

# FUJITSU Software ServerView Resource Orchestrator Management of Virtual Environment Networks

April 2016  
Fujitsu Limited

FUJITSU Software ServerView

# FUJITSU Software ServerView Resource Orchestrator



Management of  
Virtual Environment Networks

shaping tomorrow with you

## ■ Positioning

The documentation road map for FUJITSU Software ServerView Resource Orchestrator is as shown below:

### Introduction to ServerView Resource Orchestrator V3.2.0

General introduction to ServerView Resource Orchestrator

**This document**

Introduction to ServerView Resource Orchestrator V3.2.0  
[Management of Virtual Environment Networks]

Introduction to Networks Using ServerView Resource Orchestrator Cloud Edition

## ■ Purpose

This document explains how ServerView Resource Orchestrator Cloud Edition addresses challenges involved with network configuration for virtual environments, as well as guidelines to the selection of network devices necessary for virtual environments.

- Challenges and Approaches for Networks in Virtual Environments
- Selecting Network Devices Necessary for Virtual Environments
- References

# Challenges and Approaches for Networks in Virtual Environments

- Three Challenges for Networks in Virtual Environments
- Realizing "Flexible Operation" - Handling SDN\* -  
(Solution of Challenge 1)
- Ensuring "System Reliability" (Solution of Challenge 2)
- Realizing "Visualization of Physical and Virtual Environments"  
(Solution of Challenge 3)
- Effects of ServerView Resource Orchestrator
- [Reference] What is SDN?

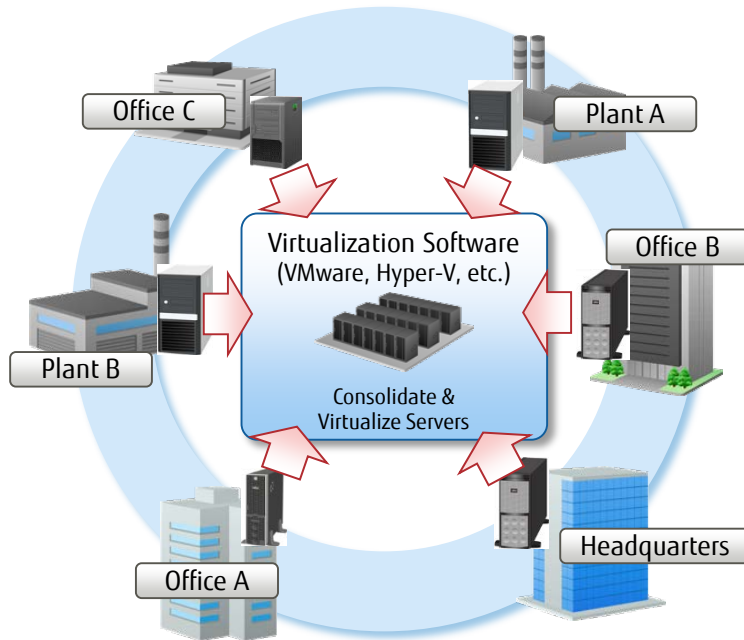
\* Abbreviation of "Software Defined Networking".

## The next step after the consolidation of physical servers is to address the challenges in business systems!!

- Consolidate physical servers using virtualization software
  - Reduce physical servers
  - Realize central consolidation



However, when configuring business systems in a virtual environment, challenges still remain!!



### Challenge 1

#### [Flexible Operation]

Is flexible response to requirement changes such as addition and update of business systems available? (Upon provision of new services, organizational changes, etc.)

### Challenge 2

#### [System Reliability]

Are the "security", "safety", and "stability" of business systems ensured?

### Challenge 3

#### [Visualize Physical and Virtual Environments]

When trouble occurs in communications between business systems, is it possible to confirm the status of physical and virtual environments at a glance?

# Realizing "Flexible Operation" - Handling SDN - (Solution of Challenge 1)

## Simplified addition and modification of business systems, including complicated network reconfiguration

- Templates enable quick creation of business systems to respond to the urgent launch of a new business
- Automatic network configuration Enables quick configuration of networks without specialized knowledge

When preparing a 3-tier system for example...



Administrator

System design?

- Deployment of servers and storage
- Deployment of firewalls
- Deployment of server load balancers

Are necessary devices available ?

What is the configuration method for each device?

Difficult to configure in a short time, as lots of activities such as designing, checking, and configuring are required !!  
So much work is involved and building it in a short time is difficult!!

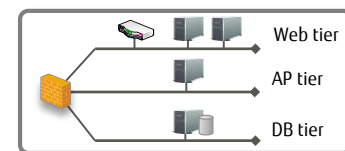
With ServerView  
Resource  
Orchestrator Cloud  
Edition



Administrator

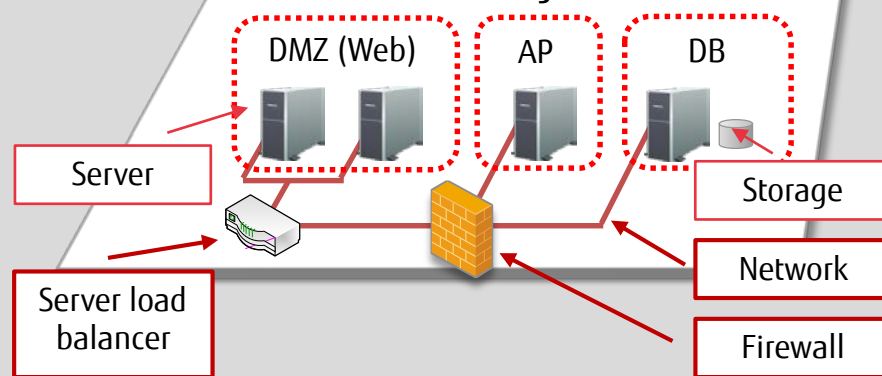
Select the template which was prepared in advance and enter the network environment information and other necessary information

Three-tier business system



Simply configure business systems in a short period of time using the GUI!!

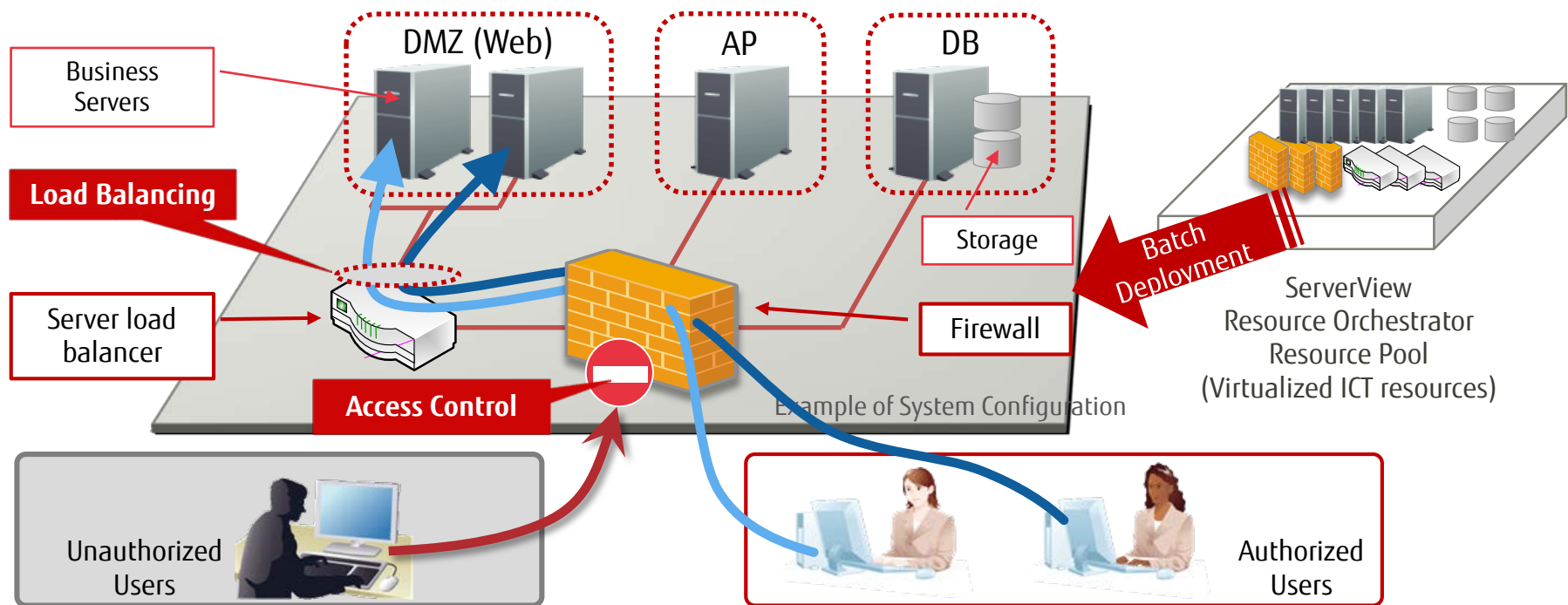
ROR configures automatically based on application details entered using the GUI





## Deploy firewalls and server load balancers as a batch

- Deploy “servers”, “firewalls”, “server load balancers”, and “storage” in batches within a business system
  - ⇒ With NS option (virtual firewall and virtual server load balancer), there is no need to add dedicated devices



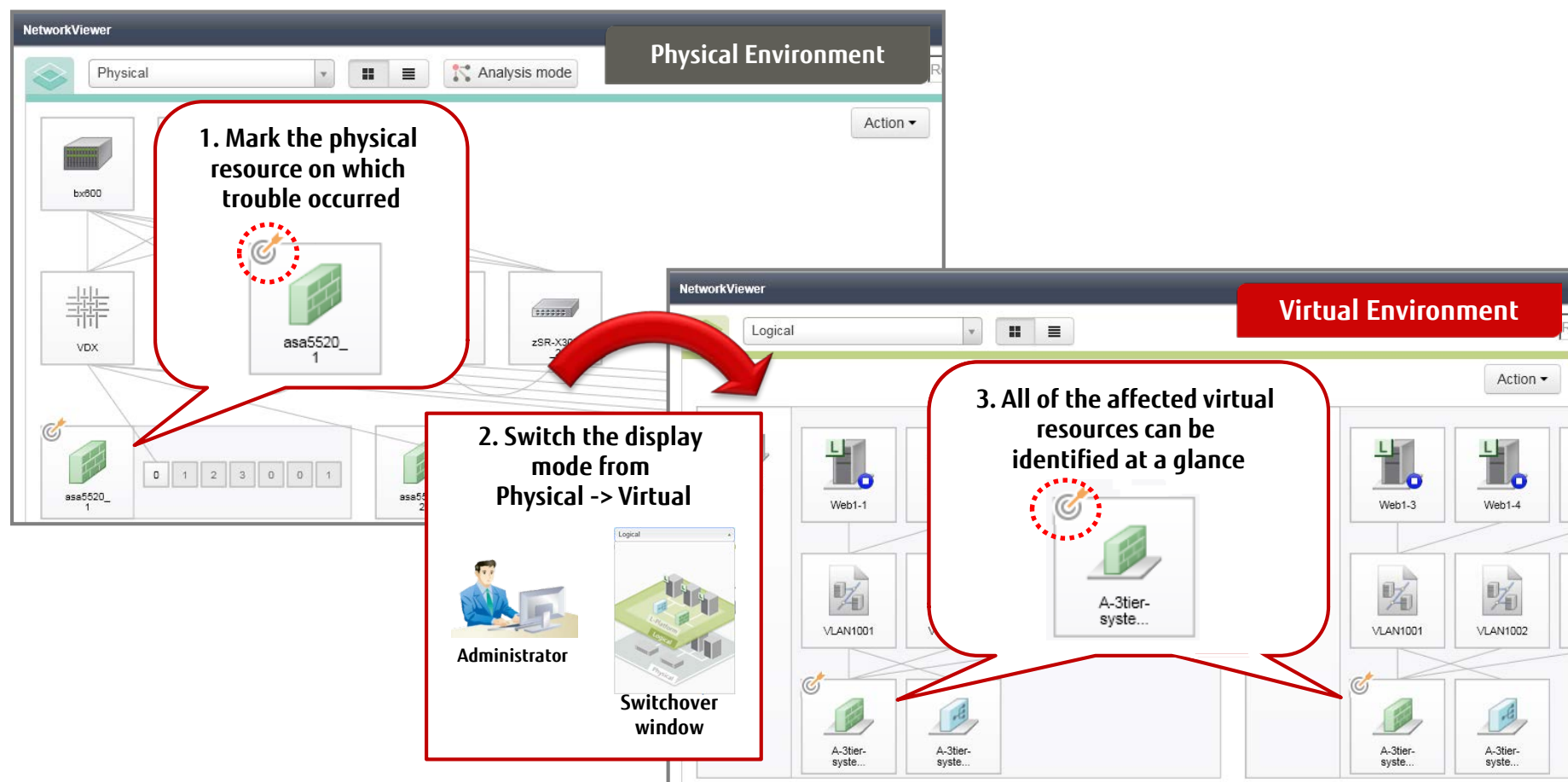
\* For the network devices necessary to configure a business system, refer to "Selecting Network Devices Necessary for Virtual Environments".



# Realizing "Visualization of Physical and Virtual Environments" (Solution of Challenge 3)

## Associate physical and virtual environments to detect status change quickly

- Associate physical and virtual environments and identify the affected scope easily. Enable a prompt response for recovery with reduced service downtime.



## Control of Business Systems Including Networks Is Possible

### ■ Business System Setup [New/Addition/Modification]

#### ■ Easy Setup

- GUI that enables easy setup and modification of business systems  
**⇒Possible to set up a business system in a short time!!**

#### ■ Securing Reliability

- Possible to set up business systems optimized for specific requirements (such as security or stable services)  
**⇒Possible to set up highly reliable business systems, including firewalls and server load balancers!!**

### ■ Business System Operation

#### ■ Response When Trouble Occurs

- Easy to identify error locations and the affected scope by managing statuses in both physical and virtual environments  
**⇒NetworkViewer makes it easy to associate physical and virtual environments, enabling a prompt response for recovery!!**
- Restore a backed-up environment on a replaced device easily using generation management of backup environments  
**⇒Restoration and recovery of an environment in a short time is possible with a single operation!!**

# [Reference] What is SDN?

## ■ Software Solution for Flexible Setup and Configuration of Networks, Reducing Physical Restrictions

Traditionally...

Individual Device Administrators



1. Confirm target devices
2. Repeat the following steps on all of the target devices
  - Login
  - Configuration
  - Logout

\*1: Necessary not only when creating, but also when modifying.

\*2: Operations and the commands to use differ by device.

As a result of virtualization, networks become complicated and troublesome  
Administrator workload increases!!

(1) Login

(2) Configuration (VLAN, etc.)

(3) Logout

[Perform on all managed devices]

(1) Login

(2) Configurations (rules, etc.)

(3) Logout

[Perform on all managed devices]

(1) Login

(2) Configurations (rules, etc.)

(3) Logout

[Perform on all managed devices]

Network Devices

Access Switches (L2 Switches)



Firewalls



Server Load Balancers



With SDN Concept

Administrator



Instructions  
- Setup  
- Modify settings

Modify Settings



Manager/Controller\*

Administrator workload is significantly reduced!!

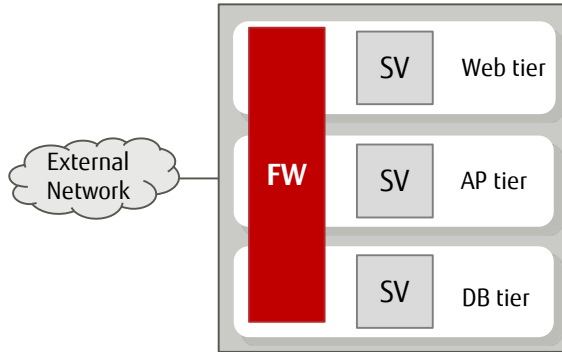
\* Supported by Fujitsu ServerView Resource Orchestrator Cloud Edition.

# Selecting Network Devices Necessary for Virtual Environments

- 3-tier Model Example
- Step 1: Deciding Necessary Devices
- Step 2: Deciding Devices to Configure

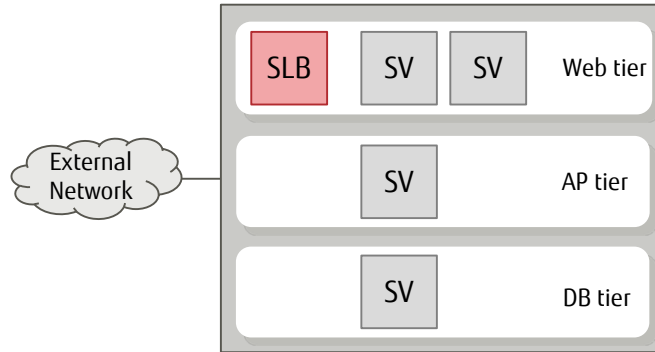
# 3-tier Model Example

## L2 Switch + Firewall



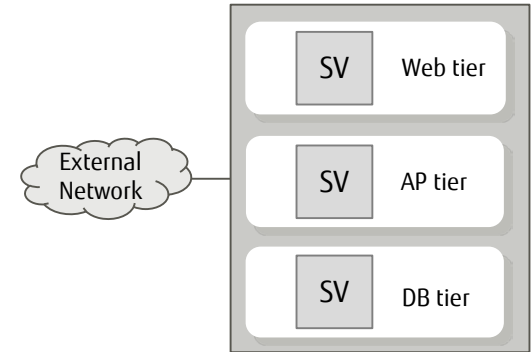
Example of an L-Platform

## L2 Switch + Server Load Balancer



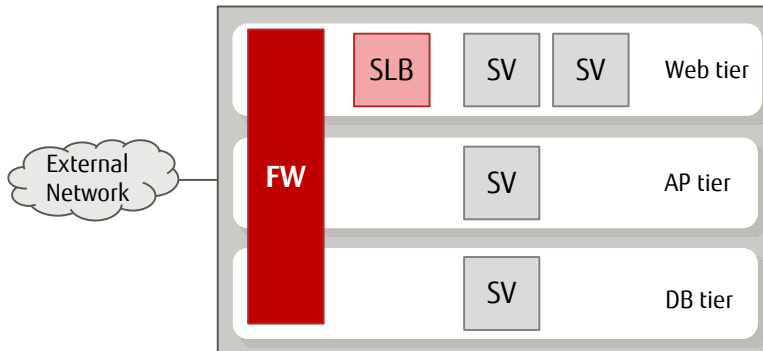
Example of an L-Platform

## Only L2 Switch






Example of an L-Platform

## L2 Switch + Firewall + Server Load Balancer

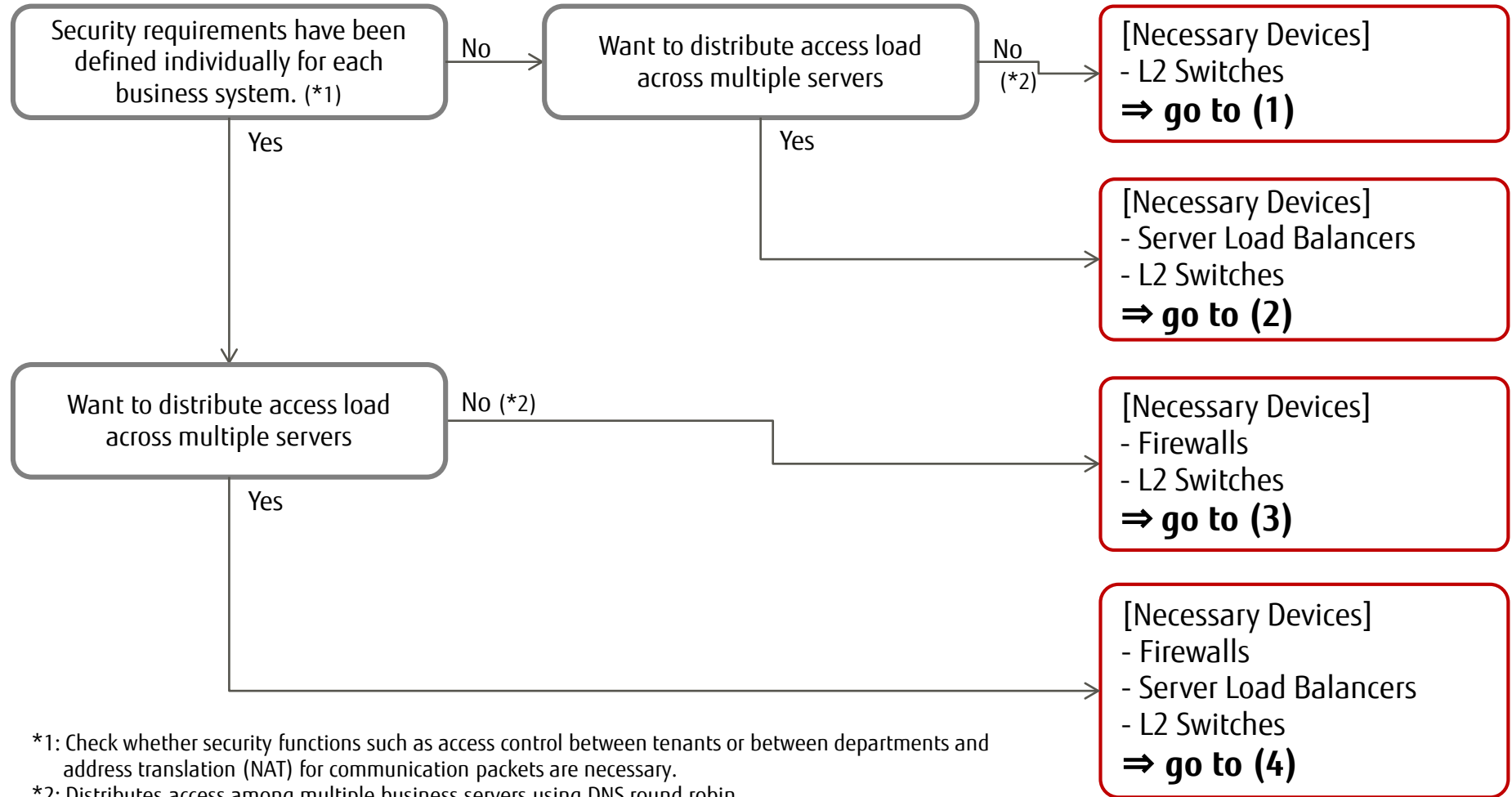


Example of an L-Platform

-  Firewall  
Necessary for having individual security rules for each business system
-  Server Load Balancer  
Necessary for load balancing of access to multiple business servers
-  Servers

# Step 1: Deciding Necessary Devices

## Decide devices necessary for an L-Platform based on the business system requirements



# Step 2: Deciding Devices to Configure (1)

## Decide the network devices to deploy on an L-Platform based on the requirements

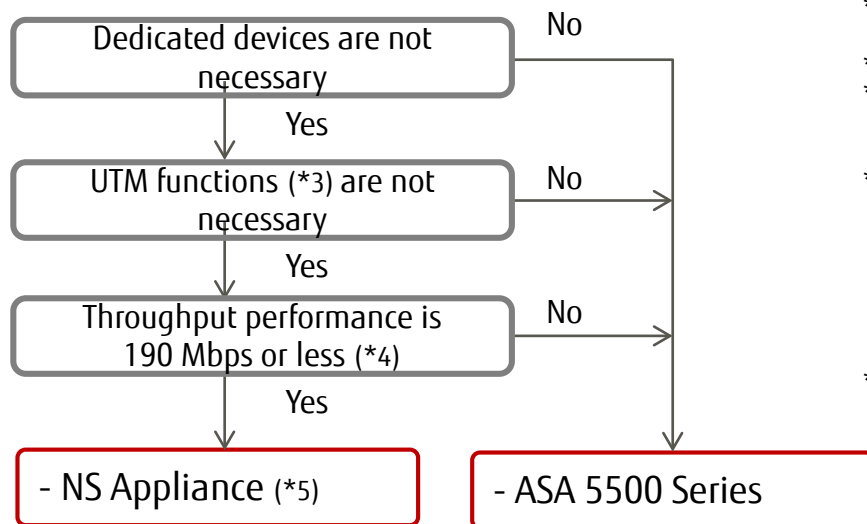
### (1) Select L2 Switches (\*1)

- SR-X Series
- Catalyst Series
- Nexus Series
- VDX Series

### (2) Select Server Load Balancers (\*1) (\*2)

- BIG-IP LTM Series

### (3) Select Firewalls (\*1)(\*2)



\*1: For details on the supported devices, refer to "Supported Network Devices" in the References.

\*2: L2 Switches are also necessary.

\*3: Unified Threat Management Security functions other than common firewall functions (access control, address translation, and anomaly-based IPS). Anti-virus, web content filtering, signature-based IPS, and WAF functions are included.

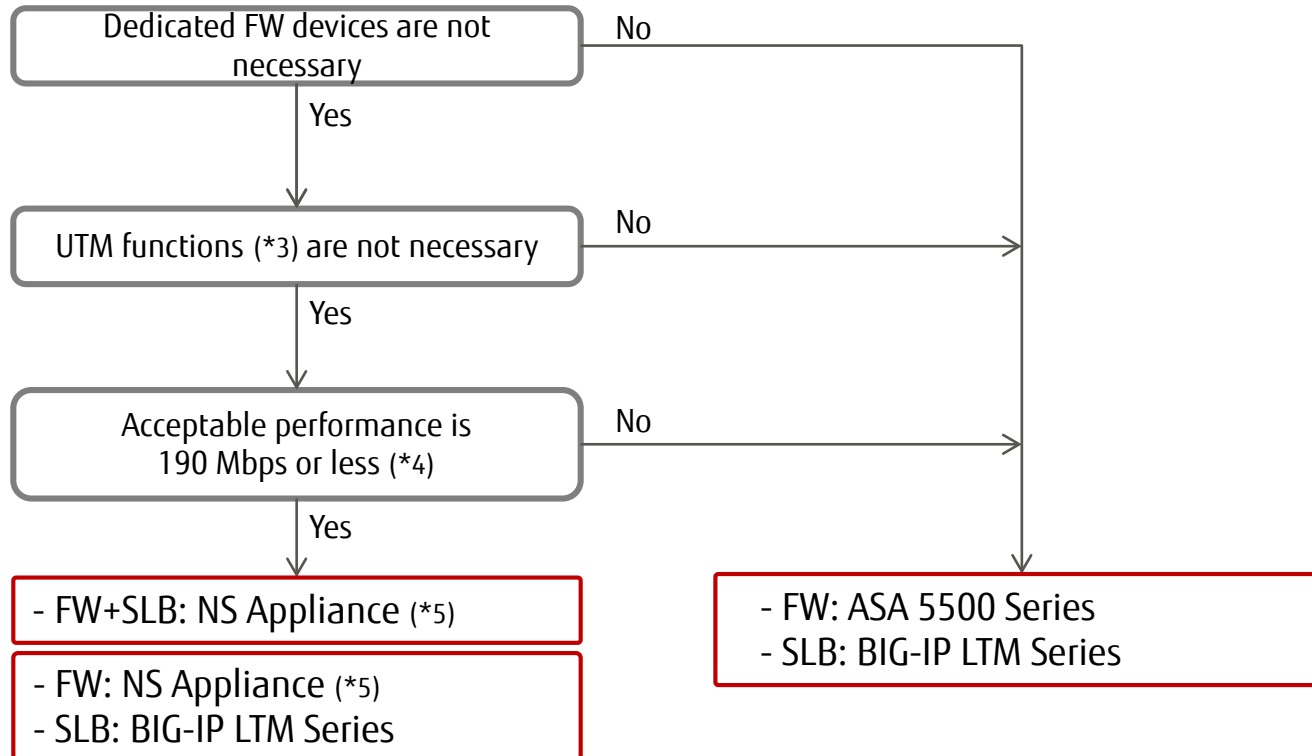
\*4: When using a physical server exclusively for a single NS Appliance, throughput performance is 190 Mbps or less. When creating multiple (up to 20) NS Appliances on a physical server, the throughput performance decreases in proportion to the number of NS Appliances created. For this reason, it is necessary to consider the throughput performance expected for the number of NS Appliances to create.

\*5: Requires ServerView Resource Orchestrator V3 NS Option.



## Step 2: Deciding Devices to Configure (2)

### (4) Select Firewalls (FW) and Server Load Balancers (SLB) (\*1)(\*2)



\*1: For details on the supported devices, refer to "Supported Network Devices" in the References.

\*2: L2 Switches are also necessary.

\*3: Unified Threat Management

Security functions other than common firewall functions (access control, address translation, and anomaly-based IPS). Anti-virus, web content filtering, signature-based IPS, and WAF functions are included.

\*4: When using a physical server exclusively for a single NS Appliance, throughput performance is 190 Mbps or less.

When creating multiple (up to 20) NS Appliances on a physical server, the throughput performance decreases in proportion to the number of NS Appliances created.

For this reason, it is necessary to consider the throughput performance expected for the number of NS Appliances to create.

\*5: Requires "ServerView Resource Orchestrator NS Option V3".

# References

- Supported Network Devices

Supported network devices (*1)		Version
L2 Switches	Fujitsu SR-X 300/500 Series	V01 or later
	Cisco Catalyst Series	IOS 12.2 or later
	Cisco Nexus 5000 Series	NX-OS V5.2
	Brocade VDX 6700 Series	NOS 2.0 or later
Firewalls	Fujitsu NS Appliance (*2)	-
	Cisco ASA 5500 Series	ASA Software-8.3 or later
Server load balancers	Fujitsu NS Appliance (*2)	-
	F5 Networks BIG-IP LTM Series	BIG-IP V11.2

\*1: Network devices which support standard MIB are supported for monitoring. Automatic configuration is also possible with the appropriate scripts. Scripts for automatic configuration are provided for some models. Contact Fujitsu staff for the models for which scripts for automatic configuration are provided.

\*2: Requires ServerView Resource Orchestrator NS Option V3. It operates on PRIMERGY BX924 S2/S3/S4 and PRIMERGY RX300 S7/S8.

# Trademark Information

- ServerView is a registered trademark of FUJITSU LIMITED.
- Proper nouns such as corporate names and product names are trade names, trademarks, or registered trademarks of their respective owners.
- System names and product names may not be followed by trademark symbols (TM or ®) in this material.

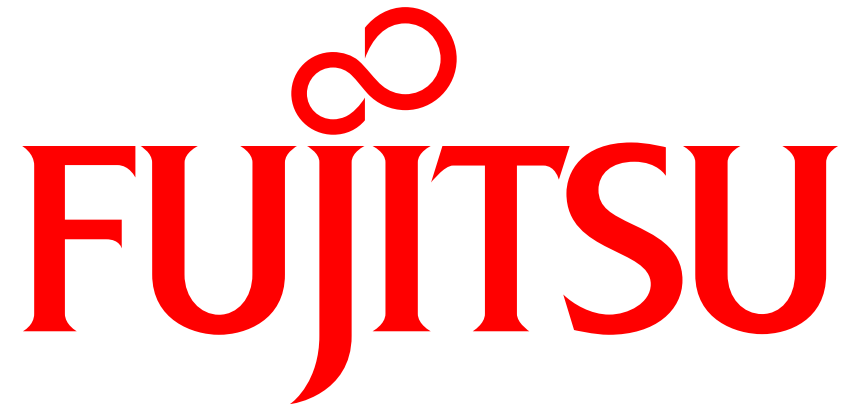


**Green Policy Innovation**

**Green Product**

Installation of this product helps you and your group reduce environmental burdens.

\*This product is recognized as a Green Product in Fujitsu's "Green Policy Innovation".



shaping tomorrow with you