Troubleshoot 4000 Series ISR for Issues with ROMMON

Contents

Introduction

This document describes how to recover the Cisco 4000 series ISR from ROMMON when configured with Cisco IOS®-XE release of an incorrect platform.

Background Information

This document describe step-by-step process on how to troubleshoot and recover Cisco 4000 series ISR (Integrated Services Router) from ROMMON or infinite boot loop if configured with Cisco IOS-XE release of incorrect platform. At times Cisco 4000 series ISR gets stuck in ROMMON or continuous boot loop.

Problem

Cisco 4400 and Cisco 4300 series routers have Cisco IOS-XE images looks very similar in case you configured the Cisco 4400 with Cisco IOS-XE release for Cisco 4300 or vice-versa. The router does not bootup completely, rather, it gets stuck in ROMMON.

This is a Cisco 4400 configured with an Cisco IOS-XE release of Cisco 4300:

Cisco ISR4431/K9 (1RU) processor with 1665895K/6147K bytes of memory.
Processor board ID XXXXXXXXXX
4 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
7057407K bytes of flash memory at bootflash:.
4013055K bytes of USB flash at usb1

```
<#root>

ROUTER#

configure terminal


Enter configuration commands, one per line. End with CNTL/Z.
ROUTER(config)#
```

```
boot system flash bootflash:isr4300-universalk9.3.13.01.S.154-3.S1-ext.SPA.bin
```

```
ROUTER(config)#
```

```
end
```

```
ROUTER#
ROUTER#
```

```
show running-config | include boot
```

```
boot-start-marker
boot system flash bootflash:isr4300-universalk9.03.13.01.S.154-3.S1-ext.SPA.bin
boot-end-marker
```

If you reload this router, the router gets stuck in ROMMON mode with this message on boot-up:

```
%IOSXEBOOT-1-INVALID_IMAGE: (RP/0): Booting an invalid ISR4300 image - Reloading system.
```

The methods to bring router up with correct Cisco IOS-XE image do not work.

1. Try to bring router up with an USB Flash:

<#root>

```
rommon 1 >
```

```
boot usb1:isr4400-universalk9.03.15.01.S.155-2.S1-std.SPA.bin
```

Please reset before you reboot:

<#root>

```
rommon 2 >
```

```
reset
```

2. Try to ignore startup-config and bring router up without startup configuration:

<#root>

```
rommon 3 >
```

```
confreg 0x2142
```

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

```
<#root>
```

rommon 4 >

boot usb1:isr4400-universalk9.03.15.01.S.155-2.S1-std.SPA.bin

You need to reset before you boot:

```
<#root>
```

rommon 5 >

reset

3. Try to bring router up from traditional bootflash file system:

```
<#root>
```

rommon 6 >

boot bootflash:isr4400-universalk9.03.15.01.S.155-2.S1-std.SPA.bin

Reset before you continue:

```
<#root>
```

rommon 7 >

reset

4. In some cases, the internal bootflash file system does not recognized by router:

```
<#root>
```

rommon 8 >

dir bootflash:

Reset before you continue:

```
<#root>
```

rommon 9 >

reset

Solution

This is the correct process to recover this infinite boot loop issue:

1. Break router into ROMMON mode with break sequence while you boot-up:

```
rommon 1 >
```

2. Change the config-register vlaue to 0x0 to ignore the boot variable configured in startup config:

<#root>

```
rommon 1 >

confreg 0x0
```

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

<#root>

```
rommon 2 >

reset
```

3. This brings the router into ROMMON mode again. Then change the config-register value to 0x2102:

<#root>

```
rommon 3 >

confreg 0x2102
```

4. Now you need to configure the correct boot variable from ROMMON:

<#root>

```
rommon 4 >

 boot bootflash:isr4400-universalk9.03.15.01.S.155-2.S1-std.SPA.bin
```

Once router is up, you can delete the incorrect boot variable and confgure the correct Cisco IOS-XE release:

<#root>

```
ROUTER(config)#
```

no boot system flash bootflash:isr4300-universalk9.03.13.01.S.154-3.S1-ext.SPA.bin

```
ROUTER(config)#
```

boot system flash bootflash:isr4400-universalk9.03.15.01.S.155-2.S1-std.SPA.bin

5. Save the changes:

<#root>

```
ROUTER#
```

write memory

For the password recovery guide for the Cisco 4000 Series Integrated Services Router, refer to [Troubleshoot Guide for the Cisco 4000 Series Integrated Services Router](#).

Related Information

- **[Cisco Technical Support & Downloads](#)**