Generate TFTP Transfer Rate Increase on a Switch and 5760 WLC

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Introduction

This document describes how the Cisco IOS® XE image size increases when you upload an image to a switch and how this results in a longer transfer time.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- TFTP
- FTP

Components Used

The information in this document is based on the Cisco Catalyst 3850 Series switch that runs Cisco IOS-XE 03.03.02SE and earlier versions. The examples mentioned use a standalone 3850 switch. The same commands can be used on a stack. Commands discussed in this document are also applicable to Cisco 5760 wireless controller.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Note: In order to download the Cisco IOS-XE images from the Cisco website, you must have a valid Cisco Connection Online (CCO) account with entitled credentials. Cisco does not offer a free TFTP/FTP solution; therefore, you must install and configure the TFTP/FTP before you begin.

Background Information

This document describes how the Cisco IOS® image size increases when you upload an image to a switch. This size increase results in a longer transfer time. The later release on the Cisco Catalyst 3850 is 245MB in size and can take up to 30 minutes to TFTP to the switch. The configuration described in this document can be used to speed up the transfer time.

Configure

By default, the Catalyst 3850 uses a TFTP block size of 512, which is the lowest possible value. This default setting is used in order to ensure interoperability with legacy TFTP servers.

```
3850(config)#ip tftp blocksize ?
  <512-8192>  blocksize value
```

In the Cisco IOS-XE 3.3.2 and earlier versions, you must **manually change** the block size in the global configuration to speed up the transfer process.

Note: This example shows a transfer comparison when you use the default block size of 512K versus a transfer of maximum block size value of 8192K.

```
3850#copy tftp flash:
Address [172.16.108.26]?
Source filename [IOS/3850/cat3k_caa-universalk9.SPA.03.03.02.SE.150-1.EZ2.bin
Destination filename [cat3k_caa-universalk9.SPA.03.03.02.SE.150-1.EZ2.bin]?
Accessing tftp://*****@172.16.108.26/cat3k_caa-universalk9.SPA.03.03.02.SE.150-1.EZ2.bin...
Loading cat3k_caa-universalk9.SPA.03.03.02.SE.150-1.EZ2.bin from 172.16.108.26 (via Vlan1):
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!



[OK - 257243236 bytes]

257243236 bytes copied in 1416.360 secs (181623 bytes/sec)
```

The results show that the 245MB .bin file was transferred in 1416.360 seconds (which is equal to 24 minutes). Now, **adjust the block size value** to the maximum allowed value of 8192.

```
3850#config t
3850(config)#ip tftp blocksize 8192
3850(config)#end
```

The same transfer is executed again.

```
3850#copy tftp flash:
Address [172.16.108.26]?
Source filename [IOS/3850/cat3k_caa-universalk9.SPA.03.03.02.SE.150-1.EZ2.bin
```

```
Destination filename [cat3k_caa-universalk9.SPA.03.03.02.SE.150-1.EZ2.bin]?
Accessing tftp://*****@172.16.108.26/cat3k_caa-universalk9.SPA.03.03.02.SE.150-1.EZ2.bin...
Loading cat3k_caa-universalk9.SPA.03.03.02.SE.150-1.EZ2.bin from 172.16.108.26 (via Vlan1):
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 257243236 bytes]

257243236 bytes copied in 124.100 secs (2072871 bytes/sec)
```

The results are clearly better. The same file is transferred in two minutes with the new block size value.

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

If you change the block size value and the TFTP does not work, ensure that the TFTP server can handle larger block size transfers.

Related Information

- **Cisco Catalyst 3850 Series Switches - Product Support Page**
- **Cisco 5700 Series Wireless LAN Controllers - Data Sheets and Literature**
- **Cisco Technical Support & Downloads**