Recover the Password on XE-SDWAN

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Introduction

This document describes the procedure to recover the password on XE-SDWAN.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

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.

Problem

In XE-SDWAN (version 16.10.3 onward), there is a default one-time admin password due to security reasons which can be easily ignored by the user and potentially can get into a user lock situation. This is especially dangerous during initial router setup if control connection with vManage controller is not established; you cannot simply attach new template with username and password set. This article gives a detailed procedure on how to recover.

```
Username: admin
Password:
Router#

Sep 23 20:36:03.133: SDWAN INFO: WARNING: Please configure a new username and password; one-time user a
```

This is the new message on the console after login with default admin/admin credentials.

Note: This procedure wipes out the current configuration, so please take a backup of the configuration

if possible before you proceed further.

Solution

This is an example of how a device gets locked as it ignores the onetime password message from console logs:

```
rommon 2 > boot bootflash:asr1000-ucmk9.16.10.3a.SPA.bin

File size is 0x2f7f66c6

Located asr1000-ucmk9.16.10.3a.SPA.bin

Image size 796878534 inode num 17, bks cnt 194551 blk size 8*512

################################################################################################################
Boot image size = 796878534 (0x2f7f66c6) bytes


<<<<<<<< OUTPUT TRIMMED >>>>>>>>>

Press RETURN to get started!


<<<<<<<< OUTPUT TRIMMED >>>>>>>>>

*Sep 23 20:35:33.558: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon vdaemon @ p
*Sep 23 20:35:33.635: %Cisco-SDWAN-Router-TTMD-6-INFO-1200001: R0/0: TTMD: Starting
*Sep 23 20:35:33.725: %Cisco-SDWAN-Router-CFGMGR-6-INFO-300001: R0/0: CFGMGR: Starting
*Sep 23 20:35:33.823: %Cisco-SDWAN-Router-FPMD-6-INFO-1100001: R0/0: FPMD: Starting
*Sep 23 20:35:33.953: %Cisco-SDWAN-Router-FTMD-6-INFO-1000020: R0/0: FTMD: SLA class '__all_tunnels__' a
*Sep 23 20:35:34.424: %Cisco-SDWAN-Router-FTMD-4-WARN-1000007: R0/0: FTMD: Connection to TTM came up. p
*Sep 23 20:35:41.475: %DMI-5-INITIALIZED: R0/0: syncfd: process has initialized.
*Sep 23 20:35:44.975: %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback65528, changed state to up
*Sep 23 20:35:44.991: %SYS-5-LOG_CONFIG_CHANGE: Buffer logging: level debugging, xml disabled, filtering
*Sep 23 20:35:45.025: SDWAN INFO: Received ENABLE_CONSOLE message from sysmgr
*Sep 23 20:35:45.025: Console Enabled
*Sep 23 20:35:45.025: SDWAN INFO: PNP start, status: success
*Sep 23 20:35:45.023: %DMI-5-ACTIVE: R0/0: nesd: process is in steady state.
*Sep 23 20:35:45.888: EXEC mode enabled on console

User Access Verification

Username: admin
Password:
Router#
*Sep 23 20:36:03.133: SDWAN INFO: WARNING: Please configure a new username and password; one-time user a
*Sep 23 20:36:03.240: %DMI-5-CONFIG_I: R0/0: nesd: Configured from NETCONF/RESTCONF by system, transact
Router#exit

Press RETURN to get started.

User Access Verification

Username: admin
Password:
% Login invalid
```

```
Press RETURN to get started.

User Access Verification

Username:
Login incorrect

Username:
```

Step 1. Initiate the process with these steps:

1. Power cycle the router and force it get into the ROMmon mode with break sequence (**ctrl+break, ctrl+c**).
2. Change the config register to 0xA102 or 0x8000.

Note: We recommend 0xA102 because it is less prone to user errors. For example, if you set config register by mistake to 0x800 instead of 0x8000 (two zeros instead of three), the console baud rate is set to 4800 instead of configuration bypass. For more information about configuration registers, please see https://www.cisco.com/c/en/us/support/docs/routers/10000-series-routers/50421-config-register-use.html

---

Note: In Cisco IOS® XE software, the configuration bypass cannot be done with 0x2142 config register because Cisco IOS® XE SD-WAN software stores configuration in a different way in the Configuration Data Base (CDB) on the flash. From Cisco IOS® XE SD-WAN software 16.10.1, onward, bit 15 can be set to 1 to bypass configuration, hence configuration register is, for example, 0xA102. This is a result of bit 15 at (0x8000) in combination with hex value of default register 0x2102.

---

3. Reset the box (check the output for the command):

```
Initializing Hardware ...

System integrity status: 90170400 12030117

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Current image running: Boot ROM1

Last reset cause: PowerOn


Warning: Octeon PCIe lanes not x2 width: sts=0x5011

ASR1001-HX platform with 16777216 Kbytes of main memory


rommon 1 >     confreg 0x8000
```

```
You must reset or power cycle for new config to take effect

rommon 2 > i


Reset .......




Initializing Hardware ...

System integrity status: 90170400 12030117

Trixie configured
CaveCreek Link Status reg: Bus/Dev/Func: 0/28/1, offset 0x52, status = 00003011Times left ms:0000005C
Initializing DS31408...
 Read MB FPGA Version: 0x16051716

 DS31408 locked to local Oscillator
Taking Yoda out of reset...

Yoda VID enabled...

Crypto enabled...

Warning: Octeon PCIe link width not x2: sts=00001001
    requesting link retrain

Astro enabled...

Astro PLL/bandgap init...

NP5c out of reset...

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CPLD Version: 16033009 ASR1001-HX Slot:0



Current image running: Boot ROM1

Last reset cause: LocalSoft

Reading confreg 0x8000


Enabling interrupts

Initializing SATA controller...done

Checking for PCIe device presence...

Warning: Octeon PCIe lanes not x2 width: sts=0x5011 done
```

```
ASR1001-HX platform with 16777216 Kbytes of main memory

autoboot entry: NVRAM VALUES: bootconf: 0x0, autobootstate: 0

autobootcount: 0, autobootsptr: 0x0
```

Step 2. Boot the XE-SDWAN .bin image from rommon:

```
rommon 3 > boot bootflash:asr1000-ucmk9.16.10.3a.SPA.bin

Warning: filesystem is not clean

File size is 0x2f7f66c6

Located asr1000-ucmk9.16.10.3a.SPA.bin

Image size 796878534 inode num 17, bks cnt 194551 blk size 8*512

################################################################################################################

File is comprised of 200 fragments (0%)

<<<<<< OUTPUT TRIMMED >>>>>>>>


Press RETURN to get started!

<<<<<< OUTPUT TRIMMED >>>>>>>>

*Sep 23 20:47:34.124: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon cfgmgr @ p
*Sep 23 20:47:34.125: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon fpmd @ pid
*Sep 23 20:47:34.125: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon ftmd @ pid
*Sep 23 20:47:34.126: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon ompd @ pid
*Sep 23 20:47:34.127: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon ttmd @ pid
*Sep 23 20:47:34.127: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon vdaemon @ p
*Sep 23 20:47:34.214: %Cisco-SDWAN-Router-TTMD-6-INFO-1200001: R0/0: TTMD: Starting
*Sep 23 20:47:34.307: %Cisco-SDWAN-Router-CFGMGR-6-INFO-300001: R0/0: CFGMGR: Starting
*Sep 23 20:47:34.382: %Cisco-SDWAN-Router-FPMD-6-INFO-1100001: R0/0: FPMD: Starting
*Sep 23 20:47:34.525: %Cisco-SDWAN-Router-FTMD-6-INFO-1000020: R0/0: FTMD: SLA class '__all_tunnels__' a
*Sep 23 20:47:41.143: %ONEP_BASE-6-CONNECT: [Element]: ONEP session Application:com.cisco.syncfd Host:R0
*Sep 23 20:47:41.997: %DMI-5-INITIALIZED: R0/0: syncfd: process has initialized.
*Sep 23 20:47:45.480: %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback65528, changed state to up
*Sep 23 20:47:45.495: %SYS-5-LOG_CONFIG_CHANGE: Buffer logging: level debugging, xml disabled, filtering
*Sep 23 20:47:45.534: SDWAN INFO: Received ENABLE_CONSOLE message from sysmgr
*Sep 23 20:47:45.534: Console Enabled
*Sep 23 20:47:45.534: SDWAN INFO: PNP start, status: success
*Sep 23 20:47:45.531: %DMI-5-ACTIVE: R0/0: nesd: process is in steady state.
*Sep 23 20:47:45.945: EXEC mode enabled on console
```

Step 3. Log in with default admin credentials:

```
User Access Verification

Username: admin
Password:
Router#
*Sep 23 20:48:16.659: SDWAN INFO: WARNING: Please configure a new username and password; one-time user
*Sep 23 20:48:16.767: %DMI-5-CONFIG_I: R0/0: nesd: Configured from NETCONF/RESTCONF by system, transact
Router#
Router#sh ver | i Configuration register
Configuration register is 0x8000
```

Step 4. This is a mandatory step.

1. Change the configuration register back to 0x2102 and perform a SD-WAN software reset. This wipes out all the configuration that exists.
2. The router goes on a reboot at this step and boots up with software specified in the packages.conf configuration file:

```
Router#request platform software sdwan software reset

*Sep 23 20:52:17.400: %INSTALL-5-INSTALL_START_INFO: R0/0: install_engine: Started install activate boo
*Sep 23 20:52:23.919: %SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
Router#
*Sep 23 20:52:47.943: %INSTALL-5-INSTALL_COMPLETED_INFO: R0/0: install_engine: Completed install activa


Initializing Hardware ...

System integrity status: 90170400 12030117

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Current image running: Boot ROM1

Last reset cause: LocalSoft


Warning: Octeon PCIe lanes not x2 width: sts=0x5011

ASR1001-HX platform with 16777216 Kbytes of main memory


File size is 0x00001a47

Located packages.conf

Image size 6727 inode num 1120114, bks cnt 2 blk size 8*512

#

File size is 0x01e7df8e

Located asr1000-rpboot.16.10.3a.SPA.pkg
```

```
Image size 31973262 inode num 1120126, bks cnt 7806 blk size 8*512

################################################################################################################

Boot image size = 31973262 (0x1e7df8e) bytes


ROM:RSA Self Test Passed

ROM:Sha512 Self Test Passed


<<<<<< OUTPUT TRIMMED >>>>>>>>



*Sep 23 20:57:13.347: %ONEP_BASE-6-CONNECT: [Element]: ONEP session Application:com.cisco.syncfd Host:R
*Sep 23 20:57:15.226: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon cfgmgr @ p
*Sep 23 20:57:15.227: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon fpmd @ pid
*Sep 23 20:57:15.228: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon ftmd @ pid
*Sep 23 20:57:15.229: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon ompd @ pid
*Sep 23 20:57:15.229: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon ttmd @ pid
*Sep 23 20:57:15.230: %Cisco-SDWAN-Router-SYSMGR-6-INFO-200017: R0/0: SYSMGR: Started daemon vdaemon @
*Sep 23 20:57:15.308: %Cisco-SDWAN-Router-TTMD-6-INFO-1200001: R0/0: TTMD: Starting
*Sep 23 20:57:15.391: %Cisco-SDWAN-Router-CFGMGR-6-INFO-300001: R0/0: CFGMGR: Starting
*Sep 23 20:57:15.484: %Cisco-SDWAN-Router-FPMD-6-INFO-1100001: R0/0: FPMD: Starting
*Sep 23 20:57:15.620: %Cisco-SDWAN-Router-FTMD-6-INFO-1000020: R0/0: FTMD: SLA class '__all_tunnels__'
*Sep 23 20:57:16.092: %Cisco-SDWAN-Router-FTMD-4-WARN-1000007: R0/0: FTMD: Connection to TTM came up. p
*Sep 23 20:57:27.380: %DMI-5-INITIALIZED: R0/0: syncfd: process has initialized.
*Sep 23 20:57:35.032: %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback65528, changed state to u
*Sep 23 20:57:35.048: %SYS-5-LOG_CONFIG_CHANGE: Buffer logging: level debugging, xml disabled, filterin
*Sep 23 20:57:35.081: SDWAN INFO: Received ENABLE_CONSOLE message from sysmgr
*Sep 23 20:57:35.081: Console Enabled
*Sep 23 20:57:35.081: SDWAN INFO: PNP start, status: success
*Sep 23 20:57:35.079: %DMI-5-ACTIVE: R0/0: nesd: process is in steady state.
*Sep 23 20:57:35.682: EXEC mode enabled on console
```

Step 5. Now, once again you are prompted with one-time admin credentials. After this step, do not forget to change the default password. It is recommended to add an additional user also. If you miss this step and get locked out, then you need to repeat all the steps again.

```
User Access Verification

Username: admin
Password:
Router#
*Sep 23 20:58:18.048: SDWAN INFO: WARNING: Please configure a new username and password; one-time user
*Sep 23 20:58:18.155: %DMI-5-CONFIG_I: R0/0: nesd: Configured from NETCONF/RESTCONF by system, transact
Router#confi
Router#config-tr
System is still initializing. Wait for PnP to be completed or terminate PnP with the command:

pnpa service discovery stop
Router#pnpa service discovery stop
PNP-EXEC-DISCOVERY (1): Stopping PnP Discovery...
Waiting for PnP discovery cleanup ..

Router#
```

```
*Sep 23 20:58:48.997: %PNP-6-PNP_DISCOVERY_ABORT_ON_CLI: PnP Discovery abort on CLI input
*Sep 23 20:58:48.999: %DMI-5-SYNC_START: R0/0: syncfd: External change to running configuration detecte
*Sep 23 20:58:54.955: %DMI-5-SYNC_COMPLETE: R0/0: syncfd: The running configuration has been synchroniz
*Sep 23 20:58:54.955: %DMI-5-ACTIVE: R0/0: syncfd: process is in steady state.
*Sep 23 20:58:55.150: %DMI-5-CONFIG_I: R0/0: nesd: Configured from NETCONF/RESTCONF by system, transact
*Sep 23 20:58:55.676: %Cisco-SDWAN-Router-SYSMGR-5-NTCE-200050: R0/0: SYSMGR: System status solid green
Router#
*Sep 23 20:59:00.083: %INSTALL-5-INSTALL_START_INFO: R0/0: install_engine: Started install commit PACKA
*Sep 23 20:59:00.327: %INSTALL-5-INSTALL_COMPLETED_INFO: R0/0: install_engine: Completed install commit
Router#sh ver | i register
Configuration register is 0x2102
Router#sh sdwan ver

*Sep 23 20:59:12.640: %PNP-6-PNP_DISCOVERY_ABORT_ON_CLI: PnP Discovery abort on CLI input
*Sep 23 20:59:12.640: %PNP-6-PNP_DISCOVERY_STOPPED: PnP Discovery stopped (Discovery Aborted)16.10.3a

Router#
Router#sh sdwan ver
16.10.3a

Router#
Router#conf
Router#config-tr

admin connected from 127.0.0.1 with console on Router
Router(config)# username admin privilege 15   secret <your password>
Router(config)# username  sdwan privilege 15 secret <your password>
Router(config)# comm
Commit complete.
Router(config)#
*Sep 23 21:00:59.270: %DMI-5-CONFIG_I: R0/0: nesd: Configured from NETCONF/RESTCONF by admin, transacti
Router(config)# end
```

Step 6. Verify that you still have access to the device with newly created username and password:

```
Router#exit
Router con0 is now available

Press RETURN to get started.

User Access Verification

Username: admin
Password:

Router>en
Router#
Router#exit

Router con0 is now available

Press RETURN to get started.
User Access Verification

Username: sdwan
Password:

Router>en
```

```
Router#
```