

Off-the-shelf Hardware

M1 1000 Series

INSTALLATION GUIDE

Contents

Chapter 1	Safety Information.....	5
	General safety information.....	6
	Safety Warnings & Cautions.....	7
	Intended Application Uses.....	8
	Site Selection.....	9
	Equipment Handling Practices.....	10
	Power and Electrical Warnings.....	11
	Power Cord Warnings.....	11
	System Access Warnings.....	13
	Rack Mount Warnings.....	14
	Electrostatic Discharge (ESD).....	15
	Other Hazards.....	16
	Battery Replacement.....	16
	Cooling and Airflow.....	16
	Laser Peripherals or Devices.....	16
Chapter 2	Preparation for Installation.....	17
	Unpacking the system.....	18
	Choosing the operating environment.....	19
	Placement.....	20
	Table top placement.....	20
	Rack-mount bracket installation.....	20
	Installing the chassis into a rack.....	20
	Removing chassis from rack.....	22
Chapter 3	Installation.....	24
	Overview.....	25
	Connectors for M1.....	26
	Network connector (management).....	26
	Input connectors.....	27
	MPEG-2 TS over IP input.....	27
	10 Gbe input (optional).....	27
	ASI input (optional).....	28
	Output connectors.....	28
	SDI output (optional).....	28
	Powering.....	29

	Connecting power cords.....	29
	Power-up sequence.....	29
	Power button.....	30
	System status LED.....	30
	Power-down sequence.....	31
Chapter 4	Post-Installation Procedures.....	32
	Configuring the Network connectors.....	33
	Network interface roles.....	33
	Configuration from the LCD panel.....	33
	Front panel control buttons.....	33
	Front panel menu structure.....	34
	Configuring Network connectors.....	34
	Configuration from Linux.....	34
	Managing licenses.....	37
	Manage Licensing.....	37
	Display license details.....	37
	Request license file.....	38
	Import license file.....	39
	Revert to the previous license file.....	39
	Basic system commands.....	40
	Configuring NTP.....	40
	Changing time zone.....	40
	Configuring IGMP.....	41
	Configuring rp_filter.....	41
Chapter 5	Maintenance.....	43
	MFVP Content Processing upgrade.....	44
	Factory Restore Procedure.....	45
	Prerequisites.....	45
	Factory backup procedure.....	45
	Contacting Ericsson Support.....	47
	Contacting Ericsson support.....	47
Chapter 6	Physical Characteristics.....	48
	Physical Characteristics.....	49
Chapter 7	Regulatory information.....	50
	Regulatory Compliance and Certification.....	51
	Product Regulatory Compliance.....	52

Product Safety Compliance.....	52
Product EMC Compliance - Class A Compliance.....	52
Product Environmental Compliance.....	53
Product Regulatory Compliance Markings.....	53
Electromagnetic Compatibility Notices.....	56
FCC Verification Statement (USA).....	56
ICES-003 (Canada).....	56
Europe (CE Declaration of Conformity).....	56
VCCI (Japan).....	57
BSMI (Taiwan).....	57
KC (Korea).....	57
Specific warnings.....	58
Rack mount installation guidelines.....	59
If AC power supplies are installed.....	59
AC power cord usage guidelines.....	60
Environmental recommendations.....	61
2008 ASHRAE Environmental Guidelines for Datacom Equipment - Expanding the Recommended Environmental Envelope.....	61
Product Ecology Compliance.....	61
Other Markings.....	62

CHAPTER 1

Safety Information

General safety information

This document applies to Advantech Vega 7010 chassis. To reduce the risk of bodily injury, electrical shock, fire, and equipment damage, read this document and observe all warnings and precautions in this guide before installing or maintaining your M1 chassis.

In the event of a conflict between the information in this document and information provided with the product or on the website for a particular product, the product documentation takes precedence.

Your server should be integrated and serviced only by technically qualified persons.

You must adhere to the guidelines in this guide and the assembly instructions in your server manuals to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products / components will void the UL Listing and other regulatory approvals of the product, and may result in noncompliance with product regulations in the region(s) in which the product is sold.

Safety Warnings & Cautions

To avoid personal injury or property damage, before you begin installing the product, read, observe, and adhere to all of the following safety instructions and information. The following safety symbols may be used throughout the documentation and may be marked on the product and / or the product packaging.

CAUTION	Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.
WARNING	Indicates the presence of a hazard that may result in serious personal injury if the WARNING is ignored.
	Indicates potential hazard if indicated information is ignored.
	Indicates shock hazards that result in serious injury or death if safety instructions are not followed.
	Indicates hot components or surfaces.
	Indicates do not touch fan blades, may result in injury.
	Indicates to unplug all AC power cord(s) to disconnect AC power.
	Please recycle battery.

Intended Application Uses

This product was evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other product categories and environments (such as medical, industrial, residential, alarm systems, and test equipment), other than an ITE application, may require further evaluation.

Site Selection

The system is designed to operate in a typical office environment. Choose a site that is:

- Clean, dry, and free of airborne particles (other than normal room dust).
- Well-ventilated and away from sources of heat including direct sunlight and radiators.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppresser and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power supply cord(s), because they serve as the product's main power disconnect.

Equipment Handling Practices

Reduce the risk of personal injury or equipment damage:

- Conform to local occupational health and safety requirements when moving and lifting equipment.
- Use mechanical assistance or other suitable assistance when moving and lifting equipment.
- To reduce the weight for easier handling, remove any easily detachable components.

Power and Electrical Warnings

CAUTION

- The power button, indicated by the stand-by power marking, DOES NOT completely turn off the system AC power, 5V standby power is active whenever the system is plugged in. To remove power from system, you must unplug the AC power cord from the wall outlet. Your system may use more than one AC power cord. Make sure all AC power cords are unplugged. Make sure the AC power cord(s) is/are unplugged before you open the chassis, or add or remove any non hot-plug components.
- Do not attempt to modify or use an AC power cord if it is not the exact type required. A separate AC cord is required for each system power supply.
- Some power supplies use Neutral Pole Fusing. To avoid risk of shock use caution when working with power supplies that use Neutral Pole Fusing.
- The power supply in this product contains no user-serviceable parts. Do not open the power supply. Hazardous voltage, current and energy levels are present inside the power supply. Return to manufacturer for servicing.
- When replacing a hot-plug power supply, unplug the power cord to the power supply being replaced before removing it from the server.
- To avoid risk of electric shock, turn off the server and disconnect the power cord, telecommunications systems, networks, and modems attached to the server before opening it.

Power Cord Warnings

CAUTION

NOTE If an AC power cord was not provided with your product, purchase one that is approved for use in your country.

To avoid electrical shock or fire, check the power cord(s) that will be used with the product as follows:

- Do not attempt to modify or use the AC power cord(s) if they are not the exact type required to fit into the grounded electrical outlets.
- The power cord(s) must meet the following criteria:
 - The power cord must have an electrical rating that is greater than that of the electrical current rating marked on the product.
 - The power cord must have safety ground pin or contact that is suitable for the electrical outlet.
- The power supply cord(s) is/are the main disconnect device to AC power. The socket outlet(s) must be near the equipment and readily accessible for disconnection.
- The power supply cord(s) must be plugged into socket-outlet(s) that is /are provided with a suitable earth ground.

Connection to line to line mains supplies

Where the supply connection used is line to line rather than line to neutral (eg: 208 V supplies used in North America) suitable double pole protection, as detailed below, must be provided in the building installation to provide the appropriate short circuit and overload protection.

The following double pole circuit breaker values are recommended:

Product Current Rating	Recommended Double Pole Circuit Breaker
Up to 6 A	10 A
6 A to 10 A	16 A
10 A to 16 A	20 A

System Access Warnings

CAUTION

To avoid personal injury or property damage, the following safety instructions apply whenever accessing the inside of the product:

- Turn off all peripheral devices connected to this product.
- Turn off the system by pressing the power button to off.
- Disconnect the AC power by unplugging all AC power cords from the system or wall outlet.
- Disconnect all cables and telecommunication lines that are connected to the system.
- Retain all screws or other fasteners when removing access cover(s). Upon completion of accessing inside the product, refasten access cover with original screws or fasteners.
- Do not access the inside of the power supply. There are no serviceable parts in the power supply. Return to manufacturer for servicing.
- Power down the server and disconnect all power cords before adding or replacing any non hot-plug component.
- When replacing a hot-plug power supply, unplug the power cord to the power supply being replaced before removing the power supply from the server.

CAUTION

If the server has been running, any installed processor(s) and heat sink(s) may be hot. Unless you are adding or removing a hot-plug component, allow the system to cool before opening the covers. To avoid the possibility of coming into contact with hot component(s) during a hot-plug installation, be careful when removing or installing the hot-plug component(s).

CAUTION

To avoid injury do not contact moving fan blades. If your system is supplied with a guard over the fan, do not operate the system without the fan guard in place.

Rack Mount Warnings

- The equipment rack must be anchored to an unmovable support to prevent it from tipping when a server or piece of equipment is extended from it. The equipment rack must be installed according to the rack manufacturer's instructions.
- Install equipment in the rack from the bottom up, with the heaviest equipment at the bottom of the rack.
- Extend only one piece of equipment from the rack at a time.
- You are responsible for installing a main power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the server(s).
- To avoid risk of potential electric shock, a proper safety ground must be implemented for the rack and each piece of equipment installed in it.

Electrostatic Discharge (ESD)



- ESD can damage disk drives, boards, and other parts. We recommend that you perform all procedures at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground – any unpainted metal surface – on your server when handling parts.
- Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

Other Hazards

Battery Replacement



- There is the danger of explosion if the battery is incorrectly replaced. When replacing the battery, use only the battery recommended by the equipment manufacturer.
- Dispose of batteries according to local ordinances and regulations.
- Do not attempt to recharge a battery.
- Do not attempt to disassemble, puncture, or otherwise damage a battery.

Cooling and Airflow



Carefully route cables as directed to minimize airflow blockage and cooling problems.

For proper cooling and airflow, operate the system only with the chassis covers installed. Operating the system without the covers in place can damage system parts. To install the covers:

1. Check first to make sure you have not left loose tools or parts inside the system.
2. Check that cables, add-in boards, and other components are properly installed.
3. Attach the covers to the chassis according to the product instructions.

Laser Peripherals or Devices



To avoid risk of radiation exposure and/or personal injury:

- Do not open the enclosure of any laser peripheral or device.
- Laser peripherals or devices have are not user serviceable.
- Return to manufacturer for servicing.

CHAPTER 2

Preparation for Installation

Unpacking the system

Ensure that you have received the following:

- M1 chassis
- AC or DC power cords
- Packing list
- MFVP - Content Processing Quick start guide

Choosing the operating environment

The M1 is designed to operate in a typical office environment. Install the product in a location that is:

- Clean and free of airborne particles (other than normal dust).
- Well ventilated and away from sources of heat, including direct sunlight.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power supply cord, because they serve as the main power disconnect for the product.

Placement

The M1 can be installed on a table top or in a rack. Use the following guidelines to determine the appropriate installation for your needs:

- If the M1 must be moved frequently, install it on a table top or other flat surface.
- If the M1 is going to be installed permanently, install it in a rack using rack mount brackets.

Whichever installation is used, always position the equipment to allow easy access to the rear panel and provide adequate ventilation.

Table top placement

When the M1 is installed on a table top or other flat surface, place the unit on a rubber mat or other material that will prevent the unit from sliding and protect the table top surface.

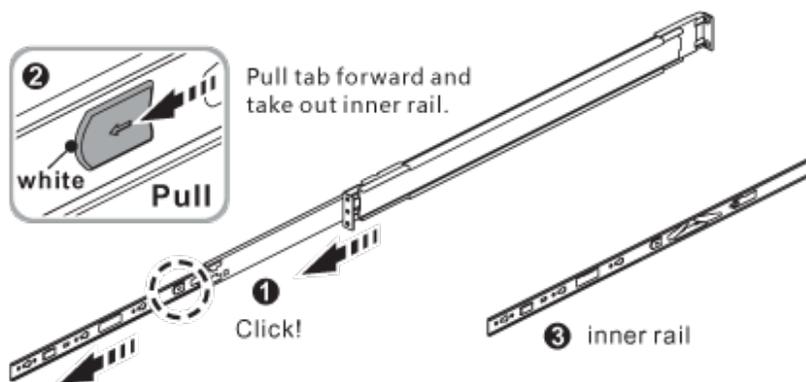
Ensure that the location and position provide the minimum required air flow clearance.

Rack-mount bracket installation

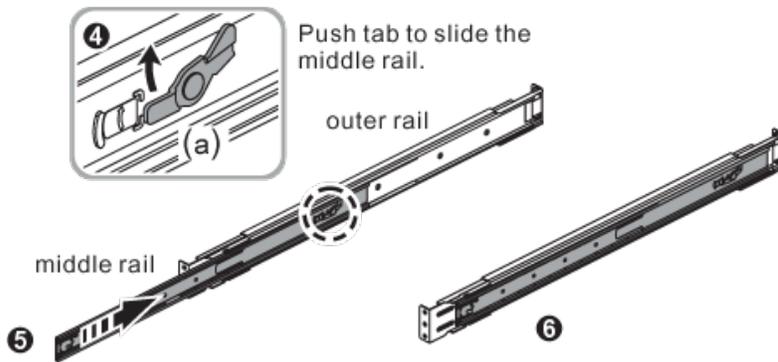
The M1 is designed to be mounted into a rack using a rail kit. Instructions for installing M1 chassis into a rack are listed below.

Installing the chassis into a rack

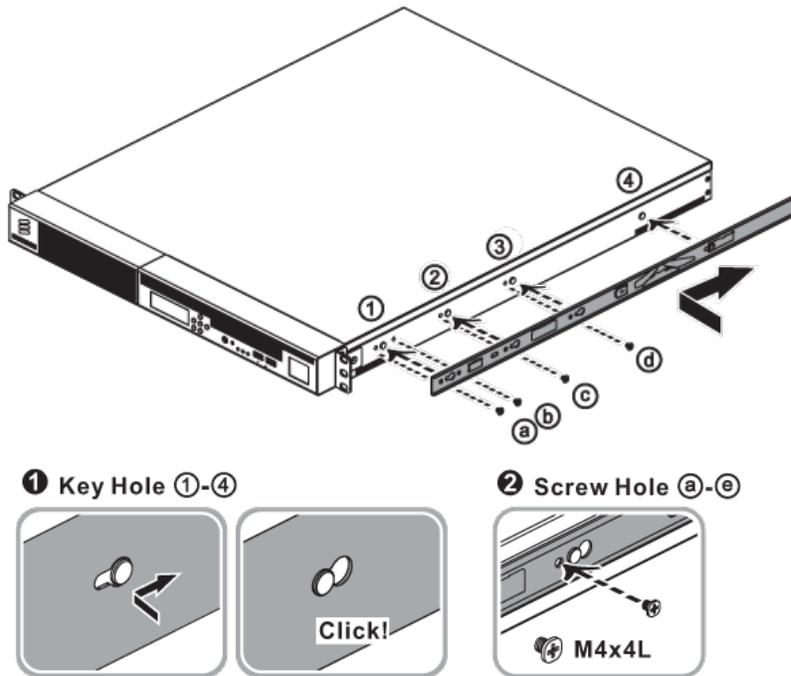
1. Remove the inner rail.



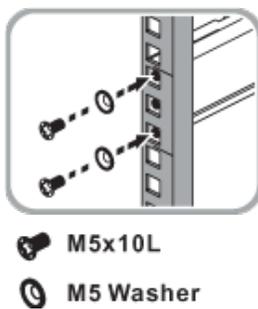
2. Push (a) and slide middle rail back.

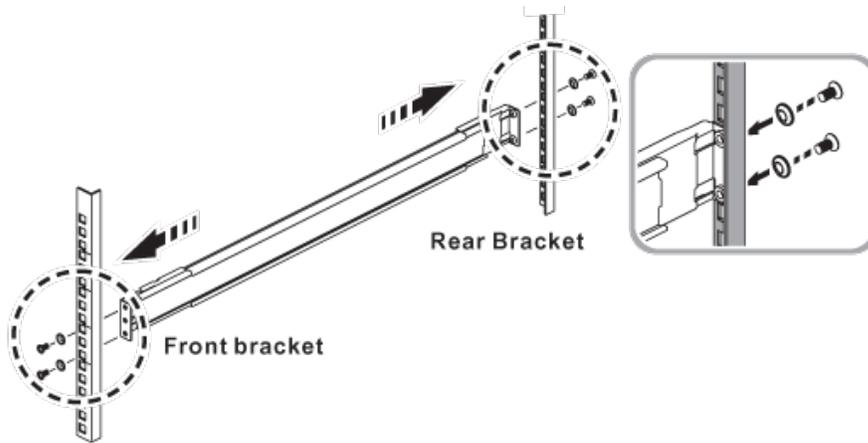


3. Install the inner rail onto the chassis.

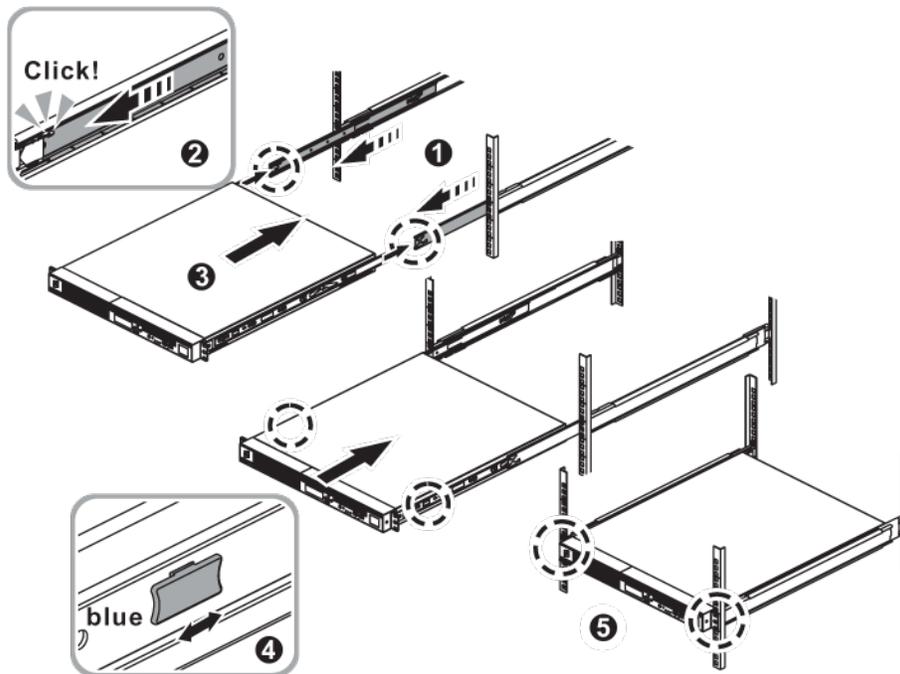


4. Fix the outer rail/bracket assembly to the frame.



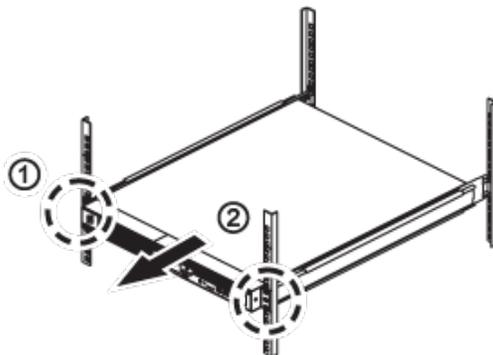


5. Insert the chassis to complete the installation.

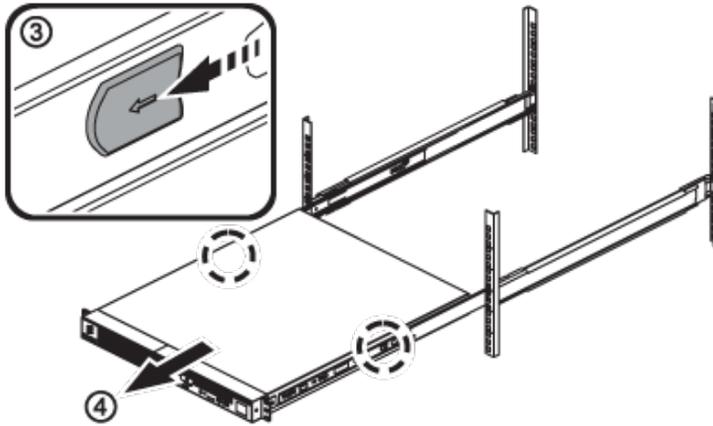


Removing chassis from rack

1. Loosen shipping screw to pull out chassis (1)(2).



2. Press the disconnect tab forward to remove chassis (3)(4).



CHAPTER 3

Installation

Overview

This section describes how to connect input, output, network and management connectors to an M1 platform. All the connections are located on the rear panel.

The M1 is a rack mount 1U server system with redundant power supply modules.



Connectors for M1

This section describes how to connect input, output and network connectors to the M1. By default, the server is delivered with IP input. You can order specific options

NOTE The backpanel components are SELV (Safety Extra Low Voltage) components.

Figure 1. Rear view of M1 with no optional card



Figure 2. Rear view of M1 with HD-SDI option



Figure 3. Rear view of M1 with 10 Gbe option



Figure 4. Rear view of M1 with ASI + HD-SDI options



Figure 5. Rear view of M1 with 10 Gbe + HD-SDI options



Figure 6. Rear view of M1 with ASI + 10 Gbe + HD-SDI option



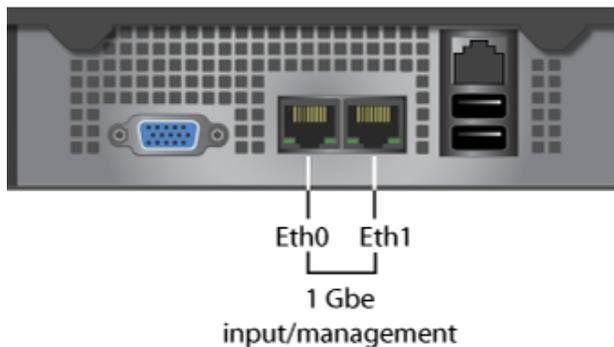
Network connector (management)

Management IP address: By default, the network management interfaces (**Ethernet 0** and **Ethernet 1**) are set in DHCP but you can configure it (see).

To connect the M1 to the network, follow these steps:

1. Connect a 1 Gb network interface cable into the LAN connector on the rear panel of M1. Push the plug into the connector until it clicks into place.
2. Plug the other end of the LAN cable into the corresponding network switch.

Figure 7. M1 network connectors



3. Plug the other end of the LAN cable into the corresponding network switch.

Input connectors

Transport stream can be streamed into MFVP - Content Processing over either Ethernet or ASI depending on the card fitted to the M1.

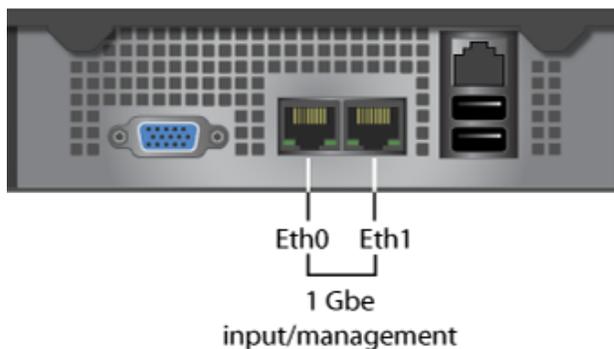
MPEG-2 TS over IP input

IMPORTANT Use the network interfaces #0 or #1 (see graphic below).

To connect the MPEG-2/MPEG-2 TS over IP input connectors, follow these steps:

1. Connect the network interface cable into one of the RJ-45 connectors on the rear panel of the M1.
2. Push the plug into the connector until it clicks into place.

Figure 8. M1 MPEG-2 TS over IP input connectors



3. Plug the other end of the cable into the corresponding switch or hub.

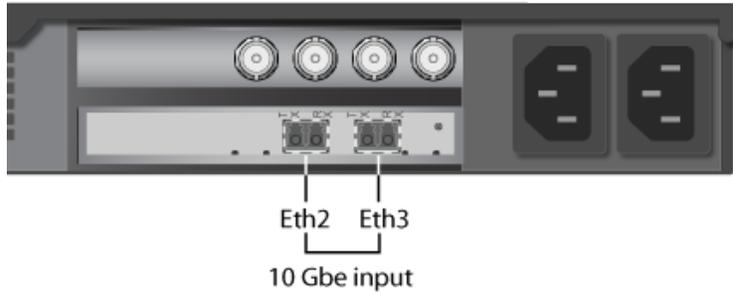
10 Gbe input (optional)

IMPORTANT Use the network interfaces #2 and #3 (see graphic below).

To connect the 10 Gbe input connectors, follow these steps:

1. Connect the network interface cable into the SFP+ DAC connector on the rear panel of the M1.
2. Push the plug into the connector until it clicks into place.

Figure 9. M1 10 Gbe input connectors



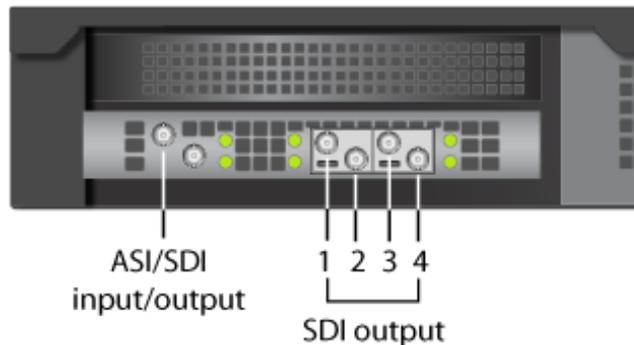
3. Plug the other end of the cable into the corresponding 10 Gbe IP switch.

ASI input (optional)

To connect the ASI input connector, follow these steps:

1. Connect the ASI cable into one the mini-DIN ASI connector on the rear panel of M1.
2. Push the plug into the connector until it clicks into place.

Figure 10. M1 SDI connectors



3. Plug the other end of the cable into the corresponding 10 Gbe IP switch.

Output connectors

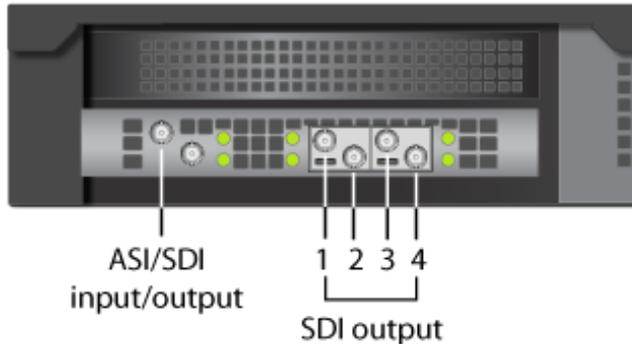
SDI output (optional)

IMPORTANT Use the network interfaces #1 to #4 (see graphic below).

1. Connect the SDI cable into one of the mini-DIN SDI connectors on the rear panel of M1.

2. Push the plug into the connector until it clicks into place.

Figure 11. M1 SDI connectors



3. Plug the other end of the cable into the ASI source device.

Powering

Figure 12. AC Power supplies



Connecting power cords

The system can support up to two 750 Watts power supply modules providing support for either a non-redundant 1+0 or redundant 1+1 power configuration. In a 1+1 redundant configuration, each power supply module is hot-swappable should one fail.

To connect the power cords, follow this procedure.

CAUTION Before connecting any power cords, verify that the input voltage selector switch (if present) is set to the correct voltage for your region.

WARNING Use a grounded power cord that complies with national electrical safety regulations. Do not use or attempt to modify the supplied power cord if it is not the correct type for your electric power outlet. In regions where electrical storms are frequent, plug the system into a surge suppressor for additional protection.

1. Connect the two power cords to the system.
2. Plug the two power cords into grounded outlets.

Power-up sequence

Once the cabling and interconnections are completed, you may power-up the unit.

1. To power-up the M1, us the power button the front panel:

Figure 13. M1 front panel including power button and system status LED



Power button

The power button toggles the system power on and off.

The power-on cycle takes a approximately 1 minutes to complete.

The integrated LED is a single color (green) and is capable of supporting different indicator states as defined in the following table.

State	Power Mode	LED	Description
Power-off	Non-ACPI	Off	System power is off, and the BIOS has not initialized the chipset.
Power-on	Non-ACPI	On	System power is on.
S5	ACPI	Off	Mechanical is off, and the operating system has not saved any context to the hard disk.
S4	ACPI	Off	Mechanical is off. The operating system has saved context to the hard disk ⁽¹⁾ .
S0	ACPI	Steady on	System and the operating system are up and running.

1. **Remark from Andrew:** Is this true? Not sure what this means for MFCP. We don't really have a suspend or hibernate mode? **My answer:** This information comes from G7 install guide, it probably needs to be reviewed and updated.

System status LED

The System Status LED shows the current health of the system. The following table provides a description of each supported LED state.

Table 1. Rear I/O status LED definitions

LED	State	Color	Description
Power LED	On	Green	System in tuned on

	Off	No	No power
Alert LED	On	Red	System Event triggered
	Off	No	No power/No event occurred
HW Fault LED	On	Green	by user programming
	On	Orange	by user programming
	Off	No	N/A

Table 2. Front I/O status LED definitions

LED	State	Color	Description
LAN1 ~ LAN2 LED	Blinking	Green	LAN linked
	On	Green	LAN active
	Off	No	LAN unlinked

Power-down sequence

To power-down the M1 (MFVP - Content Processing), press the **Power** button located on the front panel. The server will automatically stop the running processes and shut down.

NOTE If the M1 does not shut down, press and release the power button located on the front panel.

CHAPTER 4

Post-Installation Procedures

Configuring the Network connectors

The following sections explain how to configure the network connectors.

NOTE By default, the Ethernet interfaces uses a DHCP configuration.

The network interfaces can be configured:

- either via the M1 LCD panel
- or via a standard Linux application, NetworkManager text user interface (TUI) tool: **nmtui**).

Network interface roles

By default, network interfaces roles are the following:

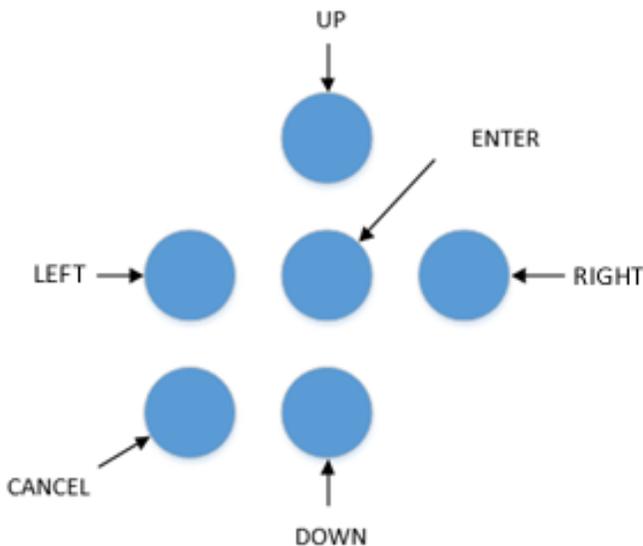
Ethernet connector # ⁽¹⁾	Role
Ethernet 1 (<i>eth0</i>)	input/output/management
Ethernet 2 (<i>eth1</i>)	input/output/management

1. Note that physical network connectors are numbered from Ethernet 1 to Ethernet 2 though under Linux, Ethernet ports are labeled from eth0 to eth1.

Configuration from the LCD panel

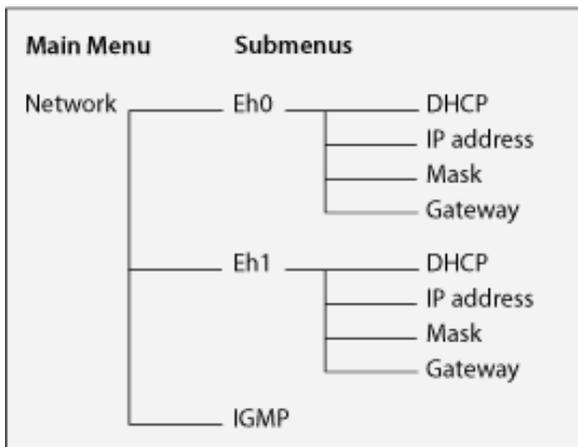
Front panel control buttons

The following buttons on the front panel can be used to navigate into the menus, make selections, and configure the IP addresses:



Front panel menu structure

Below is the current front panel menu structure:



Configuring Network connectors

M1 front panel controls and display

1. Use the **UP**, **DOWN**, **LEFT** and **BACK** buttons to navigate and select the parameter to be changed.
2. Use the **UP** and **DOWN** buttons to adjust the value.
3. Press **ENTER** to apply the new value.

Configuration from Linux

To configure the network interfaces from Linux, follow the steps below:

1. Open a Terminal window on **MFCP** and login using your username and password.

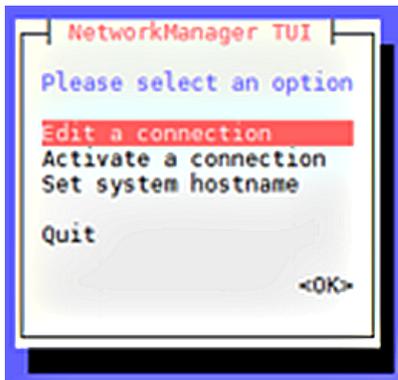
NOTE Default admin user log in information:

- Username: **mfadmin**
- Password: **C&y4u2**

2. Start nmtui by typing the following command:

```
$ sudo nmtui
```

3. Select **Edit a connection**.

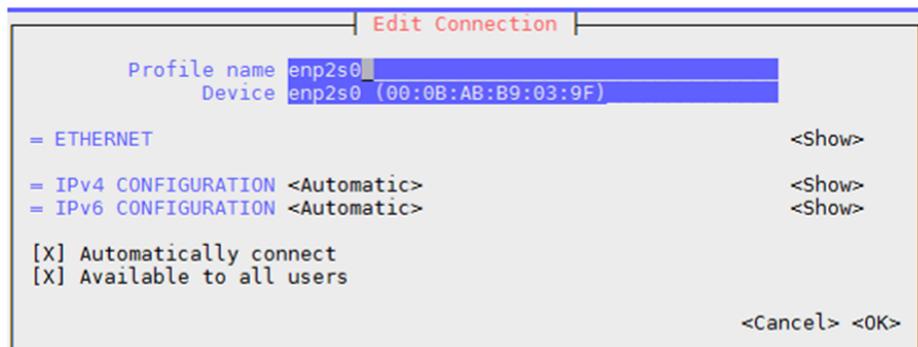


NOTE To navigate, use the **Arrow keys** or press **Tab** to step forwards and press **Shift+Tab** to step back through the options.

Press **Enter** to select an option.

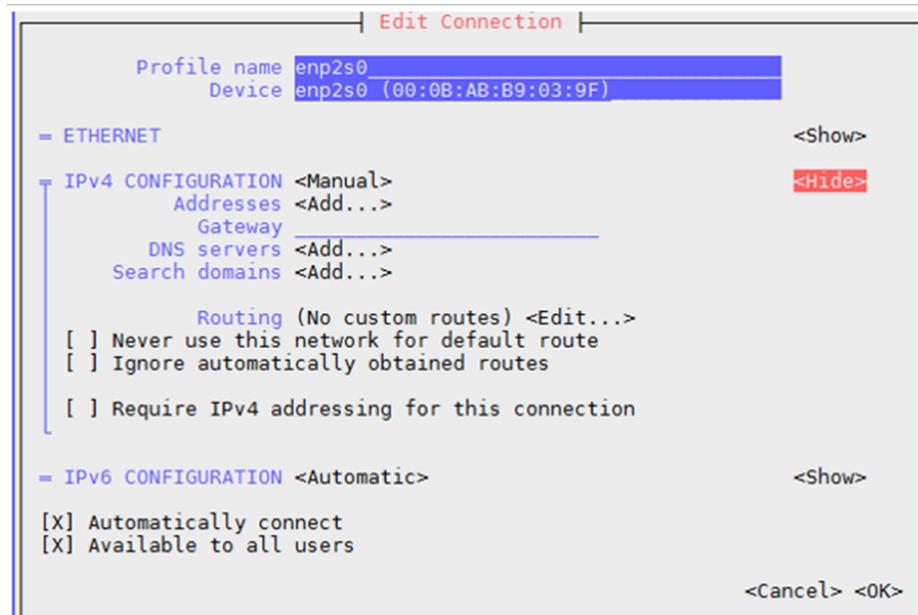
The **Space bar** toggles the status of a check box.

4. Select the port to be configured, either **Eth0** or **Eth1**.



5. NOTE Depending on which address protocol is being used on the network (IPv4 or IPv6) select either **<Automatic>** for DHCP or **<Manual>** for static IP for each protocol type.

If using **<Manual>** select **<show>** and set up the ethernet connection as required.



6. Select **<OK>** when the configuration is complete then **<QUIT>** the program.
7. To ensure all new parameters have been applied it is recommended to restart.

NOTE See the [redhat Networking Guide](#) for more information.

Managing licenses

Manage Licensing

MFVP solutions offer flexible licensing models. Each model depends on your solution and installation options. A service can be configured but can only be processed for a limited period of time without a license (grace period).

License servers and installation

The license manager is a micro-service application installed on a server, or on 2 servers if in redundancy mode. By default, the Controller hosts this application that is identified by a *Licensing* processing type.

The license manager may also run dedicated servers for very large configurations.

-
- TIP** View [license details per feature](#) to display:
- [license usage per feature](#)
 - [license codes](#)
 - [license expiry dates in Universal Time \(UTC\)](#)
-

Display license details

There is a license code per feature. Licenses are required for features and options in the MFVP solution and have expiry dates.

-
- IMPORTANT**
- Licenses are managed by a License Manager.
 - The License Manager is a micro-service application installed by default on the Controller server or a dedicated license server.
 - There may be more than one license server if your solution is installed in redundancy.
-

1. [Display servers](#).

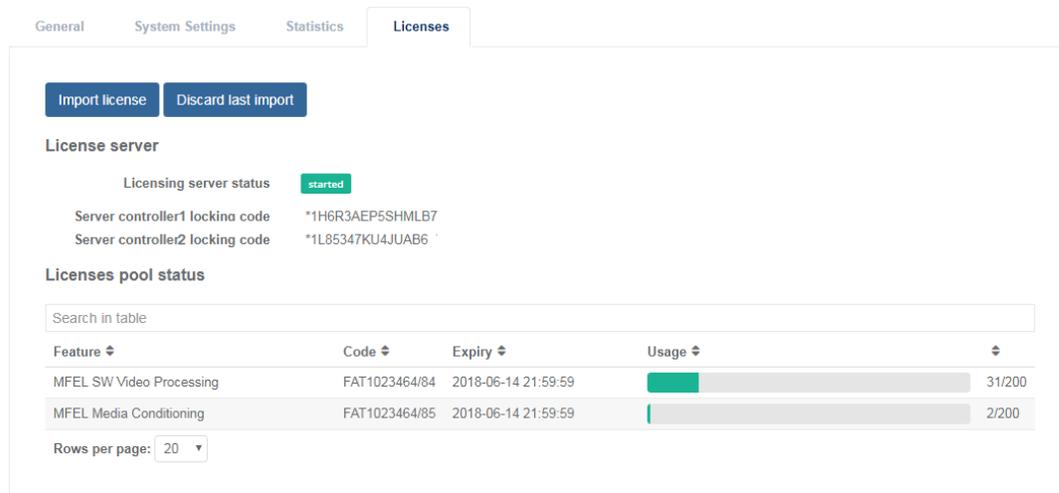
Result: The servers display.

2. Click  for the server with the **Licensing processing type**.

NOTE The *Licensing* processing type may display for the Controller server if the licensing manager is installed on the same machine as the Management Controller.

3. Select the **Licenses** tab.

Example:



Result: The license information displays.

NOTE All time stamps are in Universal Time (UTC).

Request license file

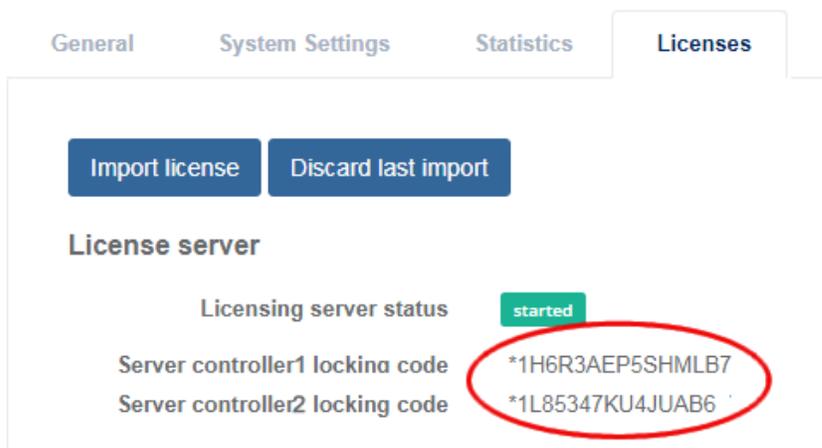
This is your first time connecting to your MFVP user interface and you want to request a license file.

1. [Display license details.](#)

Result: The licensing information displays for the specific server.

2. Copy the locking code, including the asterisk (*) and paste into the email or file you plan to send to Ericsson.

Example:



IMPORTANT In redundant solutions:

- Multiple locking codes display per server.
- Provide both locking codes.

3. Copy and paste the LAC reference number for your Software Handling Community to the same file or email and send to your Ericsson representative.

NOTE The LAC reference number and the Software Handling Community details are in the software Delivery Note. See software installation package.

Import license file

New license files are available from the support center.

Prerequisites:

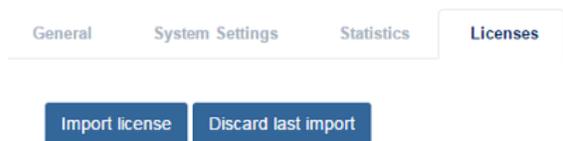
- The new license file needs to be available on the machine.
- Only configuration and admin users can import license files.

1. [Display the license details.](#)

Result: The licensing information displays for the specific server.

2. Click **Import license** > **Select file** to browse and select the file to import.

Example:



Result: A summary displays.

TIP If an error occurs, keep a copy of the error number and contact support.

Revert to the previous license file

This feature is helpful when solving import errors that restrict license use. **Only use if Ericsson support staff approves a revert.**

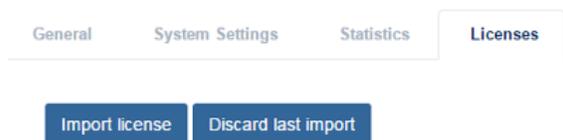
Prerequisites:

You are connected to MFVP with the appropriate user rights.

1. [Display the license details.](#)

2. Click **Discard last import**.

Example:



Result: You are prompted to confirm.

3. Click **OK** to confirm.

Result: The last license file import is discarded and the previous file is used.

Basic system commands

Configuring NTP

To configure NTP, follow these steps:

1. Edit the `/etc/ntp.conf` file.
2. Add the NTP server URL:

```
server <ntp server url>iburst
```

NOTE You may configure several NTP servers by adding several lines.

3. Complete configuration by entering the following command:

```
service ntpd restart
```

Changing time zone

By default M1 time zone is set to Pacific Standard Time (PST), GMT -08:00.

To change time zone, follow these steps:

1. From a PC on the same network, you need one IP address **10.0.0.y** with mask **255.255.255.0**.
2. Connect over SSH to **http://[IP-address]:8080**(using Putty software for example).

```
server <ntp server url>iburst
```

NOTE You may configure several NTP servers by adding several lines.

3. Enter the following command: `ln -sf /usr/share/zoneinfo/PST8PDT/etc/localtime`, and replace `/PST8PDT` with the directory (if your zone has one) and filename of the time zone you wish to use. The list of available time zones is located in `/usr/share/zoneinfo`.
4. Check the modification using the date command.

Result:

Figure 14. Changing time zone

```
[root@env-4e-150001 ~]# date
Wed May 13 07:15:57 PDT 2015
[root@env-4e-150001 ~]# ln -sf /usr/share/zoneinfo/Europe/Paris /etc/localtime
[root@env-4e-150001 ~]# date
Wed May 13 16:16:18 CEST 2015
[root@env-4e-150001 ~]#
```

Configuring IGMP

By default, MFVP - Content Processing uses IGMP v2 protocol version. It can be switched to V3 if required.

Forcing Red Hat Linux to IGMP Version 2

To force Linux to IGMP v2, follow these steps:

1. Edit the file `/etc/sysctl.conf`
2. Add the following lines:

```
net.ipv4.conf.eth0.force_igmp_version = 2
net.ipv4.conf.lo.force_igmp_version = 2
net.ipv4.conf.default.force_igmp_version = 2
net.ipv4.conf.all.force_igmp_version = 2
```

NOTE You can find out more about your current running IGMP configuration by using this command: `cat /proc/net/igmp`.

Configuring `rp_filter`

To turn on the `rp_filter`, follow these steps:

1. Enter the following command:

```
sudo vi /etc/sysctl.d/98-live-encoder.conf
```

2. Change `net.ipv4.conf.eth1.rp_filter` to either 1 or 2.

Default value is 0.

3. Enter the following command:

```
sudo sysctl --load /etc/sysctl.d/98-live-encoder.conf
```

4. To verify the the `rp_filter` settings, enter the following command:

```
sudo sysctl -a | grep rp_filter
```

Rp_filter options are as listed below:

- **0** - No source validation.
- **1** - Strict mode as defined in RFC3704 Strict Reverse Path. Each incoming packet is tested against the FIB and if the interface is not the best reverse path the packet check will fail. By default failed packets are discarded.
- **2** - Loose mode as defined in RFC3704 Loose Reverse Path. Each incoming packet source address is also tested against the FIB and if the source address is not reachable via any interface the packet check will fail.

CHAPTER 5

Maintenance

MFVP Content Processing upgrade

Prerequisites:

To run MFVP - Content Processing upgrade, you must be logged as 'mfadmin'. Login: **mfadmin** /

Password: **C&y4u2**

Update procedure:

1. Get the **tar.gz** file delivered for your product and called **ericsson-mfcp-<version><build>_<GIT repository tag >.el7x86_64.tar.gz**.

Example: ericsson-mfcp-1.0.0.5_0_ge8f73.el7x86_64.tar.gz

2. Copy the **tar.gz** file from your PC over SSH to M1 in the **/home** folder.
3. Connect over SSH and uncompress **tar.gz** on M1, and enter the following SSH commands:

```
cd /tmp  
tar -xvf *.tar.gz
```

4. Launch installation: enter the following SSH command and wait for a period of time (typically about 1 minute):

```
./install.sh
```

5. Once installation is done, delete **tar.gz** files:

```
rm -f *.tar.gz
```

6. After a few second, the updater web interface will be accessible via:

http://[IP-address]:8080

... where [IP-address] is the IP address of the M1 management port.

Factory Restore Procedure

You can restore the system to factory installation at any time.

Prerequisites

The procedure requires using a KVM or a monitor and keyboard connected to M1.

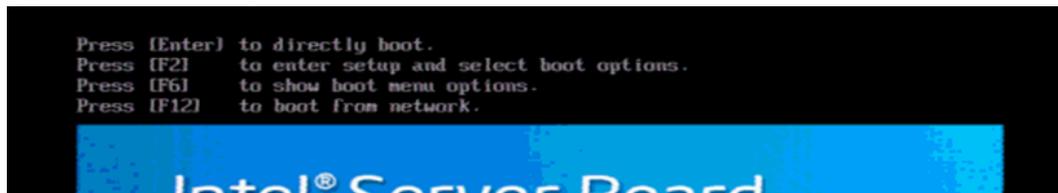
The **Factory Restore** menu is only available after a **Factory Backup** procedure has been performed.

Factory backup procedure

1. (Re-) Start the M1, be ready to press the **down arrow** key.
2. When **Press any key to enter the menu** message is displayed, press the **down arrow** key to enter into the boot menu.

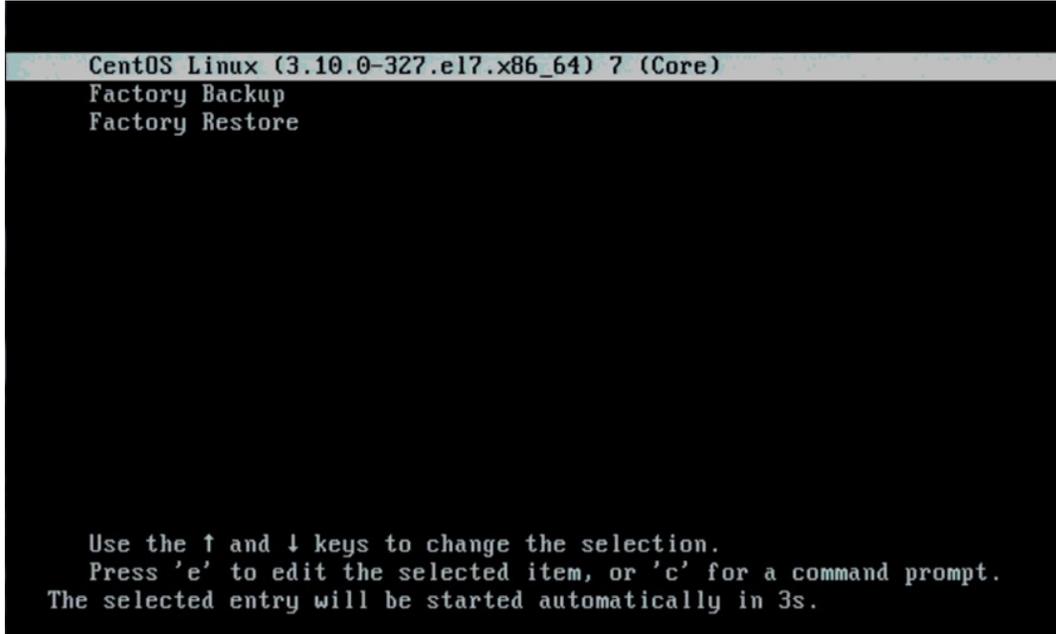
NOTE You have only 2 seconds before default boot option runs.

Figure 15. Entering the boot menu



3. Select the **Factory Backup** entry with the **down arrow** and press **Enter**.

Figure 16. Selecting Factory Backup entry



Contacting Ericsson Support

Contacting Ericsson support

CAUTION It is not allowed to perform installation or modification of any software on the appliance as it could impact its proper functioning and could limit the warranty.

You may contact us for specific projects requiring customized options or specific development, available through our service organization. For contact information, see the Ericsson website at <http://www.ericsson.com>.

If you have support questions, contact your Ericsson regional support or send an email to your Sales contact.

Ericsson Support contacts:

- **EMEA Region:**
EMEA+ 44 (0)2380 484455
tvsupportemea@ericsson.com
- **Americas Region:**
US and Canada +1 888 671 1268
Latin Americas +1 678 689 1733
tvsupportamericas@ericsson.com
- **APAC Region:**
Southeast Asia +852 2590 3820
South Korea +82 2 2005 4633
China +86 1084767264
tvsupportapac@ericsson.com

CHAPTER 6

Physical Characteristics

Physical Characteristics

M1 chassis model: Advantech Vega 7010

Dimensions (W x H x D)	17.48" (44.4mm) x 16.77" (426 mm) 21.65" (550 mm)
Weight	41.86 lbs (19 kg) without optional card 44,09 lbs (20 kg) fully loaded
Operating temperature	32 to 122° F (0 to 50° C)
Storage temperature	-4 to 158° F (-20 to 70° C)
Operating humidity	10~85%@40C non-condensing
Power	Input voltage: AC/DC 550W
	Input frequency: The power supply shall operate at any frequency between 47 Hz and 63 Hz
Power consumption	Max: 463.16W
Heat dissipation	1582 BTU/hr
Power supplies	Dual load-balancing hot-swappable power supplies

CHAPTER 7

Regulatory information

Regulatory Compliance and Certification

CAUTION To help ensure Safety regulatory compliance of the final integrated product, you must adhere to the assembly instructions in this guide to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products / components will void the UL and/or other National Recognized Test Laboratory (NRTL) Certification Listing and other regulatory approvals; this will most likely result in noncompliance with product regulations in the region(s) in which the product is sold.

To help ensure EMC compliance with your local regional rules and regulations, before computer integration, make sure that the chassis, power supply, and other modules have passed EMC testing using a server board with a microprocessor from the same family (or higher) and operating at the same (or higher) speed as the microprocessor used on the server board.

Product Regulatory Compliance

M1 chassis and system component level products have been tested and comply to the following safety, electromagnetic compatibility (EMC), and product environmental regulations and requirements. **Intended Application** - The server chassis and system component products are evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other product categories and environments (such as: medical, industrial, telecommunications, NEBS, residential, alarm systems, test equipment, etc.), other than an ITE application, may require further evaluation.

Product Safety Compliance

- UL60950 - CSA 60950(USA / Canada)
- EN60950 (Europe)
- IEC60950 (International)
- CB Certificate & Report, IEC60950 (report to include all country national deviations)
- GS Certification (Germany)
- CU Certification (Russia)
- Ukraine Certification (Ukraine)
- CE - Low Voltage Directive 2006/95/EC (Europe)
- IRAM Certification (Argentina)
- BSMI CNS14336 Emissions (Taiwan)

Product EMC Compliance - Class A Compliance

- FCC /ICES-003 - Emissions (USA/Canada) Verification
- CISPR 22 - Emissions (International)
- CISPR 24 - Immunity (International)
- EN55022 - Emissions (Europe)
- EN55024 - Immunity (Europe)
- EN6-3-2 - Harmonics (Europe)
- EN6-3-3 - Voltage Flicker (Europe)
- CE - EMC Directive 2004/108 EC (Europe)
- VCCI Emissions (Japan)
- AS/NZS 3548 Emissions (Australia / New Zealand)
- BSMI CNS13438 Emissions (Taiwan)

- CU Certification (Russia)
- Ukraine Certification (Ukraine)
- KC Certification (Korea)

Product Environmental Compliance

The M1 chassis provider has a system in place to restrict the use of banned substances in accordance with worldwide regulatory requirements.

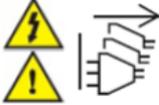
- Europe - European Directive 2011/65/EU - Restriction of Hazardous Substances (RoHS) Threshold limits and banned substances are noted below.
 - Quantity limit of 0.1% by mass (PPM) for: Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls Diphenyl Ethers (PBB/PBDE)
 - Quantity limit of 0.01% by mass (100 PPM) for: Cadmium
- California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials
- China - Restriction of Hazardous Substances (China RoHS)
- WEEE Directive (Europe) Packaging Directive (Europe)
- REACH Directive (Europe)

Product Regulatory Compliance Markings

M1 chassis and system component level products are typically marked with the following regulatory/certification markings. Some of the certification markings will vary depending on what certifier was used to obtain a certification.

Regulatory Compliance	Country	Marking
Ctick	Australia / New Zealand	
NRTL (National Recognized Test Laboratory)	USA/Canada	
GS Mark	Germany	
CE Mark	Europe	
FCC Marking (Class A)	USA	This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions:

		<p>(1) This device may not cause harmful interference, and</p> <p>(2) this device must accept any interference received, including interference that may cause undesired operation.</p>
EMC Marking (Class A)	Canada	CANADA ICES-003 CLASS A
VCCI Marking (Class A)	Japan	この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。VCCI-A
BSMI Certification (RPC) Number & Class A Warning	Taiwan	 <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>警告使用者： 這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策</p> </div>
CU Certification	Russia	
KC Mark (Korean Communications Commission)	Korea	
Ukraine certification	Ukraine	
Waste of Electronic and Electrical Equipment Recycling Mark	Europe	
China Restriction of Hazardous Substance Environmental Friendly Use Period Mark	China	
China Recycling Mark	China	
Recycling Marks	International	
Battery Perchlorate Warning Information	California	Perchlorate Material - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate

		<p>This notice is required by California Code of Regulations, Title 22, Division 4.5, and Chapter 33: Best Management Practices for Perchlorate Materials. This product may include a battery which contains Perchlorate material.</p>
Safety	Multiple Power Cord Marking	 <p>This unit has more than one power supply cord. To reduce the risk of electrical shock, disconnect (2) two power supply cords before servicing.</p> <p>Simplified Chinese:</p> <p>注意： 本設備包括多條電源系統電纜。為避免遭受電擊，在進行維修之前應斷開兩（2）條電源系統電纜。</p> <p>Traditional Chinese:</p> <p>注意： 本設備包括多條電源系統電纜。為避免遭受電擊，在進行維修之前應斷開兩（2）條電源系統電纜。</p> <p>German:</p> <p>Dieses Geräte hat mehr als ein Stromkabel. Um eine Gefahr des elektrischen Schlages zu verringern trennen sie beide (2) Stromkabeln bevor Instandhaltung.</p>
Nordic Countries	Connection to Proper Ground Outlet	<p>"WARNING:"</p> <p>"Apparaten skall anslutas till jordat uttag, när den ansluts till ett nätverk."</p> <p>"Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan."</p> <p>"Connect only to a properly earth grounded outlet."</p>
Safety	Stand-by power	
Safety	Rack Load Warning	

Electromagnetic Compatibility Notices

FCC Verification Statement (USA)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the Reference Guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the User will be required to correct the interference at ones own expense.

ICES-003 (Canada)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Canadian Department of Communications.

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le Ministre Canadian des Communications.

This product has been tested in accordance too, and complies with the Low Voltage Directive (2006/95/EC) and EMC Directive (2004/108/EC). The product has been marked with the CE Mark to illustrate its compliance.

Europe (CE Declaration of Conformity)

The CE mark is affixed to indicate compliance with the following directives:

Low Voltage Directive (LVD): Directive 2014/35/EC on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.

Electromagnetic Compatibility (EMC) Directive: Directive 2014/30/EU on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.

Radio Equipment Directive (RED): (If the product is configured as a broadcast receiver). Directive 2014/53/EU of 16 April 2014 on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC

Restriction of Hazardous Substances (RoHS) Directive: Directive 2011/65/EU of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

VCCI (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

English translation of the notice above:

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) from Information Technology Equipment. If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

BSMI (Taiwan)

BSMI EMC Notice:

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策

KC (Korea)

Korea EMC Certification requires the additional information on the product. If there is no room to place the information this information is provided in this product literature:

1. Type of Equipment (Model Name): Model name is on KC Certificate marked on product
2. Certification No.: Certification number is on KC certificate and marked on product
3. Name of Certification Recipient: Ericsson name is on KC Certificate marked on product
4. Date of Manufacturer: Date of manufacturer is a part of date code serial number on product
5. Manufacturer/Nation: Country of origin marked on product

Specific warnings

WARNING Any changes or modifications to this equipment not expressly approved by Ericsson, could void the user's authority to operate the equipment.

WARNING This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures .

WARNING Always install rack-mount equipment with the heaviest units near the bottom of the rack. Do not pull out more than one piece of equipment at a time. Doing so may cause the rack to become unbalanced and may result in the rack falling .

WARNING Do not use the front handles for the purpose of lifting the equipment. Support the equipment from the bottom when removing and installing in a rack .

Rack mount installation guidelines

Anchor the equipment rack: The equipment rack must be anchored to an unmovable support to prevent it from falling over when one or more servers are extended in front of the rack on slides. You must also consider the weight of any other device installed in the rack. A crush hazard exists should the rack tilt forward which could cause serious injury.

Temperature: The temperature, in which the server operates when installed in an equipment rack, must not go below 5 °C (41 °F) or rise above 40 °C (104 °F). Extreme fluctuations in temperature can cause a variety of problems in your server.

Ventilation: The equipment rack must provide sufficient airflow to the front of the server to maintain proper cooling. The rack must also include ventilation sufficient to exhaust a maximum of 2121.5 BTUs (British Thermal Units) per hour for the server. The rack selected and the ventilation provided must be suitable to the environment in which the server will be used.

If AC power supplies are installed

Mains AC power disconnection: The AC power cord(s) is considered the mains disconnect for the server and must be readily accessible when installed. If the individual server power cord(s) will not be readily accessible for disconnection then you are responsible for installing an AC power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire rack, not just to the server(s).

Grounding the rack installation: To avoid the potential for an electrical shock hazard, you must include a third wire safety ground conductor with the rack installation. If the server power cord is plugged into an AC outlet that is part of the rack, then you must provide proper grounding for the rack itself. If the server power cord is plugged into a wall AC outlet, the safety ground conductor in the power cord provides proper grounding only for the server. You must provide additional, proper grounding for the rack and other devices installed in it.

Overcurrent protection: The server is designed for an AC line voltage source with up to 20 amperes of overcurrent protection per cord feed. If the power system for the equipment rack is installed on a branch circuit with more than 20 amperes of protection, you must provide supplemental protection for the server.

AC power cord usage guidelines

WARNING Do not attempt to modify or use a power cord set that is not the exact type required.

You must use a power cord set that meets the following criteria:

- **Rating:** In the U.S. and Canada, cords must be UL (Underwriters Laboratories, Inc.) Listed/CSA (Canadian Standards Organization) Certified type SJT, 18-3 AWG (American Wire Gauge). Outside of the U.S. and Canada, cords must be flexible harmonized (<HAR>) or VDE (Verband Deutscher Elektrotechniker, German Institute of Electrical Engineers) certified cord with 3 x 0.75 mm conductors rated 250 VAC (Volts Alternating Current).
- **Connector, wall outlet end:** Cords must be terminated in grounding-type male plug designed for use in your region. The connector must have certification marks showing certification by an agency acceptable in your region and for U.S. must be Listed and rated 125% of overall current rating of the server.
- **Connector, server end:** The connectors that plug into the AC receptacle on the server must be an approved IEC (International Electrotechnical Commission) 320, sheet C13, type female connector.
- **Cord length and flexibility:** Cords must be less than 4.5 meters (14.76 feet) long.

Environmental recommendations

2008 ASHRAE Environmental Guidelines for Datacom Equipment - Expanding the Recommended Environmental Envelope

See www.ashrae.org for more details.

Overview: The current recommended environmental envelope for IT Equipment is listed in Table 2.1 of the 2004 referenced ASHRAE Datacom book [1]. These recommended conditions as well as the allowable conditions refer to the inlet air entering the datacom equipment. Specifically, it lists for data centers in ASHRAE classes 1 and 2 (refer to the referenced ASHRAE book for details on data center type, altitude, recommended vs allowable, etc.) a recommended environment range of 20 to 25°C (68 to 77°F) (dry bulb temperature) and a relative humidity (RH) range of 40 to 55%.

Because of the derating of the maximum allowable temperature with altitude for classes 1 and 2, the recommended maximum temperature is derated by 1°C/300 m (1.8 °F/984.25 ft.) above 1800 m (5905.51 ft.).

Product Ecology Compliance

Ericsson has a system in place to restrict the use of banned substances in accordance with worldwide regulatory requirements.

- Europe - European Directive 2002/95/CE - Restriction of Hazardous Substances (RoHS) Threshold limits and banned substances are noted below.
 - Quantity limit of 0.1% by mass (PPM) for: Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls Diphenyl Ethers (PBB/PBDE)
 - Quantity limit of 0.01% by mass (100 PPM) for: Cadmium
- California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials
- China - Restriction of Hazardous Substances (China RoHS)
- WEEE Directive (Europe)
- Packaging Directive (Europe)

Other Markings

Stand-by Power

- 60950 Safety Requirement
- *Applied to product is stand-by power switch is used.*

Multiple Power Cords

- 60950 Safety Requirement
- *Applied to product if more than one power cord is used.*

Ground Connection

- 60950 Deviation for Nordic Countries
- *Line 1: "WARNING:"*
Swedish on line 2: Apparaten skall anslutas till jordat uttag, när den ansluts till ett nätverk."
Finnish on line 3: "Laitte on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan."
English on line 4: "Connect only to a properly earth grounded outlet."