

NIAS (NEC Information Assessment System) Integrated File Server Management Software

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AI Platform Division,
NEC Corporation



Challenges of Disordered File Server

Trash Box

- ✓ No organized rule for file/folder creation and management
- ✓ **Huge amount of old files and unused files** spoil the efficient file search and usage

Repeated Disk Expansion

- ✓ **Capital investment or cloud service usage cost** unexpectedly increasing due to rapid increase of file data
- ✓ Back-up and disaster recovery needs more and more cost to handle large data



Information Leakage

- ✓ **No rule of access right setting** relying on specific users
- ✓ **Information are not appropriately managed based on file organization rule**

Time Consuming Work

- ✓ Information change and update history management of Active Directory requiring big effort
- ✓ **Information system division manages every request** for access right change

Inactive Data Occupying File Server

- Increase ratio of file capacity is **1.55 times** every year resulting in **9 times increase** in five years
- In addition;

68%

files are not
referenced more
than 90 days

76%

files are not
updated
more than 1
year

53%

files are large
(10MB or more)
but it occupies
only **1%** of total
file number.

28%

Files are
duplicated files

Deletion of it
results in **14%**
capacity
reduction

Stored data increases dramatically, but the most of the **unused data** is occupying the file servers.

(NEC's survey with 50 companies/organizations)

NIAS Solution Overview

Safer and more efficient operation management of file servers

Cost Saving

a. Visualization

Automated graphical report creation enabling to immediately grasp the file server.



b. Organization / Capacity Reduction

Periodical unused data organization and reduction by deleting or archiving to cloud environment.



Removing Risks

c. Access Rights Setting

Modification of access rights using view list. Easy detection and optimization of inappropriate access rights



Efficiency — Option product

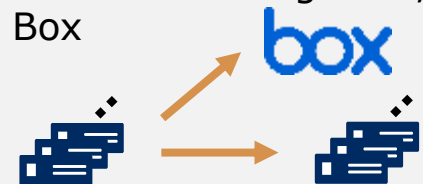
d. Resource Management

Active Directory setting, quota setting, and workflow for approval



e. Data Migration

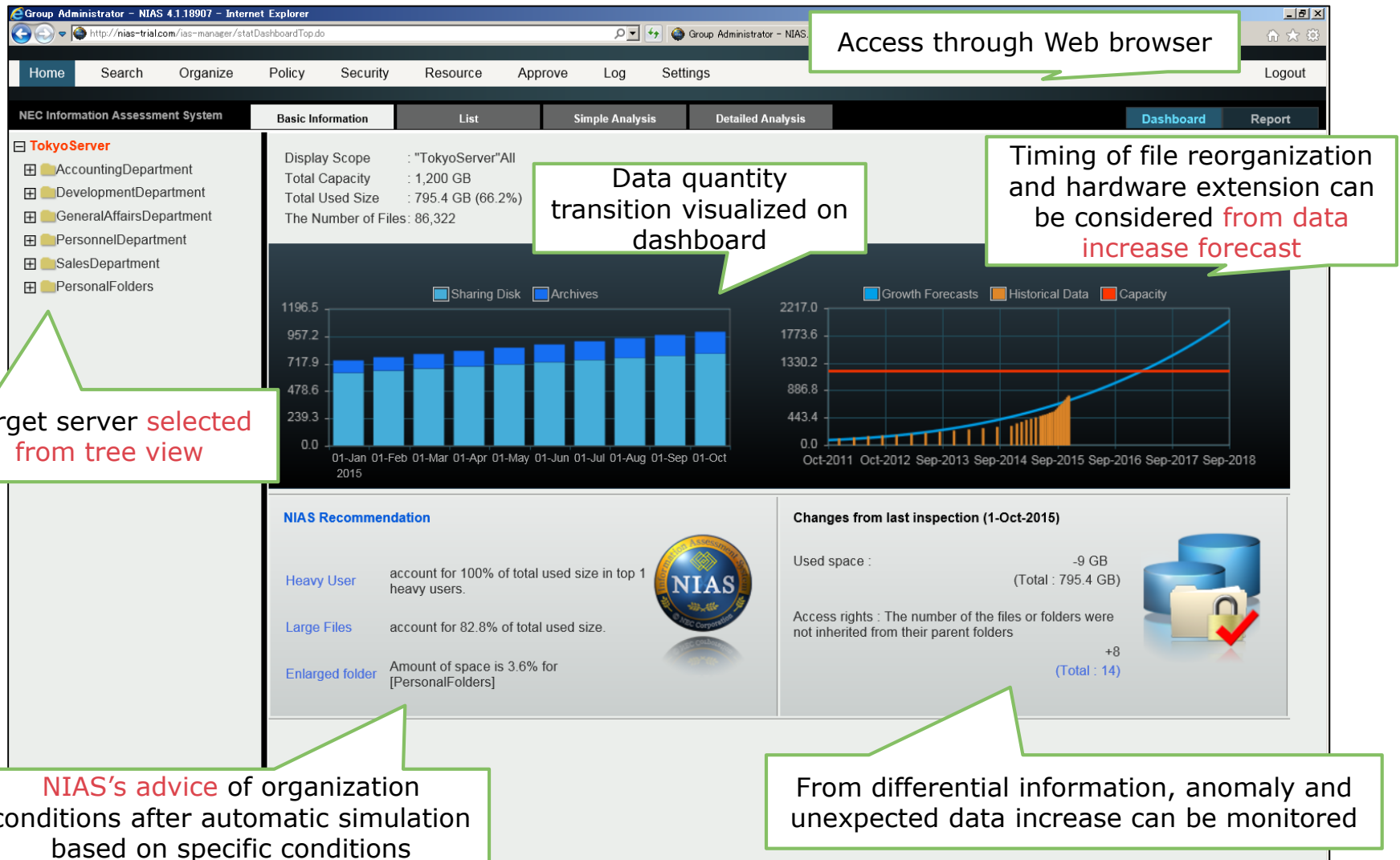
Data migration from on-premise file server to other file servers including IaaS, and Box



V4.2
NEW

Status Check on Dashboard

Status of file server can be checked with intuitive UI



Rapid Simulation of Outcomes (1/2)

Easy condition setting to list organization target files

Home Search Organize Policy Security Resource Approve Log Settings

NEC Information Assessment System Basic Information List Simple Analysis

TokyoServer

- AccountingDepartment
- DevelopmentDepartment
- GeneralAffairsDepartment
- PersonnelDepartment
- SalesDepartment
- PersonalFolders

NIAS Recommendation

☐ Heavy user ☒ Not Modified

795.4 (GB) 307.3 (GB) 176.8 (GB) 659 (GB) 162.8 (GB)

Top 4 More than 6 months 100MB ~ ∞

Slide bar to adjust condition details

File Organization Effect

-32.3%

257.5 (GB)

The Number of Files : 397

Favorite Analysis Conditions (Enable to save up to 3)

Cross tabulation by combining several conditions

Top 1 Heavy User. / ... Top 4 Heavy User. Top 4 Heavy User - 2...

659 (GB) 795.4 (GB)

Real time analysis help you analyze the issues in file server


Here instantly reflects the settings above

Policy Request ☒ List

File list output

[Organization Conditions]
Heavy User: User information occupying large spaces
Not Modified: Not updated in certain period of time
Not Accessed: Not referred in certain period of time
Large Files: File with file size beyond certain size
Duplicated Files: Same files are existing in some places

Flag	Name	Size	Owner	Date Modified	Parent Folder
<input type="checkbox"/>	10000_GuideReviseAndPc	61,597 KB	Administrators	11-May-2015 17:29:56	\\127.0.0.1\share2\AccountingDepartment\19_2015
<input type="checkbox"/>	10000_Y1_1_ScheduleMar	1 KB	Administrators	05-Jul-2015 17:34:45	\\127.0.0.1\share2\GeneralAffairsDepartment\13_CheckList17
<input type="checkbox"/>	10000_master_Processalter	1 KB	Administrators	07-Mar-2012 17:26:34	\\127.0.0.1\share2\DevelopmentDepartment\49_Design-Devel
<input type="checkbox"/>	10001_DevelopmentTerm	1,461 KB	Administrators	26-Sep-2015 17:29:56	\\127.0.0.1\share2\AccountingDepartment\19_ProjectPlan23
<input type="checkbox"/>	10001_FileDesignDocum	1 KB	Administrators	13-Apr-2015 17:26:34	\\127.0.0.1\share2\DevelopmentDepartment\43_CheckList45
<input type="checkbox"/>	10001_TestCaseDocumen	1 KB	Administrators	20-Sep-2015 17:34:45	\\127.0.0.1\share2\GeneralAffairsDepartment\1_ReleaseModu
<input type="checkbox"/>	10002_#2_ScreenGraph.d	235 KB	Administrators	25-Apr-2015 17:29:56	\\127.0.0.1\share2\AccountingDepartment\37_FTDocument39
<input type="checkbox"/>	10002_YYYYMMDD_Prog	5,265 KB	Administrators	14-Sep-2015 17:26:34	\\127.0.0.1\share2\DevelopmentDepartment\25_Configuration
<input type="checkbox"/>	10002_master_Inspection	6,157 KB	Administrators	06-Jun-2015 17:34:45	\\127.0.0.1\share2\GeneralAffairsDepartment\19_ReleaseMan
<input type="checkbox"/>	10003_#3 - Screen-FormL	9 KB	Administrators	14-Aug-2015 17:34:45	\\127.0.0.1\share2\GeneralAffairsDepartment\17_Manuals
<input type="checkbox"/>	10003_DevelopmentManu	1 KB	Administrators	15-Aug-2015 17:26:34	\\127.0.0.1\share2\DevelopmentDepartment\13_CodingRule1



Visualization of Access Rights

Only single click to grasp the access right of specific folder

Home Search Organize Policy **Security** Resource Approve Log Settings Logout

NEC Information Assessment System

Folders / Files User / Group

Look for
access rights of specific files or folders

\\127.0.0.1\share2\PersonnelDepartment\

Inherited Full control Modify Read & execute Read Write Special permissions

Object Name	Allow	Deny
NIASDEMO\AccountingDepartment		
NIASDEMO\DEMOGROUP		
NIASDEMO\DevelopmentDepartment		
NIASDEMO\GeneralAffairsDepartment		
NIASDEMO\PersonnelDepartment	Member Edit members	
NIASDEMO\SalesDepartment		

Create Folder

Change Access Rights

Inappropriate setting can be immediately modified from the view of NIAS

Members in "NIASDEMO\PersonnelDepartment"

- NIASDEMO\Emma(Emma)
- NIASDEMO\Samar(Samar)
- NIASDEMO\Thomas(Thomas)

Active Directory group member can be checked from the view

Close All Edit members

Detailed access rights of every user can be checked with NIAS UI, enabling you to know "allow" and "deny" status.



Access Right Modification

Detailed access rights of specific folder is shown in the single view. Access right can be modified with the view list while confirming if it was modified properly, leading to setting error prevention

The screenshot displays the NIAS Access Right Modification interface. At the top, there's a section for 'Set unique access rights' with a toolbar containing icons for Inherited, Full control, Modify, Read & execute, List folder contents, Read, Write, and Special permissions. Below this is a list of users/groups with their corresponding access rights. At the bottom left, there's an 'Execution schedule' section with options to 'Execute Now' or 'Execute' at a specific date and time. On the right, two windows show detailed access right settings for 'NIASDEMO\DevelopmentDepartment'. The top window is labeled 'Advanced access right setting (13 items)' and shows a list of 13 items. The bottom window is labeled 'Basic access right setting (6 items)' and shows a table comparing 'Allow' and 'Deny' settings for 6 items.

Advanced access right setting (13 items)

Basic access right setting (6 items)

Operation can be managed with scheduling, and future expiration date can be also scheduled.

Time-Saving Setting in Single View

Active Directory setting and folder creation (quota setting) is enabled. Application/approval workflow with access right setting is offered with this option function

Account management with Active Directory

Delete user/group

Target Object: NIASENG\group1

Information of deletion

Classification	Group
Location	CN=Users,DC=niasang,DC=nec,DC=com
Group name	group1
E-mail	

[The custom attribute]

Description

[Belonging member]

- user2(user2)
- user1(user1)
- groupA ← **Deletion**
- groupB ← **Addition**

Execution schedule ☒ Execute Now ☐ Execute month day hour minute

Cancel Fix

Change group member of Active Directory in the single view



Folder creation (quota setting) with storage

Home Search Organize Policy Security Resource Approve Log Settings

NEC Information Assessment System

Menu

- Resource Setting
- Active Directory
- Storage Setting

Change Resource Setting

Basic Information > Access Rights

Resource name	userA folder	?
Parent folder	\\192.168.37.172\CONTENTS\ [17.4GB Space]	<input type="checkbox"/> Set quota for
Folder name	userA	?
Quota capacity (GB)	15.0	?
Mail address		?

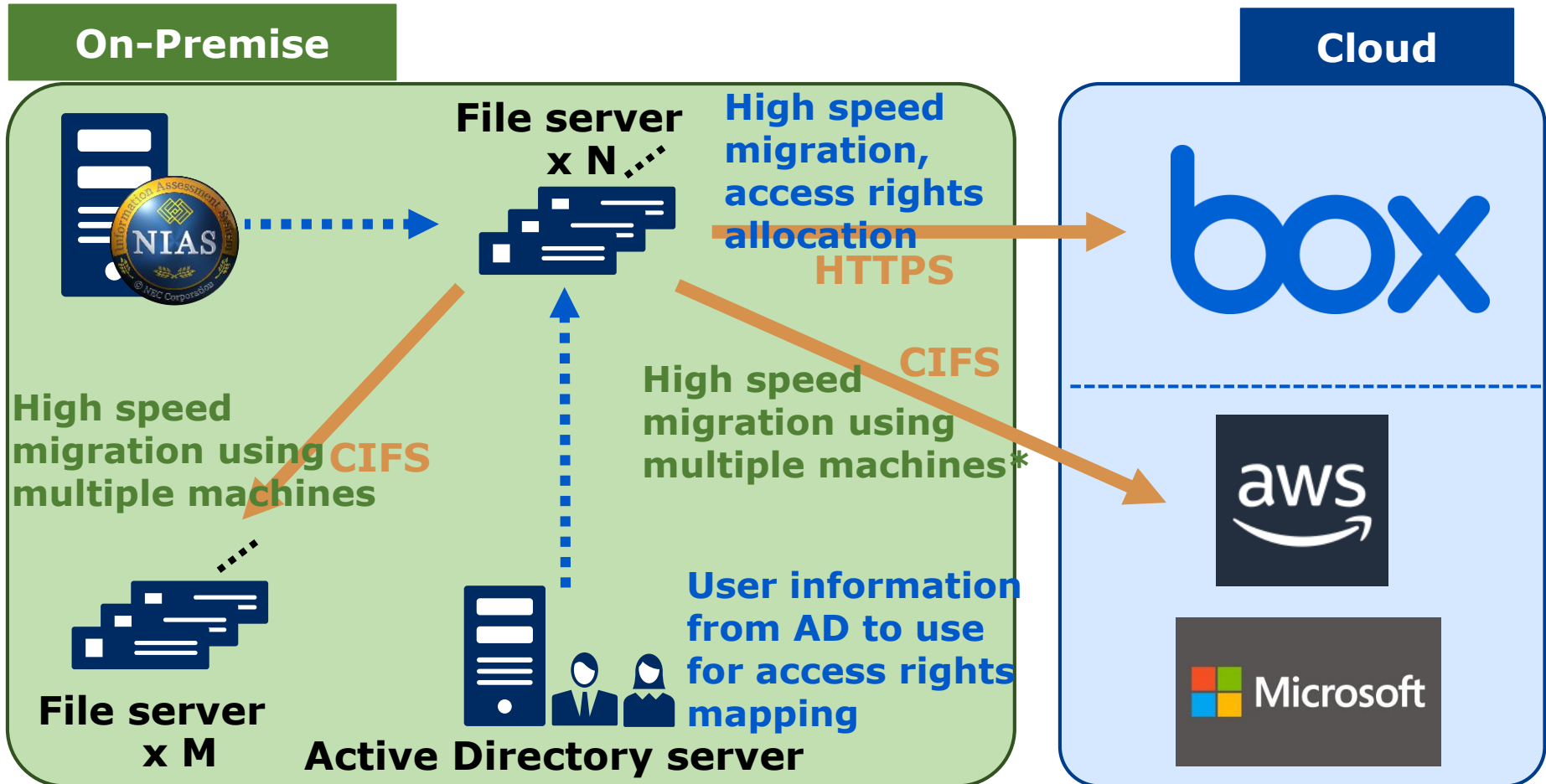
Execution schedule ☒ Execute Now ☐ Execute month day hour minute

Return Next

Data Migration to CIFS File Server and Cloud Storage "Box"

V4.2
NEW

Reinforce data migration functions for "from on-premise to cloud" and "from on-premise to on-premise" (cloud storage is only Box)



*Dedicated networks such as VPN is required.

Analyze file server usage and visualize unnecessary files. Increased awareness of file organization led to **40TB reduction**

Challenges

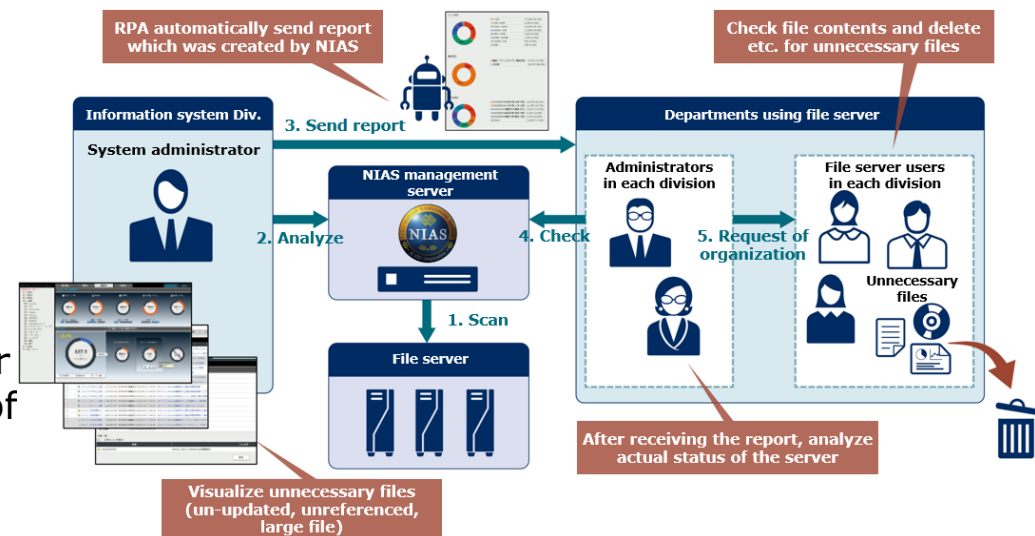
- 200TB file server is managed by 200+ organizations, and data management is a responsibility of each department, and deletion of unnecessary files has not been controlled with proper rule.
- Capacity shortage of existing file server is big concern, as file server replacement is not done in near future. Also, data migration cost reduction is required.

Why NIAS?

- Company-wide 200TB file server visualization, file reduction and access rights management.
- As a result of the benchmark test, the performance of NIAS was greatly higher than that of other companies in terms of processing power for detecting unnecessary files and crawling speed.

Benefit

- ✓ Sufficient capacity up to server replacement was secured, and capacity reduction of about 40 TB became possible.
- ✓ Report that visualized the problem changed the awareness of the users. Unnecessary files such as long-term un-updated / unreferenced, duplicated, large-capacity, etc. has been removed.



NIAS contributes to the expansion of users and stable operation of file storage services using NAS

Challenges

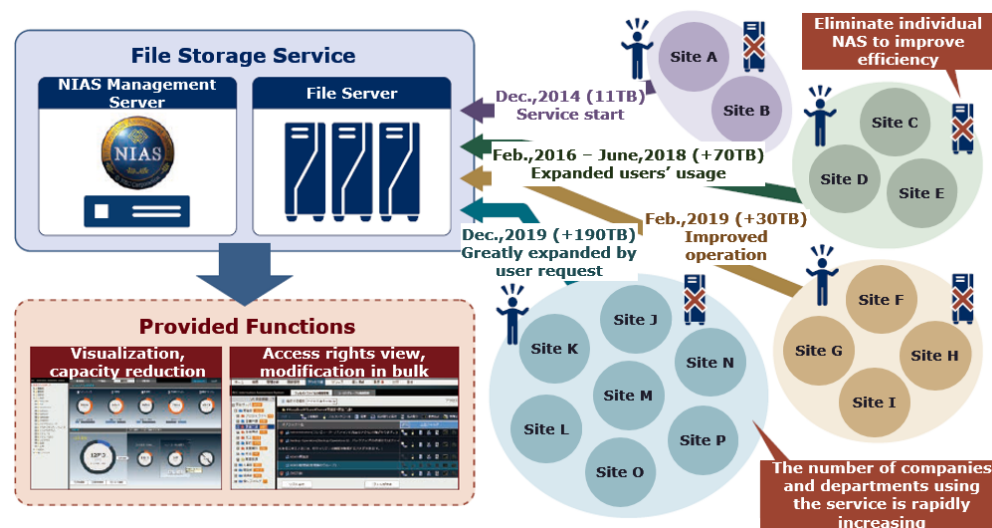
- As unnecessary file deletion and access rights setting modification required a lot of time and effort. Therefore "File storage service" using NAS for each group company started, but in order to smoothly organize files and reduce capacity, a tool to visualize NAS was required.
- Inconsistencies in access rights occur in timing of personnel change. It took a long time to set up

Why NIAS?

- NIAS, which uses unique memory DB, can realize high-speed response and users can use the service comfortably.
- A simple and easy-to-read GUI makes it possible to quickly get the required information, when it is required.

Benefit

- ✓ In user department, complicated work for inventorying and modifying access rights was saved, and information leakage risk was reduced. Service was expanded from 11TB to 300TB due to users' request, which eliminated unnecessary investment by realizing file server visualization, instead of simply increasing the number of NAS



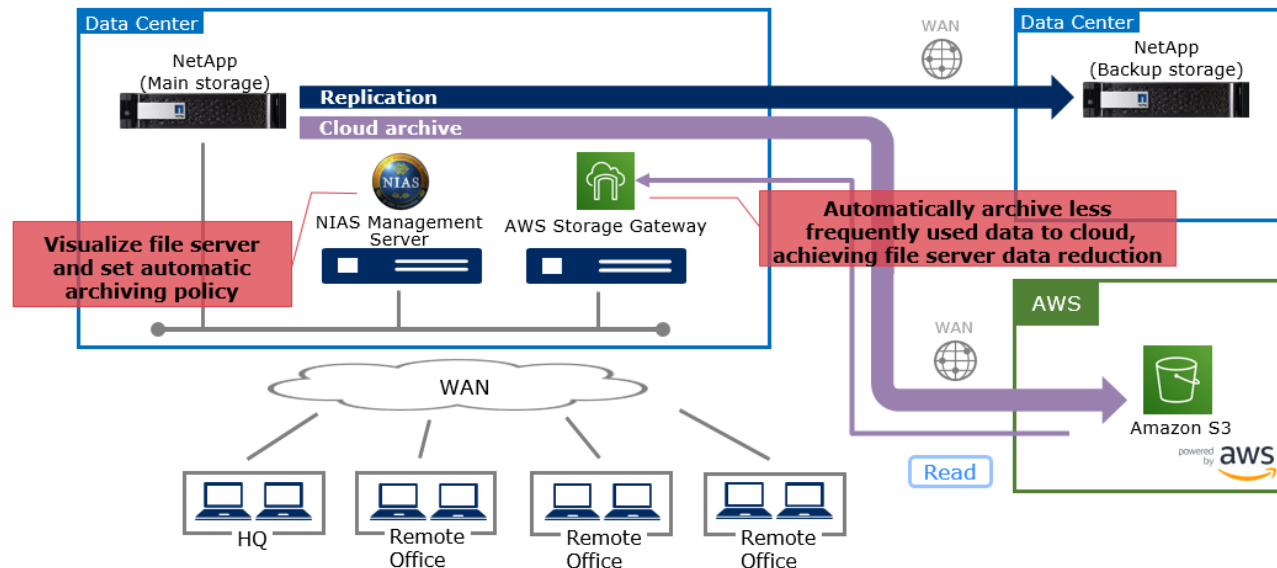
NIAS manages data on integrated storage and moves **less frequently used data to Amazon S3** to reduce operational cost.

Challenges

- Cost increase due to unmanaged file server locating at several remote places. Data increased to more than 15 times in 5 years.
- Unnecessary files were occupying free space of file server. Administrators could not delete files without users' permission.
- Hardware extension required huge amount of time and cost.

Benefit

- ✓ Stable operation after file server integration using NIAS's visualization function.
- ✓ NIAS specifies unused files (e.g. files not updated over 1 year) and automatically sends these files to cloud storage.
- ✓ Using both economical S3 storage and on-premise file server saves time and cost to manage the files by 60% in 5 years.



NIAS helped visualize and **modify all access right inconsistencies** caused by rapid business growth and frequent organizational changes

Challenges

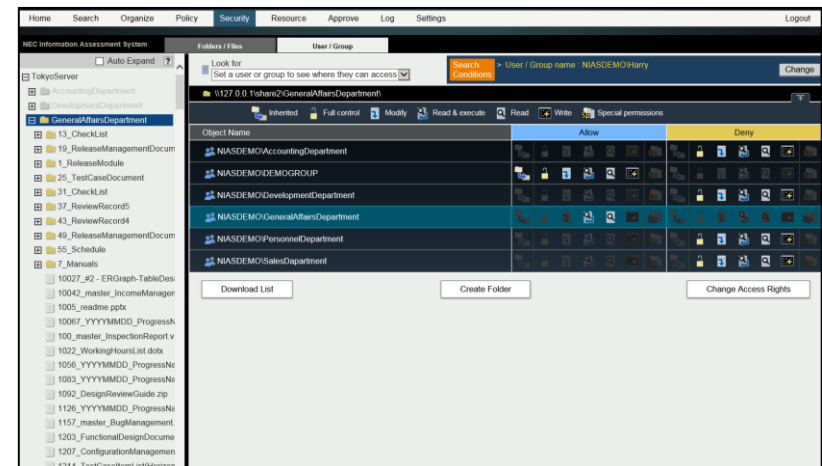
- Organizational changes to cope with a rapidly growing workforce following business expansion led to frequent changes in access rights and its inconsistencies.
- The large amount of files made it physically impossible to manually check the actual situation and change access rights.
- The amount of data on file servers increased suddenly, as did storage costs.

Why NIAS?

- Visualization and modification of access rights can be done in a single view
- Group member of Active Directory can be edited with NIAS easy-to-understand view
- Quick response in handling with more than 100TB data capacity
- Rich experiences of implementation

Benefit

- As much as 1.2 million inconsistencies were modified in 2, 3 days.
- Appropriate status greatly reduces the risks of information leakage.
- By managing duplicated or large files, large amount of capacity reduction / free space creation are enabled.

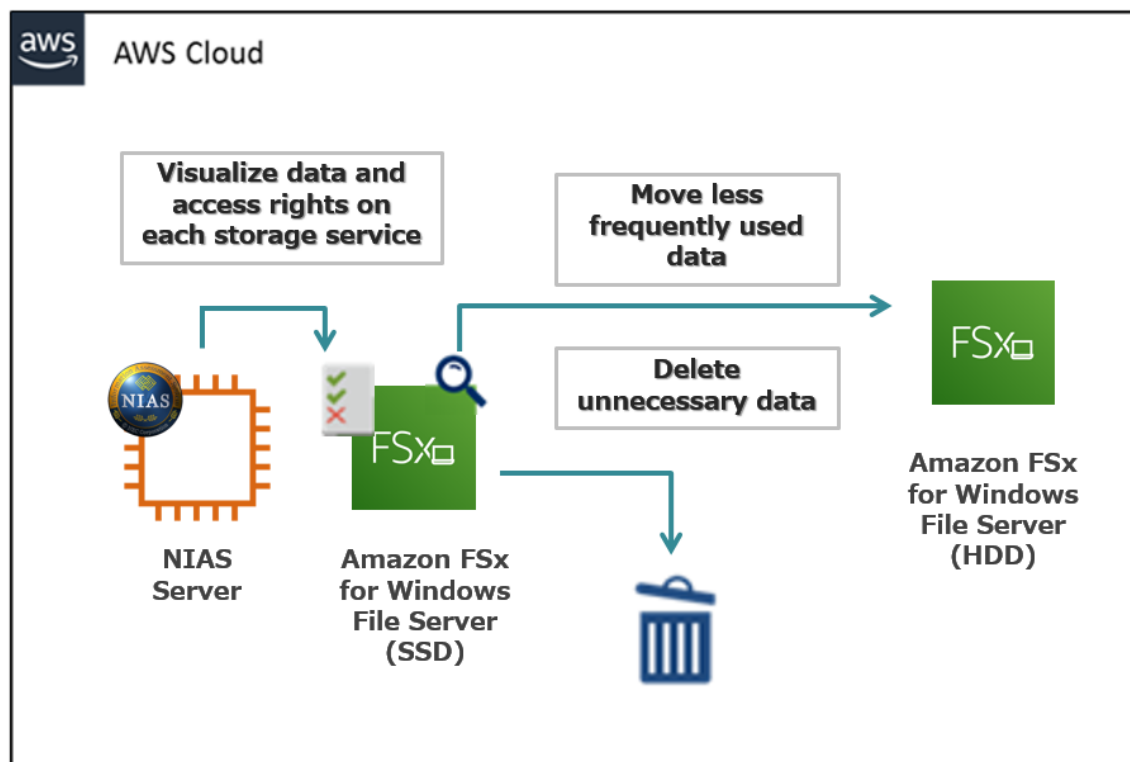


https://www.nec.com/en/global/prod/nias/case_study/gloops/

AWS × NIAS File Server Optimization Solution

Security measure and optimal placement of data on cloud

- Low cost and high performance being fulfilled with FSx. Frequently used data remains in high speed SSD, and the others are archived to low cost HDD.
- Proper access rights management on cloud data to keep security.



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