Oracle® Communications
DSR or SDS NOAM Failover

Release 9.0.0.0.0

ORACLE®

Oracle Communications DSR or SDS NOAM Failover, Release 9.0.0.0.0

F79583-01

Contents

My Oracle Support

My Oracle Support (https://support.oracle.com) is your initial point of contact for all product support and training needs. A representative at Customer Access Support can assist you with My Oracle Support registration.

Call the Customer Access Support main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select **2** for New Service Request.

2. Select **3** for Hardware, Networking and Solaris Operating System Support.

3. Select one of the following options:

    - For Technical issues such as creating a new Service Request (SR), select **1**.

    - For Non-technical issues such as registration or assistance with My Oracle Support, select **2**.

Acronyms

The following table provides information about the acronyms used in this document.

Table   Acronyms

Acronym	Meaning
CLI	Command Line Interface
DR	Disaster Recovery
DSR	Diameter Signaling Router
GUI	Graphical User Interface
NE	Network Element
NOAM (or NOAMP)	Network Operations, Administration, Maintenance and Provisioning
SDS	Subscriber Database Server
VIP	Virtual IP
XMI	External Management Interface

1
Introduction

Although each Product maintains individual Disaster Recovery Procedures, the steps required to manually transfer functionality between a Primary and a Secondary NOAM NE is currently common to all Oracle COMCOL based products matching a 3-tier topology with an installed DR NOAM. Therefore, the intent of this document is to function as a single reference supporting both the DSR and SDS.

Currently, the DSR and SDS Disaster Recovery procedures assume that the Primary NOAM is network isolated as a perquisite to Failover. It is important to note here that the reason for network isolation is not relevant to these procedures (i.e. the loss of the NOAM NE's default router, a site power outage or the site being underwater due to flooding all look the same to the rest of the topology).

It should also be noted that this document goes a step further than just addressing Disaster Recovery procedures in that it also offers the methodology required to perform a "graceful" Failover where the Primary NOAM is not network isolated and no outage scenario exist.

1.1 References

Following are the reference documents:

- *3-Tier NOAM Failover, MO008266*
- *DSR Disaster Recovery User's Guide*
- *SDS Disaster Recovery User's Guide*

1.2 Required Materials

No physical materials are required for this procedure. However, the user must have access to an "Administrator" level account in the NOAM GUI and "root" access to both the Primary and Disaster Recovery servers CLI.

1.3 How to Use This Document

To effectively use this document, consider the following:

1. Before beginning a procedure, completely read the instructional text (it will appear immediately after the Section heading for each procedure) and all associated procedural Warnings or Notes.

2. Before performing a step within a procedure, completely read the information in left and right columns including any step-specific Warnings or Notes.

If a procedural step fails to run successfully, **STOP** and contact My Oracle Support (MOS) for assistance before attempting to continue. Refer to My Oracle Support, for more information on contacting Oracle Customer Service.

> **Note:**
>
> Read DSR or SDS NOAM Failover Process Flow Chart section before
> attempting any procedures in this document.

2

DSR or SDS NOAM Failover Process Flow Chart

This document supports NOAM Failover for DSR/SDS 8.6.0.0.0 releases only, which is COMCOL 7.5.

The below flowchart is intended to act as the core procedure for DSR/SDS NOAM Failover.

- The user should perform all the procedures in this document as subroutines in a program (always returning to the flowchart after performing a called out procedure).

- After completing a "called out" procedure, never continue on to the next procedure unless directed to do so based on the logic trail followed from the flowchart in Figure 2-1.

- The user should understand that any NOAM NE may function as the "Primary" or the "Secondary" (*Disaster Recovery mode*). Do not confuse site names or designations with the actual functional state of the NOAM NE. Just because "DRNO" may be part of a NOAM server's hostname does not mean that server is currently running in Disaster Recovery mode, which is secondary mode.

- Before starting this procedure, it is recommended for the user to print out Figure 2-1 and write in the Primary (Site_1) and Disaster Recovery (Site_2) site names in the space provided (see detailed description in Figure 2-1 Legend).

Figure 2-1   DSR or SDS NOAM Failover Process
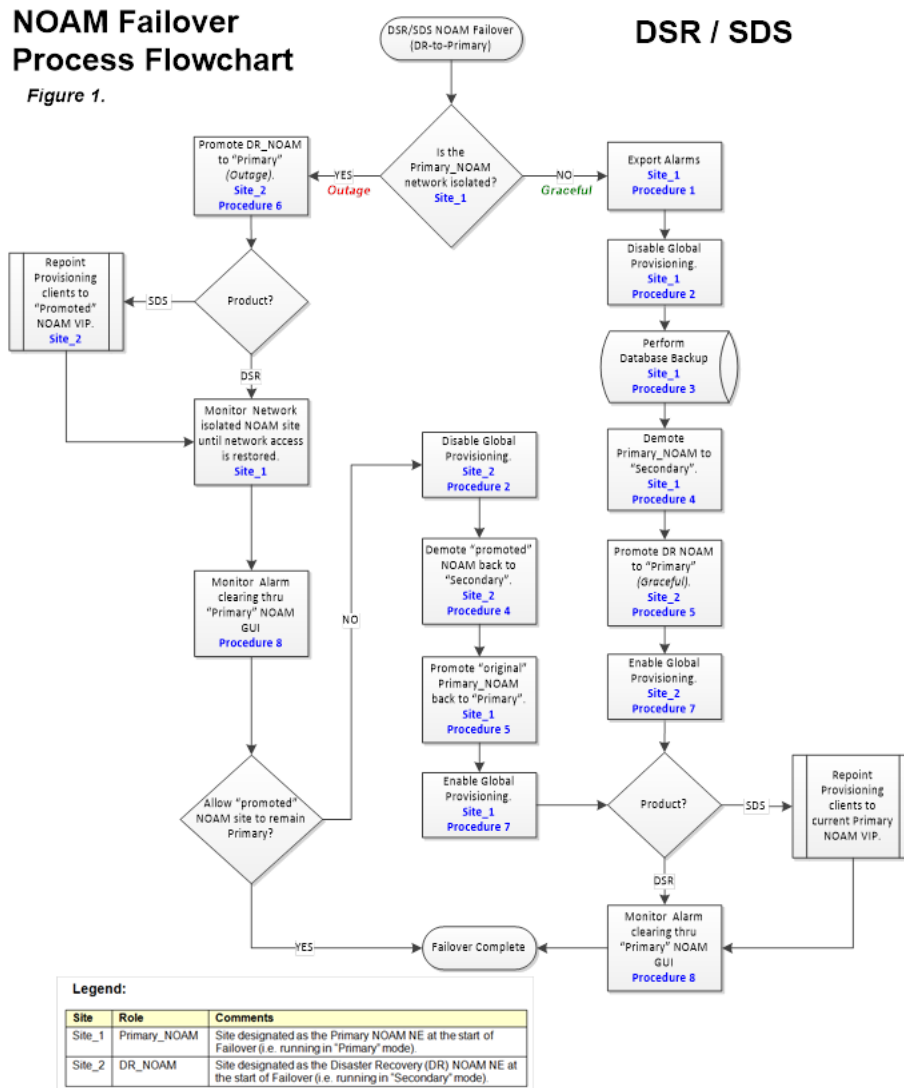
3

Pre-Failover Procedures

3.1 Exporting Alarms

Perform the following steps on Primary NOAM VIP to export alarms at the Primary Active NOAM.

1. Launch an **HTML5** compliant browser and connect to the XMI Virtual IP address (VIP) assigned to **Primary Active NOAM site.**
   If a **Certificate Error** is received, click on **Continue to this website (not recommended)** link.

   Figure 3-1   Certificate Error
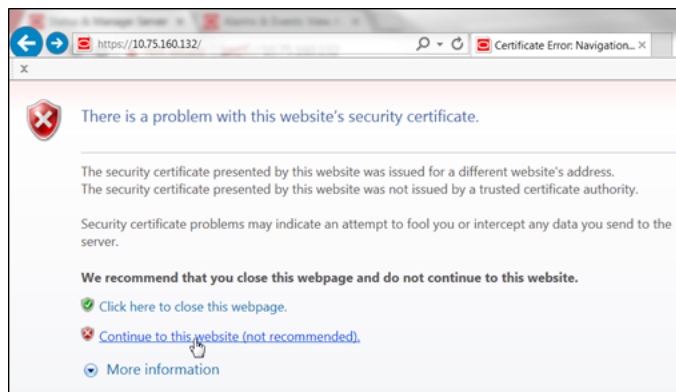
   The login screen appears.

2. Log in to the GUI using a User account with Administrator privileges.

   Figure 3-2   Login Screen

The **Product Main Menu** appears.

3. Verify that the message shown at the bottom of the panel indicates that the browser is using the **"VIP"** to connect to the **ACTIVE NETWORK OAM&P.**

Figure 3-3   Main Menu
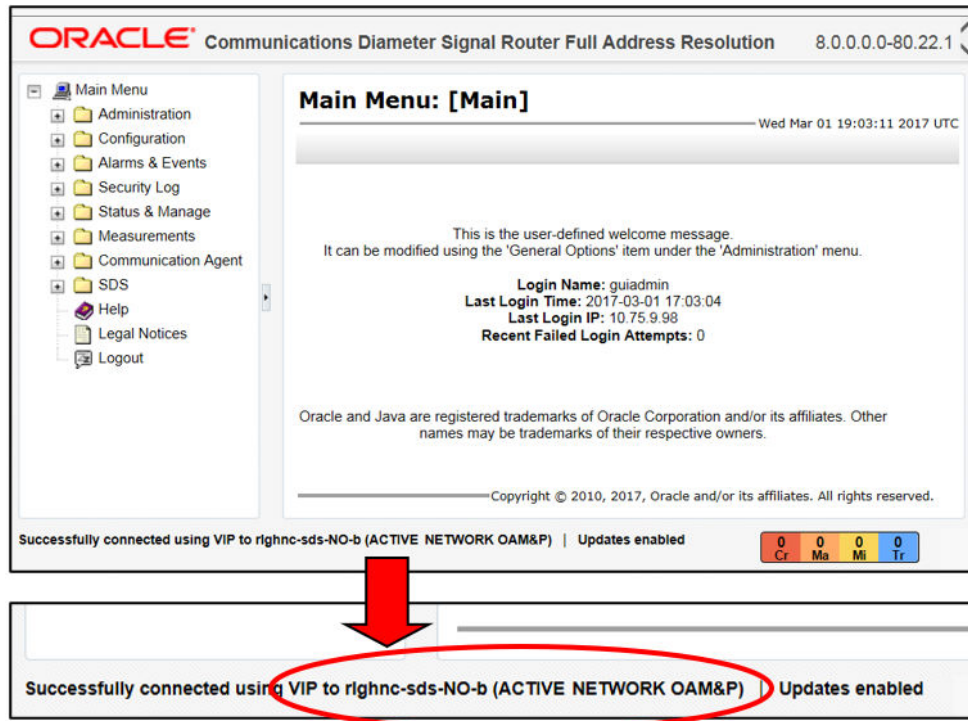
4. Navigate to **Main Menu**, then **Alarm & Events**, and then to **View Active**.
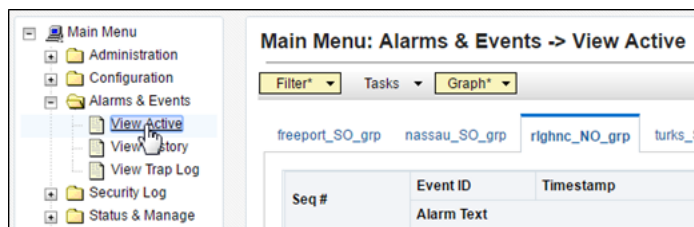
5. Select the **Export** dialogue button from the bottom left corner of the screen.

6. Click **Ok** displayed at the bottom of the screen.

The name of the exported Alarms CSV file appears in the banner under **Tasks** at the top of the right panel.

> **Note:**
>
> Depending on the product version, the user may have to click **Tasks** in the banner in order to see the output dialogue box.

7. Record the filename of Alarms CSV file generated in the space provided on the right.
   Example: `Alarms_<yyyymmdd> - <hhmmss> - <TimeZone>_<Task_ID>.csv.gz`

> **Note:**
>
> Depending on the product version, the file suffix may vary (csv, csv.gz, so on).

8. Click **Report** at the bottom of the screen.
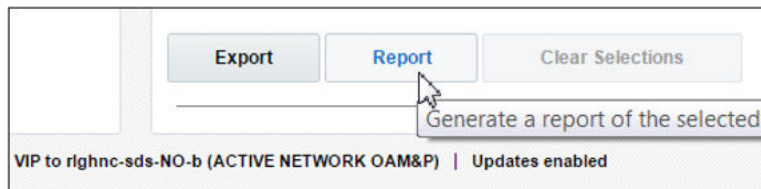
An Alarms & Events Report is generated in the right panel displaying all the Active alarms.
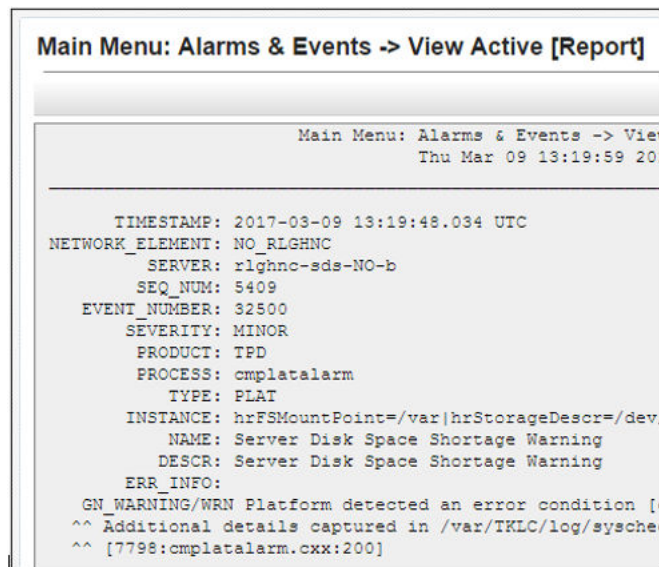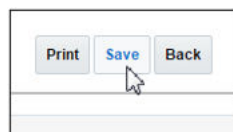
9. Click **Save**.

Depending on the web browser, a **Save**.
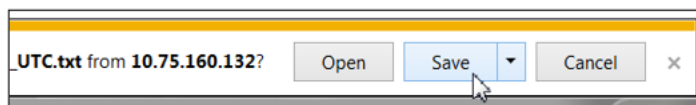
10. If the pop-up box appears, click **Save** or **Save File**.
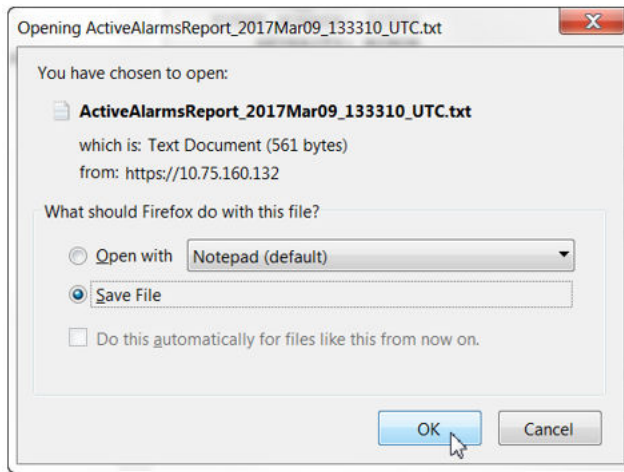
11. Select a directory on the local disk drive to store the Active Alarms & Events Report file and click **Save**.

> **Note:**
>
> This procedure has been completed. Return to Figure 2-1.

3.2 Disable Global Provisioning or PDB Relay Verification

Perform the following steps on **Primary NOAM VIP** to disable global provisioning at the **Primary NOAM GUI**.

1. Launch an **HTML5** compliant browser and connect to the XMI Virtual IP address (VIP) assigned to **Primary Active NOAM** site.
   If a Certificate Error is received, click on **Continue to this website (not recommended)** link.

Figure 3-4   Certificate Error
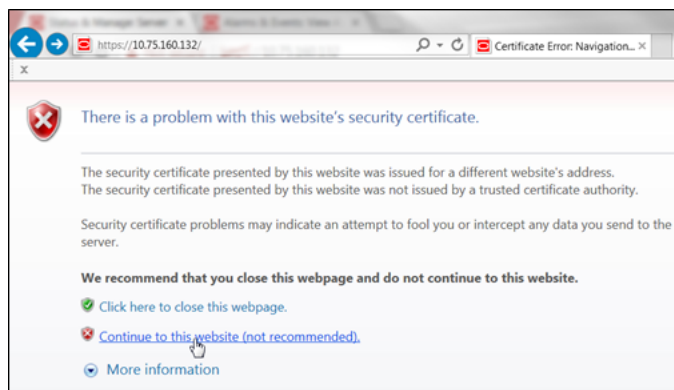
The login screen appears.

2. Log in to the GUI using a User account with Administrator privileges.

Figure 3-5   Login Screen

The Product Main Menu appears.

3. Verify if the message shown at the bottom of the panel indicates that the browser is using **VIP** to connect to the **ACTIVE NETWORK OAM&P**.

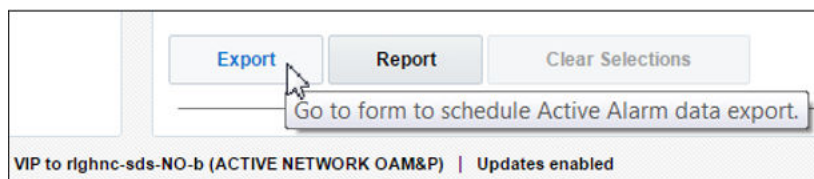**Figure 3-6   Main Menu**
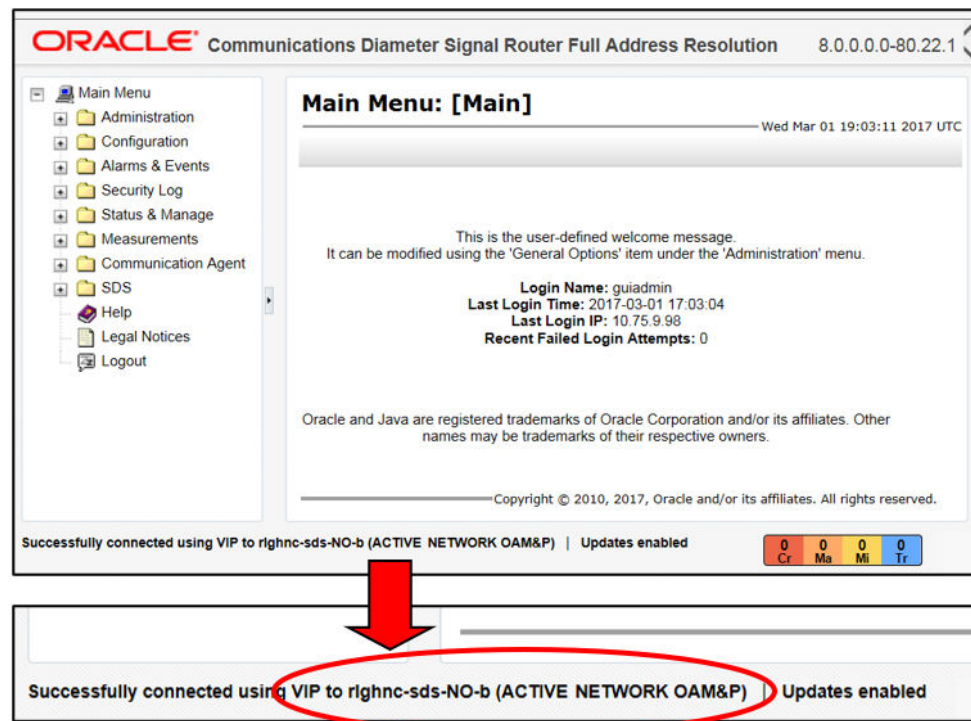
4. To disable PDB Relay, go to **Main Menu**, and then **Configurations**, and then **Options**. Then, uncheck **PDB Relay Enabled**.

Figure 3-7   Main Menu - Options
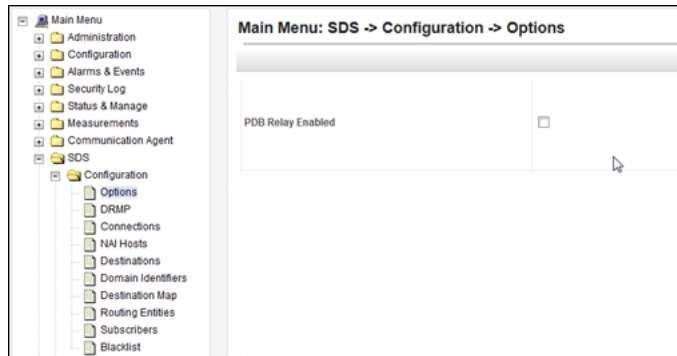
Click **Apply**.
The following confirmation message appears.
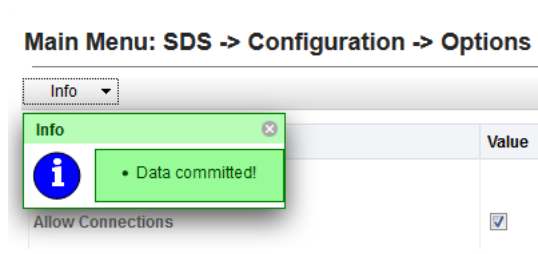
5. Go to **Main Menu**, and then **Status & Manage**, and then **Database**.

Figure 3-8   Main Menu - Database
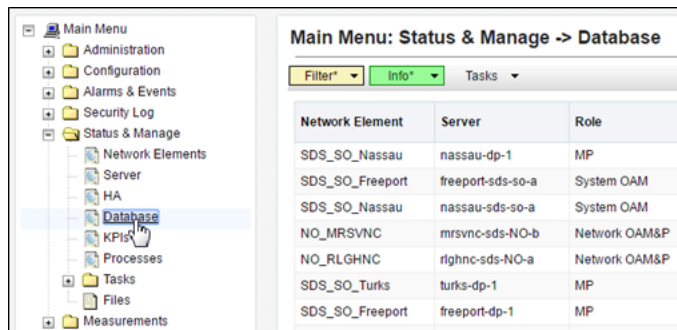
6. Select the **Disable Provisioning** dialogue button at the bottom of the right panel.

Click **OK** on the pop-up confirmation dialogue box.
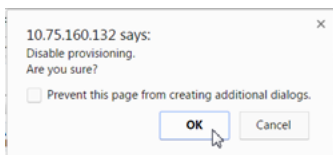
A Warning banner message appears indicating that "Global Provisioning has been manually disabled".
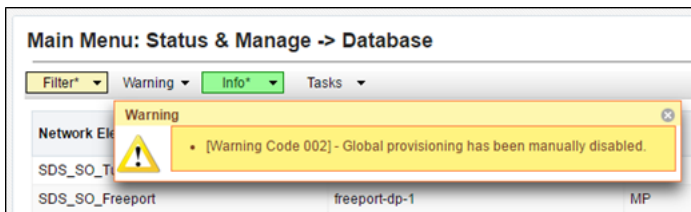
> **Note:**
>
> - **Event(s) 10008** appearing at this time can be ignored.
> - For DSR systems, return to NOAM Failover Process Flowchart for next steps.

7. For SDS systems only, continue with the next steps in this procedure:

   a. Access the command prompt (CLI).

   b. Log in to the server as the **admusr** user.

   ```
   rlghnc-sds-NO-b login: admusr
   Password: <admusr_password>
   ```

   > **Note:**
   >
   > The password will not appear on the screen when you type the characters.

   The following output appears as the server returns to a command prompt.
   *** TRUNCATED OUTPUT ***

   ```
   RUNID=00
   VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/
   awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/
   TKLC/comagent:/usr/TKLC/sds
   PRODPATH=/opt/comcol/prod
   [admusr@rlghnc-sds-NO-b ~]$
   ```

c. Confirm that you are connected to the **Primary Active NOAM** Server which is indicated as **VIP Active**.

```
[admusr@rlghnc-sds-NO-b ~]$ hostname
rlghnc-sds-NO-b
[admusr@rlghnc-sds-NO-b ~]$ ha.mystate -i |grep VIP
    VIP   Act/Act rlghnc-sds-NO-b          0      0302:235736.946
[admusr@rlghnc-sds-NO-b ~]$
```

d. Verify the value for `pdbRelayEnabled`.

```
[admusr@rlghnc-sds-NO-b ~]$ iqt -zhp -fvalue ProvOptions where
"var='pdbRelayEnabled'"
TRUE
[admusr@rlghnc-sds-NO-b ~]$
```

> **Note:**
>
> • If the value is false, then this procedure has been completed. Hence, return to figure 1 for next steps.
>
> • If the value is true, then continue with further steps of this procedure.

e. Retrieve the **pdbRelay timestamp**.

```
[admusr@rlghnc-sds-NO-b ~]$ iqt -zhp -fvalue ProvOptions where
"var='pdbRelayMsgLogTimeStamp'"
1524776142883
[admusr@rlghnc-sds-NO-b ~]$
```

Record the value for the **pdbRelay timestamp** retrieved in the previous step.

```
pdbRelayMsgLogTimeStamp:
```

> **Note:**
>
> Wait for 30 seconds before executing the next step.

f. Retrieve the **pdbRelay timestamp** again.

```
[admusr@rlghnc-sds-NO-b ~]$ iqt -zhp -fvalue ProvOptions where
"var='pdbRelayMsgLogTimeStamp'"
1524776142883
[admusr@rlghnc-sds-NO-b ~]$
```

Record the value for the **pdbRelay timestamp** retrieved in the previous step.

```
pdbRelayMsgLogTimeStamp:
```

> **✎ Note:**
>
> - Ensure that the time stamps recorded in last two steps are an exact match.
> - If the values do not match, repeat the last two steps.
> - Do not return to NOAM Failover Process Flowchart until both the time stamps recorded match.

3.3 Database Backup

Perform the following steps at the Primary Active NOAM VIP, to perform database backup.

1. Launch an **HTML5** compliant browser and connect to the XMI Virtual IP address (VIP) assigned to **Primary Active NOAM** site.
    If a Certificate Error is received, click on **Continue to this website (not recommended)** link.

Figure 3-9   Certificate Error
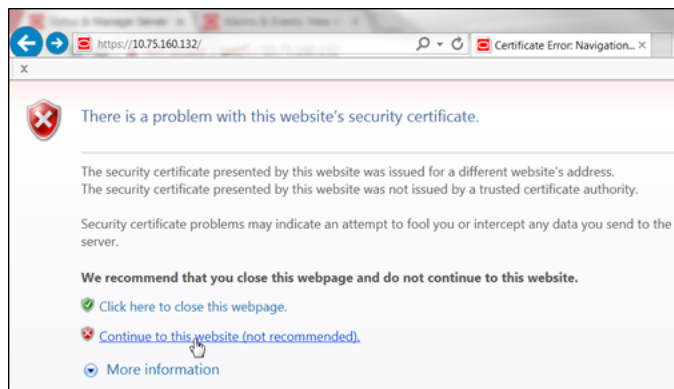
The login screen appears.

2. Log in to the GUI using a user account with administrator privileges.

**Figure 3-10   Login Screen**

The Product Main Menu appears.

3. Verify if the message shown across the bottom of the panel indicates that the browser is using the **VIP** to connect to the **Active NOAM server** (hostname) on the **ACTIVE NETWORK OAM&P** NE.

Figure 3-11   Main Menu
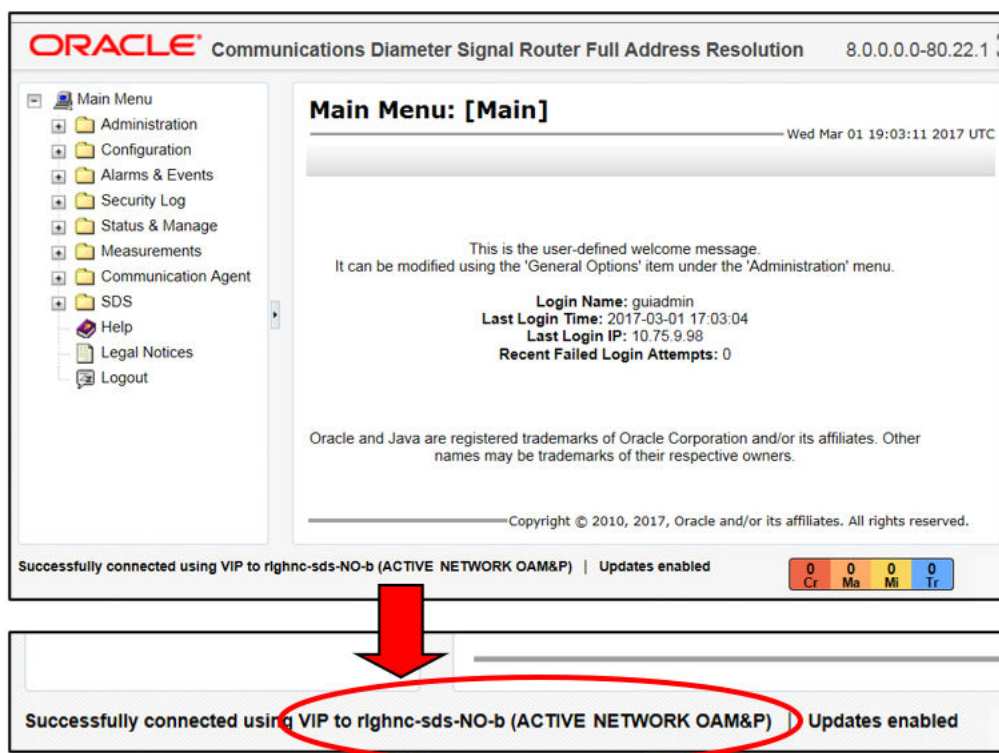
4. Go to **Main Menu**, and then **Status & Manage**. Manage, and then select **Database**.

Figure 3-12 Database
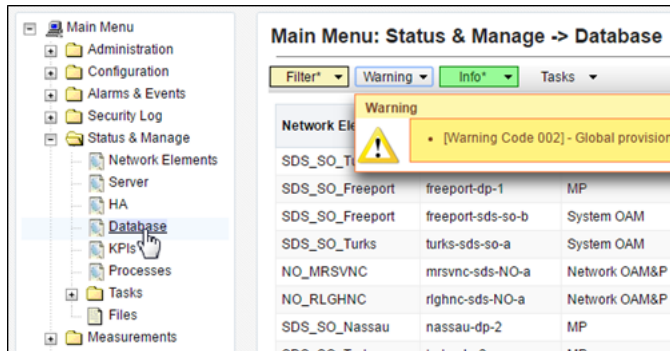
5. Select the row containing the **hostname** of the **Active NOAM server** (previously identified in Step 3 of this procedure). Then, click **Backup**.

Figure 3-13 Database Backup
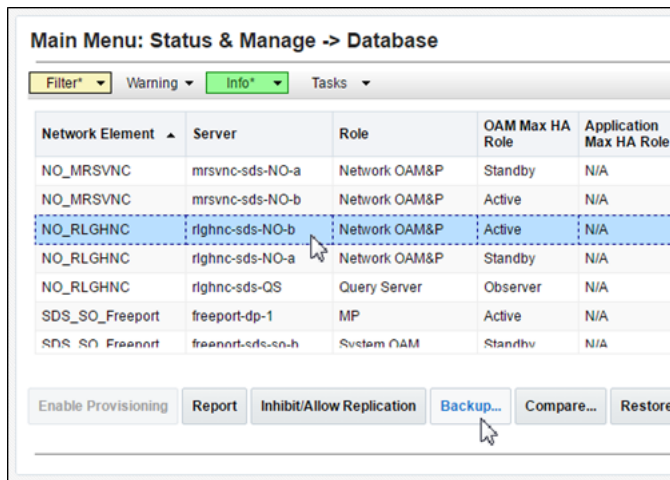
The **Database [Backup]** screen appears.

Figure 3-14   Database [Backup]

6. For SDS Systems only, perform the following steps:

   a. Uncheck the **Configuration** checkbox, so that only the **Provisioning** checkbox is selected.

   b. Enter a comment to reflect the reason for the manual backup in the **comment** field.

   c. Click **Ok**.

Figure 3-15   Database [Backup] - SDS Systems Only

7. For DSR Systems only, perform the following steps:

   a. The **Provisioning** checkbox cannot be selected on DSR. Ensure that the **Configuration** checkbox is selected.

   b. Enter a comment to reflect the reason for the manual backup in the **comment** field.

   c. Click **Ok**.

Figure 3-16　Database [Backup] - DSR Systems Only

8. Click on **Tasks** tab to verify that a new Database backup from GUI task has been created.

Figure 3-17　Database Task

9. Use the **Tasks** tab to monitor the status in the **Progress** column until it shows 100%.

Figure 3-18　Database Task Progress

> **Note:**
>
> - Depending on the release version, the User may have to periodically click the **Status & Manage**, under **Database** menu option in order for the information on the **Tasks** tab to refresh and show real-time status.
>
> - This procedure has been completed. Return to Figure 2-1.

4

Failover Procedures

4.1 Demoting the Active NOAM from Primary to Secondary

Perform the following steps on **Primary NOAM VIP** to stop the Application Software on **Primary and DR NOAM**.

1. Launch an HTML5 compliant browser and connect to the XMI Virtual IP address (VIP) assigned to **Primary Active NOAM** site.

   If a **Certificate Error** is received, click on **Continue to this website (not recommended)** link.

   Figure 4-1   Certificate Error
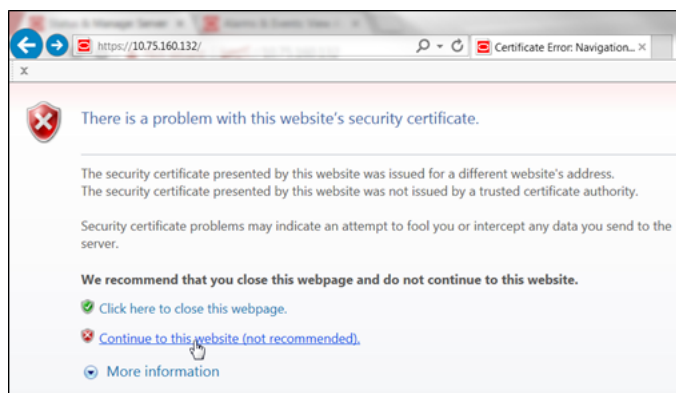
   The login screen appears.

2. Log in to the GUI using a User account with Administrator privileges.

   Figure 4-2   Login Screen

The **Product Main Menu** appears.

3. Verify that the message shown at the bottom of the panel indicates that the browser is using the **VIP** to connect to the **ACTIVE NETWORK OAM&P**.

Figure 4-3   Main Menu
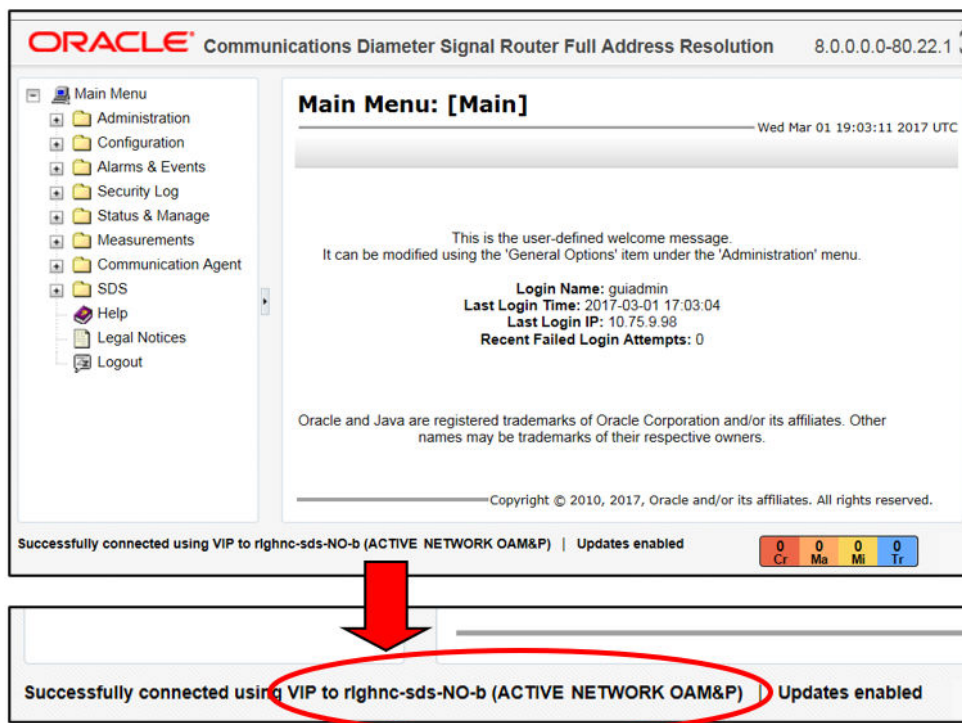
4. Go to **Main Menu**, and then **Status & Manage**. Then, select **HA**.

Figure 4-4   Main Menu - HA

5. Use the Server hostname shown in the bottom banner for the **ACTIVE NETWORK OAM&P** to identify the current **Primary NOAM** site.

> **Note:**
>
> The server **hostname** of the **ACTIVE NETWORK OAM&P** identifies the current Primary NOAM site. For example, rlghnc.

6. As the Primary NOAM site is identified, next identify the Primary Active, Primary Standby, Secondary Active (DR) and Secondary Standby NOAM Servers.

> **Note:**
>
> `Active` or `Standby` states for each NOAM server must be recorded as it is critical that the SW on each server be stopped in the exact order specified in Steps **8 - 12** of this procedure.

7. Record the hostnames of the Active/Standby NOAM servers at the Primary and Secondary (DR) NOAM sites in the space provided.

```
Site_1 = Primary_NOAM  (Active)  = _____
Site_1 = Primary_NOAM (Standby)  = _____


Site_2 =   DR_NOAM  (Active)     = _____
Site_2 = DR_NOAM (Standby)  = _____
```

8. Go to **Main Menu**, and then **Status & Manage**. Manage, and then select **Server**.

Figure 4-5   Main Menu - Server
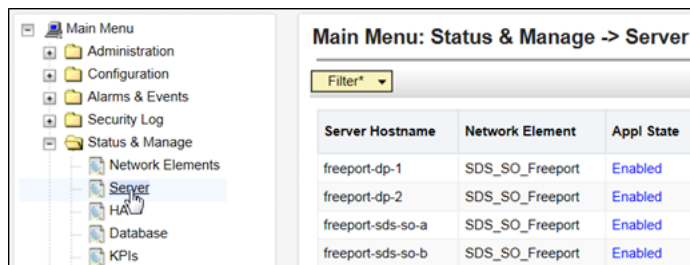
9. Based on the information recorded in **Step 6** of this procedure, perform the following steps on the **Primary NOAM Standby** server:

   a. Select the server in the right panel.

   b. Click **Stop**.

   c. Click **OK** in the pop-up confirmation box.

> **Note:**
>
> Alarms begin to generate at this time including but not limited to **Event ID(s): 10008, 10075 & 31201**.

10. After the screen refreshes, verify that the server now shows an Appl State value of **Disabled** and a Proc value of **Man**.

> **Note:**
>
> Although the screen automatically refreshes after several seconds, the user may refresh it immediately if desired by re-selecting the left menu option for the **Main Menu: Status & Manage**, and then **Server**.

> **Note:**
>
> - To stop the SW on the **Primary NOAM Active** server, refer to **Steps 8 - 9** of this Procedure for the **Primary NOAM** *"Active"* Server.
>
> - To stop the SW on the **DR NOAM Standby** Server, refer to **Steps 8 - 9** of this Procedure for the **DR NOAM Standby** Server.
>
> - To stop the SW on the **DR NOAM Active** server, refer to **Steps 8 - 9** of this Procedure for the **DR NOAM Active** server.

11. Access the command prompt (CLI) and log in to the server as the **admusr** user.

```
rlghnc-sds-NO-b login: admusr
Password: <admusr_password>
```

> **Note:**
>
> The password does not appear on the screen as you type the characters.

Output received is similar to that shown below, as the server returns to a command prompt.

*** TRUNCATED OUTPUT ***

```
PRODPATH=
RELEASE=8.6.0
RUNID=00
VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/
comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds
PRODPATH=/opt/comcol/prod
[admusr@rlghnc-sds-NO-b ~]$
```

12. Confirm that you are connected to the **Primary Active NOAM** server by verifying that the server hostname matches the entry showing **VIP Act/Act**.

```
[admusr@rlghnc-sds-NO-b ~]$ hostname
rlghnc-sds-NO-b
[admusr@rlghnc-sds-NO-b ~]$ ha.mystate -i |grep VIP
            VIP   Act/Act rlghnc-sds-NO-b          0
0302:235736.946
[admusr@rlghnc-sds-NO-b ~]$
```

13. Verify that the current value for **myClusterRole** is **Primary**.

```
[admusr@rlghnc-sds-NO-b ~]$ top.myrole
myNodeId=A0907.121
myParentClusters=(  )
myClusterRole=Primary
myRecognizedPrimary=A0907
```

```
myRecognizedSecondary=A1103
[admusr@rlghnc-sds-NO-b ~]$
```

14. Set the value for **myClusterRole** to **Secondary**.

```
[admusr@rlghnc-sds-NO-b ~]$ top.setSecondary
- Using my cluster: A0907
- New Secondary Timestamp: 03/03/17 00:19:07.181
- Updating To A0907.060: rlghnc-sds-NO-a
- Updating To A0907.113: rlghnc-sds-QS
- Updating To A0907.121: rlghnc-sds-NO-b
- Updating To A1103.165: mrsvnc-sds-NO-b
- Updating To A1103.223: mrsvnc-sds-NO-a
[admusr@rlghnc-sds-NO-b ~]$
```

15. Verify that the value for **myClusterRole** is now **Secondary**.

```
[admusr@rlghnc-sds-NO-b ~]$ top.myrole
myNodeId=A0907.121
myParentClusters=(  )
myClusterRole=Secondary
myRecognizedPrimary=A0907
myRecognizedSecondary=Unknown
[admusr@rlghnc-sds-NO-b ~]$
```

16. Verify the current PID for the **apwSoapServer** process.

```
[admusr@rlghnc-sds-NO-b ~]$ pl |grep Server
A 946215 apwSoapServer      Up    03/02 23:52:31 3 !CMNOSIGCHK=1
apwSoapServer
[admusr@rlghnc-sds-NO-b ~]$
```

17. Restart the **apwSoapServer** process.

```
[admusr@rlghnc-sds-NO-b ~]$ sudo pm.kill apwSoapServer
[admusr@rlghnc-sds-NO-b ~]$
```

18. Verify that the PID for the **apwSoapServer** process has changed from the previous value shown in the previous step of this procedure.

```
[admusr@rlghnc-sds-NO-b ~]$ pl |grep Server
A 951908 apwSoapServer     Up    03/02 23:52:31 3 !CMNOSIGCHK=1
apwSoapServer
[admusr@rlghnc-sds-NO-b ~]$
```

> **Note:**
>
> Post completion of this procedure, return to .

4.2 Promoting the DR NOAM from Secondary to Primary

4.2.1 Promoting the DR NOAM from Secondary to Primary (Graceful)

Perform the following steps in DR NOAM to promote the DR NOAM from Secondary to Primary.

1. Establish an SSH session to the SDS/DSR DR NOAM XMI IP address, access the command prompt (CLI) and log in to the server as **admusr** user.

```
msvnc-sds-NO-b login: admusr
Password: <admusr_password>
```

2. To check NOAM Status of the server, run the following command on the Active NOAM.

```
$ ha.mystate
[admusr@msvnc-sds-NO-b ~]$ ha.mystate
```

```
         resourceId      role       node  DC   subResources         lastUpdate
----------------------------------------------------------------------------------
     DbReplication   Act/Act  A3374.144   *              0   180712:064445.775
              VIP   Act/Act  A3374.144   *              0   180712:064445.875
     CacdProcessRes  Act/Act  A3374.144   *              0   180712:064445.873
      PDBA_Process   Act/Act  A3374.144   *              0   180712:064445.876
   PDBAUDIT_Process  Act/Act  A3374.144   *              0   180712:064445.875
   PDBRELAY_Process  Act/Act  A3374.144   *              0   180712:064445.876
       XDS_Process   Act/Act  A3374.144   *              0   180712:064445.878
    IMPORT_Process   Act/Act  A3374.144   *              0   180712:064445.876
    EXPORT_Process   Act/Act  A3374.144   *              0   180712:064445.877
   DPSERVER_Process  Act/OOS  A3374.144   *              0   180711:062936.051
```

3. Verify that the current value for **myClusterRole** is **Secondary**.

```
[admusr@mrsvnc-sds-NO-b ~]$ top.myrole
myNodeId=A1103.165
myParentClusters=(  )
myClusterRole=Secondary
myRecognizedPrimary=A1103
myRecognizedSecondary=Unknown
[admusr@mrsvnc-sds-NO-b ~]$
```

4. Set the value for **myClusterRole** to **Primary**.

```
[admusr@mrsvnc-sds-NO-b ~]$ top.setPrimary
- Using my cluster: A1103
- New Primary Timestamp: 03/03/17 00:50:40.986
- Updating To A0907.060: rlghnc-sds-NO-a
- Updating To A0907.113: rlghnc-sds-QS
- Updating To A0907.121: rlghnc-sds-NO-b
- Updating To A1103.165: mrsvnc-sds-NO-b
- Updating To A1103.223: mrsvnc-sds-NO-a
[admusr@mrsvnc-sds-NO-b ~]$
```

5. Verify that the value for **myClusterRole** is now **Primary**.

```
[admusr@mrsvnc-sds-NO-b ~]$ top.myrole
myNodeId=A1103.165
```

```
myParentClusters=(  )
myClusterRole=Primary
myRecognizedPrimary=A1103
myRecognizedSecondary=A0907
[admusr@mrsvnc-sds-NO-b ~]$
```

> **Note:**
>
> Perform the next steps in **New Primary NOAM VIP (former DR)**.

6. Launch an HTML5 compliant browser and connect to the XMI Virtual IP address (VIP) assigned to **Primary Active NOAM** site.

   If a **Certificate Error** is received, click on **Continue to this website (not recommended)** link.

   Figure 4-6   Certificate Error
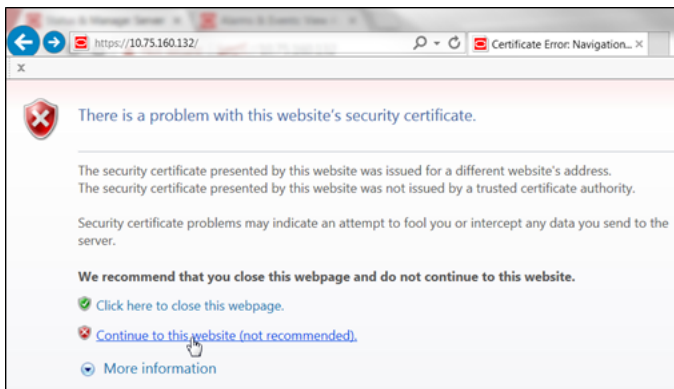
   The login screen appears.

7. Log in to the GUI using a user account with administrator privileges.

8. Go to **Main Menu**, and then **Status & Manage**, and then **HA**.

Figure 4-7   Main Menu - HA

9. Use the Server hostname shown in the bottom banner for the **ACTIVE NETWORK OAM&P** to identify the current **Primary NOAM** site.
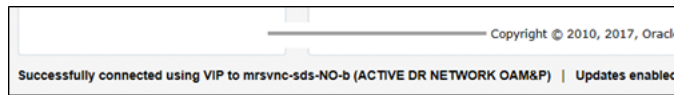
> **Note:**
>
> The server **hostname** of the **ACTIVE NETWORK OAM&P** identifies the current **Primary** NOAM site. For example, mrsvnc.

Now that we know which NOAM site is Primary, identify the **Primary Active**, **Primary Standby**, **Secondary Active (DR)**, and **Secondary Standby** NOAM Servers.

> **Note:**
>
> Do not skip the following step.
> **Active/Standby** states for each NOAM server must be recorded as it is Critical that the SW on each server be restarted in the exact order specified in Steps **12** and **13** of this procedure.

10. Based on the information identified in the previous step, record the hostnames of the **Primary Active**, **Primary Standby**, **Secondary Active (DR)**, and **Secondary Standby** NOAM Servers.

```
Site_1 = Primary_NOAM (Active)    = _____
Site_1 = Primary_NOAM (Standby)   = _____
```

```
Site_2 = DR_NOAM (Active)   = _____
Site_2 = DR_NOAM (Standby)  = _____
```

11. Go to **Main Menu**, and then **Status & Manage**, and then **Server**.
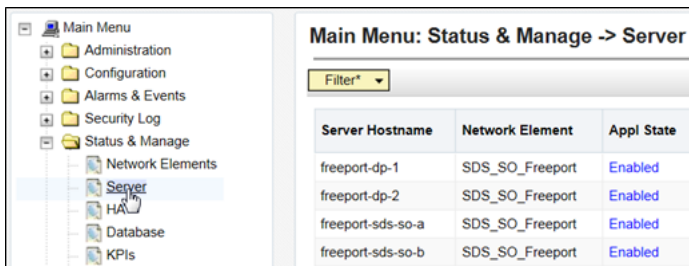
Based on the information recorded in **Step 10** of this procedure, perform the below sub-steps on the newly promoted **Primary NOAM Active** Server (Site_2).

12. Select the Server in the right panel (highlight will occur) and click **Restart** in the right panel.
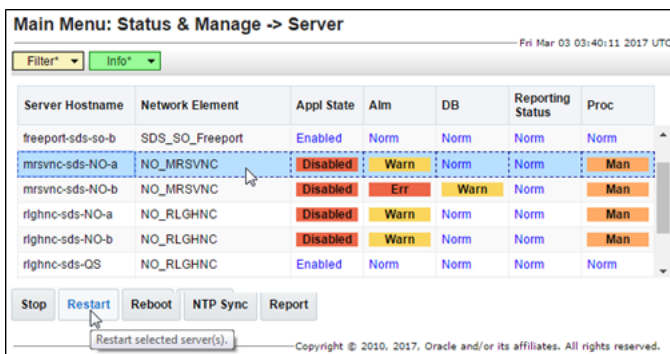
Click **OK** in the pop-up confirmation box.
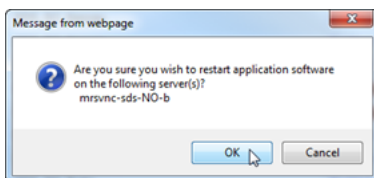
13. After the screen refresh, verify that the server now shows an **Appl State** value of **Enabled** and a Proc value of **Norm**.
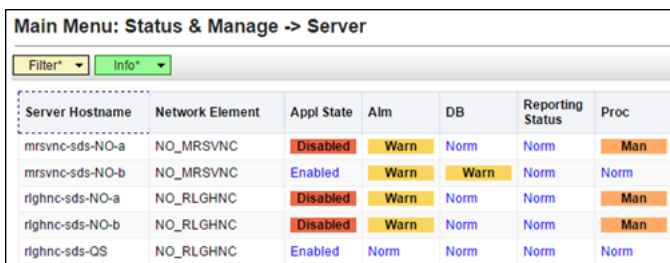
> **✎ Note:**
>
> - Restart the SW on the **Primary NOAM Standby** Server, by repeating **Steps 12 - 13** of this Procedure for the **Primary NOAM Standby** Server.
>
> - Restart the SW on the **DR NOAM Standby** Server, by repeating **Steps 12 - 13** of this Procedure for the **DR NOAM Standby** Server.
>
> - Restart the SW on the **DR NOAM Active** Server, by repeating **Steps 12 - 13** of this Procedure for the **DR NOAM Active** Server.
>
> - For SDS systems, this procedure is completed. Return to NOAM Failover Process Flowchart for next steps.
>
> - For DSR systems only, perform the next steps in this procedure.

14. Identify the **clusterId** values for the `myRecognizedPrimary` and the `myRecognizedSecondary`. For example, Axxxx.

```
[admusr@dominica-dr-noam-b ~]$ top.myrole
myNodeId=A0568.058
myParentClusters=(  )
myClusterRole=Primary
myRecognizedPrimary=A0568
myRecognizedSecondary=A1667
[admusr@dominica-dr-noam-b ~]$
```

15. Record the **clusterId** values for the `myRecognizedPrimary` and the `myRecognizedSecondary` in the space provided.

```
myRecognizedPrimary (clusterId) = _____
myRecognizedSecondary (clusterId) = _____
```

16. Identify which A-Level **clusterId** (for example, Axxxx) is located in the **HaClusterResourceCfg** table.

```
[admusr@dominica-dr-noam-b ~]$ iqt -p HaClusterResourceCfg
cluster resource optional
A0568 DSROAM_Proc Yes
C0804 DSROAM_Proc Yes
C1223 DSROAM_Proc Yes
C2346 DSROAM_Proc Yes
C3147 DSROAM_Proc Yes
C3316 DSROAM_Proc Yes
[admusr@dominica-dr-noam-b ~]$
```

17. If the A-Level **clusterId** located in the **HaClusterResourceCfg** table is the `myRecognizedPrimary` value recorded in Step 15 of this procedure, delete the entry.

For example:

```
$ irem HaClusterResourceCfg where
"cluster='<myRecognizedPrimary_clusterId>'"
[admusr@dominica-dr-noam-b ~]$ irem HaClusterResourceCfg where
```

```
"cluster='A0568'" === deleted 1 records ===
[admusr@dominica-dr-noam-b ~]$
```

If the A-Level **clusterId** is not located there, then continue to the next step.

18. Add an entry to the **HaClusterResourceCfg** table for the
    `myRecognizedSecondary` value recorded in Step 15 of this procedure.

    For example:

    ```
    $ echo "<myRecognizedSecondary_clusterId>|DSROAM_Proc|Yes" | iload -
    ha -xun -fcluster -fresource -foptional HaClusterResourceCfg
    [admusr@dominica-dr-noam-b ~]$ echo "A1667|DSROAM_Proc|Yes" | iload
    -ha -xun -fcluster -fresource -foptional HaClusterResourceCfg
    [admusr@dominica-dr-noam-b ~]$
    ```

19. Verify that the **HaClusterResourceCfg** table now displays an entry for the
    `myRecognizedSecondary` value recorded in Step 15 of this procedure.

    ```
    [admusr@dominica-dr-noam-b ~]$ iqt -p HaClusterResourceCfg
    cluster resource optional
    A1667 DSROAM_Proc Yes
    C0804 DSROAM_Proc Yes
    C1223 DSROAM_Proc Yes
    C2346 DSROAM_Proc Yes
    C3147 DSROAM_Proc Yes
    C3316 DSROAM_Proc Yes
    [admusr@dominica-dr-noam-b ~]$
    ```

> **Note:**
>
> Once this procedure is completed, return to Figure 2-1.

4.2.2 Promoting the DR NOAM from Secondary to Primary (Outage)

Perform the following steps in DR NOAM to promote the DR NOAM from Secondary to Primary:

1. Establish an SSH session to the SDS/DSR DR NOAM XMI IP address, access the command prompt (CLI) and log in to the server as **admusr** user.

   ```
   msvnc-sds-NO-b login: admusr
   Password: <admusr_password>
   ```

2. To check NOAM Status of the server, run the following command on the Active NOAM.

   ```
   $ ha.mystate
   [admusr@msvnc-sds-NO-b ~]$ ha.mystate
   ```

```
     resourceId        role      node   DC    subResources        lastUpdate
----------------------------------------------------------------------------
    DbReplication    Act/Act  A3374.144   *              0    180712:064445.775
             VIP     Act/Act  A3374.144   *              0    180712:064445.875
  CacdProcessRes     Act/Act  A3374.144   *              0    180712:064445.873
    PDBA_Process     Act/Act  A3374.144   *              0    180712:064445.876
 PDBAUDIT_Process    Act/Act  A3374.144   *              0    180712:064445.875
 PDBRELAY_Process    Act/Act  A3374.144   *              0    180712:064445.876
     XDS_Process     Act/Act  A3374.144   *              0    180712:064445.878
  IMPORT_Process     Act/Act  A3374.144   *              0    180712:064445.876
  EXPORT_Process     Act/Act  A3374.144   *              0    180712:064445.877
DPSERVER_Process     Act/OOS  A3374.144   *              0    180711:062936.051
```

3. Verify that the current value for **myClusterRole** is **Secondary**.

```
[admusr@mrsvnc-sds-NO-b ~]$ top.myrole
myNodeId=A1103.165
myParentClusters=( A0907 )
myClusterRole=Secondary
myRecognizedPrimary=A0907
myRecognizedSecondary=A1103
[admusr@mrsvnc-sds-NO-b ~]$
```

4. Using the **clusterId** of the `myRecognizedPrimary` from the previous step, set the **clusterId** to **Secondary**.

```
[admusr@mrsvnc-sds-NO-b ~]$ top.setSecondary A0907
- New Secondary Timestamp: 03/03/17 18:28:48.318
- Updating To A0907.060: rlghnc-sds-NO-asetSecondaryTo(A0907) returned
proxy error=28
SOAP 1.2 fault SOAP-ENV:Receiver [no subcode]
"Connection timed out"Detail: connect failed in tcp_connect()

- Updating To A0907.113: rlghnc-sds-QSsetSecondaryTo(A0907) returned
proxy error=28
SOAP 1.2 fault SOAP-ENV:Receiver [no subcode]
"Connection timed out"Detail: connect failed in tcp_connect()

- Updating To A0907.121: rlghnc-sds-NO-bsetSecondaryTo(A0907) returned
proxy error=28
SOAP 1.2 fault SOAP-ENV:Receiver [no subcode]
"Connection timed out"Detail: connect failed in tcp_connect()

- Updating To A1103.165: mrsvnc-sds-NO-b- Updating To A1103.223: mrsvnc-
sds-NO-a
[admusr@mrsvnc-sds-NO-b ~]$
```

> **Note:**
>
> The **connection timeouts** to the **Primary NOAM NE** are expected when that NE is network isolated.
> Under these circumstances, the user should allow several minutes (≈ 7) for this command to complete.

5. Set the value for **myClusterRole** to **Primary**.

```
[admusr@mrsvnc-sds-NO-b ~]$ top.setPrimary
- Using my cluster: A1103
- New Primary Timestamp: 03/03/17 18:35:26.279
- Updating To A0907.060: rlghnc-sds-NO-asetPrimaryTo(A1103)
returned proxy error=28
SOAP 1.2 fault SOAP-ENV:Receiver [no subcode]
"Connection timed out"
Detail: connect failed in tcp_connect()

- Updating To A0907.113: rlghnc-sds-QSsetPrimaryTo(A1103) returned
proxy error=28
SOAP 1.2 fault SOAP-ENV:Receiver [no subcode]
"Connection timed out"
Detail: connect failed in tcp_connect()

- Updating To A0907.121: rlghnc-sds-NO-bsetPrimaryTo(A1103)
returned proxy error=28
SOAP 1.2 fault SOAP-ENV:Receiver [no subcode]
"Connection timed out"
Detail: connect failed in tcp_connect()

- Updating To A1103.165: mrsvnc-sds-NO-b
- Updating To A1103.223: mrsvnc-sds-NO-a
[admusr@mrsvnc-sds-NO-b ~]$
```

> **Note:**
>
> The **connection timeouts** to the **Primary NOAM NE** (shown in the output to the right) are expected when that NE is network isolated. Under these circumstances, the user should allow several minutes (≈ 7) for this command to complete.

6. Verify that the value for **myClusterRole** is now set to **Primary**.

```
[admusr@mrsvnc-sds-NO-b ~]$ top.myrole
myNodeId=A1103.165
myParentClusters=(  )
myClusterRole=Primary
myRecognizedPrimary=A1103
myRecognizedSecondary=A0907
[admusr@mrsvnc-sds-NO-b ~]$
```
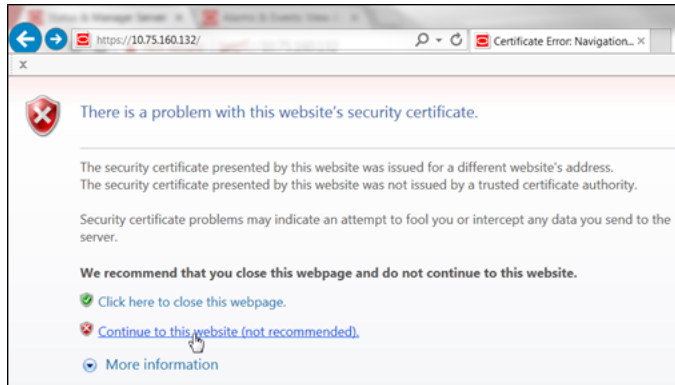
> **Note:**
>
> Perform the next steps on the **New Primary NOAM VIP (former DR)**.

7. Launch an HTML5 compliant browser and connect to the XMI Virtual IP address (VIP) assigned to **Primary Active NOAM** site.

If a Certificate Error is received, click on **Continue to this website (not recommended)** link.

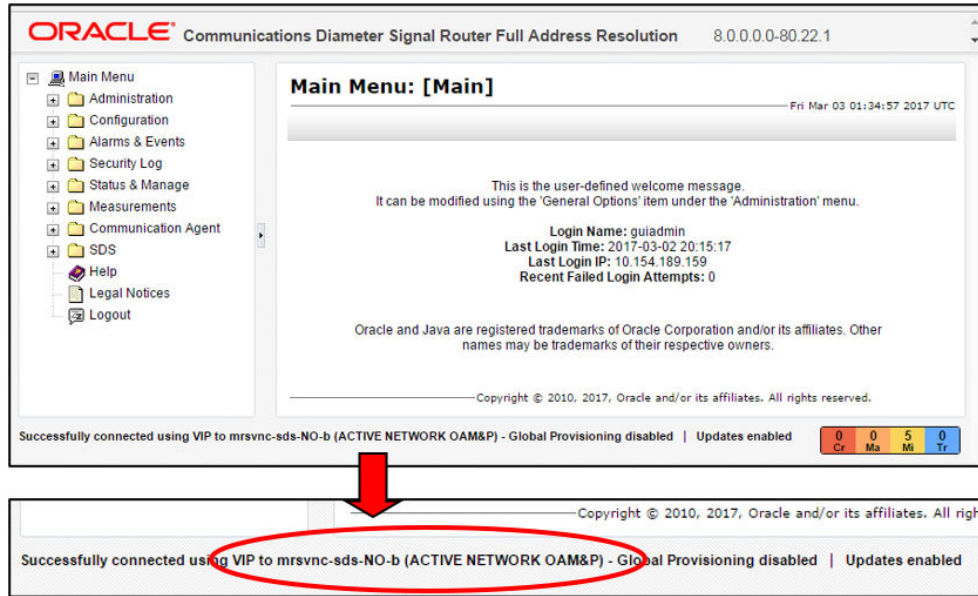**Figure 4-8   Certificate Error**

The login screen appears.

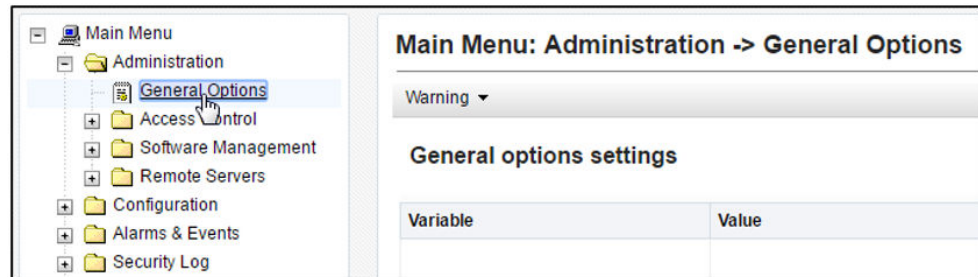8. Log in to the GUI using a user account with administrator privileges.

The Product Main Menu appears.

9. Verify that the message shown across the bottom of the panel indicates that the browser is using the **VIP** to connect to the **ACTIVE NETWORK OAM&P**.
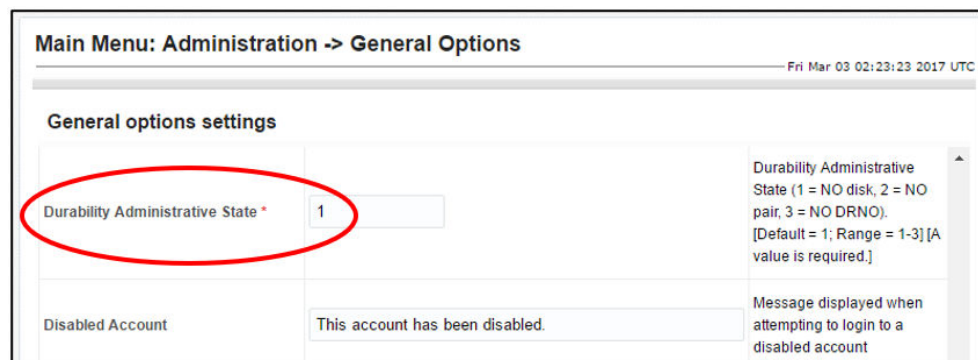
10. Go to **Main Menu**, and then **Administration**, and then **General Options**.
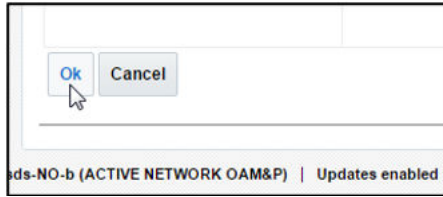

11. Verify the value for **Durability Administrative State**.

    If performing this procedure in response to a network isolated Primary NOAM (outage), modify the **Durability Administrative State** value to **1** (if necessary).
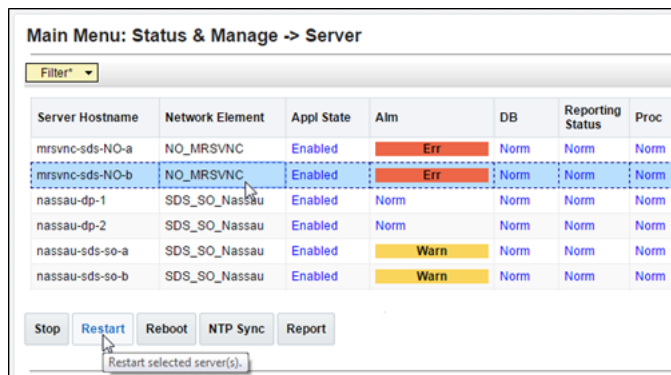

    Click **OK**.

12. Go to **Main Menu**, and then **Status & Manage**, and then **Server** and identify the hostname of the Primary Active NOAM server from the banner message at the bottom of the browser window.
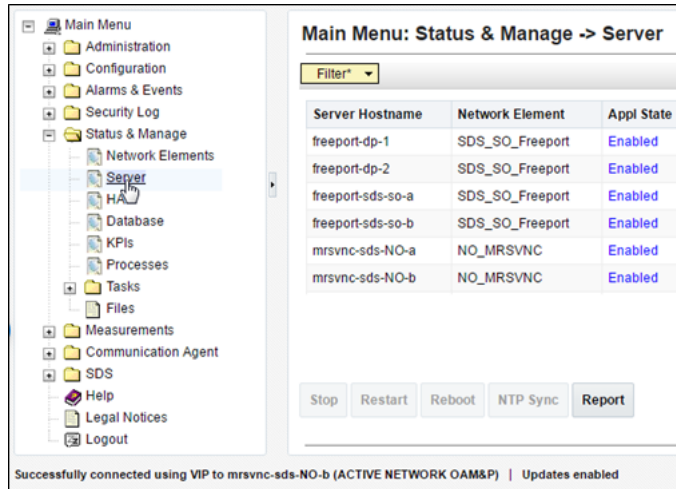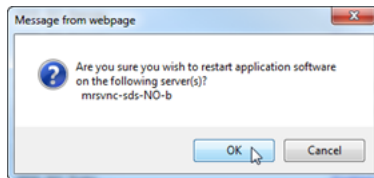

> **Note:**
>
> Based on the information recorded in this step, perform the next steps on the newly promoted **Primary NOAM Active Server (Site_2)**.

13. Select the Server Hostname (highlighted once selected) and click **Restart**.

Click **Ok**, in the pop-up confirmation box.

> **Note:**
>
> - For SDS systems, this procedure is completed. Return to NOAM Failover Process Flowchart for next steps.
>
> - For DSR systems only, perform the next steps in this procedure on the **New Primary NOAM VIP (former DR)**.

14. Identify the **clusterId** values for the **myRecognizedPrimary** and the **myRecognizedSecondary**. For example, Axxxx.

```
[admusr@dominica-dr-noam-b ~]$ top.myrole
myNodeId=A0568.058
myParentClusters=(  )
myClusterRole=Primary
myRecognizedPrimary=A0568
myRecognizedSecondary=A1667
[admusr@dominica-dr-noam-b ~]$
```

15. Record the **clusterId** values for the `myRecognizedPrimary` and the `myRecognizedSecondary` in the space provided.

```
myRecognizedPrimary (clusterId) = _____
myRecognizedSecondary (clusterId) = _____
```

16. Identify which A-Level **clusterId** (example, Axxxx) is located in the **HaClusterResourceCfg** table.

```
[admusr@dominica-dr-noam-b ~]$ iqt -p HaClusterResourceCfg
cluster resource optional
A0568 DSROAM_Proc Yes
C0804 DSROAM_Proc Yes
C1223 DSROAM_Proc Yes
C2346 DSROAM_Proc Yes
C3147 DSROAM_Proc Yes
C3316 DSROAM_Proc Yes
[admusr@dominica-dr-noam-b ~]$
```

17. If the A-Level **clusterId** located in the **HaClusterResourceCfg** table is the `myRecognizedPrimary` value recorded in next step of this procedure, delete the entry.

For example:

```
$ irem HaClusterResourceCfg where
"cluster='<myRecognizedPrimary_clusterId>'"
[admusr@dominica-dr-noam-b ~]$ irem HaClusterResourceCfg where
"cluster='A0568'"
=== deleted 1 records ===
[admusr@dominica-dr-noam-b ~]$
```

If the A-Level **clusterId** is not located in the table, continue to the next step.

18. Add an entry to the **HaClusterResourceCfg** table for the **myRecognizedSecondary** value recorded in Step 18 of this procedure.

    For example:

```
$ echo "<myRecognizedSecondary_clusterId>|DSROAM_Proc|Yes" | iload -ha -
xun -fcluster -fresource -foptional HaClusterResourceCfg
[admusr@dominica-dr-noam-b ~]$ echo "A1667|DSROAM_Proc|Yes" | iload -ha -
xun -fcluster -fresource -foptional HaClusterResourceCfg
[admusr@dominica-dr-noam-b ~]$
```

19. Verify if the **HaClusterResourceCfg** table now displays an entry for the `myRecognizedSecondary` value recorded in Step 18 of this procedure.

```
[admusr@dominica-dr-noam-b ~]$ iqt -p HaClusterResourceCfg
cluster resource optional
A1667 DSROAM_Proc Yes
C0804 DSROAM_Proc Yes
C1223 DSROAM_Proc Yes
C2346 DSROAM_Proc Yes
C3147 DSROAM_Proc Yes
C3316 DSROAM_Proc Yes
[admusr@dominica-dr-noam-b ~]$
```

> ✎ **Note:**
>
> Once this Procedure is completed, return to Figure 2-1.

4.3 Enabling Global Provisioning

Perform the following steps on **Primary NOAM VIP** to enable Global Provisioning at the newly promoted Primary NOAM GUI.

1. Launch an HTML5 compliant browser and connect to the XMI Virtual IP address (VIP) assigned to **Primary Active NOAM** site.

   If a Certificate Error is received, click on **Continue to this website (not recommended)** link.

Figure 4-9   Certificate Error
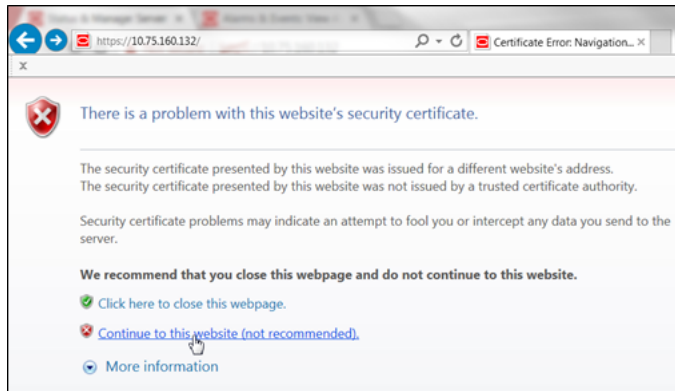
The login screen appears.

2. Log in to the GUI using a user account with administrator privileges.
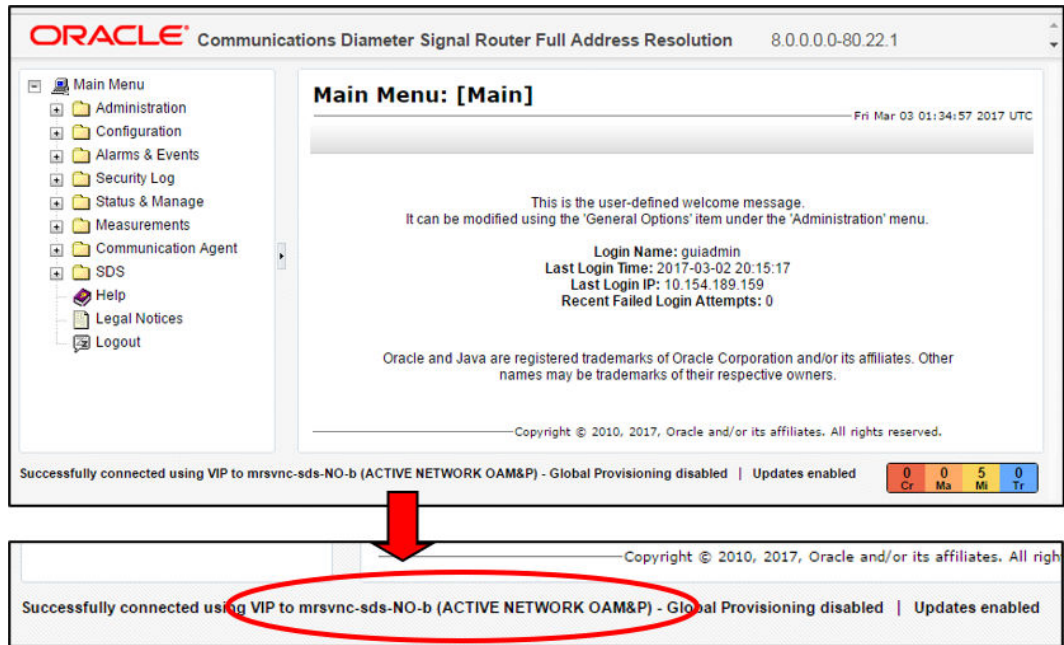
Figure 4-10   Login Screen
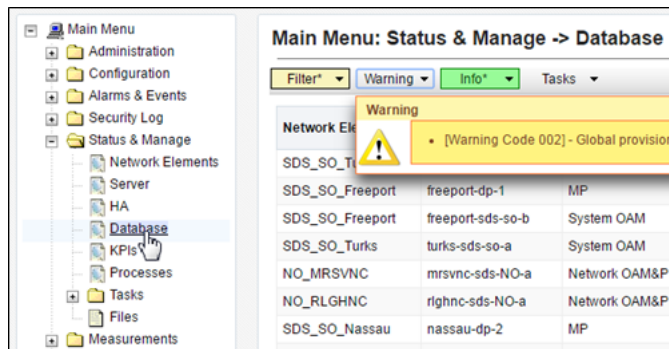

The **Product Main Menu** appears.

3. Verify that the message shown across the bottom of the panel indicates that the browser is using the **VIP** to connect to the **ACTIVE NETWORK OAM&P**.
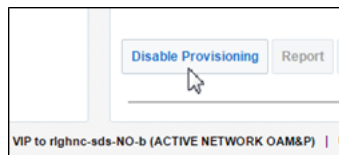
Figure 4-11   Main Menu

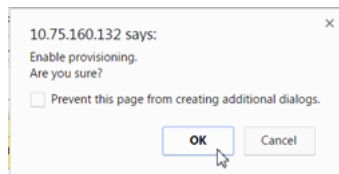4. Go to **Main Menu**, and then **Status & Manage**. Then, select **Database**.

Figure 4-12   Main Menu - Database

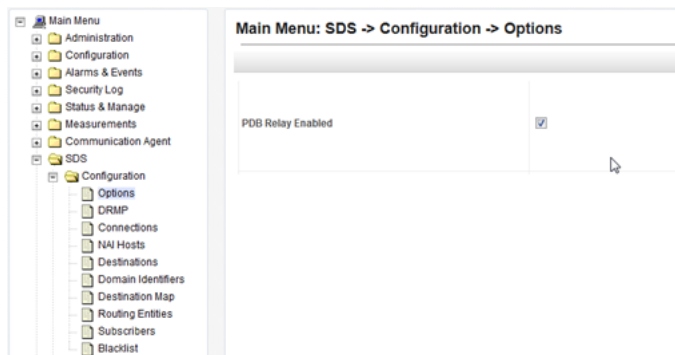5. Select **Enable Provisioning** at the bottom of the right panel.

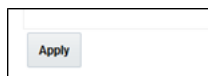Click **OK** on the pop-up confirmation box.

6. Verify that the dialogue button located at the bottom of the right panel changes text to **Disable Provisioning**.
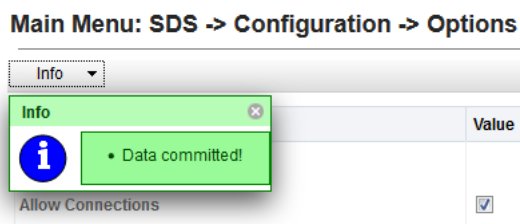

7. To enable PDB Relay, go to **Main Menu**, then **Configurations**, and then **Options**. Then, check the **PDB Relay Enabled** option box.

Click **Apply**.

The following confirmation message is displayed.

> **Note:**
>
> Post completion of this procedure, return to Figure 2-1.

5

Verifying Alarm Status (After Failover)

Perform the following steps in **New Primary NOAM VIP (former DR)** to verify alarms status at the Primary Active NOAM.

1. Launch an **HTML5** compliant browser and connect to the XMI Virtual IP address (VIP) assigned to **Primary Active NOAM** site.

2. If a Certificate Error is received, click on **Continue to this website (not recommended)** link.

Figure 5-1   Certificate Error
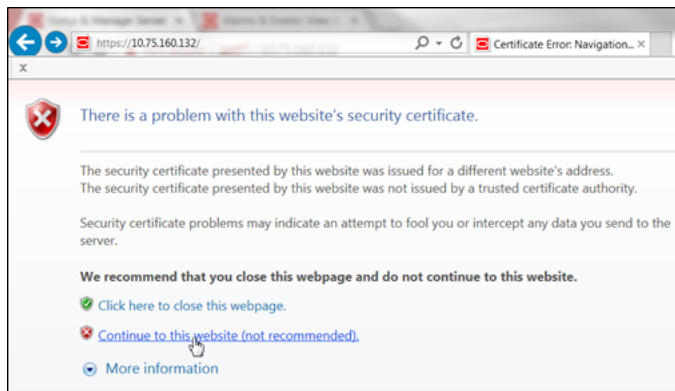
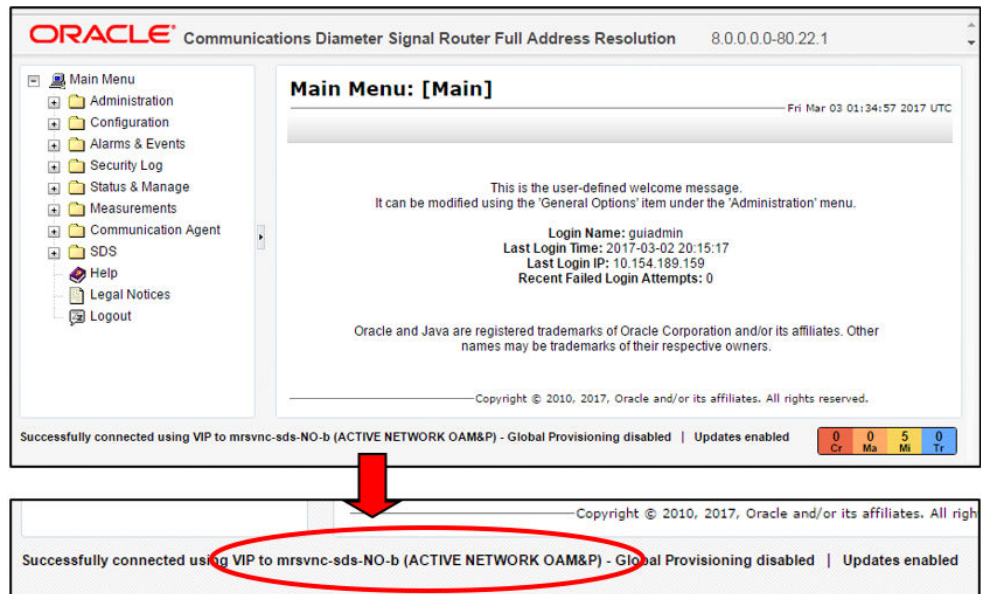
The login screen appears.

3. Log in to the GUI using a user account with administrator privileges.
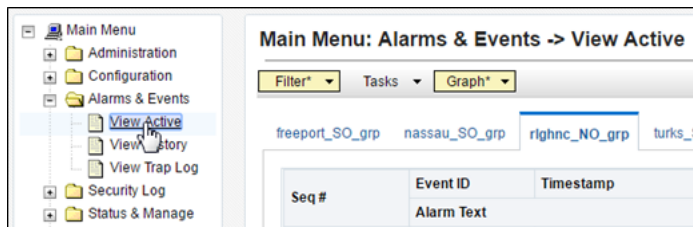

The **Product Main Menu** appears.

4. Verify that the message shown across the bottom of the panel indicates that the browser is using the **VIP** to connect to the **ACTIVE NETWORK OAM&P**.

Figure 5-2   Product Main Menu

5. Go to **Main Menu**, and then **Alarm & Events**. Then, select **View Active**.

Figure 5-3   View Active
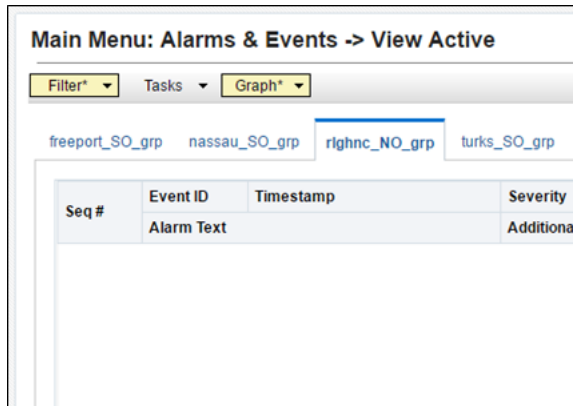

The current list of Active Alarms appears.

Figure 5-4   Active Alarms

> **Note:**
>
> Alarms visible at this time may include but are not limited to **Event ID(s): 31106, 31107, 31114, 31233 & 31283**.

6. Monitor the current list of Active alarms until all alarms associated with the Failover have cleared.

> **Note:**
>
> The user should allow at least 15 minutes for resulting alarms to clear before attempting any troubleshooting activities.

> **Note:**
>
> - Contact My Oracle Support (MOS) for assistance with any reoccurring alarms or alarms which fail to clear within a 15 minute timeframe.
> - Refer to My Oracle Support (MOS), for more information on contacting Oracle Customer Service.
> - If alarms fail to clear that are related to features that use **SSH key exchange** based **file transfer** and the user wishes to re-enable them prior to performing a Failover back to the original Primary or Secondary states, then the feature may be reconfigured using the product feature's initial configuration procedures. Partial list of features that use SSH key exchange based file transfer:
>   - SDS: provimport, provexport, APDE
>   - HLRR: PDE, APDE
>   - DSR: APDE
> - This procedure has been completed. Return to Figure 2-1.

6
Backout Procedures

This section provides instructions on reversing Primary or Secondary NOAM Failover (Backout).

The user should recognize that the Primary or Secondary NOAM states are now reversed from what they were prior to the previous implementation of this procedure.

Insert the **Site_1** and **Site_2** names in the bottom of Figure 2-1 figure. According to the real-time state (primary or secondary) for each NOAM site and follow the Flowchart.