

FUJITSU Software ServerView Resource Orchestrator Management of Virtual Environment Networks

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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 V3.4.0

General introduction to ServerView Resource Orchestrator

This document

Introduction to ServerView Resource Orchestrator V3.4.0
[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".

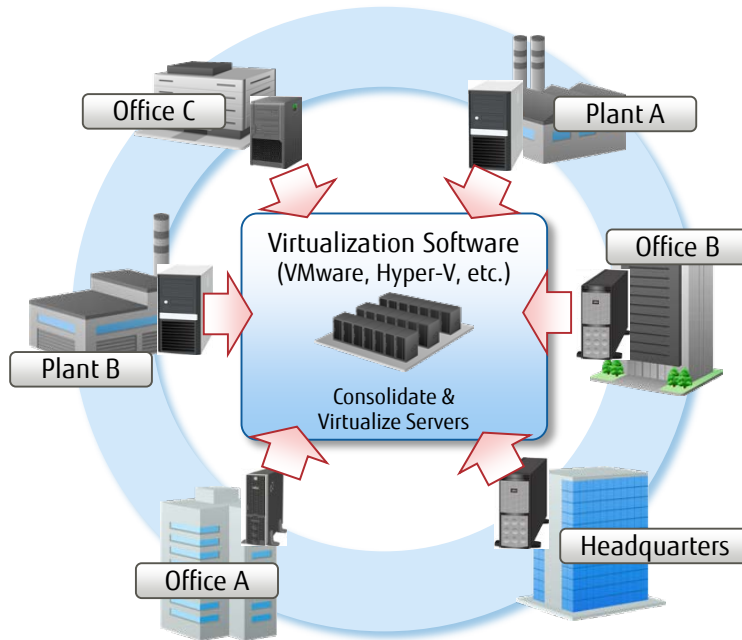
Three Challenges for Networking in Virtual Environments

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!!

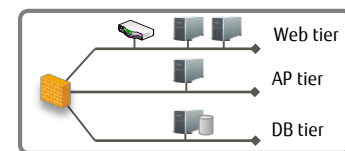
With ServerView
Resource
Orchestrator Cloud
Edition



Administrator

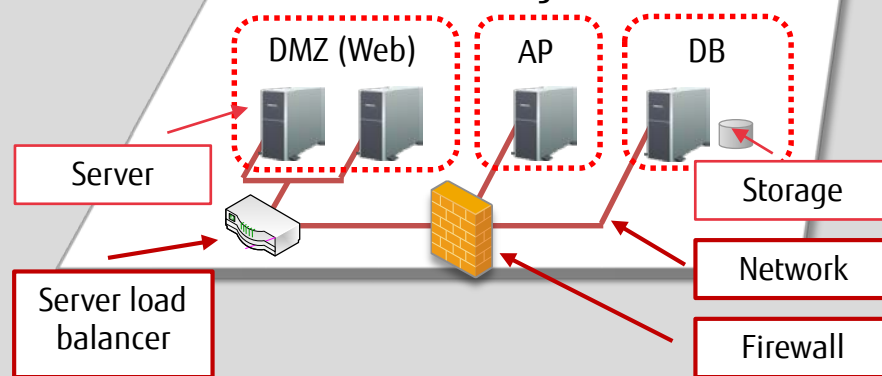
Select the template which was prepared in advance and enter the network environment information and other necessary information

Three-tier business system



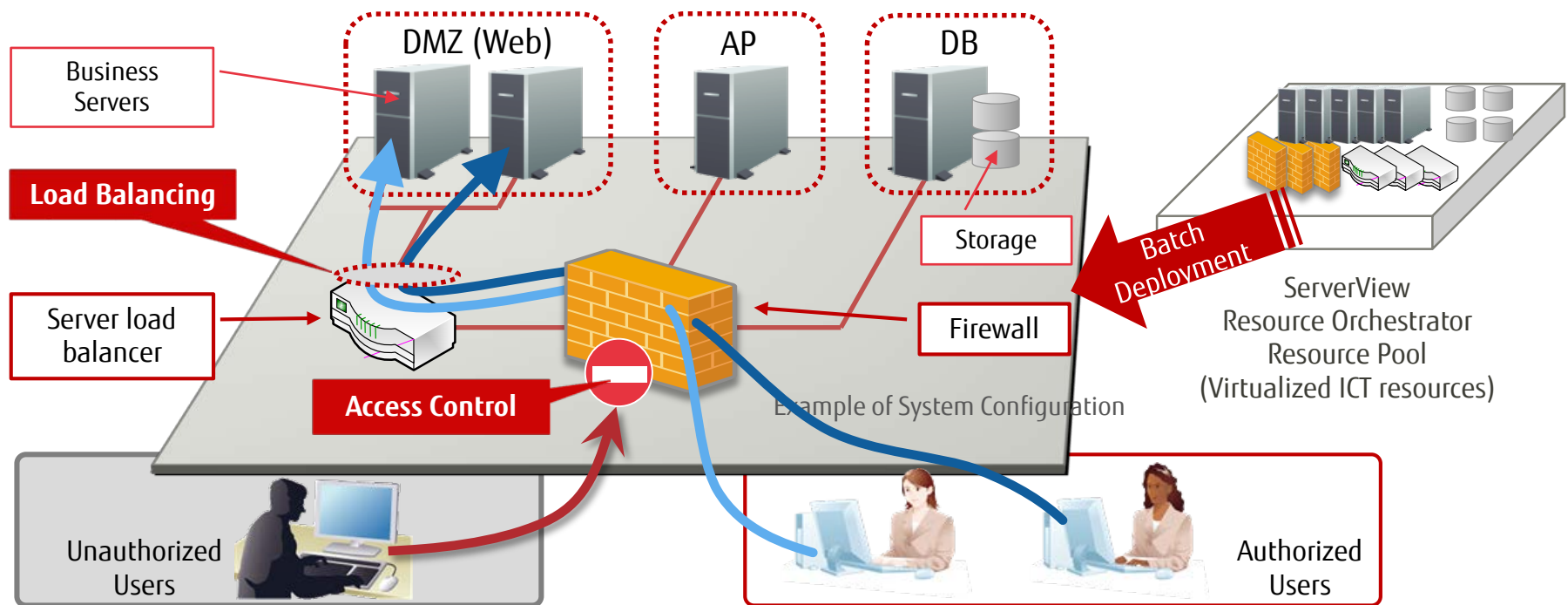
Simply configure business systems in a short period of time using the GUI!!

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

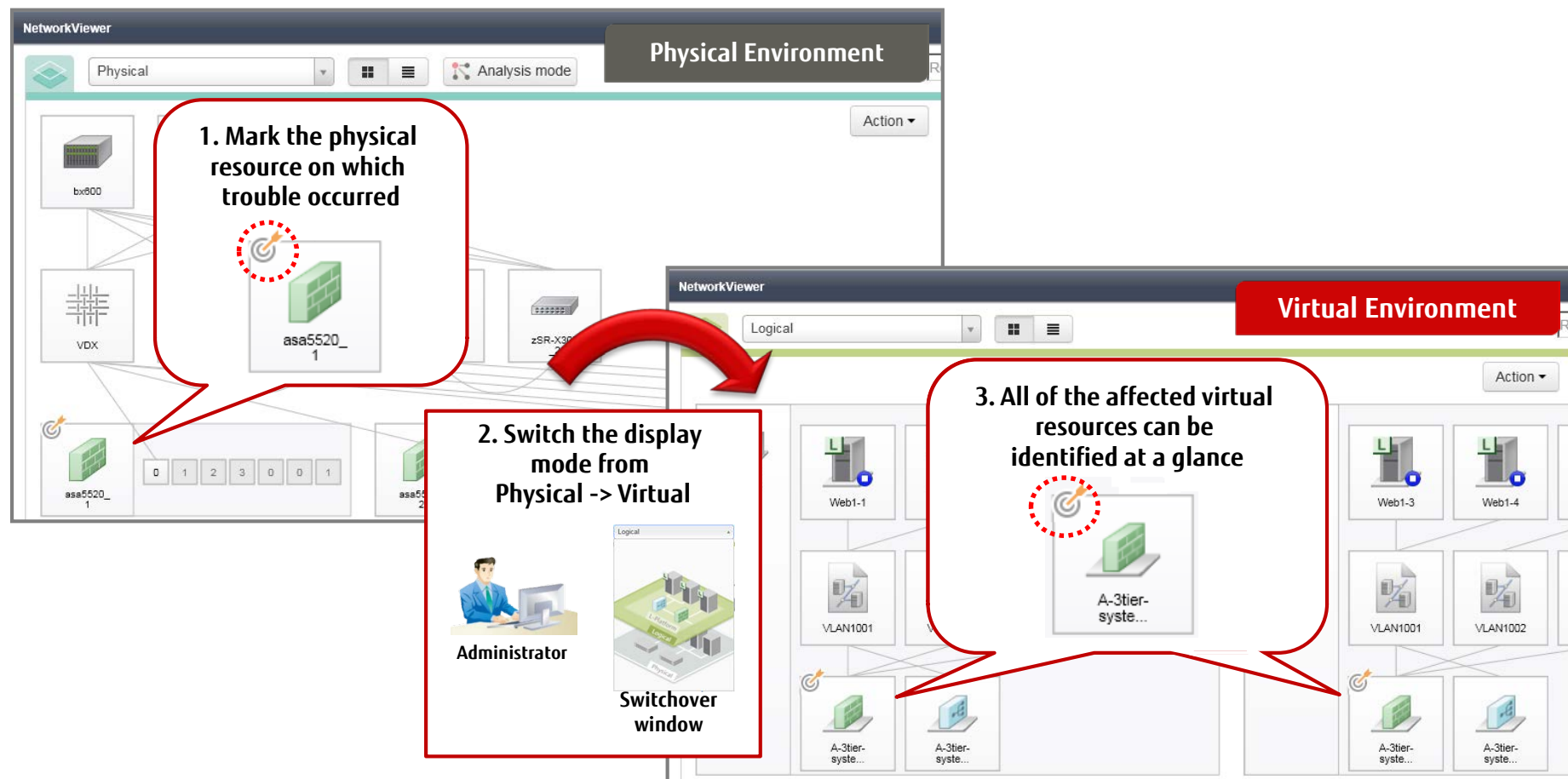


* For the network devices necessary to configure a business system, refer to "Selecting Network Devices Necessary for Virtual Environments".

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!!

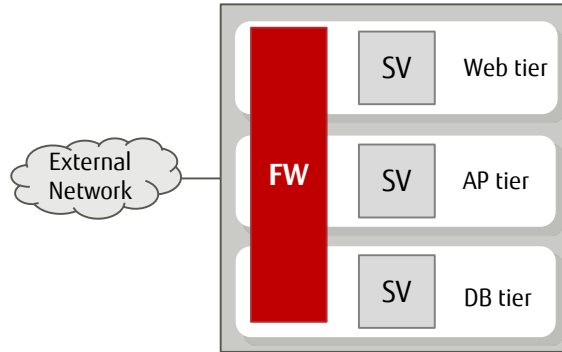
* Supported by Fujitsu ServerView Resource Orchestrator Cloud Edition.

Selecting Network Devices Necessary for Virtual Environments

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

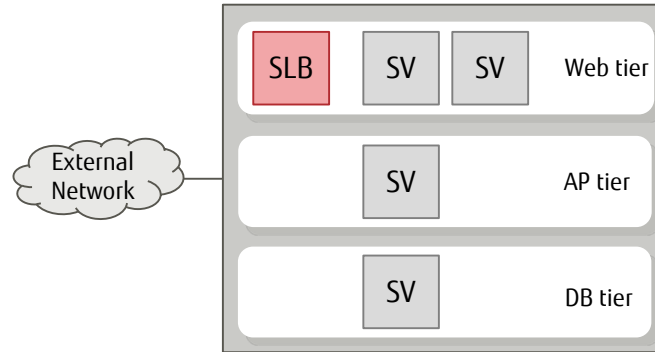
3-tier Model Example

L2 Switch + Firewall



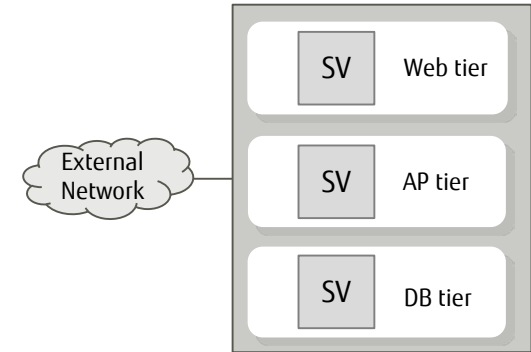
Example of an L-Platform

L2 Switch + Server Load Balancer



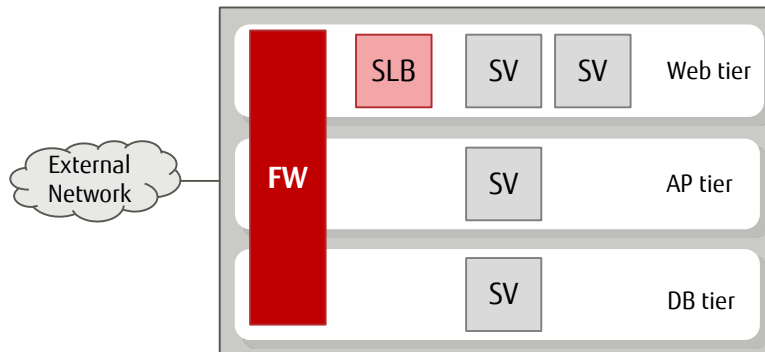
Example of an L-Platform

Only L2 Switch






Example of an L-Platform

L2 Switch + Firewall + Server Load Balancer

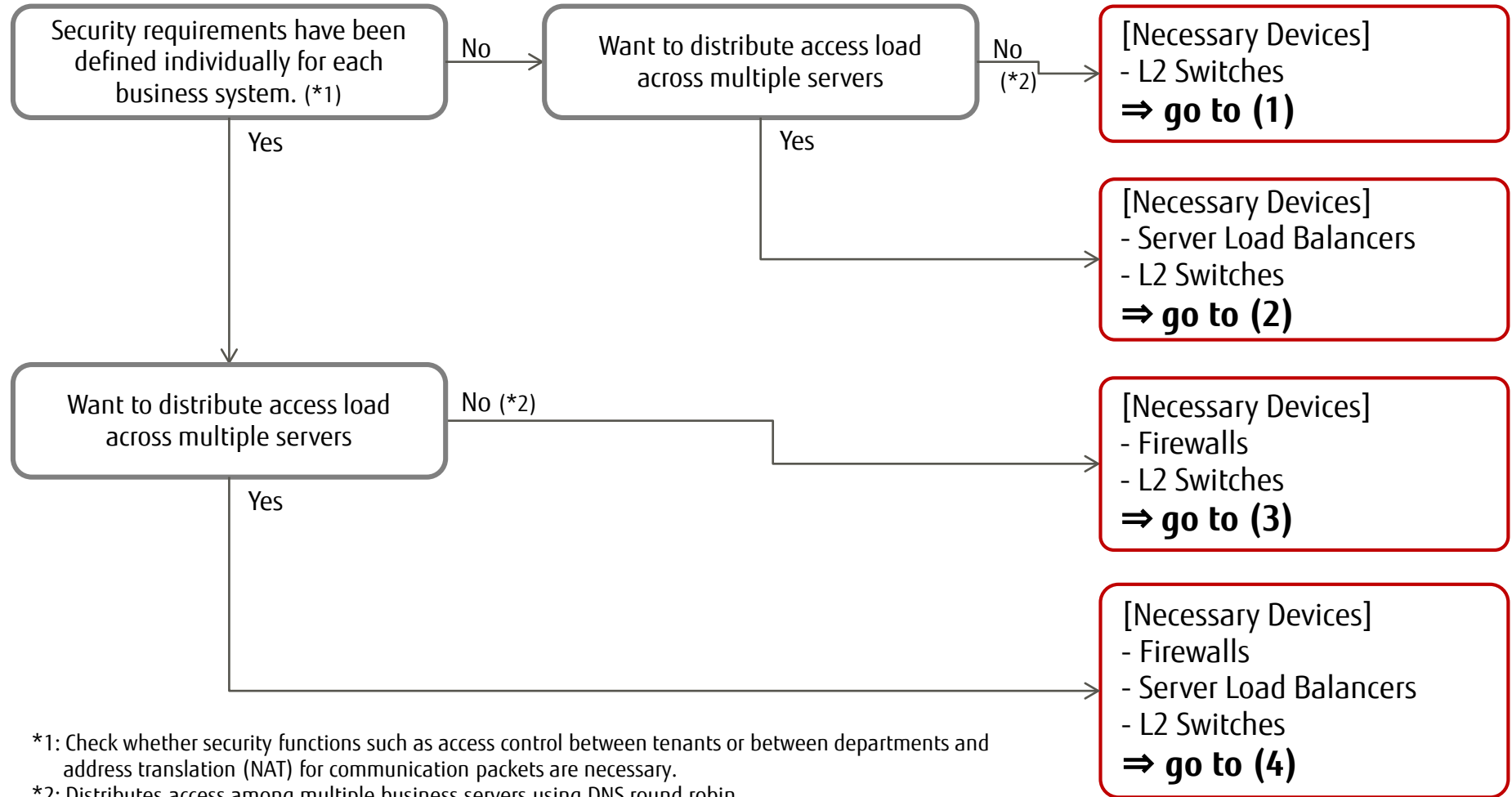


Example of an L-Platform

-  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



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)

- ASA 5500 Series

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

- FW: ASA 5500 Series
- SLB: BIG-IP LTM Series

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

*2: L2 Switches are also necessary.

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
	ExtremeSwitching VDX 6700 Series	NOS 2.0 or later
Firewalls	Cisco ASA 5500 Series	ASA Software-8.3 or later
Server load balancers	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.

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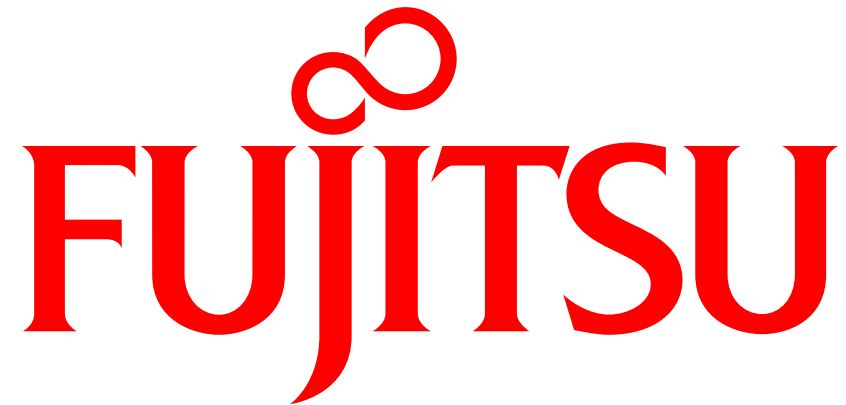


Green Policy Innovation

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".



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