



設定例

この付録は、Cisco ASR 1000 シリーズ ルータでいくつかの一般的なネットワークング タスクを実行する方法の例を示すことを目的とします。この付録に示された例は、単なる説明用です。これらの例の背景情報はほとんど、またはまったく提供されていません。この章の例に関する詳細な説明については、このマニュアルの他の章（特に第 3 章「[統合パッケージとサブパッケージの管理](#)」）を参照してください。

この章を読む際は、ネットワークに関する設定は複雑であり、何通りにも設定できることに留意してください。この章の例は、単にある設定を実現する 1 つの方法を示すだけにすぎません。

この付録には次の例が示されています。

- 「[TFTP サーバの統合パッケージをブートするようにルータを設定する例](#)」 (P.B-1)
- 「[TFTP サーバからルータに統合パッケージをコピーする例](#)」 (P.B-5)
- 「[ルータに保存されている統合パッケージを使用してブートするようにルータを設定する例](#)」 (P.B-6)
- 「[統合パッケージから同じファイル システムにサブパッケージを抽出する例](#)」 (P.B-7)
- 「[統合パッケージから別のファイル システムにサブパッケージを抽出する例](#)」 (P.B-9)
- 「[サブパッケージを使用してブートするようにルータを設定する例](#)」 (P.B-10)
- 「[コンフィギュレーション ファイルのバックアップ](#)」 (P.B-14)
- 「[SSO を使用してシングル RP 上で 2 番目の IOS プロセスをイネーブルにする例](#)」 (P.B-15)
- 「[ISSU : 統合パッケージのアップグレードの例](#)」 (P.B-19)

TFTP サーバの統合パッケージをブートするようにルータを設定する例

次に、TFTP サーバの統合パッケージをブートするようにルータを設定する例を示します。

```
Router(config)# boot system
tftp://172.17.16.81/auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
Router(config)#config-reg 0x2102
Router(config)# exit
*May 29 21:51:11.963: %SYS-5-CONFIG_I: Configured from console by user on console
Router# show run | include boot
boot-start-marker
```



```
Calculating SHA-1 hash...done
validate_package: SHA-1 hash:
    calculated fb456e80:4ba2fa07:8556d27c:ea643e4f:512236df
    expected   fb456e80:4ba2fa07:8556d27c:ea643e4f:512236df
Image validated
```

```
PPC/IOS XE loader version: 0.0.3
loaded at:      00800000 0CF3C004
zimage at:     00807673 009B92D6
initrd at:     009BA000 01041CC9
isord at:      01042000 0CF39800
avail ram:     00400000 00800000
```

```
Kernel load:
Uncompressing image... dst: 00000000 lim: 00400000 start: 00807673 size: 001B1C63...done.
Now booting the IOS XE kernel
%IOSXEBOOT-4-BOOT_SRC: (rp/0): Non-HD Boot
%IOSXEBOOT-4-BOOT_PARAMETER: (rp/0): Booting with custom BOOT_PARAM setting
```

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cisco Systems, Inc.
170 West Tasman Drive
San Jose, California 95134-1706

```
Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version
12.2(33)XNA, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Thu 01-May-08 00:29 by mcpre
Image text-base: 0x10064AF0, data-base: 0x137E0958
```

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■ TFTP サーバの統合パッケージをブートするようにルータを設定する例

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<http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to
export@cisco.com.

```
cisco ASR1006 (RP1) processor with 1772131K/6147K bytes of memory.
5 Gigabit Ethernet interfaces
2 Packet over SONET interfaces
2 Channelized T3 ports
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
921599K bytes of eUSB flash at bootflash:.
39004543K bytes of SATA hard disk at harddisk:.
Duplex is configured.Remove duplex configuration before enabling auto-negotiation
```

<output removed for brevity>

User Access Verification

```
Username: user
Password:
```

```
Router>en
```

```
Password:
```

```
Router# show version
```

```
Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version
12.2(33)XNA, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Thu 01-May-08 00:29 by mcpre
```

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 documentation or "License Notice" file accompanying the IOS-XE software,
 or the applicable URL provided on the flyer accompanying the IOS-XE
 software.

ROM: IOS-XE ROMMON

```
Router uptime is 2 minutes
Uptime for this control processor is 4 minutes
System returned to ROM by reload at 14:52:01 DST Thu May 29 2008
System image file is "tftp://172.17.16.81/auto/tftp-users/user/asr1000rp1-adve"
Last reload reason: Reload command
```

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 to comply with U.S. and local laws, return this product immediately.

ルータに保存されている統合パッケージを使用してブートするようにルータを設定する例

```

86401 drwx      4096   Dec 4 2007 06:06:24 -08:00  .ssh
14401 drwx      4096   Dec 4 2007 06:06:36 -08:00  .rollback_timer
28801 drwx      4096  Mar 18 2008 17:31:17 -07:00  .prst_sync
43201 drwx      4096   Dec 4 2007 04:34:45 -08:00  .installer
   12 -rw-    208904396  May 28 2008 16:17:34 -07:00
asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin
   13 -rw-      45977   Apr 9 2008 16:48:46 -07:00  target_support_output.tgz.tgz

928862208 bytes total (503156736 bytes free)

```

ルータに保存されている統合パッケージを使用してブートするようにルータを設定する例

次に、ルータに保存されている統合パッケージを使用してブートするように設定する例を示します。

```

Router# dir bootflash:
Directory of bootflash:/

   11 drwx      16384   Dec 4 2007 04:32:46 -08:00  lost+found
86401 drwx      4096   Dec 4 2007 06:06:24 -08:00  .ssh
14401 drwx      4096   Dec 4 2007 06:06:36 -08:00  .rollback_timer
28801 drwx      4096  Mar 18 2008 17:31:17 -07:00  .prst_sync
43201 drwx      4096   Dec 4 2007 04:34:45 -08:00  .installer
   12 -rw-    208904396  May 28 2008 16:17:34 -07:00
asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin
   13 -rw-      45977   Apr 9 2008 16:48:46 -07:00  target_support_output.tgz.tgz

928862208 bytes total (503156736 bytes free)

Router# config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#boot system bootflash:asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin
Router(config)#config-reg 0x2102
Router(config)#exit
Router#show run | include boot
boot-start-marker
boot system bootflash:asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin
boot-end-marker
Router# copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router# reload
<output removed for brevity>
User Access Verification

Username: user
Password:

Router>en
Password:
Router#show version
Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version
12.2(33)XNA, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
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Compiled Thu 01-May-08 00:29 by mcpre

```

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documentation or "License Notice" file accompanying the IOS-XE software,  
or the applicable URL provided on the flyer accompanying the IOS-XE  
software.
```

```
ROM: IOS-XE ROMMON
```

```
Router uptime is 3 minutes  
Uptime for this control processor is 5 minutes  
System returned to ROM by reload at 16:20:55 DST Wed May 28 2008  
System image file is "bootflash:asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin"  
Last reload reason: Reload command
```

```
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use. Delivery of Cisco cryptographic products does not imply  
third-party authority to import, export, distribute or use encryption.  
Importers, exporters, distributors and users are responsible for  
compliance with U.S. and local country laws. By using this product you  
agree to comply with applicable laws and regulations. If you are unable  
to comply with U.S. and local laws, return this product immediately.
```

```
A summary of U.S. laws governing Cisco cryptographic products may be found at:  
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html
```

```
If you require further assistance please contact us by sending email to  
export@cisco.com.
```

```
cisco ASR1006 (RP1) processor with 1772131K/6147K bytes of memory.  
5 Gigabit Ethernet interfaces  
8 Serial interfaces  
8 Channelized T1 ports  
2 Packet over SONET interfaces  
2 Channelized T3 ports  
32768K bytes of non-volatile configuration memory.  
4194304K bytes of physical memory.  
921599K bytes of eUSB flash at bootflash:.  
39004543K bytes of SATA hard disk at harddisk:.
```

```
Configuration register is 0x2102
```

統合パッケージから同じファイル システムにサブパッケージを抽出する例

次に、統合パッケージから同じファイル システムにサブパッケージを抽出する例を示します。

次の例では、bootflash に asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin 統合パッケージ ファイルがあります。このディレクトリにはサブパッケージはありません。

```
Router# dir bootflash:  
Directory of bootflash:/
```

■ 統合パッケージから同じファイル システムにサブパッケージを抽出する例

```

    11 drwx      16384   Dec 4 2007 04:32:46 -08:00  lost+found
86401 drwx      4096    Dec 4 2007 06:06:24 -08:00  .ssh
14401 drwx      4096    Dec 4 2007 06:06:36 -08:00  .rollback_timer
28801 drwx      4096    Mar 18 2008 17:31:17 -07:00  .prst_sync
43201 drwx      4096    Dec 4 2007 04:34:45 -08:00  .installer
    12 -rw-    208904396   May 9 2008 14:36:31 -07:00
asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
    13 -rw-      45977    Apr 9 2008 16:48:46 -07:00  target_support_output.tgz.tgz

```

928862208 bytes total (503156736 bytes free)

```

Router# request platform software package expand file
bootflash:asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
Verifying parameters
Validating package type
Copying package files

```

SUCCESS: Finished expanding all-in-one software package.

request platform software package expand file

bootflash:asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin コマンドを入力すると（このコマンドには **to** オプションが指定されていないことに注意してください）、サブパッケージが統合パッケージから **bootflash:** に抽出されます。

```

Router# dir bootflash:
Directory of bootflash:/

```

```

    11 drwx      16384   Dec 4 2007 04:32:46 -08:00  lost+found
86401 drwx      4096    Dec 4 2007 06:06:24 -08:00  .ssh
14401 drwx      4096    Dec 4 2007 06:06:36 -08:00  .rollback_timer
28801 drwx      4096    Mar 18 2008 17:31:17 -07:00  .prst_sync
43201 drwx      4096    Dec 4 2007 04:34:45 -08:00  .installer
    12 -rw-    208904396   May 9 2008 14:36:31 -07:00
asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
57611 -rw-    47071436   May 22 2008 11:26:23 -07:00
asr1000rp1-espbase.02.01.00.122-33.XNA.pkg
57602 -rw-      5740    May 22 2008 11:26:22 -07:00
asr1000rp1-packages-adventerprisek9.02.01.00.122-33.XNA.conf
57612 -rw-   20334796   May 22 2008 11:26:24 -07:00
asr1000rp1-rpaccess.02.01.00.122-33.XNA.pkg
57613 -rw-   22294732   May 22 2008 11:26:24 -07:00
asr1000rp1-rpbase.02.01.00.122-33.XNA.pkg
57614 -rw-   21946572   May 22 2008 11:26:25 -07:00
asr1000rp1-rpcontrol.02.01.00.122-33.XNA.pkg
57615 -rw-   48099532   May 22 2008 11:26:26 -07:00
asr1000rp1-rpios-adventerprisek9.02.01.00.122-33.XNA.pkg
57616 -rw-   34324684   May 22 2008 11:26:27 -07:00
asr1000rp1-sipbase.02.01.00.122-33.XNA.pkg
57617 -rw-   22124748   May 22 2008 11:26:28 -07:00
asr1000rp1-sipspa.02.01.00.122-33.XNA.pkg
57603 -rw-      6256    May 22 2008 11:26:28 -07:00  packages.conf
    13 -rw-      45977    Apr 9 2008 16:48:46 -07:00  target_support_output.tgz.tgz

```

928862208 bytes total (286662656 bytes free)

統合パッケージから別のファイル システムにサブパッケージを抽出する例

次に、統合パッケージから別のファイル システムにサブパッケージを抽出する例を示します。

次の例では、usb0: に asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin 統合パッケージ ファイルがあります。

```
Router# dir usb0:
Directory of usb0:/

 1240  -rwx   208904396  May 27 2008 14:10:20 -07:00
asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin

255497216 bytes total (40190464 bytes free)
```

bootflash: ディレクトリにはサブパッケージはありません。

```
Router# dir bootflash:
Directory of bootflash:/

 11  drwx      16384  Dec 13 2004 03:45:47 -08:00  lost+found
87937 drwx      4096  Dec 13 2004 03:46:45 -08:00  .rollback_timer
14657 drwx      4096  Dec 13 2004 03:47:17 -08:00  .installer
29313 drwx      4096  Dec 13 2004 03:53:00 -08:00  .ssh
 12  -rw-     33554432  Dec 13 2004 03:53:49 -08:00  nvram_00100
58625 drwx      4096   May 7 2008 17:27:51 -07:00  .prst_sync

945377280 bytes total (695246848 bytes free)
```

```
Router# request platform software package expand file
usb0:asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin to bootflash:
Verifying parameters
Validating package type
Copying package files
SUCCESS: Finished expanding all-in-one software package.
```

request platform software package expand file

usb0:asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin to bootflash: コマンドを入力すると、今度はサブパッケージが bootflash: ディレクトリに抽出されます。

```
Router# dir bootflash:
Directory of bootflash:/

 11  drwx      16384  Dec 13 2004 03:45:47 -08:00  lost+found
87937 drwx      4096  Dec 13 2004 03:46:45 -08:00  .rollback_timer
14657 drwx      4096  Dec 13 2004 03:47:17 -08:00  .installer
29313 drwx      4096  Dec 13 2004 03:53:00 -08:00  .ssh
 12  -rw-     33554432  Dec 13 2004 03:53:49 -08:00  nvram_00100
43979 -rw-     47071436  May 27 2008 14:25:01 -07:00
asr1000rp1-espbase.02.01.00.122-33.XNA.pkg
58625 drwx      4096   May 7 2008 17:27:51 -07:00  .prst_sync
43970 -rw-      5740  May 27 2008 14:25:00 -07:00
asr1000rp1-packages-adventerprisek9.02.01.00.122-33.XNA.conf
43980 -rw-    20334796  May 27 2008 14:25:01 -07:00
asr1000rp1-rpaccess.02.01.00.122-33.XNA.pkg
43981 -rw-    22294732  May 27 2008 14:25:02 -07:00
asr1000rp1-rpbase.02.01.00.122-33.XNA.pkg
```

■ サブパッケージを使用してブートするようにルータを設定する例

```

43982 -rw-      21946572  May 27 2008 14:25:03 -07:00
asr1000rpl-rpcontrol.02.01.00.122-33.XNA.pkg
43983 -rw-      48099532  May 27 2008 14:25:04 -07:00
asr1000rpl-rpios-adventerprisek9.02.01.00.122-33.XNA.pkg
43984 -rw-      34324684  May 27 2008 14:25:05 -07:00
asr1000rpl-sipbase.02.01.00.122-33.XNA.pkg
43985 -rw-      22124748  May 27 2008 14:25:05 -07:00
asr1000rpl-sipspace.02.01.00.122-33.XNA.pkg
43971 -rw-         6256   May 27 2008 14:25:05 -07:00  packages.conf

945377280 bytes total (478752768 bytes free)

```

サブパッケージを使用してブートするようにルータを設定する例

次に、サブパッケージを使用してブートするようにルータを設定する例を示します。

dir bootflash: コマンドを入力して、すべてのサブパッケージとプロビジョニング ファイルが同じファイル システムにあることを確認します。

```

Router# dir bootflash:
Directory of bootflash:/

   11  drwx           16384  Dec 4 2007 04:32:46 -08:00  lost+found
86401  drwx           4096   Dec 4 2007 06:06:24 -08:00  .ssh
14401  drwx           4096   Dec 4 2007 06:06:36 -08:00  .rollback_timer
28801  drwx           4096   Mar 18 2008 17:31:17 -07:00  .prst_sync
43201  drwx           4096   Dec 4 2007 04:34:45 -08:00  .installer
   12  -rw-      208904396   May 9 2008 14:36:31 -07:00
asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin
57611  -rw-      47071436   May 22 2008 11:26:23 -07:00
asr1000rpl-espbase.02.01.00.122-33.XNA.pkg
57602  -rw-         5740   May 22 2008 11:26:22 -07:00
asr1000rpl-packages-adventerprisek9.02.01.00.122-33.XNA.conf
57612  -rw-      20334796   May 22 2008 11:26:24 -07:00
asr1000rpl-rpaccess.02.01.00.122-33.XNA.pkg
57613  -rw-      22294732   May 22 2008 11:26:24 -07:00
asr1000rpl-rpbase.02.01.00.122-33.XNA.pkg
57614  -rw-      21946572   May 22 2008 11:26:25 -07:00
asr1000rpl-rpcontrol.02.01.00.122-33.XNA.pkg
57615  -rw-      48099532   May 22 2008 11:26:26 -07:00
asr1000rpl-rpios-adventerprisek9.02.01.00.122-33.XNA.pkg
57616  -rw-      34324684   May 22 2008 11:26:27 -07:00
asr1000rpl-sipbase.02.01.00.122-33.XNA.pkg
57617  -rw-      22124748   May 22 2008 11:26:28 -07:00
asr1000rpl-sipspace.02.01.00.122-33.XNA.pkg
57603  -rw-         6256   May 22 2008 11:26:28 -07:00  packages.conf
   13  -rw-      45977    Apr 9 2008 16:48:46 -07:00  target_support_output.tgz.tgz

928862208 bytes total (286662656 bytes free)

```

```

Router# show running-config | include boot
boot-start-marker
boot-end-marker
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# boot system bootflash:packages.conf
Router(config)# config-reg 0x2102
Router(config)# exit
Router# config t

```

```

*May 29 22:47:57.433: %SYS-5-CONFIG_I: Configured from console by user
Router# show running-config | include boot
boot-start-marker
boot system bootflash:packages.conf
boot-end-marker
Router# copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router# reload
Proceed with reload? [confirm]

*May 29 22:51:54.194: %SYS-5-RELOAD: Reload requested by user on console. Reload Reason:
Reload command.

System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
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Current image running: Boot ROM0
Last reset cause: LocalSoft

ASR1000-RP1 platform with 4194303 Kbytes of main memory

Located packages.conf
Image size 6256 inode num 57603, bks cnt 2 blk size 8*512
#
Located asr1000rp1-rpbase.02.01.00.122-33.XNA.pkg
Image size 22294732 inode num 57606, bks cnt 5444 blk size 8*512
#####
#####
#####
#####
#####
Boot image size = 22294732 (0x15430cc) bytes

Using midplane macaddr
Package header rev 0 structure detected
Calculating SHA-1 hash...done
validate_package: SHA-1 hash:
    calculated 4ad33773:e1cb7492:db502416:4ad586f2:7c4d9701
    expected   4ad33773:e1cb7492:db502416:4ad586f2:7c4d9701
Image validated

PPC/IOS XE loader version: 0.0.3
loaded at:      00800000 01D45004
zimage at:     00807673 009B92D6
initrd at:     009BA000 01041CC9
isord at:      01042000 01D42800
avail ram:     00400000 00800000

Kernel load:
Uncompressing image... dst: 00000000 lim: 00400000 start: 00807673 size: 001B1C63...done.
Now booting the IOS XE kernel
%IOSXEBOOT-4-BOOT_SRC: (rp/0): Non-HD Boot
%IOSXEBOOT-4-BOOT_PARAMETER: (rp/0): Booting with custom BOOT_PARAM setting

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```

■ サブパッケージを使用してブートするようにルータを設定する例

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cisco Systems, Inc.
170 West Tasman Drive
San Jose, California 95134-1706

Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version 12.2(33)XNA, RELEASE SOFTWARE (fc1)
Technical Support: <http://www.cisco.com/techsupport>
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Thu 01-May-08 00:29 by mcpre
Image text-base: 0x10064AF0, data-base: 0x137E0958

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cisco ASR1006 (RP1) processor with 1776227K/6147K bytes of memory.
5 Gigabit Ethernet interfaces
2 Packet over SONET interfaces
2 Channelized T3 ports
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
921599K bytes of eUSB flash at bootflash:.
39004543K bytes of SATA hard disk at harddisk:.
Duplex is configured.Remove duplex configuration before enabling auto-negotiation

Press RETURN to get started!
<some output removed for brevity?
User Access Verification

Username: **user**
Password:

```
Router> enable
Password:

Router# show version
Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version
12.2(33)XNA, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Thu 01-May-08 00:29 by mcpre
```

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or the applicable URL provided on the flyer accompanying the IOS-XE
software.

ROM: IOS-XE ROMMON

```
Router uptime is 1 minute
Uptime for this control processor is 3 minutes
System returned to ROM by reload at 15:51:54 DST Thu May 29 2008
System image file is "bootflash:packages.conf"
Last reload reason: Reload command
```

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<http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

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export@cisco.com.

```
cisco ASR1006 (RP1) processor with 1776227K/6147K bytes of memory.
5 Gigabit Ethernet interfaces
8 Serial interfaces
8 Channelized T1 ports
2 Packet over SONET interfaces
2 Channelized T3 ports
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
921599K bytes of eUSB flash at bootflash:.
39004543K bytes of SATA hard disk at harddisk:.
```

```
Configuration register is 0x2102
```

コンフィギュレーション ファイルのバックアップ

ここで紹介する例は、次のとおりです。

- 「スタートアップ コンフィギュレーション ファイルをブートフラッシュにコピーする例」(P.B-14)
- 「スタートアップ コンフィギュレーション ファイルを USB フラッシュ ディスクにコピーする例」(P.B-14)
- 「スタートアップ コンフィギュレーション ファイルを TFTP サーバにコピーする例」(P.B-15)

スタートアップ コンフィギュレーション ファイルをブートフラッシュにコピーする例

```
Router# dir bootflash:
Directory of bootflash:

   11  drwx           16384  Dec 4 2007 04:32:46 -08:00  lost+found
 86401 drwx           4096  Dec 4 2007 06:06:24 -08:00  .ssh
14401  drwx           4096  Dec 4 2007 06:06:36 -08:00  .rollback_timer
28801  drwx           4096  May 29 2008 16:31:41 -07:00  .prst_sync
43201  drwx           4096  Dec 4 2007 04:34:45 -08:00  .installer
   12  -rw-      208904396  May 28 2008 16:17:34 -07:00  asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin

Router# copy nvram:startup-config bootflash:
Destination filename [startup-config]?

3517 bytes copied in 0.647 secs (5436 bytes/sec)

Router# dir bootflash:
Directory of bootflash:

   11  drwx           16384  Dec 4 2007 04:32:46 -08:00  lost+found
 86401 drwx           4096  Dec 4 2007 06:06:24 -08:00  .ssh
14401  drwx           4096  Dec 4 2007 06:06:36 -08:00  .rollback_timer
28801  drwx           4096  May 29 2008 16:31:41 -07:00  .prst_sync
43201  drwx           4096  Dec 4 2007 04:34:45 -08:00  .installer
   12  -rw-      208904396  May 28 2008 16:17:34 -07:00  asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin
  13  -rw-           7516   Jul 2 2008 15:01:39 -07:00  startup-config
```

スタートアップ コンフィギュレーション ファイルを USB フラッシュ ディスクにコピーする例

```
Router# dir usb0:
Directory of usb0:/

43261  -rw-      208904396  May 27 2008 14:10:20 -07:00  asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin

255497216 bytes total (40190464 bytes free)

Router# copy nvram:startup-config usb0:
Destination filename [startup-config]?
```

```

3172 bytes copied in 0.214 secs (14822 bytes/sec)

Router# dir usb0:
Directory of usb0:/

43261 -rwx 208904396 May 27 2008 14:10:20 -07:00
asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
43262 -rwx 3172 Jul 2 2008 15:40:45 -07:00 startup-config

255497216 bytes total (40186880 bytes free)

```

スタートアップ コンフィギュレーション ファイルを TFTP サーバにコピーする例

```

Router# copy bootflash:startup-config tftp:
Address or name of remote host []? 172.17.16.81
Destination filename [pe24_asr-1002-config]? /auto/tftp-users/user/startup-config
!!
3517 bytes copied in 0.122 secs (28828 bytes/sec)

```

SSO を使用してシングル RP 上で 2 番目の IOS プロセスをイネーブルにする例

show platform コマンドの出力から、2 番目の IOS プロセスがアクティブでないことがわかります。

```

Router# show platform
Chassis type: ASR1004

Slot          Type                State                Insert time (ago)
-----
0             ASR1000-SIP10      ok                   00:04:39
 0/0          SPA-5X1GE-V2       ok                   00:03:23
 0/1          SPA-2XT3/E3        ok                   00:03:18
R0            ASR1000-RP1        ok, active           00:04:39
F0            ASR1000-ESP10      ok, active           00:04:39
P0            ASR1004-PWR-AC     ok                   00:03:52
P1            ASR1004-PWR-AC     ok                   00:03:52

Slot          CPLD Version        Firmware Version
-----
0             07091401            12.2(33r)XN2
R0            07062111            12.2(33r)XN2
F0            07051680            12.2(33r)XN2

```

show redundancy states コマンドの出力が、冗長ステートが非冗長であることを示します。

```

Router# show redundancy states
my state = 13 -ACTIVE
peer state = 1 -DISABLED
Mode = Simplex
Unit ID = 48

Redundancy Mode (Operational) = Non-redundant
Redundancy Mode (Configured) = Non-redundant
Redundancy State = Non Redundant
Maintenance Mode = Disabled

```

SSO を使用してシングル RP 上で 2 番目の IOS プロセスをイネーブルにする例

```
Manual Swact = disabled (system is simplex (no peer unit))
Communications = Down      Reason: Simplex mode

client count = 66
client_notification_TMR = 30000 milliseconds
RF debug mask = 0x0
```

SSO を設定します。

```
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# redundancy
Router(config-red)# mode sso
*May 27 19:43:43.539: %CMRP-6-DUAL_IOS_REBOOT_REQUIRED: R0/0: cmand: Configuration must
be saved and the chassis must be rebooted for IOS redundancy changes to take effect
Router(config-red)# exit
Router(config)# exit
Router#show
*May 27 19:44:04.173: %SYS-5-CONFIG_I: Configured from console by user on console
```

show redundancy states コマンドの出力から、今度は SSO が設定されているものの、動作していないことがわかります。

```
Router# show redundancy states
my state = 13 -ACTIVE
peer state = 1 -DISABLED
Mode = Simplex
Unit ID = 48

Redundancy Mode (Operational) = Non-redundant
Redundancy Mode (Configured) = sso
Redundancy State = Non Redundant
Maintenance Mode = Disabled
Manual Swact = disabled (system is simplex (no peer unit))
Communications = Down      Reason: Simplex mode

client count = 66
client_notification_TMR = 30000 milliseconds
RF debug mask = 0x0
```

show platform コマンドの出力が、2 番目の IOS プロセスがまだ動作していないことを引き続き示します。

```
Router# show platform
Chassis type: ASR1004

Slot      Type                State                Insert time (ago)
-----
0         ASR1000-SIP10      ok                   00:05:53
  0/0     SPA-5X1GE-V2       ok                   00:04:37
  0/1     SPA-2XT3/E3        ok                   00:04:32
R0        ASR1000-RP1        ok, active           00:05:53
F0        ASR1000-ESP10      ok, active           00:05:53
P0        ASR1004-PWR-AC     ok                   00:05:06
P1        ASR1004-PWR-AC     ok                   00:05:06

Slot      CPLD Version        Firmware Version
-----
0         07091401            12.2 (33r) XN2
R0        07062111            12.2 (33r) XN2
F0        07051680            12.2 (33r) XN2

Router# copy running-config startup-config
Destination filename [startup-config]?
```



```
Building configuration...
[OK]
```

SSO を動作冗長モードにするには、実行コンフィギュレーションの保存後にルータをリロードする必要があります。

```
Router# reload
Proceed with reload? [confirm]
```

```
*May 27 19:45:16.917: %SYS-5-RELOAD: Reload requested by user on console. Reload Reason:
Reload command.
```

```
System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2008 by cisco Systems, Inc.
```

```
Current image running: Boot ROM1
Last reset cause: LocalSoft
```

```
ASR1000-RP1 platform with 4194303 Kbytes of main memory
```

```
Located packages.conf
Image size 6256 inode num 43971, bks cnt 2 blk size 8*512
#
Located asr1000rpl-rpbase.02.01.00.122-33.XNA.pkg
Image size 22294732 inode num 43974, bks cnt 5444 blk size 8*512
#####
#####
#####
Boot image size = 22294732 (0x15430cc) bytes
```

```
Using midplane macaddr
Package header rev 0 structure detected
Calculating SHA-1 hash...done
validate_package: SHA-1 hash:
    calculated 4ad33773:e1cb7492:db502416:4ad586f2:7c4d9701
    expected   4ad33773:e1cb7492:db502416:4ad586f2:7c4d9701
Image validated
```

```
PPC/IOS XE loader version: 0.0.3
loaded at:    00800000 01D45004
zimage at:   00807673 009B92D6
initrd at:   009BA000 01041CC9
isord at:    01042000 01D42800
avail ram:   00400000 00800000
```

```
Kernel load:
Uncompressing image... dst: 00000000 lim: 00400000 start: 00807673 size: 001B1C63...done.
Now booting the IOS XE kernel
%IOSXEBOOT-4-BOOT_SRC: (rp/0): Non-HD Boot
%IOSXEBOOT-4-BOOT_PARAMETER: (rp/0): Booting with custom BOOT_PARAM setting
```

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SSO を使用してシングル RP 上で 2 番目の IOS プロセスをイネーブルにする例

cisco Systems, Inc.
170 West Tasman Drive
San Jose, California 95134-1706

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Compiled Thu 01-May-08 00:29 by mcpre
Image text-base: 0x10064AF0, data-base: 0x137E0958

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cisco ASR1004 (RP1) processor with 752227K/6147K bytes of memory.
5 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
937983K bytes of eUSB flash at bootflash:.
39004543K bytes of SATA hard disk at harddisk:.
253424K bytes of USB flash at usb0:.

Press RETURN to get started!

<some output omitted for brevity>

User Access Verification

Username: **user**
Password:

Router> **enable**
Password:

show platform コマンドの出力から、RP 0 上で 2 番目の IOS プロセスがアクティブになっていることがわかります。

```
Router# show platform
Chassis type: ASR1004
```

Slot	Type	State	Insert time (ago)
0	ASR1000-SIP10	ok	00:29:34
0/0	SPA-5X1GE-V2	ok	00:28:13
0/1	SPA-2XT3/E3	ok	00:28:18
R0	ASR1000-RP1	ok	00:29:34
R0/0		ok, active	00:29:34
R0/1		ok, standby	00:27:49
F0	ASR1000-ESP10	ok, active	00:29:34
P0	ASR1004-PWR-AC	ok	00:28:47
P1	ASR1004-PWR-AC	ok	00:28:47

Slot	CPLD Version	Firmware Version
0	07091401	12.2(33r)XN2
R0	07062111	12.2(33r)XN2
F0	07051680	12.2(33r)XN2

show redundancy states コマンドでは、動作冗長モードとして SSO が示されます。

```
Router# show redundancy states
    my state = 13 -ACTIVE
    peer state = 8  -STANDBY HOT
    Mode = Duplex
    Unit ID = 48

Redundancy Mode (Operational) = sso
Redundancy Mode (Configured)  = sso
Redundancy State                = sso
    Maintenance Mode = Disabled
    Manual Swact = enabled
    Communications = Up

    client count = 66
    client_notification_TMR = 30000 milliseconds
    RF debug mask = 0x0
```

ISSU : 統合パッケージのアップグレードの例

次の例では、ISSU を使用して、同じ Cisco ASR 1000 シリーズ ルータに搭載された 2 つの RP を統合パッケージにアップグレードします。RP は、Cisco IOS XE Release 2.1.0 (Cisco IOS Release 12.2(33)XNA を使用) から Cisco IOS XE Release 2.1.1 (Cisco IOS Release 12.2(33)XNA1 を使用) にアップグレードされます。

最初に、RP 0 (アクティブ RP) にログインします。

```
Router# show version
Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version
12.2(33)XNA, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
```

Compiled Thu 01-May-08 00:29 by mcpre

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documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.

ROM: IOS-XE ROMMON

Router uptime is 2 weeks, 2 hours, 54 minutes
Uptime for this control processor is 1 hour, 7 minutes
System returned to ROM by reload at 15:24:15 DST Mon Jul 21 2008
System image file is "bootflash:asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin"
Last reload reason: redundancy force-switchover

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<http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to
export@cisco.com.

cisco ASR1006 (RP1) processor with 1772131K/6147K bytes of memory.
8 FastEthernet interfaces
5 Gigabit Ethernet interfaces
8 Serial interfaces
8 Channelized T1 ports
2 Packet over SONET interfaces
2 Channelized T3 ports
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
921599K bytes of eUSB flash at bootflash:.
39004543K bytes of SATA hard disk at harddisk:.

Configuration register is 0x2102

Router# **dir bootflash:**

Directory of bootflash:/

11	drwx	16384	Dec 4 2007 04:32:46 -08:00	lost+found
86401	drwx	4096	Dec 4 2007 06:06:24 -08:00	.ssh
14401	drwx	4096	Dec 4 2007 06:06:36 -08:00	.rollback_timer
28801	drwx	4096	Jul 21 2008 15:29:25 -07:00	.prst_sync
43201	drwx	4096	Dec 4 2007 04:34:45 -08:00	.installer
12	-rw-	208904396	May 28 2008 16:17:34 -07:00	asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin
13	-rw-	7516	Jul 2 2008 15:01:39 -07:00	startup-config


```

928862208 bytes total (76644352 bytes free)
Router# dir stby-bootflash:
Directory of stby-bootflash:/

   11  drwx           16384  Dec 13 2004 03:45:47 -08:00  lost+found
 87937  drwx           4096   Jul 17 2008 16:43:34 -07:00  .rollback_timer
14657  drwx           4096   Jul 17 2008 16:43:34 -07:00  .installer
29313  drwx           4096   Dec 13 2004 03:53:00 -08:00  .ssh
   12  -rw-        33554432  Dec 13 2004 03:53:49 -08:00  nvram_00100
   13  -rw-        208904396  Jun 5 2008 20:12:53 -07:00
asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
58625  drwx           4096   Jul 21 2008 15:32:59 -07:00  .prst_sync
   14  -rw-        209227980  Jul 17 2008 16:16:07 -07:00
asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin

```

```
945377280 bytes total (276652032 bytes free)
```

```

Router# issu loadversion rp 1 file
stby-bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin

```

```

--- Starting installation state synchronization ---
Finished installation state synchronization

```

```

--- Starting file path checking ---
Finished file path checking

```

```

--- Starting system installation readiness checking ---
Finished system installation readiness checking

```

```

--- Starting installation changes ---
Setting up image to boot on next reset
Starting automatic rollback timer
Finished installation changes

```

```
SUCCESS: Software will now load.
```

```

Router#
*Jul 21 23:34:27.206: %ASR1000_OIR-6-OFFLINECARD: Card (rp) offline in slot R1
*Jul 21 23:34:27.271: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
(P_EER_NOT_PRESENT)
*Jul 21 23:34:27.271: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (P_EER_DOWN)
*Jul 21 23:34:27.271: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
(P_EER_REDUNDANCY_STATE_CHANGE)
*Jul 21 23:37:05.528: %ASR1000_OIR-6-ONLINECARD: Card (rp) online in slot R1
*Jul 21 23:37:25.480: %REDUNDANCY-5-P_EER_MONITOR_EVENT: Active detected a standby
insertion (raw-event=P_EER_FOUND(4))

*Jul 21 23:37:25.480: %REDUNDANCY-5-P_EER_MONITOR_EVENT: Active detected a standby
insertion (raw-event=P_EER_REDUNDANCY_STATE_CHANGE(5))
Finished installation state synchronization

```

```

*Jul 21 23:37:26.349: %REDUNDANCY-3-IPC: IOS versions do not match.
*Jul 21 23:38:47.172: %HA_CONFIG_SYNC-6-BULK_CFGSYNC_SUCCEED: Bulk Sync succeeded
*Jul 21 23:38:47.173: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)

```

```

Router# issu runversion
--- Starting installation state synchronization ---
Finished installation state synchronization

```

```

Initiating active RP failover
SUCCESS: Standby RP will now become active

```

```
Router#
```

```
System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2008 by cisco Systems, Inc.
```

<additional output removed for brevity>

```
*Jul 21 23:43:31.970: %SYS-5-RESTART: System restarted --
Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version
12.2(33)XNA, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Thu 01-May-08 00:29 by mcpre
*Jul 21 23:43:31.978: %SSH-5-ENABLED: SSH 1.99 has been enabled
*Jul 21 23:43:35.196: Relay: standby progression done
*Jul 21 23:43:35.197: %PLATFORM-6-RF_PROG_SUCCESS: RF state STANDBY HOT
```

この時点で、RP1 にログインする必要があります。RP1 は、アップグレードの開始時はスタンバイ RP でしたが、スイッチオーバーのあとにアクティブ RP になります。

以降のコマンドは RP1 から入力します。

```
Router# issu acceptversion
Cancelling rollback timer
SUCCESS: Rollback timer cancelled
```

```
Router# issu commitversion
--- Starting installation changes ---
Cancelling rollback timer
Saving image changes
Finished installation changes
```

```
Building configuration...
[OK]
```

```
SUCCESS: version committed: bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin
```

```
Router# show version
Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version
12.2(33)XNA1, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Tue 08-Jul-08 14:40 by mcpre
```

```
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documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.
```

```
ROM: IOS-XE ROMMON
```

```
Router uptime is 2 weeks, 3 hours, 8 minutes
Uptime for this control processor is 11 minutes
System returned to ROM by reload at 15:29:24 DST Mon Jul 21 2008
System image file is "bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin"
```

Last reload reason: EHSB standby down

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```
cisco ASR1006 (RP1) processor with 1772046K/6147K bytes of memory.
8 FastEthernet interfaces
5 Gigabit Ethernet interfaces
8 Serial interfaces
8 Channelized T1 ports
2 Packet over SONET interfaces
2 Channelized T3 ports
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
937983K bytes of eUSB flash at bootflash:.
39004543K bytes of SATA hard disk at harddisk:.
253424K bytes of USB flash at usb0:.
```

Configuration register is 0x2102

```
Router# show running-config | include boot
boot-start-marker
boot system bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin
boot system bootflash:asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
boot-end-marker
Router#
```

この時点で、RP1 のアップグレードは完了しました。

以降の手順では、同じステップを使用して RPO をアップグレードします。このプロセスの開始時には、ユーザはまだ RP1 上にいます。

```
Router# show platform
Chassis type: ASR1006
```

Slot	Type	State	Insert time (ago)
0	ASR1000-SIP10	ok	00:16:10
0/0	SPA-5X1GE-V2	ok	00:10:50
0/1	SPA-8X1FE-TX-V2	ok	00:10:46
0/2	SPA-2XCT3/DS0	ok	00:10:42
1	ASR1000-SIP10	ok	00:16:10
1/0	SPA-2XOC3-POS	ok	00:10:49
1/1	SPA-8XCHT1/E1	ok	00:10:45
1/2	SPA-2XT3/E3	ok	00:10:41
R0	ASR1000-RP1	ok, standby	00:16:10
R1	ASR1000-RP1	ok, active	00:16:10
F0	ASR1000-ESP10	ok, standby	00:16:10
F1	ASR1000-ESP10	ok, active	00:16:10


```
P0      ASR1006-PWR-AC      ok      00:15:07
P1      ASR1006-FAN        ok      00:15:07
```

Slot	CPLD Version	Firmware Version
0	06120701	12.2(33r)XN2
1	06120701	12.2(33r)XN2
R0	07082312	12.2(33r)XN2
R1	07062111	12.2(33r)XN2
F0	07051680	12.2(33r)XN2
F1	07051680	12.2(33r)XN2

```
Router# issu loadversion rp 0 file
stby-bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin
--- Starting installation state synchronization ---
Finished installation state synchronization

--- Starting file path checking ---
Finished file path checking

--- Starting system installation readiness checking ---
Finished system installation readiness checking

--- Starting installation changes ---
Setting up image to boot on next reset
Starting automatic rollback timer
Finished installation changes

SUCCESS: Software will now load.

Router#
*Jul 21 23:53:41.218: %ASR1000_OIR-6-OFFLINECARD: Card (rp) offline in slot R0
*Jul 21 23:53:41.256: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
(P_EER_NOT_PRESENT)
*Jul 21 23:53:41.256: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (P_EER_DOWN)
*Jul 21 23:53:41.256: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
(P_EER_REDUNDANCY_STATE_CHANGE)
*Jul 21 23:53:42.423: %IP-4-DUPADDR: Duplicate address 172.29.52.155 on GigabitEthernet0,
sourced by 001a.3046.e3ff
*Jul 21 23:56:19.885: %ASR1000_OIR-6-ONLINECARD: Card (rp) online in slot R0
*Jul 21 23:56:39.324: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby
insertion (raw-event=PEER_FOUND(4))

*Jul 21 23:56:39.324: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby
insertion (raw-event=PEER_REDUNDANCY_STATE_CHANGE(5))

*Jul 21 23:58:03.660: %HA_CONFIG_SYNC-6-BULK_CFGSYNC_SUCCEED: Bulk Sync succeeded
*Jul 21 23:58:03.661: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)

Router# issu runversion
--- Starting installation state synchronization ---
Finished installation state synchronization

Initiating active RP failover
SUCCESS: Standby RP will now become active

Router#

System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2008 by cisco Systems, Inc.
```

<Output removed for brevity>

スイッチオーバーのあと、RP0 にログインする必要があります。

残りのコマンドはすべて RP0 から入力します。

```
Router# issu acceptversion
Cancelling rollback timer
SUCCESS: Rollback timer cancelled
```

```
Router# issu commitversion
```

```
*Jul 22 00:10:45.488: %HA_CONFIG_SYNC-6-BULK_CFGSYNC_SUCCEED: Bulk Sync succeeded
*Jul 22 00:10:45.489: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)
--- Starting installation changes ---
Cancelling rollback timer
Saving image changes
Finished installation changes
```

```
Building configuration...
```

```
[OK]
```

```
SUCCESS: version committed: bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin
```

```
Router# show version
```

```
Cisco IOS Software, IOS-XE Software (PPC_LINUX_IOSD-ADVENTERPRISEK9-M), Version
12.2(33)XNA1, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Tue 08-Jul-08 14:40 by mcpre
```

```
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documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.
```

```
ROM: IOS-XE ROMMON
```

```
Router uptime is 2 weeks, 3 hours, 33 minutes
Uptime for this control processor is 16 minutes
System returned to ROM by reload at 15:24:15 DST Mon Jul 21 2008
System image file is "bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin"
Last reload reason: EHSa standby down
```

```
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```

```
A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wvl/export/crypto/tool/stqrg.html
```

If you require further assistance please contact us by sending email to export@cisco.com.

```
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2 Channelized T3 ports  
32768K bytes of non-volatile configuration memory.  
4194304K bytes of physical memory.  
921599K bytes of eUSB flash at bootflash:.  
39004543K bytes of SATA hard disk at harddisk:.
```

Configuration register is 0x2102

```
Router# show running-config | include boot  
boot-start-marker  
boot system bootflash:asr1000rpl-adventerprisek9.02.01.01.122-33.XNA1.bin  
boot system bootflash:asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin  
boot-end-marker  
Router#
```

