



Configuring Brocade FC switches with RCF files

ONTAP MetroCluster

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Configuring Brocade FC switches with RCF files

To configure a Brocade FC switch, you must reset the switch settings to factory defaults, install the switch software, and download and apply the reference configuration (RCF) files that provide the complete switch settings for certain configurations.

Before you begin

You must have access to an FTP server. The switches must have connectivity with the FTP server.

About this task

Each configuration file is different and must be used with the correct switch. Only one of the configuration files for each switch fabric contains zoning commands.

Resetting the Brocade FC switch to factory defaults

Before installing a new software version and RCF files, you must erase the current switch configuration and perform basic configuration.

About this task

You must repeat these steps on each of the FC switches in the MetroCluster fabric configuration.

Steps

1. Log in to the switch as an administrator.
2. Disable the Brocade Virtual Fabrics (VF) feature:

```
fosconfig options
```

```
FC_switch_A_1:admin> fosconfig --disable vf
WARNING: This is a disruptive operation that requires a reboot to take
effect.
Would you like to continue [Y/N]: y
```

3. Disconnect the ISL cables from the ports on the switch.
4. Disable the switch:

```
switchcfgpersistentdisable
```

```
FC_switch_A_1:admin> switchcfgpersistentdisable
```

5. Disable the configuration:

```
cfgDisable
```

```
FC_switch_A_1:admin> cfgDisable
```

You are about to disable zoning configuration. This action will disable any previous zoning configuration enabled.

Do you want to disable zoning configuration? (yes, y, no, n): [no] y

Updating flash ...

Effective configuration is empty. "No Access" default zone mode is ON.

6. Clear the configuration:

```
cfgClear
```

```
FC_switch_A_1:admin> cfgClear
```

The Clear All action will clear all Aliases, Zones, FA Zones and configurations in the Defined configuration.

Run `cfgSave` to commit the transaction or `cfgTransAbort` to cancel the transaction.

Do you really want to clear all configurations? (yes, y, no, n): [no] y

7. Save the configuration:

```
cfgSave
```

```
FC_switch_A_1:admin> cfgSave
```

You are about to save the Defined zoning configuration. This action will only save the changes on Defined configuration.

Do you want to save the Defined zoning configuration only? (yes, y, no, n): [no] y

Updating flash ...

8. Set the default configuration:

```
configDefault
```

```

FC_switch_A_1:admin> configDefault
WARNING: This is a disruptive operation that requires a switch reboot.
Would you like to continue [Y/N]: y
Executing configdefault...Please wait
2020/10/05-08:04:08, [FCR-1069], 1016, FID 128, INFO, FC_switch_A_1, The
FC Routing service is enabled.
2020/10/05-08:04:08, [FCR-1068], 1017, FID 128, INFO, FC_switch_A_1, The
FC Routing service is disabled.
2020/10/05-08:04:08, [FCR-1070], 1018, FID 128, INFO, FC_switch_A_1, The
FC Routing configuration is set to default.
Committing configuration ... done.
2020/10/05-08:04:12, [MAPS-1113], 1019, FID 128, INFO, FC_switch_A_1,
Policy dflt_conservative_policy activated.
2020/10/05-08:04:12, [MAPS-1145], 1020, FID 128, INFO, FC_switch_A_1,
FPI Profile dflt_fpi_profile is activated for E-Ports.
2020/10/05-08:04:12, [MAPS-1144], 1021, FID 128, INFO, FC_switch_A_1,
FPI Profile dflt_fpi_profile is activated for F-Ports.
The switch has to be rebooted to allow the changes to take effect.
2020/10/05-08:04:12, [CONF-1031], 1022, FID 128, INFO, FC_switch_A_1,
configDefault completed successfully for switch.

```

9. Set the port configuration to default for all ports:

```
portcfgdefault port-number
```

```
FC_switch_A_1:admin> portcfgdefault <port number>
```

You must complete this step for each port.

10. Verify that the switch is using the dynamic Port on Demand (POD) method.



For Brocade Fabric OS versions before 8.0, you run the following commands as admin, and for versions 8.0 and later, you run them as root.

a. Run the license command:

```
licenseport --show
```

```

FC_switch_A_1:admin> licenseport -show
24 ports are available in this switch
Full POD license is installed
Dynamic POD method is in use

```

b. Enable the root user if it is disabled by Brocade.

```
FC_switch_A_1:admin> userconfig --change root -e yes
FC_switch_A_1:admin> rootaccess --set consoleonly
```

c. Run the license command:

```
licenseport --show
```

```
FC_switch_A_1:root> licenseport -show
24 ports are available in this switch
Full POD license is installed
Dynamic POD method is in use
```

d. Change the license method to dynamic:

```
licenseport --method dynamic
```



If the dynamic POD method is not in use (if POD method is in static) you must change the license assignment method to dynamic. Skip this step if the dynamic POD method is in use.

```
FC_switch_A_1:admin> licenseport --method dynamic
The POD method has been changed to dynamic.
Please reboot the switch now for this change to take effect
```

11. Reboot the switch:

```
fastBoot
```

```
FC_switch_A_1:admin> fastboot
Warning: This command would cause the switch to reboot
and result in traffic disruption.
Are you sure you want to reboot the switch [y/n]?y
```

12. Confirm that the default settings have been implemented:

```
switchShow
```

13. Verify that the IP address is set correctly:

```
ipAddrShow
```

You can set the IP address with the following command, if required:

```
ipAddrSet
```

Downloading the Brocade FC switch RCF file

You must download the reference configuration (RCF) file to each switch in the MetroCluster fabric configuration.

About this task

To use these RCF files, the system must be running ONTAP 9.1 or later and you must use the port layout for ONTAP 9.1 or later.

If you are planning to use only one of the FC ports on the FibreBridge bridges, configure the back-end fibre channel switches manually using the instructions found in the section, [Port assignments for FC switches when using ONTAP 9.1 and later](#).

Steps

1. Refer to the RCF file table on the Brocade RCF download page and identify the correct RCF file for each switch in your configuration.

The RCF files must be applied to the correct switches.

2. Download the RCF files for the switches from the [MetroCluster RCF download](#) page.

The files must be placed in a location where they can be transferred to the switch. There is a separate file for each of the four switches that make up the two-switch fabric.

3. Repeat these steps on each switch in the configuration.

Installing the Brocade FC switch RCF file

When you configure a Brocade FC switch, you can install the switch configuration files that provide the complete switch settings for certain configurations.

About this task

These steps must be repeated on each of the Brocade FC switches in the MetroCluster fabric configuration.

Steps

1. Initiate the download and configuration process:

```
configDownload
```

Respond to the prompts as shown in the following example.

```

FC_switch_A_1:admin> configDownload
Protocol (scp, ftp, sftp, local) [ftp]:
Server Name or IP Address [host]: <user input>
User Name [user]:<user input>
Path/Filename [<home dir>/config.txt]:path to configuration file
Section (all|chassis|switch [all]): all
.
.
.
Do you want to continue [y/n]: y
Password: <user input>

```

After entering your password, the switch downloads and executes the configuration file.

2. Persistently enable the switch:

```
switchcfgpersistenable
```

The example shows how to persistently enable FC switch_A_1.

```
FC_switch_A_1:admin> switchcfgpersistenable
```

3. Run the following command to confirm that the configuration file has set the switch domain:

```
switchShow
```

Each switch is assigned a different domain number depending on which configuration file the switch used.

```

FC_switch_A_1:admin> switchShow
switchName: FC_switch_A_1
switchType: 109.1
switchState: Online
switchMode: Native
switchRole: Subordinate
switchDomain: 5

```

4. Verify that your switch is assigned the correct domain value as indicated in the following table.

Fabric	Switch	Switch domain
1	A_1	5
	B_1	7

2	A_2	6
	B_2	8

5. Change the port speed:

portcfgspeed

```
FC_switch_A_1:admin> portcfgspeed port number port speed
```

By default, all the ports are configured to operate at 16 Gbps. You might change the port speed for the following reasons:

- The interconnect switch ports speed should be changed when an 8-Gbps FC-VI adapter is used and the switch port speed should set to 8 Gbps.
- The switch ports speed should be changed when an 8-Gbps HBA adapter is used for ATTO FibreBridge 6500N.
- The ISL ports' speed must be changed when the ISL is not capable of running at 16 Gbps.

6. Calculate the ISL distance.

Due to the behavior of the FC-VI, you must set the distance to 1.5 times the real distance with a minimum of 10 (LE). The distance for the ISL is calculated as follows, rounded up to the next full kilometer: $1.5 \times \text{real distance} = \text{distance}$.

If the distance is 3 km, then $1.5 \times 3 \text{ km} = 4.5$. This is lower than 10; therefore, you must set the ISL to the LE distance level.

The distance is 20 km, then $1.5 \times 20 \text{ km} = 30$. You must set the ISL to the LS distance level.

7. Set the distance for each ISL port:

portcfglongdistance *port level vc_link_init -distance distance_value*

A *vc_link_init* value of 1 uses the fillword "ARB" by default. A value of 0 uses the fillword "IDLE". The required value might vary depending on the link you use. In this example, the default is set and the distance is assumed to be 20 km. Hence, the setting is "30" with a *vc_link_init* value of "1", and the ISL port is "21".

Example: LS

```
FC_switch_A_1:admin> portcfglongdistance 21 LS 1 -distance 30
```

Example: LE

```
FC_switch_A_1:admin> portcfglongdistance 21 LE 1
```

8. Verify if the IP address is set correctly:

```
ipAddrshow
```

```
FC_switch_A_1:admin> ipAddrshow
```

You can set the IP address with the following command if required:

```
ipAddrSet
```

9. Set the timezone from the switch prompt:

```
tstimezone --interactive
```

You should respond to the prompts as required.

```
FC_switch_A_1:admin> tstimezone --interactive
```

10. Reboot the switch:

```
reboot
```

The example shows how to reboot FC switch _A_1.

```
FC_switch_A_1:admin> reboot
```

11. Verify the distance setting:

```
portbuffershow
```

A distance setting of LE appears as 10 km.

```
FC_Switch_A_1:admin> portbuffershow
```

User Port	Lx	Max/Resv	Buffer	Needed	Link	Remaining
Port	Type	Mode	Buffers	Usage	Buffers	Distance

...						
21	E	-	8	67	67	30 km
22	E	-	8	67	67	30 km
...						
23	-	8	0	-	-	466

12. Reconnect the ISL cables to the ports on the switches where they were removed.

The ISL cables were disconnected when the factory settings were reset to the default settings.

Resetting the Brocade FC switch to factory defaults

13. Validate the configuration.

a. Verify that the switches form one fabric:

```
switchshow
```

The following example shows the output for a configuration that uses ISLs on ports 20 and 21.

```
FC_switch_A_1:admin> switchshow
switchName: FC_switch_A_1
switchType: 109.1
switchState:Online
switchMode: Native
switchRole: Subordinate
switchDomain:      5
switchId:   fffc01
switchWwn:  10:00:00:05:33:86:89:cb
zoning:      OFF
switchBeacon: OFF

Index Port Address Media Speed State  Proto
=====
...
20    20  010C00   id    16G  Online FC   LE E-Port
10:00:00:05:33:8c:2e:9a "FC_switch_B_1" (downstream) (trunk master)
21    21  010D00   id    16G  Online FC   LE E-Port  (Trunk port,
master is Port 20)
...
```

b. Confirm the configuration of the fabrics:

```
fabricshow
```

```
FC_switch_A_1:admin> fabricshow
Switch ID      Worldwide Name      Enet IP Addr FC IP Addr Name
-----
1: fffc01 10:00:00:05:33:86:89:cb 10.10.10.55  0.0.0.0
"FC_switch_A_1"
3: fffc03 10:00:00:05:33:8c:2e:9a 10.10.10.65  0.0.0.0
>"FC_switch_B_1"
```

c. Verify that the ISLs are working:

```
islshow
```

```
FC_switch_A_1:admin> islshow
```

- d. Confirm that zoning is properly replicated:

```
cfgshow  
zoneshow
```

Both outputs should show the same configuration information and zoning information for both switches.

- e. If trunking is used, you can confirm the trunking with the following command: **trunkShow**

```
FC_switch_A_1:admin> trunkshow
```

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