

# Extreme X770 Configuration

Cloud Execution Environment

## INSTALLATION INSTRUCTIONS

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# 1 Introduction

This document describes procedures for how to install Extreme X770 switches to be used as Traffic and Storage Switches, as part of the CEE Installation.

## 1.1 Prerequisites

This section describes the prerequisites which must be fulfilled before the Extreme switch can be configured.

### 1.1.1 Installation Data

Required site-specific data:

- ☐ A customer-specific IP and VLAN plan, based on the document IP and VLAN plan, Reference [1]
- ☐ The CEE region name
- ☐ A password for the Extreme admin user. The default setting is blank for a new switch.

The address variables are summarized in the table below. For more information, refer to the IP and VLAN plan, Reference [1]. The IP address `<tftp_server_address>` is that of the kickstart or LCT server, obtained during the preparation process described in the Preparation of Kickstart Server.

Network/VLAN	IPv4 Address Variable
fuel_ctrl_sp (admin)	<code>&lt;tftp_server_address&gt;</code>
cee_ctrl_sp	<code>&lt;traffic_switch_a_static_ip&gt;</code>
cee_ctrl_sp	<code>&lt;traffic_switch_b_static_ip&gt;</code>
cee_ctrl_sp	<code>&lt;storage_switch_a_static_ip&gt;</code>
cee_ctrl_sp	<code>&lt;storage_switch_b_static_ip&gt;</code>

### 1.1.2 Hardware and Software Required

Required hardware:

- ☐ Two pairs of Extreme X770 switches

Required software:

- ☐ EXOS firmware



### 1.1.3

#### Tools

The following tools are required:

A kickstart server or LCT (kickstart vs LCT table), prepared with:

- ☐ Software to enable console port access
- ☐ TFTP server accessible, with EXOS firmware

Required cables:

Cable	Use
adapter USB-to-RS-232	Console connection
adapter RJ45-to-RS-232	Console connection
Two cat6 Ethernet cables	One cable is connected directly to the management port during installation to download SW to switch if needed. The other cable is connected to USB-to-RS-232 and RJ45-to-RS-232 for connection to console port

**Note:** The switches have one native management port (Ethernet) and one console port on the front panel. Both use RJ45.

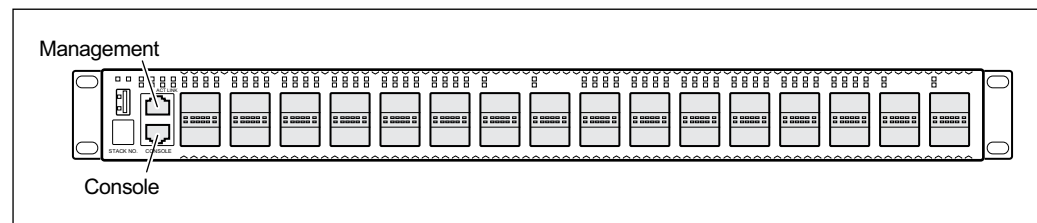


Figure 1 Extreme X770 Switch, Front

### 1.1.4

#### Conditions

Before the installation can be performed, the following conditions must apply:

Software packages, see the download instructions in Section 2 on page 3:

- ☐ Upgrade package for the Extreme firmware.
- ☐ Installation package for the Extreme firmware SSH module.

Other equipment:

- ☐ Serial number for at least one of the Extreme switches. This is used when downloading software, if the firmware is not already available.



## 2 Prepare to Configure Extreme X770 Switches

This section describes the preparations needed before Extreme switches are configured.

To prepare for the installation, perform the following:

1. Download the needed software packages from <http://www.extremenetworks.com/partners/partners-hub.aspx>.

**Note:** The serial number of the Extreme switch is required to download the software.

2. Create a folder for the Extreme software on for the TFTP server:

The folder for Extreme software used in this document is <tftp\_boot\_server\_directory>/Extreme/

3. Copy the extracted software to the folder created. Make sure that the software is accessible.



## 3 Configuration of Extreme X770 Switches

The Extreme switch configuration covered in this section is a manual procedure, taking each switch in turn:

1. Follow Step 1 to Step 32 in Section 3.1 on page 4, for Traffic Switch A.
2. Follow Step 2 to Step 33 in Section 3.1 on page 4, for Traffic Switch B.
3. Follow Step 1 to Step 31 in Section 3.2 on page 11, for Storage Switch A.
4. Follow Step 2 to Step 30 in Section 3.2 on page 11, for Storage Switch B.

**Note:** Configuration must be done as described in this document in steps, to avoid a loop in the network.

### 3.1 Configuration of Traffic Switch

Configure the switch:

1. Identify the switch having a tag name attached to it (one of the alternatives below):

Switch	Tag Name
A	<cee_region_name>_TRAFFIC_SWA_X770
B	<cee_region_name>_TRAFFIC_SWB_X770

2. Connect USB-to-RS-232 and RJ45-to-RS-232 to the console port.

**Note:** See Figure 1 for the location of the port.

3. Remove the cable from the management port if the cable was already connected. Connect the kickstart server to the Extreme switch using the Ethernet cable.

**Note:** See Figure 1 for the location of the port.

4. Access the switch from the console port.
5. If username and password are requested, continue with Step 6, otherwise go to Step 8.
6. Check if the file `default.xsf` exists:

```
ls default.xsf
```

If output contains `ls: default.xsf: No such file or directory`, continue with Step 7.





Rename default.xsf.

```
mv default.xsf default.xsf.old
```

Rename file default.xsf to file default.xsf.old on switch?  
(y/N)

Enter **Yes**.

7. Unconfigure switch:

```
unconfigure switch all
```

Restore all factory defaults and reboot? (y/N)

Enter **Yes**

The reboot can take about five minutes.

After reboot, the following authentication service text is displayed:

Authentication Service (AAA) on the master node is now  
available for login.

Enter **admin** as user.

Enter no password.

8. Set default configuration:

This switch currently has all management methods enabled for  
convenience reasons.  
Please answer these questions about the security settings you  
would like to use.

Telnet is enabled by default.  
Telnet is unencrypted and has been the target of security  
exploits in the past.

Would you like to disable Telnet? [y/N]:

Enter **Yes**

SNMP access is enabled by default.  
SNMP uses no encryption, SNMPv3 can be configured to eliminate  
this problem.

Would you like to disable SNMP? [y/N]:

Enter **No**

All ports are enabled by default.



In some secure applications, it maybe more desirable for the ports to be turned off.

Would you like unconfigured ports to be turned off by default?  
[y/N]:

Enter **Yes**

Changing the default failsafe account username and password is highly recommended.

If you choose to do so, please remember the username and password as this information cannot be recovered.

Would you like to change the failsafe account username and password now? [y/N]:

Enter **No**

Would you like to permit failsafe account access via the management port? [y/N]:

Enter **No**

The following text will be shown for firmware later than EXOS version 15.4.2.8:

The switch can proactively attempt to send basic configuration and operational switch information for the purpose of assisting technical support to resolve customer-reported issues. Uploaded data is encrypted if the ssh.xmod is installed. Otherwise, a reduced switch data set is sent in clear text that contains no customer-specific information.

Would you like to disable the automatic switch reporting service? [Y/n]:

Enter **Yes**

Since you have chosen less secure management methods, please remember to increase the security of your network by taking the following actions:

- \* change your admin password
- \* change your failsafe account username and password
- \* change your SNMP public and private strings
- \* consider using SNMPv3 to secure network management traffic

**Note:** Do not change the admin password, because later steps expect an empty password.

9. List the installed versions.



The following printout is an example that shows the OS version and modules installed. If the version is correct, go to Step 20.

#### **show version images**

```
Card Partition Installation Date Version Name Branch
-----
Switch primary Fri Jan 23 14:04:50 UTC 2015 15.6.1.4
summitX-15.6.1.4.xos v1561b4
Switch primary Fri Jan 23 14:06:05 UTC 2015 15.6.1.4
summitX-15.6.1.4-ssh.xmod v1561b4
Switch secondary Fri Jan 23 14:09:42 UTC 2015 15.6.1.4
summitX-15.6.1.4.xos v1561b4
Switch secondary Fri Jan 23 14:10:56 UTC 2015 15.6.1.4
summitX-15.6.1.4-ssh.xmod v1561b4
```

10. Configure temporary management IP address. Perform one of the following commands, depending on which switch is being configured:

Switch	Command
A	<code>configure vlan mgmt ipaddress =&gt; &lt;traffic_switch_a_static_ip&gt; &lt;netmask-for-fuel_ctrl_sp&gt;</code>
B	<code>configure vlan mgmt ipaddress =&gt; &lt;traffic_switch_b_static_ip&gt; &lt;netmask-for-fuel_ctrl_sp&gt;</code>

For example, type the following:

```
configure vlan mgmt ipaddress 192.168.2.2 255.255.255.0
```

11. Install OS.

Transfer the image from TFTP server to Extreme X770 switch:

```
download image <tftp_server_address>=>
Extreme/summitX-<version_name>.xos VR-mgmt
```

Do you want to install image after downloading?

Enter **Yes**.

12. Install SSH module.

Transfer the image from kickstart server to the Extreme X770 switch:

```
download image <tftp_server_address> =>
Extreme/summitX-<version_name>-ssh.xmod VR-mgmt
```

Do you want to install image after downloading?

Enter **Yes**.



13. Save the configuration:

```
save configuration primary
```

No default configuration database has been selected to boot up the system.

Save configuration will set the new configuration as the default database.

The configuration file primary.cfg already exists.

Do you want to save configuration to primary.cfg and overwrite it? (y/N)

Enter **Yes**.

14. Reboot the switch to use the new OS:

```
reboot
```

Are you sure you want to reboot the switch? (Y/N)

Enter **Yes**.

Reboot can take about five minutes.

15. Log on by console.

After reboot, the following authentication service text is displayed:

Authentication Service (AAA) on the master node is now available for login.

Enter **admin** as user.

Enter no password.

16. Install the OS on the second partition.

Transfer the image from the TFTP server to the Extreme X770 switch:

```
download image <tftp_server_address> ⇒  
Extreme/summitX-<version_name>.xos VR-mgmt secondary
```

Do you want to install image after downloading?

Enter **Yes**.

17. Install the SSH module on the second partition.

Transfer the image from the kickstart server to the Extreme X770 switch:

```
download image <tftp_server_address> ⇒  
Extreme/summitX-<version_name>-ssh.xmod ⇒  
VR-mgmt secondary
```



Do you want to install image after downloading?

Enter **Yes**.

18. Change the used partition:

**use image primary**

19. Remove the temporary management IP address configured in Step 10.

**unconfigure vlan mgmt ipaddress**

20. Partition ports:

**configure ports 52 partition 1x10G**

Warning: Configuration will be lost on ports 52

No configuration changes should be made on these ports until after the next reboot.

This command will only take effect after save configuration and reboot.

Are you sure you want to continue? (y/N)

Enter **Yes**

21. Configure the default VLAN:

**configure vlan default delete ports all**

22. Create the CEE administration VLAN:

**create vlan cee\_ctrl\_sp tag 2**

Perform one of the following commands, depending on which switch is being configured:

Switch	Command
A	<b>configure vlan cee_ctrl_sp ipaddress =&gt; &lt;traffic_switch_a_static_ip&gt; &lt;netmask-for-cee_ctrl_sp&gt;</b>
B	<b>configure vlan cee_ctrl_sp ipaddress =&gt; &lt;traffic_switch_b_static_ip&gt; &lt;netmask-for-cee_ctrl_sp&gt;</b>

**configure vlan cee\_ctrl\_sp add ports 52 tagged**

23. Enable the port:

**enable ports 52**

24. Enable SSH:

**enable ssh2 vr VR-Default**



An example of the printout is the following:

```
enable ssh2 vr VR-Default
```

```
WARNING: Generating new server host key
```

```
This could take approximately 15 minutes and cannot be =>  
canceled. Continue? (y/N) Yes
```

25. Set the system name. Perform one of the following commands, depending on which switch is being configured:

Switch	Command
A	<code>configure snmp sysName &lt;cee_region_name&gt;_TRAFFIC_SWA_X770</code>
B	<code>configure snmp sysName &lt;cee_region_name&gt;_TRAFFIC_SWB_X770</code>

26. Enable HTTP:

```
enable web http
```

27. Save the configuration:

```
save configuration primary
```

```
Do you want to save configuration to primary.cfg and overwrite  
it? (y/N)
```

Enter **Yes**.

```
save configuration secondary
```

```
The configuration file secondary.cfg already exists.  
Do you want to save configuration to secondary.cfg and  
overwrite it? (y/N)
```

Enter **Yes**.

```
Saving configuration on master ..... done!  
Configuration saved to secondary.cfg successfully.
```

```
The current selected default configuration database to boot up  
the system (primary.cfg) is different than the one just saved  
(secondary.cfg).
```

```
Do you want to make secondary.cfg the default database? (y/N)
```

Enter **No**.

28. Reboot the switch:

```
reboot
```

```
Are you sure you want to reboot the switch? (Y/N)
```



Enter **Yes**.

The reboot can take about five minutes.

29. End the console port session.
30. Remove the console port cable inserted in Step 2.
31. Remove the Ethernet cable and reinsert the cable that was removed in Step 3.
32. If you have followed the steps for Switch A, go to Step 2 for Switch B.
33. Go to Section 3.2 on page 11.

## 3.2 Configuration of Storage Switch

Configure the switch:

1. Identify the switch having a tag name (one of the alternatives below):

Switch	Tag Name
A	<cee_region_name>_STORAGE_SWA_X770
B	<cee_region_name>_STORAGE_SWB_X770

2. Connect USB-to-RS-232 and RJ45-to-RS-232 to the console port.

**Note:** See Figure 1 for the location of the port.

3. Remove the cable from the management port (if already connected) and connect the Ethernet cable.

**Note:** See Figure 1 for the location of the port.

4. Access the switch from the console port.
5. If username and password are requested, continue with Step 6, otherwise continue with Step 8.
6. Check if the file `default.xsf` exists:

```
ls default.xsf
```

If the output contains `ls: default.xsf: No such file or directory`, continue with Step 6.

Rename `default.xsf`:

```
mv default.xsf default.xsf.old
```

Rename file `default.xsf` to file `default.xsf.old` on switch?  
(y/N)



Enter **Yes**.

7. Unconfigure the switch:

```
unconfigure switch all
```

Restore all factory defaults and reboot? (y/N)

Enter **Yes**

The reboot can take about five minutes.

After the reboot, the following authentication service text is displayed:

```
Authentication Service (AAA) on the master node is now  
available for login.
```

Enter **admin** as user.

Enter no password.

8. Set default configuration:

```
This switch currently has all management methods enabled for  
convenience reasons.
```

```
Please answer these questions about the security settings you  
would like to use.
```

```
Telnet is enabled by default.
```

```
Telnet is unencrypted and has been the target of security  
exploits in the past.
```

```
Would you like to disable Telnet? [y/N]:
```

Enter **Yes**.

```
SNMP access is enabled by default.
```

```
SNMP uses no encryption, SNMPv3 can be configured to eliminate  
this problem.
```

```
Would you like to disable SNMP? [y/N]:
```

Enter **No**.

```
All ports are enabled by default.
```

```
In some secure applications, it maybe more desirable for the  
ports to be turned off.
```

```
Would you like unconfigured ports to be turned off by default?  
[y/N]:
```

Enter **Yes**.





Changing the default failsafe account username and password is highly recommended.

If you choose to do so, please remember the username and password as this information cannot be recovered.

Would you like to change the failsafe account username and password now? [y/N]:

Enter No.

Would you like to permit failsafe account access via the management port? [y/N]:

Enter No.

The following text will be shown for firmware later than EXOS version 15.4.2.8:

The switch can proactively attempt to send basic configuration and operational switch information for the purpose of assisting technical support to resolve customer-reported issues. Uploaded data is encrypted if the ssh.xmod is installed. Otherwise, a reduced switch data set is sent in clear text that contains no customer-specific information.

Would you like to disable the automatic switch reporting service? [Y/n]:

Enter Yes.

Since you have chosen less secure management methods, please remember to increase the security of your network by taking the following actions:

- \* change your admin password
- \* change your failsafe account username and password
- \* change your SNMP public and private strings
- \* consider using SNMPv3 to secure network management traffic

**Note:** Do not change the admin password, because later steps expect an empty password.

## 9. List the installed versions.

The following example printout shows the OS version and modules installed with. If the version is correct, go to Step 20.

**show version images**

Card	Partition	Installation Date	Version	Name	Branch
-----	-----	-----	-----	-----	-----

-----



```
Switch primary Fri Jan 23 14:04:50 UTC 2015 15.6.1.4
summitX-15.6.1.4.xos v1561b4
Switch primary Fri Jan 23 14:06:05 UTC 2015 15.6.1.4
summitX-15.6.1.4-ssh.xmod v1561b4
Switch secondary Fri Jan 23 14:09:42 UTC 2015 15.6.1.4
summitX-15.6.1.4.xos v1561b4
Switch secondary Fri Jan 23 14:10:56 UTC 2015 15.6.1.4
summitX-15.6.1.4-ssh.xmod v1561b4
```

10. Configure temporary management IP address:

Switch	Command
A	<code>configure vlan mgmt ipaddress =&gt; &lt;storage_switch_a_static_ip&gt; &lt;netmask-for-fuel_ctrl_sp</code>
B	<code>configure vlan mgmt ipaddress =&gt; &lt;storage_switch_b_static_ip&gt; &lt;netmask-for-fuel_ctrl_sp</code>

11. Install the OS.

Transfer the image from the TFTP server to the Extreme X770 switch:

```
download image <tftp_server_address>=>
Extreme/summitX-<version_name>.xos VR-mgmt
```

Do you want to install image after downloading?

Enter **Yes**.

12. Install the SSH module.

Transfer the image from the kickstart server to the Extreme X770 switch:

```
download image <tftp_server_address>=>
Extreme/summitX-<version_name>-ssh.xmod VR-mgmt
```

Do you want to install image after downloading?

Enter **Yes**.

13. Save the configuration:

```
save configuration primary
```

No default configuration database has been selected to boot up the system.

Save configuration will set the new configuration as the default database.

The configuration file primary.cfg already exists.

Do you want to save configuration to primary.cfg and overwrite it? (y/N)



Enter **Yes**.

14. Reboot the switch to use the new OS:

**reboot**

Are you sure you want to reboot the switch? (Y/N)

Enter **Yes**.

The reboot can take about five minutes.

15. Log on by console.

Wait for the following text to be displayed:

Authentication Service (AAA) on the master node is now  
available for login.

Enter **admin** as user.

Enter no password.

16. Install the OS on the second partition.

Transfer the image from TFTP server to Extreme X770 switch:

**download image <tftp\_server\_address> ⇒  
Extreme/summitX-<version\_name>.xos VR-mgmt secondary**

Do you want to install image after downloading?

Enter **Yes**.

17. Install the SSH module on the second partition.

Transfer the image from the kickstart server to the Extreme X770 switch:

**download image <tftp\_server\_address> ⇒  
Extreme/summitX-<version\_name>-ssh.xmod ⇒  
VR-mgmt secondary**

Do you want to install image after downloading?

Enter **Yes**.

18. Change the used partition:

**use image primary**

19. Remove the temporary management IP address configured in Step 10:

**unconfigure vlan mgmt ipaddress**



## 20. Partition ports:

```
configure ports 52 partition 1x10G
```

Warning: Configuration will be lost on ports 52  
No configuration changes should be made on these ports until  
after the next reboot.  
This command will only take effect after save configuration and  
reboot.

Are you sure you want to continue? (y/N)

Enter Yes.

## 21. Configure the Virtual Router:

```
configure vlan default delete ports all
```

## 22. Create CEE administration VLAN:

```
create vlan cee_ctrl_sp tag 2
```

Switch	Command
A	<pre>configure vlan cee_ctrl_sp ipaddress =&gt; &lt;storage_switch_a_static_ip&gt; &lt;netmask-for-cee_ctrl_sp</pre>
B	<pre>configure vlan cee_ctrl_sp ipaddress =&gt; &lt;storage_switch_b_static_ip&gt; &lt;netmask-for-cee_ctrl_sp</pre>

```
configure vlan cee_ctrl_sp add ports 52 tagged
```

## 23. Enable the port:

```
enable ports 52
```

## 24. Set the system name:

Switch	Command
A	<pre>configure snmp sysName &lt;cee_region_name&gt;_STORAGE_SWA_X770</pre>
B	<pre>configure snmp sysName &lt;cee_region_name&gt;_STORAGE_SWB_X770</pre>

## 25. Enable HTTP:

```
enable web http
```

## 26. Save the configuration:

```
save configuration primary
```

Do you want to save configuration to primary.cfg and overwrite  
it? (y/N)



Enter **Yes**.

**save configuration secondary**

The configuration file secondary.cfg already exists.  
Do you want to save configuration to secondary.cfg and  
overwrite it? (y/N)

Enter **Yes**.

Saving configuration on master ..... done!  
Configuration saved to secondary.cfg successfully.

The current selected default configuration database to boot up  
the system (primary.cfg) is different than the one just saved  
(secondary.cfg).  
Do you want to make secondary.cfg the default database? (y/N)

Enter **No**.

27. Reboot the switch:

**reboot**

Are you sure you want to reboot the switch? (Y/N)

Enter **Yes**.

The reboot can take about five minutes.

28. End the console port session.

29. Remove the console port cable inserted in Step 2.

30. Remove the Ethernet cable and reinsert the cable that was removed in Step 3.

31. If you have followed the steps for Switch A, go to Step 2 for Switch B.



## Reference List

- [1] IP and VLAN plan, 2/102 62-CRA 119 1862/5 Uen