



The Configuration Register



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CCIE Routing & Switching



Video Overview

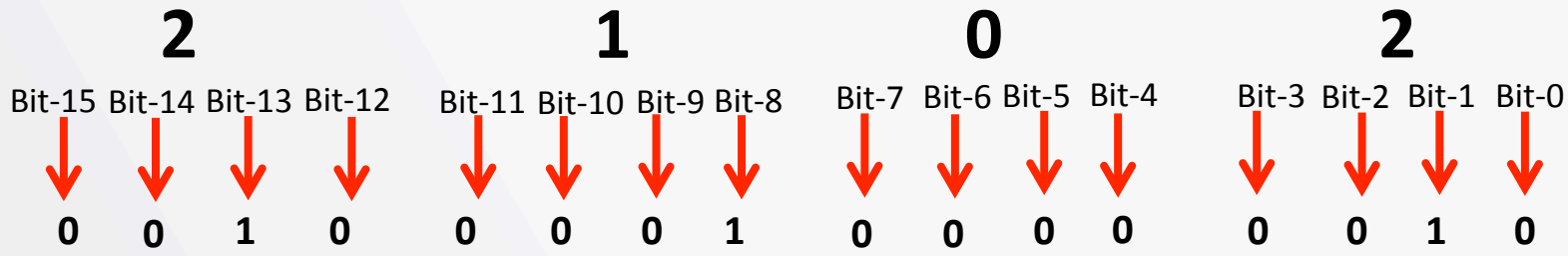
- What is the Configuration Register?
- Individual Bit-Meanings
- Setting the Configuration-Register
- Viewing the Configuration-Register

The Configuration Register

- ▶ 16-Bits located within NVRAM
- ▶ Controls bootup characteristics of the device (Router or Switch):
 - Console baud rate
 - To load (or not load) Startup-Config file
 - Where to look for IOS image
 - Disable boot messages

How it works

Bit No.	Hex Value	Meaning/Function
00 to 03	0x0000 to 0x000F	Defines the source of a default Cisco IOS Software image required to run the router: 00—Stays at the system bootstrap prompt. 01—Boots the first system image in onboard Flash memory. 02 to 0F—Specifies a default netboot filename. Enables boot system commands that override the default netboot filename.
06	0x0040	Causes system software to ignore NVRAM contents.
07	0x0080	Enables the original equipment manufacturer (OEM) bit.
08	0x0100	Disables the Break function.
09	0x0200	Uses secondary bootstrap.
10	0x0400	Broadcasts Internet Protocol (IP) with all zeros.
5, 11 and 12	0x0800 to 0x1000	Defines the console baud rate (the default setting is 9600 baud).
13	0x2000	Boots default Flash software if network boot fails.
14	0x4000	Causes IP broadcasts to leave out network numbers.
15	0x8000	Enables diagnostic messages and ignores the contents of NVRAM.



Setting the console baud rate

► Console baud determined by bits 12, 11 and 5 in Config-Register

Bit-12 value	Bit-11 value	Bit-5 value	Resulting Baud Rate
0	0	0	9600 (default)
0	0	1	19,200
0	1	0	4800
0	1	1	38,400
1	0	0	1200
1	0	1	57,600
1	1	0	2400
1	1	1	115,200

2 1 0 2

Bit-15 Bit-14 Bit-13 **Bit-12** **Bit-11** Bit-10 Bit-9 Bit-8 Bit-7 Bit-6 **Bit-5** Bit-4 Bit-3 Bit-2 Bit-1 Bit-0

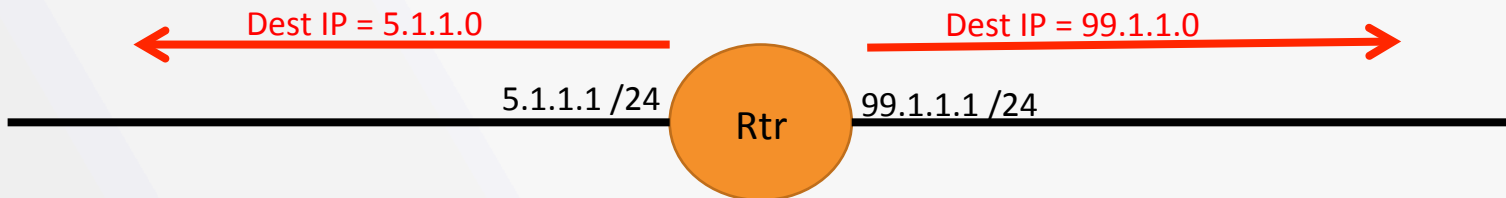
0 0 1 **0** **0** 0 0 1 0 0 **0** 0 0 0 1 0

Controlling Broadcasts

- ▶ The format of broadcasts generated by the router/switch is controlled by bits 14 and 10 of the Configuration-Register

Bit 14	Bit 10	Address (<net><host>)
0	0	<ones><ones>
0	1	<ones><zeros>
1	0	<net><ones>
1	1	<net><zeros>

Router(config)#config-register 0x6502



Modifying the Configuration Register

Router#config terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#**config-register 0x2142**

Router(config)#

Or...

ROMMON>**confreg 0x2102**

Viewing the Configuration Register

► Output of “show version” displays the Config-Register

Router#**show version**

Cisco IOS Software, 2800 Software (C2800NM-ADVENTERPRISEK9-M), Version 15.3(3)XB12, RELEASE SOFTWARE (fc2)

Technical Support: <http://www.cisco.com/techsupport>

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Cisco 2811 (revision 1.0) with 247808K/14336K bytes of memory.

Processor board ID FTX1214A3DM

6 FastEthernet interfaces

4 Low-speed serial(sync/async) interfaces

1 Virtual Private Network (VPN) Module

DRAM configuration is 64 bits wide with parity enabled.

239K bytes of non-volatile configuration memory.

250880K bytes of ATA CompactFlash (Read/Write)

```
-----  
Device# PID          SN  
-----  
*0      CISCO2811      FTX1214A3DM
```

Configuration register is 0x8102 (will be 0x2102 at next reload)