Summary of Requirements

Server

Hardware	CPU	Intel® Xeon® E3-1220 v3, 3.1 GHz or faster processor
	Memory	4 GB or higher
	Disk	320 GB or higher
	Ethernet Card	1000BASE-T
Software	OS	Red Hat Enterprise Linux 6.5 (64-bit edition)

Scenario creation terminal

Hardware	CPU	Intel® Core i5 M560 (2.66G Hz) or faster processor
	Memory	4 GB or higher
	Disk	10 GB or higher
Software	OS	Microsoft Windows 7

FUJITSU Network Virtuora SP

Software for automating the operation and maintenance of servers, storage and networks

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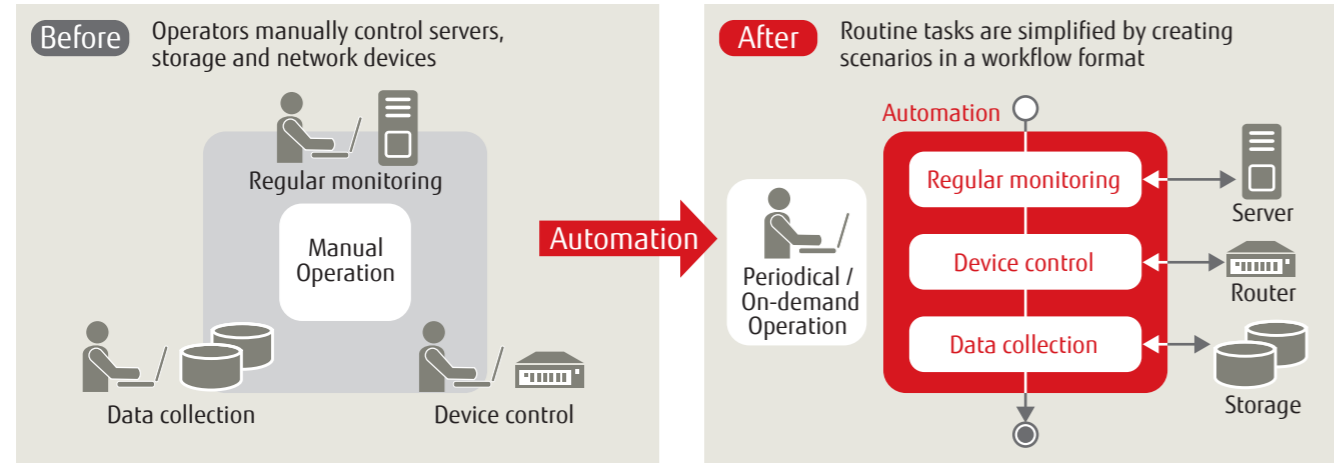
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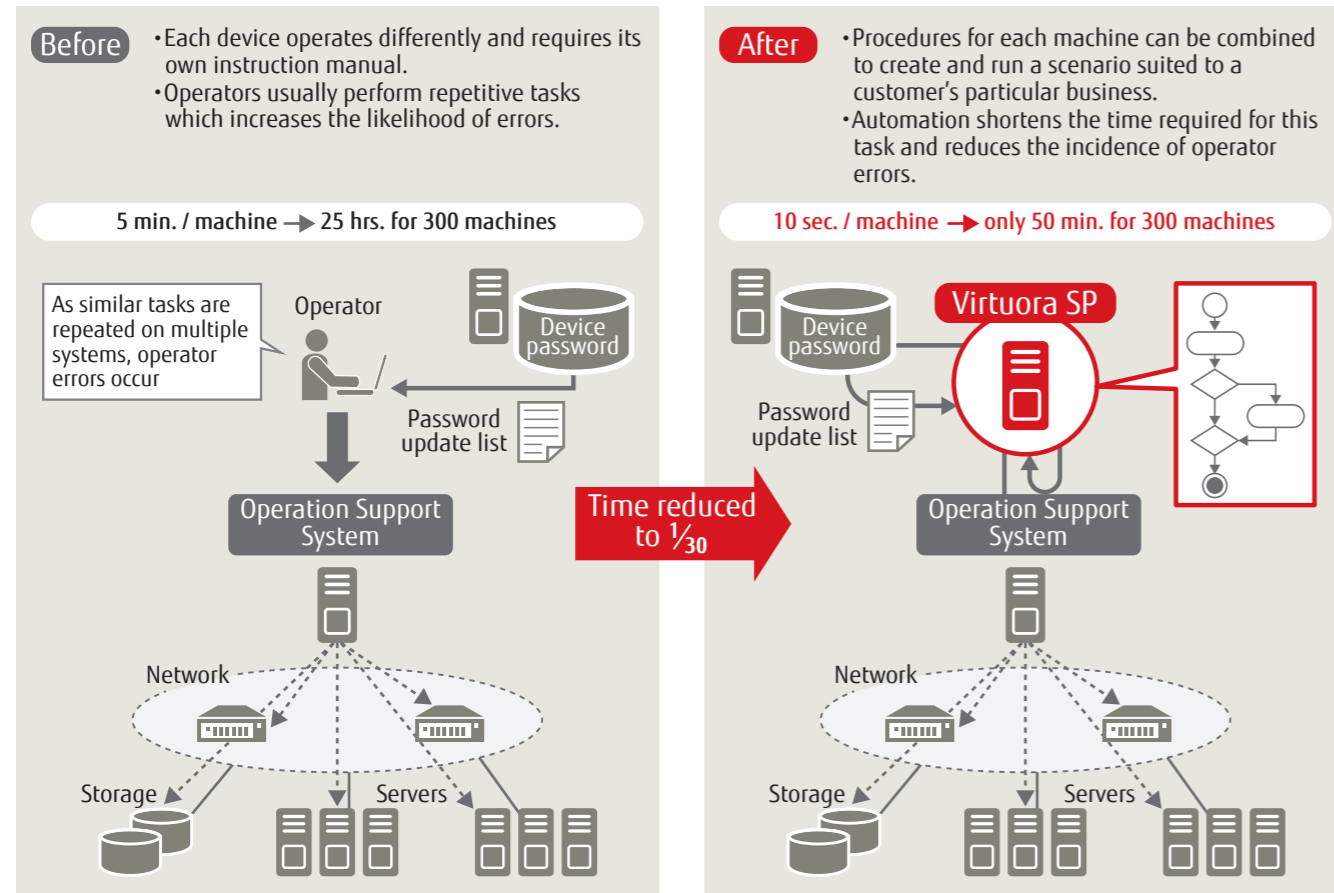# Automating customers' operations and maintenance tasks

Virtuora SP automates the operation and maintenance (O&M) of servers, storage and networks by using software to apply acquired knowledge of those tasks in specific scenarios. This allows much faster provision of services to customers and significantly reduces operational costs.
By automating tasks that are normally performed manually, such as collecting device logs and managing device activity and resources, Virtuora SP also improves the quality of O&M tasks.
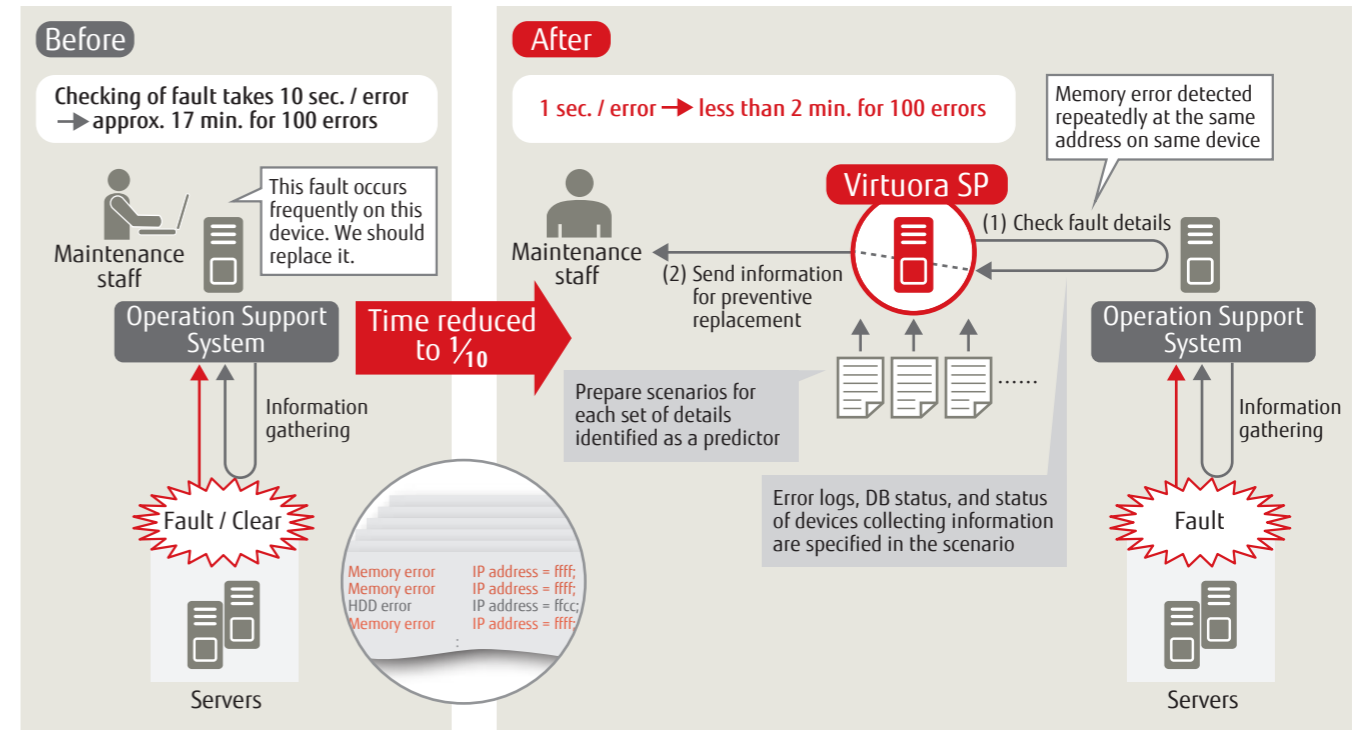
Before Operators manually control servers, storage and network devices

Regular monitoring

Manual Operation

Data collection   Device control

Automation

After Routine tasks are simplified by creating scenarios in a workflow format

Automation

Periodical / On-demand Operation

Regular monitoring — Server

Device control — Router

Data collection — Storage

Example 1 | Automation of regular password changes

Time-consuming tasks that are prone to input and configuration errors can be made more efficient through software-based automation. For example, the task of regularly changing passwords, previously performed manually by an operator, can be automated using Virtuora SP.
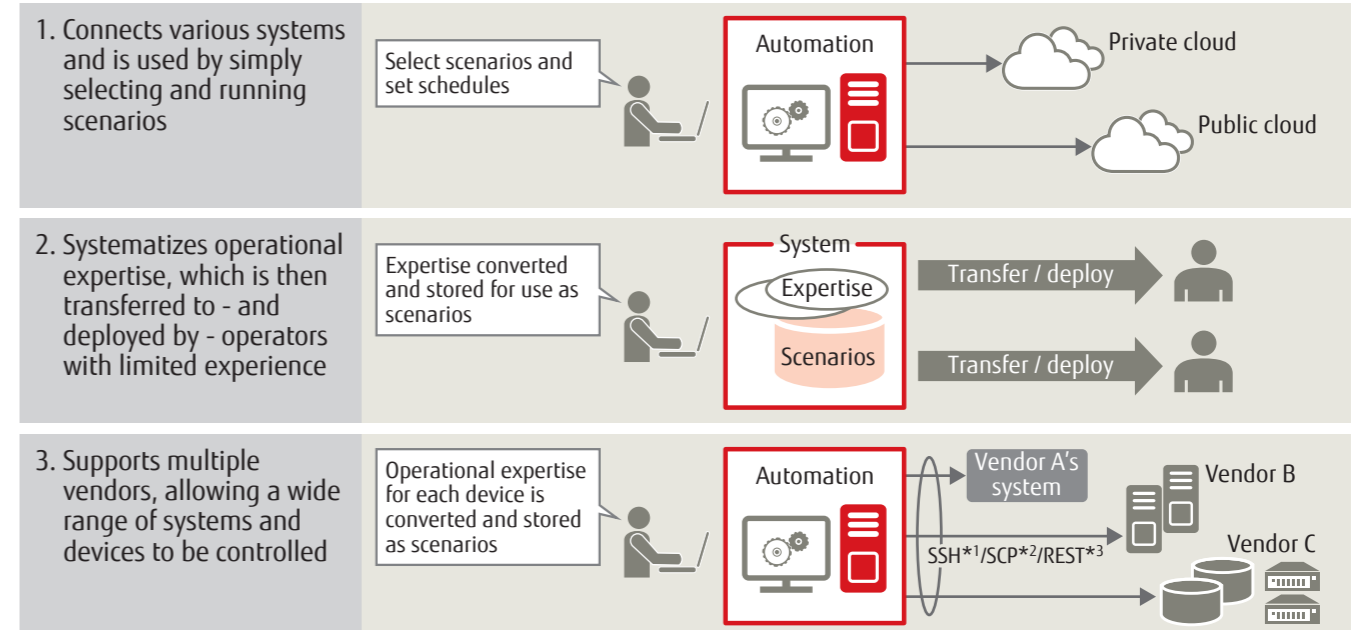
Before
- Each device operates differently and requires its own instruction manual.
- Operators usually perform repetitive tasks which increases the likelihood of errors.

5 min. / machine → 25 hrs. for 300 machines

As similar tasks are repeated on multiple systems, operator errors occur

Operator   Device password

Password update list

Operation Support System

Network

Storage   Servers

Time reduced to 1/30

After
- Procedures for each machine can be combined to create and run a scenario suited to a customer's particular business.
- Automation shortens the time required for this task and reduces the incidence of operator errors.

10 sec. / machine → only 50 min. for 300 machines

Device password

Virtuora SP

Password update list

Operation Support System

Network

Storage   Servers

Example 2 | Automated detection of critical fault predictors

Intermittent faults in servers, storage and networks may be predictors of more serious faults in the future. Various tasks performed by operators can be automated in Virtuora SP, such as the checking of fault locations and frequencies. In addition, decisions can be made more rapidly on preventive replacement of devices by regularly running scenarios to check on the location and frequency of faults, based on information extracted from fault history data. Alerts are issued to assist with decision making.

Before

Checking of fault takes 10 sec. / error → approx. 17 min. for 100 errors

Maintenance staff

This fault occurs frequently on this device. We should replace it.

Operation Support System

Information gathering

Fault / Clear

Memory error   IP address = ffff;
Memory error   IP address = ffff;
HDD error   IP address = ffcc;
Memory error   IP address = ffff;

Servers

After

1 sec. / error → less than 2 min. for 100 errors

Memory error detected repeatedly at the same address on same device

Maintenance staff

Virtuora SP

(1) Check fault details

(2) Send information for preventive replacement

Operation Support System

Prepare scenarios for each set of details identified as a predictor

Error logs, DB status, and status of devices collecting information are specified in the scenario

Information gathering

Time reduced to 1/10

Fault

Servers

Features of FUJITSU Network Virtuora SP

1. Connects various systems and is used by simply selecting and running scenarios

Select scenarios and set schedules

Automation

Private cloud

Public cloud

2. Systematizes operational expertise, which is then transferred to - and deployed by - operators with limited experience

Expertise converted and stored for use as scenarios

System

Expertise

Scenarios

Transfer / deploy

Transfer / deploy

3. Supports multiple vendors, allowing a wide range of systems and devices to be controlled

Operational expertise for each device is converted and stored as scenarios

Automation

Vendor A's system

Vendor B

Vendor C

SSH*1/SCP*2/REST*3

*1 SSH (Secure SHell): Protocol used to communicate securely with remote computers
*2 SCP (Secure CoPy): Secure file transfer protocol that uses SSH functionality
*3 REST (REpresentational State Transfer): A set of principles, properties, and constraints that describe a style of software architecture used for networked resources.