SSF for MaxCore™ MC3000 Platform

Installation and Use

P/N: 6806800T81M

March 2020

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Table of Contents

Table of Contents

Table of Contents

List of Figures

List of Figures

List of Tables

List of Tables

About this Manual

Overview of Contents

This manual provides information on System Services Framework (SSF) configuration and different methods of accessing SSF. It contains the following chapters and appendices.

Chapter 1, Introduction on page 17 provides an overview of SSF and its features.

Chapter 2, SSF Installation and Upgrade on page 23 provides step-by-step procedure of SSF installation.

Chapter 3, SSF Service Configuration on page 43 provides information for configuring SSF.

Chapter 4, Accessing SSF on page 45 provides step-by-step procedures to access SSF using various interfaces.

Chapter 5, Configuration Management on page 49

Appendix A, Additional Information on page 51 provides additional information required for SSF configuration.

Appendix B, Troubleshooting and FAQ on page 67 provides troubleshooting and frequently asked questions.

Appendix C, Related Documentation on page 73 lists the relevant manuals.

Abbreviations

These are the abbreviations used in this manual.

Abbreviation	Definition
AAA-Server	Authentication, Authorization, and Accounting Server
BCSIM	Blade Common System Information Model
BMC	Baseboard Management Controller
CSIM	Common System Information Model
FRU	Field Replaceable Unit
LCU	Log Collection Utility
MCPU	Management CPU
RADIUS	Remote Authentication Dial-In User Service

Abbreviation	Definition
SMAN	Service Manager
SSF	System Services Framework
SMC	System Management Controller
TCP	Transmission Control Protocol
TL-Server	Transport Layer Server
MIB	Management Information Base
MO	Managed Objects
PCIe	Peripheral Component Interconnect Express
UDP	User Datagram Protocol
UDS	Unix Domain Socket
VF	Virtual Function

Conventions

The table below describes the conventions used throughout this manual.

Notation	Description
`0x00000000`	Typical notation for hexadecimal numbers (digits are 0 through F), for example used for addresses and offsets
0b0000	Same for binary numbers (digits are 0 and 1)
bold	Used to emphasize a word
`Screen`	Used for on-screen output and code related elements or commands. `Sample of Programming used in a table (9pt)`
`Courier + Bold`	Used to characterize user input and to separate it from system output
Reference	Used for references and for table and figure descriptions
File > Exit	Notation for selecting a submenu
<text>	Notation for variables and keys
[text]	Notation for software buttons to click on the screen and parameter description

Notation	Description
...	Repeated item for example node 1, node 2, ..., node 12
. . .	Omission of information from example/command that is not necessary at the time
..	Ranges, for example: 0..4 means one of the integers 0,1,2,3, and 4 (used in registers)
|	Logical OR
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury
	Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury
	Indicates a property damage message
	Indicates a hot surface that could result in moderate or serious injury
	Indicates an electrical situation that could result in moderate injury or death
Use ESD protection 	Indicates that when working in an ESD environment care should be taken to use proper ESD practices

Notation	Description
	No danger encountered, pay attention to important information

Summary of Changes

Part Number	Date	Description
6806800T81M	March 2020	Rebranded to SMART Embedded Computing
6806800T81L	August 2017	Updated *Chapter 2, SSF Installation and Upgrade on page 23*.
6806800T81K	July 2017	Added *Chapter 2, Installing SSF with SSF Core on External PC on page 29*, and *Appendix A, Ramdisk Creation for PCIE-7210* . Updated *Appendix B, How to check whether SSF Services are running fine* , and *Service Manager Configuration INI File on page 63*.
6806800T81J	April 2017	Added *Appendix B, Troubleshooting and FAQ* and *Changing Logging Configuration*. Updated *Chapter 1, Introduction*, *Chapter 2, SSF Installation and Upgrade*, *Chapter 3, SSF Service Configuration*, and *Updating Shelf Address*.
6806800T81H	April 2017	Updated *Chapter 1, Introduction* and *Updating Shelf Address*.
6806800T81G	January 2017	Updated *Table 2-4*, *Chapter 2, SSF Installation and Upgrade*, and *Configuring Multiple Shelves on MaxCore*.
6806800T81F	November 2016	Removed section *1.1.2.1 Network Connectivity*. Added *Installing SSF on PCIE-7210 Card*.
6806800T81E	September 2016	Updated *Chapter 2, SSF Installation and Upgrade*, *Chapter 3, SSF Service Configuration*, and *Chapter 4, Accessing SSF*. Added *Verifying SSF and BBS Versions Installed on the System*.
6806800T81D	August 2016	Added *Updating Shelf Address*, *Configuring Multiple Shelves on MaxCore*, *Configuring firewalld to Allow SSF Communication*. Updated *Chapter 1, Introduction*, *Chapter 2, SSF Installation and Upgrade*.

Part Number	Date	Description
6806800T81C	June 2016	Added Notice in *Installing SSF* and *Configuring a Non-SMART EC Card for SSF*. Updated *Chapter 3, SSF Service Configuration*, and *Chapter 1, Introduction* and Changed Manual Title.
6806800T81B	April 2016	Added *SNMP Interface*, *Chapter 2, SSF Installation and Upgrade* and *Accessing SSF using SNMP*.
6806800T81A	January 2016	Initial version.

Introduction

The MaxCore ™ MC3000 platform is unique in its ability to combine CPU-attached PCI Express cards with an extremely flexible communication network among these CPUs. Traditional single box server architectures provide either a single multi-core server that can be combined with a small number of PCI Express based I/O cards, or offer multiple independent server nodes with or without minimal local I/O extension. However, the MaxCore platform supports both types of architectures.

System Services Framework (SSF) provides a management and configuration interface to SMART Embedded Computing's hardware and software products. It facilitates system level configuration and management access to SSF managed hardware and software components through Web, XML, and CLI protocol interfaces.

SSF represents all the managed hardware and software components in a simple and easily manageable hierarchal model. It also supports persistency and playback of MaxCore configuration.

The following are the key features supported by SSF:

- Access, Authentication, and Authorization
- Configuration persistency, Reload, and Rollback
- Hierarchal representation of System model
- Dynamic population of System model
- Remote system configuration Management
- Application Management of Remote systems
- Event and Alarm management
- Graphical Monitoring of Sensors

1.1 PEX Modes and Network Configuration

MaxCore has two different architecture modes:

- Single-Host Mode
- Multi-Host Mode

shelfHost

shelfHost is a central management entity in a MaxCore with many CPUs. It is a combination of BMC, SSF, and BBS. It manages the MaxCore infrastructure, such as power supplies, fans, and USB/SATA/PF/VF assignments.

applicationHost

An applicationHost processes the data it receives through the network functions assigned to it by a shelf host.

systemHost

systemHost can manage a single MaxCore or a stack of many MaxCores which is called the System in the SSF terminology. The systemHost can be located on any CPU within the SSF network. This can also be a third-party server or a PC.

1.1.1 Single-Host Mode

In this case, it is a single PCIe domain. Where only one slot (slot1 or slot15) is populated with one host card and other slots (downstream slots) are populated with PCIe endpoint cards. This mode can be compared with any other PCIe rack server (For example, Dell R720 or R320) with a host processor and multiple PCIe Slots (14 slots).

1.1.2 Multi-Host Mode

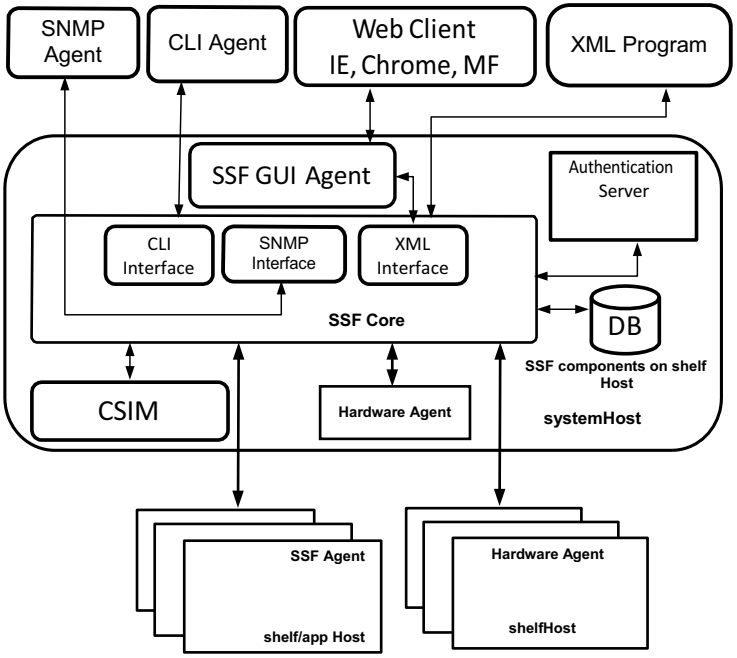
In Multi-Host Mode, multiple slots are configured as host ports. There can be multiple PCIe hosts that contains PCIe endpoints associated with them. The Active Shelf Host can either assign the complete PCIe device to a PCIe host or it assigns the Virtual Function (VF) of a device.

By default, MaxCore is configured in Base Mode. You can switch the MaxCore to Express fabric mode using SSF. This will result in the reset of the shelf host and bring-up MaxCore with the Multi-Host configuration, now set as default. You can decide on the default fabric mode configuration set separately.

1.2 Components of SSF

The following figure illustrates various components of SSF.

Figure 1-1 Components of SSF



SSF has the following components:

SSF Core - It is the central component of SSF. It provides a single point access to the complete system. It interacts with the SSF External Interface Agent (XML Interface Agent, CLI Interface Agent) and multiple SSF Agents. It receives all the requests from different external Interface agents, forwards the request to the one or many targeted SSF Agents, receives the response and respond it back to the external Interface agent. It also receives asynchronous events from the SSF Agents and forwards them to the external interface agents, who have registered for events. SSF Core only interacts with Authentication, Authorization, and Accounting Server (AAA- Server) for user authentication and Database server for persistency. An AAA server is a server program that handles user requests for access to computer resources and for an enterprise, provides authentication, authorization, and accounting (AAA) services. The AAA server typically interacts with network access and gateway servers and with databases and directories containing user information. The current standard by which devices or applications communicate with an AAA server is the Remote Authentication Dial-In User Service (RADIUS).

SSF GUI Agent - It is an application that interacts with the SSF core to provide web interface for accessing SSF managed system. Similar to SSF core, SSF GUI Agent has to be installed on shelf host.

SSF Agent (Host OS Management) - It is present in the shelf Host. It communicates with the SSF core and provides access to platform services, such as `syslog-ng`, and a user-defined service `syslcu` installed on the SSF core. You can also add your own platform services that can be managed using SSF. Please refer to *Service Manager Configuration on page 62*.

SSF Agent (Application Management) - It is an interface between the south-bound interface of SSF and a north-bound interface of an application. It forwards all the requests from the SSF core to an application and vice versa.

1.3 SSF Access Methods

You can access SSF using the following interfaces:

- Web interface
- XML interface
- CLI
- SNMP

These interfaces provide:

- Hierarchic system view
- Complete System Management
- System Configuration
- General Linux services and also proprietary application services

1.3.1 Web Interface

You can access SSF using a web-based application for configuring, managing, and monitoring SMART EC's systems and their components. The web interface represents the system in a hierarchical structure that helps in identifying various components at different levels.This provides a pictorial view of the system with navigation links to view component details and perform actions.

The web interface of SSF has the following capabilities:

Accessibility

HTTP-based access to the web interface.

User Management

Configuration and management of different user categories.

Monitoring

Centralized logging system based on `syslog-ng`

Logging of alarms and events

Graphical monitoring of Platform Parameters such as Fan Speed, power sensors, and temperature sensors

For more details, see *Chapter 4, Accessing SSF*.

1.3.2 XML Interface

XML Interface enables you to communicate with SSF core via the XML agent. XML agent forwards requests from the XML interface to the SSF core and sends back responses and notifications from the SSF core to the XML interface.

For more information about the XML interface, refer to the *System Services Framework for MaxCore™ Platform XML Interface Guide*.

1.3.3 CLI

SSF provides a fully functional CLI with auto complete, history, and help features.

You can access CLI through a telnet session. Multiple sessions can be created simultaneously and the number of sessions supported is only limited by the available system resources. SSF CLI enables you to traverse the system hierarchically and provide configuration and management access to the SSF system. All these hierarchies are represented as nodes.

The CLI of SSF has the following capabilities:

- CLI Access to different users can be restricted using different privilege levels.
- Multiple client sessions for a single user to access the system can be configured.

The following table provides command line editing features of SSF CLI.

Table 1-1 Command Line Editing Features

Keyboard keys	Description
Left and Right arrow	Allow you to move the cursor within the current command line.
Up and Down arrow	Allow you to browse through a command history.
BACKSPACE	Enables you to remove the character towards left.

Table 1-1 Command Line Editing Features (continued)

Keyboard keys	Description
TAB	Completes the keyword being entered automatically.
“?”	Provides you context help.
<cr>	Carriage return. System displays this command when you provide all mandatory arguments of a particular CLI command. It represents the command syntax completion.

1.3.4 SNMP Interface

Simple Network Management Protocol (SNMP) is a protocol for network management which monitors and manage devices on networks. It is used for collecting information from, and configuring, network devices, such as servers, switches, and routers on an IP network. Also, it exposes management data in the form of variables on the managed systems, which describe the system configuration. For more details, see *Accessing SSF using SNMP*.

SSF Installation and Upgrade

SSF can be downloaded using the SWORDS download server available from the SMART Embedded Computing Customer Resource Center website *https://www.smartembedded.com/ec/support*.

2.1 Software Deliverables

SSF software is delivered as a complete package, which includes SSF RPMs, dependent RPMs, Basic Blade Services (BBS), and an installation script. The software deliverables include packages for PCIE-7410, PCIE-9205, and PCIE-7210. These packages also include deliverables for associated PCIE target cards, such as PCIE-8120, and PCIE-7207. The following provide package details of PCIE-7410, PCIE-9205, and PCIE-7210 cards.

Table 2-1 System Update Package

Package	Description
SSFMAXCORE-R_<package-ver>.iso	MC3K software (update)- A single update package for system update feature. It contains update BMC, BBS, and SSF update packages for PCIE-7410, PCIE-7210, and PCIE-9205 cards.

Table 2-2 Package for PCIE-7410 and PCIE-9205

Package	Description
install_disk.img	MC3k software (full) - Contains SSF, Kernel, BBS, and so on.
mc3ksw_update_7410_<os>-<os-ver>_<package-ver>.iso	MC3k software (update) - Contains BBS and SSF repositories for PCIE-7410, PCIE-8120, and PCIE-7207.
ramdisk.image.gz	MC3K software (full) - Updated ramdisk image contains SSF, Kernel, and BBS.
rootfs.tar.bz2	Compressed root file system updated with SSF packages.

Table 2-3 PCIE-7210 package

Package	Description
mc3ksw_update_7210_<os>-<os_ver>_<package-ver>.iso	Contains BBS and SSF repositories for PCIE-7210, PCIE-8120, and PCIE-7207.

The next table lists the contents (SSF and Dependent RPMs) in the delivered packages.

Table 2-4 List of SSF and Dependent RPMs for Host

RPM	Description
SSF Core	
ssf_maxcore_main_rel-<Version>-el7.x86_64.rpm	Contains binary and configuration files of SSF Core and Common System Information Model (CSIM). This has to be installed on shelfHost.
Hardware Agent	
ssf_maxcore_mxcagent_rel-<version>-el7.x86_64	Contains Hardware Platform Agent binaries and configuration files. This should be installed on shelfHost of the MaxCore. In multi-shelf environment this should be installed on shelfHost of all MaxCores. Hardware Agent performs hardware discovery by communicating with BMC and PEX and provides the information to SSF.
SSF GUI Agent	
ssf_maxcore_gui_rel-<version>-ssf_<Version>-el7.x86_64.rpm	Contains Zend Framework, httpd server, and GUI configuration scripts to be installed on a shelf host.
ssf_maxcore_gui_help_rel-<version>-el7.x86_64	Provides SSF GUI help pages.
ssf_maxcore_gui_console_rel-<Version>-el7.x86_64.rpm	Contains console support for SSF web interface to be installed on a shelf host.
SSF Agent	
ssf_maxcore_bcsim_rel-<version>-el7.x86_64.rpm	Contains binary and configuration files of the SSF Agent. This also includes the Linux service configuration file. The SSF Agent is used to configure and maintain the OS services, Interfaces, OS information, and so on. This SSF Agent is for PCIE-741, and PCIE-7210 delivered or packaged along with the BBS Release mentioned in *MaxCore™-MC3000BBS-Release-Notes*.
ssf_maxcore_rrcTLS_rel-9205-<version number>-el7.x86_64.rpm	Contains the binary and configuration files for SSF switch agent.
switchsw-pcie920x-<version number>-el7.x86_64.rpm	Switch Software Release RPM.

Table 2-4 List of SSF and Dependent RPMs for Host (continued)

RPM	Description
SSF Version	
ssf_version_rel-<version>-el7.x86_64	Contains SSF compatibility versions.
ViewCheck Agent	
ssf_maxcore_viewcheckTLS_rel-<version number>-el7.x86_64.rpm	Provides binary and configuration files of the ViewCheck SSF Agent. This RPM is dependent on SMART EC ViewCheck RPM.
ViewCheck	
viewcheck_rel-<7210|7410|9205>-<version number>-el7.x86_64.rpm	This RPM contains the ViewCheck service. The ViewCheck RPM image is functionally comprises diagnostics framework, specific test cases, and test suites. The ViewCheck RPM always uses the same OS variant and compile time environment based on the BBS release of the target PCIE card. ViewCheck service RPM consists of: ViewCheck Core -Daemon Static Test Suite Configuration files for the specific card Start/Stop/Restart /Status scripts for ViewCheck Core
sysLCU	
syslcu-<version>.noarch	Contains scripts and configuration files of *sysLCU* utility.
PCIE-7207 Specific RPMs	
viewchecklib_rel-7207-<version>-el7.x86_64.rpm	Provides binary and configuration files for the ViewCheck library for PCIE-7207.
ssf_maxcore_mcpdiag_rel-7207-<version>-el7.x86_64.rpm	Provides the binary and configuration files for SSF MCP ViewCheck agent.
ssf_maxcore_mcpagt_rel-7207-1.1.0.13-el7.x86_64.rpm	Provides the configuration and binary files for MCP agent.
PCIE-7207 Ramdisk Specific RPMs	

Table 2-4 List of SSF and Dependent RPMs for Host (continued)

RPM	Description
viewcheck_rel-7207-<version>-el7.x86_64.rpm	Provides binary and configuration files for the ViewCheck RPM for PCIE-7207.
ssf_maxcore_mcpagtclnt_rel-7207-<version>-el7.x86_64.rpm	Provides the binary and configuration files for SSF MCP client, which interacts with SSF MCP agent.
PCIE-8120 Specific RPMs	
qt-<version>.e17_2.x86_64.rpm	Dependent RPMs for the octasic-sdk.
qt-settings-<version>.e17.centos.noarch.rpm	
sofia-sip-<version>.e17.centos.x86_64.rpm	
octasic-sdk-<version>-1A.e17.centos.x86_64.rpm	Contains mainly firmware image and some tools required for booting up the DSPs.
pcie8120-<version>-MC_1.e17.centos.x86_64.rpm	Contains set of binaries, C-library, `octmezz` commands and mainly PCIE-8120 kernel module
ssf_maxcore_smcTLS_rel-8120-<version>-el7.x86_64.rpm	Provides the binary and configuration files for SSF PCIE-8120 card configuration agent.
Dependent RPMs	
freeradius-1.1.7-el7.x86_64.rpm	Contains access and authentication services on SSF.
libpqxx-2.6.8-el7.x86_64.rpm	Library to communicate with PostGRE database.
`postgresql-9.1.3-el7.x86_64.rpm`	Database to provide configuration persistency.
vsftpd-3.0.2-9-el7.x86_64.rpm	Supports file transfer from remote user.
expect-5.45-12.el7.x86_64.rpm	Contains scripts and configuration files of expect utility.
tcl-8.5.13-8.el7.x86_64.rpm	Dependent rpm for expect utility.
ftp binary	Supports file transfer from remote user.
Syslcu tar file	Contains scripts and configuration files of sysLCU utility.
psmisc-22.6-19.el6_5.x86_64.rpm	Provides utilities for installing ViewCheck on PCIE-7410, PCIE-9205, and PCIE-7210.

Table 2-4 List of SSF and Dependent RPMs for Host (continued)

RPM	Description
HTTP-2.2.29 package	A compiled version of http that supports Zend.
Zend-framework for SSF GUI	Zend with PHP 5.3.

2.2 Installing SSF

2.2.1 Installing SSF on PCIE-7410 and PCIE-9205 Cards

SSF and BBS comes pre-installed on these PCIE cards. If you want to reinstall latest version, use the `install_disk.img` provided in the release. SSF is a part of disk's `rootfs` and it gets installed along with the BBS and OS. For more on how to install `install_disk.img`, refer to *MaxCore™ MC3000 Platform Installation and Use* manual.

SSF automatically identifies the location of these cards placed in a MaxCore shelf and enables only the required services based on their role (whether a shelfHost card or an application Host card).

2.2.2 Installing SSF on PCIE-7210 Card

Before installing SSF, install BBS on PCIE-7210 card. For more information on how to install BBS, refer to *SharpStreamerPro PCIE-7210 Installation and Use* manual.

After installing BBS, follow the below procedure to install SSF on PCIE-7210 card:

1. Copy the `mc3ksw_update_7210_<os>-<os_ver>_<ver>.iso` image to the card.
2. Create a directory to mount the image.
   ```
   #mkdir -p /mnt/ssf-update
   ```
3. Mount the image.
   ```
   #mount -o loop mc3ksw_update_<7210>_<os>-<os_ver>_<ver>.iso
   /mnt/ssf-update
   ```
4. Install SSF.
5. Run `mc3k_<7210>_software_update.sh` script.
   ```
   #cd /mnt/ssf-update/SSF
   #./mc3k_7210_software_update.sh
   ```

6. Enter **1** to install the software.
7. Verify the installed RPMs.
   ```
   #rpm -qa | grep ssf
   ```
8. Unmount `ssf-update` and reboot the card.
   ```
   #umount /mnt/ssf-update
   #reboot
   ```

NOTICE

If the RPM database is corrupted (Error: rpmdb open failed), you can rebuild it by using rpm --rebuilddb command as follows:

```
#rm -f /var/lib/rpm/__db*
#db_verify /var/lib/rpm/Packages
#rpm --rebuilddb
#yum clean all
```

2.2.3 Installing SSF Agents for Endpoint PCIE Cards

SMART EC provides SharpStreamer PCIE-7207 and SharpMedia PCIE-8120 endpoint PCIE cards, which are compatible with MaxCore.

Prerequisite

Before you install software on these cards, make sure that related software for these endpoint cards is already installed on the host card and is currently acting as a shelfHost.

To install SSF Agents for target PCIE cards on host card (PCIE-7410, PCIE-9205, or PCIE-7210)

1. Copy the `mc3ksw_update_<7410|7210>_<os>-<os_ver>_<ver>.iso` image to the host card.
2. Create a directory to mount the image.
   ```
   #mkdir -p /mnt/ssf-update
   ```
3. Mount the image.
   ```
   #mount -o loop mc3ksw_update_<7410|7210>_<os>-<os_ver>_<ver>.iso
   /mnt/ssfupdate
   ```

To install software on a PCIE-7207 card

1. Run `mc3k_7207_software_update.sh` script to upgrade SSF on PCIE-7207.

```
#cd /mnt/ssf-update
#./mc3k_7207_software_update.sh
```

2. Enter **1** to install the software.
3. Verify the installed RPMs.
   `#rpm -qa | grep 7207`
4. Unmount `ssf-update`
   `#umount /mnt/ssf-update`

To install software on a PCIE-8120 card

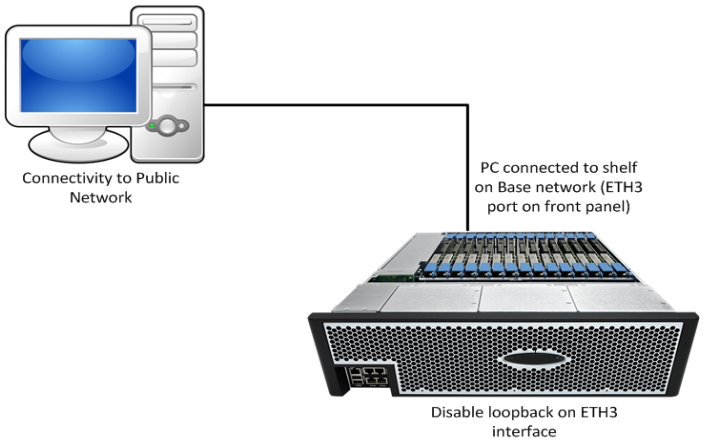
1. Run `mc3k_8120_software_update.sh` script to upgrade SSF on PCIE-8120.
   ```
   #cd /mnt/ssf-update
   #./mc3k_8120_software_update.sh
   ```
2. Enter **1** to install the software.
3. Verify the installed RPMs.
   `#rpm -qa | grep 8120`
4. Unmount `ssf-update`
   `#umount /mnt/ssf-update`

Edit the configuration file `/opt/ssf/etc/config/smc/ssfApi.conf` to populate the correct Shelf-Host IP-address. The IP-address will be in `172.27.<shelf-id>.2` format.

2.3 Installing SSF with SSF Core on External PC

In this configuration, SSF core and SSF GUI agent runs on a external PC. But, the SSF application agents will run as usual on respective cards. To manage the system, SSF core needs IP connectivity to the SSF application agents. SSF can be installed on x86_64 based PC. The PC should be reachable to base network, so that SSF core running on PC can be reachable for system management. *Figure 2-1* illustrates how an external PC is connected to MaxCore system. A complete package which includes dependent packages, SSF packages and installation script is provided with SSF release. Following sections will explain the steps to install SSF with SSF core on connected PC in details.

Figure 2-1 External PC based System Manager



2.3.1 Installing Linux on connected PC

A complete installation packages `mc3ksw_update_PC_centos-<os_version>_<version>.iso` is provided with the SSF release. SSF supports the following Linux OS distribution: CentOS release 7.2 on 64-bit platform.

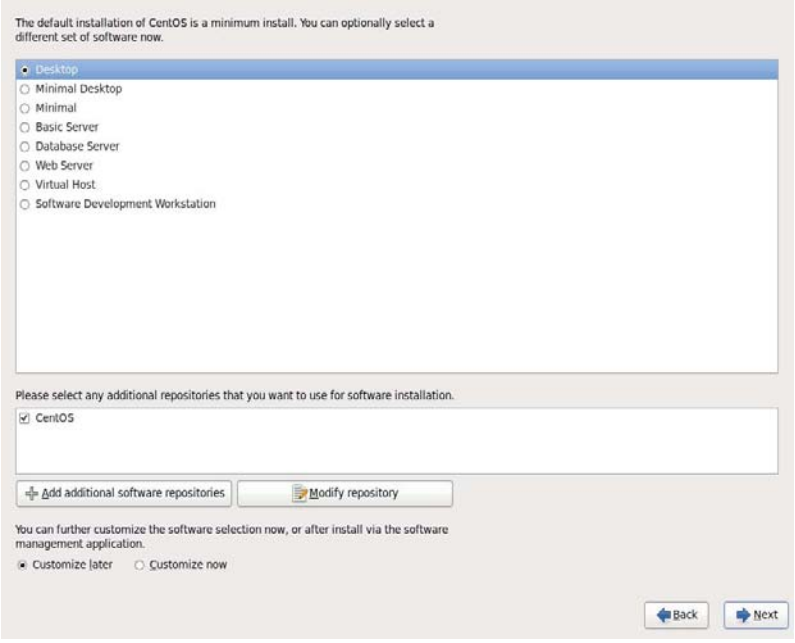
2.3.1.1 Installing CentOS on Connected PC

This section describes installing CentOS on external PC.

Install CentOS from either of the locations mentioned in the above section and select Desktop option.

NOTE: Do not upgrade the Linux installation using any automatic upgrade tool (for example, yum) after installation. Any such upgrade can lead to failure of installation of SSF Core. You may perform such upgrade after the installation of SSF. For CentOS installation, select Desktop-Gnome option, when prompted for the type of install option as shown in the next figure. Any other selection can result into some dependency issues, which can lead to failure of smooth installation.


CentOS
The default installation of CentOS includes a set of software applicable for general internet usage. What additional tasks would you like your system to include support for?
Desktop - Gnome
Desktop - KDE
Server
Please select any additional repositories that you want to use for software installation.
Add additional software repositories
You can further customize the software selection now, or after install via the software management application.
Customize later
Customize now
Release Notes
Back
Next


The default installation of CentOS is a minimum install. You can optionally select a different set of software now.
Desktop
Minimal Desktop
Minimal
Basic Server
Database Server
Web Server
Virtual Host
Software Development Workstation
Please select any additional repositories that you want to use for software installation.
CentOS
Add additional software repositories
Modify repository
You can further customize the software selection now, or after install via the software management application.
Customize later
Customize now
Back
Next

2.3.2 Updating Interface Name of External PC

Interface name of external PC should be br0/ETH3. To change the Interface name follow the below steps:

1. Find out the MAC address of the network device.

```
#ifconfig enp63s0
enp63s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.130.100.98  netmask 255.255.255.0  broadcast
10.130.100.255
        inet6 fe80::216:35ff:fe60:daa7  prefixlen 64  scopeid
0x20<link>
        ether 00:16:35:60:da:a7  txqueuelen 1000  (Ethernet)
        RX packets 303760  bytes 419193497 (399.7 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 170123  bytes 15587165 (14.8 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 17
```

In this example, MAC address is `00:16:35:60:da:a7`

2. Edit the file `/etc/udev/rules.d/70-persistent-net.rules` and add names of the network devices listed in this file as follows, and replace the `xx:xx:xx:xx:xx:xx` with the proper MAC address.

```
# interface with MAC address "xx:xx:xx:xx:xx:xx" will be assigned
"ETH3"
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*",
ATTR{address}=="xx:xx:xx:xx:xx:xx", ATTR{dev_id}=="0x0",
ATTR{type}=="1", KERNEL=="enp*", NAME="ETH3"
```

3. Rename the network interface configuration file.

```
# cd etc/sysconfig/network-scripts/
# mv ifcfg-enp63s0 ifcfg-ETH3
```

4. Edit the network interface configuration file and replace all occurrences of the old name enp63s0 with the new one ETH3.

```
# vi /etc/sysconfig/network-scripts/ifcfg-ETH3
```

5. Reboot the system to test changes.

```
# reboot
```

6. To verify new settings

```
# ifconfig -a
```

2.3.3 Installing SSF

This section describes installing SSF on external PC.

NOTE: Make sure that Linux OS is already installed on the external PC before installing SSF.

1. Copy the `mc3ksw_update_PC_<os>-<os_ver>_<ver>.iso` image to the Linux PC.
2. Create a directory to mount the image.
   `#mkdir -p /mnt/ssf-update`
3. Mount the image.
   `#mount -o loop mc3ksw_update_PC_<os>-<os_ver>_<ver>.iso /mnt/ssf-update`

To install software on a PC

1. Run `mc3k_pc_software_update.sh` script to install/upgrade SSF on PC.
   `#cd /mnt/ssf-update`
   `#./mc3k_pc_software_update.sh`
2. Enter 1 to install the software.
3. Verify the installed RPMs.
   `#rpm -qa | grep ssf`
4. Unmount ssf-update and reboot the PC.
   `#umount /mnt/ssf-update`
   `#reboot`

2.3.4 Configuring System Network

Before configuring the system network, make sure your PC is connected to the ETH3 port of MaxCore, which enables PC to communicate with all the boards through Base network.

IP Address assignment

By default, SSF is configured to listen on all interfaces of its Host. All of the application SSF agents are configured to contact SSF core on IP address set through MCparams.

Assign the static IP address `172.27.0.1` to the port of PC connected to the Base Network (connected to ETH3).

MaxCore configuration procedure

1. The file `/opt/ssf/etc/config/main/maxcore.conf` on the desktop hosting SSF core should be modified with the listening interface that is the port of desktop connected to the base network.

```
log_level=INFO
ssfhostinterface=ETH3 <-  interface name of the desktop port connected to the base network
applicationhost_apply_policy=true
default_configuration=true
domain=11                    # Domain ID
rack=1                       # Rack ID
shelf=75
name=Shelf                   # Shelf Name
master=true                  # shelf type
mcpu_ipaddr=127.0.0.1    <-  shelfHost IP address, which is reachable from external Host
mcpu_port=8888               # MCPU Port
mcpu_evt_port=8890           # MCPU Evt Port
```

NOTE: Make sure that the physical connection to the PC from MaxCore is via ETH3 of front panel.

2. Disable loopback on ETH3 interface on MaxCore.
   `#mccs_tool.py --method set-loopback --func 16,2 --mode off`
3. Restart SSF on the PC:
   `#systemctl restart ssfCore.service`
4. Power cycle the connected MaxCore shelf.

2.3.5 Uninstallation Procedure on External Linux PC

This section explains how to uninstall the package on the Linux OS distribution:

1. Copy the `mc3ksw_update_PC_<os>-<os_ver>_<ver>.iso` image to the Linux PC.
2. Create a directory to mount the image.
   `#mkdir -p /mnt/ssf-update`
3. Mount the image.
   `#mount -o loop mc3ksw_update_PC_<os>-<os_ver>_<ver>.iso /mnt/ssf-update`

To install software on the PC:

4. Run `mc3k_pc_software_update.sh` script to install/upgrade SSF on PC
   ```
   #cd /mnt/ssf-update
   #./mc3k_pc_software_update.sh
   ```
5. Enter 2 to Uninstall the software.
6. Verify the installed RPMs.
   ```
   #rpm -qa | grep ssf
   ```
7. Unmount ssf-update and reboot the PC.
   ```
   #umount /mnt/ssf-update
   #reboot
   ```

2.3.6 Upgrade Procedure on External Linux PC

This section explains how to upgrade the package from one release version to another release version on the Linux OS distribution:

1. Copy the `mc3ksw_update_PC_<os>-<os_ver>_<ver>.iso` image to the Linux PC.
2. Create a directory to mount the image.
   ```
   #mkdir -p /mnt/ssf-update
   ```
3. Mount the image.
   ```
   #mount -o loop mc3ksw_update_PC_<os>-<os_ver>_<ver>.iso /mnt/ssf-update
   ```

To install software on the PC:

4. Run `mc3k_pc_software_update.sh` script to install/upgrade SSF on PC.
   ```
   #cd /mnt/ssf-update
   #./mc3k_pc_software_update.sh
   ```
5. Enter 3 to upgrade the software.
6. Verify the installed RPMs.
   ```
   #rpm -qa | grep ssf
   ```
7. Unmount ssf-update and reboot the PC.
   ```
   #umount /mnt/ssf-update
   #reboot
   ```

2.3.7 Starting SSF on External PC

After completion of the installation, the postgres, radius, and SSF services will be started automatically.

This section describes how to start the SSF Core manually.

2.3.7.1 Starting SSF core on External PC

After completion of the installation, the postgres, radius, and SSF services will be started automatically.

Use the following commands to start, stop, status, and restart the postgres, radius, and SSF services for future use:

```
systemctl start ssfCore.service
systemctl stop ssfCore.service
systemctl status ssfCore.service
systemctl restart ssfCore.service
```

2.4 Upgrading Shelf using System Update

SSF supports MaxCore System Update from release 1.1.0.28 (SP5). Using this feature, you can update a complete shelf with a single command.

SSF for MaxCore release package contains a system update package, which includes upgrades for all SMART EC cards (PCIE-7410, PCIE-7210, and PCIE-9205) for MaxCore platform. You can use System Update using CLI and XML interface. The following section describes the procedure in detail.

NOTICE

If any of the applicationHost CPU is booted with network boot, then boot that CPU with latest ramdisk image to avoid any upgrade to be initiated.

To perform a system update, you have to connect to SSF either through a CLI or XML interface through serial access or over IP. For more information, refer to sections *Accessing SSF using XML Interface on page 46* and *Accessing SSF using CLI on page 46*.

By default the credential are: **Username**: *Admin* and **Password**: *Admin*

NOTICE

The MaxCore system update only updates the local storage and you must copy the latest ramdisk image in case you are booting any of the application hosts using netboot.

2.4.1 Checking Shelf Status

System update upgrades the shelfHost and all participating applicationHost CPUs on the shelf. An applicationHost can only participate in system update if the upgrade agent (part of SSF agent) is available and connected to the shelfHost. This command lists the applicationHost CPUs which are participating in the system update. Verify all the applicationHost CPUs that are listed in the output of the command with the current version.

To check the current versions of all the components available in the shelf and to view the update status, use the status command as shown below.

```
[root@pcie9205-s1-c1 ~]  telnet localhost 11001
  Trying ::1...
  telnet: connect to address ::1: Connection refused
  Trying 127.0.0.1...
  Connected to localhost.
  Escape character is '^]'.
  Welcome to SSF CLI
  Username: Admin
  Password:
  Access granted
  >en
  con t
  MaxCore(config)system 1
  MaxCore(system-1)shelf 22
  MaxCore(shelf-1-22)system-upgrade-status
================================================
Shelf# 22             status: Upgrade Success
================================================
  Slot# 1
  CPU# 1  status: Upgrade Success
 ------------------------------------------------------------
```

```
  Entity      Status      Curr Ver        Last Updated
 ------------------------------------------------------------
 BMC_Application                 1.8.000000          Sun Mar 12
12:42:41 IST 2017
BMC_CPLD_Companion              0.03.03000000       Sun Mar 12
12:42:41 IST 2017
BMC_CPLD_Glue                    0.03.00000000       Sun Mar 12
12:42:41 IST 2017
BMC_CPLD_I/O_Module           0.06.01000000    Sun Mar 12 12:42:41
IST 2017
Basic_Board_Services             1.5.0               Sun Mar 12
12:42:41 IST 2017
System_Services_Framework Upgrade Success   1.1.0.29 Sun Mar 12
13:42:53 IST 2017
PCIe-9205_BIOS 1.4.00000002      Sun Mar 12 12:42:41 IST 2017
PCIe-9205_CPLD      01.00.00        Sun Mar 12 12:42:41 IST 2017
PCIe-9205_Switch_Management   Upgrade Success        1.0.2.24
Sun Mar 12 13:45:36 IST 2017
ViewCheck   Upgrade Success   1.0.2.15    Sun Mar 12 13:48:06 IST
2017
  Slot# 2
  Slot# 3
  Slot# 4
  Slot# 5
  Slot# 6
    CPU# 1 status:       --
      ------------------------------
   Entity       Status       Curr Ver       Last Updated
   ------------------------------   ------------------------
    CPU# 2 status: Upgrade Success
   ------------------------------   ------------------------
   Entity     Status         Curr Ver       Last Updated
   ------------------------------   ------------------------
Basic_Board_Services    1.5.0             Sun Mar 12 13:29:53 IST
2017
System_Services_Framework   Upgrade Success   1.1.0.29         Sun
Mar 12 14:07:23 IST 2017
```

```
PCIe-7410_BIOS  1.4.00000002      Sun Mar 12 13:29:53 IST 2017
PCIe-7410_CPLD     01.00.00        Sun Mar 12 13:29:53 IST 2017
 ViewCheck Upgrade Success 1.1.0.15  Sun Mar 12 14:07:50 IST 2017
  Slot# 7
  Slot# 8
  Slot# 9
    CPU# 1  status:       --
   ------------------------------   ------------------------
     Entity      Status                    Curr Ver          Last
Updated
   ------------------------------   ------------------------
    CPU# 2  status: Upgrade Success
   ------------------------------   ------------------------
   Entity  Status            Curr Ver       Last Updated
   ------------------------------   ------------------------
  Slot# 10
  Slot# 11
  Slot# 12
  Slot# 13
  Slot# 14
  Slot# 15
    CPU# 1  status:       --
   ------------------------------   ------------------------
   Entity Status             Curr Ver       Last Updated
   ------------------------------   ------------------------
    CPU# 2  status:       --
   ------------------------------   ------------------------
  Entity  Status            Curr Ver       Last Updated
    ------------------------------    ------------------------
```

In the above output, you can see that Slot6- CPU1, Slot9-CPU1, Slot9-CPU2 Slot15-CPU1 and Slot15-CPU2 are not participating in system update, but Slot6-CPU2 is participating.

2.4.2 Initiating System Update

To perform the system update, follow these steps.

1. Download the System Update package from the delivery to the shelfHost of the MaxCore for which you want to initiate the update.
2. Connect to SSF either through CLI or XML interface through serial access or over IP.
3. Run the following command.
   `MaxCore(shelf-1-22)#`**`system-upgrade-initiate filename "<System Update file with Absolute Path>"`**

This initiates the upgrade on the shelf which includes multiple power cycles and reboots.

For more information about the system update command, refer to *SSF for MaxCore MC3000 Platform XML Interface Guide* and *SSF for MaxCore MC3000 Platform Command Line Interface Guide*.

2.5 Upgrading SSF

This section describes steps to perform SSF software upgrade on PCIE-7410, PCIE-7210, and PCIE-9205 cards individually.

The `mc3ksw_update_<7410 |7210>_<os>-<os_ver>_<ver>.iso` image contains BBS and SSF repositories that can be used for upgrading SSF on PCIE-7410, PCIE-7210, or PCIE-9205 cards.

The ISO file contains the following repositories for PCIE-7410, PCIE-7210, PCIE-9205, PCIE-7207, and PCIE-8120 cards.

Table 2-5 Software Update Package Contents

ISO Contents	Description
mc3k_software_update.sh	PCIE-7410 or PCIE-9205 update script.
mc3k_<7210>_software_update.sh	PCIE-7210 update script.
mc3k_7207_software_update.sh	PCIE-7207 update script.
mc3k_8120_software_update.sh	PCIE-8120 update script.
ssf7210	PCIE-7210 yum repository.
ssf	PCIE-7410 or PCIE-9205 yum repository. The PCIE-9205 yum repository includes RRC-TLS.
ssf7207	PCIE-7207 yum repository.
ssf8120	PCIE-8120 yum repository.

Table 2-5 Software Update Package Contents (continued)

ISO Contents	Description
ssf<7210>.repo	PCIE-7210 yum repository file.
ssf.repo	PCIE-7410 or PCIE-9205 yum repository file.
ssf7207.repo	PCIE-7207 yum repository file.
ssf8120.repo	PCIE-8120 yum repository file.
zend-default-vhost-80.conf	Zend server configuration file.
updatePCIe-7207-OS.sh	Ramdisk image creation file.
bbs-release	BBS release file.

NOTICE

If you are running SSF <7410 |7210> 1.1.0.12 you can upgrade to higher version using the mc3ksw_update_<7410 |7210>_centos-7.2_<greater than 12>.iso image. SSF contains a yum repository with new packages.

To upgrade SSF on PCIE-7210, refer to *Installing SSF on PCIE-7210 Card on page 27*.

Upgrading SSF

1. Copy the `mc3ksw_update_<7410 |7210>_<os>-<os_ver>_<ver>.iso` image to the card.
2. Create a directory for mounting the image.
   `#mkdir -p /mnt/ssf-update`
3. Mount the image.
   `#mount -o loop mc3ksw_update_<7410 |7210>_<os>-<os_ver>_<ver>.iso /mnt/ssf-update`

Upgrade the software

1. Run `mc3k_<7410 |7210>_software_update.sh` script.
   `#cd /mnt/ssf-update/SSF`
   `#./mc3k_software_update.sh`
2. Enter **3** to upgrade the software.
3. Verify the installed RPMs.
   `#rpm -qa | grep ssf`

NOTE: If you do not want to install SSF agents for target PCIE cards (PCIE-7207 and PCIE-8210), go to *Step 4.*in the *Upgrade SharpMedia PCIE-8120* procedure.

Upgrade SharpStreamer PCIE-7207

1. Run `mc3k_7207_software_update.sh` script to upgrade SSF on SharpStreamer PCIE-7207.
   ```
   #cd /mnt/ssf-update
   #./mc3k_7207_software_update.sh
   ```
2. Enter **3** to upgrade the software.
3. Verify the installed RPMs.
   ```
   #rpm -qa | grep 7207
   ```

Upgrade SharpMedia PCIE-8120

1. Run the `mc3k_8120_software_update.sh` script to upgrade SSF on PCIE-8120.
   ```
   #cd /mnt/ssf-update
   #./mc3k_8120_software_update.sh
   ```
2. Enter **3** to upgrade the software.
3. Verify the installed RPMs.
   ```
   #rpm -qa | grep smcTLS
   ```
4. Unmount `ssf-update` and reboot the card.
   ```
   #umount /mnt/ssf-update
   #reboot
   ```

During the installation or upgrade, if you observe the below issue, execute the commands provided in the resolution section.

Reinitiate the installation or upgrade once the database is recovered.

For Network Booted Hosts

If a CPU is network (PXE) booted with a ramdisk image of an older version of SSF, it will not get upgraded even if it appears to be upgrading in system-upgrade-status. Instead, it will boot up from the original image on next reboot. You must replace the older ramdisk image with the newer version image and boot from it to get the latest version of software.

For versions 1.1.0.28 and older, if the current shelf ID is different from the shelf ID that is present in the configuration in original ramdisk image, ssfAgent will not be able to connect to shelf host after it is rebooted during the system upgrade. As a result, it may not show up in system-upgrade-status. From version 1.1.0.34, the ssfAgent on a network booted CPU will be able to connect to Shelf Host irrespective of the current shelf ID.

SSF Service Configuration

3.1 Starting SSF

SSF starts automatically once you restart the system after its installation and configuration. If you want to start manually, the following sections describe how to start SSF Core, SSF Agent, Application agent individually, and SSF web interface.

3.1.1 Starting SSF Core

You can stop and start the SSF Services using the systemd scripts. After you start the SSF core, you can stop, restart, and check the status of the SSF using the following command.

```
#systemctl {stop|restart|status|enable|disable} ssfCore.service
```

3.1.2 Starting SSF Agent

You can stop, restart, and check the status of the SSF Agent using the following command.

```
#systemctl {stop|restart|status|enable|disable} ssfAgent.service
```

3.2 Managing SSF MaxCore Agent

The SSF MaxCore agent service, `mcagent.service` is managed using `systemd`. By default, it will start at OS boot-up.

```
#systemctl status mcagent.service OR
service ssfCore status
```

Accessing SSF

4.1 Accessing SSF using Web Interface

You can access SSF using the web interface for configuring, managing, and monitoring the MaxCore platform equipped with multiple resources. Use any of the following browsers to log on and access the SSF:

- Internet Explorer version 10.0 and later.
- Mozilla Firefox 12.0 and later.
- Google Chrome version 23 and later.

NOTE: Sometimes after installation or due to some timeout, you may get a blank screen. Clean up the browser cache (CTRL + SHFT+ DEL) and reconnect the SSF using the web interface. This is a one-time activity.

If you don't have the SSF URL, check with your administrator.

1. Type the SSF web application URL in the address bar of the web browser and press <Enter>.

   For example, `https://<IP Address>:<PortNumber>`

   The SSF Login dialog box opens as shown in *Figure 4-1*.

Figure 4-1 Login Page

2. In the Login dialog box, type your user name and password. The default username and password is **Admin**.
3. Click Login for logging into SSF. The SSF home page opens.

For more information on the web interface, refer to the Online Help integrated with the SSF application. Click the Help icon to access the Online help.

Make sure that the SSF web interface is initiated before accessing the SSF. To access SSF GUI, the SSF discovery/initialization should be completed.

4.2 Accessing SSF using XML Interface

The XML interface of SSF passes management requests to the SSF framework for processing. It also handles responses and notifications/events from the SSF framework.

The XML interface facilitates access to SSF using an XML-based request protocol. The XML interface is intended for remote configuration of software and scripts. It can also be used via a remote GUI configuration tool. The XML-based requests are sent over a persistent connection to the XML agent, which processes the requests and returns XML-based responses. SSF also sends asynchronous responses/events over the XML interface such as alarm notifications, etc. By default, these events are disabled.

For more information about the XML commands, refer to the *System Services Framework for MaxCore™ Platform XML Interface Guide*.

4.3 Accessing SSF using CLI

You can access SSF using the CLI. SSF provides a fully functional CLI.

1. Establish a secure shell connection to SSF host using SSH.
2. Start the telnet connection from an already established secure shell.

```
root@localhost ~]# telnet localhost 11001
Trying ::1...
telnet: connect to address ::1: Connection refused
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
Welcome to Maxcore CLI
```

3. Type your user name and password.

```
Username: Admin
Password:
Access granted

>enable
#configure terminal
Maxcore(config)#
```

By default, the administrator user name and password are Admin. To change the existing password, see *Appendix A, Additional Information*

4.4 Accessing SSF using SNMP

The SNMP is designed to provide a way of managing and monitoring diverse network devices. It has client-server architecture and uses unencrypted text known as community strings for authentication. Communication between the client and server is accomplished using a command. There are four commonly used commands: `snmpget, snmpset, snmpwalk`, and `snmptrapd` for receiving trap message.

You can access SSF on PCIE card using port number 10165, private enterprise number 26061, and text file MAX-CORE-MIB which will be available in `/usr/share/snmp/mibs` directory.

Example for SNMPget

```
#snmpget -v2c -cprivate -m /usr/share/snmp/mibs/MAX-CORE-MIB
snmp_agent_Ip_address:10165 systemName.1
MAX-CORE-MIB::systemName.1 = STRING: "MaxCore System Framework"
```

Example for SNMP walk

```
#snmpwalk -m /usr/share/snmp/mibs/MAX-CORE-MIB  -v2c -c private
snmp_agent_Ip_address:10165 1.3.6.1.4.1.26061
MAX-CORE-MIB::systemInfo.1 = STRING: "System Services Framework
for Configuring MaxCore shelves"
MAX-CORE-MIB::systemName.1 = STRING: "MaxCore System Framework"
MAX-CORE-MIB::maxNoEvents.1 = Gauge32: 1000000
MAX-CORE-MIB::eventFilterSeverity.1 = Gauge32: 1
MAX-CORE-MIB::eventFilterType.1 = Gauge32: 32
MAX-CORE-MIB::userConfig.1 = Gauge32: 0
MAX-CORE-MIB::shelfName.1.1 = STRING: "Maxcore (r1.s1.a1.b1)"
```

```
MAX-CORE-MIB::shelfAddr.1.1 = STRING: "r1.s1.a1.b1"
MAX-CORE-MIB::shelfInventoryInfo.1.1 = STRING: "Vendor: ARTESYN,
Product: MAXCore"
```

…

Example for SNMP set

```
#snmpset -m /usr/share/snmp/mibs/MAX-CORE-MIB -v2c - cprivate
snmp_agent_Ip_address :10165 systemName.1 s "MAXCORE"
MAX-CORE-MIB::systemName.1 = STRING: "MAXCORE"
```

Example for SNMP trap

You can configure the PCIE card using the CLI to send notifications to SNMP managers as traps.

```
#snmp-server host snmp_traphost_Ip_address trap version 2c SSF udp-
port 162 Admin
```

To receive traps, start the `snmptrapd` application on the configured manager that listens at port 162 and notifies the traps.

```
#snmptrapd -f -Lo -m MAX-CORE-MIB
```

Configuration Management

SSF provides a set of predefined configuration candidates.The changes you perform on configuration candidates are stored in database and not applied to the real hardware. This is called emulator mode. In this mode, you can work on more than one MaxCore configuration, called configuration candidate. By default, no configuration is available in these candidates. You can store configurations in these candidates and use them whenever you require. You can apply any of these configurations candidates to the real hardware.

You can perform the following tasks under Configuration Management:

Task	Description
Copy Configuration	Copy a configuration from the current running hardware configuration or from configuration candidates or from external configuration files.
Switch to emulator candidate	View and modify the configuration in a candidate, you have to switch to the emulator mode by selecting the desired candidate.
Apply active candidate to hardware	Apply the selected configuration to hardware.
Clear configuration	Remove the configuration of a candidate.
Save a copy of configuration to a file	Save the configuration of a candidate to a file.
Reload the saved configuration from a file	Load a configuration file on to the hardware or to a candidate.

For more information, refer to *SSF for MaxCore MC3000 Platform GUI Help*.

5.1 Adding or Remove Emulator Mode Candidate Names

The following are the predefined configuration candidates provided by SSF:

- ssfConfig1
- ssfConfig2
- ssfConfig3
- ssfConfig4
- startup

SSF allows you to add new configuration candidates or remove existing configuration candidates.

5.1.1 Adding a Configuration Candidate

To add a configuration candidate:

1. Enter the candidate name in `/opt/ssf/etc/config/main/ssf_config.ini` file in the following format.

   `Configuration<number> = <CandidateName>`

   For example, `Configuration6 = ssfconfig1`

   The left side text must start with word `Configuration` followed by a number.

   For example, `Configuration6.` The number should be continuous in an incremental order.

2. Update the `MaxConfig` value based on number of candidates available in the system. Make sure that the value of `MaxConfig` is greater than or equal to the number of configured candidates.
3. Restart SSF core service. A new configuration candidate is added.

NOTE: This will not affect configuration in existing candidates.

5.1.2 Removing a Configuration Candidate

To remove a configuration candidate:

1. Remove the line containing respective configuration candidate from the `/opt/ssf/etc/config/main/ssf_config.ini`
2. Restart SSF core service.

NOTE: This will not affect configuration in existing candidates, candidate is not shown by SSF, but it still exists in the database. To delete a candidate from the database, remove `/opt/ssf/data/` and then restart SSF core service.

Additional Information

A.1 Resetting Administrator Password

To reset the administrator password:

1. Log on to the card on which SSF and PostgreSQL are installed.
2. Log on as a PostgreSQL user with the `# su -l postgres` command.
3. Connect to the PostgreSQL database using the below command

   ```
   #/usr/local/postgres/bin/psql SSF
   ```

   The following output is displayed.

   ```
   psql (9.1.3)
   Type "help" for help.
   SSF=#
   ```

4. List the available users, using the `SSF=# select * from "user";` command. The list of available users along with the passwords are displayed as shown.

   ```
   user | password | hash
   -------+----------+------
   Admin | Admin    |
   (1 row)

   SSF=#
   ```

5. Reset the administrator password using the following command.

   ```
   SSF=# update "user" set password = 'test' where "user" = 'Admin';
   UPDATE 1
   SSF=#
   ```

6. Check whether the new password is reflected or not by listing the available users using the `SSF=# select * from "user";`command.

   The following output is displayed.

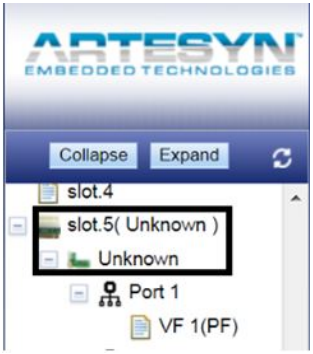
   ```
   SSF=#
   SSF=# select * from "user";
   user | password | hash
   -------+----------+------
   Admin | test     |
   (1 row)

   SSF=#
   ```

A.2 Configuring a Non-SMART EC Card for SSF

If a non-SMART EC card is inserted into the MaxCore chassis, the card information will be shown as **Unknown** in the SSF GUI. The following figure shows a sample SSF GUI view when a non-SMART EC card is inserted into a MaxCore system, for example, assume that a non-SMART EC card is inserted in slot 5.

Figure A-1 Non-SMART EC Card in MaxCore system - Before Configuration



To view the card information in the SSF GUI, follow these steps:

1. Obtain the vendor and device details of the card using mccs_tool.py tool. Run the following command on ShelfHost.

   #**mccs_tool.py --method=list-devices**

NOTE: Only the output of the card in slot 5 is shown below for quick reference.

```
slot: 5 device: 1
  func: 1
      vendor          : 0x8086
      device          : 0x15a4
      class           : 0x20000
   pci location@mcpu  : 2a:00.0
   plx switch         : 1
   plx station        : 4
   plx port           : 16
```

2. Add the card details in `/opt/ssf/etc/config/main/mxc_supported_cardinfo.ini` file in the following format.

   `<CardName>::<Vendor>::<Device>::<DeviceNumber>::<DeviceName>::<S_Device (optional)>`

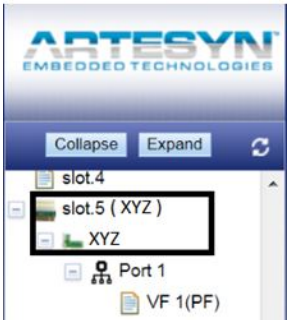
For example, `XYZ::0x8086::0x15a4::1::XYZ-1::2023`
Make sure to add details of all the devices available on the card.

NOTE: The card output shows the vendor and device details as `0x8086` and `0x15a4` respectively.

3. Restart the SSF hardware agent.
   `#/opt/ssf/etc/config/S99mcagent.sh restart`

After completion of the process, the name of the card with its details are shown in SSF GUI as shown in the following figure.

Figure A-2 Non-SMART EC Card in MaxCore system - After Configuration



A.3 Updating Shelf Address

SSF allows you to update the MaxCore shelf address through GUI. The Shelf address is represented with the following convention: `r1.s<ID>.<Location/Address>`

- r1 refers to the rack number. Currently, this is not user configurable and is kept for future use.
- ID refers to the shelf number
- Location/Address refers to a user-configurable text

You are allowed to modify and update these details for unique identification of your shelf. You can update the Shelf ID or Location/Address or both.

Shelf ID change in Shelf Address change triggers a Shelf Host reboot. The booting of Shelf Host results to a power reset of Application Hosts. It is STRONGLY SUGGESTED to shut down all Application Hosts gracefully before proceeding.

You can use the *Power Off All App Hosts* button on the *System* > *MaxCore* > *Overview* screen in GUI to perform this operation

For more information on how to update shelf address, refer to SSF for MaxCore MC3000 Platform GUI Online Help.

A.4 Network Boot Configuration

SSF allows you to enable or disable network boot configuration of applicationHost (s). The Network Boot Configuration dialog box shows the status of availability of images (ramdisk and kernel) of CPU for that specific card (PCIE-7410, PCIE-9205, and PCIE-7210). If any of these images are not available or you want to replace the available image with a new image, you need to upload the required image.

For more details, see *Network Boot Configuration* Section in *SSF for MaxCore MC3000 GUI help*.

A.5 Setting Default Configuration

SSF allows you to set the default assignments, ETH3 and ETH4 virtual functions, to applicationHosts. The predefined virtual functions are automatically assigned to the available applicationHosts bringing applicationHosts into internal networking.

You do not need to assign these virtual functions to applicationHost manually. This operation will not disturb any other assignments made from other endpoint devices.

A.6 Enabling Network Time Protocol

Using this feature you can enable or disable SSF Configured NTP (Network Time Protocol) Service. SSF provides this feature at the CPU level of a MaxCore system. This feature allows you to synchronize the date and time of application hosts with the shelfHost.

To enable or disable this feature, click Off/On control button in line with SSF Configured NTP Service label. This is a toggle button. When this service is enabled (ON), the time stamp of all the application hosts running in the MaxCore gets aligned with shelfHost running time and when this service is disabled (OFF), the respective application hosts will be running independently irrespective of shelfHost running time.

Disable SSF Configured NTP Service if you want to synchronize any of the applicationHosts date and time with an external source other than shelfHost.

A.7 Configuring Multiple Shelves on MaxCore

To configure multiple shelves on MaxCore, follow the procedure below. Verify that Shelf IDs and chassis numbers are already configured. See *Updating Shelf Address on page 53*.

On System Host (that hosts all the MaxCore shelves)

1. Check the current shelf's configuration using CLI or XML Command.

   ```
   MaxCore(config-HardwarePlatformManager)#listShelves
   Shelf: Shelf
         rackID: 1
         ShelfId: 1
         Name: Shelf
         shelfHostIpAddr: 127.0.0.1
         isMaster: true;
   ```

   Here, the shelfHost IP address is localhost (127.0.0.1) and the shelf id is 1.

2. Add a new Shelf using CLI or XML command.

   The Shelf's ID and shelfHost IP Address should be different from that of earlier configured shelves, and shelfHost IP Address should be reachable to SSF core.

Syntax

```
MaxCore(config-HardwarePlatformManager)#addShelf shelfID
<Shelf_Id> shelfHostIpAddr <Shelf_IP_Address> master false
shelfName <Shelf_Name>
```

Example

```
MaxCore(config-HardwarePlatformManager)#addShelf shelfID 2
shelfHostIpAddr 172.27.2.2 master false shelfName Shelf2
```

For more information about add shelf command, refer to *SSF for MaxCore MC3000 Platform XML Interface Guide* and *SSF for MaxCore MC3000 Platform Command Line Interface Guide*.

On Shelf Hosts (other than System Host)

1. Disable loop-back for ETH3 while connecting multiple shelves to a hub to be on default base network.

   ```
   # mccs_tool.py --method=set-loopback --mode=off --func=16,2
   ```

Start and Stop following these services.

```
#systemctl stop ssfCore.service
#systemctl disable ssfCore.service
#systemctl start mcagent.service
#systemctl enable mcagent.service
```

On both System Hosts and Shelf Hosts

Restart all SSF services. For more information on restarting SSF services, see sections *Starting SSF on page 43* and *Managing SSF MaxCore Agent on page 43*.

A.8 Configuring firewalld to Allow SSF Communication

Before starting this procedure verify the following configurations are present:

- **`firewalld`** is running both on SSF-Core and App-host
- **`firewalld`** is already started while executing the commands (Command: **`systemctl start firewalld`**)

Follow the below procedure to configure firewalld to allow SSF internal communication:

On App-host

Identify the ports for which firewall rule needs to be added. Run the command:

```
# cat /opt/ssf/etc/config/bcsim/ssfApi.conf
```

Output:

```
# Transport type (one of: tcp, uds)
#transport=tcp
 #listening address
LocalTcpAddress=0.0.0.0:21215   <-  firewall rule to be added for
this on App Host side
 # embeddedMIND process location
emindTcpAddress=192.168.201.100:21212 <- firewall rule to be added
for this on SSF Core side
#emindUdsPath=/tmp/emind-tl-uds
 # Link health-check period (in seconds)
healthcheckPeriod=10.0
 # Log settings
#logEnabled=yes
```

```
#logLevel=error # one of: error, info, debug
#logFile=eMindApi.log
[root@localhost ~]#
Add firewall rule on App Host. (port 21215 in this case). It allows
traffic from SSF-Core to App-host.
#firewall-cmd --zone=public --add-port=21215/tcp
Change the port number in the above command as per your ssfApi.conf
file.
On SSF Core-host
Add firewall rule on the SSF Core host. All app-hosts usually
connect to port 21212. So, this needs to be added for firewall
exception.
#firewall-cmd --zone=public --add-port=21212/tcp
```

A.9 Verifying SSF and BBS Versions Installed on the System

For verifying SSF version execute this command:

```
#cat /etc/ssf-release
```

For verifying BBS version execute this command:

```
#cat /etc/blade-release
```

A.10 Changing Logging Configuration

By default, the log level configured is "info".

To change it to lower levels to avoid excessive logging, perform the following steps:

1. Login to SSF CLI and enter the config mode.

```
# telnet localhost 11001
Trying::1...
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
Welcome to SSF CLI
Username: Admin
Password:
```

```
Access granted
>enable
#configure terminal
MaxCore(config)#
```

2. Go to logfilter class and select syslog instance, then enter **show** to get the current logging configurations.

```
MaxCore(config)#logfilter syslog
MaxCore(logfilter-syslog)#show
logfilter, syslog
type                = priority
priority            = info
modules             =
```

3. Enter priority from one of the following.

```
MaxCore(logfilter-syslog)#priority ?
  critical  Filter priority (applicable for priority log filter)
[debug]
  debug     Filter priority (applicable for priority log filter)
[debug]
  error     Filter priority (applicable for priority log filter)
[debug]
  info      Filter priority (applicable for priority log filter)
[debug]
  warning   Filter priority (applicable for priority log filter)
[debug]
```

A.11 SSF Core Configuration

SSF core is a management and configuration interface between hardware and software. SSF core consists of two sets of configuration files. One for SSF-Core (ssfMxcd) and other for SSF-CSIM (ssfcsimd). All SSF-Core (ssfMxcd) executable configuration files are stored in `/opt/ssf/etc/config/main/`.You can edit the ssf.ini, maxcore.conf, and tl.ini files stored at this location to configure the required parameters.

All CSIM (ssfcsimd) executable configuration files are stored in `/opt/ssf/etc/config/csim/`. You can edit the ssfApi.conf file stored at this location to configure the required parameters. *Table A-1* describes the configuration options.

Misconfiguring any of the file names in the table may lead to an unusable system.

Table A-1 SSF Core Configuration Files

File Name	Configuration Options	Description
ssf.ini Directory: /opt/ssf/etc/config/main	MaxSessions	The default value for MaxSessions is 100. You can edit it to any required value.
	SessionTimeOut	The default value for SessionTimeOut is 1800 seconds. You can edit it to any required value.
maxcore.conf Directory: /opt/ssf/etc/config/main	log_level	Log level INFO - Notifications and important information. DEBUG - Verbose Default is INFO.
	domain	MaxCore ID in the system. This may become obsolete.
	rack	Rack ID in the system.
	shelf	Shelf ID or chassis number to uniquely identify the MaxCore.
	name	Name of the MaxCore. This is optional.
	mcpu_ipaddr	Shelf Host IP address. The default IP is `127.0.0.1`. You can edit it to any Shelf Host IP reachable by the system host.
	mcpu_port	TCP/IP port. The default value is 8888.
	mcpu_evt_port	TCP/IP port for events. The default value is 8890.
	Note: To access multiple MaxCores simultaneously, you can configure more than one domain in the same file.	

Table A-1 SSF Core Configuration Files (continued)

File Name	Configuration Options	Description
tl.ini Directory: /opt/ssf/etc/config/main	transport	The default Transport is set as TCP. You can also change it to Unix Domain Sockets (UDS), if needed. SSF Server (SSF Host) listens on both TCP and UDS sockets for connection from the SSF agent.
	emindTcpAddress	By default, the emindTcpAddress is set to localhost. You can replace with the IP address of the SSF Core.
ssfApi.conf Directory: /opt/ssf/etc/config/csim/	transport	The default Transport is set as TCP. You can also change it to UDS, if required. SSF Server (SSF Host) listens on both TCP and UDS sockets for connection from the SSF agent.
	emindTcpAddress	By default, the emindTcpAddress is set to localhost. You can edit with the IP address of the SSF Core.
	healthcheckPeriod	By default, the healthcheckPeriod is set to 1.0 seconds. In every 1.0 second the system checks the health link between CSIM core and SSF. You can modify this value to required duration.
	logEnabled	By default, the logEnabled field is enabled for log collection. You can modify it to disable log collection.
	logLevel	By default, the logLevel is set to error. You can modify to either error, info or debug.
	logFile	By default, `logFile` name is **eMindApi.log** file.

A.12 SSF Agent Configuration

Server SSF core consists of SSF-BCSIM (ssfbcsimd) executable configuration files. These files are stored in `/opt/ssf/etc/config/bcsim/`. You can edit the ssfApi.conf file stored at this location to configure the required parameters.The following table provides the list of configuration options of ssfApi.conf file.

Table A-2 SSF Server Configuration Files

File Name	Configuration Options	Description
ssfApi.conf	transport	The default transport is set as TCP. You can also change it to UDP if needed.
	emindTcpAddress	By default, the emindTcpAddress is 172.27.1.2. You can edit with the IP address of SSF Core.
	healthcheckPeriod	By default, the healthcheckPeriod is to 1.0 second. In every 1.0 second, the system checks the health link between CSIM core and SSF. You can edit this value to required duration.
	logEnabled	By default, the logEnabled field is enabled for log collection. You can edit it to disable log collection.
	logLevel	By default, the logLevel is set to error. You can edit to either error, info or debug.
	logFile	By default, the logFile name is eMindApi.log file.
	ShelfHostIPAddress	By default, the ShelfHostIPAddress is set to 172.27.1.2. You can edit with the IP address of the shelf host of the shelf in which the SSF agent is to be considered. **Note**: This option is only applicable to SSF Agent and no other TL servers.
	localTcpAddress	By default, the localTcpAddress is set to 0.0.0.0:21215. You can edit with the IP address and port on which the SSF agent needs to be configured to listen to incoming request from SSF Core.

A.12.1 Service Manager Configuration

In the Service Manager (SMAN) configuration file SMAN.conf, you can add additional user defined services. The SMAN.conf file is stored in `/opt/ssf/etc/config/bcsim/`.

Use the following guidelines to add a service:

- Service name should be less than 20 characters.
- Service name should be the same as that of Linux daemon service, if there exists a Linux daemon.
- Description of the service should be equal to or less than 128 characters.
- Binary file path should be equal to or less than 128 characters.
- Tabs should be given before the file list and space should be used between path and filename.

Syntax

```
## SYSLOG-NG configuration ####

#service syslog-ng
{
        enable=y;
        desc="syslog-ng system logger application";
      binFilePath=/opt/ssf/etc/config/bcsim/etc/init.d/syslog-ng;
        numberOfConfigFiles=2;
        filename
        {
                /etc/syslog-ng/ syslog-ng.conf;
                /etc/syslog-ng/ scl.conf;
        }
}
```

NOTE: To disable a particular service parsing, add '#' before the service.

A.12.2 Service Manager Configuration INI File

Service Manager (SMAN) configuration INI file (`SMAN.ini`) supports two modes:

ConfigMode: Supports commit-config of configured applications. The services under SSF control should be separated by comma (,). For example,:
`[ConfigMode]:pcieBsnet,dhcpd,tftp,ntpd,syslog-ng,syslcu`

NonConfigMode: Does not support commit-config of configured applications. For example:
`[NonConfigMode]:syslog-ng,tftp`

NOTE: Add an application under configMode in case you choose to perform Commit Config for the application. Otherwise add it to NonConfigMode.

A.13 Hardware Agent Configuration

Hardware Agent RPM consists of MaxCore Agent executable configuration files (mxcagent.conf). Configuration files are stored in `/opt/ssf/etc/config/agent`. You can edit the mxcagent.conf file stored at this location to configure the required parameters.The following table provides the list of configuration options of mxcagent.conf file.

Table A-3 Hardware Agent Configuration

File Name	Configuration Options	Description
mxcagent.conf Directory: /opt/ssf/etc/config/agent	log_level	Log level INFO - Notifications and important information. DEBUG - Verbose Default is INFO.
	domain	MaxCore ID in the system. This may become obsolete.
	master	Identifies whether SSF core runs on this Shelf Host. The default type is true.
	rack	Rack ID in the system.
	shelf	Shelf ID or chassis number to uniquely identify the MaxCore.

Table A-3 Hardware Agent Configuration (continued)

File Name	Configuration Options	Description
	name	Name of the MaxCore. This is optional.
	mcpu_ipaddr	Shelf Host IP address. The default IP is 127.0.0.1. You can edit it to any Shelf Host IP reachable by the system host.
	agent_listening_port	This is listening TCP/IP port to make a connection for SSF core. The default value is 8888.
	agent_evt_listening_port	This is listening TCP/IP port for event. The default value is 8890.
	con_type	Connection type to BMC. The default value is smi.
	ipmi_con_tmout	IPMI connection timeout. The default value is 5000 msecs.
	Note: The below commands are not applicable if the connection type is (con_type) smi. But, it is applicable only if it is LAN type.	
	bmc_ipaddr	BMC IP address. The default IP is 192.168.201.9. You can edit it to any BMC IP reachable by the shelf host.
	port	RMCP port. The default value is 623.
	auth_type	RMCP authentication type. The default type is md5.
	privilege	RMCP privilege. The default privilege is admin.
	username	RMCP username. The default username is admin.
	password	RMCP password. The default password is admin.

A.14 Ramdisk Creation for PCIE-7210

Follow these steps to create Ramdisk for PCIE-7210.

1. Mount the SSF MaxCore update ISO on /mnt/ssf-update directory

   ```
   mkdir /mnt/ssf-update
   mount -o loop mc3ksw_update_7210_centos-<OS Ver>_<SSF Version>.iso /mnt/ssf-update
   ```

2. Create a directory and copy the CentOS7.2 Distribution ISO and SSF update ISO images to the directory.

   ```
   cd /home
   mkdir ramdisk
   cp <CentOS 7.2 Distribution iso> /home/ramdisk
   cp mc3ksw_update_7210_centos-<OS Ver>_<SSF Version>.iso /home/ramdisk
   ```

3. Execute the create_updated_iso.sh script to generate the ramfs.xz image.

   ```
   /mnt/ssf-update/SSF/create_updated_iso.sh <CentOS7.2 Distribution iso> mc3ksw_update_7210_centos-<OS Ver>_<SSF Version>.iso xz
   ```

For example,

```
/mnt/ssf-update/SSF/create_updated_iso.sh MC3K_7210_OS_CENTOS72_DIST_1_0_2.iso mc3ksw_update_7210_centos-7.2_1.1.0.39.iso xz
```

If any packages that are required on the machine are missing, please download the package and install it to create the ramfs image.

4. Once the updated ISO is created mount the ISO and copy the ramfs image.

   ```
   mkdir /tmp/ramdisk
   mount -o loop MC3K_7210_OS_CENTOS72_DIST_1_0_2_updated.iso /tmp/ramdisk
   cp /tmp/ramdisk/images/ramfs.xz <net boot directory>
   ```

Troubleshooting and FAQ

B.1 Overview

This section provides FAQs and their usual solutions on SSF for MaxCore.

B.2 System Discover or Active Configuration is Empty

Problem Description

After login tree is not populated and prints the following: “System discovery may be in progress or Active configuration is empty.”

Root Cause and Solution

- Shelf id is 0
- Pciemgmt.service is not started, in turn mcagent is not started or Discovery is in progress
- If shelf is not connected to an emulator candidate, then the message means Shelf host discovery just started.
- If shelf is connected to an emulator candidate, empty left with the message above means, the emulator candidate has no configuration.

B.3 SSF Core Failure

Problem Description

Why SSF core fails to start.

Root Cause and Solution

- PAM-postgres-SSF communication error. If so, wait for a while and retry starting SSF core.
- Radiusd service is not running.
- User table in SSF got corrupted
- Insufficient persistence memory - Make sure sufficient physical disk space available for database transactions being done by SSF.
- Meta.txt not is sync with the compiled SSF binaries - Make sure that /opt/ssf/etc/config/main/meta.txt is proper and not corrupted.

B.4 Host OS Not Displayed

Problem Description

Why is host OS not seen under CPU in navigation pane.

Root Cause and Solution

- The CPU is not in the internal (base) network. May because virtual functions from ETH3 (default base network) are not assigned to the CPU. At least one VF from ETH3 should be assigned to the CPU.
- ssfAgent on that specific CPU is not running.
- ssfAgent did not get shelf host IP address through mcparams.
- Verify /opt/boardinfo/params on that specific CPU to see if shelfhost IP address is populated.
- If firewall is enabled on shelf host and or application host, then proper IP table rules should be added.
- SSF discovery is in progress.

B.5 Login Failure

Problem Description

Why do login fail.

Root Cause and Solution

- Login fails if wrong credentials are provided as input.
- SSF failed to start or User table in SSF got corrupted.

B.6 Switch Management Tab is Hidden

Problem Description

Why is switch management tab not seen.

Root Cause and Solution

See the reasons in *Host OS Not Displayed*.

B.7 Reload Failure

Problem Description

Why reload fails.

Root Cause and Solution

- If shelf ID of the shelf is different to what is present in the configuration.
- If any of IPMI or PEX commands fails.
- Configuration file is corrupted.
- If the PCIE card is PCIE-9205, then if any of RRC configurations set is failed, then reload will fail.
- If configuration is captured on a shelf which has different hardware configuration to the one on which it is applied.
- If configuration is captured at different level (for example captured at Shelf) to the one on which it is applied (at system level).
- Even if the configuration is captured and applied at same level, reload may fail if it applied on different MOID. For example configuration captured at HOST OS of slot 1, CPU1 fails if applied to Slot15, CPU1 HOST OS.

B.8 GUI Access and Logging Issues

Problem Description

User logged in after a long interval and Tree is not getting loaded or not able to access GUI. It returns Error 500 or any http error.

Root Cause and Solution

- Linux may be responding slowly.
- File system is corrupted.

B.9 PCIE-9205 Switch Management is Not Populated in GUI

Problem Description

In case PCIE-9205 is placed as Network CPU and if PCIE-9205 Switch Management is not populated in GUI.

Root Cause and Solution

Perform the following steps.

1. Check if `172.27.<SHELF ID>.2` is reachable from PCIE-9205.
2. Check if PEP4 (ex. enp6s0) of PCIE-9205 is having DHCP IP on network `172.27.x.x`. To find device name of PEP4, use the below commands. In this case, enp6s0 is the PEP4 interface.

```
# lspci -vv | grep "FM10000\|VP"
06:00.0 Ethernet controller: Intel Corporation Ethernet Switch
FM10000 Host Interface
Product Name: FM10000
[VP] Vendor specific: 4
0a:00.0 Ethernet controller: Intel Corporation Ethernet Switch
FM10000 Host Interface
Product Name: FM10000
[VP] Vendor specific: 8
# systool -c net
Class = "net"
Class Device = "enp0s20u2"
Device = "3-2:1.0"
Class Device = "enp10s0"
Device = "0000:0a:00.0"
Class Device = "enp4s0f0"
Device = "0000:04:00.0"
Class Device = "enp4s0f1"
Device = "0000:04:00.1"
Class Device = "enp6s0"
Device = "0000:06:00.0"
```

3. Check if DHCP client is running on PEP4 interface. emindTcpAddress and ShelfHostIPAddress in configuration file(s) of SSF BCSIM and SSF RRC TLS is to be set with the IP address of br0 on System Host. It would be of the format `172.27.<SHELFID>.2`.

   For example,

   `emindTcpAddress =172.27.44.2:21212 =>` This is to be modified in both rrc/ssfApi.conf and bcsim/ssfApi.conf

NOTE: Reboot PCIE-9205, if you perform any changes on these files.

4. If an old configuration file is not loaded properly, check the following:
   - Size of Port, VLAN, and Pool descriptions is less than 24 characters.
   - In the old configuration file, replace the trailing spaces at the end of each line using the this command in vim: `%s/\s\+$//`

B.10 Incorrect Device Id to RRC PEP Port Mapping

Problem Description

If listed VF ports in the configuration interface is not matching as per mapping listed by`/opt/switch_sw/etc/pcie9205_getpep.sh` script. This script lists the mapping between PEP devices and RRC port, then there is a correction required in the mapping configuration file.

Root Cause and Solution

By default, all the four PEP devices are mapped in reverse to sw1p2* ports of RRC with EEPROM v10. However, if there is any change in the mapping or to confirm the mapping, copy `/opt/switch_sw/etc/pcie9205_getpep.sh` from PCIE-9205 to management CPU and run the script. This script will be listing the mapping between PEP devices and RRC ports.

If there is a different mapping between PEP devices and RRC ports, the correct mapping needs to be updated in `/opt/switch_sw/etc/pep_info.conf` as below:

`<DEVICE ID> <RRC PORT>`

For example,

sw1p20
sw1p21
sw1p22
sw1p23

B.11 How to check whether SSF Services are running fine

Below are the services which need to be checked in order to confirm SSF is running properly.

1. pciemgmt.service - on shelf host of SSF configured shelves.
2. mcagent.service – on shelf host of SSF configured shelves.
3. ssfCore.service – on system host.
4. ssfAgent.service – on all SSF configured hosts.
5. dhcpd.service – on shelf host of SSF configured shelves.
6. network.service – on all SSF configured hosts.
7. ssfRRCAgent.service – on all SSF configured network hosts.
8. zend-server.service – on system host.
9. vsftpd.service – on system host.

Related Documentation

C.1 SMART Embedded Computing Documentation

The documentation listed is referenced in this manual. Technical documentation can be found by using the Documentation Search at *https://www.smartembedded.com/ec/support/* or you can obtain electronic copies of SMART EC documentation by contacting your local sales representative.

Table C-1 SMART Embedded Computing Publications

Document Title	Publication Number
SSF for MaxCore™ MC3000 Platform XML Interface Guide	6806800T71
SSF for MaxCore™ MC3000 Platform Command Line Interface Guide	6806800T87
MaxCore™ MC3000 Platform Installation and Use	6806800T88
MaxCore™ MC3000 Platform Quick Start Guide	6806800T89
MaxCore™ MC3000 Platform Safety Notes Summary	6806800T90
ViewCheck on PCIE Card User Guide	6806800T92
MaxCore™ MC3000 Platform Networking Application Note	6806800T97
Getting Started with MaxCore™ MC3000 Application Note	6806800T98
SharpStreamer™Pro PCIE-7210 Installation and Use	6806800U29