



## 設定例

この付録は、Cisco ASR 1000 シリーズルータで一般的なネットワーキングタスクを実行する方法の例を示すことを目的としています。この付録に示されている例は、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）提供されません。

さらに、このセクションを読む際には、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。このセクションの例は、ある設定を実現する1つの方法を示しているにすぎません。

この付録には、次の例が含まれています。

- [TFTP サーバーで統合パッケージを起動するためのルータの設定](#) (1 ページ)
- [TFTP サーバからルータに統合パッケージをコピーする例](#) (4 ページ)
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- [コンフィギュレーションファイルのバックアップ](#) (11 ページ)
- [SSO を使用した単一 RP での 2 番目の IOS プロセスの有効化](#) (12 ページ)
- [ISSU : 統合パッケージのアップグレード](#) (16 ページ)

## TFTP サーバーで統合パッケージを起動するためのルータの設定

次に、TFTP サーバーで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://198.51.100.81/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
```

## TFTP サーバーで統合パッケージを起動するためのルータの設定

```

Router# show run | include boot
boot-start-marker
boot system
tftp://198.51.100.81/auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
boot-end-marker
Router# copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router# reload
Proceed with reload? [confirm]
*May 29 21:52:01.500: %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 ROM0
Last reset cause: LocalSoft
ASR1000-RP1 platform with 4194303 Kbytes of main memory
  IP_ADDRESS: 198.51.100.155
  IP_SUBNET_MASK: 255.255.255.0
  DEFAULT_GATEWAY: 198.51.100.1
  TFTP_SERVER: 198.51.100.81
  TFTP_FILE:
auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
Using midplane macaddr
  TFTP_MACADDR: 00:1a:30:46:e3:ff
  TFTP_VERBOSE: Progress
  TFTP_RETRY_COUNT: 18
  TFTP_TIMEOUT: 7200
  TFTP_CHECKSUM: Yes
  ETHER_PORT: 3
  ETHER_SPEED_MODE: Auto Detect
link up 100Mbps/HD
Receiving auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin from
198.51.100.81
-----
File reception completed.
Boot image size = 208904396 (0xc73a0cc) bytes
Using midplane macaddr
Package header rev 0 structure detected
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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(c) (1) (ii) of the Rights in Technical Data and Computer
Software clause at DFARS sec. 252.227-7013.

```

```
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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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
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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GPL code under the terms of GPL Version 2.0. For more details, see the
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 2008System image file is
```

```
"tftp://172.17.16.81/auto/tftp-users/user/asr1000rp1-adve"Last reload reason: Reload
command
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
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
```

## TFTP サーバからルータに統合パッケージをコピーする例

次に、TFTP サーバからルータに統合パッケージをコピーする例を示します。

```
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
  13  -rw-      45977   Apr 9 2008 16:48:46 -07:00  target_support_output.tgz.tgz
928862208 bytes total (712273920 bytes free)
Router# copy tftp bootflash:
Address or name of remote host []? 198.51.100.81
Source filename []?
/!auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
Destination filename [asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin]?
Accessing
tftp://198.51.100.81/!auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin...
Loading /!auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin from
198.51.100.81 (via GigabitEthernet0):
-----
[OK - 208904396 bytes]
208904396 bytes copied in 330.453 secs (632176 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   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  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)
```

## 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ルータを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 (fcl)
Technical Support: http://www.cisco.com/techsupport
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GPL code under the terms of GPL Version 2.0.  For more details, see the
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 2008System image file is
bootflash:asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.binLast reload reason: Reload
command
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
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

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。

asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin 統合パッケージファイルはブートフラッシュにあります、ディレクトリにサブパッケージは存在しません。

```

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
 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 (to オプションが使用されていない点に注意) を入力すると、統合パッケージのサブパッケージが bootflash: に解凍されます。

```

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
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-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

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。

asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin 統合パッケージファイルはusb0にあります。

```

Router# dir usb0:
Directory of usb0:/
  1240  -rwx      208904396  May 27 2008 14:10:20 -07:00
asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin
255497216 bytes total (40190464 bytes free)

```

bootflash: ディレクトリにサブパッケージは存在しません。

```

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:asr1000rpl-adventerprisek9.02.01.00.122-33.XNA.bin to bootflash:
Verifying parameters
Validating package type

```

## サブパッケージを使用して起動するようルータを設定する

```
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、サブパッケージが bootflash: ディレクトリに存在するようになります。

```
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
43982 -rw-       21946572  May 27 2008 14:25:03 -07:00
asr1000rp1-rpcontrol.02.01.00.122-33.XNA.pkg
43983 -rw-       48099532  May 27 2008 14:25:04 -07:00
asr1000rp1-rpios-adventerprisek9.02.01.00.122-33.XNA.pkg
43984 -rw-       34324684  May 27 2008 14:25:05 -07:00
asr1000rp1-sipbase.02.01.00.122-33.XNA.pkg
43985 -rw-       22124748  May 27 2008 14:25:05 -07:00
asr1000rp1-sipspa.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起動するようルータを設定する

次の例は、サブパッケージを使って起動するようルータを設定する方法を示しています。

**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存在す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
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
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-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)
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
Copyright (c) 2008 by cisco Systems, Inc.
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 asr1000rpl-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

```

## サブパッケージを使用して起動するようルータを設定する

```

%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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Software clause at DFARS sec. 252.227-7013.
  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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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 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
Cisco IOS-XE software, Copyright (c) 1986-2008 by Cisco Systems, Inc.
All rights reserved. Certain components of Cisco IOS-XE software are
licensed under the GNU General Public License (GPL) Version 2.0. The

```

```

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with ABSOLUTELY NO WARRANTY. You can redistribute and/or modify such
GPL code under the terms of GPL Version 2.0. For more details, see the
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 1 minute
Uptime for this control processor is 3 minutes
System returned to ROM by reload at 15:51:54 DST Thu May 29 2008System image file is
bootflash:packages.confLast reload reason: Reload command
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
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 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

```

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
asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
13 -rw-         7516   Jul 2 2008 15:01:39 -07:00  startup-config

```

## USB フラッシュディスクへのスタートアップ構成ファイルのコピー

```

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
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.bin43262 -rwx          3172   Jul 2 2008
15:40:45 -07:00  startup-config255497216 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 []? 198.51.100.81
Destination filename [pe24_asr-1002-config]? /auto/tftp-users/user/startup-config
!!
3517 bytes copied in 0.122 secs (28828 bytes/sec)

```

## SSO を使用した単一 RP での 2 番目の IOS プロセスの有効化

**show platform** コマンドの出力は、2 番目の IOS プロセスがアクティブであることを示していません。

```

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** コマンドの出力は、冗長状態が非冗長であることを示しています。

```
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
      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 は次のように設定されています。

```
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** コマンドの出力は、SSO が設定されているものの動作していないことを示しています。

```
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** コマンドの出力は、2 番目の IOS プロセスがまだ実行されていないことを示しています。

```
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を保存した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 asr1000rp1-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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          cisco Systems, Inc.

```

```

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San Jose, California 95134-1706
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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 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** コマンドの出力は、2 番目の IOS プロセスが RP 0 で現在アクティブであることを示しています。

```

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** コマンドは、動作冗長モードとしての SSO を示しています。

```
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

次の例では、ISSU を使用して、同じ Cisco ASR 1000 シリーズ ルータの 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 リリース 12.2(33)XNA を使用する Cisco IOS XE リリース 2.1.0 から、Cisco IOS リリース 12.2(33)XNA1 を使用する Cisco IOS XE リリース 2.1.1 にアップグレードされています。

この例は、ユーザーがアクティブ RP である RP 0 にログインしている状態から始まります。

```
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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GPL code under the terms of GPL Version 2.0. For more details, see the
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:asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
Last reload reason: redundancy force-switchover
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
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
```



```

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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.
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
asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
  13 -rw-           7516   Jul 2 2008 15:01:39 -07:00  startup-config
  14 -rw-           45977   Apr 9 2008 16:48:46 -07:00  target_support_output.tgz.tgz
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
945377280 bytes total (276652032 bytes free)
Router# copy tftp bootflash:
Address or name of remote host []? 198.51.100.81

Source filename []?
/!auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin

Destination filename [asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin]?
Accessing
tftp://198.51.100.81/!auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin...
Loading /!auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin from
198.51.100.81 (via GigabitEthernet0):
=====
[OK - 209227980 bytes]
209227980 bytes copied in 329.215 secs (635536 bytes/sec)
Router# copy bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin stby-bootflash:

Destination filename [asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin]?
Copy in progress...CCCCCCCC<output removed for brevity>
209227980 bytes copied in 434.790 secs (481216 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   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
asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
    15 -rw-      7516    Jul 2 2008 15:01:39 -07:00  startup-config
    13 -rw-     45977    Apr 9 2008 16:48:46 -07:00  target_support_output.tgz.tgz
    16 -rw-    209227980  Jul 17 2008 16:06:58 -07:00
asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin
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
```

プロセスのこの時点で、ユーザーは RPI にログオンする必要があります。RPI はスタンバイ RP としてアップグレードを開始しましたが、スイッチオーバー後はアクティブ RP になります。

RPI から次のコマンドを入力します。

```
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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licensed under the GNU General Public License (GPL) Version 2.0. The
software code licensed under GPL Version 2.0 is free software that comes
with ABSOLUTELY NO WARRANTY. You can redistribute and/or modify such
GPL code under the terms of GPL Version 2.0. For more details, see the
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: EHSA standby down
  This product contains cryptographic features and is subject to United
  States and local country laws governing import, export, transfer and
  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 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#

```

手順のこの時点で、RP1 のアップグレードは完了しています。

次の手順では、RP0 をアップグレードする場合と同じ手順を使用します。このプロセスの開始時点で、ユーザーは引き続き RP1 にログオンしています。

```

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
(PEER_NOT_PRESENT)
*Jul 21 23:53:41.256: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
*Jul 21 23:53:41.256: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
(PEER_REDUNDANCY_STATE_CHANGE)
*Jul 21 23:53:42.423: %IP-4-DUPADDR: Duplicate address 198.51.100.155 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>

```

スイッチオーバー後、ユーザーは RP0 にログオ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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with ABSOLUTELY NO WARRANTY. You can redistribute and/or modify such
GPL code under the terms of GPL Version 2.0. For more details, see the
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
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
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 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.
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: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#
```

## 翻訳について

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