



Upgrading Software Releases on IWAN Devices

First Published: 2017-05-03

Last Updated: 2017-05-03

Introduction

This document provides information about upgrading software on IWAN hub and branch devices.

This document contains the following sections:

- [Upgrading a Datacenter, page 1](#)
- [Upgrading Single Router Branch, page 2](#)
- [Upgrading Dual Router Branch, page 2](#)
- [Non-Upgraded Branches on an Earlier Release, page 3](#)
- [Command Outputs, page 3](#)
- [Obtaining Documentation and Submitting a Service Request, page 9](#)

Upgrading a Datacenter

Perform the following steps to upgrade the software on a datacenter.

1. Upgrade the hub master controller and wait 10 minutes.
2. Upgrade the first hub border router and wait 10 minutes.
3. Upgrade each additional hub border router and wait 10 minutes before upgrading the next hub border router.

Validating the Datacenter Upgrade

Use the following commands to validate the upgrade on the hub master controller.

1. **show domain iwan master status**
2. **show domain iwan master channels summary**
3. **show domain iwan master site-prefix**
4. **show domain iwan master discovered-sites**
5. **show domain iwan master site-capability**

6. show domain iwan master traffic-class summary

Use the following commands to validate the upgrade on the hub border routers.

- 1. show domain iwan border status**
- 2. show domain iwan border channels summary**
- 3. show domain iwan border site-prefix**

Repeat the above steps on each datacenter in your environment.

More information about the commands and their outputs is available in the [Command Outputs, page 3](#) section.

Upgrading Single Router Branch

Perform the following steps to upgrade the software on a single router branch.

1. Upgrade the software on the branch router.
2. Repeat these steps for each additional single router branch in your environment.

Validating Single Router Branch Upgrade

Use the following commands to verify that WAN interfaces are discovered.

- 1. show domain default master all**
- 2. show domain default master channels summary**
- 3. show domain default master site-prefix**
- 4. show domain default master discovered-sites**
- 5. show domain default master site-capability**
- 6. show service-overlay summary**
- 7. show adjacency tunnel {mpls | inet} detail**
- 8. show domain default border peering**
- 9. show domain default master peering**
- 10. show eigrp service-family ipv4 neighbors**
- 11. show domain default master traffic-class summary**

More information about the commands and their outputs is available in the [Command Outputs, page 3](#) section.

Upgrading Dual Router Branch

Perform the following steps to upgrade the software on a dual router branch.

1. Upgrade the software on the first branch router and wait for five minutes.
2. Upgrade the software on the second branch router.
3. Repeat these steps for each dual router branch in your environment.

Validating Dual Router Branch Upgrade

Use the following commands to verify that WAN interfaces are discovered.

4. **show domain default master all**
5. **show domain default master channels summary**
6. **show domain default master site-prefix**
7. **show domain default master discovered-sites**
8. **show domain default master site-capability**
9. **show service-overlay summary**
10. **show adjacency tunnel 100 detail**
11. **show domain default border peering**
12. **show domain default master peering**
13. **show eigrp service-family ipv4 neighbors**
14. **show domain default master traffic-class summary**

More information about the commands and their outputs is available in the [Command Outputs, page 3](#) section.

Non-Upgraded Branches on an Earlier Release

Use the following commands to verify that WAN interfaces are discovered.

1. **show domain default master all**
2. **show domain default master channels summary**
3. **show domain default master site-prefix**
4. **show domain default master discovered-sites**
5. **show domain default master site-capability**
6. **show domain default master site-capability *hub-master-controller-IP address path-id***

Command Outputs

This section provides information about commands used to verify the upgrade.

- [show domain default master status Command, page 4](#)
- [show domain default master channels summary Command, page 5](#)
- [show domain default border channels summary Command, page 5](#)
- [show domain default master site-prefix Command, page 6](#)
- [show domain default master discovered-sites, page 6](#)
- [show domain default master site-capability Command, page 7](#)

- [show service-overlay summary Command, page 7](#)
- [show adjacency tunnel 100 detail Command, page 8](#)
- [show domain default border peering Command, page 8](#)
- [show domain default master peering Command, page 9](#)
- [show eigrp service-family ipv4 neighbors Command, page 9](#)

show domain default master status Command

The following is a sample output of the **show domain default master status** command. The highlighted lines in the command output indicate the upgrade status.

```
Device# show domain default master status

*** Domain MC Status ***

Master VRF: Global

Instance Type:      Hub
Instance id:        0
Operational status: Up
Configured status:  Up
Loopback IP Address: 10.8.88.70
Global Config Last Publish status: Peering Success
Load Balancing:
  Admin Status: Enabled
  Operational Status: Up
  Enterprise top level prefixes configured: 0
  Max Calculated Utilization Variance: 0%
  Last load balance attempt: never
  Last Reason: Variance less than 20%
  Total unbalanced bandwidth:
    External links: 0 Kbps  Internet links: 0 Kbps
External Collector: 10.4.221.10 port: 2055
Route Control: Enabled
Transit Site Affinity: Enabled
Load Sharing: Enabled
Mitigation mode Aggressive: Disabled
Policy threshold variance: 20
Minimum Mask Length: 28
Syslog TCA suppress timer: 180 seconds
Traffic-Class Ageout Timer: 5 minutes
Channel Unreachable Threshold Timer: 4 seconds
Minimum Packet Loss Calculation Threshold: 15 packets
Minimum Bytes Loss Calculation Threshold: 1 bytes

Borders:
  IP address: 10.8.88.30
  Version: 2
  Connection status: CONNECTED (Last Updated 2d02h ago )
  Interfaces configured:
    Name: Tunnel200 | type: external | Service Provider: MPLS1 | Status: UP | Zero-SLA: NO | Path of
Last Resort: Disabled
  Number of default Channels: 0
  path-id:23

Tunnel if: Tunnell

IP address: 10.8.88.20
Version: 2
```

Command Outputs

```

Connection status: CONNECTED (Last Updated 2d02h ago)
Interfaces configured:
  Name: Tunnel100 | type: external | Service Provider: INET | Status: UP | Zero-SLA: NO | Path of
Last Resort: Disabled
  Number of default Channels: 0
  path-id:49

Tunnel if: Tunnel1

IP address: 10.8.88.120
Version: 2
Connection status: CONNECTED (Last Updated 2d02h ago)
Interfaces configured:
  Name: Tunnel101 | type: external | Service Provider: INET1 | Status: UP | Zero-SLA: NO | Path of
Last Resort: Disabled
  Number of default Channels: 0
  path-id:72

IP address: 10.8.88.130
Version: 2
Connection status: CONNECTED (Last Updated 2d02h ago)
Interfaces configured:
  Name: Tunnel200 | type: external | Service Provider: MPLS1 | Status: UP | Zero-SLA: NO | Path of
Last Resort: Disabled
  Number of default Channels: 0
  path-id:34

Tunnel if: Tunnel1
    
```

show domain default master channels summary Command

The following is a sample output of the **show domain default master channels summary** command. The highlighted lines in the command output indicate the upgrade status.

```

Device# show domain default master channels summary

Ch-ID - Channel ID, SP - Service Provider
TCA - counts for Received/Processed/Unreachable
A - Available, UA - Un-Available

Ch-ID Dst-Site-ID      DSCP   SP    pfr-Label          Status TCA
159   10.100.2.1         default MPLS 0:0 | 0:23 [0x17]  A    0/0/0
160   10.100.2.1         default INET 0:0 | 0:49 [0x31]  A    0/0/0
    
```

show domain default border channels summary Command

The following is a sample output of the **show domain default border channels summary** command. The highlighted lines in the command output indicate the upgrade status.

```

Device# show domain default border channels summary

Ch-ID Dst-Site-ID      DSCP Next Hop          SP    pfr-Label          RX/TX
160   10.100.2.1         0    10.15.1.88       INET 0:0 | 0:49 [0x31]  R/R
    
```

show domain default master site-prefix Command

The following is a sample output of the **show domain default master site-prefix** command. The highlighted lines in the command output indicate the upgrade status.

```
Device# show domain default master site-prefix

Change will be published between 5-60 seconds
Next Publish 00:59:57 later
Prefix DB Origin: 10.8.88.70
Last publish Status : Peering Success
Total publish errors : 0
Total learned prefix discards: 0
Prefix Flag: S-From SAF; L-Learned; T-Top Level; C-Configured; M-shared
```

Site-id	Site-prefix	Last Updated	DC Bitmap	Flag
10.8.88.70	10.4.220.0/24	2d03h ago	0x1	C,M
10.8.88.70	10.4.221.0/24	2d03h ago	0x1	C,M
10.8.88.70	10.4.230.0/24	00:02:56 ago	0x3	C,M
10.8.88.35	10.4.230.0/24	00:02:56 ago	0x3	C,M
10.8.88.35	10.8.88.35/32	00:02:56 ago	0x2	S
10.8.88.70	10.8.88.70/32	2d03h ago	0x1	L
10.100.2.1	10.100.2.1/32	01:30:46 ago	0x0	S
10.100.2.1	10.101.2.0/24	01:30:46 ago	0x0	S
10.100.2.1	10.101.5.0/24	01:30:46 ago	0x0	S

show domain default master discovered-sites

The following is a sample output of the **show domain default master discovered-sites** command. The highlighted lines in the command output indicate the upgrade status.

```
Device# show domain default master discovered-sites

*** Domain MC DISCOVERED sites ***

Number of sites: 2
*Traffic classes [Performance based] [Load-balance based]

Site ID: 10.100.2.1
Site Discovered:1d01h ago
DSCP :default[0]-Number of traffic classes[0][0]
DSCP :cs1[8]-Number of traffic classes[0][0]
DSCP :af11[10]-Number of traffic classes[0][0]
DSCP :af12[12]-Number of traffic classes[0][0]
DSCP :af13[14]-Number of traffic classes[0][0]
DSCP :cs2[16]-Number of traffic classes[0][0]
DSCP :af21[18]-Number of traffic classes[0][0]
DSCP :af22[20]-Number of traffic classes[0][0]
DSCP :af23[22]-Number of traffic classes[0][0]
DSCP :cs3[24]-Number of traffic classes[0][0]
DSCP :cs4[32]-Number of traffic classes[0][0]
DSCP :af41[34]-Number of traffic classes[0][0]
DSCP :af42[36]-Number of traffic classes[0][0]
DSCP :af43[38]-Number of traffic classes[0][0]
DSCP :ef[46]-Number of traffic classes[0][0]
Site Traffic Classes: 0

Site ID: 255.255.255.255
Site Discovered:2d03h ago
DSCP :default[0]-Number of traffic classes[0][0]
DSCP :cs1[8]-Number of traffic classes[0][0]
```

Command Outputs

```
DSCP :af11[10]-Number of traffic classes[0][0]
DSCP :af12[12]-Number of traffic classes[0][0]
DSCP :af13[14]-Number of traffic classes[0][0]
DSCP :cs2[16]-Number of traffic classes[0][0]
DSCP :af21[18]-Number of traffic classes[0][0]
DSCP :af22[20]-Number of traffic classes[0][0]
DSCP :af23[22]-Number of traffic classes[0][0]
DSCP :cs3[24]-Number of traffic classes[0][0]
DSCP :cs4[32]-Number of traffic classes[0][0]
DSCP :af41[34]-Number of traffic classes[0][0]
DSCP :af42[36]-Number of traffic classes[0][0]
DSCP :af43[38]-Number of traffic classes[0][0]
DSCP :ef[46]-Number of traffic classes[0][0]
Site Traffic Classes: 0
```

show domain default master site-capability Command

The following is a sample output of the **show domain default master site-capability** command. The highlighted lines in the command output indicate the upgrade status.

```
Device# show domain default master site-capability
Device Capability
```

```
-----
|      Capability      |      Major      |      Minor      |
|-----|-----|-----|
|      Domain          |          2       |          0       |
|-----|-----|-----|
|      Zero-SLA        |          1       |          0       |
|-----|-----|-----|
|      Mul-Hop         |          1       |          0       |
|-----|-----|-----|
```

```
Site id : 10.100.2.1
```

```
-----
|      Capability      |      Major      |      Minor      |
|-----|-----|-----|
|      Domain          |          2       |          0       |
|-----|-----|-----|
|      Zero-SLA        |          1       |          0       |
|-----|-----|-----|
|      Mul-Hop         |          1       |          0       |
|-----|-----|-----|
```

```
Last publish Status : Peering Success
Total publish errors : 0
```

show service-overlay summary Command

The following is a sample output of the **show domain default master site-capability** command. The highlighted lines in the command output indicate the upgrade status.

```
Device# show service-overlay summary
Legend: Application --> Name(R - Registered)
       Encap --> Size: Requested(Effective)
       Negotiate --> Negotiation mechanism
       Sub-option --> Service/Metadata header sub-option
=====
```

```
Application   Encap   Negotiate   Sub-option
-----
```

Command Outputs

```

CENT CMD      4 (NA)          NA          6
-----
Interface: Tunnel0 (Cisco Metadata Header)
Protocol: IPv4
CENT CMD (R)  4 (6)          NHRP        6

Interface: Tunnel100 (Cisco Metadata Header)
Protocol: IPv4
CENT CMD (R)  4 (6)          NHRP        6

Interface: Tunnel200 (Cisco Metadata Header)
Protocol: IPv4
CENT CMD (R)  4 (6)          NHRP        6
    
```

show adjacency tunnel 100 detail Command

The following is a sample output of the **show adjacency tunnel 100 detail** command. The highlighted lines in the command output indicate the upgrade status.

```

Device# show adjacency tunnel 100 detail

Protocol Interface      Address
IP         Tunnel100          10.15.1.1(7)
                                0 packets, 0 bytes
                                epoch 0
                                sourced in sev-epoch 6
                                Encap length 40
                                4500000000000000FF2FA3CD0B000001
                                0D0000012000890900000006408000102
                                200600000000000000
                                Tun endpt
                                Next chain element:
                                IP adj out of GigabitEthernet0/1, addr 11.0.0.4
IP         Tunnel100          10.15.1.3(7)
                                0 packets, 0 bytes
                                epoch 0
                                sourced in sev-epoch 6
                                Encap length 40
                                4500000000000000FF2FA3CB0B000001
                                0D0000032000890900000006408000102
                                200600000000000000
                                Tun endpt
Protocol Interface      Address
                                Next chain element:
                                IP adj out of GigabitEthernet0/1, addr 11.0.0.4
    
```

show domain default border peering Command

The following is a sample output of the **show domain default border peering** command. The highlighted lines in the command output indicate the upgrade status.

```

Device# show domain default border peering

Peering state: Enabled
Origin:         Loopback0(10.100.2.1)
Peering type: Peer(With 10.100.2.1)
Subscribed service:
    pmi (3) :
        Last Notification Info: 1d01h ago, Size: 4525, Compressed size: 620, Status: Peering Success,
Count: 1
    site-prefix (1) :
    
```


Command Outputs

```

    Last Notification Info: 00:20:33 ago, Size: 226, Compressed size: 172, Status: Peering Success,
Count: 131
globals (5) :
    Last Notification Info: 1d01h ago, Size: 616, Compressed size: 333, Status: Peering Success,
Count: 2
Capability (4) :
    Last Notification Info: 00:33:34 ago, Size: 462, Compressed size: 255, Status: Peering Success,
Count: 161

Published service: N/A

```

show domain default master peering Command

The following is a sample output of the **show domain default master peering** command. The highlighted lines in the command output indicate the upgrade status.

```

Device# show domain default master peering
Peering state: Enabled
Origin:          Loopback0(10.100.2.1)
Peering type:    Listener, Peer(With 10.8.88.70)
Subscribed service:
  cent-policy (2) :
    Last Notification Info: 1d01h ago, Size: 3554, Compressed size: 644, Status: Peering Success,
Count: 1
  site-prefix (1) :
    Last Notification Info: 00:20:51 ago, Size: 226, Compressed size: 172, Status: Peering Success,
Count: 131
  Capability (4) :
    Last Notification Info: 00:33:52 ago, Size: 462, Compressed size: 255, Status: Peering Success,
Count: 161
  globals (5) :
    Last Notification Info: 1d01h ago, Size: 616, Compressed size: 333, Status: Peering Success,
Count: 2

Published service:
  site-prefix (1) :
    Last Publish Info: 01:48:41 ago, Size: 225, Compressed size: 151, Status: Peering Success
  Capability (4) :
    Last Publish Info: 01:29:44 ago, Size: 460, Compressed size: 233, Status: Peering Success

```

show eigrp service-family ipv4 neighbors Command

The following is a sample output of the **show eigrp service-family ipv4 neighbors** command. The highlighted lines in the command output indicate the upgrade status.

```

Device# show eigrp service-family ipv4 neighbors
EIGRP-SFv4 VR(#AUTOCFG#) Service-Family Neighbors for AS(59501)
H   Address                Interface           Hold Uptime      SRTT   RTO  Q  Seq
                               (sec)              (ms)            Cnt  Num
0   10.8.88.70              Lo0                 544 1d01h         1   100  0  360

10.8.88.70 - Hub MC IP

```

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see [What's New in Cisco Product Documentation](#).

Command Outputs

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). The RSS feeds are a free service.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

© 2017 Cisco Systems, Inc. All rights reserved.