



A MITEL
PRODUCT
GUIDE

Unify OpenScape Voice

OpenScape Voice with RedSky E911

OpenScape Voice

07/2024

Notices

The information contained in this document is believed to be accurate in all respects but is not warranted by Mitel Europe Limited. The information is subject to change without notice and should not be construed in any way as a commitment by Mitel or any of its affiliates or subsidiaries. Mitel and its affiliates and subsidiaries assume no responsibility for any errors or omissions in this document. Revisions of this document or new editions of it may be issued to incorporate such changes. No part of this document can be reproduced or transmitted in any form or by any means - electronic or mechanical - for any purpose without written permission from Mitel Networks Corporation.

Trademarks

The trademarks, service marks, logos, and graphics (collectively “Trademarks”) appearing on Mitel’s Internet sites or in its publications are registered and unregistered trademarks of Mitel Networks Corporation (MNC) or its subsidiaries (collectively “Mitel), Unify Software and Solutions GmbH & Co. KG or its affiliates (collectively “Unify”) or others. Use of the Trademarks is prohibited without the express consent from Mitel and/or Unify. Please contact our legal department at iplegal@mitel.com for additional information. For a list of the worldwide Mitel and Unify registered trademarks, please refer to the website: <http://www.mitel.com/trademarks>.

© Copyright 2024, Mitel Networks Corporation

All rights reserved

Contents

1 Configuring OSV for Integration with RedSky.....	4
1.1 Introduction.....	4
1.2 Endpoints for RedSky E911 Manager.....	4
1.3 Creating Destination/Routes, Endpoints for the RedSky ANS.....	10
1.4 Enable RedSky Service.....	25
1.5 Configure RedSky ELINs to Route to E911 Callback Service.....	26
1.6 Do Not Publish to E911DM Setting for Subscribers.....	30
1.7 Configure E911 SNMP Traps to Send to RedSky.....	31
1.7.1 Enabling the E911 Emergency SNMP Event 250.....	31
1.7.2 Configure the E911 Emergency SNMP Event 250 RedSky Destinations.....	32
1.8 Making Emergency Calls in OSV.....	34
2 DCMP and RedSky.....	40
2.1 DCMP Implementation.....	40
2.2 Phones - DCMP - DLS Configuration.....	41
3 Configuring RedSky for Integration with OSV.....	45
3.1 Add Call Server.....	45
3.2 Create Locations and ELINS.....	47
3.2.1 Add ELIN Pool and Create ELINS.....	47
3.2.2 Create Building Location.....	49
3.2.3 Create Room/Floor Locations.....	50
3.3 Network Discovery/IP Ranges.....	51
3.3.1 Network Discovery.....	51
3.3.2 IP Ranges.....	52
3.4 Discovered Devices.....	53
4 Restrictions.....	55
4.1 Redundancy Limitations.....	55
4.2 Recovery Procedures.....	55
4.2.1 Recovery from a Complete Power Failure of all nodes.....	55
4.2.2 Restart of a Secondary Node.....	56
4.2.3 Primary Node Failover.....	56

1 Configuring OSV for Integration with RedSky

1.1 Introduction

RedSky Anywhere Service acts as a SIP Service Provider for emergency calls and distributes the E911 call to the Local PSAP. SIP connectivity is done via an SBC. This document describes how to install RedSky Anywhere in OpenScape solutions.

NOTICE:

Red Sky 6.4.5 (20150430-1732 rev 18941) is released with OSV V8 onwards.

NOTICE:

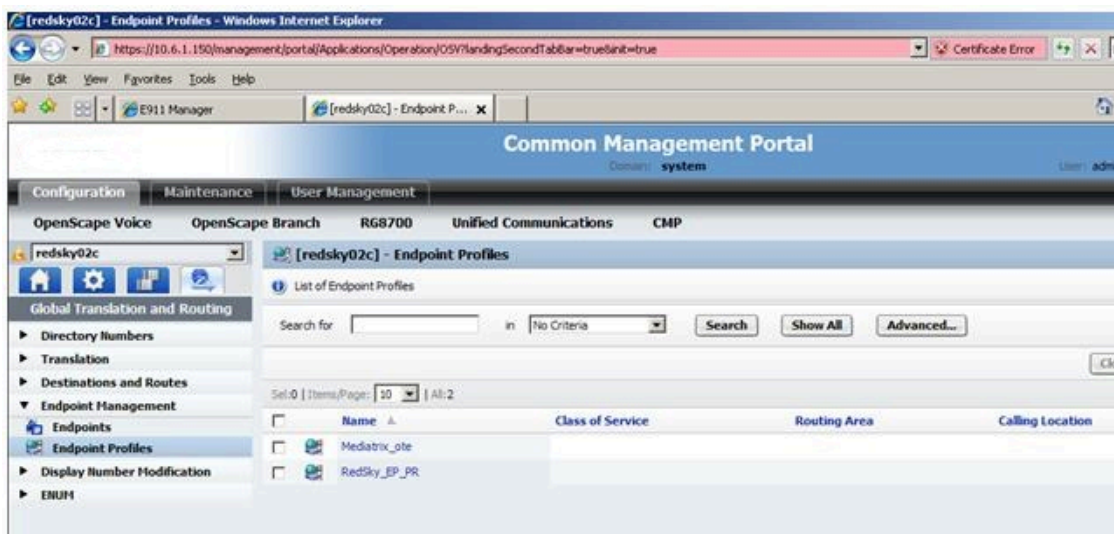
TLS cannot be used with Red Sky until further notice.

1.2 Endpoints for RedSky E911 Manager

The RedSky E911 Manager server can be a cluster or a simplex. In case it's a cluster it behaves in active/standby mode. Both active and standby nodes need to be configured as SIP endpoints on OSV.

Create Endpoint Profile for RedSky E911 Mgr

Go to **Configuration -> OpenScape Voice -> Global Translation and Routing -> Endpoint Management -> Endpoint Profiles** and press the **Add** button:



Give a name, and click **Save**.

Configuring OSV for Integration with RedSky

[redsky02c] - Edit Endpoint Profile: RedSky_EP_PR - Windows Internet Explorer
https://10.6.1.150/management/portal/Applications/Operation/OSV/GlobalNumberingPlan/EndpointManagement/PopUps/modifyEndPointPr

[redsky02c] - Edit Endpoint Profile : RedSky_EP_PR

Enter the profile data. Maximum number of allowed blocked number is 10.

General Endpoints Services

Endpoint Profile

Please enter a unique name to identify this profile.

Name: RedSky_EP_PR

Remark:

Numbering Plan: E164NANP

Management Information

Please enter the data for the following fields in the corresponding screens.

Class of Service:

Routing Area:

Calling Location:

Time Zone: LOCAL

SIP Privacy Support: Basic

Failed Calls Intercept Treatment: Disabled

Save

Verify that the endpoint profile has been created:

[redsky02c] - Endpoint Profiles - Windows Internet Explorer
https://10.6.1.150/management/portal/Applications/Operation/OSV/landingSecondTabBar=true&link=true

Common Management Portal
Domain: system

Configuration Maintenance User Management

OpenScape Voice OpenScape Branch RG8700 Unified Communications CMP

[redsky02c]

[redsky02c] - Endpoint Profiles

List of Endpoint Profiles

Search for in No Criteria Search Show All Advanced...

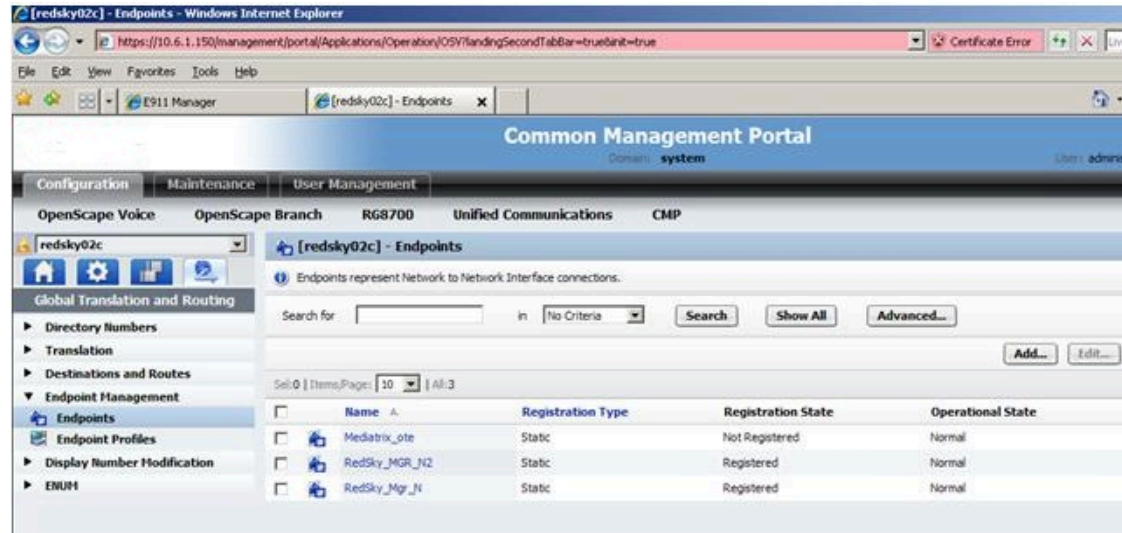
Set: 0 | Items: Page: 10 | All: 2

Name	Class of Service	Routing Area	Calling Location
Medatrix_ote			
RedSky_EP_PR			

Configuring OSV for Integration with RedSky

Create Endpoints for the two RedSky E911 Manager nodes

Go to **OpenScope Voice->Global Translation and Routing->Endpoint management->Endpoint** and press the **Add** button:



In the **General** tab, give the name and select the **Profile** that was created in the previous steps:

Configuring OSV for Integration with RedSky

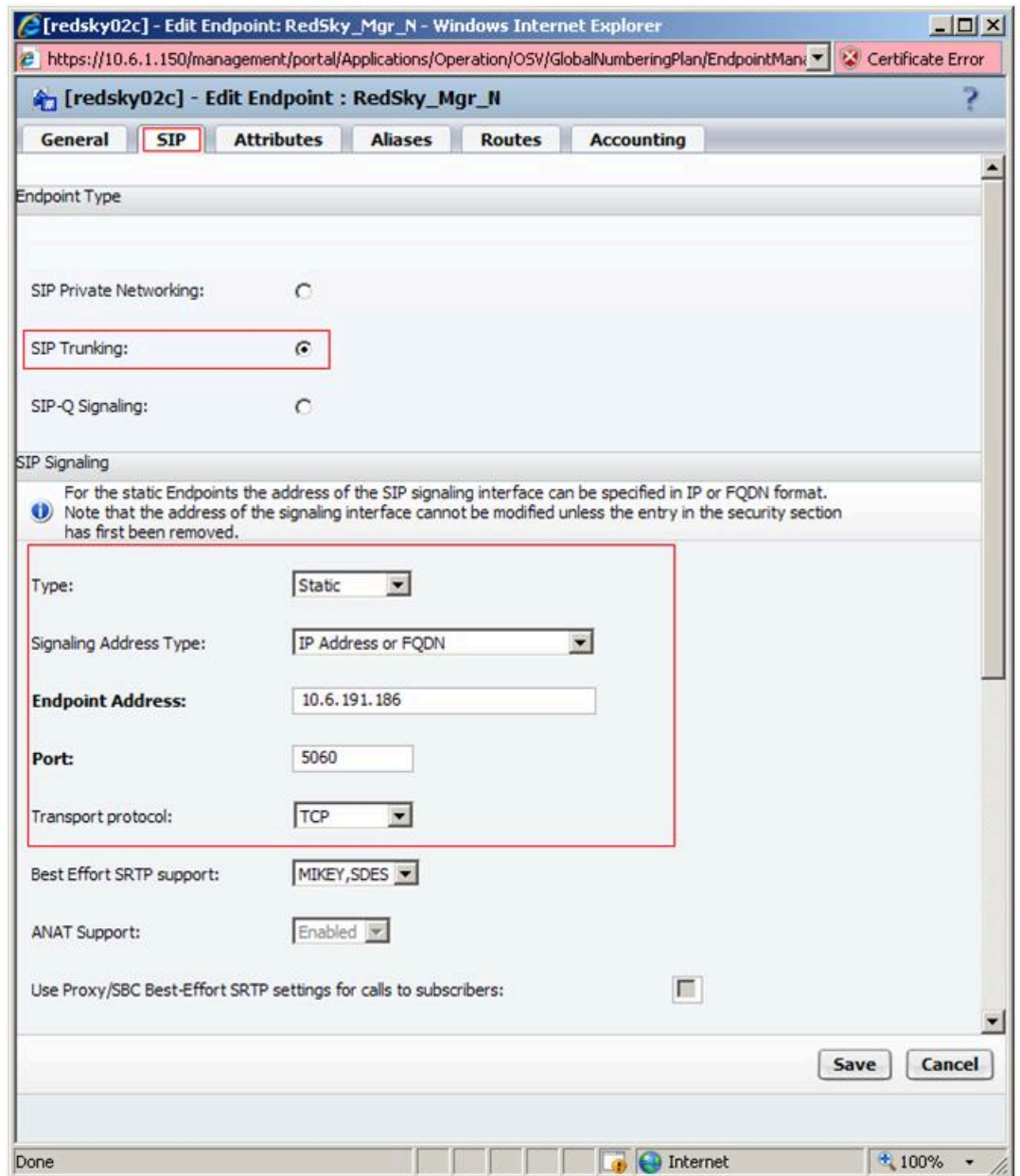
The screenshot shows a web browser window titled "[redsky02c] - Edit Endpoint: RedSky_Mgr_N - Windows Internet Explorer". The address bar shows the URL "https://10.6.1.150/management/portal/Applications/Operation/OSV/GlobalNumberingPlan/EndpointMan...". The page title is "[redsky02c] - Edit Endpoint : RedSky_Mgr_N". The interface has several tabs: "General", "SIP", "Attributes", "Aliases", "Routes", and "Accounting". The "General" tab is selected. Below the tabs, there is a section titled "Endpoint" with a description: "Define the connection data of an endpoint, e.g. you may use this to add a gateway to a switch." The form contains the following fields and controls:

- Name:** RedSky_Mgr_N (highlighted with a red box)
- Remark:** (empty text area)
- Registered:**
- Profile:** RedSky_EP_PR (highlighted with a red box) with a dropdown arrow
- Associated Endpoint:** (empty text box) with a dropdown arrow
- Default Home DN:** (empty text box) with a dropdown arrow
- Location Domain:** (empty text box)
- Endpoint Template:** (empty text box) with a dropdown arrow
- Endpoint Type:** (empty text box)
- Max number of users:** (empty text box)
- Last Update:** 2011-12-21 05:10:02

At the bottom right of the form, there are "Save" and "Cancel" buttons. The browser's status bar at the bottom shows "Done", "Internet", and "100%" zoom level.

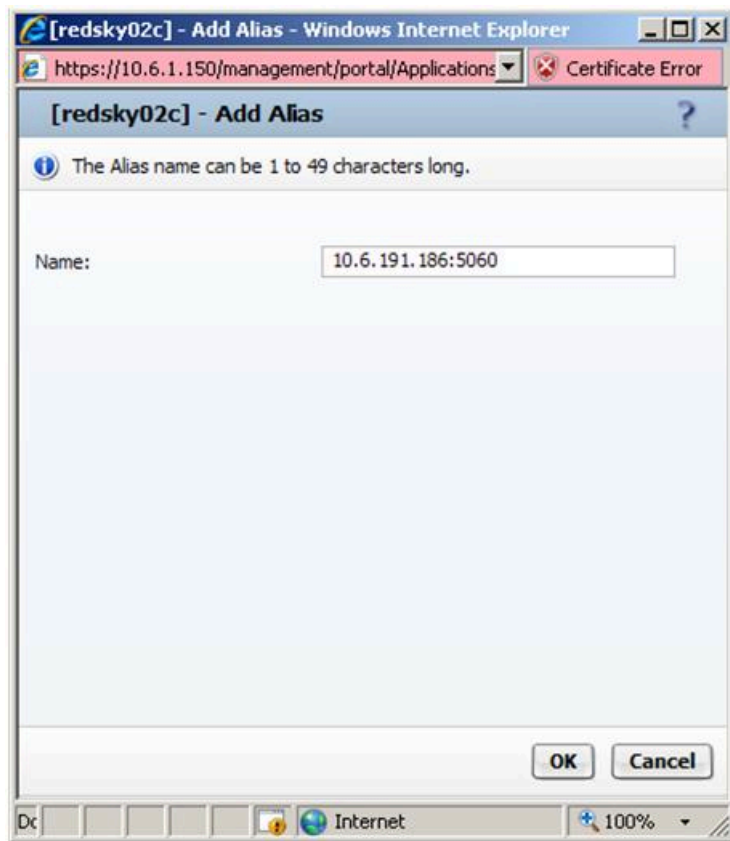
In the **SIP** tab, check the **SIP Trunking** radio button, select **Static Type**, enter the **Endpoint Address**, **Port** and **Transport protocol** (TCP or TLS):

Configuring OSV for Integration with RedSky



Go to **Aliases** tab and **Add Name: 10.6.191.186:5060**

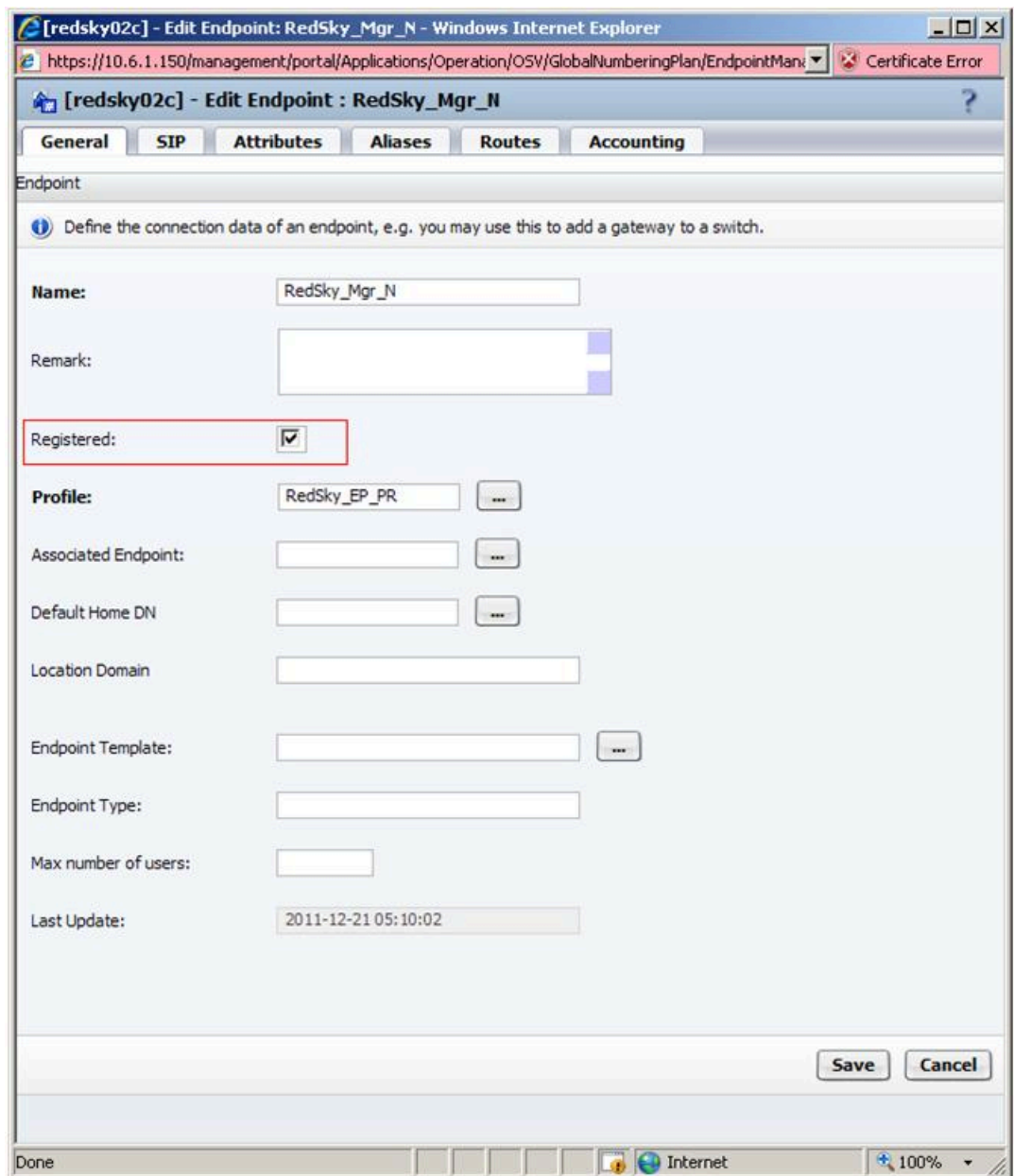
Configuring OSV for Integration with RedSky



Go back to the **General** tab and check the **Registered** box and then press **Save** button:

Configuring OSV for Integration with RedSky

Creating Destination/Routes, Endpoints for the RedSky ANS



Follow the same instructions to create the RedSky E911 Manager node2 (RedSky_Mgr_N2).

1.3 Creating Destination/Routes, Endpoints for the RedSky ANS

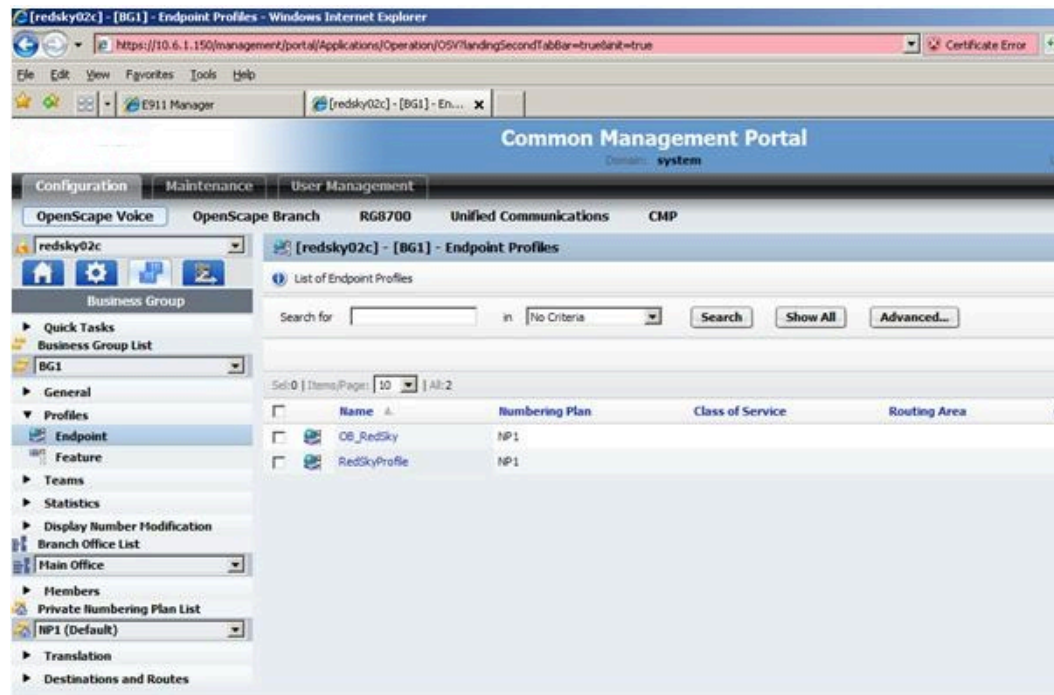
RedSky Anywhere Service acts as a SIP Service Provider for emergency calls and distributes the E911 call to the Local PSAP. SIP connectivity is done via an SBC.

Create Endpoint Profile for Redsky ANS.

Go to **OpenScape Voice->Business Group->Profiles->Endpoint**

Create endpoint profile.

Configuring OSV for Integration with RedSky



Give a **Name**, set **SIP Privacy Support** to **Full** and click **Save**.

Configuring OSV for Integration with RedSky

The screenshot shows a web browser window titled "[redsky02c] - [BG1] - Edit Endpoint Profile: RedSkyProfile". The URL is "https://10.6.1.150/management/portal/Applications/Operation(OSV)/BusinessGroup/Profiles/PopUps/modifyEndPointProfile.psm?nameEp=R". The page has three tabs: "General", "Endpoints", and "Services". The "General" tab is active.

Endpoint Profile

Please enter the profile data. Maximum number of allowed blocked number is 10.

Name: RedSkyProfile

Remark: [Empty text area]

Numbering Plan: NP1

Management Information

Please enter the data for the following fields in the corresponding screens.

Class of Service: [Empty dropdown]

Routing Area: [Empty dropdown]

Calling Location: [Empty dropdown]

Time Zone: LOCAL

SIP Privacy Support: Full

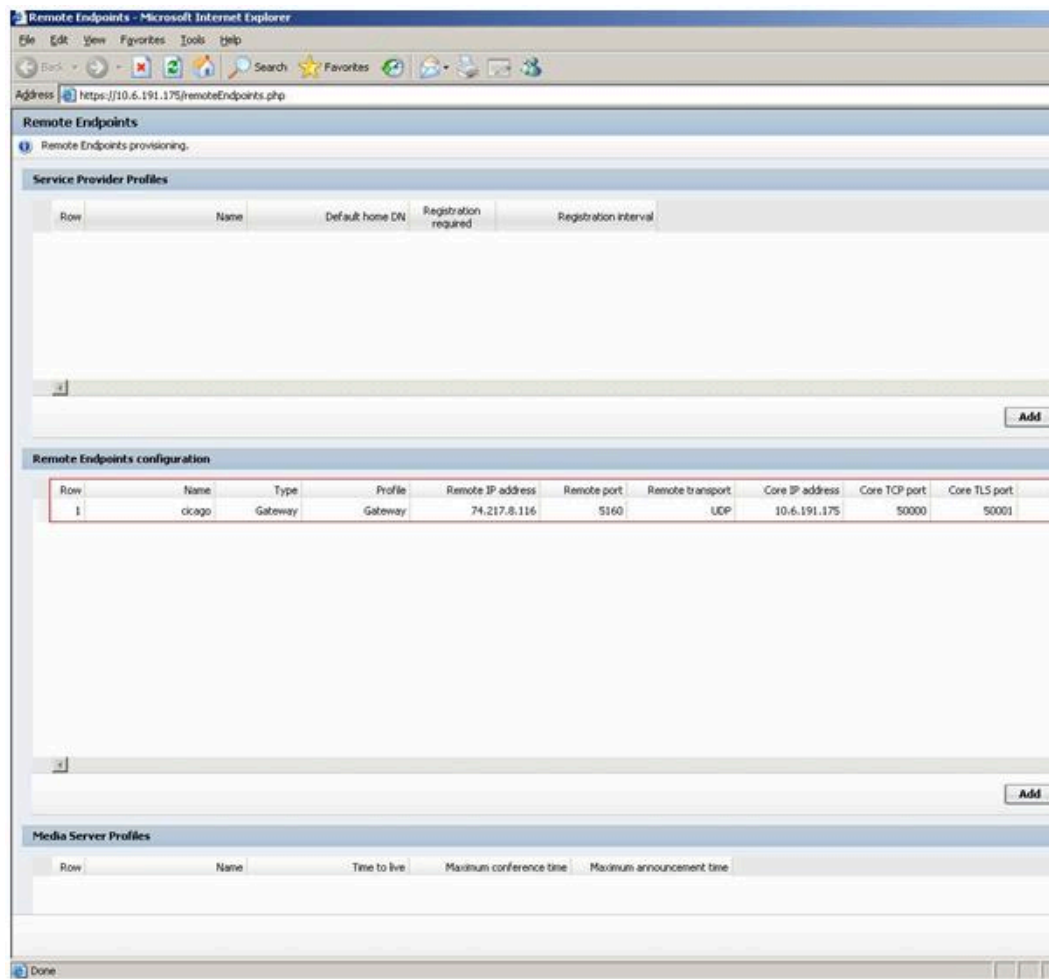
Failed Calls Intercept Treatment: Disabled

Save **Cancel**

Create Route in Central SBC

In this example we used central SBC connection (VOIP connection). Alternatively, we can use PSTN/ISDN connection. We first create a map table in SBC with the **IP** of the remote device, **remote port** and also the **IP of the core** device and **the core port**.

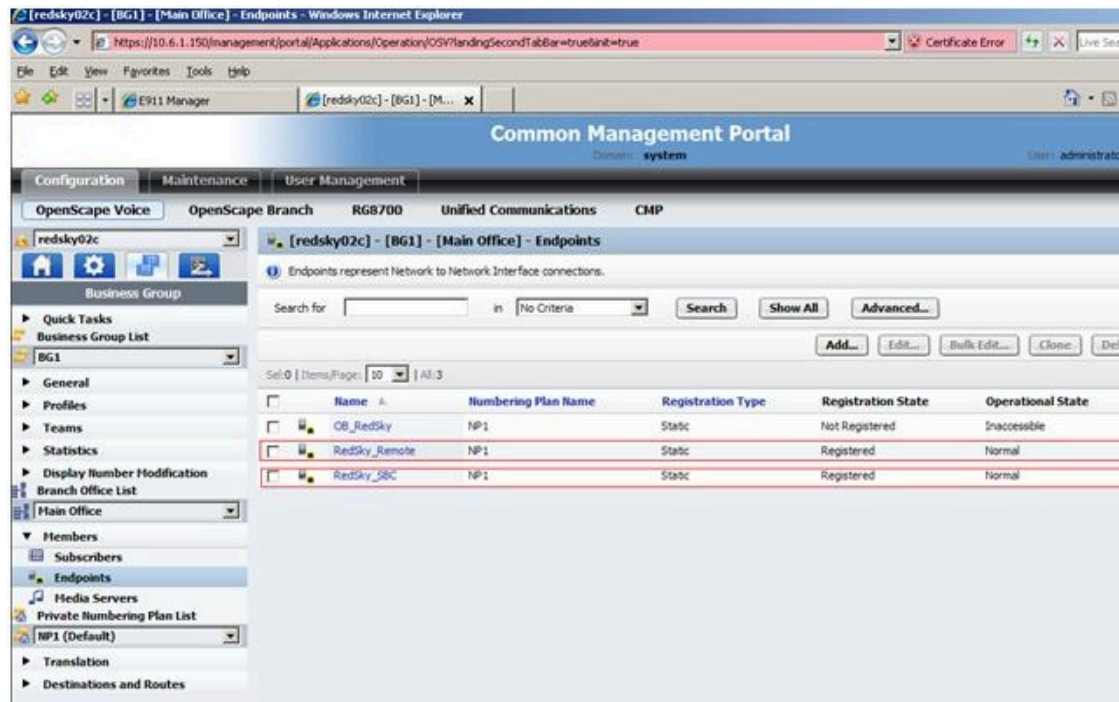
Configuring OSV for Integration with RedSky



Create endpoints for SBC connection.

To create an endpoint go to **OpenScape Voice->Business Group->Members->Endpoints:**

Configuring OSV for Integration with RedSky



Select the endpoint profile created before in the general tab of the endpoint
Select **SIP Trunking, UDP** and specify the **Port**. Also add the IP alias in the **Aliases** tab and check the **Registered** box in the General tab.

Configuring OSV for Integration with RedSky

[redsky02c] - [BG1] - [Main Office] - Edit Endpoint: RedSky_SBC - Windows Internet Explorer

https://10.6.1.150/management/portal/Applications/Operation/OSV/BusinessGroup/Members/PopUps/m

[redsky02c] - [BG1] - [Main Office] - Edit Endpoint : RedSky_SBC

General SIP Attributes Aliases Routes Accounting

Endpoint Type

SIP Private Networking:

SIP Trunking:

SIP-Q Signaling:

SIP Signaling

For the static Endpoints the address of the SIP signaling interface can be specified in IP or FQDN format. Note that the address of the signaling interface cannot be modified unless the entry in the security section has first been removed.

Type: Static

Signaling Address Type: IP Address or FQDN

Endpoint Address: 10.6.191.175

Port: 5160

Transport protocol: UDP

Best Effort SRTP support: MIKEY,SDES

ANAT Support: Enabled

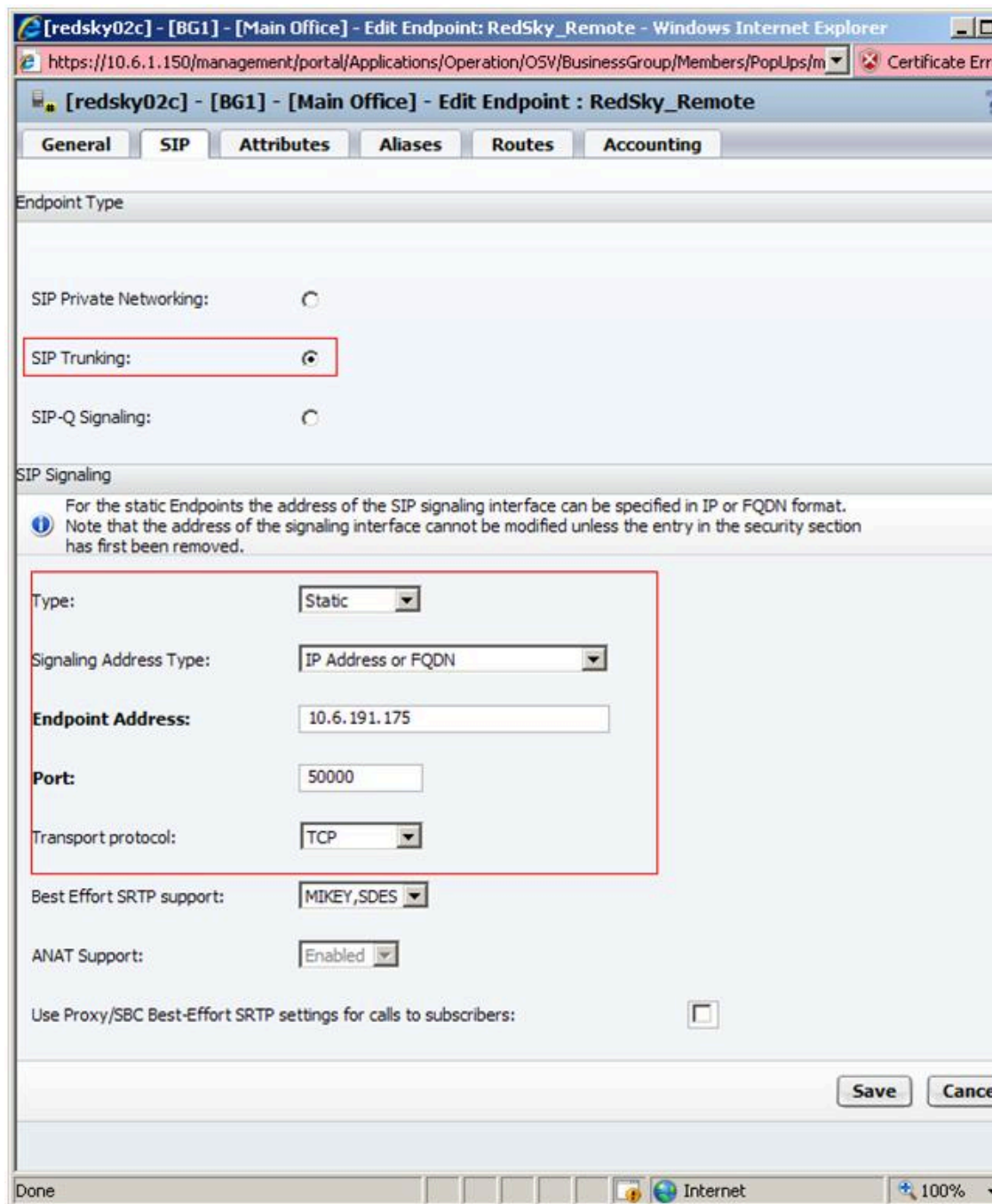
Use Proxy/SBC Best-Effort SRTP settings for calls to subscribers:

Save

Done Internet

Second endpoint should be configured as follows

Configuring OSV for Integration with RedSky



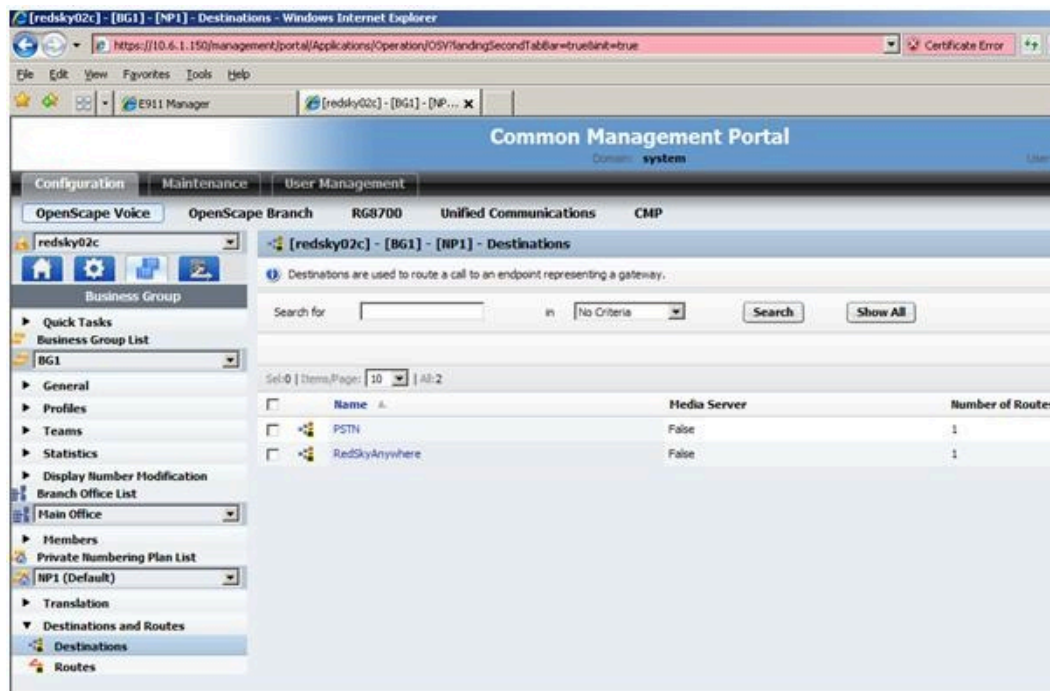
Select the endpoint profile that was created in the previous steps in the **General** tab of the endpoint.

Select **Sip Trunking**, **TCP** and specify the **Port**. Add IP alias in the **Aliases** tab and check **Registered** box in the General tab.

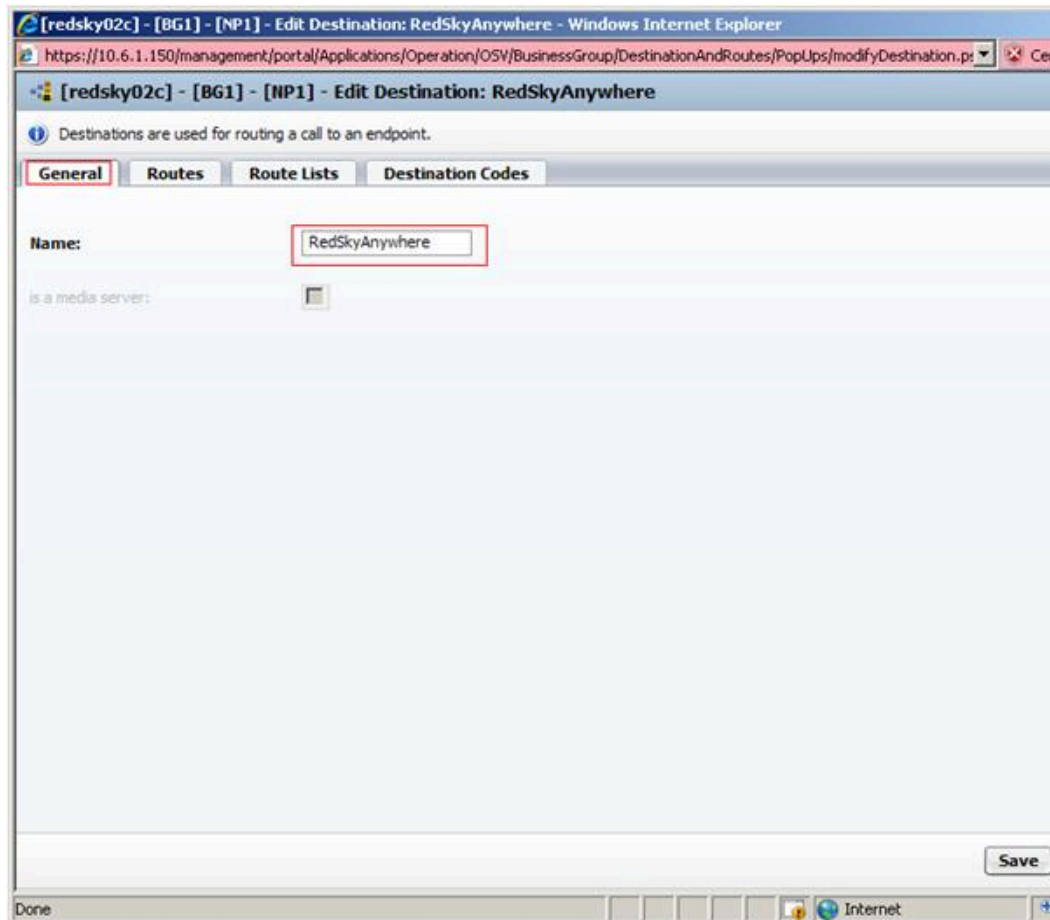
Create Destination/Routes.

Go to **OpenScope Voice->Business Group->Destinations and Routes->Destinations->Add:**

Configuring OSV for Integration with RedSky



Go to **General** tab and specify **Name** for the destination:



Go to **Routes** tab and add the endpoint created for the RedSky ANS SBC:

Configuring OSV for Integration with RedSky

- Change the modification type to number manipulation.
- Number of digits to delete: **6**
- Digits to insert: **911**
- Nature of address: **Unknown**

[redsky02c] - [BG1] - [NP1] - Edit Route: R_E22655_108

https://10.6.1.150/management/portal/Applications/Operation/OSV/BusinessGroup/DestinationAnd... Certificate Error

[redsky02c] - [BG1] - [NP1] - Edit Route: R_E22655_108

A route connects the destination with an endpoint representing a gateway.

ID

The Route ID indicates the priority level.

ID: 1

Type: SIP Endpoint

SIP Endpoint: RedSky_Remote

Originator Attributes

Restricts the traffic according to specified settings. Routes with the same restrictions can be prioritized.

Signaling Type: Undefined

Bearer Capability: Unassigned

Destination Directory Number

Number of digits to delete: Leading digits are cut off from the Directory Number.
Digits to insert: the digit string is added to the beginning of the remaining digits.

Modification Type: Number Manipulation

Number of digits to delete: 6

Digits to insert: 911

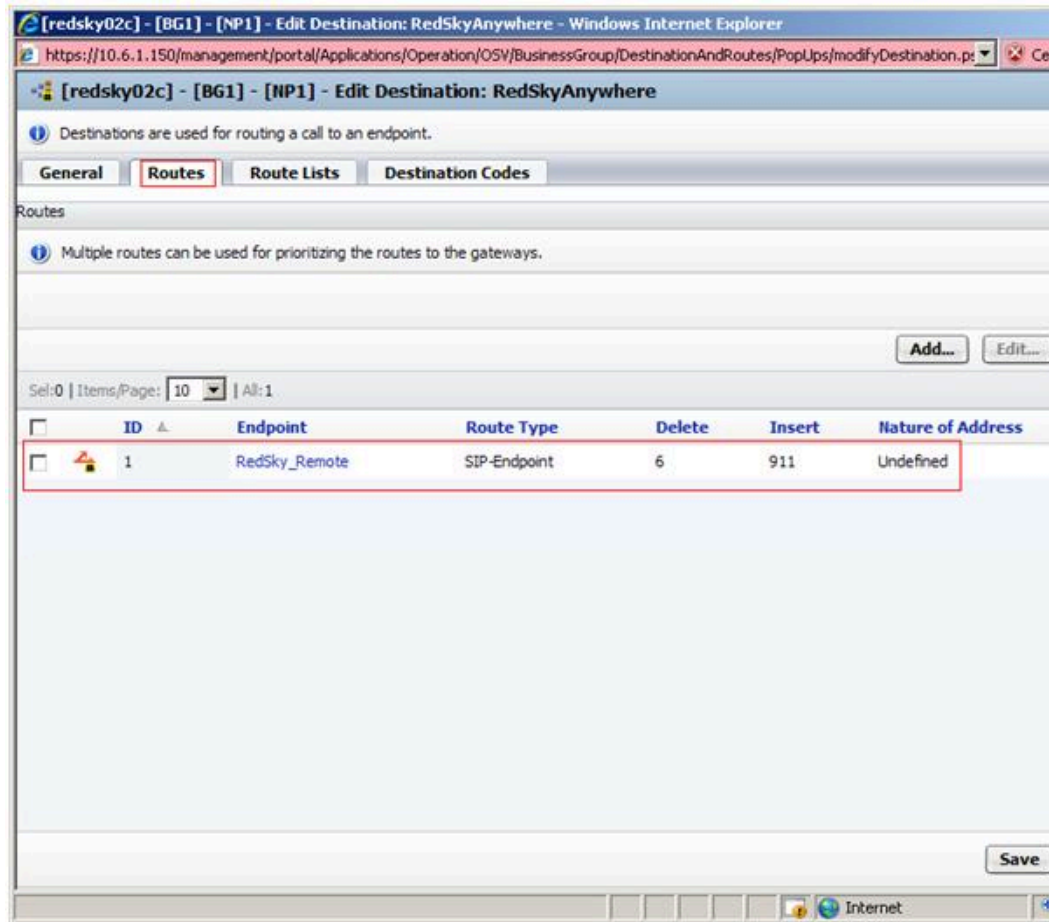
Nature of Address: Unknown

Save Cancel

Done Internet 100%

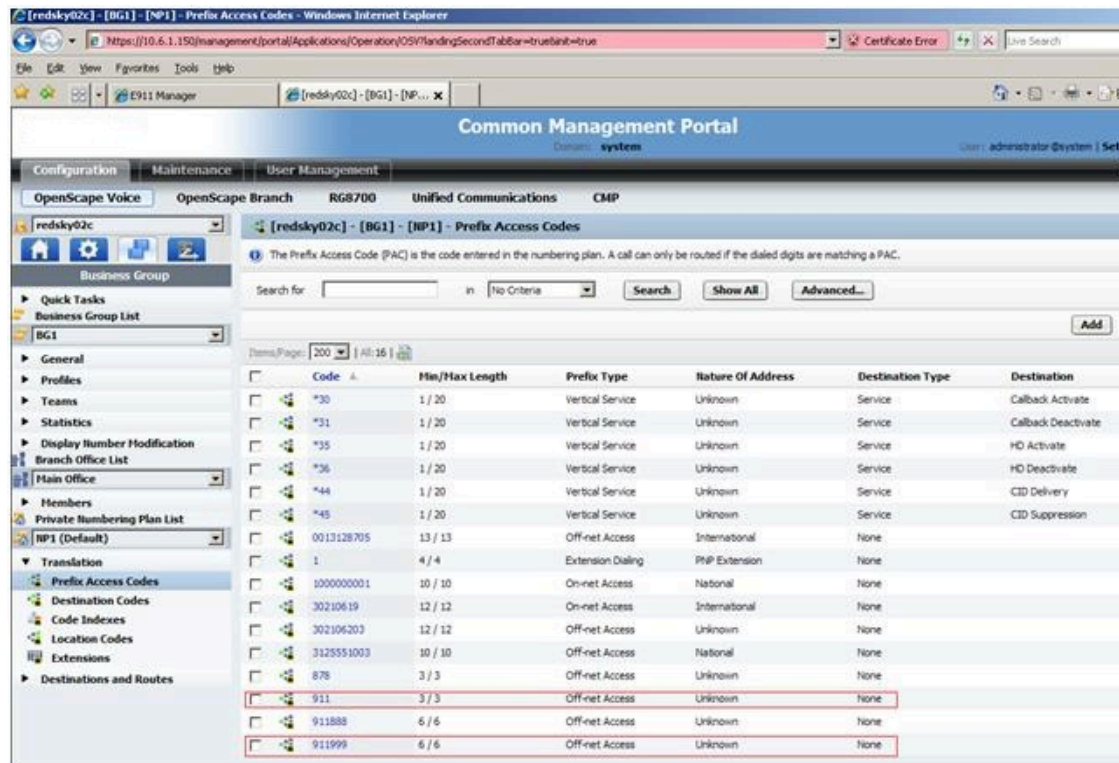
Verify that the route added successfully.

Configuring OSV for Integration with RedSky



Go to **OpenScape Voice->Business Group->Translation->Prefix Access Codes->Add:**


Configuring OSV for Integration with RedSky



Create PAC's for 911, 911999

[mgmttest15s] - [AD_CSTA] - [NP_AD_CSTA] - Edit Prefix Access Code: 911

Identification

 If the dialed digits match this code, the specified modification to these dialed digits is executed.

Prefix Access Code:

Remark:


Minimum Length:

Maximum Length:

Digit Position:

Digits to insert:

Settings

 Specify additional parameters to determine how the call will be routed.

Prefix Type:

Nature of Address:

Destination Type:

Destination:



Configuring OSV for Integration with RedSky

[mgmttest15s] - [AD_CSTA] - [NP_AD_CSTA] - Edit Prefix Access Code: 911999

Identification

i If the dialed digits match this code, the specified modification to these dialed digits is executed.

Prefix Access Code:

Remark:  

Minimum Length:


Maximum Length:


Digit Position:


Digits to insert:


Settings

i Specify additional parameters to determine how the call will be routed.

Prefix Type: 

Nature of Address: 

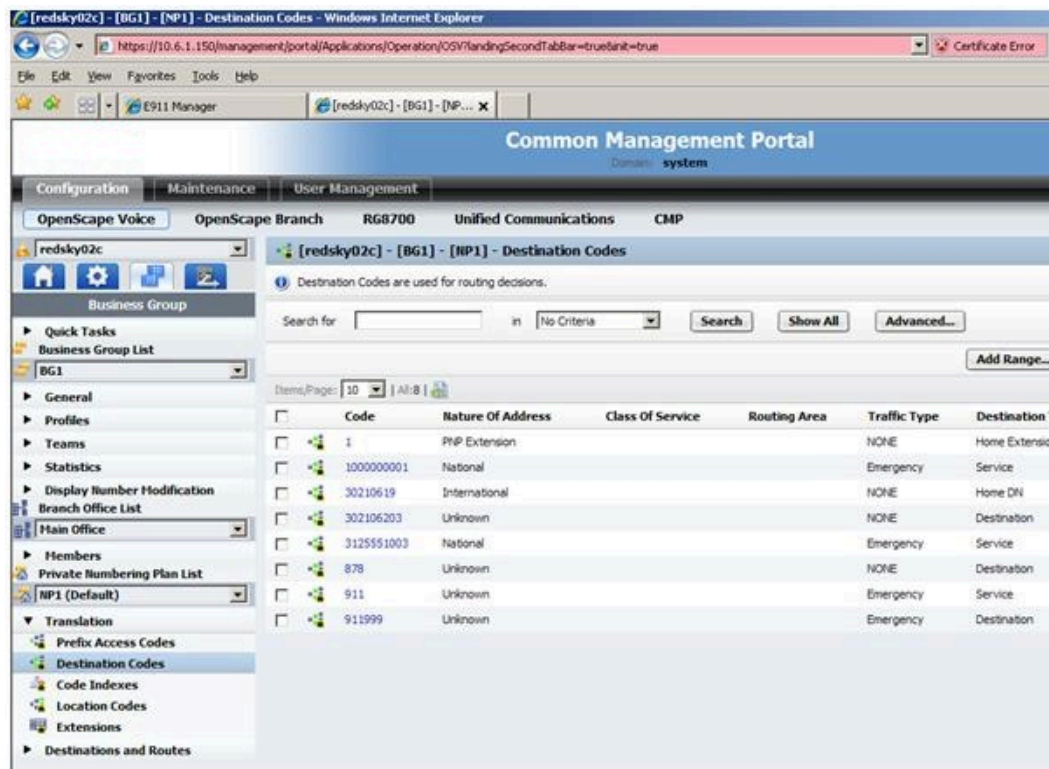
Destination Type: 

Destination: 

Save

Go to **OpenScape Voice->Business Group->Translation->Destination Codes->Add...**

Configuring OSV for Integration with RedSky



Create **Destination Code** for 911, 911999 that leads to **RedSkyAns** Destination:

Destination code for **911999**

Configuring OSV for Integration with RedSky

i This destination code will be used for a call if the dialed or modified (in PAC) digits and the Nature of Address are matching.

Destination Code: ...

Remark: ^
v

Nature Of Address: v

Originator Attributes

i Optionally, an additional match is required if the originator of the call belongs to the specified Class of Service and Routing Area.

Class Of Service: ...

Routing Area: ...

Traffic Type

i Specify the traffic type for this destination code.

None

Use Local Toll Table

Select Traffic Type ...

Destination

i Specify additional parameters to determine how the call will be routed.

Destination Type: v

Destination: ...

DN Office Code: ...

Save **Cancel**

Destination code for **911**

Configuring OSV for Integration with RedSky Enable RedSky Service

i This destination code will be used for a call if the dialed or modified (in PAC) digits and the Nature of Address are matching.

Destination Code: ...

Remark:

Nature Of Address: ▾

Originator Attributes

i Optionally, an additional match is required if the originator of the call belongs to the specified Class of Service and Routing Area.

Class Of Service: ...

Routing Area: ...

Traffic Type

i Specify the traffic type for this destination code.

None

Use Local Toll Table

Select Traffic Type ...

Destination

i Specify additional parameters to determine how the call will be routed.

Destination Type: ▾

Service: ...

Save **Cancel**

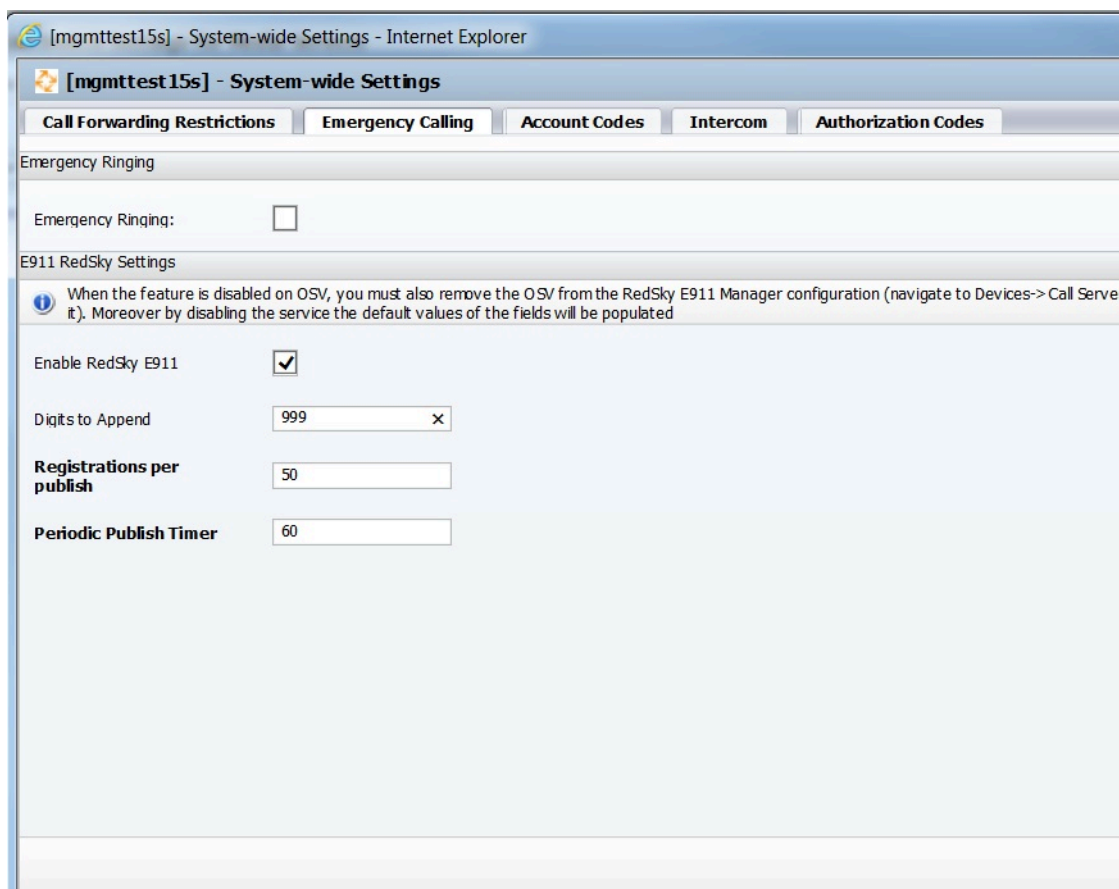
1.4 Enable RedSky Service

Go to **OpenScape Voice-> Administration->Feature Settings ->System-wide->Emergency Calling** and

- Select **Enable RedSky E911**.
- Enter **999 Digits to Append**.

Configuring OSV for Integration with RedSky

Configure RedSky ELINs to Route to E911 Callback Service



1.5 Configure RedSky ELINs to Route to E911 Callback Service

For each of the RedSky ELINs a Prefix Access Code and a Destination Code need to be created that will route to the E911 Callback Service:

NOTICE:

If no ELIN or an empty ELIN is returned from RedSky E911 Manager for a published registration, OSV shall republish the registration when the re-registration occurs

Go to **OpenScape Voice->Business Group->Translation->Prefix Access Codes->Add...**

Configuring OSV for Integration with RedSky

The screenshot shows the 'Common Management Portal' interface for configuring Prefix Access Codes. The page title is '[redsky02c] - [BG1] - [NP1] - Prefix Access Codes'. A note states: 'The Prefix Access Code (PAC) is the code entered in the numbering plan. A call can only be routed if the dialed digits are matching a PAC.' Below this is a search bar and a table of existing codes.


Code	Min/Max Length	Prefix Type	Nature Of Address	Destination Type
*30	1 / 20	Vertical Service	Unknown	Service
*31	1 / 20	Vertical Service	Unknown	Service
*35	1 / 20	Vertical Service	Unknown	Service
*36	1 / 20	Vertical Service	Unknown	Service
*44	1 / 20	Vertical Service	Unknown	Service
*45	1 / 20	Vertical Service	Unknown	Service
0013128705	13 / 13	Off-net Access	International	None
1	4 / 4	Extension Dialing	PHP Extension	None
1000000001	10 / 10	On-net Access	National	None
30210619	12 / 12	On-net Access	International	None
302106203	12 / 12	Off-net Access	Unknown	None
3125551003	10 / 10	Off-net Access	National	None
878	3 / 3	Off-net Access	Unknown	None
911	3 / 3	Off-net Access	Unknown	None
911888	6 / 6	Off-net Access	Unknown	None
911999	6 / 6	Off-net Access	Unknown	None

Create **PAC** for ELIN (e.g. 1000000001):

Configuring OSV for Integration with RedSky

[mgmttest15s] - [AD_CSTA] - [NP_AD_CSTA] - Add Prefix Access Code

Identification

 If the dialed digits match this code, the specified modification to these dialed digits is executed.

Prefix Access Code:

Remark:


Minimum Length:

Maximum Length:

Digit Position:

Digits to insert:

Settings

 Specify additional parameters to determine how the call will be routed.

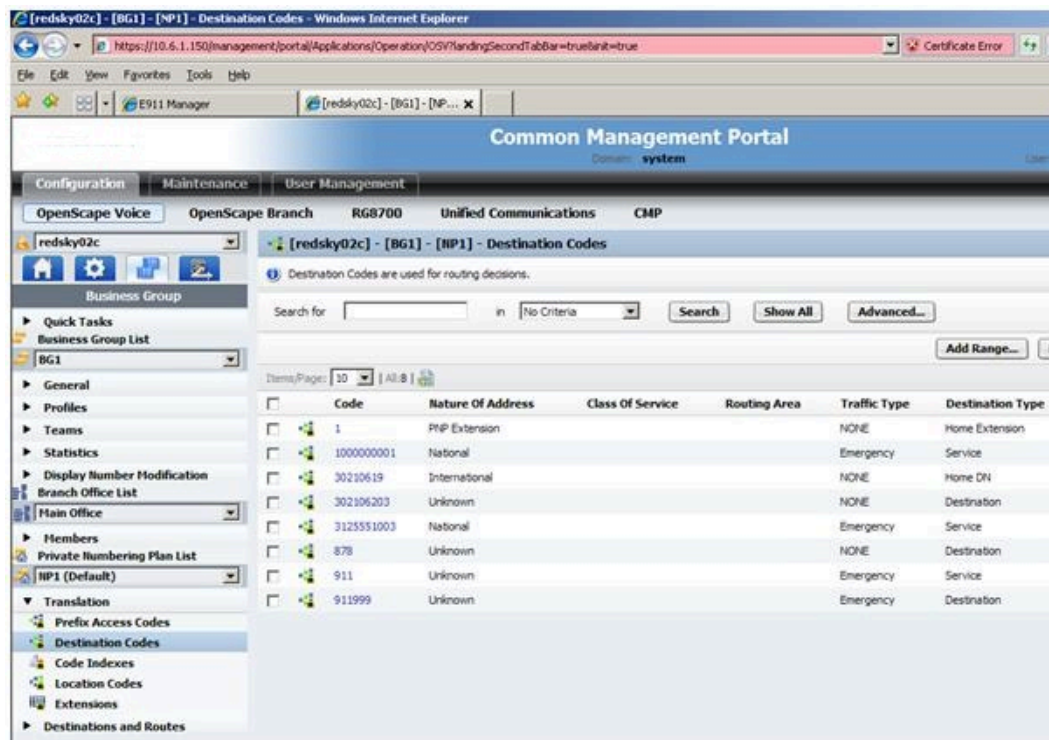
Prefix Type:

Nature of Address:

Destination Type:

Go to **OpenScape Voice->Business Group->Translation->Destination Codes->Add:**

Configuring OSV for Integration with RedSky



Create **Destination Code** 1000000001

Configuring OSV for Integration with RedSky Do Not Publish to E911DM Setting for Subscribers

i This destination code will be used for a call if the dialed or modified (in PAC) digits and the Nature of Address are matching.

Destination Code: ...

Remark:

Nature Of Address: ▾

Originator Attributes

i Optionally, an additional match is required if the originator of the call belongs to the specified Class of Service and Routing Area.

Class Of Service: ...

Routing Area: ...

Traffic Type

i Specify the traffic type for this destination code.

None

Use Local Toll Table

Select Traffic Type ...

Destination

i Specify additional parameters to determine how the call will be routed.

Destination Type: ▾

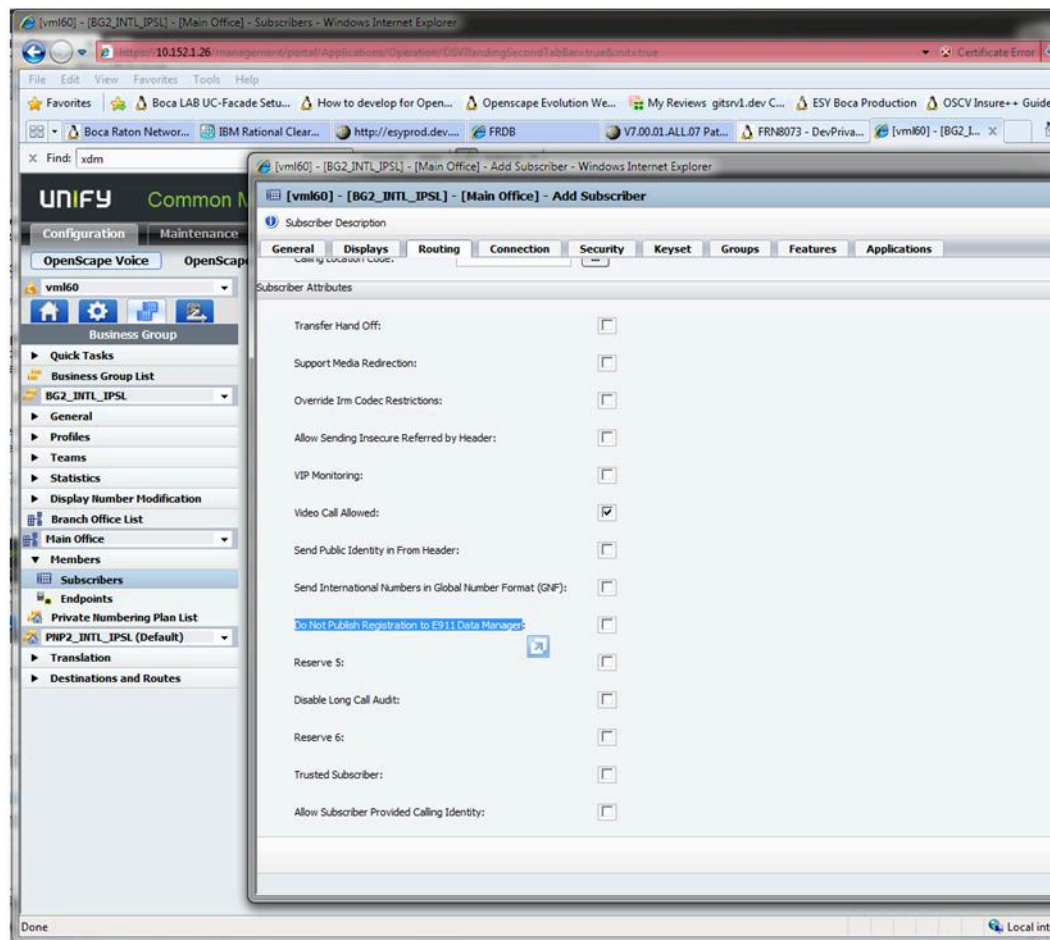
Service: ...

Save **Cancel**

1.6 Do Not Publish to E911DM Setting for Subscribers

In cases where it is not desired to have OSV forward a subscriber's registrations to E911DM, the "Do Not Publish Registration to E911 Data Manager" attribute may be selected for the specific Subscriber.

Go to **OpenScape Voice->Business Group->Members->Subscribers>Routing**



1.7 Configure E911 SNMP Traps to Send to RedSky

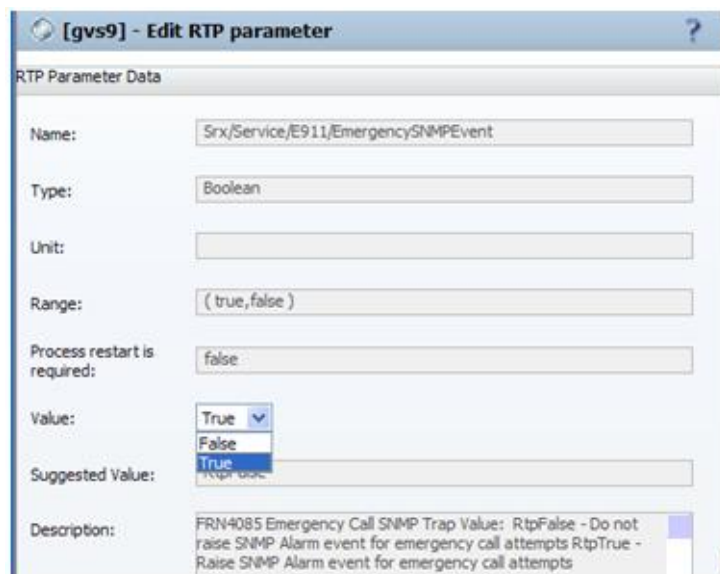
The configuration explained in this section is only required if the RedSky's Emergency On-Site Notification feature is being used in your deployment.

1.7.1 Enabling the E911 Emergency SNMP Event 250

The RTP parameter **Srx/Service/E911/EmergencySNMPEvent** by default is set to a value of **RtpFalse**. If an SNMP trap for event 250 is needed to be sent from the OpenScape Voice server to RedSky each time a subscriber initiates a E911 call this parameter must be changed to a value of **RtpTrue**.

- **OpenScape Voice->Administration->General Settings->RTP->**
- Select the check box for the RTP parameter name **Srx/Service/E911/EmergencySNMPEvent** and select the **View / Edit** button to modify.
- Select the **True** option for the "Value:" field and select the **Save** button.

Configuring OSV for Integration with RedSky



For more details on the E911 SNMP trap event 250, refer to section 6 of the “OpenScope Voice V8, Design and Planning Manual, SIP Network Planning, Planning Guide”

1.7.2 Configure the E911 Emergency SNMP Event 250 RedSky Destinations

For each RedSky E911 Manager Node endpoint that is created an SNMP Event Filter must be created specifically for event 250 only with a severity level of Warning. This is done via CLI.

```

startcli.2.->.1.->.14.for.createSnmpeventFilter
*****.ipAddr:.<IP-address-on-one-of-the-redsky-nodes>
*****.eventSets[0].<end:.<Return>>:.250
*****.eventSets[1].<end:.<Return>>:.<press-enter>
*****.severities[0].<EVT_SEV_CRITICAL: .1,
*****.EVT_SEV_MAJOR: .2,
*****.EVT_SEV_MINOR: .3,
*****.EVT_SEV_WARNING: .4,
*****.EVT_SEV_INFORMATION: .5,
*****.EVT_SEV_CLEAR: .6,
*****.end:.<Return>>:.4
*****.severities[1].<EVT_SEV_CRITICAL: .1,
*****.EVT_SEV_MAJOR: .2,
*****.EVT_SEV_MINOR: .3,
*****.EVT_SEV_WARNING: .4,
*****.EVT_SEV_INFORMATION: .5,
*****.EVT_SEV_CLEAR: .6,
*****.end:.<Return>>:.<press-enter>
*****.snmpVersion.<EVT_SNMP_TRAP_V1: .1,
*****.EVT_SNMP_TRAP_V2c: .2,
*****.EVT_SNMP_TRAP_V3: .3>:.2
*****.trapDestPort.<(1..32767)>.(default:.-1):.162

```

NOTICE:

Do not define the RedSky E911 Manager node IP addresses in the OpenScope Voice server node.cfg's SNMP Servers section as this would result in all alarms traps being sent to RedSky and not just event 250 which is specific for E911 calls.

Example of a RedSky SNMP Event Filter:

```
startCli:2->.1.->.17° to getSnmpEventFilters¶
***** .ipAddr: . <IP-address-on-one-of-the-RedSky-nodes>¶
***** .trapDestPort: .162¶
***** .eventSets: .250¶
***** .severityLevels: .4¶
***** .snmpversion: .2¶
***** .lastTransId: .0¶
```

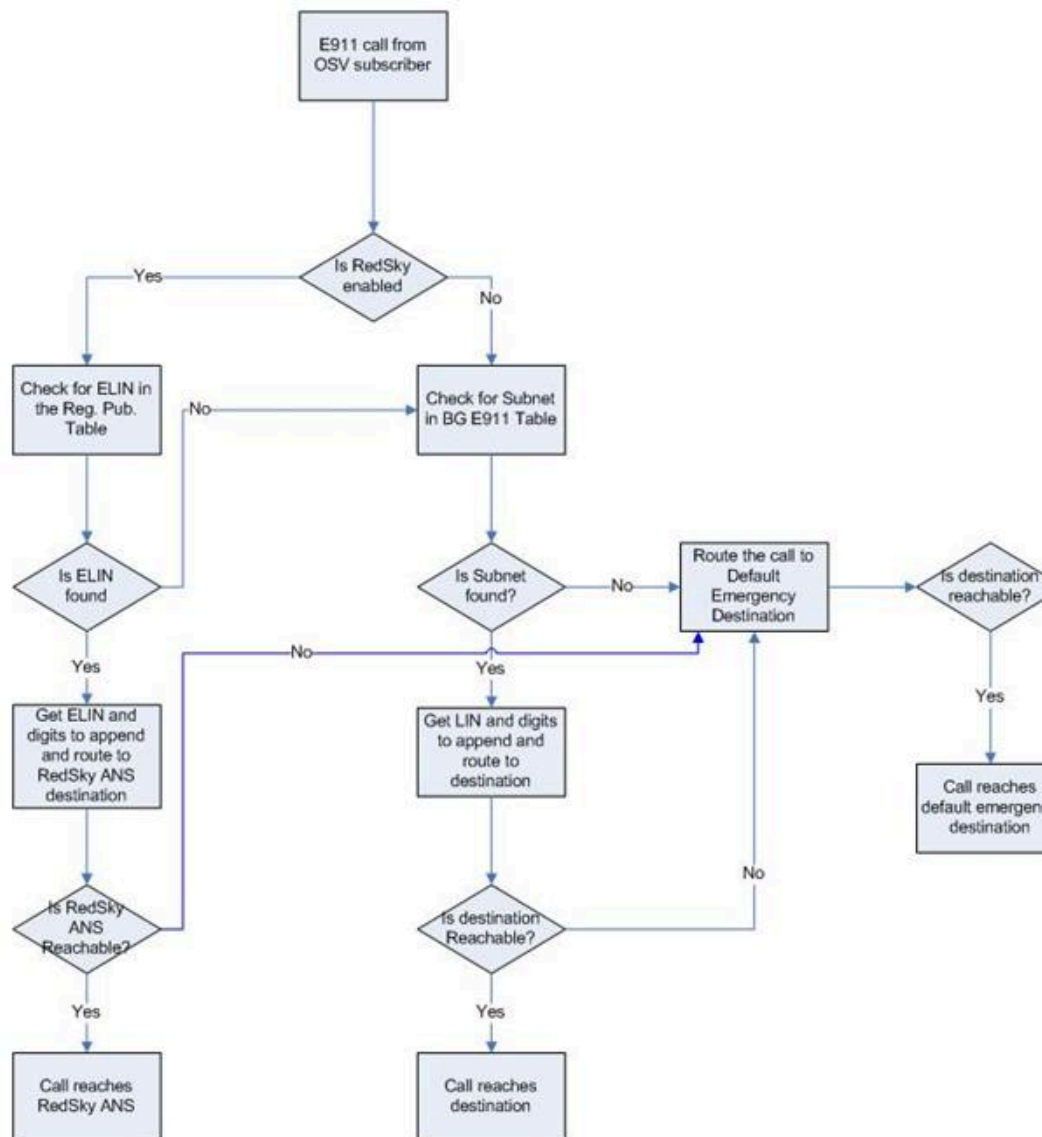
1.8 Making Emergency Calls in OSV

When an emergency call is originated by an OSV subscriber, the emergency call service shall follow the logic below:

Check if integration with RedSky is enabled.

- If not, then search in the E911 BG Subnet entries in order to find the subnet
 - If no subnet is found, route the call to the default emergency destination
 - If a subnet is found, route the call to the provisioned destination
 - If the RTP parameter Srx/Service/E911/EmergencySNMPEvent is set to RtpTrue an SNMP trap for event 250 will be sent to each configured SNMP Event Filter
 - If the RTP parameter Srx/Service/E911/EmergencySNMPEvent is set to RtpFalse no SNMP trap will be sent
- If yes, then check for the ELIN in the new table
 - If an ELIN is found, insert the ELIN in the CPN and PAI headers and route the call to the provisioned route for the RedSky Anywhere service
 - If an ELIN is not found, search in the E911 BG Subnet entries in order to find the subnet
 - If the RTP parameter Srx/Service/E911/EmergencySNMPEvent is set to RtpTrue an SNMP trap for event 250 will be sent to each configured SNMP Event Filter
 - If the RTP parameter Srx/Service/E911/EmergencySNMPEvent is set to RtpFalse no SNMP trap will be sent

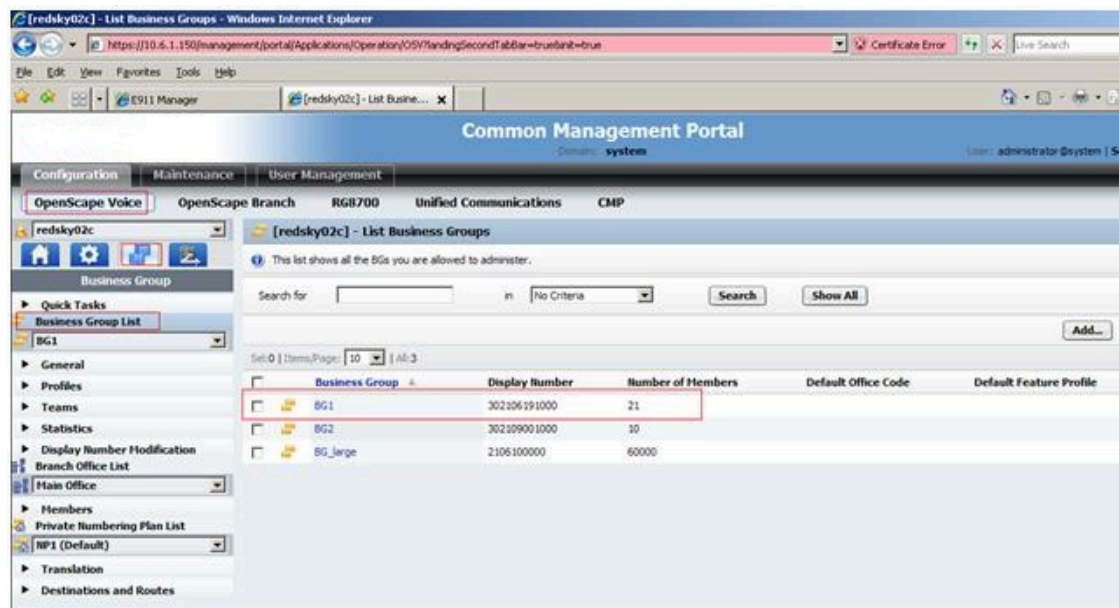
Configuring OSV for Integration with RedSky



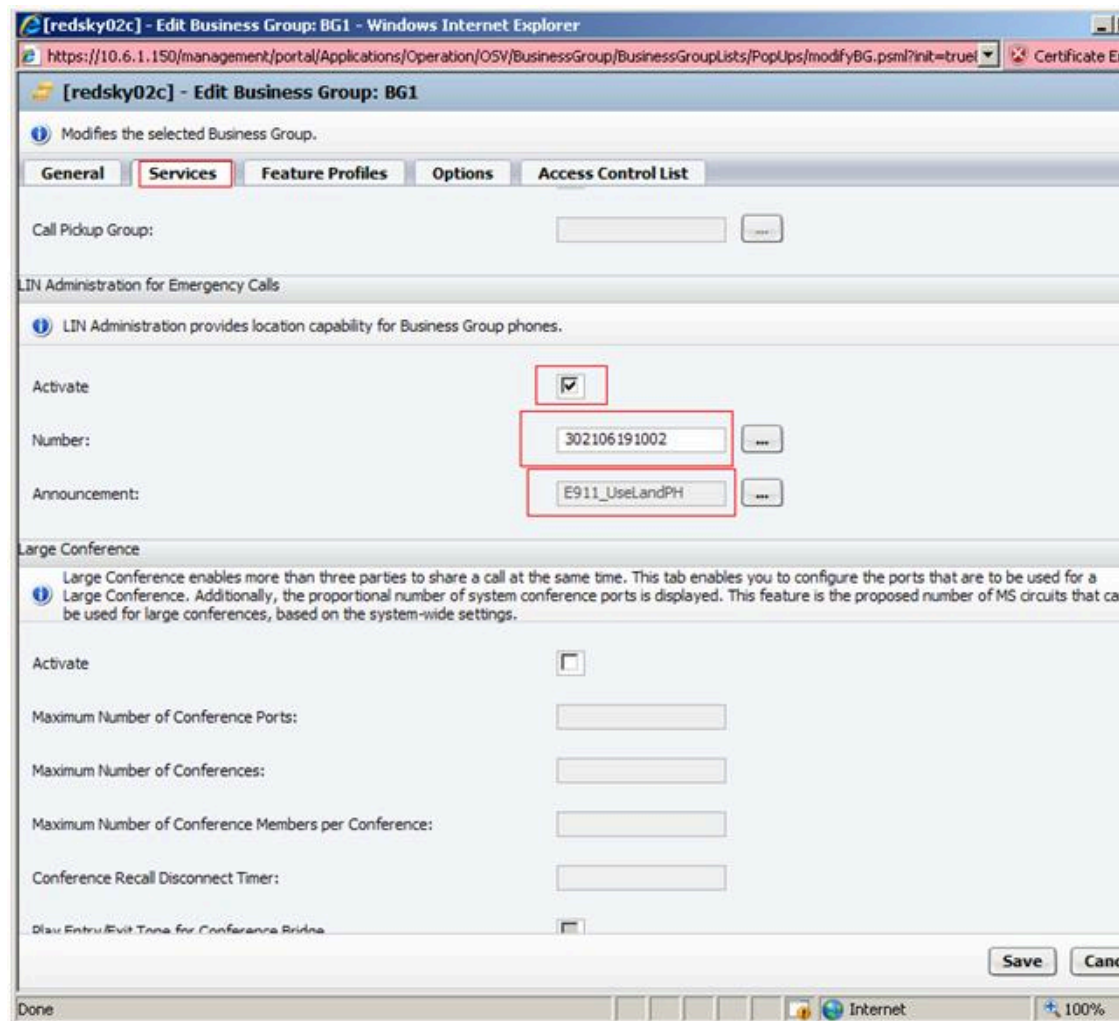
If OSV does not find ELIN then it should route the call to E911 BG Subnet entries. To create E911 BG Subnet you have to enable E911 emergency calling first in OSV. To do this,

Go to **Configuration->OpenScape Voice->Business group->Business Group** list.

Configuring OSV for Integration with RedSky



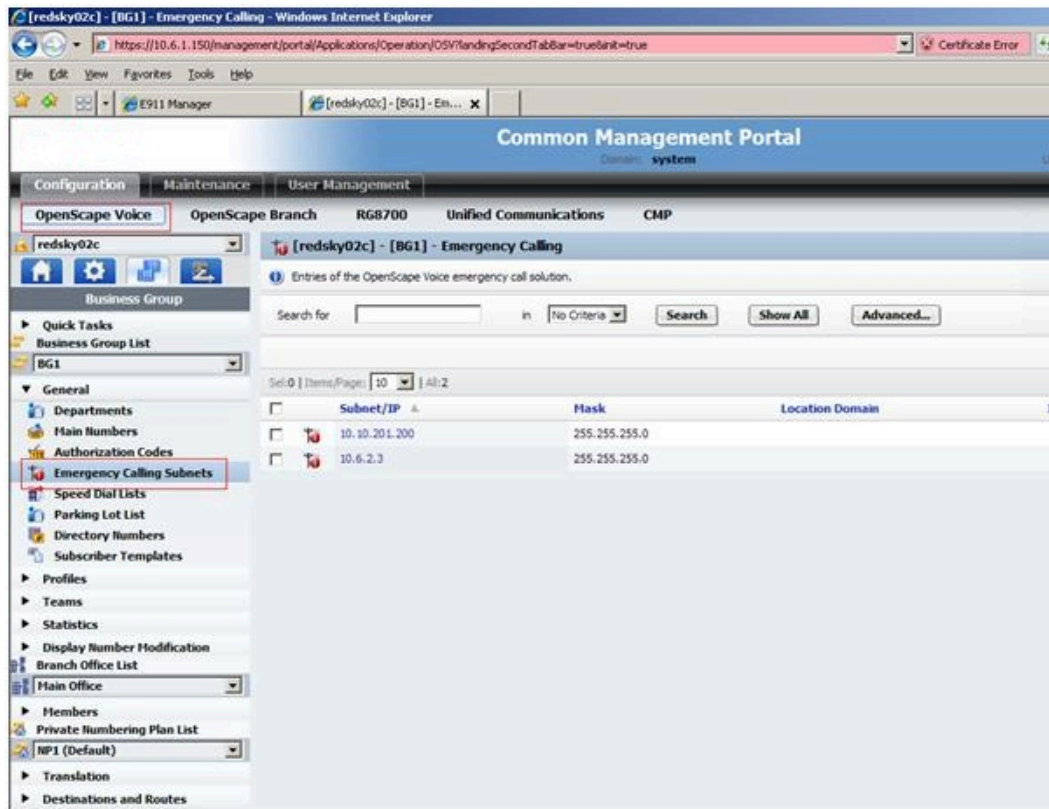
Select BG and go to **Services** tab, **Activate** E911 service, select a **Number** for default emergency destination and select **E911 Announcement**.



Configuring OSV for Integration with RedSky

To create E911 BG Subnet entries go to **OpenScape Voice->Business Group->General->Emergency Calling Subnets**.

Select **Add...**



Give a value to the parameter **IPV4 Address/Subnet** in CIDR format, enable **send LIN instead of CPN** and give the **Digits to append**.

Configuring OSV for Integration with RedSky

[mgmttest15s] - [AD_CSTA] - Add Emergency Calling - Internet Explorer

[mgmttest15s] - [AD_CSTA] - Add Emergency Calling

Entries of the OpenScape Voice emergency call solution.

General **LIN**

Identification

Use a valid "Department", and/or "IPv4 Address/Subnet" combination, and/or "IPv6 Address/Subnet" and/or a valid "Location Domain". The "IPv4 Address/Subnet" and "IPv6 Address/Subnet" must be entered in CIDR format.

Department: ...

Location Domain:

IPv4 Address/Subnet:

IPv6 Address/Subnet:

Description:

Branch Office: ...

Configuration

Here you can set all values for the general configuration.

Send LIN instead of CPN:

Digits to append: x

Save

Go to **LIN** tab and select **Add**.

Give the **Location Identification Number (LIN)**. Fill in **Callback Number** and **Default Callback Destination**. Select **OK** and then **Save**.

Configuring OSV for Integration with RedSky

The screenshot shows two browser windows. The top window is titled "[redsky02c] - [BG1] - Edit Emergency Calling Entry: 10.10.201.200" and displays the "General" tab of the configuration page. The bottom window is titled "[redsky02c] - [BG1] - Edit LIN: 3125551003" and displays the "LIN" tab. In the LIN configuration page, the "Location Identification Number" field is set to "3125551003", the "Callback Number" field is set to "3125551003", and the "Default Callback Destination" field is set to "302106191015". The "Use Default Callback Destination" checkbox is unchecked. The browser's address bar shows the URL "https://10.6.1.150/management/portal/Applications/Operation/OSV/BusinessGroup/BGOption".

[redsky02c] - [BG1] - Edit Emergency Calling Entry: 10.10.201.200

https://10.6.1.150/management/portal/Applications/Operation/OSV/BusinessGroup/BGOption

[redsky02c] - [BG1] - Edit Emergency Calling Entry: 10.10.201.200

Entries of the OpenScape Voice emergency call solution.

General LIN

Location Identification Number

[redsky02c] - [BG1] - Edit LIN: 3125551003

https://10.6.1.150/management/portal/Applications/Operation/OSV/BusinessGroup/BGOption

[redsky02c] - [BG1] - Edit LIN: 3125551003

Location Identification Number

Configuration

Here you can set all values for LIN. Field Location Identification Number and Callback Number are mandatory attributes. Please assign Callback Number a vacant DN, and Default Callback Destination a subscriber account.

Location Identification Number: 3125551003

Callback Number: 3125551003

Default Callback Destination: 302106191015

Use Default Callback Destination:

OK

Done Internet

Save

2 DCMP and RedSky

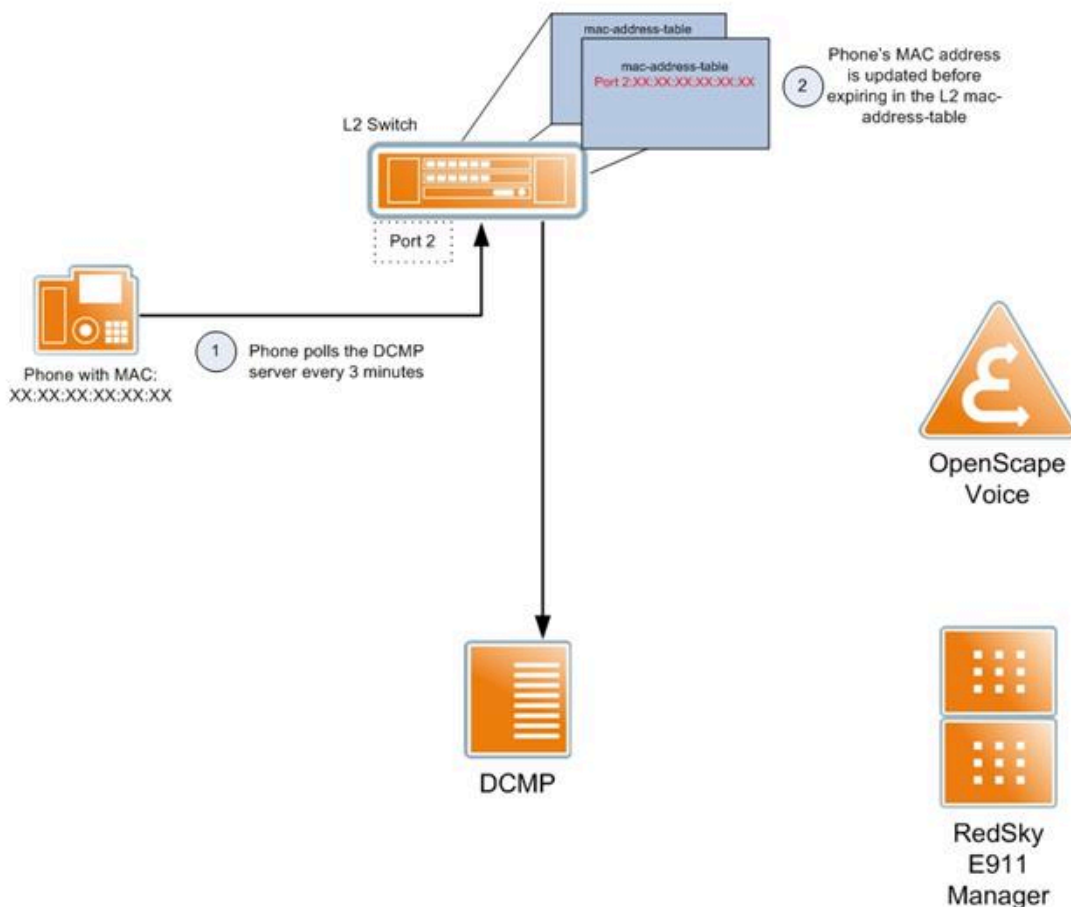
2.1 DCMP Implementation

NOTICE:

It is necessary to implement DCMP (**DLS Contact Me Proxy**) in order to have full functionality.

There are some cases where RedSky E911 Manager will attempt to perform network discovery not triggered by the device's registration. Such cases may include network discovery performed by RedSky E911 Manager on pre-configured periods (e.g. daily or weekly) for synchronization purposes or when RedSky E911 Manager is restarted. In such cases, the devices may be inactive for a long time when the network discovery is performed and the L2 mac-address-table may have flushed the MAC address of the device due to inactivity.

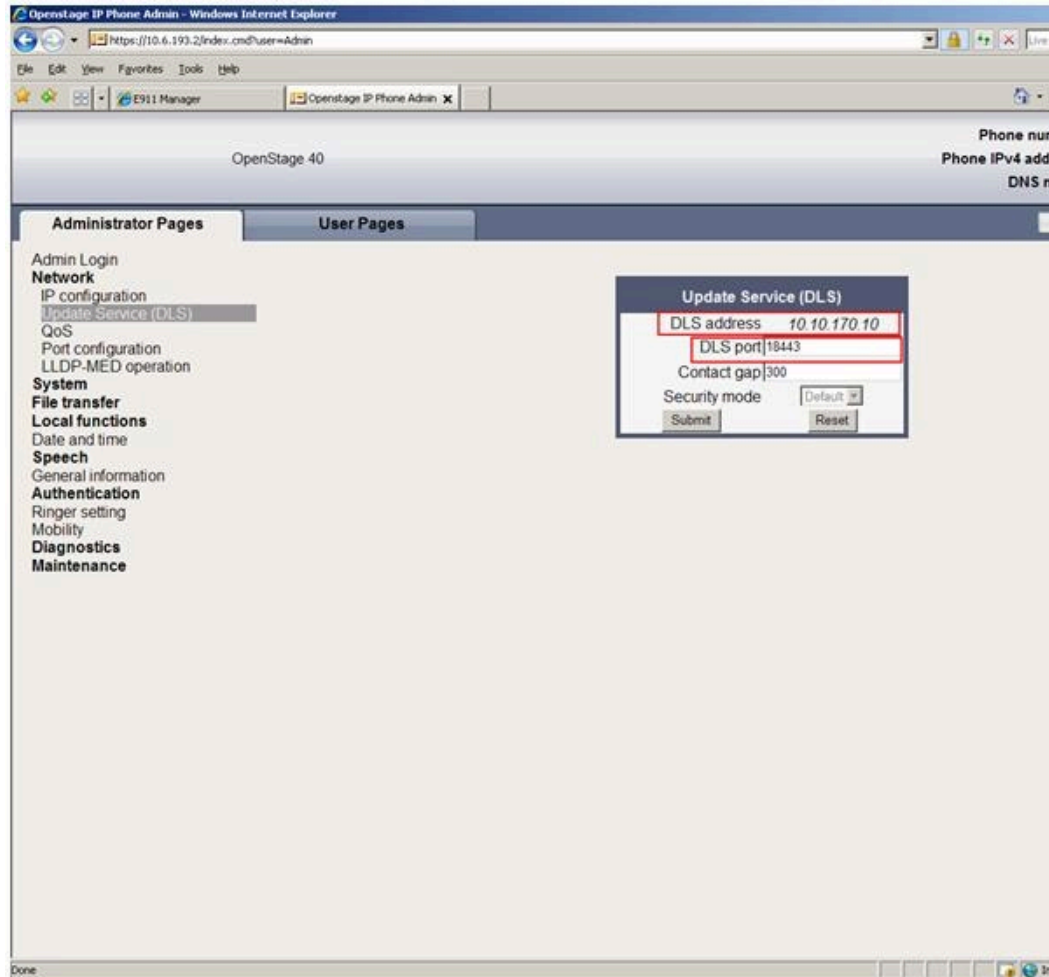
If the MAC address of a device has been flushed from the L2 switch mac-address-table then the network discovery will fail. In order to overcome this problem there have been proposed a workaround that will prevent the mac-address-tables from flushing the MAC addresses of the idle devices:



2.2 Phones - DCMP - DLS Configuration

OpenStage firmware V2R2.47.2 and above is required.

Openstage phones should be configured to have the IP of the DLS.



DCMP should be installed in the same server with DLS or should act on a different server.

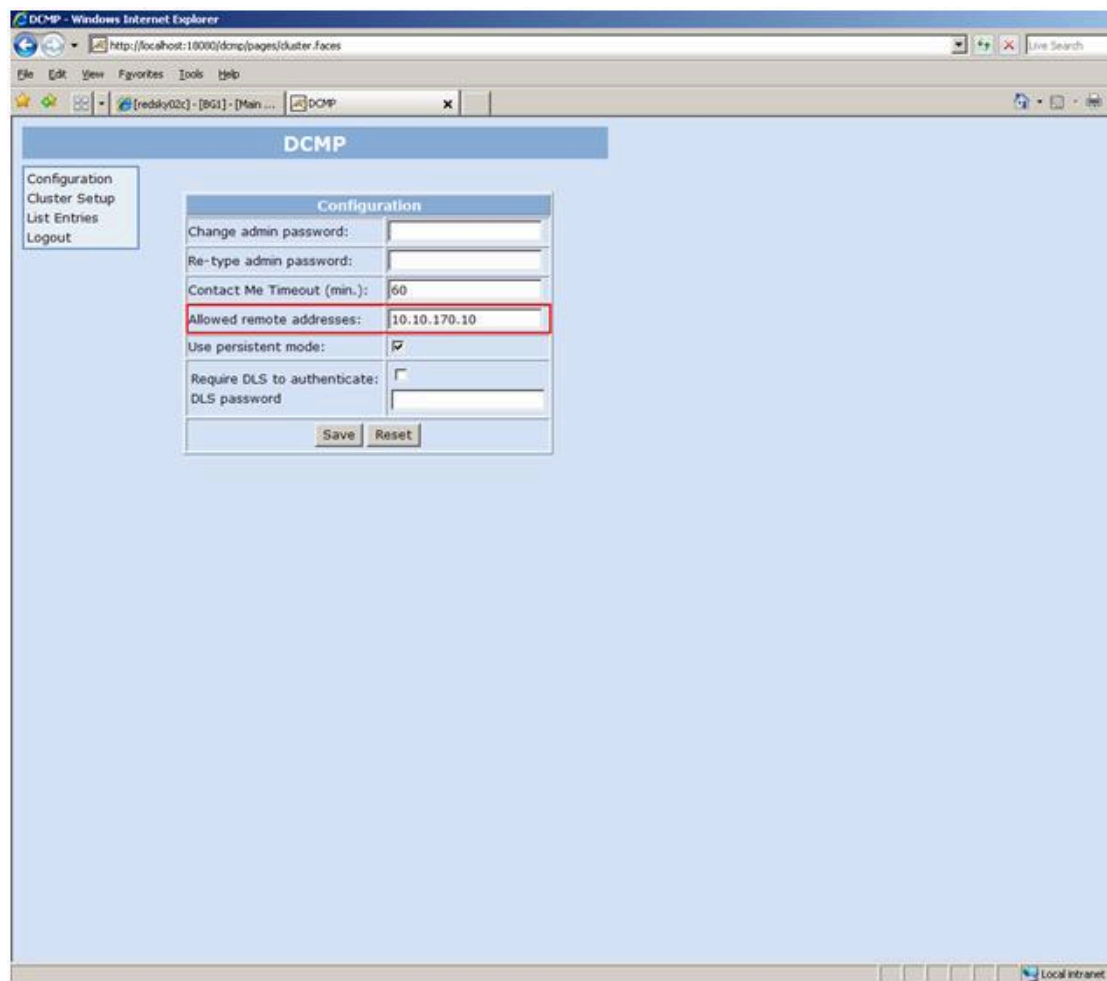
In this example DCMP acts in a different server with DLS.

After the installation of DCMP, login:

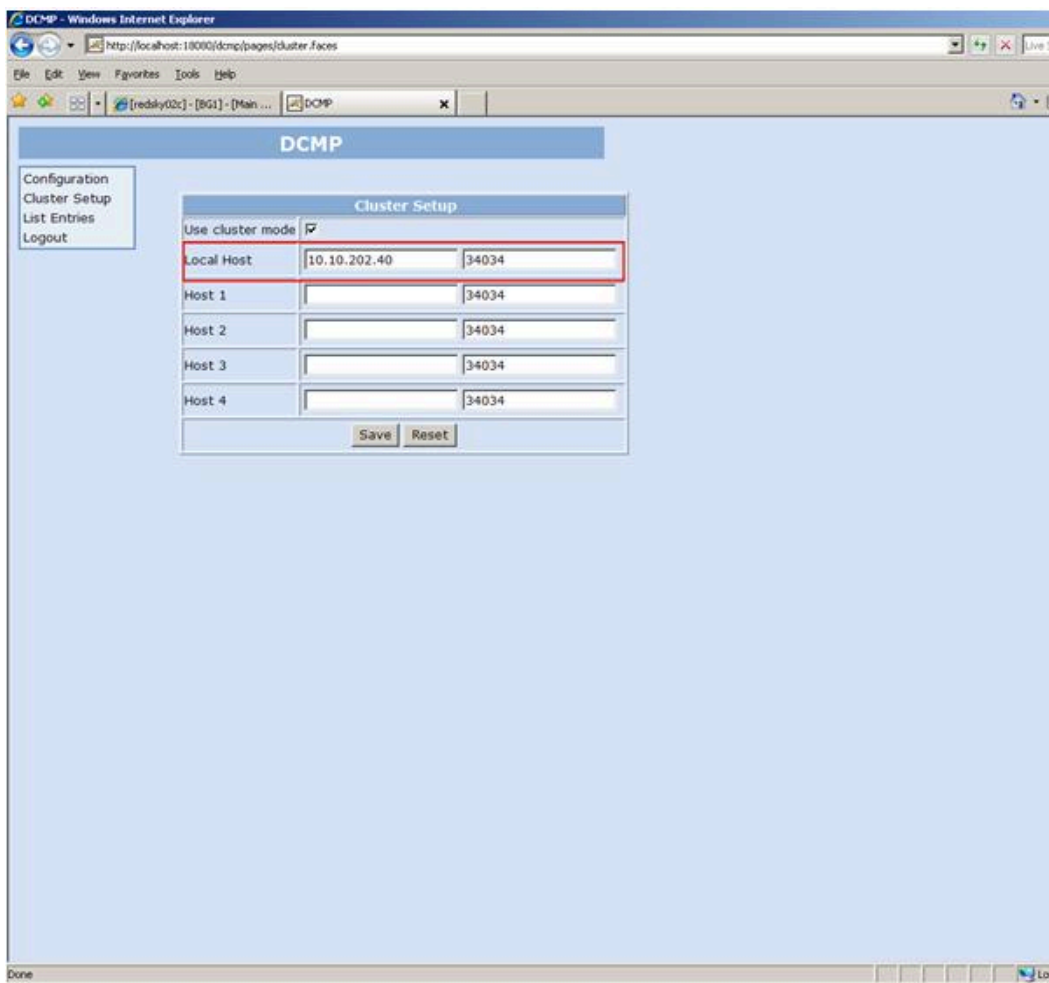
`http://localhost:18080/dcmp/`

In the configuration menu add the IP of DLS.

DCMP and RedSky



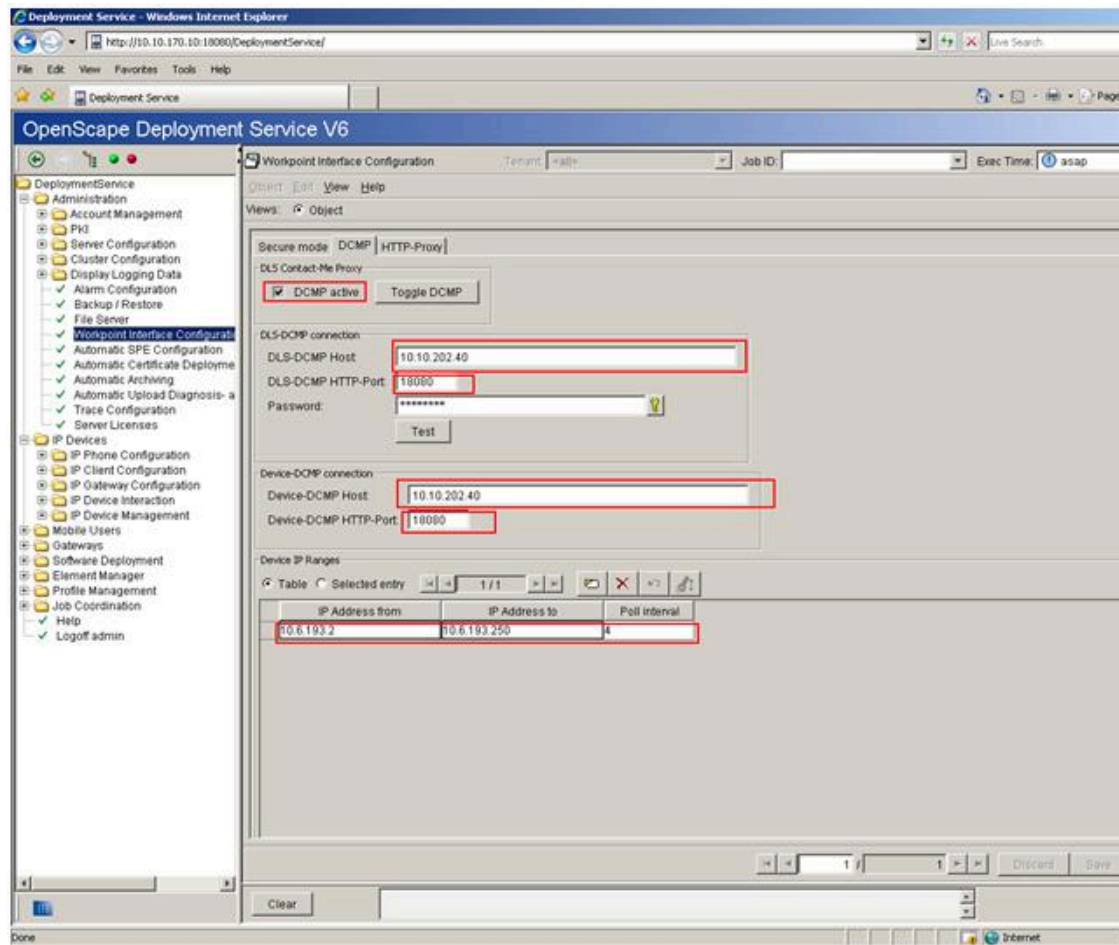
In the Cluster setup menu add the IP of DCMP.



In the Deployment Service go to **Administration** ----> **Workpoint Interface Configuration**

Activate DCMP and fill in the IP of the DCMP server in port 18080 for the **DLS-DCMP host** and **Device –DCMP host**.

Give the **IP range** of the phones that DCMP will act and set the **Poll Interval** less than 5 minutes.



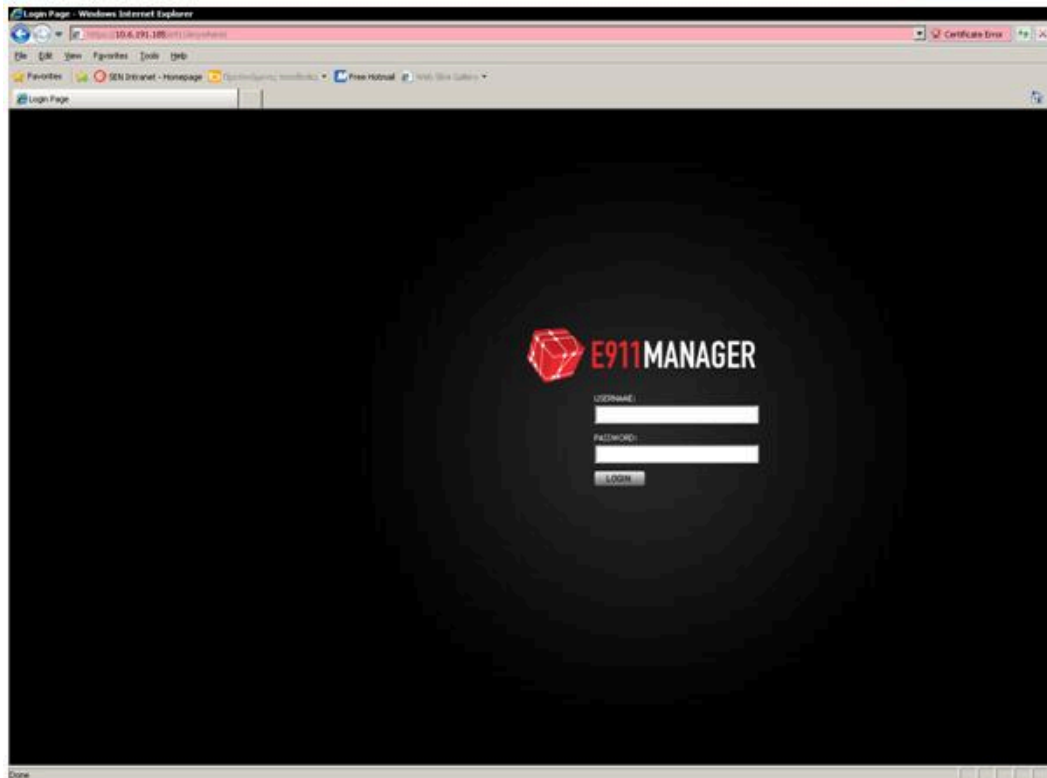
3 Configuring RedSky for Integration with OSV

3.1 Add Call Server

To configure OSV switch in RedSky manager, login to the active RedSky server as followed:

<https://xxx.xxx.xxx.xxx/e911Anywhere/>

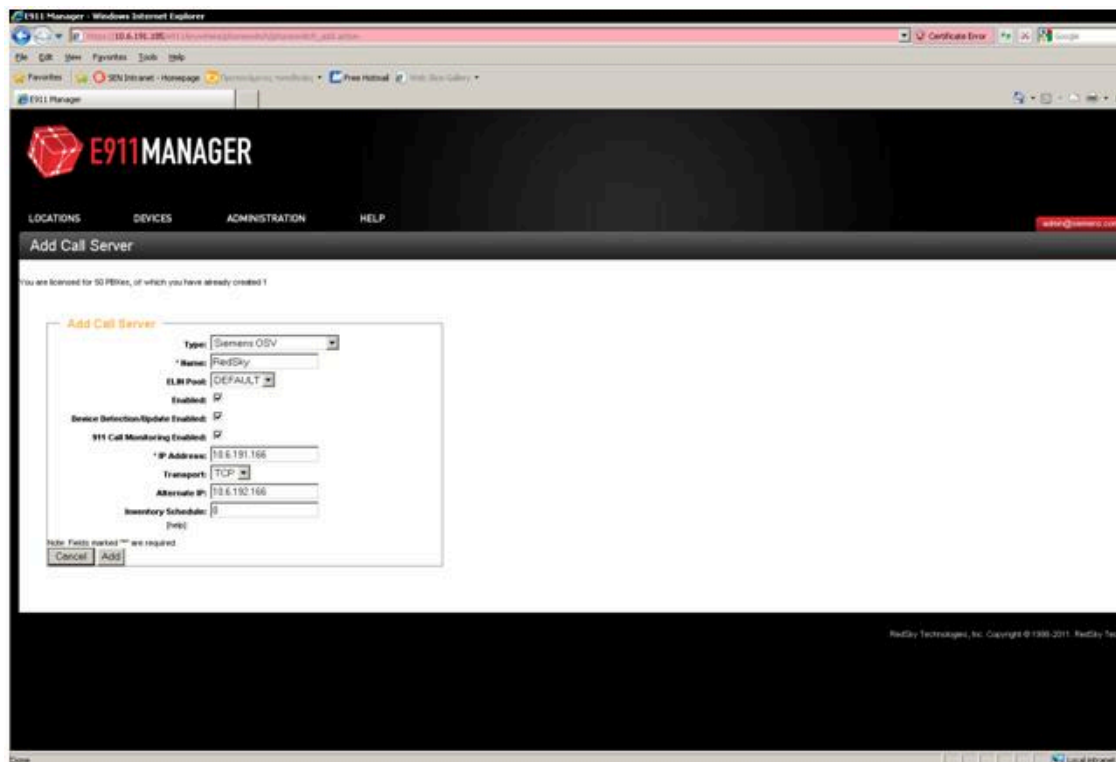
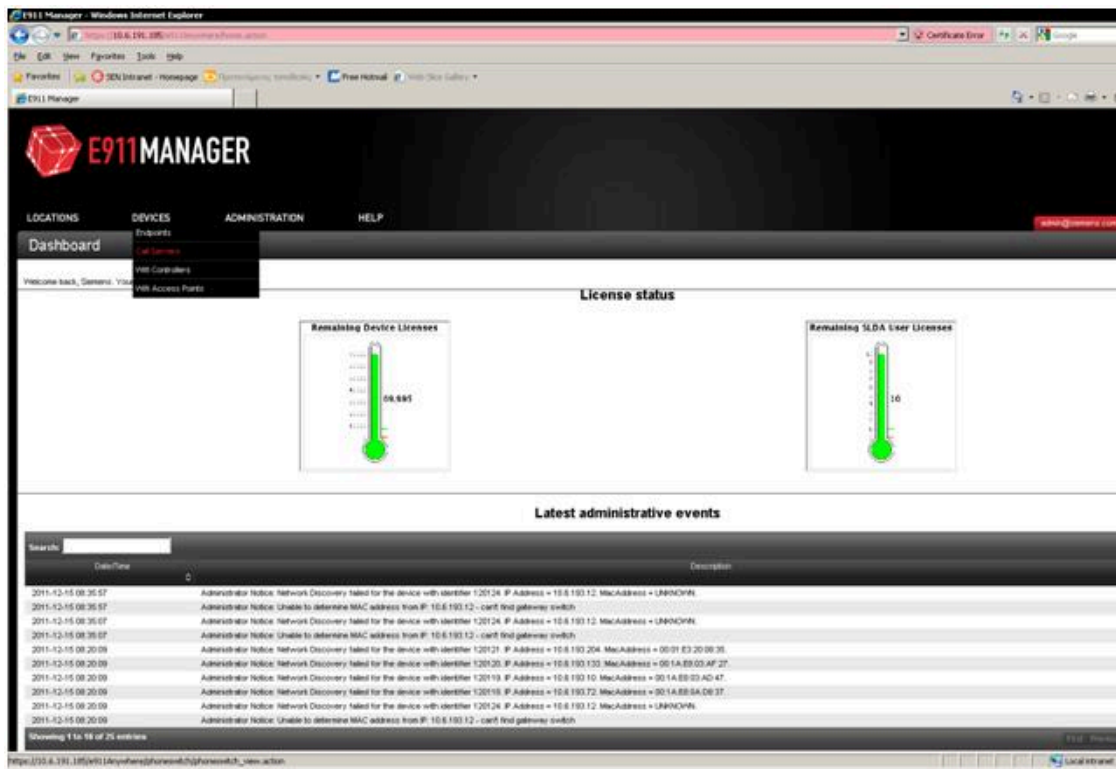
You are required to enter **username** and **password**.



To add OSV switch:

Go to **Devices->Call server** and press **add call server**

Configuring RedSky for Integration with OSV



Select

- **Type:** Siemens OSV

NOTICE:

RedSky may rename it to Unify OSV to agree with the rebranded name of the company.

- **Name:** Give a name
- Check the boxes “enabled” “**Device Detection/Update Enabled**” “**911 call monitoring enabled**”
- In the **IP address** field add **sipsm IP** of the OSV primary node.
- **Transport protocol** should be either **TCP** or **TLS**
- **Alternate IP** should be **sipsm of the secondary node** of OSV (in case of cluster).
- In the **Inventory Schedule** you should **set the time that RedSky will send SUBSCRIBE** in the OSV.

The format should be similar to the following:

Format: Second Minute Hour Day Month Weekday

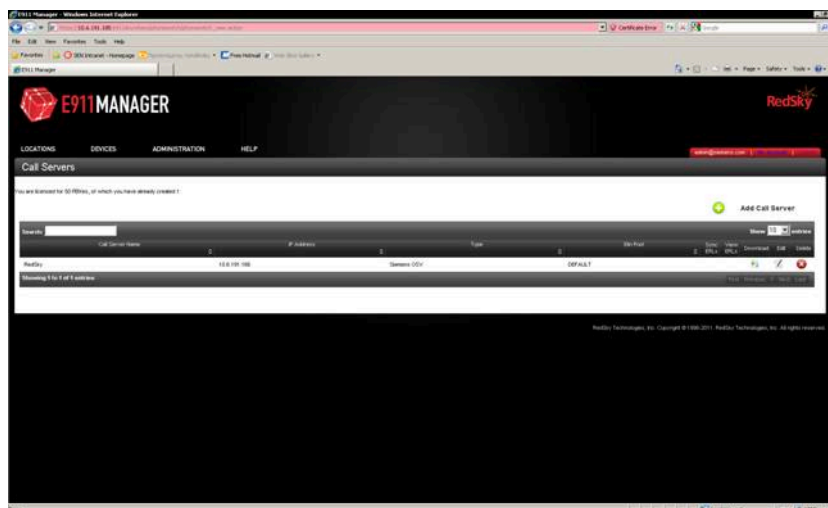
Some format examples:

12:30 am every day: 0 30 0 * * ?

First of the month at 1 am and 1 pm: 0 0 1,13 1 * ?

Tuesday and Thursday at midnight: 0 0 0 ? * TUE,THU

Press **Add**.

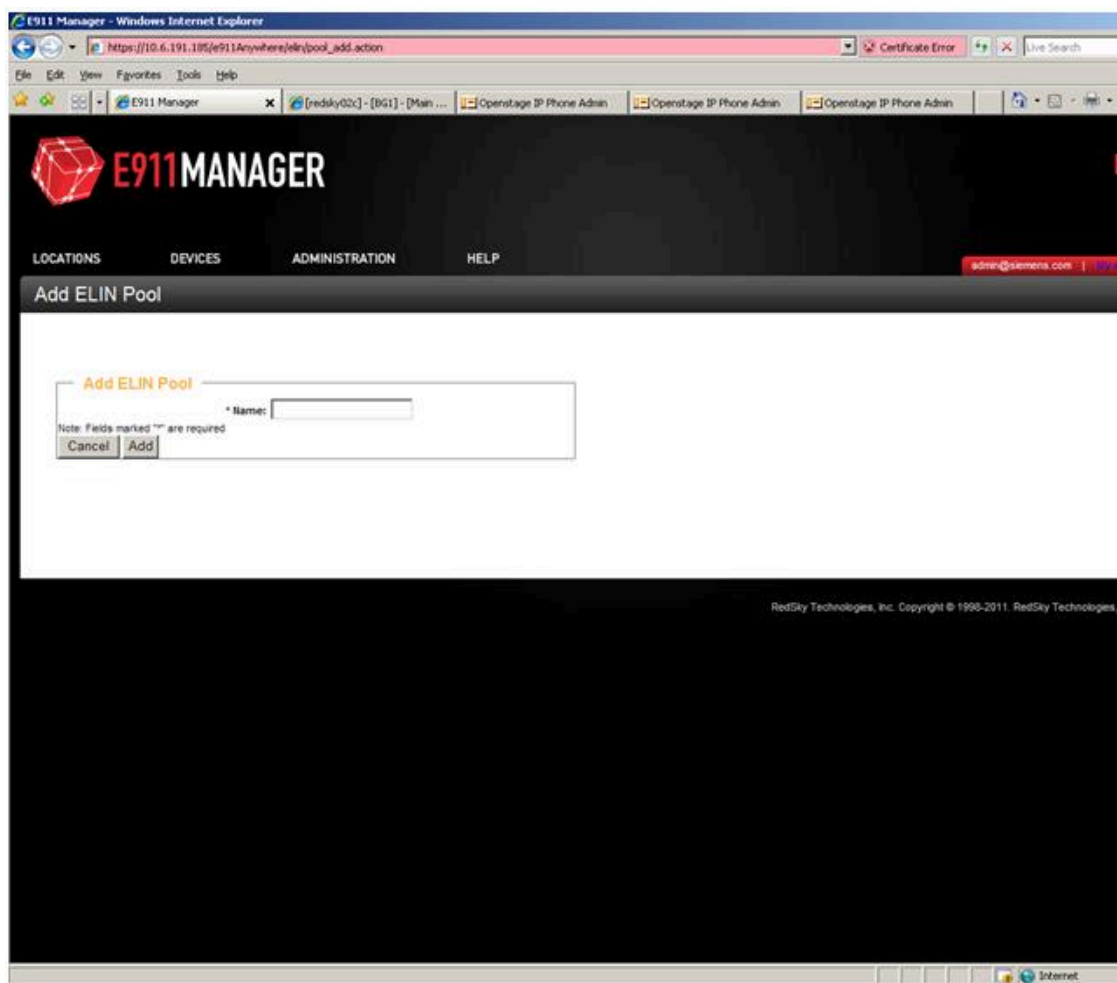


3.2 Create Locations and ELINS

3.2.1 Add ELIN Pool and Create ELINS

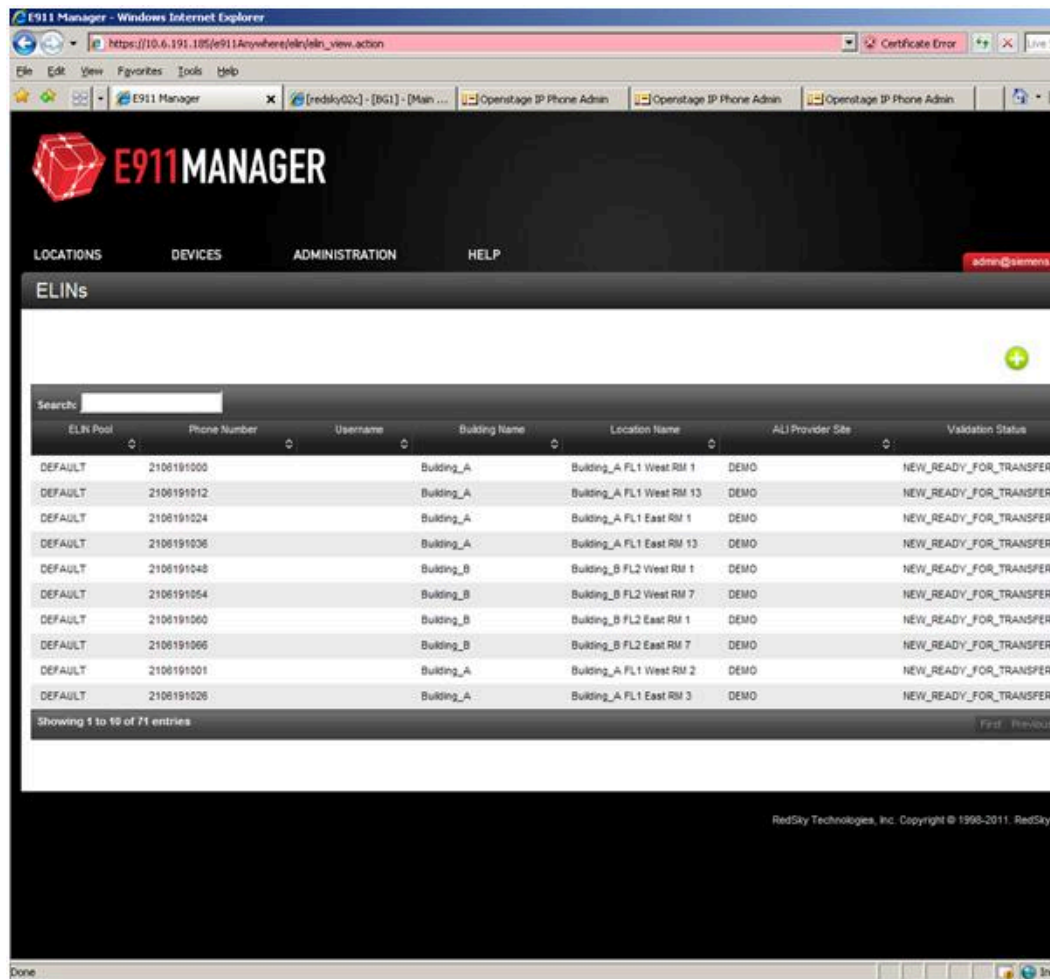
To create ELIN pools go to **Locations->ELIN pool**

Configuring RedSky for Integration with OSV



In the next step ELINS are created for every location.

NOTICE: This setting can be done only from RedSky engineer.



NOTICE:

The static changes in RedSky E911 Manager are published asynchronously to OSV. If for example the ELIN of a discovered registration is changed in RedSky E911 Manager's GUI, RedSky E911 Manager will publish the new ELIN to OSV.

3.2.2 Create Building Location

To add locations go to **Locations->Buildings->Add Building**

Configuring RedSky for Integration with OSV

The screenshot shows the E911 Manager web interface in a Windows Internet Explorer browser. The page title is "Edit Building". The form contains the following fields:

- Building Name: Building_A
- Unique ID: Building_A
- Building Type: Corporate
- House Number: 15
- House Number Extension: (empty)
- Prefix Direction: (dropdown menu)
- Street Name: Melaxa
- Street Type: St
- Post Direction: (dropdown menu)
- City: Athens
- County ID: (empty)
- State: GA
- Zipcode: 14564
- Telco ID: (empty)

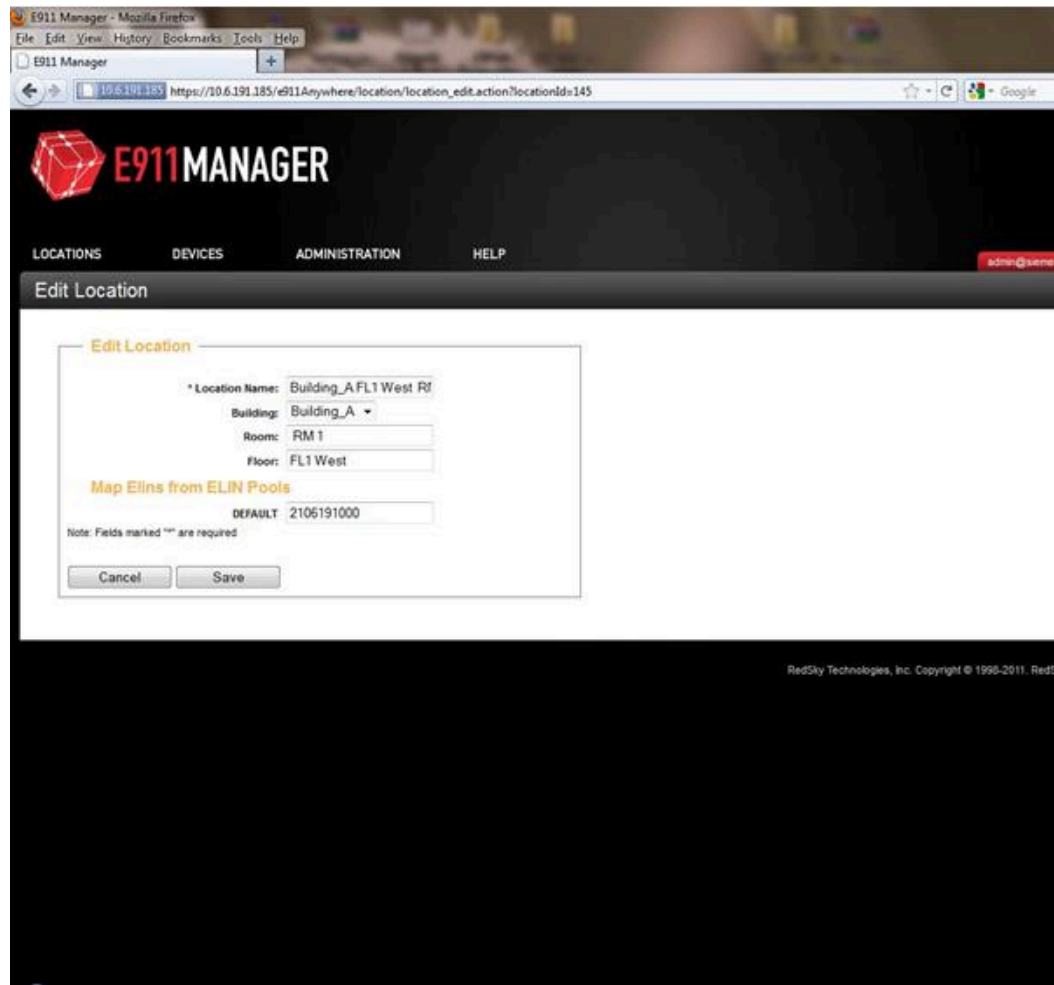
Below the form, there is a section titled "Map to ELIN Pools" with a dropdown menu set to "DEFAULT".

Buttons: "Cancel", "Save", "Cancel", "Save Mapping".

Enter information based on building location.

3.2.3 Create Room/Floor Locations

To create Room/Floor locations go to **Locations->Rooms/Floors**



Specify Location Name, Building, Room, Floor and ELIN

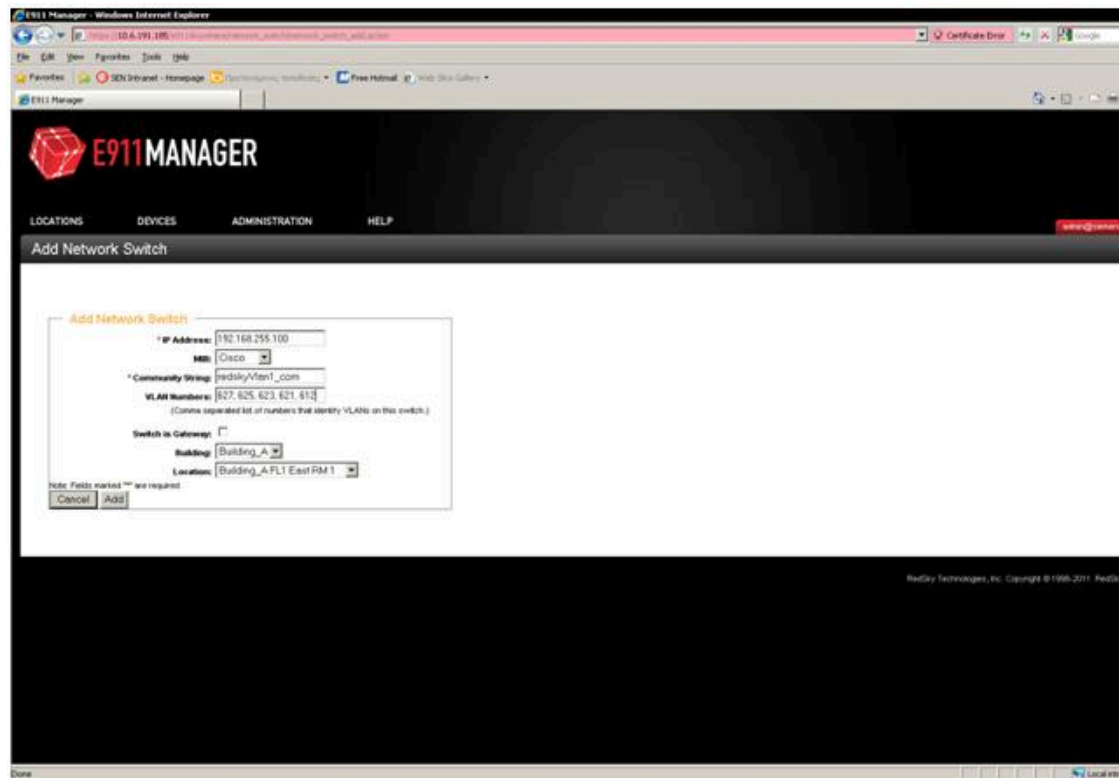
3.3 Network Discovery/IP Ranges

3.3.1 Network Discovery

To add network switch

Go to **Locations ->Network Switches-> Add Network Switch**

Configuring RedSky for Integration with OSV



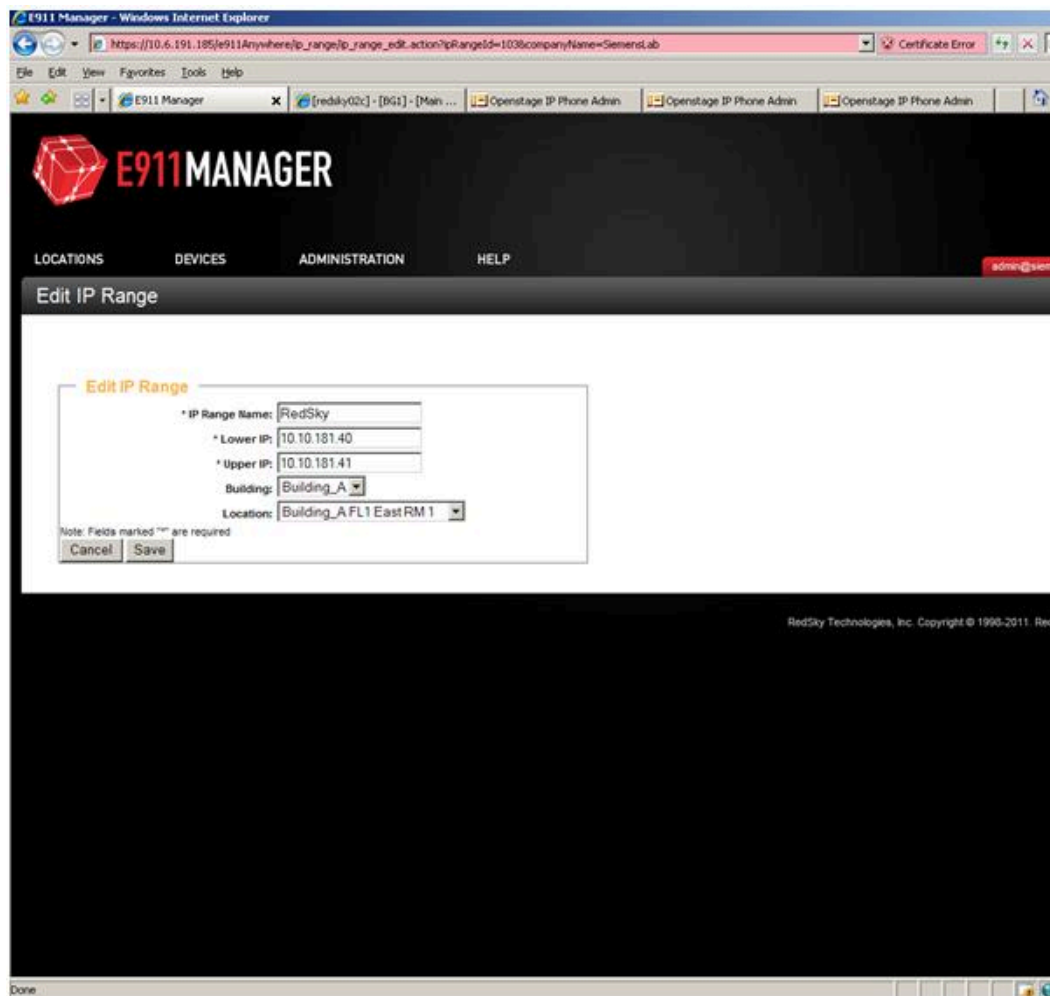
Depending on the network configuration you will require to add L2 switch. (Optionally you can add L3 switch of the network).

RedSky manager has to know the switch that the phones are plugged into, in order to do the network discovery. In this example we are using L2 switch for network discovery.

- **IP address:** the IP address of the switch
- **MIB:** choose one switch between extreme, juniper, Cisco or bridge if you want to add bridge switch.
- **Community string:** add community string name of the switch
- **VLAN numbers:** add vlan id of your network switch
- **Switch is gateway:** check if the network switch is a gateway switch. Add the appropriate subnet
- **Building:** Select the appropriate building from the drop-down menu
- **Location:** Select the location.

3.3.2 IP Ranges

To add IP Ranges go to Locations->IP Ranges->Add Range

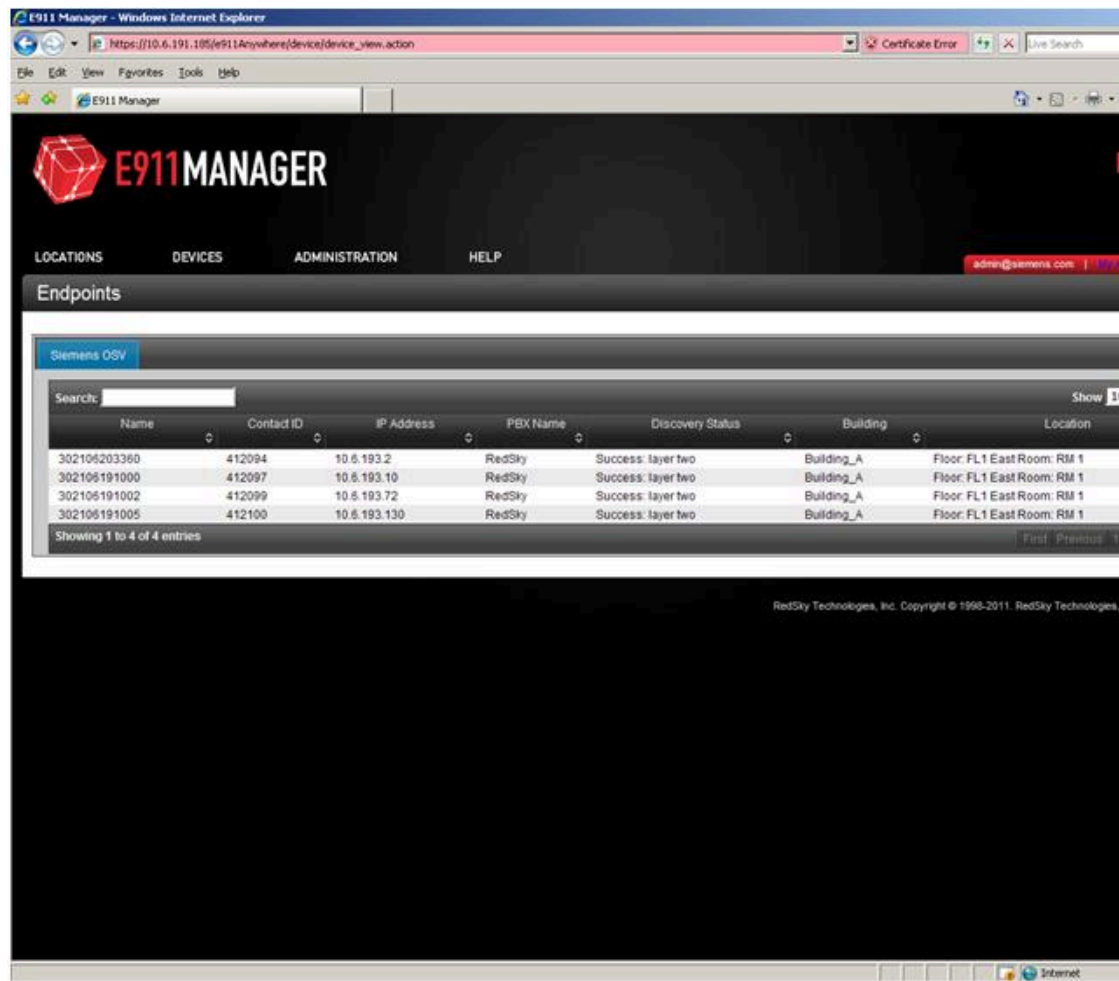


Give a name in **IP Range Name**. In **Lower IP** add the lowest IP of the range and the **Upper IP** of the range respectively. Also specify the building and location of the IP range. You can create multiple IP ranges based on the network.

3.4 Discovered Devices

To verify that OSV phone devices is discovered from RedSky go to **Devices->Endpoints**

Configuring RedSky for Integration with OSV



NOTICE:

Users registered behind an SBC (in isolated network (i.e. RedSky Manager does NOT have access to L2 switch)) should use IP ranges in order to discover the IP of the SBC.

4 Restrictions

4.1 Redundancy Limitations

In Redsky Manager (version 6.4) redundancy is limited and in some cases the servers are unable to come back into service after restarting or shutting them down.

The aforementioned cases are described below.

- **Primary/Secondary** state:
 - Secondary node restarts and the sync-connectivity gets established. Both nodes are accessible (http and functionality).
 - Primary node restarts but there is no sync-connectivity (http and functionality). Secondary node becomes primary and is accessible (http and functionality). The state becomes **Primary/Down**.
- **Primary/Down** state:
 - No Secondary node is available and Primary node restarts. This results in both nodes to be inaccessible (http and functionality). In order to establish connectivity on both nodes and return to **Primary/Secondary** state the steps in [Recovery Procedures](#) need to be followed.
- **Both Redsky nodes restart or switch on** simultaneously:
 - This results in both nodes to be inaccessible (http and functionality). In order to establish connectivity on both nodes and return to **Primary/Secondary** state the steps in [Recovery Procedures](#) need to be followed.

4.2 Recovery Procedures

This Section details procedures for bringing a cluster node back into service after it has recovered from having been in a failed state.

4.2.1 Recovery from a Complete Power Failure of all nodes

If all nodes have had a power reset, follow these steps to recover the cluster:

- 1) Power-on all nodes.
- 2) Login to the pgpool admin interface on any node:
`http://<host>:8081/pgpoolAdmin`
- 3) Under **Node Info**, the status for all nodes should be “Down”.
- 4) SSH into your nodes and examine the file `/etc/pgpool-II/config_for_script`. Look for the line starting with “MASTER_HOST=”. This line indicates which node is considered the “Master” node.
- 5) SSH into the master node and start Postgres:
`sudo service postgresql-9.3 start`
- 6) Login to the pgpool admin interface on the master node. Under **Node Info**, master node’s status should be “Down, Running as primary server, postgres: up”.
- 7) Click the **Return** button for the master node.

Restrictions

- 8) The status for the master node should change to “Up. Connected. Running as primary server. postgres: up”.
- 9) At this point the master node database is fully recovered. SSH into this node and restart all Redsky services:
 - `sudo service sailfin restart`
 - `sudo service premise_services restart`
 - `sudo service eon_email_alerter restart`

All Redsky services should now be available on the master node.

- 10) Click **Recovery** for the secondary node in the pgpool admin interface.
- 11) After a few seconds, the pgpool node status for the secondary node should change to “Up. Connected. Running as standby server. postgres: up”.
- 12) SSH into your secondary node and ensure postgres is running:

```
sudo service postgresql-9.3 start
```
- 13) Restart all Redsky services on the secondary node following the same procedure as in step 9.

The secondary node is now fully recovered.

4.2.2 Restart of a Secondary Node

If a secondary node have had a power reset, follow these steps to return the node to service:

- 1) Login to the pgpool admin interface of your primary node. Under **Node Info**, secondary node’s part of the status should be “postgres: down”.
- 2) Click **Recovery** for the secondary node.
- 3) After a few seconds, the pgpool node status for the secondary node should change to “Up. Connected. Running as standby server. postgres: up”.
- 4) SSH into the secondary node and ensure postgres is running:

```
sudo service postgresql-9.3 start
```
- 5) SSH into the secondary node and restart all Redsky services:
 - `sudo service sailfin restart`
 - `sudo service premise_services restart`
 - `sudo service eon_email_alerter restart`

All Redsky services should now be available on the secondary node.

4.2.3 Primary Node Failover

If the primary node have had a power reset, the secondary node will take its place and become the new primary node. Follow the steps below to bring the former primary node back into the cluster as a secondary node:

- 1) Login to the pgpool admin interface of the **new** primary node:

```
http://<host>:8081/pgpoolAdmin
```
- 2) Under **Node Info**, the status of the former primary node should be “Down”.

- 3) Click the **Recovery** button for the secondary node.
 - If the recovery is successful, the status should change to “Up. Connected. Running as standby server. postgres: Up”. Proceed to step 5.
 - If you receive the error “pcp_recovery_node command error occurred” then you must manually recover the node. Proceed to step 4.
- 4) Manual Recovery:
 - a) SSH as root into the node and edit the file at /etc/pgpool-II/config_for_script.
 - b) Change the line starting with “MASTER_HOST=” so that it now designates the current primary node as the master host.
 - c) Switch to the postgres user by executing:


```
su postgres
```
 - d) Go to the /var/lib/pgsql directory:


```
cd /var/lib/pgsql
```
 - e) Execute the following command (replacing `##.#.##.###` with your secondary host):


```
bash -x 9.3/data/basebackup-stream.sh /var/lib/pgsql/9.3/data ##.#.##.### /var/lib/pgsql/9.3/data
```
 - f) The node should now show “Up. Connected. Running as standby server. postgres: Up” under state field in the pgpool admin interface.
- 5) Your cluster should now be fully recovered following a failover.
- 6) Restart all Redsky services on your new secondary/standby node:
 - `sudo service sailfin restart`
 - `sudo service premise_services restart`
 - `sudo service eon_email_alerter restart`

All Redsky services should now be available on the master node.

