



Version 5.1 New Enhancement

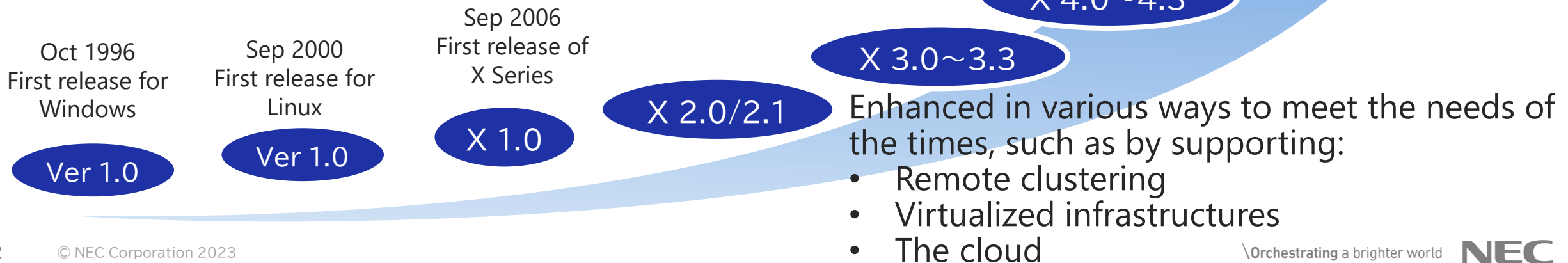
November 2023

NEC

Technology Service and Software Department
(EXPRESSCLUSTER)

EXPRESSCLUSTER Roadmap

Providing various platforms with high availability in accordance with the times



Enhancement Points of EXPRESSCLUSTER X 5.1

Enhancements for the cloud

- Added forced-stop resources for Azure.
- Mail Report function supports SMTPS and STARTTLS.
- Facilitated the configuration and operation processes in the cloud environment.

Security enhancements

- Added the function to display operation logs of the Cluster WebUI.
- Added the function to configure the log storage period.
- Added the function to configure a floating IP resource as a source IP address.
- Supported OpenSSL 3.0.

Newly supported platforms & applications

- SUSE Linux Enterprise Server 15 SP4
- Ubuntu Server 22.04.1 LTS, Ubuntu Server 20.04.5 LTS
- SQL Server 2022, PostgreSQL 15.1, MariaDB 8.0.31, MariaDB 10.10
- ReFS

Enhancements for the Cloud

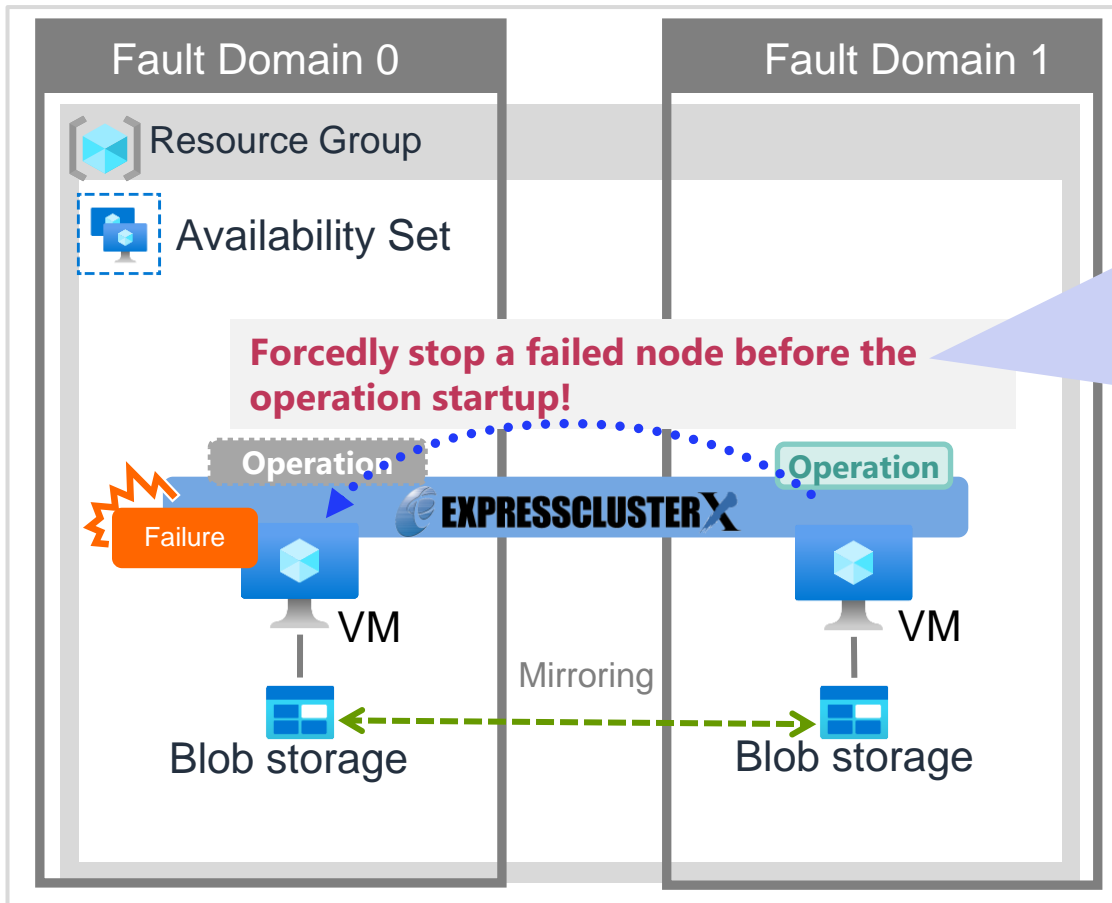
Added forced-stop resources for Azure.

Mail Report function supports SMTPS and STARTTLS.

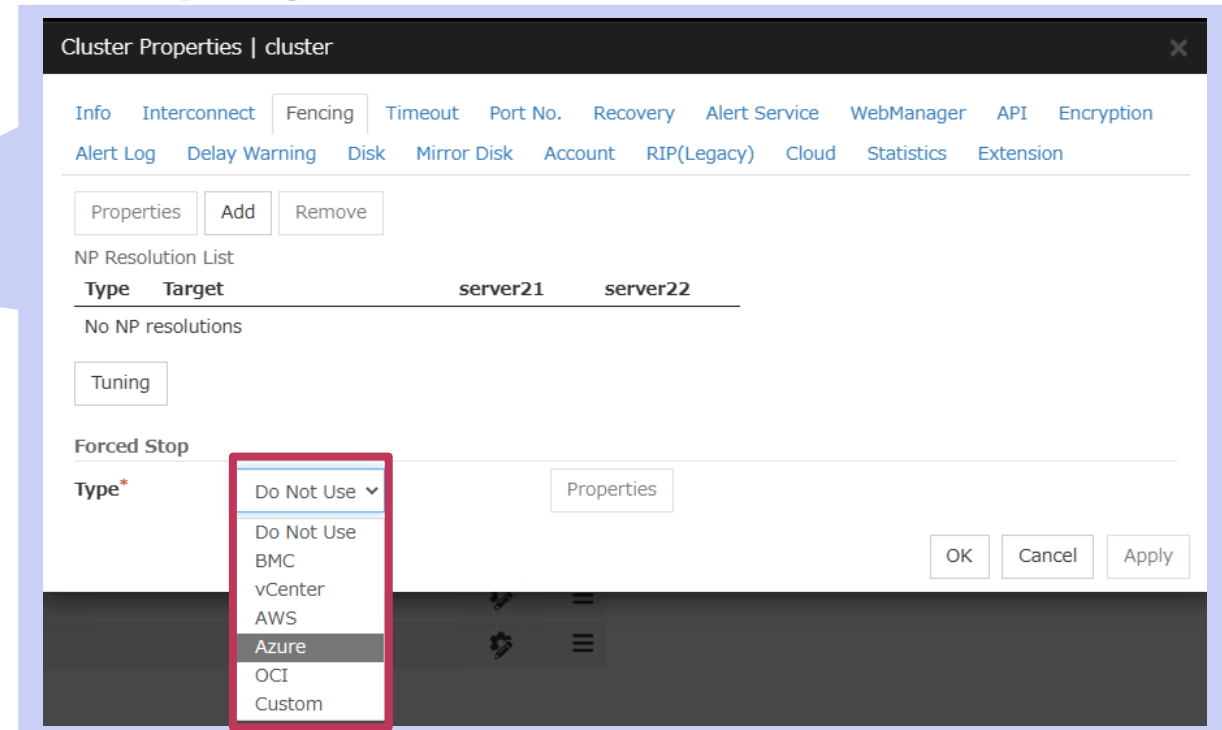
Facilitated the configuration and operation processes in the cloud environment.

Added Forced-stop Resources for Azure

The forced-stop function that prevents both-system activation due to a hang-up has been enhanced: GUI configuration now allows using the function to forcibly stop a failed node before failover.



This can be configured from GUI without scripting.



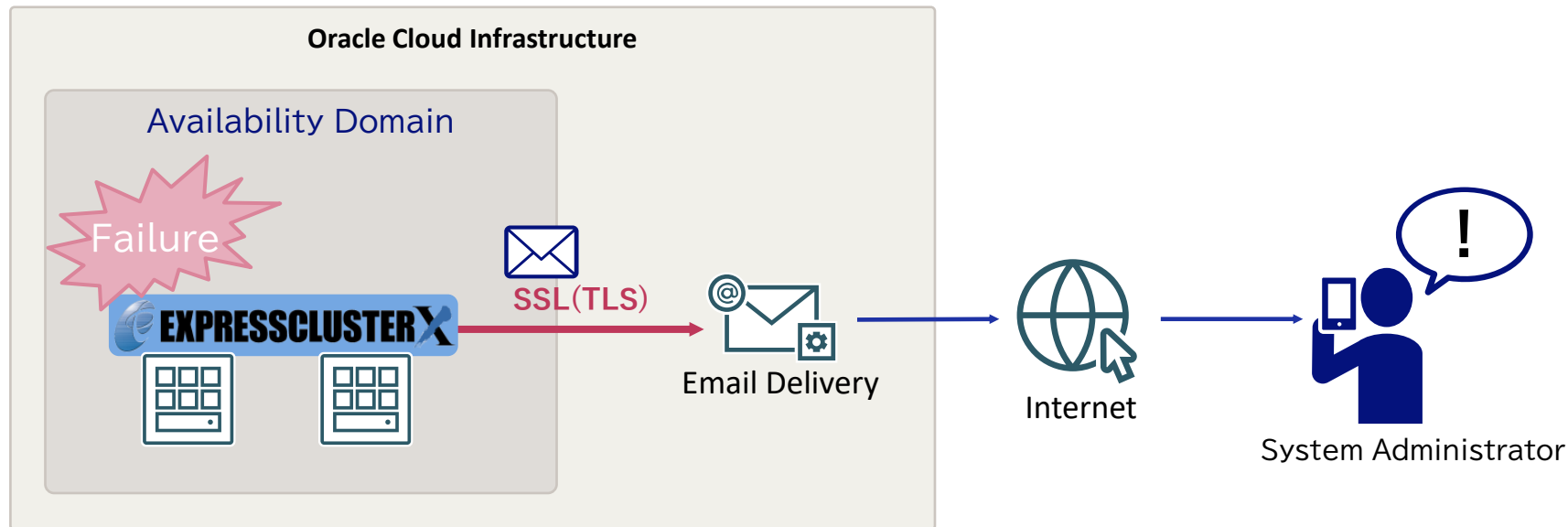
[Cluster WebUI] -> [Cluster Properties] -> [Fencing]tab -> [Forced Stop]

Mail Report function supports SMTPS and STARTTLS

*This enhanced function is available in the on-premises environment as well.

Mail Report function is now supported on Oracle Cloud Infrastructure (OCI).

- ◆ Mail Report function is now available for SMTPS/STARTTLS-required email delivery services such as “Email Delivery”, email delivery service on OCI.



Other Facilitation Improvements in Configuration and Operation on the Cloud Environment

◆ For configuration

- Environment variables for using AWS-related functions (such as AWS virtual IP resources) now can be configured from the Cluster WebUI. This allows the configuration without going through a proxy to be set on the Cluster WebUI, for example, only when EXPRESSCLUSTER uses AWS-related functions.
- Added the function for specifying a command line option, to the AWS CLI being executed with the AWS-related function. This allows specifying the end point for executing the AWS CLI.
- Installing Python is not needed anymore in the configuration using only the AWS virtual IP resource and the AWS virtual IP monitor resource.
- Installing the VMware vSphere CLI is not needed anymore to use the forced-stop function in the vSphere environment.

◆ For operation *This enhanced function is available in the on-premises environment as well.

- Added the option not to execute the OS restart, to the backup/restore commands (clpbackup/clprestore). This now allows some procedures to be performed without the OS restart.

Security Enhancements

Added the function to display operation logs of the Cluster WebUI.

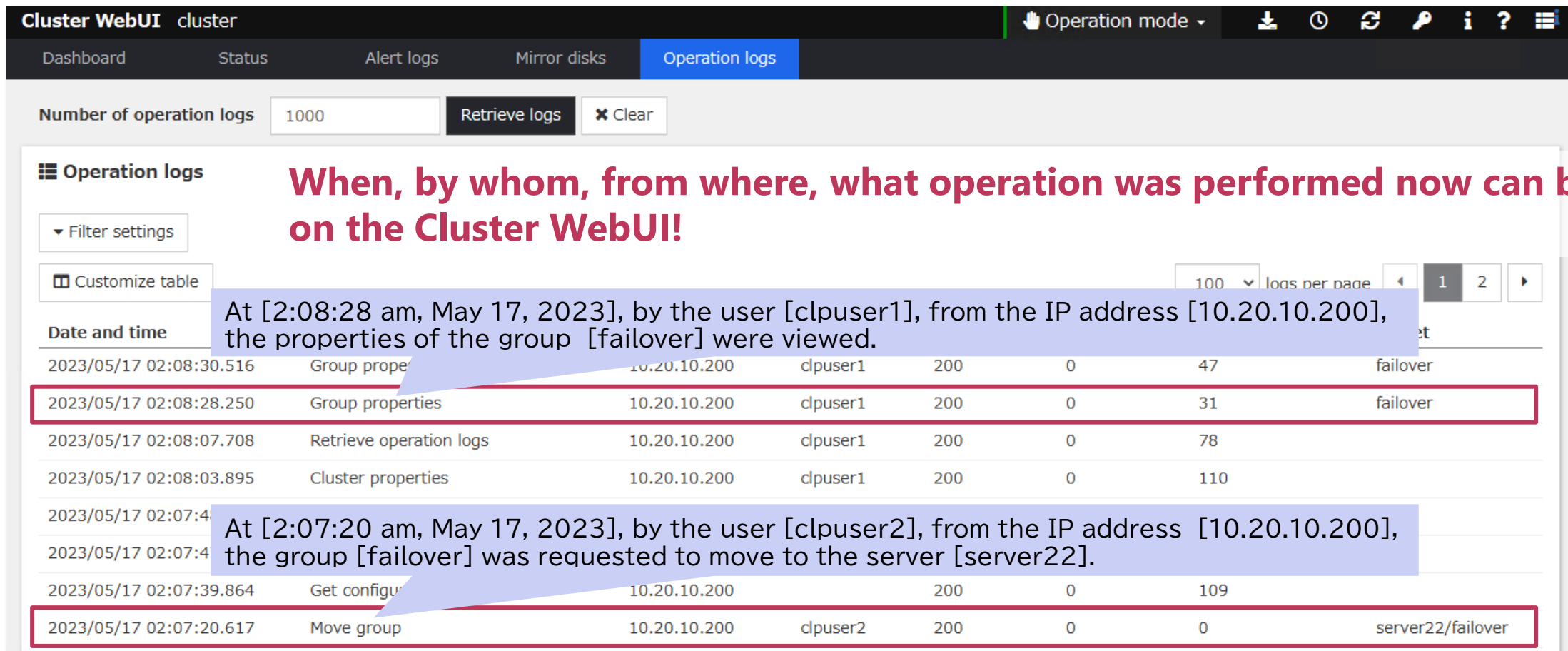
Added the function to configure the log storage period.

Added the function to configure a floating IP resource as a source IP address.

Supported OpenSSL 3.0.

Added the Function to Display Operation Logs of the Cluster WebUI

Added the tab to display the history of operations performed on the Cluster WebUI: It is now possible to check traces of incorrect or invalid operations.




When, by whom, from where, what operation was performed now can be checked on the Cluster WebUI!

Date and time	Operation	IP address	User	Status	Count	Target
2023/05/17 02:08:30.516	Group properties	10.20.10.200	clpuser1	200	0	47 failover
2023/05/17 02:08:28.250	Group properties	10.20.10.200	clpuser1	200	0	31 failover
2023/05/17 02:08:07.708	Retrieve operation logs	10.20.10.200	clpuser1	200	0	78
2023/05/17 02:08:03.895	Cluster properties	10.20.10.200	clpuser1	200	0	110
2023/05/17 02:07:40.000						
2023/05/17 02:07:40.000						
2023/05/17 02:07:39.864	Get configuration	10.20.10.200		200	0	109
2023/05/17 02:07:20.617	Move group	10.20.10.200	clpuser2	200	0	0 server22/failover

Added the Function to Configure the Log Storage Period


Items to configure for the log storage period have been added to the Cluster WebUI: It is now easy to address the requirements for the log storage.



Use log storage period feature

Store log for* days

Log storage destination*

Log storage timing* 

Logs can be compressed, stored to the log storage directory at the specified time such as the one with low server load, and kept for the desired storage period.

[Cluster WebUI] -> [Cluster Properties] -> [Extension] tab -> [Settings of log storage period]

Examples of guidelines for the log storage period

- ◆ PCI Data Security Standard v4.0 (*1)
 - 10.5.1 Retain audit log history for at least **12 months**, with at least the most recent **three months** immediately available for analysis.
- ◆ Convention on Cybercrime (ETS No. 185) (*2)
 - oblige that person to preserve and maintain the integrity of that computer data for a period as long as necessary, up to a maximum of **ninety days**
- ◆ NIST SP 800-92 (Guide to Computer Security Log Management) (*3)
 - Table 4-1. Examples of Logging Configuration Settings

Category	Low Impact Systems	Moderate Impact Systems	High Impact Systems
How long to retain log data	1 to 2 weeks	1 to 3 months	3 to 12 months

(*1) https://www.pcisecuritystandards.org/document_library/

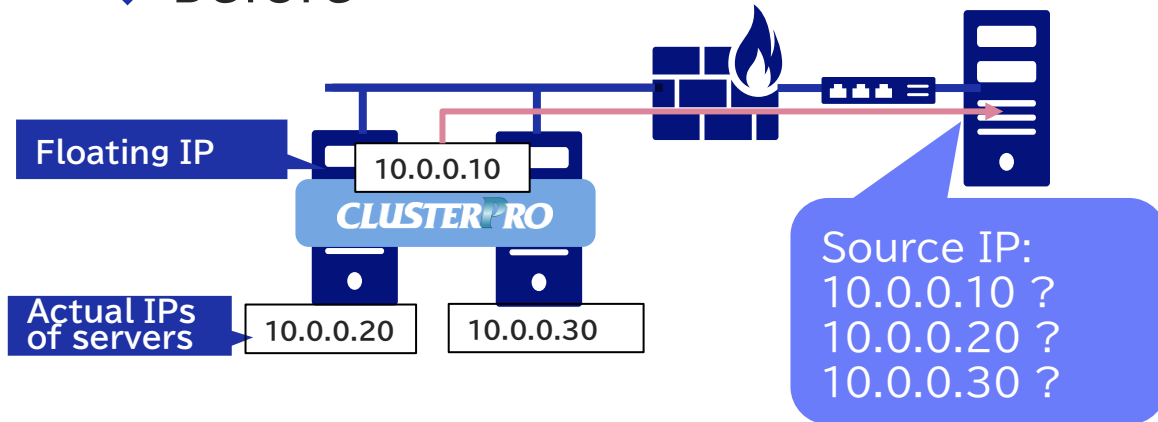
(*2) <https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treaty-num=185>

(*3) <https://nvlpubs.nist.gov/nistpubs/legacy/sp/nistspecialpublication800-92.pdf>

Added the Function to Configure a Floating IP Address as a Source IP Address

Items to configure a floating IP address as a source IP address have been added to the Cluster WebUI: The number of ports to be opened in the firewall now can be minimized as needed.

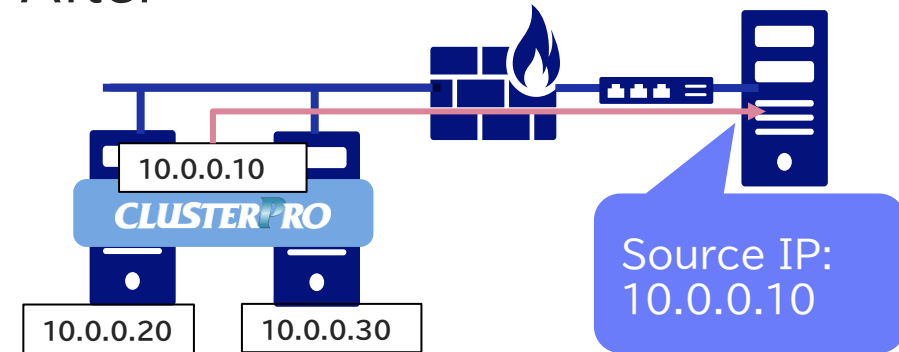
◆ Before



◆ The source IP is not fixed. (Actual IP or floating IP)

- If the firewall restricts the source IP address, all the IP addresses need to be opened.
- If a failover occurs, the source IP address changes, and then the server communicating with the cluster server behaves in an unexpected way.

◆ After



◆ The source IP is fixed to the floating IP.

- If the firewall restricts the source IP address, **only the floating IP address needs to be opened.**
- Even if a failover occurs, the source IP address remains unchanged. **This allows the server communicating with the cluster server to behave without being aware of the failover.**

*This function is available also for applications where the clients are aware of the source IPs.

[Cluster WebUI] -> Properties of Floating IP resource -> [Detail] tab
-> [Tuning] button -> [Use transmission source change feature]

Other Security Enhancements

◆ Supported OpenSSL 3.0

- HTTPS access to the Cluster WebUI
- HTTPS monitoring function by HTTP monitor resource
- FTPS monitoring function by FTP monitor resource
- Mail report function (Communication with the mail server by using SMTPS/STARTTLS)

◆ Disabled TLS 1.1

- HTTPS access to the Cluster WebUI

Newly Supported Platforms and Applications

Newly Supported Platforms and Applications

◆ OS

- Red Hat Enterprise Linux 9.2,9.0,8.8
- MIRACLE LINUX 9.2,9.0,8.8
- Oracle Linux 9.2,9.0,8.8
- SUSE Linux Enterprise Server 15 SP5/SP4
- Ubuntu Server 22.04.1 LTS
- Ubuntu Server 20.04.5 LTS
- AlmaLinux OS 9.2,9.0,8.8

◆ Data base

- SQL Server 2022
- PostgreSQL 15.1
- MariaDB 8.0.31
- MariaDB 10.10

◆ File system

- ReFS

◆ Java execution environment

- Java17

◆ Java application

- WebSAM SVF PDF Enterprise 10.1
- WebSAM RDE SUITE 10.1
- WebSAM SVF Connect SUITE Standard 10.1

Thank You



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