



Install licenses

ONTAP Systems Switches

NetApp
November 18, 2021

Table of Contents

- Install licenses for BES-53248 cluster switches 1
- Restrictions and limitations - BES-53248 switches 7
- Edit the Reference Configuration File (RCF) 9

Install licenses for BES-53248 cluster switches

The BES-53248 cluster switch base model is licensed for 16 10GbE or 25GbE ports and two 100GbE ports. New ports can be added by purchasing more licenses.

The following licenses are available for use on the BES-53248 cluster switch:

License type	License details
Supported firmware version	SW-BES-53248A1-G1-8P-LIC
Broadcom 8P 10-25,2P40-100 License Key, X190005/R	EFOS 3.4.3.3 and later
SW-BES-53248A1-G1-16P-LIC	Broadcom 16P 10-25,4P40-100 License Key, X190005/R
EFOS 3.4.3.3 and later	SW-BES-53248A1-G1-24P-LIC
Broadcom 24P 10-25,6P40-100 License Key, X190005/R	EFOS 3.4.3.3 and later
SW-BES54248-40-100G-LIC	Broadcom 6Port 40G100G License Key, X190005/R
EFOS 3.4.4.6 and later	SW-BES53248-8P-10G25G-LIC
Broadcom 8Port 10G25G License Key, X190005/R	EFOS 3.4.4.6 and later
SW-BES53248-16P-1025G-LIC	Broadcom 16Port 10G25G License Key, X190005/R
EFOS 3.4.4.6 and later	SW-BES53248-24P-1025G-LIC
Broadcom 24Port 10G25G License Key, X190005/R	EFOS 3.4.4.6 and later

Steps

1. Connect the cluster switch to the management network.
2. Use the `ping` command to verify connectivity to the server hosting EFOS, licenses, and the RCF file.

This example verifies that the switch is connected to the server at IP address 172.19.2.1:

```
(cs2) # **ping 172.19.2.1**  
Pinging 172.19.2.1 with 0 bytes of data:  
  
Reply From 172.19.2.1: icmp_seq = 0. time= 5910 usec.
```

3. Check the current license usage on switch cs2:

```
show license
```

```
(cs2) # **show license**
Reboot needed..... No
Number of active licenses..... 0

License Index  License Type      Status
-----
No license file found.
```

4. Install the license file. The following example uses HTTP to copy a license file to a key index 1.

Repeat this step to load more licenses and to use different key index numbers.

```
(cs2) # **copy http://172.19.2.1/tmp/efos/license1.dat nvram:license-key
1**

Mode..... HTTP
Set Server IP..... 172.19.2.1
Path..... tmp/efos/
Filename..... license1.dat
Data Type..... license

Management access will be blocked for the duration of the transfer
Are you sure you want to start? (y/n) **y**

File transfer in progress. Management access will be blocked for the
duration of the transfer. Please wait...

License Key transfer operation completed successfully. System reboot is
required.
```

5. Display all current license information and note the license status before switch cs2 is rebooted:

```
show license
```

```
(cs2) # **show license**
```

```
Reboot needed..... Yes
```

```
Number of active licenses..... 0
```

License Index	License Type	Status
1	Port	License valid but not applied

6. Display all licensed ports:

```
show port all | exclude Detach
```

The ports from the additional license files are not displayed until after the switch is rebooted.

```
(cs2) # **show port all \ | exclude Detach**
```

Actor	Admin	Physical	Physical	Link	Link	LACP	
Intf	Type	Mode	Mode	Status	Status	Trap	Mode
Timeout							
0/1		Disable	Auto		Down	Enable	Enable
long							
0/2		Disable	Auto		Down	Enable	Enable
long							
0/3		Disable	Auto		Down	Enable	Enable
long							
0/4		Disable	Auto		Down	Enable	Enable
long							
0/5		Disable	Auto		Down	Enable	Enable
long							
0/6		Disable	Auto		Down	Enable	Enable
long							
0/7		Disable	Auto		Down	Enable	Enable
long							
0/8		Disable	Auto		Down	Enable	Enable
long							
0/9		Disable	Auto		Down	Enable	Enable
long							
0/10		Disable	Auto		Down	Enable	Enable
long							
0/11		Disable	Auto		Down	Enable	Enable
long							
0/12		Disable	Auto		Down	Enable	Enable
long							
0/13		Disable	Auto		Down	Enable	Enable
long							
0/14		Disable	Auto		Down	Enable	Enable
long							
0/15		Disable	Auto		Down	Enable	Enable
long							
0/16		Disable	Auto		Down	Enable	Enable
long							
0/55		Disable	Auto		Down	Enable	Enable
long							
0/56		Disable	Auto		Down	Enable	Enable
long							

7. Reboot the switch:

```
reload
```

```
(cs2) # **reload**

The system has unsaved changes.
Would you like to save them now? (y/n) **y**

Config file 'startup-config' created successfully .

Configuration Saved!
Are you sure you would like to reset the system? (y/n) **y**
```

8. Check that the new license is active and note that the license has been applied:

```
show license
```

```
(cs2) # **show license**

Reboot needed..... No
Number of installed licenses..... 1
Total Downlink Ports enabled..... 16
Total Uplink Ports enabled..... 8

License Index  License Type          Status
-----
1              Port                License applied
(cs2) #
```

9. Check that all new ports are available:

```
show port all | exclude Detach
```

```
(cs2) # **show port all \ | exclude Detach**

          Admin   Physical   Physical   Link   Link   LACP
Actor
Intf     Type    Mode     Mode      Status  Status Trap  Mode
Timeout
-----
0/1     Disable  Auto                Down   Enable  Enable
long
```

0/2	Disable	Auto	Down	Enable	Enable
long					
0/3	Disable	Auto	Down	Enable	Enable
long					
0/4	Disable	Auto	Down	Enable	Enable
long					
0/5	Disable	Auto	Down	Enable	Enable
long					
0/6	Disable	Auto	Down	Enable	Enable
long					
0/7	Disable	Auto	Down	Enable	Enable
long					
0/8	Disable	Auto	Down	Enable	Enable
long					
0/9	Disable	Auto	Down	Enable	Enable
long					
0/10	Disable	Auto	Down	Enable	Enable
long					
0/11	Disable	Auto	Down	Enable	Enable
long					
0/12	Disable	Auto	Down	Enable	Enable
long					
0/13	Disable	Auto	Down	Enable	Enable
long					
0/14	Disable	Auto	Down	Enable	Enable
long					
0/15	Disable	Auto	Down	Enable	Enable
long					
0/16	Disable	Auto	Down	Enable	Enable
long					
0/49	Disable	100G Full	Down	Enable	Enable
long					
0/50	Disable	100G Full	Down	Enable	Enable
long					
0/51	Disable	100G Full	Down	Enable	Enable
long					
0/52	Disable	100G Full	Down	Enable	Enable
long					
0/53	Disable	100G Full	Down	Enable	Enable
long					
0/54	Disable	100G Full	Down	Enable	Enable
long					
0/55	Disable	100G Full	Down	Enable	Enable
long					
0/56	Disable	100G Full	Down	Enable	Enable
long					


```
(cs2) #
```

Restrictions and limitations - BES-53248 switches

Where problems arise when installing a license, the following debug commands should be run before running the `copy` command again to install the license.

Debug commands to use:

```
debug transferdebug license
```

```
(cs2) # debug transfer
Debug transfer output is enabled.
(cs2) # debug license
Enabled capability licensing debugging.
```

When you run the `copy` command with the `debug transfer` and `debug license` options enabled, the following log output is returned:

```

transfer.c(3083):Transfer process key or certificate file type = 43
transfer.c(3229):Transfer process key/certificate cmd = cp
/mnt/download//license.dat.1 /mnt/fastpath/ >/dev/null 2>&1CAPABILITY
LICENSING :
Fri Sep 11 13:41:32 2020: License file with index 1 added.
CAPABILITY LICENSING : Fri Sep 11 13:41:32 2020: Validating hash value
29de5e9a8af3e510f1f16764a13e8273922d3537d3f13c9c3d445c72a180a2e6.
CAPABILITY LICENSING : Fri Sep 11 13:41:32 2020: Parsing JSON buffer {
  "license": {
    "header": {
      "version": "1.0",
      "license-key": "964B-2D37-4E52-BA14",
      "serial-number": "QTFCU38290012",
      "model": "BES-53248"
    },
    "description": "",
    "ports": "0+6"
  }
}.
CAPABILITY LICENSING : Fri Sep 11 13:41:32 2020: License data does not
contain 'features' field.
CAPABILITY LICENSING : Fri Sep 11 13:41:32 2020: Serial number
QTFCU38290012 matched.
CAPABILITY LICENSING : Fri Sep 11 13:41:32 2020: Model BES-53248 matched.
CAPABILITY LICENSING : Fri Sep 11 13:41:32 2020: Feature not found in
license file with index = 1.
CAPABILITY LICENSING : Fri Sep 11 13:41:32 2020: Applying license file 1.

```

Check for the following in the debug output:

- Check that the Serial number matches: Serial number QTFCU38290012 matched.
- Check that the switch Model matches: Model BES-53248 matched.
- Check that the specified license index was not used previously. Where a license index is already used, the following error is returned: License file /mnt/download//license.dat.1 already exists.
- A port license is not a feature license. Therefore, the following statement is expected: Feature not found in license file with index = 1.

Use the `copy` command to backup port licenses to the server:

```

(cs2) # copy nvram:license-key 1
scp://<UserName>@<IP_address>/saved_license_1.dat

```

See [Installing licenses for BES-53248 cluster switches](#) for details of the firmware versions supported for available licenses.



If you need to downgrade the switch software from version 3.4.4.6, the licenses are removed. This is expected behavior.

You must install an appropriate older license before reverting to an older version of the software.

Edit the Reference Configuration File (RCF)

In order to activate newly licensed ports, you need to edit the latest version of the RCF and uncomment the applicable port details. The default license activates ports 0/1 to 0/16 and 0/55 to 0/56 while the newly licensed ports will be between ports 0/17 to 0/54 depending on the type and number of licenses available.



If you try to edit a previously installed RCF, the process might fail because there is an existing configuration for other areas in the RCF, see [Edit a previously installed RCF file](#).

For details of the available license types for use on the BES-53248 cluster switch, see [Installing licenses for BES-53248 cluster switches](#).

For example to activate the SW-BES54248-40-100G-LIC license, you must uncomment the following section in the RCF:

```
.
.
!
! 2-port or 6-port 40/100GbE node port license block
!
interface 0/49
no shutdown
description "40/100GbE Node Port"
!speed 100G full-duplex
speed 40G full-duplex
service-policy in WRED_100G
spanning-tree edgeport
mtu 9216
switchport mode trunk
datacenter-bridging
priority-flow-control mode on
priority-flow-control priority 5 no-drop
exit
exit
!
interface 0/50
no shutdown
description "40/100GbE Node Port"
!speed 100G full-duplex
speed 40G full-duplex
```

```
service-policy in WRED_100G
spanning-tree edgeport
mtu 9216
switchport mode trunk
datacenter-bridging
priority-flow-control mode on
priority-flow-control priority 5 no-drop
exit
exit
!
interface 0/51
no shutdown
description "40/100GbE Node Port"
speed 100G full-duplex
!speed 40G full-duplex
service-policy in WRED_100G
spanning-tree edgeport
mtu 9216
switchport mode trunk
datacenter-bridging
priority-flow-control mode on
priority-flow-control priority 5 no-drop
exit
exit
!
interface 0/52
no shutdown
description "40/100GbE Node Port"
speed 100G full-duplex
!speed 40G full-duplex
service-policy in WRED_100G
spanning-tree edgeport
mtu 9216
switchport mode trunk
datacenter-bridging
priority-flow-control mode on
priority-flow-control priority 5 no-drop
exit
exit
!
interface 0/53
no shutdown
description "40/100GbE Node Port"
speed 100G full-duplex
!speed 40G full-duplex
service-policy in WRED_100G
```

```

spanning-tree edgeport
mtu 9216
switchport mode trunk
datacenter-bridging
priority-flow-control mode on
priority-flow-control priority 5 no-drop
exit
exit
!
interface 0/54
no shutdown
description "40/100GbE Node Port"
speed 100G full-duplex
!speed 40G full-duplex
service-policy in WRED_100G
spanning-tree edgeport
mtu 9216
switchport mode trunk
datacenter-bridging
priority-flow-control mode on
priority-flow-control priority 5 no-drop
exit
exit
!
.
.

```



For high-speed ports between 0/49 to 0/54 inclusive, uncomment each port but only uncomment one **speed** line in the RCF for each of these ports, either:

- speed 100G full-duplex
- speed 40G full-duplex

as shown in the example.

For low-speed ports between 0/17 to 0/48 inclusive, uncomment the entire 8-port section when an appropriate license has been activated.

Edit a previously installed RCF file

After you edit a previously installed RCF file and run the `script apply` command, you might get the following error message:

```

(CS1) #script apply BES-53248_RCF_v1.6-Cluster-HA.scr
Are you sure you want to apply the configuration script? (y/n)

```

After you select `y`, you get the following error message:

```
config
...
match cos 5
Unrecognized command : match cos 5
Error! in configuration script file at line number 40.
CLI Command :: match cos 5.
Aborting script.
```

To either avoid or resolve this issue, you can choose one of the following options:

- To avoid the error, you can use following procedure:

1. Create a second a RCF file containing the new port configuration only.
2. Copy the second RCF file to the switch.
3. Apply the script to the switch:

```
script apply
```

- To resolve the error, see the Knowledge Base article: [Error! in configuration script file at line number XX when applying a new RCF](#)

Copyright Information

Copyright © 2021 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system- without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.