1. Instructions on updating the version of Accton switch software

1.1 Scope of Application

This document describes the steps needed to update the version of Accton switch software and the issues demanding attention when updating, and is applicable to the following types of switch when they update 5.4.XX or higher versions of software.

■ Box switch ES4600 Series
   ES4624-SFP
   ES4626-SFP
   ES4626
   ES4650
■ Rack-mount switch ES4700 Series
   ES4704BD
   ES4710BD

1.2 The introduction to switch system files

There are three types of switch system files: boot files, system image files and the vendor configuration files. To update the version of switch software is to update these three types of files by replacing the old files with new ones. These three types of files will be described respectively in the following sections.

1.2.1 Boot files

Boot files are files used to direct the initiation and other operations of a switch, which we usually refer to as ROM files. The boot files on Rack-mount switches usually comprise of a single file named boot.rom, while on Box switch, usually of two files: boot.rom and config.com. ROM files are saved in FLASH, the filenames of which should always boot.rom and config.rom.
   A certain series of switches may use the same boot files, for example:
   Box switch ES4624/26-SFP series (including two types of switches: ES4624-SFP and
      ES4626-SFP) uses the same boot files.
   Box switch ES4626/50 series (including two types of switches: ES4626 and ES4650) uses the
      same boot files.
   The same kind of modules of Rack-mount switches ES4700 series (including two types of
      switches: ES4704BD and ES4710BD) uses the same boot files.

1.2.2 System image files

System image files are compressed files of switch hardware drivers and software support programs, which we usually refer to as IMG files.

Switch system image files are saved in FLASH, the default filename of which is nos.img.
A series of switches may use the same IMG file, for example:
Box switch ES4624/26-SFP series (including two types of switches: ES4624-SFP and ES4626-SFP) uses the same IMG file.
Box switch ES4626/50 series (including two types of switches: ES4626 and ES4650) uses the same IMG file.
Rack-mount switchesES4700 series (including two types of switches:ES4704BD and ES4710BD)uses the same IMG file.

1.2.3 Vendor configuration files

The vendor configuration files are basic configuration files of a switch for saving the vendor device configuration information. They are used to dynamically displaying the basic information and dynamically loading a part of functional modules when the switch system image files starts.
A series a switches may use the same IMG file, but each type of switch has a corresponding vendor configuration file, because the file contains the device type which can be used to exclusively identify the device. For example:
Box switch ES4624/26-SFP series includes two types of switches:ES4624-SFP and ES4626-SFP, the filenames of their corresponding vendor configuration files are
ACCTON-ES4624-SFP-< version number>-vendor.cfg and ACCTON-ES4626-SFP-<version number>-vendor.cfg。
Box switch ES4626/50 series includes two types of switches: ES4626 and ES4650, the filenames of their corresponding vendor configuration files are ACCTON-ES4626-< version number >-vendor.cfg and ACCTON-ES4650-< version number>-vendor.cfg.
Rack-mount switchesES4700 series includes two types of switches: ES4704BD and ES4710BD, the filenames of their corresponding vendor configuration files are ACCTON-ES4704BD-< version number>-vendor.cfg and ACCTON-ES4710BD-<version number>-vendor.cfg.

When the switch system image file starts, it will read the vendor device configuration file vendor.cfg to dynamically display the basic information of the vendor and dynamically load a part of functional modules, except for the following three situations where the initiation should follow the default neutral vendor device configuration information.
The file does not exist.
The file exists but the check sum is incorrect
The file exists but the device type recorded in it is different from that of the switch

On a Rack-mount switch, the existence of vendor configuration files in different kinds of modules differs in three ways:
（1）The corresponding vendor device configuration file should be written to each main control module.
（2） The file should not be automatically distributed on switches having two main control modules, instead, the file should be written to each main control module separately.
（3） Vendor device configuration files need not to be written to non main control modules, instead, default neutral vendor device configuration information is used to implement the initialization.

1.3 The preparations for updating the software

Before updating the switch system files, some preparations are needed, the following steps are recommended:

(1) Check the versions of Bootrom and IMG software running in the system currently;

(2) Back up the currently running boot files, system image files, so that the system can be rolled back when the update fails；

(3) Back up the running-config and startup-config configuration files of the current system so that the original configuration can be recovered in time when the command lines differ between versions.

The switch provides two modes for users to update the switch software: first one, the update in **Bootrom mode**; second one, the update in **Shell mode**. The above three types of files update in the same way, but please pay attention to that, in **Bootrom** mode and **Shell** mode, the update sequence should be exactly the same as the description in this document, or the boot file might be corrupted, and as a result, the device should be sent back to the vendor to get repaired.

The following is the detailed description of updating software in the two modes:

1.4 Instructions on updating software in **Bootrom** mode

In Bootrom mode, there are two methods to update switch software: TFTP and FTP. Users can choose an updating method and set it with commands in Bootrom mode.

Please pay attention to that, in **Bootrom** mode, update should strictly follow the following sequence: first update the boot files; next, reboot the switch, and then update the system image files and vendor configuration files

The following is the detailed steps of update:

Step 1: Choose a PC to be the console of the switch, connect the Ethernet port of the console to the network management port of the switch, and install a FTP/TFTP server software on the PC and the three types of switch system files needing to be updated.

Step **2**: Keep pressing the key combination of "ctrl+b" during the procedure of starting the switch, until the switch enters **Bootrom** monitoring mode when the prompt **[Boot]** appears.

Step **3**：In **Bootrom** mode, implement *setconfig* command to set the interface parameters, including the IP address of the switch in **Bootrom** mode, the address of (FTP or TFTP) server, choosing FTP or TFTP as the updating method, and the username and password which need to set when choosing FTP updating method.

For example, if the user sets the IP address of the switch in **Bootrom** mode as 192.168.1.2, FTP as the updating method, the IP address of FTP file server as 192.168.1.1, the FTP username as myUsername and the password as **myPassword**, the configuration should be done as follows:

> [Boot]: setconfig
> Boot Device: marfec
> Host IP Address: [192.168.10.100] 192.168.1.2
> Server IP Address: [192.168.10.1] 192.168.1.1
> FTP (1) or TFTP (2): [1] 1
> FTP User Name: [name] myUsername
> FTP User Password: [password] myPassword
> Network interface configure OK.

For example: if users set the IP address of the switch in **Bootrom mode** as 192.168.1.2，updating method as **TFTP**，and the IP address of the **TFTP** file serve as 192.168.1.1 the configuration should be set as follows.

> [Boot]: setconfig
> Boot Device: marfec
> Host IP Address: [192.168.10.100] 192.168.1.2
> Server IP Address: [192.168.10.1] 192.168.1.1
> FTP(1) or TFTP(2): [1] 2
> Network interface configure OK.

Step **4**： In Bootrom mode，implement *saveconfig* command to save the network interface parameters configured in the previous step.

[Boot]: saveconfig

change boot params is OK

Step **5**： In Bootrom mode, use *ping* command to check the state of connection between the FTP/TFTP file server and the switch being updated, to guarantee a smooth network connection.

[Boot]: ping 192.168.1.1

Step **6**： After ensuring a smooth connection between the FTP/TFTP file server and the switch being updated, implement *load* command to download files from the file server to the memory of the switch, and then implement *write* command to write the corresponding file to the FLASH of the switch.

Pay attention to the following points:

(1) On a Rack-mount switch, the boot file is a single copy of file named as boot.rom ,while on a Box switch, the boot files are two files, the filenames of which are boot.rom and config.rom.

(2) If there is no new version of boot files, users can skip the update and move onto the next step.

For example: download and update the boot files（**boot.rom** and **config.rom**）

[Boot]: load switch-1.4.0-boot.rom

Loading...

Loading file ok!

[Boot]: write boot.rom

File boot.rom exists, overwrite? (Y/N)?[N] y

Writing boot.rom..

Write boot.rom OK.

[Boot]:

[Boot]: load switch-1.4.0-config.rom

Loading...

Loading file ok!

[Boot]: write config.rom

File config.rom exists, overwrite? (Y/N)?[N] y

Writing config.rom..

Write config.rom OK.

[Boot]:

Step 7: After updating the boot files (boot.rom and config.rom）and rebooting the switch, the system image file (nos.img) and the vendor device configuration file (vendor.cfg) should be updated.

After ensuring a smooth connection between the FTP/TFTP file server and the switch being updated, implement *load* command to download files from the file server to the memory of the switch，and then implement *write* command to write the corresponding files into the FLASH of the switch.

For example：download and update the system image file(**nos.img**)

[Boot]: load switch-5.4.10.0-nos.img

Loading...

Loading file ok!

[Boot]: write nos.img

File nos.img exists, overwrite? (Y/N)?[N] y

Writing nos.img..

Write nos.img OK.

[Boot]:

For example：download and update the vendor device configuration file(**vendor.cfg**)

[Boot]: load switch-1.0.0-vendor.cfg

Loading...

Loading file ok!
[Boot]: write vendor.cfg
File vendor.cfg exists, overwrite? (Y/N)?[N] y
Writing vendor.cfg..
Write vendor.cfg OK.
[Boot]:

When updating the vendor device configuration file from other vendors by mistake, the following error message will be reported:
[Boot]: write vendor.cfg
Writing vendor.cfg...
The device type 152 in vendor.cfg does not match with the hardware device type 151!
Write vendor.cfg error! (Vendor config type mismatching.)

Step **8:** When the update of the switch succeeds, in Bootrom mode，implement *run* or *reboot* command to reboot the switch.
[Boot]:run（or reboot）

Other commands in **BOOTROM mode**
(1) dir command
This command is used to display the files saved in the FLASH. Pay attention: this command does not display the **vendor.cfg** file.
[Boot]: dir
boot.rom 327,440 1900-01-01 00:00:00 --SH
boot.conf 83 1900-01-01 00:00:00 --SH
nos.img 2,431,631 1980-01-01 00:21:34 ----
nos-5.3.1.0.img 8,431,631 1980-01-01 00:21:34 ----
startup-config 2,922 1980-01-01 00:09:14 ----

（2） config run command
As long as there is enough space left in the FLASH, several IMG files can be written into the FLASH, *config run* command can be used to set which IMG file should be executed when the system boots.
For example：set the system boots from the nos-5.3.1.0.img file.
[Boot]: config run
Boot File: [nos.img] nos-5.3.1.0.img
Config File: [boot.conf]
[Boot]:

1.5 Instructions on updating software in Shell mode

There are two methods to update the switch software in Shell mode: TFTP and FTP, which can be done by implementing corresponding commands through a Console terminal or a TELNET/SSH remote terminal.
Pay attention to that, in **Shell** mode, the update be done exactly in the following sequence: first, update the boot files and the system image files; next, reboot the switch; and then update the vendor device configuration files.

The following is the detailed steps of update:
Step **1:** Choose a PC to be the console of the switch, connect the Ethernet port of the console to the network management port of the switch, and install a FTP/TFTP server software on the PC and the three types of switch system files that need to be updated.
Step **2:** After normally booting the switch, use *enable* command to enter the admin mode, the prompt of which is switch#

Step **3**：Use the switch being updated as the FTP/TFTP client and the PC as the FTP/TFTP server, and connect the switch with the PC via a port. The IP address of the PC is 192.168.1.1 and that of the switch is 192.168.1.2.

The following is the steps of configuration the switch:

Switch(Config)#interface vlan 1
Switch(Config-If-Vlan1)#ip address 192.168.1.2 255.255.255.0
Switch(Config-If-Vlan1)#exit
Switch(Config)#exit

Step **4**：Implement *copy* command on the switch to use ftp/tftp method to update the boot files and the system image files. This command can be implemented on a Console terminal or a TELNET/SSH remote terminal.
Provided that on the FTP server, the username is set as myUsername, and the password is myPassword.

For example：download and update the boot files(**boot.rom** and **config.rom)** via **FTP** method
Switch#copy ftp://myUsername: myPassword@192.168.1.1/1.4.0-boot.rom boot.rom
Switch#copy ftp://myUsername: myPassword@192.168.1.1/1.4.0-config.rom config.rom

For example：download and update the system image file (**nos.img**）via **FTP** method
Switch#copy ftp://myUsername: myPassword@192.168.1.1/5.4.10.0-nos.img nos.img

For example：download and update the boot files(**boot.rom** and **config.rom**）via **TFTP** method
Switch#copy tftp://192.168.1.1/1.4.0-boot.rom boot.rom
Switch#copy tftp://192.168.1.1/1.4.0-config.rom config.rom

For example：download and update the system image file (**nos.img**）via **TFTP** method
Switch#copy tftp://192.168.1.1/5.4.10.0-nos.img nos.img

Step **5**：Implement *reload* command in admin mode to reboot the switch.

Step **6**：Implement *copy* command on the switch to use ftp/tftp method to update the boot files and the system image files. This command can be implemented on a Console terminal or a TELNET/SSH remote terminal.
Pay attention：only on **5.4.X.X** or higher versions of system image files can **copy** command be used to update vendor device configuration files.
Provided that on the FTP server, the username is set as myUsername, and the password is myPassword.

For example：download and update the vendor device configuration file (**vendor.cfg**）via **FTP** method
Switch#copy ftp://myUsername: myPassword@192.168.1.1/switch-1.0.0-vendor.cfg vendor.cfg

For example：download and update the vendor device configuration file (**vendor.cfg**）via **TFTP** method
Switch#copy tftp://192.168.1.1/switch-1.0.0-vendor.cfg vendor.cfg

Step **7**：Implement *reload* command in admin mode to reboot the switch.

Step **8**：After rebooting the switch, use *show version*、*show slot* (only applied to Rack-mount switches）、*show flash* and other commands to display the switch system files and to show whether the version information is correct.

Pay attention：**show flash** command does not display the **vendor.cfg** file.

Step **9**: After rebooting the switch, use *show running-config* command to display the current running configuration of the switch and compare it with the running-config saved before update, to verify that whether the configuration is correct.

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