

排除CGR 1000的IOS虚拟机监控程序和系统映像恢复故障

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简介

本文档介绍运行IOS软件的Cisco 1000系列Connected Grid路由器(CGR 1000)上的虚拟机监控程序和系统映像的恢复步骤。如果虚拟机监控程序或系统映像损坏，此程序可帮助您使CGR 1000路由器重新联机。IOS配置存储在NVRAM中。即使使用另一个思科安全数字(SD)卡，配置也不会删除，除非将运行配置指定存储在另一个位置。

先决条件

- 本地计算机上安装的简单文件传输协议(TFTP)服务器
- 设置TFTP服务器，使其具有虚拟机监控程序和系统映像

要求

Cisco 建议您了解以下主题：

- 控制台电缆
- CAT5
- 虚拟机监控程序映像、系统映像和捆绑映像

使用的组件

本文档中的信息仅限于在CGR 1120和CGR1240上运行的IOS版本。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

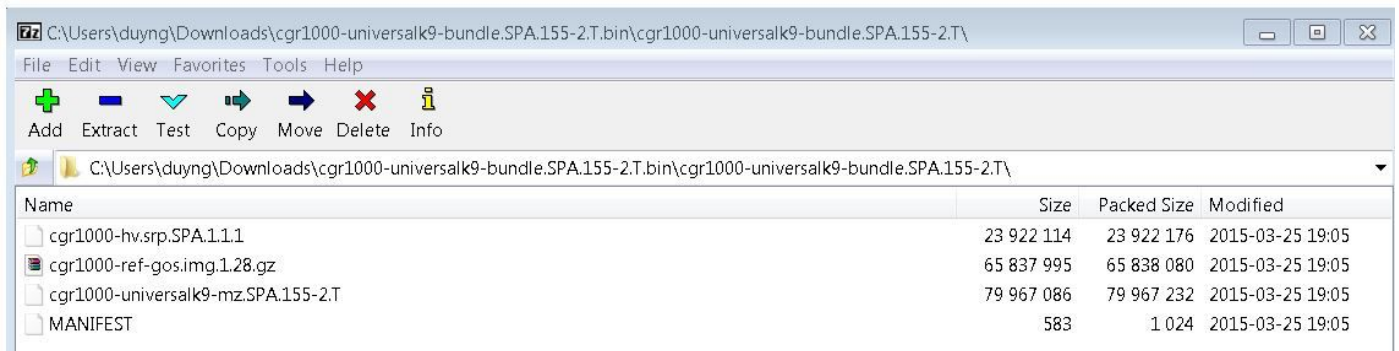
恢复虚拟机监控程序和系统映像的步骤

下载虚拟机监控程序映像和系统映像

- 1.在思科上下载任何映像cgr1000-universalk9-bundle.xxx.xxx.xxx.bin。
- 2.使用7z打开bin文件。



- 3.双击文件以浏览内容。



- 4.下载虚拟机监控程序映像(cgr1000-hv.srp.SPA.1.1.1)和系统映像(cgr1000-universalk9-mz.SPA.155-2.T)。

将这三个文件移到TFTP服务器。

- cgr1000-hv.srp.SPA.1.1.1 (虚拟机监控程序映像)
- cgr1000-universalk9-mz.SPA.155-2.T (系统映像)
- cgr1000-bundle-universalk9-bundle.SPA.155-2.T.bin (捆绑映像)

IOS的CGR启动顺序

启动顺序为：

开机> BIOS >虚拟机监控程序映像>系统映像> IOS正常操作

如果没有虚拟机监控程序映像，用户会看到：

```
IOFPGA @ 0xd0000000 version=0x23020900, datecode=0xd091e17 CPLD version 0x13
```

```
Reset reason (0.0): Unknown
```

```
BIOS Version: Build # 14 - Wed 04/30/2014
```

```
CGR Loader Stage 1 Version: 1.9.16
```

```
Autoboot string bootstrap:cgr1000-hv.srp.SPA.1.1.0
```

```
Booting image: bootstrap:cgr1000-hv.srp.SPA.1.1.0....
```

```
Autoboot failed with error=1
```

```
rommon-1>
```

如果没有系统映像 (IOS映像) ，用户将看到：

```
IOFPGA @ 0xd0000000 version=0x23020900, datecode=0xd091e17 CPLD version 0x13
```

```
Reset reason (0.0): Unknown
```

```
CGR Loader Stage 2 Version: 1.9.16
```

```
Autoboot string flash:/cgr1000-universalk9-mz.SPA.154-3.M1,12;
```

```
rommon-2>
```

恢复步骤

- 1.使用putty设置控制台电缆。
- 2.将CAT5电缆从本地pc网卡连接到CGR ETH 2/2。这是恢复过程中唯一工作的接口。
- 3.将本地PC NIC设置为与CGR位于同一子网中。

例如;PC网卡是192.0.2.1子网255.255.255.0。

对于CGR，子网为192.0.2.2，子网为255.255.255.0。

- 4.在Putty会话中，如果CGR找不到**虚拟机监控程序映像**，您会看到rommon-1>。

```
IOFPGA @ 0xd0000000 version=0x23020900, datecode=0xd091e17 CPLD version 0x13
```

```
Reset reason (0.0): Unknown
```

```
BIOS Version: Build # 14 - Wed 04/30/2014
```

```
CGR Loader Stage 1 Version: 1.9.16
```

```
Autoboot string bootstrap:cgr1000-hv.srp.SPA.1.1.0
```

```
Booting image: bootstrap:cgr1000-hv.srp.SPA.1.1.0....
```

```
Autoboot failed with error=1
```

```
rommon-1>
```

- 5.使用命令set ip设置ETH2/2的IP地址。

```
set ip 192.0.2.2 255.255.255.0
```

```
Correct - ip addr is 192.0.2.2, mask is 255.255.255.0
```

```
Found Intel IOH GBE [2:0.1] at 0xe020, ROM address 0x0000
```

```
Probing...[Intel IOH GBE]
```

```
MAC address bc:16:65:31:58:b2
```

```
External PHY link UP @ 1000/full
```

```
Address: 192.0.2.2
```

```
Netmask: 255.255.255.0
```

```
Server: 0.0.0.0
```

```
Gateway: 0.0.0.0
```

6.使用命令set gw将网关地址设置为本地PC网卡。

```
set gw 192.0.2.1
Correct gateway addr 192.0.2.1
Address: 192.0.2.2
Netmask: 255.255.255.0
Server: 0.0.0.0
Gateway: 192.0.2.1
```

7.使用命令boot tftp://从本地tftp服务器启动虚拟机监控程序映像。

```
Boot tftp://192.0.2.1/cgr1000-hv.srp.SPA.1.1.1
Booting: /cgr1000-hv.srp.SPA.1.1.1 console=ttyS0,9600n8nn quiet loader_ver="1.9
16"... [Multiboot-kludge, loadaddr=0x1c100000, text-and-data=0x16d05c2
Signature verification was successful, bss=0x0, entry=0x1c10005c]
```

```
RIF heap: 1519616 bytes, SKH heap: 2310144 bytes
RIF: used 7691/16384 bytes of stack
```

8.一旦CGR加载虚拟机监控程序映像，并且无法引导系统映像，屏幕应该如此。

```
LynxSecure TRUNK (i386; No Service Packs installed)
Copyright 2005-2014 LynuxWorks, Inc
All rights reserved.
```

```
LynxSecure (i386) build ENGINEERING created on 03/14/2014 13:21:02
URL:          svn://txx.lynx.com/svn/lynxsecure-svn/engr/psubramaniam/cisco/ohci/lynxsk
Revision(s): 5194M
Built by:     psubramaniam@paricos62.localdomain
Initializing the Internal Timekeeping...
Initializing the System State Manager...
Initializing LynxSecure global data areas.
Number of CPU(s) : 2
Initializing the CPU Support Package.
Initializing LynxSecure page table...
Initializing the Board Support Package.
Starting up the other CPUs...
CPUs online: #0 #1
Initializing Scheduler...
Initializing the VCPU module...
Initializing Device Configuration Virtualization...
Initializing Subject Resources...
Initializing Interrupt Routing...
Initializing Hypercalls...
Heap memory used by LynxSecure: 2240444 (0x222fbc) bytes
Launching Subjects
```

```
IOFPGA @ 0xd0000000 version=0x23020900, datecode=0xd091e17 CPLD version 0x13
Reset reason (0.0): Unknown
```

```
CGR Loader Stage 2 Version: 1.9.16
```

```
rommon-2>
```

9.使用命令set ip设置ETH2/2的IP地址。

```
set ip 192.0.2.2 255.255.255.0
```

```
Correct - ip addr is 192.0.2.2, mask is 255.255.255.0
Found Intel IOH GBE [2:0.1] at 0xe020, ROM address 0x0000
Probing...[Intel IOH GBE]
MAC address bc:16:65:31:58:b2
External PHY link UP @ 1000/full
Address: 192.0.2.2
Netmask: 255.255.255.0
Server: 0.0.0.0
Gateway: 0.0.0.0
```

10.使用命令set gw将网关地址设置为本地PC网卡。

```
set gw 192.0.2.1
Correct gateway addr 192.0.2.1
Address: 192.0.2.2
Netmask: 255.255.255.0
Server: 0.0.0.0
Gateway: 192.0.2.1
```

11.使用命令boot tftp://从tftp服务器启动系统映像。

```
Boot tftp://192.0.2.1/cgr1000-universalk9-mz.SPA.155-2.T
```

```
Booting: /cgr1000-universalk9-mz.SPA.155-2.T console=ttyS0,9600n8nn quiet loade
r_ver="1.9.16".... [Multiboot-elf, <0x110000:0xc599aec:0x6667dc>, shtab=0xcd1
1500
Signature verification was successful, entry=0x110240]
```

```
Smart Init is enabled
smart init is sizing iomem
                TYPE          MEMORY_REQ
Onboard devices &
  buffer pools          0x02E44000
-----
                TOTAL:      0x02E44000
```

```
Rounded IOMEM up to: 47MB.
Using 10 percent iomem. [47MB/448MB]
```

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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/stgrq.html>

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

Installed image archive

Reading module 3 idprom, please wait.....

.....

Reading module 4 idprom, please wait.....

Cisco CGR1240/K9 (revision 1.0) with 373760K/52224K bytes of memory.
Processor board ID JAF1720BBGS
Last reset from Power-on

FPGA version: 2.9.0

2 Serial(sync/async) interfaces
4 FastEthernet interfaces
3 Gigabit Ethernet interfaces
6 terminal lines
1 802.11 Radio
1 Cellular interface

DRAM configuration is 72 bits wide with parity disabled.
256K bytes of non-volatile configuration memory.
524320K bytes of ATA System Flash (Read/Write)
262176K bytes of ATA Bootstrap Flash (Read/Write)

12.如果NVRAM仍然完好无损，则运行配置将加载。路由器应仍保存旧配置。

13. (可选) 如果将新SD卡放入CGR，请使用命令partition flash：对新SD卡进行分区。否则，如果当前SD卡确认工作正常，则可跳过此步骤。

format flash:

Format operation may take a while. Continue? [confirm]

Format operation will destroy all data in "flash:". Continue? [confirm]

Format: All system sectors written. OK...

Format: Total sectors in formatted partition: 1048257

Format: Total bytes in formatted partition: 536707584

Format: Operation completed successfully.

Format of flash: complete

14.在IOS中，gigabitethernet2/2是物理机箱上ETH2/2的端口。使用IP地址192.0.2.2配置gigabitethernet2/2，以便从TFTP服务器复制捆绑映像。

Configure terminal

