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Fujitsu M10 Basics: Notes for Interactive Tutorial

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Fujitsu Limited

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Preface

Contents of this document

- This document is a supplement for the *Fujitsu M10 Basics: Interactive Tutorial* simulator operations. There may be some differences from the actual build procedures.

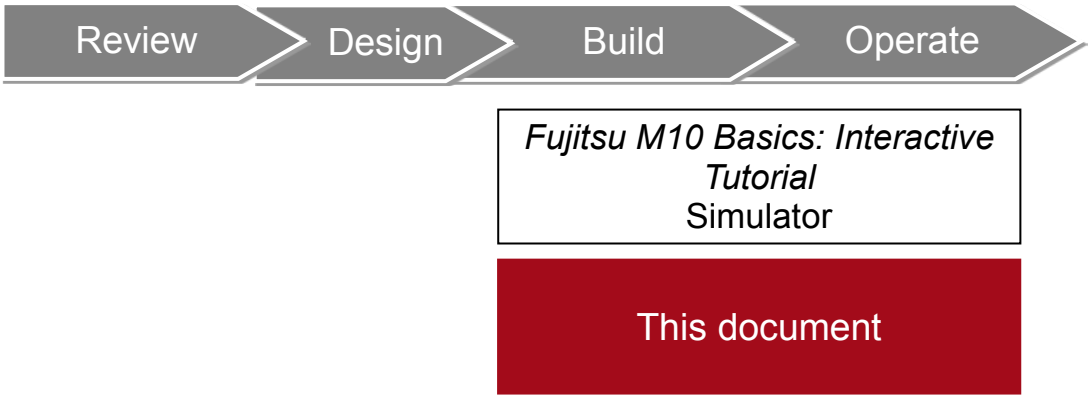
Notes

- The descriptions contained in this document are based on the SPARC M10-1.
- The descriptions contained in this document are based on Oracle Solaris 11 or later.
- For details such as on the commands and individual setting items described in this document, see the following manuals:
  http://www.fujitsu.com/global/products/computing/servers/unix/sparc/downloads/manuals/
  - *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*
  - *Fujitsu M10/SPARC M10 Systems XSCF Reference Manual*
- Items described as "[Optional]" may be configured as required.
- The simulator may behave somewhat differently from the operation of the actual machine.
- Fujitsu M10 is sold as SPARC M10 Systems by Fujitsu in Japan. Fujitsu M10 and SPARC M10 Systems are identical products.

Descriptions in this document

- Oracle Solaris may be described as "Solaris" in this document.

Positioning of documents



Contents

1. Initial System Diagnosis

This chapter describes the procedures from initial settings to initial system diagnosis of the XSCF. The procedures in the chapter assume that the server is installed and the power cables are connected. They start with the serial connection from terminal software to the server.

1.1. XSCF Connection and Initial Settings

1) Establish a serial connection to the server.

Confirm that the system management terminal is connected to the serial port of the server. Confirm that the terminal software has the following setting values. Then, establish a serial connection to the server.

Terminal software setting values

Setting Item	Value
Baud rate	9600
Data length	8 bits
Parity	None
STOP bit	1 bit
Flow control	None
Delay	Other than 0

2) Enter an XSCF login ID.

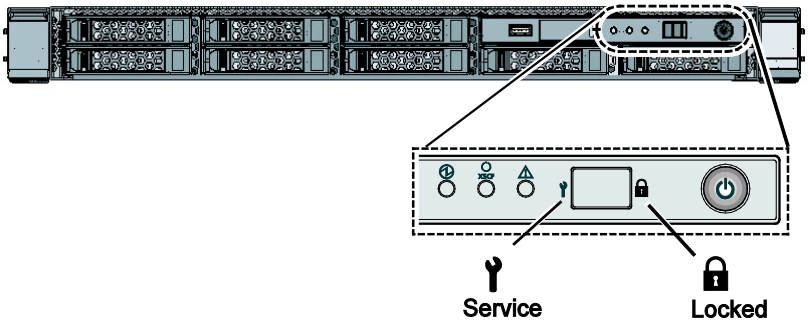
After establishing a serial connection, press the [Enter] key to display the login screen. Log in as the default user (default).

```
<Press [Enter] key>
localhost login: default
```

3) Operate the mode switch on the operation panel.

Log in to the XSCF by using the mode switch on the operation panel. Perform the switching operation of the mode switch as described below within one minute. Otherwise, after one minute, login authentication times out.

Mode switch on the operation panel



i) Switch the mode switch on the operation panel to the Locked position when the following message appears. Press the [Enter] key.

```
Change the panel mode switch to Locked and press return…
```

ii) Wait at least five seconds.

```
Leave it in that position for at least 5 seconds.
```

iii) Return the mode switch on the operation panel to the Service position, and press the [Enter] key.

```
Change the panel mode switch to Service and press return…
```

iv) Confirm that the XSCF prompt is displayed.

```
XSCF>
```

4) Check the firmware (XCP) version.

```
XSCF> version -c xcp
BB#00-XSCF#0 (Master)
XCP0 (Reserve): 2032
XCP1 (Current)        : 2032
```

☛ The execution example shows an old firmware version. Basically, the firmware applied at shipment is the latest version.

☛ Four digits like "xyyz" represent the XCP version number.
x: Major release number
yy: Minor release number
z: Micro release number

☛ You can download the latest version of XCP from My Oracle Support:

https://support.oracle.com/

5) Check the altitude setting.

```
XSCF> showaltitude
0m
```

<<Reference>>

- **Altitude setting**

The SPARC M10 controls the rotational speed of the cooling fans inside the system according to the altitude and temperature of the installation location. Therefore, when configuring the server at a high-altitude location, set the altitude.

Use the setaltitude command to set the altitude.
The unit is "m" (meters). You can specify a value in units of 100 meters.
Here, this example sets the altitude to 1000 meters.

```
XSCF> setaltitude -s altitude=1000
1000m
```

☛ After setting the value, you need to execute the rebootxscf command so that this setting is reflected. However, you may be setting the time in step 7), which would also reset the XSCF, so you can skip the execution of the rebootxscf command.

6) Check the time zone.

By default, the time zone is set to Coordinated Universal Time (UTC).

```
XSCF> showtimezone -c tz
UTC
```

<<Reference>>

- **Setting the time zone**

Use the settimezone command to set the time zone.

Here, this example sets the time zone to "Asia/Tokyo."

```
XSCF> settimezone -c settz -s Asia/Tokyo
Asia/Tokyo
```

7) Check the current time.

```
XSCF> showdate
Thu Mar  7 02:19:11 JST 2013
```

<<Reference>>

- **Setting the time**

Use the setdate command to set the time.

If the system is already running, you need to power off (poweroff) the partition before setting the time.

Here, this example sets the time to 17:30 on January 10, 2013.

Specify the time in either the "mmddHHMMyyyy.SS" or "yyyy.MM.DD-HH:MM:SS" format.

```
XSCF> setdate -s 011017302013.00
Thu Jan  10 17:30:00 JST 2013
The XSCF will be reset. Continue? [y|n] :y          <- "y" entered
Thu Jan  10 17:30:00 JST 2013
```

☛ Setting the time will reset the XSCF. The XSCF session will be disconnected, so you will need to log in to the XSCF again.

1.2. Initial Diagnosis

8) Check the hardware status.

Confirm the following three points:

- Has the initial diagnosis test been executed? Test (initial diagnosis status): "Unknown"
- Is the system board (SB) in a normal state? Fault (degradation status): "Normal"
- Is the server still powered off? Pwr (power status): "n"

```
XSCF> showboards -a -v
PSB   R PPAR-ID(LSB)   Assignment   Pwr   Conn Conf   Test      Fault
----- -- ------------- ------------ ----  ---- ----   -------   --------
00-0 *  00(00)         Assigned     n     n    n      Unknown   Normal
```

9) Execute an initial diagnosis of the server.

Before starting (poweron) the server, confirm that no parts have failed.

The following table lists the testsb command options.

Option	Description
-v	Displays detailed information.
-p	Executes probe-scsi-all of OpenBoot PROM (OBP) partway through the diagnosis processing, and displays the results.
-s	Executes show-devs of OpenBoot PROM (OBP) partway through the diagnosis processing, and displays the results.
-a	Diagnoses all the PSBs mounted in the system.
-y	Automatically enters "y" at the prompt.

```
XSCF> testsb -v -p -s -a -y
Initial diagnosis is about to start, Continue?[y|n] :y          <- "y" entered
SB power on sequence started.
(* Wait about 2 to 3 minutes)

POST Sequence 01 Banner
LSB#00: POST 1.28.0 (2012/12/14 12:09)
POST Sequence 02 CPU Check
POST Sequence 03 CPU Register

-<Omitted>-

POST Sequence 20 System Status Check
POST Sequence 21 Start Hypervisor
POST Sequence Complete.
(* Wait about 2 to 3 minutes)

SPARC M10 Systems Hypervisor version: @(#)Hypervisor 0.24.1 2012/12/14 12:55

Configuring System Board.... .Completed.
```

```
-<Omitted>-

/packages/kbd-translator
/packages/SUNW,asr
/packages/dropins
/packages/terminal-emulator
/packages/disk-label
/packages/deblocker
/packages/SUNW,probe-error-handler
/packages/SUNW,builtin-drivers
(* Wait about 1 to 2 minutes)

PSB   Test      Fault
------ ----------  ----------
00-0 Passed   Normal
```

☛ Some portions may take a while to execute.

☛ Confirm that "Passed" appears under Test (initial diagnosis status).

10) Check the initial diagnosis results.

Confirm the following two points:

- Has the initial diagnosis been executed? Test (initial diagnosis status): "Passed"
- Do execution results show a normal state? Fault (degradation status): "Normal"

```
XSCF> showboards -a -v
PSB   R   PPAR-ID(LSB)   Assignment   Pwr   Conn Conf   Test      Fault
------  --  --------------------  ----------------  -----  -------- ------  -------  --------
00-0   *    00(00)              Assigned      n      n      n      Passed    Normal
```

11) Check failed parts.

When the initial diagnosis has detected an error, check the details with the showstatus command.

```
XSCF> showstatus
XSCF>
```

☛ The prompt returns with nothing output when there are no failed (degraded) parts.

12) Check the status of the CPUs, memory, and IO devices.

Confirm that "Normal" is shown as the status of each component.

```
XSCF> showhardconf -M
SPARC M10-1;
    + Serial:TZ01238024; Operator_Panel_Switch:Service;
    + System_Power:Off; System_Phase:Cabinet Power Off;
    Partition#0 PPAR_Status:Powered Off;
    MBU Status:Normal; Ver:2032h; Serial:TZ1236001F    ;
        + FRU-Part-Number:CA07363-D001 A0     /7060744                    ;
        + Power_Supply_System: ;
        + Memory_Size:64 GB;
        CPU#0 Status:Normal; Ver:4142h; Serial:00300800;
            + Freq:2.800 GHz; Type:0x10;
            + Core:16; Strand:2;
        MEM#00A Status:Normal;
            + Code:2c800118KSF1G72PZ-1G6E1 4531-B1FA1CAC;
            + Type:04; Size:8 GB;
        MEM#01A Status:Normal;
            + Code:2c800118KSF1G72PZ-1G6E1 4531-B1FA1C3F;
            + Type:04; Size:8 GB;
        MEM#02A Status:Normal;
            + Code:2c800118KSF1G72PZ-1G6E1 4531-B1FA1C3B;
            + Type:04; Size:8 GB;
        MEM#03A Status:Normal;
            + Code:2c800118KSF1G72PZ-1G6E1 4531-B1FA1C4A;
            + Type:04; Size:8 GB;
        MEM#10A Status:Normal;
            + Code:2c800118KSF1G72PZ-1G6E1 4531-B1FA1CAD;
            + Type:04; Size:8 GB;
        MEM#11A Status:Normal;
            + Code:2c800118KSF1G72PZ-1G6E1 4531-B1FA1CC7;
            + Type:04; Size:8 GB;
        MEM#12A Status:Normal;
            + Code:2c800118KSF1G72PZ-1G6E1 4531-B1FA1C95;
            + Type:04; Size:8 GB;
        MEM#13A Status:Normal;
            + Code:2c800118KSF1G72PZ-1G6E1 4531-B1FA1CDA;
            + Type:04; Size:8 GB;
    OPNL Status:Normal; Ver:0101h; Serial:TZ1233000     ;
        + FRU-Part-Number:CA07363-D101 A0     /7060786                    ;
    PSUBP Status:Normal; Ver:0101h; Serial:TZ1233P01F    ;
        + FRU-Part-Number:CA20366-B15X 001AA/7065594                     ;
    PSU#0 Status:Normal; Ver:533046h; Serial:FJPD1228000039;
        + FRU-Part-Number:CA01022-0750-M/                ;
        + Power_Status:OFF; AC:100 V;
    PSU#1 Status:Normal; Ver:533046h; Serial:FJPD1228000015;
        + FRU-Part-Number:CA01022-0750-M/ ;
        + Power_Status:OFF; AC:100 V;
    FANU#0 Status:Normal;
    FANU#1 Status:Normal;
```

```
      FANU#2 Status:Normal;
      FANU#3 Status:Normal;
      FANU#4 Status:Normal;
      FANU#5 Status:Normal;
      FANU#6 Status:Normal;
XSCF>
```

<<Reference>>

- **Error occurred in a component**

An asterisk (*) appears in front of the component.

```
*     PSU#1 Status:Faulted; Ver:303141h; Serial:GWSD1416000597;
            + FRU-Part-Number:CA01022-0751-M/7088116      ;
            + Power_Status:OFF; AC:100 V;
```

13) Check the number of mounted components, such as the CPUs, memory, and IO devices, in the server.

```
XSCF> showhardconf -u
SPARC M10-1; Memory_Size:64 GB;
      +-------------------------------------+--------------------+
      |                FRU                  |    Quantity        |
      +-------------------------------------+--------------------+
      | MBU                                 |         1          |
      |    CPU                              |         1          |
      |       Freq:2.800 GHz;               |        (1)         |
      |    MEM                              |         8          |
      |       Type:04; Size:8 GB;           |        (8)         |
      | PCICARD                             |         0          |
      | LINKCARD                            |         0          |
      | PCIBOX                              |         0          |
      |       IOB                           |         0          |
      |       LINKBOARD                     |         0          |
      |       PCI                           |         0          |
      |       FANBP                         |         0          |
      |       PSU                           |         0          |
      |       FAN                           |         0          |
      | OPNL                                |         1          |
      | PSUBP                               |         1          |
      |       PSU                           |         2          |
      |       FANU                          |         7          |
      +-------------------------------------+--------------------+
```

14) Check the error log.

Confirm that the error log has no errors such as Warning or Alarm.

```
XSCF> showlogs error
```

☛ Nothing is displayed when there are no errors.

2. XSCF Environment Setup

This chapter describes the XSCF setup procedures such as for user settings and network settings.

2.1. Setting the Password Policy

1) Check the password policy of XSCF user accounts.

Confirm the password expiration time, number of retries when the wrong password is entered, etc.

```
XSCF> showpasswordpolicy
Mindays:    0
Maxdays:    99999
Warn:       7
Inactive:   -1
Expiry:     0
Retry:      3
Difok:      3
Minlen:     9
Dcredit:    1
Ucredit:    1
Lcredit:    1
Ocredit:    1
Remember:3
```

2) Set the password policy.

The following table lists the setpasswordpolicy command options.

Option	Description
-y	Specifies the number of retries (Retry).
-m	Specifies the minimum password length (Minlen).
-d	Specifies the minimum number of numeric characters (Dcredit).
-u	Specifies the minimum number of uppercase letters (Ucredit).
-l	Specifies the minimum number of lowercase letters (Lcredit).
-o	Specifies the minimum number of non-alphanumeric characters (Ocredit).
-M	Specifies the expiration time for a password (Maxdays).
-W	Specifies the day to start issuing password expiration warnings (Warn).

Here, this example sets three times for the number of retries and a minimum password length of eight characters including at least two numeric characters. It also sets an expiration time of 60 days, and 15 days before expiration as the day to start issuing warnings.

```
XSCF> setpasswordpolicy -y 3 -m 8 -d 2 -u 0 -l 0 -o 0 -M 60 -w 15
```

3) Confirm that the set policy has been reflected.

```
XSCF> showpasswordpolicy
Mindays: 0
Maxdays: 60
Warn: 15
Inactive: -1
Expiry: 0
Retry: 3
Difok: 3
Minlen: 8
Dcredit:  2
Ucredit:  0
Lcredit:  0
Ocredit: 0
Remember:3
```

2.2. Creating a User Account

1) Create a user account for logging in to the XSCF.

Here, this example creates the user "edu01".

```
XSCF> adduser edu01
```

2) Add user privileges.

Add the platadm and useradm privileges to the created user.

```
XSCF> setprivileges edu01 platadm useradm
```

☛ All the settings and operations related to the XSCF, excluding those of the useradm privilege and auditadm privilege, are available to users with the platadm privilege.

☛ All the operations related to user privileges are available to users with the useradm privilege.

3) Set a password.

Enter a password that complies with the password policy set as described in Section 2.1.

```
XSCF> password edu01
Password:********
Retype new password:********
passwd: password updated successfully
```

☛ The password will not appear on the screen.

4) Check the user account.

Confirm that the created user edu01 exists.

```
XSCF> showuser -l
User Name:          edu01
UID:                101
Status:             Enabled
Minimum:            0
Maximum:            60
Warning:            15
Inactive:           -1
Last Change:        Mar 07, 2013
Password Expires:   Never
Password Inactive:  Never
Account Expires:    Never
Privileges:         useradm
                    platadm
```

2.3. Configuring telnet

1) Check the service status.

By default, the telnet service is disabled (disabled).

```
XSCF> showtelnet
Telnet status: disabled
```

2) Enable the telnet service.

```
XSCF> settelnet -c enable
Continue?  [y|n]  :y          <- "y" entered
```

3) Confirm that the telnet service is enabled (enabled).

```
XSCF> showtelnet
Telnet status: enabled
```

2.4. Configuring the Network

1) Check the XSCF host name and domain name.

```
XSCF> showhostname -a
bb#00:localhost.localdomain
```

2) Set the XSCF host name and DNS domain name.

[Format] sethostname *chassis_name host_name*

sethostname -d *DNS_domain_name*

Set a name different from the set host name in the OS.

The chassis name is set beforehand. "bb#00" is that name for the SPARC M10-1.

```
XSCF> sethostname bb#00 xscf0-hostname
XSCF> sethostname -d example.com
```

☛ The host name and DNS domain name settings will be reflected after the XSCF restarts.

3) Confirm the XSCF network interface name.

Either "bb#00-lan#0" or "bb#00-lan#1" is that name for the SPARC M10-1.

```
XSCF> shownetwork -a
bb#00-lan#0
        Link encap:Ethernet  HWaddr B0:99:28:9B:B8:60
        BROADCAST MULTICAST  MTU:1500  Metric:1
        RX packets:0 errors:0 dropped:0 overruns:0 frame:0
        TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:0 (0.0 b)  TX bytes:0 (0.0 b)

bb#00-lan#1
        Link encap:Ethernet  HWaddr B0:99:28:9B:B8:61
        BROADCAST MULTICAST  MTU:1500  Metric:1
        RX packets:0 errors:0 dropped:0 overruns:0 frame:0
        TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:0 (0.0 b)  TX bytes:0 (0.0 b)
        Base address:0x8000
```

4) Set the IP address and subnet mask.

[Format] setnetwork -m *subnet_mask network_interface_name IP_address*

The network interface name (XLCF-LAN) is that confirmed in step 3).

Here, this example sets the IP address 192.168.10.20 and subnet mask 255.255.255.0 to XSCF-LAN#0.

```
XSCF> setnetwork -m 255.255.255.0 bb#00-lan#0 192.168.10.20
```

☛ The IP address settings will be reflected after the XSCF restarts.

5) Check the DNS server information.

By default, the DNS server is not registered.

```
XSCF> shownameserver
nameserver ---
search ---
```

6) Configure the DNS server.

Specify the IP address of the DNS server.

```
XSCF> setnameserver 192.168.10.100
```

☛ The IP address setting of the DNS server will be reflected after the XSCF restarts.

7) Specify the DNS server search path.

[Format] setnameserver -c addsearch *domain_name*

```
XSCF> setnameserver -c addsearch nsserver.com
```

☛ The domain name setting of the DNS server will be reflected after the XSCF restarts.

8) Configure the routing environment.

By default, no routing information is set.

```
XSCF> showroute -a
Destination     Gateway         Netmask         Flags Interface
```

9) Set the default gateway.

Here, this example sets the default gateway 192.168.10.1 to XSCF-LAN#0 of bb#00.

To set the destination IP address of the default routing information, enter "0.0.0.0".

```
XSCF> setroute -c add -n 0.0.0.0 -g 192.168.10.1 bb#00-lan#0
```

☛ The routing setting will be reflected after the XSCF restarts.

10) Apply the network settings made to the XSCF.

If no host name or DNS domain name is set, an error occurs.

```
XSCF> applynetwork
The following network settings will be applied:
   bb#00 hostname          :xscf0-hostname
   DNS domain name :example.com
   Nameserver              :192.168.10.100
   Search                  :nsserver.com

   Interface               :bb#00-lan#0
   Status                  :up
   IP address              :192.168.10.20
   Netmask                 :255.255.255.0
   Route                   :-n 0.0.0.0 -m 0.0.0.0 -g 192.168.10.1

   Interface               :bb#00-lan#1
   Status                  :down
   IP address              :
   netmask                 :
   route      :

Continue? [y|n] :y          <- "y" entered
Please reset the all XSCFs by rebootxscf to apply the network settings.
Please confirm that the settings have been applied by executing
showhostname, shownetwork, showroute, showsscp and shownameserver after
rebooting the all XSCFs.
```

11) Reset the XSCF.

Restart the XSCF to have the XSCF reflect the settings.

```
XSCF> rebootxscf -a
The XSCF will be reset. Continue? [y|n] :y                    <- "y" entered
XSCF> multi_set_system_scf_ready.sh -- complete
checkbrand.sh -- complete
snmpwatch.sh -- complete
snmpd.sh -- complete
settmpnetwork.sh -- complete
cli_scf_ready_after_setting.sh -- complete
setting_remcs_conf.sh -- complete
service syslog-ng -- stop
Stopping syslog-ng: [    OK    ]
init_script2 -- complete
cli_ntp_setting.sh -- complete
cli_network_setting.sh -- complete
service iptables -- stop
iptables: Flushing firewall rules: [    OK    ]
iptables: Setting chains to policy ACCEPT: filter [    OK    ]
iptables: Unloading modules: [    OK    ]
service network -- stop
Shutting down loopback interface:    [    OK    ]
  :
  :
start /sp/bin/coremgrd (pid=2315)
cli_scf_ready_after_setting.sh -- complete
settmpnetwork.sh -- complete
snmpd.sh -- complete
snmpwatch.sh -- complete
checkbrand.sh -- complete
multi_set_system_scf_ready.sh -- complete
-- initialize complete (SCF_READY)                <- Message checked for confirmation

<Press [Enter] key>
localhost login: edu01                             <- Logging in as created user
Password:****
XSCF>
```

12) Confirm that the host name changed.

```
XSCF> showhostname -a
bb#00:xscf0-hostname.example.com
```

13) Check the IP address settings.

Confirm the set IP address (inet addr) and subnet mask (Mask).

```
XSCF> shownetwork bb#00-lan#0
bb#00-lan#0
        Link encap:Ethernet  HWaddr B0:99:28:9B:B8:BE
        inet addr:192.168.10.20 Bcast:192.168.10.255 Mask:255.255.255.0
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        RX packets:0 errors:0 dropped:0 overruns:0 frame:0
        TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:0 (0.0 b)  TX bytes:0 (0.0 b)
```

14) Check the DNS server settings.

Confirm the set IP address of the name server (nameserver) and domain name (search).

```
XSCF> shownameserver
nameserver 192.168.10.100
search nsserver.com
```

15) Check the routing environment.

Confirm the set network address (Destination), subnet mask (Netmask), and default gateway (Gateway) for XSCF-LAN#0 of bb#00.

```
XSCF> showroute -a
Destination     Gateway         Netmask         Flags   Interface
192.168.10.0    *               255.255.255.0     U     bb#00-lan#0
default         192.168.10.1    0.0.0.0           UG    bb#00-lan#0
```

Terminate the serial connection.

Use the newly created user edu01 to perform the subsequent operations with a telnet connection to the XSCF.

2.5. Configuring the NTP Server [Optional]

1) Check the NTP service status.

Check whether the XSCF is configured as an NTP server or NTP client.

By default, both the NTP server and NTP client are disabled (disable).

```
XSCF> showntp -a
client :  disable
server :disable
```

2) Enable the NTP server service.

Enable NTP (enable) so that the XSCF has the function of the NTP server.

```
XSCF> setntp -s server -c enable
Please reset the XSCF by rebootxscf to apply the ntp settings.
```

☛ After configuring NTP, restart the XSCF.

3) Reset the XSCF.

Restart the XSCF to have the XSCF reflect the NTP server settings.

```
XSCF> rebootxscf -a
```

Resetting the XSCF (executing the rebootxscf command) will disconnect the session.

Establish a telnet connection to the XSCF again with the user edu01.

4) Confirm that the NTP server is enabled (enable).

```
XSCF> showntp -a
client :  disable
server :enable
```

2.6. Configuring the SNMP Agent [Optional]

1) Confirm the SNMP settings made.

By default, the SNMP agent is disabled (Disabled).

```
XSCF> showsnmp

Agent Status:          Disabled
Agent Port:            161
System Location:       Unknown
System Contact:        Unknown
System Description:    Unknown

Trap Hosts: None

SNMP V1/V2c: None

Enabled MIB Modules: None
```

2) Configure the SNMP agent.

Here, this example sets "NorthTower34F" for the system installation location, "admin@example.com" for the e-mail address of the system administrator, and "DataBaseServer" for a description.

```
XSCF> setsnmp -l NorthTower34F -c admin@example.com -d DataBaseServer
```

3) Enable the SNMP agent.

```
XSCF> setsnmp enable
setsnmp: Agent Enabled.
```

4) Confirm that SNMP is enabled (Enabled).

```
XSCF> showsnmp
Agent   Status:              Enabled
Agent   port:                161
System  Location:            NorthTower34F
System  Contact:             admin@example.com
System  Description:         DataBaseServer

Trap Hosts: None
SNMP V1/V2c: None
Enabled MIB Modules:

SP MIB
```

2.7. Configuring XSCF Web [Optional]

XSCF Web access uses https. Therefore, a certificate authority must be configured beforehand.

You can select any of the following three types of certificate authority:

- External certificate authority
- Intranet certificate authority
- Self-signed certificate authority

This document describes procedures for using a self-signed certificate authority.

1) Check the https service status.

By default, the https service is disabled (disabled).

```
XSCF> showhttps
HTTPS status: disabled
```

2) Enable the https service.

```
XSCF> sethttps -c enable
The web serverkey or web server certificate which has been signed by an external certification authority does not exist.
Created self-signed certificate for HTTPS service.Continue? [y|n] :y          <- "y" entered
```

☞ Specify "enable" and enter "y". The following operations 1 to 4 are automatically configured.

1. Build a self-signed certificate authority for the XSCF.
2. Generate a Web server secret key for the XSCF.
3. Generate a self-signed Web server certificate with the XSCF.
4. Enable HTTPS.

3) Confirm that the https service is enabled (enabled).

Confirm that a Web server certificate has been created.

```
XSCF> showhttps
HTTPS status: enabled
Server key: installed in Mar 15 15:36:27 JST 2013
CA key: installed in Mar 15 15:36:20 JST 2013
CA cert: installed in Mar 15 15:36:20 JST 2013
CSR:
-----BEGIN CERTIFICATE REQUEST-----
MIICwTCCAakCAQAwfDELMAkGA1UEBhMCSlAxETAPBgNVBAgMCEthbmFnYXdhMREw
DwYDVQQHDAhLYXdhc2FraTEYMBYGA1UECgwPRnVqaXRzdSBMaW1pdGVkMRgwFgYD
VQQLDA9GdWppdHN1IExpbWl0ZWQxEzARBgNVBAMMClRaMDEyMzgwMjQwggEiMA0G
CSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQDoQIlQvxazu29ubPna8obl242j2fVW
q9xRNj1PRrb+4j7QRM5MQHkrM2aLX0FqQhnWkxgNFcmD4+VOV+8Qsk+InWnSOUiz
gys5uhCuByfNjEFN/bpwmHVaoG6wUZ00FSsME8N5B0Zj2z7HnO8/OURLEryD7zuh
X+2Xl9y1kbE64pAAjpIq7O9LU7V9BduFsLX/pxlo8CmxwcXnScgp/gZpYm3/QeFK
3usUn3zGFROPhQtVlE0VqTeixxWpb7WKXsYllDOF0BUSDdx8QEdt/AnxsOJyeJB4
ZEy4R9UV1lMsd4+ZAYo7D5Px3hFxQyy/bi7vsSOf0AuHFMNxQmVbLPTJAgMBAAGg
ADANBgkqhkiG9w0BAQUFAAOCAQEAMC6mKfpeKPHi63g2fXlNh0uqwxdkD+9eXIj1
```

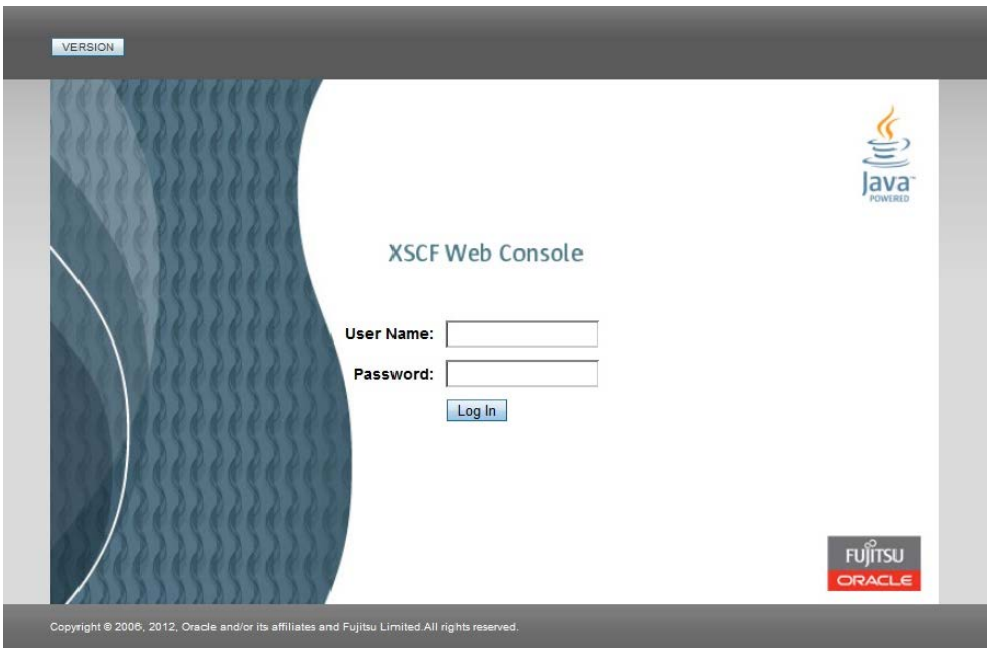
```
yhVjZDMs7RoU2QpqZSnAIXGh1SC7h6WCHhhvclHYW0sP6KVUKegknN2giMu0Vg6L
pKtsiYBRwt1mjdo3+IhnOLPJFT+cgHY7KlP+5vidEqDQ8vrsYMg9ExU7Dxe7eTjh
J7lFXnVHyR2HolAPB3P8DqPq9PzlLWaA2ynrXs61oeDpcjmEkPU/eG211il8Herb
3ZnjuwK+CRG+mbZKE920Qfq6o6Ssgchb4q8U2/lyTVblBwDK+OWUruNXJQQ7Q6iF
Nc7E1OhXWSh7PmbYV4THhOOehk+UNfbYe4KpdxrNZa663HWR4Q==
-----END CERTIFICATE REQUEST-----
```

<<Reference>>

- **Connecting to XSCF Web**

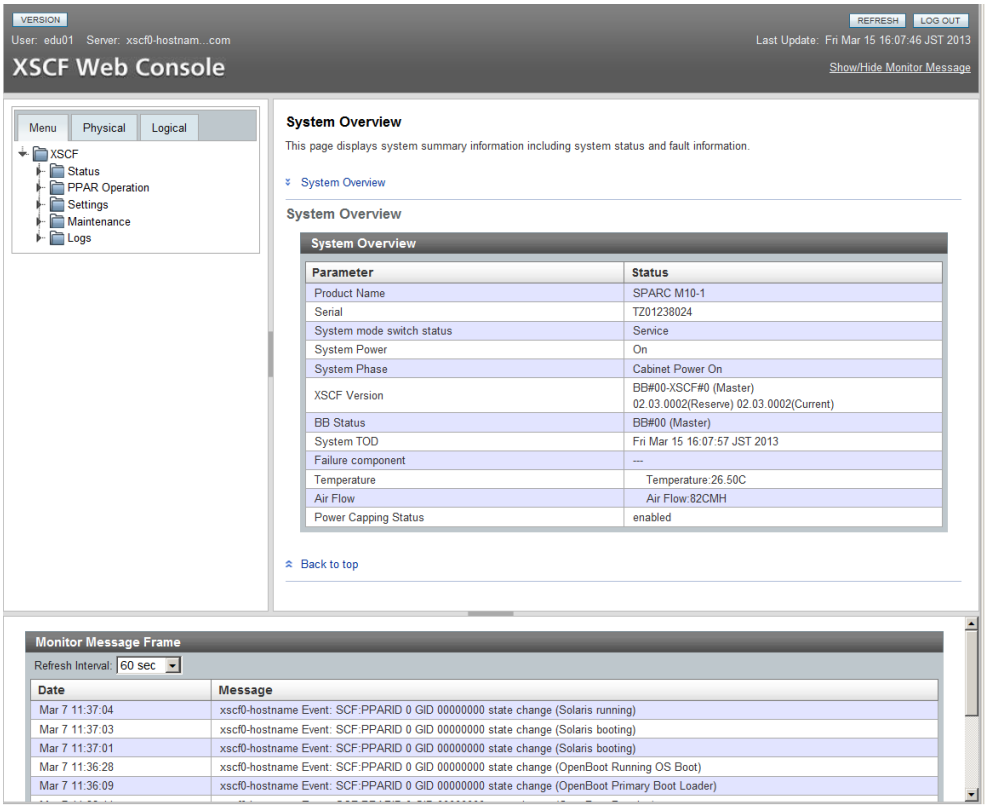
  Specify the IP address or host name of the XSCF in a browser to connect to the XSCF:
  https://<*XSCF_IP_address*>/

  1. XSCF Web login screen



☛ Log in as the newly created user edu01.

2. Screen of XSCF Web



☛ XSCF Web enables GUI-based setting and management of configuration information.

2.8. Setting a Power Consumption Limit (Power Capping) [Optional]

1) Confirm the power capping settings made.

By default, power capping is disabled (disabled).

```
XSCF> showpowercapping
activate_state      :disabled
powerlimit          :100%
timelimit           :30
violation_actions   :none
```

2) Configure power capping.

Here, this example sets 1000 W as the upper limit value for power consumption and 100 seconds as the extension time when the upper limit value is exceeded.

```
XSCF> setpowercapping -s powerlimit_w=1000 -s timelimit=100
activate_state      :disabled       -> -
powerlimit          :0w             -> 1000w
timelimit           :30             -> 100
violation_actions   :none           -> -
The specified options will be changed.
Continue? [y|n]:y                   <- "y" entered
configured.
activate_state      :disabled
powerlimit          :1000w
timelimit           :100
violation_actions   :none
```

3) Confirm that the settings made have been reflected.

Confirm that the set upper limit value for power consumption and the set extension time when the upper limit value is exceeded are correct.

```
XSCF> showpowercapping
activate_state      :disabled
powerlimit          :1000w
timelimit           :100
violation_actions   :none
```

4) Enable power capping.

```
XSCF> setpowercapping -s activate_state=enabled
activate_state          :disabled          -> enabled
powerlimit              :1000w             -> -
timelimit               :100               -> -
violation_actions       :none              -> -
The specified options will be changed.
Continue? [y|n]:y                  <- "y" entered
configured.
activate_state          :enabled
powerlimit              :1000w
timelimit               :100
violation_actions       :none
```

5) Confirm that power capping is enabled (enabled).

```
XSCF> showpowercapping
activate_state          :enabled
powerlimit              :1000w
timelimit               :100
violation_actions       :none
```

2.9. Configuring Memory Mirroring [Optional]

1) Check device information.

By default, memory mirroring is disabled (no).

```
XSCF> showfru -a
Device      Location      Memory Mirror Mode
sb          00-0
    cpu     00-0-0        no
```

2) Enable memory mirroring.

Specify "y" (enable) after the -m option in the setupfru command to enable memory mirroring.

```
XSCF> setupfru -m y sb 00-0
```

3) Confirm that memory mirror mode is enabled (yes).

```
XSCF> showfru -a
Device      Location      Memory Mirror Mode
sb          00-0
    cpu     00-0-0        yes
```

2.10. Initial Settings of CPU Resources

1) Check the CPU core resource usage.

Check the number of CPU cores whose use is permitted by CPU Activation.

```
XSCF> showcodusage
Resource       In Use   Installed    CoD Permitted     Status
-------------  -------  -----------  ----------------  ---------
PROC                0           16                4    OK: 4 cores available
PPAR-ID/Resource      In Use    Installed    Assigned
--------------------  --------  -----------  ----------
0   - PROC                 0           16    0 cores
Unused - PROC              0            0    4 cores
```

☛ The showcodusage output results include the following information:

- Top part: Information for the whole server
- Bottom part: Information by physical partition (PPAR)
  - A single physical partition is displayed for the SPARC M10-1/M10-4.
  - Multiple physical partitions can be built for the SPARC M10-4S.
- In Use: Number of active CPU cores
- Installed: Number of physically mounted CPU cores
- CoD Permitted: Number of CPU cores whose use is permitted by CPU Activation
- Status: Whether the CPU Activation license has been violated
- Assigned: Number of CPU cores assigned to the physical partition (PPAR)

☛ This example shows four cores for Unused under Assigned and zero cores for PPAR-ID 0 under Assigned. It means that four cores are permitted for use, but no cores are yet assigned to the PPAR.

<<Reference>>

- **Checking the number of CPU cores assigned to a physical partition (PPAR)**

You can also use the showcod command to check the number of CPU cores permitted for use and the number of CPU cores assigned to a PPAR.

```
XSCF> showcod
PROC Permits installed: 4 cores
PROC Permits assigned for PPAR 0: 0
```

2) Assign CPU cores to the physical partition (PPAR).

[Format] setcod -p *PPAR-ID* -s cpu *number_of_cores_to_assign_to_PPAR*

Specify the total number of CPU cores to assign to the PPAR. Note that this is not the number of CPU cores to add. Here, this example assigns four cores of the CPU to PPAR 0.

```
XSCF> setcod -p 0 -s cpu 4
```

☛ You can assign as many CPU cores as the number of CPU cores permitted for use, which is the upper limit value.

3) Check the CPU core resources.

```
XSCF> showcodusage
Resource   In Use   Installed   CoD Permitted     Status
---------- -------- ----------- ----------------- ---------
PROC              0          16                 4  OK: 4 cores available
PPAR-ID/Resource     In Use    Installed    Assigned
------------------------- --------- ----------- --------------
0   - PROC                0          16          4 cores
Unused - PROC             0           0          0 cores
```

☛ "Assigned" of PPAR-ID 0 shows that four cores are assigned.

4) Check the number of CPU cores assigned to the physical partition (PPAR).

```
XSCF> showcod
PROC Permits installed: 4 cores
PROC Permits assigned for PPAR 0: 4
```

2.11. Starting/Stopping a Physical Partition and Connecting to a Console [Optional]

1) Disable automatic startup (auto-boot) of the OS at physical partition startup.

* Make this setting for a transition after physical partition startup to the OpenBoot PROM (OBP) state, such as to reinstall the OS.
* Configure automatic OS startup based on the operation policy.

Change the auto-boot setting, which is an OBP environment variable, to "false" on the XSCF.

[Format] setpparparam -p *PPAR-ID* -s bootscript "*OBP_environment_variable_setting*"

```
XSCF> setpparparam -p 0 -s bootscript "setenv auto-boot? false"
OpenBoot PROM variable bootscript will be changed.
Continue? [y|n] :y              <- "y" entered
```

☛ The auto-boot setting will be reflected in the OBP environment at the next startup (next poweron time).

2) Start the physical partition.

```
XSCF> poweron -p 0
PPAR-IDs to power on :00
Continue? [y|n] :y              <- "y" entered
00 : Powering on

*Note*
 This command only issues the instruction to power-on.
 The result of the instruction can be checked by the "showlogs power".
```

☛ The physical partition takes about five minutes to start.

3) Check the status of the physical partition.

```
XSCF> showpcl -p 0
PPAR-ID     LSB     PSB       Status
00                            Running
            00      00-0
```

☛ Confirm that the physical partition status is "Running."

4) Check the OS environment status.

```
XSCF> showdomainstatus -p 0
Logical Domain Name           Status
primary                       OpenBoot Running
```

☛ Confirm that the domain (OS) status is "OpenBoot Running."

☛ The OS does not automatically start up because the auto-boot setting is "false."

5) Connect to the physical partition console.

Here, this example connects to the PPAR-ID 0 console.

```
XSCF> console -p 0

Console contents may be logged.
Connect to PPAR-ID 0?[y|n] :y                    <- "y" entered
<Press [Enter] key>
{0} ok
```

☛ Confirm that the "ok" prompt is displayed.

6) Terminate the console connection.

Enter "#." (number sign + period) to terminate the console connection.

```
{0} ok #.
exit from console.
XSCF>
```

☛ In the actual execution environment, "#." does not appear on the screen.

☛ Terminating the console connection will display the XSCF prompt.

7) Stop the physical partition.

```
XSCF> poweroff -p 0
PPAR-IDs to power off :00
Continue? [y|n] :y                <- "y" entered
00 : Powering off

*Note*
  This command only issues the instruction to power-off.
  The result of the instruction can be checked by the "showlogs power".
```

8) Check the physical partition status.

```
XSCF> showpcl -p 0
PPAR-ID     LSB     PSB     Status
00                          Powered Off
                00      00-0
```

☛ Confirm that the physical partition status is "Powered Off."

Oracle Solaris 11 or Oracle Solaris 10 has been preinstalled on the physical partition. You can select to either use the preinstalled OS or reinstall Solaris, as appropriate to the intended use. When reinstalling Oracle Solaris 11, apply the latest SRU.
For details on how to install Oracle Solaris 11 and apply an SRU, see the *Oracle Solaris 11* manuals.

- "Technical information Technical Park" > Document
  http://www.fujitsu.com/global/products/computing/servers/unix/sparc/downloads/documents/

3. CPU Activation

CPU Activation is the function that can activate, in units of CPU cores, the CPUs mounted in the SPARC M10. You can flexibly change the number of CPU cores to activate, as appropriate to changes in workload, while the system is running. This chapter describes the procedures for adding CPU cores using the CPU Activation function. In actual operation, CPU Activations must be purchased in advance.

This chapter describes procedures that are performed in an environment with Oracle Solaris 11.1 installed and an update program applied (Oracle version: SRU 1.4). For details on how to install Oracle Solaris 11 and apply the SRU, see the *Oracle Solaris 11* manuals.

- "Technical information Technical Park" > Document
  http://www.fujitsu.com/global/products/computing/servers/unix/sparc/downloads/documents/

3.1. Checking CPU Resources on the OS

In the subsequent procedures after this one, perform operations in the XSCF environment. The operations assume that the console has been connected.

1) Start the physical partition.

```
XSCF> poweron -p 0
PPAR-IDs to power on :00
Continue? [y|n] :y                <- "y" entered
00 : Powering on
```

2) Connect to the console of the physical partition from the XSCF.

```
XSCF> console -p 0

Console contents may be logged.
Connect to PPAR-ID 0?[y|n] :y                    <- "y" entered
<Press [Enter] key >
{0} ok boot
Boot device: disk    File and args:
SunOS Release 5.11 Version 11.1 64-bit
Copyright (c) 1983, 2012, Oracle and/or its affiliates. All rights reserved.
Hostname: m10-01

m10-01 console login: user01                     <- Logging in as general user
Password:*****
Last login: Thu Dec 13 13:19:41 on console
Oracle Corporation          SunOS 5.11          11.1        September 2012 s
$
$ su -
Password:*****                                   <- Switched to root privilege
```

☛ Connect to the console, and log in to the OS as a general user. Then, switch to root privilege.

3) Check the number of CPU cores recognized by the OS.

```
# psrinfo -vp
The physical processor has 4 cores and 8 virtual processors (0-7)
   The core has 2 virtual processors (0 1)
   The core has 2 virtual processors (2 3)
   The core has 2 virtual processors (4 5)
   The core has 2 virtual processors (6 7)
      SPARC64-X (chipid 0, clock 2800 MHz)
```

☛ In this execution example, four CPU cores and eight threads are assigned.

4) Check the CPU core resource usage.

Check the number of CPU cores permitted for use on the OS (PERMITS) and number of CPU cores assigned to the OS (IN USE).

```
# ldm list-permits

CPU CORE
    PERMITS    (PERMANENT)    IN USE        REST
    4          (4)            4             0
```

☛ In this execution example, four CPU cores are permitted for use, and all of them are assigned to the OS.

5) Go to the XSCF environment.

Enter "#." (number sign + period) to go to the XSCF environment.

```
# #.
XSCF>
```

☛ In the actual execution environment, "#." does not appear on the screen.

3.2. Adding CPU Cores Using the CPU Activation Function [Optional]

1) Check the CPU core resource usage.

Check the number of CPU cores whose use is permitted by CPU Activation.

```
XSCF> showcodusage
Resource    In Use    Installed   CoD Permitted    Status
----------  --------  ----------  ---------------  ---------
PROC             4         16               4     OK: 0 cores available
PPAR-ID/Resource  In Use   Installed  Assigned
------------------------  ---------  ----------  -----------
0   - PROC                    4          16     4 cores
Unused - PROC                 0           0     0 cores
```

☛ The showcodusage output results include the following information:

- Top part: Information for the whole server
- Bottom part: Information by physical partition (PPAR)
  - A single physical partition is displayed for the SPARC M10-1/M10-4.
  - Multiple physical partitions can be built for the SPARC M10-4S.
- In Use: Number of active CPU cores
- Installed: Number of physically mounted CPU cores
- CoD Permitted: Number of CPU cores whose use is permitted by CPU Activation
- Status: Whether the CPU Activation license has been violated
- Assigned: Number of CPU cores assigned to the physical partition (PPAR)

2) Check the number of CPU cores assigned to the physical partition (PPAR).

You can also use the showcod command to check the number of CPU cores permitted for use and number of CPU cores assigned to the PPAR.

```
XSCF> showcod
PROC Permits installed: 4 cores
PROC Permits assigned for PPAR 0: 4
```

3) Check the number of registered CPU Activation keys.

```
XSCF> showcodactivation
Index    Description    Count
-------  -------------  -------
    0    PROC               2
    1    PROC               2
```

4) Check detailed information on the CPU Activation key.

Check the raw data of the CPU Activation key.

```
XSCF> showcodactivation -r -i 0
*Index0
Product: SPARC M10-1
SequenceNumber: 97
Cpu: noExpiration 2
Text-Signature-SHA256-RSA2048:
cR+u4MiPpxgUvC/qSsLjZtctV9sI . . . . . .

XSCF> showcodactivation -r -i 1
*Index1
Product: SPARC M10-1
SequenceNumber: 98
Cpu: noExpiration 2
Text-Signature-SHA256-RSA2048:
S1azJ3Ok4nMDufdPs7i/hBXewVCL . . . . . .
```

5) Add a CPU Activation key.

Specify the key by copying all the key data and pasting it in double quotation marks ("").

```
XSCF> addcodactivation "Product: SPARC M10-1
> SequenceNumber: 99
> Cpu: noExpiration 2
> Text-Signature-SHA256-RSA2048:
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxx==
> "    <Press [Enter] key>
Above Key will be added, Continue?[y|n]:y                    <- "y" entered
```

☛ CPU Activations must be purchased in advance.

☛ By adding one CPU Activation key, you make two cores available.

Example: License key details (cod_key_M10_1_99.dsf)

```
Product: SPARC M10-1
SequenceNumber: 99
Cpu: noExpiration 2
Text-Signature-SHA256-RSA2048:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxx==
```

* Actual details omitted

6) Check the CPU core resource usage.

Confirm that two additional CPU cores are available from CPU Activation.

```
XSCF> showcodusage
Resource      In Use     Installed     CoD Permitted     Status
------------  --------   ----------    ----------------  --------
PROC          4          16            6                 OK: 2 cores available
PPAR-ID/Resource        In Use    Installed   Assigned
----------------------  --------  ----------  -------------
0   - PROC              4         16          4 cores
Unused - PROC           0         0           2 cores
```

7) Check the number of CPU cores assigned to the physical partition.

```
XSCF> showcod
PROC Permits installed: 6 cores
PROC Permits assigned for PPAR 0: 4
```

☛ Two CPU cores are additionally permitted for use, and a total of six cores are available.

8) Assign CPU cores to the physical partition (PPAR).

Here, this example assigns five cores of the CPU to PPAR-ID 0.

```
XSCF> setcod -p 0 -s cpu 5
```

☛ Specify the total number of CPU cores to assign to the PPAR. Note that it is not the number of CPU cores to add.

☛ You can specify a value in units of one core.

☛ You can assign as many CPU cores as the number of CPU cores permitted for use, which is the upper limit value.

9) Check the CPU core resource usage.

```
XSCF> showcodusage
Resource    In Use     Installed     CoD Permitted     Status
------------  ---------  -----------  --------------------  ---------
PROC              5           16                6      OK: 1 cores available
PPAR-ID/Resource    In Use     Installed    Assigned
------------------------  ---------  -----------  --------------
0   - PROC                  5           16     5 cores
Unused - PROC               0            0     1 cores
```

☛ Confirm that the five cores of the CPU are assigned to PPAR-ID 0.

☛ It may take up to 20 minutes for the correct value to be displayed. However, if the firmware version is XCP 2043 or earlier, it may take up to 16 minutes.

10) Check the number of CPU cores assigned to the physical partition.

```
XSCF> showcod
PROC Permits installed: 6 cores
PROC Permits assigned for PPAR 0: 5
```

☛ Of the six cores permitted for use, five cores are assigned to PPAR-ID 0.

11) Connect to the console of the physical partition from the XSCF.

```
XSCF> console -p 0

Console contents may be logged.
Connect to PPAR-ID 0?[y|n] :y                    <- "y" entered for question

m10-01 console login: user01                     <- Logging in as general user
Password:*****
Last login: Thu Mar   7 18:25:02 on console
Oracle Corporation      SunOS 5.11      11.1      September 2012
$
$ su -                                           <- Switched to root privilege
Password:*****
```

☛ Connect to the console, and log in to the OS as a general user. Then, switch to root privilege.

3.3. Adding Dynamic CPU Resources in the OS Environment [Optional]

After assigning CPU core resources to a physical partition in the XSCF environment, you need to add the CPU resource to individual domains in the OS environment. Here, this example adds a CPU to the physical server environment (control domain: primary).

1) Check the number of CPU cores currently available on the OS.

```
# psrinfo -vp
The physical processor has 4 cores and 8 virtual processors (0-7)
  The core has 2 virtual processors (0 1)
  The core has 2 virtual processors (2 3)
  The core has 2 virtual processors (4 5)
  The core has 2 virtual processors (6 7)
    SPARC64-X (chipid 0, clock 2800 MHz)
```

2) Check the CPU resource usage.

```
# ldm list-permits

CPU CORE
    PERMITS (PERMANENT)    IN USE        REST
    5           (5)                4             1
```

☛ Confirm that the number of CPU cores permitted for use (PERMITS) has increased.

☛ The added CPU cores are not yet assigned to the OS, so the number of unused CPU cores (REST) is 1.

3) Change the number of CPU cores.

Here, this example assigns a number of CPU cores equivalent to five cores to the OS.

```
# ldm set-core 5 primary
```

4) Check the number of CPU cores again.

```
# psrinfo -vp
The physical processor has 5 cores and 10 virtual processors (0-9)
  The core has 2 virtual processors (0 1)
  The core has 2 virtual processors (2 3)
  The core has 2 virtual processors (4 5)
  The core has 2 virtual processors (6 7)
  The core has 2 virtual processors (8 9)
    SPARC64-X (chipid 0, clock 2800 MHz)
```

☛ Confirm that the number of CPU cores recognized by the OS is equivalent to five cores.

5) Check the CPU resource usage again.

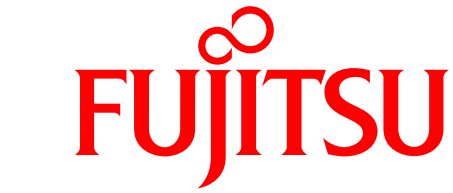
```
# ldm list-permits

CPU CORE
    PERMITS (PERMANENT)    IN USE        REST
    5           (5)                5             0
```

☛ Confirm that the number of CPU cores in use (IN USE) has increased to five cores. All the CPUs have been assigned to the OS, so the number of unused CPU cores (REST) is 0.

Revision History

Date	Edition	Description
December 2016	First	First edition created



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