

Configuration Tool for Oracle VM Server for SPARC

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Fujitsu Limited

■ About this document

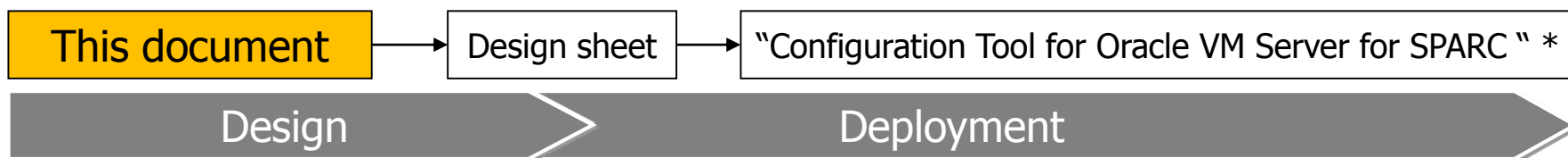
■ Purpose

- Configuration Tool for Oracle VM Server for SPARC ("OVM ConfigTool") is a tool used to automatically configure Oracle VM Server for SPARC on the Fujitsu M10 Servers (SPARC M10).
- Please read this document before starting to use OVM ConfigTool.
- This document is targeted for OVM ConfigTool Version 2.4.

■ Notes

- This document occasionally refers to Oracle Solaris as "Solaris".
- This document occasionally refers to Oracle VM Server for SPARC as "Oracle VM" or "OVM".

■ Position of this document



* Provides shell script programs.

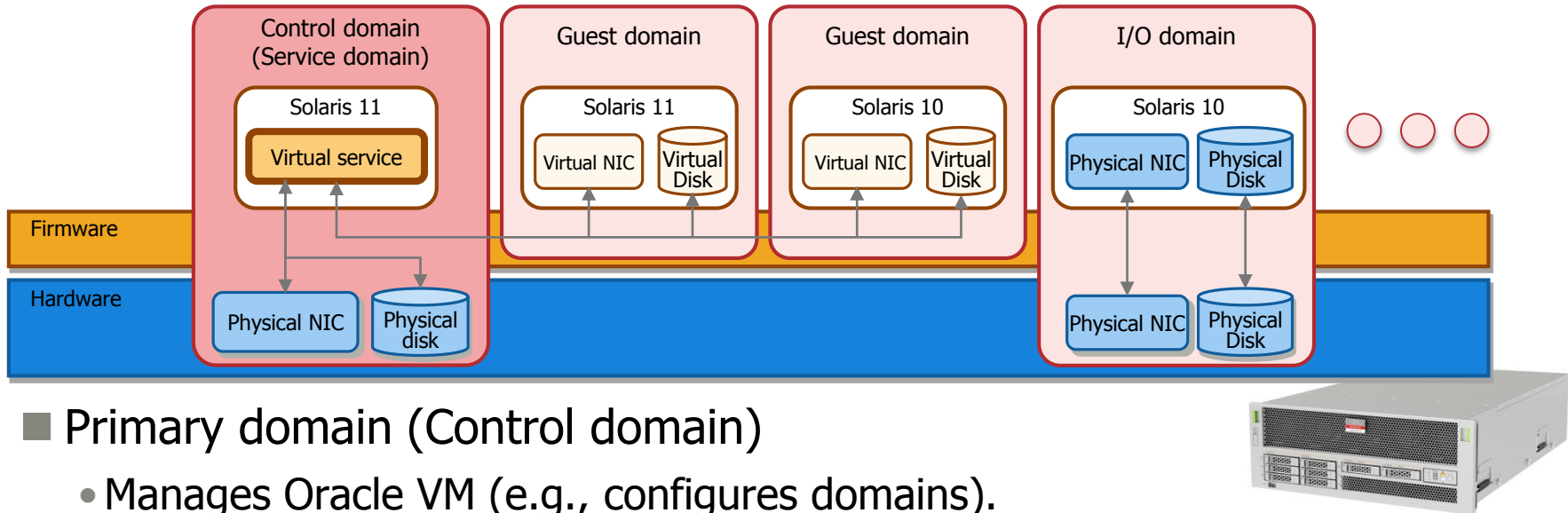
Introduction

1. Oracle VM Server for SPARC
2. Configuration Tool for Oracle VM Server for SPARC
3. Template Mode
4. Original Mode

1. Oracle VM Server for SPARC

Domains Composing Oracle VM Server for SPARC

■ You can configure 4 types of domains using OVM ConfigTool.



- Primary domain (Control domain)
 - Manages Oracle VM (e.g., configures domains).
- Service domain
 - Provides virtual I/O to guest domains using virtual services.
- I/O domain*
 - Has a physical I/O device directly assigned.
- Guest domain
 - Uses virtual I/O to run business applications.

*This tool is only compatible with "I/O root domains" that can be allocated in root complex (PCIe bus) units.

2. Configuration Tool for Oracle VM Server for SPARC

■ Features of OVM ConfigTool

- You can configure a virtual environment based on Oracle VM without using any commands.
 - Enter/select the settings interactively.
 - Create a set of commands required to configure an Oracle VM environment as a shell script, based on the entered and/or selected values.
 - Running the generated script configures the Oracle VM environment.
- 2 modes are provided according to use scenarios.
 - **Template mode**
 - Choose from multiple configuration patterns.
 - While some of the settings are interactively configured, most of the them are automatically configured.
 - **Original mode**
 - Create a virtual environment with an easy operation.
 - Enter/select settings required to configure each domain interactively.
 - Of the settings required to configure an Oracle VM environment, you can only configure common settings.

How to Use OVM ConfigTool

■ Steps

■ 1. Download the tool.

- Download the tool file.

File name: OVM_ConfigTool_v2.4.tar.gz

■ 2. Expand the file in an arbitrary directory and assign the execution permission to the file.

- Transfer the files into the OS environment where the tool will be used using an ftp tool, etc.
- Save the file in an arbitrary file and expand it there. (/opt/OVM is used here.)

```
# cd /opt/OVM
```

```
# /usr/bin/gzip -d OVM_ConfigTool_v2.4.tar.gz
```

```
# /usr/bin/tar -xf OVM_ConfigTool_v2.4.tar
```

- Assign the execution permission to the file.

```
# /usr/bin/chmod +x OVM_ConfigTool/Start_config.sh
```

■ 3. Run the tool.

- Move to the directory where the tool was expanded and run it.

```
# cd /opt/OVM/OVM_ConfigTool
```

```
# ./Start_config.sh
```

■ File configuration

/OVM_ConfigTool	... Top-level directory
├ Start_config.sh	... Startup script
├ /script	... Script files
├ /conf	... Output directory
├ README-Ja	... README file (Japanese)
└ README-E	... README file (English)

- You will run the Start_config.sh script only.
- 'conf' directory will contain the OVM environment configuration script output by running the tool.

■ Requirements

■ Supported hardware

- Fujitsu M10-1 Server (SPARC M10-1)
- Fujitsu M10-4 Server (SPARC M10-4)
- Fujitsu M10-4S Server (SPARC M10-4S)
 - Up to 2 Building Blocks configuration.

■ Supported software

- Oracle Solaris 11.1 or 11.2 or 11.3 (Control domain)
 - * I/O and guest domains conform to the requirements of the OS running on Fujitsu M10 Servers.
- Oracle VM Server for SPARC Software 3.0 or 3.1 or 3.2 or 3.3 or 3.4

■ Precautions

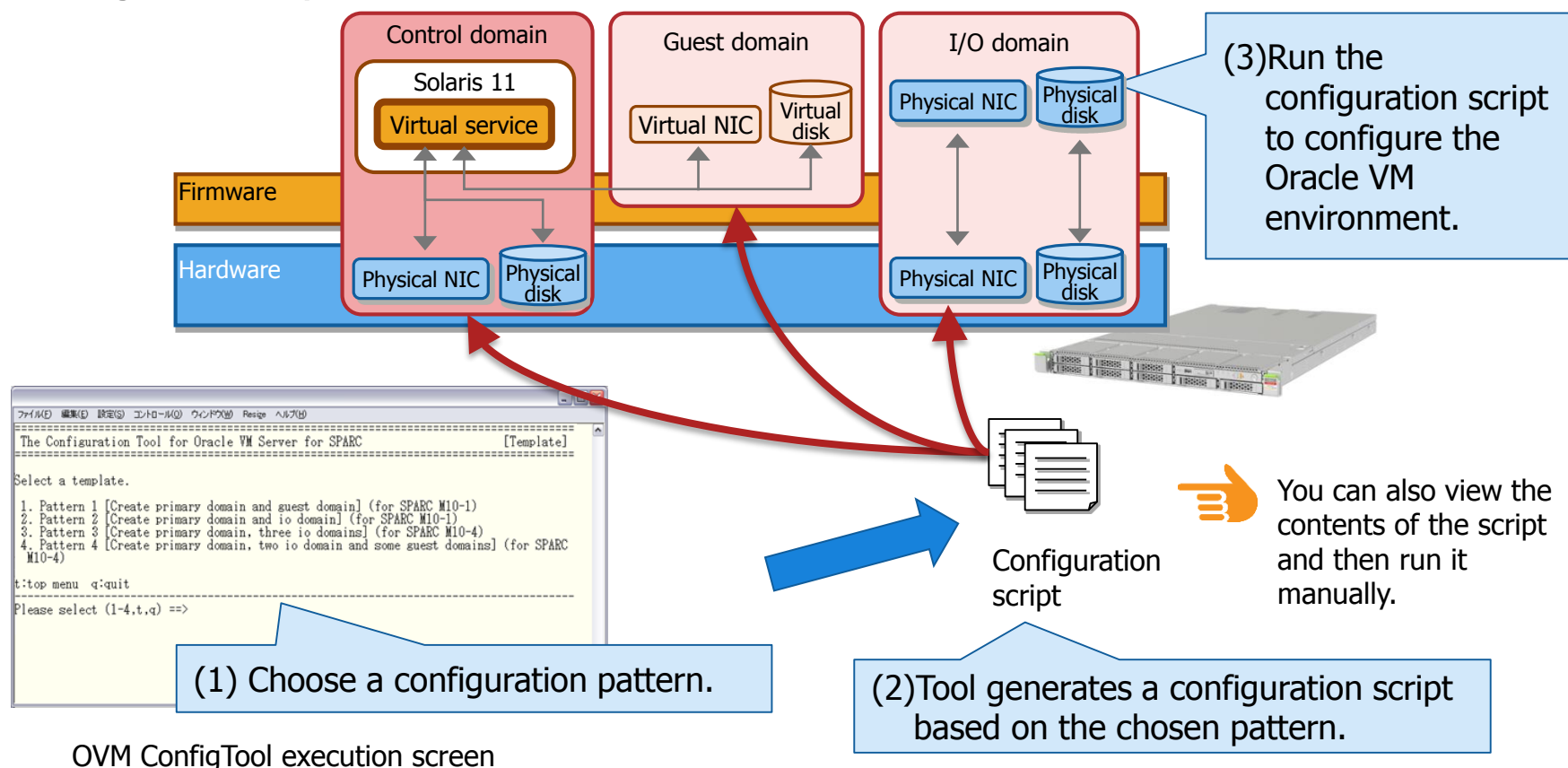
- This tool is intended for use during the introduction phase (initial configuration) of the OVM environment. It is not suitable for modifying an existing environment.
- Redistribution of this tool is prohibited.

3. Template Mode

Template Mode Pattern Configuration

■ Provides multiple configuration patterns

- This version provides 4 configuration patterns for Fujitsu M10 Server.
 - Refer to the following pages for the details.
- You can configure a domain environment in accordance with the configuration pattern.



■ Pattern 1 "Multi-server integration" (for Fujitsu M10-1 Server)

■ Domain configuration

- Control domain x 1, Guest domain x n

■ Features

- Control domain provides all virtual services (virtual disk, virtual network, virtual console).
- Guest domain only uses virtual I/O.
 - Virtual network is made redundant using the onboard LAN and Quad GbE card.

■ Points to note

- For network redundancy, it is necessary to add a Quad GbE card.
- A PCI card can be mounted in any PCI slot.

■ Pattern 2 "2-server integration" (for Fujitsu M10-1 Server)

■ Domain configuration

- Control domain x 1, I/O domain x 1

■ Features

- Control domain and I/O domain both run business applications.
- Each domain is assigned physical I/O.
 - Virtual I/O is not used.

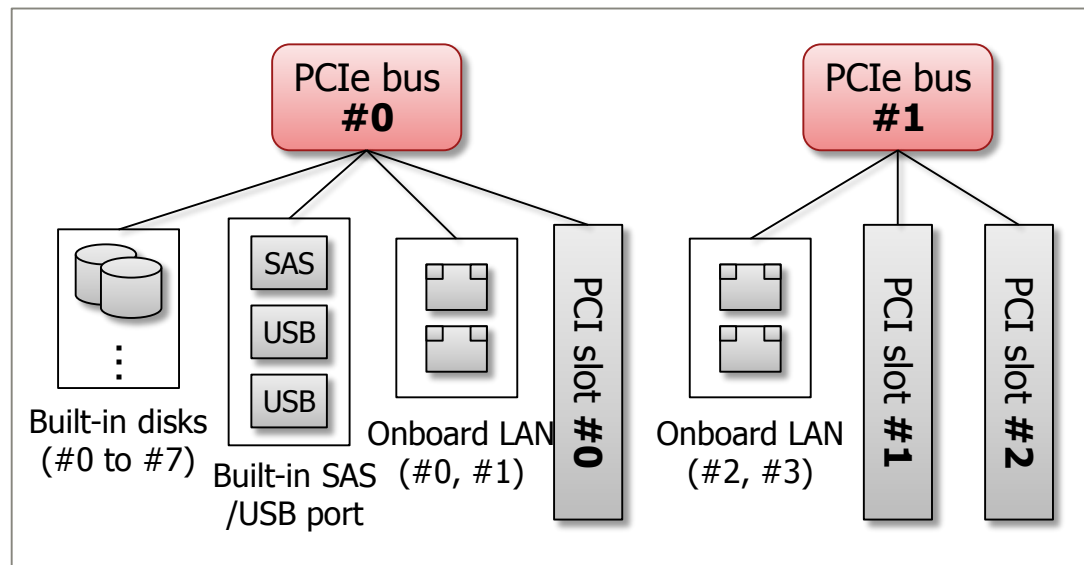
■ Points to note

- External storage needs to be allocated for the system volume of the I/O domain.
- PCIe bus #1 is assigned to the I/O domain. Therefore, it is necessary to mount the PCI card for the I/O domain in PCI slot #1 or #2.

<Reference> Physical I/O of Fujitsu M10-1

■ Overview of physical I/O configuration of Fujitsu M10-1

- Two PCIe buses exist in total
 - PCIe bus #0 is usually assigned to the Control domain.
- All built-in disks, built-in SAS, and USB ports are included in PCIe bus#0.
 - Same in Fujitsu M10-4



Fujitsu M10-1 (1CPU / PCIe bus x 2)



■ Pattern 3 "Multi-server integration" (for Fujitsu M10-4*)

■ Domain configuration

- Control domain x 1, I/O domain x 3

*CPU : For four-CPU configurations only. Does not apply to two-CPU configurations, or configurations that have been expanded from two- to four-CPU configurations.

Memory : Fit at least 32 DIMM memory

■ Features

- Automatically implements resource deployment utilizing the characteristics of the Fujitsu M10-4.
- Allocates a physical I/O to each domain.
- Allocates a virtual network as the management network for each I/O domain.

■ Points to note

- If OVM version 3.3 or earlier, specifies physical addresses for each domain and allocates memory.

Accordingly, the targeted domain must be stopped when altering the amount of memory after constructing a domain.

- External storage needs to be allocated for the system volume of the I/O domain.
- Two PCIe buses are assigned to the Control domain and each I/O domain.
 - For details, see "[Pattern 3 Physical I/O Device Configuration](#)".

■ Pattern 4 "Multi-server integration" (for Fujitsu M10-4)

■ Domain configuration

- Control domain x 1, I/O domain x 2, Guest domain x n

■ Features

- Prerequisite configuration pattern for integrating three-tier system (web server, application server, database server).
 - Web server and application server can be configured from two or more guest domains. (Scale-out configuration)
 - Database server is configured from one I/O domain.
- Connects Web server to application server, and application server to database server, using the internal virtual network to improve security and communication speed.
- Allocates physical hard disks to the database server, because it provides database design and operations that are the same as the existing server.

■ Points to note

- External storage needs to be allocated for the system volume of the I/O domain.
- Four PCIe buses are assigned to one I/O domain (service domain), and two PCIe buses are assigned to the I/O domain for the database server.
 - For details, see "[Pattern 4 Physical I/O Device Configuration](#)".

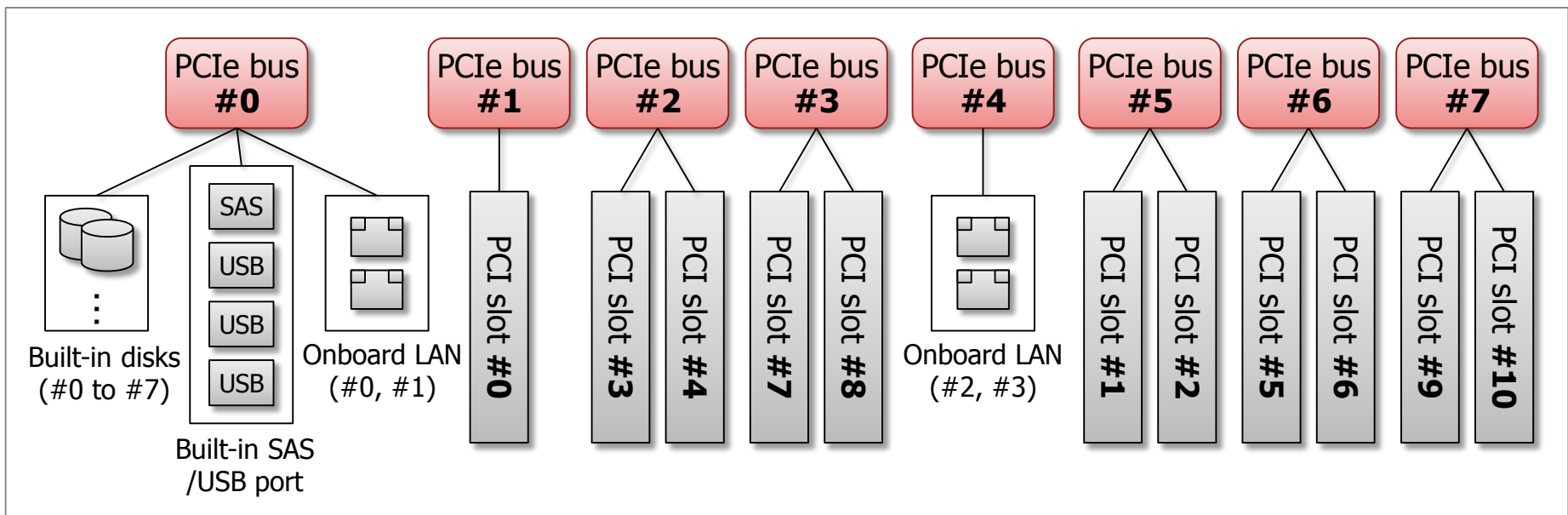
<Reference> Physical I/O of Fujitsu M10-4

■ Overview of physical I/O configuration of Fujitsu M10-4

■ 8 PCIe buses exist in total

- Up to 7 I/O root domains can be built. (1 PCIe bus is assigned to the Control domain.)

■ Care must be taken because the order of PCI slot numbers and PCIe bus numbers is different.

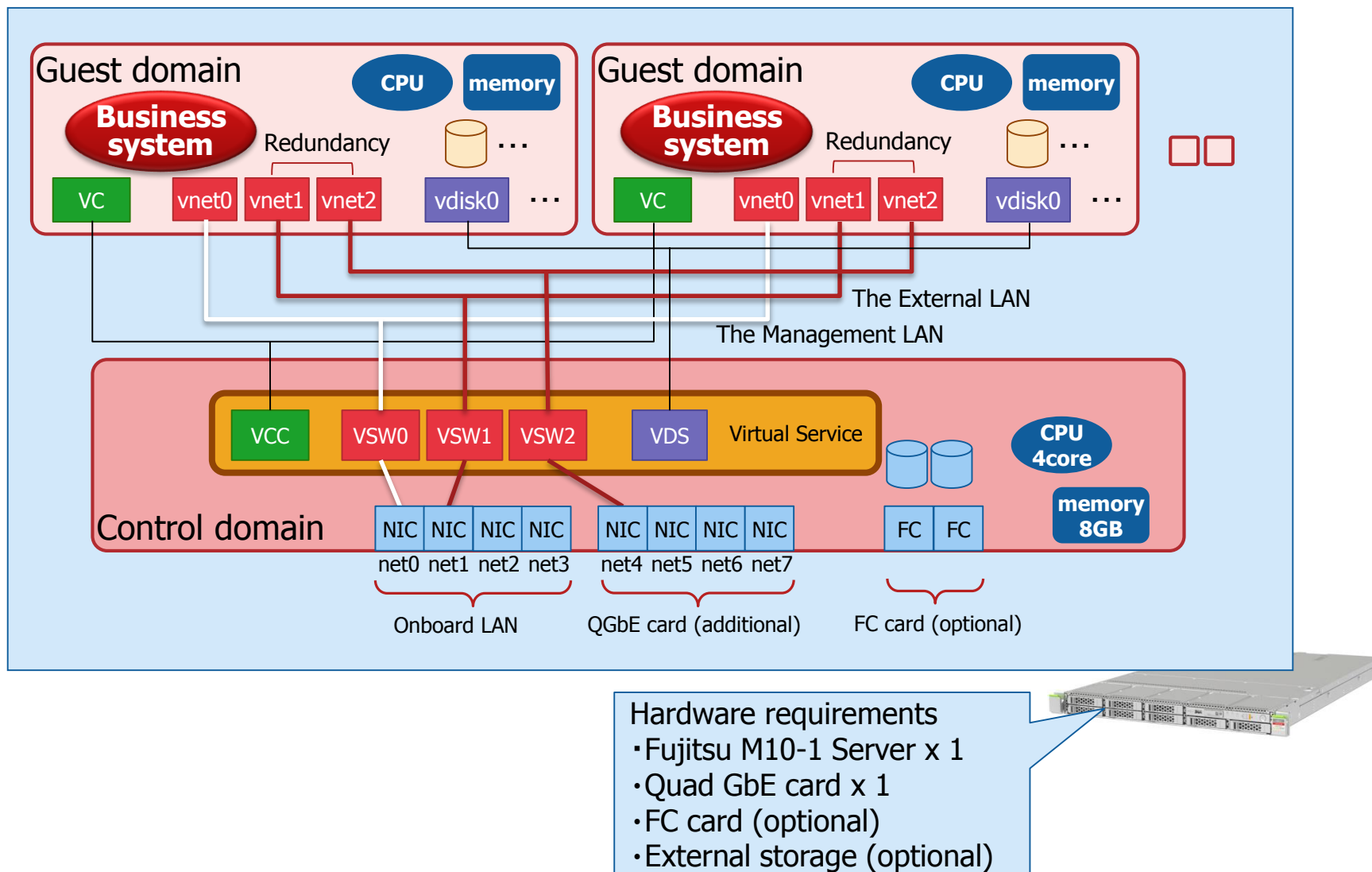


Fujitsu M10-4 (4CPU / PCIe bus x 8)



Pattern 1 Configuration Image

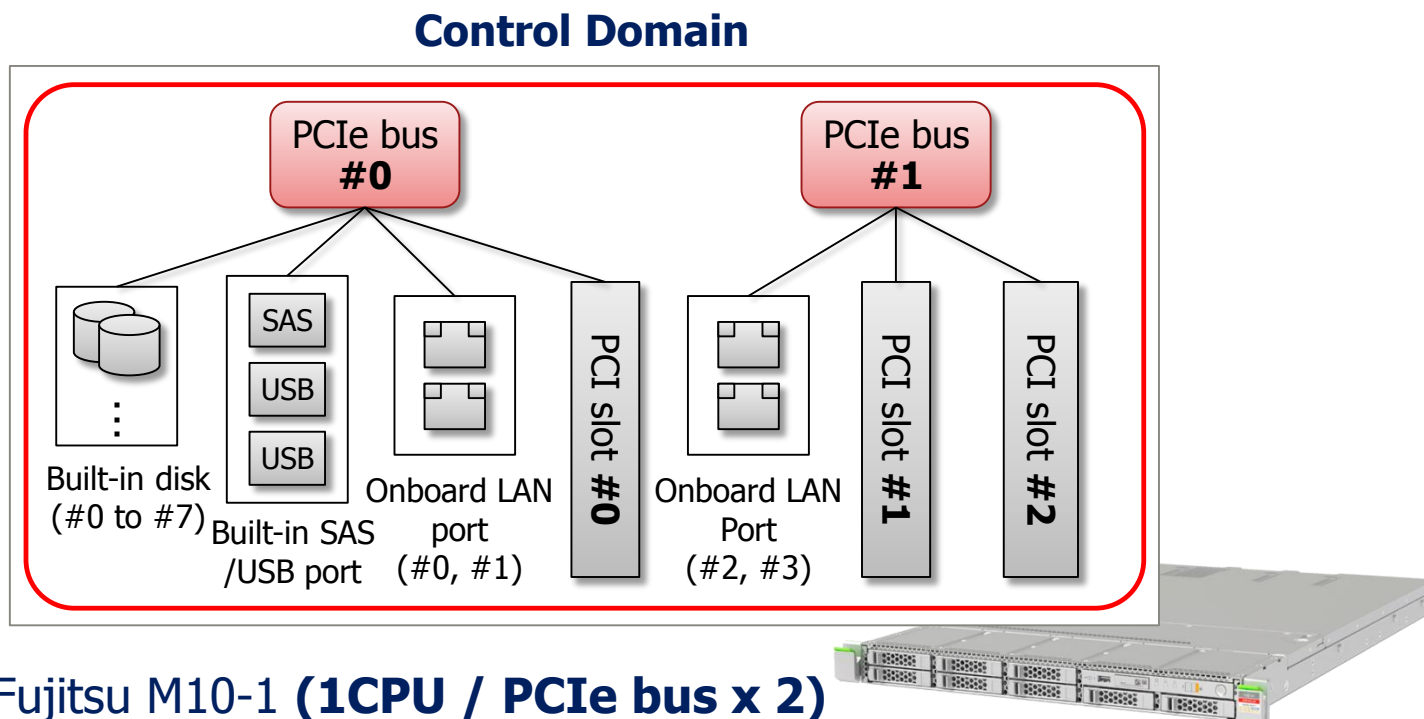
■ Multi-server integration making use of flexibility of virtual I/O



Pattern 1 Physical I/O Device Configuration

■ Network device allocation

- For a redundant configuration of the virtual network, a Quad GbE card can be mounted in any PCI slot.
- Network interface of onboard LAN is recognized as net0 through net3, and additional cards are recognized as net4 through net7.
- Pattern 1 constitutes a virtual network service using net0 and net4.



■ Work flow

- Configure the Control domain, and then Guest domains.
 - A single domain is configured during single execution of the tool.
- Refer to the design sheet for the details of domain settings.

■ Control domain settings

- All parameters are set automatically.
 - The CPU/memory are set to the least required amount. If you are creating many guest domains, add the CPU/memory resources manually after running the tool.

Parameter		Description
Configuration confirmation	The following primary domain configuration will be set.	Confirm the control domain configuration (CPU, memory, VCC, VSW, and configuration name).
Final configuration confirmation	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the control domain configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to configure the control domain based upon the configuration script.

■ Guest domain settings

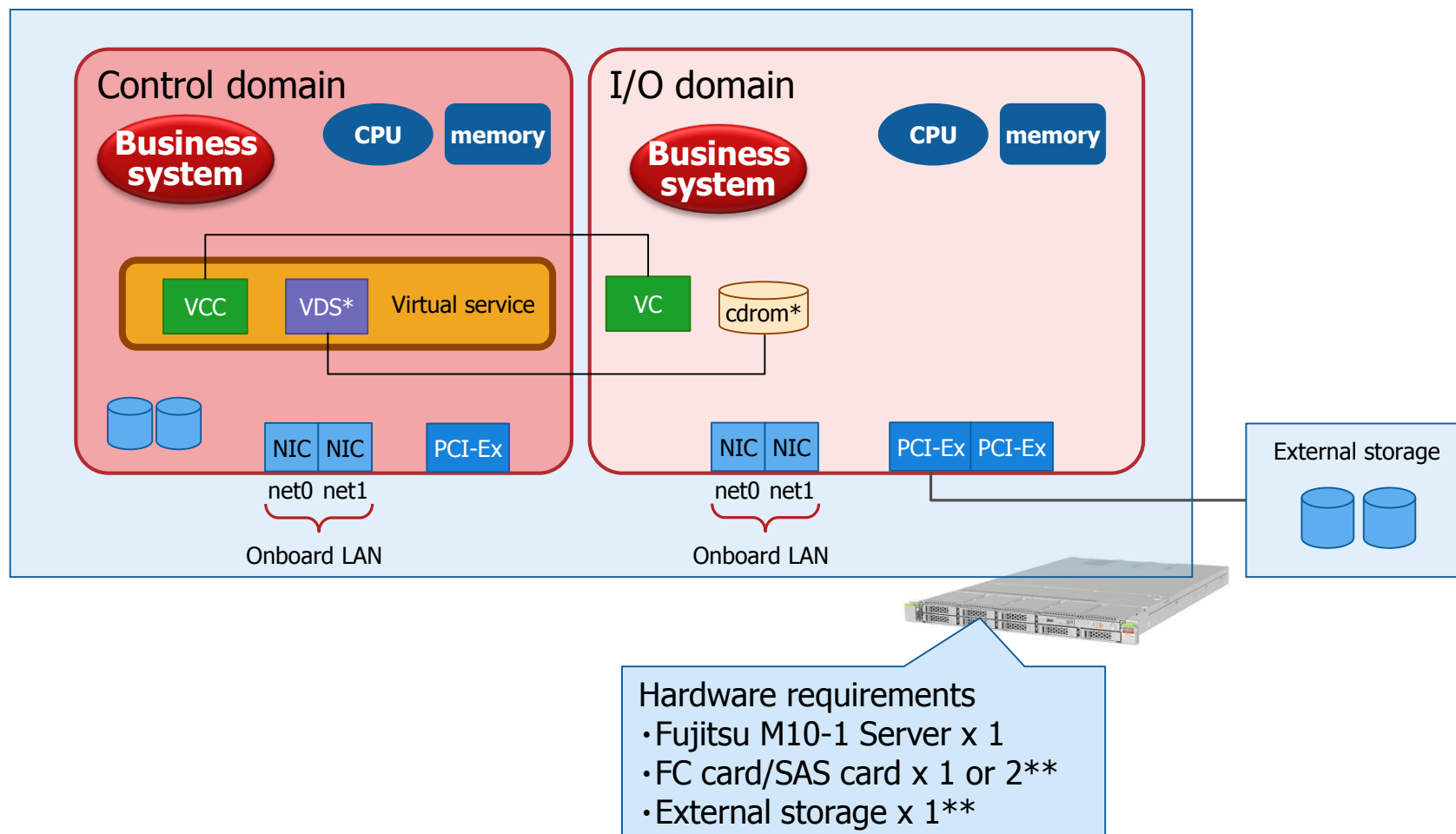
■ You can configure multiple guest domains.

- Run this tool repeatedly for the number of guest domains to configure.
- You can configure as many domains as the available CPU/memory resources permit.

Parameter		Description
Domain name	Enter the quantity of guest domains that you wish to create.	Enter the number of guest domains to create.
	'Enter a name (e.g., ldom1)	Enter the guest domain name.
CPU	Enter the quantity of CPU cores for the guest domain <i>Domain name</i> .	Enter the number of CPU cores to assign.
	Do you wish to set the parameter of "max-cores"?	Choose if you want to set the max-cores parameter.
Memory	Enter the amount of memory for the guest domain <i>Domain name</i> . (By multiple of 4MB).	Enter the amount of the memory to assign. (Entered value is automatically rounded up to 4MB boundary).
Virtual disk	Enter the quantity of virtual disks that you wish to create.	Enter the number of VDISK to create.
	Set the 1st virtual disk configuration: vdisk0	Select the first disk. The disk selected here is set as the boot disk.
	Set the 2nd virtual disk configuration: vdisk1	Select the second disk. If you are creating more disks, select this parameter for the number of VDISK to be configured.
Virtual network	Please confirm the virtual Switch and the virtual network.	Confirm the settings of the VNET.
Virtual console	Please confirm the virtual console.	Confirm the settings of the virtual console.
OS	Select a method to install the Oracle Solaris OS on the logical domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select how to install the OS.
Final configuration confirmation	The following guest domain configuration will be set.	Confirm the guest domain configuration.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to create the guest domain based upon the configuration script.

Pattern 2 Configuration Image

■ Small-scale integration using physical I/O

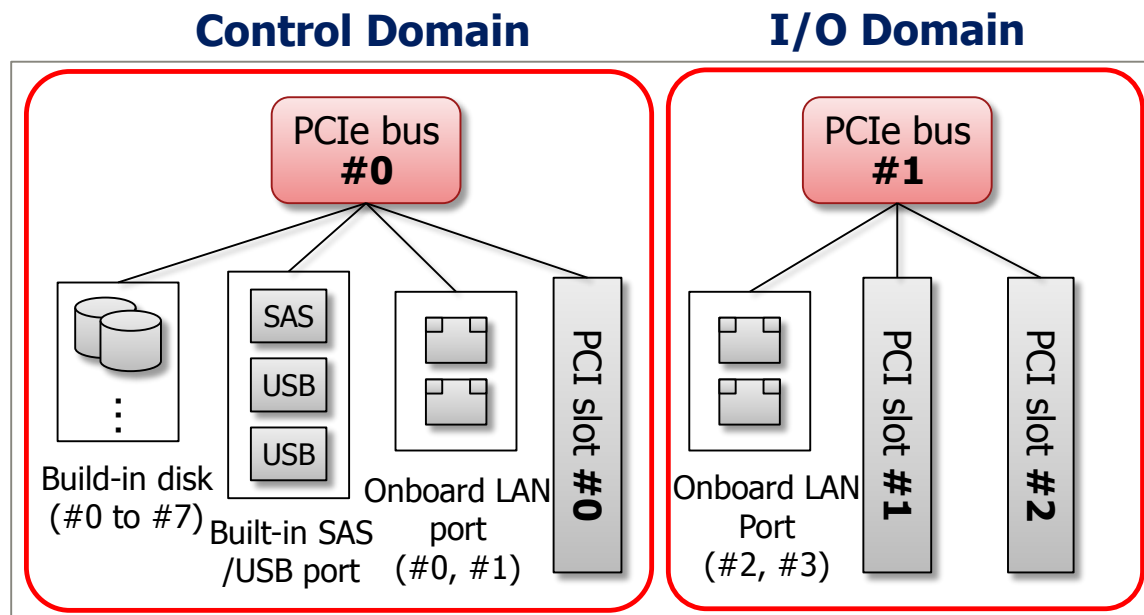


*Only created when an ISO image is used to install the OS in the I/O domain.

**I/O domain will not have an built-in disk.
Prepare an external disk such as ETERNUS.

■ External storage allocation

- In pattern 2, PCIe bus #0 is assigned to Control domain, and PCIe bus #1 is assigned to I/O domain.
- For the system volume of I/O domain, mount an FC card or SAS card in PCI slot #1 or #2, and allocate external storage.



Fujitsu M10-1 (1CPU / PCIe bus x 2)



■ Work flow

- Configure the Control domain, and then I/O domain.
 - A single domain is created during single execution of the tool.
- Refer to the design sheet for the details of domain settings.

■ Control domain settings

- Only CPU and memory are set. Other parameters are automatically set.

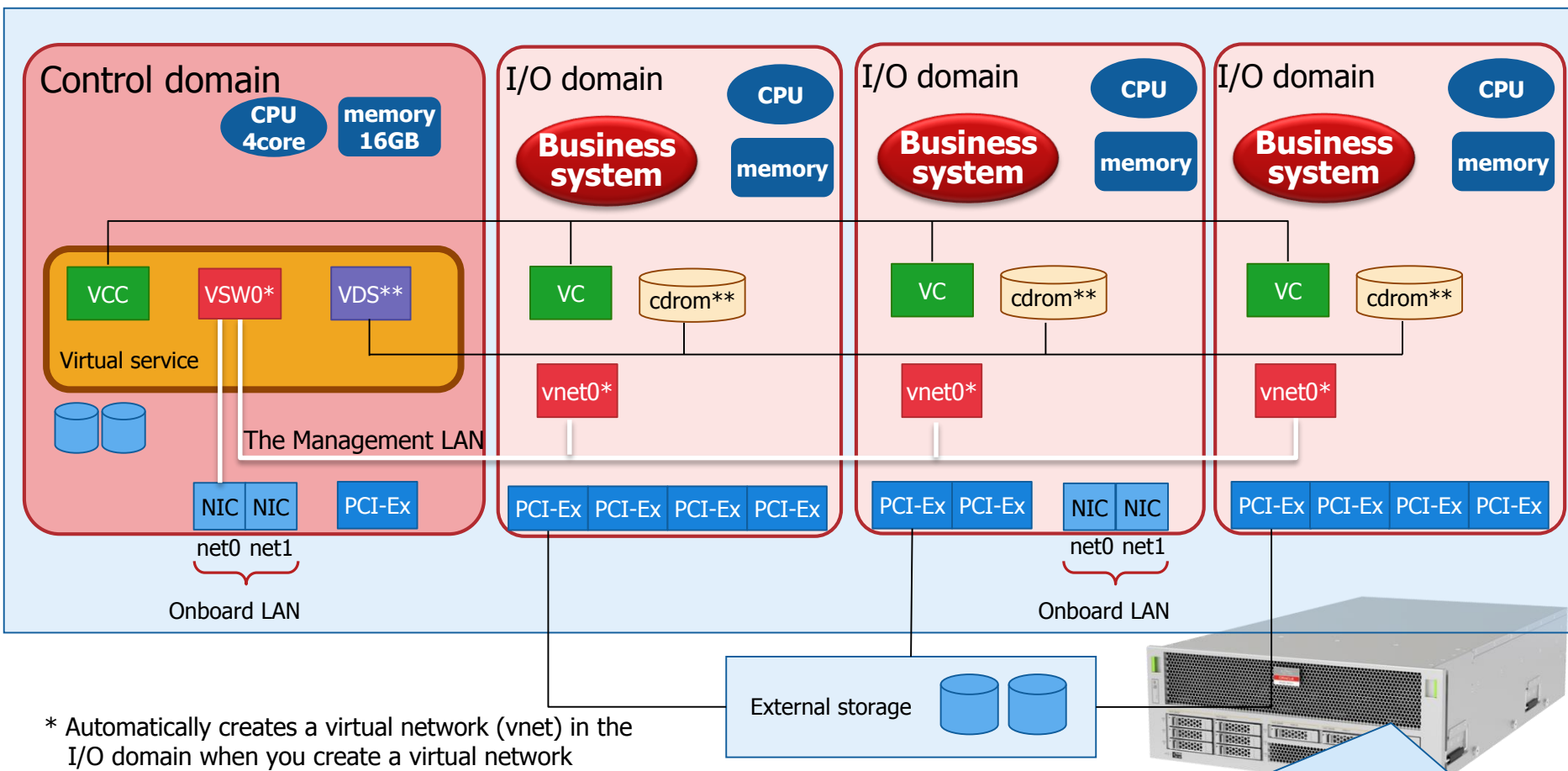
Parameter		Description
I/O	Please confirm I/O devices to remove from primary domain.	Confirm the I/O device to separate.
CPU	Enter the quantity of CPU cores for the primary domain.	Enter the number of CPU cores to assign.
	Do you wish to set the parameter of "max-cores"?	Choose if you want to set the max-cores parameter.
Memory	Enter the amount of memory for the primary domain. (By multiple of 4MB).	Enter the amount of the memory to assign. (Entered value is automatically rounded up to 4MB boundary).
Final configuration confirmation	The following primary domain configuration will be set.	Confirm the domain configuration.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the control domain configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to configure the control domain based upon the configuration script.

■ I/O domain settings

Parameter		Description
Domain name	Enter a logical domain name (e.g., ldom1)	Enter the I/O domain name.
I/O	Confirm add I/O devices to the domain <i>Domain name</i>	Confirm the physical I/O device to add.
CPU	Enter the quantity of CPU cores for the I/O domain <i>Domain name</i> .	Enter the number of CPU cores to assign.
	Do you wish to set the parameter of "max-cores"?	Choose if you want to set the max-cores parameter.
Memory	Enter the amount of memory for the I/O domain <i>Domain name</i> . (By multiple of 4MB).	Enter the amount of the memory to assign. (Entered value is automatically rounded up to 4MB boundary.)
OS	Select a method to install the Oracle Solaris OS on the logical domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select how to install the OS.
Final configuration confirmation	The following guest domain configuration will be set.	Confirm the I/O domain configuration set.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to create the I/O domain based upon the configuration information.

Pattern 3 Configuration Image

■ Multi-server integration using physical I/O



* Automatically creates a virtual network (vnet) in the I/O domain when you create a virtual network switch (VSW) on the control domain.

** Only created when an ISO image is used to install the OS in the I/O domain.

*** I/O domain will not have an built-in disk.
Prepare an external disk such as ETERNUS.

Hardware requirements

- Fujitsu M10-4 Server (Four-CPU configuration) x 1
- FC card/SAS card x 3 or more ***
- External storage x 1***

Pattern 3 Physical I/O Device Configuration

External storage and network device allocation

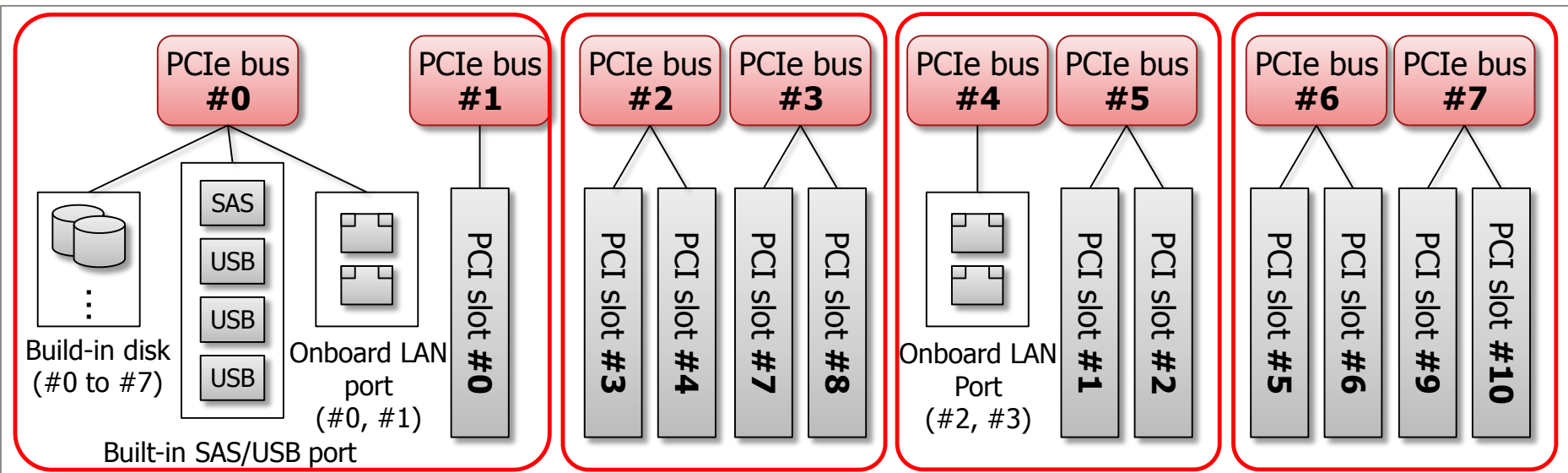
- In pattern 3, PCIe bus #0 and #1 are assigned to Control domain, and two PCIe buses are assigned to each I/O domain.
- Mount FC cards, etc. in PCI slots that are recognized by each I/O domain to allocate external storage for the system volume.
- Mount a network card when allocating a network interface to I/O domain #0 and I/O domain #2.

Control Domain

I/O Domain #0

I/O Domain #1

I/O Domain #2

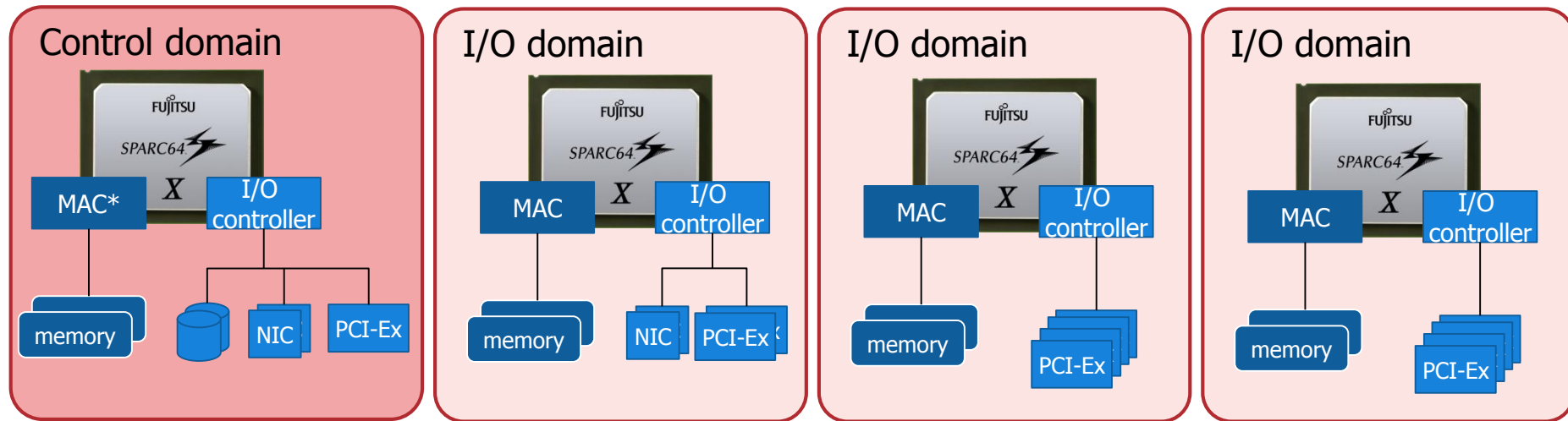


Fujitsu M10-4 (4CPU / PCIe bus x 8)



<Reference> Physical characteristics of Fujitsu M10-4

- In pattern 3, a domain configuration utilizing the characteristics of the Fujitsu M10-4 is constructed automatically.
 - The SPARC64 X mounts memory controllers and I/O controllers on the processor.
 - Each domain in pattern 3 automatically constructs a CPU, memory, and I/O configuration in processor units.
 - Minimizing the separation of the CPU, memory and I/O used for each domain minimizes latency.



* MAC ... Memory access controller

■ Work flow

- Configure the Control domain, and then I/O domain.
 - The tool is executed once to configure a Control domain, and once to configure and I/O domains.
- Refer to the design sheet for the details of domain settings.

■ Control domain settings

- All parameters are set automatically.

Parameter		Description
I/O	Please confirm I/O devices to remove from primary domain.	Confirm the physical I/O devices to remove.
VSW	Create a virtual switch service? (y/[n])	Choose if you want to create VSW.
	Please select a physical NIC to allocate primary-vsw0 from the following list.	Select the physical NIC assigned to VSW.
Final configuration confirmation	The following primary domain configuration will be set.	Confirm the domain configuration.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Select whether to save the configuration script for the control domain. The configuration tool will close if you choose not to save the script.
	Do you wish to create the domain now with this configuration file? (y/n)	Select whether to construct a domain based on the configuration script.

Pattern 3 Parameters 2/2

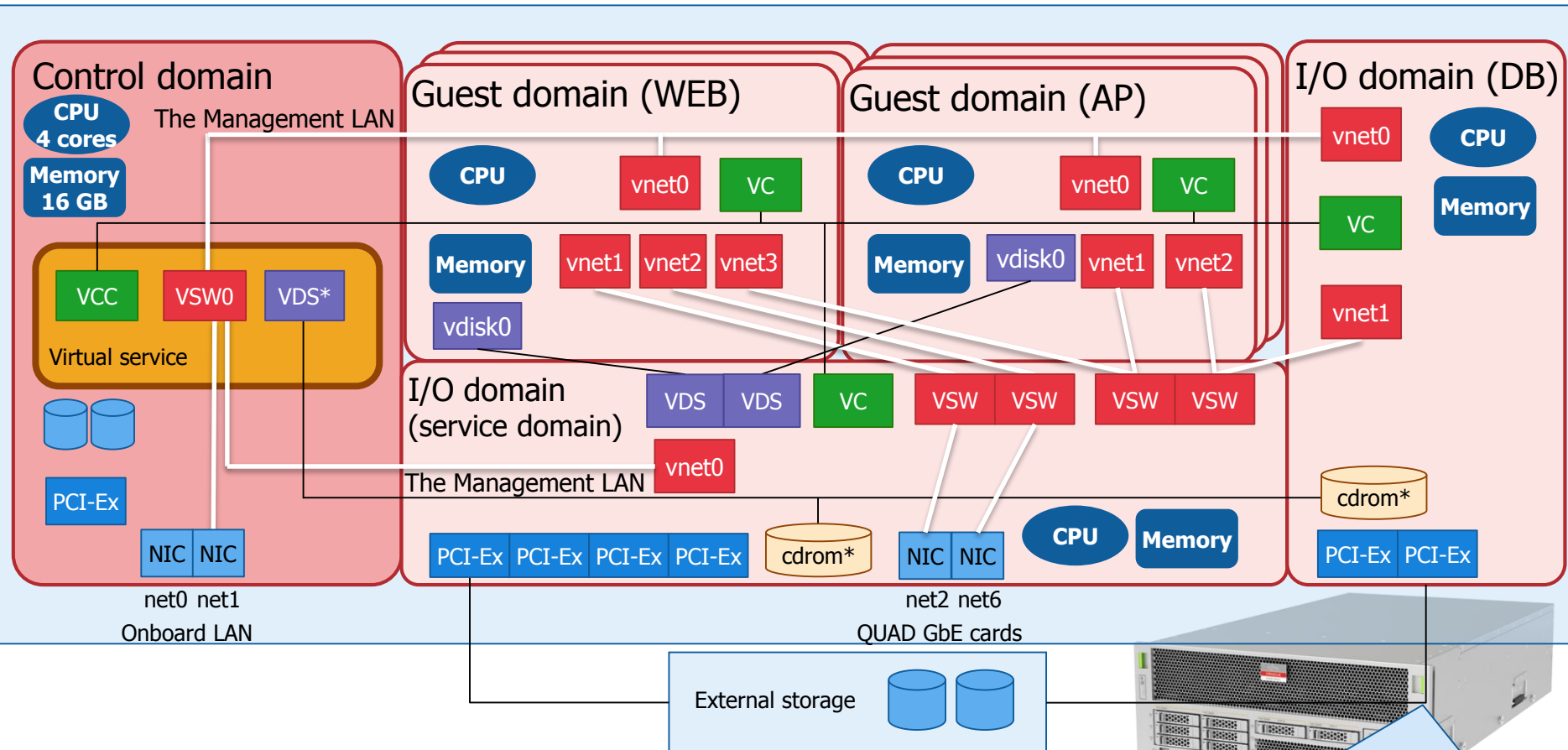
■ I/O domain settings

- Three I/O domains are constructed with a single execution of the tool.

Parameter		Description
Domain name	Enter a logical domain name (e.g., ldom1)	Enter the I/O domain name.
host ID	Specify a host ID? (If no, a host ID will be created automatically.)	Confirm whether to create a host ID automatically.
	Enter an 8 character host ID for <i>Domain name</i> .	Enter a host ID.
CPU	Enter the quantity of CPU cores for the I/O domain <i>Domain name</i> .	Enter the number of CPU cores to allocate.
	Do you wish to set the parameter of "max-cores"?	Select whether the max-cores parameter is valid.
Memory	Enter the amount of memory for the I/O domain <i>Domain name</i> . (By multiple of 256MB).	Enter the memory size to allocate. (Automatically rounded up to the nearest 256MB)
Virtual network	Assign VNET(Virtual Network) to the domain <i>Domain name</i> .	Confirm the content of the VNET settings.
I/O	Please confirm the I/O device to be added to the domain <i>Domain name</i>	Confirm the physical I/O device to add.
Virtual console	Please confirm the virtual console.	Confirm the content of the virtual console settings.
OS	Select a method to install the Oracle Solaris OS on the logical domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select the OS installation method.
Final configuration confirmation	The following I/O domain configuration will be set.	Confirm the I/O domain configuration set.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Select whether to save the configuration script. The configuration tool will close if you choose not to save the script.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose whether or not to create an I/O domain based on the configuration script.

Pattern 4 Configuration Image

■ Virtualization integration including network



* Only created when an ISO image is used to install the OS in the I/O domain.

** I/O domain will not have a built-in disk. Prepare an external disk such as ETERNUS.

*** I nstall two Quad GbEs as LAN cards. net2 and net6 are the leading ports.

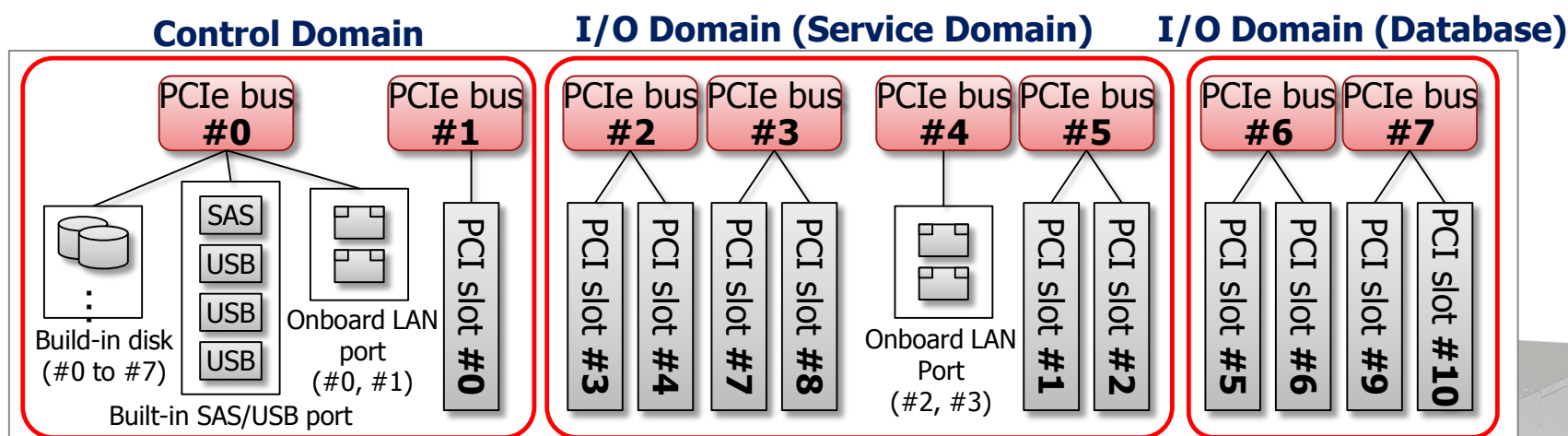
Hardware requirements

- Fujitsu M10-4 Server x 1
- LAN card x 2 or more
- FC card/SAS card x 2 or more**
- External storage x 1**

Pattern 4 Physical I/O Device Configuration

■ External storage and network device allocation

- In pattern 4, PCIe buses are assigned to the Control domain and I/O domains as shown in the diagram below.
- Mount FC cards, etc. in PCI slots that are recognized by each I/O domain to allocate external storage for the system volume.
- To create a redundantly configured network for the I/O domain (service domain), mount two Quad GbE cards. Network interface of onboard LAN is recognized as net0 and net1, and additional cards are recognized as net2 through net5 and net6 through net9.
- Pattern 4 constitutes a virtual network service using net2 and net6.



Fujitsu M10-4 (4CPU / PCIe bus x 8)



■ Work flow

- Configure the Control domain, the I/O domain, the guest domain in turn.
 - The tool is executed once to configure a Control domain, three times to configure I/O domains, and twice to configure guest domains.
- Refer to the design sheet for the details of domain settings.

■ Control domain settings

- All parameters are set automatically.

Parameter		Description
Configuration confirmation	The following primary domain configuration will be set.	Confirm the control domain configuration (CPU, memory, I/O, VCC, VSW, and configuration name).
Final configuration confirmation	The following primary domain configuration will be set.	Confirm the control domain configuration set.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the control domain configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to configure the control domain based on the configuration script.

Pattern 4 Parameters 2/6

- I/O domain settings for providing virtual services (1)
 - Execute the tool twice to configure the I/O domain
 - The input items when executing it the first time are the following

Parameter		Description
Host ID	Specify a host ID? (If no, a host ID will be created automatically.)	Confirm whether to create a host ID automatically.
	Enter an 8 character host ID for <i>Domain name</i> .	Enter a host ID.
CPU	Enter the quantity of CPU cores for the I/O domain <i>Domain name</i> .	Enter the number of CPU cores to allocate.
	Do you wish to set the parameter of "max-cores"?	Select whether the max-cores parameter is valid.
Memory	Enter the amount of memory for the I/O domain <i>Domain name</i> . (By multiple of 4MB) [4096](MB)	Enter the memory size to allocate. (Automatically rounded up to the nearest 4MB)
I/O	Confirm add I/O devices to the domain <i>Domain name</i> .	Confirm the physical I/O device to add.
Virtual network	Assign VNET(Virtual Network) to the domain <i>Domain name</i> .	Confirm the content of the VNET settings.
OS	Select a method to install the Oracle Solaris OS on the logical domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select the OS installation method.
Virtual console	Please confirm the virtual console.	Confirm the content of the virtual console settings.
Final configuration confirmation	The following I/O domain configuration will be set.	Confirm the I/O domain configuration set.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to configure the I/O domain based on the configuration script.

- I/O domain settings for providing virtual services (2)
 - Execute the tool twice to configure the I/O domain
 - The input items when executing it the second time are the following

Parameter		Description
VDS	A virtual disk server (vds) is created to allow importing virtual disks.	Confirm the VDS to add.
VSW	A virtual switch service (vsw) is created.	Confirm the VSW to add.
Config	Enter the configuration filename. [current configuration]	Enter the configuration file name.
Final configuration confirmation	The following I/O domain configuration will be set.	Confirm the I/O domain configuration set.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Select whether to save the configuration script. The configuration tool will close if you choose not to save the script.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to create the I/O domain based upon the configuration information.

■ I/O domain settings for database server

■ Execute the tool once to configure the I/O domain

Parameter		Description
Host ID	Specify a host ID? (If no, a host ID will be created automatically.)	Confirm whether to create a host ID automatically.
	Enter an 8 character host ID for <i>Domain name</i> .	Enter a host ID.
CPU	Enter the quantity of CPU cores for the I/O domain <i>Domain name</i> .	Enter the number of CPU cores to allocate.
	Do you wish to set the parameter of "max-cores"?	Select whether the max-cores parameter is valid.
Memory	Enter the amount of memory for the I/O domain <i>Domain name</i> . (By multiple of 4MB).	Enter the memory size to allocate. (Automatically rounded up to the nearest 4MB)
I/O	Confirm add I/O devices to the domain <i>Domain name</i>	Confirm the physical I/O device to add.
Virtual network	Assign VNET(Virtual Network) to the domain <i>Domain name</i> .	Confirm the content of the VNET settings for The Management LAN.
Virtual network	Assign VNET(Virtual Network) to the domain <i>Domain name</i> .	Confirm the content of the VNET settings for The Internal LAN.
OS	Select a method to install the Oracle Solaris OS on the logical domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select the OS installation method.
Virtual console	Please confirm the virtual console.	Confirm the content of the virtual console settings.
Final configuration confirmation	The following I/O domain configuration will be set.	Confirm the I/O domain configuration set.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to configure the I/O domain based on the configuration script.

■ Guest domain settings (1)

- Execute the tool once to configure multiple guest domains for the Web server
 - The configuration of all guest domains is same even if multiple guest domains are created.

Parameter		Description
domain	Enter the quantity of guest domains that you wish to create.[1]	Enter the number of guest domains to create.
CPU	Enter the quantity of CPU cores for the guest domain <i>Domain name</i> .	Enter the number of CPU cores to assign.
	Do you wish to set the parameter of "max-cores"?	Select whether the max-cores parameter is valid.
Memory	Enter the amount of memory for the guest domain <i>Domain name</i> . (By multiple of 4MB).	Enter the memory size to allocate. (Automatically rounded up to the nearest 4MB)
Virtual network	These VNETs (Virtual Network) are created for the system management of the web server.	Confirm the content of the VNET settings for The Management LAN.
Virtual network	These VNETs (Virtual Network) are created for the external LAN connection and the Inter-Domain connection.	Confirm the content of the VNET settings for The Internal LAN and The External LAN.
Virtual disk	Enter the quantity of virtual disks that you wish to create. [1]	Enter the number of VDISK to create.
	Set the 1st virtual disk configuration: vdisk0	Select the first disk. The disk selected here is set as the boot disk.
OS	Select a method to install the Oracle Solaris OS on the logical domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select the OS installation method.
Virtual console	A virtual console (vc) is set to access to each domain's console.	Confirm the content of the virtual console settings.
Final configuration confirmation	The following guest domain configuration will be set.	Confirm the guest domain configuration set.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to configure the I/O domain based on the configuration script.

■ Guest domain settings (2)

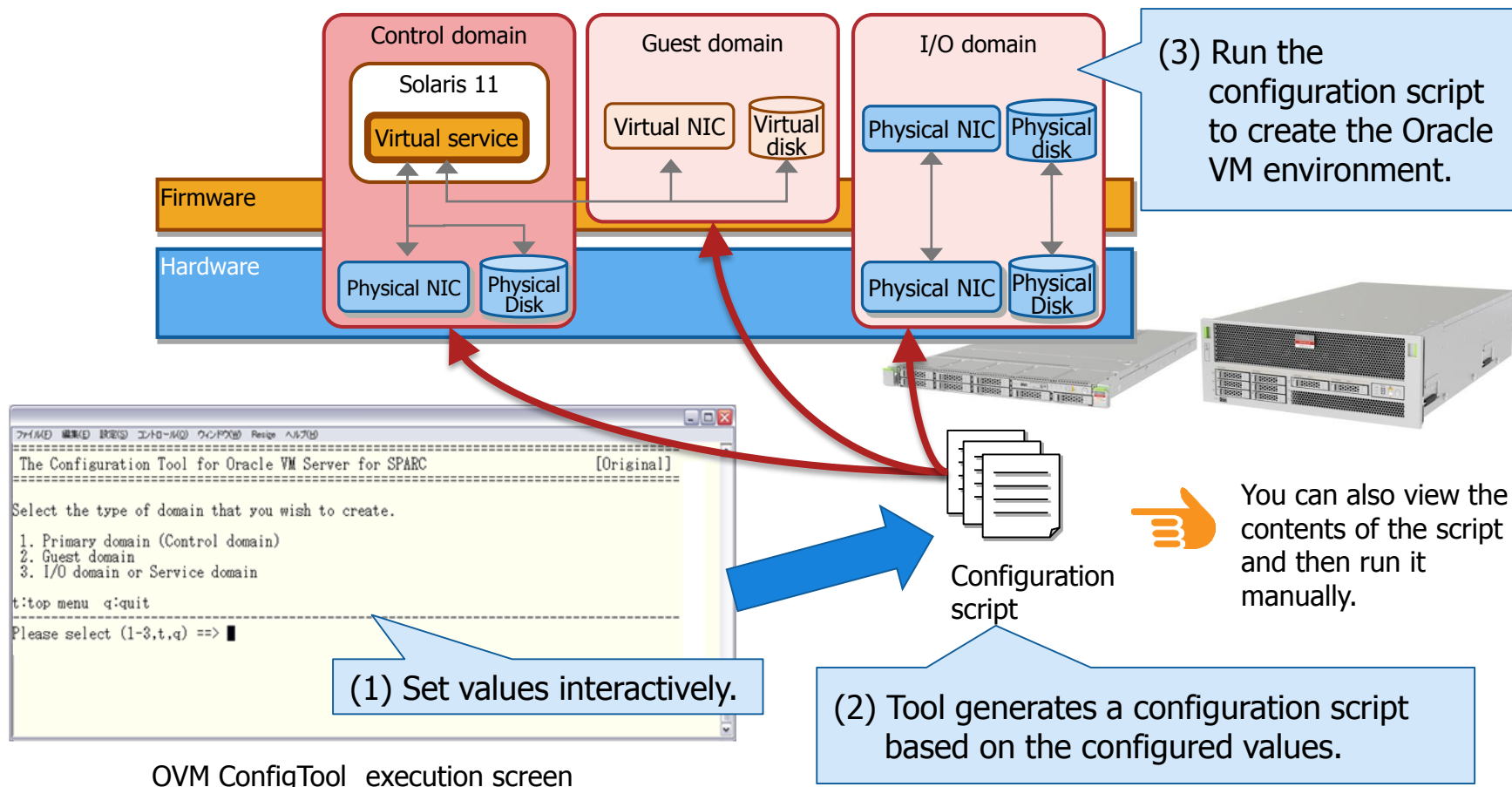
- Execute the tool once to configure multiple guest domains for the application server
 - The configuration of all guest domains is same even if multiple guest domains are created.

Parameter		Description
domain	Enter the quantity of guest domains that you wish to create.[1]	Enter the number of guest domains to create.
CPU	Enter the quantity of CPU cores for the guest domain <i>Domain name</i> .	Enter the number of CPU cores to assign.
	Do you wish to set the parameter of "max-cores"?	Select whether the max-cores parameter is valid.
Memory	Enter the amount of memory for the guest domain <i>Domain name</i> . (By multiple of 4MB).	Enter the memory size to allocate. (Automatically rounded up to the nearest 4MB)
Virtual network	These VNETs (Virtual Network) are created for the system management of the web server.	Confirm the content of the VNET settings for The Management LAN.
Virtual network	These VNETs (Virtual Network) are created for the external LAN connection and the Inter-Domain connection.	Confirm the content of the VNET settings for The Internal LAN and The External LAN.
Virtual disk	Enter the quantity of virtual disks that you wish to create. [1]	Enter the number of VDISK to create.
	Set the 1st virtual disk configuration: vdisk0	Select the first disk. The disk selected here is set as the boot disk.
OS	Select a method to install the Oracle Solaris OS on the logical domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select the OS installation method.
Virtual console	A virtual console (vc) is set to access to each domain's console.	Confirm the content of the virtual console settings.
Final configuration confirmation	The following guest domain configuration will be set.	Confirm the guest domain configuration set.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to configure the I/O domain based on the configuration script.

4. Original Mode

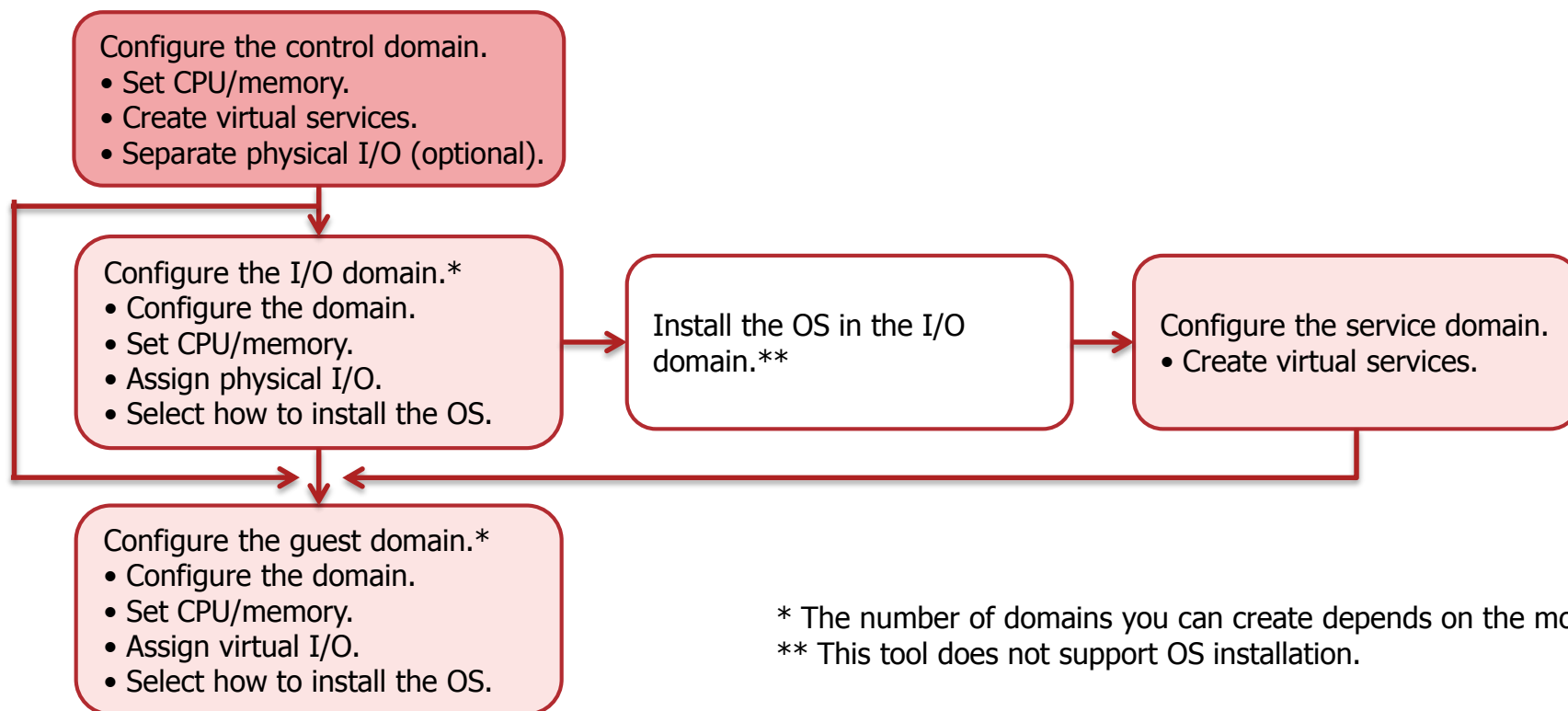
Overview of Original Mode

- Create a virtual environment with an easy operation.
 - Enter/select values interactively
 - You can configure a flexible Oracle VM environment.



Original Mode Configuration Flow

- Configure the Control domain, I/O domain (Service domain), and then the Guest domain(s).
 - I/O and/or guest domains may not be created depending on the configuration.
 - Run this tool to configure each domain.
 - If you are configuring the control domain x 1 and guest domain x 3, run this tool for 4 times.



Original Mode Parameters 1/4

■ Control domain settings

■ Configure necessary settings sequentially.

Parameter		Description
I/O	Do you wish to exclude any I/O devices from the primary domain?	Select the I/O device to separate.
VDS	Create a virtual disk server (vds)? (y/[n])	Choose if you want to create VDS.
	Enter the desired quantity of virtual disk servers.	Choose how many VDS's you want to create.
VCC	Enter the range of port numbers for primary-vcc0. starting port number [5000] ==> ending port number [5100] ==>	Specify the port range (with the starting and ending port number) assigned to VCC.
VSW	Create a virtual switch service? (y/[n])	Choose if you want to create VSW.
	Enter the quantity of virtual switch services	Choose how many VSW's you want to configure.
	Set the 1st virtual switch service configuration	Select the physical NIC assigned to VSW.
CPU	Enter the quantity of CPU cores for the primary domain.	Enter the number of CPU cores assigned.
	Do you wish to set the parameter of "max-cores"?	Choose if you want to set the max-cores parameter.
Memory	Enter the amount of memory for the primary domain. (By multiple of 4MB).	Enter the amount of the memory to assign. (Entered value is automatically rounded up to 4MB boundary).
Config	Enter the configuration filename.	Enter the configuration file name.
Final configuration confirmation	The following guest domain configuration will be set.	Confirm the control domain configuration.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to configure the control domain based on the configuration script.

Original Mode Parameters 2/4

■ I/O domain settings

Parameter		Description
Domain	Enter a logical domain name (e.g., ldom1)	Enter the domain name.
	Specify a host ID? (If no, a host ID will be created automatically.)(y/[n])	Enter the host ID.
CPU	Enter the quantity of CPU cores for the guest domain <i>Domain name</i> .	Enter the number of CPU cores to assign.
	Do you wish to set the parameter of "max-cores"?	Choose if you want to set the max-cores parameter.
Memory	Enter the amount of memory for the <i>Domain name</i> . (By multiple of 4MB).	Enter the amount of the memory to assign. (Entered value is automatically rounded up to 4MB boundary).
I/O	Please select I/O devices that you wish to add to the I/O domain.	Select the I/O device to add.
OS	Select a method to install the Oracle Solaris OS on the guest domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select how to install the OS.
Virtual console	Do you wish to specify a virtual console port number for <i>Domain name</i> ? (y/[n])	Specify or select the port number.
	Enter a virtual console port number. (port range: xxxx-xxxx)	Enter the port number.
Variable	Select the "auto-boot?" parameter value for <i>Domain name</i> .	Select the auto-boot parameter.
	Enter "boot-device" parameter value (the device name from which to boot) for <i>Domain name</i> .	Select the boot-device parameter.
Service domain	Do you wish to add a service domain function to the I/O domain? (y/n)	Choose if you want to define the I/O domain as a service domain.
Final configuration confirmation	The following guest domain configuration will be set.	Confirm the I/O domain configuration.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration information. You will be able to edit saved configuration information. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to create the I/O domain based upon the configuration information.

■ Service domain settings

Parameter		Description
Domain selection	Select the domain for which you wish to add a service domain function.	Select an I/O domain which will be used as the service domain.
VDS	Create a virtual disk server (vds)? ([y]/n)	Choose if you want to create VDS.
	Enter the desired quantity of virtual disk servers.	Choose how many VDS's you want to configure.
VCC	Create a virtual console concentrator (vcc)? ([y]/n)	Choose if you want to create VCC.
	Enter the range of port numbers for <i>Domain name-vcc0</i> . starting port number [5000] ==> ending port number [5100] ==>	Specify the port range for VCC.
VSW	Create a virtual switch service? ([y]/n)	Choose if you want to create VSW.
	Enter the quantity of virtual switch services	Choose how many VSW's you want to configure.
	Set the 1st virtual switch service configuration	Specify the physical NIC assigned to VSW.
Final configuration confirmation	The following guest domain configuration will be set.	Confirm the service domain configuration.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration information. You will be able to edit saved configuration information. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to create the service domain based upon the configuration information.

■ Guest domain settings

Parameter		Description
Domain name	Specify a name for the guest domain.	Enter the domain name.
	Specify a host ID? (If no, a host ID will be created automatically.) (y/[n])	Select if you want to specify the host ID.
	Enter an 8 character host ID for <i>Domain name</i> .	Enter the host ID.
CPU	Enter the quantity of CPU cores for the guest domain <i>Domain name</i>	Enter the number of CPU cores to assign.
	Do you wish to set the parameter of "max-cores"?	Choose if you want to set the max-cores parameter.
Memory	Enter the amount of memory for the primary domain. (By multiple of 4MB).	Enter the amount of the memory to assign. (Entered value is automatically rounded up to 4MB boundary).
Virtual network	Create a virtual network? (y/[n])	Choose if you want to use VNET.
	Enter the quantity of virtual networks.	Choose how many VNET's you want to use.
	Set the 1st vnet configuration: vnet0	Select VSW for the control domain used by vnet0.
	Set a VLAN for vnet0? (y/[n])	Choose if you want to set VLAN.
OS	Select a method to install the Oracle Solaris OS on the guest domain <i>Domain name</i> . Please select either installation from a network install server for from an iso image file.	Select how to install the OS.
Virtual disk	Create a virtual disks? (y/[n])	Choose if you want to create VDISK.
	Enter the quantity of virtual disks that you wish to create.	Choose how many VDISK's you want to configure.
	Set the 1st virtual disk configuration: vdisk0	Select VDS used by vdisk0.
Virtual console	Please select a virtual console concentrator for <i>Domain name</i> from the following list:	Select VCC.
	Do you wish to specify a virtual console port number for <i>Domain name</i> ? (y/[n])	Select the port number.
Variable	Select the "auto-boot?" parameter value for <i>Domain name</i> .	Select the auto-boot parameter.
	Enter "boot-device" parameter value (the device name from which to boot) for <i>Domain name</i> .	Select the boot-device parameter.
Final configuration confirmation	The following guest domain configuration will be set.	Confirm the guest domain configuration.
	Save this configuration file? If no, the configuration will be cleared. (y/n)	Choose if you want to save the configuration script. The tool will terminate if you do not save the file.
	Do you wish to create the domain now with this configuration file? (y/n)	Choose if you want to create the guest domain based upon the configuration information.

■ Support policy of this tool

- This tool uses these subcommands and options of the OVM management command (Idm command)
- These are required or frequently used one.

Idm subcommand	Option	Description
add-domain	hostid=<num>	Specify the host ID.
	max-cores=<num>	Specify the maximum number of cores assigned to the domain.
add-vswitch	pvid=<pvid>	Specify the VLAN ID for the non-tag mode (port VLAN).
	vid=<vid1,vid2, ...>	Specify the VLAN ID for the tagged mode (tag VLAN).
	net-dev=<device>	Specify the network device for the virtual switch.
add-vnet / set-vnet	linkprop=[phys-state]	Option for the virtual network (VNET). This option reports the link status and is required when setting the link-based IPMP (network duplication) function.
add-vdsdev / set-vdsdev	options={ro,excl}	Option for the virtual disk device. ro [read only] : Read only excl [exclusive] : Exclusive
add-vconscon	port-range=<x>-<y>	Specify the console port range provided by the virtual console service.
set-vconsole	port=<port-num>	Specify the console connection port number for the guest domain.
set-variable	auto-boot?=[true false] boot-device=<device>	Specify the OBP parameter for the guest domain. auto-boot? : Auto boot setting of OS boot-device : Specify the boot disk

■ OS installation in guest domain

■ You can choose "Local Install" or "Network Install".

- Local Install (installation from an iso image file)
 - In this tool, it is supported to install by the ISO image of Solaris. It does not support to install from the DVD-ROM.
 - Create the ISO image from the installation media (e.g. by using the dd command) and place it in the control domain in advance.
- Network Install (installation from a network install server)
 - This method requires that a virtual NIC or physical NIC is allocated in the domain where the OS is being installed.
 - A installation server is required. This tool only checks if the virtual NIC is configured in the installation target domain.
 - This tool does not check if there is installation server and you cannot set the installation server by this tool.

■ Physical device for virtual disk (vdisk)

- You need to create the physical device (back end) assigned to vdisk in the Control or Service domain in advance.
 - This tool supports the following types of back end devices:
 - Physical disk (LUN)
 - Image file
 - ZFS volume
 - Creation command examples
 - Image file

```
# mkfile [Size] [File name]
```

(e.g., # mkfile 10g vdisk01.img)
 - ZFS volume

```
# zfs create -V [Size] [File system name]
```

(e.g., # zfs create -V 10g tank1/vdisk01)
- You can select the physical disk (LUN) and ZFS volume when configuring the virtual disk. Be sure to enter the full pathname for the image file.

■ Output messages when configuring the Control domain (Primary domain)

- You may receive the following message several times while executing the script to configure the Control domain.

Notice: The primary domain is in the process of a delayed reconfiguration.
Any changes made to the primary domain will only take effect after it reboots.

- This is not an error message.
- This message is displayed when the Control domain is in the delayed reconfiguration state. (Oracle VM specification)
- There is no problem in setting the control domain, please ignore.
- You need to restart the OS if the following message is displayed after setting the Control domain.

Please reboot the system after pressing the enter key

- You need to restart the OS in order to release the delayed reconfiguration state.

Bug Information

#	Classification	Details	Fix
1	Phenomenon	<p>When setting an I/O domain as the service domain, the SP configuration information cannot be overwritten.</p> <p>[Corresponding menu]</p> <p>2. Create an original configuration -> 3. I/O domain or Service domain -> 2. Add a function of service domain to a I/O domain.</p> <p>[Error message returned from tool]</p> <p>Name must start with an alpha-numeric character</p> <p>_Default_SP_Config is not a valid autosave configuration name</p>	Fixed in Ver 1.1
	Criteria	<p>After removing the currently selected configuration information (with the "current" or "next poweron" status) using the following command, use this tool to set the service domain:</p> <p># Idm remove-spconfig [Configuration name]</p>	
	Counteraction	<p>If the configuration information cannot be overwritten after running the tool, use the following command to newly save the information:</p> <p># Idm add-spconfig [Configuration name]</p>	
2	Phenomenon	The number of cores which can be assigned to the domain indicates "the number of physically installed cores" instead of "the number of cores made available by CoD".	Fixed in Ver 1.1
	Counteraction	To be fixed in the next release.	
3	Phenomenon	In pattern 1 (when creating guest domain), and pattern 2 (when creating I / O domain), the virtual device for installation of the OS is not created even though an ISO image is specified.	Fixed in Ver 2.2
	Cause	Error existed in processing to search for the domain name.	
4	Phenomenon	When setting the service domain to the I/O domain as in the Original Pattern, "vconscon" is not created in the I/O domain, it is created in the control domain. Also, "vntsd" is booted by the control domain.	Fixed in Ver 2.2
	Cause	Error existed in processing to search for the domain name.	
5	Phenomenon	When setting the service domain to the I/O domain as in the Original Pattern, it tries to create an I/O domain that already exists.	Fixed in Ver 2.2
	Cause	There was a process that created a new domain by mistake when setting the service domain.	

■ Function update/addition in Ver 1.1

- You can now set the max-cores parameter which is required to support Oracle DB hardware partitioning. Set this value when specifying the number of CPU cores for the domain. However, this function is not available for the control domain with the template 1.
 - You need to stop the target domain when changing the maximum value of the max-cores option.
- This tool cannot be used when the control domain is in the delayed reconfiguration state. Run the tool after rebooting the OS (or cancelling the delayed reconfiguration state).
- The option required for the IPMP configuration (linkprop) can only be set for VSW which has a physical NIC assigned.
- Configuration scripts are now created with the specified domain memory capacity automatically rounded up to a 4MB-boundary.
- A function which resets the domain environment to the factory default (factory-default) is available.
- The control domain can be configured only when "Config: factory-default" is [current].
- Duplication check for the configuration name specified in control domain setting is now available. If the specified name already exists, the tool will prompt you to enter another name.
- In the list of back end devices, those already used by other domains are now shown as [Domain name:Reserved].
- When configuring multiple VDWs in the control domain, the tool now checks duplication of specified physical NICs.
- The virtual console port number for the I/O domain is now fixed to 5000.

■ Function update/addition in Ver 2.0

- Template pattern 3, designed for the Fujitsu M10-4 can now be selected.
- In template pattern3, the CPU/memory allocated to each domain is set automatically, taking into account the CPU mounting position and the memory starting address. A domain environment can be constructed that takes the performance of each domain into account.

■ Function update/addition in Ver 2.0.1

- Added support of Oracle VM Server for SPARC Software 3.1
- The virtual network switch (VSW) can be selected in template pattern 3.
 - If the VSW is created on the control domain, then virtual networks (vnet) are created on the I/O domain automatically.
 - The VSW and vnets are used for the management LAN.

■ Function update/addition in Ver 2.1

- Added template pattern 4, which is designed for the Fujitsu M10-4
 - Virtual services, such as the VDS (virtual disk service) and the VSW, are created on the I/O domain automatically. This means the I/O domain has role of the service domain.
 - Guest domains are created using the virtual services on the I/O domain.
- Added process for saving the configuration file when creating a domain or modifying the settings of a domain, for all patterns.
 - This process is executed automatically, there is no need to set it.
 - This process was added for control domains from the first release.
 - This process was added for I/O domains and guest domains in this release.

■ Function update/addition in Ver 2.2

- Support for Oracle Solaris 11.2 version.
- Fixed bugs.

■ Function update/addition in Ver 2.3

- Added support of Oracle VM Server for SPARC Software 3.2

■ Function update/addition in Ver 2.4

- Added support of Oracle VM Server for SPARC Software 3.4
- The CPU socket can be auto-selected in template pattern 3.

Revision History 1/2

Revision	Date	Page	Description
First release	Jan 23 2013		Newly configured
Ver 1.0.1	April 4 2013	<Precautions > 1/3, OS installation in guest domain	Incorrect ISO image configuration example was deleted.
Ver 1.1	April 24 2013		Entire document was reviewed.
Ver 2.0	July 8 2013		Template mode pattern 3 is added.
Ver 2.0.1	January 23 2014	Requirements and Precautions	Added Oracle VM Server for SPARC Software 3.1 to required software.
		Overview of Each Pattern Pattern 3 "Multi-server integration" (for Fujitsu M10-4*) Pattern 3 Parameters 1/2, 2/2 Release Notes 2/2	Added process for setting virtual network switch on the control domain to template pattern 3. Then updated the summary, configuration images and messages displayed when executing this tool.
Ver 2.1	May 8 2014	Overview of Each Pattern Pattern 4 Configuration Image Pattern 4 Parameters 1/6 ~ 6/6	Added template pattern 4.
Ver 2.2	Nov 5 2014	Introduction	Added Oracle Solaris 11.2 as supported software
		Overview of Each Pattern <Reference> Physical I/O of Fujitsu M10-1/M10-4 Physical I/O Device Configuration Bug Information	Added configuration images of the physical I/O devices in each template pattern. Added notes for each template pattern. Added bug fix information.
Ver 2.3	Sep 15 2015	Requirements and Precautions	Added Oracle VM Server for SPARC Software 3.2 to required software.

Revision History 2/2

Revision	Date	Page	Description
Ver 2.4	Jan 1 2017	Requirements and Precautions Overview of Each Pattern	Added Oracle VM Server for SPARC Software 3.4 to required software. Update Points to note.

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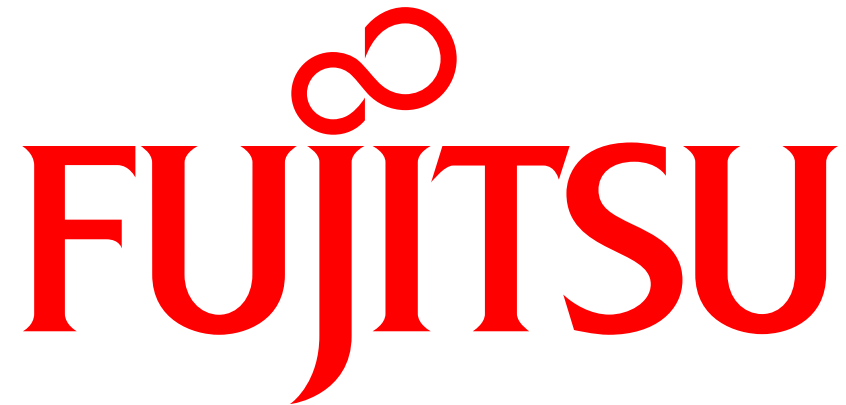
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