PGW 2200 Softswitch 'MSO Refused, Warm Start−up Failed' Error Message

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Introduction

This document is designed to help you troubleshoot the Cisco PGW 2200 when you receive the 'MSO refused, Warm start−up Failed' message. This error message appears after you issue the MML command **sw−over::confirm**. Since warm−start is a low priority and asynchronous activity, multiple components can be in the process of warm−starting their standby peers. The alarm helps an operator know when a standby unit is ready to take over as a standby. Raise the alarm when procM sends a `Make Peer Standby` request to IOCM. Only clear the alarm after warm−start is successful.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Media Gateway Controller Software Release 9

Components Used

The information in this document is based on these software and hardware versions:

- Cisco PGW 2200 Software Releases 9.3(2) and later

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.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Troubleshoot

After you issue the MML command **sw−over::Confirm** on the Active Cisco PGW 2200, you receive this error.

```
PGW2200 mml> sw−over::Confirm
MGC−01 − Media Gateway Controller 2004−05−26 11:37:37.061 MEST
M DENY
SROF
"Proc Mgr"
/* MSO refused, Warm start−up Failed. */
;
PGW2200 mml>
```

Note: A "Warm Restart" is an indication that the STANDBY is ready to receive check−pointing data. This usually happen on processes like the replicator and IOCC MTP3 through the IOCM. It can be that SS7 IOCC is the reason why IOCM rejects the **sw−over** command. Other issues can also be the case. For this case, collect the log information with the information in this section.

When the user attempts a manual switchover (MSO) and is denied, MML responds with one of these reasons:

- **MSO refused, standby system not ready** Switchover failed because the standby system was not ready.
- **MSO refused, warm start−up in progress** Switchover failed because start−up of the standby system was in progress.
- **MSO refused, Warm start−up Failed** MSO is refused and the warm start−up switchover failed.
- **MSO refused, System is not in active state** Switchover failed because the PGW 2200 host in not in an active state.
- **MSO refused, Detected standalone Flag** Switcover failed because no Standby PGW 2200 host is configured.

```
PGW2200 mml> rtrv−alms
MGC−01 − Media Gateway Controller 2004−05−26 11:37:40.732 MEST
M RTRV
"lnk−1−cisco1: 2004−04−29 18:24:43.766 MEST,ALM=\"SC FAIL\",SEV=MJ"
"lnk−1−cisco2: 2004−04−29 18:24:43.779 MEST,ALM=\"SC FAIL\",SEV=MJ"
"lnk−2−cisco3: 2004−04−29 18:24:43.797 MEST,ALM=\"SC FAIL\",SEV=MJ"
```

Note: Always check with the MML **rtrv−alms** command the alarms that occur during the **sw−over::confirm** command. Do this in combination with the UNIX command **tail −f platform.log** under the /opt/CiscoMGC/var/log directory. Also check the error message linked to the **sw−over** command.

The platform.log error messages linked to this situation are:

```
Wed May 1 16:13:47:752 2004 MEST | ProcessManager
(PID 698) <Error>GEN_ERR_HA_MSO: Cannot comply with Manual
Switch Over request. Reason  Warm start up failed
```

Troubleshoot Procedure Example

The `Standby Warm Start` alarm is set in the Active Box at the start of the Warm−Start process in IOCM.

The alarm is automatically cleared from the Active box only when the Warm−Start process successfully finishes.

In the event of a Warm−Start failure, this alarm is not cleared. If this happens, the alarm is cleared only when the Warm−Start is processed successfully at a later time.

The affect of the alarm is that a manual switch−over is denied.

This is the corrective action if the alarm does not clear:

1. Make sure that the pom.dataSync parameter is set to **true** in the Active and Standby PGW 2200.
2. Stop and start the Standby PGW 2200 software.
3. If the alarm still does not clear, open a Technical Support service request and log the platform.log under directory /opt/CiscoMGC/var/log and mml.log − alarm.log, the current PGW 2200 configuration, the previous two configuration directories (CFG_) when the alarm was seen, and platform.log from both PGW 2200 to the service request.

This is an example of a troubleshooting procedure:

1. Check the release notes for any items linked to this error message. These are fixed in later Cisco PGW 2200 releases.

   Make sure you do not run into any corrupted patch. Verify the platform.log files at the moment the problem is reported under the /opt/CiscoMGC/var/log directory. Also check for the file messages related to UNIX error messages under the /var/adm directory.

   Cisco recommends that you upgrade to the latest Cisco PGW 2200 patches.

   If everything in this step is OK, proceed to step 2.
2. Issue the **netstat −a** command to see if the replication is in an Established mode (for example, Active <−> Standby).

   Issue the MML **prov−sync** command to see if this works correctly. Also, issue a **sw−over::confirm** command again and check the status. The Cisco PGW 2200 uses Replication TCP port 2970,2974.

   - On an Active Cisco PGW 2200, run the UNIX command **netstat −a | grep 29\[0−9\]\[0−9\]**.
   - On the Standby Cisco PGW 2200, run the UNIX command **netstat −a | grep 29\[0−9\]\[0−9\]**.

   For example, check the Active system to see if it is in an `ESTABLISHED` mode.

```
mgc−bru−20 mml> rtrv−ne
   MGC−01 − Media Gateway Controller 2004−05−28 11:03:46.236 GMT
M  RTRV
   "Type:MGC"
   "Hardware platform:sun4u sparc SUNW,UltraAX−i2"
   "Vendor:"Cisco Systems, Inc.""
   "Location:MGC−01 − Media Gateway Controller"
   "Version:"9.3(2)""
   "Platform State:ACTIVE"
   ;
mgc−bru−20 mml>

mgcusr@mgc−bru−20% netstat −a | grep 29\[0−9\]\[0−9\]
mgc−bru−20.2974            *.*                0      0 24576      0 LISTEN
mgc−bru−20.2970            *.*                0      0 24576      0 LISTEN
mgc−bru−20.37637     mgc−bru−22.2974      24820      0 24820      0 ESTABLISHED
mgc−bru−20.37638     mgc−bru−22.2970      24820      0 24820      0 ESTABLISHED
mgc−bru−20.telnet    dhcp−peg3−cl31144−254−5−149.cisco.com.2906 65256      3 25D
mgcusr@mgc−bru−20%
```

This example checks the Standby system for the ESTABLISHED mode.

```
mgc−bru−22 mml> rtrv−ne
   MGC−01 − Media Gateway Controller 2004−05−28 13:09:20.552 MSD
M  RTRV
   "Type:MGC"
   "Hardware platform:sun4u sparc SUNW,Ultra−5_10"
   "Vendor:"Cisco Systems, Inc.""
   "Location:MGC−01 − Media Gateway Controller"
   "Version:"9.3(2)""
   "Platform State:STANDBY"
   ;
mgc−bru−22 mml>

mgcusr@mgc−bru−22% netstat −a | grep 29\[0−9\]\[0−9\]
mgc−bru−22.2974            *.*                0      0 24576      0 LISTEN
mgc−bru−22.2970            *.*                0      0 24576      0 LISTEN
mgc−bru−22.2974      mgc−bru−20.37637     24820      0 24820      0 ESTABLISHED
mgc−bru−22.2970      mgc−bru−20.37638     24820      0 24820      0 ESTABLISHED
mgc−bru−22.telnet    dhcp−peg3−cl31144−254−5−149.cisco.com.2910 65256      1 25D
mgcusr@mgc−bru−22%
```

If this is OK, proceed to step 3.

3. Check to see if both configurations are the same on Active and Standby with the UNIX **diff** command.

   Issue the UNIX command **netstat −i** to see if you do not have any increase in the counters for the Ierrs, Oerrs, and Collis values.

```
mgcusr@PGW2200% netstat −i
Name  Mtu  Net/Dest        Address             Ipkts        Ierrs     Opkts       Oe
lo0      8232 loopback       localhost          28389215    0       28389215
eri0     1500 mgc−bru−20   mgc−bru−20     187731714 231   185007958        3     0
eri1     1500 mgc−bru−20b  mgc−bru−20b    0      0        82         2

mgcusr@PGW2200%
```

   Check the configuration on the Cisco PGW 2200 and create a Cisco PGW 2200 Standby file under the /opt directory. This is a temporary directory that you remove after a final check.

```
#mkdir temp
```

   Use FTP to copy all the information from the Cisco PGW 2200 Active under the /opt/CiscoMGC/etc directory. Move this information over to the Cisco PGW 2200 Standby under the /opt/temp directory and the subdirectories. *Be sure you have a backup of Cisco PGW 2200 Active/Standby before you do this.*

   Note: Only XECfgParm.dat changes during the UNIX **dircmp** command. You can also run the UNIX command **diff**.

```
# dircmp −d /opt/temp /opt/CiscoMGC/etc/
May 31 13:52 2004  Comparison of /opt/temp /opt/CiscoMGC/etc/ Page 1

directory       .
same            ./accRespCat.dat
same            ./alarmCats.dat
same            ./alarmTable.dat
same            ./auxSigPath.dat
same            ./bearChan.dat
```

```
same            ./bearChanSwitched.dat
same            ./buckets.dat
same            ./cable.dat
same            ./charge.dat
same            ./chargeholiday.dat
same            ./codec.dat
same            ./components.dat
same            ./compTypes.dat
same            ./condRoute.dat
same            ./Copyright
same            ./crossConnect.dat
same            ./dependencies.dat
same            ./dialplan.dat
same            ./digitAnalysis.dat
same            ./dmprSink.dat
same            ./dns.dat
same            ./dpc.dat
same            ./extNodes.dat
same            ./extNodeTypes.dat
same            ./extProcess.dat
same            ./files.dat
same            ./gtdParam.dat
same            ./linkSetProtocol.dat
same            ./mclCallReject.dat
same            ./mclThreshold.dat
same            ./mdlProcess.dat
same            ./measCats.dat
same            ./measProfs.dat
same            ./mmlCommands.dat
same            ./percRoute.dat
same            ./physLineIf.dat
same            ./processes.dat
same            ./procGroups.dat
same            ./profileComps.dat
same            ./profiles.dat
same            ./profileTypes.dat
same            ./properties.dat
same            ./propSet.xml.dat
same            ./propSet.xml.dat.old.newfile
same            ./propSet.xml.dat.old.newfile.newfile
same            ./propSet.xml.dat.old.newfile.newfile.newfile
same            ./propVal.xsd.dat
same            ./routeAnalysis.bin
same            ./routeAnalysis.dat
same            ./routes.dat
same            ./services.dat
same            ./sigChanDev.dat
same            ./sigChanDevIp.dat
same            ./sigPath.dat
same            ./snmpmgr.dat
same            ./stp.dat
same            ./tables.dat
same            ./tariff.dat
same            ./testLine.dat
same            ./thresholds.dat
same            ./trigger.dat
same            ./trigger.template
same            ./trunkGroup.dat
same            ./variant.dat
same            ./variant.dat.old.newfile
same            ./variant.dat.old.newfile.newfile
same            ./variant.dat.old.newfile.newfile.newfile
same            ./version.dat
different       ./XECfgParm.dat
```

To help you troubleshoot, you also need to think about what has changed in the network around the time these issues occurred. For instance, gateway upgrades, configuration changes, any new circuits added, and so forth.

Proceed to step 4 if everything in this step is OK.

4. In most instances, this error message is linked to I/O channel controller (IOCC) processes that do not run or a failure on the Standby Cisco PGW 2200. If this is the case, stop and start the Cisco PGW 2200 application on Standby with the UNIX command **./CiscoMGC stop**. Then restart the application with the **./CiscoMGC start** command under /etc/init.d directory.

   Run the MML command **rtrv−softw:all** on the Cisco PGW 2200 Standby host ensure that all processes correctly run.

```
PGW2200 mml> rtrv−softw:all
   MGC−01 − Media Gateway Controller 2004−05−31 13:04:21.410 MSD
   M  RTRV
   "CFM−01:RUNNING STANDBY"
   "ALM−01:RUNNING STANDBY"
   "MM−01:RUNNING STANDBY"
   "AMDMPR−01:RUNNING STANDBY"
   "CDRDMPR−01:RUNNING STANDBY"
   "DSKM−01:RUNNING IN N/A STATE"
   "MMDB−01:RUNNING IN N/A STATE"
   "POM−01:RUNNING STANDBY"
   "MEASAGT:RUNNING STANDBY"
   "OPERSAGT:RUNNING STANDBY"
   "ss7−i−1:RUNNING IN N/A STATE"
   "mgcp−1:RUNNING IN N/A STATE"
   "Replic−01:RUNNING STANDBY"
   "ENG−01:RUNNING STANDBY"
   "IOCM−01:RUNNING STANDBY"
   "TCAP−01:RUNNING IN N/A STATE"
   "eisup−1:RUNNING IN N/A STATE"
   "FOD−01:RUNNING IN N/A STATE"
   "sip−1:RUNNING IN N/A STATE"
   ;
PGW2200 mml>
```

   If all processes show that they correctly run but still display the error message during MML command **sw−over**, proceed to step 5. Otherwise, check the reason for the failure.

   An example is if you update and add some new SS7 trunks and run into this **sw−over** failure message. At that point, change the `ss7−i−1` process into debug mode. This provides more details of the error message in the /opt/CiscoMGC/var/log/platform.log file. The default equals error status.

```
PGW2200 mml>rtrv−log:all
   MGC−01 − Media Gateway Controller 2004−05−31 13:10:35.376 MSD
   M  RTRV
   "CFM−01:ERR"
   "ALM−01:ERR"
   "MM−01:ERR"
   "AMDMPR−01:ERR"
   "CDRDMPR−01:ERR"
   "DSKM−01:ERR"
   "MMDB−01:ERR"
   "POM−01:ERR"
   "MEASAGT:ERR"
   "OPERSAGT:ERR"
   "ss7−i−1:ERR"
   "mgcp−1:ERR"
```

```
   "Replic-01:ERR"
   "ENG-01:ERR"
   "IOCM-01:ERR"
   "TCAP-01:ERR"
   "eisup-1:ERR"
   "FOD-01:ERR"
   "sip-1:ERR"
   ;
PGW2200 mml>
```

a. Change the `ss7-i-1` process into debug mode with this MML command on the Cisco PGW 2200 Standby host.

```
mml> set-log:ss7-i-1:debug,confirm
```

b. Issue the UNIX command **vi** to remove the **#** character under the /opt/CiscoMGC/etc directory for the XECfgParm.dat file on the Standby.

```
ioChanMgr.logPrio =    Debug
foverd.logPrio =       Debug
```

c. Under the /etc/init.d directory, run the commands **./CiscoMGC/stop** and **./CiscoMGC/start** on the Standby Cisco PGW 2200.
d. Issue the MML command **sw-over::confirm** again. Then check the MML **rtrv-alms** command and the UNIX command **tail -f platform.log** for the error message information.
e. Check to see if the Replication process on the Active Cisco PGW 2200 is in the Active state.

```
PGW2200 mml> rtrv-softw:all
<snip>
"Replic-01:RUNNING ACTIVE"
<snip>
```

Collect all information and add these details to the Service Request.

5. If all these steps are tested/checked, you can proceed with this step since the problem can still exist on the Active Cisco PGW 2200.

   During the maintenance window, you need to shutdown the active Cisco PGW 2200 with the **/etc/init.d/CiscoMGC stop** command.

   The Standby needs to take over. However, before you perform this step, ensure that all the configuration information from the Active system (step 3) and the **rtrv-tc:all** command show that the status of the calls are greater than or equal to the Active Cisco PGW 2200. Also use the **rtrv-softw:all** command to check that all processes are in `STANDBY` status.

   If this step fails, open a Service Request that includes all details and information related to the error message.

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