

عضو نم Catalyst 9800 مكحت ةدحو دادرستسإ ROMmon

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ةمدقملا

ROMmon عضو ىل ادا نسا Catalyst 9800 مكحت ةدحو ةداعتسإ ةيفيكن دنتسملا اذه حضوي (ةتقؤملا ةركاذل) Flash ةركاذي ةروص نودبو.

ةيساسألابلطتملا

تابلطتملا

ةيلاتل عيضاوملاب ةفرعم كي دل نوكت ناب Cisco ي صوت:

- Catalyst 9800 ةيكلسلال مكحتل تادحو

ةمدختسملا تانوكملا

ةيلاتل ةيدامل تانوكملا وجماربل تارادصل ىل دنتسملا اذه ةف ةدراول تامولعمل دنتست:

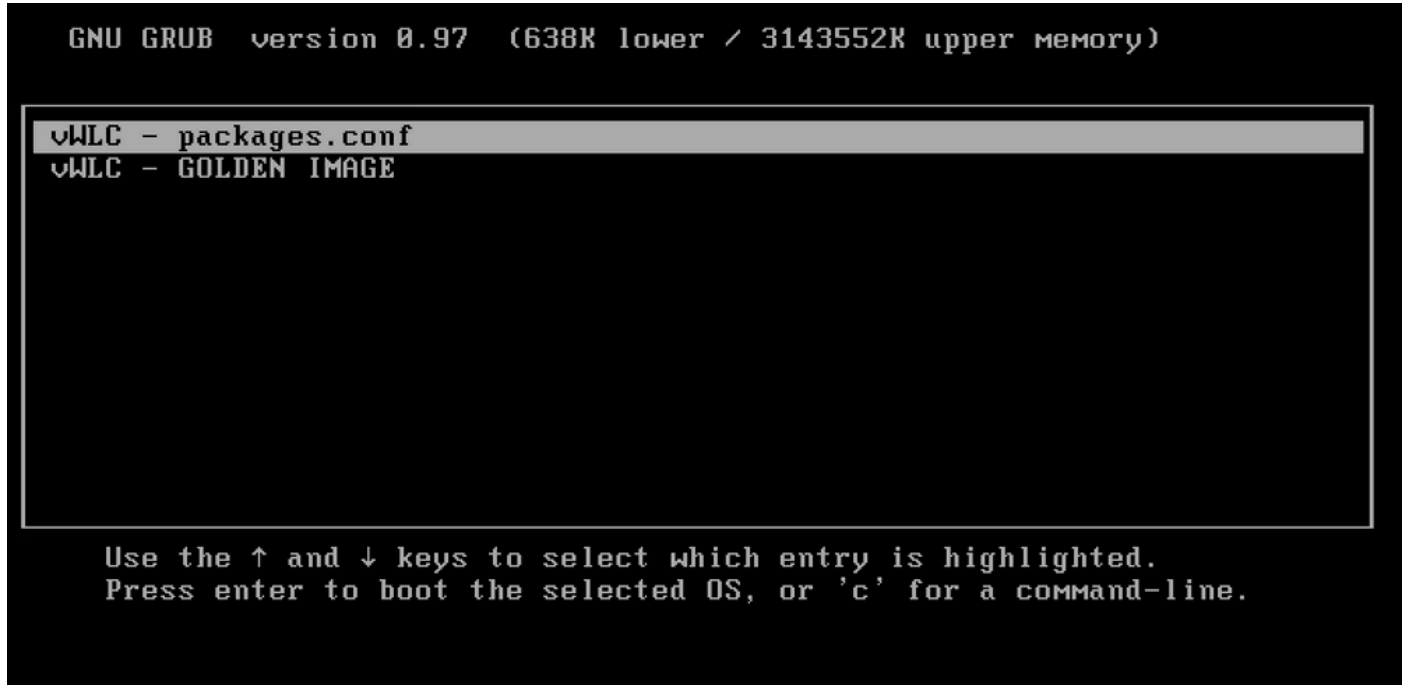
- Catalyst 9800، 16.10.1 رادصلال

ةصاخ ةيلمعم ةئيب ي ةدوجوملا ةزهجال نم دنتسملا اذه ي ةدراول تامولعمل عاشنإ مت تناك اذإ. (يضا رتفا) حوسمم نويوكتب دنتسملا اذه ي ةمدختسملا ةزهجال عيمج تأدب رما يال لم تحمل ريثأتلل كمهف نم دكأف، ليغشتل دي قكتكبش

نيوكتال

Virtual 9800 (9800-CL) ل رورملا ةم لك دادرتسإ عارجإ

ليمحت ديدحت ةشاش ةعرسب ىرتس 9800-CL زارطلا ديهمت ةداعإ 1. ةوطخل



ةوعومحملا ةبللاطم ىلع لوصحلل ةشاشلا هذه ىلع C طغضا 2. ةوطخل

config 0x2142 رمألا مادختساب ةبللاطملا هذه يف نيوكتال لجس رييغت كنكمي 3. ةوطخل



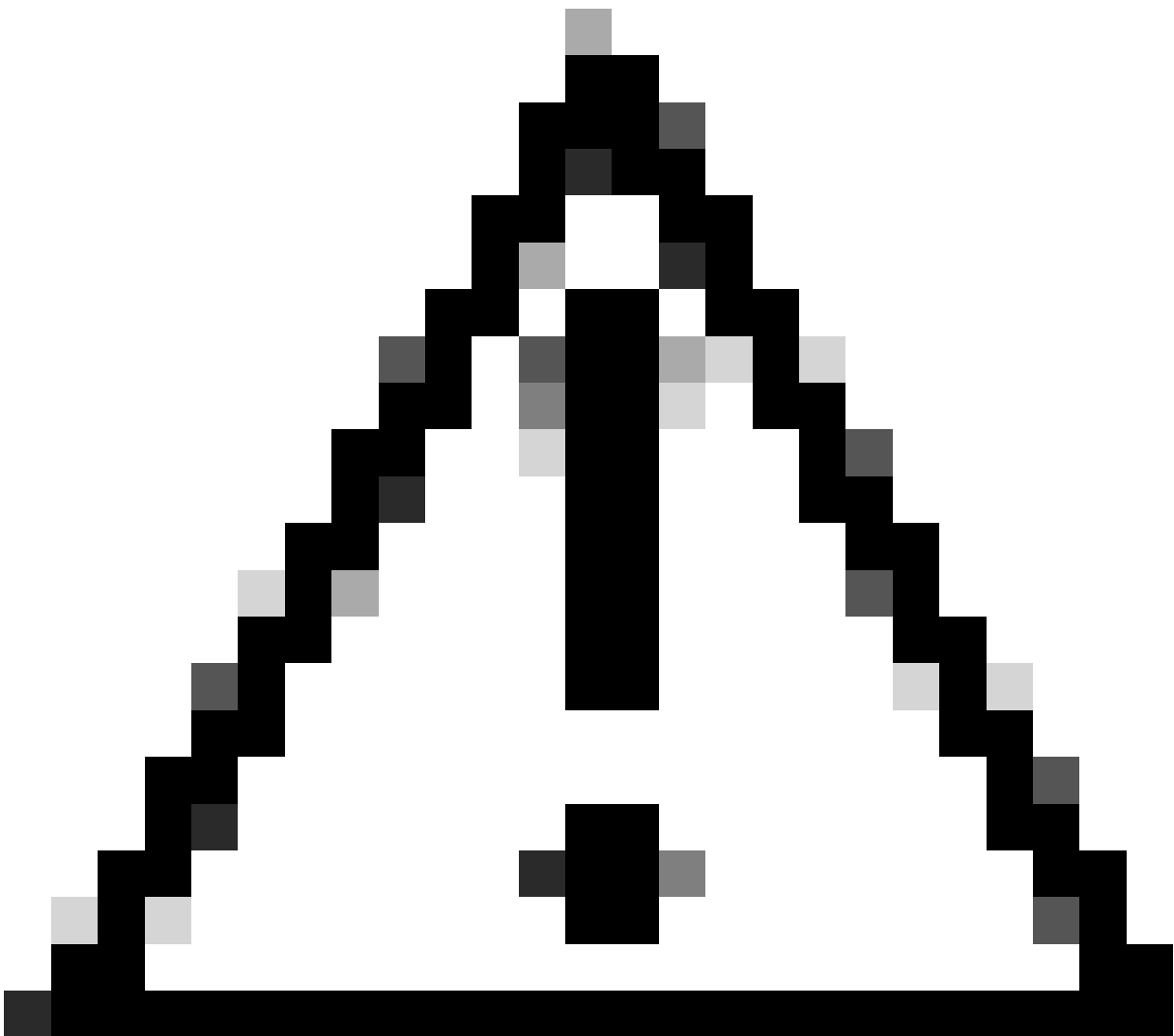
ديهمتال رتخاو ديهمتال ديدحت packages.conf هجوم ىلإ ةدوعلل ESC خاتفم ىلع طغضا 4. ةوطخل
ةيداعلا ةروصلا ىلع

نود كي دل (WLC) ةيكلساللا ةيلحمللا ةكبشللا يف مكحتللا رصنع ديهمت يريجي 5. ةوطخل
لكلذ عجرتسا. نيوكت

ةميقللا ىلإ ىرخأ ةرم نيوكتال لجس نييعتو 1 ةوطخل نم عارجإل راركت سننلا 6. ةوطخل
ديهمتال ةداعإ تايلمع ىلع هليمحتو نيوكتال ظفح متي ىتح 0x2002 ةيصلألا

ROMMON ربع زاهجلل رورملا ةم لك دادرتس إ عارج

م كحتلا ةدحو ىلع اعوبطم ##### ىرت ام دنع (تقؤملا فاقىإلا) Break حاتفم لاسرا 1. ةوطخلا بهذو وليغشتلا ءدب ةيلمع رسكب ماظنلا موقى م ث. ةروصولا ليحتب موقى يذلا ماظنلا ىلع Ctrl+Break وأ Break ىلع طغضلا دنع كلذب مايقلا اما كنكمي. ROMMON ةبلاطم ىلإ رمأ، لاثملا لىبس ىلع) يفرطلا جمانربلا نم لصفلا لاسرا اضيأ كنكمي. جيتافملا ةحول Break لاسرا > داعبالا يثالث م كحتلا رصنع، (تقؤملا فاقىإلا) > Break صاخلا PuTTY (تقؤملا فاقىإلا).



ROMMON ىلإ ماظنلا طاقسإ رورملا ةم لك دادرتسإ بلطتي: ريذخت Cisco IOS® ف. ROMMON ىلإ ةدوعلا ماظنلا كنكمي ناك اذا ام config-register دادعإ ددحي، يكييساللا لصافلا رادصإ دنع ROMMON ىلإ ةدوعلا عنم ىلإ 0x2102 ل config لجس يدؤيس ىلع (9800-L و 9800-80 و 9800-40) 9800 زارط ةزهجألا عيمج يوتحت، يضارتفا لكشب Linux Cisco IOS ليغشتب موقت اهنأل ارظن، كلذ عنمو. config-register 0x2102 ةعومجم رمألا نيوكت يه ROMMON ىلإ ةدوعلا عنمل ةديحوللا ققيرطلاو، كلذ لهاجت متي، no service recovery.

config- register يف تبلا اذه عنمي، 16.12(3r) نم مدقألا ROMMON لغشي يذلا 9800-L يف :ريذحت رورملا ةملك دادرتسا عارجأ ROMMON نع لاصفناال ROMMON ليعشتب تمق اذا :حالصإلا ةقثوم تاداشرا عم ROMMON ةيقرتب مقف ،ةميدقألا ROMMON ليعشتب تمق اذا :حالصإلا [Cisco Catalyst 9800-L](#) ةيكللساللا مكحتلا ةدحول ةجمربملا تالاجملا ةيقرت :ىلع لفق عنمو ليدب لك 0x2002 ىلإ config-register ليدعت :ةيقرتلا عارجأ رذعت اذا :لحل ROMMON.

```
File size is 0x01d191f3
Located C9800-rpboot.16.10.01.SPA.pkg
Image size 30511603 inode num 874837, bks cnt 7450 blk size 8*512
#####
#####
#####
#####
Boot image size = 30511603 (0x1d191f3) bytes

ROM:RSA Self Test Passed
ROM:Sha512 Self Test Passed

Package header rev 3 structure detected
Calculating SHA-1 hash...done
validate_package_cs: SHA-1 hash:
    calculated e36f46af:2c06b38d:eeb6e65b:ffaeb429:a6982d29
    expected  e36f46af:2c06b38d:eeb6e65b:ffaeb429:a6982d29
Validating main package signatures
```

monitor: command "boot" aborted due to user interrupt

rommon 1 >

ROMMON. هجوم نم 0x2142 confreg رمألا مادختساب 0x2142 ىلإ نيوكتلا لجس رييغت. 2. ةوطخل

<#root>

rommon 1 >

confreg 0x2142

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

rommon. reset ةبلاطم ةذفان يف sync ذي فننلاب مق ، ROMMON نيوكت رييغت ظفحل. 3. ةوطخل rommon رييغتلا قيبطتل ROMMON. هجوم نم رييغتلا قيبطتل

<#root>

rommon 2 >

sync

rommon 3 >

reset

Resetting

Initializing Hardware ...

System integrity status: 90170200 12030107

System Bootstrap, Version 16.10(2r), RELEASE SOFTWARE
Copyright (c) 1994-2018 by cisco Systems, Inc.

Current image running: Boot ROM0
Last reset cause: LocalSoft

C9800-40-K9 platform with 33554432 Kbytes of main memory

File size is 0x000015c9
Located packages.conf
Image size 5577 inode num 874834, bks cnt 2 blk size 8*512
#

File size is 0x01d191f3
Located C9800-rpboot.16.10.01.SPA.pkg
Image size 30511603 inode num 874837, bks cnt 7450 blk size 8*512

#####

Boot image size = 30511603 (0x1d191f3) bytes

ROM:RSA Self Test Passed
ROM:Sha512 Self Test Passed

Package header rev 3 structure detected
Calculating SHA-1 hash...done
validate_package_cs: SHA-1 hash:
 calculated e36f46af:2c06b38d:eeb6e65b:ffaeb429:a6982d29
 expected e36f46af:2c06b38d:eeb6e65b:ffaeb429:a6982d29
Validating main package signatures

RSA Signed RELEASE Image Signature Verification Successful.
Image validated
Jun 21 02:30:21.565: %PMAN-3-PROC_EMPTY_EXEC_FILE: R0/0: pvp: Empty executable u
sed for process bt_logger
Jun 21 02:30:24.561: %PMAN-3-PROC_EMPTY_EXEC_FILE: R0/0: pvp: Empty executable u
sed for process bt_logger

Both links down, not waiting for other chassis
Chassis number is 1
Jun 21 02:30:25.327: %PMAN-3-PROC_EMPTY_EXEC_FILE: R0/0: pvp: Empty executable u
sed for process bt_logger
Jun 21 02:30:27.293: %PMAN-3-PROC_EMPTY_EXEC_FILE: R0/0: pvp: Empty executable u
sed for process bt_logger
Jun 21 02:30:33.770: %PMAN-3-PROC_EMPTY_EXEC_FILE: R0/0: pvp: Empty executable u
sed for process bt_logger

Jun 21 02:30:37.045: %PMAN-3-PROC_EMPTY_EXEC_FILE: R0/0: pvp: Empty executable used for process bt_logger

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Compiled Mon 19-Nov-18 08:27 by mcpre

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cisco C9800-40-K9 (1GL) processor (revision 1GL) with 7866660K/6147K bytes of memory.

FIPS: Flash Key Check : Key Not Found, FIPS Mode Not Enabled

Processor board ID TTM22500DAL
1 Virtual Ethernet interface
4 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
33554432K bytes of physical memory.
26255359K bytes of eUSB flash at bootflash:.
234365527K bytes of SATA hard disk at hard disk:.
0K bytes of WebUI ODM Files at webui:.

Base Ethernet MAC Address : D4:C9:3C:CC:F2:E0

Installation mode is INSTALL

Press RETURN to get started!

```
*Jun 21 02:31:00.165: %IOS_XE_PLATFORM-3-WDC_NOT_FOUND: WDC returned length: 0
*Jun 21 02:31:00.185: %SMART_LIC-6-EXPORT_CONTROLLED: Usage of export controlled
  features is not allowedAdding registry invocations for the WLC platform

*Jun 21 02:31:01.743: %SMART_LIC-6-AGENT_READY: Smart Agent for Licensing is ini
tialized
*Jun 21 02:31:01.743: %SMART_LIC-6-AGENT_ENABLED: Smart Agent for Licensing is e
nabled
*Jun 21 02:31:01.743: %SMART_LIC-6-EXPORT_CONTROLLED: Usage of export controlled
  features is not allowed
*Jun 21 02:31:04.732: mcp_pm_subsys_init : Init done sucessfullyRA Tracing tool
registry return: OSID Manager, starting initialization ...

*Jun 21 02:31:05.511: Notifications initializedSID Manager, completed initializa
tion ...

*Jun 21 02:31:07.298: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled for typ
e vln
*Jun 21 02:31:08.999: %CRYPTO-4-AUDITWARN: Encryption audit check could not be p
erformed
*Jun 21 02:31:09.081: %VOICE_HA-7-STATUS: CUBE HA-supported platform detected.
*Jun 21 02:31:09.317: %IOSXE_VMAN-3-MSGINITFAIL: Failed to initialize required V
irt-manager resource: Initalize MQIPC
*Jun 21 02:31:09.333: mcp_pm_init_done : Called
*Jun 21 02:31:09.338: %LINK-3-UPDOWN: Interface Lsmi0, changed state to up
*Jun 21 02:31:09.345: %LINK-3-UPDOWN: Interface EOBC0, changed state to up
*Jun 21 02:31:09.345: %LINEPROTO-5-UPDOWN: Line protocol on Interface VoIP-Null0
, changed state to up
*Jun 21 02:31:09.346: %LINEPROTO-5-UPDOWN: Line protocol on Interface LI-Null0,
changed state to up
*Jun 21 02:31:09.346: %LINK-3-UPDOWN: Interface GigabitEthernet0, changed state
to down
*Jun 21 02:31:09.351: %LINK-3-UPDOWN: Interface LIIN0, changed state to up
*Jun 21 02:30:33.738: %PMAN-3-PROC_EMPTY_EXEC_FILE: Chassis 1 R0/0: pvp: Empty e
xecutable used for process bt_logger
*Jun 21 02:30:37.011: %PMAN-3-PROC_EMPTY_EXEC_FILE: Chassis 1 R0/0: pvp: Empty e
xecutable used for process bt_logger
*Jun 21 02:30:39.576: %CMFP-6-CRYPTO_MODULE: Chassis 1 R0/0: cman_fp: Crypto Har
dware Module is present
*Jun 21 02:31:01.754: %LMRP-3-RTU_UNINITIALIZED: Chassis 1 R0/0: lman: RTU not y
et initialized: stack enabled 0
*Jun 21 02:31:09.489: %SMART_LIC-6-HA_ROLE_CHANGED: Smart Agent HA role changed
to Active.
*Jun 21 02:31:10.295: %IOSXE_MGMTVRF-6-CREATE_SUCCESS_INFO: Management vrf Mgmt-
intf created with ID 1, ipv4 table-id 0x1, ipv6 table-id 0x1E000001
*Jun 21 02:31:10.344: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, cha
nged state to down
*Jun 21 02:31:10.345: %LINEPROTO-5-UPDOWN: Line protocol on Interface Lsmi0, ch
anged state to up
*Jun 21 02:31:10.394: %LINEPROTO-5-UPDOWN: Line protocol on Interface EOBC0, cha
nged state to up
*Jun 21 02:31:10.394: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEth
ernet0, changed state to down
```

```

*Jun 21 02:31:10.394: %LINEPROTO-5-UPDOWN: Line protocol on Interface LIIN0, changed state to up
*Jun 21 02:31:10.966: %ONEP_BASE-6-SS_ENABLED: ONEP: Service set Base was enabled by Default
*Jun 21 02:31:12.842: %SYS-6-STARTUP_CONFIG_IGNORED: System startup configuration is ignored based on the configuration register setting.
*Jun 21 02:31:12.854: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 0/0, interfaces disabled
*Jun 21 02:31:12.913: %SPA_OIR-6-OFFLINECARD: SPA (BUILT-IN-4X10G/1G) offline in subslot 0/0
*Jun 21 02:31:12.919: %IOSXE_OIR-6-INSCARD: Card (fp) inserted in slot F0
*Jun 21 02:31:12.920: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F0
*Jun 21 02:31:12.946: %IOSXE_OIR-6-INSCARD: Card (cc) inserted in slot 0
*Jun 21 02:31:12.946: %IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 0
*Jun 21 02:31:13.111: % Redundancy mode change to SSO

*Jun 21 02:31:13.112: %VOICE_HA-7-STATUS: NONE->SSO; SSO mode can not take effect until after a platform reload.
*Jun 21 02:31:13.231: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 0/0
*Jun 21 02:31:14.793: %SYS-5-RESTART: System restarted --
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*Jun 21 02:31:14.834: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Jun 21 02:31:14.834: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
*Jun 21 02:31:16.976: %LINK-3-UPDOWN: Interface GigabitEthernet0, changed state to up
*Jun 21 02:31:17.079: %SYS-6-BOOTTIME: Time taken to reboot after reload = 325 seconds
*Jun 21 02:31:17.977: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0, changed state to up
*Jun 21 02:31:21.579: %SPA_OIR-6-ONLINECARD: SPA (BUILT-IN-4X10G/1G) online in subslot 0/0
*Jun 21 02:31:21.638: %IOSXE_SPA-6-UPDOWN: Interface TenGigabitEthernet0/0/0, link down due to remote fault
*Jun 21 02:31:21.708: %IOSXE_SPA-6-UPDOWN: Interface TenGigabitEthernet0/0/1, link down due to local fault
*Jun 21 02:31:21.748: %IOSXE_SPA-6-UPDOWN: Interface TenGigabitEthernet0/0/2, link down due to local fault
*Jun 21 02:31:21.788: %IOSXE_SPA-6-UPDOWN: Interface TenGigabitEthernet0/0/3, link down due to local fault
*Jun 21 02:31:21.855: %PNP-6-PNP_DISCOVERY_STOPPED: PnP Discovery stopped (Start up Config Present)
*Jun 21 02:31:23.541: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/0, changed state to down
*Jun 21 02:31:23.571: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/1, changed state to down
*Jun 21 02:31:23.572: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/2, changed state to down
*Jun 21 02:31:23.575: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/3, changed state to down
*Jun 21 02:31:24.680: %IOSXE_SPA-6-UPDOWN: Interface TenGigabitEthernet0/0/0, link down due to local fault
*Jun 21 02:31:23.618: %LINK-3-UPDOWN: SIP0/0: Interface TenGigabitEthernet0/0/0, changed state to down
*Jun 21 02:31:29.036: %PKI-2-NON_AUTHORITATIVE_CLOCK: PKI functions can not be initialized until an authoritative time source, like NTP, can be obtained.
*Jun 21 02:31:29.491: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/0, changed state to up
*Jun 21 02:31:30.492: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabit

```



```
Ethernet0/0/0, changed state to up
*Jun 21 02:31:29.491: %LINK-3-UPDOWN: SIP0/0: Interface TenGigabitEthernet0/0/0,
  changed state to up
*Jun 21 02:31:30.495: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, cha
  nged state to up
*Jun 21 02:31:37.119: %CRYPTO_ENGINE-5-KEY_ADDITION: A key named CISCO_IDEVID_SU
  DI_LEGACY has been generated or imported by pki-sudi
*Jun 21 02:31:39.050: %CRYPTO_ENGINE-5-KEY_ADDITION: A key named CISCO_IDEVID_SU
  DI has been generated or imported by pki-sudi
```

ل.يغشتال ادب نيوكت جالعام لهاجت .نيوكت يآ نود ماضنل ديهمت متي نآل 4. ةوطخل

ال running-config إلى startup-config خسن، ماضنل روهظ درجمب 5. ةوطخل

، دامتعال تانايب إلى لوخدل لچس وأ enable password رورمل ةملك نيوكت دأ 6. ةوطخل
ssh وأ telnet ربع زاهجال إلى لوصول اعيطتست تنك اذا امم ققحتو

<#root>

C9800-40#

telnet 172.22.175.1

Trying 172.22.175.1 ... Open

User Access Verification

Username: admin

Password:

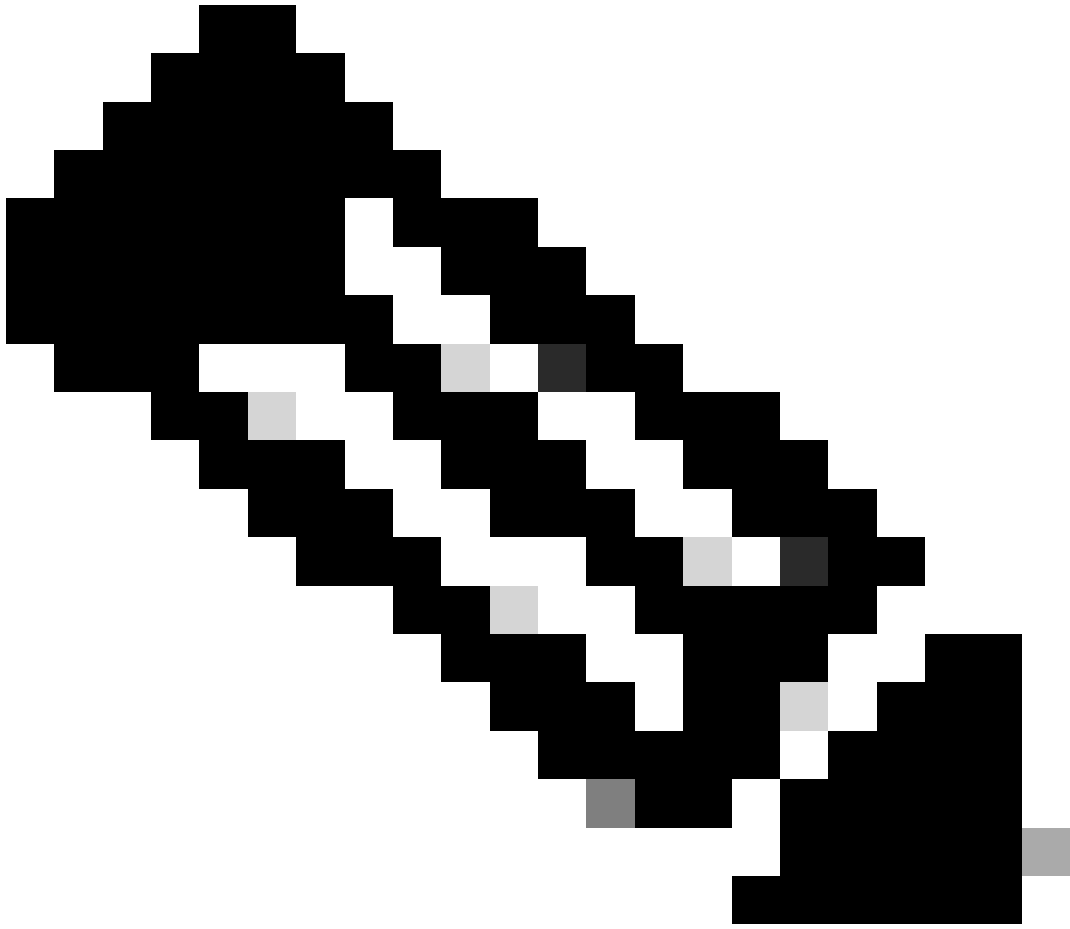
C9800-40#

0x2002 إلى ىرخأ ةرم config-register رييغت ب مق 7. ةوطخل

<#root>

C9800-40(config)#

config-register 0x2002



نآلا دعب لصاف لاسراب كل حمسي ال ،0x2102 عم 0x2102 مدختست ال :ةطحال م

config ظفح 8. ةوطخال

<#root>

C9800-40#

write memory

Building configuration...

[OK]

USB ربع زاهجلل رورملا ةملك دادرئسإ عارجإ

ROMMON نم (WLC) ةيكلسالل ةيلحملل ةكبشلل في مكحتلل رصنع ديهمت

ديهمتلل لمعي ملو ROMMON في تقلع اذا:

<#root>

rommon 12 >

boot

File size is 0x0001dfe6

Located memleak.tcl

Image size 122854 inode num 12, bks cnt 30 blk size 8*512

##

Boot image size = 122854 (0x1dfe6) bytes

Unsigned package found, aborting package loading...

Failed to Free memory block at address 0x00000000cd50b000

File size is 0x00000023

Located pnp-tech-time

Image size 35 inode num 13, bks cnt 1 blk size 8*512

Boot image size = 35 (0x23) bytes

Unsigned package found, aborting package loading...

Failed to Free memory block at address 0x00000000cd4d3000

File size is 0x0001ad3f

Located pnp-tech-discovery-summary

Image size 109887 inode num 14, bks cnt 27 blk size 8*512

#

Boot image size = 109887 (0x1ad3f) bytes

Unsigned package found, aborting package loading...

Failed to Free memory block at address 0x00000000cd49b000

File size is 0x00000268

Located vlan.dat

Image size 616 inode num 15, bks cnt 1 blk size 8*512

Boot image size = 616 (0x268) bytes

Unsigned package found, aborting package loading...

Failed to Free memory block at address 0x00000000cd463000

boot: cannot determine first file name on device "bootflash:/"

rommon 13 >

اهنم ديهمتلل ةروص يألعل ةتقؤملا ةركاذلا يوتحي ال:

<#root>

rommon 13 >

dir bootflash:

File System: EXT2/EXT3

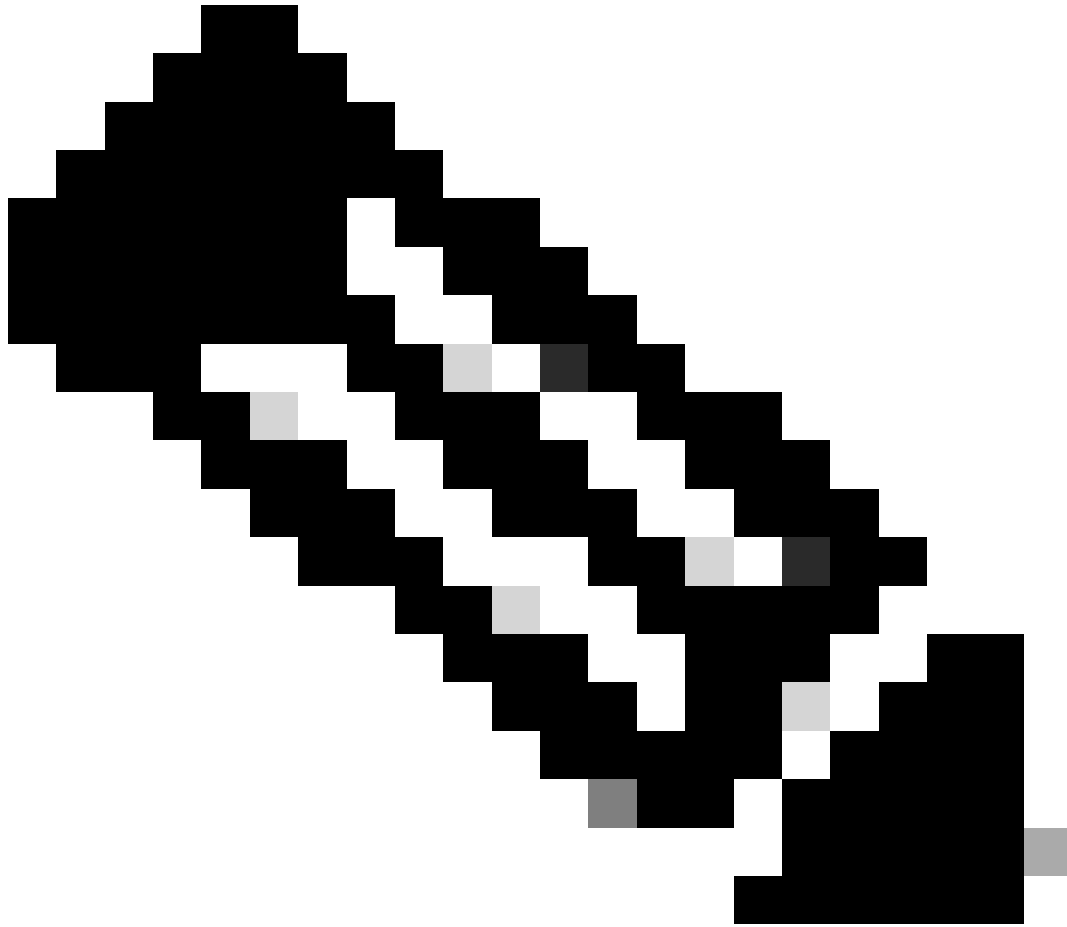
11	16384	drwx-----	lost+found
850305	4096	drwxr-xr-x	.installer
588673	4096	drwxrwxrwx	.prst_sync
948417	4096	drwxr-xr-x	.rollback_timer
1381745	4096	drwxr-xr-x	dc_profile_dir
12	122854	-rw-r--r--	memleak.tcl
506913	4096	drwxr-x---	vman_fdb
670433	4096	drwxr-xr-x	.dbpersist
793073	4096	drwxr-xr-x	onep
13	35	-rw-r--r--	pnv-tech-time
14	109887	-rw-r--r--	pnv-tech-discovery-summary
15	616	-rw-r--r--	vlan.dat

نم ي أةطساوب ع برملا دادرتسا كنكمي:

- ملقلااب USB صارقأ كرحم لال خ نم ةروص ليمحت
- (قلاطنلا چراخ ةرادإ ةهجاو) Gigabit0 لال خ نم ةروص ليمحت

USB لال خ نم ةروصلا ليمحت

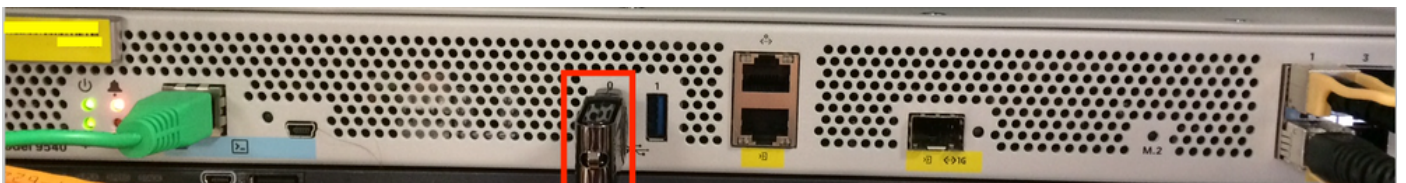
في (ف). 9800م كحتلا ةدحو لىإ bin. فلم ليمحت عم USB ملق صارقأ كرحم لىل لصحا. 1. ةوطخلا كرحم لىل فرعتلا كنكمي ال، [CSCvn8287](#) Cisco نم ءاطخألا حيحصت فرعم ببسب، 9800-80 (ROMMON) في USB 3.0 شالف صارقأ.



نكلو، ةضارت فا 9800-CL ةس تناك اذا ام ةلاح يف هسفن وه ءارج اإل: ةطخال م VM. زاهج ىلإ هطيطختو VMhost ىل USB صارقأ كرحم لى صوت كىل ع نىعتى

9800 ذفنم نم USB 0 ذفنم ب USB لى غشت جم انرب لى صوت ب مق 2. ةوطخال

ىم املال رظنم ل:



USB. ءارق عىطتست اهنأ نم دكأتو مكحتل ءحو ىلإ مكحتل ءحو نم لوخدل ل جس 3. ةوطخال

<#root>

rommon 19 >

بـولسأ بـكـري نأ بـولسأ ةـمـزح نـم 9800 لـا تـريـغ 6. ةـوطـخ

بـولسأ ةـمـزح يـف دـهـمـي وـه ، USB نـم مـكـحـت زـاـهـجـل تـنأ دـهـمـي اـمـدـنـع

```
!  
!--Output omitted--  
!  
FIPS: Flash Key Check : Key Not Found, FIPS Mode Not Enabled
```

```
Processor board ID TTM22071510  
1 Virtual Ethernet interface  
4 Ten Gigabit Ethernet interfaces  
32768K bytes of non-volatile configuration memory.  
33554432K bytes of physical memory.  
26910719K bytes of eUSB flash at bootflash:.  
234365527K bytes of SATA hard disk at hard disk:.  
15243680K bytes of USB flash at usb0:.  
0K bytes of WebUI ODM Files at webui:.
```

```
Base Ethernet MAC Address          : 00:A3:8E:23:A2:40
```

```
Installation mode is BUNDLE
```

```
%INIT: waited 0 seconds for NVRAM to be available
```

ةـيـقـرـتـلـا يـف "تـيـبـثـلـا" عـضـو يـلـا لـقـنـلـا رـايـتـخـا كـنـكـمـي ، مـدـخـتـسـمـلـا ةـهـجـا و يـف 16.12 نـم
عـضـو يـلـا هـلـقـن مـتـيـس يـذـلـا يـلـا حـلـ رـا دـصـلـا نـم مـضـتـي ، جـمـانـرـب فـلـم يـا رـيـفـوتـب مـق . ةـيـلـاتـلـا
تـيـبـثـلـا .

لـعـفـلـاب دـرـبـم packages.conf لـا يـلـا رـيـشـي ال نـا رـيـغـتـم دـيـهـمـتـلـا رـح 7. ةـوطـخـلـا

```
<#root>
```

```
WLC#
```

```
configure terminal
```

```
Enter configuration commands, one per line.  End with CNTL/Z.
```

```
WLC(config)#
```

```
no boot system
```

```
WLC(config)#
```

```
boot system bootflash:packages.conf
```

```
WLC(config)#
```

```
end
```

```
WLC#
```

```
write
```

```
Building configuration...
```

[OK]
WLC#

show boot

```
BOOT variable = flash:packages.conf,12;  
CONFIG_FILE variable does not exist  
BOOTLDR variable does not exist  
Configuration register is 0x2102
```

Standby not ready to show bootvar

0x2002. وه نيوكتال لجس نأ نم دكأت.

(WLC): ةيكلسال الة لحميل ةكبشلا في مكحتال رصنع ليحت ةداعإ. 8 ةوطخل

<#root>

WLC#

reload

"تيثتال" عوضو في مكحتال ةدحو ديهمت متي، كلذ دعب

<#root>

WLC#

show version

```
!  
!--Output omitted--  
!  
Installation mode is INSTALL Configuration register is 0x2002
```

TFTP نم ةروص ليحت

ايدام لصتم GigabitEthernet0 ةرادإ ذفنم كيذل نوكي نأ بجي، ةكبشلا نم ةروص ليحتل لوصو ذفنمب.

set.رمأل مادختساب تقوي في تاريغتمال نم ققحتال كنكمي، ROMMON نم

<#root>

rommon 1 >

set

PS1=rommon ! >


```
?=0
DEFAULT_GATEWAY=10.1.1.1
ETHER_SPEED_MODE=4
TFTP_RETRY_COUNT=36
SWITCH_NUMBER=1
DLC_DONE=TRUE
RET_2_RTS=
RET_2_RCALTS=
MCP_STARTUP_TRACEFLAGS=00000000:00000000
TFTP_MACADDR=00:db:ad:ba:d0:52
IP_SUBNET_MASK=255.255.255.0
IP_ADDRESS=10.1.1.152
TFTP_SERVER=10.1.1.1
TFTP_FILE=C9800-80-universalk9_wlc.BLD_V1610_1_THROTTLE_LATEST_20181016_174328_2.bin
BSI=0
RANDOM_NUM=1650632109
```

ريغتمل مسال بق set ةباتك لل ةجاح دجوت ال. رخآلا ولت دجاو تاريغتمل طبض ذئدنع كنكمي ريغتمل مسال ةباتك دنع طوطخلال بنجت. ROMMON ي رخآلا ةزهجألل ةبسنلاب لالجال وه امك عون يأ نم ققحت دجوي ال ثيح.

<#root>

rommon 2 >

IP_ADDRESS=10.48.71.113

rommon 3 >

IP_SUBNET_MASK=255.255.255.128

rommon 4 >

DEFAULT_GATEWAY=10.48.71.5

ي:لات رملال عم ةروص TFTP نم تدهم عي طتسي تنأ ،دادعإ ةي لمع ip لال نوكي نإ ام

<#root>

rommon 5 >

boot tftp://10.48.39.33/C9800-80-universalk9_wlc.16.10.01.SPA.bin

```
IP_ADDRESS: 10.48.71.113
IP_SUBNET_MASK: 255.255.255.128
DEFAULT_GATEWAY: 10.48.71.5
TFTP_SERVER: 10.48.39.33
TFTP_FILE: C9800-80-universalk9_wlc.16.10.01.SPA.bin
TFTP_MACADDR: 70:6d:15:35:99:ff
TFTP_VERBOSE: Progress
TFTP_RETRY_COUNT: 36
TFTP_TIMEOUT: 7200
TFTP_BLKSIZE: 1460
TFTP_CHECKSUM: Yes
ETHER_PORT: 3
```

```
ETHER_SPEED_MODE: 1000MB/HD
link up
Receiving C9800-80-universalk9_wlc.16.10.01.SPA.bin from 10.48.39.33
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

ةركاذى إلى لعفلاب Cisco IOS ةروص خسن سنن ال Cisco IOS رمأو رطس يف رمألا كب يهتني كنكمي. حيحص لكشب ديهمتال ريغتم طبضو تباثال صرقال وأ (ةتقؤملا ةركاذلا) Flash ةتقؤملا ةركاذلا يف فلمال خسن درجم ب، 6 ةوطخال ىتح ةقباسلا، USB نم ءارجلال فانئتسإ :تباثال صرقال وأ (flash)

اهحال صإو ءاطخالأ فاشكتسا

دنع "ديهمتال لبق طبضلا ءداعإ ءارلأ" كل لوقت يتال ROMMON ةمدخ روهظ رمتسا اذإ TFTP لوكوتورب وأ USB ذفنم لثم، ةركاذلا يف فلم نم ديهمتال ءلواح

```
rommon 4 > boot bootflash:C9800-L-universalk9_wlc.V176_1.SPA.bin
Please reset before booting
```

ءداعإ دعب ءلكشملا يهتنت. هنييغت ءداعإو نيوكتال لجس ءاغلإ وه ب مايقلا كئلع ام لك ردصم ي نم ديهمتال كنكميوليغشتال

```
confreg 0x0
reset
```

ةديفملا ىرخألا ROMMON رمأو

(bootflash، harddisk، usb، و ام) ءرفوتملا نيزختلا ءزهجأ درسب رمألا devموقي

ROMMON رادصلإ showmonرمألا ضرعي

ةلص تاذا ماولعم

- [Cisco نم تاليزنتلاو ينفلا معدلا](#)

ةمچرتل هذه ل و ح

ةيلآل ا تاي ن ق ت ل ا ن م ة و م ج م ا د خ ت س ا ب د ن ت س م ل ا ا ذ ه Cisco ت م ج ر ت
م ل ا ع ل ا ا ح ن ا ع م ج ي ف ن ي م د خ ت س م ل ل م ع د ي و ت ح م م ي د ق ت ل ة ي ر ش ب ل و
ا م ك ة ق ي ق د ن و ك ت ن ل ة ي ل آ ة م ج ر ت ل ض ف ا ن ا ة ظ ح ا ل م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب
Cisco ي ل خ ت . ف ر ت ح م م ج ر ت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ا ل ا ة م ج ر ت ل ا ع م ل ا ح ل ا و ه
ي ل ا ا م ا د ع و ج ر ل ا ب ي ص و ت و ت ا م ج ر ت ل ا ه ذ ه ة ق د ن ع ا ه ت ي ل و ئ س م Systems
(ر ف و ت م ط ب ا ر ل ا) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا د ن ت س م ل ا