Password Recovery Procedure for Cisco NX-OS

Password Recovery Procedure for Cisco NX-OS 2

Prerequisites 2

Recovering the Administrator Password 2

Recovery from the loader> Prompt 9

Related Documentation 10

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Password Recovery Procedure for Cisco NX-OS

This document describes how to recover a lost network administrator password from the console port of a device that operates with Cisco NX-OS.

The Cisco NX-OS software is a data center-class operating system that is based on the Cisco SAN-OS software. The Cisco NX-OS software fulfills the routing, switching, and storage networking requirements of data centers and provides an Extensible Markup Language (XML) interface and a command-line interface (CLI) that is similar to Cisco IOS software.

This document includes the following sections:

Prerequisites

This section describes the prerequisites to performing the recovery procedure and includes the following topics:

- Requirements
- Conventions

Requirements

On a device with two supervisor modules, you must perform the password recovery procedure on the supervisor module that will become the active module after you complete the recovery procedure. To ensure that the other supervisor module does not become active, perform one of the following tasks:

- Remove the other supervisor module from the chassis.
- Change the console prompt of the other supervisor module to one of the following two prompts until the recovery procedure completes:
  - `loader >`
  - `switch(boot) #`

For more information about these prompts, see the documentation for your device.

Conventions

For more information about document conventions, see the *Cisco Technical Tips Conventions* at http://www.cisco.com/application/pdf/paws/17016/techtip_conventions.pdf

Recovering the Administrator Password

You can recover the network administrator password using one of these methods:

- From the CLI with a username that has network-admin privileges
- By power cycling the device
- By reloading the device

Using the CLI with Network-Admin Privileges to Recover the Administrator Password

Procedure

	Command or Action	Purpose

Step 1	switch# **show user-account**
	Example:
	`switch# show user-account`
	`user:admin`
	`this user account has no expiry date`
	`roles:network-admin`
	`user:dbgusr`
	`this user account has no expiry date`
	`roles:network-admin network-operator`
		Shows that your username has network-admin privileges.

Step 2	switch# **config terminal**
	Example:
	`switch# config terminal`
	`switch(config)#`
		Enters global configuration mode.

Step 3	switch(config)# **username admin password** *new-password* **Example:** `switch(config)# username admin password egBdf`	Assigns a new network administrator password if your username has network-admin privileges. **Note** The *new-password* does not allow the $ character.
Step 4	switch(config)# **copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	Copies the running configuration to the startup configuration.

Power Cycling the Device to Recover the Administrator Password

If you cannot start a session on the device that has network-admin privileges, you can recover the network administrator password by power cycling the device.

Caution The password recovery procedure disrupts all traffic on the device. All connections to the device will be lost for 2 to 3 minutes.

Note You cannot recover the administrator password from a Telnet or Secure Shell (SSH) session to the management interface. You must have access to the local console connection.

Note Password recovery updates the new administrator password only in the local user database and not on the remote AAA servers. The new password works only if local authentication is enabled; it does not work for remote authentication. When a password is recovered, local authentication is enabled for logins through a console so that the admin user can log in with a new password from a console.

Note If you need to recover the password because the username was not specified in the configuration file when you performed a **copy** *configuration-file* **startup-config** followed by the **fast-reload** or **reload** command, you will need to perform a **write erase** in Step 12 below.

Before you begin

On a device with two supervisor modules, you must perform the password recovery procedure on the supervisor module that will become the active module after you complete the recovery procedure. To ensure that the other supervisor module does not become active, perform one of the following tasks:

- Remove the other supervisor module from the chassis.
- Change the console prompt of the other supervisor module to one of the following two prompts until the recovery procedure completes:
  - loader >
  - switch(boot)#

Procedure

	Command or Action	Purpose
Step 1	Establish a terminal session on the console port of the active supervisor module.	— **Note** If you are using a non-U.S. keymap, the key sequence that you need to press to generate the break sequence might not work. In this case, we recommend that you set your terminal to a U.S. keymap. You can enter **Ctrl-C** instead of **Ctrl-]** (right square bracket) due to keyboard mapping.
Step 2	If you use SSH or a terminal emulator to access the console port, go to Step 6.	—
Step 3	If you use Telnet to access the console port, press **Ctrl-]** (right square bracket) to verify that it does not conflict with the Telnet escape sequence. **Example:** `switch login: Ctrl-]`	— **Note** If the Cisco NX-OS login prompt remains and the Telnet prompt does not appear, go to Step 6.

	Command or Action	Purpose

Step 4	If the Telnet prompt appears, change the Telnet escape sequence to a character sequence other than Ctrl-] (right square bracket).
	Example:
	`telnet> set escape ^\`
	`Escape Character is 'CTRL+\'`
		The example shows how to set Ctrl-\ as the escape key sequence in Microsoft Telnet.
		Note If the Cisco NX-OS login prompt remains and the Telnet prompt does not appear, go to Step 6.

Step 5	Press **Enter** one or more times to return to the Cisco NX-OS login prompt.
	Example:
	`telnet> <Enter>`
	`switch login:`
		—

Step 6	Power cycle the device.	—

Step 7	Press **Ctrl-C** to access the loader> prompt.
	Example:
	`Ctrl-C`
	`loader>`
		—

Step 8	loader> **cmdline recoverymode=1** **Example:** `loader> cmdline recoverymode=1`	Enters recovery mode.

Step 9	loader> **boot n9000-dk9.x.x.x.bin**
	Example:
	`loader> boot n9000-dk9.x.x.x.bin`
	`Booting iash`
	`Trying diskboot`
	`Filesystem type is ext2fs, partition type 0x83`
	`Image valid`
	`MD5Sum mismatch`
	
	`INIT: Loading IGB driver ... Signature Envelope.(36)Invalid Tag in Signature Envelope`
	`Installing SSE module ... done`
	`Creating the sse device node ... done`
	`Installing CCTRL driver for card_type 3 ...`
	
	`Checking all filesystems.......`
	`Installing SPROM driver ...`
	`Installing default sprom values ...`
	`done.Configuring network ...`
	`Installing psdev ...`
	`Installing veobc ...`
	`Installing OBFL driver ...`
	`Starting portmap daemon...`
	`creating NFS state directory: done`
		Restarts the device with the nx-os image to reach the switch(boot)# prompt.

	Command or Action	Purpose
	starting 8 nfsd kernel threads: done starting mountd: done starting statd: done Loading system software No system image is specified INIT: Sending processes the TERM signal INIT: Sending processes the KILL signal Bad terminal type: "linux". Will assume vt100. Cisco Nexus Operating System (NX-OS) Software TAC support: http://www.cisco.com/tac Copyright (c) 2002-2013, Cisco Systems, Inc. All rights reserved. The copyrights to certain works contained in this software are owned by other third parties and used and distributed under license. Certain components of this software are licensed under the GNU General Public License (GPL) version 2.0 or the GNU Lesser General Public License (LGPL) Version 2.1. A copy of each such license is available at http://www.opensource.org/licenses/gpl-2.0.php and http://www.opensource.org/licenses/lgpl-2.1.php switch(boot)#	
Step 10	Press **Enter** one or more times to return to the Cisco NX-OS login prompt. **Example:** telnet> <Enter> switch login:	—
Step 11	switch(boot)# **config terminal** **Example:** switch(boot)# config terminal Enter configuration commands, one per line. End with CNTL/Z. switch(boot)(config)#	Enters boot configuration mode.
Step 12	switch(boot)(config)# **admin-password** *new-password* **Example:** switch(boot)(config)# admin-password egBdf WARNING! Remote Authentication for login through console has been disabled	Resets the network administrator password. **Note** If you are performing this password recovery procedure because the username was not specified in the configuration file when you performed a **copy** *configuration-file* **startup-config** followed by the **fast-reload** or **reload** command, skip this step, enter the **write erase** command instead, and then go to the next step.
Step 13	switch(boot)(config)# **exit** **Example:**	Exits boot configuration mode.

	Command or Action	Purpose
	`switch(boot)(config)# exit` `switch(boot)#`	
Step 14	switch(boot)# **load-nxos** **Example:** `switch(boot)# load-nxos`	Loads the nx-os image. You must enter the **load-nxos** command exactly as shown. Do not enter the image filename with this command.

Step 15	Log into the device using the new administrator password.
	Example:
	`switch login: admin`
	`Password: egBdf`
		The running configuration indicates that local authentication is enabled for logins through a console. You should not change the running configuration in order for the new password to work for future logins. You can enable remote authentication after you reset and remember the administrator password that is configured on the AAA servers.
		`switch# show running-config aaa`
		`!Command: show running-config aaa`
		`!Time: Fri Jun 7 02:39:23 2013`
		`version 6.1(2)I1(1)`
		`logging level aaa 5`
		`aaa authentication login ascii-authentication`

Step 16	switch# **config terminal**
	Example:
	`switch# config terminal`
	`switch(config)#`
		Enters global configuration mode.

Step 17	switch(config)# **username admin password** *new-password* **Example:** `switch(config)# username admin password egBdf`	Resets the new password to ensure that it is also the Simple Network Management Protocol (SNMP) password.

Step 18	switch(config)# **exit**
	Example:
	`switch(config)# exit`
	`switch#`
		Exits global configuration mode.

Step 19	Insert the previously removed standby supervisor module into the chassis, if necessary.	—
Step 20	Boot the nx-os image on the standby supervisor module, if necessary.	—
Step 21	switch(config)# **copy running-config startup-config** **Example:**	Copies the running configuration to the startup configuration.

	Command or Action	Purpose
	`switch(config)# copy running-config startup-config`	

Reloading the Device to Recover the Administrator Password

You can reset the network administrator password by reloading the device.

Caution This procedure disrupts all traffic on the device. All connections to the device will be lost for 2 to 3 minutes.

Note You cannot recover the administrator password from a Telnet or Secure Shell (SSH) session to the management interface. You must have access to the local console connection.

Note Password recovery updates the new administrator password only in the local user database and not on the remote AAA servers. The new password works only if local authentication is enabled; it does not work for remote authentication. When a password is recovered, local authentication is enabled for logins through a console so that the admin user can log in with a new password from a console.

Procedure

	Command or Action	Purpose
Step 1	Establish a terminal session on the console port of the active supervisor module.	—

Step 2	switch# **reload**
	Example:
	`switch# reload`
	`This command will reboot the system. (y/n)?  [n] Y`
	`2013 Jun  7 13:09:56 switch %$ VDC-1 %$ %PLATFORM-2-PFM_SYSTEM_RESET:`
	`Manual system restart from Command Line Interface writing reset reason 9,`
	`..`
	`..`
	`GNU GRUB  version 0.97`
	`Autobooting bootflash:/n9000-dk9.x.x.x.bin bootflash:/n...`
	`Filesystem type is ext2fs, partition type 0x83`
	`Booting nx-os image: bootflash:/n9000-dk9.x.x.x.bin....(---->`
	`Press Ctrl + C)`
	`....Aborting Image Boot`
	`GNU GRUB  version 0.97`
	`Loader Version 3.22.0`
	`loader>`
		Reloads the device to reach the loader prompt. You need to press **Ctrl-C** when the following appears:
		`Booting nx-os image: bootflash:/n9000-dk9.x.x.x.bin....`

	Command or Action	Purpose

Step 3	loader> **boot n9000-dk9.x.x.x.bin**
	Example:
	`loader> boot n9000-dk9.x.x.x.bin`
	`Filesystem type is ext2fs, partition type 0x83`
	`Booting nx-os image: n9000-dk9.6.1.2.I1.1.gbin....`
	`.....`
	`.....Image verification OK`
	`..`
	`..`
	`Lesser General Public License (LGPL) Version 2.1.`
	`A copy of each such license is available at`
	`http://www.opensource.org/licenses/gpl-2.0.php and`
	`http://www.opensource.org/licenses/lgpl-2.1.php`
	`switch(boot)#`
		Restarts the device with only the nx-os image to reach the switch boot prompt.

Step 4	Reset the network administrator password by following Steps 6 through 20 in Power Cycling the Device to Recover the Administrator Password.	—

Recovery from the loader> Prompt

Use the **help** command at the `loader>` prompt to display a list of commands available at this prompt or to obtain more information about a specific command in that list.

Before you begin

This procedure uses the **init system** command, which reformats the file system of the device. Be sure that you have made a backup of the configuration files before you begin this procedure.

The loader> prompt is different from the regular switch# or switch(boot)# prompt. The CLI command completion feature does not work at the loader> prompt and might result in undesired errors. You must type the command exactly as you want the command to appear.

If you boot over TFTP from the loader> prompt, you must supply the full path to the image on the remote server.

Procedure

Step 1 Specify the local IP address and the subnet mask for the system.

```
loader> set ip 172.21.55.213 255.255.255.224
```

Step 2 Specify the IP address of the default gateway.

```
loader> set gw 172.21.55.193
```

Step 3 Configure the boot process to stop at the switch(boot)# prompt.

```
loader> cmdline recoverymode=1
```

Step 4 Boot the NX-OS image file from the required server. The switch(boot)# prompt indicates that you have a usable nx-os image.

```
loader> boot tftp://172.28.255.18/tftpboot/n9000-dk9.6.1.2.I1.1.bin
```

Step 5 Enter the NX-OS system.

Caution Be sure that you have made a backup of the configuration files before you enter this command.

```
switch(boot)# init system
```

Step 6 Complete the reload of the NX-OS image file.

```
switch(boot)# reload-nxos
```

Related Documentation

You can find documentation for the Cisco NX-OS software on Cisco.com :

http://www.cisco.com/en/US/products/ps9372/tsd_products_support_series_home.html

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