How To Read the Output of the Show Controller fia Command

Document ID: 15100

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Introduction

This documents explains how to interpret the output of the **show controller fia** command.

Prerequisites

Requirements

Readers of this document should be knowledgeable of the following:

- The distributed architecture of the Cisco 12000 Series Internet Router

You can find more details about this architecture in Cisco 12000 Series Internet Router Architecture, particularly the chapter related to the switch fabric.

Components Used

This document is not restricted to specific software and hardware versions.

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

The show controller fia Command

The **show controller fia** command is used to display information about the Fabric Interface Asic (FIA) controllers of the Cisco 12000 Series Internet Router. The FIA resides on both the Gigabit Route Processor (GRP) and the Line Cards (LCs). It provides an interface between the GRP/LC and the switch fabric cards (CSC/SFC).

The **show controller fia** command is very important for troubleshooting switch fabric issues on the Cisco 12000 Series Internet Router. For instance, it is used to Troubleshoot Fabric Ping Timeouts and Failures on the Cisco 12000 Series Internet Router. If you are interested in troubleshooting guidelines for the switch fabric, see Troubleshooting the Switch Fabric (CSC and SFC).

There is a distinction between the From Fabric and To Fabric FIA Errors in the **show controller fia** command. The From Fabric errors are for packets coming *from* the switch fabric toward a line card or a GRP, and the To Fabric errors are for packets going *out* a line card/GRP through the switch fabric to another card.

Here's an example of output from the **show controller fia** command:

```
Line 1   12016#show controller fia
Line 2   Fabric configuration: Full bandwidth redundant
Line 3   Master Scheduler: Slot 17
Line 4
Line 5   From Fabric FIA Errors
Line 6   -----------------------
Line 7   redund fifo parity 0          redund overflow 0          cell drops 0
Line 8   crc32 lkup parity  0          cell parity     0          crc32      0
Line 9   Switch cards present:   0x001F  Slots  16 17 18 19 20
Line 10  Switch cards monitored: 0x001F  Slots  16 17 18 19 20
Line 11  Slot:    16        17         18         19         20
Line 12  Name:   csc0      csc1        sfc0       sfc1       sfc2
                --------   --------   --------   --------   --------
Line 13  los    0          0          0          0          0
Line 14  state  Off        Off        Off        Off        Off
Line 15  crc16  0          0          0          0          0
Line 16
Line 17  To Fabric FIA Errors
Line 18  -----------------------
Line 19  sca not pres 0          req error     0          uni FIFO overflow 0
Line 20  grant parity 0          multi req     0          uni FIFO undrflow 0
Line 21  cntrl parity 0          uni req       0          crc32 lkup parity 0
Line 22  multi FIFO   0          empty dst req 0          handshake error   0
Line 23  cell parity  0
```

- Line 2 indicates whether the box is in full− or quarter−bandwidth mode, and whether or not it is currently redundant.
- Line 3 indicates which clock and scheduler card (CSC) is the current master. 17 is the default master.
- Lines 7 to 15 provide various error counters for the From Fabric FIA. You can find explanations for some of them at Troubleshooting the Switch Fabric (CSC and SFC).
- Lines 9 and 10 are inverse bit masks of which fabric cards are currently present (powered up) and monitored (being used). The bits are broken down like this:

```
   7      6      5    4    3    2    1    0
unused unused unused SFC2 SFC1 SFC0 CSC1 CSC0
```

  In this case, 0x1F is 00011111, meaning all the cards are there. 0x1D would be 00011101, meaning that the bit for CSC1 is off.
- Line 11 is the header line for the slots below:

  0=Slot 16=CSC0

  1=Slot 17=CSC1

  2=Slot 18=SFC0

  3=Slot 19=SFC1

4=Slot 20=SFC2

- Line 13 indicates the number of times you have lost clock synchronization with the fabric card.
- Line 14 indicates the synchronization status. "On" means you are currently out of synchronization; "off" means you are synchronized.
- Line 15 indicates the number of fabric cyclic redundancy check (CRC) errors that have occurred while talking to this particular fabric card. A high number is usually a sign of bad or poorly seated hardware. It's important to check whether the number of errors increases. If it does, you need to check whether they are increasing on all of the fabric cards, or on just one of them.
- Lines 19 to 23 provide various error counters for the To Fabric FIA. You can find explanations for some of them at Troubleshooting the Switch Fabric (CSC and SFC).

The 12410 has a slightly different physical fabric configuration, so the output looks slightly different:

```
Line 1   12410#show controller fia
Line 2   Fabric configuration: Full bandwidth, redundant fabric
Line 3   Master Scheduler: Slot 17 Backup Scheduler: Slot 16
Line 4
Line 5   From Fabric FIA Errors
Line 6   -----------------------
Line 7   redund fifo parity 0   redund overflow 0    cell drops 0
Line 8   crc32 lkup parity 0    cell parity 0        crc32 0
Line 9   Switch cards present 0x007C Slots 18 19 20 21 22
Line 10  Switch cards monitored 0x007C Slots 18 19 20 21 22
Line 11  Slot:   18       19       20      21        22
Line 12  Name:  sfc0     sfc1     sfc2    sfc3      sfc4
              -------- -------- -------- -------- --------
Line 13  los   0        0        0        0        0
Line 14  state Off      Off      Off      Off      Off
Line 15  crc16 0        0        0        0        0
Line 16
Line 17  To Fabric FIA Errors
Line 18  -----------------------
Line 19  sca not pres 0   req error 0       uni fifo overflow 0
Line 20  grant parity 0   multi req 0       uni fifo undrflow 0
Line 21  cntrl parity 0   uni req 0         crc32 lkup parity 0
Line 22  multi fifo 0     empty dst req 0   handshake error 0
Line 23  cell parity 0
```

Related Information

- **Troubleshooting Fabric Ping Timeouts and Failures on the Cisco 12000 Series Internet Router**
- **Troubleshooting the Switch Fabric (CSC and SFC)**
- **Cisco 12000 Series Internet Router Architecture**
- **Cisco 12000 Series Internet Router: Frequently Asked Questions**
- **Routers Technical Support**
- **Cisco IOS Software Technical Support**
- **Technical Support − Cisco Systems**

Updated: Jan 23, 2008 Document ID: 15100