# The 7 Common Challenges Facing IT Departments
## The First Step into Offensive IT Investment

Cloud Platform Division
NEC Corporation

# Factors Impeding Offensive Investment in IT

The IT department's mission is to enhance business performance. IT professionals need to reevaluate the current situation to make offensive investment possible.

## Expectations for the IT department

Improve customer satisfaction

Gain a competitive advantage

Develop new businesses

Two inhibiting factors

No improvement in efficiency

Insufficient stability

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# Seven Issues Facing System Operators

* Selected based on real customer feedback, original questionnaire, company survey report

## No improvement in efficiency

(1) Virtualization made operation even more troublesome
(2) Remote maintenance on server and POS systems is required
(3) It takes time and effort to configure the network equipment
(4) It takes time to check the normality of the server every morning

## Insufficient stability

(5) I'm worried about whether the AWS snapshot was taken
(6) Data bloat and access management are causing me a headache
(7) I want to prepare for the system going down due to a failure

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# Challenges in Improving Operational Efficiency

(1) Virtualization made operation even more troublesome
(2) Remote maintenance on server and POS systems is required
(3) It takes time and effort to configure the network equipment
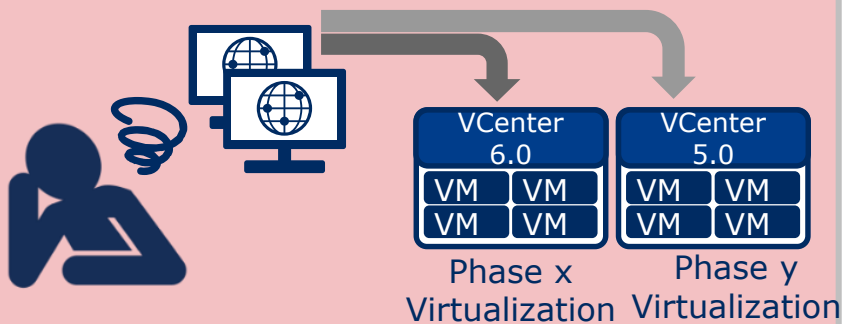(4) It takes time to check the normality of the server every morning

# (1) Virtualization made operation even more troublesome

**Challenge** Virtualization helped cut server procurement costs, but made system configuration even more complicated, and the operation more troublesome.
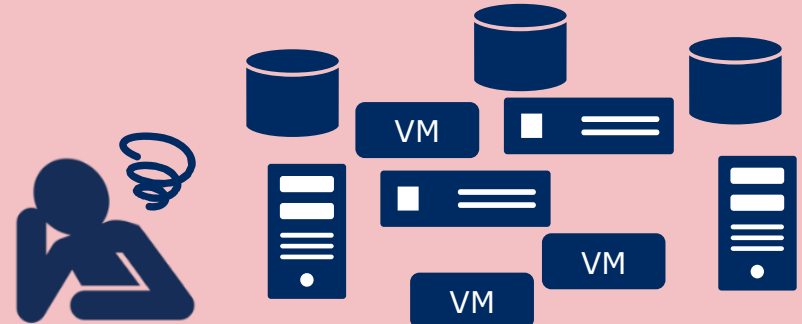
## Performance issues occurred! No clue as to the root cause

Virtualization host

Virtual machine

storage

I'm not sure which management tool I'm supposed to check.
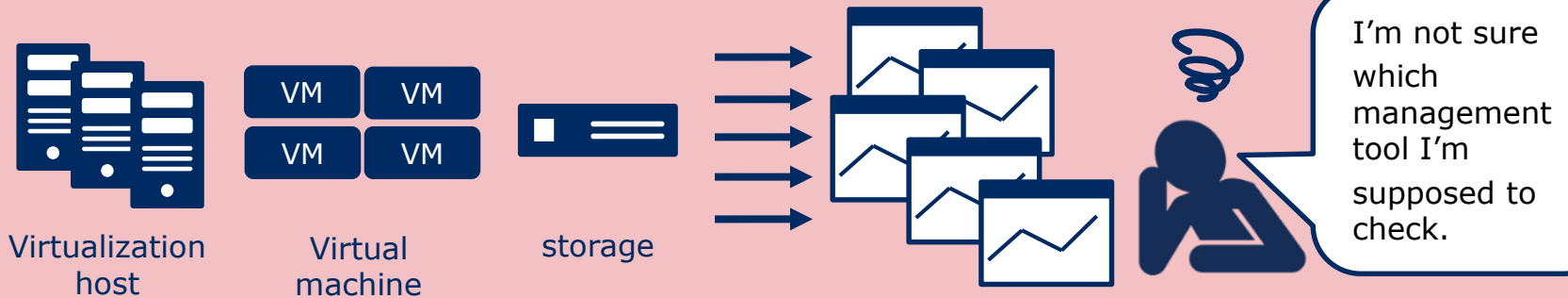
## Management tools are different for each platform

VCenter 6.0
VM VM
VM VM
Phase x Virtualization

VCenter 5.0
VM VM
VM VM
Phase y Virtualization

## Hard to fully grasp the system configuration

VM

VM

VM

VM

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# Solution: MasterScope SigmaSystemCenter

**Solution**

SigmaSystemCenter visualizes resource usage and configuration of complicated virtualized systems, making it easier to manage these systems.

## Visualizes resource usage

Report

* Current resource usage
* Resource usage trends
* Resource depletion/surplus ranking
* Maximum resource consumption
* Server configuration list

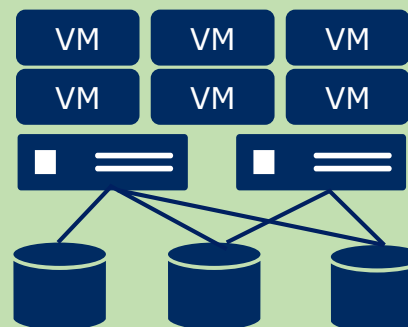Information that requires confirmation is well-organized and easy to find.

The Excel file format makes it easy to create reports.

## One management tool covers entire infrastructure

VCenter 6.0
| VM | VM |
| VM | VM |

VCenter 5.0
| VM | VM |
| VM | VM |

Phase x Virtualization

Phase y Virtualization
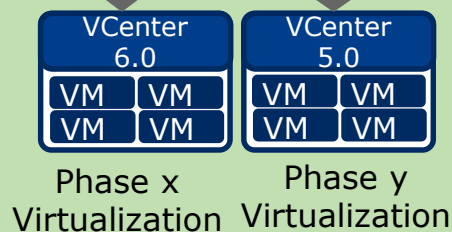
## Easy to grasp the current system configuration

| VM | VM | VM |
| VM | VM | VM |

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**Challenge**

Having to go on-site to perform inspections and repairs every time maintenance is required or system failure occurs is troublesome.

## In addition to Windows machines, remote maintenance of POS terminals and ATMs is required
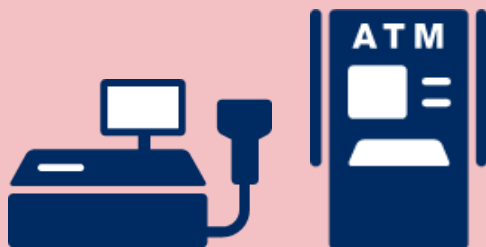
Equipment operating on Windows Embedded OS

Isn't there a way to check the cause of failure before visiting?

I wish I could operate Windows systems, including embedded operating systems, using a single tool.

## Once the OS is frozen, it cannot be controlled remotely

I wish I could restart the machine remotely.

## Difficult to keep track of task history

Is there a way to record operations performed remotely?

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# Solution: MasterScope WinShare

**Solution**

## WinShare helps to reduce the number of on-site visits by remotely operating Windows machines (including embedded OS)

### Performs remote maintenance on servers, computers, POS terminals, and ATMs scattered in different locations

I can use a single tool to perform maintenance on Windows systems, including embedded operating systems.
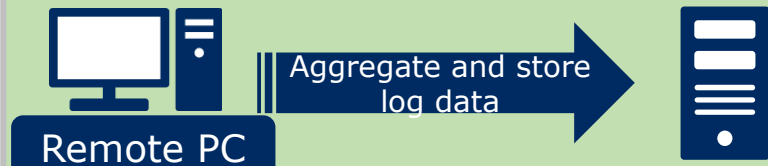
Maintenance base

Store

ATM
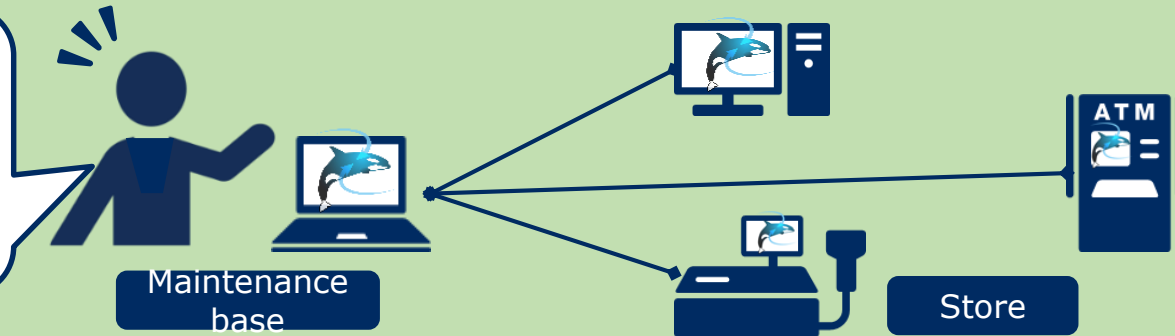
### Power supply can also be controlled

Control power supply

ON

Operation PC
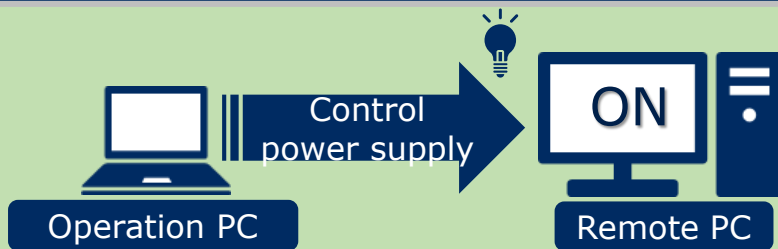
Remote PC

Power supply can be controlled with Intel R AMT*1 or Wake on LAN

*1: Intel R AMT 6.0 or later is supported

### Access and operation log can be collected

Aggregate and store log data

Remote PC

* Access log  * Remote operation log
* File transfer log
* Command execution log
* Security (authentication) log

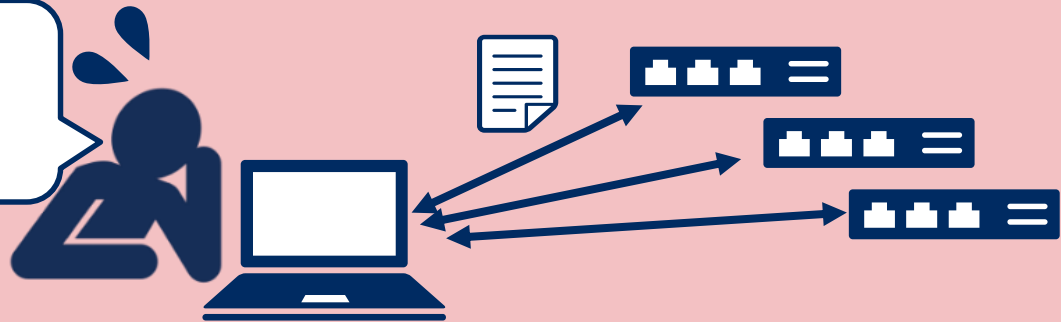Orchestrating a brighter world    **NEC**

**Challenge**

## It takes time and effort to manage the configuration of multiple devices in a multi-vendor or large-scale environment

### Collecting and editing the configuration of multiple devices is troublesome

It takes time and effort to manually collect and edit the configuration information of a large number of devices.

### Managing configuration data is difficult

It's not easy to organize and store configuration data.

### Hard to keep track of individual updates

Someone changed the configuration.

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# Solution: MasterScope Network Manager

**Solution**

Network Manager manages configurations collectively under a common operation, thus reducing management burden even in a multi-vendor environment

## Collects and distributes configuration data in a single operation

Network Manager automatically collects and distributes configuration data in a single operation, allowing me to use my time for other work.
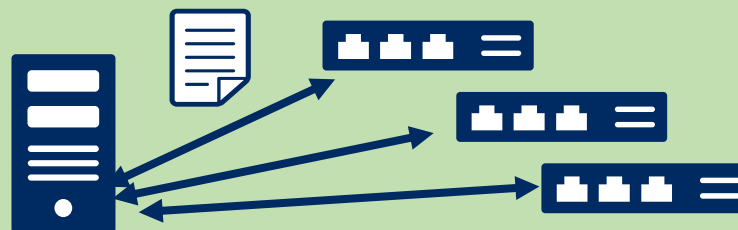
## Makes generation management and differential comparisons possible

Generation management and differential comparisons make it easy to confirm when and what has been changed.

## Detects changes

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# (4) It takes time to check the normality of the server every morning

**Challenge**

It takes time to visually check every single device every morning to check the completion status of backups and batch jobs.

## Checking the system operation every morning is time-consuming

Check that backup was completed successfully

Check that hardware is running properly

Check performance

Check event logs

## Adding monitoring hardware is not possible

I don't want to add hardware just to monitor servers.

## Lack of operational know-how

How do I decide the settings and threshold values of the monitoring tool?

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# Solution: MasterScope SystemManager G

**Solution**

## SystemManager G compiles the server operation status of multiple servers which helps to cut down time for checking

### The report function provides information on normal and abnormal operation

Ping communication report, ArcServe UDP log list, Server diagnostic report, Hyper-V machine status

### No need for monitoring hardware

SystemManager G can simply be installed on a server that needs to be monitored.

System Manager G

### Easy setup

Configuration Templates

Monitoring insight for OS and major packages is available as templates.

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# Challenges in Operational Stability

(5) I'm worried about whether the AWS snapshot was taken

(6) Data bloat and access management are causing me a headache

(7) I want to prepare for the system going down due to a failure

**Challenge**

There is a function for creating snapshots in AWS, but when I use it, lots of problems arise

## Complete snapshot data cannot be obtained

Oops!
I forgot to create a snapshot of the new instance.

**Error**

What should I do… there's an inconsistency in the snapshot data.

## The snapshot database keeps growing

I can't figure out when the snapshot was created and for which instance.

## Failed to start instance after taking snapshot

**Error**

The system stops when status is at the halfway point.

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# Solution: MasterScope JobCenter

**Solution**

## JobCenter helps to create AWS snapshots reliably and efficiently through the automation of workflow and schedule

### Acquires snapshots automatically and reliably at quiescent points

Acquires snapshots reliably in accordance with the schedule and workflow

START → EC2 Stop → Snapshot → EC2 Start-up → END

All I need to do is to add new instances as targets of a workflow.

### Generation management prevents unnecessary storage

START → EC2 Stop → Snapshot → EC2 Start-up → END

| Parameters | value |
| --- | --- |
| Object | Snapshot = Yes |
| Number of generations | 5 |

Easy setup based on parameters

### Checks to see that the instance has started correctly

Snapshot → EC2 Start-up → ◇ → END
Email notification

An email notification is sent if an error occurs during startup

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**Challenge** The file server fills up rapidly with junk and measures are not in place to protect against data breach

## Chronic capacity shortage

The disk space is filling up at an unexpected pace. There's still three more years to go until the next update. What should I do?
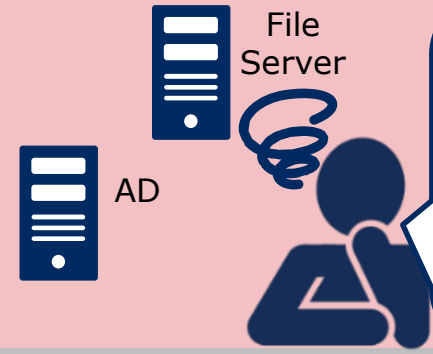
After one year

After two years

...

After five years

Data increases at twice the pace every year, 16 times in 5 years

## Inadequate access rights management

Setup is complicated, which is bound to lead to mistakes...

Click, click,
Click, click again ...
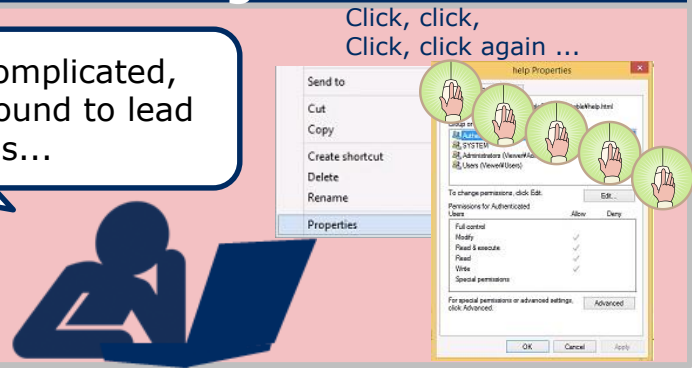
## Managing users and groups is difficult

File Server

AD

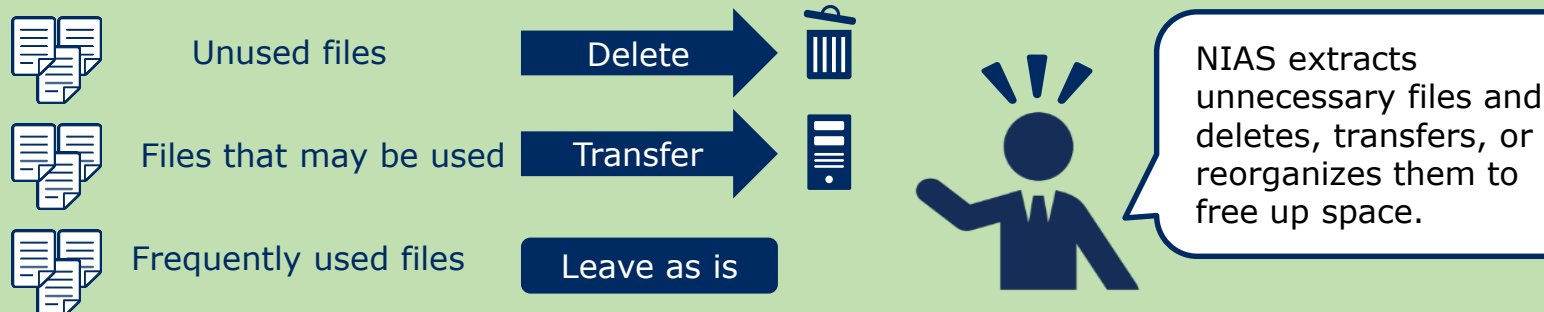Each personnel transfer event requires modification of users and groups using Active Directory management tools. It is hard to handle all the work.

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# Solution: NIAS (NEC Information Assessment System)

**Solution**

NIAS deletes unnecessary files to reduce data volume, and reinforces security conditions by appropriately managing access rights and personal information

## Reduces data volume on file server

Unused files → **Delete** →

Files that may be used → **Transfer** →

Frequently used files → **Leave as is**

NIAS extracts unnecessary files and deletes, transfers, or reorganizes them to free up space.

## Visualizes access rights and keeps track of inventory

Inappropriate access permissions are marked in red to make them easy to spot.

Access rights can be checked at a glance then changed.

Problems can be fixed in a single operation.

## Manages users and groups collectively

NIAS

AD

File Server

NIAS can manage users and groups collectively along with Active Directory.

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**Challenge**

## Stopping system operation due to server failure or maintenance is not feasible

### Breaking down of non-redundant parts or software application error can cause the system to go down

- CPU/memory
- Chipset
- Power supply
- NIC
- Disk
- Disk array controller

- Application
- Process
- Service
- ...

Sometimes even non-redundant parts and power supply modules can break down.

### Data is lost during a failure

I need to recover data from a point after backup was performed.

### The system needs to be shut down to apply patches

It's troublesome to coordinate the maintenance schedule with all related departments.

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# Solution: EXPRESSCLUSTER

**Solution**

EXPRESSCLUSTER makes hardware and business data redundant, and switches servers automatically in the case of failure or maintenance, thereby helping to minimize system downtime

## The whole server is made redundant making it possible to cope with failure or software malfunction
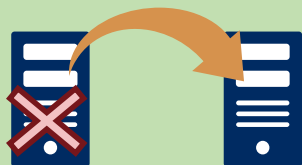
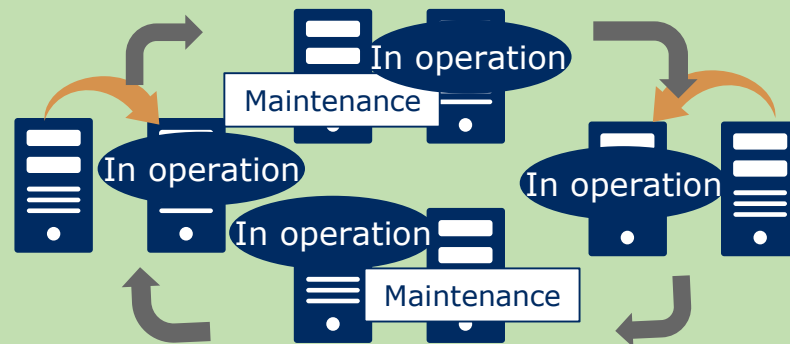Because the whole server is made redundant, any hardware breakdown can be dealt with.

The system switches automatically, reducing burden on the system administrator.

## Operation restarts at the point just before failure

Operation restarts at the point just before failure.
I don't need to recover the data manually.

## Downtime is minimized during maintenance

In operation

Maintenance

In operation

In operation

In operation

Maintenance

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# Summary

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Seven Issues Facing System Operators and Their Solutions

## No improvement in efficiency

(1) Virtualization made operation even more troublesome
→ Solution: **SigmaSystemCenter**

(2) Remote maintenance on server and POS systems is required
→ Solution: **WinShare**

(3) It takes time and effort to configure the network equipment
→ Solution: **Network Manager**

(4) It takes time to check the normality of the server every morning
→ Solution: **SystemManager G**

## Insufficient stabilization

(5) I'm worried about whether the AWS snapshot was taken
→ Solution: **JobCenter**

(6) Data bloat and access management are causing me a headache
→ Solution: **NIAS**

(7) I want to prepare for the system going down due to a failure
→ Solution: **EXPRESSCLUSTER**

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# Thank You



Realize simple and integrated system operation

For more product information,
visit >> http://www.nec.com/masterscope/

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