FUJITSU

SPARC Enterprise
Oracle VM Server for SPARC
Important Information

C120-E618-06EN
October 2012

Revision History

Edition	Date	Revised Location (Type) (*1)	Description
01	2010-5-26	-	-
02	2010-12-17	All (Modification)	Modified manual number to C120-E618-02EN
		Chapter 1(Modification)	Modified Supported functions for Oracle VM Server for SPARC 2.0
		Chapter 2(Modification) Table 2.2,2.3,2.4,2.7,2.8,2.10	Modified "Table 2.2 No.2", "Table 2.3 No.3","Table 2.4 No.2", "Table 2.7 No.3","Table 2.8 No.1,2,3","Table 2.10 No.1,5,6,7"
		Table 2.2, 2.6, 2.8 (Addition)	Added "Table 2.2 No.8","Table 2.6 No.3", "Table 2.8 No.4,5"
		Table 2.1 (Addition)	Added " Bug information on Oracle VM Server for SPARC 2.0"
		Chapter 3(Modification) Table 3.10.1, 3.10.2,3.10.4	Modified "Table 3.10.1 No.1,9", "Table 3.10.2 No.1,2","Table 3.10.4 No.1"
		Table 3.4, 3.6, 3.10.2(Addition)	Added "Table 3.4 No.16", " Table 3.6 No.3", "Table 3.10.2 No.3"
		Table 3.1(Addition)	Added "Notes on Oracle VM Server for SPARC 2.0"
		Table 3.11(Addition)	Added "Notes for Oracle VM Server for SPARC Physical-to-Virtual Migration Tool on Oracle VM Sever for SPARC 2.0"
		Table 4.1 (Addition)	Added "Table 4.1 System requirements for System requirements for Oracle VM Server for SPARC 2.0"
		Chapter 5 (Addition)	Added "5.1 Notes on SPARC T3"
		Table 5.2,5.3,5.5 (Modification)	Modified "Guest Domain Memory size"
		5.5 (Addition)	Added "SPARC T3"
		Chapter 5 (Addition)	Added "5.6Support situation of PCI Express (PCIe) direct I/O"
		Chapter 5 (Addition)	Added "5.7.1 SPARC T3"

Edition	Date	Revised Location (Type) (*1)	Description
03	2011-6-26	All (Modification)	Modified manual number to C120-E618-03EN
		Reference Manuals (Modification)	Modified Oracle URL
		Table 2.1 No.5 (Modification)	Modified "Bug ID"
		Table 2.1 (Addition)	Added "Table 2.1 No.9"
		Table 2.1 No.7 (Modification)	Removed " Table 3.1No.5"
		Table 2.2 (Addition)	Added "Table 2.2 No.1, No2"
		Table 2.3 (Modification)	Modified "Table 2.3 No.3"
		Table 2.9 (Addition)	Added "Bug information for Dynamic Resource Management (DRM) on Oracle VM Server for SPARC 2.0 or later"
		Table 2.10 No.4 (Modification)	Modified "Bug ID"
		Table 2.13 (Addition)	Added Bug information for System Firmware"
		Table 3.2 (Addition)	Addition "Notes on Logical Domains 1.3 or later"
		Table 3.11.1 (Modification)	Modified "Table 3.11.1 No.1"
		Table 3.11.3 No2 (Modification)	Modified "Table 3.11.3 No.2"
		Table 4.1 System requirements for System requirements for Oracle VM Server for SPARC 2.0 (Addition)	Added T3-4 in "Hardware" and "Firmware" Added base OS, required Patches (of Control Domain)
		5.1.3 (Addition)	Added precautionary statement (SPARC T3-4) regarding hot plugging of PCI Express Module (PEM)
		5.5 Hardware requirement of I/O Domains (Addition)	Added "SPARC T3-4"
		Table 5.7 Support or Not support in PCI Express direct I/O (Modification)	Update the table

Edition	Date	Revised Location (Type) (*1)	Description
04	2011-7-7	All (Modification)	Modified manual number to C120-E618-04EN
		Chapter 1(Addition)	Added "Extended mapin space support for the Oracle Solaris 11 Express OS"
		Chapter 1 (Removal)	- Removed "Oracle VM Server for SPARC Configuration Assistant(GUI)" - Because it has been deleted from Oracle VM Server for SPARC 2.1 or later
		Chapter 2 (Addition)	Added "Please refer to Oracle VM Server for SPARC 2.1 Release notes"
		Table 2.1 No.1,2 (Addition)	Added " Bug information on Oracle VM Server for SPARC 2.1"
		Table 2.2 No.2 (Removal)	Removed "failure-policy" and "MAC address"
		Table 2.2 No.4,5 (Addition) Table 2.3 No.1 Table 2.4 No.1 Table 2.9 No.1,2 Table 2.10 No.1 Table 2.11 No.4 Table 2.13 No.4	Added "This has been fixed in Oracle VM Server for SPARC 2.1 or later"
		Table2.2 No.6,9 (Addition) Table2.8 No.4	Added "Bug ID"
		Table3.1 (Addition)	Added "Notes on Oracle VM Server for SPARC 2.1"
		3.9 (Modification)	Modified Notes for "Autorecovery of configurations on Logical Domains 1.2 or later"
		Table4.1 (Addition)	Added "System requirements for System requirements for Oracle VM Server for SPARC 2.1"
		5.1.5 (Addition)	Added "5.1.5. Precautions regarding the usage of 10GbE QSPF network module (SE4X5XC1G) and Rear I/O module (SE5X9RM1G) with Direct I/O (for SPARC T3-2/T3-4)"
		Table5.7 Support or Not support in PCI Express direct I/O (Modification)	Update the table - Added "6Gbps SAS Card" - Added "Dual 10GbE SFP+ PCIe 2.0 Express Module (PEM)" - Added "10GbE QSFP Network Modules(SPARC T3-2)"

Edition	Date	Revised Location (Type) (*1)	Description
05	2012-2-20	All (Modification)	Modified manual number to C120-E618-05EN
		Preface	Added the fact that it is only valid for Oracle Solaris 10 users
		Chapter 1 (Modification)	Modified functions are not supported
		Table 2.1 No.1,2 Table 2.2 No2,5,6,7 Table 2.5 No.1,3,4 Table 2.6 No.1 Table 2.12 No.1 Recommended Action (Addition)	Added "Bug ID"
		Table 2.1 No.3,4,5 (Addition)	Added "Bug information on Oracle VM Server for SPARC 2.1"
		Table 2.1 No.1 (Addition)	Added "Oracle VM Server for SPARC 2.1 Bug ID"
		Table 2.2 No.1 (Removal)	This bug information has been deleted as the symptom is a feature (wrong recognition)
		Table 2.2 No.4 (Modification)	Modified "Symptom"
		Table 2.2 No.9 (Modification)	Removing the Table 3.2
		Table 2.2 No.10 (Modification)	Removing the Table 3.8
		Table 2.3 No.2 (Addition)	Added Oracle VM Server for SPARC 2.1 patch number
		Table 2.5 No.1 (Modification)	Modified Recommended Action
		Table 2.5 No.5 (Modification)	Removing the Table 3.5
		Table 3.1 No.2 (Addition)	Added Oracle VM Server for SPARC 2.1 patch
		Table 3.5 No.3 (Addition) Table 3.6 No.5 (Addition)	Added Recommended Action
		Table 3.6 No.15 (Modification)	Modified the reference
		Table 3.8 No.2 (Addition)	Added Recommended Action
		Table 4.1 (Addition)	Added Required Patches (Control Domain)
		5.1.5 (Modification)	Modified "Notes on SPARC T3-2/T3-4"
		Table 5.7 Support or Not support in PCI Express direct I/O (Modification)	Added - 10Gigabit Ethernet Card - 10Gigabit Ethernet Card(SPARC T3-1/T3-2) - Rear I/O module
		Table 5.7 Support or Not support in PCI Express direct I/O (Addition)	Added "SE0X7F11F,SE0X7F12F,SE0X7HE1F"

Edition	Date	Revised Location (Type) (*1)	Description
06	2012-10-2	All (Modification)	Modified manual number to C120-E618-06EN
		Preface (Modification)	Added SPARC T4-1/T4-2/T4-4 Modified Oracle VM Server for SPARC 2.2
		Reference Manuals (Addition)	Added “Oracle VM Server for SPARC Version 2.2”
		Chapter 1 (Modification)	Modified the title
		Table 2.1 No.3,4 (Modification)	Added LDoms2.1 Patches
		Table 2.8 No.4 (Modification)	Modified the content bug
		Table 2.8 No.5 (Addition)	Added Bug information for "Autorecovery of configurations”
		Table 2.14 No.2 (Addition)	Removing the “Precautions for the usage of 10GbE QSPF network module (SE4X5XC1G) and Rear I/O module (SE5X9RM1G) with Direct I/O 10GbE QSFP”
		Table 3.1 No.3 (Modification)	Removing the Table 2.1
		Table 4.1 (Addition)	Added "System requirements for System requirements for Oracle VM Server for SPARC 2.2"
		Table 4.2 “Hardware” (Addition)	Added “SPARC T4-1/T4-2/T4-4”
		Table 4.2 “Firmware” (Addition)	Added System Firmware version
		Table 4.2 “Operating System” (Addition)	Added Operating System version and Required Patches
		Table 4.2 and Table 4.3 “Enhanced Support Facility” (Addition)	Added Required Patches
		5.1 (Addition)	Added “Notes on SPARC T4-1/T4-2/T4-4”
		5.6 (Modification)	Added SPARC T4-1/T4-2/T4-4 in Hardware requirement of I/O Domains
		5.7.1 (Addition)	Added “Notes on PCI Express(PCIe) direct I/O (SPARC T4-1/T4-2/T4-4/T3-1/T3-2 /T3-4)”
		Table 5.8 Support or Not support in PCI Express direct I/O (Modification)	Added Onboard LAN (SPARC T4-1/T4-2/ /T4-4)

Preface

- This document explains the outline, instructions on configuration, operation, etc of Oracle VM Server for SPARC (formerly called Logical Domains or LDoms) provided with SPARC T4-1/T4-2/T4-4 and T3-1/T3-2/T3-4 and SPARC Enterprise T5120/T5220/T5140/T5240/T5440. In this document, Oracle VM Server for SPARC is sometimes described as Logical Domains (LDoms).
- In this document, an environment created by the Oracle VM Server for SPARC function is described as a domain or Logical Domains.
- This document is supposed to be read by Oracle VM Server for SPARC 2.2 users, but if functions other than ones added by 2.2 are used, this document may be available for customers who are using Logical Domains 1.3 or older.
- Oracle Solaris is sometimes described as Solaris, Solaris Operating System, or Solaris OS.
- Oracle Solaris 10 is assumed Operating System throughout this document.

Organization of this manual

This document describes the Logical Domains environment in the following framework.

Chapter 1 Supported functions for Oracle VM Server for SPARC 2.2

Nonsupport information in Oracle VM Server for SPARC 2.2.

Chapter 2 Bug Information

The information about bugs occurred in Logical Domains 1.0.2 or newer is explained according to the version.

Chapter 3 Notes Information

The information notes when using Logical Domains are explained according to the version.

Chapter 4 System Requirements

This chapter explains system requirements for Logical Domains Manager.

Chapter 5 Notes on SPARC Enterprise T Series

This chapter explains Logical Domains Operating Environment and configurations in SPARC T4-1/T4-2/T4-4/T3-1/T3-2/T3-4 and SPARC Enterprise T5120/T5220/T5140/T5240/T5440.

Reference Manuals

Documents referential for building Logical Domains are listed below.
If you fail to find a document, search relevant information in the URL below.

http://www.oracle.com/technetwork/indexes/documentation/index.html

Oracle VM Server for SPARC Version 2.2

http://docs.oracle.com/cd/E35434_01/index.html

IMPORTANT INFORMATION FOR THIS RELEASE

- Release Notes

ADMINISTERING ORACLE VM SERVER FOR SPARC 2.2

- Oracle VM Server for SPARC 2.2 Administration Guide

ORACLE VM SERVER FOR SPARC REFERENCE

- Oracle VM Server for SPARC 2.2 Reference Manual

Oracle VM Server for SPARC Version 2.1

http://docs.oracle.com/cd/E23120_01/index.html

IMPORTANT INFORMATION FOR THIS RELEASE

- Release Notes

ADMINISTERING ORACLE VM SERVER FOR SPARC 2.1

- Oracle VM Server for SPARC 2.1 Administration Guide

ORACLE VM SERVER FOR SPARC REFERENCE

- Oracle VM Server for SPARC 2.1 Reference Manual

Oracle VM Server for SPARC 2.0 Version 2.0

http://download.oracle.com/docs/cd/E19608-01/

IMPORTANT INFORMATION FOR THIS RELEASE

- Release Notes

ADMINISTERING ORACLE VM SERVER FOR SPARC 2.0

- Administration Guide

ORACLE VM SERVER FOR SPARC REFERENCE

- Reference Manual

Logical Domains 1.3 Collection

http://download.oracle.com/docs/cd/E19604-01/index.html

- Logical Domains 1.3 Release Notes
- Logical Domains 1.3 Reference Manual
- Logical Domains 1.3 Administration Guide

Logical Domains 1.2 Collection

http://download.oracle.com/docs/cd/E19227-01/index.html

- Logical Domains 1.2 Administration Guide
- Logical Domains 1.2 Release Notes
- Logical Domains 1.2 Reference Manual

Logical Domains (LDoms) 1.1 Documentation

http://download.oracle.com/docs/cd/E19053-01/ldoms.mgr11/index.html

- Logical Domains (LDoms) 1.1 Administration Guide
- Logical Domains (LDoms) 1.1 Release Notes
- Logical Domains (LDoms) 1.1 Man Page Guide

Logical Domains (LDoms) 1.0 Documentation

http://download.oracle.com/docs/cd/E19053-01/ldoms.mgr10/index.html

- Logical Domains (LDoms) 1.0.3 Release Notes
- Logical Domains (LDoms) 1.0.3 Administration Guide
- Logical Domains (LDoms) Manager 1.0.3 Man Page Guide
- Logical Domains (LDoms) 1.0.2 Release Notes
- Logical Domains (LDoms) 1.0.2 Administration Guide

Refer to the following document:

Logical Domains (LDoms) MIB Documentation

http://download.oracle.com/docs/cd/E19053-01/ldoms.mgr10/index.html

- Logical Domains (LDoms) MIB 1.0.1 Release Notes
- Logical Domains (LDoms) MIB 1.0.1 Administration Guide

Logical Domains Manager Software (Official Fujitsu site)

http://www.fujitsu.com/global/services/computing/server/sparcenterprise/products/software/ldoms/

- SPARC Enterprise Oracle VM Server for SPARC Guide

Text Conventions

This manual uses the following fonts and symbols to express specific types of information.

Fonts/symbols	Meaning	Example
AaBbCc	Indicates commands that users enter.	# ls -l <Enter>
Italic	Indicates names of manuals.	See the *System Console Software User's Guide.*
""	Indicates names of chapters, sections, items, buttons, and menus.	See Chapter 4, "Building Procedure."

Syntax of the Command Line Interface (CLI)

The command syntax is described below.

Command Syntax

- A variable that requires input of a value must be enclosed in < >.
- An optional element must be enclosed in [ ].
- A group of options for an optional keyword must be enclosed in [ ] and delimited by |.
- A group of options for a mandatory keyword must be enclosed in { } and delimited by |.

The command syntax is shown in a frame such as this one.

Fujitsu Welcomes Your Comments

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For Users in U.S.A., Canada, and Mexico:
https://download.computers.us.fujitsu.com/

For Users in Other Countries:
http://www.fujitsu.com/global/contact/computing/sparce_index.html

Notice

The contents of this manual may be revised without prior notice.

Contents

Figures and Tables

Figures

Tables

Chapter 1 Supported functions for Oracle VM Server for SPARC 2.2

Notice Fujitsu does not provide the following functions.

- NIU (Network Interface Unit) Hybrid I/O.
- Multi path configuration of a virtual disk.
- Extended mapin space.
- Oracle VM Server for SPARC Configuration Assistant (GUI) not supported even before Oracle VM Server for SPARC 2.0

  Note) Oracle VM Server for SPARC Configuration Assistant (GUI) was deleted from Oracle VM Server for SPARC 2.1 or newer.

Chapter 2 Bug Information

This chapter describes prescriptions for Logical Domains problems. You can refer to the latest version of "Oracle VM Server for SPARC Release Notes", released by Oracle.

- Oracle VM Server for SPARC 2.2 Release Notes

  http://docs.oracle.com/cd/E35434_01/index.html

Bug information for Logical Domains 1.0.2 or later is explained according to the version.

- About bug information classified by version number, please be sure to read the following when you configure logical domains.

  "2.1 Bug information on Oracle VM Server for SPARC 2.1"

  "2.2 Bug information on Oracle VM Server for SPARC 2.0"

  "2.3 Bug information on Logical Domains 1.3 or later"

  "2.4 Bug information on Logical Domains 1.2 or later"

  "2.5 Bug information on Logical Domains 1.1 or later"

  "2.6 Bug Information on Logical Domains 1.0.2 or later"

- About bug information classified by function, please be sure to read the following when you use a function.

  "2.7 Bug information for CPU Power Management Software on Logical Domains 1.2 or later"

  "2.8 Bug information for Auto recovery of configurations on Logical Domains 1.2 or later"

  "2.9 Bug information for Logical Domains Configuration Assistant (ldmconfig) on Logical Domains 1.3 or later"

  "2.10 Bug information for Dynamic Resource Management (DRM) on Oracle VM Server for SPARC 2.0 or later"

  "2.11 Bug information for Dynamic Resource Management (DRM) on Logical Domains 1.3 or later"

  "2.12 Bug information for ZFS on Logical Domains 1.1 or later"

  "2.13 Bug information for Logical Domains P2V Migration Tool on Logical Domains 1.3 or later"

  "2.14 Bug information for System Firmware"

2.1 Bug information on Oracle VM Server for SPARC 2.1

Table 2.1 Bug information on Oracle VM Server for SPARC 2.1

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>When the Control Domain is in Dynamic and Delayed Reconfiguration mode, the "ldm" command fails with "Invalid Response" and produces a core dump if the "inter-vnet-link" property of two or more virtual switches, which were added to the Control Domain, are changed using the "set-vswitch" command and then the "Dynamic and Delayed Reconfiguration" mode was deactivated.
On top of this, when more virtual switches are attempted to be added to the Control Domain, system panic occurs in the Control Domain.
Example)
primary# ldm list
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
primary active -n-cv- UART 16 8G 0.4% 4h 24m
primary# ldm add-vswitch primary-vsw1 primary
primary# ldm add-vswitch primary-vsw2 primary
primary# ldm start-reconf primary
Initiating a delayed reconfiguration operation on the primary domain.
All configuration changes for other domains are disabled until the primary domain reboots, at which time the new configuration for the primary domain will also take effect.
primary# ldm set-vswitch inter-vnet-link=off primary-vsw1

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.
----
primary# ldm set-vswitch inter-vnet-link=off primary-vsw2

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.
----
primary# ldm cancel-operation reconf primary
Invalid response
primary# ldm add-vswitch primary-vsw3 primary
Jul 15 15:07:43 XXXX unix: WARNING: machine_descrip_update: new MD older generation (63) than current MD (64)
Jul 15 15:07:43 XXXX ds: WARNING: MD reload failed
panic[cpu3]/thread=300229d47c0: BAD TRAP: type=31 rp=2a100b532e0 addr=9c4 mmu_fsr=0 occurred in module "genunix" due to a NULL pointer dereference
< snip >
rebooting...</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#7031177.
When the Control Domain is in Dynamic and Delayed Reconfiguration mode, do not change the "inter-vnet-link" property of two or more virtual switches, which are allocated to it. In case it has already been changed, reboot the Control Domain without cancelling the Dynamic and Delayed Reconfiguration mode.
This has been fixed in Oracle VM Server for SPARC 2.1 patch 147507-01 or later.</td></tr>
</table>

<table>
<tr><td rowspan="2">2</td><td>Symptom</td><td>When a Guest Domain is in "inactive" state, the "ldm" command fails with "Invalid Response" and produces a core dump if the "inter-vnet-link" property of the virtual switch allocated to it is changed with the "set-vswitch" command.
Example)
primary# ldm list
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
primary active -n-cv- UART 32 8G 0.1% 3m
ldom1 inactive ------ 32 8G

primary# ldm add-vswitch ldom1-vsw0 ldom1
primary# ldm set-vswitch inter-vnet-link=off ldom1-vsw0
Invalid response</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#7070623.
When changing the "inter-vnet-link" property of the virtual switch allocated to a Guest Domain, please bind the Guest Domain beforehand.</td></tr>
<tr><td rowspan="2">3</td><td>Symptom</td><td>In Oracle Solaris 10 environment, a Logical Domain which has not been earmarked a "whole-core", produces an error message and fails at the time of binding, when the 147507-01 patch of Oracle VM Server for SPARC 2.1 is applied to it, in "inactive" state.
Example)
primary# ldm list-domain -o resmgmt ldom1
NAME
ldom1
primary# ldm list-domain ldom1
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
ldom1 inactive ------ 7 1G
(Installing the patch)
primary# ldm bind-domain ldom1
Requested threading cannot be applied without the whole-core constraint</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#7107548.
The 147507-01 patch for Oracle VM Server for SPARC 2.1 contains single-CPU performance enhancements, as required by BugID#7011573.
For such performance improvement, parameters added for the feature above must be set up on existing Logical Domains using the following commands, after applying this patch.
primary# ldm set-domain threading=max-throughput <Domain Name>
This has been fixed in Oracle VM Server for SPARC 2.1 patch 147507-03 or later.</td></tr>
</table>

<table>
<tr><td rowspan="2">4</td><td>Symptom</td><td>In Oracle Solaris 10 environment, a Logical Domain which has been earmarked a "whole-core" and the Oracle VM Server for SPARC 2.1 patch 147507-01 is applied to it in "inactive" state, shows abnormal behavior and cease to stop when "bound" or "activated".
In this state, if the OS or the ldmd daemon is restarted, the ldmd daemon starts and stops repeatedly and the ldm command cannot be executed.
Example)
primary# ldm list-domain -o resmgmt ldom1
NAME
ldom1
CONSTRAINT
whole-core
max-cores=1
primary# ldm list-domain ldom1
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
ldom1 inactive ------ 8 1G
(patch application)
primary# ldm bind-domain ldom1
primary# ldm start-domain ldom1
primary# ldm list-domain ldom1
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
ldom1 active ------ 5001 8 1G 0.0% 0s
(FLAGS are not properly displayed)</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#7107548.
• Restoration procedure
If the Logical Domain has already been started, please power off the system, and then power it on. The system and recreate the Logical Domain.
• Workaround
If the Logical Domain has not yet been started, please execute the following commands to set the parameters, after applying the aforesaid patch.
primary# ldm set-domain threading=max-throughput <Domain Name>
This has been fixed in Oracle VM Server for SPARC 2.1 patch 147507-03 or later.</td></tr>
</table>

2.2 Bug information on Oracle VM Server for SPARC 2.0 or later

Table 2.2 Bug information on Oracle VM Server for SPARC 2.0 or later

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>The following configuration information is not restored when the configuration information of the Control Domain is restored (ldm init-system).
• PCI Express direct I/O: The status becomes factory-default after the restoration.</td></tr>
<tr><td>Recommended Action</td><td>Please change the parameters below manually after the configuration information of the Control Domain is restored.
• PCI Express direct I/O
If you want to set any value other than factory-default, please change the setting by the ldm add-io, ldm remove-io, and ldm set-io commands.</td></tr>
<tr><td rowspan="2">2</td><td>Symptom</td><td>If I/O device (not PCI bus) is added to a domain (*1) that is resource binding state(bound) and not running with the "ldm add-io" command, the domain may not be able to be started (*2). Even if the domain starts, it may not be stopped.
*1) When you see the state with the "ldm list-domain" command, "bound" is displayed in "STATE" column for the domain.
*2) After the domain is started with the "ldm start-domain" command, nothing is displayed even if you connect to the console.
Moreover, when you see the state of the domain with the "ldm list-domain" command, "------" is displayed in "FLAGS" column.
Example)
primary# ldm list-domain ldom01
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
ldom01 bound ------ 5000 16 8G
*) Domain that is bound and not running
primary# ldm add-io <I/O device> ldom01 *) I/O device is added
primary# ldm start-domain ldom01
LDom ldom01 started
primary# ldm list-domain ldom01
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
ldom01 active ------ 5000 16 8G 0.0% 0s
*) "------" is displayed in "FLAGS" column
primary# ldm stop-domain ldom01
LDom ldom01 stop notification failed
*) Even domain cannot be stopped</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6970974.
This has been fixed in System Firmware 7.3.0 or later.
When you add I/O devices to a domain (excluding the Control Domain) with the "ldm add-io" command, make sure that resources are unbound from a logical domain.
Example)
primary# ldm list-domain ldom01
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
ldom01 bound ------ 5000 16 8G
primary# ldm unbind-domain ldom01 *) unbind the domain
primary# ldm add-io <I/O device> ldom01
If this symptom occurs, unbind all domains excluding the Control Domain and the domain where this symptom occurs, and then reboot the Control Domain. After booting the Control Domain, the problematic domain is automatically booted, and operations of the domain become possible.</td></tr>
</table>

<table>
<tr><td rowspan="2">3</td><td>Symptom</td><td>If you restore a Guest Domain using XML file, and there is a difference in parameters for maximum number of cores which can be set in logical domains (max-cores) and the number of cores restored, the number of virtual CPUs is not restored correctly.
Example)
When the number of threads per one core is eight, if you restore ldom1, sixteen virtual CPU (VCPU)s are restored.
<pre># ldm list-domain -o resmgmt
  :
NAME
ldom1

CONSTRAINT
    whole-core
    max-cores=2

ldm list-domain
NAME   STATE   FLAGS   CONS   VCPU MEMORY   UTIL UPTIME
primary   active   -n-cv- SP   16   2432M   0.2% 4m
ldom1   active   -n---- 5001   8   10624M   0.3% 16h 25m</pre></td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6977065.
Please change the number of virtual CPUs manually (by the ldm command) after restoring the configuration information of the Guest Domain.
This has been fixed in Oracle VM Server for SPARC 2.1 or later.</td></tr>
<tr><td rowspan="2">4</td><td>Symptom</td><td>If you specify extremely large number such as 2147483647 for the number of cores when you add, remove, or set a virtual CPU with the -c option, the following problem occurs.
The ldmd daemon may output core dump.
Number of the virtual CPU (VCPU) does not appear in the output when run, ldm list-domain etc.</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID# 7018662.
For the number of cores, please specify a value that does not exceed the number of cores in the server.
This has been fixed in Oracle VM Server for SPARC 2.1 or later.</td></tr>
<tr><td rowspan="2">5</td><td>Symptom</td><td>When you execute virtinfo(1M) in an I/O domain to which only PCIe end point device is allocated, "root" that means Root I/O domain is displayed as "Domain role" though the I/O domain is not Root I/O domain.
Example)
<pre># virtinfo
Domain role: LDoms guest I/O root</pre></td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#7010446.
This has been fixed in 146486-03 or later.
It is impossible to distinguish between Root I/O domain and another domain by using virtinfo(1M) if unpatched.</td></tr>
</table>

<table>
<tr><td rowspan="2">6</td><td>Symptom</td><td>The following report is created in Guest Domains in SPARC T3 systems every time the domains are rebooted or the fmd daemon(/usr/lib/fm/fmd/fmd) is restarted.

<pre>ldom1# fmdump -eV
TIME   CLASS
Jan 04 2011 13:03:40.957565714 ereport.fm.fmd.module nvlist version:
0
       version = 0x0
       class = ereport.fm.fmd.module
       detector = (embedded nvlist)
       nvlist version: 0
              version = 0x0
              scheme = fmd
              authority = (embedded nvlist)
              nvlist version: 0
                     version = 0x0
                     product-id = sun4v
                     server-id = ldom1
              (end authority)

              mod-name = disk-transport
              mod-version = 1.0
       (end detector)

       ena = 0x35deb7b553903c01
       msg = failed to get topology: empty topology
       _ttl = 0x1
       _tod = 0x4d229c1c 0x39134b12</pre>

There is a case that the problem happened with the following condition:
1) A Guest Domain is created in a SPARC T3 system, and
2) Any of the following two operations is executed:
2-1) To boot OS in the Guest Domain, or
<pre>ok> boot</pre>
2-2) To restart the fmd daemon in the Guest Domain, or
<pre>ldom1# svcadm restart svc:/system/fmd:default</pre>

This problem happens only in Guest Domains, but not in the Control Domains.</td></tr>
<tr><td>Recommended Action</td><td>This symptom corresponds to Oracle Bug ID#6983193.
The report doesn't affect the system. Please ignore the report.
This has been fixed in 146804-01 or later.</td></tr>
</table>

<table>
<tr><td rowspan="2">7</td><td>Symptom</td><td>
In SPARC T3 servers, when the feature of Server Power Limit (or Server Power Budget) is enabled in ILOM while the server is powered on, there is a case that the status of Power Budget becomes "violation" and then suddenly the power of the server goes off though the value of the actual power is under the upper limit.
Once the problem happens, the server can't be started.
e.g.)
This problem happened with the following settings.
Information in ILOM:
<pre>
/SP/powermgmt/budget
   Targets:

   Properties:
       activation_state = enabled
       status = violation
       powerlimit = 768 (watts)
       timelimit = 0
       violation_actions = hardpoweroff
       min_powerlimit = 372
       pendingpowerlimit = 768 (watts)
       pendingtimelimit = 0
       pendingviolation_actions = hardpoweroff
       commitpending = (Cannot show property)

   Commands:
       cd
       set
       show
</pre>
• The value of "allocated_power" was 1085, and the value of "actual_power" when the budget got enabled was 283.
<pre>
-> show /SP/powermgmt
     :
  Properties:
      actual_power = 283
     :
      allocated_power = 1085
     :
</pre>
• "powerlimit" was set to a value more than double the value of "actual_power" and lower than the value of "allocated_power."
• "timelimit" was set to 0 (or none).
• "violation_actions" was set to "hardpoweroff."
<pre>
-> set /SP/powermgmt/budget pendingpowerlimit=768
-> set /SP/powermgmt/budget pendingtimelimit=none
-> set /SP/powermgmt/budget pendingviolation_actions=hardpoweroff
-> set /SP/powermgmt/budget commitpending=true
</pre>
- "activation_state" was set to "enabled."
<pre>
-> set /SP/powermgmt/budget activation_state=enabled
</pre>
</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#7009245.
When you use the feature of Server Power Limit (or Server Power Budget), please set "powerlimit" to 1 or more.</td></tr>
</table>

<table>
<tr><td rowspan="2">8</td><td>Symptom</td><td>The following error message is output when about 500 virtual CPUs are deleted at a time from a Guest Domain on a SPARCT3-4 server with no load.
Example)
primary # ldm list-domain
NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME
primary active -n-cv- UART 8 8G 7.7% 25m
ldom1 active -n---- 5001 504 64G 0.0% 22m
primary# ldm remove-vcpu 503
Request to remove cpu(s) sent, but no valid response received VCPU(s) will remain allocated to the domain, but might not be available to the guest OS
When a lot of virtual CPUs are deleted at a time, this symptom may occur. If the target domain is under a heavy load, this symptom might occur even when a smaller number of CPUs are deleted at a time.</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6994984.
The following information may be unmatched between the Control Domain (output of 'ldm list') and the Guest Domain.
• Number of virtual CPUs in the Guest Domain
• Percentage of virtual CPU usage in the Guest Domain
The above unmatch can be fixed by executing some operation on the virtual CPUs.
Please execute either of the following procedures when deleting a lot of virtual CPUs at a time.
Moreover, if this symptom occurs, please execute either of the following procedures again, in order to delete virtual CPUs.
• Delete the number of virtual CPUs by small number of virtual CPUs and repeat the procedure. Do not delete a large number of virtual CPU at a time.
• Delete virtual CPUs after stopping the target Guest Domain. Dynamic reconfiguration is not recommended.</td></tr>
<tr><td rowspan="2">9</td><td>Symptom</td><td>After booting up the Control Domain, if the "-a", "-c" and "-s" options of the virtinfo(1M) command have never been executed on the Control Domain, but have been executed on any other domain, the network name and platform serial number of the Control Domain are not displayed and "Unknown" is displayed instead.
Moreover, excessive time is required to process the virtinfo(1M) command.
The "-a" option requires 30 seconds, the "-c" and "-s" options require 15 seconds each.
Example)
virtinfo -a
Domain role: LDoms guest
Domain name: ldom1
Domain UUID: 7eb2ef30-d4fc-c8b2-e9a4-8eee27f5d887
Control domain: Unknown
Chassis serial#: Unknown</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6943493.
An workaround to this problem is to execute the "-a", "-c" and "-s" options of the virtinfo(1M) command on the Control Domain after every booting of the system.
You must execute commands above before executing them on any other domains.
This has been fixed in 146858-01 or later.</td></tr>
</table>

<table>
<tr><td rowspan="2">10</td><td>Symptom</td><td>After deleting a VCPU having the VID (Virtual CPU ID) 0 from a domain, if further VCPUs are added to it, the flag in the second column of the FLAGS field shows "t" (switching state) instead of "n" (usual state), in the output of the "ldm list-domain" command or the "ldm list-bindings" command.
<pre>primary# ldm list-domain
NAME   STATE   FLAGS   CONS   VCPU   MEMORY   UTIL UPTIME
primary   active   -t-cv- SP   17   3872M   27%   16m</pre>
The Control Domain is displayed in switched state.</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6961910.
This is a display related problem and has no effect on the functioning of the system. Please reboot the Control Domain for a proper display.
This has been fixed in 144500-19 or later.</td></tr>
</table>

2.3 Bug information on Logical Domains 1.3 or later

Table 2.3 Bug information on Logical Domains 1.3 or later

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>If the following operations are executed in the order below, the ldm daemon produces core file at the interval of every few seconds. Moreover, due to this problem, the ldm command (and all of its sub-commands) cannot be used.
1) When the Control Domain is in a delayed reconfiguration state or has migrated to a delayed reconfiguration state, the network device had not yet been configured and then, network device is configured on the virtual switch of the Control Domain and the linkprop property's phys-state is configured simultaneously.
2) Delayed reconfiguration state is cancelled.
Example)
<code># ldm add-vswitch < virtual switch name> primary</code>
<code># ldm set-vswitch net-dev=< network device name> linkprop=phys-state < name of virtual switch></code>
<code>Initiating a delayed reconfiguration operation on the primary domain. All configuration changes for other domains are disabled until the primary domain reboots, at which time the new configuration for the primary domain will also take effect.</code>
<code># ldm cancel-operation reconf primary</code>
• After this, the ldm daemon creates core files at intervals of every few seconds.
• Moreover, at this point, if the ldm command is executed, the following error message is displayed and this command cannot be used.
(The following is only an example of a certain command. All ldm commands cease to work)
<code># ldm list -o network primary
Invalid response</code></td></tr>
<tr><td>Recommended Action</td><td>This symptom corresponds to the Oracle Bug ID #7019282.
Workaround to this problem is as follows.
If the linkprop property of the Control Domain's virtual switch is to be set to "phys-state", execute one of the following procedures:
• When adding a virtual switch with the "ldm add-switch" command, set up the network device (net-dev) and the linkprop property simultaneously.
<code># ldm add-vswitch net-dev=< network device name> linkprop=phys-state < virtual switch name></code>
• After changing the network device (net-dev) of a virtual switch with the "ldm set-vswitch" command, restart the Control Domain and configure only the linkprop property of the virtual switch.
<code># ldm set-vswitch net-dev=< network device name> < virtual switch name></code>
• Restart Control Domain.
<code># ldm set-vswtich linkprop=phys-state < virtual switch name></code>
Handling in case of Occurrence)
If this problem has occurred, please power off the system, and then power it on.
This has been fixed in Oracle VM Server for SPARC 2.1 or later.</td></tr>
</table>

<table>
<tr><td rowspan="2">2</td><td>Symptom</td><td>
If the following operations are executed in that order, configuration of the linkprop property of the virtual switch fails and ldmd produces core files.
1) When the Control Domain is in a delayed reconfiguration state or has migrated to a delayed reconfiguration state, the network device on the virtual switch of the Control Domain is either configured or its configuration is changed.
2) Configure the linkprop property of the virtual switch as "phys-state".
Example)
<pre># ldm add-vswitch <virtual switch name> primary
ldm set-vswitch net-dev=<network device name> <virtual switch name>
Initiating a delayed reconfiguration operation on the primary domain.
All configuration changes for other domains are disabled until the
primary domain reboots, at which time the new configuration for the
primary domain will also take effect.</pre>
• ldmd produced core file like the following example, after the configuration of linkprop property failed:
<pre># ldm set-vsw linkprop=phys-state <virtual switch name>
Mar 1 15:05:54 XXXX genunix: NOTICE: core_log: ldmd[xxxx] core dumped: /var/core/ldmd.xxxx.XXXX
Invalid response</pre>
• The following shows that "phys-state" had not been set up in the linkprop property:
<pre># ldm list -o network
      <snip>
NAME MAC   NET-DEV ID DEVICE   LINKPROP DEFAULT-VLAN-ID PVID VID MTU MODE
<*1> <*2> <*3>   1   switch@x   1   1   1500

      <snip></pre>
*1) "virtual switch name" is output
*2) "MAC address" is output
*3) "Network Device Name" is output
</td></tr>
<tr><td>Recommended Action</td><td>
This symptom corresponds to Oracle Bug ID #7031177.
Workaround to this problem is as follows.
If the linkprop property of the Control Domain's virtual switch is to be set to "phys-state", execute one of the following procedures:
• When adding a virtual switch with the "ldm add-switch" command, configure the network device (net-dev) and the linkprop property simultaneously.
<pre># ldm add-vswitch net-dev=<network device name> linkprop=phys-state <virtual switch name></pre>
• After changing the network device (net-dev) of a virtual switch with the "ldm set-vswitch" command, restart the Control Domain and configure only the linkprop property of the virtual switch.
<pre># ldm set-vswitch net-dev=<network device name> <virtual switch name></pre>
• Restart Control Domain.
<pre># ldm set-vswtich linkprop=phys-state <virtual switch name></pre>
Handling in case of Occurrence)
The occurrence of this symptom is an indication that "phy-state" had not been configured in the linkprop property. To set up "phys-state" in the linkprop property, please follow the procedures described in the <Workaround> above.
This has been fixed in Oracle VM Server for SPARC 2.0 patch 147507-01 or later.
</td></tr>
</table>

2.4 Bug information on Logical Domains 1.2 or later

Table 2.4 Bug information on Logical Domains 1.2 or later

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>When with the Control Domain in delayed reconfiguration mode Virtual CPUs are reconfigured several times with any of the following commands, the ldmd daemon may output a core dump.
"ldm add-vcpu" command (Addition of the virtual CPU)
"ldm remove-vcpu" command (Deletion of the virtual CPU)
"ldm set-vcpu" command (Setting of the virtual CPU)
The ldmd daemon is rebooted automatically.

Example)
<pre># ldm set-memory 2G primary
Initiating delayed reconfigure operation on Ldom primary. All configuration changes for other LDoms are disabled until the Ldom reboots, at which time the new configuration for Ldom primary will also take effect.
ldm list-domain
NAME   STATE   FLAGS   CONS VCPU MEMORY UTIL UPTIME
Primary   active   -ndcv- SP   8   1G   0.0% 1h 1m
ldom1   inactive ------   4   2G
ldom2   inactive ------   8   1G

ldm set-vcpu 1 primary
Notice: Ldom primary is in the process of a delayed reconfiguration.
Any changes made to primary will only take effect after it reboots.
ldm set-vcpu 2 primary
Aug 13 16:12:16 XXXXXX genunix: NOTICE: corelog: ldmd[2053] core dumped: /var/core/core_XXXXXX_ldmd_0_0_1250147534_2053
Invalid response</pre>
Moreover, when this symptom occurs, the following message is output into the /var/svc/log/ldoms-ldmd:default.log file.
Fatal error: (4) Reconfiguring the HV (FIXME: do warmstart)</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6697096.
When you add, remove, or set the virtual CPU for multiple time for the Control Domain in the Delayed Reconfiguration Mode, please reboot the Control Domain whenever you do such operation. When this symptom occurs, please reboot the Control Domain and perform the virtual CPU operation again.
This symptom does not occur in Oracle VM Server for SPARC 2.1 or newer because multiple virtual CPU operations cannot be executed on a Control Domain in "Dynamic and Delayed Reconfiguration" mode.</td></tr>
</table>

<table>
<tr><td rowspan="2">2</td><td>Symptom</td><td>If the following operation to virtual I/O devices is performed while OS is not running in the active Guest Domain, the domain may enter the delayed reconfiguration mode instead of resulting in error.
• Any of mac-addr, net-dev, mode, or mtu is specified with the set-vsw subcommand.
• Either mode or mtu is specified with the set-vnet subcommand.
• Timeout is specified with the set-vdisk subcommand.
The following messages mean the delayed reconfiguration.
<pre>Initiating delayed reconfigure operation on <domain_name>.
All configuration changes for other Logical Domains are disabled until the Ldom reboots, at which time the new configuration for Ldom <domain_name> will also take effect.</pre></td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6852685.
This has been fixed in Logical Domains 1.3.
Use the following command to check which domain is in the delayed reconfiguration.
<pre># ldm list-domain
NAME   STATE   FLAGS   CONS VCPU MEMORY UTIL UPTIME
primary active -n-cv- SP   8   4G   0.6% 52m
ldom1   active -nd--- 5001 16   1920M   0.0% 36m</pre>Notes) If "d" is displayed in the third row of FLAGS of a target domain, it means the delayed reconfiguration mode.
• If the domain is in the reconfiguration mode after specifying options except for mtu, please execute the following operation.
- If set-vsw,set-vnet, or set-vdisk sub-command is required to be usable, reboot the Guest Domain.
- If ldom cancel-operation reconf command is used for cancelling an operation, please follow operations below.
1. Cancel the delayed reconfiguration by using ldm cancel-operation reconf command.
<pre># ldm cancel-operation reconf <domain_name></pre>2. After stopping the domain to be changed, perform operation to virtual I/O devices again and boot the domain.
• If mtu was specified, please see relevant notice for changing mtu(Item No.3 below.) please see the item 3.</td></tr>
</table>

<table>
<tr><td rowspan="2">3</td><td>Symptom</td><td>
The delayed reconfiguration state get cancelled, but the properties of the virtual switch or the virtual network device may not be cancelled under the conditions below.
- The following properties was changed after the delayed reconfiguration state is cancelled, and
- Virtual switches with the "ldm set-vswitch" or the "ldm set-vnet" commands respectively, or
- Virtual network devices with the "ldm set-vswitch" or the "ldm set-vnet" commands respectively
- Either one of conditons below is matched
- The Control Domain OS is in a delayed reconfiguration, or,
- The Control Domain OS has migrated to a delayed reconfiguration
Example)
<pre># ldm add-vswitch net-dev=<network device name> <virtual switch name> primary
ldm list -o network
     :
   <snip>
     :
NAME MAC NET-DEV ID DEVICE   LINKPROP   DEFAULT-VLAN-ID PVID VID MTU MODE
<*1> <*2> <*3>   1   switch@x   1   1   1500
     :
   <snip>
     :
ldm set-vswitch mtu=3000 <virtual switch name>
Initiating a delayed reconfiguration operation on the primary domain.
All configuration changes for other domains are disabled until the
primary domain reboots, at which time the new configuration for the
primary domain will also take effect.
ldm cancel-operation reconf primary</pre>
- The mtu configuration does not revert to the first value, like the following example:
<pre># ldm list -o network
     :
    < snip>
     :
NAME MAC NET-DEV ID DEVICE   LINKPROP DEFAULT-VLAN-ID PVID VID MTU MODE
<*1> <*2> <*3>   1   switch@x   1   1   3000
     :
  < snip>
     :</pre>
*1)"virtual switch name" is output
*2)"MAC address" is output
*3)"Network Device Name" is output
</td></tr>
<tr><td>Recommended Action</td><td>
This problem corresponds to Oracle BUG ID #6936833.
Workaround)
There is no workaround
Handling in case of Occurrence)
If you want to revert to the parameters values before the change took place, use the "ldm set-vswitch" and "ldm set-vnet" commands to revert the properties of virtual switch and virtual network device respectively to the values before the change.
Example)
<pre># ldm set-vswitch mtu=1500 <virtual switch name></pre>
If it had been migrated to delayed reconfiguration state, please restart the corresponding domain.
</td></tr>
</table>

<table>
<tr><td rowspan="2">4</td><td>Symptom</td><td>"ldm add-{vdisk | vnet | vsw}" command executes with illegal id value causes unexpected phenomenon like an example below:
Example 1) Wrong message is displayed.
ldm add-vdisk id=abcd vdisk3 Vol1@primary-vds0 ldoma3
Id already exists
Example 2) Wrong id is set.
ldm add-vdisk id=12abc12 vdisk3 Vol1@primary-vds0 ldoma3
ldm list-domain -o disk ldoma3
NAME
ldoma3

DISK
NAME VOLUME TOUT ID DEVICE SERVER MPGROUP
<...>
vdisk3 Vol1@primary-vds0 12 disk@12 primary</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6858840.
Please set a natural number to id option of ldm command.
This is fixed in Logical Domains 1.3.</td></tr>
<tr><td rowspan="2">5</td><td>Symptom</td><td>When vnet, vsw, or vdisk to which no device ID is allocated exists at the time of application of Logical Domains Manager 1.2 Patch 142840-04, the following error message may be output by performing resource binding (bind) against a Guest Domain.
Id already exists
Also ID is duplicated as the following example (vnet).
ldm list-domain -l
:
NETWORK
NAME SERVICE ID DEVICE MAC MODE
vnet1 primary-vsw0 0 00:14:4f:fa:a6:f2 1
vnet2 primary-vsw1 0 00:14:4f:f9:b0:59 1</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6904638.
When you use Logical Domains Manager 1.2 Patch 142840-04, please unbind the binding of resources in all Guest Domains beforehand.
When you add vnet, vsw, or vdisk, please bind resources in all Guest Domains after applying the patch, and then add the new definitions for vnet, vsw, or vdisk.
If this issue occurs, remove vnet, vsw, or vdisk that were already defined before Logical Domains Manager 1.2 Patch 142840-04 is applied and to which no device ID is allocated. After such removal, define the removed definitions again.
This problem can be resolved from Logical Domains 1.3 or later</td></tr>
<tr><td rowspan="2">6</td><td>Symptom</td><td>The following message may be on screen after Solaris OS in the Control Domain is booted.
WARNING: ds_ucap_init: ds_loopback_set_svc err (16)</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6813225.
This is fixed in patch 139983-04 or later. Please apply the patch.</td></tr>
</table>

<table>
<tr><td rowspan="2">7</td><td>Symptom</td><td>If you set id option for adding or setting virtual I/O devices to the value greater than 9999, the ldmd process may create a core dump.</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6920988.
Please set id option to the value less than 9999.</td></tr>
<tr><td rowspan="2">8</td><td>Symptom</td><td>If you perform a dry run in migration to a domain to which a device in the virtual disk server is added, the ldmd daemon of the target system outputs a 'core' file, and an improper domain is created in the target system.
• Console log of the Control Domain of the source system.
<pre>primary# ldm list-domain ldom01
<...>
VDS
NAME   VOLUME OPTIONS MPGROUP   DEVICE
ldom01-vds0 vol1   /LDoms/Vol1/vdisk1.img
primary# ldm migrate-domain -n ldom01 <IP address of the Control Domain of the target system></pre>
• Console log of the Control Domain of the target system.
<pre>primary# ldm list-domain
NAME   STATE   FLAGS   CONS   VCPU MEMORY   UTIL UPTIME
primary   active   -n-cv- SP   16   4G   0.1% 1d 16m
primary# Jul 28 14:05:20 server genunix: NOTICE: core_log: ldmd[nnnnn] core dumped: /var/tmp/ldmd.nnnnn.server(*1)
primary# ldm list-domain
NAME   STATE   FLAGS   CONS   VCPU MEMORY   UTIL UPTIME
primary   active   -n-cv- SP   16   4G   0.1% 1d 16m
ldom01(*2) inactive</pre>
*1) The ldmd daemon in the target system outputs a 'core' file.(The ldmd daemon is rebooted automatically.)
*2) The improper domain - ldom01 has been created in the target system.</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6988211.
No workaround is available for this symptom. Please do not perform a dry run in migration to a domain to which a device in the virtual disk server is added.
If this symptom occurs, remove the domain created improperly in the target system.
<pre>primary# ldm remove-domain <The name of the domain created improperly></pre>
This has been fixed in Oracle VM Server for SPARC 2.0 patch 145880-01 or later.</td></tr>
</table>

2.5 Bug information on Logical Domains 1.1 or later

Table 2.5 Bug information on Logical Domains 1.1 or later

1	Symptom	After the migration of an active domain, the "UPTIME" for the migrated domain is displayed as an abnormal value (e.g. "183205d 10h"), when "ldm list", "ldm list-domain" or "ldm list-bindings" commands are executed.
	Recommended Action	This issue corresponds to Oracle Bug ID#6774641. This has been fixed in System Firmware version 7.2.6 or later. This does not affect the Guest Domain and could be ignored.
2	Symptom	When "ldm migrate" command fails, an improper domain may be created in the target server. Please see a few examples below. **Example 1)** When the target server falls in a delayed reconfiguration during the dry run. **Example 2)** When a network connection between source and target is broken during the active domain migration. **Example 3)** When the inactive domain migration occurs while a network connection between source and target is not established.
	Recommended Action	**Regarding Example 1:** This issue corresponds to Oracle Bug ID#6787570. During the dry run, please do not execute the operation that activates the reconfiguration. If the migration fails, get rid of the cause of the failure in the first place. Then, please remove domains created in the target server manually. **Regarding Example 2 and 3:** If the migration fails, please get rid of the cause of the failure such as network trouble. After that, please take the steps below. • Remove the source domain manually if the target domain is resumed. In other cases, remove both source and target domains manually, and rebuild the source domain in the source server.
3	Symptom	The following message is output from "Logical Domains (LDoms) 1.1 Administration Guide". "You cannot migrate a logical domain that has bound cryptographic units. Attempts to migrate such a domain fail." However, when number of VCPU is 1, this migration does not fail.
	Recommended Action	This was an errata of "Logical Domains (LDoms) 1.1 Administration Guide". In Logical Domains 1.1, you can migrate an active domain binding cryptographic units if the domain has one VCPU. This phenomenon corresponds to Oracle Bug ID#6843096. "6843096 LDoms document info is not accurate in customer environment" Meanwhile, on Logical Domains 1.3 or newer versions, migration is possible even in the case of multiple VCPUs.

4	Symptom	If you execute 'ldm start' or 'ldm stop' or commands which perform Dynamic Reconfiguration of the virtual disk during the execution of Dynamic Reconfiguration of a virtual disk, the ldmd may dump core and terminate abnormally.
	Recommended Action	This issue corresponds to Oracle Bug ID#6825741. This has been fixed in Oracle VM Server for SPARC 2.0 or later. When you execute any of commands (add-vds, add-vdsdev, add-vdisk, rm-vds, rm-vdsdev, rm-vdisk) which perform Dynamic Reconfiguration of the virtual disk, please do not execute 'ldm start' or 'ldm stop' or commands (add-vds, add-vdsdev, add-vdisk, rm-vds, rm-vdsdev, rm-vdisk) which perform Dynamic Reconfiguration of the virtual disk.

5	Symptom	When you try to set the virtual console option for the Control Domain with "ldm set-vcons", the ldmd daemon outputs a core dump. The ldmd daemon is rebooted automatically.
		Example)
		`# ldm set-vcons port=5004 primary`
		`Sep 2 11:50:26 XXXXXX genunix: NOTICE: core_log: ldmd[526] core dumped: /var/core/core_XXXXXX_ldmd_0_0_1251859823_526`
		`Invalid response`

	Recommended Action	This issue corresponds to Oracle Bug ID#6964708. The "ldm set-vcons" command can be used only in domains from which resources have been released. Please do not use it in the Control Domain. This symptom does not occur in Oracle VM Server for SPARC 2.1 or newer. In Oracle VM Server for SPARC 2.1, the following messages are output: `# ldm set-vcons port=5004 primary` **`The control domain primary does not have a virtual console`**

2.6 Bug Information on Logical Domains 1.0.2 or later

Table 2.6 Bug information on Logical Domains 1.0.2 or later

1	Symptom	When booting the Solaris OS in the Guest Domain, a panic sometimes occurs in [recursive mutex_enter]. This bug occurs when four or more Guest Domains are built.
	Recommended Action	This issue corresponds to Oracle Bug ID#6639934. This has been fixed in 127127-11 or later. Reboot the Solaris OS of the corresponding Guest Domain when the error occurs. This does not affect the Control Domain or the other Guest Domains.
2	Symptom	If virtual CPUs are repeatedly added/removed by using dynamic reconfiguration to/from a domain, the domain may panic.
	Recommended Action	This issue corresponds to Oracle Bug ID#6883476. Do not add/remove virtual CPUs by using dynamic reconfiguration (such as by using a shell script) repeatedly to/from a domain. If this symptom occurs, reboot Solaris OS of the domain. This has been fixed in Oracle Solaris10 9/10 OS or later.

2.7 Bug information for "CPU Power Management Software on Logical Domains 1.2 or later"

To use CPU Power Management Software, you need to apply 142840-04 or later that is a Logical Domains 1.2 patch

Table 2.7 Bug information for "CPU Power Management Software on Logical Domains 1.2 or later"

1	Symptom	While a break is in process of execution on the console of a Guest Domain when CPU Power Management is enabled, the ldm(1M) command may give no response on the Control Domain.
		(Guest Domain's console)
		Break with ~#
		`# Debugging requested; hardware watchdog suspended.`
		`c)ontinue, s)ync, r)eset?`
		`(Control Domain)`
		`primary# ldm list-domain`
		`No response condition`

	Recommended Action	This issue corresponds to Oracle Bug ID#6875401. This has been fixed lcd driver patch in 143119-02 or later. When this symptom occurs, please follow operations below. 1) Select any of 'continue', 'sync', or 'reset' to cancel the break condition on the console of the Guest Domain. 2) Recover the ldm(1M) command from the no response condition by using Ctrl+C.

2.8 Bug information for "Autorecovery of configurations on Logical Domains 1.2 or later"

Table 2.8 Bug information for "Autorecovery of configurations on Logical Domains 1.2 or later"

1	Symptom	When specifying "3" to "autorecovery_policy" property of ldmd SMF service, restoring the configuration might failed.
	Recommended Action	This issue corresponds to Oracle Bug ID#6839844. Do not specify "3" to "autorecovery_policy" property of ldmd SMF service. This has been fixed in Logical Domains 1.3.
2	Symptom	The new configuration is created by changing the configuration information shortly after deleting autosave configuration information, but [newer] is not displayed on the right side of the name of the new configuration. Moreover, despite restarting the ldmd SMF service, it does not work in accordance with the "autorecovery_policy" property setting.
	Recommended Action	This issue corresponds to Oracle Bug ID#6888351. In order to restore the configuration, execute "ldm add-spconfig -r" to conform the configuration saved in the SP to the autosave configuration. This has been fixed in Logical Domains 1.3.

3	Symptom	Although you remove the configuration information (ldm remove-spconfig) after a command error as described below occurs, the configuration information created in the system controller (test1 in the following example) may not be removed.
		
		`primary# ldm add-spconfig -r test1 test2`
		`Error: Operation failed because a configuration`
		`named "test2" already exists on the system controller.`
		`Before being able to save a new configuration with`
		`this name the existing one must be removed`
		
		`primary# ldm remove-spconfig test1`
		`primary# ldm list-spconfig`
		`factory-default`
		`test1`
		`test2 [current]`

	Recommended Action	This issue corresponds to Oracle Bug ID#7006650. When you remove the configuration information of auto-saved configuration data specified by the command resulted in error (test1 in the example of <Symptom>), re-execute the ldm remove-spconfig command.
4	Symptom	After adding configuration information (with the "ldm add-spconfig" command) of a logical domain, if the configuration information is changed again, "newer" does not appear at the right of the automatically saved configuration information name, when the "ldm list-spconfig -r" command is executed.
	Recommended Action	This symptom corresponds to Oracle Bug ID#7062644 As this is only a display problem, which does not affect system performance, please ignore it.

5	Symptom	After adding configuration information (with the "ldm add-spconfig" command) of a logical domain, if the configuration information is changed again, all automatically saved configuration information cease to be displayed.
		
		`primary# ldm add-spconfig test1; ldm add-vcpu 8 ldoma1`
		`primary# ldm list-spconfig -r`
		`test1`
		`  :`
		(Ten minutes or so have passed)
		`  :`
		`primary# ldm list-spconfig -r`
		`No autosave configurations`

	Recommended Action	After adding the configuration information of a logical domain (ldm add-spconfig), please wait for a certain time before the configuration change. This symptom does not occur on Oracle VM Server for SPARC 2.0 or newer.

2.9 Bug information for "Logical Domains Configuration Assistant (ldmconfig) on Logical Domains 1.3 or later"

Table 2.9 Bug information for "Logical Domains Configuration Assistant (ldmconfig) on Logical Domains 1.3 or later"

1	Symptom	A virtual disk device is created in the particular directory (/ldoms/disks).
	Recommended Action	This issue corresponds to Oracle Bug ID#6848114. The destination directory for storage of the virtual disk device cannot be changed. Please do the following workaround before executing 'ldmconfig'. 1) Create a directory which will be used as a virtual disk directory. `# mkdir -p /ldoms/disks` 2) Mount enough blank area for storage of the virtual disk. `# mount /dev/dsk/c1t0d0s7 /ldoms/disks` *) * In this example, /dev/dsk/c1t0d0s7 are mounted. This has been fixed in Oracle VM Server for SPARC 2.1 or later.
2	Symptom	The "-c" option of the Logical Domains Configuration Assistant (ldmconfig(1M)) does not work.
	Recommended Action	This issue corresponds to Oracle Bug ID#69622142. Please don't use "-c" option. This has been fixed in Oracle VM Server for SPARC 2.1 or later.
3	Symptom	Logical Domains Configuration Assistant (ldmconfig(1M)) assigns 8 VCPU to the Control Domain.
	Recommended Action	This issue corresponds to Oracle Bug ID#6923698. This limits the maximum number of vcpus for Guest Domains to the total number of vcpus present in the system minus eight for the Control Domain. If you want to change the number of vcpus of Control Domain and Guest Domain, please use the ldm(1M) command after finishing the Logical Domains Configuration Assistant(ldmconfig(1M)). `# ldm set-vcpu 4 primary` This has been fixed in Oracle VM Server for SPARC 2.0 or later.

2.10 Bug information for "Dynamic Resource Management (DRM) on Oracle VM Server for SPARC 2.0 or later"

Table 2.10 Bug information for "Dynamic Resource Management (DRM) on Oracle VM Server for SPARC 2.0 or later"

1	Symptom	In case of the following conditions, the number of virtual CPUs in Guest Domain may not revert to the previous number, before being started by DRM. 1) Before DRM starts, the state of any DRM policies in the Guest Domain remains "running". 2) Two or more Guest Domains have been created and OS have been started, and 3) Among the Guest Domains which match condition 2), the stop time (tod-end) of two or more Guest Domains have been registered by the same DRM policy, and 4) Among the DRM policies of condition 3), two or more DRM policies have the status of 'running', and the stop time (tod-end) has approached. The status of the DRM policy can be ascertained by the STATUS field of the output of the "ldm list -o resmgmt" command.
	Recommended Action	This symptom corresponds to the Oracle BUG ID #7013854. **Workaround)** There is no workaround when the stop times (tod-end) of DRM policies are the same for all domains. However, the problem can be avoided by setting the different stop time (tod-end) in at least one all domains. **Handling in case of Occurrence)** If this problem occurs, delete the DRM policy in the Guest Domain with the "ldm remove-policy" command and reset the number of virtual CPUs for that Guest Domain with the "ldm set-vcpu", "ldm add-vcpu" or the "ldm remove-vcpu" commands. This has been fixed in Oracle VM Server for SPARC 2.1 or later.

2.11 Bug information for "Dynamic Resource Management (DRM) on Logical Domains 1.3 or later"

Table 2.11 Bug information for "Dynamic Resource Management (DRM) on Logical Domains 1.3 or later"

1	Symptom	The DRM function does not work effectively for logical domains to which 100 or more virtual CPUs are allocated. Also after 100 or more virtual CPUs are allocated to logical domains using the DRM function, the DRM function does not work properly.
	Recommended Action	This issue corresponds to Oracle Bug ID#6908985. If you want to use the DRM function for logical domains, please do not allocate more than or equal to 100 virtual CPUs for the logical domain. In addition, the value of the vcpu-max option of policy of the DRM function is 'unlimited' (no limitation on the number of virtual CPUs allocated to domains) by default. Please be sure to set a value of 99 or less for the vcpu-max option. This has been fixed in Oracle VM Server for SPARC 2.0 or later.

2	Symptom	An error occurs when "08" or "09" is set for any of hh, mm, ss in values (hh:mm[:ss], hour:minute:second) of the tod-begin and tod-end options of the ldm add-policy and ldm set-policy command.
		Example)
		`# ldm set-policy tod-begin=08:09:08 name=aaa ldom1`
		`hours must be an integer`
		`Invalid time of day, please use tod-begin=<hh>:<mm>:[<ss>]`

	Recommended Action	This issue corresponds to Oracle Bug ID#6909998. If "08" or "09" are set as a value of any of hh, mm, ss, please set "8" or "9" respectively. **Example)** `# ldm set-policy tod-begin=8:9:8 name=aaa ldom1` This has been fixed in Oracle VM Server for SPARC 2.0 or later.

<table>
<tr><td rowspan="2">3</td><td>Symptom</td><td>"Logical Domains 1.3 Reference Manual" of Oracle describes that the default value of enable property of ldm command is "yes".

primary# man ldm
<<snip>>
enable=yes|no Enables or disables resource management for an individual domain. By default, enable=yes
<<snip>>

But the default value of enable property is "no".
Example)
primary# ldm add-policy tod-begin=9:00 tod-end=18:00 util-lower=25 util-upper=75 vcpu-min=2 vcpu-max=16 attack=1 decay=1 priority=1 name=high-usage ldom1
primary# ldm list-domain -o resmgmt ldom1
NAME
ldom1
POLICY
STATUS PRI MIN MAX LO UP BEGIN END RATE EM ATK DK NAME
Off 1 2 16 25 75 09:00:00 18:00:00 10 5 1 1 high-usage</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6928250.
If you want to enable the resource management policy, please specify the enable property to "yes".

primary# ldm add-policy enable=yes tod-begin=9:00 tod-end=18:00 util-lower=25 util-upper=75 vcpu-min=2 vcpu-max=16 attack=1 decay=1 priority=1 name=high-usage ldom1
primary# ldm list-domain -o resm ldom1
NAME
ldom1
POLICY
STATUS PRI MIN MAX LO UP BEGIN END RATE EM ATK DK NAME
on 1 2 16 25 75 09:00:00 18:00:00 10 5 1 1 high-usage
This has been fixed in Oracle VM Server for SPARC 2.0 or later.</td></tr>
<tr><td rowspan="2">4</td><td>Symptom</td><td>Though available virtual CPUs exist, DRM may not allocate a virtual CPU to any domain where DRM policy is valid. Conditions for this symptoms are as follows.

1) The value set for vcpu-max property of the DRM policy is larger than the number of the virtual CPUs allocated to the domain at that time added to the number of the virtual CPUs which are not used in the system, and
2) The "attack" property of the DRM policy has any value other than "1".</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#7012833.
If this symptom occurs, set "1" for the "attack" property of the DRM policy.
primary# ldm set-policy attack=1 name=<DRM policy name> <domain name>
This has been fixed in Oracle VM Server for SPARC 2.1 or later.</td></tr>
</table>

2.12 Bug information for "ZFS on Logical Domains 1.1 or later"

Table 2.12 Bug information for "ZFS on Logical Domains 1.1 or later"

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>When the virtual disk backend (file or volume) is located in the ZFS storage pool and the zvols don't reserve enough space, the following problems occur.

• When you boot the domain which uses the virtual disk as UFS system disk, the following error messages are output and the domain boot fails.
<code>WARNING: Error writing master during ufs log roll</code>
<code>WARNING: ufs log for / changed state to Error</code>
<code>WARNING: Please umount(1M) / and run fsck(1M)</code>
<code>WARNING: init(1M) exited on fatal signal 10: restarting automatically</code>
<code>WARNING: exec(/sbin/init) failed with errno 5.</code>
<code>WARNING: failed to restart init(1M) (err=5): system reboot required</code>

• The following messages are output when the domain is running and even if you execute fsck(1M) command, the command will fail.
<code>WARNING: Error writing master during ufs log roll</code>
<code>WARNING: ufs log for /disk4 changed state to Error</code>
<code>WARNING: Please umount(1M) /disk4 and run fsck(1M)</code></td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6429996.
This has been fixed in Oracle Solaris10 9/10 OS or later.
The ZFS storage pool which you locate the virtual disk backend (file or volume) needs enough free space (20%) for ZFS meta data.
Work Around:
• delete unnecessary files and free up some space in the ZFS storage pool.
• add the other device and expand the ZFS storage pool size.</td></tr>
<tr><td rowspan="2">2</td><td>Symptom</td><td>When you export zfs volume as back-end by using the slice option, a label of the virtual disk allocated to the Guest Domain is displayed as "<Unknown-Unknown-XX>" by executing the format(1M) from the Guest Domain.</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#6840912.
The displayed information is wrong. But this has no effect on the system behavior.</td></tr>
</table>

2.13 Bug information for "Logical Domains P2V Migration Tool on Logical Domains 1.3 or later"

Table 2.13 Bug information for "Logical Domains P2V Migration Tool on Logical Domains 1.3 or later"

1	Symptom	Under the following environment and conditions, the "ldmp2v convert" commands output the message and fails.
		(1) Source system have a network interface with its IP address not set, and
		(2) Source system have 0.0.0.0 IP address, and
		(3) The network interface in plump.
		`Testing original system status ...`
		`ldmp2v: ERROR: At least one IP address of the original system is still active:`
		`0.0.0.0`
		`Exiting`

	Recommended Action	This issue corresponds to Oracle Bug ID#6920852. If the symptom happened, please execute the followings. • unplumb the network interface before migration by this tool, or • specify the IP address which you don't use at the source network and target network, and after migration, please back to 0.0.0.0. This has been fixed in Oracle VM Server for SPARC 2.0 or later.

2	Symptom	The IPv6 network interface is not migrated to the target system. When you boot the domain after migration, the following messages are output.
		`Boot device: disk0 File and args:`
		`SunOS Release 5.10 Version Generic_139555-08 64-bit`
		`Copyright 1983-2009 Sun Microsystems, Inc. All rights reserved.`
		`Use is subject to license terms.`
		`<...>`
		`Failed to plumb IPv6 interface(s): hme0`
		`<...>`
		`t_optmgmt: System error: Cannot assign requested address`
		`<...>`

	Recommended Action	This issue corresponds to Oracle Bug ID#6920550 • unplumb the IPv6 network interface and delete the "/etc/hostname6.<*network interface name*>". • After migration, please reconfigure the network interface.

3	Symptom	If the source system have logical network interface by adding the "/etc/hostname.<*network interface*>:n", the network interface is not migrated to the target system. When you boot the domain after migration, the following messages are output.
		`Boot device: disk File and args:`
		`SunOS Release 5.10 Version Generic_139555-08 64-bit`
		`Copyright 1983-2009 Sun Microsystems, Inc. All rights reserved.`
		`Use is subject to license terms.`
		`Failed to plumb IPv4 interface(s): hme0:1`
		`<...>`

	Recommended Action	• unplumb the network interface and delete "/etc/hostname.<*network interface*>:n". • After migration, please reconfigure the logical network interface.

4	Symptom	During domain of the target system is booting, the following message are output and SMF service start fails.
		`svc.startd[7]: svc:/platform/sun4u/oplhpd:default: Method "/lib/svc/method/svc-oplhpd" failed with exit status 96.`
		`svc.startd[7]: platform/sun4u/oplhpd:default misconfigured: transitioned to maintenance (see'svcs -xv' for details)`
		`svc.startd[7]: svc:/platform/sun4u/sckmd:default: Method "/lib/svc/method/svc-sckmd" failed with exit status 98.`
		`svc.startd[7]: svc:/platform/sun4u/sckmd:default: Method "/lib/svc/method/svc-sckmd" failed with exit status 98.`
		`svc.startd[7]: svc:/platform/sun4u/sckmd:default: Method "/lib/svc/method/svc-sckmd" failed with exit status 98.`
		`svc.startd[7]: platform/sun4u/sckmd:default failed: transitioned to maintenance (see 'svcs -xv'for details)`
		`svc.startd[7]: svc:/platform/sun4u/dscp:default: Method "/lib/svc/method/svc-dscp start"failed with exit status 96.`
		`svc.startd[7]: platform/sun4u/dscp:default misconfigured: transitioned to maintenance (see'svcs -xv' for details)`
		`svc.startd[7]: svc:/platform/sun4u/dcs:default: Method "/lib/svc/method/svc-dcs" failed with exit status 96.`
		`svc.startd[7]: platform/sun4u/dcs:default misconfigured: transitioned to maintenance (see 'svcs -xv' for details)`

	Recommended Action	This issue corresponds to Oracle Bug ID#6856201. • Please delete the following file at the Preparation phase of Logical Domains P2V Migration Tool before executing "ldmp2v collect". `/var/svc/profile/platform.xml` • The deletion of the above file does not affect the source system because this file is recreated at the domain boot. This has been fixed in Oracle VM Server for SPARC 2.1 or later.

5	Symptom	The following message is on screen of the Guest Domain of the target system. `WARNING: ncp1: only one instance (0) allowed`

	Recommended Action	This issue corresponds to Oracle Bug ID#6905204.
		If this symptom happened, please execute the following procedure.
		1) Modify the /etc/path_to_inst file.
		`<...>`
		`"/virtual-devices@100/ncp@4" 0 "ncp"` * remove this instance
		`"/virtual-devices@100/ncp@6" 1 "ncp"` * rename this instance to 0
		`<...>`
		`(after modification)`
		`<...>`
		`"/virtual-devices@100/ncp@6" 0 "ncp"`
		`<...>`
		2) Reboot the domain.
		This has been fixed in Oracle VM Server for SPARC 2.0 or later.

6	Symptom	The following problems may occur if the UFS file system is used for migration to virtual disk system. "ldmp2v prepare" command may give no response.
	Recommended Action	This issue corresponds to Oracle Bug ID#6933260. 1) Please locate the virtual disk backend in the ZFS file system of the target system. 2) This has been fixed in Oracle VM Server for SPARC 2.0 or later.
7	Symptom	Under the following conditions, the system may not respond during the OS boot of the destination domain moved by this tool. 1) The source system's operating system is Solaris 10 OS, and 2) Solaris 10 OS release of the source system is the same as the Solaris 10 OS release of install image specified at the conversion phase of this tool.
	Recommended Action	This problem corresponds to Oracle Bug ID#6949238. If the operating system of the source system is Solaris 10 OS, specify Solaris10 OS release different from that of the source system at the conversion phase. This has been fixed in Oracle VM Server for SPARC 2.0 or later.

2.14 Bug Information for "System Firmware"

Table 2.14 Bug information for "System Firmware"

1	Symptom	The "ldm add-spoonfig" command may fail with the following error:
		`# ldm add-spconfig test1`
		`Error: Operation failed because the the system controller ran out of memory. Before being able to save a new configuration, one or more of the existing ones must be deleted`

	Recommended Action	This symptom corresponds to Oracle Bug ID #6908024 and #6946636.
		This has been fixed in System Firmware version 7.2.10 or later.
		Please take the following measures if this symptom occurs:
		1) Stop all Guest Domains.
		For the process to stop Guest Domains, please refer to the "7.1.3 Stopping the domain from the Guest Domain" in *"SPARC Enterprise Oracle VM Server for SPARC Guide"*.
		2) Shutdown the Control Domain.
		Example)
		`example# shutdown -y -g0 -i0`
		Please refer to procedure 3-1) if the shutdown was successful.
		Please refer to procedure 3-2) if the shutdown was unsuccessful.
		3-1) Power off the system using the "poweroff" command.
		Example)
		[In ALOM mode]
		`sc> poweroff -y`
		[In ILOM mode]
		`-> stop -script /SYS`
		Go to procedure 4)
		3-2) Emergent shutdown of the system.
		Example)
		[In case of using the power button]
		Press and hold the power button for 4 seconds
		[In ALOM mode]
		`sc> poweroff -fy`
		[In ILOM mode]
		`-> stop -force -script /SYS`
		Go to procedure 4)
		4) Execute ILOM reset.
		Example)
		[In ALOM mode]
		`sc> resetsc -y`
		[In ILOM mode]
		`-> reset -script /SP`
		If ILOM reset fail, please execute procedures 5) and 6)
		5) Unplug the power cords from the machine.
		Unplugging power cords the power cable will force ILOM reset.
		6) Connect the power cords to the server.

2	Symptom	In case of SPARC T3-2, if the device on 10GbE QSPF network module or in case of SPARC T3-4, if the device on Rear I/O module is first allocated to Guest Domains through Direct I/O and then returned to the Control Domain, the "nxge" driver interface on that device may fail to activate (particularly, attach(9E)).
		`primary# ifconfig nxge0 plumb xxx.xxx.xx.x netmask + broadcast + up`
		`ifconfig: SIOCSLIFNAME for ip: nxge0: Invalid argument`

	Recommended Action	This symptom corresponds to Oracle Bug ID # 7095857. This has been fixed in System Firmware version 8.2.0.a or later. There is no workaround to this problem. If this problem occurs, please powercycle the Control Domain like the following.

Chapter 3 Notes Information

Please also refer to the latest version of "Oracle VM Server for SPARC Release Notes", released by Oracle.
It contains information on the problems detected by Oracle.

- Oracle VM Server for SPARC 2.2 Release Notes

  http://docs.oracle.com/cd/E35434_01/index.html

In this section, notes when using Logical Domains are explained according to the version.

- About notes classified by version number, please be sure to read the following when you configure logical domains.

  "3.1 Notes on Oracle VM Server for SPARC 2.1"
  "3.2 Notes on Oracle VM Server for SPARC 2.0"
  "3.3 Notes on Logical Domains 1.3 or later"
  "3.4 Notes on Logical Domains 1.2 or later"
  "3.5 Notes on Logical Domains 1.1 or later"
  "3.6 Notes on Logical Domains 1.0.2 or later"

- About notes classified by function, please be sure to read the following when you use a function.

  "3.7 Notes for Domain Dependencies on Logical Domains 1.2 or later"
  "3.8 Notes for CPU Power Management Software on Logical Domains 1.2 or later"
  "3.9 Notes for Autorecovery of configurations on Logical Domains 1.2 or later"
  "3.10 Notes for Logical Domains Configuration Assistant (ldmconfig) on Logical Domains 1.3 or later"
  "3.11 Notes for Dynamic Resource Management (DRM)"
  "3.12 Notes for Logical Domains P2V Migration Tool on Logical Domains 1.3 or later"
  "3.13 Notes for Oracle VM Server for SPARC Physical-to-Virtual Migration Tool on Oracle VM Sever for SPARC 2.0"

3.1 Notes on Oracle VM Server for SPARC 2.1

Table 3.1 Notes on Oracle VM Server for SPARC 2.1

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>Problem regarding live migration of active domains:
During at a Guest Domain upgrade, if other domain is using a virtual network interface for network connection with the Guest Domain, the connection may be disconnected.</td></tr>
<tr><td>Recommended Action</td><td>After the connection has been disconnected, reconnect to the Guest Domain.
Though there is no workaround to this problem, the following method may reduce the number of the problem occurrences:
• Reduce work load from the migrating Guest Domain.
(reduce writing or renewing of system memory)
• Change the routing method of the Guest Domain to static routing.</td></tr>
<tr><td rowspan="2">2</td><td>Symptom</td><td>If the Oracle VM Server for SPARC 2.1 patch 147507-01 is applied to Solaris 10 OS environment, information on single CPU performance enhancement feature is added in details of Domain information with the "whole-core" output by either the "ldm list-domain" or the "ldm list-domain -o resmgmt" command.
Example)
<pre>primary# ldm list-domain -o resmgmt ldom1
NAME
ldom1

CONSTRAINT
    whole-core
    max-cores=1
    threading=max-throughput</pre></td></tr>
<tr><td>Recommended Action</td><td>Support for single CPU performance enhancement feature has been added by Oracle VM Server for SPARC 2.1 patch 147507-01, targeted to Bug ID#7011573.
Please note that output will change due to this reason.</td></tr>
</table>

<table>
<tr><td rowspan="2">3</td><td>Symptom</td><td>In Oracle Solaris 10 environment, a Logical Domain which has been earmarked a "whole-core", loses the "whole-core" designation , when the 147507-01 patch of Oracle VM Server for SPARC 2.1 is applied to it, in "bound" or "inactive" state.
Example)
<pre>primary# ldm list-domain -o resmgmt ldom1
NAME
ldom1
CONSTRAINT
   whole-core
   max-cores=1

primary# ldm list-domain ldom1
NAME   STATE   FLAGS   CONS   VCPU MEMORY   UTIL UPTIME
ldom1   active   -n---- 5001   8   1G   9.9% 1m</pre>
(patch application)
<pre>primary# ldm list-domain -o resmgmt ldom1
NAME
ldom1</pre>
("whole-core" is not displayed)</td></tr>
<tr><td>Recommended Action</td><td>This symptom is a limitation of Oracle VM Server for SPARC 2.1.
When a whole-core constraint is registered to an existing logical domain, the following restoration process or workaround must be executed.

Restoration procedure
Example for Control Domain)
(After patch application)
<pre>primary# ldm start-reconf primary
primary# ldm set-vcpu -c <Number of CPU cores> primary</pre>
(OS Restart)
Example for domains other than the Control Domain)
<pre>primary# ldm stop-domain <Domain Name>
primary# ldm unbind-domain <Domain Name>
primary# ldm set-vcpu -c <Number of CPU cores> <Domain Name>
primary# ldm set-domain threading=max-throughput <Domain Name>
primary# ldm bind-domain <Domain Name>
primary# ldm start-domain <Domain Name></pre>

Workaround
<pre>primary# ldm stop-domain <Domain Name>
primary# ldm unbind-domain <Domain Name></pre>
(patch application)
<pre>primary# ldm set-domain threading=max-throughput <Domain Name>
primary# ldm bind-domain <Domain Name>
primary# ldm start-domain <Domain Name></pre>

</td></tr>
</table>

3.2 Notes on Oracle VM Server for SPARC 2.0

Table 3.2 Notes on Oracle VM Server for SPARC 2.0

1	Symptom	If you operate memory allocation to a domain in "active" state, the following error message may be output. `"The ldom1 domain does not support the dynamic reconfiguration of memory."`
	Recommended Action	This symptom occurs when OS in the target domain in "active" state has stopped. Although behavior itself is proper, but the contents of the error message is improper. - The following message is an expected value. `Domain ldom1 is unable to dynamically reconfigure Memory. Please verify the guest operating system is running and supports Memory DR.` Please confirm the state of OS booting in the domain and that DR of memory is supported.
2	Symptom	If you use auto-recovery function of configuration, the whole-core and max-cores information in a Guest Domain is not set after the rebuild.
	Recommended Action	Please specify the number of cores by the ldm command (ldm set-vcpu -c) to set the number of virtual CPUs after you restore the configuration information. At the same time the "whole-core", and set the "max-cores".

3	Symptom	When you change the Control Domain into the delayed reconfiguration mode, and execute the setting (with specifying the -c option) or cancellation (without specifying the -c option) of the whole-core restriction by using "ldm add-vcpu/remove-vcpu/set-vcpu", the following message is output and you cannot cancel the delayed reconfiguration even though you execute the cancellation of the delayed reconfiguration mode by using "ldm cancel-operation reconf".
		`primary# ldm cancel-operation reconf primary`
		`Cannot cancel this delayed reconfig because a change to whole-core partitioning was recorded`

	Recommended Action	Such rejection of cancel-operation follows the Logical Domains specification. In addition, you cannot cancel the delayed reconfiguration but you can set or cancel the whole-core restriction by using "ldm add-vcpu/remove-vcpu/set-vcpu" freely during the delayed reconfiguration mode.

<table>
<tr><td rowspan="2">4</td><td>Symptom</td><td>When the Control Domain is in Dynamic and Delayed Reconfiguration mode, and the number of virtual CPUs is not double the number of threads on one core, attempt to set up core-based virtual CPUs (with the "ldm set-vcpu -c" command) on the Control Domain fails with the following message. You may notice the number of threads per core for SPARC T2 and T3 used in SPARC T series are eight.

Cannot use whole-core partitioning, number of vcpus must be a multiple of 8

Note) example of message in case of 8-thread on one core.</td></tr>
<tr><td>Recommended Action</td><td>This is normal operation based on the specification.
But, there is an errata in Oracle manual regarding this. This symptom corresponds to Bug ID#7018684. If this symptom occurs, please create virtual CPUs so that their account equals to the double of the number of threads on one core and make sure that the virtual CPUs are based on cores (with the "ldm set-vcpu -c) command.

Example) In case the number of threads on one core is 8.
1. On the Control Domain, create twice as many virtual CPUs as there are threads on each core.
ldm set-vcpu 8 primary

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.
----
2. Reboot the Control Domain.
reboot
3. Set core-based virtual CPUs (with the "ldm set-vcpu -c").
ldm start-reconf primary
Initiating a delayed reconfiguration operation on the primary domain.
All configuration changes for other domains are disabled until the primary
domain reboots, at which time the new configuration for the primary domain
Will also take effect.

ldm set-vcpu -c 3 primary

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.
----
4. Reboot the Control Domain.
reboot</td></tr>
</table>

3.3 Notes on Logical Domains 1.3 or later

Table 3.3 Notes on Logical Domains 1.3 or later

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>If the Logical Domains 1.3 patch 145316-01 is applied to the system, the UUD information will be added to the information output by the "ldm list-domain -l" command.
Example)
<pre>primary# ldm list-domain -l
NAME   STATE   FLAGS   CONS VCPU MEMORY UTIL UPTIME
primary active -n-cv- SP   8   4G   0.1% 5d 20h 41m
SOFTSTATE
Solaris running
7772d839-190c-4c97-a3be-bd071f3953eb
MAC
00:14:4f:97:b5:58</pre></td></tr>
<tr><td>Recommended Action</td><td>The Logical Domains 1.3 patch 145316-01 contains fix for UUID (Bug ID # 6873532). Please note that due to this fact, the output of the above command will change.</td></tr>
</table>

3.4 Notes on Logical Domains 1.2 or later

Table 3.4 Notes on Logical Domains 1.2 or later

1	Symptom	If the following operation to virtual I/O devices of the Control Domain is performed, the domain may enter the delayed reconfiguration mode. • Any of mac-addr, net-dev, mode, or mtu is specified with the set-vsw subcommand. • Either mode or mtu is specified with the set-vnet subcommand. • Timeout is specified with the set-vdisk subcommand.
	Recommended Action	This is normal operation based on the specification.

3.5 Notes on Logical Domains 1.1 or later

Table 3.5 Notes on Logical Domains 1.1 or later

1	Symptom	When a virtual disk with a backend file size of less than 512 bytes is added or removed using dynamic reconfiguration (DR), the Guest Domain's Solaris OS may hang-up.
		Example 1)
		`primary# ldm add-vdisk Vol50B Vol50B@primary-vds0 ldom3`
		`VIO configure request sent, but no valid response received`
		`Ldom ldom3 did not respond to request to configure VIO device`
		`VIO device is considered to be allocated to Ldom, but might not be available to the guest OS`
		Example 2)
		`primary# ldm rm-vdisk Vol50B ldom3`
		`VIO unconfigured request sent, but no valid response received`
		`Ldom ldom3 did not respond to request to configure VIO device`
		`VIO device is considered to be allocated to Ldom, but might not be available to the guest OS Failed to remove vdisk instance`

	Recommended Action	The minimum size of Logical Domains virtual disk is 512 bytes. Please delete the virtual disk smaller than 512 bytes in inactive state.
2	Symptom	After performing an active domain migration, the system time of the migrated domain will have a delay.
	Recommended Action	Please fix the time error using the "date" command if necessary. `# date mmddHHMM[[cc] yy] [.SS]` Please refer to the man pages for the details of "date".
3	Symptom	If the network connection between source and target server is disconnected during an active domain migration, the migration fails and the number of the vcpu of the source domain is reduced to 1.
	Recommended Action	After rebooting the source domain, execute the following command to modify the number of vcpu. `# ldm add-vcpu <vcpu number> <ldom name>` This has been fixed in Oracle VM Server for SPARC 2.1 or later.
4	Symptom	When you export SVM volume as back-end by using the slice option, a label of the virtual disk allocated to the Guest Domain is displayed as "<drive type unknown>" by executing the format(1M) from the Guest Domain.
	Recommended Action	The displayed information is wrong. But this has no effect on the system behavior.

5	Symptom	When you execute the add-vdisk subcommand with Dynamic Reconfiguration (DR), the following message may be output. Moreover a virtual disk may be added to the Guest Domain actually even if this message is output.
		`Primary# ldm add-vdisk vol3 vol3@vds1 ldom2`
		`VIO configure request sent, but no valid response received Ldom ldom2 did not respond to request to configure VIO device VIO device is considered to be allocated to Ldom, but might not be available to the guest OS`

	Recommended Action	If the virtual disk that you were trying to add had already been added to the Guest Domain when this message was output, use the rm-vdisk subcommand to remove the added virtual disk. Also when you execute the rm-vdisk subcommand against the virtual disk where this message is output due to the execution of the add-vdisk command, the rm-vdisk subcommand may fail. In this case, please re-execute the rm-vdisk subcommand after a while (15 mins - more than 30 mins later).

3.6 Notes on Logical Domains 1.0.2 or later

Table 3.6 Notes on Logical Domains 1.0.2 or later

1	Symptom	The boot of the Solaris OS sometimes hangs in the Guest Domain. This bug occurs when more than or equal to four Guest Domains are built. (Low frequency of occurrence)
	Recommended Action	Forcibly stop the corresponding Guest Domain and then reboot the Solaris OS when the error occurs. This does not affect the Control Domain or the other Guest Domains.
2	Symptom	The "db error: disk I/O error" occurs and single user mode becomes effective when booting the Solaris OS in the Guest Domain. This bug occurs when four or more Guest Domains are built. (Low frequency of occurrence)
	Recommended Action	Reboot the Solaris OS of the corresponding Guest Domain when the error occurs. This does not affect the Control Domain or the other Guest Domains.
3	Symptom	The "svc.configd: Fatal error: "boot" backup failed:" occurs and single user mode becomes effective when booting the Solaris OS in the Guest Domain. This bug occurs when more than or equal to four Guest Domains are built. (Low occurrence)
	Recommended Action	Reboot the Solaris OS of the corresponding Guest Domain when the error occurs. This does not affect the Control Domain or the other Guest Domains.
4	Symptom	If multiple Guest Domains are installed at one time, "boot net" may fail.
	Recommended Action	Fujitsu recommends that you install four or less Guest Domains at one time. Please reduce the number of Guest Domains you try to install at one time. Domains where this problem occurred can be restored by executing start-domain following stop-domain.

5	Symptom	The following WARNING message may be displayed when collecting necessary information in Sun Explorer.
		# /opt/SUNWexplo/bin/explorer
		:
		`October 17 14:45:22 t5240-fj-05[16428] disks: RUNNING`
		`Oct 17 14:45:22 t5240-fj-05 scsi: WARNING:`
		`/pci@400/pci@0/pci@1/pci@0/usb@0,2/storage@2/disk@0,0 (sd2):`
		`Oct 17 14:45:22 t5240-fj-05 Error for Command: inquiry Error Level: Informational`
		`Oct 17 14:45:22 t5240-fj-05 scsi: Requested Block: 0 Error Block: 0`
		`Oct 17 14:45:22 t5240-fj-05 scsi: Vendor: TSSTcorp Serial Number:`
		`Oct 17 14:45:22 t5240-fj-05 scsi: Sense Key: Illegal Request`
		`Oct 17 14:45:22 t5240-fj-05 scsi: ASC: 0x24 (invalid field in cdb), ASCQ: 0x0, FRU: 0x0`
		`October 17 14:46:05 t5240-fj-05[16428] emc: RUNNING`

	Recommended Action	This issue corresponds to Oracle Bug ID#6450938, 6561095. This WARNING message does not affect the system therefore please ignore his message. This has been fixed in Oracle Explorer 5.3 or later.

6	Symptom	The following error message is displayed when deleting virtual CPUs fails.
		`primary# ldm remove-vcpu 4 mydom2`
		`LDom mydom2 does not support adding VCPUs`
		`Resource removal failed`

	Recommended Action	This issue corresponds to Oracle Bug ID#6769835. "adding" is displayed even if the "remove" processing is in process. This symptom does not affect system performance. The resolution for this symptom is given by Logical Domains 1.3 or later.

7	Symptom	When the logical domains are running in "factory-default" configuration, total number of vcpus and total amount of memory appears to be exceeding the actual number of vcpus and memory size available.
		`primary# ldm list-domain`
		`NAME STATE FLAGS CONS VCPU MEMORY UTIL UPTIME`
		`primary active -n-c- SP 127 16160M 0.0% 3m`
		`mydom2 inactive ----- 120 12G`

	Recommended Action	This is not a problem because they are displayed as specified. If "STATE" is "inactive", the ldm command outputs a domain definition, not values used by the domain.
8	Symptom	You can export the same virtual disk backend with the exclusive option (excl) many times. (From Logical Domains1.0.3 Administration Guide, you are allowed to export it only one time.)
	Recommended Action	If you export one virtual disk backend many times, please delete all virtual disk server devices exported with the exclusive option (excl) first, and then re-export them without the exclusive option (excl).
9	Symptom	In the Solaris 10 10/08 environment, even if you exported with the slice option that creates one slice disk, slices between s0 and s7 are created after allocating to a Guest Domain.
	Recommended Action	Slices between s0 and s7 are created, but since only s0 is available actually, please ignore the slices between s1 and s7.
10	Symptom	If you execute the eject (1) from the Control Domain, a media may be ejected even though a CD/DVD is in use on a Guest Domain.
	Recommended Action	Please specify the exclusive option (excl) when exporting the CD/DVD. By specifying the exclusive option, the eject (1) from the Control Domain becomes invalid. Please use the eject button of the CD/DVD drive to eject a media.
11	Symptom	If you use an exported CD/DVD in a Guest Domain, you may fail to eject a media even though you press the eject button of the CD/DVD drive.
	Recommended Action	You need to cancel the allocation of the exported CD/DVD to the Guest Domain. To cancel the allocation, you need to stop the Guest Domain after deleting the virtual disk from the Guest Domain.
12	Symptom	If you install Solaris OS into the Guest Domain via network, the system may hang during the Guest Domain OS boot.
	Recommended Action	This issue corresponds to Oracle Bug ID#6705823. 6705823 guest ldom hangs during boot net of s10u4 Please apply 127111-05 or later to mini root of the install image
13	Symptom	When the two or more virtual consoles are added, the telnet connection cannot be established to the newly added virtual console ports.
	Recommended Action	Only a single virtual console service should exist. Please do not create more than one virtual console service.

<table>
<tr><td rowspan="2">14</td><td>Symptom</td><td>When a virtual I/O device is removed, the device names of the remaining virtual I/O devices are reassigned and may be changed at the binding of the Guest Domain.
The virtual I/O device may be a Virtual Disk (vdisk), a Virtual Network device (vnet), or a Virtual Switch (vsw).
There are two cases. One is that the device name assigned to the Virtual Disk is changed when one of three Virtual Disks is removed. The other is that the device name is not changed.
In this example, three Virtual Disk vdisk0, vdisk1, vdisk2 exist.
1) Check device names.
<pre>#ldm list-domain -l ldom1
DISK
NAME   VOLUME   TOUT   DEVICE   SERVER   MPGROUP
vdisk0 Vol1@primary-vds0   disk@0   primary
vdisk1 Vol2@primary-vds0   disk@1   primary
vdisk2 Vol3@primary-vds0   disk@2   primary</pre>
< Case where the device name does not change >
2-1) When we remove vdisk2, the device name assigned to any Virtual Disk is not changed after binding a Guest Domain.
<pre>#ldm list-domain -l ldom1
DISK
NAME   VOLUME   TOUT   DEVICE   SERVER   MPGROUP
vdisk0 Vol1@primary-vds0   disk@0   primary
vdisk1 Vol2@primary-vds0   disk@1   primary</pre>
< Case where the device name changes >
2-2) When we remove vdisk1, the device name assigned to vdisk2 are changed after binding a Guest Domain.
<pre>#ldm list-domain -l ldom1
DISK
NAME   VOLUME   TOUT   DEVICE   SERVER   MPGROUP
vdisk0 Vol1@primary-vds0   disk@0   primary
vdisk2 Vol3@primary-vds0   disk@1   primary</pre>
Changed!!
Note) The Guest Domain which is assigned with vdisk2 as a boot disk cannot boot.</td></tr>
<tr><td>Recommended Action</td><td>In Logical Domains 1.2, the resolution for this symptom is given by 142840-04 or later. Please apply the patch.
The resolution for this symptom is given by Logical Domains 1.3 or later.
In Logical Domains 1.1 or before, please execute following method to avoid / restore this symptom.
Workaround:
Do not remove any virtual I/O devices.
Recovery operations:
Execute the Logical Domains configuration script for the Guest Domain to reconfigure the Guest Domain.
After that, re-install Solaris OS to the Guest Domain or restore the system to the Guest Domain from the latest backup.
Do not remove any virtual I/O devices after recovery.</td></tr>
</table>

15	Symptom	If you change the Logical Domain configuration (ldm set-spconfig), the following value are not set correctly according to the specified configuration. - vcc **(*1)** - vds **(*1),(*2)** - vdsdev **(*1)** This has been fixed in Logical Domains 1.3 and also 142840-02 or later for Logical Domains1.2. **(*2)** This issue does not occur when you set the configuration to the factory-default.

	Recommended Action	Please set the Logical Domains configuration to the factory-default and rebuild the Logical Domain configuration by the Logical Domains configuration scripts. Please see the following procedures.
		1) Removing the Guest Domain
		Please refer to "7.12.1 Removing the Guest Domain".
		2) Removing the Logical Domains configuration
		Please refer to "7.12.2 Removing the Logical Domains configuration".
		3) Building the Control Domain
		Please refer to "4.2.5 Building the Control Domain".
		4) Building the Guest Domain
		Please refer to "4.2.6 Building the Guest Domain".
		http://www.fujitsu.com/global/services/computing/server/sparcenterprise/products/software/ldoms/
		If you use the Logical Domains 1.3, you can restore the Logical Domain configuration by the following procedure.
		Please backup the value of the vdiskserver when you build the Logical Domain configuration.
		Set the vdiskserver again.
		1) remove all configuration of the vdiskserver.
		`# ldm remove-vdiskserverdevice [-f] <volume_name>@<service_name>`
		2) add the vdiskserver settings accoding to the backup configuration value.
		`# ldm add-vdiskserverdevice [-f] [options={ro,slice,excl}] [mpgroup=<mpgroup>] <backend> <volume_name>@<service_name>`
		If you use Logical Domains 1.2, please install Logical Domains 1.3

16	Symptom	When a process terminates abnormally, there is a possibility that the global core is not output.

	Recommended Action	If you want to let the system output the global core when a process terminates abnormally, please perform the following procedure to change the setting so that the global core can be output.
		Example)
		1) Set the name and place for a core file that is produced.
		`# coreadm -g /var/core/%d/%f.%p.%n`
		2) Permit the global core pattern.
		`# coreadm -e global`
		3) Set to let the system output messages to syslog.
		`# coreadm -e log`
		4) Confirm the setting of the core output.
		`# coreadm`
		In addition, you can set not to let the system output the global core by using the following procedure.
		`# coreadm -d global`
		`# coreadm -d log`

3.7 Notes for "Domain Dependencies on Logical Domains 1.2 or later"

Table 3.7 Notes for "Domain Dependencies on Logical Domains 1.2 or later"

1	Symptom	When you try to configure a master domain, the following error message may be displayed. `LDom "<slave_name>" is bound and requires LDom "<master_name>" be bound`
	Recommended Action	The message is displayed when the master domain is not binding resources (inactive). After binding resources of the master domain, configure the master domain.
2	Symptom	When you try to unbind resources against a Guest Domain, the following error message may be displayed. `LDom "<slave_name>" is bound with a dependency on LDom "<master_name>"`
	Recommended Action	The message is displayed when a domain that is configured as the master domain (master_name) exists. Execute the following command or execute the configuration script for cancellation of dependency relationships to cancel the domain dependencies. `# ldm set-domain master= <slave_name>`
3	Symptom	If a slave domain is reset due to a master domain's stop, the ok prompt may be displayed twice in the slave domain.
	Recommended Action	This is a problem with the display. It does not affect the Guest Domain and Solaris OS of the Guest Domain, therefore please ignore this symptom.

4	Symptom	If a master domain stops (failure-policy=panic) while OK prompt is displayed on a slave domain, the following error message is output on the slave domain's screen and the boot fails.
		`FATAL: /virtual-devices@100/console@1: Last Trap: Non-Resumable Error`
		In addition, even if you boot of the slave domain again, the boot fails with the following error message.
		`FATAL: system is not bootable, boot command is disabled`

	Recommended Action	Please boot OS of the Guest Domain after rebooting the problematic Guest Domain.

3.8 Notes for "CPU Power Management Software on Logical Domains 1.2 or later"

To use CPU Power Management Software, you need to apply 142840-04 or later that is an Logical Domains 1.2 patch.

Table 3.8 Notes for "CPU Power Management Software on Logical Domains 1.2 or later"

1	Symptom	If CPU Power Management switches off the power of a virtual CPU of a domain, the virtual CPU becomes invisible from that domain even by using psrinfo(1M) or other commands.
	Recommended Action	This is normal operation based on the specification.
2	Symptom	If a processor set or resource pool is set on a domain when CPU Power Management is enabled, the following message may be output into /var/adm/messages of the domain. `Sep  4 18:31:20 ldoma1 rcm_daemon[2777]: POOL: processor set (-1) would go below its minimum value of 1`
	Recommended Action	The message is output when CPU Power Management tries to switch off the power of the virtual CPU of the processor corresponding to a processor-set even with a greater value than pset.min. When CPU Power Management is activated, processor set and resource pool cannot be used together. When using processor set and resource pool together, set the CPU Power Management policy to "performance mode".

3.9 Notes for "Autorecovery of configurations on Logical Domains 1.2 or later"

Table 3.9 Notes for "Autorecovery of configurations on Logical Domains 1.2 or later"

1	Symptom	When [current] or [next poweron] is displayed on the right side of "factory-default" in the output of "ldm list-spconfig," the configuration is not saved automatically even though the configuration is changed.
	Recommended Action	In the following case, factory-default is [current] or [next poweron]. - No configuration is added except factory-default. - The configuration of [current] or [next poweron] saved on the Service Processor is deleted. In order to save the configuration automatically, add the new configuration except "factory-default" before changing the configuration.
2	Symptom	After executing "ldm set-spconfig", the name of configuration as [current] or [next poweron] might not be the same as the name of autosave configuration.
	Recommended Action	After changing the configuration of [current] or [next poweron] with "ldm set-spconfig", make sure to power off the Logical Domains system and then power it on again. The autosave function enables the configuration of [current] or [next poweron] just before poweroff of the Logical Domains system. If adding the configuration with "add-spconfig", the new configuration is enabled immediately and saved on the Service Processor automatically. However, if changing the configuration at the next powercycle which is saved on the Service Processor with "set-spconfig", the name of the autosave configuration is not reflected. Therefore, that causes an inconsistency between the name of configuration for [current] or [next poweron] saved on the Service Processor and the name of autosave configuration. In order to correct the inconsistency like this, the powercycling the Logical Domains system is needed.

3.10 Notes for "Logical Domains Configuration Assistant (ldmconfig) on Logical Domains 1.3 or later"

Table 3.10 Notes for "Logical Domains Configuration Assistant (ldmconfig) on Logical Domains 1.3 or later"

1	Symptom	The following error messages may be output when Logical Domains Configuration Assistant (ldmconfig(1M)) starts and starting Logical Domains Configuration Assistant (ldmconfig(1M)) fails. 1) - ERROR: Non-factory default configuration is current. This utility will only operate on unconfigured environments. - ERROR: Non-factory default configurations exist. This utility will only operate on unconfigured environments. 2) - ERROR: Additional Guest Domains already exist. This utility will only operate on unconfigured 3) - ERROR: Existing virtual console concentrator service. This utility will only operate on unconfigured environments. 4) - ERROR: Existing virtual switch service. This utility will only operate on unconfigured environments. 5) - ERROR: Existing virtual disk service. This utility will only operate on unconfigured environments.
	Recommended Action	Message 1) above is on screen when an Logical Domains environment exists. Message 2) above is on screen when a created domain exists. Message 3) above is on screen when a created virtual console (VCC) exists. Message 4) above is on screen when a created virtual switch service (VSW) exists. Message 5) above is on screen when a created virtual disk service (VDS) exists. Please execute the following procedure. Remove configuration information other than 'factory default', and created domains. After that, power on again and execute the ldmconfig(1M) command after starting in 'factory default'.

3.11 Notes for "Dynamic Resource Management (DRM)"

Table 3.11 Notes for "Dynamic Resource Management (DRM)"

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>• [Symptom that occurs in Logical Domains 1.3 or later]
The ldm command will fail when you specify the start time and end time of the policy across am 0:00 by the "tod-begin" (start time of the policy) and "tod-end" (stop time of the policy) properties of the ldm add-policy and ldm set-policy.
Example)
<code>primary# ldm add-policy enable=yes tod-begin=18:00:00 tod-end=9:00:00
name=med-usage ldom1
tod_begin=18:00:00 cannot be greater than or equal to tod_end=09:00:00</code></td></tr>
<tr><td>Recommended Action</td><td>• If you specify the start and end time of the policy across am 0:00, please set two policy before am 0:00 and after 0:00.
<code>primary# ldm add-policy enable=yes tod-begin=18:00:00 tod-end=23:59:59
name=med-usage1 ldom1
primary# ldm add-policy enable=yes tod-begin=00:00:00 tod-end=9:00:00
name=med-usage2 ldom1
primary# ldm list-domain -o resmgmt ldom1
NAME
ldom1
POLICY
STATUS PRI MIN MAX LO UP BEGIN END RATE EM ATK DK NAME
on 99 1 U 60 85 18:00:00 23:59:59 10 5 U 1 (*1)
on 99 1 U 60 85 00:00:00 09:00:00 10 5 U 1 (*2)</code>
*1) med-usage1
*2) med-usage2
Note) For Oracle VM Server for SPARC 2.0 or newer, when you change over DRM policy, Note No.2 in "Table 3.9 Notes on the Dynamic Resource Management (DRM) function" exists.</td></tr>
<tr><td rowspan="2">2</td><td>Symptom</td><td>[Symptom that occurs in Oracle VM Server for SPARC 2.0 or later]
The number of virtual CPUs of the domain may decrease and increase (or increase and decrease) suddenly when the DRM policy is changed over because of the cause described in Note). This symptom happens if the number of virtual CPUs is changed with a big difference.
Note) In Oracle VM Server for SPARC 2.0, Oracle Bug ID#6950417 has been fixed. Therefore, after the period of validity of DRM policy terminates, the DRM policy becomes ineffective, or the DRM policy is removed, the number of virtual CPUs of the domain returns to the value before the DRM policy becomes effective.
Information on the cause of the occurrence
When there is a big difference between the number of virtual CPUs of the domain before the DRM policy becomes effective and the number of virtual CPUs set by the DRM policy,
(1) If you make the DRM policy effective, the number of virtual CPUs of the domain may increase (or decrease) suddenly when the DRM policy is used.
(2) When the period of validity of the DRM policy terminates, the DRM policy becomes ineffective, or the DRM policy is removed, virtual CPUs of the domain may decrease (or increase) suddenly.</td></tr>
<tr><td>Recommended Action</td><td>This issue corresponds to Oracle Bug ID#7005028.
This is the behavior according to the specification.
No measures needs to be taken.</td></tr>
</table>

3.12 Notes for "Logical Domains P2V Migration Tool on Logical Domains 1.3 or later"

This section describes the notes for Logical Domains P2V Migration Tool on Logical Domains 1.3 or later according to the following phases:

- Before Logical Domains P2V migration
- Collection Phase
- Conversion Phase
- After Logical Domains P2V migration

3.12.1 Notes for "Before Logical Domains P2V migration"

Table 3.12.1 Notes for "Before Logical Domains P2V migration"

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>If you use the RAID software and the file system to migrate is on the volume of the RAID software, the file system is not migrated to the target system by the Logical Domains P2V Migration Tool.
Note) Only mirror volume of Solaris Volume Manager (hereinafter SVM) is moved by this tool which cancel the mirroring automatically. In addition, SVM's RAID0 or RAID5 volumes cannot be moved by this tool.
Example)
The "ldmp2v collect" command output the following message and fails at the Collection Phase of the Logical Domains P2V Migration Tool.
<pre>Collecting system configuration ...
ldmp2v: this system can not be converted because file system / is on a volume manager device.</pre></td></tr>
<tr><td>Recommended Action</td><td>This is normal operation based on the specification.
• If the mirroring of system disks is established by volume management software other than SVM, that system cannot be moved by this tool.
• If the source system has file system which is not system disk, please unmount these file system or exclude these file system by using option of the "ldmp2v collect" command. And please consider using ufsdump(1M)/ufsrestore(1M) as normal backup/restore procedure.</td></tr>
<tr><td rowspan="2">2</td><td>Symptom</td><td>If the source system has non-global zone, you can not migrate by the Logical Domains P2V Migration Tool.</td></tr>
<tr><td>Recommended Action</td><td>In this case, please consider other migration tool except for the Logical Domains P2V Migration tool.</td></tr>
</table>

3	Symptom	If the nonextent virtual device names are set in /etc/ldmp2v.conf, the following problem occurs.
		Example)
		If the nonexistent virtual switch name is set in /etc/ldmp2v.conf, the "ldmp2v convert" command output the following message and fails.
		`primary# ldmp2v convert -n vnet0 -d /mnt/kybele kybele`
		`Testing original system status ...`
		`The virtual switch service primary-vsw2 for virtual network vnet0 does not exist or is not bound`

	Recommended Action	This is normal operation based on the specification. Please set existent virtual device name. • VSW: virtual switch • VDS: virtual disk service • VCC: virtual console
4	Symptom	If the version of the Solaris 10 OS DVD ISO image which is used for Solaris OS upgrade in the preparation phase of the Logical Domains P2V Migration Tool is older than Solaris 10 10/09, the Guest Domain of the target system may give no response during OS booting.
	Recommended Action	Please use the Solaris 10 10/09 or later.
5	Symptom	Under the following environment and conditions, the network interfaces of the source system are not migrated to the target system. 1) "/etc/hostname.<network interface name>" does not exist, or 2) unplumb the network interface
	Recommended Action	1) Please reconfigure the network interface after migration. 2) Please use the Logical Domains P2V Migration Tool after plumb the network interface.
6	Symptom	Under the following environment and conditions, the "ldmp2v collect" command output the message. 1) "/etc/hostname.<network interface name>" exists, and 2) unplumb the network interface The network interface is not migrated to the target system though the command procedures continue. `ifconfig: status: SIOCGLIFFLAGS: <network interface name>: no such interface` `ifconfig: status: SIOCGLIFFLAGS: <network interface name>: no such interface`
	Recommended Action	Please use the Logical Domains P2V Migration Tool after plumb the network interface.

<table>
<tr><td rowspan="2">7</td><td>Symptom</td><td>If you use the multipath software and the file system to migrate is on the volume of the multipath software, the file system is not migrated to the target system by the Logical Domains P2V Migration Tool.
Example)
The "ldmp2v collect" command output the following message and fails at the Collection Phase of the Logical Domains P2V Migration Tool.
<pre>Collecting system configuration ...
ldmp2v: this system can not be converted because file system /mnt is on a volume manager device.</pre></td></tr>
<tr><td>Recommended Action</td><td>• Please release the multipath software settings and uninstall the multipath software before migration.
• If you want to migrate the data on disk array unit, please setup disk array unit of the target system and copy the data manually.</td></tr>
<tr><td rowspan="2">8</td><td>Symptom</td><td>The target or source systems may hang up if you run "ldmp2v(1M)" command multiply at the same time.</td></tr>
<tr><td>Recommended Action</td><td>• Please run "ldmp2v(1M)" command only once at the same time.</td></tr>
<tr><td rowspan="2">9</td><td>Symptom</td><td>If the target system has not sufficient resource, the size of the UFS file system or ZFS storage pool which have a Virtual Disk Backend, memory, swap, the migration may fail or it become lack of the resource after migration.
Because the Operating System of the target system is upgraded to Solaris 10 OS, the required size of disk, memory and swap may be increased than source system's resource.</td></tr>
<tr><td>Recommended Action</td><td>Please see the hand book of each release of Solaris 10 OS and estimate appropriate size of the disk space, memory size and swap size.
The following command is the example to specify the resource size of the target system.
Example)
• /(root) of the source system : 10GB → Increase to 20GB
• /var of the source system : 1GB → Increase to 5GB
• memory size of the source system : 1GB → Increase to 4GB
• Swap size of the source system : 1GB → Increase to 2GB (*)
<pre>primary# ldmp2v prepare -m /:20g -m /var:5g -m swap:2g -M 4096 -d /work/p2v domainA</pre>*) Logical Domain1.3 cannot change swap size. The swap size of the target system is same as source file system. So please migrate after adding the swap space to the source system. Or resize the swap space of the target system after migration.</td></tr>
</table>

3.12.2 Notes for "Collection Phase"

Table 3.12.2 Notes for "Collection Phase"

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>If 'flash' is specified (*) for the -a option of "ldmp2v collect" command as archive method at the collection phase, the following message may be output.
*) In Oracle VM Server for SPARC) 2.0 or newer, the default value of the "-a" option is 'flash'.
<pre># ldmp2v collect -a flash -d <Output directory>
Collecting system configuration ...
Archiving file systems ...
current filter settings
Creating the archive...
cpio: File size of "etc/mnttab" has increased by nnn (Action1)
cpio: "dev/ccv" ?   (Action2)
cpio: "dev/kkcv" ?   (Action2)
<...>
15280124 blocks
3 error(s)
Archive creation complete.</pre></td></tr>
<tr><td>Recommended Action</td><td>Ignore actions related to log files or files reflecting the system condition in message of Action 1).
Ignore actions related to a socket file in message of Action 2).
• This is the behavior according to the specification of flarcreate(1M) that runs by the "ldmp2v collect" command.</td></tr>
<tr><td rowspan="2">2</td><td>Symptom</td><td>In Logical Domains 1.3, ufsdump (default value) can be specified as archive method that is specified by the -a option of "ldmp2v collect " command at the collection phase of this tool.
The "ldmp2v collect" command collects archive of a mounted file system, but if it is used for a file system where ufsdump(1M) is mounted, a problem may occur.</td></tr>
<tr><td>Recommended Action</td><td>If you use "ldmp2v collect" command in Logical Domains 1.3, do not specify ufsdump as archive method.
Because only 'flash'(default value), 'none' can be specified in Oracle VM Server for SPARC 2.0, this problem does not occur.</td></tr>
<tr><td rowspan="2">3</td><td>Symptom</td><td>If 'flash' is specified by the archive method using the -a option of "ldmp2v collect" command used at the collection phase of this tool, a file whose size is 2GB or more cannot be moved.
Note) The default value of the "-a" option is 'flash' in Oracle VM Server for SPARC 2.0 or newer.</td></tr>
<tr><td>Recommended Action</td><td>This is the specification of 'flarcreate(1M)' issued by the "ldmp2v collect" command.
Please move manually a file whose size is 2GB or more.</td></tr>
</table>

3.12.3 Notes for "Conversion Phase"

Table 3.12.3 Notes for "Conversion Phase"

1	Symptom	The input value of the Solaris OS upgrade install at the Conversion Phase of the Logical Domains P2V Migration Tool (ldmp2v convert) are not use the target system. The source system's setting value is used in the target system without change.
	Recommended Action	This is normal operation based on the specification. If you want to change the settings, please use sys-unconfig(1M) after migration.

2	Symptom	In the conversion phase, the logical domain uses the Solaris upgrade process to upgrade to the Solaris 10 OS in the "ldmp2v convert" command. The used size of the file systems may increase, because the upgrade operation includes replacement of the system files and addition of the new packages.
		
		It the current file systems do not have enough space for the upgrade, the following messages display at the screen.
		
		`- More Space Needed ----------`
		`The system's file systems do not have enough space for the upgrade. The file systems that need more space are listed below. You can either go back and delete software that installs into the file systems listed, or you can let auto-layout reallocate space on the file systems.`
		`If you choose auto-layout, it will reallocate space on the file systems by:`
		`- Backing up file systems that it needs to change`
		`- Repartitioning the disks based on the file system changes`
		`- Restoring the file systems that were backed up`
		<...>

	Recommended Action	At the preparation phase, please run the "ldmp2v prepare" command with "`-m` <mountpoint>:<size>" option to extend the file system size. For more information about the necessary size of free space for upgrade, please see "Chapter 4. System Requirements, Guidelines, and Upgrade(Planning)" in "Solaris 10 10/09 Installation Guide: Planning for Installation and Upgrade" http://download.oracle.com/docs/cd/E19253-01/

3.12.4 Notes for "After Logical Domains P2V migration"

Table 3.12.4 Notes for "After Logical Domains P2V migration"

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>Because the OBP variables cannot be migrated to the target system by the Logical Domains P2V Migration Tool, the following problems occur.
Example)
When the "/(root)" file system of the source system is on the slice except for slice 0, the domain of the target system outputs the following message and fails to boot.
"The file just loaded does not appear to be executable."</td></tr>
<tr><td>Recommended Action</td><td>This is normal operation based on the specification.
The cause is that the domain is booted from slice 0 even though the device name which is set to boot-device is not set ":x" corresponding to the slice number.
• Please set OBP variables on the target system manually.
• If this problem happens, please execute the following procedures. Please set the boot-device to ":x" corresponding to the slice number of the source system.
Notes) ":x" will be
slice number 0 -> ":a"
slice number 1 -> ":b"
slice number 2 -> ":c"
slice number 3 -> ":d"
slice number 4 -> ":e"
slice number 5 -> ":f"
slice number 6 -> ":g"
slice number 7 -> ":h"

Example)
If the "/(root)" file system exist on the slice 3.

{0} ok printenv boot-device
boot-device = disk0
{0} ok setenv boot-device disk0:d
add ":d"
boot-device = disk0:d
{0} ok boot
Boot device: disk0:d File and args:
<...>
This has been fixed in Oracle VM Server for SPARC 2.0 or later.</td></tr>
</table>

<table>
<tr><td rowspan="2">2</td><td>Symptom</td><td>If the source system is with Solaris 10 OS, and the domain is booted, the following messages are on screen and the domain enters to the maintenance mode.
Example)
<pre>WARNING: The following files in / differ from the boot archive:
    new   /platform/SUNW,Sun-Fire-15000/lib/cvcd
    new   /platform/SUNW,Ultra-Enterprise-10000/lib/cvcd
   <...></pre>The recommended action is to reboot to the failsafe archive to correct the above inconsistency. To accomplish this, on a GRUB-based platform, reboot and select the "Solaris failsafe" option from the boot menu.
On an OBP-based platform, reboot then type "boot -F failsafe". Then follow the prompts to update the boot archive. Alternately, to continue booting at your own risk, you may clear the service by running:
"svcadm clear system/boot-archive"
Nov 16 08:22:56 svc.startd[7]: svc:/system/boot-archive:default:
Method "/lib/svc/method/boot-archive" failed with exit status 95.
Nov 16 08:22:56 svc.startd[7]: system/boot-archive:default failed fatally:
transitioned to maintenance (see 'svcs -xv' for details)</td></tr>
<tr><td>Recommended Action</td><td>Please execute the following procedures.
1) clear the boot-archive service
<pre># svcadm clear boot-archive</pre>2) reboot the system
<pre># shutdown -i6 -y -g0</pre></td></tr>
<tr><td rowspan="2">3</td><td>Symptom</td><td>The middle ware's which need FSUNlic package cannot work on the target system because this package is not included in the Enhanced Support Facility 3.0 or later.</td></tr>
<tr><td>Recommended Action</td><td>Please install FSUNlic package in the middleware products after installing the Enhanced Support Facility on the target system.</td></tr>
</table>

3.13 Notes for "Oracle VM Server for SPARC Physical-to-Virtual Migration Tool on Oracle VM Sever for SPARC 2.0"

Table 3.13 Notes for "Oracle VM Server for SPARC Physical-to-Virtual Migration Tool on Oracle VM Sever for SPARC 2.0"

<table>
<tr><td rowspan="2">1</td><td>Symptom</td><td>If 'disk' is set as the type of backend by BACKEND_TYPE of the /etc/ldmp2v.conf file, or the -b option of "ldmp2v prepare" command, the setting of BACKEND_PREFIX property of the /etc/ldmp2v.conf file is ignored and you are required to set the -B option.
<pre>Backend type 'disk' requires -B option.</pre></td></tr>
<tr><td>Recommended Action</td><td>If you specify 'disk' to the backend type, you must set the -B option the same times as the number of disks of the source system.
A physical disk or volume which you specified the -B option is allocated to the disk of the source system in the order of the disk entry described in the manifest file which you collected at the collection phase of this tool.
Example)
Command:
<pre>primary# ldmp2v prepare -B /dev/dsk/c2t0d0s2 -B /dev/dsk/c2t1d0s2 -d /work/p2v domainA</pre><pre>Content of the manifest file:
archive_method flash
cpu 1
disk 0 /dev/dsk/c0t1d0 143349312 (*1)
disk 1 /dev/dsk/c0t0d0 143349312 (*2)
hostid 83c2be45
<...></pre>*1) The content of /dev/dsk/c0t1d0s2 - the disk of the source system is extracted on a virtual disk whose backend device is /dev/dsk/c2t0d0s2 of the target system.
*2) The content of /dev/dsk/c0t0d0s2 - the disk of the source system is extracted on a virtual disk whose backend device is /dev/dsk/c2t1d0s2 of the target system.</td></tr>
<tr><td rowspan="2">2</td><td>Symptom</td><td>If a volume made by the VERITAS volume manager is used as backend of the virtual disk, an error occurs at the conversion phase of this tool and the moving fails.</td></tr>
<tr><td>Recommended Action</td><td>A volume made by the VERITAS volume manager cannot be used as backend of the virtual disk.</td></tr>
</table>

<table>
<tr><td rowspan="2">3</td><td>Symptom</td><td>If there are two or more disk slices allocated as swap area in the source system, only size of one swap area is changed though two or more 'swap's are specified with the -m option of the "ldmp2v prepare" command.</td></tr>
<tr><td>Recommended Action</td><td>If you specified a file system (including 'swap') having a same name multiple times with the -m option of the "ldmp2v prepare" command, only the value you specified at the last time is valid. Also, a size of the swap area described at the head of swap entry in the manifest file collected at the collection phase of this tool will be changed.

Example of command)
primary# ldmp2v prepare -m swap:4g -m swap:2g -d /LDoms/p2v/domeinX
This specification is valid.
Example of the manifest file)
archive_method flash
<...>
swap 0 /dev/dsk/c0t1d0s1 1058288 The size of this swap area is changed.
swap 1 /dev/dsk/c0t0d0s1 4202672
<...></td></tr>
<tr><td rowspan="2">4</td><td>Symptom</td><td>When you use a physical disk with EFI disk label as a backend device of the virtual disk of the destination domain in this tool, you need to specify the second slice.
In this case, the entire disk will be used as a backend device, and data stored in places other than the second slice will be overwritten.</td></tr>
<tr><td>Recommended Action</td><td>This is the behavior according to the specification of this tool.</td></tr>
</table>

Chapter 4 System Requirements

In this section, the system requirements for Logical Domains Manager are explained according to the version.

4.1 System requirements for Oracle VM Server for SPARC 2.2

Table 4.1 System requirements for Oracle VM Server for SPARC 2.2

Hardware	SPARC T4-1/T4-2/T4-4/T3-1/T3-2/T3-4 SPARC Enterprise T5120/T5220/T5140/T5240/T5440
Firmware	8.2.0.a or later (SPARC T4-1/T4-2/T4-4/T3-1/T3-2/T3-4) 7.4.2 or later (SPARC Enterprise T5120/T5220/T5140/T5240/T5440)
Operating System	• Oracle Solaris 10 8/11 OS or later • In case of SPARC T4-1/T4-2/T4-4, confirm that the OS is newer than Oracle Solaris 10 8/11 and that the following patch has been applied to the system. 147440-08(SunOS 5.10: Solaris kernel patch) or later 147149-01(SunOS 5.10: mpt_sas patch) or later 147153-01(SunOS 5.10: hermon patch) or later 147707-02(SunOS 5.10: ssl patch) or later 147159-03(SunOS 5.10: T4 crypto performance patch) or later • When using the SPARC T3-4, please apply the following patch(es) before starting the operation. 143647-08(SunOS 5.10: fp patch) or later 144567-01(SunOS 5.10: ixgbe patch) or later 145098-02(SunOS 5.10: emlxs driver patch) or later 145868-01(SunOS 5.10: pcie patch) or later 144486-04(SunOS 5.10: qlge patch) or later 144488-04(SunOS 5.10: kernel patch) or later 145786-02(SunOS 5.10: pcicfg patch) or later 145961-01(SunOS 5.10: fmd patch) or later
Required Patches (Control Domain)	After installing Logical Domains Manager, confirm that the following patch has been installed before starting operation. 144500-19 (Oracle Solaris 10 8/11 feature kernel update) or later 148233-02 (Oracle Solaris 10 8/11:SR-IOV and DIO) 141514-02 (SunOS 5.10: vntsd patch) or later

Required Patches (Service Domains)	Please apply the following patch(es) to the domain. 144500-19 (Oracle Solaris 10 8/11 feature kernel update) or later 148233-02 (Oracle Solaris 10 8/11:SR-IOV and DIO) 141514-02 (SunOS 5.10: vntsd patch) or later
Required Patches (I/O Domains)	Please apply the following patch(es) to the domain. 144500-19 (Oracle Solaris 10 8/11 feature kernel update) or later 148233-02 (Oracle Solaris 10 8/11:SR-IOV and DIO)
Required Patches (Guest Domains)	Please apply the following patch(es) to the domain. 144500-19 (Oracle Solaris 10 8/11 feature kernel update) or later
Enhanced Support Facility	• SPARC Enterprise T5120/T5220 Enhanced Support Facility 3.0 or newer The following patches are required for Enhanced Support Facility Manuals & Patches 3.0A20 or 3.0A30. 914595-05 or newer **(*)** 914603-08 or newer 914604-17 or newer • SPARC Enterprise T5140/T5240 Enhanced Support Facility 3.0.1 or newer (The following patches are required for 3.0.1) 914595-05 or newer **(*)** 914603-08 or newer 914604-17 or newer • SPARC Enterprise T5440 Enhanced Support Facility 3.1 or newer (The following patches are required for 3.1) 914603-08 or newer 914604-17 or newer ***)** The following patches are not required for 3.1 or newer. 914595-05 or newer • All models for SPARC T3-1/T3-2/T3-4 Enhanced Support Facility 3.2 or newer The patches are not required. • SPARC T4-1/T4-2/T4-4 Enhanced Support Facility 3.2.1 or newer The following patches are required. 914604-17 or newer

4.2 System requirements for Oracle VM Server for SPARC 2.1

Table 4.2 System requirements for Oracle VM Server for SPARC 2.1

Hardware	SPARC T4-1/T4-2/T4-4/T3-1/T3-2/T3-4 SPARC Enterprise T5120/T5220/T5140/T5240/T5440
Firmware	8.2.0.a or later (SPARC T4-1/T4-2/T4-4) 8.1.0 c or later (SPARC T3-1/T3-2/T3-4) 7.4.0 b or later (SPARC Enterprise T5120/T5220/T5140/T5240/T5440)
Operating System	• Oracle Solaris 10 9/10 OS or later • In case of SPARC T4-1/T4-2/T4-4, confirm that the OS is newer than Oracle Solaris 10 8/11 and that the following patch has been applied to the system. 147440-08(SunOS 5.10: Solaris kernel patch) or later 147149-01(SunOS 5.10: mpt_sas patch) or later 147153-01(SunOS 5.10: hermon patch) or later 147707-02(SunOS 5.10: ssl patch) or later 147159-03(SunOS 5.10: T4 crypto performance patch) or later • When using the SPARC T3-4, please apply the following patch(es) before starting the operation. 143647-08(SunOS 5.10: fp patch) or later 144567-01(SunOS 5.10: ixgbe patch) or later 145098-02(SunOS 5.10: emlxs driver patch) or later 145868-01(SunOS 5.10: pcie patch) or later 144486-04(SunOS 5.10: qlge patch) or later 144488-04(SunOS 5.10: kernel patch) or later 145786-02(SunOS 5.10: pcicfg patch) or later 145961-01(SunOS 5.10: fmd patch) or later
Required Patches (Control Domain)	After installing Logical Domains Manager, confirm that the following patch has been installed before starting operation. 147507-01 (VM Server for SPARC 2.1 ldmd patch) or later 142909-17 (Oracle Solaris 10 9/10 feature kernel update) or later 141514-02 (SunOS 5.10: vntsd patch) or later 145868-04 (SunOS 5.10: pcie patch) or later
Required Patches (Service Domains)	Please apply the following patch(es) to the domain. 142909-17 (Oracle Solaris 10 9/10 feature kernel update) or later 141514-02 (SunOS 5.10: vntsd patch) or later
Required Patches (I/O Domains)	Please apply the following patch(es) to the domain. 142909-17 (Oracle Solaris 10 9/10 feature kernel update) or later
Required Patches (Guest Domains)	Please apply the following patch(es) to the domain. 142909-17 (Oracle Solaris 10 9/10 feature kernel update) or later

Enhanced Support Facility	• SPARC Enterprise T5120/T5220 Enhanced Support Facility 3.0 or newer The following patches are required for Enhanced Support Facility Manuals & Patches 3.0A20 or 3.0A30. 914595-05 or newer **(*)** 914603-08 or newer 914604-17 or newer • SPARC Enterprise T5140/T5240 Enhanced Support Facility 3.0.1 or newer (The following patches are required for 3.0.1) 914595-05 or newer **(*)** 914603-08 or newer 914604-17 or newer • SPARC Enterprise T5440 Enhanced Support Facility 3.1 or newer (The following patches are required for 3.1) 914603-08 or newer 914604-17 or newer ***)** The following patches are not required for 3.1 or newer. 914595-05 or newer • All models for SPARC T3-1/T3-2/T3-4 Enhanced Support Facility 3.2 or newer The patches are not required. • SPARC T4-1/T4-2/T4-4 Enhanced Support Facility 3.2.1 or newer The following patches are required. 914604-17 or newer

4.3 System requirements for Oracle VM Server for SPARC 2.0

Table 4.3 System requirements for Oracle VM Server for SPARC 2.0

Hardware	SPARC T3-1/T3-2/T3-4 SPARC Enterprise T5120/T5220/T5140/T5240/T5440
Firmware	8.0.4 a or later(SPARC T3-1/T3-2/T3-4) 7.3.0 c or later(T5120/T5220/T5140/T5240/T5440)
Operating System	• Oracle Solaris 10 9/10 or later • When using the SPARC T3-4, please apply the following patch(es) before starting the operation. 143647-08(SunOS 5.10: fp patch) or later 144567-01(SunOS 5.10: ixgbe patch) or later 145098-02(SunOS 5.10: emlxs driver patch) or later 145868-01(SunOS 5.10: pcie patch) or later 144486-04(SunOS 5.10: qlge patch) or later 144488-04(SunOS 5.10: kernel patch) or later 145786-02(SunOS 5.10: pcicfg patch) or later 145961-01(SunOS 5.10: fmd patch) or later
Required Patches (Control Domain)	After you finish installing Logical Domains Manager, please apply the following patch(es) before starting the operation. 142909-17 (Oracle Solaris 10 9/10 feature kernel update) or later 141514-02 (SunOS 5.10: vntsd patch) or later 145868-04 (SunOS 5.10: pcie patch) or later 145880-02 (OVM Server for SPARC 2.0 ldmd patch) or later
Required Patches (Service Domains)	Please apply the following patch(es) to the domain. 142909-17 (Oracle Solaris 10 9/10 feature kernel update) or later 141514-02 (SunOS 5.10: vntsd patch) or later
Required Patches (I/O Domains)	Please apply the following patch(es) to the domain. 142909-17 (Oracle Solaris 10 9/10 feature kernel update) or later
Required Patches (Guest Domains)	Please apply the following patch(es) to the domain. 142909-17 (Oracle Solaris 10 9/10 feature kernel update) or later

Enhanced Support Facility	• SPARC Enterprise T5120/T5220 Enhanced Support Facility 3.0 or newer The following patches are required for Enhanced Support Facility Manuals & Patches 3.0A20 or 3.0A30. 914595-05 or newer **(*)** 914603-08 or newer 914604-17 or newer • SPARC Enterprise T5140/T5240 Enhanced Support Facility 3.0.1 or newer (The following patches are required for 3.0.1) 914595-05 or newer **(*)** 914603-08 or newer 914604-17 or newer • SPARC Enterprise T5440 Enhanced Support Facility 3.1 or newer (The following patches are required for 3.1) 914603-08 or newer 914604-17 or newer ***)** The following patches are not required for 3.1 or newer. 914595-05 or newer • All models for SPARC T3-1/T3-2/T3-2 Enhanced Support Facility 3.2 or newer The patches are not required.

4.4 System requirements for Logical Domains Manager1.3

Table 4.4 System requirements for Logical Domains Manager 1.3

Hardware	SPARC Enterprise T5120/T5220/T5140/T5240/T5440
Firmware	7.2.2.e or later
Operating System	Solaris 10 8/07 OS or later (Solaris 10 10/09 OS or later is recommended.) Solaris 10 8/07, 5/08, 10/08, 5/09 require the following patch. 141444-09 or later
Required Patches (Control Domain)	Please apply the following patches before installing Logical Domains Manager. 139946-01 or later 142055-03 or later 141514-02 or later 141054-01 or later 142245-01 or later
Required Patches (Service Domains, I/O Domains)	Please apply the following patches to the domain after completing OS installation on the domain. 139946-01 or later 142055-03 or later 142245-01 or later
Required Patches (Guest Domains)	Please apply the following patches to the domain after completing OS installation on the domain. 142245-01 or later
Enhanced Support Facility	• SPARC Enterprise T5120/T5220 Enhanced Support Facility 3.0 or newer The following patches are required for Enhanced Support Facility Manuals & Patches 3.0A20 or 3.0A30. 914595-05 or newer **(*)** 914603-06 or newer 914604-06 or newer • SPARC Enterprise T5140/T5240 914595-05 or newer **(*)** 914603-06 or newer 914604-06 or newer • SPARC Enterprise T5440 Enhanced Support Facility 3.1 or newer (The following patches are required for 3.1) 914603-06 or newer 914604-06 or newer ***)** The following patches are not required for 3.1 or newer. 914595-05 or newer

4.5 System requirements for Logical Domains Manager1.2

Table 4.5 System requirements for Logical Domains Manager 1.2

Hardware	SPARC Enterprise T5120/T5220/T5140/T5240/T5440
Firmware	7.2.2.e or later
Operating System	Solaris 10 8/07 or later (Solaris 10 10/09 OS or later is recommended.) Solaris 10 8/07, 5/08, 10/08, 5/09 require the following patch. 139555-08
Required Patches (Control Domain)	Please apply the following patches before installing Logical Domains Manager. 141778-02 or later 139983-04 or later
Logical Domains Manager	142840-04 or later
Enhanced Support Facility	• SPARC Enterprise T5120/T5220 Enhanced Support Facility 3.0 or newer The following patches are required for Enhanced Support Facility Manuals & Patches 3.0A20 or 3.0A30. 914595-05 or newer (*) 914603-06 or newer 914604-06 or newer • SPARC Enterprise T5140/T5240 914595-05 or newer (*) 914603-06 or newer 914604-06 or newer • SPARC Enterprise T5440 Enhanced Support Facility 3.1 or newer (The following patches are required for 3.1) 914603-06 or newer 914604-06 or newer *) The following patches are not required for 3.1 or newer. 914595-05 or newer

4.6 System requirements for Logical Domains Manager1.1

Table 4.6 System requirements for Logical Domains Manager 1.1

Hardware	SPARC Enterprise T5120/T5220/T5140/T5240/T5440
Firmware	7.2.2.b or later required
Operating System	• SPARC Enterprise T5120/T5220/T5140/T5240 Solaris 10 10/08 or later is recommended. Solaris 10 8/07 require the following patch 137137-09 or later • SPARC Enterprise T5440 Solaris 10 10/08 or later is recommended. Solaris 10 5/08 require the following patch 137137-09 or later
Required Patches (Control Domain)	Please apply the following patches before installing Logical Domains Manager. 139458-01 or later 139502-01 or later 139508-01 or later 139562-02 or later 139570-02 or later
Required Patches (Service Domains, I/O Domains)	Please apply the following patches to the domain after completing OS installation on the domain. 139458-01 or later 139508-01 or later 139562-02 or later 139570-02 or later
Required Patches (Guest Domains)	Please apply the following patches to the domain after completing OS installation on the domain. 139508-01 or later 139562-02 or later 139570-02 or later
Logical Domains Manager	140809-02 or later

Enhanced Support Facility	• SPARC Enterprise T5120/T5220 Enhanced Support Facility 3.0 or newer The following patches are required for Enhanced Support Facility Manuals & Patches 3.0A20 or 3.0A30. 914595-05 or newer (*) 914603-06 or newer 914604-06 or newer • SPARC Enterprise T5140/T5240 914595-05 or newer (*) 914603-06 or newer 914604-06 or newer • SPARC Enterprise T5440 Enhanced Support Facility 3.1 or newer (The following patches are required for 3.1) 914603-06 or newer 914604-06 or newer *) The following patches are not required for 3.1 or newer. 914595-05 or newer

4.7 System requirements for Logical Domains Manager1.0.3

Table 4.7 System requirements for Logical Domains Manager 1.0.3

Hardware	SPARC Enterprise T5120/T5220/T5140/T5240/T5440
Firmware	• SPARC Enterprise T5120/T5220 7.0.9 or later • SPARC Enterprise T5140/T5240 7.1.6.d or later is recommended 7.1.3.d or later • SPARC Enterprise T5440 7.1.7.d or later
Operating System	• SPARC Enterprise T5120/T5220/ T5140/T5240 Solaris 10 5/08 or later is recommended. Solaris 10 8/07 require the following patch. 127127-11 or later • SPARC Enterprise T5440 Solaris 10 10/08 or later is recommended Solaris 10 5/08 require the following patch. 137137-09 or later
Required Patches (Control Domain, Service Domains, I/O Domains, Guest Domains)	Please apply the following patches before installing Logical Domains Manager. • SPARC Enterprise T5120/T5220 127111-09 or later • SPARC Enterprise T5140/T5240 127111-11 or later • SPARC Enterprise T5440 Solaris 10 5/08 require the following patch. 137111-03 or later 137291-01 or later 138048-01 or later 138312-01 or later Note) When you use the installation server, please perform the installation into the Control Domain, and Guest Domain of T5440 after applying the above patches to the install image.

Enhanced Support Facility	• SPARC Enterprise T5120/T5220 Enhanced Support Facility 3.0 or newer The following patches are required for Enhanced Support Facility Manuals & Patches 3.0A20 or 3.0A30. 914595-05 or newer (*) 914603-06 or newer 914604-06 or newer • SPARC Enterprise T5140/T5240 914595-05 or newer (*) 914603-06 or newer 914604-06 or newer • SPARC Enterprise T5440 Enhanced Support Facility 3.1 or newer (The following patches are required for 3.1) 914603-06 or newer 914604-06 or newer *) The following patches are not required for 3.1 or newer. 914595-05 or newer

4.8 System requirements for Logical Domains Manager1.0.2

Table 4.8 System requirements for Logical Domains Manager 1.0.2

Hardware	SPARC Enterprise T5120/T5220
Firmware	7.0.9 or later
Operating System	Solaris 10 8/07 OS or later
Required Patches (Control Domain)	Please apply the following patches before installing Logical Domains Manager. 127111-09 or later
Required Patches (Service Domains, I/O Domains)	Please apply the following patches to the domain after completing OS installation on the domain. 127111-09 or later
Required Patches (Guest Domains)	Please apply the following patches to the domain after completing OS installation on the domain. 127111-09 or later
Enhanced Support Facility	The following patches are required for Enhanced Support Facility Manuals & Patches 3.0A20 or 3.0A30. 914595-05 or newer **(*)** 914603-06 or newer 914604-06 or newer ***)** The following patches are not required for 3.1 or newer. 914595-05 or newer

Chapter 5 Notes on SPARC Enterprise T Series

This chapter explains Logical Domains Operating Environment and configurations in SPARC T4-1/T4-2/T4-4/T3-1/T3-2/T3-4 and SPARC Enterprise T5120/T5220/T5140/T5240/T5440.

5.1 Notes on SPARC T4-1/T4-2/T4-4

5.1.1 Working environment and recommended configuration of Logical Domains

Fujitsu recommends the following configurations in SPARC T4-1/T4-2/T4-4 server.

However you need to test your configuration in the environment where you use the system in actual business. Our recommendation may differ depending on the result of the test.

Table 5.1 Recommended configurations in SPARC T4-1/T4-2/T4-4

Number of CPUs	One or more CPU core per domain
Memory	Control Domain, I/O domain : 4GB or larger memory size Guest Domain: 2GB or larger memory size
Internal disks	It is used in the Control Domain, with mirrored disk by RAID software. (The internal disks are available in the Guest Domain.)

5.1.2 Notes on LAN in SPARC T4

The following describes network driver names of standard LAN ports.

SPARC T4 : igb

5.1.3 Notes on PCI Hot Plug for PCI Express Module (PEM) (SPARC T4-4)

When a PCI Express Module (PEM) is allotted to a Guest Domain through Direct I/O, it is not possible to remove that PEM from the Guest Domain using hot plugging, while Oracle Solaris OS is running. To replace or remove a PEM allotted to a Guest Domain through Direct I/O, either the PEM should first be deleted (ldm remove-io) from the target Guest Domain, added (ldm add-io) to the Control Domain, then removed using hot plugging, or it should be removed after powering off the system.

When a PEM, has been removed, please do not power on the system with a system configuration in which the PEM is still allotted to the previous Guest Domain.

5.1.4 Notes on Virtual Cipher Units

There are no Virtual Cipher Units on SPARC T4. On SPARC T4, it has become possible to use the hardware encryption mechanism of all the virtual CPUs without allotting any Virtual Cipher Units to them.

5.1.5 Precautions for the usage of 10GbE QSPF network module (SE4X5XC1G) and Rear I/O module (SE5X9RM1G) with Direct I/O (for SPARC T4-2/T4-4)

In case of SPARC T4-2, if the device on 10GbE QSPF network module or in case of SPARC T4-4, if the device on Rear I/O module is first allocated to Guest Domains through Direct I/O and then returned to the Control Domain, the "nxge" driver interface on that device may fail to activate (particularly, attach(9E)).

This problem occurs when the following type of operation is executed:

1. Delete the device on 10GbE QSPF network module or the Rear I/O module from the Control Domain.

```
primary# ldm remove-io niu@480 primary
```

2. Reboot the Control Domain to enable the changed configuration.

```
primary# reboot -- -r
```

3. Allocate the device on 10GbE QSPF network module or the Rear I/O module to a Guest Domain (ldg1) and start the Guest Domain.

```
primary# ldm add-io niu@480 ldg1
primary# ldm bind-domain ldg1
primary# ldm start-domain ldg1
```

4. Stop the Guest Domain (ldg1), delete the device on 10GbE QSPF network module or the Rear I/O module and allocate it to the Control Domain.

```
primary# ldm stop-domain ldg1
primary# ldm unbind-domain ldg1
primary# ldm remove-io niu@480 ldg1
primary# ldm add-io niu@480 primary
```

5. Reboot the Control Domain to enable the changed configuration.

```
primary# reboot -- -r
```

6. After rebooting the Control Domain, the device on 10GbE QSPF network module or the Rear I/O module may fail when attempts are made to activate it.

```
primary# ifconfig nxge0 plumb 192.168.2.2 netmask + broadcast + up
ifconfig: SIOCSLIFNAME for ip: nxge0: Invalid argument
```

***)** Message File (/ var / adm / messages) to the output is as follows.

```
WARNING: nxge0 : ==> nxge_add_intrs_adv_type_fix: failed #0 status 0xffffffff
WARNING: nxge0 :  nxge_add_intrs:  nxge_add_intrs_adv failed: status 0x60000000
```

There is no workaround to this problem. If this problem occurs, please powercycle the Control Domain like the following.

```
primary# shutdown -i0 -g0 -y
....
syncing file systems... done
Program terminated
r)eboot, o)k prompt, h)alt? o     *) [Enter o]
{0} ok power-off
Chassis | critical: Host has been powered off
```

***)** Enter [#(sharp)] and [. (dot)] sequentially.

```
-> start /SYS
Are you sure you want to start /SYS (y/n)? y
Starting /SYS
```

Re-execute no.6 (above) to properly activate the device on 10GbE QSPF network module or the Rear I/O module.

5.2 Notes on SPARC T3-1/T3-2/T3-4

5.2.1 Working environment and recommended configuration of Logical Domains

Fujitsu recommends the following configurations in SPARC T3-1/T3-2/T3-4 server.

However you need to test your configuration in the environment where you use the system in actual business. Our recommendation may differ depending on the result of the test.

Table 5.2 Recommended configurations in SPARC T3-1/T3-2/T3-4

Number of CPUs	One or more CPU core per domain
Memory	Control Domain, I/O domain : 4GB or larger memory size Guest Domain: 2GB or larger memory size
Internal disks	It is used in the Control Domain, with mirrored disk by RAID software. (The internal disks are available in the Guest Domain.)

5.2.2 Notes on LAN in SPARC T3

The following describes network driver names of standard LAN ports.

SPARC T3 : igb

5.2.3 Notes on PCI Hot Plug for PCI Express Module (PEM) (SPARC T3-4)

When a PCI Express Module (PEM) is allotted to a Guest Domain through Direct I/O, it is not possible to remove that PEM from the Guest Domain using hot plugging, while Oracle Solaris OS is running. To replace or remove a PEM allotted to a Guest Domain through Direct I/O, either the PEM should first be deleted (ldm remove-io) from the target Guest Domain, added (ldm add-io) to the Control Domain, then removed using hot plugging, or it should be removed after powering off the system.

When a PEM, has been removed, please do not power on the system with a system configuration in which the PEM is still allotted to the previous Guest Domain.

5.3 Notes on SPARC Enterprise T5120/T5220

5.3.1 Working environment and recommended configuration of Logical Domains

Fujitsu recommends the following configurations in SPARC Enterprise T5120/T5220.

However you need to test your configuration in the environment where you use the system in actual business. Our recommendation may differ depending on the result of the test.

Table 5.3 Recommended configurations in SPARC Enterprise T5120/T5220

Number of CPUs	More than or equal to 1 CPU core per domain
Memory	Control Domain, I/O domain: 4GB or larger memory size Guest Domain: 2GB or larger memory size
Internal disks	It is used for the Control Domain with mirrored disks by RAID software. (The internal disks are available for the Guest Domain.)

5.3.2 Notes on LAN in SPARC Enterprise T5120/T5220

The following describes network driver names of standard LAN ports.

SPARC Enterprise T5120/T5220:e1000g

5.4 Notes on SPARC Enterprise T5140/T5240

5.4.1 Working environment and recommended configuration of Logical Domains

Fujitsu recommends the following configurations for SPARC Enterprise T5140/T5240.
Despite the recommendation, Fujitsu recommends you to test on a system you are going to build.

Table 5.4 Recommended configurations in SPARC Enterprise T5140/T5240

Number of CPUs	More than or equal to 1 CPU core per domain
Memory	Control Domain, I/O domain: 4GB or larger memory size Guest Domain: 2GB or larger memory size
Internal disks	It is used for the Control Domain, with mirrored of disks by RAID software. (The internal disk is available for the Guest Domain.)

5.4.2 Notes on LAN in SPARC Enterprise T5140/T5240

Please notice the usageof 10GbitEthernet XAUI cards. If a XAUI card is mounted, corresponding standard LAN port is unavailanble.(In case of SPARC Enterprise T5140/T5240)

Table 5.5 When 10GbitEthernet XAUI card is installed, In case of SPARC Enterprise T5140/T5240

XAUI card installation location	Unavailable Standard LAN Ports
Slot 0	NET1
Slot 1	NET0

When you configure the Guest Domain on SPARC Enterprise T5140/T5240, standard LAN ports are allocated to the I/O domain.
When the standard LAN port is allocated to the I/O domain, LAN cards are to be added to the Control Domain.

Figure 5.1 In case of SPARC Enterprise T5140

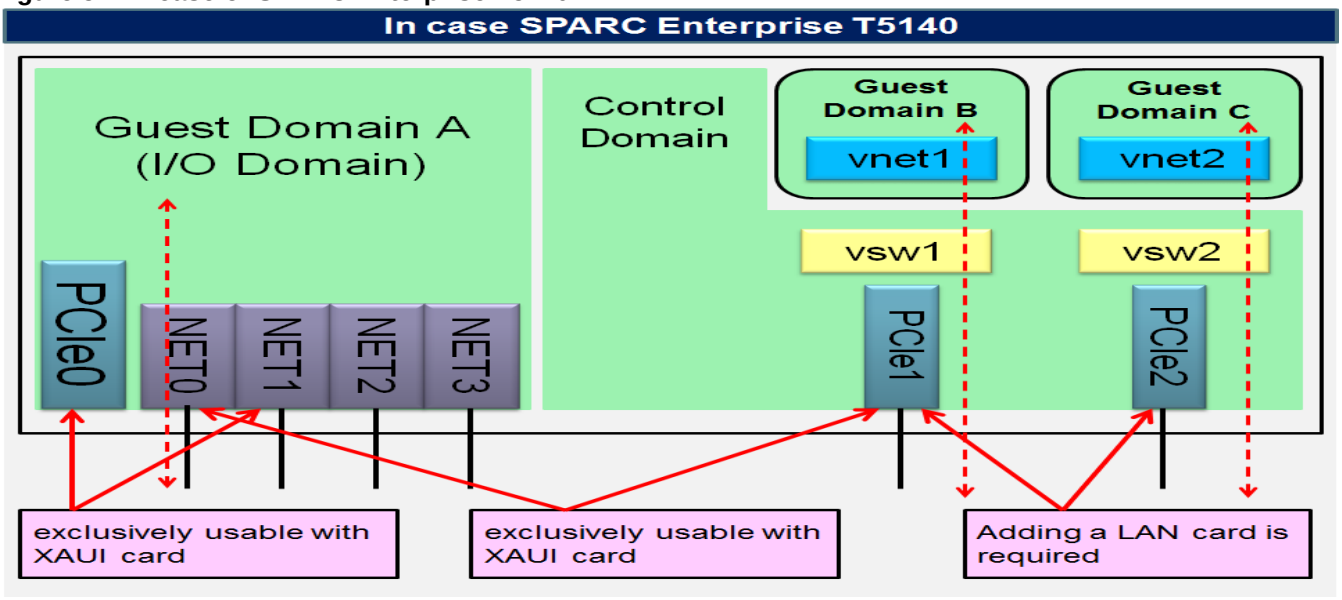
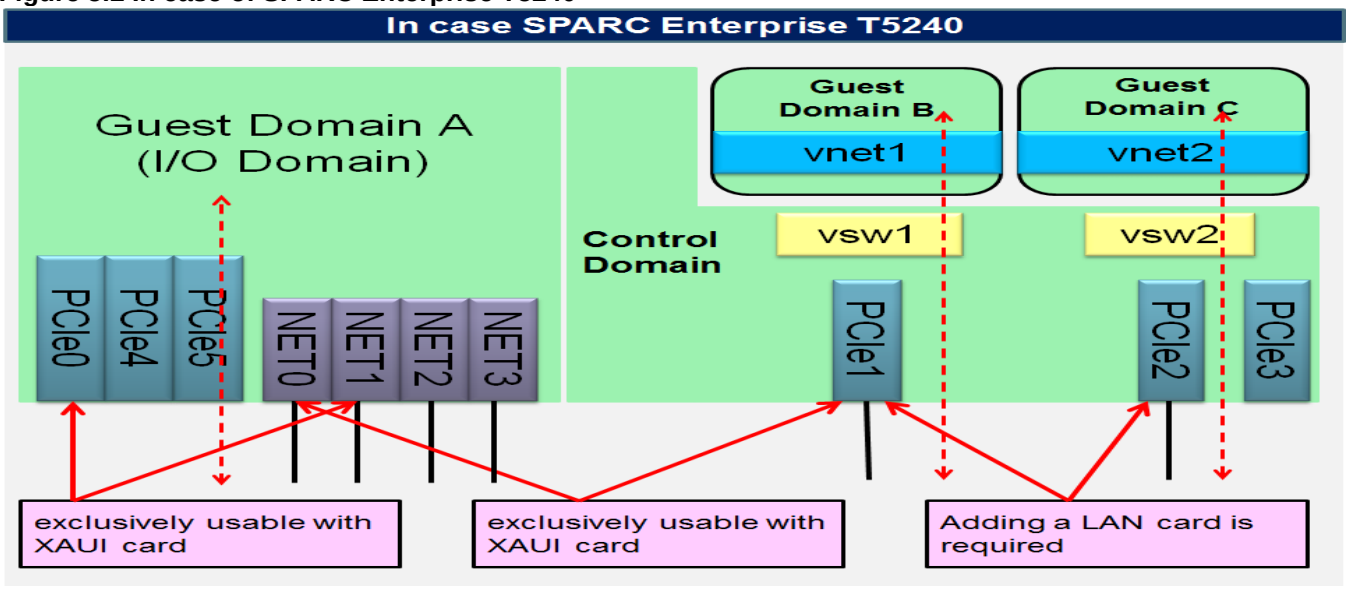


Figure 5.2 In case of SPARC Enterprise T5240



The following describes network driver names of standard LAN ports.

SPARC Enterprise T5140/T5240:nxge

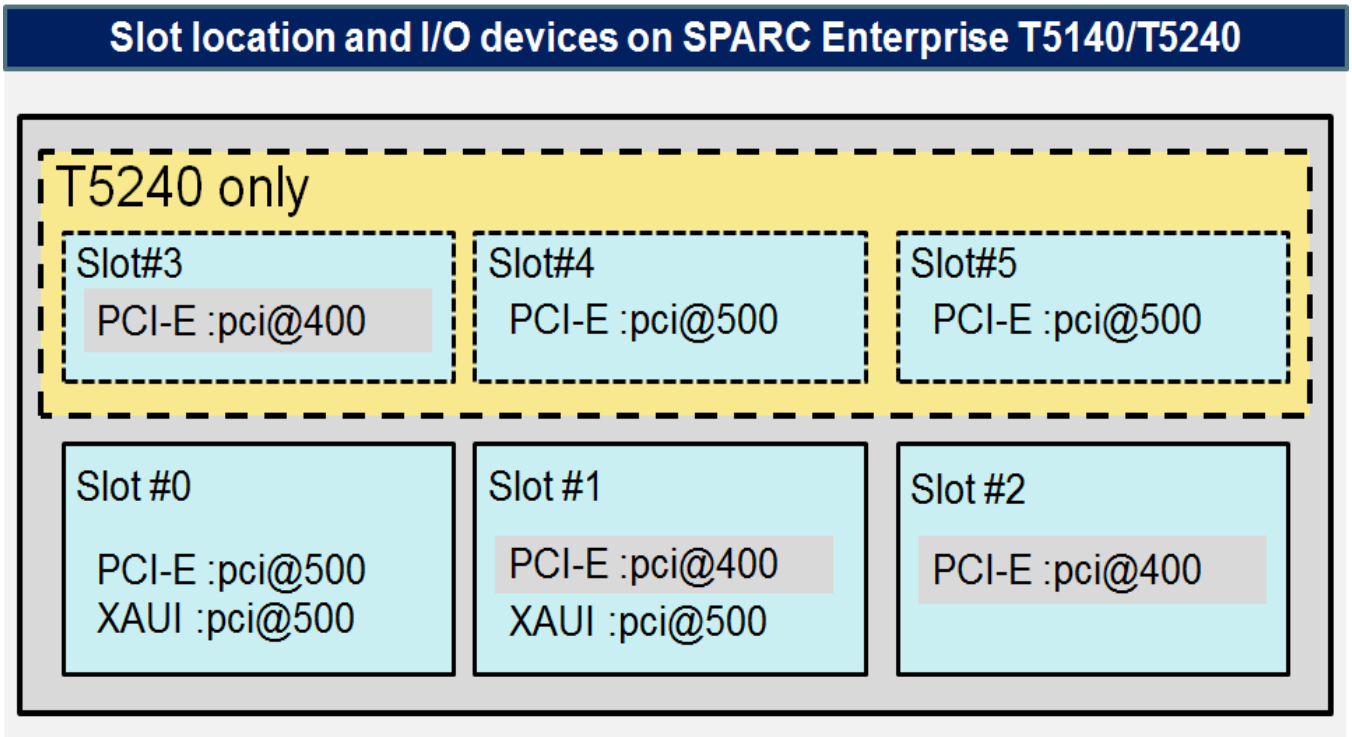
5.4.3 Loading additional cards

Regarding with slots mounting either Ethernet cards, XAUI cards, storage connection cards, or other cards on SPARC Enterprise T5140/T5240, please see "Figure 5.3".

Control Domain : pci@400

I/O Domain : pci@500

Figure 5.3 Slot location and I/O devices on SPARC Enterprise T5140/T5240



5.5 Notes on SPARC Enterprise T5440

5.5.1 Working environment and recommended configuration of Logical Domains

Fujitsu recommends the following configurations in SPARC Enterprise T5440.
Despite the recommendation, Fujitsu recommends you to test on a system you are going to build.

Table 5.6 Recommended configurations in SPARC Enterprise T5440

Number of CPUs	More than or equal to 1 CPU core per domain
Memory	Control Domain, I/O domain : 4GB or larger memory size Guest Domain: 2GB or larger memory size
Internal disks	It is used for the Control Domain with, mirrored disks by RAID software. (The internal disk is available for the Guest Domain.)

5.5.2 Notes on LAN in SPARC Enterprise T5440

- The following standard LAN ports are unavailable if 10GbitEthernet XAUI card is mounted. A XAUI card is exclusively usable with a standard LAN port.(In case of SPARC Enterprise T5440)

Table 5.7 When 10GbitEthernet XAUI card is installed, In case of SPARC Enterprise T5440

XAUI card installation location	Unavailable Standard LAN Ports
Slot 4	NET1
Slot 5	NET0

The following describes network driver names of standard LAN ports.

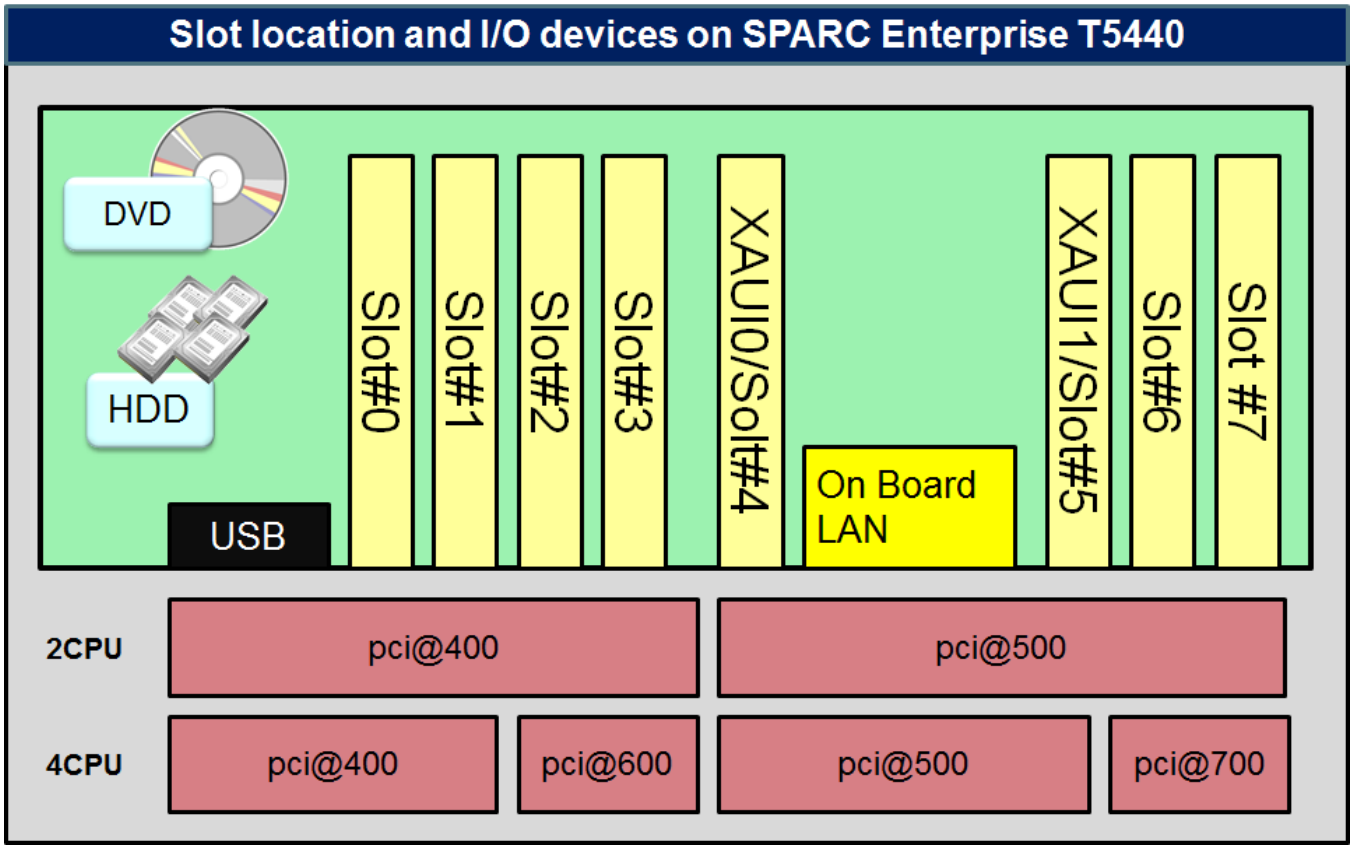
SPARC Enterprise T5440:nxge

5.5.3 Loading additional cards

Regarding slots for an Ethernet card, XAUI card, Storage connection card, and other cards on SPARC Enterprise T5440, please refer to "Figure 5.4".
In addition, I/O device and the number of I/O domains that you can create are different between 2 CPU model and 4 CPU model.

	In case of 2 CPU model	In case of 4 CPU model
Number of I/O Domains	2	4
Control Domain	pci@400	pci@400(*), pci@500, pci@600, pci@700 (*) Be sure to allocate pci@400 to the Control Domain.
I/O Domain	pci@500	pci@500, pci@600, pci@700

Figure 5.4 Slot location and I/O devices on SPARC Enterprise T5440



5.6 Hardware requirement of I/O Domains

- SPARC T4-1/T4-2/T4-4
- SPARC T3-1/T3-2/T3-4
- SPARC Enterprise T5140/T5240/T5440
- Ethernet card for the Control Domain
- External storage connection card for the I/O domain and external storage

5.7 Support situation of PCI Express (PCIe) direct I/O

The following describes whether or not PCI card, onboard LAN, and onboard SAS which support PCI Express direct I/O run.

Table 5.8 Support or Not support in PCI Express direct I/O

Type	Hardware	Product Name in Japan **(*1)**	Support or Not support**(*2)**	Remarks
FCoE	Dual 10Gbps FCoE Card	SE0X7EC12F SE0X7EF12F	Not support	
Fibre Channel	Single-Channel 8Gbps Fibre Channel Card	SE0X7F21F	Support	PCIe direct I/O can not configured in MPx0.
	Dual-Channel 8Gbps Fibre Channel Card	SE0X7F22F	Support	PCIe direct I/O can not configured in MPx0.
	Single-Channel 8Gbps Fibre Channel Card	SE0X7F31F	Not support	
	Dual-Channel 8Gbps Fibre Channel Card	SE0X7F32F	Not support	
	Single-Channel 4Gbps Fibre Channel Card	SE0X7F11F	Support	914583-08 or later. - SAN boot is not supported. - Oracle Solaris11 is not supported.
	Dual-Channel 4Gbps Fibre Channel Card	SE0X7F12F	Support	914583-08 or later - SAN boot is not supported. - Oracle Solaris11 is not supported.
	4Gb Single-Channel Fibre Channel Card	XSEFC401AF	Not support	
	4Gb Dual-Channel Fibre Channel Card	XSEFC402AF	Not support	
SAS	SAS Card	SE0X7SA1F	Not support	
	6Gbps SAS Card	SE0X7SA2F	Support	
	6Gb SAS (PEM)	SE5X7SA1G	Support	
	Onboard LAN SAS (Internal disks) (SPARC Enterprise T5120/T5220/T5140/T5240/ T5440,SPARC T3-2/T4-2)	Not Product Name	**(*3)**	Internal disks , please use the Control Domain.
	Onboard LAN SAS (Internal disks) (SPARC T3-1/T3-4/T4-1/ T4-4)	Not Product Name	Support	
SCSI	Dual-Channel Ultra 320 SCSI Card	SE0X7SC1F SE0X7SC2F	Not support	

Type	Hardware	Product Name in Japan **(*1)**	Support or Not support**(*2)**	Remarks
LAN	Dual Gigabit Ethernet Card	SE0X7GD1F SE0X7GD2F	Not support	
	Quad Gigabit Ethernet Card	SE0X7GQ2F	Not support	
	Quad Gigabit Ethernet UTP (PEM)	SE5X7GQ1G	Not support	
	Dual Gigabit Ethernet MMF (PEM)	SE5X7GD1G	Support	
	10Gigabit Ethernet Card	SE0X7HE1F	Support	915064-03 or later - Oracle Solaris11 is not supported.
	10Gigabit Ethernet Card	SE0X7HE2F	Support	
	10Gigabit Ethernet Card (SPARC T3-1/T3-2/T4-1/ T4-2)	SE1X7HE3G	Support	
	Dual 10GbE SFP+ PCIe 2.0 Express Module (PEM)	SE5X7GD2G	Support	
	Onboard LAN (SPARC Enterprise T5120/T5220**,** SPARC T3-1/T3-2/T3-4/ T4-1/T4-2/T4-4)	Not Product Name	Support	Allocated by two ports.
	Onboard LAN (SPARC Enterprise T5140/T5240/T5440)	Not Product Name	Support	Onboard LAN port is allocated collectively.
	10Gigabit Ethernet XAUI Card (SPARC Enterprise T5120/T5220)	SESX7XA1F	Support	Allocation is possible by Direct I/O (usual function)
	10Gigabit Ethernet XAUI Card (SPARC Enterprise T5140/T5240/T5440)	SESX7XA1F	Support	Onboard LAN is allocated at the same time when XAUL is allocated.
	10GbE QSFP Network module (SPARC T3-2/T4-2)	SE4X5XC1G	Support	It is possible to allocate by Direct I/O. Allocation can be done in units of two ports.
	Rear I/O Module	SE5X9RM1G	Support	It is possible to allocate by Direct I/O. Allocation can be done in units of two ports.

Type	Hardware	Product Name in Japan **(*1)**	Support or Not support**(*2)**	Remarks
Combo	Dual 8 Gigabit FC Dual 1 Gigabit Ethernet HBA in Express Module (PEM)	SE5X7F22G SE5X7F32G	Not support	
Others	PCI Box	SENY8BE1F	Not support	
	USB Device	Not Product Name	Not support	

***1)** When you order these products outside Japan, please confirm the corresponding product names with the following contact:

- SPARC Enterprise contacts
  http://www.fujitsu.com/global/contact/computing/sparce_index.html

***2)** If a PCI card or a PEM is mounted on a system which is capable of Direct I/O, Direct I/O becomes available irrespective of whether PCI Express direct I/O works or not.

***3)** Do not setup PCI Express Direct I/O for this components because all of this components are allotted to relevant Domains, so no internal disk remains in the Control Domain.

5.7.1 Notes on PCI Express(PCIe) direct I/O(SPARC T4-1/T4-2/T4-4/T3-1/ T3-2/T3-4)

Please do not allocate on-board SAS controller with which system volume of the Control Domain is connected to any Guest Domain. If you move on-board SAS controller which manages system volume of the Control Domain to a Guest Domain by mistake, OS of the Control Domain may fail to be booted.
You can confirm an internal disk and the corresponding on-board SAS controller which is managing it as follows when MPxIO is used as the internal disk (just after OS is installed).

1. Execute ldm(1M) list-io to confirm the physical path of on-board SAS controller to be allocated.

```
# ldm list-io
                    :
PCIE                      PSEUDONYM            STATUS  DOMAIN
----                      ---------            ------  ------
                    :
pci@400/pci@1/pci@0/pci@4  /SYS/MB/SASHBA0      OCC     primary
pci@400/pci@2/pci@0/pci@4  /SYS/MB/SASHBA1      OCC     primary
                    :
```

2. Confirm the logical path of the system volume by using format(1M), the /etc/vfstab file, the list option of zfs(1M), etc.
   Example)/scsi_vhci/disk@g5000c5001d480d6b

3. Execute prtpicl(1M) -v and from the result of the command, look for an entry of the logical path you confirmed at the step 2. in ":devfs-path". ":obp-path" just below ":devfs-path" is the physical path of the target disk.

```
# prtpicl -v
              :
     :devfs-path       /scsi_vhci/disk@g5000c5001d480d6b
     :driver-name      sd
     :binding-name     scsiclass,00
     :bus-addr  g5000c5001d480d6b
     :instance  3
     :_class    fabric
     :name     disk
        multipath (multipath, cd000000f8)
         :path-class    primary
         :phy-num      0x1
         :obp-path     /pci@400/pci@2/pci@0/pci@4/scsi@0/disk@w5000c5001d480d69,0
         :target-port   5000c5001d480d69
         :lun   0
         :wwn   5000c5001d480d6b
                        :
```

Logical path of the system volume

Physical path of the target disk

4. From the result of prtpicl(1M) at the step 3, judge which on-board SAS controller output by ldm(1M) at the step 1. manages the system volume.

5.8 Supplement

This supplement explains the relations between an internal disk, an I/O slot, on-board LAN and a Logical Domain, when using Logical Domains.

- The following shows configurations when all I/Os are connected to the Control Domain and when I/Os are divided into the Control Domain and the Guest Domain (also used as I/O domain).

5.8.1 SPARC Enterprise T5140

Figure 5.5 Configuration pattern 1

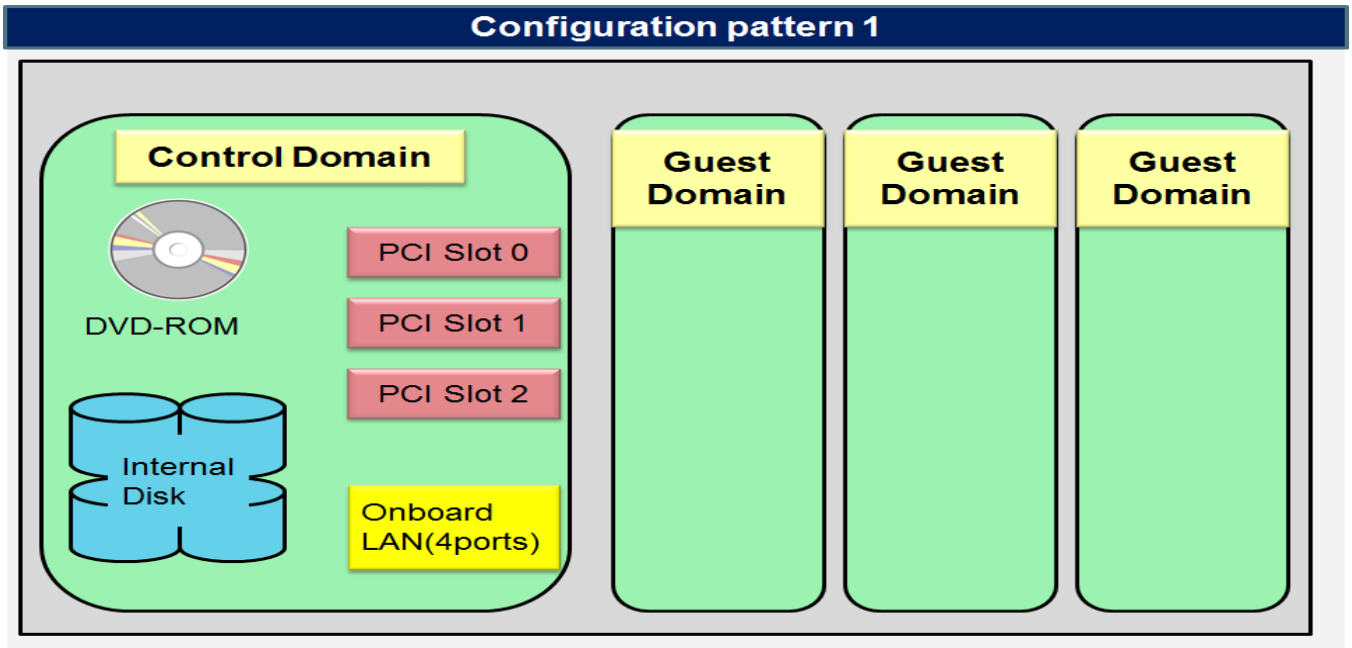
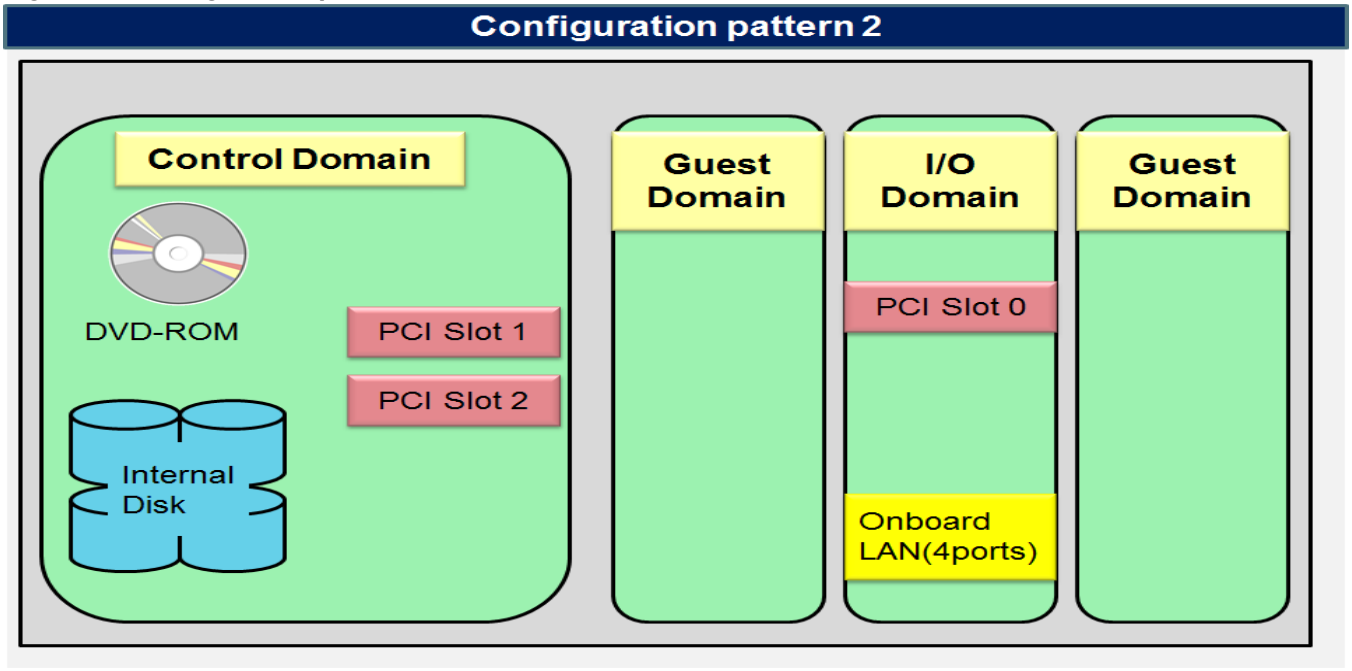


Figure 5.6 Configuration pattern 2



Note) In the second configuration example, XAUI card is not implemented.
A LAN card needs to be added to the Control Domain.

5.8.2 SPARC Enterprise T5240

Figure 5.7 Configuration pattern 1

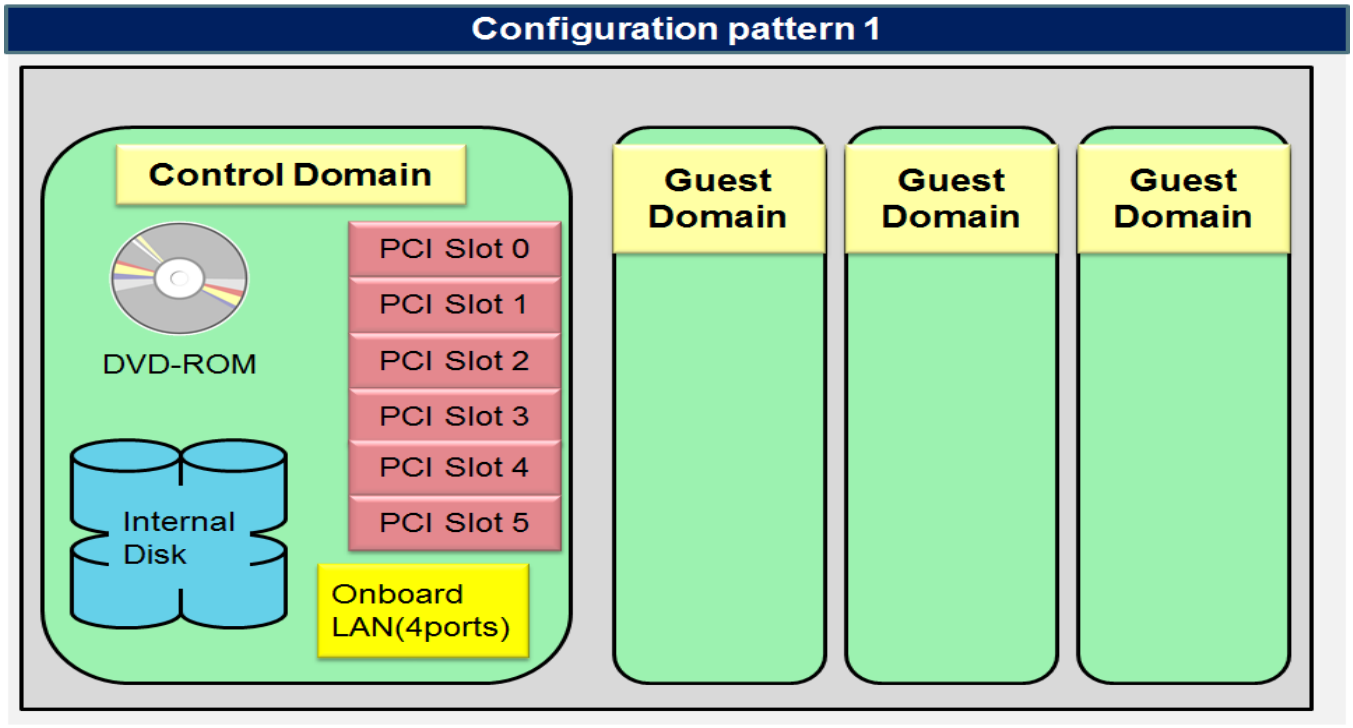
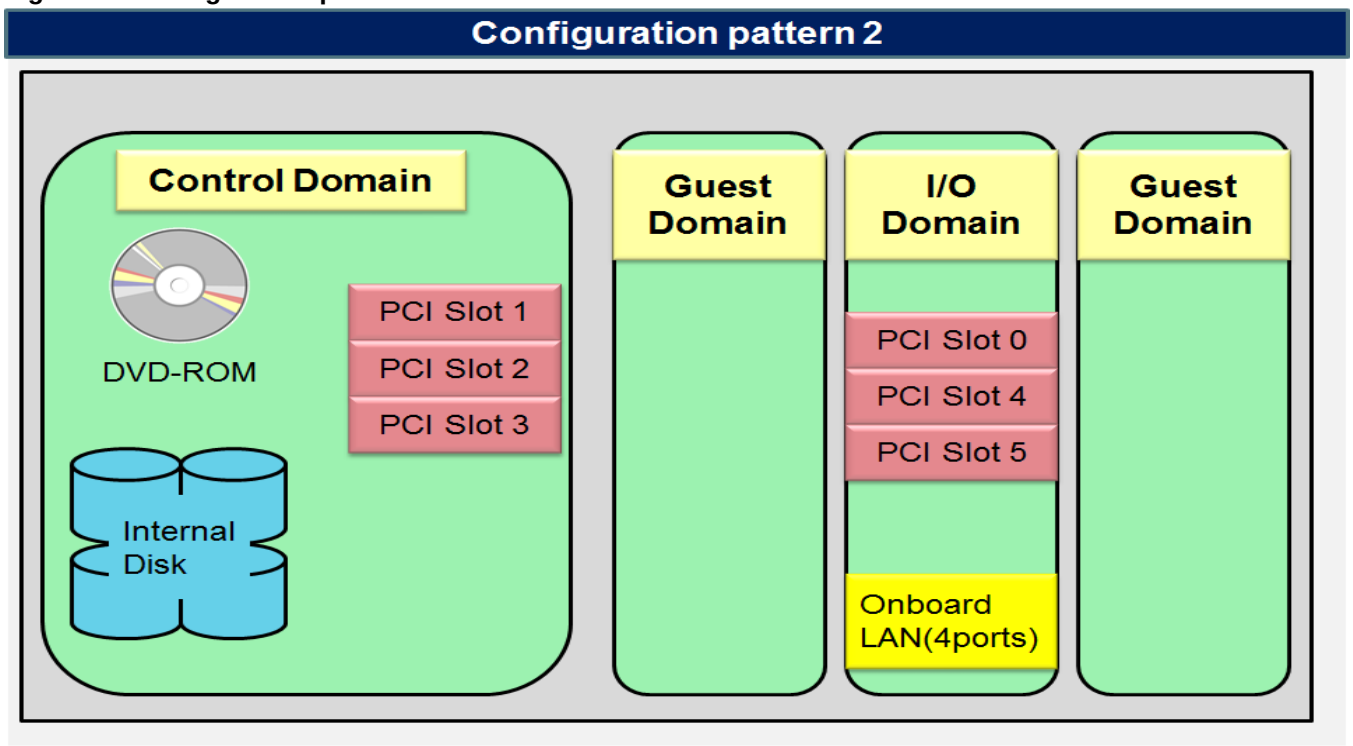


Figure 5.8 Configuration pattern 2



Note) In the second configuration example, XAUI card is not implemented.
A LAN card needs to be added to the Control Domain.

5.8.3 SPARC Enterprise T5440

Figure 5.9 Configuration pattern 1

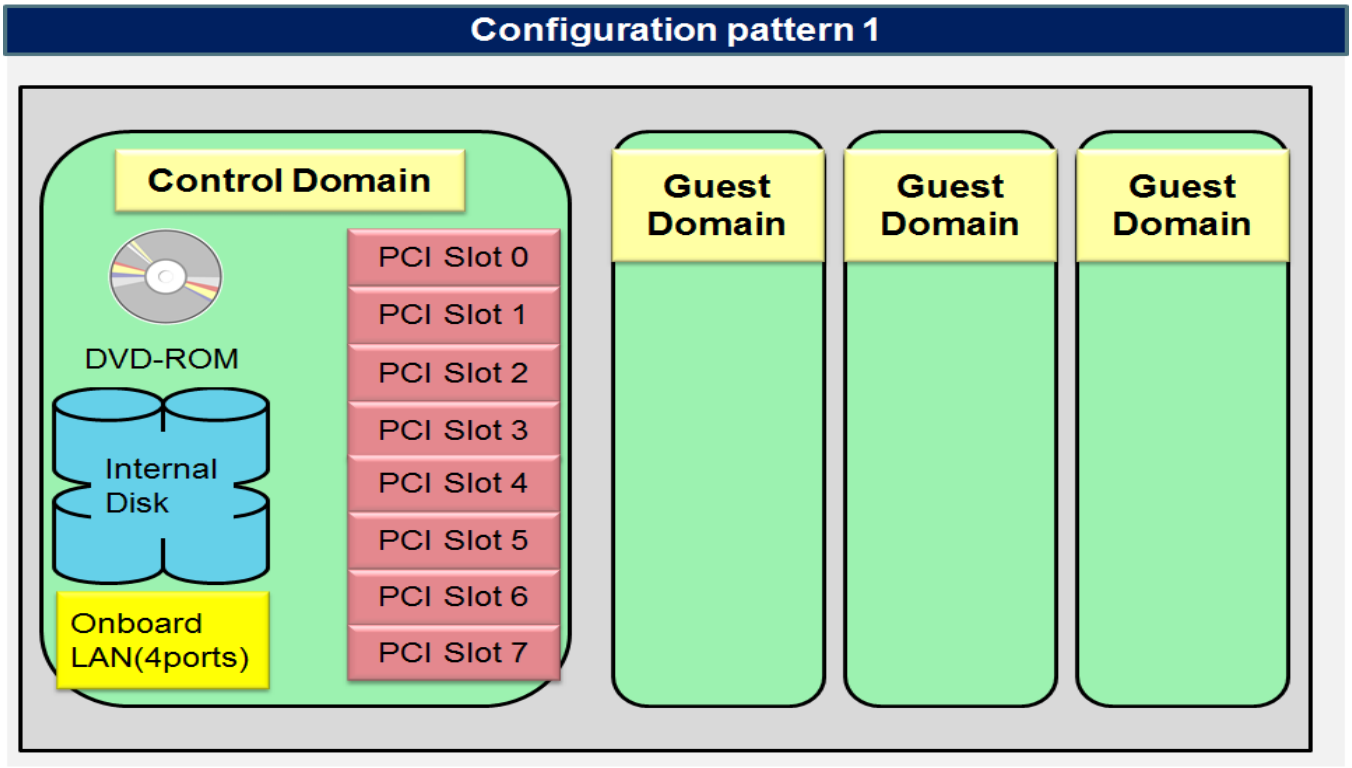
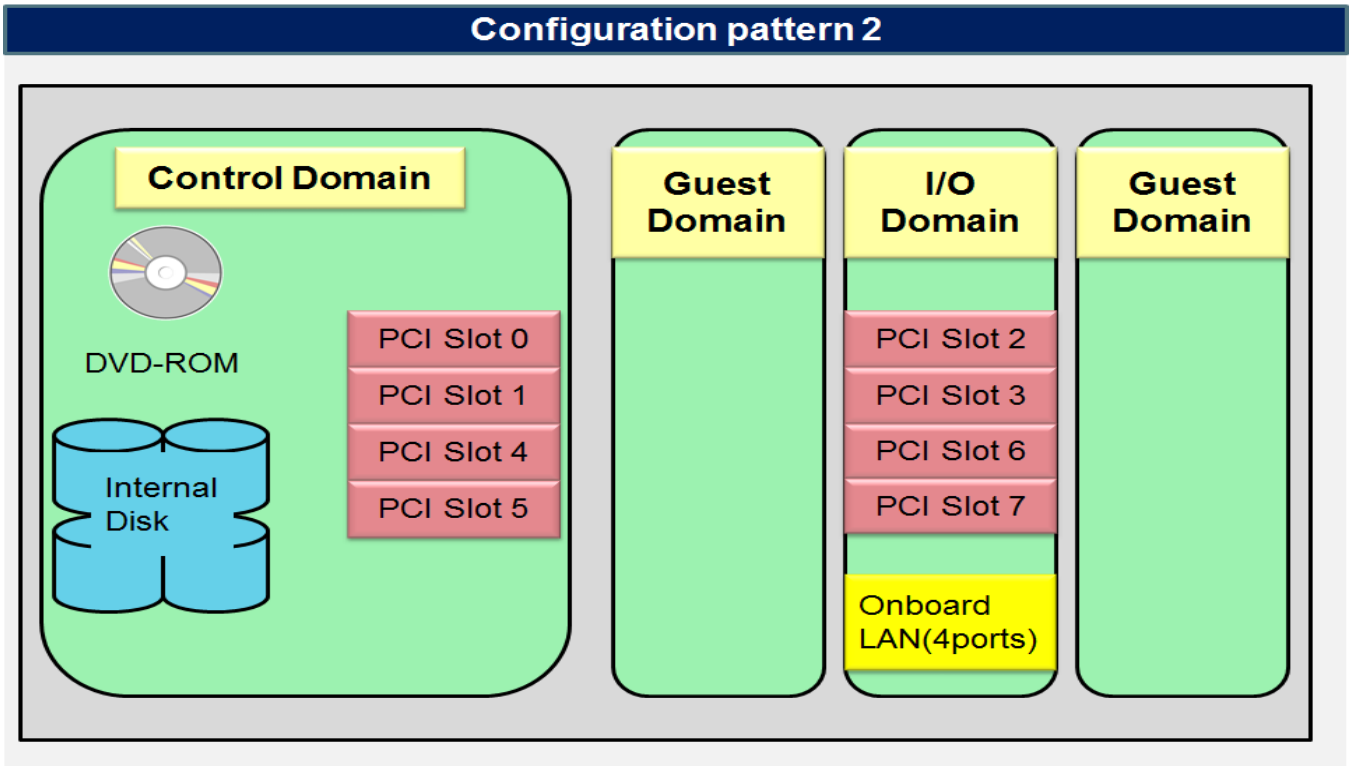
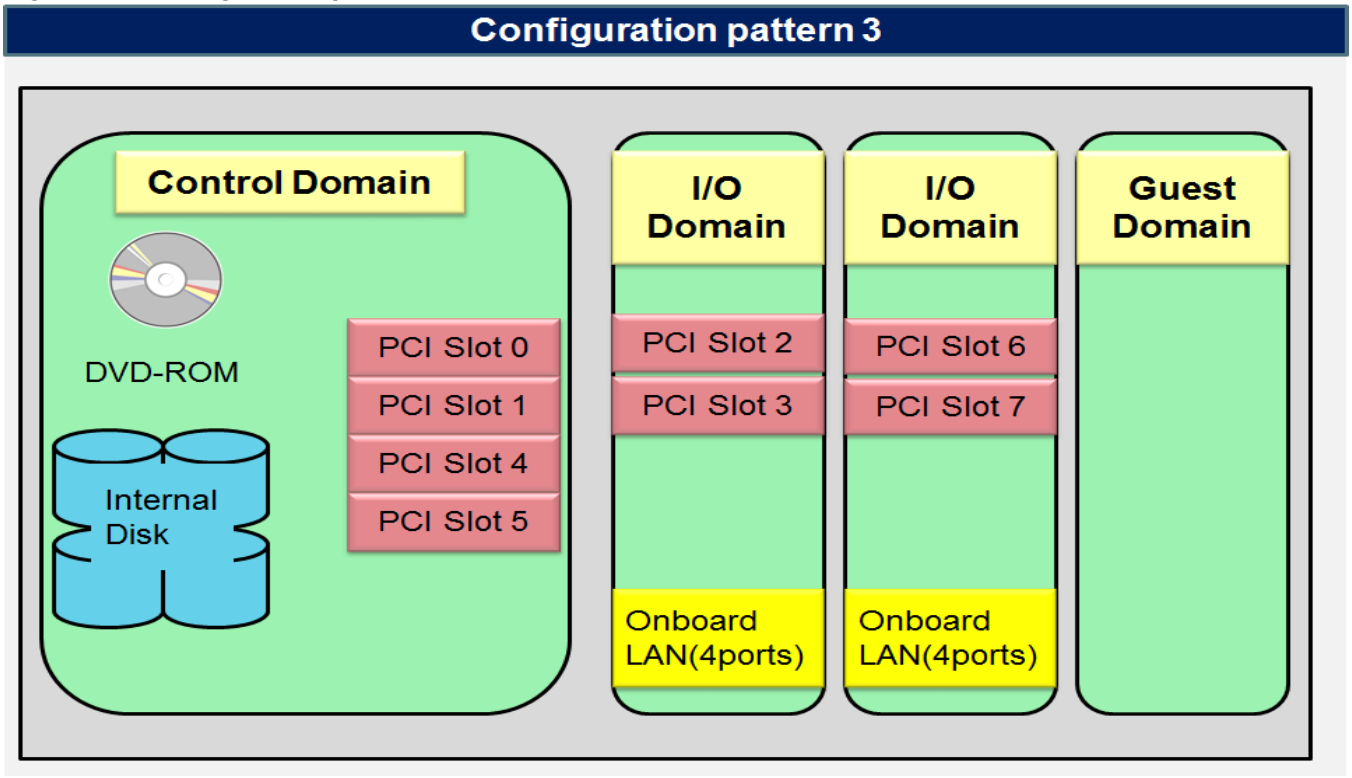


Figure 5.10 Configuration pattern 2

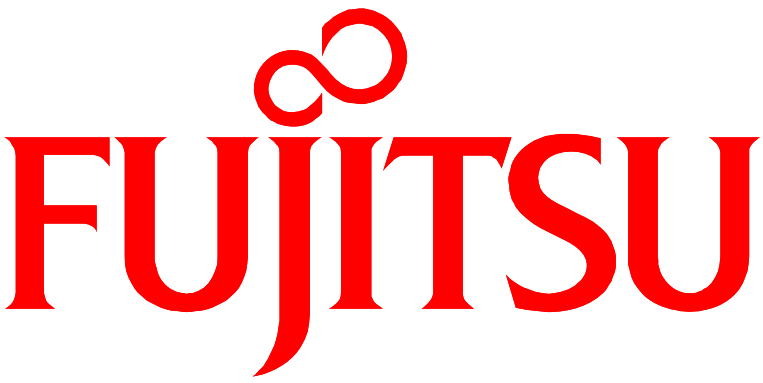


Note) In the second configuration example, XAUI card is not implemented.
A LAN card needs to be added to the Control Domain.

Figure 5.11 Configuration pattern 3



Note) In the second configuration example, XAUI card is not implemented.
A LAN card needs to be added to the Control Domain.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