

# Troubleshoot Bootflash and System Image Recovery for CGOS CGR 1000

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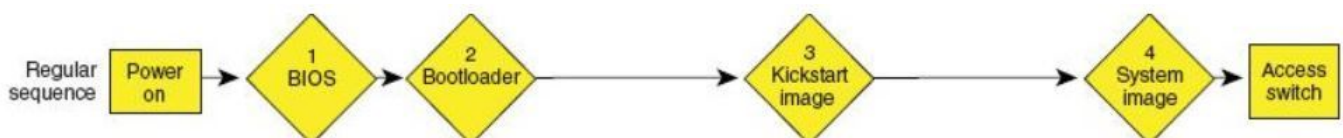
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## Introduction

This document describes troubleshoot steps to recover bootflash and system image on CGR 1000.

## Background Information

CGR1000 use Cisco Secure Digital (SD) Card memory to stored kickstart images, system images, configurations, etc. In rare occasions, the SD card gets corrupted. As a result, the kickstart image and/or the system image gets corrupted. This prevents the CGR from booting up. The sequence for the bootup is outlined in the given figure. The procedure outline in this article is to restore the CGR from a corrupted SD card memory state.



## Prerequisites

1. Trivial File Transfer Protocol (TFTP) server installed on the local PC
2. Setup the TFTP server to have the kickstart image and the system image

## Requirements

Cisco recommends that you have knowledge of these topics:

1. Console Cable
2. CAT5
3. The kickstart image and the system images

## Components Used

This document is restricted to only CGOS version running on CGR 1120 and CGR1240.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

## Recovery Steps

- 1. Setup console cable using putty.**
- 2. Connect the CAT5 cable from the local pc NIC to the CGR ETH 2/2 . This is the only interface that works at the time of the recovery process.**
- 3. Setup the local pc NIC to be in the same subnet as the CGR.**

For example; PC NIC is 192.0.2.1 subnet 255.255.255.0.

For the CGR will be 192.0.2.2 subnet 255.255.255.0.

- 4. In the Putty session, you see:**

```
"loader>"
```

```
IOFPGA @ 0xd0000000 version=0x30020700, datecode=0xc080d17 CPLD version 0x14  
Reset Reason = 0(0)  
Scratch pad test passed !!!
```

```
BIOS Version: Build # 12 - Wed 06/27/2012  
CGR Loader Version: 1.00.01
```

```
Filesystem type is ext2fs, partition type 0x83  
Filesystem type is ext2fs, partition type 0x83
```

```
GNU GRUB version 0.97
```

```
CGR Loader Version 1.00.01
```

```
loader>
```

- 5. Setup the IP address of ETH2/2 with the command "set ip".**

```
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 78:da:6e:8:ad:e1  
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
```

```
loader>
```

## 6. Setup the Gateway Address to be the local PC NIC with the command "set gw".

```
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. Boot the kickstart image from the local tftp server with the command "boot tftp://".

```
loader> boot tftp://192.0.2.1/cgr1000-uk9-kickstart.5.2.1.CG4.3.SPA.bin
Address: 192.0.2.2
Netmask: 255.255.255.0
Server: 192.0.2.1
Gateway: 192.0.2.1
  Filesystem type is tftp, using whole disk
Booting: /cgr1000-uk9-kickstart.5.2.1.CG4.3.SPA.bin console=ttyS0,9600n8mn quiet
t loader_ver="1.00.01"....
.....
.....Kickstart image verification Successful
Image verification OK
```

```
INIT: Checking all filesystems ..... done.
Warning: switch is starting up with default configuration
Creating boot config file...
/etc/rc.d/rcS.d/S26check-flash: line 528: /mnt/bootloader/boot/grub/menu.lst.local: No such file
or directory
cp: cannot stat `/mnt/cfg/0/boot/grub/menu.lst.local': No such file or directory
WARNING: image sync is going to be disabled after a loader netboot
Loading system software
INIT: Sending processes the TERM signal[HJ
INIT: Sending processes the TERM signal
INIT: Sending processes the
```

```
KILL signal
```

## 8. Once image boots up, you will see an output that is similar to this output.

```
Router(boot)# ?
Exec commands:
clear      Reset functions
config     Enter configuration mode
copy       Copy from one file to another
delete     Delete a file or directory
dir        Directory listing for files
exit       Exit from the EXEC
find       Find a file below the current directory
format     Format disks
init       Initialize internal disk
load       Load system image
mkdir      Create new directory
move       Move files
no         Disable debugging functions
```

```
pwd          View current directory
reload      Reboot this supervisor module
rmdir       Remove existing directory
show        Show running system information
sleep       Sleep for the specified number of seconds
ssh         SSH to another system
tail        Display the last part of a file
telnet      Telnet to another system
```

## 9. Format the corrupted SD card with the command "format bootflash:".

This command is going to erase the contents of your bootflash:.

Do you want to continue? (y/n) [n] y

```
Formatting bootflash:
Formatting started at: Fri Feb 20 23:56:00 UTC 2015
mke2fs 1.35 (28-Feb-2004)
Formatting finished at: Fri Feb 20 23:56:52 UTC 2015
Formatting completed
```

## 10. Run init system (option step: this command formats the SD card and wipes out everything).

```
Router(boot)# init system
```

This command is going to erase your startup-config, licenses as well as the contents of your bootflash:.

```
Do you want to continue? (y/n) [n] yInitializing the system
mount: /dev/mmcblk0p4 already mounted or /bootflash busy
mount: according to mtab, /dev/mmcblk0p4 is already mounted on /bootflash
ERROR: cannot mount filesystem
cp: omitting directory `/bootflash/'
Partitioning failed
```

## 11. Setup the Management Interface (this is required in order to copy the kickstart and system image into the bootflash).

```
Router(boot)# configure terminal
Router(boot)(config)# interface mgmt0
Router(boot)(config-if)#ip address 192.0.2.2 255.255.255.0
Router(boot)(config-if)#no shut
```

## 12. Copy the kickstart and system image into the bootflash.

```
Router(boot)# copy tftp://192.0.2.1/cgr1000-uk9-kickstart.5.2.1.CG4.3.SPA.bin bootflash:
Trying to connect to tftp server.....
Connection to server Established. Copying Started.....

TFTP get operation was successful
Copy complete, now saving to disk (please wait)...
```

```
Router(boot)# copy tftp://192.0.2.1/cgr1000-uk9.5.2.1.CG4.3.SPA.bin bootflash:
Trying to connect to tftp server.....
Connection to server Established. Copying Started.....

TFTP get operation was successful
Copy complete, now saving to disk (please wait)...
```

## 13. Verify that the kickstart and system image is on the CGR with "dir".

```
Router(boot)#dir
 29167616    Feb 21 00:39:59 2015  cgr1000-uk9-kickstart.5.2.1.CG4.3.SPA.bin
```

```
143332283    Feb 21 00:42:06 2015  cgr1000-uk9.5.2.1.CG4.3.SPA.bin
      372      Feb 23 17:55:52 2015  fpga.log
      1905     Feb 23 18:39:54 2015  mts.log
```

```
Usage for bootflash://
691462144 bytes used
8859394048 bytes free
9550856192 bytes total
```

#### 14. Boot the system image with the "load bootflash" command.

```
Router(boot)# load bootflash:cgr1000-uk9.5.2.1.CG4.3.SPA.bin
```

```
Loading system software
Uncompressing bootflash:/cgr1000-uk9.5.2.1.CG4.3.SPA.bin.....done. (in 37 seconds)
Loading plugin 0: core_plugin...
```

```
INIT: Switching to runlevel: 3
INIT: Sending processes the TERM signal
Router(boot)#
```

```
INIT:
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
2015 Feb 21 00:47:56  %$ VDC-1  %$ %COPP-2-COPP_NO_POLICY: Control-plane is unprotected.System is
coming up ... Please wait ...
2015 Feb 21 00:47:58  %$ VDC-1  %$ %VDC_MGR-2-VDC_ONLINE: vdc 1 has come online 2015 Feb 21
00:47:58 Router %$ VDC-1  %$ %PLATFORM-2-
```

```
INPUT_POWER_SOURCE_TRANSITION: Three Phase and DC Input Status Alert:  L1 Phase ON, L2 Phase
OFF, L3 Phase OFF, DC Input Absent
```

#### 15. Once the CGR boots up into the system image, you need to install the kickstart and system image with "install all bootflash:<kickstart-image> system bootflash:<system image>".

```
cgr1120# install all kickstart bootflash:cgr1000-uk9-kickstart.5.2.1.CG4.3.SPA.bin system
bootflash:cgr1000-uk9.5.2.1.CG4.3.SPA.bin
```

```
Verifying image bootflash:/cgr1000-uk9-kickstart.5.2.1.CG4.3.SPA.bin for boot variable
"kickstart".
-- SUCCESS
```

```
Verifying image bootflash:/cgr1000-uk9.5.2.1.CG4.3.SPA.bin for boot variable "system".
-- SUCCESS
```

```
Verifying image type.
-- SUCCESS
```

```
Extracting "system" version from image bootflash:/cgr1000-uk9.5.2.1.CG4.3.SPA.bin.
-- SUCCESS
```

Extracting "kickstart" version from image bootflash:/cgr1000-uk9-kickstart.5.2.1.CG4.3.SPA.bin.

-- SUCCESS

Extracting "bios" version from image bootflash:/cgr1000-uk9.5.2.1.CG4.3.SPA.bin.

-- SUCCESS

Checking for Battery Power Mode.

-- SUCCESS

Checking for Module Power Status.

-- SUCCESS

Checking for WPAN upgrade compatibility.

-- SUCCESS

Performing module support checks.

-- SUCCESS

Notifying services about system upgrade.

-- SUCCESS

Compatibility check is done:

Module	bootable	Impact	Install-type	Reason
1	yes	disruptive	reset	Hitless upgrade is not supported

Images will be upgraded according to following table:

Module	Image	Running-Version(pri:alt)	New-Version	Upg-Required
1	system	5.2(1)CG4(3)	5.2(1)CG4(3)	no
1	kickstart	5.2(1)CG4(3)	5.2(1)CG4(3)	no
1	bios	v16.1.0(10/15/2013):V12.1.0(06/27/2012)	v16.1.0(10/15/2013)	no
1	fpga	2.07.00	2.07.00	no

Switch will be reloaded for disruptive upgrade.

Do you want to continue with the installation (y/n)? [n] y