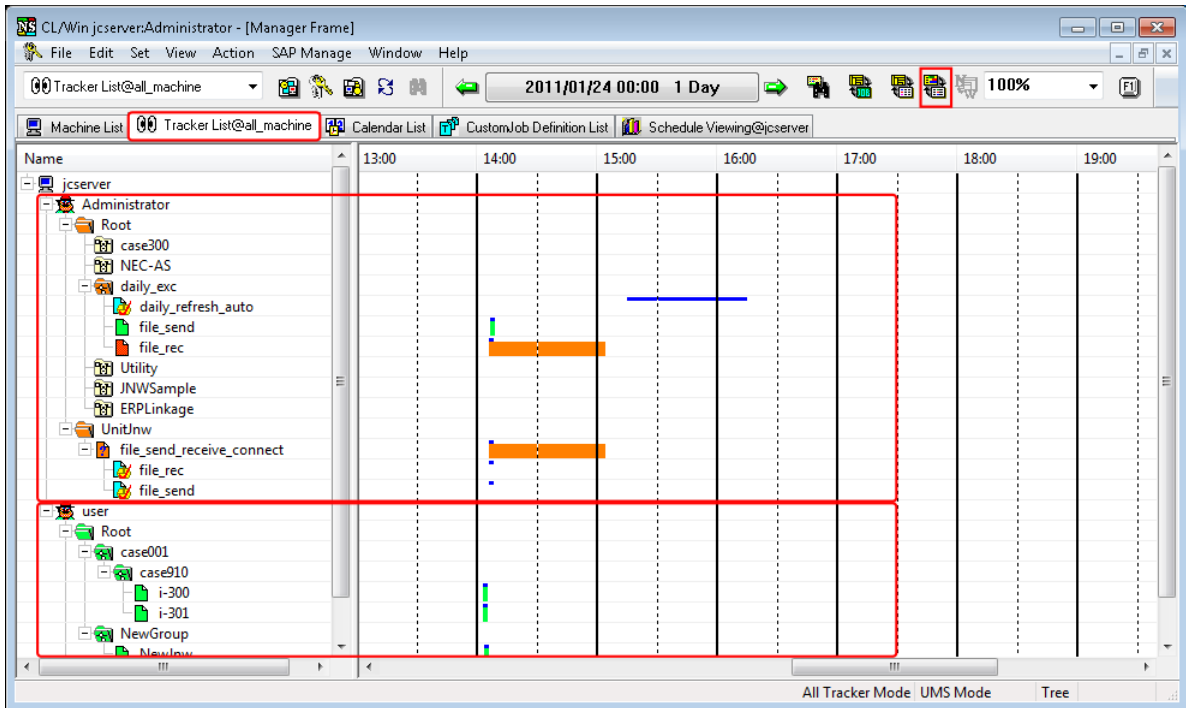


Figure 8.8. Screenshot of Tracker List@all\_machine in the Manager Frame (Gantt Mode)

For a description of each item in the Gantt Mode, refer to [Section 8.2.1.1, "Gantt Mode"](#).

### 8.2.3.2. List Mode

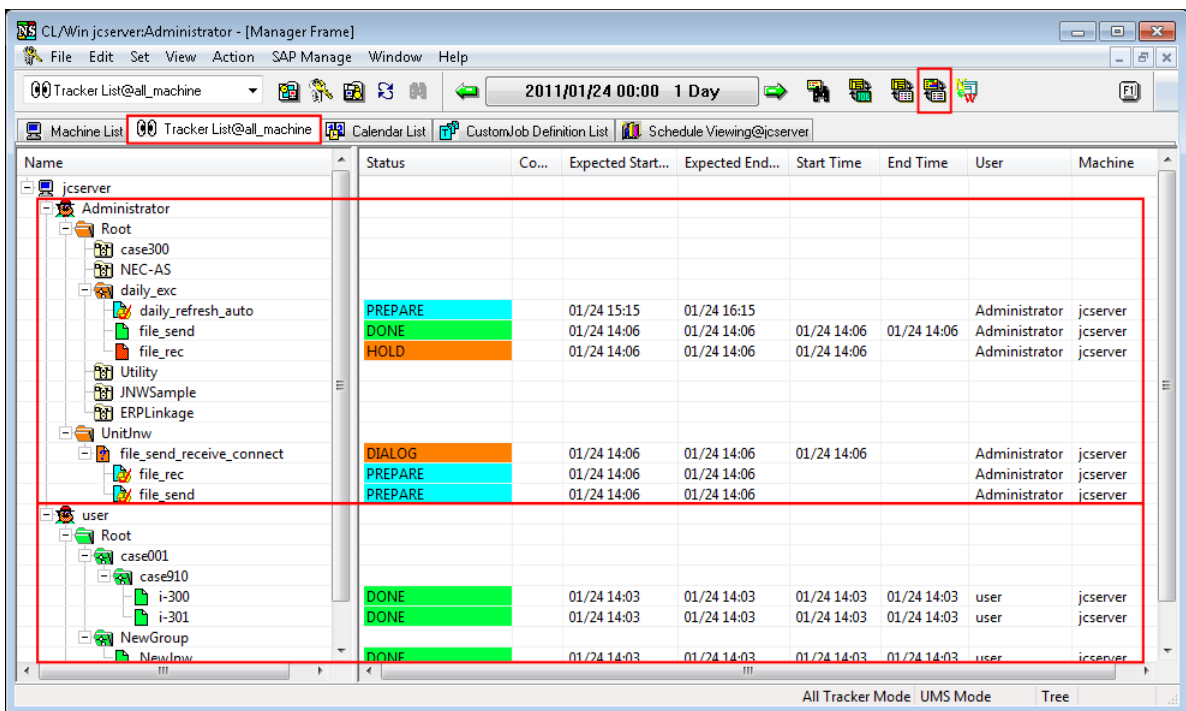


Figure 8.9. Screenshot of Tracker List@all\_machine in the Manager Frame (List Mode)

For a description of each item in the List Mode, refer to [Section 8.2.1.2, "List Mode"](#).

### 8.2.4. Simple Display of Status Statistics

The number of each type of tracker status is counted and displayed at the bottom of the Tracker List. Note that only the statuses of parent job networks are counted.

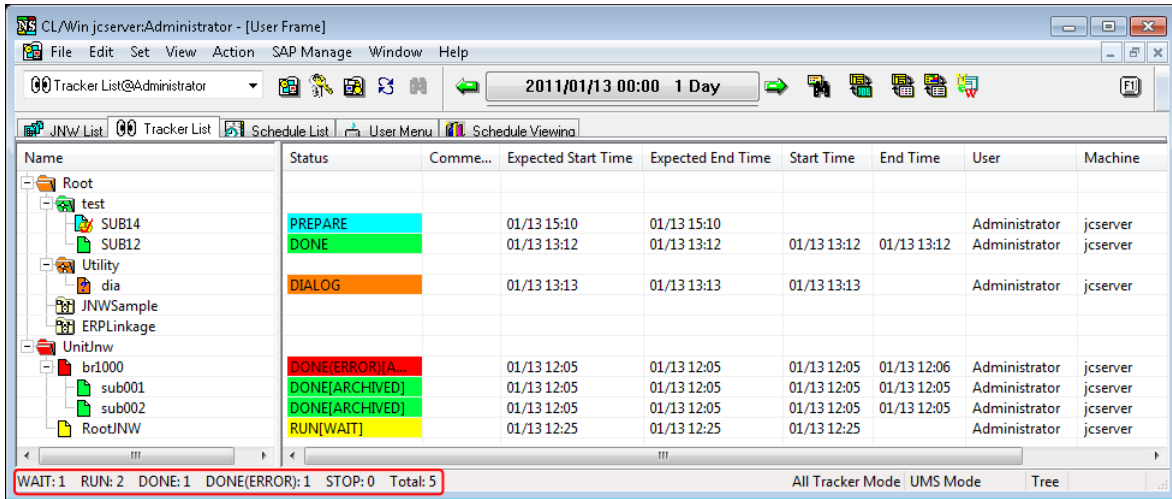


Figure 8.10. Simple statistics display

The following table lists the tracker statuses that are counted and shows how they are classified.

Status	Statuses
WAIT	WAIT, PREPARE
RUN	RUN, RUN[ERROR], RUN[WARNING], DIALOG, HOLD, RUN[ERROR][WAIT], RUN[WARNING][WAIT], RUN[WAIT], RUN[ERROR][END WAIT], RUN[WARNING][END WAIT], RUN[END WAIT], RUN<RERUN>, RUN[ERROR]<RERUN>
DONE	DONE, SKIPPED, KILLED, SKIPPED[RUNLIM], DONE<RERUN>
DONE(ERROR)	DONE(ERROR), WARNING, ABORT, DONE(ERROR)<RERUN>
STOP(ERROR)	STOP(ERROR)
Total	The number of parent job networks

## 8.3. Displaying Only the Latest Trackers

Of the trackers of the same job network definition in the Tracker List window, only the latest tracker is displayed (Latest Tracker Display Mode). The Latest Tracker Display Mode can be used in the following four windows:

- the [Tracker List] tab in the [User Frame] window,
- the [Tracker List@all\_machine] tab in the [Manager Frame],
- the [Tracker List] tab in the [Job Network] window,
- the [Tracker List] tab in the [Machine Frame].

Trackers that are displayed by Latest Tracker Display are as follows:

- Of the trackers being executed and those already executed, only the latest tracker is displayed. A scheduled or scheduled (confirmed) tracker is not displayed.
- In the case of a tracker having sub job networks, only the latest tracker of those trackers whose top-level job networks belong to the same tracker is displayed. In this case, the original scheduled submission time of the top-level job network is used to determine whether the tracker is the latest.

For example, when tracker A in the schedule state is forced started and then the same job network is submitted again, the latest tracker is determined by comparing tracker A's original scheduled submission time and the submission time.



### Cautions about the Latest Tracker Display Mode

- In the Latest Tracker Display Mode, the shift of the display period, the [Period setting] button, and the switch of Gantt/List Mode cannot be performed.
- The [Tracker Config] tab in the [User Config] dialog and [WAIT] and [Displaying Branch-Skipped Wait JNW] in [Display Filter Switch] of [Control setting] cannot be selected.

### 8.3.1. Using a Latest Tracker Display Mode

1. In the Tracker List, click the [Latest Tracker Display] button  on the extreme right of the toolbar, or on the menu bar, select [View] and then click [Latest Tracker Display].

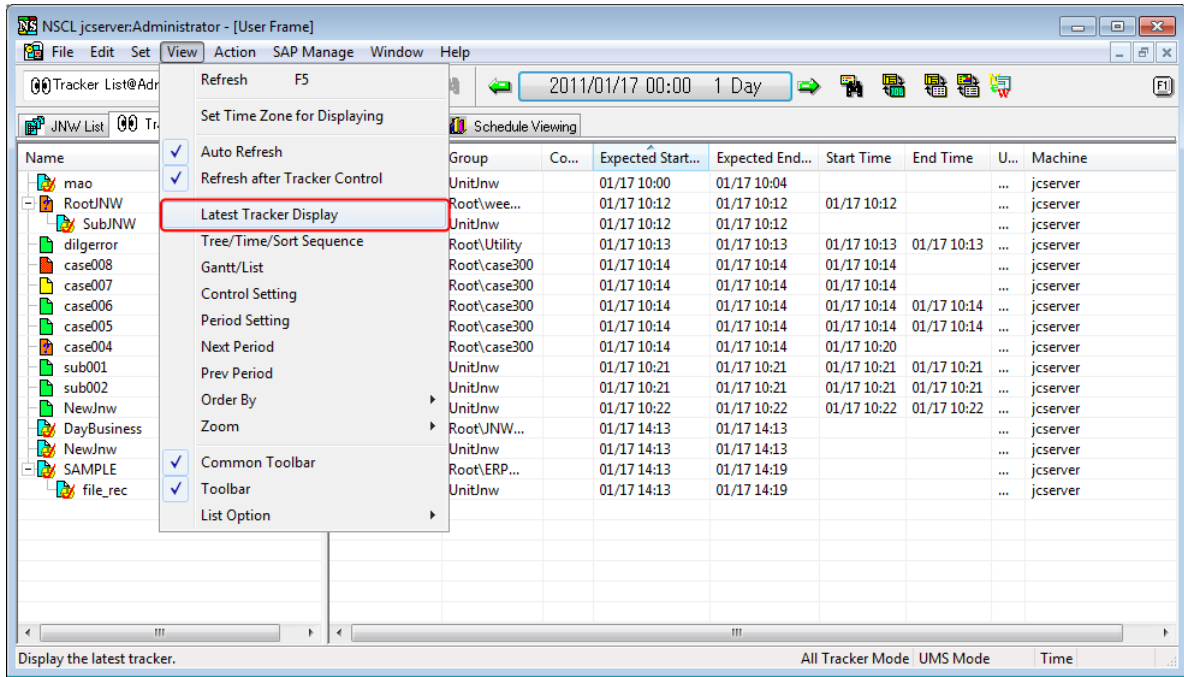


Figure 8.11. Screenshot that shows how to select the Latest Tracker Display Mode

- The Tracker List window displays in the Latest Tracker Display Mode. In the Latest Tracker Display Mode, only the latest trackers are shown regarding the trackers which have the same top-level job network name.

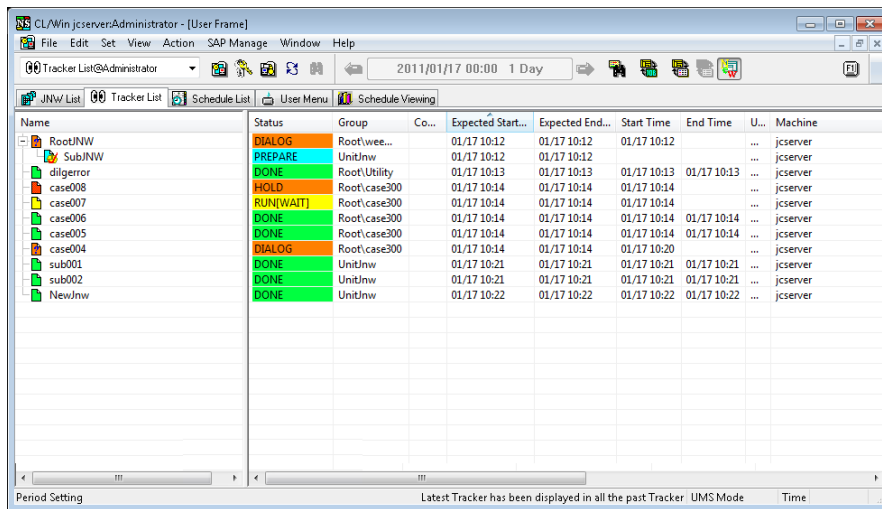


Figure 8.12. Screenshot that shows the result of the Latest Tracker Display Mode

In the lower right of the window, a status indication appears that represents what is currently displayed. There are three types, as follows.

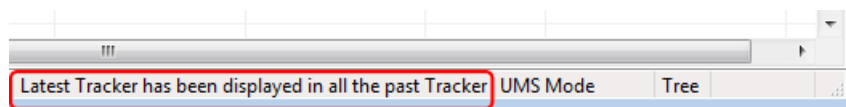


Figure 8.13. Example of the status indication representing what is currently displayed in the Tracker List

■ All Tracker Display Mode

All trackers are displayed (conventional Tracker List display format).

■ Latest Tracker has been displayed in all the past Tracker

Only the latest tracker is displayed after searching all the past trackers regardless of the period.

■ Latest tracker since xxxx/xx/xx is displayed

Only the latest tracker is displayed after searching trackers within a set period (after the indicated date).

### 8.3.2. Setting a Latest Tracker Display Mode

To set the Latest Tracker Display Mode, use [TrackerList's Display Mode] of [Tracker Config] tab in User Config.

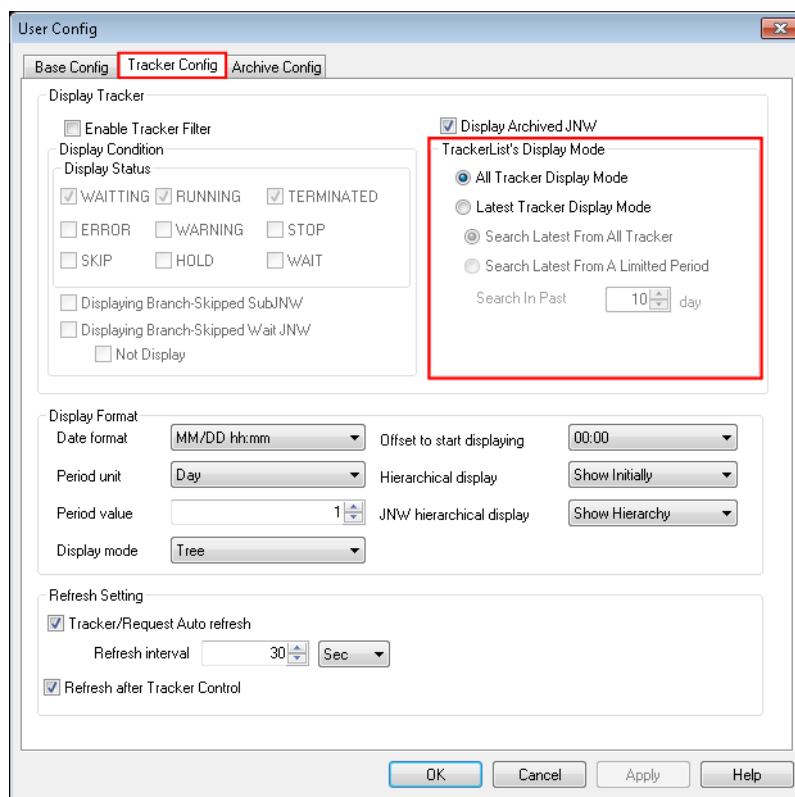


Figure 8.14. Screenshot of [Tracker Config] tab in [User Config] dialog box

■ All Tracker Display Mode

All trackers are displayed.

■ Latest Tracker Display Mode

Only the latest tracker is displayed. When this mode is specified, the settings shown in the table below are available. When the Latest Tracker Display Mode is selected, [WAITING] in the [Display Filter] section and [Displaying Branch-Skipped Wait JNW] cannot be selected.

Search Latest From All Tracker	Searches all past trackers and displays only the latest tracker.
Search Latest From A Limited Period	Searches trackers within a specified period and displays only the latest tracker.

Search In Past

Available when [Search Latest From A Limited Period] is selected.  
Set a value in the range of 1 to 9999.

(Example) When 2 is set, the trackers after 00:00 of the previous day are searched, while those before 23:59 of the day before the previous day are ignored.

The Tracker List window is displayed according to the settings specified here.



#### Cautions about [TrackerList's Display Mode]

- The changes you make using [TrackerList's Display Mode] of the [Tracker Config] tab in the [User Config] dialog box take effect next time you open the [User Frame] or [Manager Frame] window.

Therefore, if you change the settings when the [User Frame] or [Manager Frame] window is open, reflecting the changes requires closing the window and then reopening it.


- When [TrackerList's Display Mode] of the [Tracker Config] tab in the [User Config] dialog box is set to [Search Latest From All Tracker], all trackers are searched regardless of the period to display the latest tracker. Therefore, depending on the amount of the tracker data, it may take a long time before the tracker is displayed.

In that case, search for the latest tracker by selecting Search Latest From A Limited Period in [Tracker Config] tab of User Config.



## 8.4. Displaying Tracker List in Tree

The Tracker List trackers are displayed in a hierarchical tree structure in the order of machines in the machine group, users, group Root, and group UnitJnw. The hierarchical tree display is as shown in [Figure 8.15, "Image of hierarchical tree"](#).

To switch to the tree display, click the  button. "Tree" appears in the lower right corner of the window.

For details about machine groups, refer to in <Environment Guide>Section 3.1.3, "Machine Group Configuration (Registering Another Machine from JobCenter CL/Win)".




The "Tracker List of the Job Network window" cannot offer the tree display.



Figure 8.15. Image of hierarchical tree

### 8.4.1. Tracker List in User Frame Window

1. In the User Frame window, click the [Tracker List] tab.
2. A list of User Frame trackers is displayed. Click  button to switch display mode to Tree. "Tree" is displayed at the bottom right corner of the window.
3. Child groups and trackers under group Root for the login user are listed.

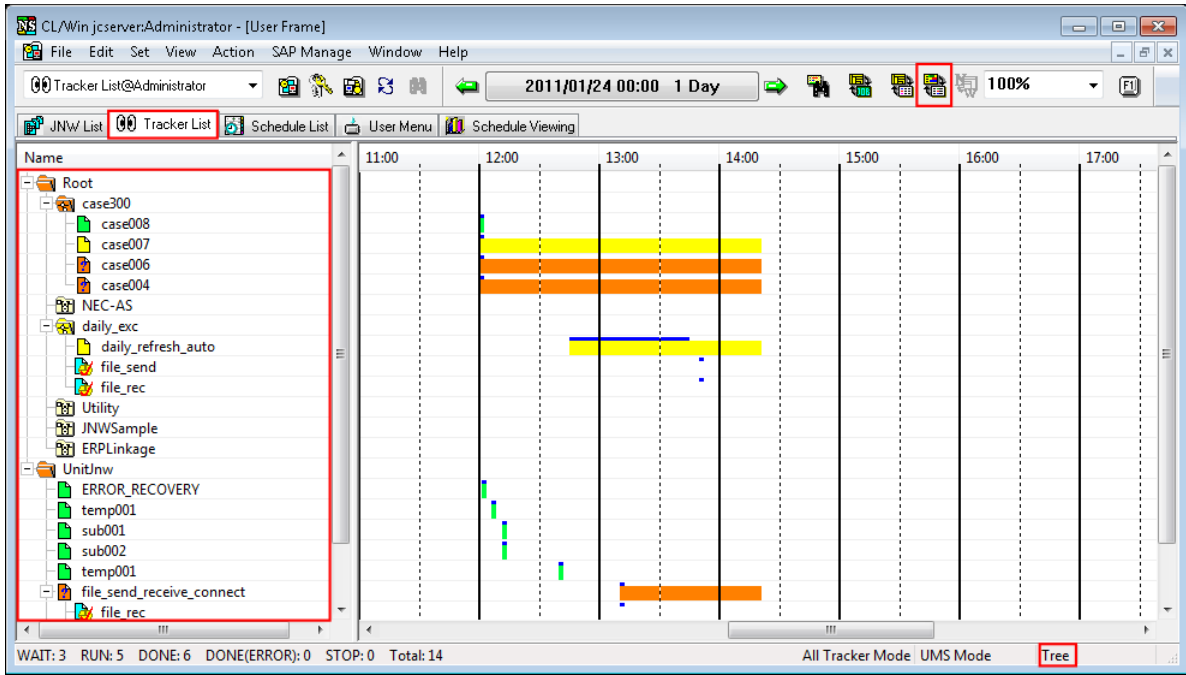



Figure 8.16. Screenshot of Tracker List in the User Frame in Tree mode

### 8.4.2. Tracker List@all\_machine in the Manager Frame

1. In the Manager Frame window, select the [Tracker List@all\_machine] tab.
2. A list of Manager Frame trackers is displayed. Click  button to switch the display mode to Tree. "Tree" is displayed at the bottom right corner of the window.
3. For each user of the machines in the machine group, child groups and all trackers under group Root are listed. Trackers under group UnitJnw are also listed.

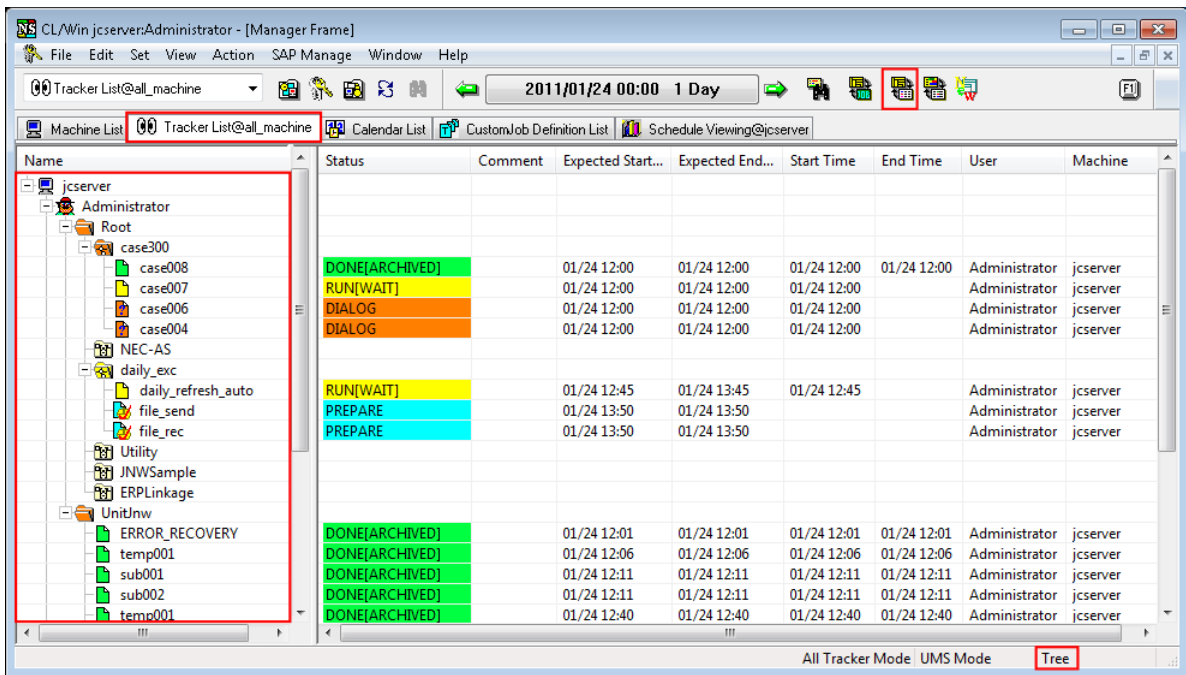


Figure 8.17. Screenshot of Tracker List@all\_machine in the Manager Frame in Tree mode

### 8.4.3. Expanding only the Hierarchies of Groups Where a Tracker Exists

For the tree display, the hierarchies of all groups are expanded by default regardless of tracker existence. By using this function, you can expand only the groups where a tracker exists.

To expand only the hierarchies of groups where a tracker exists, follow the procedure below.

1. Display the tracker list.
2. Select a group that contains a child group (the Root group shown below, for example), and then select [Collapse No-tracker Group] in the right-click menu.

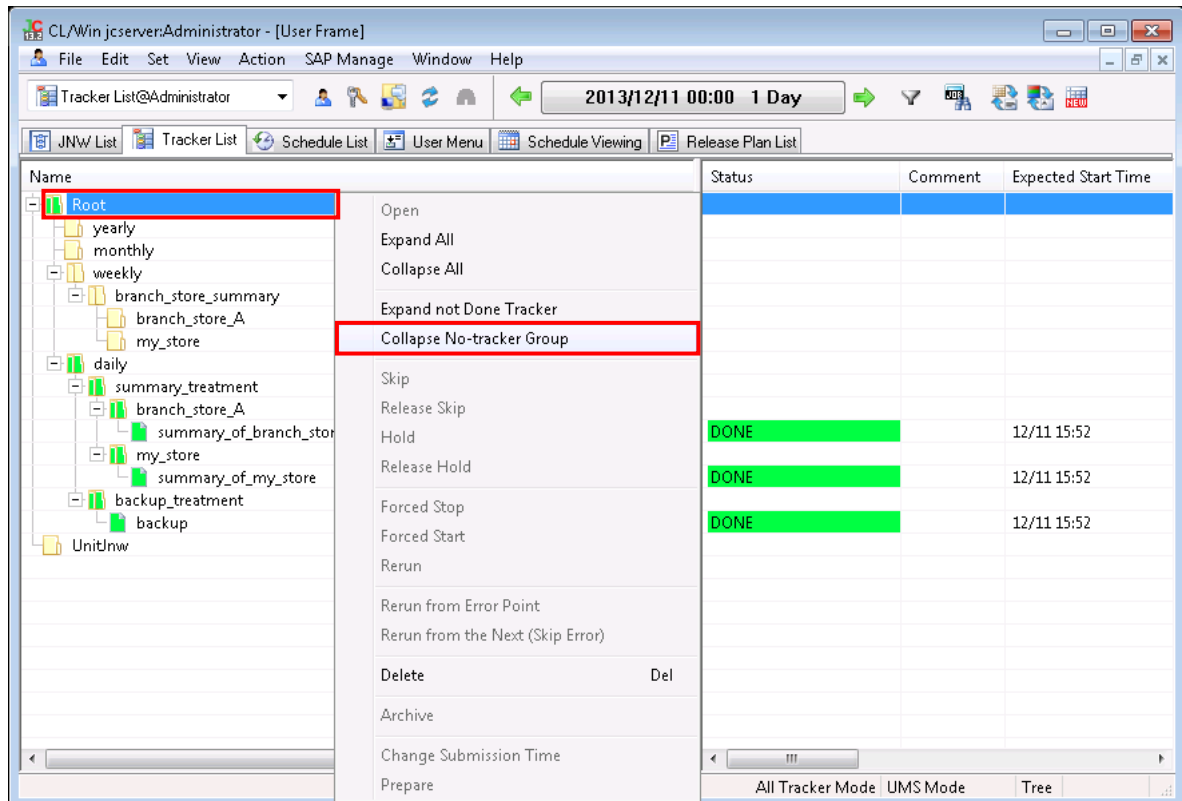


Figure 8.18. Screenshot of selecting [Collapse No-tracker Group]

3. This expands only the groups that contain a tracker and collapses the groups that do not contain a tracker (the Weekly group shown above, for example).

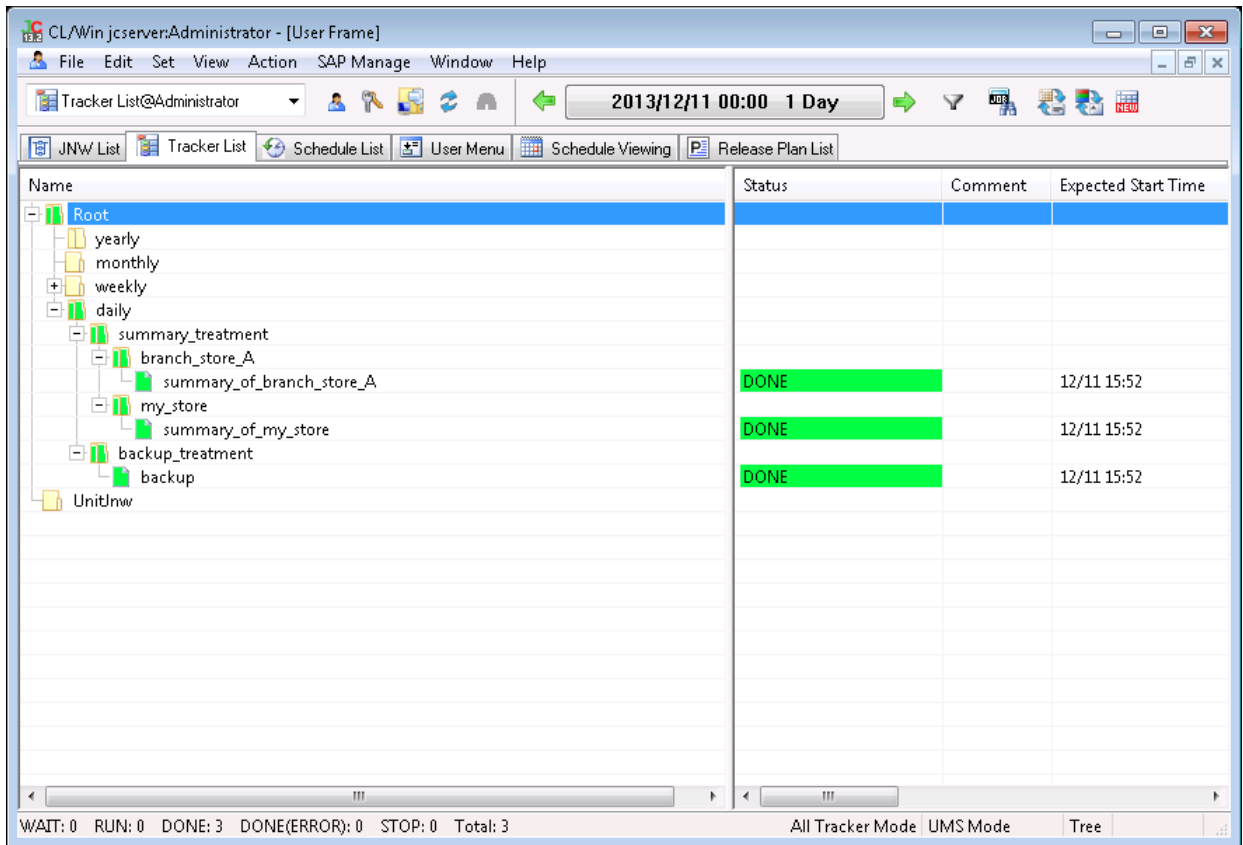


Figure 8.19. Screenshot of expanding only the groups with tracker

## 8.5. Displaying Tracker List in the Ascending Order of the Expected Start Time

Trackers of a job network, the user, or the machine are listed in the ascending order of the expected start time.

### 8.5.1. Job Network Tracker List

In the Tracker List of Job Network window, use [Expected Start Time] in the menu to list trackers in the ascending order of the expected start time. Display mode cannot be switched to "Time" by Tree/Time/Sort sequence button. In addition, "Time" is not displayed at the bottom right corner of the window.

1. In the Job Network window, select the [Tracker List] tab.
2. The job network tracker list is displayed.
3. In the menu bar, select [View], [Order By], and then click [Expected Start Time].

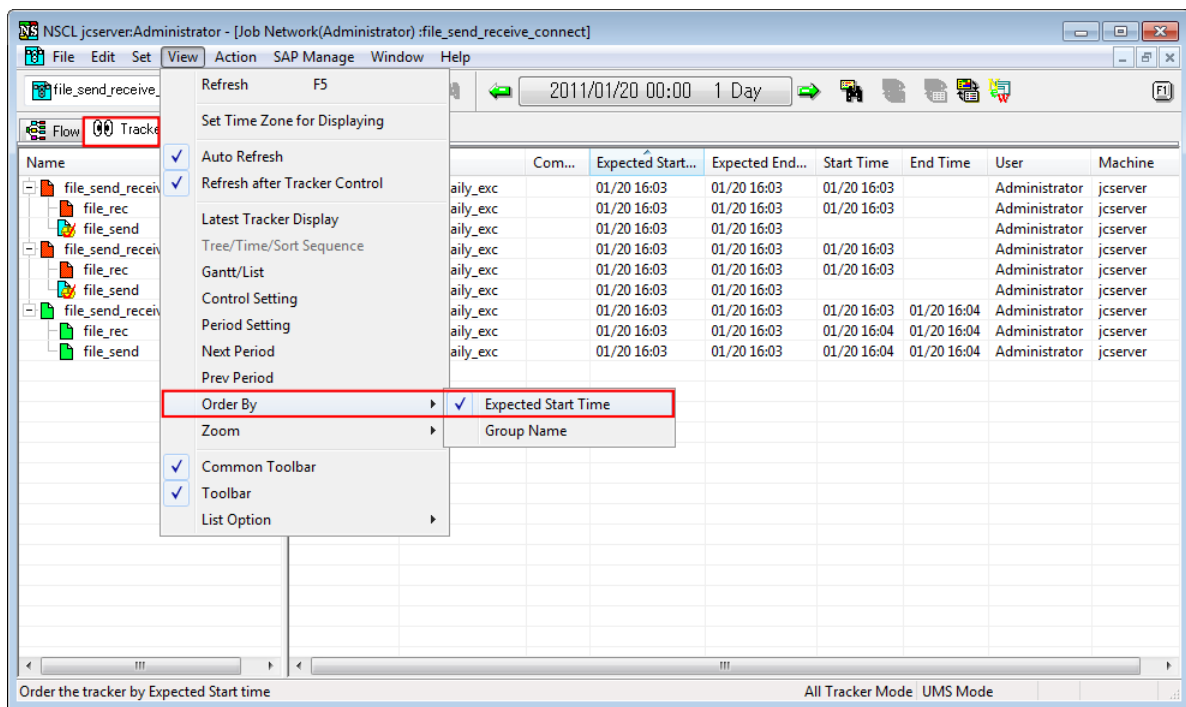


Figure 8.20. Screenshot that shows how to select [Expected Start Time] menu

4. Trackers of the job network are listed in the ascending order of the expected start time.

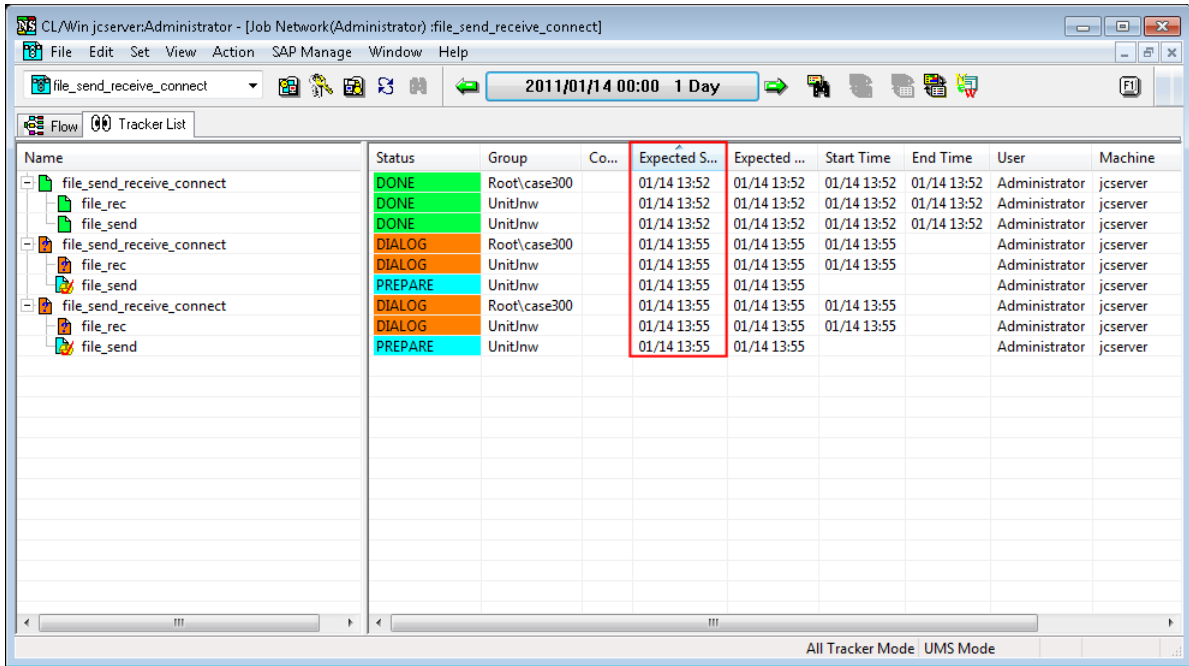



Figure 8.21. Screenshot of Tracker List in the Job Network window in Time mode

### 8.5.2. Tracker List in User Frame Window

1. In the User Frame window, click the [Tracker List] tab.
2. A list of User Frame trackers is displayed. Click  button to switch display mode to Time. "Time" is displayed at the bottom right corner of the window.
3. Trackers of the user are listed in the ascending order of the expected start time.

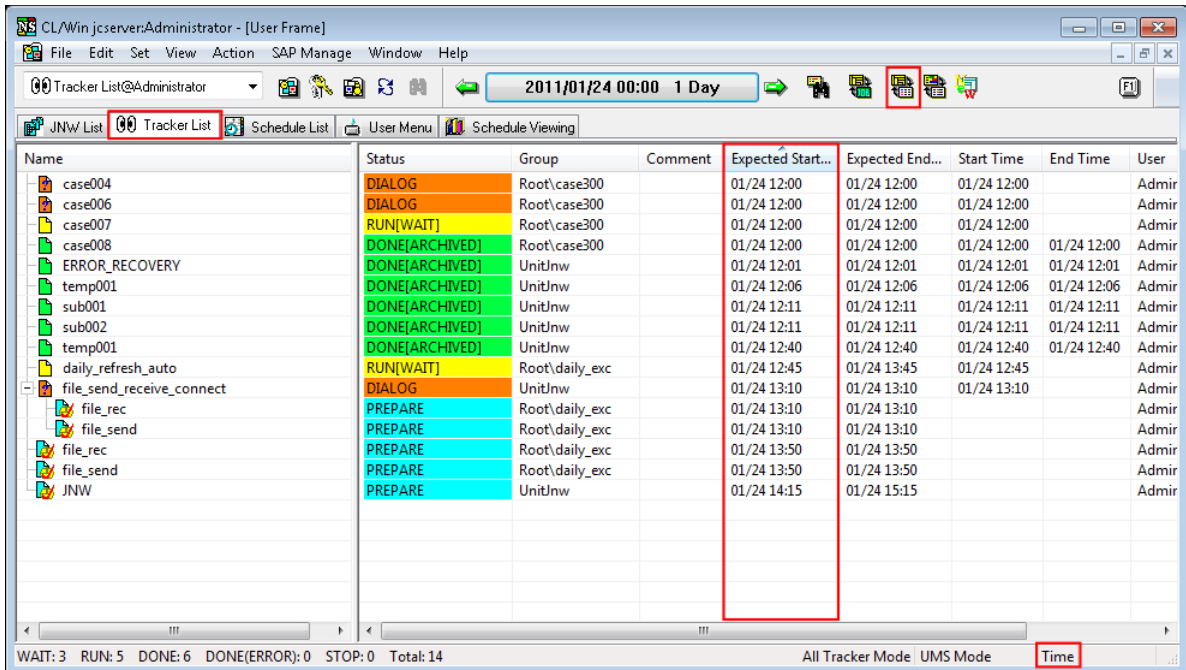



Figure 8.22. Screenshot of Tracker List in the User Frame in Time mode

### 8.5.3. Tracker List@all\_machine in the Manager Frame

1. In the Manager Frame window, select the [Tracker List@all\_machine] tab.
2. A list of Manager Frame trackers is displayed. Click  button to switch display mode to Time. "Time" is displayed at the bottom right corner of the window.
3. For each user of the machines in the machine group, child groups and all trackers under group Root are listed. Trackers under group UnitJnw are also listed.

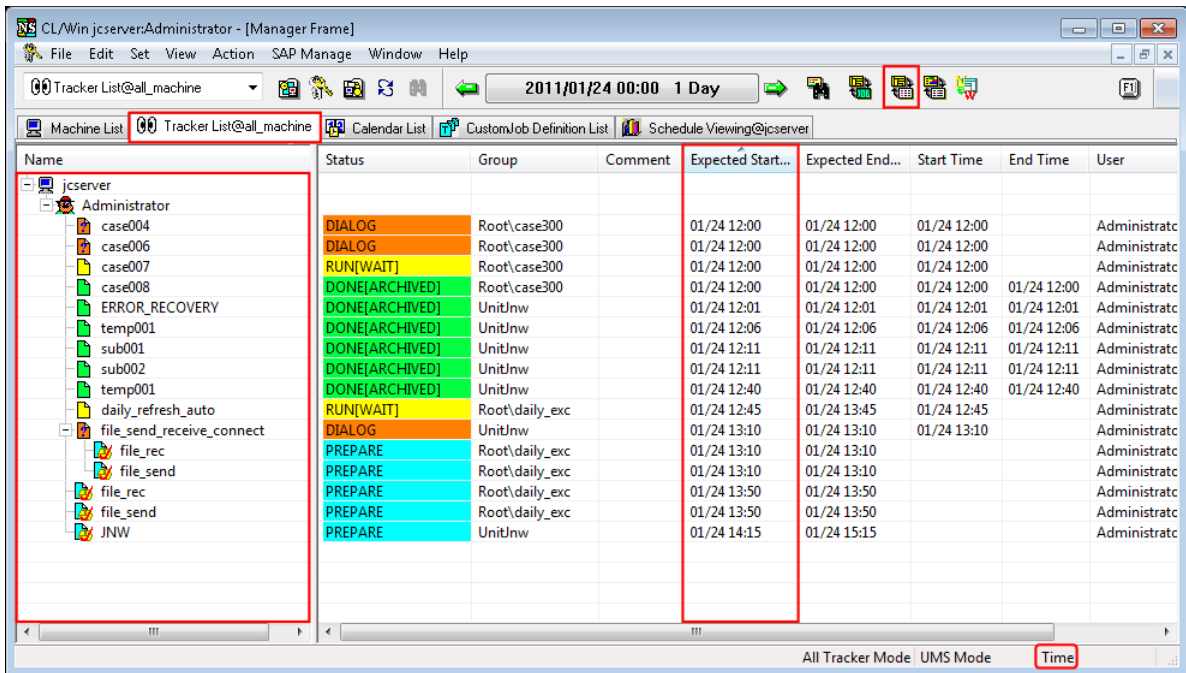



Figure 8.23. Screenshot of Tracker List@all\_machine in the Manager Frame in Time mode

## 8.6. Sorting the Tracker List by Machine


Trackers of all machines of a machine group or a specific machine are sorted in the ascending order of the expected start time.

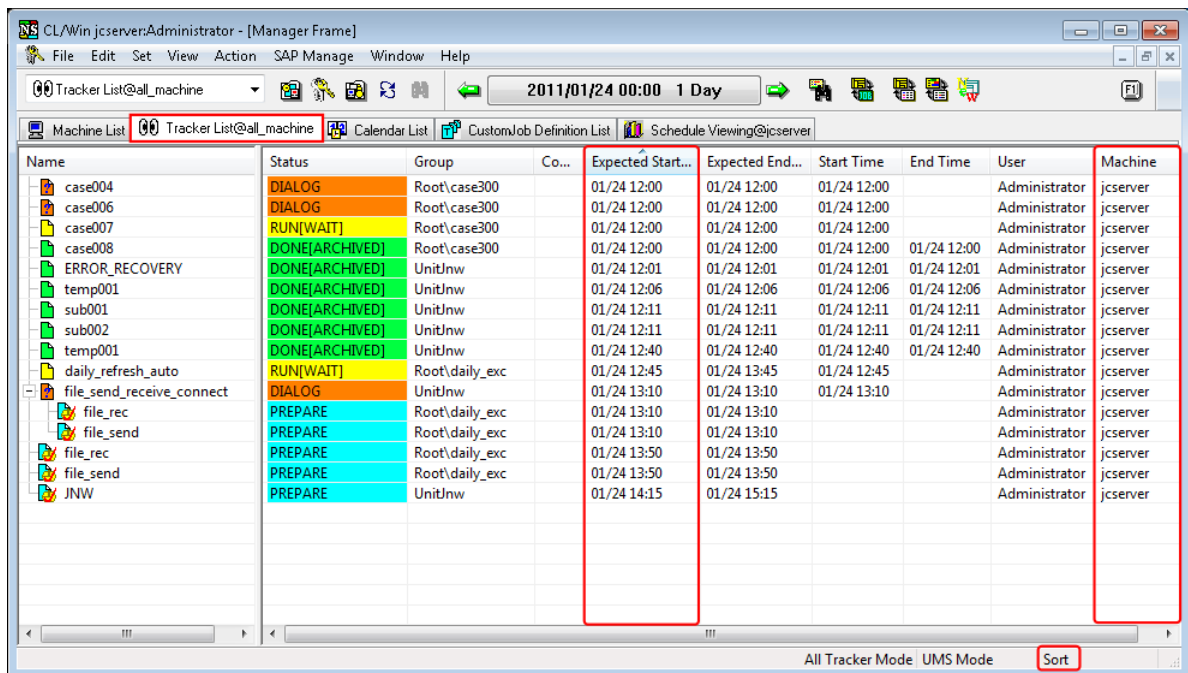
To switch to the sort display, click the  button. "Sort" appears at the lower right corner of the window.



The "Tracker List of the Job Network window" and "Tracker List of the User Frame window" cannot offer the sort display.

### 8.6.1. Tracker List@all\_machine in the Manager Frame

1. In the Manager Frame window, select the [Tracker List@all\_machine] tab.
2. A list of Manager Frame trackers is displayed. Click  button to switch display mode to Sort. "Sort" is displayed at the bottom right corner of the window.
3. Trackers of all machines of a machine group or a specific machine are sorted in the ascending order of the expected start time.



Name	Status	Group	Co...	Expected Start...	Expected End...	Start Time	End Time	User	Machine
case004	DIALOG	Root\case300		01/24 12:00	01/24 12:00	01/24 12:00		Administrator	jcserver
case006	DIALOG	Root\case300		01/24 12:00	01/24 12:00	01/24 12:00		Administrator	jcserver
case007	RUN[WAIT]	Root\case300		01/24 12:00	01/24 12:00	01/24 12:00		Administrator	jcserver
case008	DONE[ARCHIVED]	Root\case300		01/24 12:00	01/24 12:00	01/24 12:00	01/24 12:00	Administrator	jcserver
ERROR_RECOVERY	DONE[ARCHIVED]	UnitJnw		01/24 12:01	01/24 12:01	01/24 12:01	01/24 12:01	Administrator	jcserver
temp001	DONE[ARCHIVED]	UnitJnw		01/24 12:06	01/24 12:06	01/24 12:06	01/24 12:06	Administrator	jcserver
sub001	DONE[ARCHIVED]	UnitJnw		01/24 12:11	01/24 12:11	01/24 12:11	01/24 12:11	Administrator	jcserver
sub002	DONE[ARCHIVED]	UnitJnw		01/24 12:11	01/24 12:11	01/24 12:11	01/24 12:11	Administrator	jcserver
temp001	DONE[ARCHIVED]	UnitJnw		01/24 12:40	01/24 12:40	01/24 12:40	01/24 12:40	Administrator	jcserver
daily_refresh_auto	RUN[WAIT]	Root\daily_exc		01/24 12:45	01/24 12:45	01/24 12:45		Administrator	jcserver
file_send_receive_connect	DIALOG	UnitJnw		01/24 13:10	01/24 13:10	01/24 13:10		Administrator	jcserver
file_rec	PREPARE	Root\daily_exc		01/24 13:10	01/24 13:10			Administrator	jcserver
file_send	PREPARE	Root\daily_exc		01/24 13:10	01/24 13:10			Administrator	jcserver
file_rec	PREPARE	Root\daily_exc		01/24 13:50	01/24 13:50			Administrator	jcserver
file_send	PREPARE	Root\daily_exc		01/24 13:50	01/24 13:50			Administrator	jcserver
JNW	PREPARE	UnitJnw		01/24 14:15	01/24 15:15			Administrator	jcserver

Figure 8.24. Screenshot of Tracker List@all\_machine in the Manager Frame in Sort mode



## 8.7. Displaying the Tracker List with a Period Specified

The range of the Tracker List to be displayed can be narrowed down by specifying the start date or duration of the display period.

1. With the Tracker List window displayed, click the **2011/01/12 00:00 1 Day** button ([Period setting] button) on the toolbar.

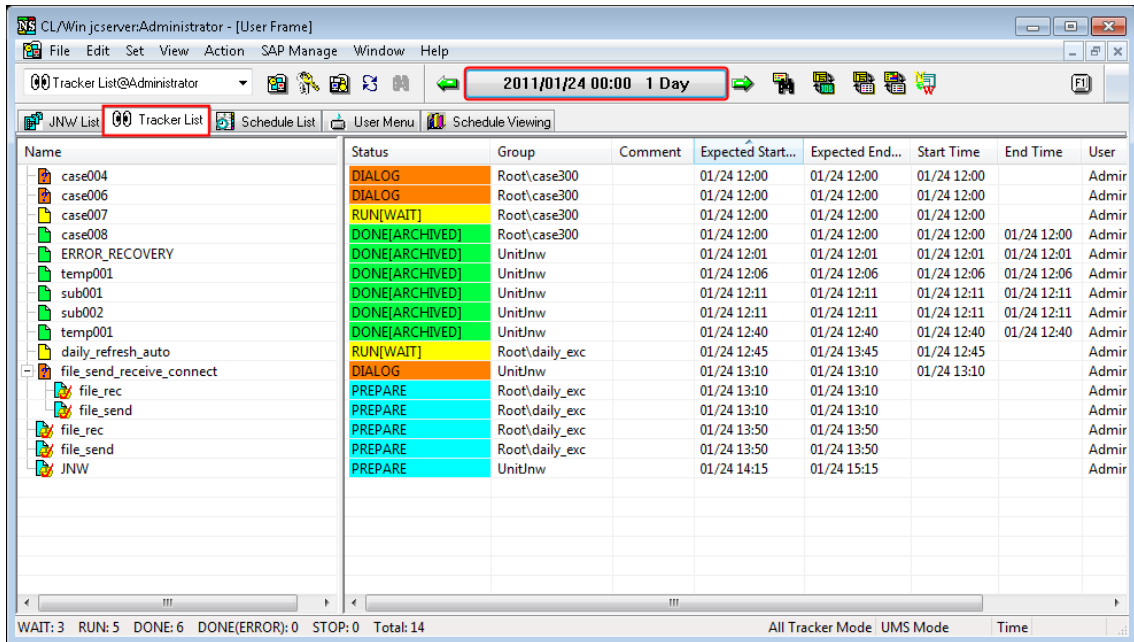


Figure 8.25. Screenshot selecting the [Period setting] button

2. The [Period setting] dialog box opens.
3. Set "Start day" and "Period value and unit".

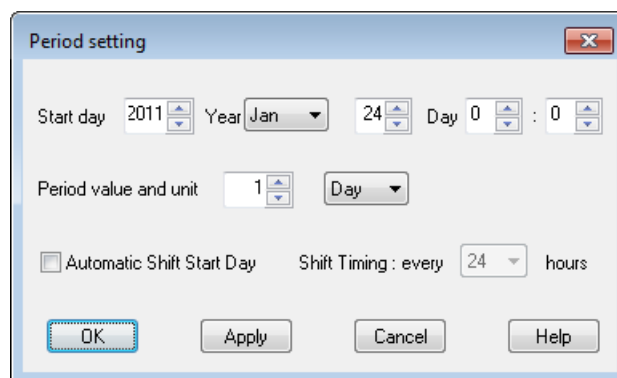


Figure 8.26. Period setting dialog box



When you have opened the [Period setting] dialog box from the schedule viewing, the items "Automatic Shift Start day" and "Shift Timing" do not appear.

4. After configuration, click [OK].

5. The start day is displayed on the [Period setting] button, and a [Tracker List] is displayed listing the trackers whose expected start times are within the display period.

The setting items of "Start date" and "Period value and unit" in the [Period setting] dialog box are as follows:

■ Start day

Specify the start date (year/month/day hour:minute) of the Tracker List display period.

■ Period value and unit

Specify the duration of the Tracker List display period.

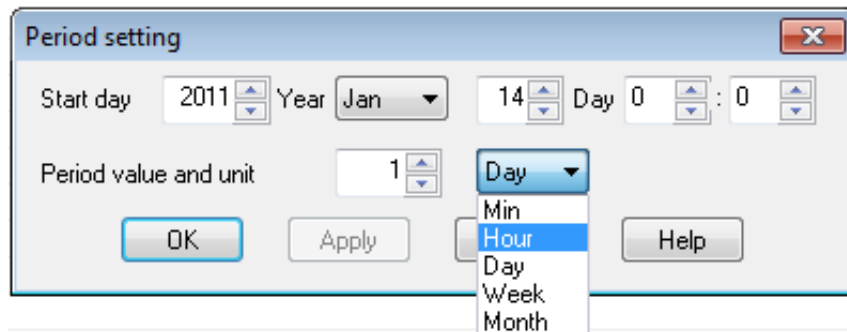




Figure 8.27. Period setting dialog box

Set the value and unit of the period. You can set 1 to 59 minutes, 1 to 23 hours, 1 to 7 days, 1 to 5 weeks, and 1 to 3 months.

By clicking ,  button beside the [Period setting] button, alternatively selecting [View] on the menu bar and then click [Prev Range] or [Next Range], you can move forward and backward through the display start date by the period.

## 8.8. Switching the Period in the Tracker List Automatically

The period displayed in the Tracker List can be switched automatically.

This function is used to change the start day of the period displayed in the tracker list automatically with the lapse of time if the Tracker List is always displayed to monitor trackers.

1. While the Tracker List is displayed, click the  button ([Period setting] button).

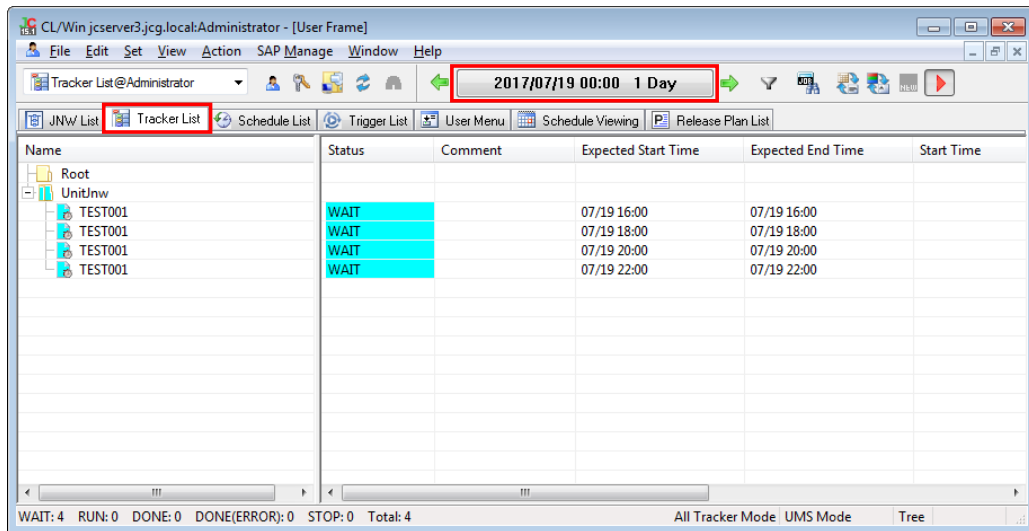


Figure 8.28. Example of selecting the [Period setting] button

2. The [Period setting] dialog box appears.
3. Place a check mark next to "Automatic Shift Start Day", and set the time of "Shift Timing".

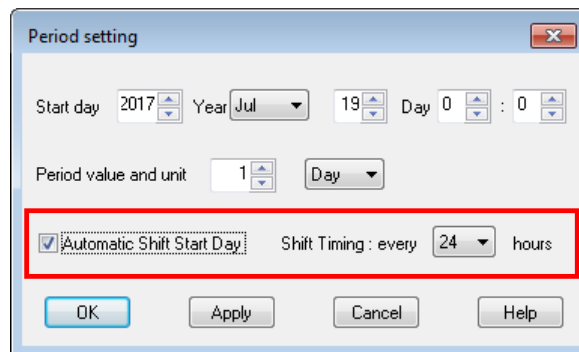


Figure 8.29. Example of setting "Automatic Shift Start Day"

The setting items of "Automatic Shift Start Day" and "Shift Timing" in the [Period setting] dialog box are as follows:


### ■ Automatic Shift Start Day

If you place a check mark next to this item, 24 hours is divided into periods based on the time set for the start day. At the time obtained by dividing, the start date in the Tracker List shifts at the time set as the shift timing.

For example, if the time displayed in the start day is 0:00 and the shift timing is every 8 hours, the period in the Tracker List is automatically switched at 0:00, 8:00, and 16:00.

■ Shift Timing


Sets the time to shift the start day automatically. The time can be selected from 1, 2, 3, 4, 6, 8, 12, and 24.



When you have opened the [Period setting] dialog box from the schedule viewing, the items "Automatic Shift Start Day" and "Shift Timing" do not appear.

4. After setting, click the [OK] button.

5. The specified start date appears in the [Period setting] button in the tool bar, and the [Tracker List] that shows the expected start time in the period appears.

The  button on the toolbar remains to be set to ON (checked).

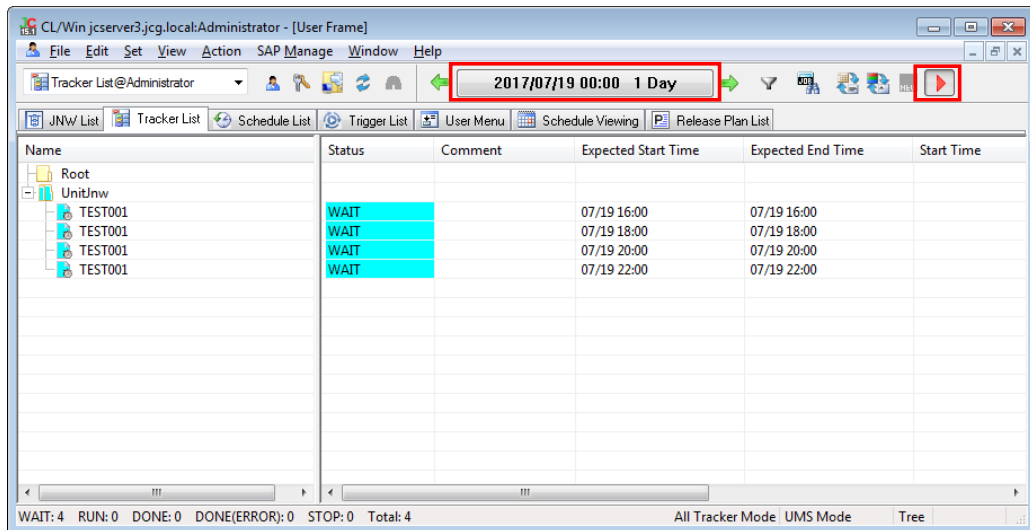


Figure 8.30. Example of the Tracker List before auto shift

6. At the time to shift the period automatically, the start day in the period setting of the Tracker List is updated to the date according to the time set as the shift timing, and the tracker displayed in the Tracker List is also updated.

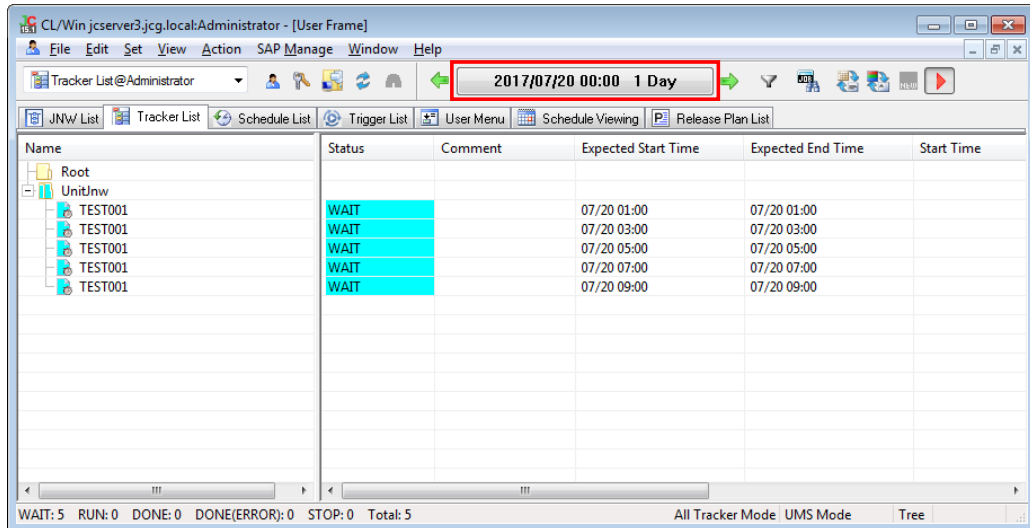





Figure 8.31. Example of the Tracker List after auto shift

If a check mark next to "Automatic Shift Start Day" in [Period setting] or to the  button in the tool bar is cleared, the tracker start time is not shifted.



- If "Automatic Shift Start Day" is enabled, the Latest Tracker Display Mode is disabled. Disable "Automatic Shift Start Day", and then switch to the Latest Tracker Display Mode.
- For [Tracker List@all\_machine] in the [Manager Frame] and [Tracker List] in the frame of other users, the "Start date auto shift" setting in [Period setting] is disabled.
- The "Automatic Shift Start Day" setting in [Period setting] is automatically disabled under the following conditions.
  - Exiting the CL/Win terminal or discontinuing the connection
  - Closing the user frame
  - Clicking the  and  buttons next to the [Period setting] button
  - Selecting [View] on the menu bar and then clicking [Prev Range] or [Next Range]
- The "Shift Timing" value in [Period setting] returns to the default value under the following conditions.
  - Exiting the CL/Win terminal

## 8.9. Displaying the Tracker List with the Display Start Time Specified

1. On the menu bar, select [Set] and then click [User Config].
2. When the [User Config] dialog box opens, select the [Tracker Config] tab.

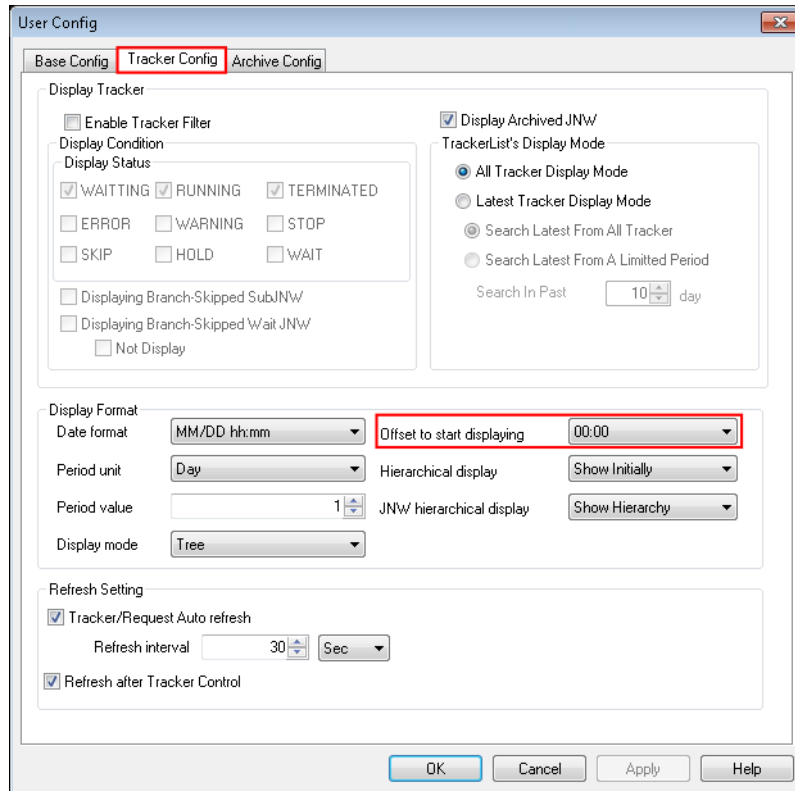


Figure 8.32. Screenshot of [Tracker Config] tab in [User Config] dialog box

3. Set [Offset to start displaying]. From the combo box, you can select the time in one-hour steps from 00:00 to 23:00.

For example, if you set "05:00," "YYYY/MM/DD 05:00 [period]" is displayed on the [Period setting] button on the toolbar of the window and the [Tracker List] is displayed from the expected start time "05:00."

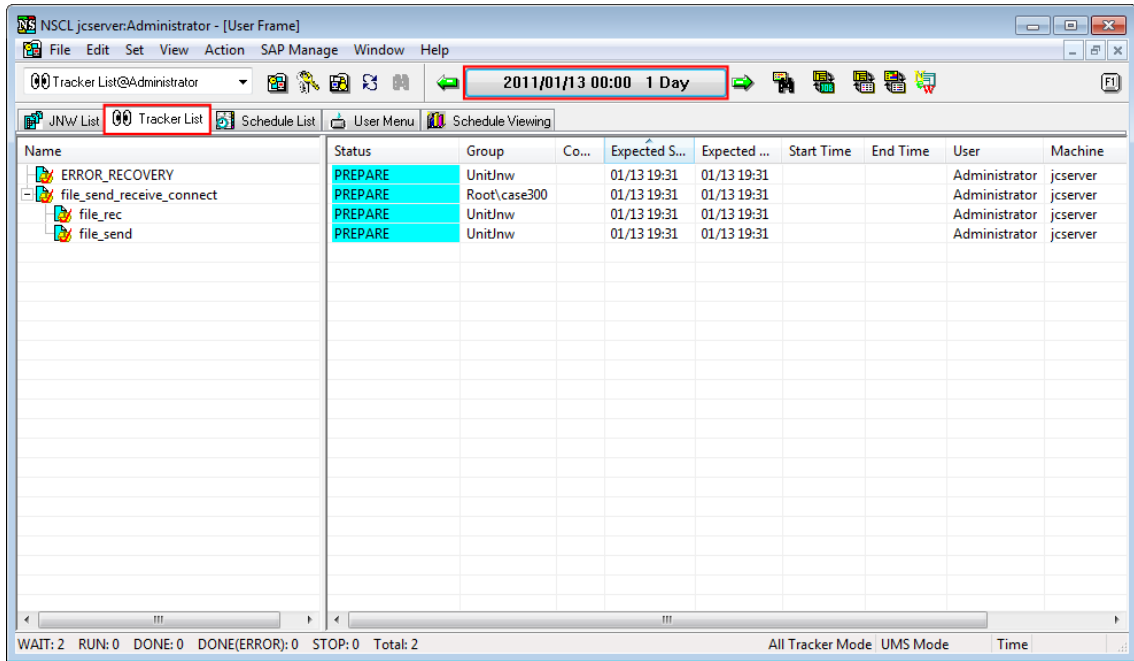


Figure 8.33. Display of the [Period setting] button when the display start time is set to 05:00



The changes you make in the [TrackerList's Display Mode] field of the [Tracker Config] tab in the [User Config] dialog box take effect the next time you open the [User Frame] or [Manager Frame] window.

Therefore, if you change the settings when the [User Frame] or [Manager Frame] window is open, reflecting the changes requires closing the window and then reopening it.

## 8.10. Filtering the Tracker List Before Displaying It

The Tracker List can be filtered by using the job network tracker execution status, job network name, etc. as conditions.

To set the filtering, use [Control setting]. The filtering, display format, and so forth can be specified with a machine name, user name, group name, and job network name.

1. On the menu bar, select [View] and then click [Control Setting].
2. The [Control setting] dialog box opens.

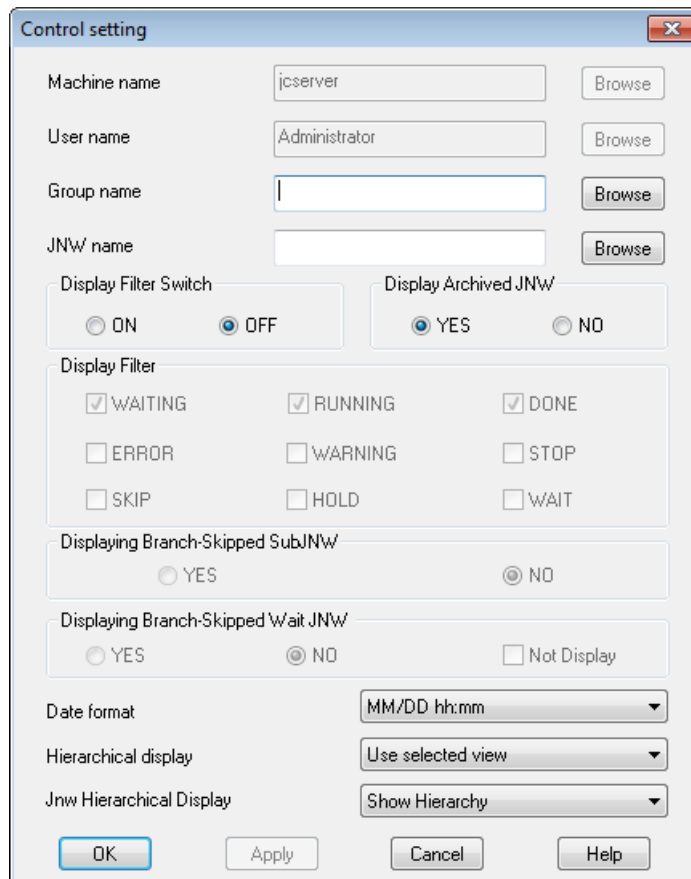


Figure 8.34. Screenshot of [Control setting] dialog box

3. After configuration, click [OK] to execute the filtering.

Configuration Items in the [Control setting] dialog box are as follows:

### ■ Machine Name

Specifies the machine name to view the trackers.



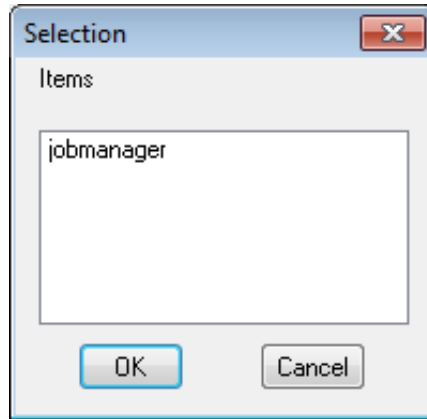


Figure 8.35. Screenshot of [Selection] dialog box to select a machine name

Select a machine name directly. Alternatively, select a machine name from the [Selection] dialog box which appears by clicking the [Browse] button.



The Browse button can be specified from the [Control setting] dialog box with the [Tracker List@all\_machine] tab is selected.

#### ■ User Name

Specify the user of the tracker to be displayed.

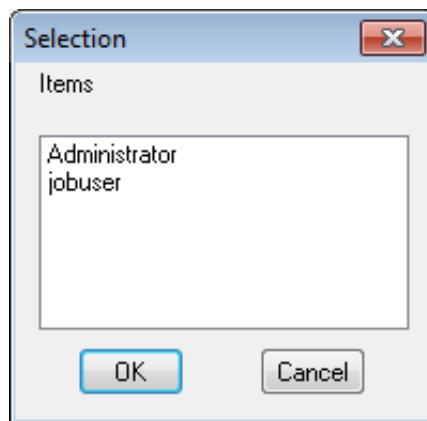


Figure 8.36. Screenshot of the [Selection] dialog box to select a user name

Enter a user name directly, or select a user name from the [Selection] dialog box that appears when you click the [Browse] button.



The Browse button can be specified from the [Control setting] dialog box with the [Tracker List@all\_machine] tab is selected.

If the machine name field is left blank, a user name cannot be specified. To specify a user name, you need to first specify the name of the machine to which the user belongs.

#### ■ Group Name

Specify the group of the trackers to be displayed.

Clicking the [Browse] button for [Group name] displays the [Group Selection] dialog box, which lets you select a group.

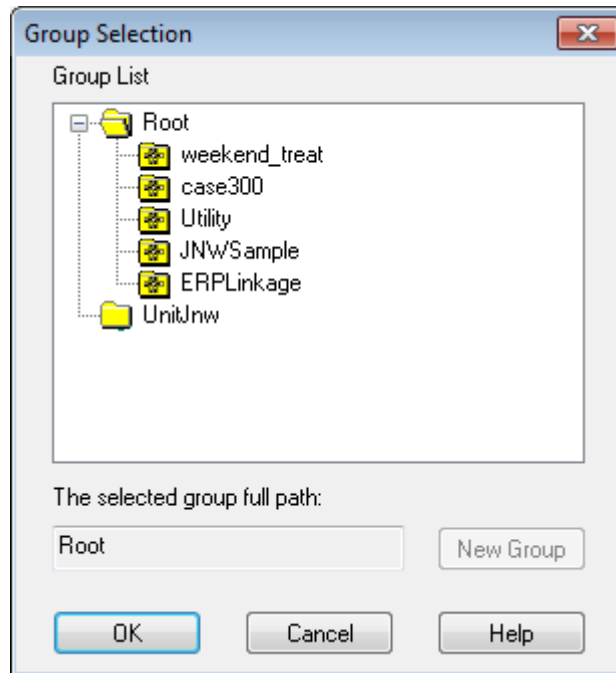


Figure 8.37. Screenshot of the [Group Selection] dialog box

For example, if you specify the [Root\group\group1] format, you can display the child groups or trackers under [Root\group\group1].

If you specify the [group] format, you can display all the child groups or trackers under [group].

If you specify the [group\*] format, you can display the child groups or trackers whose names begin with [group].

#### ■ Job Network Name

Select the name of the job network of the trackers to be displayed.

Clicking the [Browse] button for [JNW name] displays the [Selection] dialog box, which lets you select a job network.

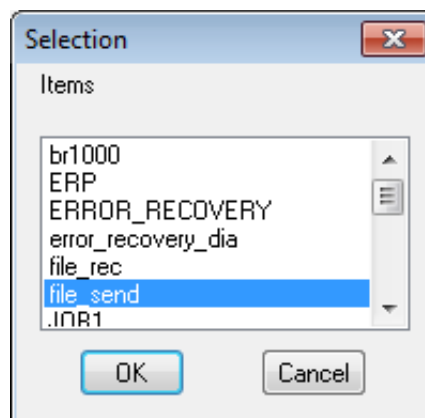


Figure 8.38. Screenshot of the [Selection] dialog box to select a job network name

If you put an asterisk at the end of the name, those job networks whose names begin with the specified character string are displayed. This condition can be specified only for [Tracker List@all\_machine] and Tracker List of job networks.

■ Display Filter Switch

Select whether to enable or disable the "Display Filter" settings.

ON	Enables the selection of "Display Filter." Only the trackers meeting the selected conditions will be displayed.
OFF	"Display Filter" is grayed (unselectable), and the trackers of all states are displayed.

■ Display Archived JNW

Select whether to display archived trackers.

Setting [YES] displays archived trackers, and setting "NO" does not display them.

■ Display Filter

Specify the condition of trackers to be displayed in the tracker list.

More than one filter condition can be selected.

For the tracker states, refer to [Section 8.1, "Relation between job status and tracker's color"](#).

■ Displaying Branch-Skipped SubJNW

Select whether to display in the Tracker List unexecuted sub job networks as branch skipped after determining if those trackers in unexpected states have undergone branch processing (calendar branch).

YES	Displays unexecuted sub job networks as branch skipped.
NO	Does not display unexecuted sub job networks.

■ Displaying Branch-Skipped Wait JNW

Select whether to judge if those trackers in expected states have undergone the branch processing (calendar branch) before displaying them in the Tracker List.

If [YES] is selected, you can select whether to display unexecuted sub job networks as branch skipped.

YES	Judges sub job networks unexecuted due to calendar branch and displays them as branch skipped.  Note that these sub job networks are not displayed unless [SKIP] is selected as the filter condition.
NO	Does not judge sub job networks unexecuted due to calendar branch.
Not Display	Does not display branch skipped sub job networks when [YES] is selected.

■ Date format

Specify the format of the expected and actual start and end times for the Tracker List display (text mode).

hh:mm	Displays the time (hour:minute).
MM/DD hh:mm	Displays the date (month/day) and time (hour:minute).
YYYY/MM/DD hh:mm:ss	Displays the date (year/month/day) and time (hour:minute:seconds).

■ Hierarchical display

Specify whether to display trackers for sub job networks automatically.

Show Initially	Displays trackers automatically.
Hide Initially	Does not display trackers automatically.
Use selected view	Displays the tree and time.

■ Jnw Hierarchical Display

Select the tracker display format.

Show Hierarchy	Always displays the hierarchy from the root job network.
Hide Hierarchy	Displays only trackers that meet specified conditions.



While [Display Tracker] and [Display Format] on the [Tracker Config] tab in the [User Config] dialog box are used to make the default display settings for the tracker list per user, [Control setting] is used to make temporal display or filtering settings for the currently open tracker list window.

## 8.11. Printing the Tracker List

The data displayed in the Tracker List can be printed or output to a CSV file.

1. With the displayed Tracker List, select [File] on the menu bar and then click [Print].
2. The [Tracker list print setup] dialog box opens.
3. Configure the Tracker list print setup.

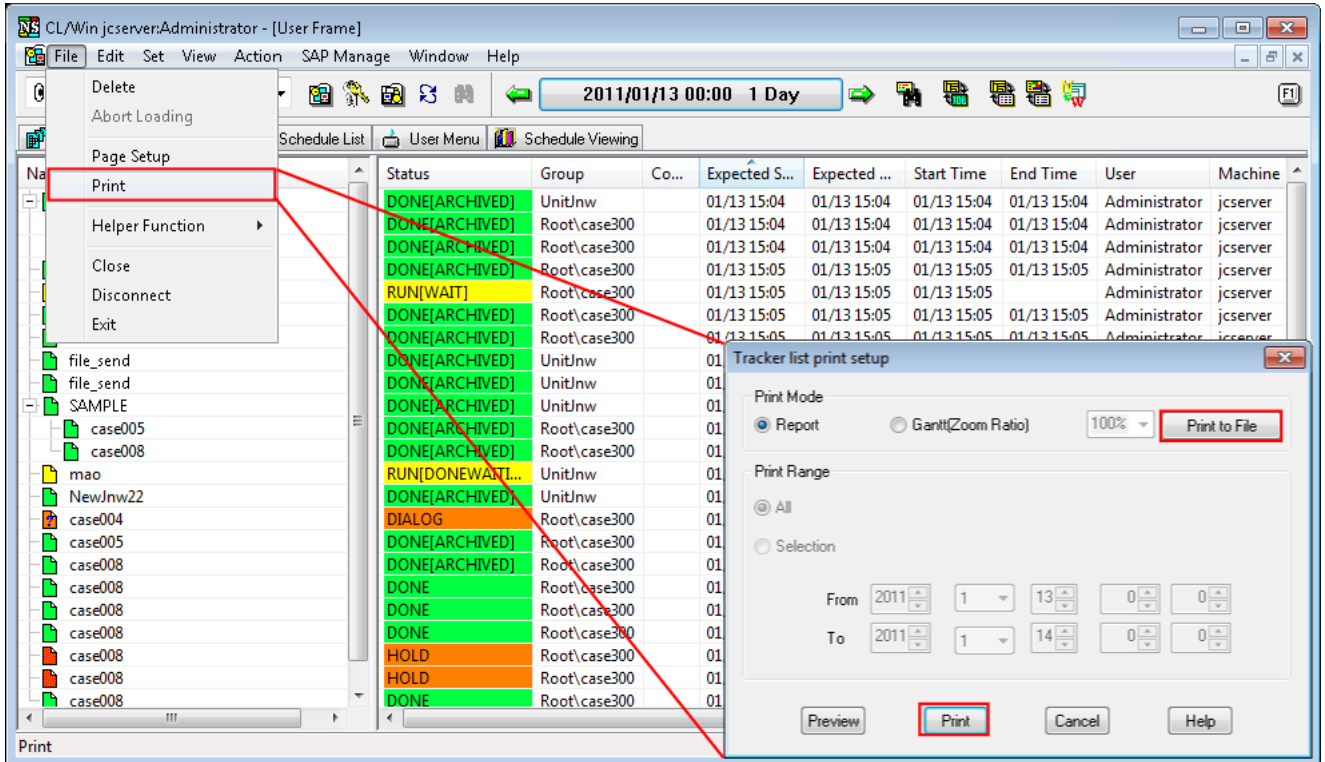


Figure 8.39. Screenshot of the dialog box to select the Tracker List output method

4. After configuration, click the [Print] or [Print to File] button.

Configuration items in the [Tracker list print setup] dialog box are as follows:

### ■ Print Mode

Print mode can be selected.

Report	Prints the detailed data of the Tracker List in the report format.
Gantt (Zoom Ratio)	Prints the data of the Tracker List in the Gantt Figure format. A zoom ratio can be selected. The range is 25% to 200%. The default is 100%.
[Print to File] button	Outputs the data of the Tracker List to a file in the CSV format. Clicking the [Print to File] button displays the [Save As] dialog box. Specify the location and the name of the file to which you want to save the data.  The following data items displayed in the Tracker List window are output in the CSV format:

	<p>"Name," "Status," "Group," "Tracker ID," "Comment," "Group," "Expected Start Time," "Expected End Time," "Start Time," "End Time," "User," "Machine"</p> <p>If the trackers are listed hierarchically, the name is output with all the tracker names from the top to the target trackers concatenated by colons (:).</p>
--	---

■ **Print Range**

Select the print range.

All	Prints all the trackers in the tracker list within the period specified by the minimum and maximum dates.
Selection	Prints the trackers within a specified period.

■ **[Preview] button**

Clicking this button provides a preview of how the currently displayed tracker will look when printed.

■ **[Print] button**

Clicking this button prints the currently displayed tracker.

■ **Cancel**


Closes the [Tracker list print setup] dialog box.

■ **Help**

Clicking this button displays help information about tracker printing.

## 8.12. Refreshing the Tracker List

There are three ways to refresh the Tracker List as described below. Take one of these steps while the [Tracker List] is displayed.

- Press the [F5] key.
- On the menu bar, select [View] and then click [Refresh].
- Click the  button on the toolbar.

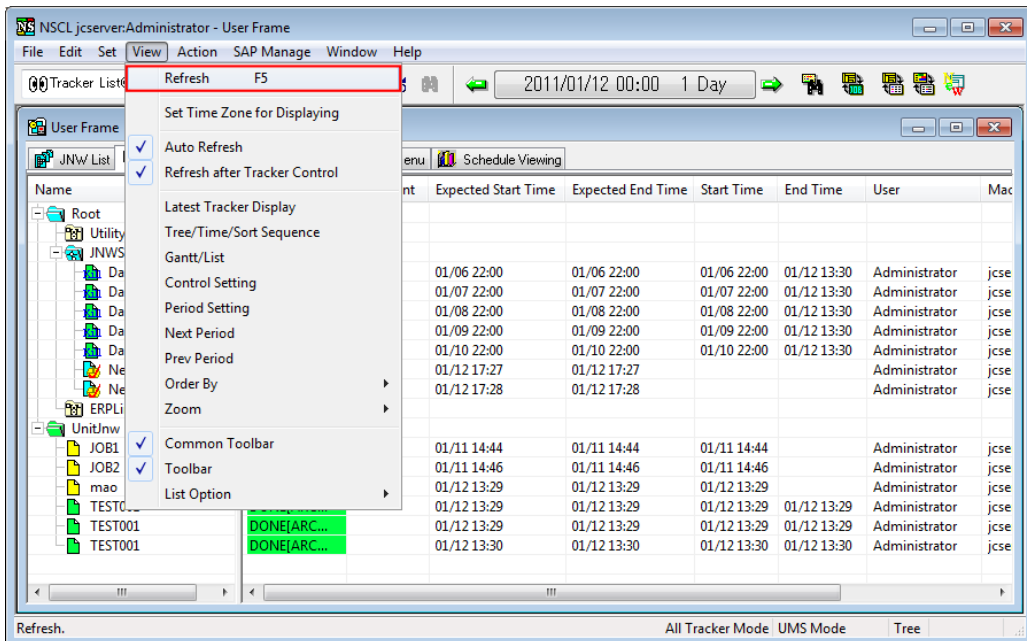


Figure 8.40. Example of displaying the Tracker List refreshing method

## 8.13. Displaying Only Unfinished Trackers

In the tracker list, you can choose to display only the running or scheduled trackers.

In the tracker list displayed, if a group or tracker that can be collapsed is right-clicked, [Expand not Done Tracker] is displayed.

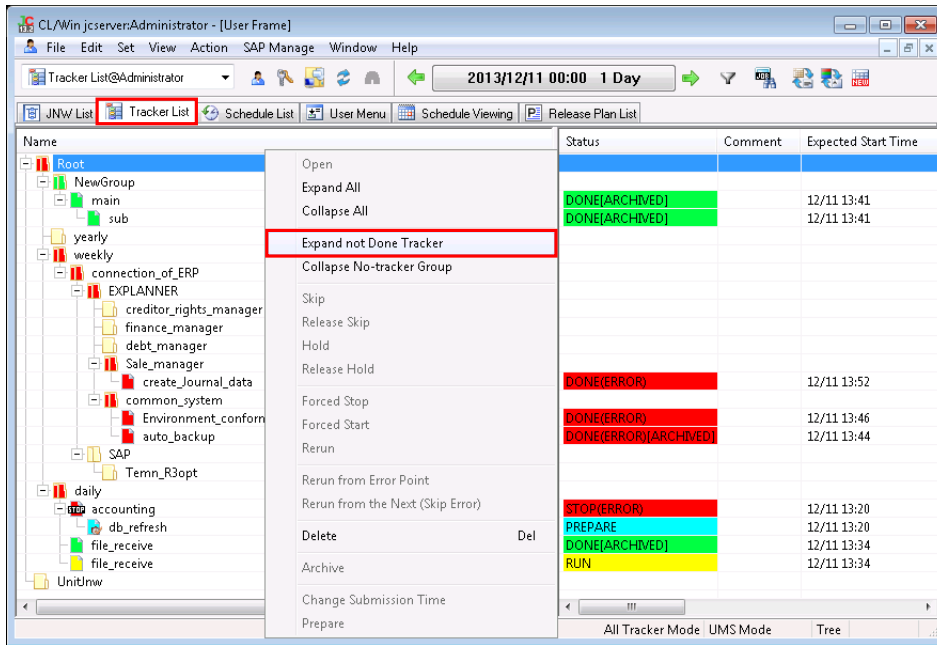


Figure 8.41. How to display only unfinished trackers in the tracker list

Click [Expand not Done Tracker] to expand only the running or scheduled trackers; unfinished trackers are then displayed.

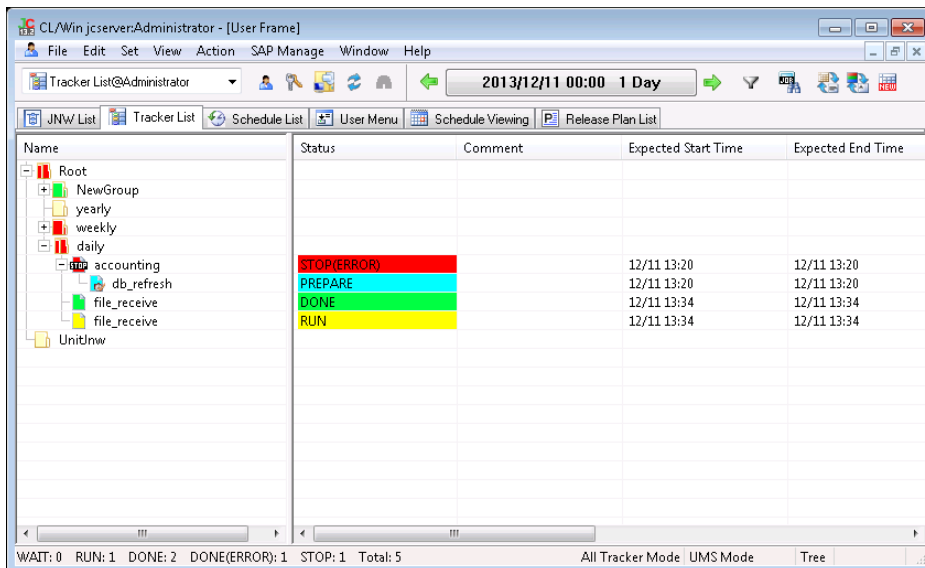


Figure 8.42. Screenshot of displaying only the unfinished trackers in the tracker list



## 8.14. Reflecting Changes on the Tracker List

---

Pressing the [F6] key with the Tracker List displayed allows you to get changes in the trackers reflected explicitly. This function is available only when Auto Refresh is set to on.

The change reflecting function using the [F6] key does not reflect the following information on the Tracker List window, as in the case of Auto Refresh.

- New expected tracker mapped to the schedule after the Tracker List window is opened.
- Group change information (information about changes made when moving, copying, creating, or otherwise manipulating groups and job networks)

If any of these operations has been performed, press the [F5] key with the Tracker List window displayed to refresh the list.

## 8.15. Not Refreshing the Tracker List Window After Tracker Control

It has been made possible to select whether to refresh the entire Tracker List window after performing an operation on the Tracker List window.

Refreshing the Tracker List window takes time if the list contains a large number of trackers. In the previous versions, the entire Tracker List window is refreshed every time a single tracker has been operated, making the process ineffective when multiple trackers are involved. This function allows you to select not to refresh the entire Tracker List window after a single tracker operation and to refresh the entire window explicitly after performing all necessary tracker operations, thus making you able to operate multiple trackers in a more efficient manner.

You can change the setting by selecting or deselecting [Refresh after Tracker Control] of [View] on the menu bar. The default value depends on the corresponding item of the [Tracker Config] tab in [User Config]. For details, refer to in <Environment Guide>Section 6.3, "Changing the Tracker Display Settings".

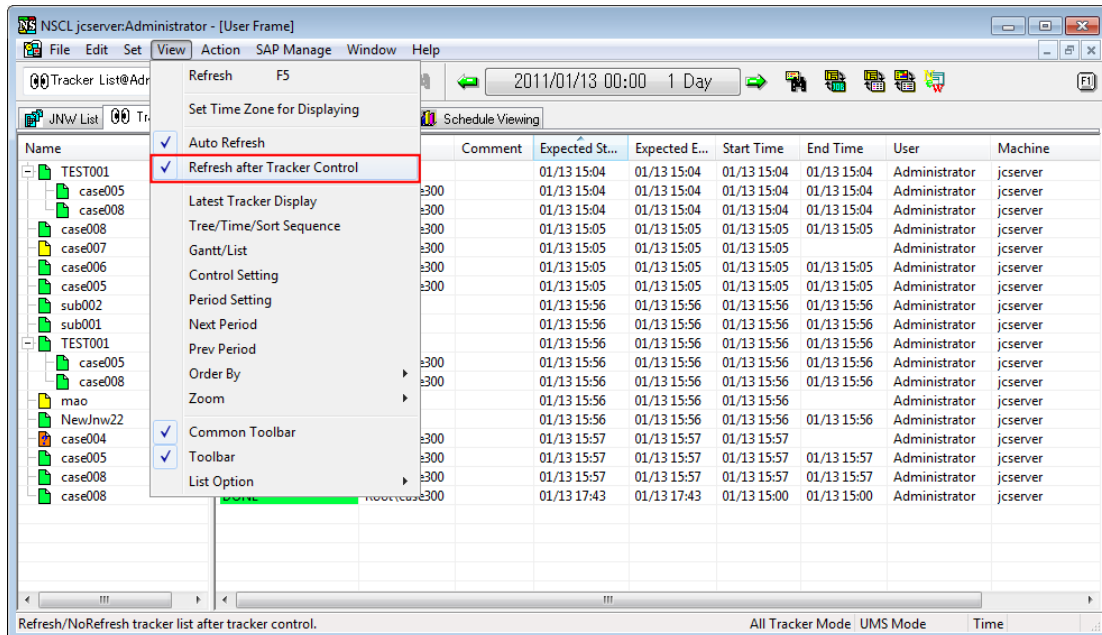


Figure 8.43. [Refresh after Tracker Control] dialog box

- When the item is selected, the entire Tracker List window is refreshed after a tracker operation.
- When the item is not selected, the entire Tracker List window is not refreshed after a tracker operation.

The change made from the menu bar is confined to one specific CL/Win terminal and does not affect any other terminal that is logged in to the target manager machine as the same user.

This configuration Item is displayed when focusing one of the following displays or frames.

- Tracker List display in the User Frame
- Tracker List display in the Manager Frame
- Tracker List display in the machine window
- Tracker List tab in the Job Network window

### 8.15.1. Description of the Operations

The operations that may be performed when you have chosen not to refresh the entire Tracker List window are described below.

■ When a tracker has been performed from the Tracker List window

The Tracker List window is not refreshed. When the tracker flow of the target tracker is open, the tracker flow is not refreshed.

■ When a part has been performed from the tracker flow window

While the tracker flow is refreshed, the Tracker List window is not.

To have the unupdated Tracker List window refreshed, you need to wait for Auto Refresh to refresh it or explicitly refresh the window by pressing the F5 key or other means.

### 8.15.2. Caution

If the Tracker List window is not refreshed after a tracker operation, the displayed tracker status may be different from the actual status. Therefore, the possible tracker operations may differ from the operations that can actually be performed.

In such a case, an operation that cannot actually be performed according to the actual status may cause an error. If this happens, refresh the Tracker List window before carrying out the operation.

## 8.16. Operating Job Network Tracker

By using the Job Network Tracker, you can not only monitor and control the execution of a job but also force a tracker to be executed, change a scheduled submission time, and add and delete object parts.

### 8.16.1. Opening Job Network Tracker

1. In the User Frame dialog box, click the [Tracker List] tab.
2. Double-click the job network to browse or right-click it and select [Open] from the shortcut menu.

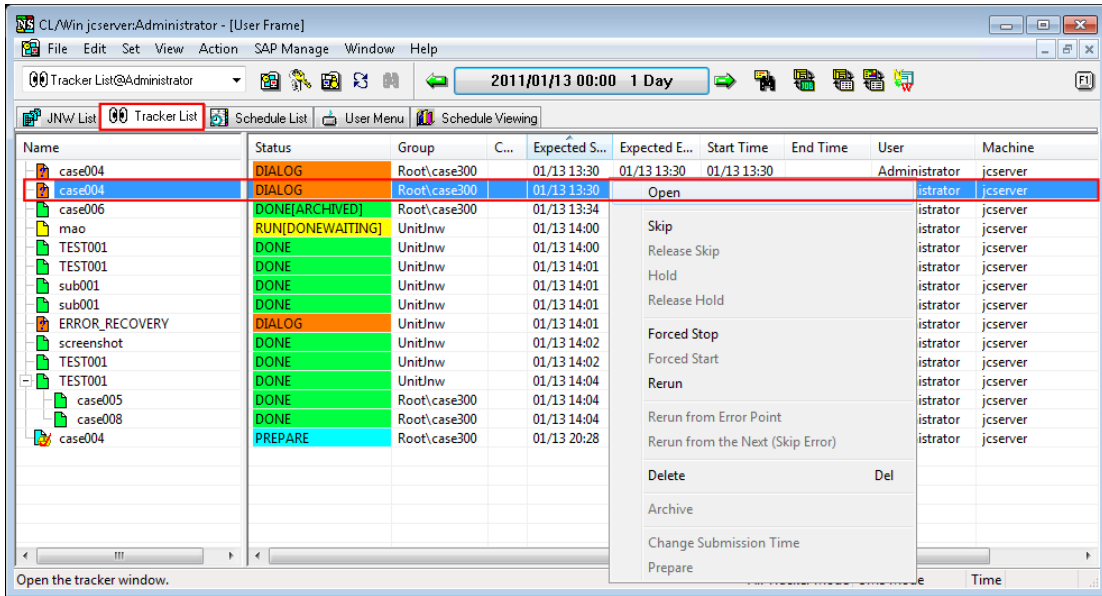


Figure 8.44. Screenshot that shows how to browse the Job Network Tracker window

3. The tracker of the selected job network opens.

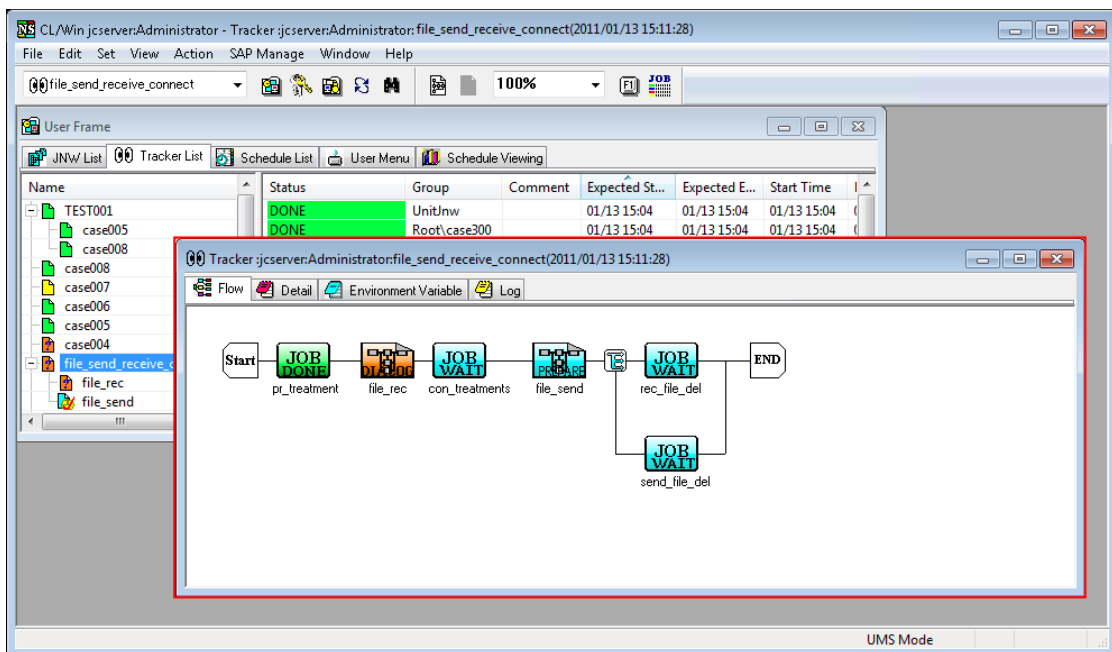


Figure 8.45. An example of the result when the Job Network Tracker window is displayed

4. The Job List View can be displayed. To display it, click the [Job List View] icon.

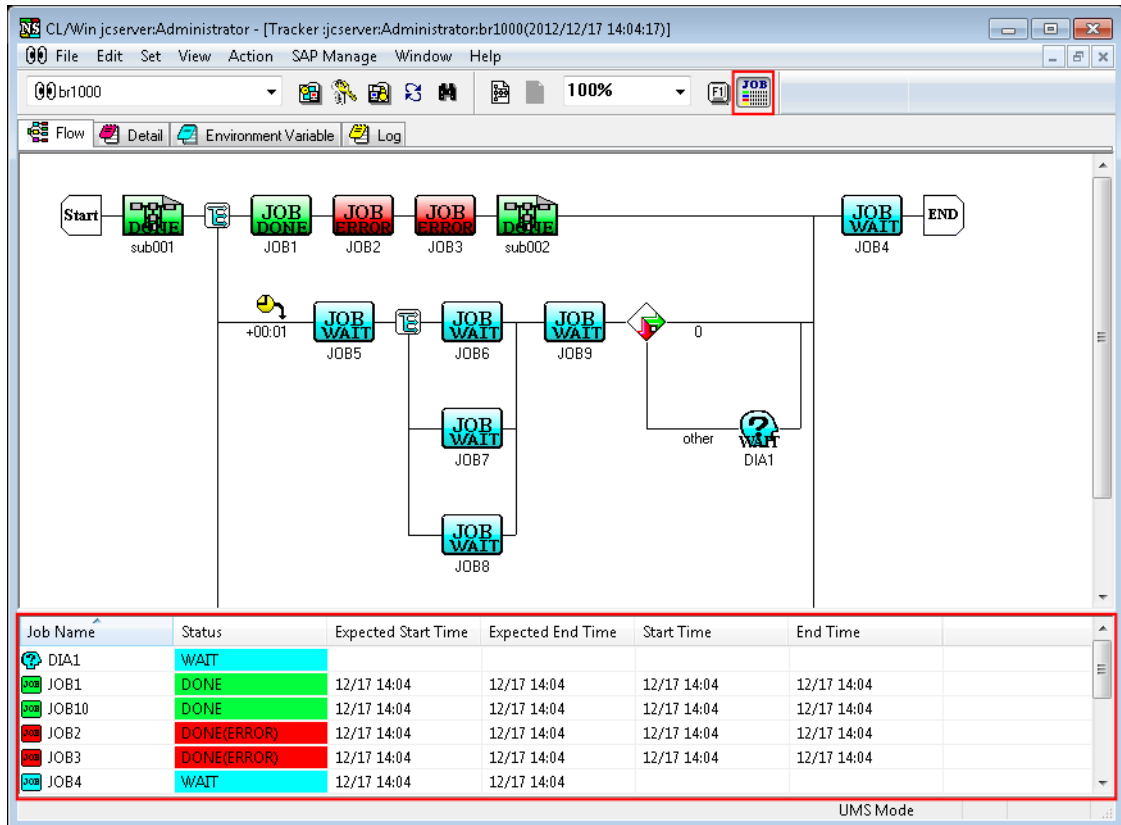


Figure 8.46. Screenshot of the Job List View

### 8.16.2. Monitoring and Controlling Execution of the Job

On the [Flow] tab of the job network, it is possible to monitor and control execution of a job.

The [Flow] tab in the [Job Network Tracker] window displays icons that indicate execution trackers for each job. Execution state of a unit job is indicated by the label and color of its icon.

1. Select the [Flow] tab in the Job Network Tracker.

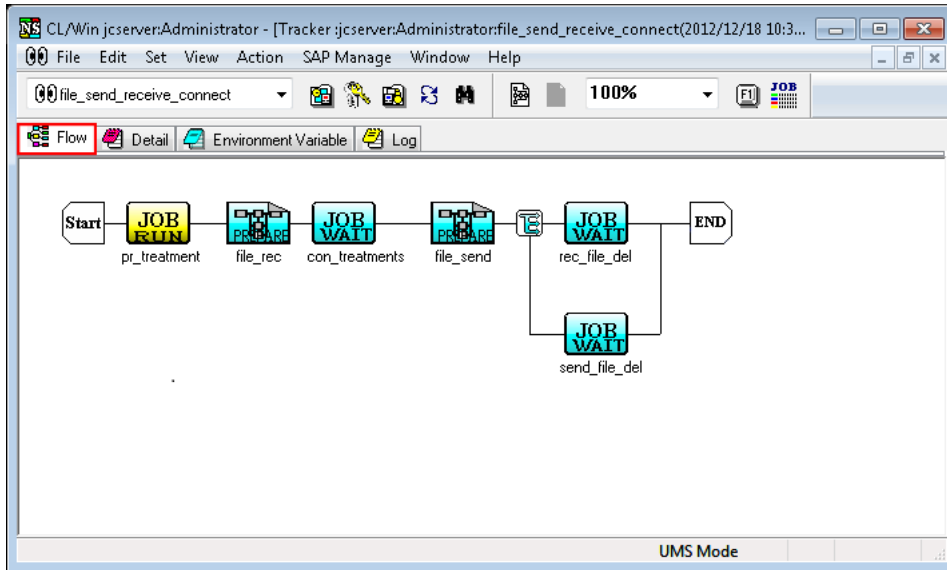


Figure 8.47. Screenshot of [Flow] in the [Job Network Tracker] window

Double-clicking an icon opens a window that shows detailed information on each unit job. For details related to the execution state of each unit job, refer to [Section 8.17, “Operating a Unit Job Tracker Icon”](#).

2. If you want to control the job network trackers, execute the relevant control command by selecting [JNW Tracker] on the [Action] menu while there is no part selected on the flow.

While there is no part selected on the flow, [Job] on the [Action] menu that shows the control commands for each part is unavailable.

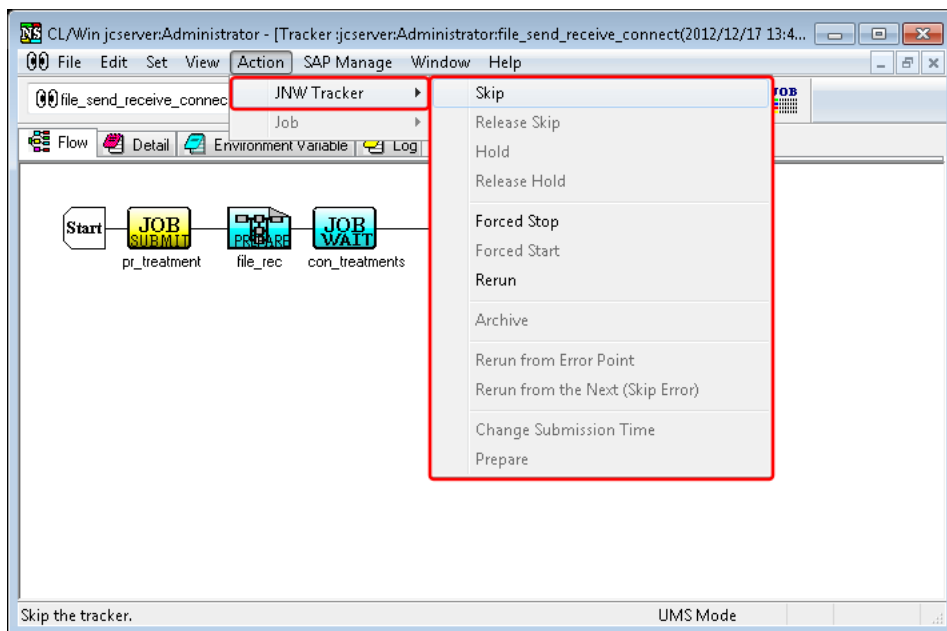


Figure 8.48. Screenshot of [JNW Tracker] window opened from [Action] menu when no part is selected on the flow in the [Job Network Tracker] window

3. If you want to control the parts on the flow, execute the relevant control command by selecting [Job] on the [Action] menu while that part is selected on the flow.

While there is a part selected on the flow, [JNW Tracker] on the [Action] menu that shows the control commands for each job network tracker is unavailable.

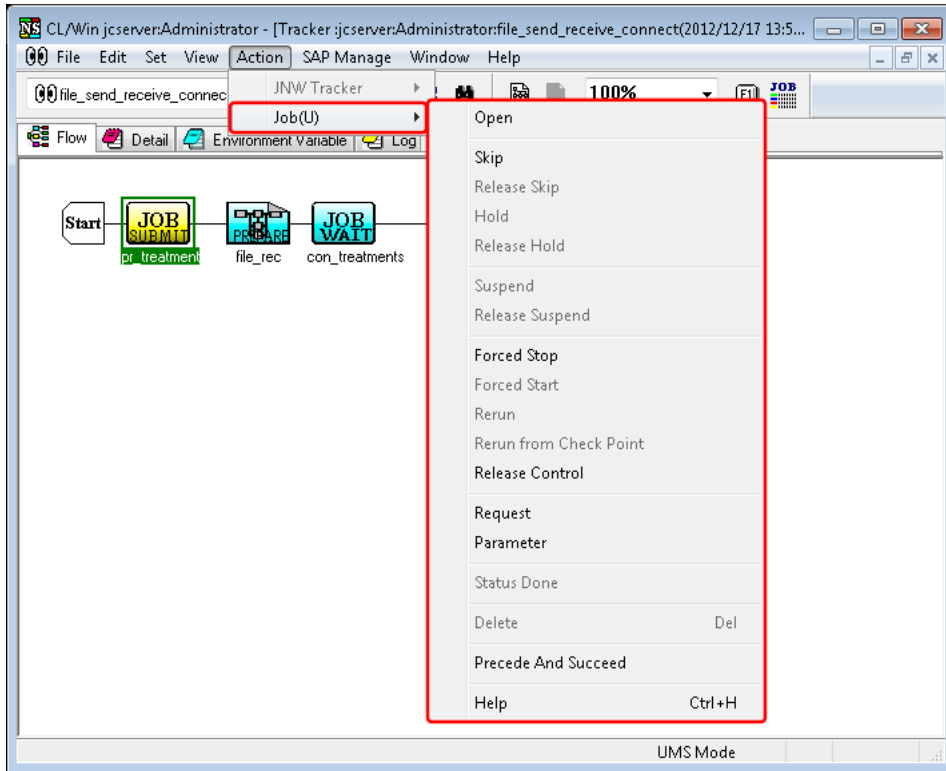



Figure 8.49. Screenshot of [Job] window opened from [Action] menu when a part is selected on the flow in the [Job Network Tracker] window

In the case that the displaying tracker is a sub job network, its next superior tracker flow opens by selecting [View] on the menu bar and then clicking [To Parent Tracker], or clicking [To parent tracker] icon .

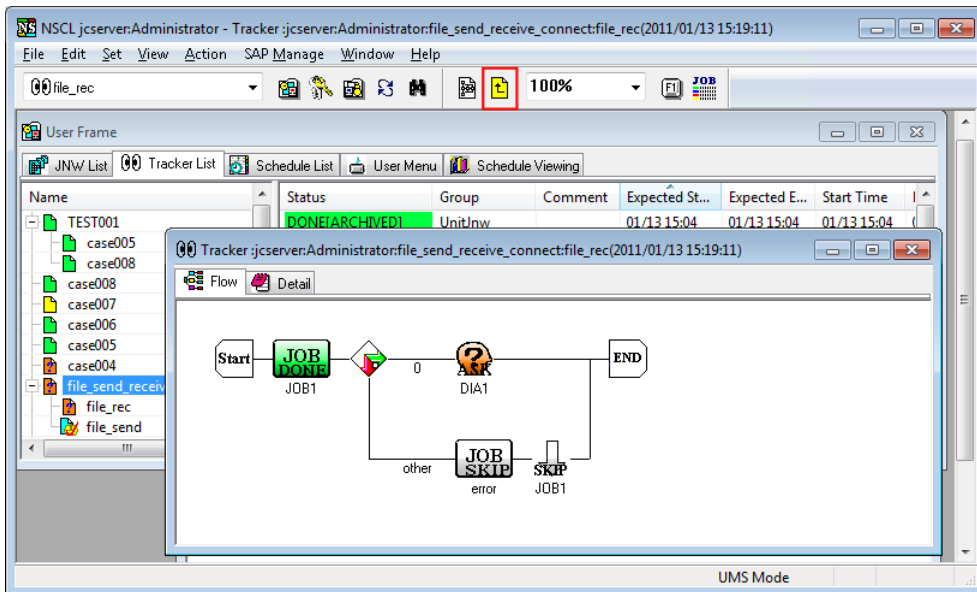


Figure 8.50. Screenshot when the displaying tracker is a sub job network

### 8.16.3. Browsing Details about Execution of the Job

On the [Detail] tab in [Job Network Tracker] window, details of the execution of the job can be browsed.

1. Click the [Detail] tab in the Job Network Tracker.

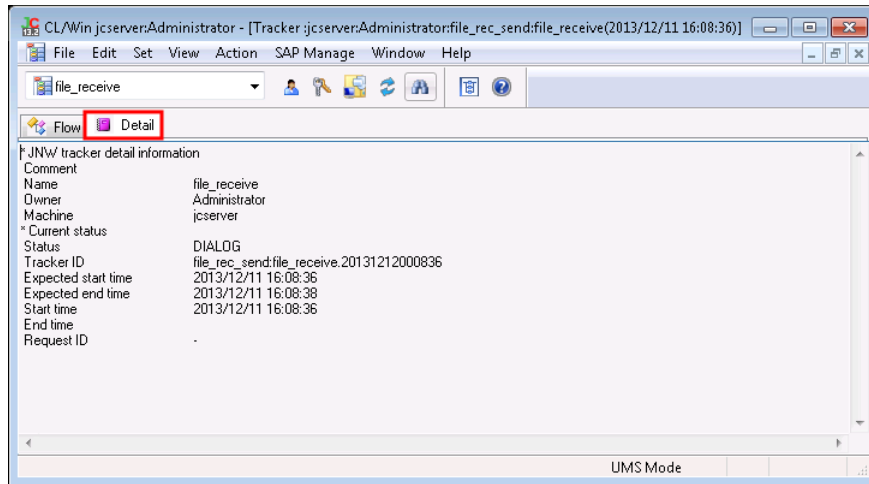


Figure 8.51. Screenshot of the [Detail] tab in the [Job Network Tracker] window

The content of each item on the [Detail] tab in [Job Network Tracker] window are as follows:

■ **Comment**

Indicates a comment appended to the job network.

■ **Name**

Indicates the name of a job network.

■ **Owner**

Indicates the user who is executing the job network.

■ **Machine**

Indicates the machine on which the job network scheduler is running.

■ **Status**

Indicates the status of a Job Network Tracker.

■ **Tracker ID**

ID used to uniquely identify a tracker.

■ **Expected start time/Expected end time**

Indicates the estimated start time registered in the schedule / Indicates the estimated end time calculated from the estimated start time and estimated execution.

■ **Start time/End time**

Indicates the time execution actually started / Indicates the time execution actually ended.



## ■ Request ID

Indicates the ID of the NQS request that is the JobNetwork scheduler.

### 8.16.4. Browse job network environment variables

Job network environment variables can be browsed on the [Environment Variable] tab in the [Job Network Tracker] window.



The job network environment variables are parameters that can only be used in job network flows. These environment variables are not automatically inherited after a unit job has been executed on the flow.

The log is not automatically update. To update the log, use the same operation as for refreshing a tracker window (ex. press the [F5] function key.)

The environment variable names or values can be sorted in ascending or descending order by clicking the corresponding column name.

The [Environment Variable] tab does not exist when the status of the tracker is "WAIT."

1. Click the [Environment Variable] tab in the [Job Network Tracker] window.

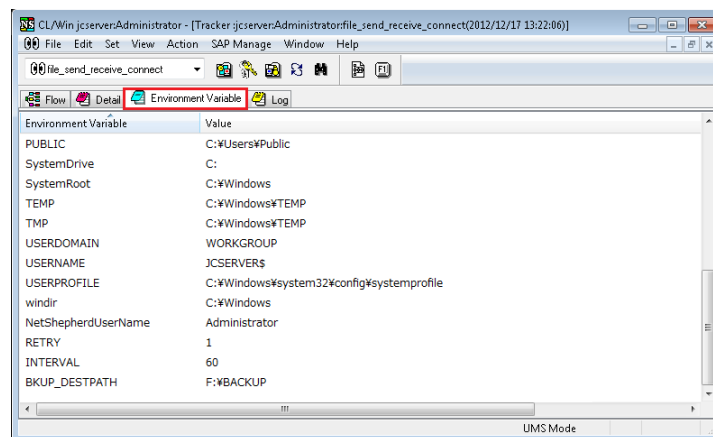


Figure 8.52. Screenshot of [Environment Variable] tab in [Job Network Tracker] window

### 8.16.5. Browsing Histories of Execution and Operation of the Job

On the [Log] tab in the [Job Network Tracker] window, the execution log of a job network (histories of the execution and operation of the job) can be browsed.

The log is not automatically updated. To update the log, use the same operation as when refreshing a tracker window (such as pressing the [F5] function key).

The logs about a sub job network are recorded in the parent tracker's log.

The [Log] tab does not exist when the status of the tracker is "WAIT."

1. Click the [Log] tab in the [Job Network Tracker] window.

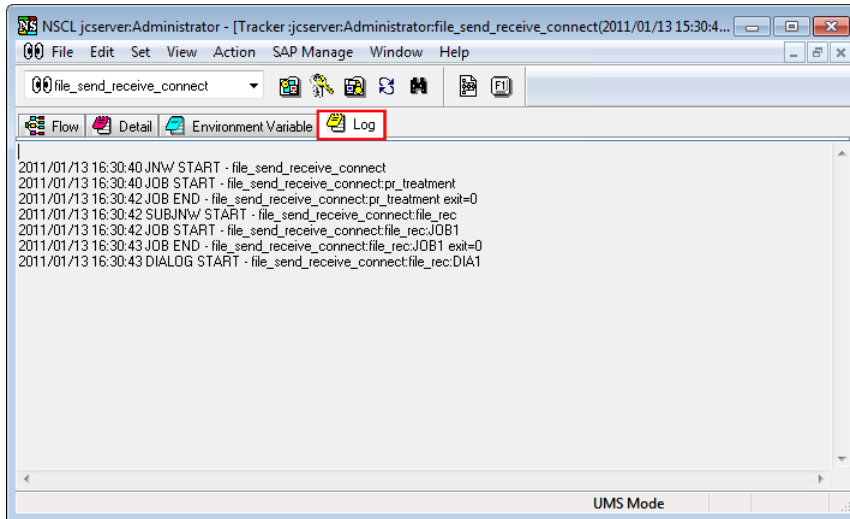


Figure 8.53. Screenshot of the [Log] tab in the [Job Network Tracker] window

### 8.16.6. Selects Multiple Trackers and Executes an Operation at Once

Regardless of the schedules, JobCenter allows the operations to multiple trackers at once such as [Open], [Skip (Release Skip)], [Hold (Release Hold)], [Forced Stop], [Forced Start], [Rerun], [Delete], [Archive], and [Prepare]. This section explains using [Forced Start] as an example.

1. From the Tracker List, select multiple trackers of the job network to be started forcibly.

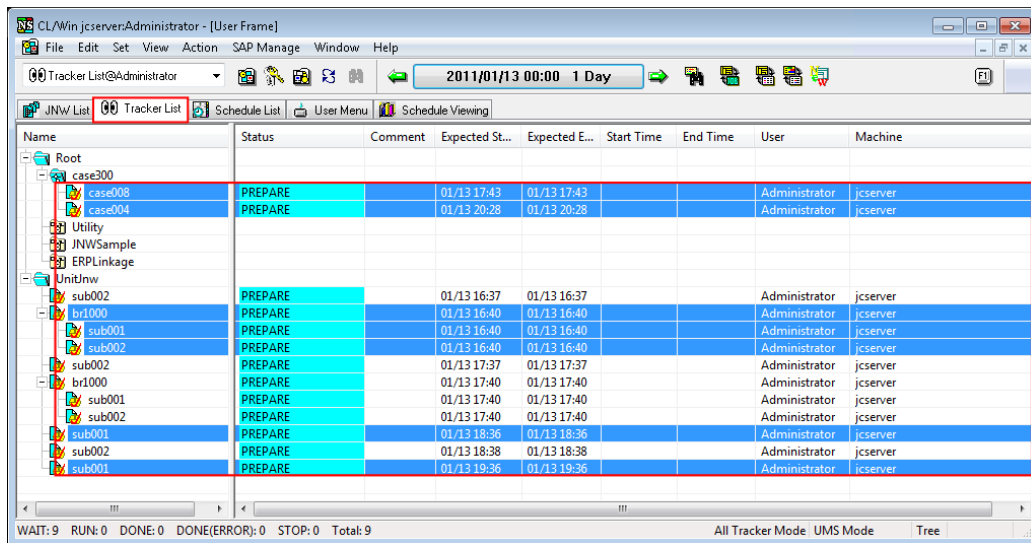


Figure 8.54. Screenshot that shows selecting multiple trackers

2. Select [Forced Start] from the shortcut menu which appears by right-clicking, or on the menu bar, select [Action] and then click [Forced Start].
3. The [Tracker Operation Confirm] dialog box opens. Confirm the trackers to be operated and confirm the operations.

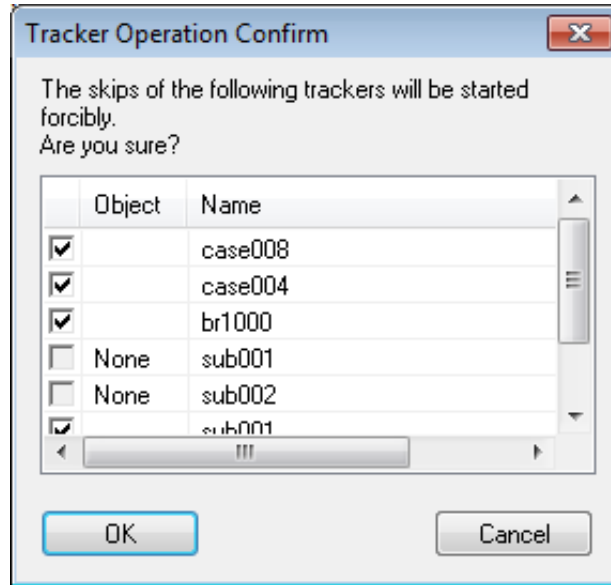


Figure 8.55. Screenshot of [Tracker Operation Confirm] dialog box

4. After configuration, click the [OK] button.
5. The [Tracker Operation Result] dialog box opens.

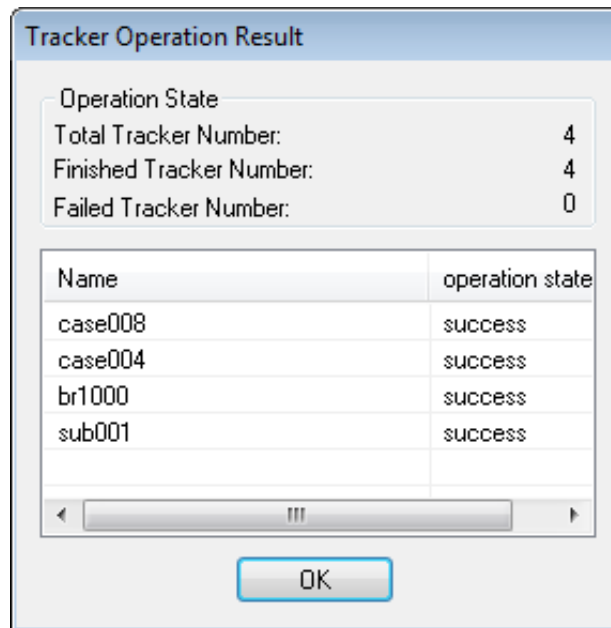


Figure 8.56. Screenshot of [Tracker Operation Result] dialog box

The [Tracker Operation Confirm] and [Tracker Operation Result] dialog boxes are explained as follows:

[Tracker Operation Confirm]

■ Object

Trackers which cannot be operated are displayed as "None" and their checkboxes are grayed out.

The checkboxes of operable trackers are selected.

These checkboxes can be deselected so that the corresponding trackers are disabled from operations.

■ Name

Displays the names of the trackers selected.

■ OK

Starts Forced Start operations on trackers whose checkboxes are selected.

■ Cancel

Cancels operations and closes the dialog box.

[Tracker Operation Result]

■ Total Tracker Number

Total number of trackers operated.

■ Finished Tracker Number

Number of trackers for which operations have completed.

■ Failed Tracker Number

Number of trackers which failed operations.

■ Name

Displays the names of the trackers operated.

■ Operation state

Displays the operation state.

Three operation states are displayed; "running," "success," "failure."

■ OK

Closes the [Tracker Operation Result] dialog box.

### 8.16.7. Archiving and Saving the Tracker Information

It is possible to set up for each user whether to archive the tracker information on the executed job network. This setting is performed on the [Archive Config] tab in the [User Config] dialog box.

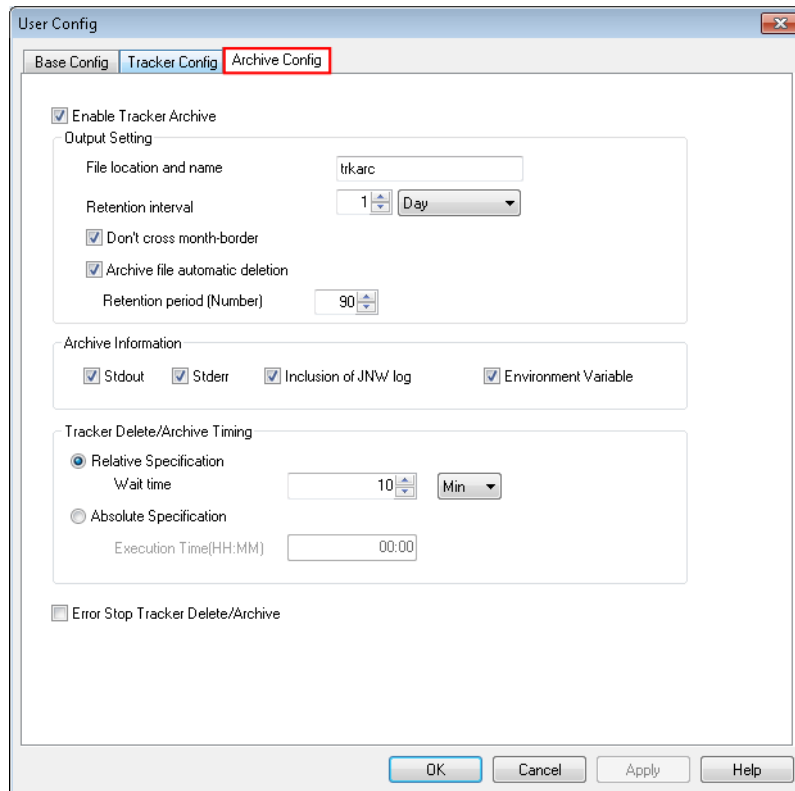


Figure 8.57. Screenshot of [Archive Config] tab in [User Config] dialog box



- The tracker in the [STOP(ERROR)] status is not normally archived because it is regarded as "paused" rather than finished.

The tracker in this status is included when counting the number of job network parameters that can be simultaneously started. So, "skip" or "delete" unnecessary ones.

- If the [Error Stop Tracker Delete/Archive] check box is cleared, the tracker is deleted as soon as the waiting time specified by [Tracker Delete/Archive Timing] has elapsed.
- To archive the tracker in the [STOP(ERROR)] status, select the [Error Stop Tracker Delete/Archive] check box on the [Archive Config] tab in the [User Config] dialog box.
- Archiving the tracker information limits tracker operations. The limitations are described below.

- Job network tracker

When the tracker information is in the [ARCHIVED], [Skip (Release Skip)], [Hold (Release Hold)], [Rerun], and [Archive] cannot be performed for that tracker. [Open] and [Delete] can be performed even after archiving.

- Unit job tracker

For the unit job tracker that belongs to the job network tracker in the ARCHIVED status, [Skip (Release Skip)], [Hold (Release Hold)], [Rerun], and [Status Done] cannot be selected and [Unit job parameter] cannot be changed. [Open], [Precede And Succeed], [Help] can be selected. However, the [Script] tab in the [Unit Job Tracker] window cannot be displayed.

### 8.16.8. Changing Submission Time of a Scheduled Tracker

The input time of job networks immediately input at a future time or scheduled job network can be changed temporarily.

For example, "if tomorrow's job is expected to take more time than usual, want to execute the job network one hour earlier" or "want to add the unit job only for tomorrow" can be utilized.

1. Right-click a scheduled tracker from the Tracker List and select [Change Submission Time] from the shortcut menu.
2. The [Change Submission Time] window opens, in which the submission time can be changed.

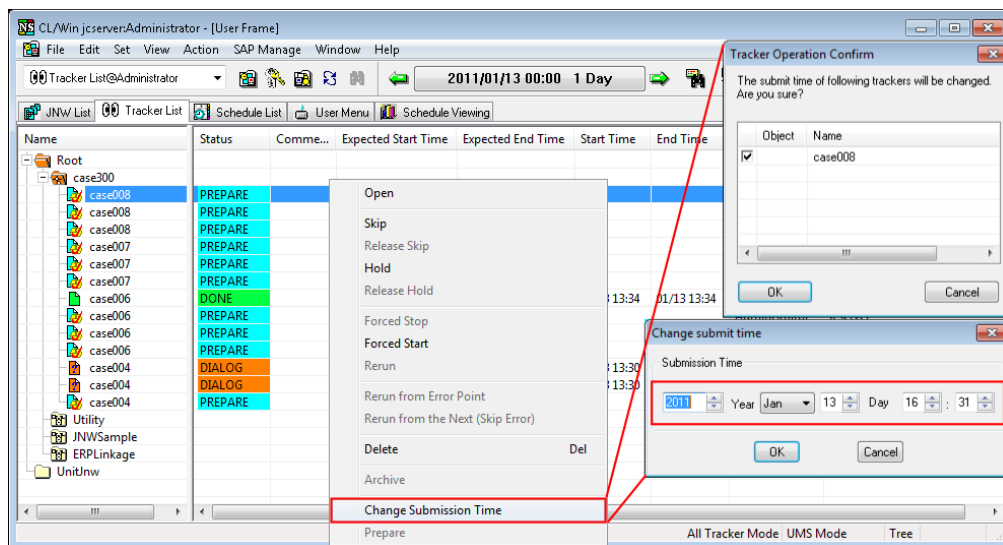


Figure 8.58. Screenshot of the [Change Submission Time] window

3. After configuration, click [OK].



- If the time setup of the original schedule is changed after changing the submission time, the schedule in the [Change submit time] window is not updated. Therefore, both the time changed in the [Change submit time] window and the time changed in the original schedule will be registered.
- Once the tracker submission time is changed, the changed time cannot be restored to the original time.
- If a scheduled tracker enters the scheduled (confirmed) state, deleting that tracker results in a scheduled tracker being re-created according to the schedule rule.

### 8.16.9. Adding/Deleting Objects of a Job Network

It is possible to add or delete parts of a selected tracker flow without affecting the definition of the job network.

1. Double-click the tracker to change in the Tracker List screen to display the flow screen.

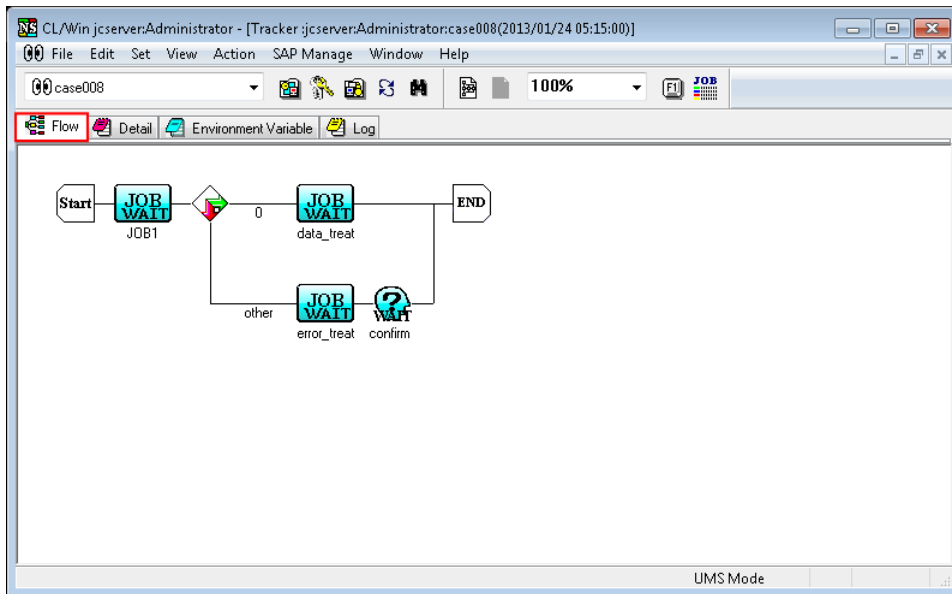


Figure 8.59. Screenshot of the tracker flow window for adding parts

2. Select [File] and [Mod Flow] from the menu. Make the flow changeable.

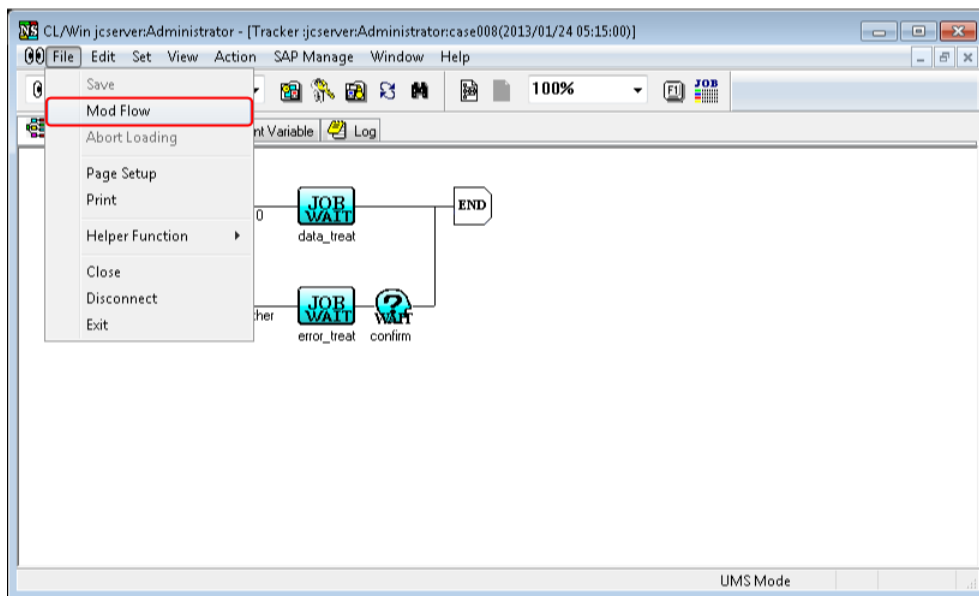


Figure 8.60. Screenshot of the selection window that appears when [File] - [Mod Flow] is selected on the menu bar

3. Add or delete objects. In this instruction, a unit job is added.

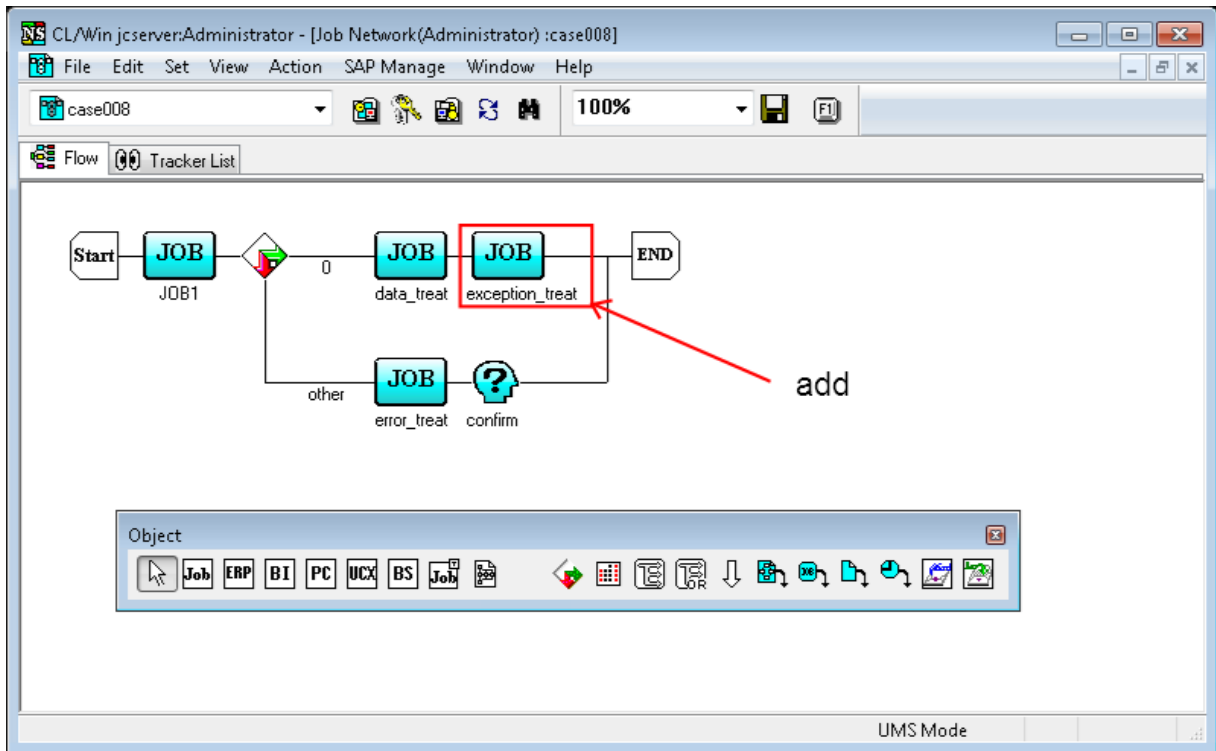





Figure 8.61. Screenshot that shows addition of the part object

4. After making the change, choose [File] and then [Save] on the menu bar or click the  icon on the toolbar to save the changed flow.
5. The job network is executed according to the changed flow.

 ■ Objects cannot be moved.  
 ■ A SAP ERP job, SAP BI job and SAP PC job part cannot be added or deleted.

### 8.16.10. Displaying a Job Network Definition Flow from a Tracker

From the [Flow], [Detail], or [Log] window of the [Job Network Tracker] window, you can display the corresponding job network definition.

With the [Job Network Tracker] window selected, on the menu bar, select [View] and then click [Show JNW]. Alternatively, click the [Show JNW] icon . The flow of the job network opens.



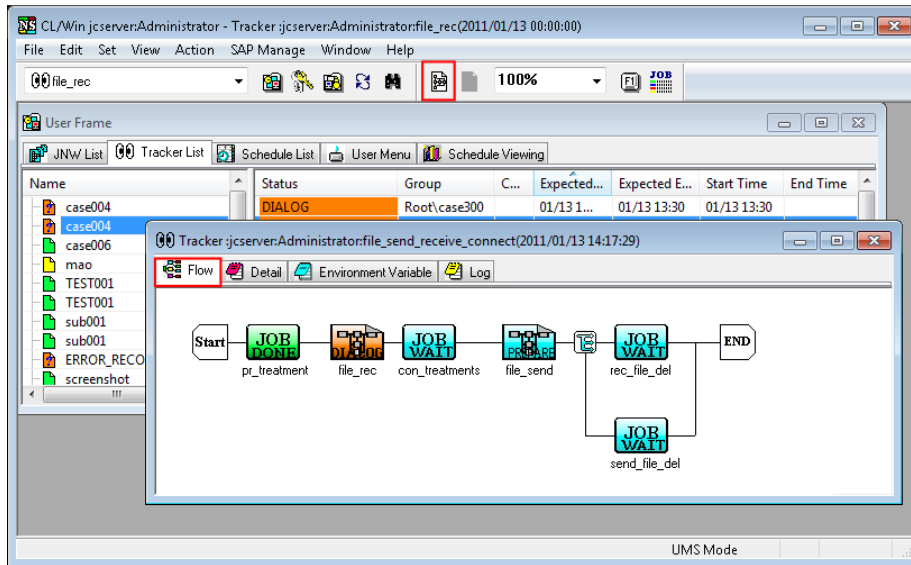


Figure 8.62. Screenshot of the window that appears when the [Show JNW] icon is clicked on the [Job Network Tracker] window

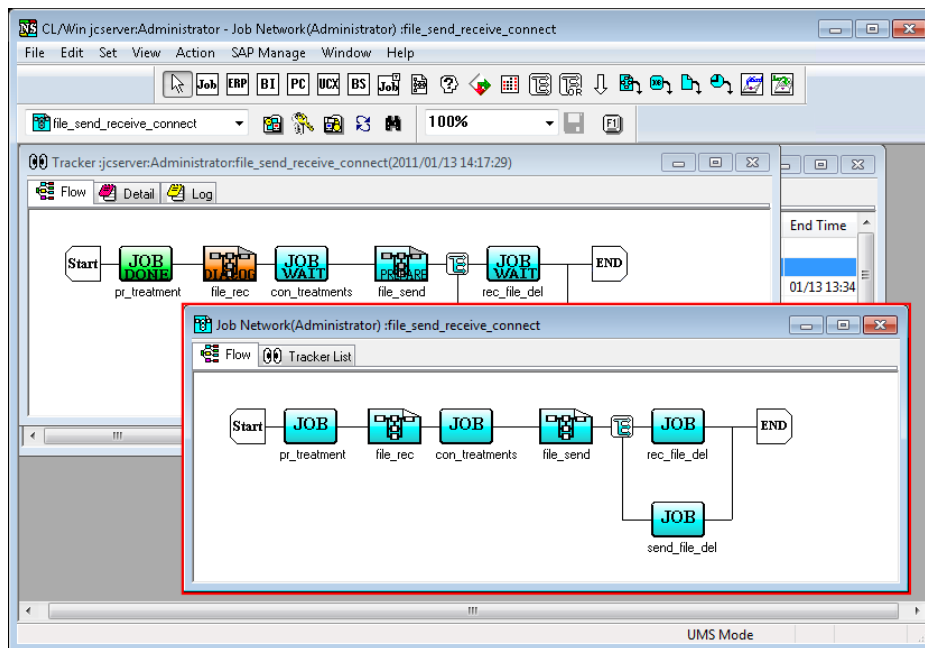


Figure 8.63. Screenshot of the [Flow] window of the [Job Network] window

### 8.16.11. Printing a Job Network Tracker Flow

You can print a Job Network Tracker Flow.

With the desired Job Network Tracker Flow displayed, select [File] and then click [Print] on the menu bar.

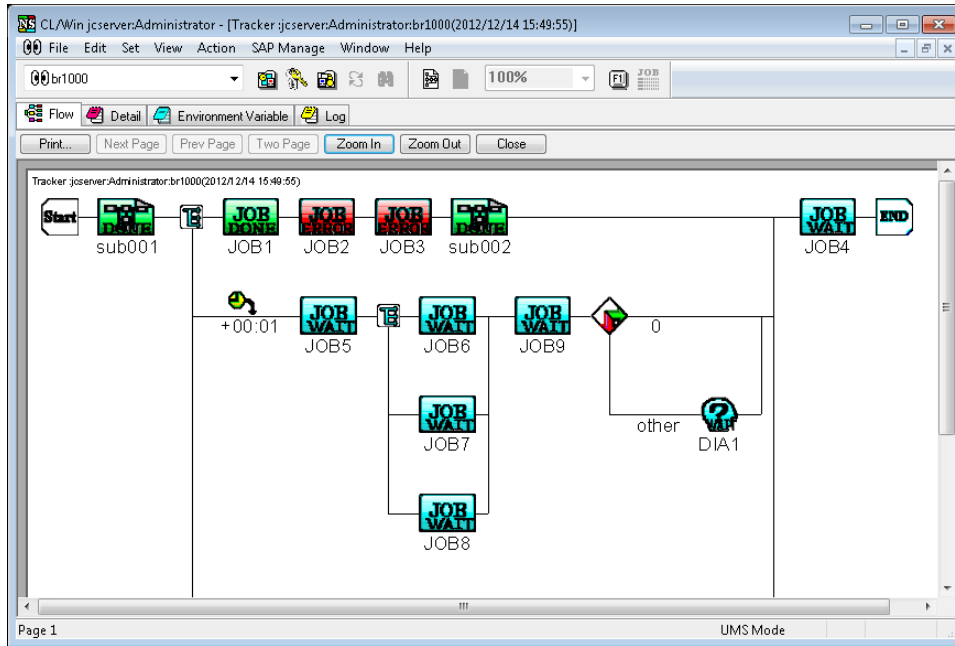


Figure 8.64. Preview of a Job Network Tracker Flow

The server name, user name, job network name, time, and tracker flow are printed.

### 8.16.12. Manually Archiving the Tracker

The tracker in the DONE, DONE(ERROR), or WARNING status can be manually archived before the archiving time comes.

Use this function for example to archive a specific tracker before 11:00 p.m. when archiving is scheduled at 11:00 p.m. in [Tracker Delete/Archive Timing] on the [Archive Config] tab in the [User Config] dialog box.

1. Select the tracker to archive from the tracker list and select [Archive] from the shortcut menu which appears by right-clicking.

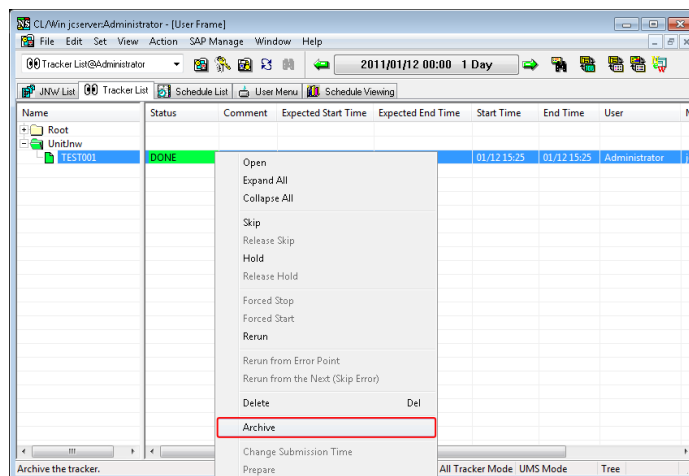


Figure 8.65. Screenshot of Manual Archiving Operation

2. The [Tracker Operation Confirm] dialog box opens. Confirm the target trackers and the operation.

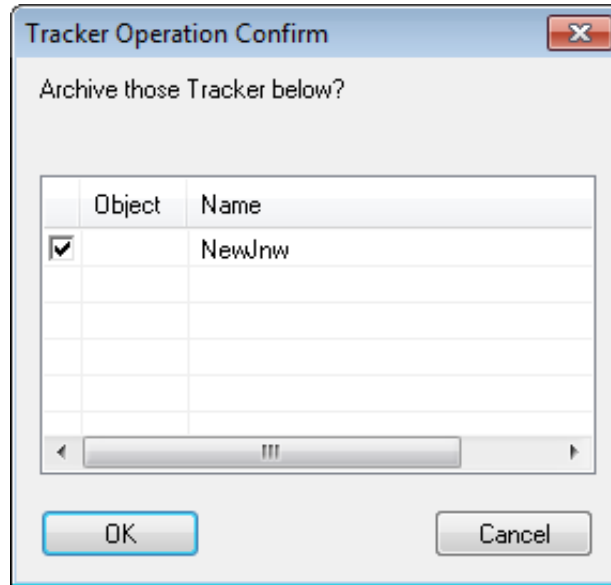


Figure 8.66. Screenshot of the [Tracker Operation Confirm] dialog box during the archiving operation

3. After configuration, click the [OK] button.
4. The [Tracker Operation Result] dialog box for the archiving operation opens.

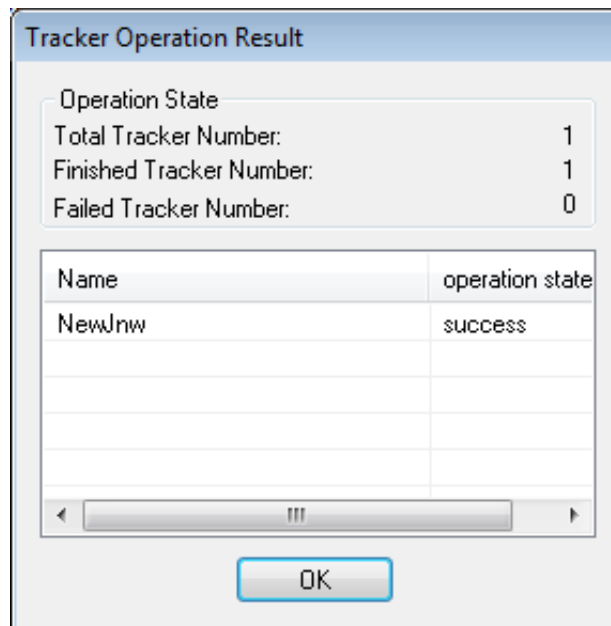


Figure 8.67. Screenshot of the [Tracker Operation Result] dialog box during the archiving operation



- The tracker can be manually archived only when it is in the DONE, DONE(ERROR), or WARNING status. In addition, the time must pass at least one minute since the tracker submission time (the submission time before change if the tracker submission time is changed).

- The tracker in other status cannot be manually archived (e.g., WAIT, PREPARE, RUN, and STOP(ERROR)).
- The tracker in the STOP(ERROR) status cannot be manually archived even if the [Error Stop Tracker Delete/Archive] check box is selected on the [Archive Config] tab in the [User Config] dialog box.
- Any tracker cannot be manually archived unless the [Error Stop Tracker Delete/Archive] check box is selected on the [Archive Config] tab in the [User Config] dialog box.

### 8.16.13. Controlling trackers from the [Action] menu

This function allows you to perform the same operations as the operations shown below from the [Action] menu on the menu bar after selecting one or more trackers on the [Tracker List] tab in the [User Frame] window or the [Tracker List@all\_machine] tab in the [Manager Frame] window.

- [Section 8.16.6, "Selects Multiple Trackers and Executes an Operation at Once"](#)
- [Section 8.16.8, "Changing Submission Time of a Scheduled Tracker"](#)

Note, however, that [Open], [Delete], and [Precede And Succeed] cannot be executed for a tracker from the [Action] menu. Execute these operations by using the mouse's right-click menu.

## 8.17. Operating a Unit Job Tracker Icon

The [Flow] tab in the [Job Network Tracker] window displays icons that indicate execution trackers for each job. To a Unit Job Tracker, Various operations such as Open of detail information of execution result, Skip or Hold of job execution, and Rerun, can be performed.

### 8.17.1. Operating a Unit Job Tracker Icon

Point the cursor to a unit job icon in the Job Network Tracker window, the operations which appears by right-clicking can be performed.

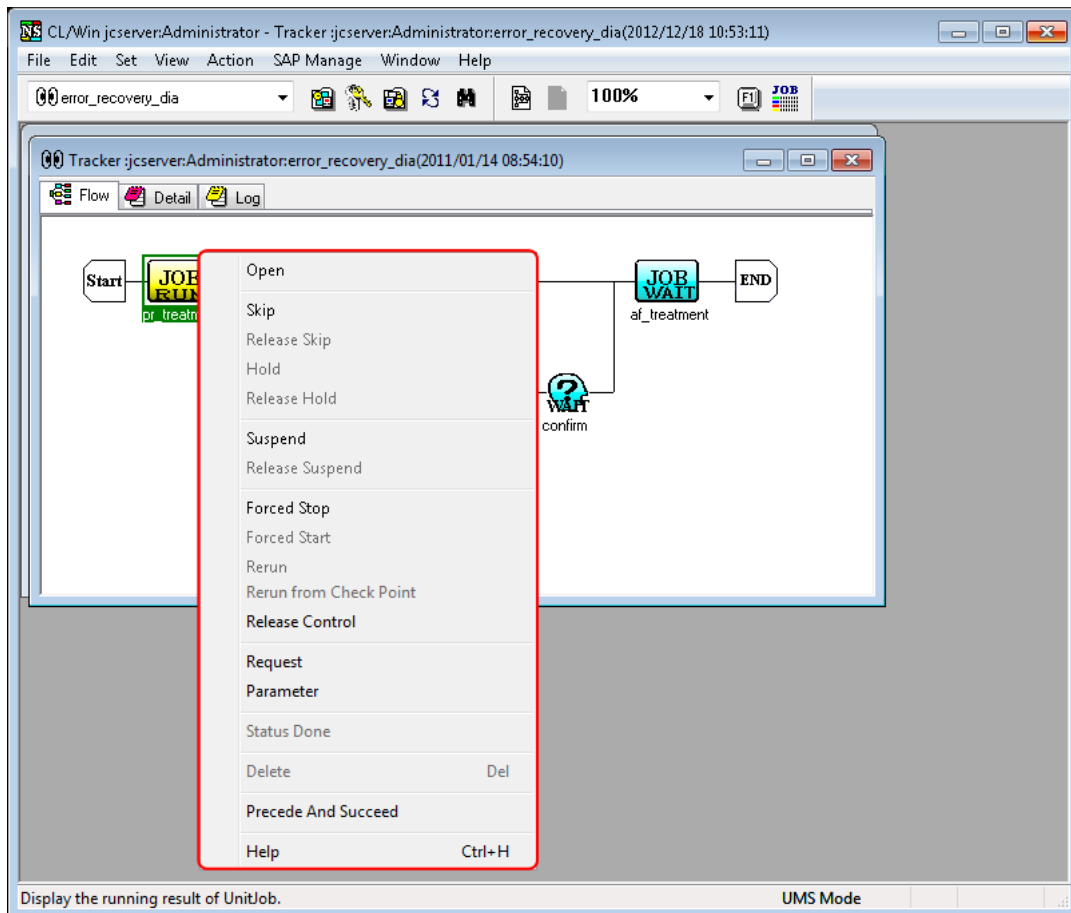


Figure 8.68. Screenshot that shows operating the Unit Job Tracker Icon

Operations on the shortcut menu which appears by right-clicking are as follows:

#### ■ Open


Shows the status of execution of a unit job.

#### ■ Skip

Stops the running job and start executing the following job. SKIP is indicated no matter which state the job is in. A job with SKIP marking is not executed.

If the job has not been executed, it is scheduled for skipping. A job for which skipping is scheduled is not executed and the next job is executed. If the job is running, its execution is aborted and the next job is executed.

If the sub job network has already executed, it is scheduled for skipping and skipped during re-execution.

Jobs for which skipping is scheduled carry an arrow  that indicates skipping.


■ Release Skip

Cancels scheduled skipping that is indicate with [SKIP].

■ Hold

Holds a unit job. At the time of execution, the job waits for release of holding.

Only a unit job before or after execution can be held. If a job is held after its execution, it enters waiting state when it is re-execution.

A held job carries a hand sign .

■ Release Hold

Cancels holding of a unit job.

■ Suspend

Suspends execution of a unit job. SIGSTOP signal is sent to the job process.



This function is supported in UNIX only.

■ Release Suspend

Cancels suspension of a unit job. SIGCONT signal is sent to the job process.



This function is supported in UNIX only.

■ Forced Stop

Stops execution of a unit job. SIGKILL signal is sent to the job process. The execution of tracker is stopped and [STOP(ERROR)] is displayed in the tracker list.

■ Forced Start

Start the waiting job after the current unit job.

■ Rerun

Re-executes the completed job after the current job. If the parts on the flow after the completed unit job to be rerun are still being executed, all of these parts are skipped.

■ Rerun from Check Point

Re-execute the job from the last check point passed in the script of the current unit job.



This function is supported in UNIX only. It is also necessary to enable the expansion function of [Job Step Restart] to use this function.

#### ■ Release Control

Isolates the selected unit job from JobCenter control. [STOP(ERROR)] is displayed for the unit job and the execution result is not acquired. However, the processing of unit job request continues on NQS.

The processing of tracker flow continues the part after the unit job of which control is released. Not to execute subsequent unit jobs for operational purpose, set [HOLD] to these jobs before releasing the control.



Because the status of unit job script is checked when the control is released, [DONE] may be displayed for the unit job of which control is released.

#### ■ Status Done

Changes the status of unit job from DONE(ERROR) or WARNING to DONE.

#### ■ Request

Displays the request parameters for the selected unit job. The parameters can be displayed only while the unit job request is queued in the NQS queue. They cannot be displayed if the job request is not yet submitted to the queue or has already been executed.

#### ■ Parameter

Displays the parameters currently set for the selected unit job. The settings of some parameters can be changed if they are in the [WAIT], [PREPARE] or waiting before execution status. However, changes of parameters are not reflected to the unit job currently or already executed.

For details, refer to [Section 4.2.2, "Setting up Conditions \(Parameters\) for Executing a Unit Job"](#).

#### ■ Delete

Deletes this unit job from the tracker flow. This function can be used only by selecting a unit job for the tracker in the [WAIT] or [PREPARE] status and enabling [File] and then [Mod Flow] on the menu. Refer to [Section 8.16.9, "Adding/Deleting Objects of a Job Network"](#).

A unit job for the tracker currently or already executed cannot be deleted.

#### ■ Precede And Succeed

Displays the anteroposterior relation of the selected unit job. For details, refer to [Section 8.22, "Displaying an Anteroposterior Relation of a Tracker"](#).

#### ■ Help

Shows help about Unit Job Tracker.

### 8.17.2. Referring to Detail Information of Unit Job Tracker Window

1. Double-click the icon which indicates a tracker for an execution of the unit job. Alternatively, select [Open] from the shortcut menu which appears by right-clicking.
2. The [Unit Job Tracker] window opens. Refer to the result and the detail information about the execution of the job.

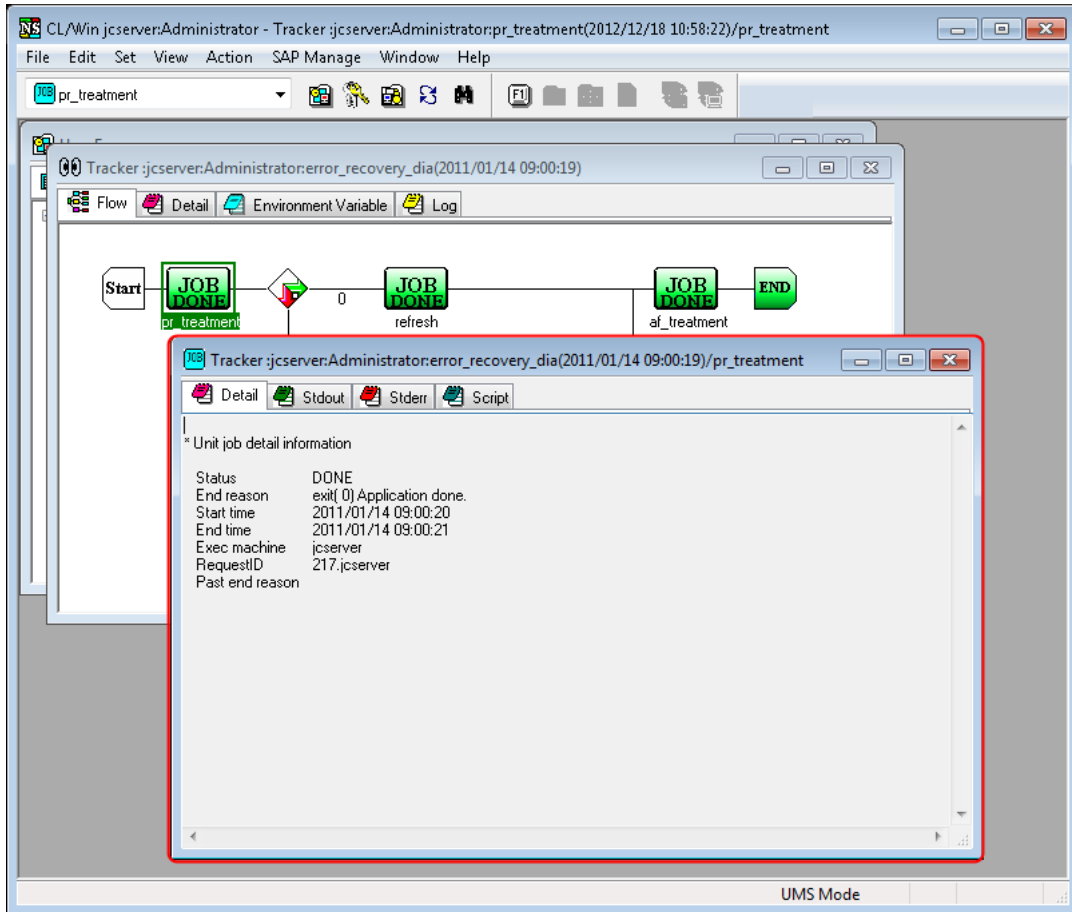


Figure 8.69. Screenshot of [Unit Job Tracker] window

In the [Unit Job Tracker] window, there are [Detail], [Stdout], [Stderr], [Request], and [Script] tab explained in the following.

Table 8.6. Tab List of [Unit Job Tracker] window

Tab name	Description	Chapter
Details	Shows the status of execution of a unit job.	Section 3.2.2, "Confirming the Result of an Immediate Submission (Unit Job Being Executed)"  Section 3.2.3, "Confirming the Result of an Immediate Submission (Unit Job Already Finished)"
Stdout	Lists the output to stdout from a job process. If the Stdout file is specified in the parameter, the output is not displayed if specified in the parameter.	Section 3.2.2, "Confirming the Result of an Immediate



		Submission (Unit Job Being Executed)"  Section 3.2.3, "Confirming the Result of an Immediate Submission (Unit Job Already Finished)"
Stderr	Lists the output to stderr from a job process. If the Stderr file is specified in the parameter, the output is not displayed if specified in the parameter.	–
Request	While the request job is being submitted to the queue, the information about the request is displayed. You can view the request ID and status or the process ID used for execution.  The monitoring PID and the script execution PID mean the following:  <ul style="list-style-type: none"> <li>• The monitoring PID is the PID of the monitoring process operating in execution of the request and means the parent process ID of the script that is executed. This PID appears only in the Windows version.</li> <li>• The script execution PID is the PID of the script execution process that runs when the request is executed</li> </ul>	Section 3.2.2, "Confirming the Result of an Immediate Submission (Unit Job Being Executed)"
Script	Indicates the script file of a unit job.  If the script file of a job before execution is changed, the change is reflected during execution. In other cases, the change is reflected when the job is re-executed. The change is temporary limited for this tracker.  If the tracker is in the "ARCHIVED" status, scripts cannot be browsed.	Section 3.1.5, "Editing Script of Unit Job Icon"  Section 4.2.1, "Setting an Execution Script of a Unit Job"



If a particularly large amount of data is output to the standard job output and standard error output in a unit job script, not only does it take a long time for the results to be displayed in the tracker window in CL/Win, but it also slows down search processing on the server side due to insufficient memory resources.

Also, even if [Stdout file] and [Stderr file] are temporarily changed to arbitrary files on the [Results] tab in the [UnitJob parameter setting] dialog box, a large amount of data still has to be handled by the JobCenter NQS before being written to these files, slowing down the processing.

For these kinds of output files, take measures such as preventing them from being handled by JobCenter by coding the unit job script so that the file is redirected to a file directly under the directory (as an application or command log).

## 8.18. Operating a Sub Job Network Tracker

You can perform various kinds of operations, as with job network tracker icons.

Select a sub job network icon in the Job Network Tracker, and right-click the mouse. The available operations are shown in the resulting shortcut menu.

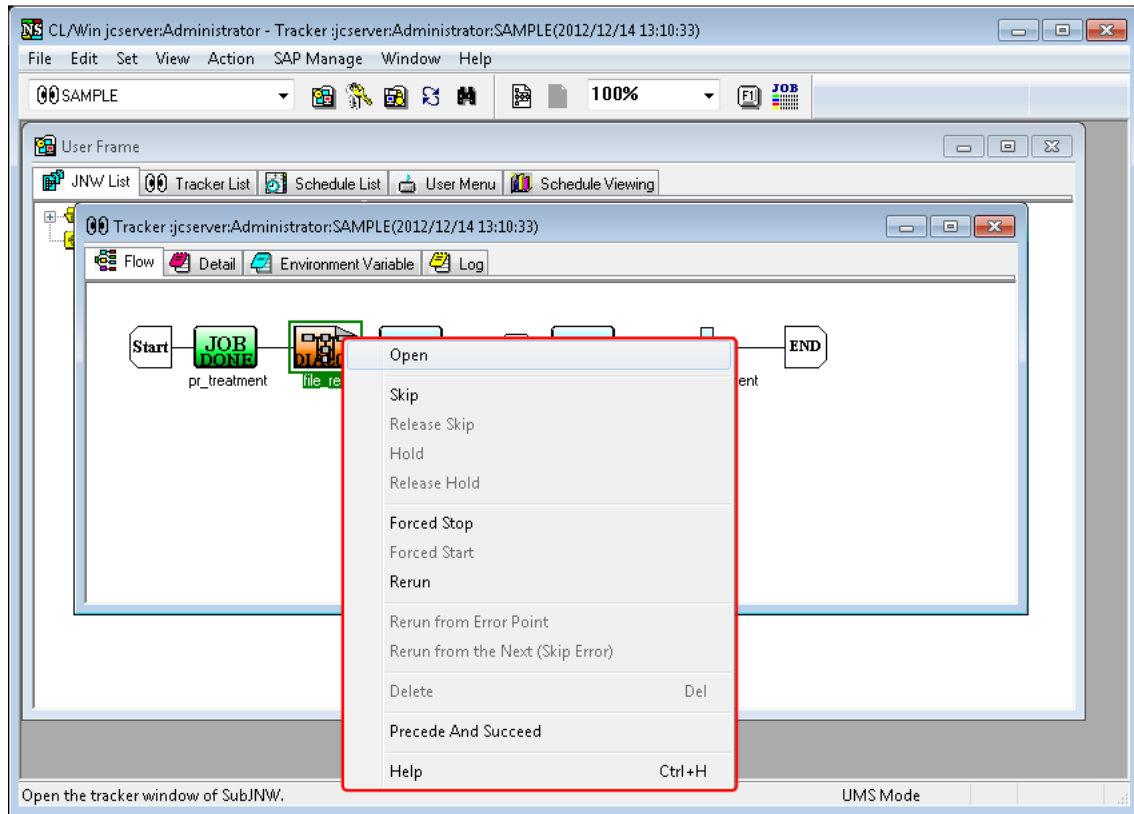


Figure 8.70. Screenshot that shows operating the Sub Job Network Tracker



Operations such as Skip, Hold, and Re-run can be executed on a sub job network from the [Action] menu. For details, refer to [Section 8.16.13, "Controlling trackers from the \[Action\] menu"](#).

Operations on the shortcut menu which appears by right-clicking are as follows:

### ■ Open

Browses the sub job network tracker.

### ■ Skip

If the sub job network has not been executed, it is scheduled for skipping. A sub job network for which skipping is scheduled is not executed and the next job is executed.

If the sub job network is running, its execution is aborted and the next job is executed.

If the sub job network has already been executed, it is scheduled for skipping and skipped during re-execution.

### ■ Release Skip

Cancels scheduled skipping that is indicate with [SKIP].

■ Hold

Holds a sub job network. At the time of execution, the sub job network waits for release of holding. Only a sub job network before or after execution can be held.

If a sub job network is held after its execution, it enters waiting state when it is re-execution.

■ Release Hold

Cancels suspension of a sub job network.

■ Forced Stop

Stops execution of a sub job network. The job request process in the sub job network is stopped forcibly.

■ Forced Start

Starts execution of the waiting job network.

■ Rerun

Re-executes the completed job after the selected sub job network. If the parts on the flow after the completed sub job network to be rerun are still being executed, all of these parts are skipped.

■ Delete

Deletes the selected sub job network. This function can be used only by selecting a sub job network for the tracker in the [WAIT] or [PREPARE] status and enabling [File] and then [Mod Flow] on the menu. Refer to [Section 8.16.9, "Adding/Deleting Objects of a Job Network"](#).

A sub job network for the tracker currently or already executed cannot be deleted.

■ Precede And Succeed

Displays the anteroposterior relation of the selected sub job network. For details, refer to [Section 8.22, "Displaying an Anteroposterior Relation of a Tracker"](#).

■ Help

Shows help for Job Network Tracker.

## 8.19. Responding to a Dialog (Deciding a completion status)

You can determine the exit status in which a response is received from the user in the dialog box.

Select the dialog tracker icon in the Job Network Tracker window. The exit status of a dialog part is determined by the section ([Ok] or [Error]) from the shortcut menu.

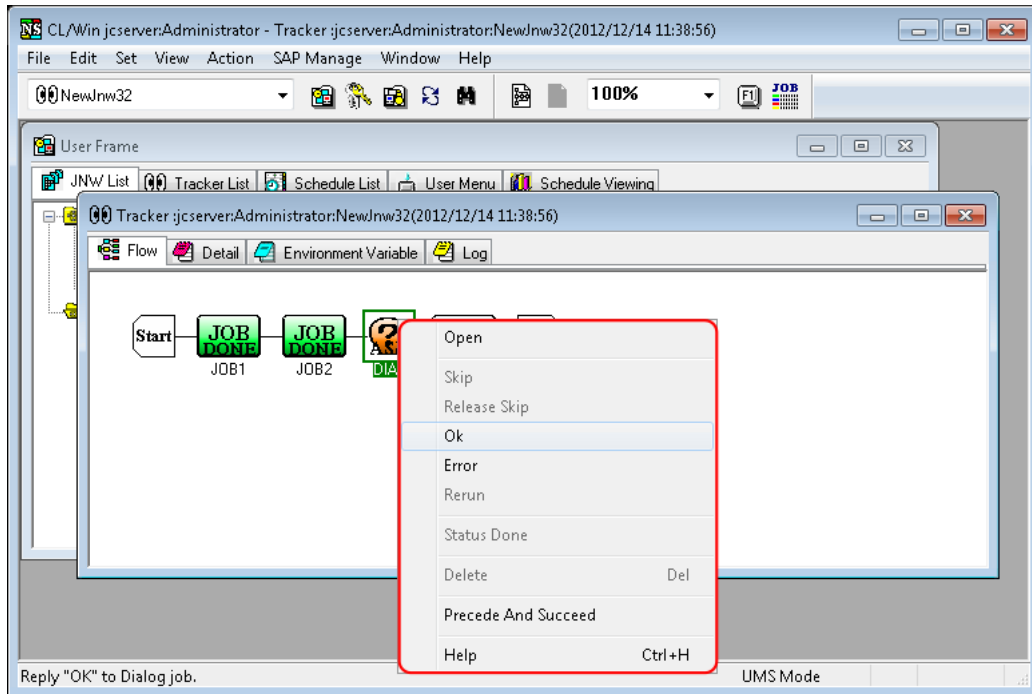


Figure 8.71. Screenshot that shows operating the Dialog tracker

## 8.20. Skipping Waiting Part and Event Transmission/Reception Jobs

Select a waiting part tracker or an event transmission/reception tracker icon in the Job Network Tracker window. The job can be skipped by using the shortcut menu which is displayed by right-clicking the icon.

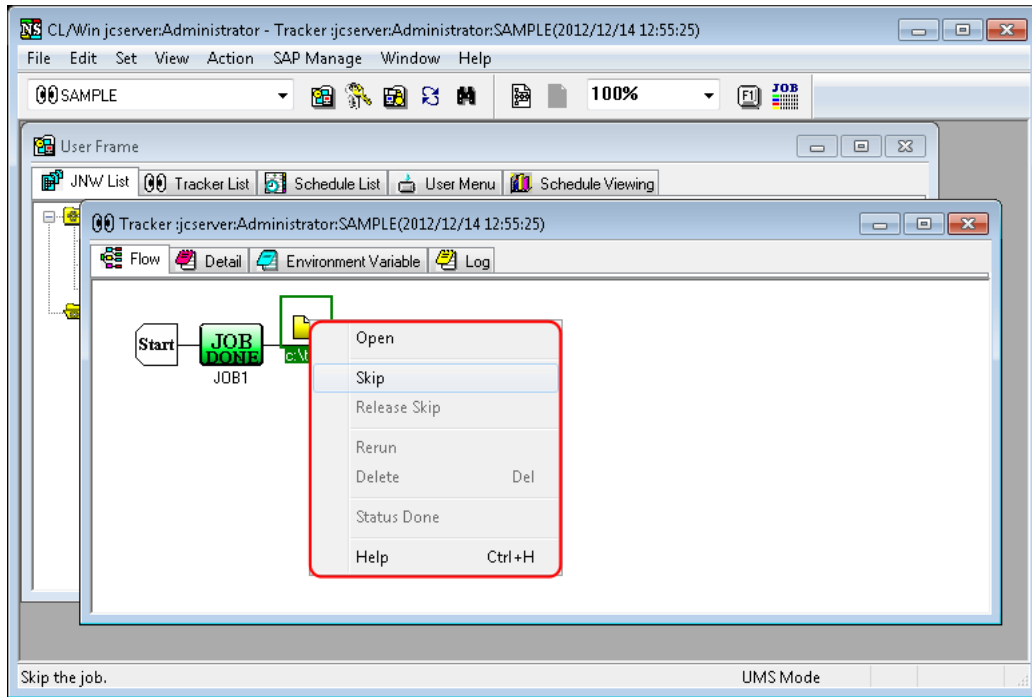









Figure 8.72. Screenshot of the window for operating waiting part and event transmission/reception trackers

The types of waiting part and event transmission/reception trackers are as follows:

Table 8.7. A List of waiting job part trackers and event transmission/reception trackers

Icon	Description
	Job Waiting
	JNW Waiting
	Timer Waiting
	File Waiting
	Event Reception
	Event Transmission

## 8.21. Doing a Part Search

To search for a part displayed in the tracker flow window, click the [Job Searching] button  on the toolbar to display the [Job Searching Dialog] window.


The [Job Searching Dialog] window can be opened from the User Frame, Manager Frame, and Job Searching Frame.

There are seven types of target parts - unit job, ERP job, BI job, PC job, WOBS job, custom job, sub job network, dialog part, event transmission part, and event reception part.

The part search results can be sorted by display item. They can also be printed and output to a CSV file.

### 8.21.1. Setting the Part Search Items

The [Job Searching Dialog] window allows you to do a part search and sort search results in the same way as with [Control setting] of the Tracker List (refer to [Section 8.10, "Filtering the Tracker List Before Displaying It"](#)).

1. Display User Frame, Manager Frame, or Job Searching Frame.
2. On the toolbar, click the [Job Searching] button .
3. [Job Searching Dialog] window opens.

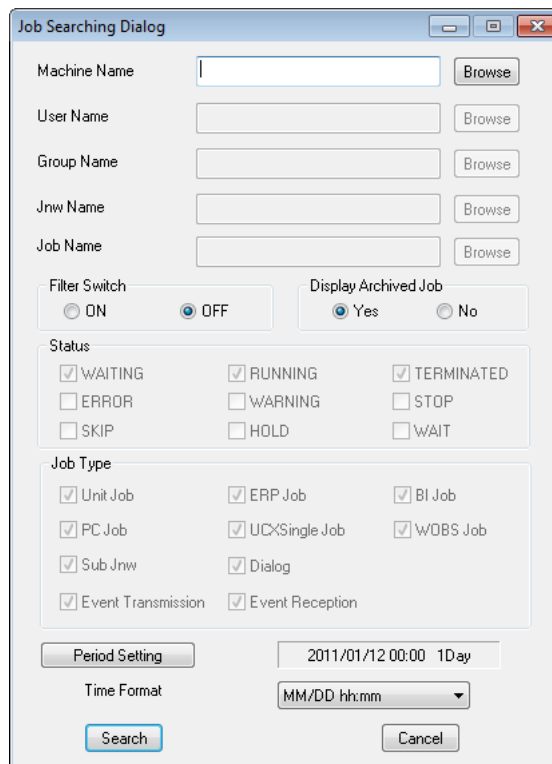


Figure 8.73. Screenshot of [Job Searching Dialog] window

4. After configuration, click [Search] to start searching.

Configuration items in the [Job Searching Dialog] window are as follows:

■ Machine name

Specify the name of the machine to which the part you want to search for belongs.

This item can be specified only when the current user is permitted to reference the trackers of other machines.

Enter a machine name directly in the field, or select a machine name from the list that appears when you click the [Browse] button. If the machine name field is left blank, the function searches the parts of all machines.

■ User name

Specify the name of the user who owns the part you want to search for. This item can be specified only when the current user is permitted to reference the trackers of other users.

Enter a user name directly in the field, or select a user name from the list that appears when you click the [Browse] button. If the user name field is left blank, the function searches the parts of all the users whom the current user is permitted to access.



If the machine name field is left blank, a user name cannot be specified. To specify a user name, you need to first specify the name of the machine to which the user belongs.

■ Group Name

Specify the name of the group to which the part you want to search for belongs.

Enter a group name directly in the field, or select a group name from the list that appears when you click the [Browse] button.

If the field is left blank, the function searches the parts of all groups.

You can specify a wildcard "\*" to perform a prefix search.

(For example, if you enter "Process\*" in the Group Name field, the function searches for group names that match the character string preceding the asterisk, such as "Process 1" and "Process Update." Group names that do not match the preceding character string, such as "1 Process" and "Update Process," are ignored.)

If only a wildcard "\*" is specified, the function searches for all input items, as when the field is left blank.

Note that you cannot perform a prefix search by specifying a path in the Group Name field (e.g., Root\NewJnw\*).

■ Jnw name

Specify the name of the job network to which the part you want to search for belongs.

Enter a job network name directly in the field, or select a job network name from the list that appears when you click the [Browse] button. If the field is left blank, the function searches the parts of all job networks.

You can specify a wildcard "\*" to perform a prefix search.

If only a wildcard "\*" is specified, the function searches for all input items, as when the field is left blank.



If the machine name or user name field is left blank, a group name and job network name cannot be specified. To specify these, you need to first specify the target machine name and user name.

■ Job Name

Specify the name of the part you want to search for.

Enter a part name directly in the field, or select a part from the list that appears when you click the [Browse] button.

If the field is left blank, the function searches all parts.

You can specify a wildcard "\*" to perform a prefix search.

If only a wildcard "\*" is specified, the function searches for all input items, as when the field is left blank.



When a machine name is specified, you can search for a part by entering a part name directly in the field. To use the [Browse] button requires specifying a job network name first.

■ Filter Switch

Select whether to enable or disable the specification of the part search conditions.

ON	Enables the specification of "Status Search" and "Type Search."
OFF	"Status Search" and "Type Search" are not available. The function searches all statuses and types.

■ Display Archived Job

Select whether to search for archived tracker parts.

To search for archived tracker parts, select [Yes]. Otherwise, select [No].

■ Status

Select the status of the part you want to search for.

For details of each status, refer to the items of display filter in [Section 8.10, "Filtering the Tracker List Before Displaying It"](#).

■ Job Type

Select the type of the part you want to search for.

For details of each part, refer to [Chapter 4, 「Usage of Part Objects」](#).

■ [Period Setting] button

Select the period of the part you want to search for.

Clicking the [Period Setting] button displays the [Job Searching Period Dialog] window.



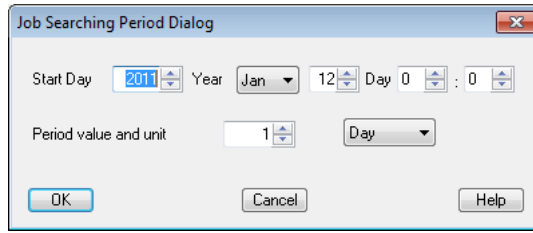


Figure 8.74. Screenshot of the [Job Searching Period Dialog] window

In the [Job Searching Period Dialog] window, set the following items.

Start Day	Specify the start date of the part search (year, month, day, hour, and minute).
Period value and unit	Specify the period of the part search. Set the value and unit of the period. You can set 1 to 59 minutes, 1 to 23 hours, 1 to 7 days, 1 to 5 weeks, and 1 to 3 months.

■ Time Format

Set the format for displaying the time.

hh:mm	Displays the time (hour:minute).
MM/DD hh:mm	Displays the date (month/day) and time (hour:minute).
YYYY/MM/DD hh:mm:ss	Displays the date (year/month/day) and time (hour:minute:seconds).

### 8.21.2. Viewing the Job Searching Results

1. Perform the search based on the items set in the [Job Searching Dialog] window.
2. The searching results are displayed in the [Job Searching Frame].

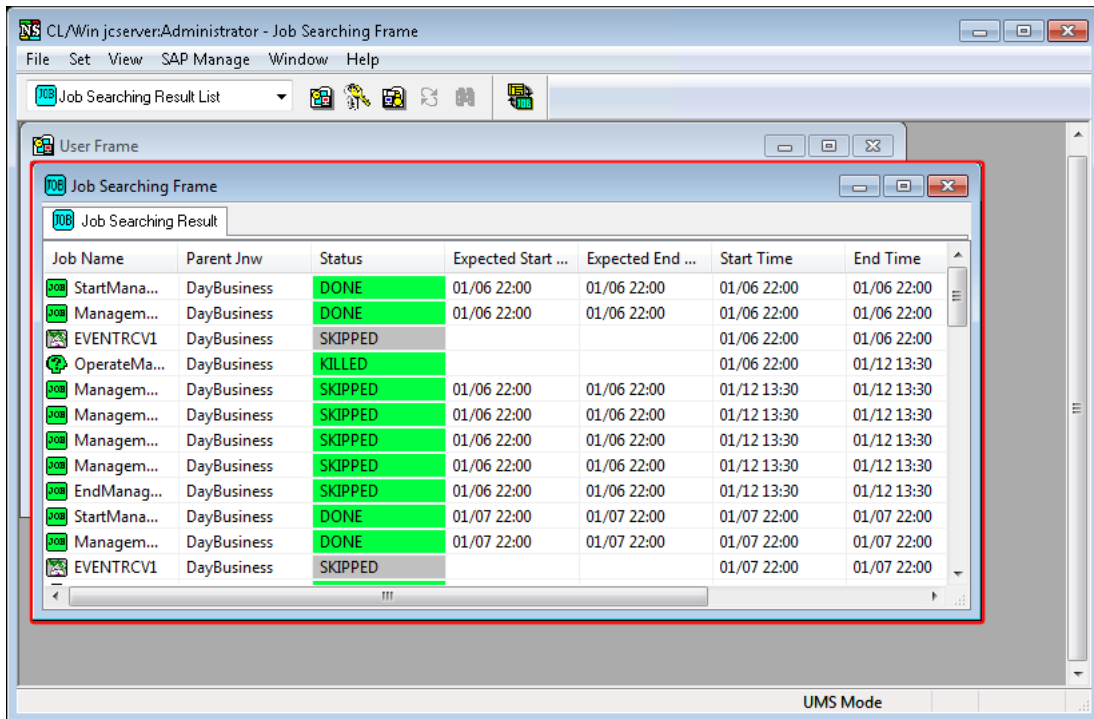


Figure 8.75. Screenshot of the Job Searching Frame

3. The [Job Searching Dialog] window is still open. To close the [Job Searching Dialog] window, click the [Cancel] button in the [Job Searching Dialog] window.

The Job Searching Frame contains the following items.

Item	Description
Job Name	Displays the name of the part that meets the search condition.
Parent Jnw	Displays the name of the job network to which the part belongs.
Status	Displays the current status of the part.
Expected Start Time	Displays the expected start time registered in the scheduler.
Expected End Time	Displays the expected end time calculated from the expected start time and the job's expected execution time.
Start Time	Displays the time when execution actually started.
End Time	Displays the time when execution actually ended.
Owner	Displays the name of the user who executed the parent job network.
Machine	Displays the name of the machine that executed the parent job network.

### 8.21.3. Refreshing the Job Searching Frame

This function refreshes the display of the Job Searching Frame.

Reload the latest data by clicking the [Search] button in the [Job Searching Dialog] window.



The frame cannot be refreshed by the Auto Refresh function or manually (pressing the [F5] function key).

### 8.21.4. Sorting the Job Searching Results

You can sort the searching results displayed in the Job Searching Frame on a column-by-column basis.

Click the button showing the column name you want to sort. Shown below is an example of sorting the data of [Parent Jnw].

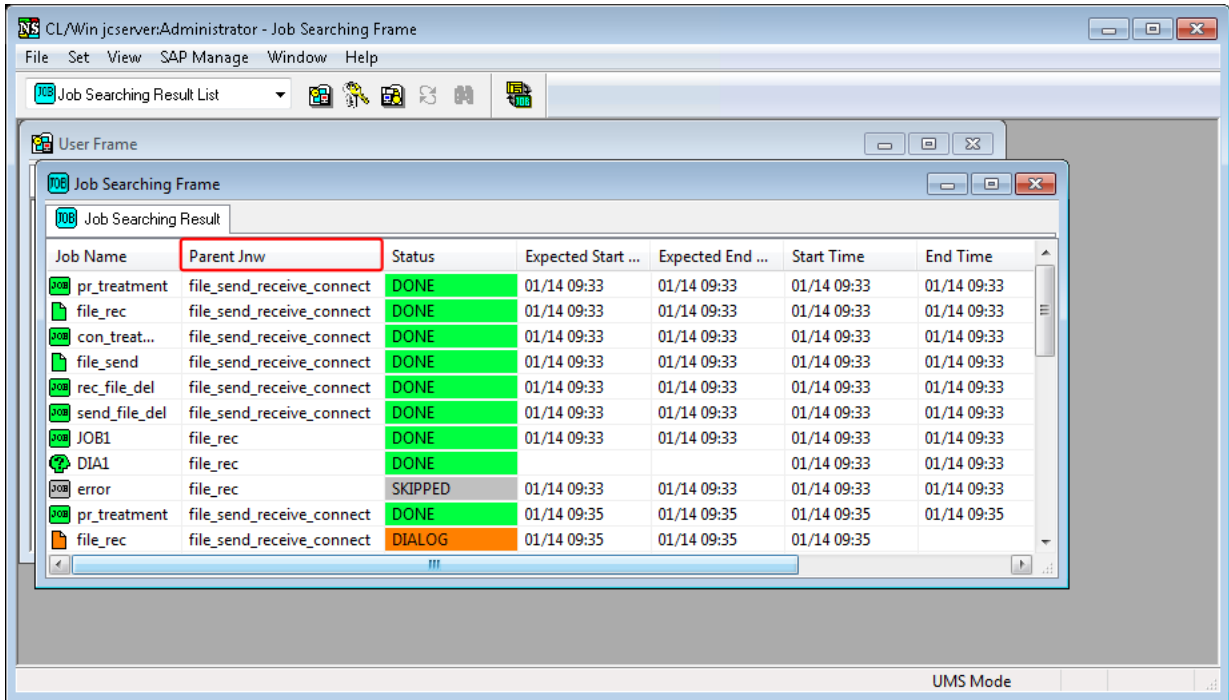


Figure 8.76. Screenshot of the window where the searching results have been sorted

### 8.21.5. Referencing a Tracker from the Job Searching Frame

1. Double-click the part you want to reference from the Job Searching Frame.
2. The [Job Network Tracker] window opens to the one where the part belongs. The focus is moved to the target.

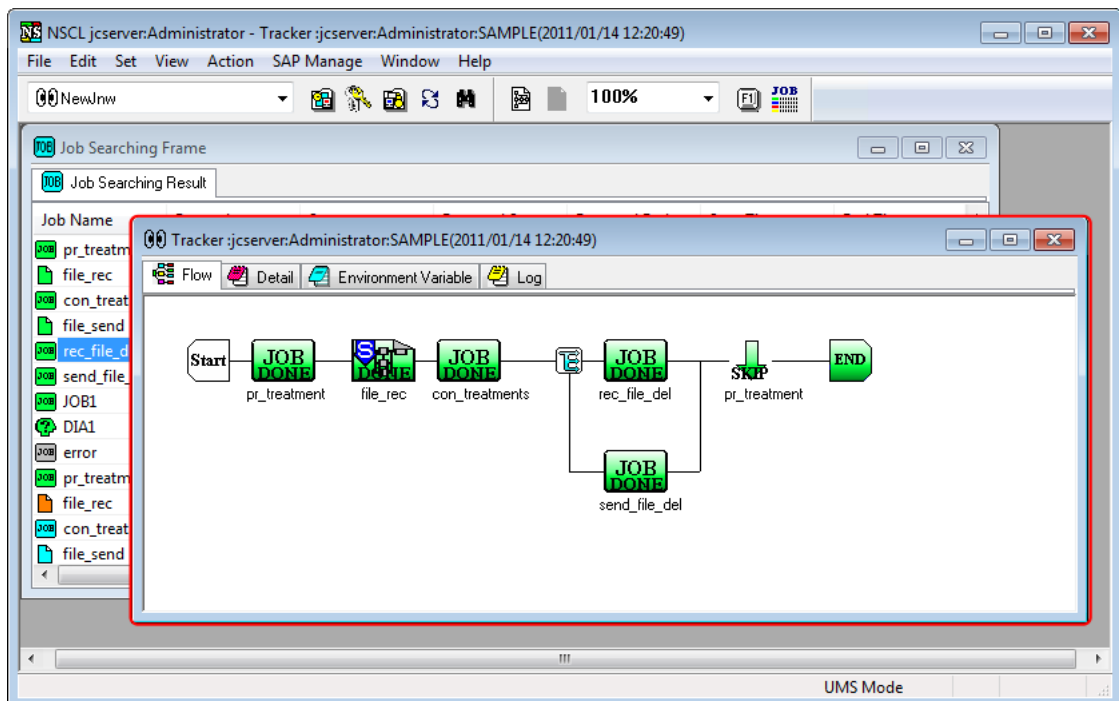


Figure 8.77. Screenshot of the [Job Network Tracker] window

## 8.21.6. Outputting the Job Searching Results

The job searching results can be printed or output to a file in the CSV format.

1. On the menu bar, select [File] and then click [Print].
2. The [Search Result Printing] dialog box appears. To close the [Search Result Printing] dialog box, click the [Cancel] button.

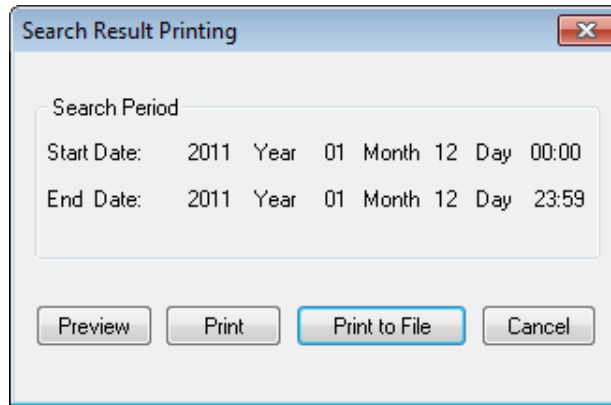


Figure 8.78. Screenshot of the [Search Result Printing] dialog box

3. Clicking the [Preview] button displays the print preview of the searching result window.

Job Name	Parent Job	Status	Expected Start Time	Expected End Time	Start Time	End Time	User	Machine
op_treatment	file_send_receive.connect	DONE	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
file_rec	file_send_receive.connect	DONE	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
cont_treatment	file_send_receive.connect	DONE	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
file_send	file_send_receive.connect	DONE	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
rec_file_del	file_send_receive.connect	DONE	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
send_file_del	file_send_receive.connect	DONE	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
JOB1	file_rec	DONE	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
DIAT	file_rec	DONE	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
error	file_rec	SKIPPED	01/14 09:33	01/14 09:33	01/14 09:33	01/14 09:33	Administrator	jservr
op_treatment	file_send_receive.connect	DONE	01/14 09:35	01/14 09:35	01/14 09:35	01/14 09:35	Administrator	jservr
file_rec	file_send_receive.connect	DIALOG	01/14 09:35	01/14 09:35	01/14 09:35	01/14 09:35	Administrator	jservr
cont_treatment	file_send_receive.connect	WAIT	01/14 09:35	01/14 09:35			Administrator	jservr
file_send	file_send_receive.connect	PREPARE	01/14 09:35	01/14 09:35			Administrator	jservr
rec_file_del	file_send_receive.connect	WAIT	01/14 09:35	01/14 09:35			Administrator	jservr
send_file_del	file_send_receive.connect	WAIT	01/14 09:35	01/14 09:35			Administrator	jservr
JOB1	file_rec	DONE	01/14 09:35	01/14 09:35	01/14 09:35	01/14 09:35	Administrator	jservr

Figure 8.79. Screenshot of the print preview of the searching result window

### 8.21.6.1. Printing the job searching results

Clicking the [Print] button prints the job searching results.

### 8.21.6.2. Outputting the job searching results to a CSV file

Clicking the [Print to File] button displays the [Save As] dialog box.

Specify the location and the name of the file to which you want to save the results.

The data displayed in [Job Searching Result] is output to a CSV file with the following header information appended:

"Job Name," "Job Type," "Parent Jnw," "Status," "Expected Start Time," "Expected End Time," "Start Time," "End Time," "User," "Machine"

## 8.22. Displaying an Anteroposterior Relation of a Tracker

You can check the anteroposterior relation of parts and their statuses in a tracker flow.

The target parts are the unit job, ERP job, BI job, PC job, WOBS job, custom job, sub job network, dialog part, event transmission part, and event reception part.

### 8.22.1. Displaying the Anteroposterior Relationship of a Tracker

1. Select [Precede And Succeed] from the shortcut menu that appears when you right-click a specific part.

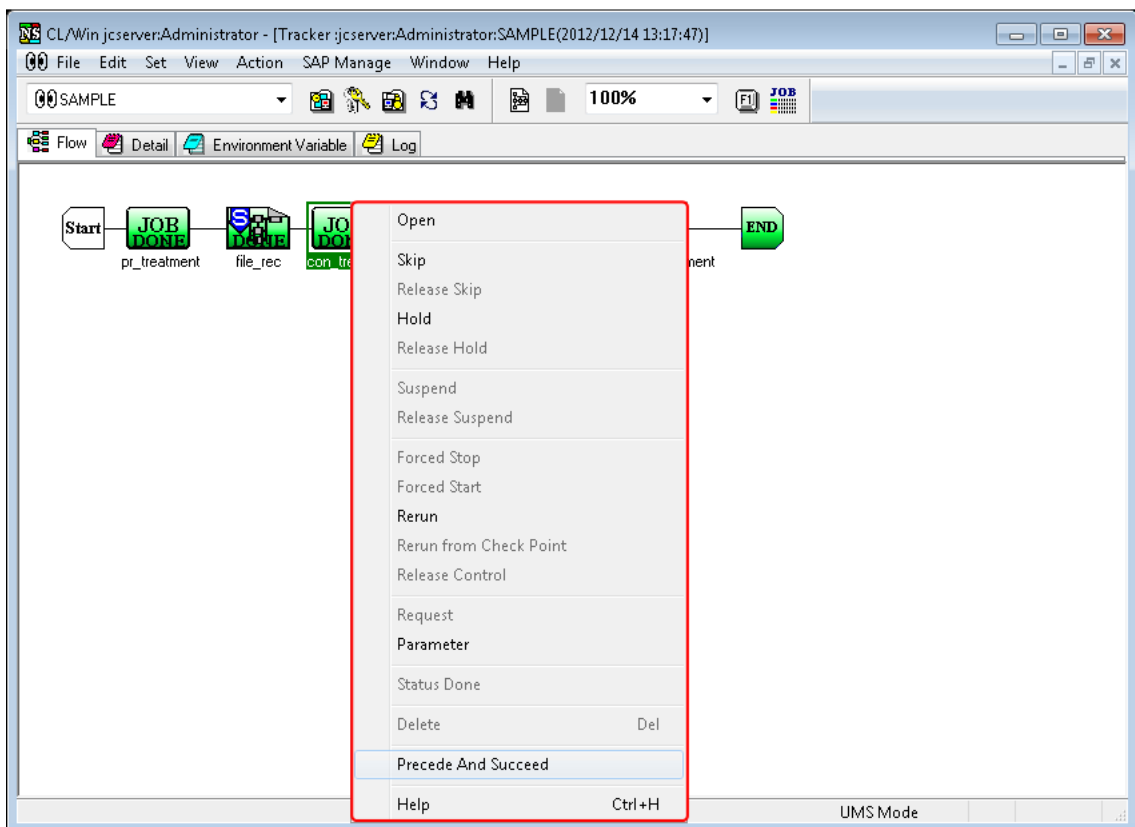


Figure 8.80. Screenshot of the window for operating a unit job tracker icon (Precede And Succeed)

2. The [Precede And Succeed] dialog box opens.

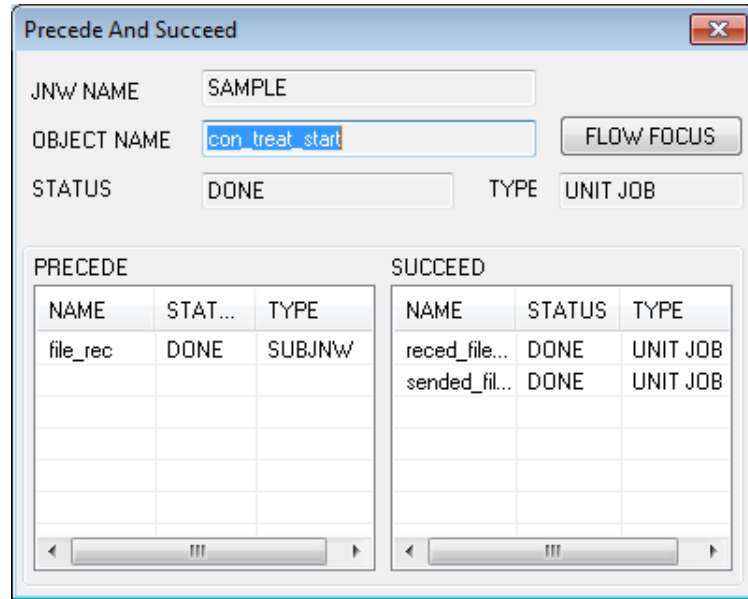


Figure 8.81. Screenshot of the [Precede And Succeed] dialog box

The [Precede And Succeed] dialog box is organized as follows:

■ JNW NAME

Displays the name of the job network to which the selected part belongs. The name begins with the parent job network name, with each segment concatenated by a colon.

■ OBJECT NAME

Displays the name of the selected part.

■ STATUS

Displays the status of the part displayed in the [OBJECT NAME] field.

■ TYPE

Displays the type of the part displayed in the [OBJECT NAME] field.



Note about "STATUS" and "TYPE"

If the tracker of a job network waiting part that waits for another job network or another user's job network is displayed in the "PRECEDE" or "SUCCEED" list, the "STATUS" field shows "Unknown" and the "TYPE" field shows "Another tracker part."

The same is true for those job waiting parts that wait for another job network or another user's job network.

Also, if you double-click the column of such job waiting parts or job network waiting parts, the move operation cannot be performed, because the waiting part and the part it waits for belong to different trackers.

■ PRECEDE

The "NAME," "STATUS," and "TYPE" information of all the parts preceding the part shown in the [OBJECT NAME] field is displayed.

If you double-click a displayed preceding part, the name of that part appears in the [OBJECT NAME] field, with the other items refreshed according to the target part.

For the definition of "PRECEDE," refer to [Section 8.22.2, "Defining the Preceding Relation for a Tracker"](#).

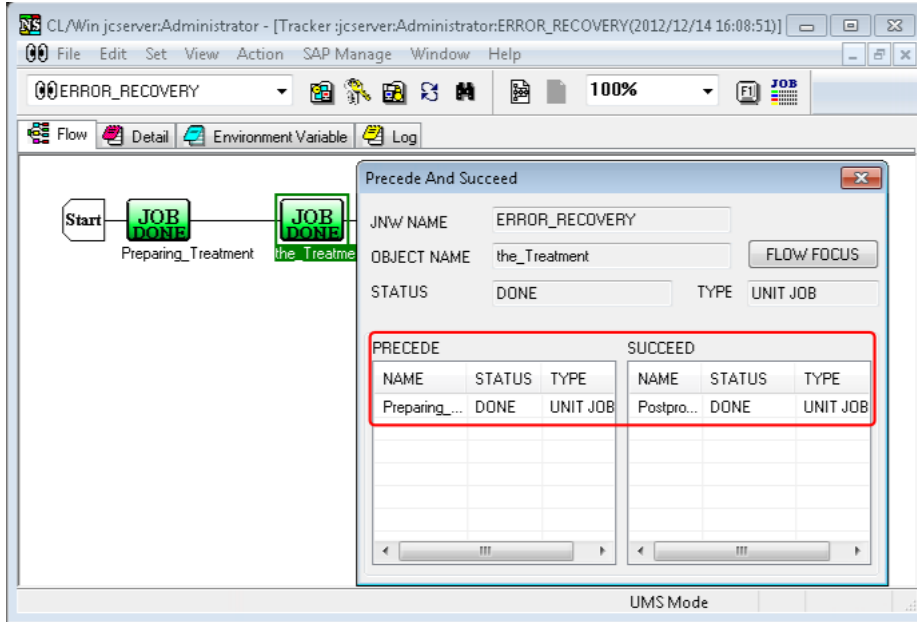


Figure 8.82. Example of the result displayed when the preceding part "the\_Treatment" is double-clicked

■ SUCCEED

The "NAME," "STATUS," and "TYPE" information of all the parts succeeding the part shown in the [OBJECT NAME] field is displayed.

If you double-click a displayed succeeding part, the name of that part appears in the [OBJECT NAME] field, with all the items refreshed according to the target part.

For the definition of "SUCCEED," refer to [Section 8.22.3, "Defining the Succeeding Relation for a Tracker"](#).



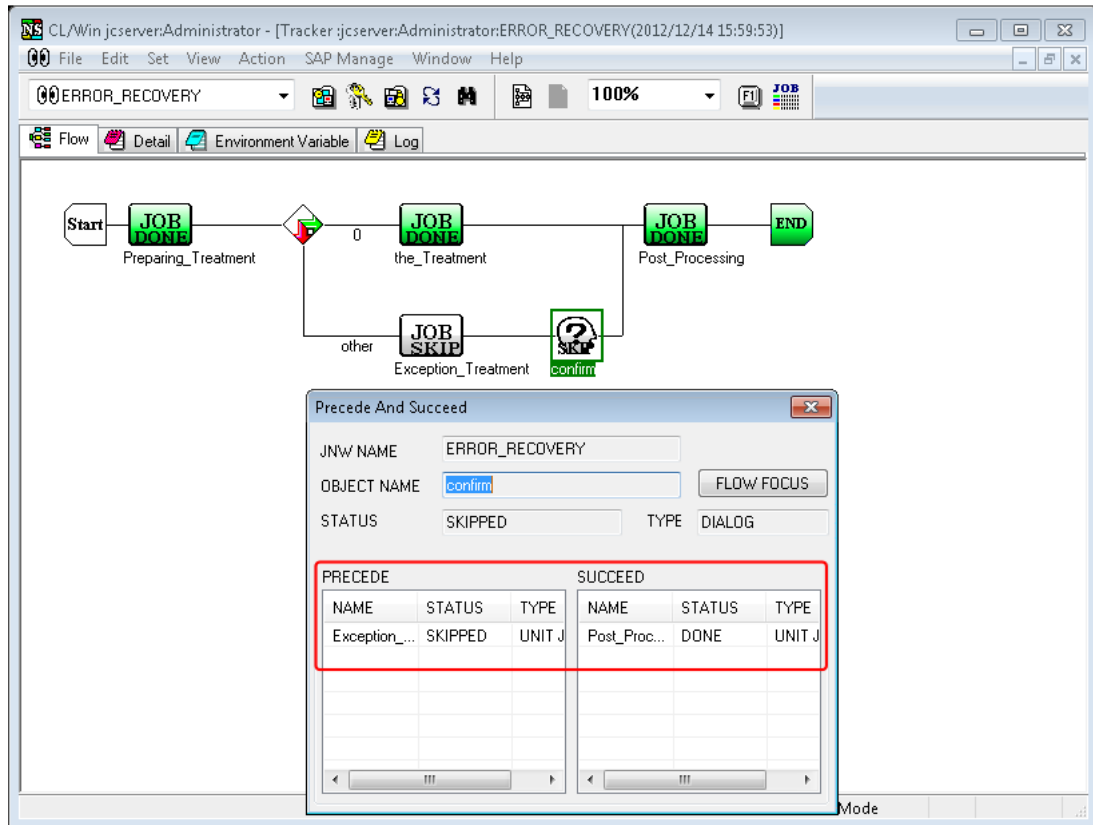


Figure 8.83. Example of the result displayed when the succeeding part "confirm" is double-clicked

■ [FLOW FOCUS] button

Clicking the [FLOW FOCUS] button displays a tracker flow with the focus on the part shown in the [OBJECT NAME] field.

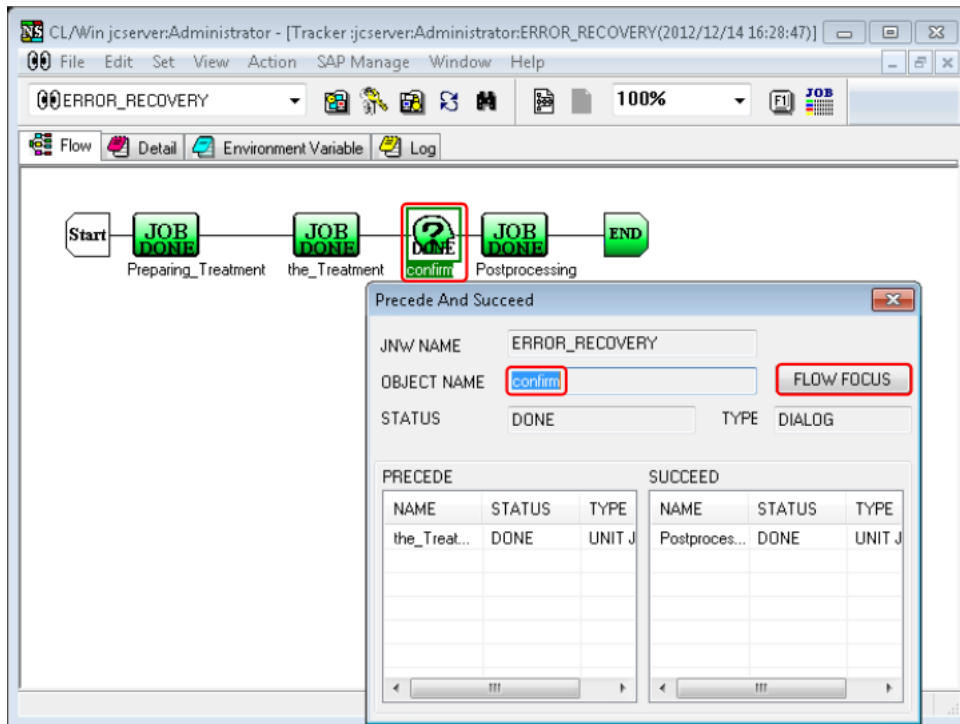


Figure 8.84. Example of the focus movement when the [FLOW FOCUS] button is clicked

### 8.22.2. Defining the Preceding Relation for a Tracker

A search is conducted for the display target part, which is regarded as preceding according to the definitions given below, and the matching part is displayed in the PRECEDE list. The display target parts are the unit job, ERP job, BI job, PC job, WOBS job, custom job, sub job network, dialog part, event transmission part, and event reception part.

1. A display target part directly connected to the left-side line of the part in question on the tracker flow is regarded as "preceding." There may be no or multiple preceding parts.
2. If the part found in 1 is not a display target part, the search is continued in the left direction until a display target part is found. The display target part found this way is regarded as "preceding."
3. If the part found in 1 is at a "parallel branch," "condition branch," or "calendar branch," the rightmost display target part of the branch is regarded as "preceding." If the branch is empty or if there is no display target part, the search is continued for a "receding" part as described in 2. If the search reaches the start point of the branch, it is continued in the left direction.
4. If the part found in 1 is a "job waiting or job network waiting part," the part for which the part is waiting is regarded as "preceding."
5. If the part found in 1 is a sub job network, the search is not done on the parts in that sub job network and the sub job network itself is regarded as "preceding."
6. If the search reaches the start point without any "preceding" part being found by the method described in 2, the search is ended. If the searched tracker flow is a sub job network, the parent job network of that sub job network is included in the "preceding" relation.

### 8.22.3. Defining the Succeeding Relation for a Tracker

A search is conducted for the display target part, which is regarded as succeeding according to the definitions given below, and the matching part is displayed in the SUCCEED list. The display target

parts are the unit job, ERP job, BI job, PC job, WOBS job, custom job, sub job network, dialog part, event transmission part, and event reception part.

1. A display target part directly connected to the right line of the part in question on the tracker flow is regarded as "succeeding." There may be no or multiple succeeding parts.
2. If the part found in 1 is not a display target part, the search is continued in the right direction until a display target part is found. The display target part found this way is regarded as "succeeding."
3. If the part found in 1 is at a "parallel branch," "condition branch," or "calendar branch," the first display target part of the branch is regarded as "succeeding." If the branch is empty or if there is no display target part, the search is continued for a "succeeding" part as described in 2. If the search reaches the end point of the branch, it is continued in the right direction.
4. If any part is waiting for itself, the display target part to the right of that part is regarded as "succeeding." If there is no display target part, the search is continued as described in 2.
5. If the part found in 1 is a sub job network, the search is not done on the parts in that sub job network and the sub job network itself is regarded as "succeeding."
6. If the search reaches the end point without any "succeeding" part being found by the method described in 2, the search is ended. If the searched tracker flow is a sub job network, the parent job network of that sub job network is included in the "succeeding" relation.

### 8.22.4. Example of an Anteroposterior Relation

An example of an anteroposterior relation including a sub job network is shown below.

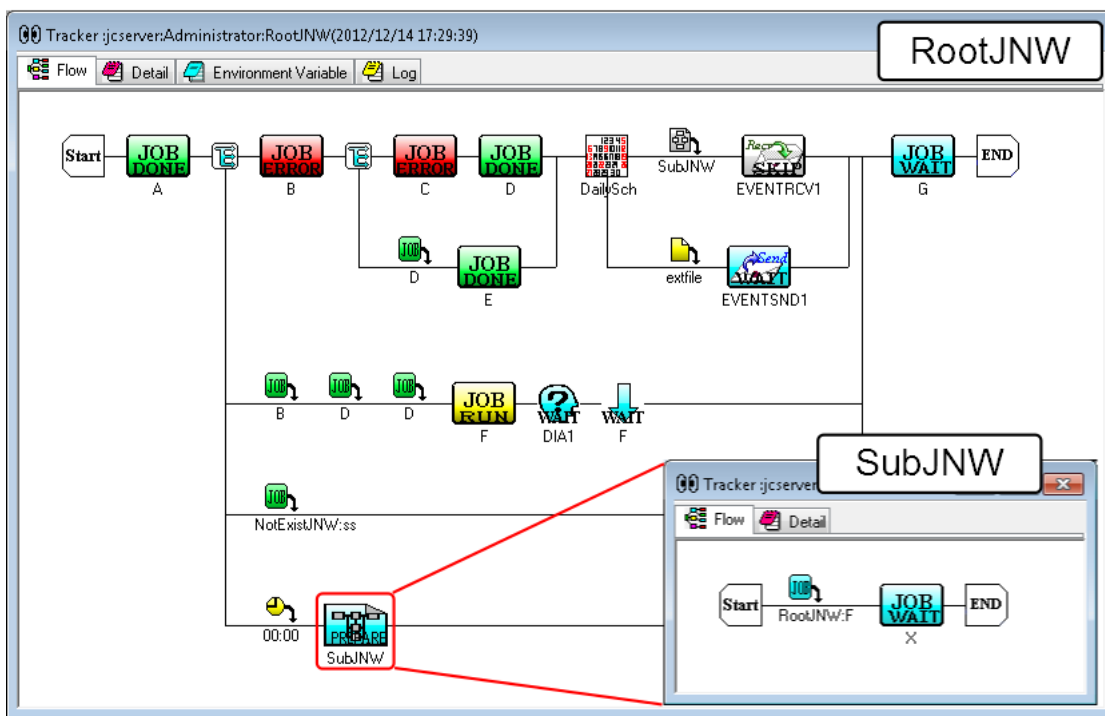


Figure 8.85. Flow example of a job network anteroposterior relation including a sub job network

The anteroposterior relation of parts of RootJNW (parent job network) in Figure 8.85, "Flow example of a job network anteroposterior relation including a sub job network" is as follows.

Table 8.8. Anteroposterior relation of parts of RootJNW (parent job network)

Display target part (type)	PRECEDE	SUCCEED
----------------------------	---------	---------

A (Unit Job)	None	B, F, subJNW, G
B (ERP Job)	A	C, E, F
C (BI Job)	B	D
D (Unit Job)	C	EVENTRCV1, EVENTSND1, E, F
E (Unit Job)	B, D	EVENTRCV1, EVENTSND1
F (Unit Job)	A, B, D	DIA1, X (RootJNW:subJNW)
G (Unit Job)	EVENTRCV1, EVENTSND1, A, DIA1, ss (NotExistJNW), subJNW	NONE
subJNW (Sub job network)	A	G, EVENTRCV1
EVENTRCV1 (Event reception part)	D, E, subJNW	G
EVENTSND1 (Event Transmission part)	D, E	G
DIA1 (Dialog part)	F	G

The anteroposterior relation of parts of subJNW in [Figure 8.85, "Flow example of a job network anteroposterior relation including a sub job network"](#) is as follows.

Table 8.9. Anteroposterior relation of parts of subJNW

Display target part (type)	PRECEDE	SUCCEED
X (Unit Job)	F (RootJNW), RootJNW (parent job network)	RootJNW (parent job network)

When the "preceding" or "succeeding" relation of the parts of a sub job network includes a parent job network, double-clicking the displayed parent job network causes the [OBJECT NAME] field to show the name of the sub job network to which the parts belong, and the other items are also refreshed according to that sub job network.

[Figure 8.86, "Display example of "PRECEDE" and "SUCCEED" for the parts in subJNW"](#) below shows the anteroposterior relation of the parts in the sub job network. Double-clicking the "preceding" parent job network refreshes the anteroposterior relation according to the sub job network, as in [Figure 8.87, "Screenshot of the \[Precede And Succeed\] dialog box displayed when the parent job network is double-clicked"](#).

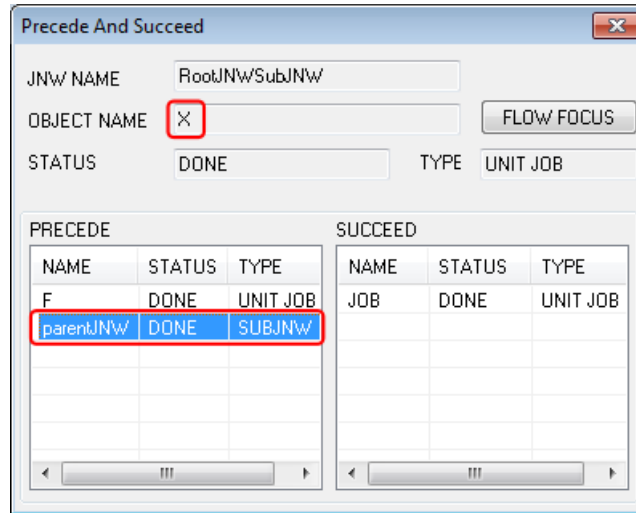


Figure 8.86. Display example of "PRECEDE" and "SUCCEED" for the parts in subJNW

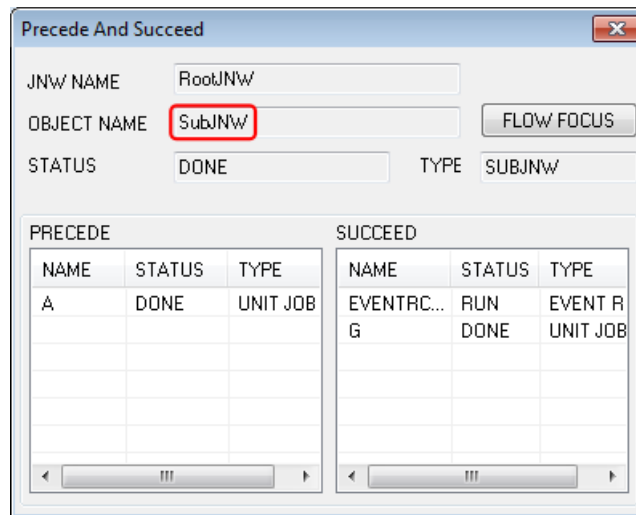


Figure 8.87. Screenshot of the [Precede And Succeed] dialog box displayed when the parent job network is double-clicked

## 8.23. Viewing the Tracker Schedule and Results

You can view the tracker schedule and results on a daily or hourly basis.

Click the [Schedule Viewing] tab of the User Frame, or select [Schedule Viewing@user name] from the combo box. If you are permitted to view other users' trackers, you can also start this function from the Manager Frame.

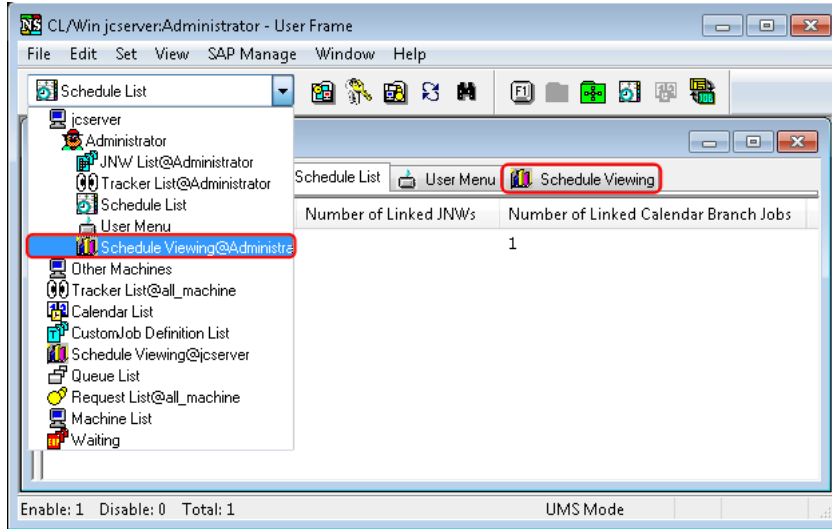


Figure 8.88. Screenshot of the [Schedule Viewing@user name] selection window

The options for viewing the tracker schedule and results are [Month Schedule Viewing], [Month Tracker Viewing], [Daily Schedule Viewing], [Daily Tracker Viewing], and [Comparison Viewing].

You can change the display method by selecting [Change Page] on the toolbar or selecting [View] and then [Change Page] on the menu bar.

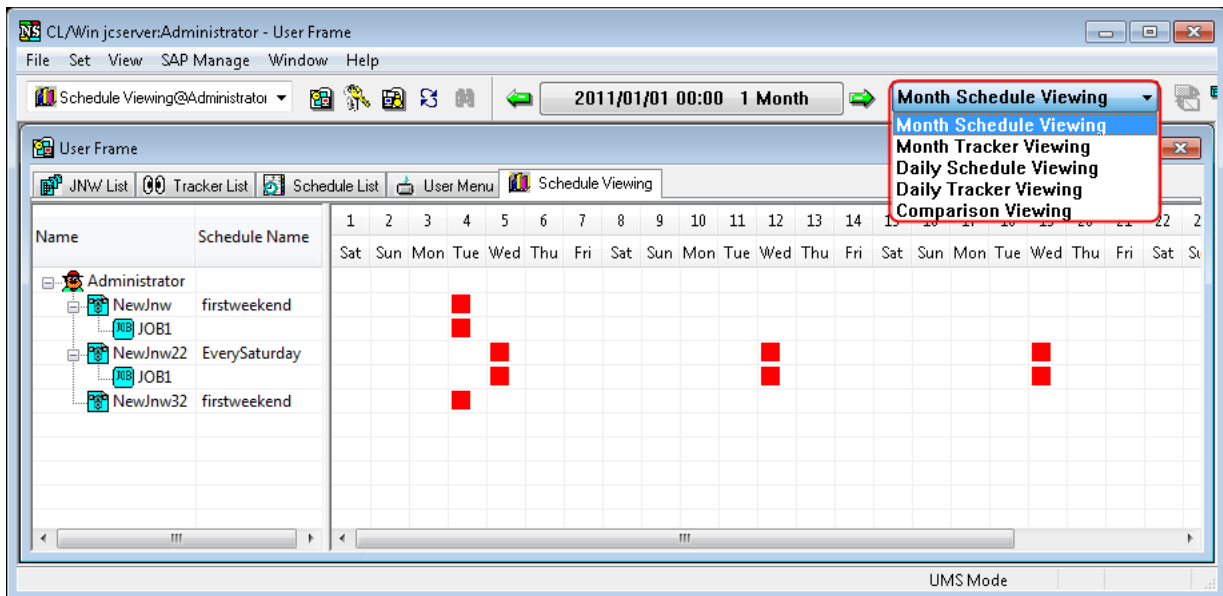


Figure 8.89. Screenshot of the [Change Page] window for changing the schedule viewing

## 8.23.1. Month Schedule Viewing

A monthly schedule is displayed on a daily basis with regard to the unit jobs and sub job networks of the trackers in the "WAIT" and "PREPARE" states.

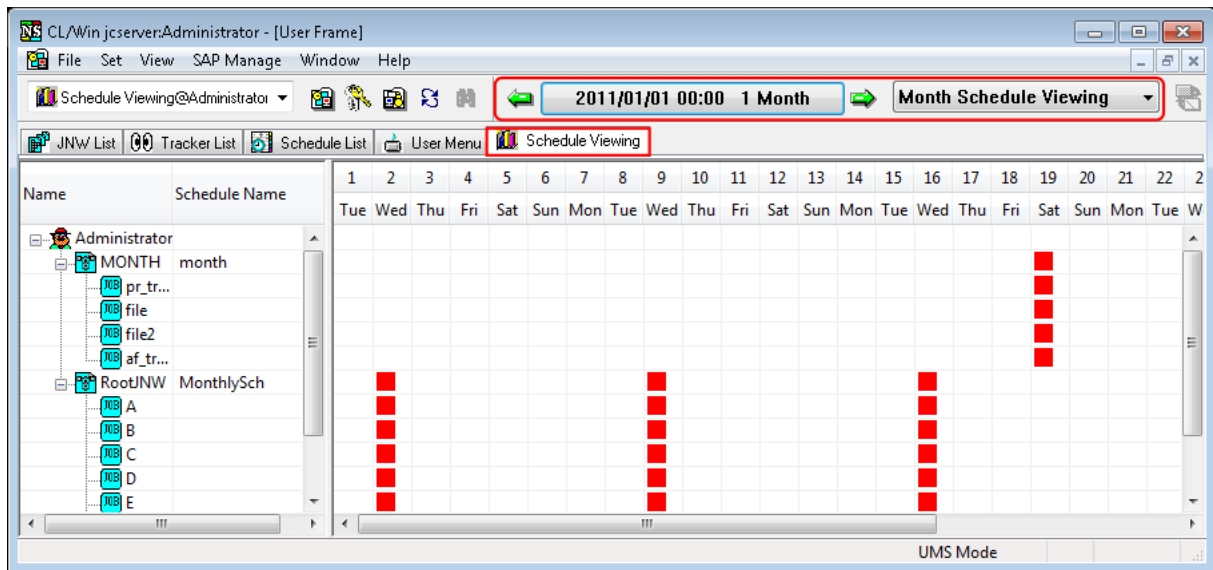


Figure 8.90. Screenshot of Month Schedule Viewing

### ■ Left view

The [Name] field displays the tree structure of the job networks that a user has in a hierarchical fashion. As the parts in a job network, only unit jobs and sub job networks are displayed. This tree structure can be expanded and folded, and the right view cells move accordingly.

Double-clicking a job network name, unit job name, or sub job network name opens the [Tracker Selection] dialog box. For information about [Tracker Selection] Dialog, refer to [Section 8.23.1.2, "Tracker Selection Dialog"](#).

The [Schedule Name] field displays the related schedule names. Nothing is displayed if there is no related schedule. Next to a job network name is the schedule name for which that job network is set as the related schedule. Next to a sub job network name or unit job name is the schedule name used as the calendar branch part immediately before the part in question on the job network flow. Note that, in the case of a tracker in the "PREPARE" state, the schedule name is enclosed within parentheses.


The comment specified for the job network is displayed in the "COMMENT" field.

### ■ Right view

The right view displays the monthly schedule for the job networks shown in the left view, as well as their unit jobs and sub job networks. The schedule information is provided on a daily basis, with [■] shown on each day for which a schedule is set. The display period can be set using the [Period setting] dialog box. For information about how to set the display period, refer to [Section 8.7, "Displaying the Tracker List with a Period Specified"](#).

### 8.23.1.1. Filtering on the Month Schedule Viewing window

The [Schedule Viewing Filter Setting] dialog box lets you filter the displayed data by specifying a user name, job network name, and unit job name.

1. With the [Month Schedule Viewing] window displayed, click the [Filter Setting] button . Alternatively, on the menu bar, select [View] and then click [Filter Setting].

2. [Schedule Viewing Filter Setting] dialog box opens.

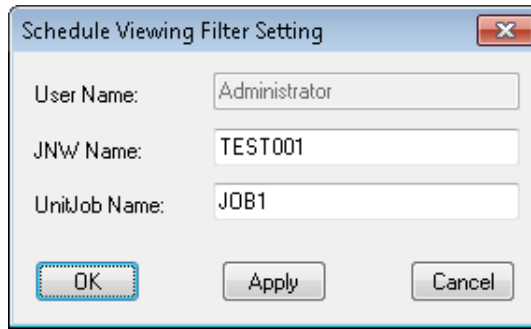


Figure 8.91. Screenshot of the [Schedule Viewing Filter Setting] dialog box

3. Clicking the [OK] button filters the displayed data.

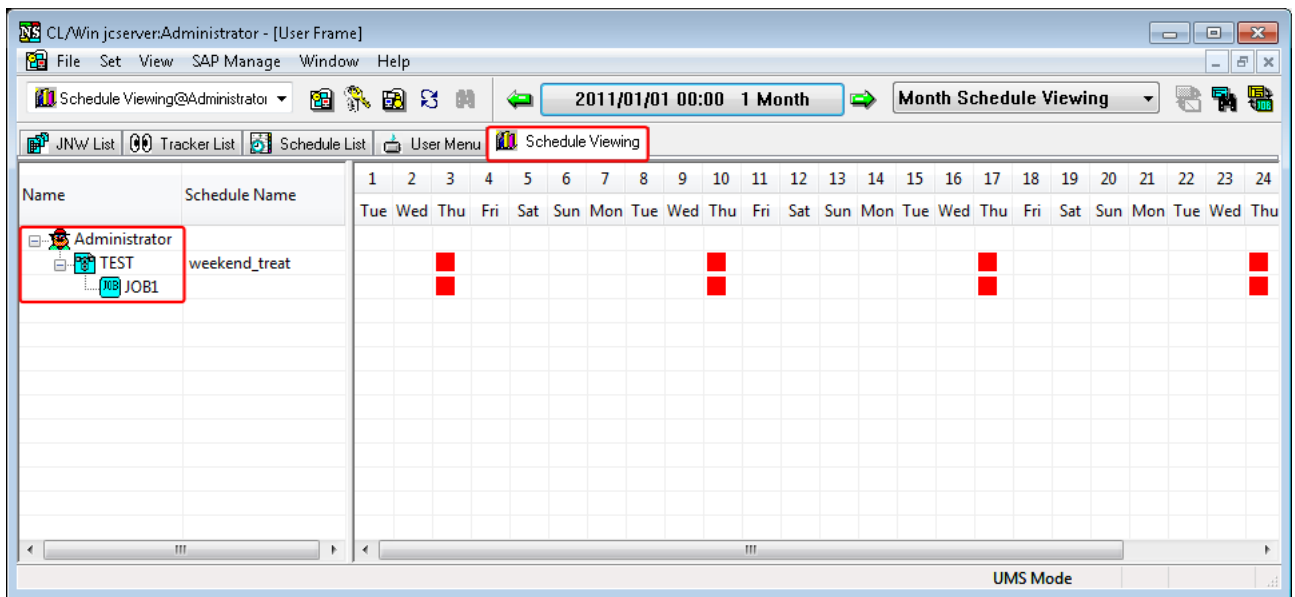


Figure 8.92. Screenshot of the Month Schedule Viewing window showing the filtering results

Configuration items in the [Schedule Viewing Filter Setting] dialog box are as follows:

- **User Name**  
Specify the user of the tracker to be displayed.
- **JNW name**  
Specify the job network of the tracker to be displayed.
- **UnitJob Name**  
Specify the unit job to be displayed.

An asterisk can be specified as the suffix.



## 8.23.1.2. Tracker Selection Dialog

1. If you double-click a job network name, unit job name, or sub job network name in the Name field when the [Month Schedule Viewing] window is open, the [Tracker Selection Dialog] window opens.

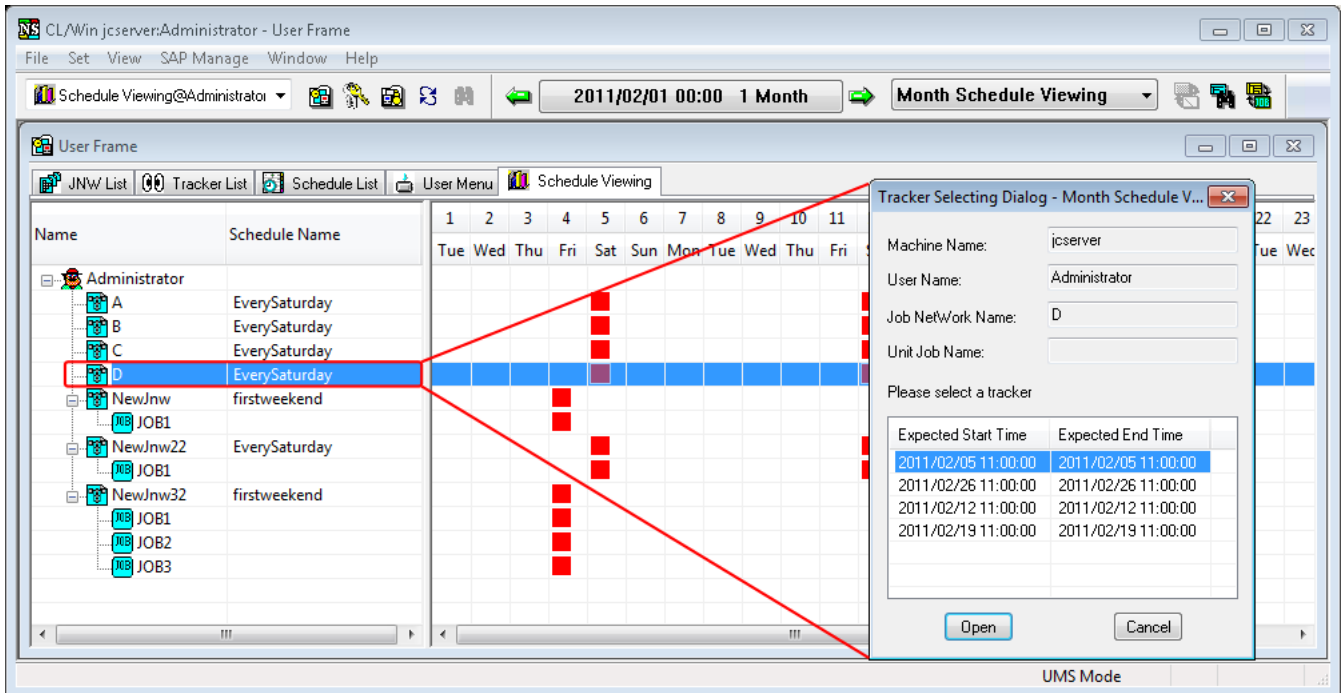


Figure 8.93. Screenshot of the [Tracker Selection Dialog] window

2. After configuration, click [Open].

The tracker flow of the job network to which the selected job network or unit job belongs is displayed. When a unit job is selected, the focus is moved to it.

The [Tracker Selection Dialog] window is organized as follows:

- Machine Name

Displays the machine name of the selected unit job or job network.

- User Name

Displays the user name of the selected unit job or job network.

- JNW name

Displays the name of the job network to which the selected unit job or job network belongs.

- Unit Job Name

Displays the name of the selected unit job or job network. This item is not displayed when you opened the window by double-clicking a job network name.

- Tracker List (Please select a tracker)

Displays the Tracker List of the selected unit job or job network. Select the tracker you want to view.

## 8.23.2. Month Tracker Viewing

The execution status of a monthly schedule is displayed on a daily basis with regard to the unit jobs and sub job networks of the trackers in the "END" state. Archived trackers are also displayed.

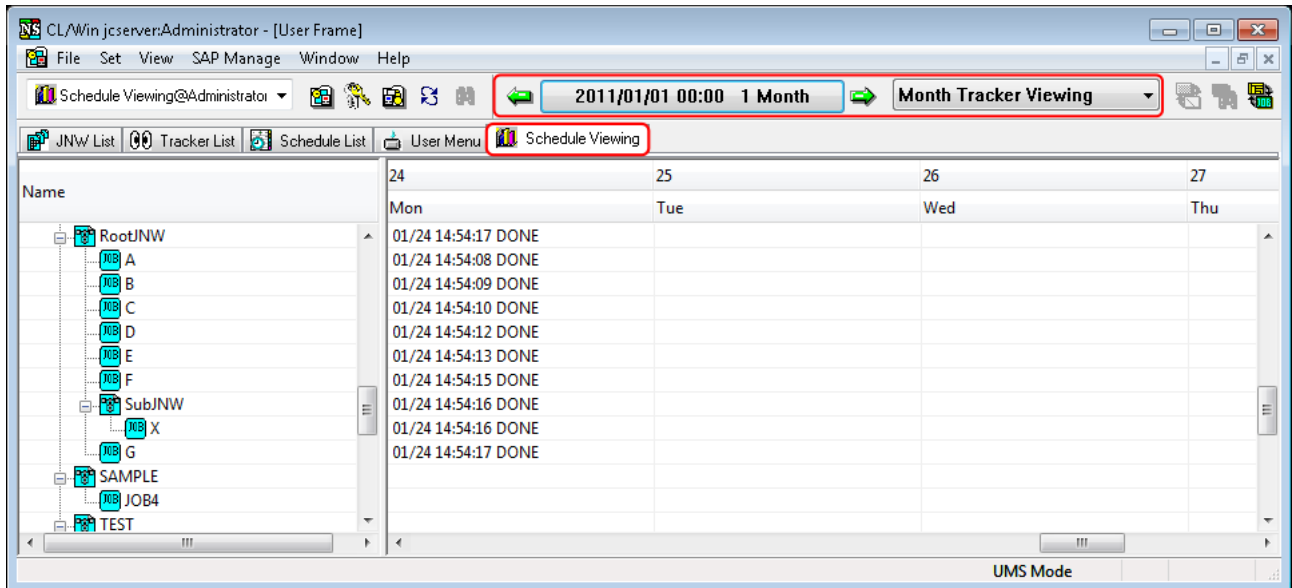


Figure 8.94. Screenshot of the Month Tracker Viewing window

### ■ Left view

The tree structure of the job networks that a user has is displayed in a hierarchical fashion. As the parts in a job network, only unit jobs and sub job networks are displayed. This tree structure can be expanded and folded, and the right view cells move accordingly.

Double-clicking a job network name, unit job name, or sub job network name opens the [Tracker Selection] Dialog.

### ■ Right view

The right view displays the execution status of the monthly schedule for the job networks shown in the left view, as well as their unit jobs and sub job networks. The schedule information is provided on a daily basis, with each cell showing the end time and status of a tracker.

The display period can be set using the [Period setting] dialog box. For information about how to set the display period, refer to [Section 8.7, "Displaying the Tracker List with a Period Specified"](#).

## 8.23.3. Daily Schedule Viewing

A daily schedule is displayed on an hourly basis with regard to the unit jobs and sub job networks of the trackers in the "WAIT" and "PREPARE" states.

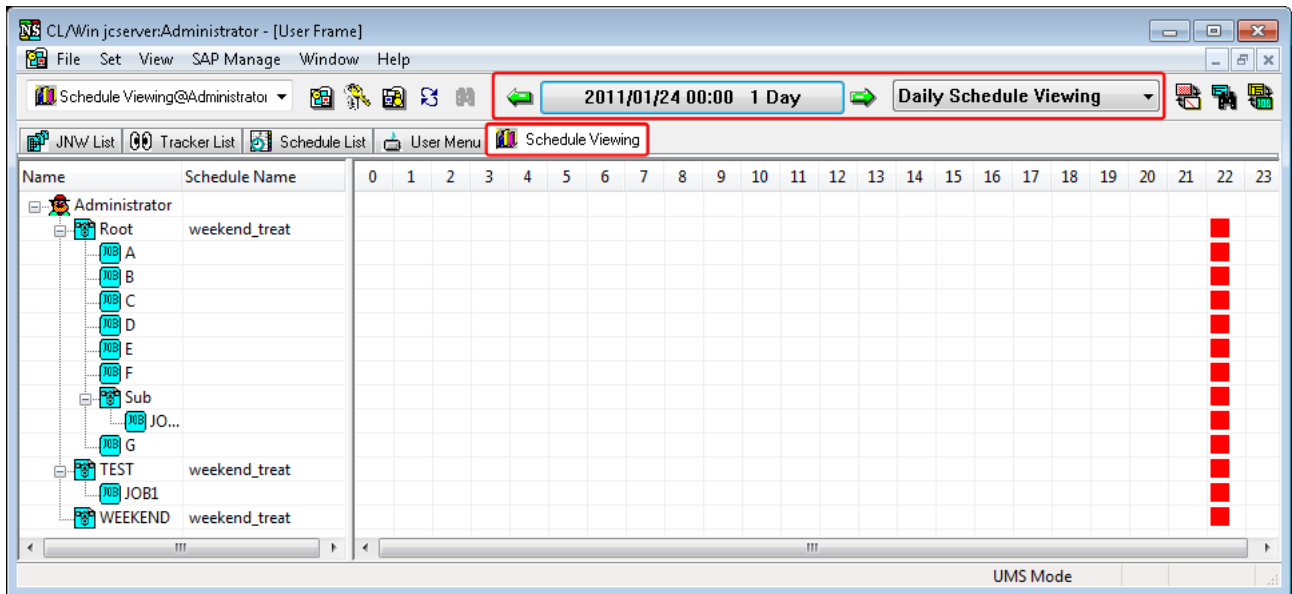


Figure 8.95. Screenshot of the Daily Schedule Viewing window

#### ■ Left view

The [Name] field displays the tree structure of the job networks that a user has in a hierarchical fashion. As the parts in a job network, only unit jobs and sub job networks are displayed. This tree structure can be expanded and folded, and the right view cells move accordingly.

Double-clicking a job network name, unit job name, or sub job network name opens the [Tracker Selection] dialog box.

The [Schedule Name] field displays the related schedule names. Nothing is displayed if there is no related schedule. Next to a job network name is the schedule name for which that job network is set as the related schedule. Next to a sub job network name or unit job name is the schedule name used as the calendar branch part immediately before the part in question on the job network flow. Note that, in the case of a tracker in the "PREPARE" state, the schedule name is enclosed within parentheses.

The comment specified for the job network is displayed in the "COMMENT" field.

#### ■ Right view

The right view displays the daily schedule for the job networks shown in the left view, as well as their unit jobs and sub job networks. The schedule information is provided on an hourly basis, with [■] shown on each hour for which a schedule is set.

The display period can be set using the [Period setting] dialog box. For information about how to set the display period, refer to [Section 8.7, "Displaying the Tracker List with a Period Specified"](#).

### 8.23.4. Daily Tracker Viewing

The execution status of a daily schedule is displayed on an hourly basis with regard to the unit jobs and sub job networks of the trackers in the "END" state. Archived trackers are also displayed.

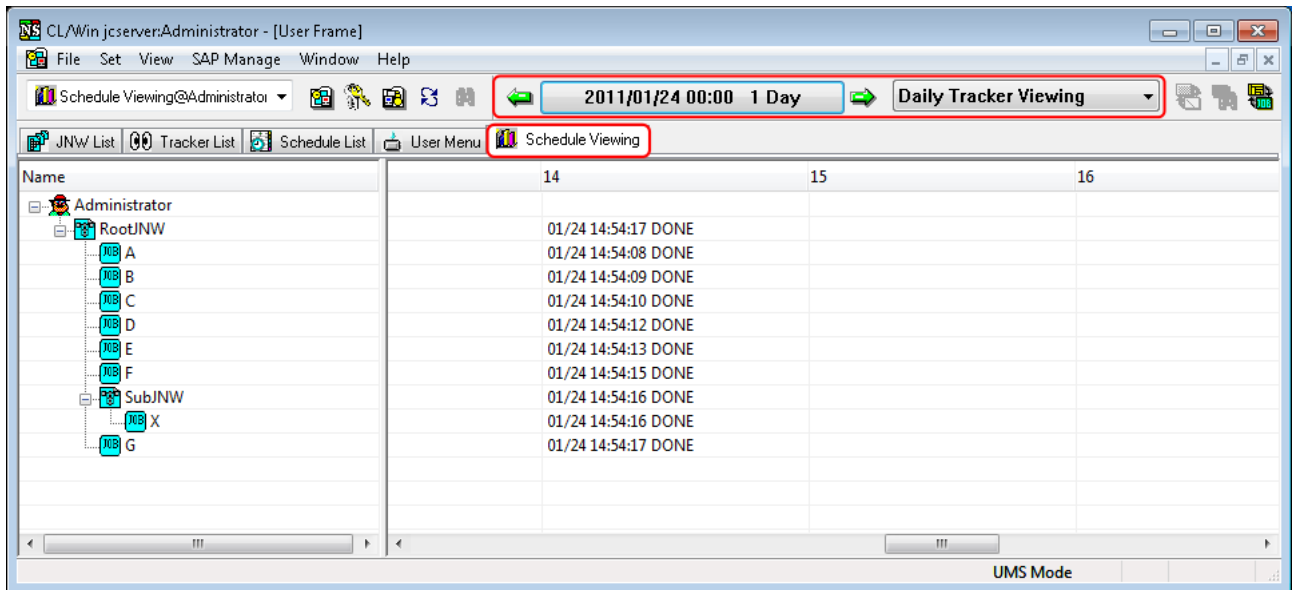


Figure 8.96. Screenshot of the Daily Tracker Viewing

#### ■ Left view

The tree structure of the job networks that a user has is displayed in a hierarchical fashion. As the parts in a job network, only unit jobs and sub job networks are displayed. This tree structure can be expanded and folded, and the right view cells move accordingly.

Double-clicking a job network name, unit job name, or sub job network name opens the [Tracker Selection] dialog box.

#### ■ Right view

The right view displays the execution status of the daily schedule for the job networks shown in the left view, as well as their unit jobs and sub job networks. The schedule information is provided on an hourly basis, with each cell showing the end time and status of a tracker.

The display period can be set using the [Period setting] dialog box. For information about how to set the display period, refer to [Section 8.7, "Displaying the Tracker List with a Period Specified"](#).

### 8.23.5. Comparison Viewing

The expected end time, end time, and status are displayed with regard to the unit jobs and sub job networks of the trackers whose expected end times are within a specified time range.

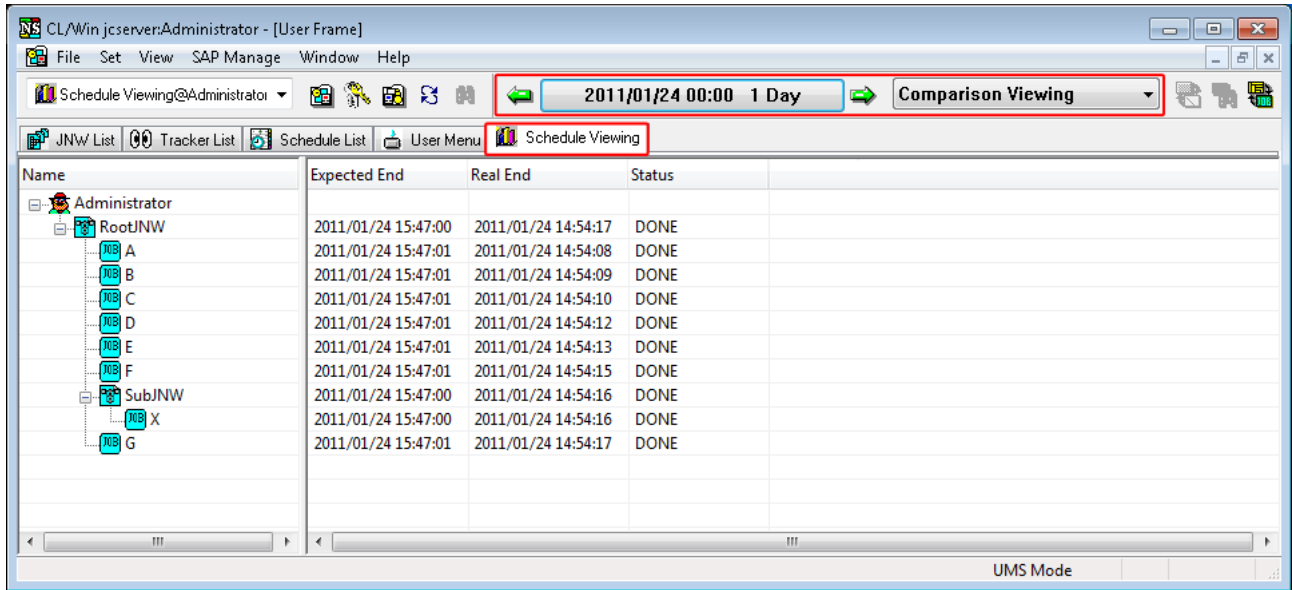


Figure 8.97. Screenshot of Comparison Viewing

#### ■ Left view

The tree structure of the job networks that a user has is displayed in a hierarchical fashion. As the parts in a job network, only unit jobs and sub job networks are displayed. This tree structure can be expanded and folded, and the right view cells move accordingly.

Double-clicking a job network name, unit job name, or sub job network name opens the [Tracker Selection] Dialog.

#### ■ Right view

The right view displays the expected end time, end time, and status of the job networks shown in the left view, as well as their unit jobs and sub job networks.

The display period can be set using the [Period setting] dialog box. For information about how to set the display period, refer to [Section 8.6, "Sorting the Tracker List by Machine"](#).

### 8.23.6. Printing the Comparison Viewing Window

Each individual schedule window and result display window can be printed or output to a file in the CSV format.

1. On the menu bar, select [File] and then click [Print].
2. [Print Setting Dialog] opens.

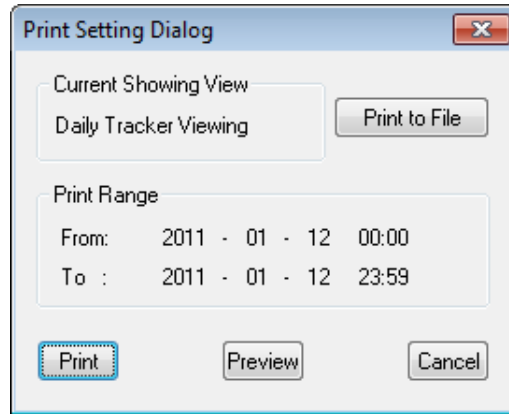


Figure 8.98. Screenshot of [Print Setting Dialog]

3. After configuration, click the [Print] or [Print to File] button.

The [Print Setting Dialog] window is organized as follows:

■ [Current Showing View]

Type of the currently displayed tracker schedule or result display window

■ [Print Range]

Display period of the right view of the schedule or result display window

To change the output range, click the [Period setting] button. For information about how to change the range, refer to [Section 8.7, "Displaying the Tracker List with a Period Specified"](#).

■ [Print to File] button

Clicking this button displays the [Save As] dialog box. Specify the location and the name of the file to which you want to save the data of the window.

The content of the currently displayed schedule or result display window is output to a file in the CSV format.

■ [Print] button

Clicking this button prints the currently displayed schedule or result display window.

■ [Preview] button

Clicking this button displays the print preview of the currently displayed schedule or result display window.

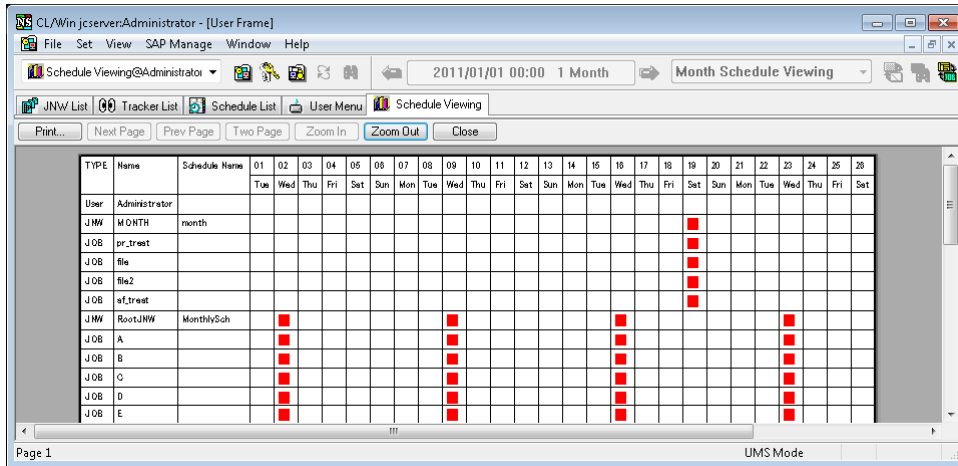


Figure 8.99. Screenshot of the print preview of the schedule or result display window

■ [Cancel] button

Clicking this button closes the [Print Setting Dialog] window.

### 8.23.6.1. Outputting a monthly schedule to a CSV file

Data is output to a CSV file in the format shown below.

Two lines of header information is output.

First line:	TYPE, Name, Schedule Name, Comment, 1, 2, 3, ..., 29, 30
Second line:	..., SUN, MON, TUE, WED, THURS, FRI, SAT, ...

The content of the header information is as follows.

■ TYPE

Indicates the type - job network (JNW), unit job (JOB), or sub job network (SubJNW).

■ Name

Displays the job name.

The name is displayed with each element concatenated by a colon, beginning with the top level, as in "machine-name:user-name:job-network-name:..."

■ Comment

Displays the comment specified for the job network.

■ 1 to 30, Sun to Sat

The numbers on the first line represent the days of the month, and characters on the second line the days of the week. They correspond to each other on a one-to-one basis.

When the display start day is set to other than the first day of the month, the information for the set day to the last day of the month is output, followed by the information for the first and succeeding days of the next month.

For example, when the display start day is set to 9/20, the information is output as follows.

20,21, ..., 29,30, 1,2,3, ..., 18,19

Data is displayed with an asterisk shown on each day for which a schedule is set.

Nothing is output when there is no schedule.

Some data output examples are given below.

```
JNW,jchp1:administrator:JNW1,SCH1,comment,,*,*,...
JOB,jchp1:administrator:JNW1:JOB1,,,,*,*,...
```

### 8.23.6.2. Outputting monthly tracker results to a CSV file

Data is output to a CSV file in the format shown below.

Two lines of header information are output.

```
First line: TYPE, Name, 1, 2, 3, ..., 29, 30
Second    ..., SUN, MON, TUE, WED, THURS, FRI, SAT, ...
line:
```

The content of the header information is as follows.

#### ■ TYPE

Indicates the type: job network (JNW), unit job (JOB), or sub job network (SubJNW).

#### ■ Name

Displays the job name.

The name is displayed with each element delimited by a colon, beginning with the top level, as in "machine-name:user-name:job-network-name:..."

#### ■ 1 to 30, Sun to Sat

The numbers on the first line represent the days of the month, and the characters on the second line the days of the week. They correspond to each other on a one-to-one basis.

When the display start day is set to other than the first day of the month, the information for the set day to the last day of the month is output, followed by the information for the first and succeeding days of the next month.

For example, when the display start day is set to 9/20, the information is output as follows.

```
20,21,...,29,30,1,2,3,...,18,19
```

Data is displayed in the format of "End Time (MM/DD hh:mm:ss) status" for each day with a result.

Nothing is output when there are no results.

Some data output examples are given below.

```
JNW,jchp1:administrator:JNW1,,09/02 13:00:10 Normal end,09/03 13:01:25 Normal end,...,,09/02
14:00:10 Normal end,09/03 14:01:15 Normal end, ...
JOB,jchp1:administrator:JNW:JOB1,,09/02 13:00:02 Normal end,09/03 13:01:15 Normal end,...,,09/02
14:00:01 Normal end,09/03 14:01:05 Normal end,...
```

### 8.23.6.3. Outputting a daily schedule to a CSV file

One line of header information is output.



```
First line: TYPE, Name, Schedule Name, Comment, 0, 1, 2, 3, ..., 22, 23
```

The content of the header information is as follows.

■ TYPE

Indicates the type: job network (JNW), unit job (JOB), or sub job network (SubJNW).

■ Name

Displays the job name.

The name is displayed with each element concatenated by a colon, beginning with the top level, as in "machine-name:user-name:job-network-name:..."

■ Comment

Displays the comment specified for the job network.

■ 0 to 23

Indicates the hour.

When the display start hour is set to other than 0 o'clock of the day, the information for the set hour to 23 o'clock of the day is output, followed by the information for 0 o'clock and succeeding hours of the next day.

For example, when the display start day is set to 18 o'clock, the information is output as follows.

```
18,19,...,22,23,0,1,2,...,16,17
```

Data is displayed with an asterisk shown on each hour for which a schedule is set.

Nothing is output when there is no schedule.

Some data output examples are given below.

```
JNW,jchp1:administrator:JNW1,SCH1,comment,,*,*, ...
```

#### 8.23.6.4. Outputting daily tracker results to a CSV file

One line of header information is output.

```
First line: TYPE, Name, 1, 2, 3, ..., 22, 23
```

The content of the header information is as follows.

■ TYPE

Indicates the type: job network (JNW), unit job (JOB), or sub job network (SubJNW).

■ Name

Displays the job name.

The name is displayed with each element delimited by a colon, beginning with the top level, as in "machine-name:user-name:job-network-name:..."

■ 0 to 23

Indicates the hour.

When the display start hour is set to other than 0:00 hours, the information for the set hour up to 23:00 hours is output, followed by the information for 0:00 hours and the succeeding hours of the next day.

For example, when the display start day is set to 18:00, the information is output as follows.

```
18,19,...,22,23,0,1,2,...,16,17
```

Data is displayed in the format of "End Time (MM/DD hh:mm:ss) status" for each hour with a result.

Nothing is output when there are no results.

Some data output examples are given below.

```
JNW,jchp1:administrator:JNW1,,09/21 01:00:40 Normal end,...,09/21 14:20:15 Abnormal end,,
```

### 8.23.6.5. Outputting a Comparison Viewing to a CSV file

One line of header information is output.

TYPE, Name, Expected End, Real End, Status

#### ■TYPE

Indicates the type: job network (JNW), unit job (JOB), or sub job network (SubJNW).

#### ■Name

Displays the job name.

The name is displayed with each element concatenated by a colon, beginning with the top level, as in "machine-name:user-name:job-network-name:..." When there is no schedule or result, this field is blank in either format.

#### ■Expected End, Real End

Indicates the expected end time and actual end time.

The display format is YYYY/MM/DD hh:mm:ss.

#### ■Status

Indicates the end status.

Some data output examples are given below.

```
JNW,jchp1:administrator:JNW1,2005/07/10 12:10:42,2005/07/10 12:10:50,Normal end
JOB,jchp1:administrator:JNW1:JOB1,2005/07/10 12:10:20,2005/07/10 12:10:24,Normal end
SubJNW,jchp1:administrator:JNW1:JNW2,2005/07/10 12:10:38,2005/07/10 12:10:45,Normal end
```

When the same job network is executed more than once, "TYPE" and "Name" are omitted in the second and subsequent outputs. If "TYPE" and "Name" are omitted, it means that the items are the same as those of the last output data.

---

## 9 Tracker Archive Offline Reference Function

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The tracker archive online reference function allows you to reference tracker archive information by downloading the information without connecting to JobCenter MG/SV.

The tracker archive offline reference function has the following merits:

- There is no need to connect JobCenter MG/SV, and thus no load on JobCenter MG/SV.
- Even expired archive files can be referenced if they are downloaded.

This function uses the functions described below.

- [Downloading Tracker Archive Information](#)
- [Referring to Tracker Archive Files](#)

## 9.1. Downloading Tracker Archive Information

---

This section describes how to download tracker archive information. You can download this information in the following two ways.

- Download tracker archive information using the Helper function of JobCenter CL/Win.

For details of the Helper function, refer to [Section 12.1.3, “Downloading Tracker Archive Information”](#).

- Download tracker archive information using the `jdh_trkget` command of JobCenter MG/SV.

For details of the `jdh_trkget` command, refer to in <Command Reference>Section 3.16, “`jdh_trkget` (Getting Tracker Information)”.



The `jdh_trkget` command gets unarchived tracker information and tracker archive files. The tracker archive viewer allows you to view only tracker archive files.

## 9.2. Referring to Tracker Archive Files

### 9.2.1. List of Tracker Archives

From the Windows Start menu, click [JobCenter], [CL XX.YY], and then [Tracker Archive Viewer] to open the screen.



XX.YY represents the version number.

On the [File] menu, click [Open] to specify the JPF file downloaded in [Section 9.1, "Downloading Tracker Archive Information"](#). The Tracker list screen then opens.

Name	Status	Comment	Expected Start Time	Expected End Time	Start Time	End Time
backup_treatment	DONE(ERROR)AR...		2013/12/09 14:25:01	2013/12/09 14:25:01	2013/12/09 14:25:01	2013/12/09 14:25:04
daily_treatment	DONE[ARCHIVED]		2013/12/09 14:26:09	2013/12/09 14:26:09	2013/12/09 14:26:10	2013/12/09 14:26:10
monthly_treatment	DONE[ARCHIVED]		2013/12/09 14:27:52	2013/12/09 14:27:52	2013/12/09 14:27:52	2013/12/09 14:27:52
weekly_treatment	DONE[ARCHIVED]		2013/12/09 14:28:08	2013/12/09 14:28:08	2013/12/09 14:28:09	2013/12/09 14:28:09

WAIT: 0 RUN: 0 DONE: 3 DONE(ERROR): 1 STOP: 0 Total: 4 NUM

Figure 9.1. Screenshot of the tracker list



On the Tracker archive viewer, the setting cannot be changed and is fixed as follows:

- The displayed time zone is the same as the OS time zone.
- Job network trackers and job trackers are displayed in default colors.

To search for a tracker, click [View], click [Tracker Search] to open the [Tracker archive filter setting] dialog box, and then search the tracker by using the following fields:

- User name
- Job network name

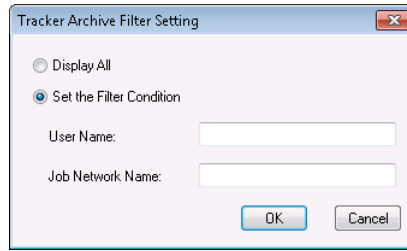


Figure 9.2. Screenshot of the tracker archive filter setting dialog box



The tracker list on the Tracker archive viewer has the same layout as the JobCenter CL/Win tracker list, only supports the following functions:

- Text mode for Graphic/Text mode
- Time display for Tree/Time display

### 9.2.2. Checking the Tracker Flow on Tracker Archive

In the tracker list, double-click a tracker to show the tracker flow.

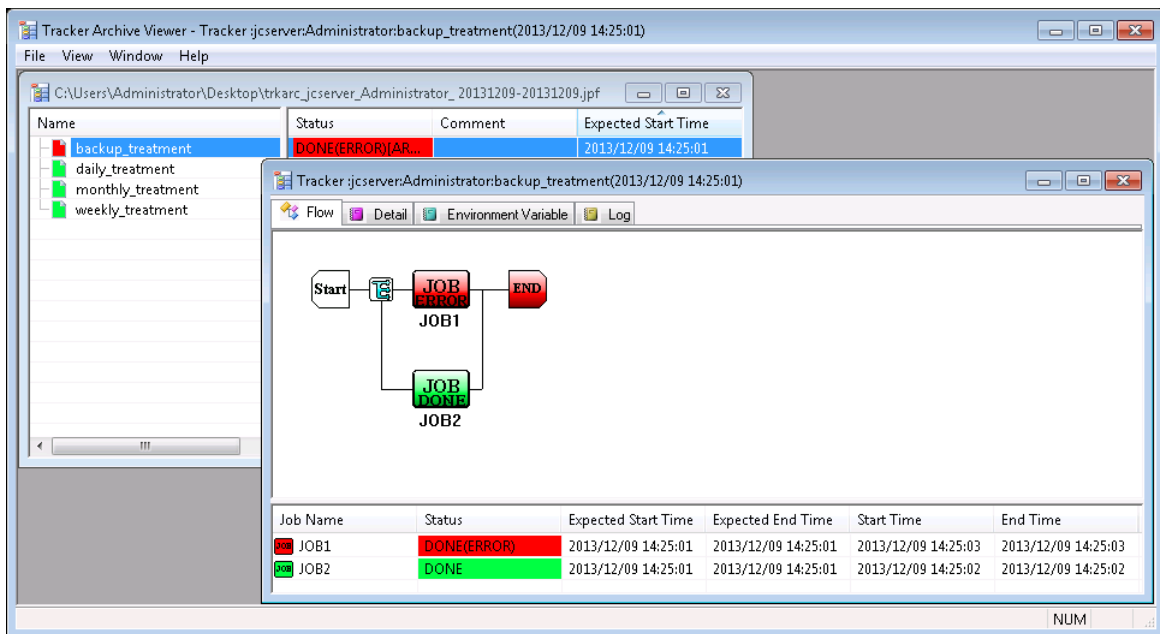


Figure 9.3. Screenshot of the Tracker flow screen

### 9.2.3. Checking the Job Details on the Tracker Archive

On the Tracker flow screen, double-click a job to open it.

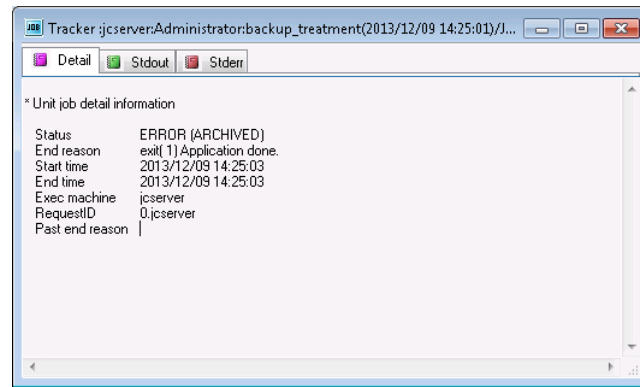


Figure 9.4. Screenshot that shows job details



The Job details screen only supports unit jobs, custom jobs and extended custom jobs.

Standard output, standard error output, log information, and environment variable information are displayed only if these data exist.

# 10 Usage of Network Queuing System (NQS)

The Network Queuing System (NQS) accumulates requests received by JobCenter in queues and executes the jobs sequentially according to the priorities of the individual queues. JobCenter uses the extended batch processing of the NQS.

The NQS uses two types of queues to perform batch processing.

Attributes such as the number of jobs that can be executed simultaneously, users permitted to submit jobs, resource limitations, and queue priorities can be defined for each queue, making it possible to have the network load distributed automatically.

Queues that are routinely used are created by default.

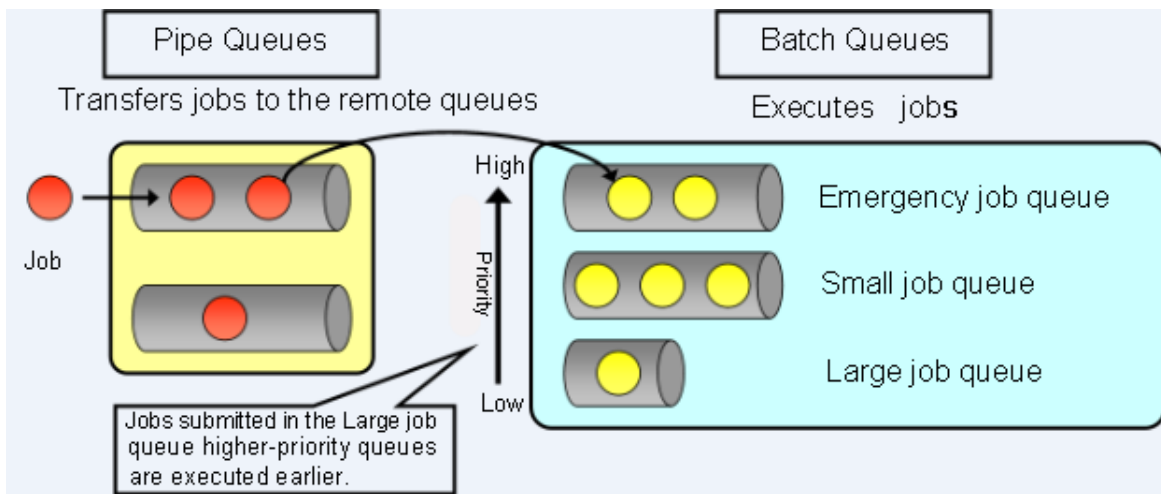


Figure 10.1. Image of batch processing



After changing the account password in Windows, check the status of the password on the [User] screen in [Server Environment Setting]. If the status of the displayed user password is not [OK], specify a new password as that user by using CL/Win and connect to MG/SV again or register a new password on the [User] screen to change the status to [OK]. If you try to execute a job request when the password status is not [OK], the batch queue stops due to authentication failure, making it impossible to execute jobs. (Although it is not necessary to specify a new password in UNIX, always ensure that the OS account is valid.)



## 10.1. Adding a Machine to Machine List

Building the environment of the JobCenter network enables multiple machines on the network to be managed in a centralized manner and makes it possible to operate queues and requests and monitor their status.

Jobs are transferred using pipe queues. Therefore, after defining the machine ID of another machine on the network to which to transfer jobs, you need to link the job submission user with the job execution user. This is called user mapping. For user mapping, it is necessary to add the machine to the machine list.

This section describes how to add a machine to the machine list and delete one from the list using the Standard Remote Machine Configuration method. For details about how to set up a machine and about the machine group configuration, refer to in <Environment Guide>Chapter 3, 「Building the JobCenter Network Environment」.



- On the Machine List tab, two machine icons labeled with the host name only and as "FQDN" might be displayed for one machine. This is because, during setup or when a machine recognized by FQDN is added to a machine group, an alias that has only a host name is automatically added for that machine.

An alias can be deleted by using the `nmapmgr` command instead of CL/Win. For how to delete an alias, refer to the description of `Delete name $alias` in in <Command Reference>Section 3.12, "nmapmgr (Managing the Network Configuration)".

- To change the host name or cluster site name for the machine icon (other machine) added to the machine list, delete that machine from the machine list in advance and add that machine to the machine list again after change. Then, set the user mapping and the job network submission destination queue again, and review the transfer destination setting of pipe queue.

You do not have to change the machine list setting when changing the IP address only.

### 10.1.1. Adding a Machine to Machine List

1. Log in with a manager account (UMS Mode), and display [Machine List] of Manager Frame.
2. Select [New] from the shortcut menu which appears by right-clicking in the [Machine List] window. Alternatively, on the menu bar, select [File] and then click [New].

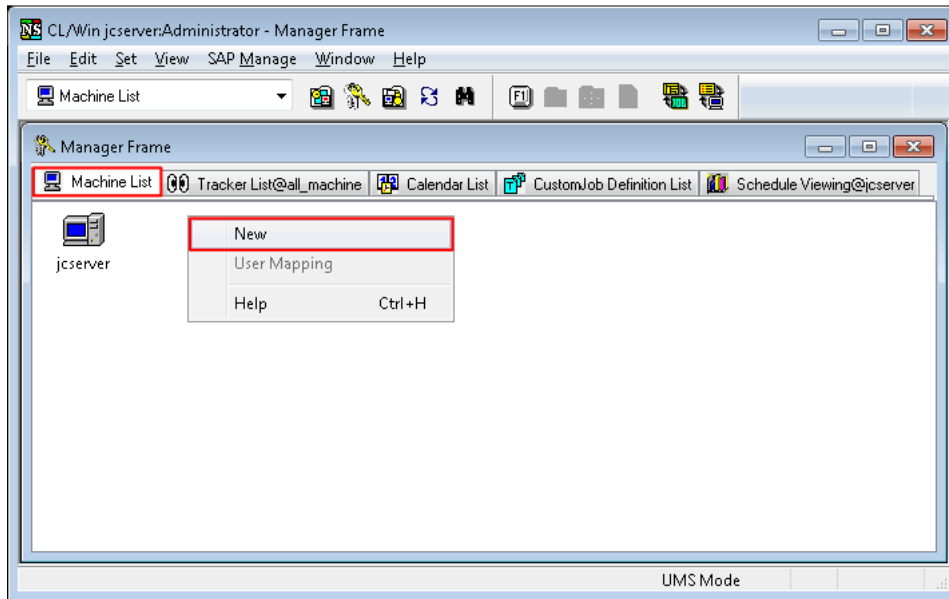


Figure 10.2. Screenshot of the window for adding a machine to the machine list (Standard Remote Machine Configuration method)

3. The [Add new machine] dialog box opens. Enter a name of the machine to be added.

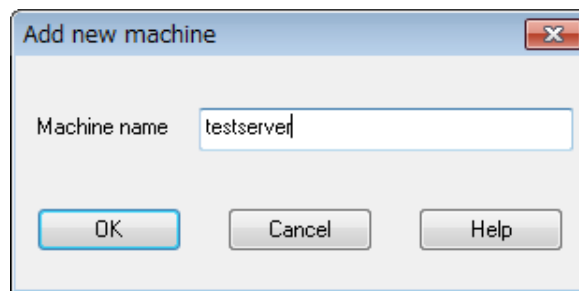


Figure 10.3. Screenshot of [Add new machine] dialog box

4. After configuration, click [OK].

5. The added machine appears on the [Machine List] of the Manager Frame window.

6. Right-click the machine for which you want to set user mapping and select [User Mapping] from the shortcut menu.

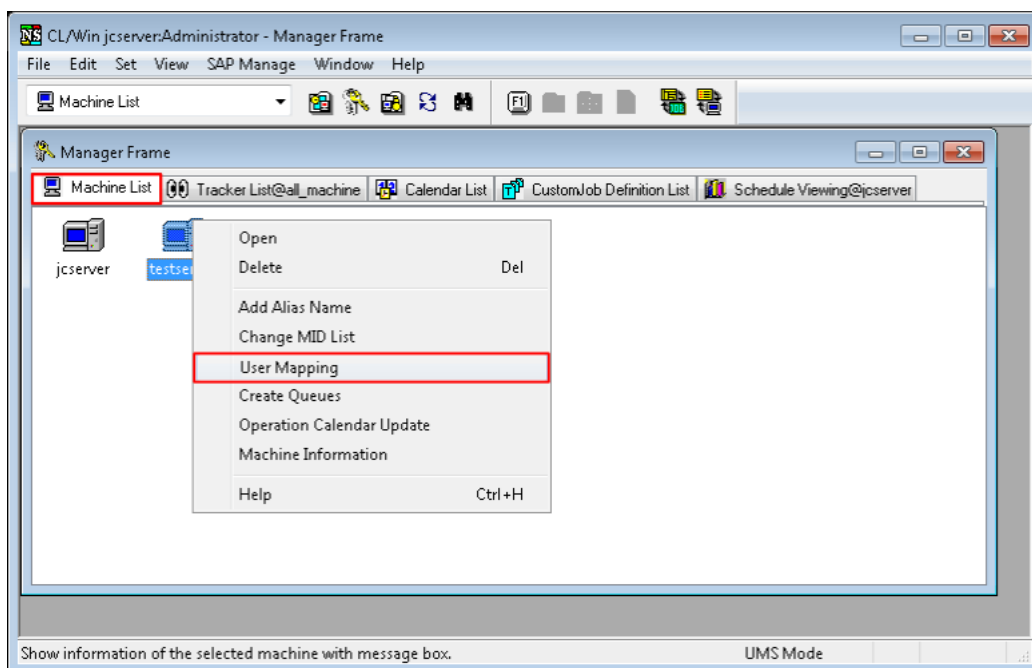


Figure 10.4. Screenshot of the window for setting User Mapping (Standard Remote Machine Configuration method)

7. The [User Mapping Setting] dialog box appears. Select the machine and user of the source machine and the machine and user of the destination machine from the respective lists.

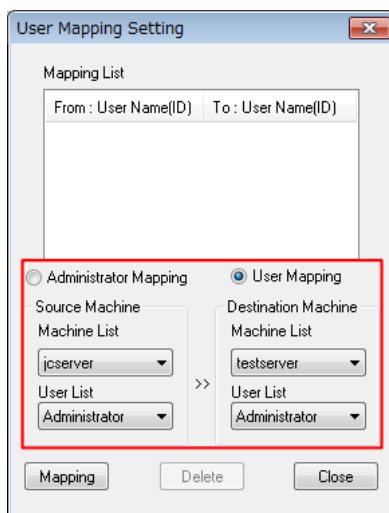


Figure 10.5. Screenshot of the [User Mapping Setting] dialog box



If the destination machine is Windows, only the users registered in the Windows version of JobCenter MG or SV or those who have connected with CL/Win are displayed in the user list. For details on user registration, refer to in <Environment Guide>Section 12.4, "Setting Up a User".

If the destination machine is UNIX, all users registered with the OS are displayed.

8. After configuration, click the [Mapping] button to finish the process of adding the machine to the machine list.

### 10.1.2. Deleting a Machine from Machine List

1. Display the [Machine List] window, as when adding a machine.
2. Right-click the machine to be deleted and select [Delete] from the shortcut menu, or on the menu bar, select [File] and then click [Delete].

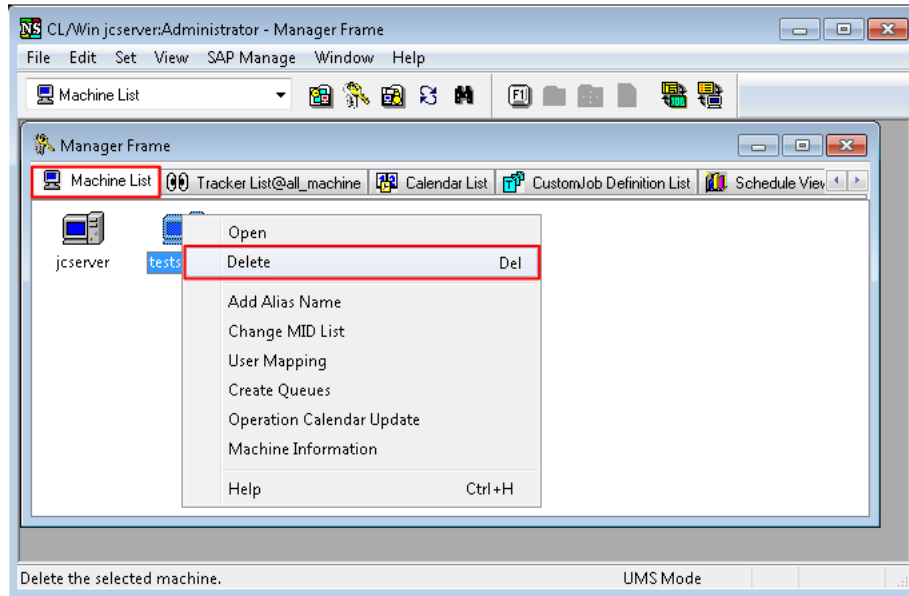


Figure 10.6. Screenshot of the window for deleting a machine (Standard Remote Machine Configuration method)

3. The machine is deleted from the [Machine List] window. When the machine is deleted, all its aliases are deleted at the same time.

### 10.1.3. Switching between view formats on Machine List Screen

The machine list screen can be displayed in two formats: icon view and detailed view. In the detailed view, machines can be sorted by item.

To switch the view format on the machine list screen, use the icon on the toolbar or select [Detailed] or [Icon] from [View] on the menu bar.

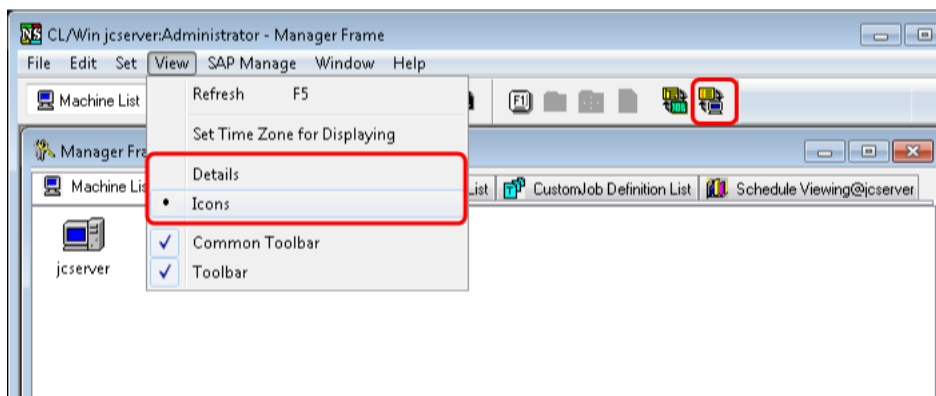


Figure 10.7. Toolbar icon and [View] menu on the menu bar

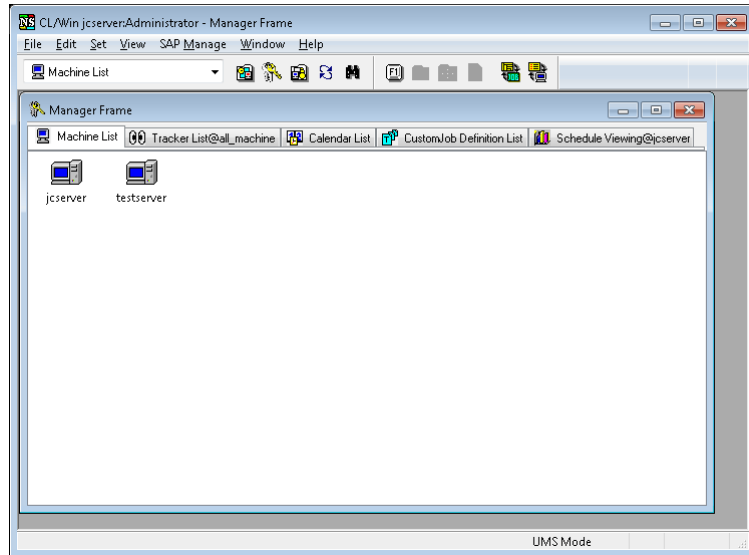


Figure 10.8. Screenshot of machine list in the icon view format

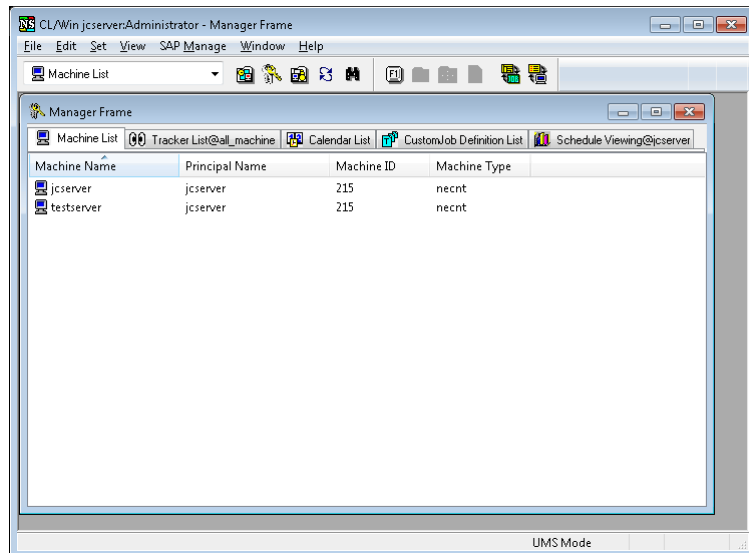


Figure 10.9. Screenshot of machine list in the detailed view format

## 10.2. Queues the JobCenter Creates by Default

During installation of JobCenter, the queues shown in [Figure 10.10, “Queues created by default”](#) and [Table 10.1, “List of initial values which queues created by default have”](#) are automatically created by default.



As of R12.8, queues are automatically created in a cluster site by default even if cjcmsite is used to create the cluster site in a cluster configuration.

Queue Name	Type	Submission	Execution	Run Limit	Total	Queued	Running	Waiting	Holding
guibs_1	BATCH	ENABLE	START	1	0	0	0	0	0
guitp_1	PIPE	ENABLE	START	10	0	0	0	0	0
guilb_def	PIPE	ENABLE	START	6	0	0	0	0	0
guinw	PIPE	ENABLE	START	5	0	0	0	0	0
batch01	BATCH	ENABLE	START	1	0	0	0	0	0

Figure 10.10. Queues created by default

Table 10.1. List of initial values which queues created by default have

Queue Name	Attribute	Function	Initial Values
guibs_1	Load Distribution Batch Queue	Accepts and executes job requests from the load distribution pipe queue in the demand delivery method.	Priority = 10 Multiplicity = 1
guinw	Pipe Queue	Free transfer queue that transfers job requests to other machines. (If a queue on a remote machine is directly specified as the submission destination, job requests are implicitly transferred via this queue.)	Priority = 10 Multiplicity = 5
guitp_1	Transparent Pipe Queue	Transfers jobs to the local batch queue at high speed and with a low load.	Priority = 10 Multiplicity = 10 Destination = guibs_1
guilb_def	Load Distribution Batch Queue	Pipe queue that is effective for load balancing. This is specified as the initial submission destination queue by default.	Priority = 10 Multiplicity = 6 Destination = guitp_1
DefaultNetQue (UNIX version only)	Network queue	Used to return a job request execution result. This queue can be referenced and controlled only by using qmgr. (The queue cannot be displayed by CL/Win. Note that the unit job status remains RUN if this queue is stopped.)	Multiplicity = 1000

When using the default setting, when a job network is executed, the request is submitted and transferred through the queues `guilb_def`, `guitp_1`, and then `guibs_1`.



Because the multiplicity for the batch queue `guibs_1` is 1 by default, multiple job requests are not executed at the same time but processed one by one. That is, the job request submitted afterward must wait for execution.

Change the multiplicity for `guibs_1` to 2 or more as needed.

## 10.3. Creating a Batch Queue

1. In the NQS Frame window, select the machine icon.
2. On the menu bar, select [File], [New], and then click [Batch Queue]. Alternatively, right-click the machine or a queue, and then select [New] from the shortcut menu, and then click [Batch Queue].

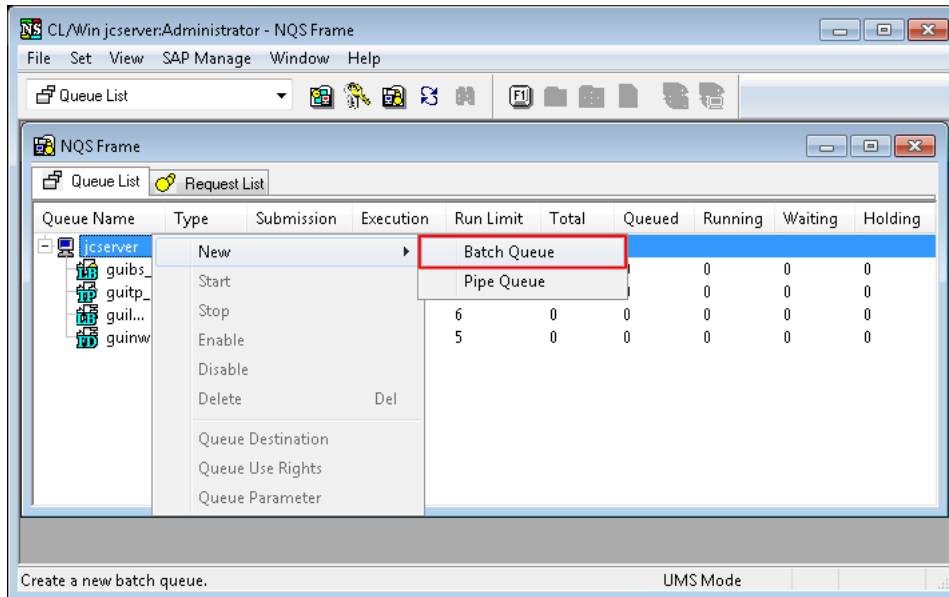


Figure 10.11. Creating a new batch queue

3. The [Create batch queue] dialog box opens. Enter the queue name.

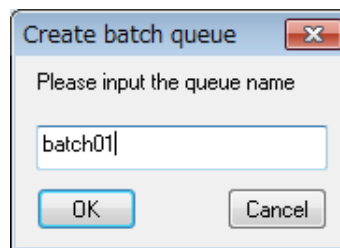


Figure 10.12. Create batch queue dialog box

4. After configuration, click [OK]. The created batch queue is added.



## 10.4. Setting Parameters of a Batch Queue

1. Right-click a batch queue to be configured, and select [Queue Parameter] from the shortcut menu.

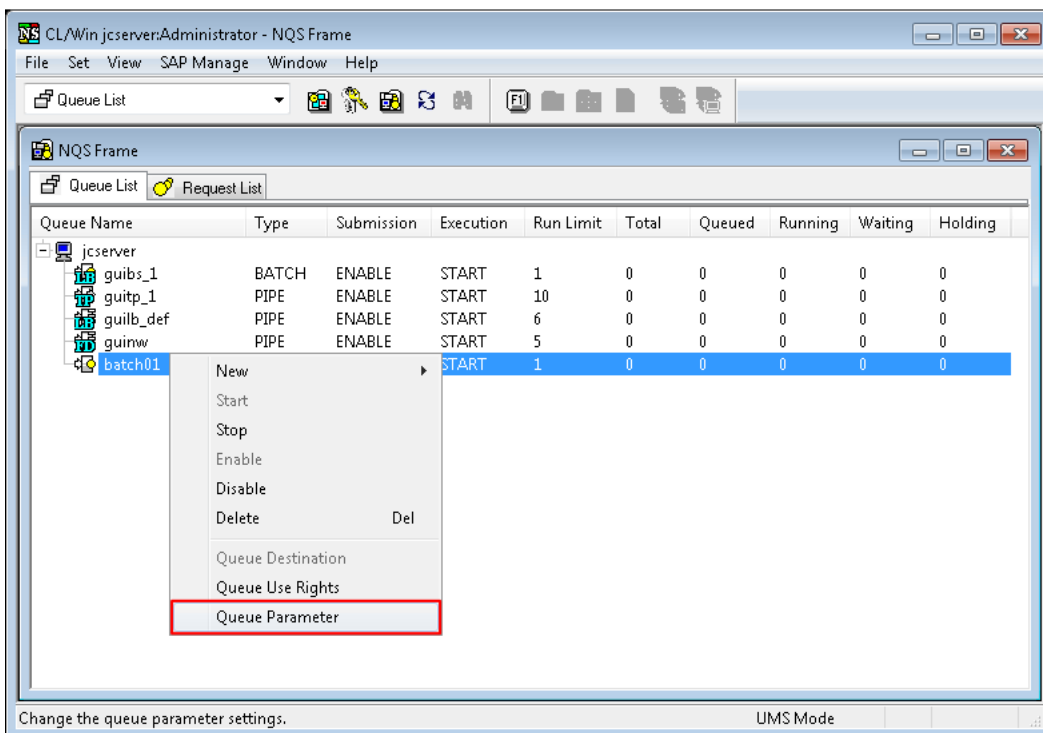


Figure 10.13. Screenshot that shows selecting [Queue Parameter] of the batch queue

2. The [Batch Queue Parameter] dialog box opens. Configure the batch queue.

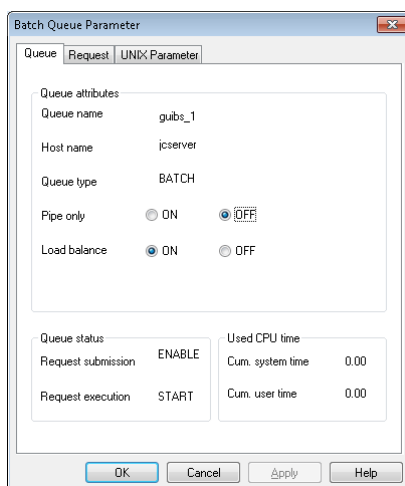


Figure 10.14. Screenshot of Batch Queue Parameter dialog box

Table 10.2. List of batch queue attributes that can be configured

Name	Function
Pipeonly	Pipeonly Gives the Pipeonly attribute to the queue. If a queue has this attribute, the request can be submitted only when it passes through the pipe queue.

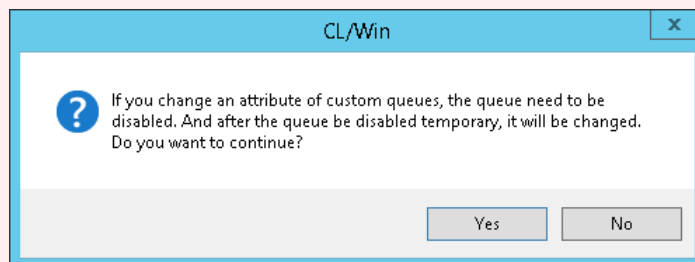
Name	Function
Custom	Custom gives the custom queue attribute to the queue. Any queue to which to submit an extended custom job or WOBS job must have this attribute.
Load balance	If the demand delivery function is used, the queue must have this attribute.
LSA	Any queue to which to submit the job to be executed under the authority of Local System Account (LSA) must have this attribute.

3. After configuration, click [OK].



To change the custom queue attribute, you need to disable the queue. If you leave the queue enabled when attempting to change the queue, you will see the warning dialog box below. If you continue the process, the queue is temporarily disabled by internal operation before the custom queue attribute changes and the queue returns to the enabled state.

If this dialog box appears, make sure that no job will be submitted to the queue of which you want to change the settings, before continuing the process.



Note that the queue parameters that can be specified using CL/Win are limited. Use the `qmgr` command to specify a queue parameter other than the above or an NQS global parameter.

## 10.5. Creating a Pipe Queue

1. In the NQS Frame window, select the machine icon.
2. On the menu bar, select [File], [New], and then click [Pipe Queue]. Alternatively, right-click the machine or a queue, and then select [New] from the shortcut menu, and then click [Pipe Queue].

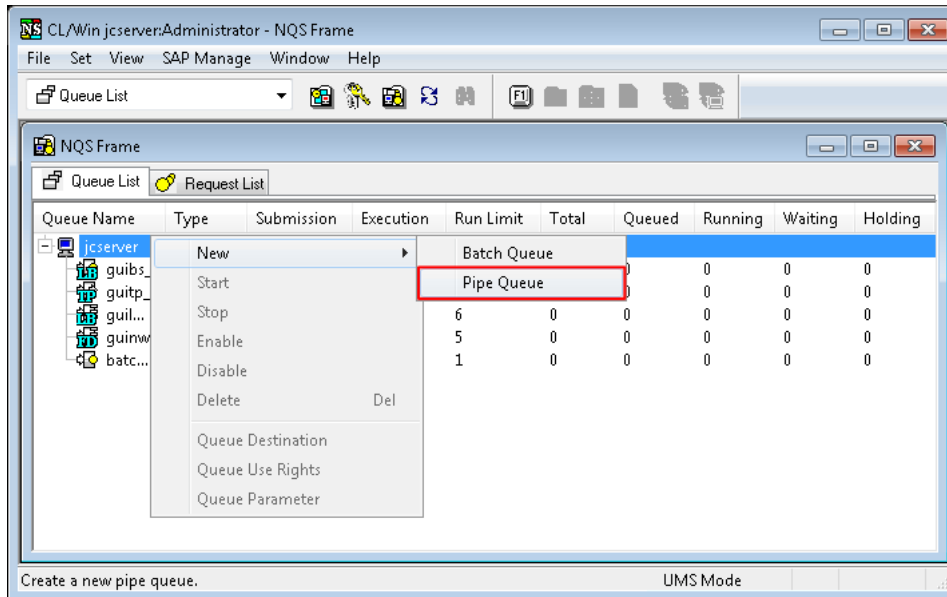


Figure 10.15. Creating a new pipe queue

3. The [Create pipe queue] dialog box opens. Enter the queue name.

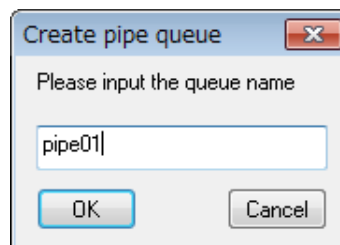


Figure 10.16. Create pipe queue dialog box

4. After configuration, click [OK]. The created pipe queue is added.

## 10.6. Setting Parameters of a Pipe Queue

1. Right-click a pipe queue to be configured and select [Queue Parameter] from the shortcut menu.

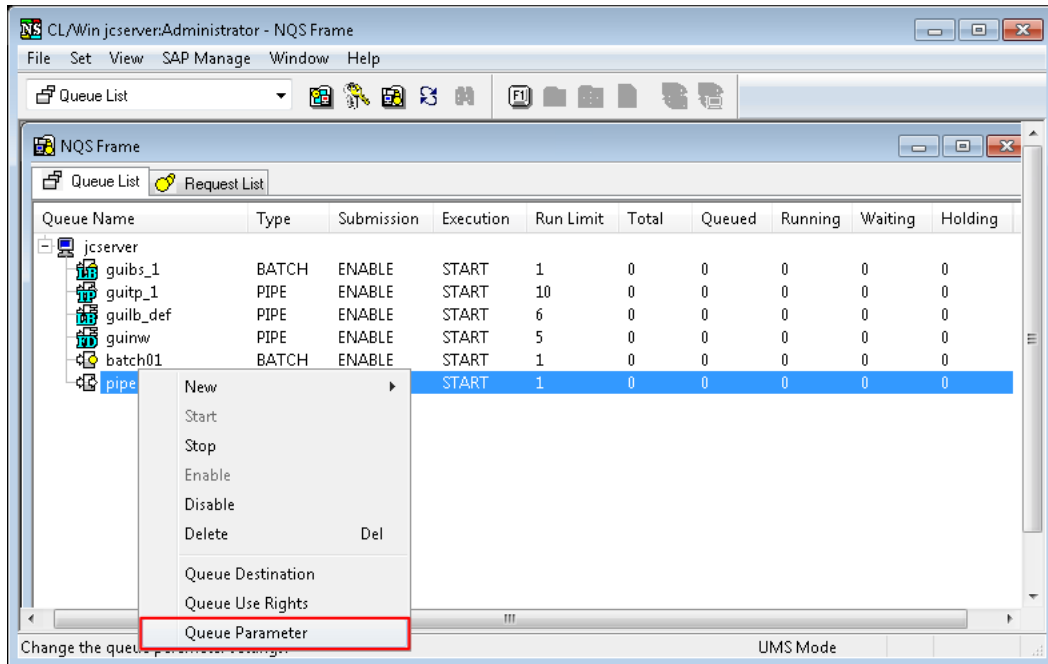


Figure 10.17. Screenshot that shows selecting [Queue Parameter] of the pipe queue

2. The [Pipe Queue Parameter] dialog box opens. Configure the pipe queue.

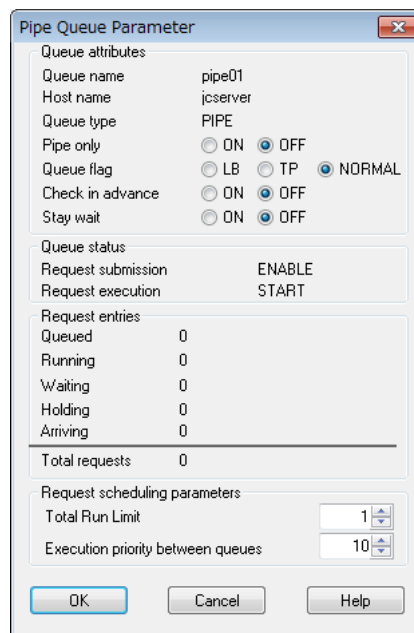


Figure 10.18. Screenshot of Pipe Queue Parameter dialog box

3. After configuration, click [OK].



Note that the queue parameters that can be specified using CL/Win are limited. Use the `qmgr` command to specify a queue parameter other than the above or an NQS global parameter.

## 10.7. Setting a Destination of a Pipe Queue

1. Right-click a pipe queue and select [Queue Destination] from the shortcut menu.

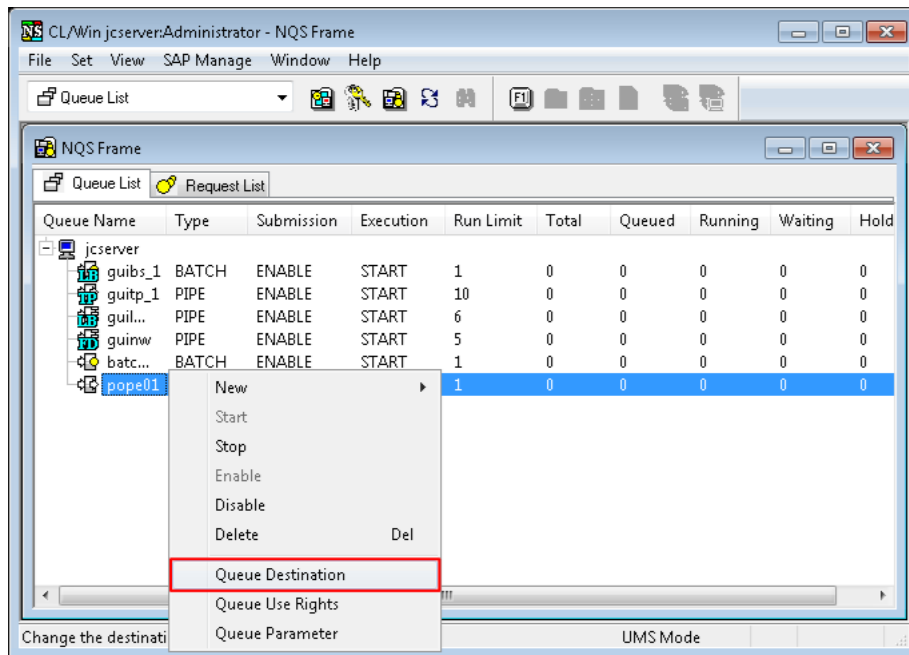


Figure 10.19. Screenshot that shows selecting the Queue Destination

2. The [Destination] dialog box opens. Select a destination machine queues and then click [Add] button.

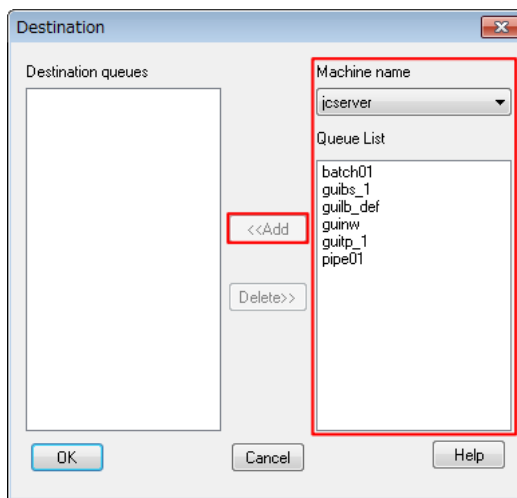


Figure 10.20. Screenshot of the Destination dialog box

3. After configuration, click [OK].



A machine that is not added in the Machine List window cannot be specified as a destination. If such a machine is selected, no candidate queues are displayed in the Queue List box. Refer to [Section 10.1, "Adding a Machine to Machine List"](#).

## 10.8. Creating a Queue on a Remote Machine

When a remote machine has been added to the machine list with a user ID mapped, you can create a queue on that remote machine using Machine List of Manager Frame of CL/Win.

1. Log in with a manager account (UMS Mode), and display [Machine List] of Manager Frame.
2. In the [Machine List] window, double-click the remote machine icon in which a queue is to be created. Alternatively, right-click the remote machine icon and then select [Open] from the shortcut menu.

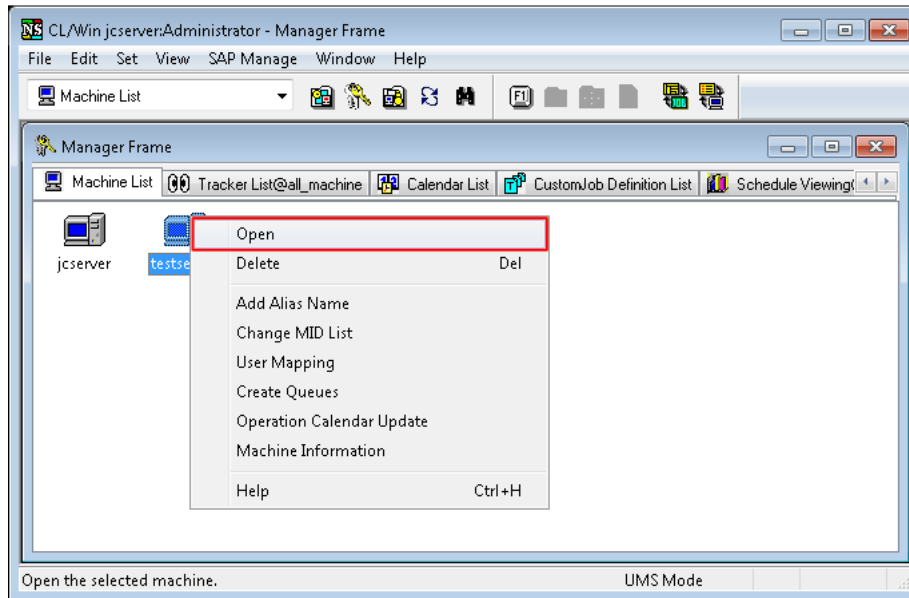


Figure 10.21. Screenshot of the Machine List window for selecting a machine icon

3. When the [Queue List] window of the [machine] window opens, create a queue, as with NQS Frame.

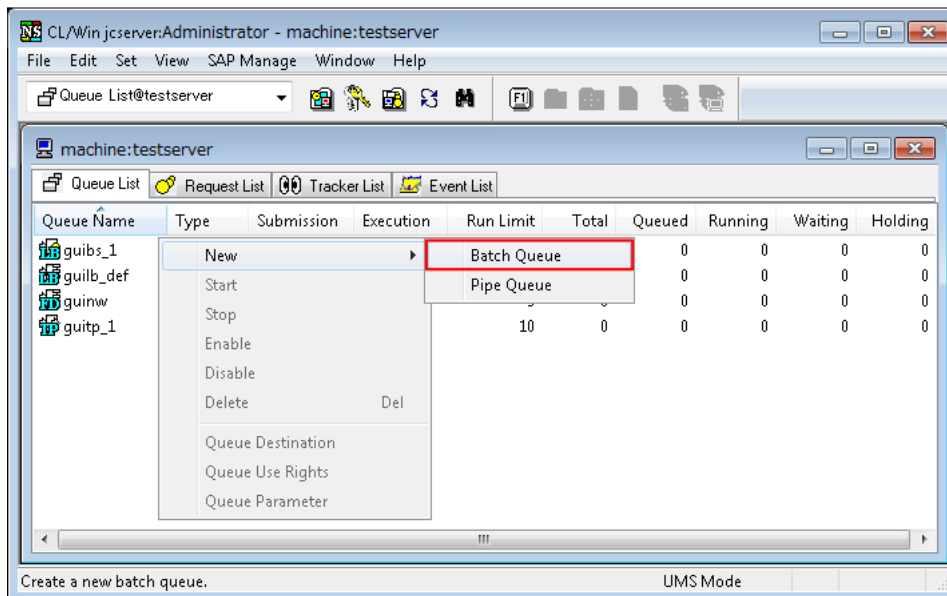


Figure 10.22. Screenshot of the [Queue List] window of the [machine] window

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# 11 Monitoring and Management of the JobCenter Usage Status

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JobCenter, as described in [Chapter 10, 「Usage of Network Queuing System \(NQS\)」](#) , uses the NQS to perform batch processing.

This allows the usage status of JobCenter to be monitored and managed using a Queue List, which shows the operation status of a job execution server, and a Request List, which shows the occurrence status of job networks and jobs.



## 11.1. Monitoring and Management with a Queue List

The Queue List shows the operation status of a job execution server. The Queue List can be displayed in the Manager Frame or NQS Frame window.

### 11.1.1. Displaying a Queue List in the Manager Frame Window

1. In the Manager Frame window, select the [Machine List] tab.
2. Select a machine icon to browse, and then double-click it, or select [Open] from the shortcut menu which appears by right-clicking.

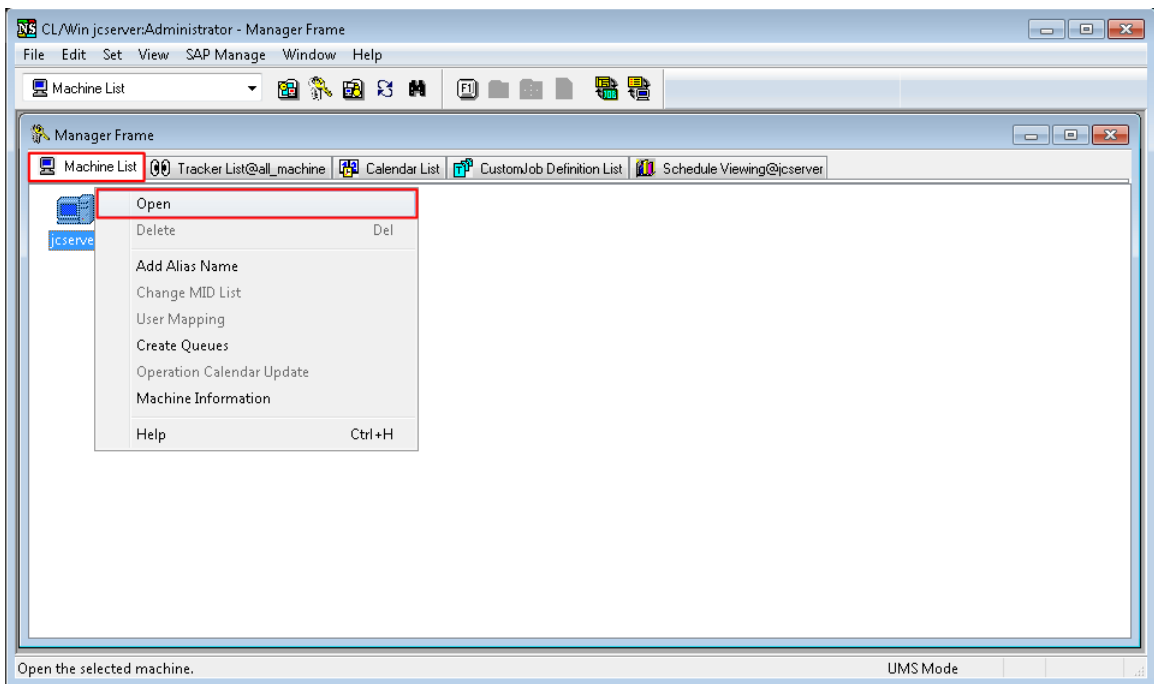


Figure 11.1. Screenshot of the window for opening a [Queue List]

3. When the [machine] window opens, select the [Queue List] tab.
4. The queues set in the machine selected in [Machine List] are listed.

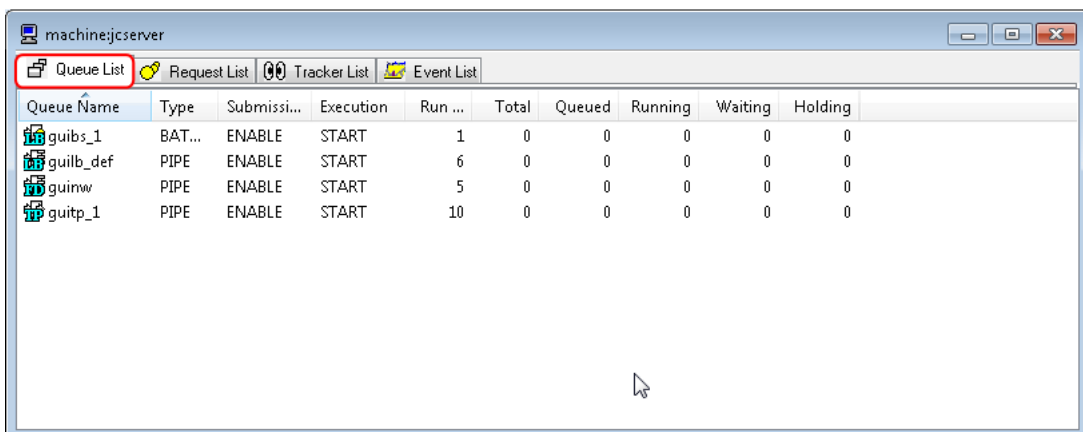


Figure 11.2. Screenshot of the [Queue List] window

## 11.1.2. Displaying a Queue List in the NQS Frame Window

1. In the NQS Frame window, select the [Queue List] tab.
2. When you select a machine, the queues set in that selected machine are listed.

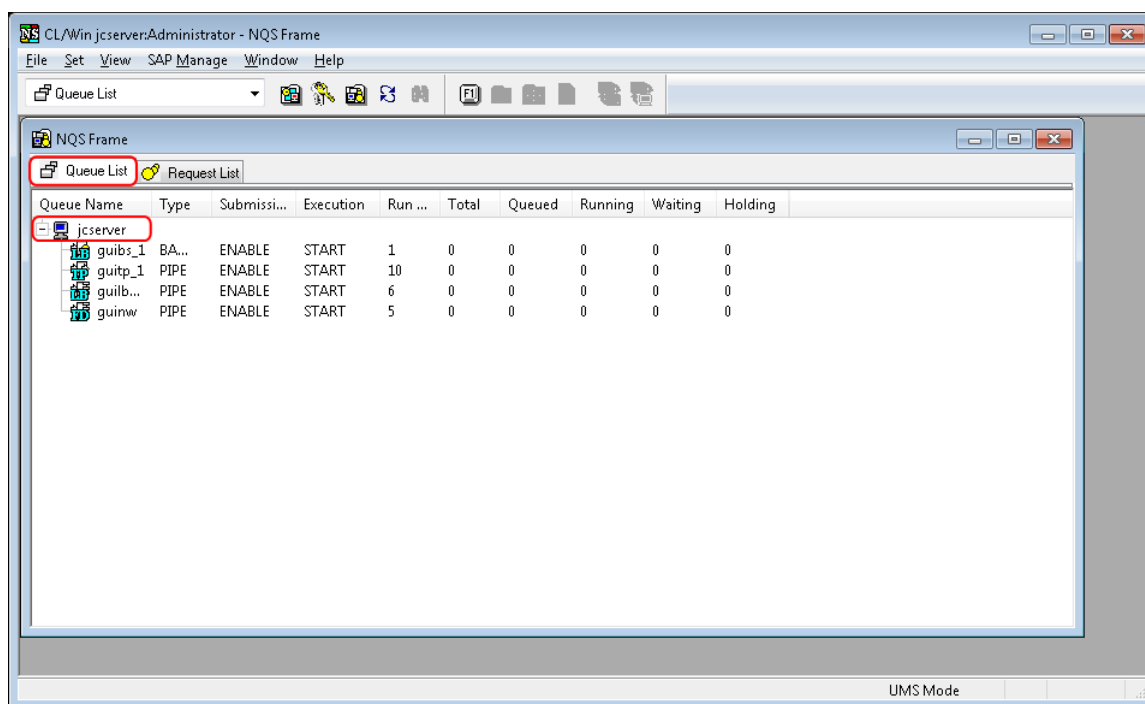


Figure 11.3. Screenshot of the [NQS Frame] - [Queue List] window

The items of the Queue List are described below.

### ■ Queue Name

When you select [Manager Frame] and then [Queue List], a queue name is displayed.

When you select [NQS Frame] and then [Queue List], the name of the machine in which the queue resides and the name of the queue are displayed.

### ■ Type

Type of the queue

BATCH	Batch queue
PIPE	Pipe queue

### ■ Submission

Whether requests can be submitted or not

ENABLE	The queue accepts submitted requests.
DISABLE	The queue does not accept submitted requests.

### ■ Execution

Whether the queue executes requests

START	The queue processes and executes requests.
-------	--

STOP	The queue does not process and execute requests.
------	--

■ Run Limit

Number of requests that the queue is allowed to execute simultaneously

■ Total, Queued, Running, Waiting, Holding

There are four request statuses - Queued, Running, Waiting, and Holding.

The Total field shows the total number of all these requests. The list also displays the number of requests by status.

Table 11.1. Request Status List

Request Status	Description
Queued	This request is queued for execution, and a schedule can be set for it. The request migrates to the Running status according to the order or priority defined by JobCenter.
Running	This request is being executed.
Waiting	This request is waiting for the start of execution or transfer to another queue.
Holding	This request is held.

## 11.2. Monitoring and Management with a Request List

The Request List can be displayed in the Manager Frame or NQS Frame window, as with the Queue List. The Request List shows the occurrence status of job networks and jobs.



You cannot perform any operation on requests from the Request List.

### 11.2.1. Displaying a Request List in the Manager Frame Window

#### 11.2.1.1. Listing the requests set in a machine

1. In the Manager Frame window, select the [Machine List] tab.
2. Double-click a machine icon to browse, or select [Open] from the shortcut menu which appears by right-clicking.

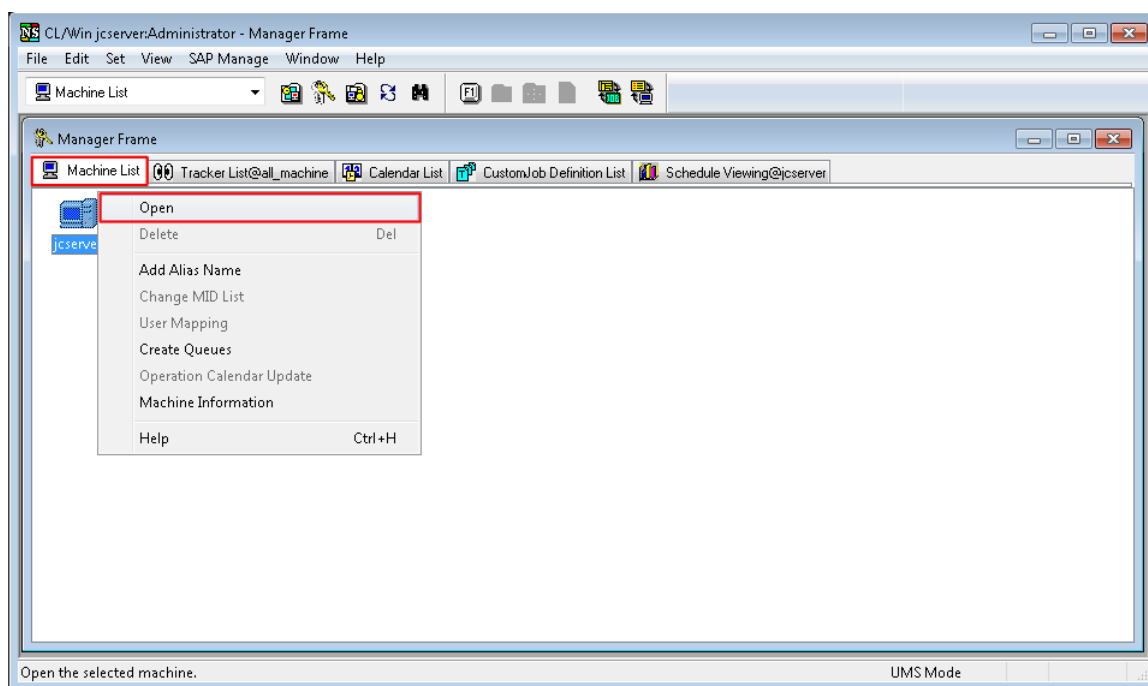


Figure 11.4. Screenshot of the window for opening the [machine] window

3. When the [machine] window opens, select the [Request List] tab.
4. The requests set in the machine selected in Machine List are listed.

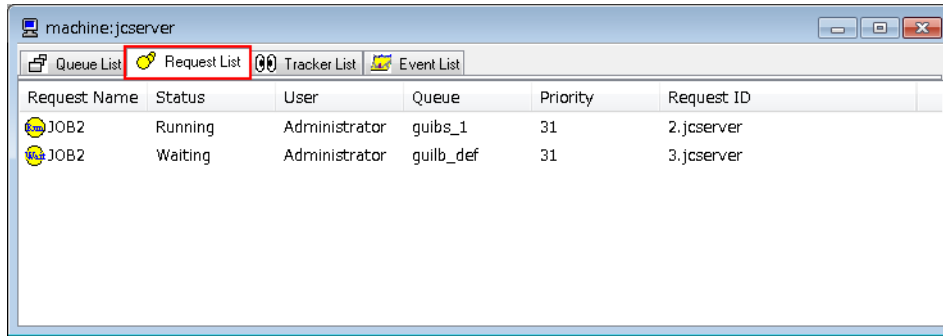


Figure 11.5. Screenshot of the [Manager Frame] - [Request List] window

### 11.2.1.2. Listing the requests set in a queue

1. In the Manager Frame window, select the [Machine List] tab.
2. Double-click a machine icon to browse, or select [Open] from the shortcut menu which appears by right-clicking.
3. When the [machine] window opens, select the [Queue List] tab.
4. Double-click the queue whose requests you want to view.

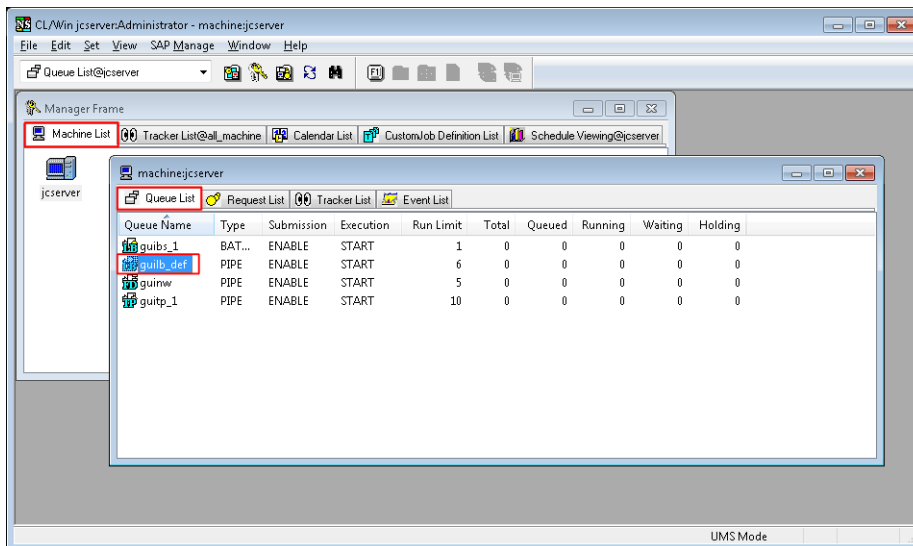


Figure 11.6. Screenshot of the window for selecting a desired queue (Manager Frame)

5. The requests set in the selected queue are listed.

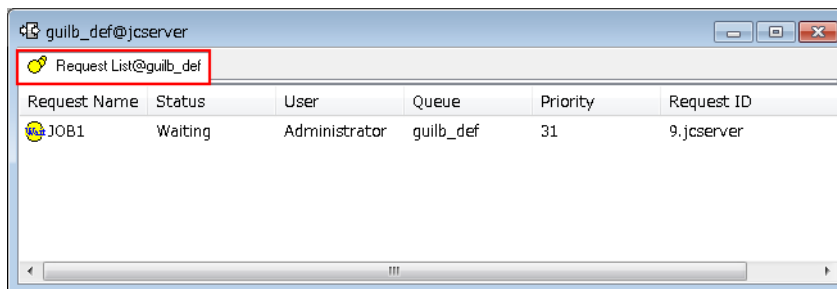


Figure 11.7. Screenshot of the window displaying the requests set in a queue (Manager Frame)

## 11.2.2. Displaying a Request List in the NQS Frame Window

### 11.2.2.1. Listing the requests set in a machine

1. In the NQS Frame window, select the [Request List] tab.
2. When you select a machine, the requests set in that selected machine are listed.

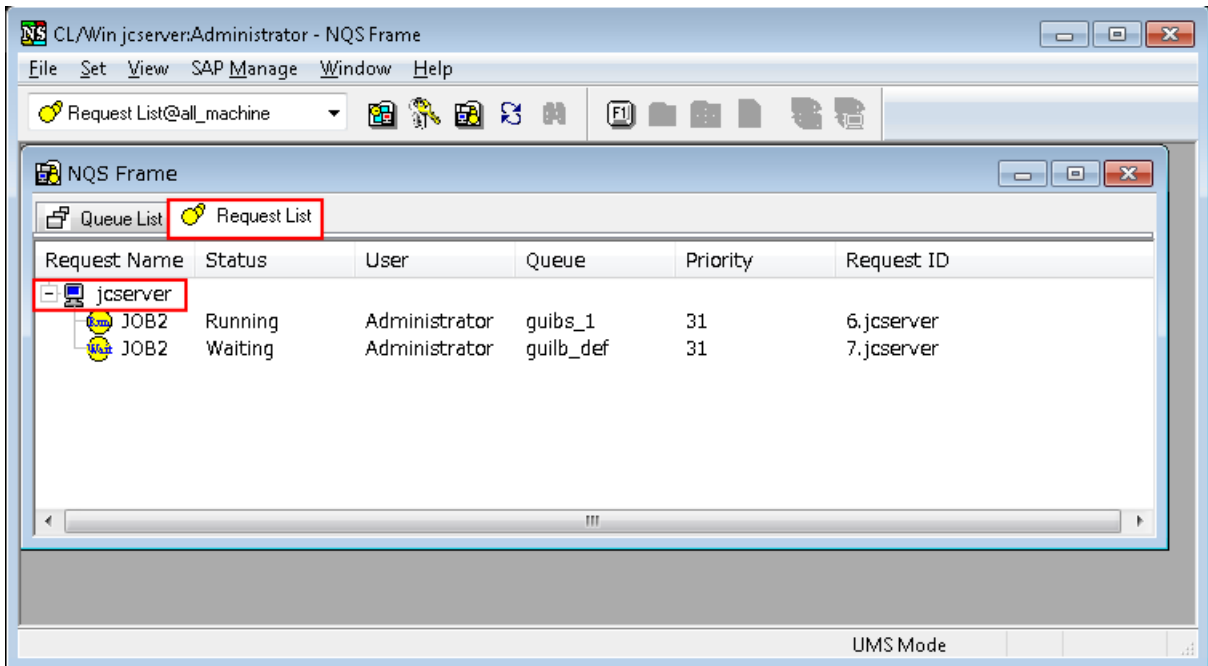


Figure 11.8. Screenshot of the [NQS Frame] - [Request List] window

### 11.2.2.2. Listing the requests set in a queue

1. In the NQS Frame window, select the [Queue List] tab.
2. When you double-click the queue whose requests you want to view, the requests set in the selected queue are listed.

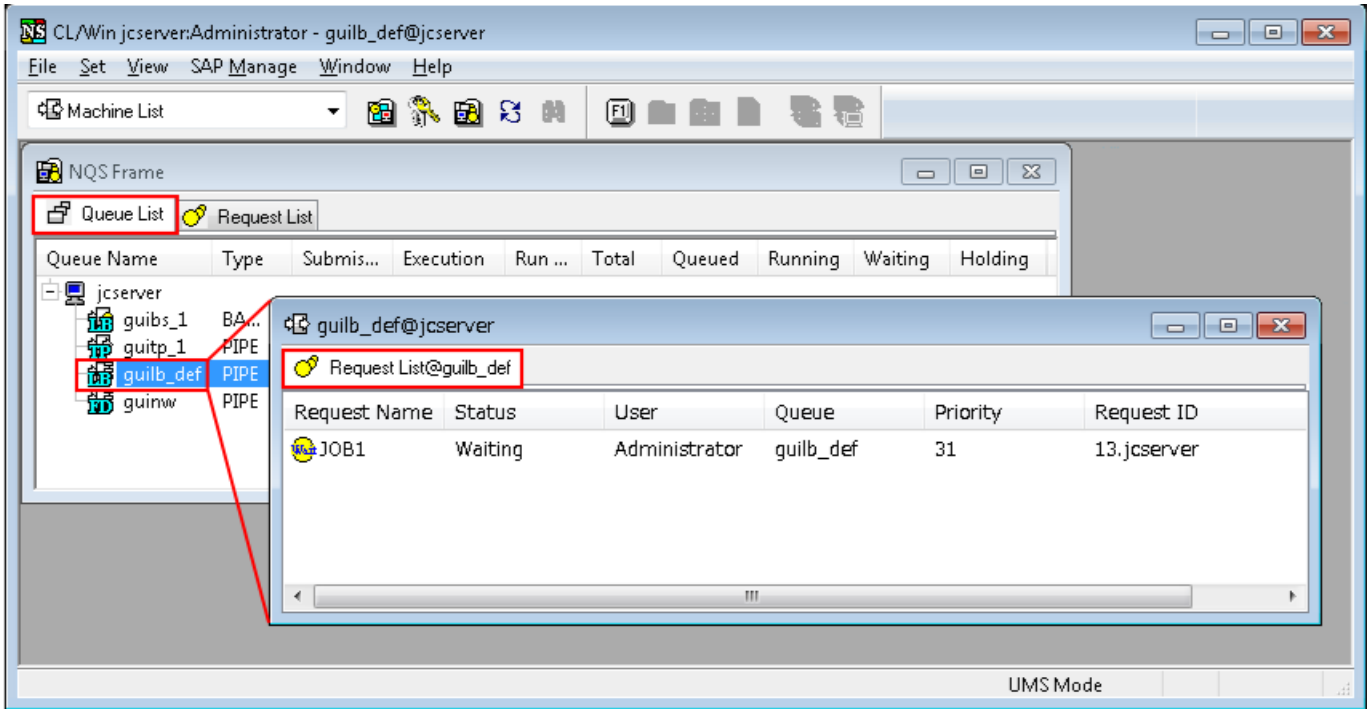


Figure 11.9. Screenshot of the window displaying the requests set in a queue (NQS Frame)

The items of the Request List are described below.

■ Request Name

When you select [Manager Frame] and then [Request List], the request name obtained by double-clicking a queue name is displayed.

When you select [NQS Frame] and then [Request List], the name of the machine in which the request resides and the name of the request are displayed.

■ Status

Status of the request. There are four request statuses - Queued, Running, Waiting, and Holding.

Table 11.2. Request Status List

Request Status	Description
Queued	This request is queued for execution, and a schedule can be set for it. The request migrates to the Running status according to the order or priority defined by JobCenter.
Running	This request is being executed.
Waiting	This request is waiting for the execution start time to arrive.
Holding	This request is held.

■ User

Name of the user who submitted the request

■ Queue

Name of the queue to which the request has been submitted

■ Priority

Execution priority of the request in the queue to which it has been submitted. The value range is 0 to 63.

■ Request ID

Unique ID assigned to the request



## 11.3. Monitoring and Management of Events with an Event List

The event list display function is outlined here.

### 11.3.1. Displaying an Event List

1. Open the Manager Frame window, select the [Machine List] tab, and open the machine whose event list you want to view.
2. Selecting the [Event List] tab displays a list of events that have arrived at that machine and are waiting for being received.



The [List and refer to the user's own Tracker] authority or [List and refer to other user's Tracker] authority is needed to display the [Event List] tab.

No.	Event ID	Source Host Name	Timeout	Message
1	Test_Event	jcserver	02/10 15:00	Sample_Message
2	JNW1_End	jcserver	NONE	JNW1EndMessage
3	job2_Start	jcserver	03/10 15:43	JNW2StartMessage

Figure 11.10. Screenshot of the Event List tab

The items of the Event List are described below.

■ No.

Order in which the events arrived at the machine

■ Event ID

Event ID specified when the event was transmitted

■ Source Host Name

Name of the host that transmitted the event

■ Timeout

Timeout time for the event. "NONE" is shown if the time is infinite.

■ Message

Message specified when the event was transmitted

## 11.3.2. Transmitting an Event

### 11.3.2.1. Event transmission method

1. Select [Command] from the menu bar, or select [Send Event] from the shortcut menu that appears when you right-click on a blank line in the Event List tab.
2. When the [Send Event Setting Dialog] appears, specify the settings necessary for event transmission.
3. After configuration, click the [OK] button.



Transmitting events of the logged in machine requires the authority to [Operate other user's Tracker]. The JobCenter administrator is allowed to view the Event Lists of all machines.

Figure 11.11. Screenshot of the Event Transmission Setting dialog box

The items of the [Send Event Setting Dialog] are described below.

■ Source Host (cannot be specified)

Name of the host that transmits events. The field shows the host name of the currently open machine frame.

■ Dest Host (required item)

Enter the name of the host to which to transmit events. Make sure that the specified host name is an official one that is recognized on the network. By default, the field shows the host name of the currently open machine frame.



If you enter an alias as the destination host name, the operation will not proceed normally.

■ Event ID (required item)

Enter an arbitrary ID to be assigned to each event transmitted. An ID may consist of alphanumeric characters and/or Japanese characters including two-byte kana characters and must be 100 bytes or less in length.

#### ■ Message

Enter a message to be transmitted to the destination. A message may consist of alphanumeric characters and/or Japanese characters including two-byte kana characters and must be 40 bytes or less in length.

#### ■ Event Range

Specify the range of parts to which to transmit events.

[Only]

If there is more than one receiving part that is waiting for an event of the same event ID, the event is transmitted only to the part that entered the waiting status first.

[All]

All the parts that are waiting for an event of the same event ID will receive the event.

#### ■ Event Valid Period

Specify the option regarding the way the event destination waits to receive events.

[No Wait]

The event destination does not wait to receive events, nor does it retain events.

When an event is transmitted with this option specified, the confirmation message shown below appears before the event is transmitted.

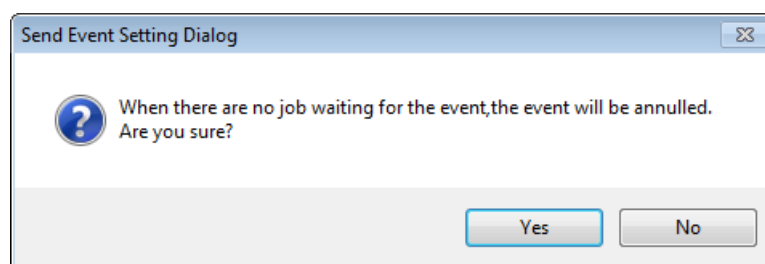


Figure 11.12. Confirmation message displayed when transmitting an event

[Wait Indefinitely]

The event destination waits infinitely until it receives an event.

This option produces the same effect as when you leave the timeout specification fields blank in the [Send Event Setting Dialog] for the event receiving part.

[Timeout(Absolute)]

Specify the absolute timeout time for event reception. The specifiable range is from the current time to Dec. 31, 2037, 23:59.

[Timeout(Relative)]

Specify the relative timeout time for event reception. The specifiable range is from 00:00 to 99:59.

### 11.3.2.2. Message dialogs displayed during event transmission

During the transmission of an event, a message dialog is displayed that indicates the result of the event transmission. The following table describes each of such message dialogs.

Table 11.3. List of message dialogs displayed during event transmission

Message	Description
Event has been sent successfully. It has been received by the destination host.	This message dialog is displayed when the transmission of the event is successful, with the event received by the event receiving part of the destination host.
Event has been sent successfully. It was not received by the destination host.	This message dialog is displayed when the transmission of the event is successful although the destination host has no event receiving part waiting to receive an event of the specified event ID.
Event has been sent successfully. It was not received by the destination host. Because the event valid period was not set, the event was annulled.	This message dialog is displayed when the transmission of the event is successful although the destination host has no event receiving part waiting to receive an event of the specified event ID and the event is discarded immediately because [No Wait] is set for Event Valid Period.
Event Send Failed. Because it had reached the upper limit of the number of events at the destination host, the event was not able to be sent.	This message dialog is displayed if the maximum number of events that can be retained by the destination host has been exceeded when it is prohibited to overwrite events in case the maximum number is exceeded.  For information about the setting regarding the action to be taken if the maximum number is exceeded, refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".
Event Send Failed. The host name is wrong.	This message dialog is displayed if the host name specified when transmitting the event cannot be found.  Check the host name.
Event Send Failed. Connecting with the destination host timeout.	This message dialog is displayed if a timeout occurred while a connection to the destination host was being established.  Retransmit the event after a while.
Event Send Failed. The destination host is not starting, or JobCenter doesn't start.	This message dialog is displayed if either the destination host or the JobCenter software of the destination host is not running.  Check the status of the destination host.
Event Send Failed.  This message dialog is displayed if any other error occurs in the destination host.	Check the status of the destination host.

### 11.3.3. Deleting an Event

1. In the [Event List] dialog box, select the one you want to delete from the events that have arrived at the machine (you may select more than one event), and then select [File] on the menu bar or select [Delete] from the shortcut menu which appears by right-clicking.

2. When the [Confirmation of Event Deletion] dialog box appears, check the event or events you are deleting and decide whether to delete them.
3. After configuration, click the [OK] button.

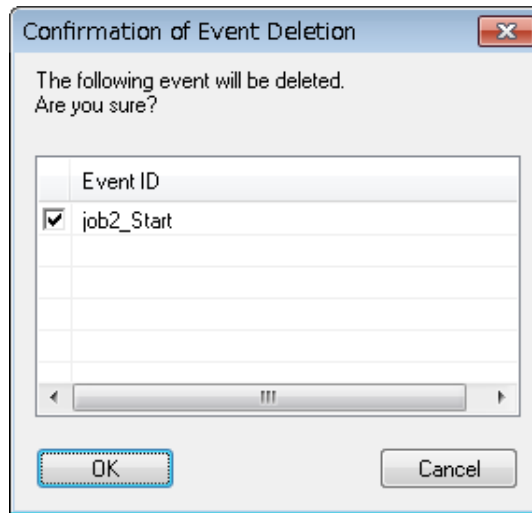


Figure 11.13. Screenshot of the Event Operation Confirmation dialog box



Deleting an event requires the authority to [Operate other user's Tracker].

If the reception of Event Transmission part is being confirmed at the source of the deleted event, the Event Transmission part is finished with the [DONE] status.

## 11.4. Monitoring Clients from the Client List

The client list shows the status of the clients currently connected to the server.

### 11.4.1. Displaying the Client List

- Selecting the [Client List] tab in the Manager Frame displays the list of the clients currently connected to the server.



You need to have a JobCenter administrator account To display the [Client List] tab.

Host name	User Name	Login Time	LastOperation Time
jobmanager	Administrator	2016/06/08 19:01:38	2016/06/08 19:07:20
jobmanager	jobuser	2016/06/08 19:01:28	2016/06/08 19:06:19
jobcerver	Administrator	2016/06/08 19:02:32	2016/06/08 19:06:20

Figure 11.14. Screenshot of [Client List] tab

The items in the client list are detailed below:

- Host name

Shows the name or IP address of the connection source host.

- User name

Shows the name of the user who has logged in to JobCenter MG/SV.

- Access ID

Shows the access ID that is assigned when a user logs in.

This ID is used to identify the login user in the server.

This ID is not displayed by default. To check the access ID, right-click the column name and then select [All columns] from the popup menu.

■ Login time

Shows the time when the user logged in to JobCenter MG/SV.

■ Last operation time

Shows the last time when the user operated JobCenter.



The Client List screen lists the following types of clients:

■ CL/Win

Shows the name or IP address of the connection source host of the currently connected.

■ CL/Web

Shows the name or IP address of the connection source host of the currently connected browser.

■ Command

Shows the name or IP address of the connection source host that is used for execution of the command.

---

## 12 Upload and Download Functions

---

The upload and download functions handle definition information and configuration information in the JPF file format. Since "JPF files" can be handled as ordinary files, it is easy to replicate and save definition information. These functions can also be used for environment backup and version management. This chapter describes the basic functions that are available regardless of whether there are licenses for JobCenter Definition Helper and other functions.

This chapter describes the following functions, which can be executed from JobCenter CL/Web.

- [Definition information, configuration information, and tracker archive information download function](#)
- [Definition information upload function](#)
- [Definition information check function](#)



- A JPF definition information file can be edited by converting it to a text format file (JDF file). For details, refer to <JobCenter Guide for using definition edit function>. (Japanese only)
- More than one JPF definition information file can be edited simultaneously using Excel. Using this function requires the JobCenter Definition Helper license. For details about JobCenter Definition Helper, refer to 2. "Definition Helper" in <JobCenter Guide for using Helper function> (Japanese only).



- For upload and download operations, depending on the volume of definition information, a memory shortage error may occur in case the operation tries to secure memory greater than that of JobCenter MG/SV. To estimate a memory capacity needed for upload and download, refer to in <Environment Guide>Section 19.7, "Estimating the Memory Amount Used for Uploads and Downloads".
- If you upload a large JPF file, a communication timeout may occur. Note that, even if a timeout occurs, the server continues to update the definition information and that you cannot edit the definition information during this period.
- To upload a downloaded JPF definition information file to another server, it is necessary to change the host name in the definition information in advance. For details, refer to in <Environment Guide>Section 13.2, "Migrating User Definition Data to Another Machine".
- A JPF configuration information file cannot be uploaded from CL/Win, because JobCenter needs to be stopped when the configuration is restored. For details about configuration information backup and restoration, refer to in <Environment Guide>Chapter 16, 「Backing Up and Restoring JobCenter Environment」 .



## 12.1. Downloading Definition Information/Configuration Information/Tracker Archive Information (JPF File)

The download function retrieves definition information, configuration information, or tracker archive information from JobCenter MG/SV and outputs a JPF file.

### 12.1.1. Downloading Definition Information

To download definition information using JobCenter CL/Win, select [File], point to [Helper Function], [Download], and then select [Definition Information].

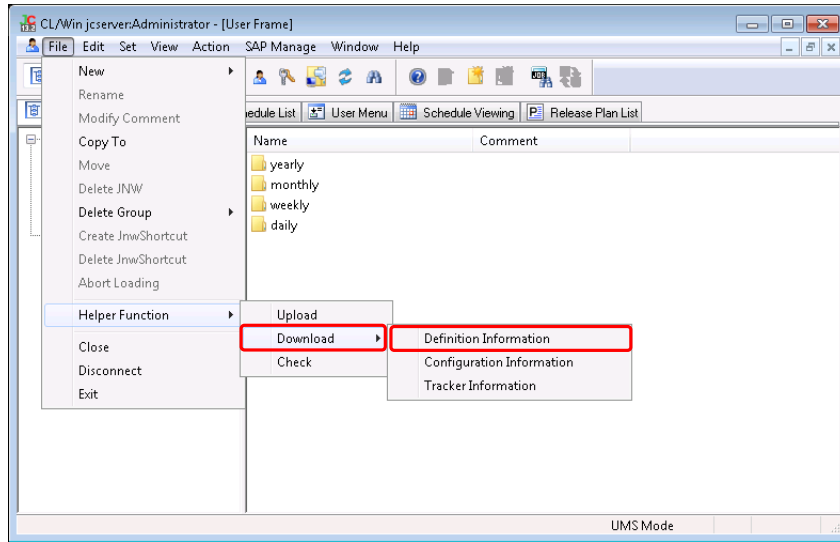


Figure 12.1. CL/Win download function (definition information)

In the download user selection dialog box, select the range of download users. You can select all users or individual users.

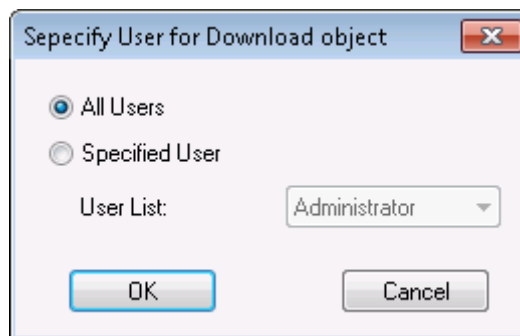


Figure 12.2. User selection dialog box



Only the JobCenter administrator can select all users as download users.

If all users are selected, JPF files are created in the specified download destination directory, each given the corresponding user name.



The download user selection dialog box displays those users who are given permissions to list and browse job networks in "Permission". The specifics are as follows.

- When users have permissions to "list and browse their own job networks", the names of the users connected to the network by using CL/Win are displayed.
- When users have permissions to "list and browse other users' job networks," the names of the permitted other users are displayed.

As the type of definition to be downloaded, select the job network, schedule, trigger, calendar, or custom job definition. To download definitions in groups or individually, click the [Detail setting] button (calendar definitions can only be downloaded individually).

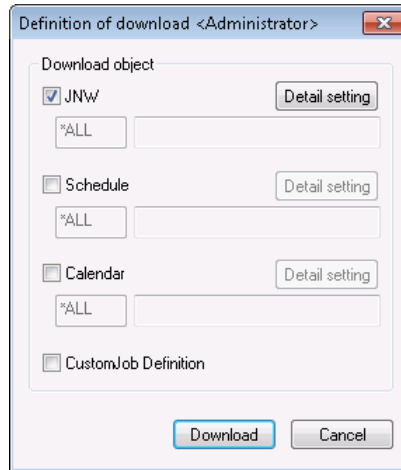


Figure 12.3. Definition download dialog box

In the [Detail setting] dialog box for job networks, select the range of job networks to download. The related sub job network, calendar branch schedule to display, and calendar can also be downloaded at the same time. Select the check boxes as necessary.

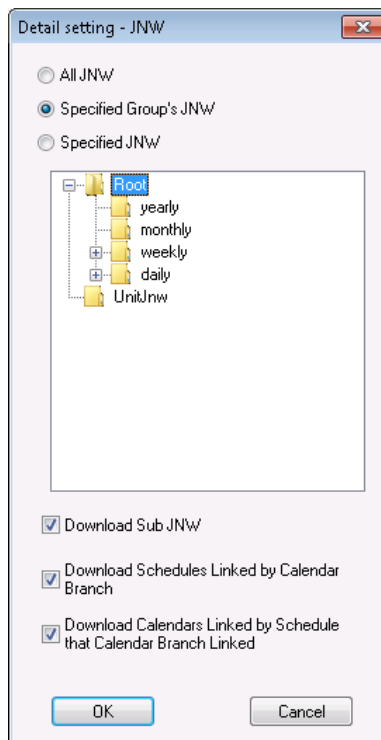


Figure 12.4. Detail setting - Job network dialog box

In the [Detail setting] dialog box for schedules, select the range of schedules to download.

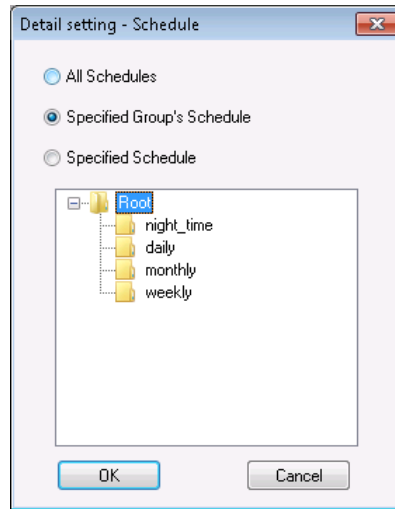


Figure 12.5. Detail setting - Schedule dialog box

In the [Detail setting] dialog box for the trigger, select the range of triggers to be downloaded. In addition, you can also download the target text log as the definition related to the trigger. Select the check boxes as necessary.

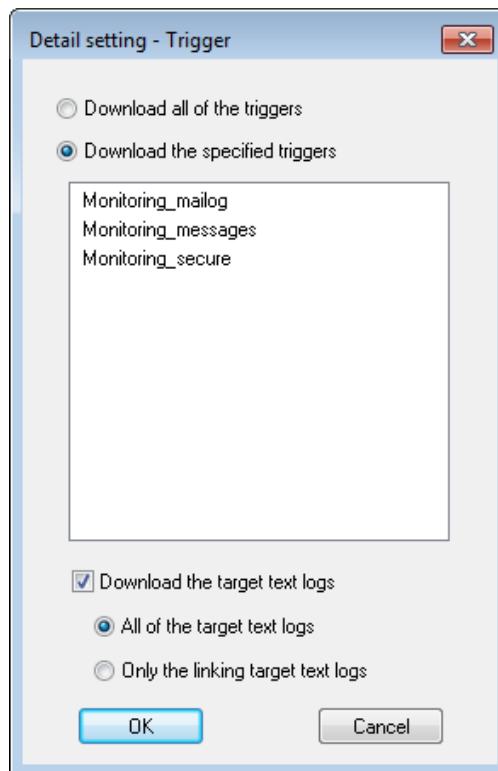


Figure 12.6. Detail setting - Trigger dialog box

In the [Detail setting] dialog box for calendars, select the range of calendars to download.

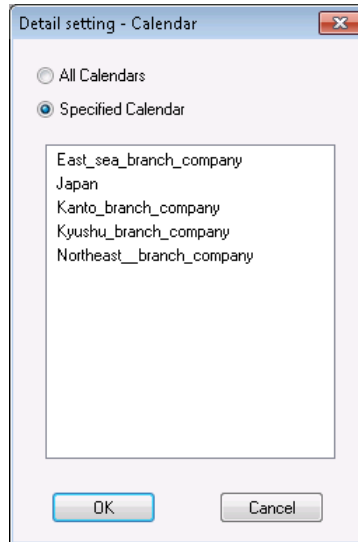


Figure 12.7. Detail setting - Calendar dialog box

When the download of the definition information is complete, a success dialog box like the one below appears.

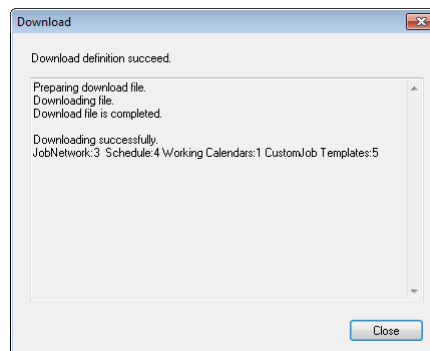


Figure 12.8. Definition download success dialog box

The download completion window displays information about the number of successfully downloaded definitions as shown below.

```

Preparing download file.
Downloading file.
Download file is completed.

User:Administrator
Downloading successfully.
JobNetworks:3 Schedules:4 Triggers(TRG):3 Triggers(TARGET_TEXTLOG):3
Working Calendars:1 CustomJob Templates:5 CustomJob Template Icons:Downloaded
    
```

### 12.1.2. Downloading Configuration Information

To download configuration information using JobCenter CL/Win, select [File], point to [Helper Function], [Download], and then select [Configuration Information].

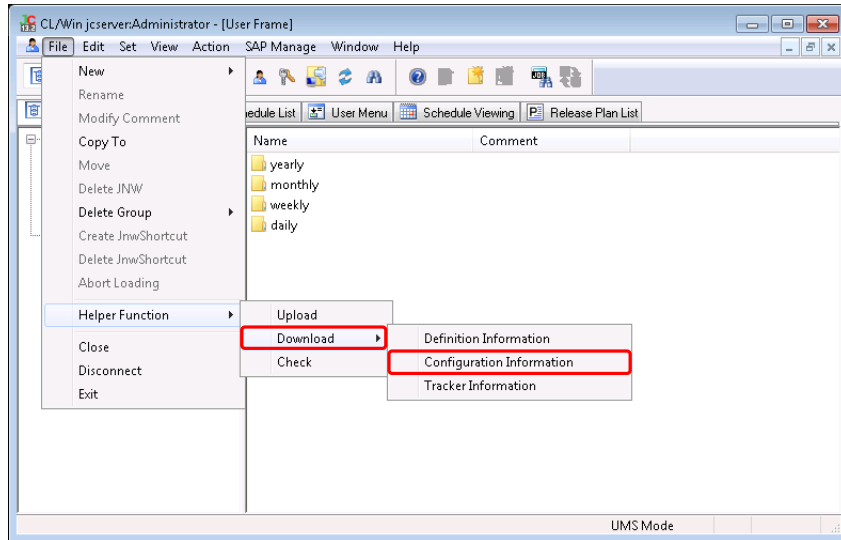


Figure 12.9. CL/Win download function (configuration information)

When the download of the configuration information is complete, a success dialog box like the one below appears.

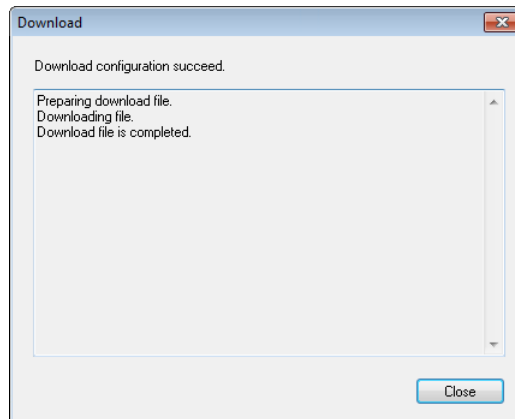


Figure 12.10. Configuration information download success dialog box

### 12.1.3. Downloading Tracker Archive Information

To download tracker archive information using JobCenter CL/Win, select [File], point to [Helper Function], [Download], and then select [Tracker Information].

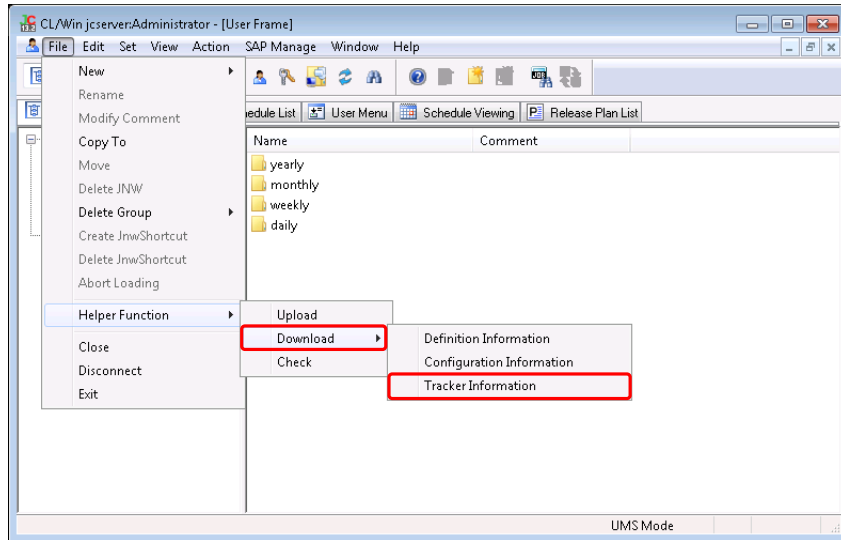


Figure 12.11. CL/Win download function (tracker archive information)

On the tracker archive information download screen, specify the date range for the download.

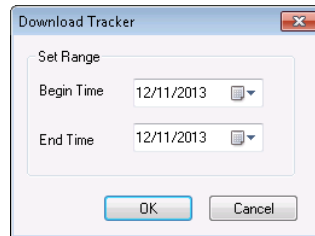


Figure 12.12. Screenshot of the tracker archive information download screen

When the download of tracker archive information is complete, a success dialog box like the one below appears.

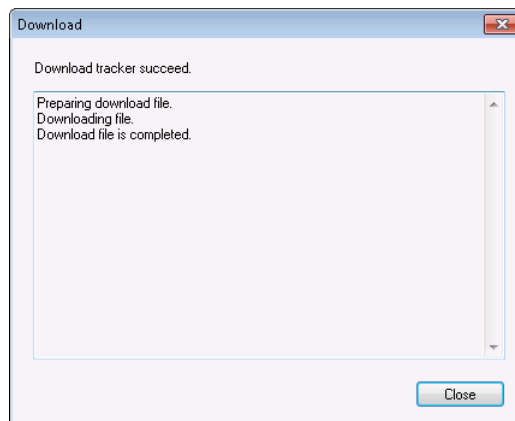


Figure 12.13. Tracker archive information download success dialog box

## 12.2. Uploading Definition Information (JPF File)

The upload function enables you to create, update, or delete the job network, schedule, trigger, definition related to trigger, calendar, or custom job definition information by uploading a JPF file to the server.

To upload definition information using JobCenter CL/Win, select [File], [Helper Function], and then [Upload].

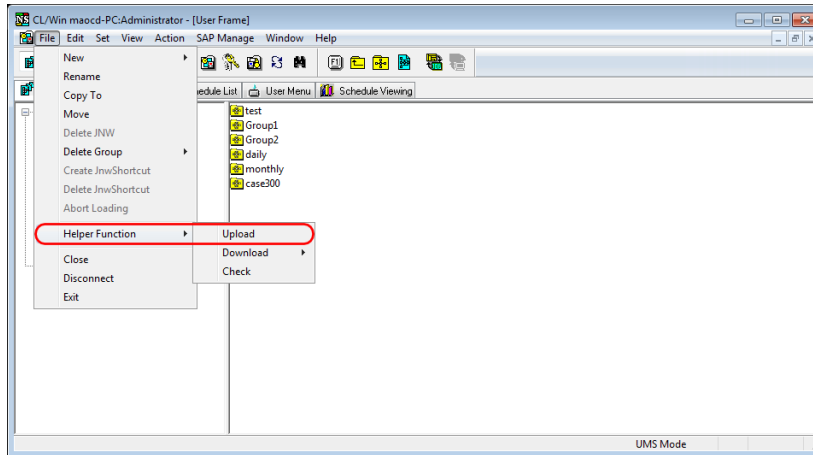


Figure 12.14. CL/Win upload function

When the upload user selection dialog box appears, select the user whose definition information you want to upload. You can select all users or individual users.

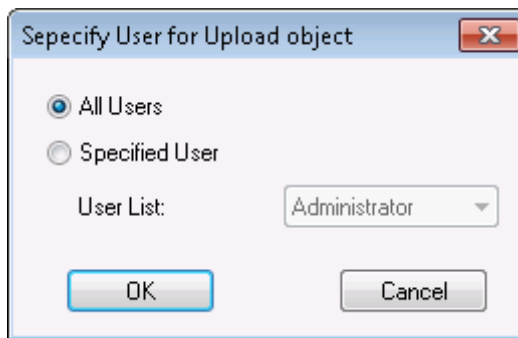


Figure 12.15. Upload user selection dialog box



Only the JobCenter administrator can select all users as upload users.

If all users are selected, the definition information is uploaded according to the JPF files each of which is given the corresponding user name.




The upload user selection dialog box displays those users who are given permissions to create, modify, and delete job networks in "Permission". The specifics are as follows.

- When users have permissions to "create, modify, and delete their own job networks", the names of the users connected to CL/Win are displayed.
- When users have permissions to "create, modify, and delete other users' job networks", the names of the permitted other users are displayed.

In the file selection dialog box, select the JPF file you want to upload.

You can select to change the machine name or skip the queue information check.

If you select to skip the queue information check, a check is not made to see whether the queue specified as the submission queue exists. Be sure to check that the queue definition is correct.

 The "Skip Check Queue Information" function is used in cases such as when the information defined in a different environment is used after environment migration. In order to make the function work normally, you need to check the queue setting. If a queue that does not exist is specified, you need to change the submission queue setting, create a new queue, etc.

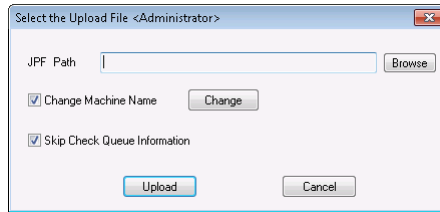


Figure 12.16. Upload file selection dialog box

To change the machine name, select the "Change Machine Name" box and click the [Change] button.

From the [Source Machine List] and [Destination Machine List], select the machine names to convert and click the [Add] button. The machine name conversion is performed during the upload according to the combinations shown in the conversion table.

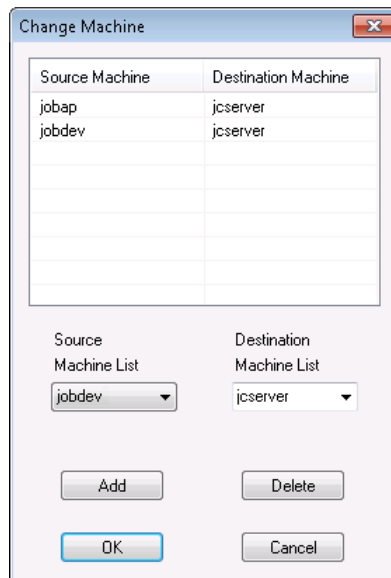



Figure 12.17. [Change Machine] dialog box

 The machine name is changed within the range shown below.

- Default submission queue set in the job network parameter
- Submission queue of the unit job
- Submission queue of the WOBS job
- Submission queue of the custom job



- Destination host name of the event transmission part
- Source host name of each condition of the event reception part

When the upload is complete, a success dialog box like the one below appears.

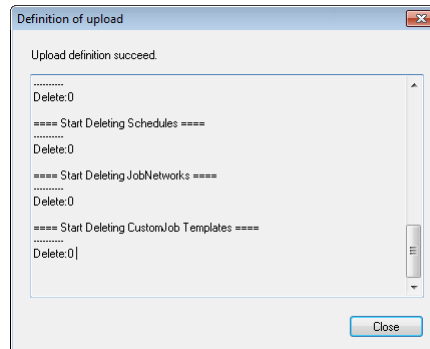


Figure 12.18. Definition upload success dialog box

The upload completion window displays the following information.

```

Preparing upload file.
Uploading file.
Upload file is completed.

==== Start Dependency check ====
-----
Dependency check is succeeded.

==== Start Updating JobNetworks ====
Update Success "Monthly job 1"
Update Success "Monthly job 2"
Update Success "Monthly job 3"
-----
Update:3 Create:0 Ignored:0

==== Start Updating Schedules ====
Update Success "Weekly"
Update Success "Nighttime processing"
-----
Update:2 Create:0 Ignored:0

==== Start Updating Triggers(TRG) ====
-----
Update:0 Create:0 Ignored:0

==== Start Updating Triggers(TARGET_TEXTLOG) ====
-----
Update:0 Create:0 Ignored:0

==== Start Updating Working Calendars ====
Update Success "Japan"
-----
Update:1 Create:0 Ignored:0

==== Start Updating Working CustomJob Templates ====

```

```

Create Success "FileDelete"
Create Success "FileCopy"
Create Success "FileCheck"
-----
Update:0 Create:3 Ignored:0

==== Converted Host Param List ====
Administrator:Monthly job 1 queue guilb_def@jcdevelop -> guilb_def@jcmanager
Administrator:Monthly job 2 queue guilb_def@jcdevelop -> guilb_def@jcmanager
Administrator:Monthly job 2:JOB1 queue guilb_def@jcdevelop -> guilb_def@jcmanager
Administrator:Monthly job 3 queue guilb_def@jcdevelop -> guilb_def@jcmanager
Administrator:Monthly job 3:EVENTSND1 hostname jcdevelop -> jcmanager
Administrator:Monthly job 3:EVENTRCV1 normal_cond 'Condition1','jcdevelop','a','1' ->
'Condition1','jcmanager','a','1'
Administrator:Monthly job 3:EVENTRCV1 error_cond 'Condition1','jcdevelop','b','1' ->
'Condition1','jcmanager','b','1'
-----

==== Start Deleting JobNetworks ====
-----
Delete:0

==== Start Deleting Schedules ====
-----
Delete:0

==== Start Deleting Triggers(TRG) ====
-----
Delete:0

==== Start Deleting Triggers(TARGET_TEXTLOG) ====
-----
Delete:0

==== Start Deleting Working Calendars ====
-----
Delete:0

==== Start Deleting CustomJob Templates ====
-----
Delete:0

```

The meanings of the displayed items are as follows.

Displayed name	Description
Dependency check	Result of the dependency check. For details about the check, refer to <a href="#">Section 12.3, "Checking Definition Information (JPF File)"</a> .
Updating JobNetworks	The number of successfully updated job network definitions (Update), number of successfully created job network definitions (Create), and number of ignored job network definitions (Ignore) are displayed.
Updating Schedules	The number of successfully updated schedule definitions (Update), number of successfully created schedule definitions (Create), and number of ignored schedule definitions (Ignore) are displayed.

Displayed name	Description
Updating Triggers(TRG)	The number of successfully updated trigger definitions (Update), number of successfully created trigger definitions (Create), and number of ignored trigger definitions (Ignore) are displayed.
Updating Triggers(TARGET_TEXTLOG)	The number of successfully updated target text logs as the definitions related to the trigger (Update), number of successfully created target text logs as the definitions related to the trigger (Create), and number of ignored target text logs as the definitions related to the trigger (Ignore) are displayed.
Updating Working Calendars	The number of successfully updated calendar definitions (Update), number of successfully created calendar definitions (Create), and number of ignored calendar definitions (Ignore) are displayed.
Updating Working CustomJob Templates	The number of successfully updated custom job definitions (Update), number of successfully created custom job definitions (Create), and number of ignored custom job definitions (Ignore) are displayed.
Converted Host Param List	The parameters converted in the host name conversion process are displayed.
Deleting JobNetworks	The number of deleted job network definitions is displayed.
Deleting Schedules	The number of deleted schedule definitions is displayed.
Deleting Triggers(TRG)	The number of deleted trigger definitions is displayed.
Deleting Triggers(TARGET_TEXTLOG)	The number of deleted target text logs as the definitions related to the trigger is displayed.
Deleting Working Calendars	The number of deleted calendar definitions is displayed.
Deleting CustomJob Templates	The number of deleted custom job definitions is displayed.



Only the JobCenter administrator can upload calendars. If a general user uploads a JPF file including any calendar, the calendar-related definitions are ignored. If the uploaded calendars are ignored, the following message is output.

**Warning: You are not JobCenter Manager. All working calendars are ignored.**

Only the JobCenter administrator can upload custom job definitions. If a general user uploads a JPF file including any custom job definition, the custom job-related definitions are ignored. If the uploaded custom jobs are ignored, the following message is output.

**Warning: You are not JobCenter Manager. All CustomJob Templates are ignored.**



If too many definitions are uploaded, only some of the job network names, schedule names, trigger names, target text log names, calendar names, and custom job definition names are displayed. The other definition names are omitted, and only the number of successfully uploaded definitions is displayed as the statistics information.

## 12.3. Checking Definition Information (JPF File)

Before uploading a JPF file to the server, you can perform a dependency check on the definitions. This check can also be performed using the information obtained after machine name conversion. The dependency check causes an error in the following cases:

- The queue whose name is set in the relevant job network parameter or unit job parameter does not exist in the MG to which the file is uploaded. (This check is not performed if "Skip Check Queue Information" is selected).
- The sub job network positioned in the job network is not defined in the JPF file, nor does it exist in the MG to which the file is uploaded.
- When a calendar branch is positioned in the job network, the schedule specified in that calendar branch is not defined in the JPF file and does not exist in the MG to which the file is uploaded.
- The schedule mapped to the job network is not defined in the JPF file, nor does it exist in the MG to which the file is uploaded.
- The calendar mapped to the schedule is not defined in the JPF file, nor does it exist in the MG to which the file is uploaded.
- The target text log specified in the trigger definition is not defined in the JPF file, nor does it exist in the MG to which the file is uploaded.
- The job network associated with the trigger is not defined in the JPF file, nor does it exist in the MG to which the file is uploaded.

To perform the check using CL/Win, select [File], point to [Helper Function], and then select [Check].

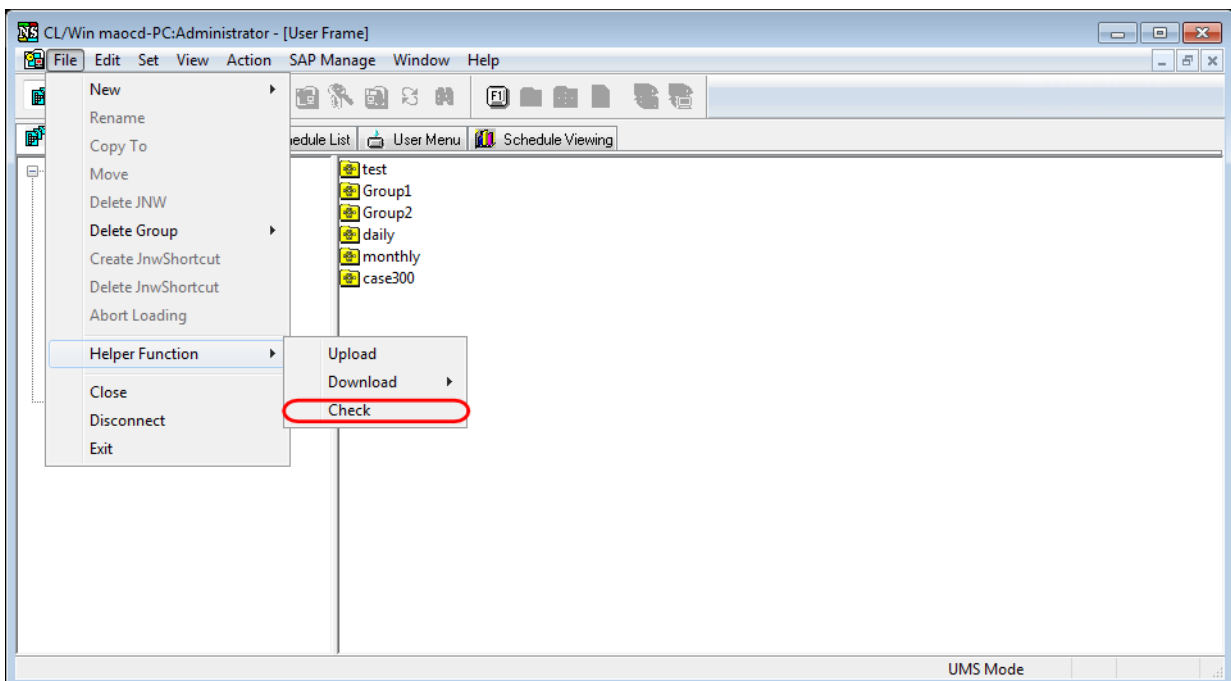


Figure 12.19. CL/Win check function

To perform the check, select the JPF file you want to check in the file selection dialog box.

Select "Change Machine Name" or "Skip Check Queue Information" as necessary. For information about "Change Machine Name", refer to [Section 12.2, "Uploading Definition Information \(JPF File\)"](#).

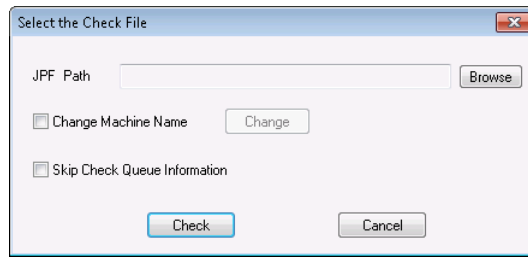


Figure 12.20. Check file selection dialog box

When the check is complete, a success dialog box like the one below appears.

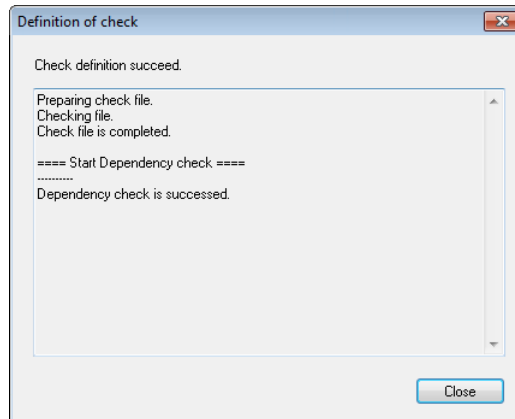


Figure 12.21. Definition check success dialog box

## 12.4. Dependency Errors

When a dependency error is detected during uploading or checking definition information, the following information is displayed on the execution result screen.

Check the dependency errors, and solve the problems.

```

Preparing the files to check.
Checking the file.
The files have been checked.

An error occurred during the check and the process cannot continue.
CODE: 5 0
==== Start Dependency check ====
Dependency Error: JNW(Jnw1) needs SCHED(Schedule1)
Dependency Error: JNW(Jnw1) needs SJNW(SubJnw1)
-----
2 dependency error detected.

dependency error log : /usr/spool/nqs/users/nsumsmgr/jdhlog/jdh_20130820154029_1588.log
    
```

A dependency error log is output to the following locations in the target machine for upload or check. The path is also displayed in the last row on the execution result screen.

### ■ For UNIX

Local site	/usr/spool/nqs/users/<user-name>/jdhlog/jdh_YYYYMMDDhhmmss_PID.log
Cluster site	<JobCenterDB-path>/nqs/users/<user-name>/jdhlog/ jdh_YYYYMMDDhhmmss_PID.log

### ■ For Windows

Local site	<JobCenter-installation-directory>\spool\users\<user-name>\jdhlog \jdh_YYYYMMDDhhmmss_PID.log
Cluster site	<JobCenterDB-path>\spool\users\<user-name>\jdhlog \jdh_YYYYMMDDhhmmss_PID.log



"User name" indicates the logon user name to upload or check environment.  
 "YYYYMMDDhhmmss" indicates the date and time of the upload or check.  
 "PID" indicates the process ID of the upload or check that was executed.



Up to 50 dependency errors are displayed on the Execution result screen. If 50 or more dependency errors occur, the 51st and later dependency errors are omitted.

To check the 51st and later errors, refer to the log files.



When uploading or checking definition information, logs retained for three or more days are automatically deleted from the storage directory.

Back up log files as needed.

## 12.4.1. List of Dependency Error Messages

The following shows the list of dependency errors and the actions to resolve them.

JNW (job network name) needs queue(queue name)	
Description	The queue specified for the default submission queue of the job network does not exist at the upload destination. Create a target queue before the uploading the file. If [Skip Check Queue Information] is selected, this error does not occur.
UJOB (unit job name) needs queue(queue name)	
Description	The queue specified for the submission queue of the unit job does not exist on the MG at the upload destination. Create a target queue before uploading the file. If [Skip Check Queue Information] is selected, an error does not occur.
WOBSJOB (WOBS job name) needs queue(queue name)	
Description	The queue specified for the submission queue of the WOBS job does not exist on the MG at the upload destination. Create a target queue before uploading the file. If [Skip Check Queue Information] is selected, an error does not occur.
JNW (job network name) needs SJNW(sub job network name)	
Description	The sub job network placed on the job network flow does not exist in either the definition in the JPF file or the MG at the upload destination. Create a target sub job network before uploading the file.
JNW (job network name) needs SCHED(schedule name)	
Description	<p>■For a dependency error in a calendar branch part</p> <p>The schedule specified for a calendar branch part placed on the job network flow does not exist in both the JPF file definition and the MG at the upload destination. Create a target schedule before uploading the file.</p>
	<p>■For a dependency error in schedule association</p> <p>The schedule associated with the job network does not exist in both the definition in the JPF file and the MG at the upload destination. Create a target schedule before uploading the file.</p>
SCHED (schedule name) needs WKCAL(calendar name)	
Description	The calendar associated with the schedule does not exist in both the definition in the JPF file and the MG at the upload destination. Create a target calendar before uploading the file.
TRG (trigger name) needs TARGET_TEXTLOG (target text log name).	
Description	The target text log configured in the trigger does not exist in either the definition in the JPF file or the MG at the upload destination. Create a target monitoring text log before uploading the file.
TRG (trigger name) needs JNW (job network name).	
Description	The job network associated with the trigger does not exist in either the definition in the JPF file or the MG at the upload destination. Create a target job network before uploading the file.
JNW (job network name) is already exists. Invalid create operation	
Description	Although handling for the job network is set to "create", the job network already exists on the MG at the upload destination. Use the Definition edit tool of Definition Helper to specify "update" as the handling of the target job network or delete the job network from the MG at the upload destination before uploading the file.

SCHED (schedule name) is already exists. Invalid create operation	
Description	Although handling for the schedule is set to "create", the schedule already exists on the MG at the upload destination. Use the Definition edit tool of Definition Helper to specify "update" as the handling of the target schedule or delete the schedule from the MG at the upload destination before uploading the file.
WKCAL (calendar name) is already exists. Invalid create operation	
Description	Although handling for the calendar is set to "create", the calendar already exists on the MG at the upload destination. Use the Definition edit tool of Definition Helper to specify "update" as the handling of the target calendar or delete the calendar from the MG at the upload destination before uploading the file.
CustomJob template (custom job name) is already exists. Invalid create operation	
Description	Although handling for the custom job definition is set to "create", the custom job definition already exists on the MG at the upload destination. Use the Definition edit tool of Definition Helper to specify "update" as the handling of the target custom job definition or delete the custom job definition from the MG at the upload destination before uploading the file.
JNW (job network name) is being edited by client=<host-name>.	
Description	Upload is not available because the job network is being edited. Close the window of the job network being edited before upload.
SCHED (schedule name) is being edited by client=<host-name>.	
Description	Upload is not available because the schedule is being edited. Close the window of the schedule being edited before upload.
WKCAL (calendar name) is being edited by client=<host-name>.	
Description	Upload is not available because the calendar is being edited. Close the window of the calendar being edited before upload.
CUSTOMJOB_TEMPLATE (custom job name) is being edited by client=<host-name>.	
Description	Upload is not available because the custom job is being edited. Close the window of the custom job being edited before upload.



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## 13 Prepared Release Function

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The prepared release function is used to release the defined job network and schedule at a specified time. It separates modification and application of the job network definitions, and allows the verified new definitions to be applied at once, reducing the risks regarding the definition release work.

The list below shows the terms used in this chapter.

Table 13.1. Terms used for the prepared release function

Term	Description
Master definition	An entity of definition referenced at the time of immediate submission of job network or schedule submission. <a href="#">Chapter 3, 「Operating Instructions for Job Network」</a> , <a href="#">Chapter 6, 「Schedule Operation Method」</a> , and <a href="#">Chapter 12, 「Upload and Download Functions」</a> also describe operating this definition. In this chapter, the definition entity is referred to as "master definition".
Release plan	An aggregate definition to update the master definition at a certain time.
Expected release time	The time at which the master definition is updated according to the release plan.

## 13.1. Overview of Prepared Release Function

A prepared release can be managed on the [Release Plan List] tab in the [User Frame] window.

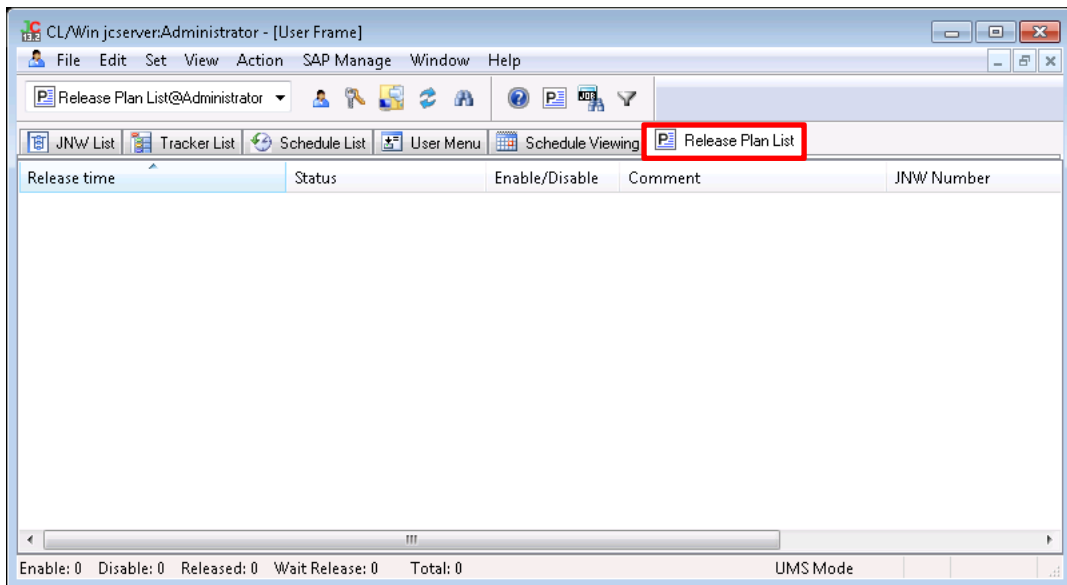


Figure 13.1. Screenshot of the List of release plans

The items displayed in [Release Plan List] are as follows:

■ Release time

Shows the expected release time of the release plan.

■ Status

Indicates the status of the release plan.

For displayed statuses and their details, refer to [Table 13.2, "List of release plan statuses"](#).

■ Enable/Disable

Indicates whether the release plan is enabled or disabled.

■ Comment

Shows the comment specified for the release plan.

■ JNW Number

Indicates the number of job networks to be created/updated according to the release plan.

■ Schedule Number

Indicates the number of schedules to be created/updated according to the release plan.

The list bellows describes the Items displayed for the release plan status.

Table 13.2. List of release plan statuses

Status	Description
Wait Release(uncheck)	<p>Applied to a release plan whose expected release time has not come.</p> <p>It indicates the release plan has not been checked, or the master definition has been changed after the check and thus the final check result is invalid.</p> <p>The release is executed at the expected release time even with the status "Wait Release(uncheck)".</p>
Wait Release(error)	<p>Applied to a release plan whose expected release time has not come.</p> <p>It indicates that a dependency error was detected in the release plan check.</p> <p>The release is executed at the expected release time even with the status "Wait Release(error)".</p>
Wait Release	<p>Applied to a release plan whose expected release time has not come.</p> <p>It indicates that no dependency error was detected in the release plan check.</p>
Released	<p>Applied to a release plan whose expected release time has come or for which the immediate release has been executed.</p> <p>It indicates [Enable/Disable] was [Enable] at the start of release, and the release has been done and the master definition has been updated successfully.</p>
Release error	<p>Applied to a release plan whose expected release time has come or for which the immediate release has been executed.</p> <p>It indicates [Enable/Disable] was [Enable] at the start of release, and updating the master definition failed because an error occurred during the release processing.</p>
Skip Release	<p>Applied to a release plan whose expected release time has come or for which the immediate release has been executed.</p> <p>It indicates [Enable/Disable] was [Disable] at the start of release.</p>

## 13.2. Creating a Release Plan

There are several ways to create a release plan. They can be selected from the right-click menu on the [Release Plan List] tab.

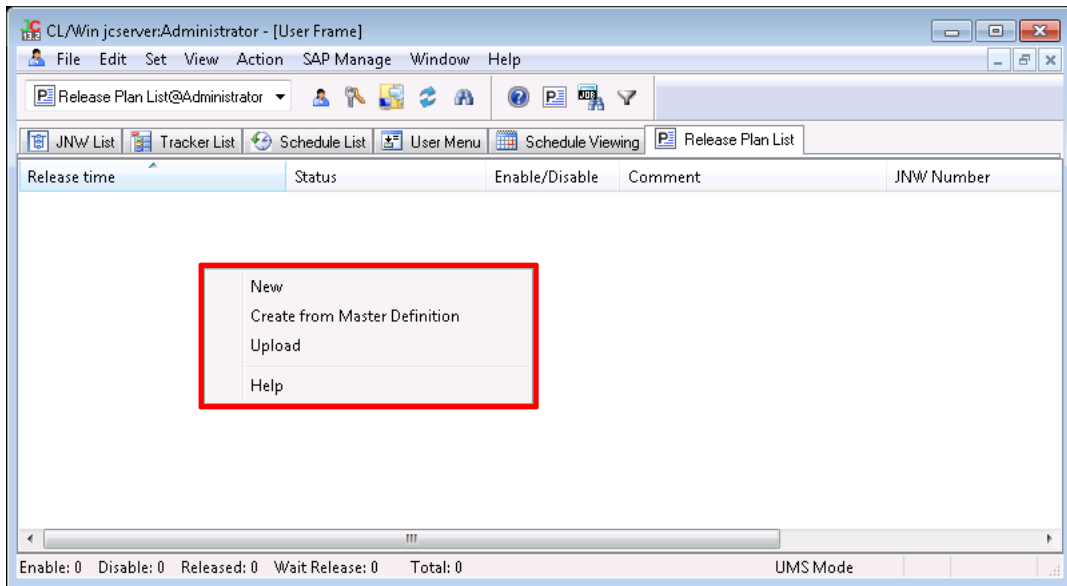


Figure 13.2. Screenshot of the right-click menu for release plans



For either way, you can add, update, or refer to a definition to update to a release plan, and update or refer to a release plan. For details about updating a release plan, refer to [Section 13.3, "Updating a Release Plan"](#).

### 13.2.1. Creating an Empty Release Plan

Create a release plan with no definition to be released.

1. Display [Release Plan List] in the [User Frame] window.
2. On the [File] menu, select [New], or right-click on the right view of the User Frame screen without selecting a release plan and then select [New] from the popup menu.
3. Set the expected release time.

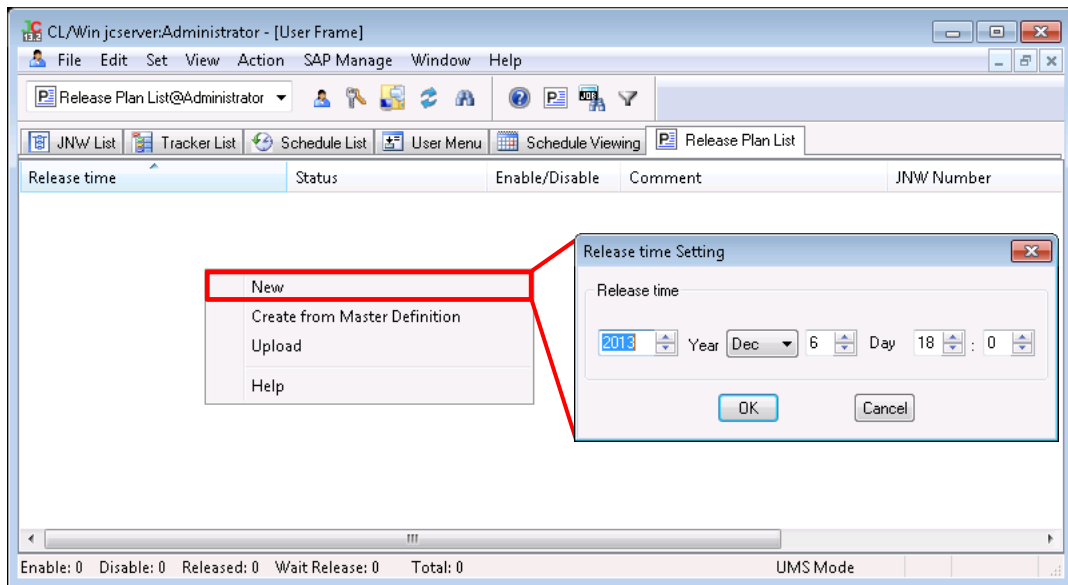


Figure 13.3. Screenshot that shows creating a release plan (New)



- You cannot specify a past time for the expected release time.
- You cannot create a release plan by specifying an expected release time that already exists.

### 13.2.2. Create a Release Plan Based on a Master Definition

Create a new release plan based on a definition created in [JNW List] or [Schedule List] in the [User Frame] window. You can add a definition to update to a created release plan, or update a release plan. For details about release plans, refer to [Section 13.3, "Updating a Release Plan"](#).

1. Shows [Release Plan List] in the User Frame.
2. On the [File] menu, select [Create from Master Definition], or right-click on the right view of the [User Frame] window without selecting a release plan and then select [Create from Master Definition] from the popup menu.
3. Set the expected release time.

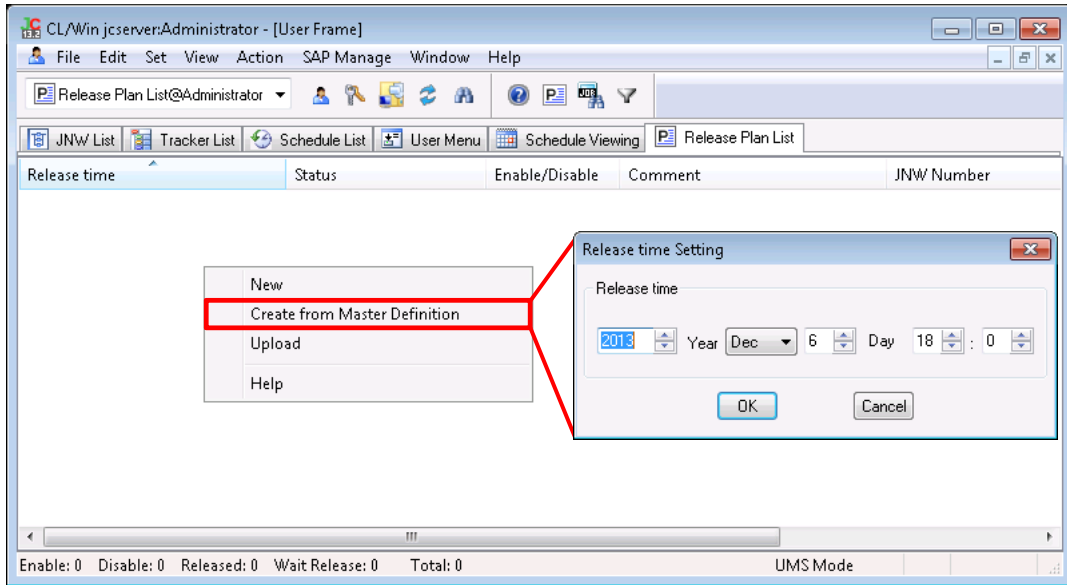


Figure 13.4. Screenshot that shows creation of a release plan (Create from Master Definition)



- You cannot specify a past time for the expected release time.
- You cannot create a release plan by specifying an expected release time that already exists.
- When creating a release plan based on the master definition, all definitions will be converted to a JPF file. If the user environment contains a lot of definitions, creating a release plan may take a long time.

### 13.2.3. Create a Release Plan from JPF file with Definition Format

Create a release plan based on a JPF file of definition information created in [Section 12.1.1, "Downloading Definition Information"](#) and Chapter 2, "Definition Helper" in <Guide for using Helper function> (Japanese only).

1. Display [Release Plan List] in the User Frame.
2. On the [File] menu, select [Upload], or right-click on the right view of the User Frame screen without selecting a release plan and then select [Upload] from the popup menu.
3. Set the expected release time.

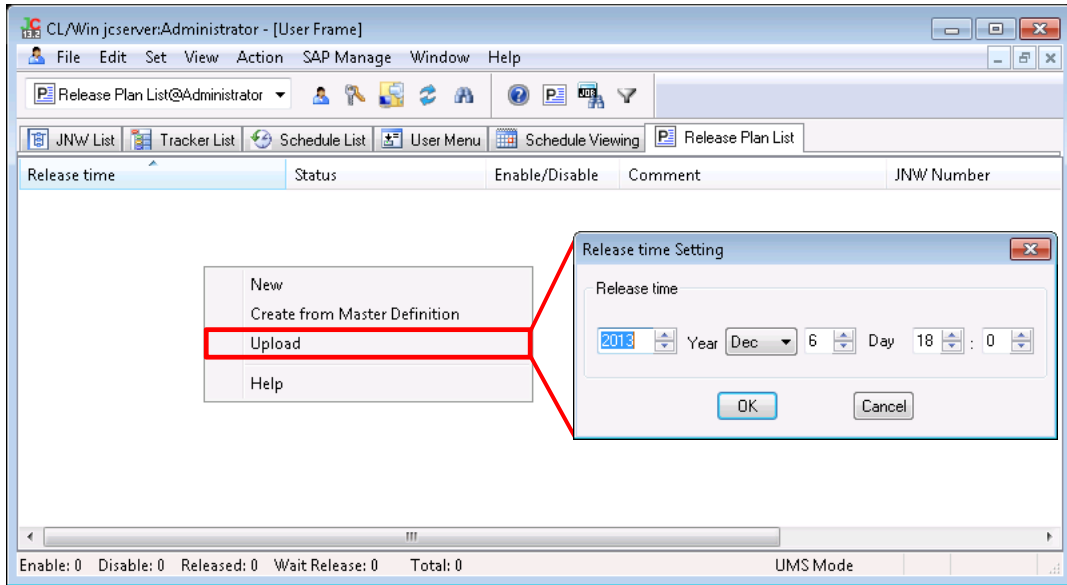


Figure 13.5. Screenshot that shows creation of a release plan (Upload)

4. In the file selection dialog box, select a JPF file of definition information used as a release plan.



For uploading a release plan, you can use files downloaded by the Upload/Download function, and files created by JobCenter Definition Helper.

By uploading as a release plan, you can see and modify the update without updating the definitions.



- You cannot specify a past time for the expected release time.
- You cannot create a release plan by specifying an expected release time that already exists.
- You cannot specify a JPF file containing all users' definitions. Specify a JPF file in which an individual user definition is downloaded.

## 13.3. Updating a Release Plan

Definitions updated by a release plan can be referred to by using the same procedure as definition reference in the User Frame. Definition contents can be updated before the expected release time.

Open the screen for creating and referring to a job network and schedule to which you add or update a definition by a release plan.

1. Double-click a release plan, or right-click a release plan and select [Open] from the popup menu.

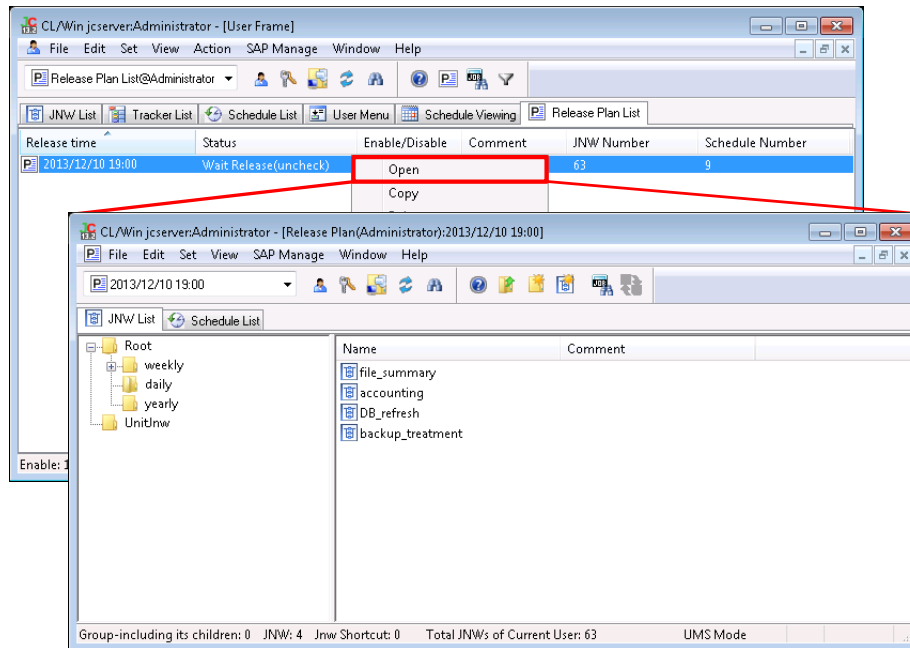



Figure 13.6. Screenshot of referring to a release plan

2. On the Release plan screen, the [JNW List] and [Schedule List] tabs are displayed.

On each tab, use the same procedure as the corresponding tab of the User Frame to see and update definitions. A definition change in a release plan does not affect the master definition until the release is executed.

3. After updating the release plan, choose [File] and then [Save] or click the  icon on the toolbar to save the release plan.



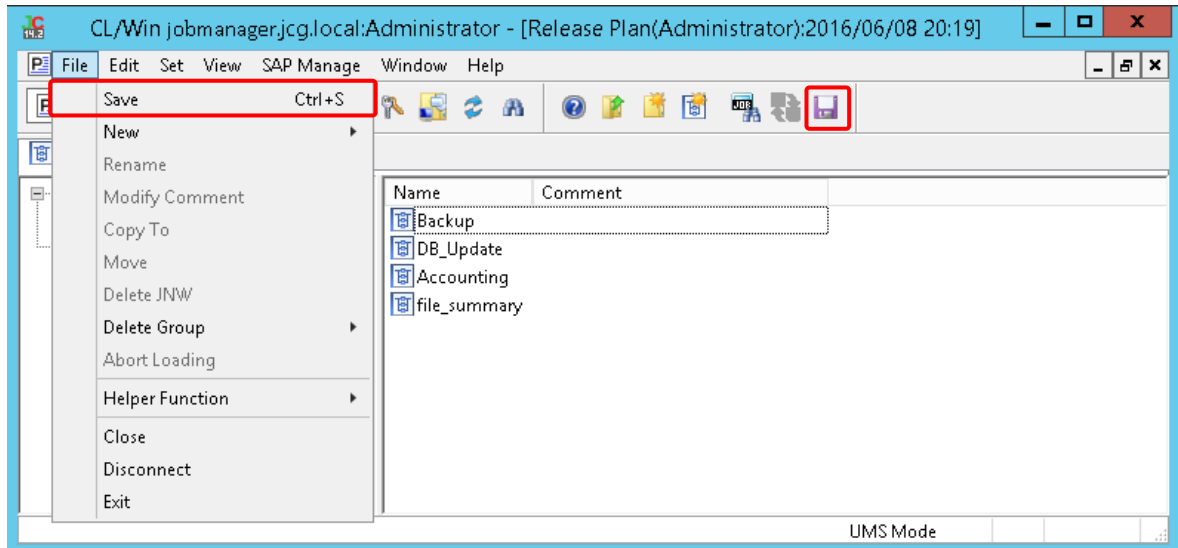


Figure 13.7. Saving the release plan



- To create, reference, and update a job network, refer to [Chapter 3, 「Operating Instructions for Job Network」](#) .
- To create, reference, and update a schedule, refer to [Chapter 6, 「Schedule Operation Method」](#) .
- When [Status] is either [Released], [Skipped release], or [Release error], the release plan cannot be updated.



You cannot use a prepared release to create a schedule group that does not contain a schedule. If you create and upload a schedule group that does not contain a schedule on [Schedule List] on the Release plan screen, and reopen the Release plan screen, that schedule group does not exit.

## 13.4. Operating a Release Plan

This section describes the operations available by using the right-click menu of each release plan.

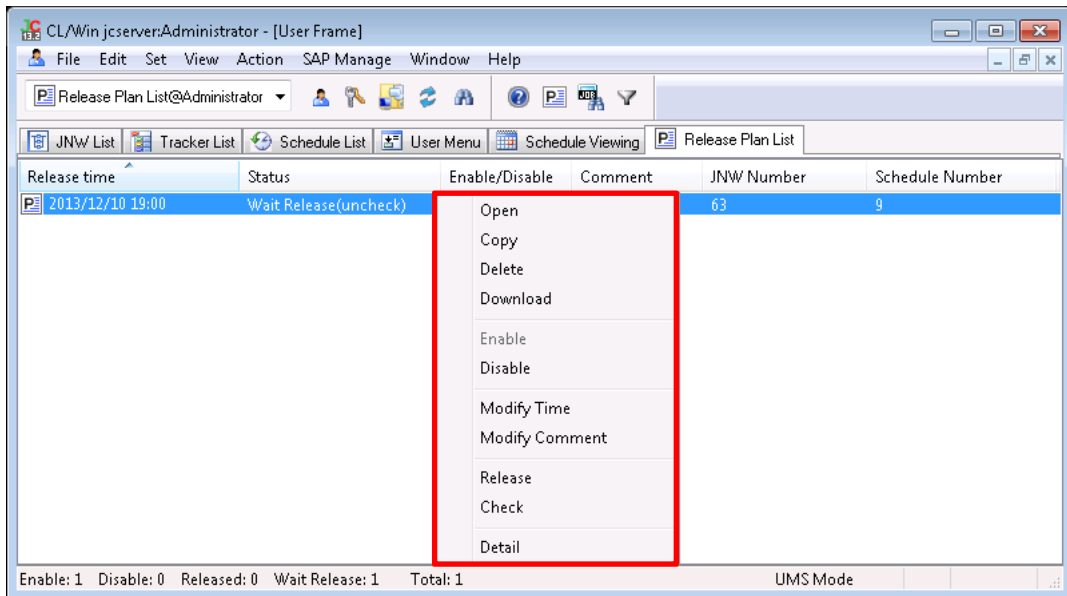


Figure 13.8. Screenshot of the right-click menu of a release plan

Table 13.3. List of release plan operations

Menu name	Description	Refer to:
Open	Open the [Release Plan] window.	<a href="#">Section 13.3, "Updating a Release Plan"</a>
Copy	Copies a release plan.	<a href="#">Section 13.4.1, "Copying a Release Plan"</a>
Delete	Deletes a release plan from the list.	<a href="#">Section 13.4.2, "Deleting a Release Plan"</a>
Download	Downloads a release plan as a JPF file of definition information.	<a href="#">Section 13.4.3, "Downloading a Release Plan"</a>
Enable	Enables a release plan.	<a href="#">Section 13.4.4, "Enabling/Disabling a Release Plan"</a>
Disable	Disables a release plan.	<a href="#">Section 13.4.4, "Enabling/Disabling a Release Plan"</a>
Modify Time	Modifies the expected release time.	<a href="#">Section 13.4.5, "Changing the Expected Release Time of a Release Plan"</a>
Modify Comment	Modify the release plan comment.	<a href="#">Section 13.4.6, "Setting a Comment of a Release Plan"</a>
Release	Releases a release plan regardless of the expected release time.	<a href="#">Section 13.4.7, "Immediate Release of a Release Plan"</a>
Check	Checks dependencies of a release plan to see whether it can be released.	<a href="#">Section 13.4.8, "Checking a Release Plan"</a>
Detail	You can refer to the details of the release plan.	<a href="#">Section 13.4.9, "Confirming Detail Information of Release Plan"</a>

### 13.4.1. Copying a Release Plan

Create a new release plan based on a registered release plan.

1. Select a release plan, select [File], and then [Copy], or right-click a release plan and then select [Copy] from the popup menu.
2. Set the expected release time.



- You cannot specify a past time for the expected release time.
- You cannot create a release plan by specifying an expected release time that already exists.

### 13.4.2. Deleting a Release Plan

Delete a created release plan.

1. Select a release plan, select [File], and then [Delete], or right-click a release plan and then select [Delete] from the popup menu.
2. In the delete confirmation dialog box, check the release plan and then click [Continue].



Created release plans remain in the release history even though they are deleted, and JobCenter does not automatically delete them. Delete unnecessary release plans after confirming release results. If there are lots of releases, processing regarding the prepared release function may take a long time.

### 13.4.3. Downloading a Release Plan

Download the definition update of a release plan as a JPF file of definition information.

1. Select a release plan, select [File], and then [Download], or right-click a release plan and then select [Download] from the popup menu.
2. In the file selection dialog box, specify a location to save the JPF file of definition information.



In the same way as the JPF file downloaded by the Download function, a JPF file of definition information downloaded from a release plan can be handled by using Definition Helper, the text definition edit function, and Upload function.

### 13.4.4. Enabling/Disabling a Release Plan

Enable or disable a specified release plan. A created release plan can be aborted without deleting it.

Whether the release plan is enabled or not is shown in the [Enable/Disable] section on the [Release Plan List] screen.

1. Select a release plan, select [File], and then select [Enable] or [Disable], or right-click a release plan, and then select [Enable] or [Disable] from the popup menu.



When the expected release time comes for a disabled release plan, the status of that release plan will be shown as [Skip Release].

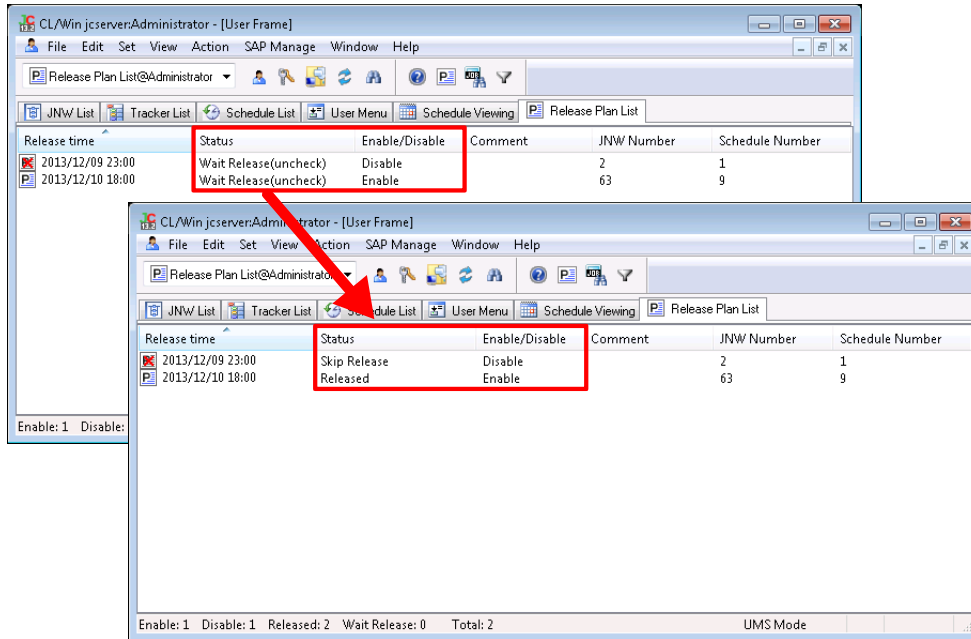


Figure 13.9. Screenshot that shows an example of enabling/disabling a release plan

### 13.4.5. Changing the Expected Release Time of a Release Plan

Change the expected release time of a specified release plan.

The expected release time is shown on the [Release time] section on the [Release Plan List] screen.

1. Select a release plan, select [File], and then select [Modify Time], or right-click a release plan, and then select [Modify Time] from the popup menu.
2. Set the expected release time.



- You cannot specify a past time for the expected release time.
- You cannot specify an expected release time that already exists.

### 13.4.6. Setting a Comment of a Release Plan

Comment on a release plan.

The comment for a release plan is shown in the [Comment] section on the [Release Plan List] screen.

1. Select a release plan, select [File], and then select [Modify Comment], or right-click a release plan, and then select [Modify Comment] from the popup menu.
2. Set a comment for a release plan.



- A Japanese or English (or mixed) string of 256 bytes or less can be used for a comment.
- The tab, special characters, and the following characters cannot be used: ^, #, \$, ;, (, ), [, ], {, }, \, |, <, >, ", &, and '.

### 13.4.7. Immediate Release of a Release Plan

Execute a specified release plan or update its definition regardless of the expected release time.

1. Select a release plan, select [File], and then select [Release], or right-click a release plan, and then select [Release] from the popup menu.



To see the release result, right-click a release plan and select [Detail], and then select [Release log]. For details, refer to [Section 13.4.9, "Confirming Detail Information of Release Plan"](#).



You cannot immediately release a release plan again that was already released.

To execute the same update as a past release plan, copy a release plan and create a new release plan.

### 13.4.8. Checking a Release Plan

Check dependencies of the specified release plan and whether it can be applied.

1. Select a release plan, select [File], and then select [Check], or right-click a release plan, and then select [Check] from the popup menu. Select [Check log] in the dialog box that opens.



■ The format of the check log is the same as [Section 12.3, "Checking Definition Information \(JPF File\)"](#). If a dependency error is detected during the check, refer to [Section 12.4, "Dependency Errors"](#).

■ To see a check result, right-click a release plan and select [Detail], and then select [Check log]. For details, refer to [Section 13.4.9, "Confirming Detail Information of Release Plan"](#).

### 13.4.9. Confirming Detail Information of Release Plan

Refer to the detail information of a specified release plan.

#### ■ Check log

A log created in [Section 13.4.8, "Checking a Release Plan"](#) can be referred to.

1. Select a release plan, select [File], and then [Detail], or right-click a release plan, and then select [Detail] from the popup menu.
2. Select [Check log] in the dialog box that opens.

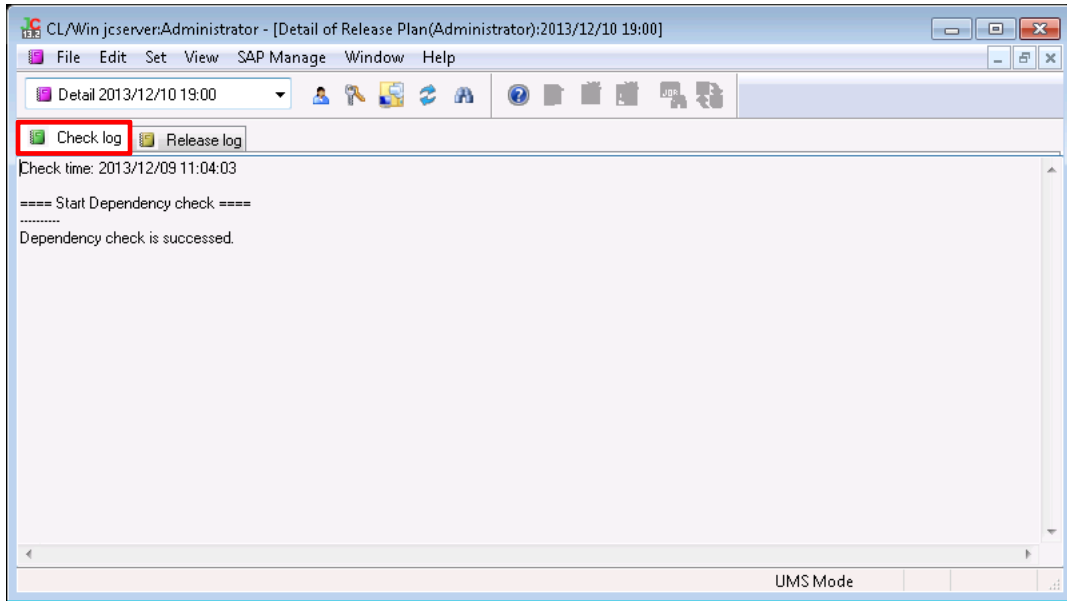


Figure 13.10. Screenshot that shows referring to a check log



The format of the check log is the same as [Section 12.3, “Checking Definition Information \(JPF File\)”](#). If a dependency error is detected during the check, refer to [Section 12.4, “Dependency Errors”](#).

■ Release log

A log created when a release plan is executed can be referred to.

1. Select a release plan, select [File], and then select [Detail], or right-click a release plan, and then select [Detail] from the popup menu.
2. Select [Release log] on the dialog box that opens.

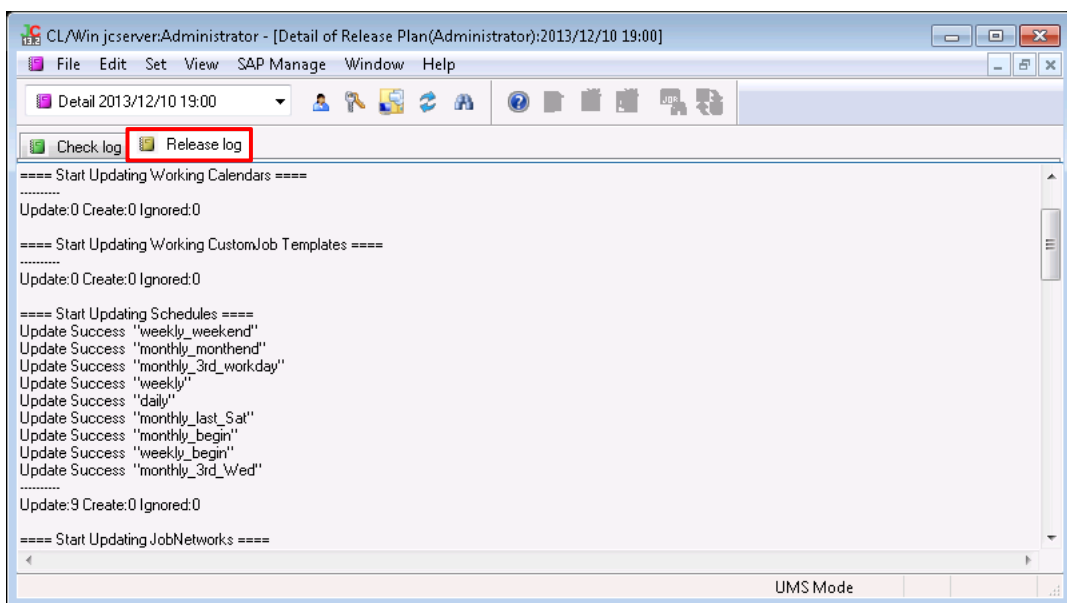


Figure 13.11. Screenshot that shows referring to a release log



The format of the release log is the same as the one shown on the Upload completion screen described in [Section 12.2, "Uploading Definition Information \(JPF File\)"](#). If a dependency error is detected during the check, refer to [Section 12.4, "Dependency Errors"](#).

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## 14 Authority Setting of General User (Permission)

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The authority of general users who use JobCenter is set on an authority group basis.

An authority group is a group of users that is given a specific level of authority according to a specific purpose.

The authority for users to reference, create, and execute their own job networks and other users' job networks, as well as to reference and operate their own trackers and other users' trackers, is set for each authority group individually.

As for the authority to access other users, it is possible to restrict users' access permissions for each authority group that is given such authority.

For details, refer to in <Environment Guide>Chapter 9, 「User Authority (Permission)」 .



## 14.1. Setting Authority Groups

The JobCenter administrator gives appropriate access rights to individual users by adding them to a default authority group or any other user-defined additional authority group.

This enables the operations listed below.

- Allow a user to reference, create, and execute other users' job networks
- Allow only specific users to access other users' job networks, etc.
- Restrict users' access permissions for each authority group
- Prohibit specific users to create and change job networks while allowing them only to execute job networks and operate trackers

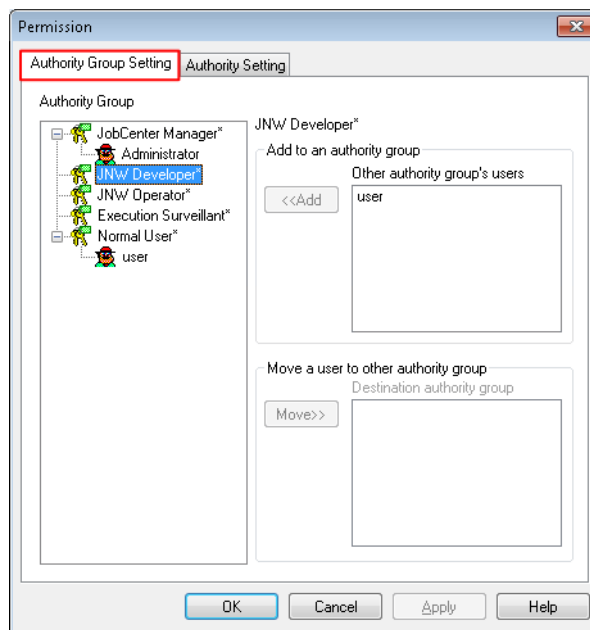


Figure 14.1. Screenshot of the [Permission] dialog box



The [Authority Group Setting] tab lets you check, set, and change the users who belong to a specific authority group.

The [Authority Setting] tab is used to create a new authority group and specify the necessary settings for the added authority group.

The following sections describe the procedures using the example of "adding userA to the JNW Developer group".

### 14.1.1. Adding a User to an Authority Group

The [Authority Group] list on the left side displays the currently set authority groups and the users who belong to them in a tree structure.

 represents an authority group, and  a user belonging to the group. The asterisk at the end of a group name indicates that the authority group is a default one.

1. To set an authority group, log in using the manager account.

2. On the menu bar, select [Set] and then click [Permission].
3. The [Authority Group Setting] tab of the [Permission] dialog box appears, which displays the authority groups currently set in the machine.

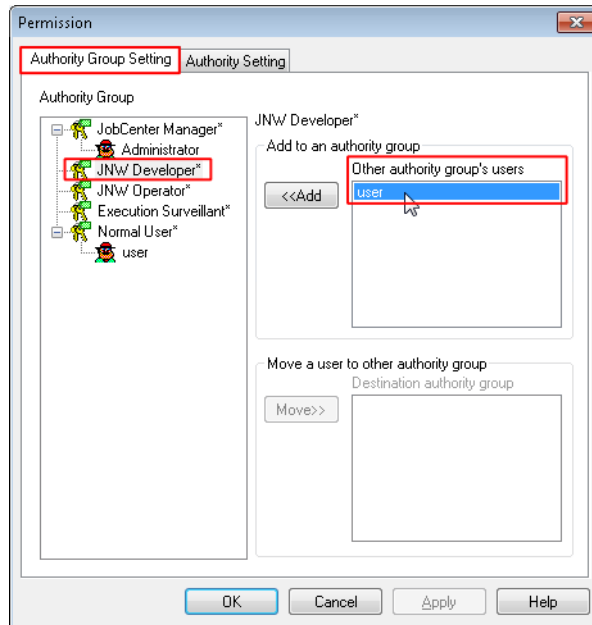


Figure 14.2. Screenshot of the dialog box for moving a user using [Add to an authority group]

4. In the [Authority Group] list, select the JNW Developer group to which you want to move the user. The [Other authority group's users] box lists the users who can be moved to the JNW Developer group.
5. Select userA in the [Other authority group's users] box, and then click the [Add] button.
6. userA is moved from the general user group to the JNW Developer group.

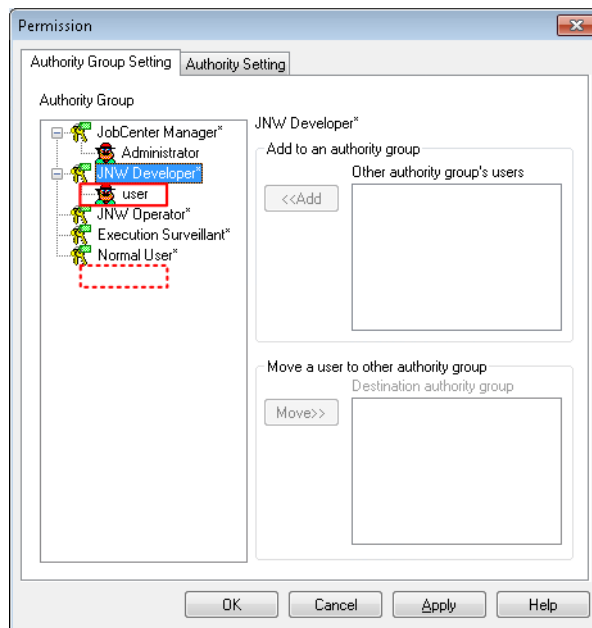


Figure 14.3. Screenshot of the dialog box after moving userA

7. Repeat these steps on a user-by-user basis to change the users belonging to the group.

8. When finished with the changes, click the [Apply] or [OK] button to get the new settings reflected.

This method also allows you to select more than one user in the [Other authority group's users] box and move all of them at once.

### 14.1.2. Moving a User to Another Authority Group

This section describes how to move a specific user (user) from the general user group to another authority group.

1. In the [Authority Group] list, select user.
2. The [Destination authority group] box lists the authority groups to which user can be moved.
3. Select [JNW Developer] in the [Destination authority group] box, and then click the [Move] button.

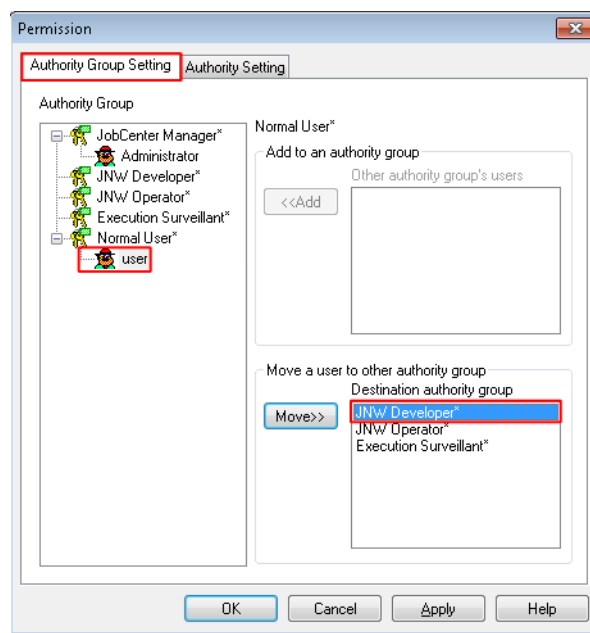


Figure 14.4. Screenshot of the dialog box for moving a user using "Move a user to other authority group"

4. userA is moved from the general user group to the JNW Developer group.

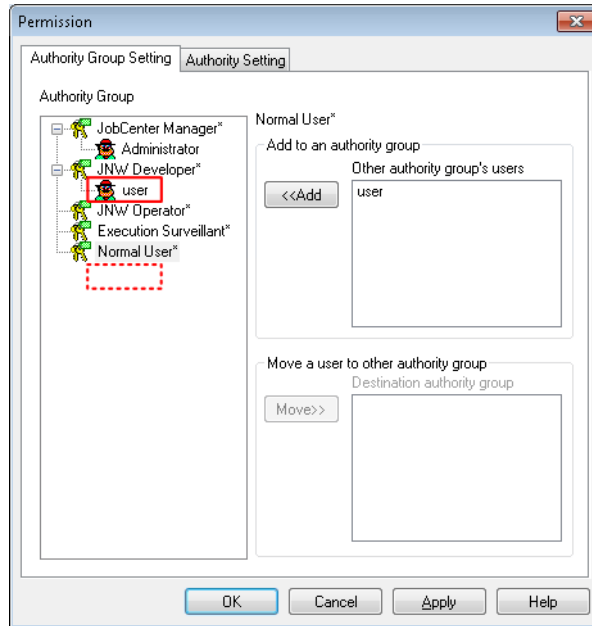


Figure 14.5. Screenshot of the dialog box after moving userA

5. Repeat these steps on a user-by-user basis to change the users belonging to the group.
6. When finished with the changes, click the [Apply] or [OK] button to get the new settings reflected.



Users who can be added to an authority group are only those who have logged in from JobCenter CL/Win. Users who have never logged in from JobCenter CL/Win are not shown in the [Authority Group] list.

## 14.2. Creating an Authority Group

In addition to the default authority groups, new authority groups can be created.

Also, the authority settings for a new authority group can be changed freely.

### 14.2.1. Adding a New Authority Group

In the Authority Setting tab, add a new authority group.

1. Open the [Authority Setting] tab in the [Permission] dialog box and then click [New].

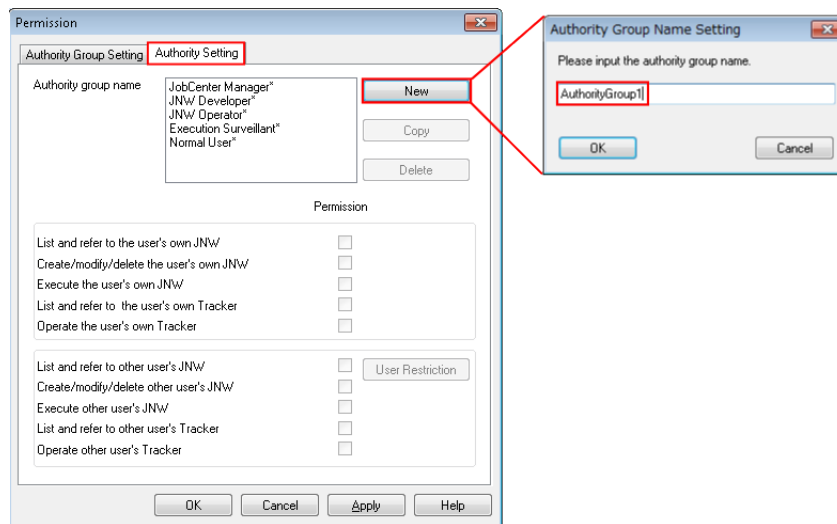


Figure 14.6. Screenshots that shows creating a new authority group

2. Enter the authority group name in the [Authority Group Name Setting] dialog box.



#### Cautions when naming an authority group

- The name cannot exceed 40 single-byte (alphanumeric) characters or 20 double-byte (Asian) characters.
- For the first character, only alphabet, underline, or double-byte (Asian) characters can be used. Furthermore, space, tab, special characters, !, ", #, \$, %, &, ', (, ), \*, ,, ., /, :, ;, <, =, >, ?, @, [, \, ], ^, `, {, |, }, and ~ are not allowed to use.

3. After configuration of the Authority group name, click [OK] button.
4. The name of the added new authority group is displayed in the [Authority group name] box.

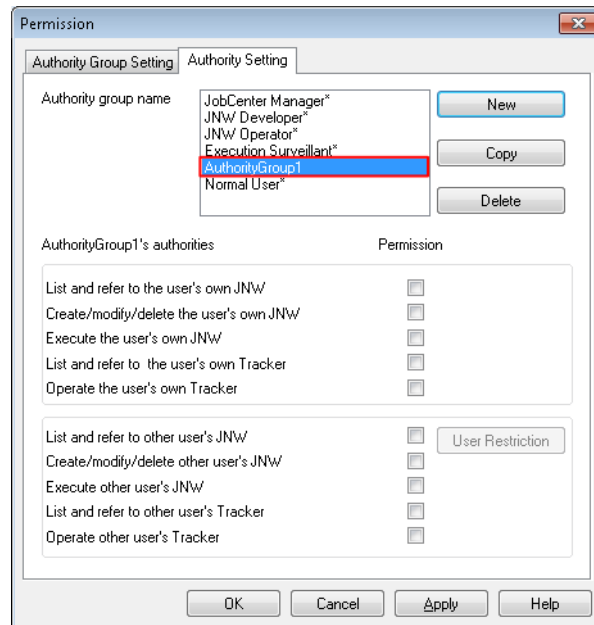


Figure 14.7. Screenshot of the dialog box after adding a new group to [Authority group name]

5. When finished with the change, click the [Apply] or [OK] button to get the new setting reflected.

### 14.2.2. Setting the Authority of an Added Authority Group

The authority of an authority group can be set by selecting the boxes for the permitted items in the "<selected-authority-group>'s authorities" section below the [Authority group name] box.

When a new authority group is created or an existing authority group is copied, these settings are reflected on the [Authority Group Setting] tab and it becomes possible to set the users belonging to the group.

Items in the [Authority Setting] tab are as follows:

#### ■ [Copy] button

Clicking this button allows you to create a new authority group by copying the authority setting and user restriction information of an existing authority group. The JobCenter Manager group cannot be copied.

#### ■ [Delete] button

Clicking this button allows you to delete an authority group. The users belonging to the deleted group are automatically moved to the "general user" group. The default authority groups cannot be deleted.

#### ■ <selected-authority-group>'s authorities

This section displays the authority settings of the selected authority group. The authority settings can be specified by clicking the checkboxes. The authority settings of a default authority group are shown for reference purposes only.

#### ■ [User Restriction] button

Clicking this button allows you to restrict users' access permissions for an authority group permitted to reference and operate other users' job networks and trackers. This feature cannot be used for authority groups having no authority to access other users or the "JobCenter Manager group".

## 14.3. Restricting the Permission to Access Other Users' Job Networks and Trackers

In the case of an authority group permitted to reference and operate other users' job networks and trackers, it is possible to restrict users' access permissions.

1. Display the [Authority Setting] tab of the [Permission] dialog box.
2. Select each authority item to be permitted for the selected authority group.

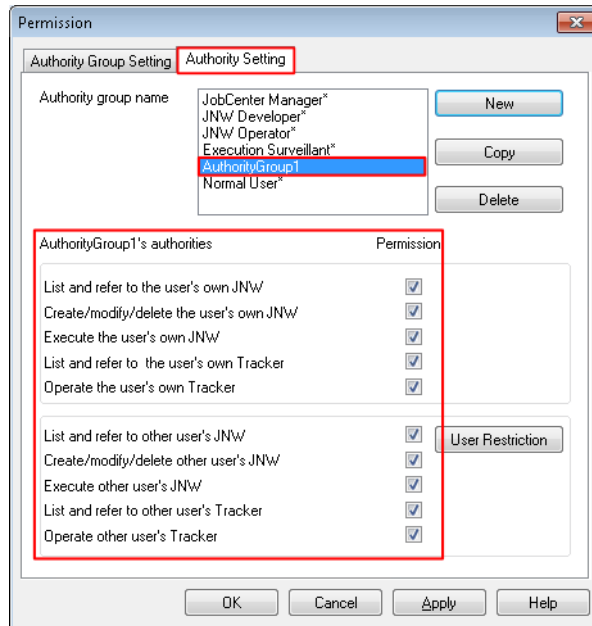


Figure 14.8. Screenshot of the dialog box for selecting the authority items to be permitted for the selected authority group

3. Clicking the [User Restriction] button opens the [Access permission] dialog box.

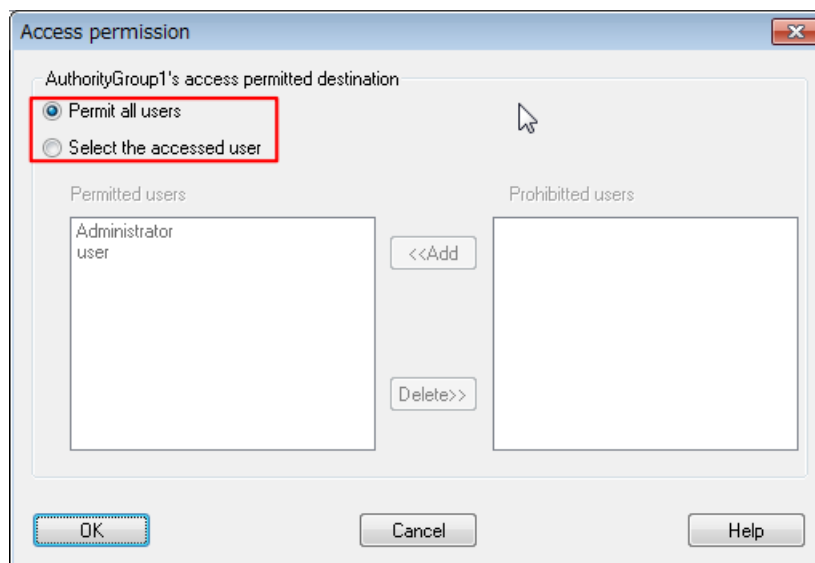


Figure 14.9. Screenshot of the initial [Access permission] dialog box

4. If you select "Select the accessed user", the "Permitted users" and "Prohibited users" lists become available, making you able to change the settings. For any authority group, the dialog box initially appears with "Permit all users" selected.
5. Here, select userA and click the [Delete] button.
6. userA is set in the Prohibited users list.

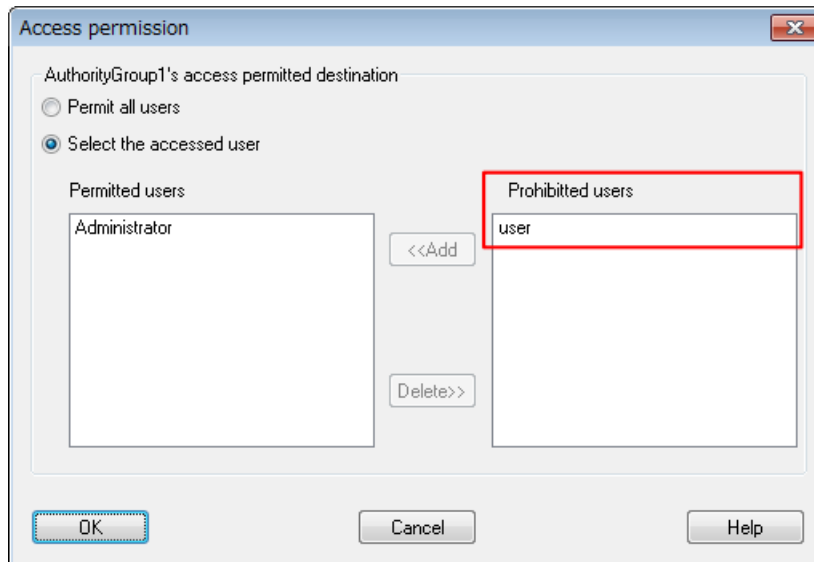


Figure 14.10. Screenshot of the [Access permission] dialog box

7. After configuration, click [OK].



#### Cautions about setting the access permission

- The access permission function is intended to restrict the operations performed with "Other User Frame", not the operations carried out by the user logged in to JobCenter. The permission settings for the login user are determined by which of the checkboxes for "user's own" are selected in the "Original\_Authority\_Group's authorities" section of the [Permission] dialog box. The user is not affected in terms of any authority group's access permission settings for "other users" even if the user's name is set in the "Prohibited users" list.
- A user who has never logged in from JobCenter CL/Win cannot be set using the [Access permission] dialog box.



## 14.4. Getting the Changed Authority Settings Reflected

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If any change is made to the settings of the authority group to which a user belongs, the new authority group settings are reflected on the two occasions described below. Until then, the system operates according to the authority group settings obtained at the time of login.

- Re-connect to the server (log out and then log back in). Re-connecting from JobCenter CL/Win to the server gets the new authority group settings reflected.
- Open the Permission dialog box (when logged in from JobCenter CL/Win). Selecting [Set] and then [Permission] on the menu bar gets the new authority group settings reflected.

Once the new authority group settings get reflected, the functions that can be performed with JobCenter CL/Win are restricted or permitted according to those settings.

If any authority group setting is deleted after connecting (logging in) to the server, the system behaves as described below, until the changed authority group settings are reflected.

- Even if the authority to create, change, and delete job networks is deleted, the menus and buttons related to these operations remain effective. However, performing any of the operations or saving the data causes an error.
- Even if the authority to list and reference is deleted, it is still possible to list and reference job networks and trackers as well as to have trackers updated automatically.
- Even if the authority to execute job networks or the authority to operate trackers is deleted, it is still possible to execute job networks and operate trackers.

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## 15 Setting the Mail Transmission Function for Errors

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It is possible to send mail to a specified destination if an error occurs in a job or part that is executed with job network parameters set, so as to report the error.

JobCenter uses the SMTP protocol to send mail.

## 15.1. Setting up the SMTP Server to Use

The settings described in this chapter can be changed only by users who log in with an administrator account (UMS mode).

1. Select [System Config] from the [Set] menu.
2. The [System Config] dialog box opens.
3. Click the [SMTP Server] tab.

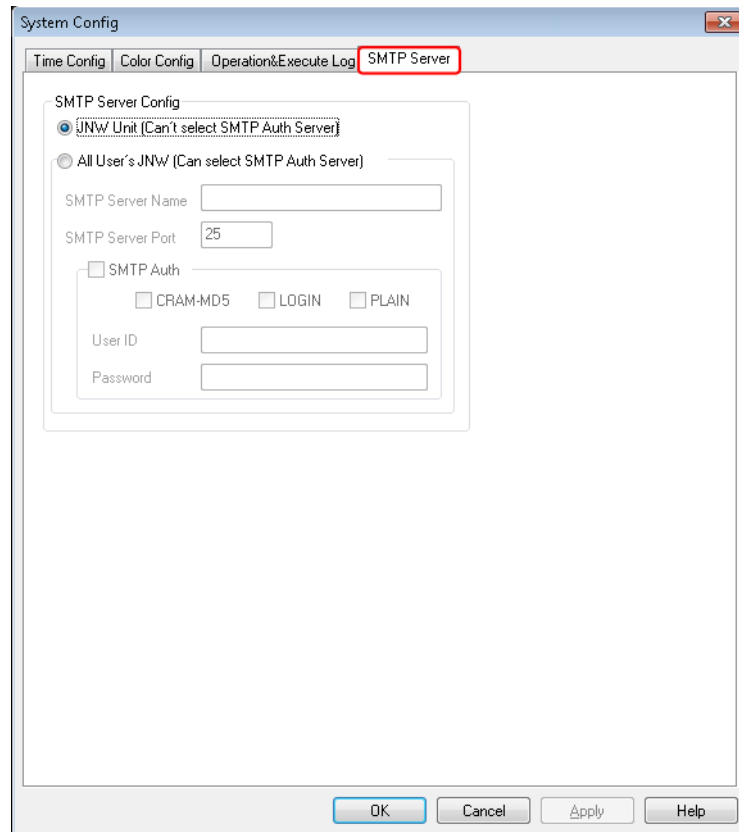


Figure 15.1. [SMTP Server] tab in the [System Config] dialog box

4. Specify the settings as required, and then click [OK].

The settings on the SMTP tab are as follows:

### ■ SMTP Server Settings

Select how to specify the SMTP server. There are the following two specification methods:

- To specify an SMTP server for each job network
- To specify an SMTP server commonly used for all job networks of all users

Select the latter method to enable the SMTP user authentication. The SMTP user authentication is disabled if the former method is selected.

<p>For Each JNW (SMTP authentication cannot be specified) server</p>	<p>Specifies a separate SMTP server for each job network. The SMTP server can be specified in the [Parameter] window for each job network.</p>
--	--

<p>Common to All User JNW (SMTP authentication server can be specified)</p>	<p>Specifies the SMTP server used in common for all job networks of all users.</p> <p>If this check box is selected, [SMTP Server Name] and [SMTP Server Port], which are described below, must be specified.</p> <p>Note that whether to send mail, the destination mail address, and other settings can be specified in the "Parameter" window for each job network.</p>
---	--

■SMTP Server Name

Specify the SMTP server.

Enter the host name or IP address of the SMTP server within 256 bytes.

Note that the following characters cannot be used for the SMTP server name: !, ", #, \$, %, &, ', (, ), \*, ,, /, :, <, =, >, ?, @, [, \, ], ^, `, {, |, }, and ~.

■SMTP Port Number

Specify the port number of the SMTP server from 1 to 65,535.

The default number is 25.

■SMTP Authentication

Select this check box to enable SMTP user authentication. If this check box is selected, the user authentication method or methods must be selected from the following, and the [User ID] and [Password] must be specified:

CRAM-MD5, LOGIN, PLAIN

If multiple methods are selected, user authentication is tried for the SMTP server, in the order of CRAM-MD5, LOGIN, and then PLAIN.


■User ID

Specify the user ID to use for SMTP user authentication within 255 bytes.

Note that the following characters cannot be used for the user ID: ", #, and '.

■Password

Specify the password for the user ID to use for SMTP user authentication within 64 bytes.



The settings of the SMTP server to be used can be changed by the command. For details, refer to the description of the setcfg sub command in <Command Reference>Section 3.33, "jc\_syscfg (Browsing and changing the system environment setting)".

## 15.2. Reporting an Error to a Specified Destination by Mail

1. To set the mail transmission function, open the "Parameter" dialog box of a job network.
2. Open [User Frame], and then the [JNW List] tab, right-click a [Job Network] icon, and then select [Parameter]. Or, open a job network flow, right-click somewhere other than the parts, and then select [Parameter].
3. In the [Parameter] dialog box, select the [Send mail setting] tab to specify the settings.

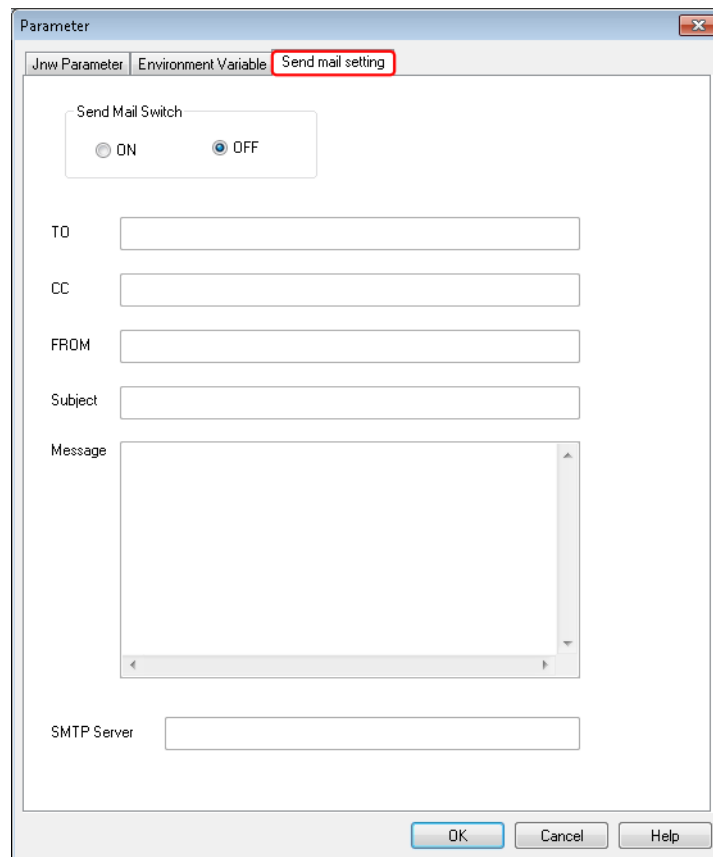


Figure 15.2. Screenshot of the [Parameter] dialog box - [Send mail setting] tab

4. After configuration, click [OK].

Configuration items in the [Send mail setting] tab are as follows:

### ■ Send Mail Switch

Set whether to send mail if an error occurs in a job network.

ON	Sends mail according to the settings if an error occurs while a job network is executed.
OFF	Does not send mail if an error occurs while a job network is executed. This option is selected by default.

### ■ TO

Set the destination address of the mail. More than one mail address can be specified, each delimited by a comma ",".

Up to 1024 bytes can be input.

This item is required when "ON" is selected in "Send Mail Switch".

#### ■CC

Set the destination address of the mail. More than one mail address can be specified, each delimited by a comma ",".

Up to 1024 bytes can be input.

#### ■FROM

Set the source address of the mail.

Up to 256 bytes can be input.

This item is required when "ON" is selected in "Send Mail Switch".



When SMTP user authentication is enabled, mail might not be sent if the specified mail address differs from that corresponding to the user ID to use for user authentication (the ID specified on the [SMTP Server] tab in the [System Config] dialog box). This is provided for the SMTP server as a countermeasure for spam, and is not an error.

#### ■Subject

Enter the subject of the mail to be sent.

Macros can be used in the subject. The available macros are a job network name, tracker name, job part name, user name, date and time, and exit code. For details, refer to [Section 15.5, "List of Macros That Can Be Used in Subjects and Messages"](#).

Up to 1024 bytes can be input. One-byte Katakana cannot be used.

#### ■Message

Enter the message of the mail to be sent.

Macros can be used. The available macros are a job network name, tracker name, job part name, user name, date and time, exit code, standard output, and standard error output. For details, refer to [Section 15.5, "List of Macros That Can Be Used in Subjects and Messages"](#).

Up to 1024 bytes can be input. One-byte Katakana cannot be used.

#### ■SMTP Server

Specify the SMTP server. Specify the host name or IP address of the SMTP server.

This parameter can be edited only if the [For Each JNW (SMTP authentication server cannot be specified)] check box is selected on the [SMTP Server] tab in the [System Config] dialog box. Be sure to specify an SMTP server for which SMTP user authentication is disabled.

Up to 250 bytes can be input.

This item is required when "ON" is selected in "Send Mail Switch."

#### ■Usable Characters

In the "TO" and "CC" fields, two-byte characters, spaces, and the following characters cannot be entered:

() + : " < > ' ,

In the "FROM" field, two-byte characters, spaces, and the following characters cannot be entered:

() + : " < > ' ,

In the "SMTP Server" field, two-byte characters, spaces, and the following characters cannot be entered:

! " # \$ % & ' ( ) \* , / ; <

= > ? @ [ \ ] ^ ` { | } ~



If you enter any of these characters and click the [OK] button, an error dialog is displayed.

■ About the mail address

Enter the destination mail address.

When you specify more than one address by delimiting each by a comma ",", up to 64 addresses can be set. The maximum number of characters that can be entered per mail address is 250 bytes. If you enter a mail address exceeding the maximum number of characters and click the [OK] button, an error dialog is displayed.

## 15.3. Notes on the Mail Transmission Function

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- The function sends mail only once per tracker when the job part that first causes an error ends. Even when the job network parameter is set so that the job execution is continued despite the tracker being in an error state, the function does not send any additional mail if any other part fails after the first failed part. Note, however, that the function may send mail multiple times in cases such as when the machine shuts down during the execution of a tracker or the JobCenter service is stopped.
- SMTP user authentication must be disabled if you want to separately specify an SMTP server for each job network. SMTP authentication servers cannot be used if the [For Each JNW (SMTP authentication server cannot be specified)] check box is selected on the [SMTP Server] tab in the [System Config] dialog box.
- If an invalid mail address is set in the [FROM] field of the [Send mail setting] tab, the FROM address of the received mail may be different from that specified by the job network parameter. This is because, depending on the type of mail server, an additional operation, such as adding a domain name to the FROM address of the transmitted mail, is performed.
- When using the %stdout% or %stderr% macro, do not perform the following operations. Performing any of these operations may preclude the macro from being converted properly.
  - Specify the same file name for both the standard output destination and the standard error output destination in Unit Job parameter setting.
  - Specify the default file name for a different output destination.

### 15.3.1. Behavior If an Error Occurs in a Sub Job Network

When a job network having a sub job network is configured to have mail transmitted from the sub job network, the mail is transmitted if an error occurs in any job within the sub job network, regardless of the mail setting of the parent network.

In this case, when the parent network is also set to send mail, two mail messages are transmitted in total from the sub job network and parent network at the time when an error occurs in a job within the sub job network.



## 15.4. Restrictions on the Mail Transmission Function

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- One-byte katakana characters cannot be used in the subject or message of the mail. Multi-byte characters other than Japanese cannot be used in the message. Because of these restrictions, if one-byte katakana characters are included in any job name or job network name, the %jobname%, %jnwnname%, and %trkname% macros may not be converted properly.
- Mail is not retransmitted even if its transmission fails. The mail transmission function regards the mail transmission process as successful when it succeeds in sending mail to the SMTP server. If the SMTP server is down, the SMTP server settings are inappropriate, or some other problem arises, the function regards the mail transmission as unsuccessful and records it in the error log.
- Even if an invalid (nonexistent) mail address is specified in the TO or CC field of the Send mail setting tab, the operation of sending mail to the mail server itself succeeds and no error log record is created.
- Neither BCC nor priority setting can be specified for mail.
- If the machine shuts down or the JobCenter service is stopped during the execution of a job network that is set to send mail, a mail message with the content set for this job network may be transmitted twice or more.
- Mail can be transmitted up to 10000 times per tracker by the rerun or other operation. If this number is exceeded, the mail transmission fails.
- If UNICODE is used, extended characters are displays as '?'.

## 15.5. List of Macros That Can Be Used in Subjects and Messages

The macros listed below can be used in the "Subject" and "Message" fields of the Send mail setting tab. The utilizable macros are as follows. Macros are not case sensitive.

Table 15.1. Macros that can be used in subjects and messages

Macro format	Outline	Description
%jnwname%	Job network name	Displays the job network name.
%trkname%	Tracker name	Displays the tracker name.
%jobname%	Job name	Displays the name of the job part that caused the error.
%trkpath%	URL path for tracker	Displays the URL path for referencing the tracker that caused the error via CL/Web.
%partspath%	URL path for tracker	Displays the URL path for referencing via CL/Web. The macro is expanded only if the error occurs in a unit job, ERP job, BI job, PC job, WOBS job, or custom job.
%username%	User name	Displays the name of the user who submitted the job network.
%occur%	Machine name	Displays the name of the machine that caused the error.
%errortime%	Date and time	Displays the date and time when mail was transmitted due to the error. Format: YYYYMMDD HH:MM:SS
%jnwstarttime%	Date and time	Displays the date and time when the job network started. Format: YYYYMMDD HH:MM:SS
%jobstarttime%	Date and time	Displays the date and time when the job part that caused the error started. Format: YYYYMMDD HH:MM:SS
%jobendtime%	Date and time	Displays the date and time when the job part that caused the error ended. Format: YYYYMMDD HH:MM:SS
%exitcode%	Exit code	Displays the exit code of the job that caused the error.
%stdout%	Standard output	Displays the data directed to the standard output of the unit job. (Message field only. This macro cannot be used in the Subject field.)
%stderr%	Standard error output	Displays the data directed to the standard error output of the unit job. (Message field only. This macro cannot be used in the Subject field.)

The %errortime%, %jnwstarttime%, %jobstarttime%, and %jobendtime% macros in [Table 15.1, "Macros that can be used in subjects and messages"](#) return the local time of the machine to which the job network has been submitted.

The maximum size of the %stdout% and %stderr% macros after expansion is 512 KB each. The portion of the macro exceeding 512 KB is ignored.

You can specify one section of the standard output or standard error output to be included in the macro. To do this, enclose the section you want to specify using character string "MAILVAR" (uppercase letters must be used), as in the example below.

```
...
MAILVAR
...
...
MAILVAR
...
```

When the standard output or standard error output has a section enclosed by character string "MAILVAR," as shown above, the macro (%stdout% or %stderr%) inserts only that enclosed section into the mail message.



If MAILVAR is output at only one place, it is considered that there is no range specified and 512 kilobytes of the standard output or standard error output is read from the beginning. If MAILVAR is output at three or more places, only the section enclosed by the first and second occurrences of MAILVAR from the beginning of the output result is inserted into the mail message, with the rest ignored. Be sure to enclose only one section using MAILVAR.

■ Unit job script examples

```
...
echo MAILVAR
...
...
echo MAILVAR
...
```

These appear in the standard output as follows:

```
...
MAILVAR
...
...
MAILVAR
...
```

To specify MAILVAR in the standard error output:

- For UNIX

```
...
echo MAILVAR 1>&2
samplecommand
set RET=$?      (Write "RET=$?" for Bourne Shell type)
echo MAILVAR 1>&2
exit $RET
```

- For Windows

```
...
echo MAILVAR 1>&2
```

```
samplecommand
set RET=%ERRORLEVEL%
echo MAILVAR 1>&2
exit %RET%
```

Output the character string MAILVAR to the standard error output by writing the script as in the examples above.

The exit code of unit job (value returned at exit) must match the return value of the executed command or batch file (sample command).



Set echo off in Windows so that unnecessary command lines are not output.

## 15.6. Lists of Operations To Be Performed in Case of an Error

The mail transmission operations are described below that are performed if a job network being executed experiences an anomaly and enters the error status.

When the execution of the first job part that has entered the error status ends, mail is transmitted with the preset content.

The following table shows the tracker statuses that may be present when mail is transmitted.

Table 15.2. Tracker statuses at the time of mail transmission

Tracker status	Description
STOP(ERROR)	Execution has been stopped due to an error.
RUN[ERROR]	Execution is continuing despite of an error.
RUN[ERROR][WAIT]	Execution is continuing in the error status, while the waiting component is waiting.
DONE(ERROR)	Execution has ended due to an error.
ABORT	Execution has been aborted due to an error.

The following table shows the job parts that may enter the error status and what is displayed after they are replaced by a macro (%jobname%).

Table 15.3. Job parts that may enter the error status and what is displayed after they are replaced by a macro

Job part type	Display after macro replacement
Unit Job	The name of the unit job part in which the error actually occurred is displayed.
ERP Job	The name of the ERP job part in which the error actually occurred is displayed.
BI Job	The name of the BI job part in which the error actually occurred is displayed.
PC Job	The name of the PC job part in which the error actually occurred is displayed.
WOBS Job	The name of the WOBS job part in which the error actually occurred is displayed.
Custom Job	The name of the custom job part in which the error actually occurred is displayed.
Dialog	The name of the dialog part in which the error actually occurred is displayed.
Event Transmission	The name of the event transmission part in which the error actually occurred is displayed.
Event Reception	The name of the event reception part in which the error actually occurred is displayed.
Sub Job Network (SubJNW)	A character string is displayed that concatenates a sub job network name and the name of the job part in which the error actually occurred with a colon.  (Example) When an error has occurred in unit job "Job1" of sub job network "SubJNW," "SubJNW:Job1" is displayed.

Continuity	<p>A character string is displayed that concatenates a part type name (contjob), a number representing the order of creation in the job network flow among the continuity parts that jump to the same job, and the name of the jump destination job with underlines.</p> <p>(Example) When the jump destination job is "Job1" and the part is the second created one of the continuity parts whose jump destination job is "Job1," "<u>contjob_2_Job1</u>" is displayed.</p>
Job Waiting	<p>A character string is displayed that concatenates a part type name (waitjob), a number representing the order of creation of the job waiting part in the flow among the waiting parts, and the name of the job waiting part with underlines.</p> <p>(Example 1) When the job waiting part resides in the same job network as the job it waits for, "waitjob_1_job" is displayed without the job network name.</p> <p>(Example 2) When the failed job waiting part is the first created one of the waiting parts (the job they wait for is "JNW1:JNW2:job"), "waitjob_1_JNW1:JNW2:job" is displayed.</p> <div data-bbox="515 857 1481 1025" style="border: 1px solid #add8e6; padding: 5px;">  <p>A job waiting part can wait for a job of another user and another job network. In this case, the job that waits for the macro expansion result is displayed as follows: &lt;user-name&gt;:&lt;JNW-name&gt;:&lt;job-name&gt;</p> </div>
SubJNW Waiting	<p>A character string is displayed that concatenates a part type name (waitsubjnw), a number representing the order of creation of the sub job network waiting part in the flow among the waiting parts, and the name of the sub job network waiting part with underlines.</p> <p>(Example) When the failed job network waiting part is the fourth created one of the waiting parts (the sub job network they wait for is "subJNW1"), "waitsubjnw_4_subJNW1" is displayed.</p> <div data-bbox="515 1317 1481 1485" style="border: 1px solid #add8e6; padding: 5px;">  <p>A job waiting part can wait for a job of a job network of another user or a job of another job network of the local user. In this case, the job that waits for the macro expansion result is displayed as follows: &lt;user-name&gt;:&lt;JNW-name&gt;</p> </div>
File Waiting	<p>A character string is displayed that concatenates a part type name (waitexfile), a number representing the order of creation of the file waiting part in the job network flow among the waiting parts, and the name of the waiting part with underlines.</p> <p>(Example) When the failed file waiting part is the first created one of the waiting parts (the name of the file they wait for is "aaa.txt"), "waitexfile_1_aaa.txt" is displayed after replacement.</p>
Time Waiting	<p>A character string is displayed that concatenates a part type name (waittime), a number representing the order of creation of the time waiting part among the waiting parts, and the waiting time (HH:MM) with underlines.</p>

(Example) When the failed time waiting part is the fifth created one of the waiting parts (the waiting time is 00:01), "waittime\_5\_00:01" is displayed after replacement.

## 15.7. Lists of Correspondence between Tracker Operations and Mail Transmission Operations

The following table lists the items of the operation menu that appears when you directly operate a tracker in the [Tracker List] window and the corresponding mail transmission operations.

Directly operating a tracker refers to selecting a tracker and executing one of the items of the shortcut menu that appears when you right-click the mouse.

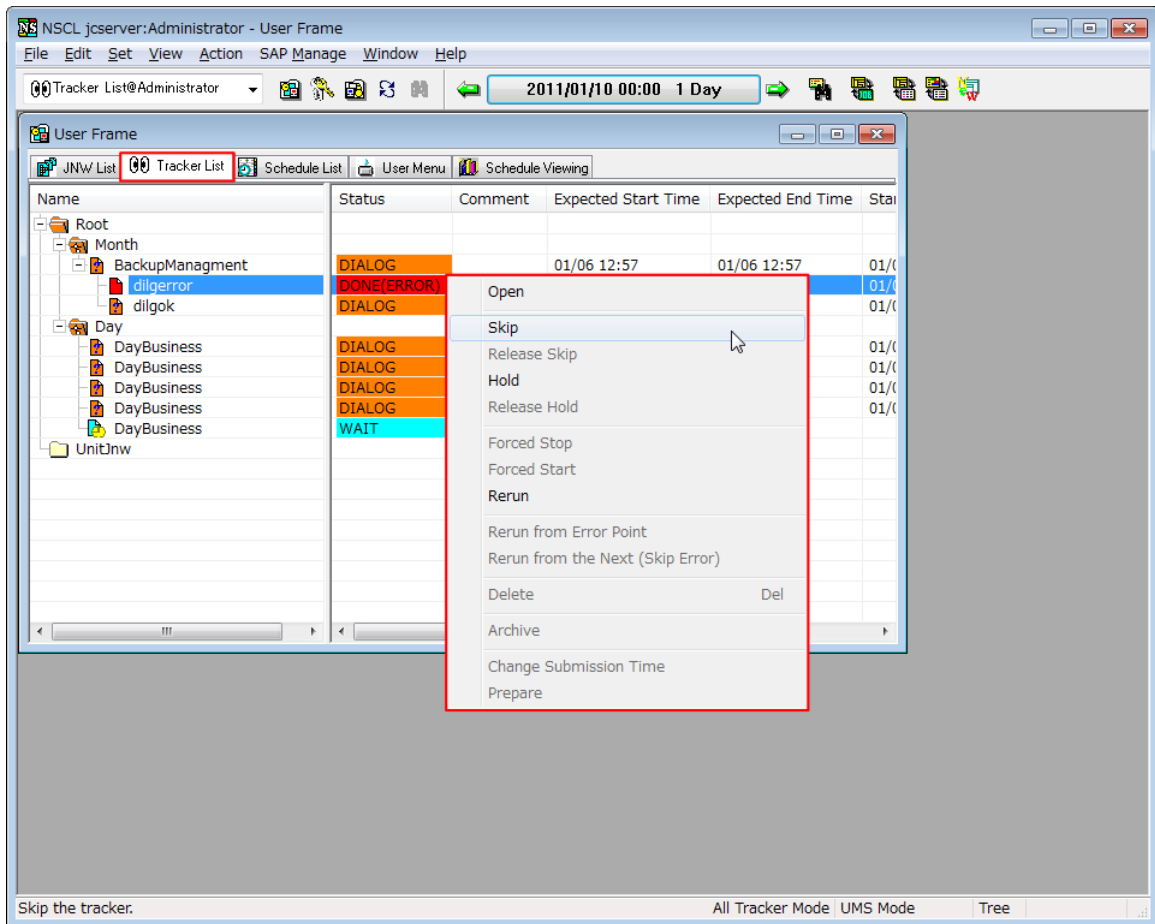


Figure 15.3. Screenshot of the window displayed when directly operating a tracker

Table 15.4. Tracker operation menu and mail transmission operation

Operation menu	Transmission operation
Skip	Mail is transmitted. <sup>Note 1</sup>
Release Skip	Mail is not transmitted.
Hold	Mail is not transmitted.
Release Hold	Mail is not transmitted.
Forced Stop	Mail is transmitted.
Forced Start	Mail is transmitted when the started tracker enters the error status.
Rerun	Mail is transmitted. <sup>Note 2</sup>
Rerun from Error Point	Mail is not transmitted if any job part after the error point causes another error.



Rerun from the Next (Skip Error)	Mail is not transmitted if any job part after the error point causes another error.
Delete	Mail is transmitted. <sup>Note 1</sup>
Archive	Mail is not transmitted.



Note 1 In the skip or deletion operation for a running tracker, JobCenter stops the tracker for the error before skipping or deleting the tracker. Therefore, mail is transmitted from the tracker for which this operation is performed.

Note 2 In the rerun operation for a running tracker, JobCenter stops the tracker for the error before rerunning the tracker. Therefore, mail is transmitted from the tracker for which this operation is performed. If an error occurs in the rerun tracker, mail is transmitted when the execution of the failed job part ends.

The following table lists the items of the operation menu that appears when you directly operate a job part from a tracker flow window and the corresponding mail transmission operations.

Table 15.5. Tracker flow window operation and mail transmission operation

Job part	Operation menu	Operation description
Unit Job	Skip	Mail is transmitted when the unit job is running normally.
	Release Skip	Mail is not transmitted.
	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.
	Forced Stop	Mail is transmitted.
	Forced Start	Mail is transmitted if an error occurs after the started unit job.
	Rerun	Mail is transmitted when the unit job is running normally
	Rerun from Check Point	Mail is not transmitted.
	Release Control	Mail is transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is transmitted when the unit job is running normally
ERP Job	Skip	Mail is transmitted when the ERP job is running normally.
	Release Skip	Mail is not transmitted.
	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.
	Forced Stop	Mail is transmitted when the ERP job is running normally
	Forced Start	Mail is not transmitted.
	Manual Start (IMMEDIATELY)	Mail is not transmitted.
	Manual Start (ASAP)	Mail is not transmitted.
	Rerun	Mail is not transmitted.
	Change to Done	Mail is not transmitted.

Setting the Mail Transmission Function for Errors

	ERP Job Parameter	Mail is not transmitted.
BI Job, PC Job	Skip	Mail is not transmitted.
	Release Skip	Mail is not transmitted.
	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.
	Forced Start	Mail is not transmitted.
	Rerun	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
Custom Job	Skip	Mail is transmitted when the custom job is running normally.
	Release Skip	Mail is not transmitted.
	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.
	Forced Stop	Mail is transmitted.
	Forced Start	Mail is transmitted if an error occurs after the started custom job.
	Rerun	Mail is transmitted when the unit job is running normally.
	Restart	Mail is not transmitted.
	Release Control	Mail is transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is transmitted when the custom job is running normally.
WOBS Job	Skip	Mail is transmitted when the WOBS job is running normally.
	Release Skip	Mail is not transmitted.
	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.
	Forced Stop	Mail is transmitted.
	Forced Start	Mail is transmitted if an error occurs after the started WOBS job.
	Rerun	Mail is transmitted when the WOBS job is running normally.
	Release Control	Mail is transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is transmitted when the WOBS job is running normally.
SubJNW	Skip	Mail is transmitted if an error occurs after the started sub-job network.
	Release Skip	Mail is not transmitted.
	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.
	Forced Stop	Mail is transmitted.

Setting the Mail Transmission Function for Errors

	Forced Start	Mail is transmitted if an error occurs after the started sub-job network.
	Rerun	Mail is transmitted when the sub-job network is running normally.
Dialog	Skip	Mail is not transmitted.
	Release Skip	Mail is not transmitted.
	Ok	Mail is not transmitted.
	Error	Mail is transmitted.
	Rerun	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is not transmitted.
Continuity	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is not transmitted.
SubJNW Waiting	Skip	Mail is transmitted when the job network is running normally.
	Release Skip	Mail is not transmitted.
	Rerun	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is not transmitted.
Job Waiting	Skip	Mail is transmitted when the job waiting is running normally.
	Release Skip	Mail is not transmitted.
	Rerun	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is not transmitted.
File Waiting	Skip	Mail is transmitted when the file waiting is running normally
	Release Skip	Mail is not transmitted.
	Rerun	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is not transmitted.
Time Waiting	Skip	Mail is transmitted when the time waiting is running normally.
	Release Skip	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is not transmitted.
Event Transmission	Skip	Mail is transmitted when the event transmission is running normally.
	Release Skip	Mail is not transmitted.
	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.

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Setting the Mail Transmission Function for Errors

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	Forced Stop	Mail is transmitted.
	Forced Start	Mail is not transmitted.
	Rerun	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is not transmitted.
Event Reception	Skip	Mail is transmitted when the event reception is running normally.
	Release Skip	Mail is not transmitted.
	Hold	Mail is not transmitted.
	Release Hold	Mail is not transmitted.
	Forced Stop	Mail is transmitted.
	Forced Start	Mail is not transmitted.
	Rerun	Mail is not transmitted.
	Change to Done	Mail is not transmitted.
	Delete	Mail is not transmitted.

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## 16 How to Check the Execution Results of Preceding Job Parts

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This chapter explains how to check the execution results of the preceding job parts to be output in a certain data format using the subsequent job parts.

For some job parts, the execution results are output in a certain data format (Example: JSON).<sup>note1</sup> There is a need to obtain the data of the execution result partially and use the obtained data for the subsequent job parts.

Normally, if the data is partially obtained from the execution result of the preceding job parts, it is necessary to analyze the execution result, obtain the data, and carry it over to the subsequent job parts.

The method described in this chapter does not require the processing above, but enables you to check the data relatively easily.

---

<sup>note1</sup>JSON is one of the data exchange formats. This type of format is used for data exchange from software to software, and for saving data.

## 16.1. Usage

This section explains how to refer to the execution results of the preceding job parts.

Basically, determine the part where the reference data is stored, specify the parameter in the definition location to refer to the data.

The data reference methods are roughly classified into the following two methods based on the part where the data is stored.

### ■ Direct reference method

Define the parameter to be referred to in the part where you want to check the data before reading the data.

This method is effective when the data to be referred to is used only by the job parts.

### ■ Indirect reference method

Define the parameter to be referred to in the job network environment variable before reading the data.

This method is effective when the data to be checked is used by multiple job parts.

The parameter that refers to the execution result in the part is called a data reference parameter.

The subsequent sections explain the data reference parameter and then the usage of each method.

### 16.1.1. Data reference parameter

The data reference parameter specifies the data within the execution result of the preceding job parts.

The format of the data reference parameter is shown below.

```
?<Data format>/<Output Destination>?<Part name><Key>
```

The items to be specified for the format are described below.

#### ■ <Data format>

Specify the data format of the execution result.

Table 16.1. Data format list

Data format	Description
json	Specify this if the data format of the execution result is JSON.

#### ■ <Output destination>

Specify the destination where the execution result is output.

Table 16.2. Output destination list

Output destination	Description
stdout	Specify this when the standard output is selected for the destination of the execution result to be referenced.
stderr	Specify this when the standard error output is selected for the destination of the execution result to be referenced.
all	Specify this when both the standard output and the standard error output are selected for the destination of the execution result to be referenced.

Output destination	Description
	The standard output and the standard error output are accessed in this order.



If "all" is specified as the output destination and a key matches the standard output, the standard error output is not checked.

■ <Part name>

Specify the part name to be referenced.

The job part types that can be specified as the check target are listed below.

- Unit job
- Custom job
- Extended custom job

The format of the part name that can be specified is shown below.

Table 16.3. List of the format of the part name that can be specified

Specified format	Description	Example
Part name	Specify the job parts for the same tracker (the same layer).	JOB1
Uppermost position job network name: ... : Lowest-level sub-job network name: Part name	Specify the job parts in the same tracker (other layers).	RootJNW:SubJNW1:JOB1



Whether the case sensitivity of the part name may vary according to OS.

In UNIX, the part name is case sensitive, but in Windows, the part name is not case sensitive.

■ Key

Specify the key of the data to be referred to. The key is case sensitive.

For how to specify the key for each data format, refer to the following.

- JSON

Table 16.4. How to specify the JSON key

Key	Description	Example
/	Specify this when the entire JSON data is specified.  Specify "/" when the JSON data consists only of character strings or numeric values (the JSON object does not exist).	/
/ <b>&lt;JSON object name&gt;</b>	Specify this when the object is specified.	/object1/object2/object3

Key	Description	Example
/<Array name>/<@Suffix>	Specify this when the array element is specified.  Specify the suffix of the array starting from zero.  To specify the subsequent JSON object, specify <@Suffix> followed by the JSON object.	/array1/@0/object1

An explanation of how to specify the key is provided using an example of the JSON data described below.

```
{
  "object1" : {
    "object2": {
      "object3": {
        "key1" : "value1"    *1
      }
    }
  },
  "array1" : [
    { "key2" : "value2" },    *2
    { "key3" : "value3" }
  ]
}
```

To refer to the value "value1" (\*1), specify the key as shown below.

```
/object1/object2/object3/key1
```

To refer to the value "value2" (\*2), specify the key as shown below.

```
/array1/@0/key2
```

### 16.1.2. Data reference by the direct reference method

In the direct reference method, define the data reference parameter in the definition location where you want to refer to the execution result.

The job parts that refers to the execution results supported by the direct reference method, and the job parts that output the execution result, are listed below.

Table 16.5. Elements supported by direct reference method

Job parts that refers to the execution result		Job parts that output the execution result (preceding job parts)
Job parts	Element to be referenced	
Extended custom job	Custom parameter	Unit job
		Custom job
		Extended custom job

The procedure for reading the data by the direct reference method is described below.

1. Check the execution results of the preceding job parts.

If you understand the execution results in detail, this step can be skipped.



Execute the preceding job parts, and check the information described below in the execution results.

- Data format of the execution result
- Output destination of the execution result
- Key of the data format corresponding to the data to be referenced

2. Determine the data reference parameter.

Determine the data reference parameter based on the checked information.

3. Set the data reference parameter.

Set the data reference parameter determined in step 2 to the custom parameter value of the extended custom job parts to be referenced.

4. Execute the job network.

Execute the preceding job part and job network containing the job part whose execution result for reference is defined.

5. Refer to the execution result.

After execution of the job parts to be checked, the data corresponding to the data reference parameter is obtained from the execution result of the preceding job parts. That data is set as the custom parameter value.

When the extended custom job part is executed, the data obtained from the custom parameter value is used.

### 16.1.3. Data reference by the indirect reference method

In the indirect reference method, define the data reference parameter in the job network environment variable to obtain the data via the environment variable.

The job parts that refers to the execution results supported by the indirect reference method, and the job parts that output the execution result, are listed below.

Table 16.6. Elements supported by indirect reference method

Job parts that refers to the execution result		Job parts for output of the execution result (preceding job parts)
Job parts	Element to be referenced	
Unit job	Script	Unit job
		Custom job
		Extended custom job
Custom job	Script	Unit job
		Custom job
		Extended custom job
Extended custom job	Custom parameter	Unit job
		Custom job
		Extended custom job

The procedure for reading the data by the indirect reference method is described below.

1. Check the execution results of the preceding job parts.

If you understand the execution results in detail, this step can be skipped.

Execute the preceding job parts, and check the information described below in the execution results.

- Data format of the execution result
- Output destination of the execution result
- Key of the data format corresponding to the data to be referenced

2. Determine the data reference parameter.

Determine the data reference parameter based on the checked information.

3. Set the data reference parameter.

Define the environment variable of job network, and set the data reference parameter determined in step 2 as the environment variable value.

Define the job parts that refers to the data in the execution result so that the environment variable of the job network is to be referenced.

4. Execute the job network.

Execute the preceding job part and job network containing the job part whose execution result for reference is defined.

5. Refer to the execution result.

After execution of the job parts to be referenced, the data corresponding to the data reference parameter is obtained from the execution result of the preceding job parts. That data is set as the environment variable of the job network.

When the job part to be referenced is executed, the data referenced via the environment variable of the job network is used.

## 16.2. Sample Usage

This section explains how to refer to the execution results of the preceding job parts for each check method using a specific example.

### 16.2.1. [Direct reference method] Referring to the execution result (JSON) of the preceding job part using the extended custom job part

In this example, the procedure for referring to the execution result of the preceding extended custom job using the subsequent extended custom job part.

The job parts to be used are listed below.

Part name	Part type	Description
get_data	Extended custom job part	Output the JSON data to the standard error output.
ref_data	Extended custom job part	Refer to the output result of get_data using the custom parameter.

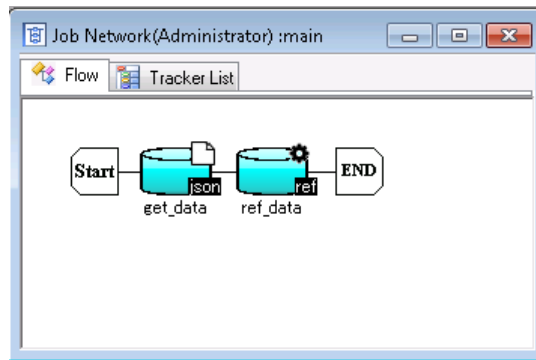


Figure 16.1. Job network flow for referring to the JSON data by the direct reference method

It is assumed that the JSON data shown below is output to the standard error output of the extended custom job part "get\_data".

```
{
  "status" : "success",
  "type" : "normal",
  "id" : "12345"
}
```

In this example, refer to the value "success" of the JSON key "status".

1. Right-click ref\_data, and select "Parameter".

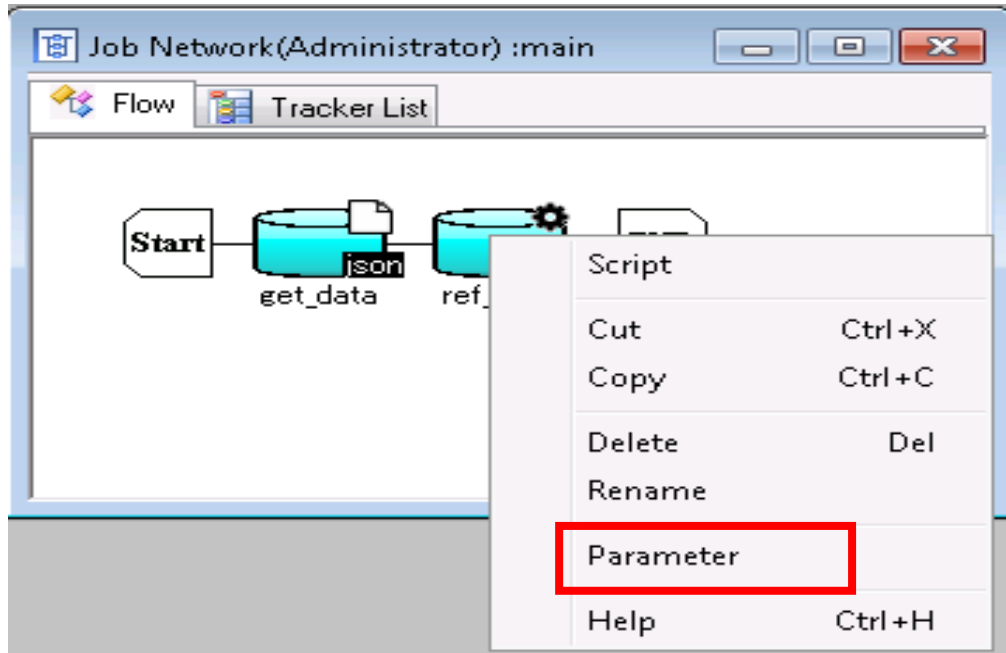


Figure 16.2. Displaying the parameters of the extended custom job part

2. Select the variable "status" from the variable list on the [Custom Param Setting] tab, and click the "Edit" button.

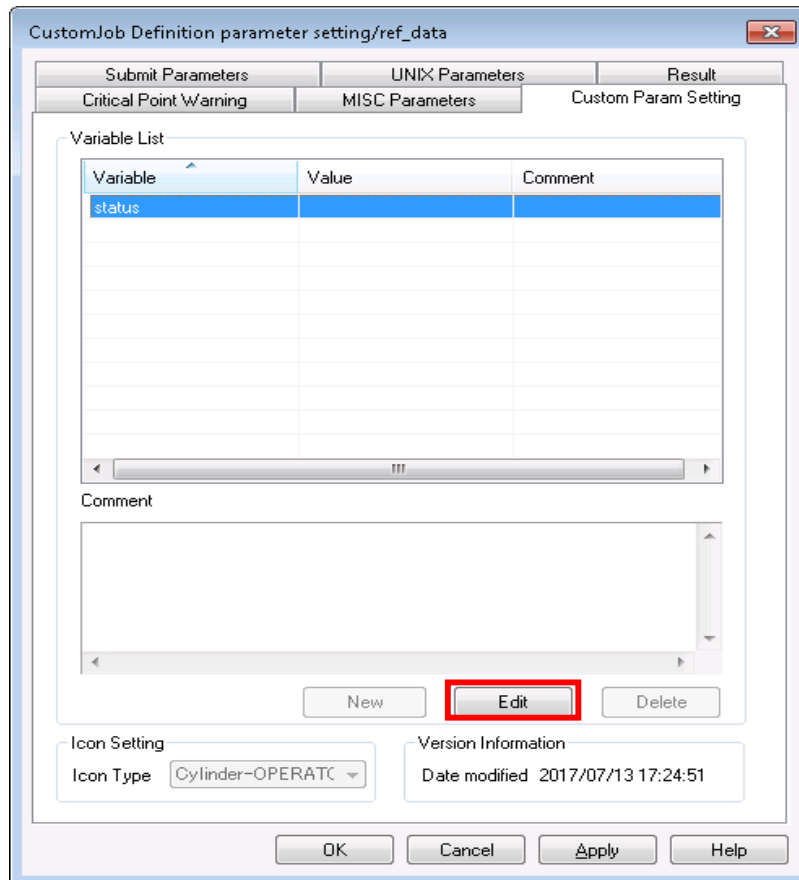


Figure 16.3. Custom parameter setting screen

3. Input the data reference parameter in "Variable Value" as shown below.

`?json/stderr?get_data/status`

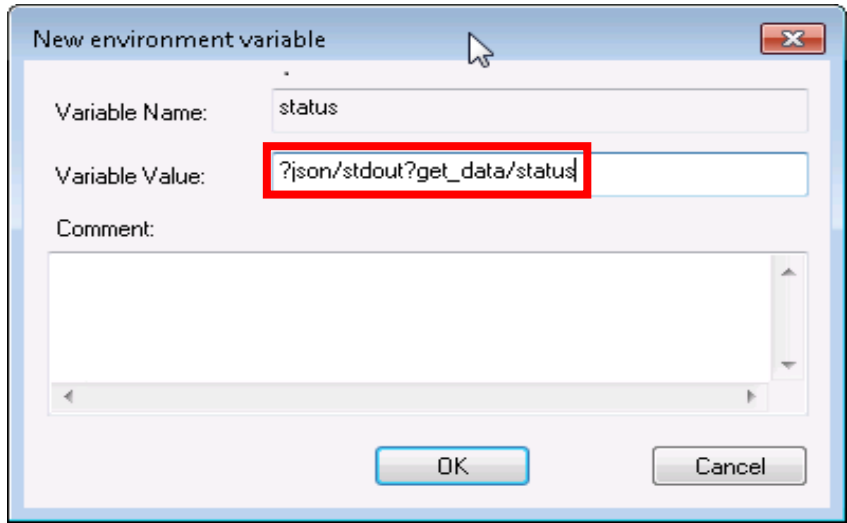


Figure 16.4. Custom variable edit screen

4. Press the "OK" button to save the settings, and execute the job network.

When ref\_data is executed, "success" is set as the value of "status" variable and can be referenced as the custom parameter.

### 16.2.2. [Indirect reference method] Referring to the execution result (JSON) of the preceding job part using the unit job

This example provides the procedure for referring to the execution result of the preceding unit job using the subsequent unit job part.

The job parts to be used are listed below.

Part name	Part type	Description
get_data	Unit job part	Output the JSON data to the standard output destination.
ref_data	Unit job part	Refer to the output result of get_data.

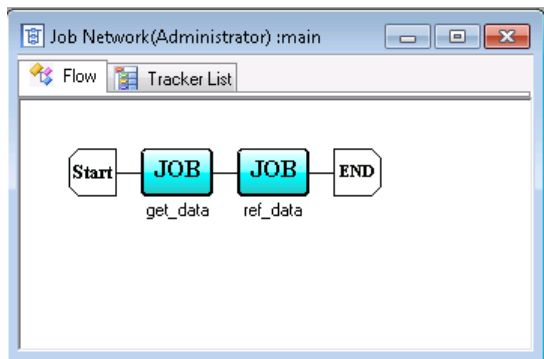


Figure 16.5. Job network flow for referring to the JSON data by the indirect reference method

It is assumed that the JSON data shown below is output to the standard output destination of the unit job part "get\_data".

```
{
  "status" : "success",
  "type" : "normal",
  "id" : "12345"
}
```

In this example, refer to the value "success" of the JSON key "status".

1. Right-click the job network "main" from the job network list, and select "Parameter".
2. Click "New" of the environment variable list on the [Environment Variable] tab.
3. Add a new environment variable shown below, and click the "OK" button.

Variable name	Variable value	Description
status	?json/stdout?get_data/status	(This may be left blank.)

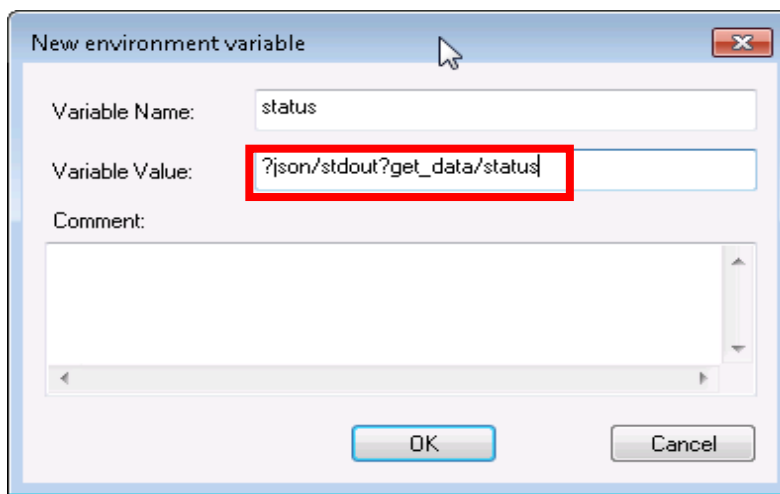


Figure 16.6. Screen for creation of a new environment variable of the job network

4. Press the "OK" button on the job network parameter screen to save the settings, and execute the job network.

After executing get\_data, "success" is set as the environment variable "status" so that the data can be referenced via the environment variable of the job network in the ref\_data script.

### 16.2.3. [Indirect reference method] Referring to the execution result (JSON) of the preceding job part using the custom parameter of the custom job

This example provides the procedure for referring to the execution result of the preceding unit job using the custom parameter of the subsequent custom job part.

Rereference via the custom parameter of a customjob is not available by the direct reference method, but you can use custom parameter of the custom job in an indirect manner by the indirect reference method.

The job parts to be used are listed below.

Part name	Part type	Description
get_data	Unit job part	Output the JSON data to the standard output destination.
ref_data	Custom job part	Check the output result of get_data.

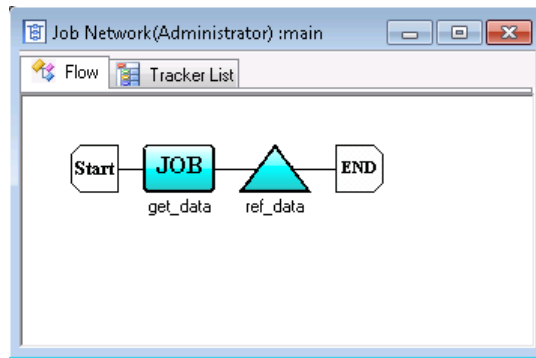


Figure 16.7. Job network flow for referring to the JSON data using the custom parameter of the custom job

It is assumed that the JSON data shown below is output to the standard output destination of the unit job part "get\_data".

```
{
  "status" : "success",
  "type" : "normal",
  "id" : "12345"
}
```

In this example, refer to the value "success" of the JSON key "status".

1. Create the custom job definition of the custom job part "ref\_data" as the JobCenter administrator.

■ Setting the custom parameter

Add the custom variable "data", and input the script of the character string to refer to the environment variable "status" in "Variable Value". Input the character string in accordance with the server environment.

- [In UNIX]

```
$status
```

- [In Windows]

```
%status%
```

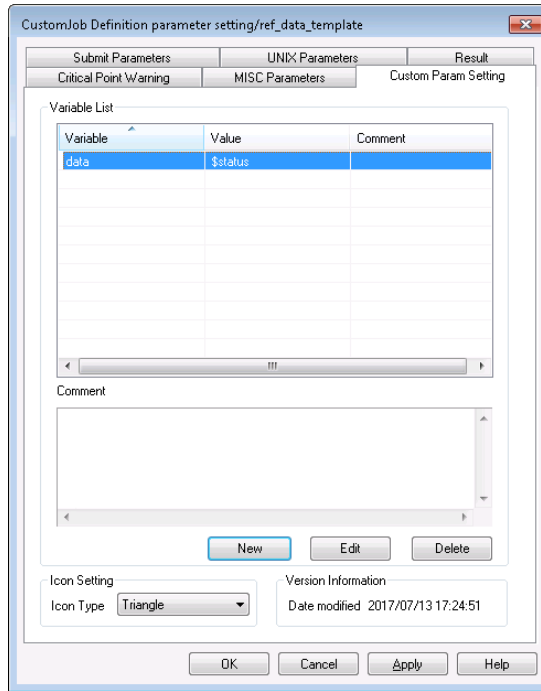


Figure 16.8. Custom parameter setting screen for the custom job definition

■ Setting the script

Add "<<data>>" at the desired point in the script.

[Example of script]

```
echo <<data>>
```

2. Perform the procedure in [Section 16.2.2, "\[Indirect reference method\] Referring to the execution result \(JSON\) of the preceding job part using the unit job"](#), and set the data reference parameter in the environment variable "status".
3. When the job network is executed, the character string "<<data>>" in the script of ref\_data is converted into the custom variable value.

■ [Example of converted script (UNIX)]

```
echo $status
```

■ [Example of converted script (Windows)]

```
echo %status%
```

After executing get\_data, "success" is set as the environment variable "status" so that the data can be referenced via the environment variable of the job network in the ref\_data script.



## 16.3. Caution

### 16.3.1. Cautions when executing the job network

- If checking of the execution result fails, the data reference parameter is replaced with a null character.
- Assign the preceding job parts and the job parts that refer to the execution result in the same tracker. Execution results across different trackers cannot be referenced.
- Set the job network flow so that the job part that refers to the execution result is executed after execution of the preceding job parts. If the execution result is referenced prior to the preceding job parts, the following events occur.
  - If a new job network is submitted
 

Referring to the execution result fails because there is no execution results, and the data reference parameter is replaced with a null character.
  - If the tracker is executed again
 

The execution result is referenced before the execution result is updated. The previous execution result is referenced.
  - If only the job part that refers to the execution result is executed again
 

The preceding job part is not executed again, and the previous execution result of the preceding job part is referenced.
- If the standard output and standard error output destinations of the preceding job parts contain multiple execution results, the last execution result is used.

The standard output and standard error output destinations contain multiple execution results in the following cases.

- If the preceding job part is executed again under an environment where "NQSDAEMON\_OPT=-x trkappend=ON" is set in the daemon setting file

If the preceding job part is executed again under the above environment, the delimiter character string shown below is output to the standard output and standard error output, and the result of executing the part again is output to the following lines.

```
=====< JNW RERUN YYYY/MM/DD hh:mm:ss >=====
```

"M/DD hh:mm:ss" indicates the time at which the preceding job part is executed again.

Data section to be referenced starts from a line other than the first blank line after delimiter character strings and ends at the last line.

[Example of execution result]

```
{
  "status" : "failure",
  "type" : "normal",
  "id" : "12345"
}

=====< JNW RERUN 2017/04/27 14:26:43 >=====
{
```

```
"status" : "success",
"type" : "normal",
"id" : "12345"
}
```

In the above execution result, the data section to be referenced starts from "{" next to the delimiter character strings and ends at "}" in the last line.

For details of "NQSDAEMON\_OPT=-x trkappend=ON", refer to in <Environment Guide>Section 5.2, "Available Parameters of a Daemon Configuration File".

- If JobCenter is restarted when the preceding job part is being executed while "Restart" is set to "ENABLE"

After restarting JobCenter, the delimiter character strings shown below are output to the standard output and standard error output, and the result of executing the part again is output to the following lines.

```
%NQS(WARN): Request restarted at <date>
```

"<Date>" indicates the time at which the preceding job part is executed again.

Data section to be referenced starts from a line other than the first blank line after delimiter character strings and ends at the last line.

[Example of execution result]

```
%NQS(WARN): Request restarted at Thu Apr 27 14:26:43 2017.

{
  "status" : "success",
  "type" : "normal",
  "id" : "12345"
}
```

In the above execution result, the blank line next to the delimiter character strings are ignored. The data section to be referenced starts from "{" next to the delimiter character strings and ends at "}" in the last line.

For details of "Restart", refer to [Section 4.2.2, "Setting up Conditions \(Parameters\) for Executing a Unit Job"](#) and [Section 4.2.2.5, "\[MISC Parameters\] tab"](#).

### 16.3.2. Cautions common to the data format

- If the execution result contains a multi-byte character, match the character code of the execution result and the setup language of JobCenter.

If the character code does not match, the data containing the multi-byte character cannot be checked correctly.

### 16.3.3. Cautions about the data format (JSON)

- Cautions about the execution result

- If the value corresponding to the JSON key is the JSON object or array, the data reference parameter is replaced with a JSON-format character string.

For an example of the following JSON data, when the value of the JSON key is /object1, the value is {"object2": {"object3": "message\n"} } .

```
{
  "object1" : {
    "object2": {
      "object3": "message\n"
    }
  }
}
```

- If there is more than one JSON data in the execution result, the top JSON data is used and the subsequent JSON data is ignored.
- If the top of the execution result contains a character string other than the JSON data, the data reference parameter is replaced with a null character.

If there is JSON data at the top, the subsequent character strings are ignored. Even if there are character strings other than the JSON data, the data can be checked successfully.

■ Cautions when specifying the key

- If you want to specify the key "@Numeric value" at the top instead of the suffix in the array, add "\" before "@".

However, do not add "\" to keys other than those with "@Numeric value" at the top. If "\" is added, the character string is used literally as the key, checking of the data fails, and the data reference parameter is replaced with a null character.

For an example of the following JSON data, specify "/object1/\@0/object2" to refer to the value of the JSON key "object2". Specify "/object1/abc@0/object3" to refer to the value of the JSON key "object3".

```
{
  "object1" : {
    "@0": {
      "object2" : "value2"
    },
    "abc@0": {
      "object3" : "value3"
    }
  }
}
```

## 16.4. Restrictions

---

### 16.4.1. Restrictions on the execution environment

- If the extended custom job is used for the preceding job part under an environment where the setup language in Windows is UNICODE, the output result of the preceding job part must consist of ASCII characters.

### 16.4.2. Restrictions on the data check parameter

- The maximum length of the data reference parameter is 256 bytes.
- The following characters are unavailable for the data reference parameter.
  - #
  - '
  - "
  - \b
  - \f
  - \n
  - \r
  - \t
  - Unicode escape sequence (Example: \u30ad)
  - Incompatible curly brace (Example: a{b)
  - =
    - Only when the data reference parameter is defined in the job network environment variable
- After referring to the execution result, the result is not referenced recursively.

For example, the following reference parameters are not checked again.

- Data reference parameter
- Environment variable (value enclosed with %)
- Encryption parameter (value enclosed with \$)

### 16.4.3. Restrictions on the data format (JSON)

- If the value to be referenced is a decimal number, the data reference parameter is replaced with an approximate value. Therefore, the parameter may not match the value of the data to be referenced. (Example: If the value to be referenced is "-12.12", the data reference parameter is replaced with "-12.119999999999999".)
- Data in which a null character is used for the JSON key is not supported.

## 16.5. Error message

This section explains the error message to be output if checking of the execution result fails.

The error message is output to the tracker log.

For the terms commonly used for explanation of error messages, refer to the following table.

Term	Description
<Part name>	Name of the part whose execution result is referenced
<Parameter definition location>	Location of the data reference parameter The following keywords are specified. <ul style="list-style-type: none"> <li>■ customparam Custom parameter for the extended custom job</li> <li>■ jnw envparam Environment variable value of the job network</li> </ul>
<Output destination of the execution result>	Output destination of the execution result of the referenced preceding job part The following keywords are specified. <ul style="list-style-type: none"> <li>■ stdout Standard output destination of the preceding job part</li> <li>■ stderr Standard error output destination of the preceding job part</li> </ul>
<Data reference parameter>	Data reference parameter for referring to the execution result
<Storage destination of the execution result>	Path to the file where the execution result is saved
<Error detail information>	Detailed information on the error that occurred when referring to the execution result

### 16.5.1. Error message common to the data formats

Message	Description
ERROR - <Part name>: <Parameter definition location> invalid format.(value=<Data reference parameter>)	The format of the data reference parameter is wrong. For details of the format, refer to <a href="#">Section 16.1.1, "Data reference parameter"</a> .
ERROR - <Part name>: <Parameter definition location> target object not found.(value=<Data reference parameter>)	The job part specified in the data reference parameter does not exist.
ERROR - <Part name>: <Parameter definition location> target object type error.(value=<Data reference parameter>)	The job part specified in the data reference parameter is one that cannot be specified as the target.
ERROR - <Part name>: <Parameter definition location> <Output destination of the execution	The execution result of the job part specified in the data reference parameter was not found.

Message	Description
result> file not found(file=<Storage destination of the execution result>).(value=<Data reference parameter>)	<p>The job part that refers to the execution result may be executed before completion of executing the preceding job parts.</p> <p>Review the job network flow so that the job parts that refer to the execution result are executed after completion of executing the preceding job parts.</p>

### 16.5.2. Error message for the data format (JSON)

Message	Description
ERROR - <Part name>: <Parameter definition location> json parse error: <Error detail information>(value=<Data reference parameter>)	<p>Failed to analyze the JSON data.</p> <p>Confirm whether the execution result of the preceding job part is described in the correct JSON format.</p> <p>Some JSON formats are not supported. For details, refer to <a href="#">Section 16.4.3, "Restrictions on the data format (JSON)"</a>.</p>
ERROR - <Part name>: <Parameter definition location> <Output destination of the execution result> jpr path error(no hash member): <Error detail information>(value=<Data reference parameter>)	<p>The key that matches the key specified in the data reference parameter does not exist.</p> <p>Confirm whether the execution result contains the key specified in the data reference parameter.</p>

