



Troubleshooting Tools

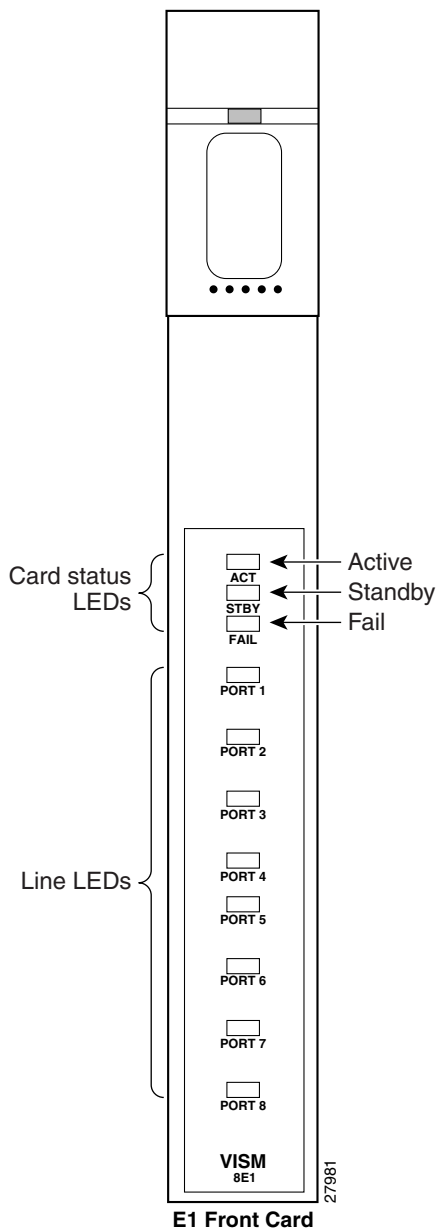
This chapter provides a description of the available VISM 2.0 troubleshooting tools together with some remedial actions that can be taken under various abnormal situations.

Troubleshooting Tools

Card LED Indicators

The first level of troubleshooting tools is the set of LED indicators located on the VISM card itself. The VISM card has 3 card status LEDs and 8 line status LEDs, organized as shown in Figure 8-1.

Figure 8-1 ViSM Front Card LEDs



The ACTIVE LED is GREEN, when the card is in the ACTIVE state.

STANDBY LED will be lit Orange, when the card is in the STANDBY or MISMATCH state or when the card's DSPs are getting downloaded as part of card booting up. STANDBY LED is a blinking Orange when the card is in the boot state.

FAIL LED will be lit RED when the card is in the FAIL state or during some stages of the bootup process.

The 8 line LEDs correspond to the eight T1 or E1 ports on the back card and are lit as follows:

GREEN - if the line has been added and there is no alarm on that line.

ORANGE - if the line has been added and there is a YELLOW alarm condition on the line.

RED - if the line has been added and there is a LOS condition (RED alarm condition), LOF or AIS on the line.

Displaying Information about the VISM card

The second level of troubleshooting aids is the range of “display” commands that are available through the Command Line Interface. Some of these commands are performed when logged into the PXM card and some when logged into the VISM card (see next section for details of the VISM display commands and the MGX 8850 Command Reference for details of the PXM display commands). The CLI prompt indicates the current card last logged onto by the user.

For example, executing the dspcd (display card) and version commands provides the following information:

```
NODENAME.1.3.VISM8.a > dspcd
ModuleSlotNumber:      17
  FunctionModuleState:  Active
  FunctionModuleType:   VISM-8T1
  FunctionModuleSerialNum: SAK0331006P
  FunctionModuleHWRev:   0.0
  FunctionModuleFWRev:   2.0.0_11Nov99_2
  FunctionModuleResetReason: ?
  LineModuleType:       LM-RJ48-8T1
  LineModuleState:      Present
  mibVersionNumber:     21
  configChangeTypeBitMap: CardCnfChng, LineCnfChng
  pcb part no - (800 level): 800-04399-01
  pcb part no - (73 level): 73-03618-01
  Fab Part no - (28 level): 28-02791-01
  PCB Revision:         08
```

```
Daughter Card Information:
  Daughter Card Serial Number: SAK0331003P
  pcb part no - (73 level): 73-03722-01
  Fab Part no - (28 level): 28-02905-01
  PCB Revision:             04
```

```
sj885044.1.17.VISM8.a > version
***** Cisco Systems. MGX 8850 VISM Card *****
  Firmware Version      = 2.0.0_11Nov99_2
  Backup Boot version   = 3.2.13
  Xilinx Firmware version = 10/ 2/1998
  DSPCOM FPGA version   = 10/ 7/1999
  DSPM Firmware Details:
    Major Release       = 3
    Minor Release       = 4
    Build number        = 2
  DSPM ecan Firmware Details:
    Major Release       = 7
    Minor Release       = 3
    Build number        = 9
  VxWorks (for R5k PDC) version 5.3.1.
  Kernel: WIND version 2.5.
  Made on Nov 11 1999, 15:31:28.
  Boot line:
```

The VISM Log

The PXM “dsplog” command can provide useful information when an abnormal situation arises. The log is maintained by the PXM and the format of a VISM entry in the log is:

Date & time of the log

Slot number of the VISM card from which a message is logged

The process on the VISM card that logged that message.

Severity of the message - if it is a fatal error causing card reboot, severity is 1. For all other messages, severity is 6.

A single line description - the log message.

Example:

```
01/05/1999-02:09:01 03 cmm          VISM-6-9157
VISM got time from PXM
```

Alarms

Several kinds of alarms can be detected by the VISM-8T1/E1.

Definition of alarm states is given in T1.403 for DS1 and G.704 for E1. The alarms are propagated to the remote end over the ATM network in accordance with ATM specifications.

Table 8-1 VISM Alarms

Error	Alarm Type	Down stream (ATM side)	Up Stream (TDM side)	Comments
Link Failure (RX)	LOS	AIS	RAI	RAI returned on TX line
Receive RAI	Yellow	RAI	None	
Receive LOF		AIS	RAI	RAI returned on TX line.
Receive AIS	AIS	AIS	RAI	RAI returned on TX line.

Loopback Paths

The VISM-8T1 and VISM-8E1 card sets provide the capability for creating loopback paths for diagnostic purposes. The available loopback configurations are:

1. Local Line Loopback, (per Line). This loopback is enabled/disabled through the **addlnloop** and **dellnloop** commands on the VISM.
2. Remote Line Loopback, (per Line). This loopback is enabled/disabled through the **cnfbert** command on the PXM
3. OAM Loopback through the CPU towards the network (per VC). This loopback is enabled automatically.

4. Per ds0 loopback at the compression DSP's towards the TDM side. This loopback is enabled using "addendptloop" command, and disabled using the "delendptloop" command.
5. Per VC remote loopback. This loopback is enabled using "addconloop" command, and disabled using the "delconloop" command.

The BERT and loopback functions can be useful in testing the integrity of the T1/E1 lines. Using the cnfbert command on the PXM, the following actions can be taken:

- Run BERT on a per line basis on the VISM card.
- Put a VISM line on a TDM side loopback.
- Put a VISM line on a network side loopback.
- Cause the VISM to put a test equipment on the far side into loopback.

The cnfbert command is described in the MGX 8850 Command Reference.

Snoop

The Unix snoop trace tool can sometimes aid in diagnosing a problem. For example, to determine if there is any activity at all between the VISM and the Call Agent. This can be done using the command -

```
snoop -x 42 -ta <ip address of CA> port <udp port of CA>  
E.g snoop -x 42 -ta vismvsc1 port 2427
```

Symptoms and Possible Causes/Remedies

VISM Card did not become active

Four possible causes exist.

1. An E1 card is inserted in a slot where a T1 card WAS present (or viceversa), resulting in configuration mismatch.
2. When at least minimum number of DSPs failed to download - currently the threshold is fixed at 5.
3. When the backcard type doesnot match with the front card type - if the front card is of type T1 (E!) and the backcard type is E1 (T1).
4. When the MIB version in the image on the card doesn't match that of the MIB on the PXM disk.

T1/E1 Mismatch

The T1/E1 mismatch causes can be identified using the PXM **dspcds** command as follows:

```
NODENAME.1.7.PXM.a > dspcds
Slot  CardState  CardType  CardAlarm  Redundancy
-----
1.1  Empty          Clear
1.2  Empty          Clear
1.3  Empty          Clear
1.4  Empty          Clear
1.5  Mismatch      VISM-8E1  Clear
1.6  Empty          Clear
1.7  Active        PXM1-OC3  Clear
1.8  Empty          Clear
1.9  Empty          Clear
1.10 Empty          Clear
1.11 Empty          Clear
1.12 Empty          Clear
1.13 Empty          Clear
1.14 Empty          Clear
1.15 Empty          Clear
1.16 Empty          Clear
1.17 Empty          Clear
1.18 Empty          Clear
1.19 Empty          Clear
```

The PXM **cnfsmcnf** command can also be used as follows:

```
NODENAME.1.7.PXM.a > dspsmcnf
slot      Card      Rate      Channel      MIB      Feature
No.       Type      Control   ized         IMA      MULTRKS   Version   Bits
-----
1  -----> No configuration file exist for this slot <-----
2  -----> No configuration file exist for this slot <-----
3  VISM-8T1  Off       Off          Off       Off       20       0x0
4  -----> No configuration file exist for this slot <-----
5  VISM-8T1  Off       Off          Off       Off       20       0x0
6  -----> No configuration file exist for this slot <-----
9  -----> No configuration file exist for this slot <-----
10 -----> No configuration file exist for this slot <-----
11 -----> No configuration file exist for this slot <-----
12 -----> No configuration file exist for this slot <-----
13 -----> No configuration file exist for this slot <-----
14 -----> No configuration file exist for this slot <-----
17 -----> No configuration file exist for this slot <-----
18 -----> No configuration file exist for this slot <-----
19 -----> No configuration file exist for this slot <-----
20 -----> No configuration file exist for this slot <-----
21 -----> No configuration file exist for this slot <-----
22 -----> No configuration file exist for this slot <-----
25 -----> No configuration file exist for this slot <-----
26 -----> No configuration file exist for this slot <-----
27 -----> No configuration file exist for this slot <-----
28 -----> No configuration file exist for this slot <-----
29 -----> No configuration file exist for this slot <-----
30 -----> No configuration file exist for this slot <-----
```

"dsplog" on the PXM shows the following cmm (card mismatch) log entry, logged by VISM card on slot 5.

```
01/01/1999-00:01:47 05 cmm          VISM-6-9025
VISM going to standby : Config. Mismatch between PXM and VISM
```

The VISM “dspcd” commands displays the following information:

```
NODENAME.1.5.VISM8.s > dspcd
ModuleSlotNumber:      5
FunctionModuleState:   Mismatch
FunctionModuleType:    VISM-8E1
FunctionModuleSerialNum: CAB12345678
FunctionModuleHWRev:   0.13
FunctionModuleFWRev:   2.2.10g.pm
FunctionModuleResetReason: WatchDog timeout reset
LineModuleType:       Missing
LineModuleState:      Not Present
mibVersionNumber:     20
configChangeTypeBitMap: CardCnfChng, LineCnfChng
cardIntegratedAlarm:  Clear
pcb part no - (800 level): 800-03530-01
pcb part no - (73 level):  73-03021-01
Fab Part no - (28 level):  28-02492-01
PCB Revision:         01
Daughter Card Information:
Daughter Card Serial Number: CAB12345678
pcb part no - (73 level):  73-03022-01
Fab Part no - (28 level):  28-02493-01
PCB Revision:         01 value = 34 = 0x22 = ''
```

DSP Fail to Load

When atleast minimum number of DSPs failed to download:- "dsplog" on the PXM shows:

```
01/01/1970-00:02:10 05 tDspmDl    VISM-6-9193
DSPM task errors      : 6 DSPs failed to download
```

If the number of DSPs (6 in the above case) is greater than 5, then, the card will fail to come up ACTIVE. If this condition happens repeatedly, the card has to be replaced.

The DSP condition is shown by the PXM "dspcds" command as shown below:

```
NODENAME.1.7.PXM.a > dspcds
Slot  CardState  CardType  CardAlarm  Redundancy
-----
1.1   Empty         Empty     Clear      -----
1.2   Empty         Empty     Clear
1.3   Empty         Empty     Clear
1.4   Empty         Empty     Clear
1.5   Failed        VISM-8E1 Clear
1.6   Empty         Empty     Clear
1.7   Active        PXM1-OC3 Clear
1.8   Empty         Empty     Clear
1.9   Empty         Empty     Clear
1.10  Empty         Empty     Clear
1.11  Empty         Empty     Clear
1.12  Empty         Empty     Clear
1.13  Empty         Empty     Clear
1.14  Empty         Empty     Clear
1.15  Empty         Empty     Clear
1.16  Empty         Empty     Clear
1.17  Empty         Empty     Clear
1.18  Empty         Empty     Clear
1.19  Empty         Empty     Clear
```

Frontcard / Backcard Mismatch

The PXM “dsplog” command can indicate that the backcard type does not match with the front card type:

```
NODENAME.1.7.PXM.a > dsplog
01/01/1970-00:02:24 05 cmm          VISM-6-9025
VISM going to standby : Config. Mismatch between ASC and VISMV
01/01/1970-00:02:24 05 cmm          VISM-6-9023
Mismatch Backcard
01/01/1970-00:02:24 05 cmm          VISM-6-9023
Mismatch Backcard
```

In this mismatch condition, the PXM “dspcds” command displays the following information.

```
NODENAME.1.7.PXM.a > dspcds
Slot  CardState  CardType      CardAlarm  Redundancy
----  -
1.1   Empty         Clear         Clear
1.2   Empty         Clear         Clear
1.3   Empty         Clear         Clear
1.4   Empty         Clear         Clear
1.5   Mismatch     VISM-8E1     Clear
1.6   Empty         Clear         Clear
1.7   Active       PXM1-OC3     Clear
1.8   Empty         Clear         Clear
1.9   Empty         Clear         Clear
1.10  Empty         Clear         Clear
1.11  Empty         Clear         Clear
1.12  Empty         Clear         Clear
1.13  Empty         Clear         Clear
1.14  Empty         Clear         Clear
1.15  Empty         Clear         Clear
1.16  Empty         Clear         Clear
1.17  Empty         Clear         Clear
1.18  Empty         Clear         Clear
1.19  Empty         Clear         Clear
```

The VISM “dspcd” command displays the following information:

```
NODENAME.1.5.VISM8.s > dspcd
ModuleSlotNumber:      5
FunctionModuleState:   Mismatch
FunctionModuleType:    VISM-8E1
FunctionModuleSerialNum: CAB0246014P
FunctionModuleHWRev:   0.0
FunctionModuleFWRev:   2.2.10g.pm
FunctionModuleResetReason: Reset by ASC from Cell Bus
LineModuleType:        LM-RJ48-8T1
LineModuleState:       Invalid
mibVersionNumber:      20
configChangeTypeBitMap: CardCnfChng, LineCnfChng
cardIntegratedAlarm:   Clear
pcb part no - (800 level): 800-04399-01
pcb part no - (73 level): 73-03618-01
Fab Part no - (28 level): 28-02791-01
PCB Revision:          05
Daughter Card Information:
Daughter Card Serial Number: CAB024601FF
pcb part no - (73 level): 73-03722-01
Fab Part no - (28 level): 28-02905-01
PCB Revision:          02 value = 34 = 0x22 = ''
```

Cannot 'CC' to VISM card

Use the PXM “dspcds” command to check whether the card is in the ACTIVE/STANDBY state. If the VISM card is not in the ACTIVE/STANDBY state, “cc” to that slot is not possible.

Card becomes active and then resets again or the card resets occasionally

Reasons why the above conditions can occur include:

- Bad hardware device on the card.
- Daughter card is not attached correctly to the VISM card, as a result, VISM card is not able to come up.

Make sure that the daughter card is making electrical contact to the mother board, and mechanically secure.

Cannot download FW to VISM

For downloading a slot specific image, there must be a VISM card in the slot to which firmware is being downloaded. The card must be in either the ACTIVE or BOOT state. Confirm this is the case and try again.

Make sure that VISM card is seated in the slot, and making the electrical contacts to the backplane.

Echo can be heard on the voice call

Make sure the call has echo cancellation turn on. If the echo delay is longer than the provision tail length, the echo cancellation will not work. Provision the tail length (cnfecantail) to a bigger value.

VISM card after insertion in a chassis has all leds turned off

The VISM card is not inserted completely in the slot. Firmware does not see the Card Insert Bit status as set. Make sure that the VISM card is seated in the slot correctly, with top and bottom half portions of the VISM card making electrical contact with back plane. This symptom can also indicate a bad VISM card or bad MGX slot.

