Genesys Application Note

BroadWorks R19
With Genesys VPS 8.1.7

Version 1.0

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1 INTRODUCTION

This **Integration testing of Voice Platform Solution 817 with BroadWorks** document presents the integration test results for testing 8.1.7 Voice Platform Solution (VPS) with BroadWorks R19 performed by the QA Team as a part of 8.1.7 VPS project. The main objective of testing is to confirm the ability of VPS 8.1.7 work with BroadWorks according to requirements.

2 GENESYS SOFTWARE VERSIONS

Table 1: Genesys software versions used

Component	Version
SIP Server	8.1.101.10
Stat Server	8.1.000.08
URS	8.1.200.16
VP Media Control Platform (MCP)	8.1.700.59
VP Resource Manager (RM)	8.1.700.71
Switch (GW)	BroadWorks: R19
VP Supplementary Gateway	8.1.700.02
VP Call Control Platform (CCP)	8.1.700.60
CTI-Connector	8.1.700.54
IVR-TServer	8.1.001.01
DB Server	8.1.000.01
Configuration Server	8.1.000.16
IRD	8.1.200.14
Message Server	8.1.000.01
Composer	8.1.003.73

3 THIRD PARTY COMPONENTS

BroadWorks: R19

Endpoints: Epi(SIP)Phone, Xlite

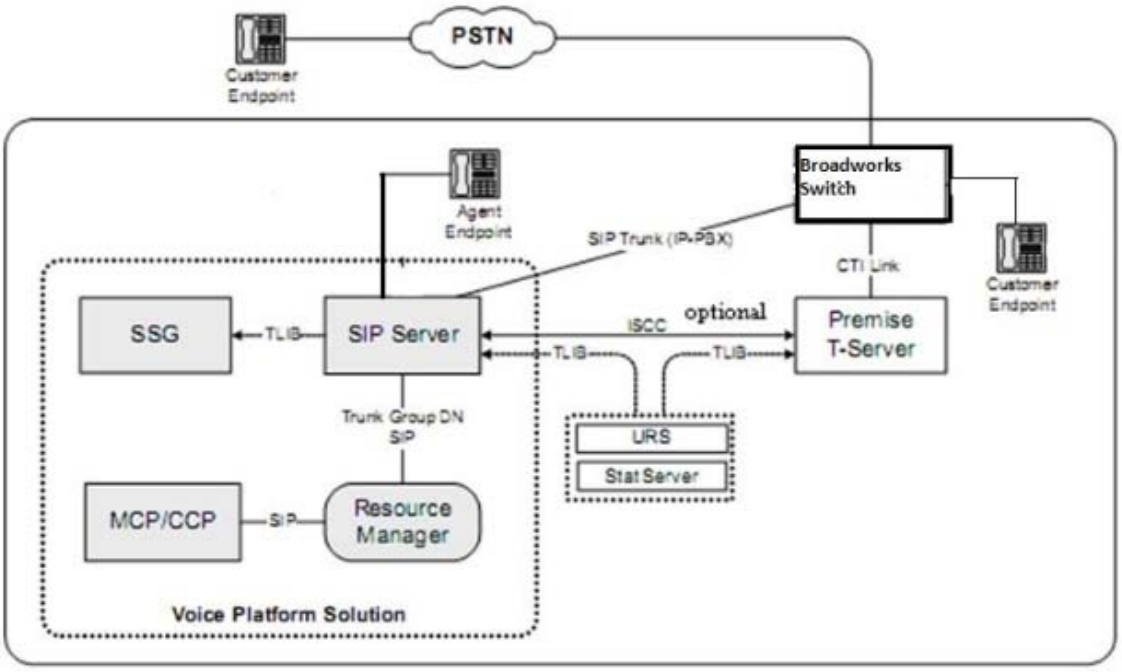
4 REFERENCE

The following BroadSoft Reference documents were used to configure the switch:

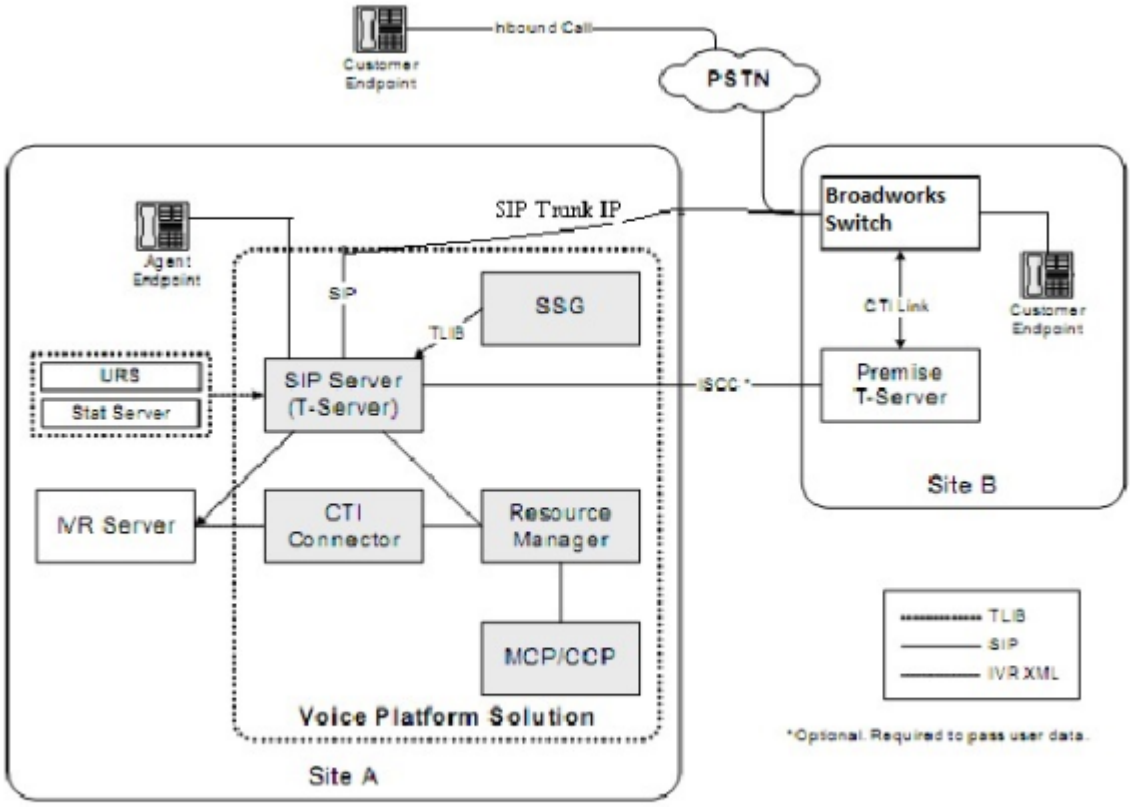
- BroadWorks Business Trunking Configuration Guide Rel 18.0
- BroadWorks SIP Trunking Solution Guide Rel 19.0

5 TEST SETUP

5.1 Set Up



Deployment without IVR Server

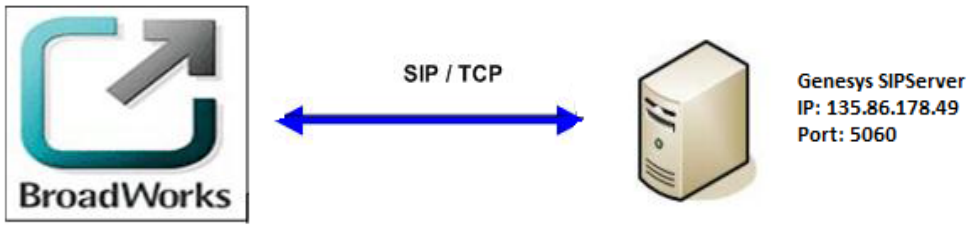


Deployment with IVR Server

5.2 BroadWorks Configuration

The SIP interface between Genesys GVP/SIP Server and BroadWorks is Enterprise Trunk. Enterprise Trunk is able to use REFER method to Blindtransfer the call back to the BroadWorks switch.

The diagram in the figure below provides a simplified example of Genesys SIP Server deployment with BroadWorks.



The following are the hosts IP Addresses in Genesys Lab:

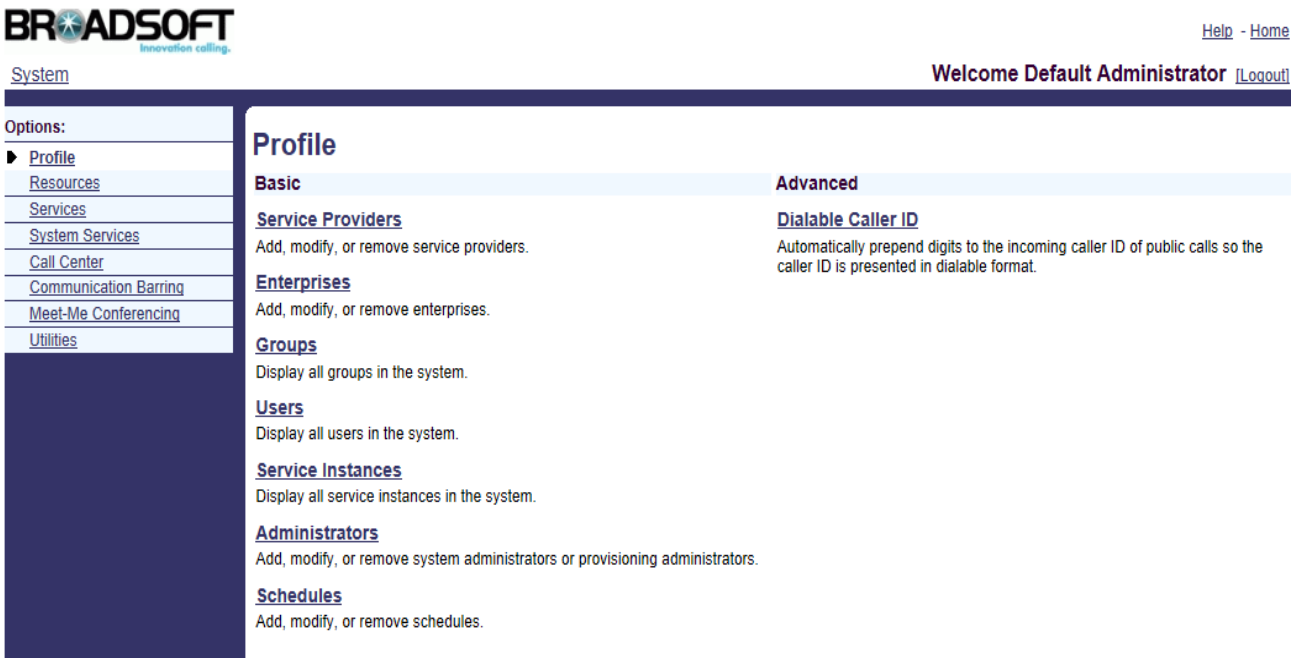
BroadWorks Application Server: 135.86.182.195
Genesys SIP Server: 135.86.178.49

Objective:

- Create EnterpriseTrunk between BroadWorks and Genesys SIP Server
- Configure Extensions on BroadWorks (when calling these numbers from BroadWorks, BroadWorks uses SIP Enterprise Trunk to the Genesys SIP Server to reach these numbers)

5.2.1 BroadWorks Enterprise/Business Trunk Configuration

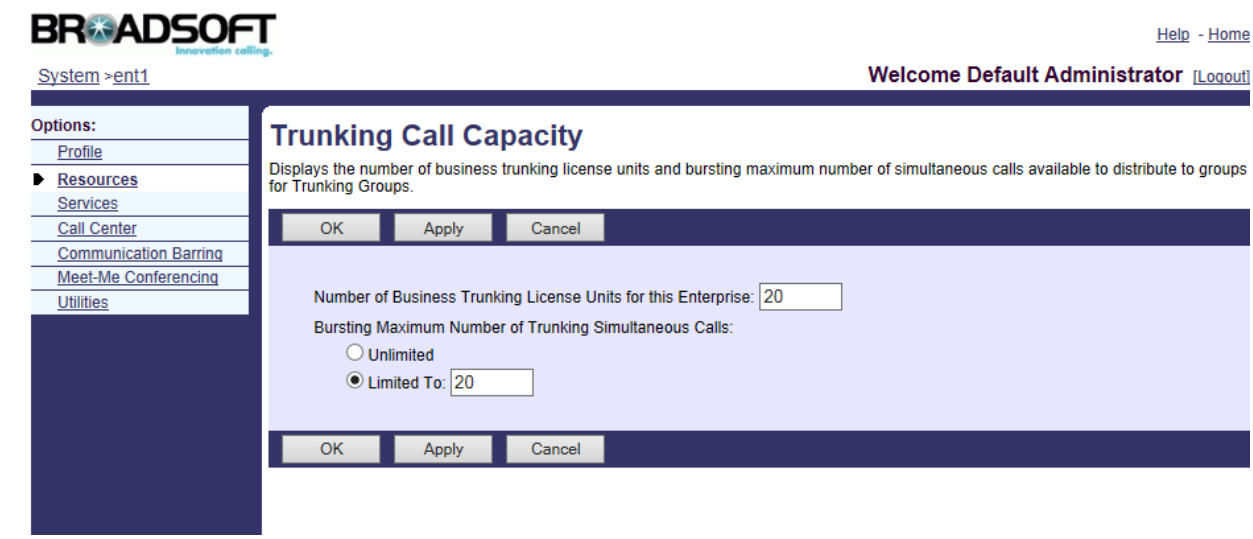
- Log in to the system Profile Web page



- Business Trunking License Allocation

For Enterprise Trunk configuration, business trunking license should be allocated to the Enterprise. This configuration depends on the value purchased or planned by customer.

Example: The settings at the Genesys lab:



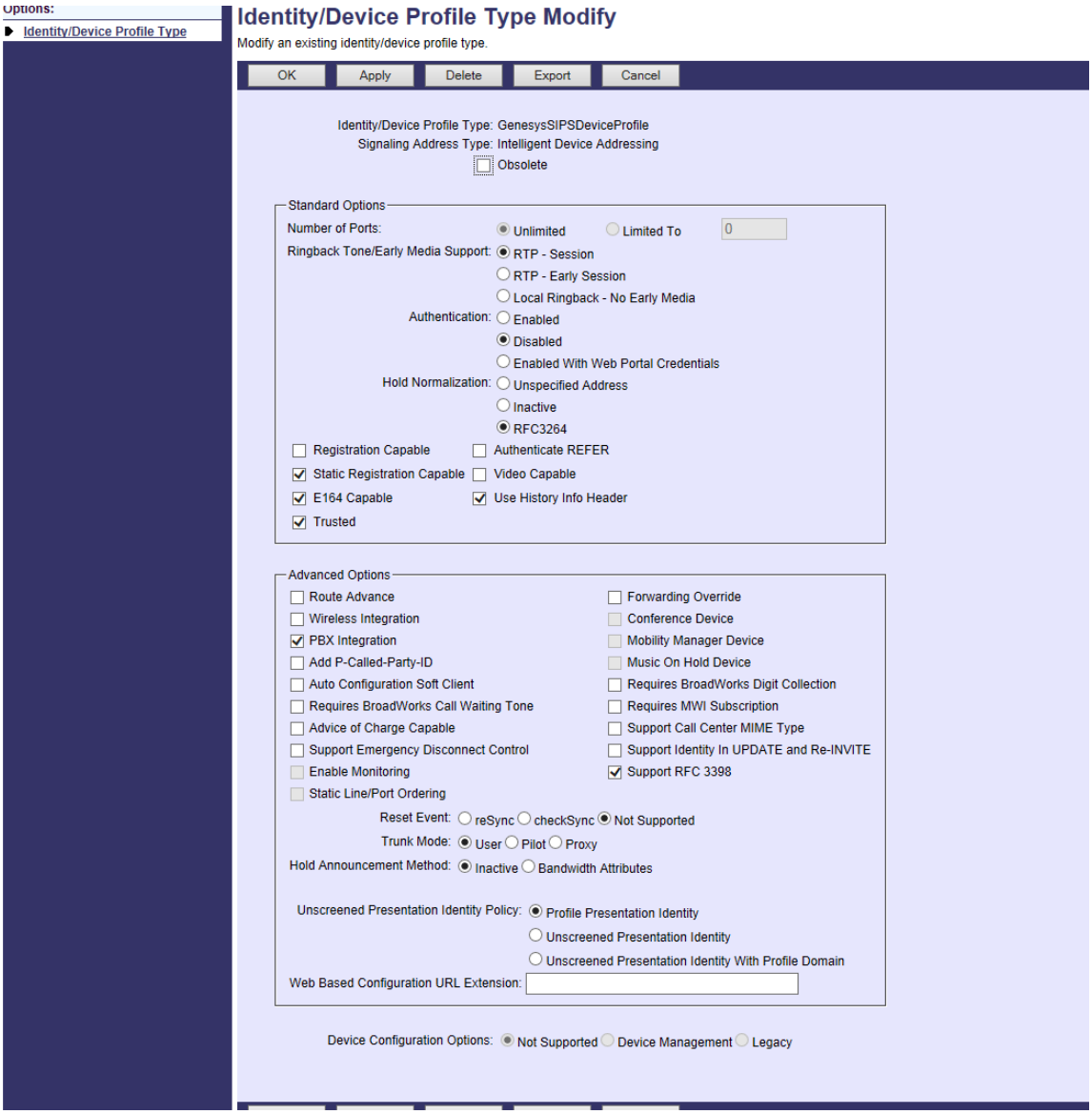
- Identity/Device Profile Type Policies

BroadWorks supports a number of device policies, which shape the SIP interface that BroadWorks presents to that device.

A new BroadWorks device profile type needs to be created for trunking with Genesys SIP Server.

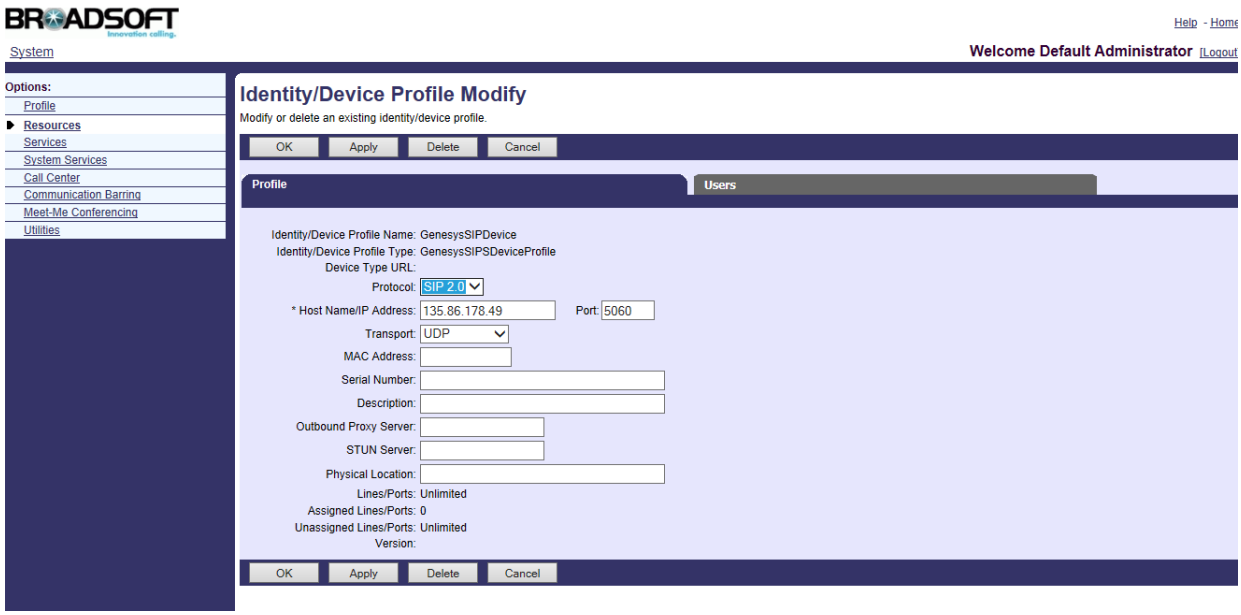
Log in as a system administrator, browse to Resources -> Identity/Device Profile Types, and create a new Trunking device profile type.

Example: This is the Identity/Device Profile type policy in the Genesys lab:



- Trunking device profile instance with the above profile type

Create a Trunking device profile instance as shown in the following figure. The device profile instance in GenesysLab is created at the System level.

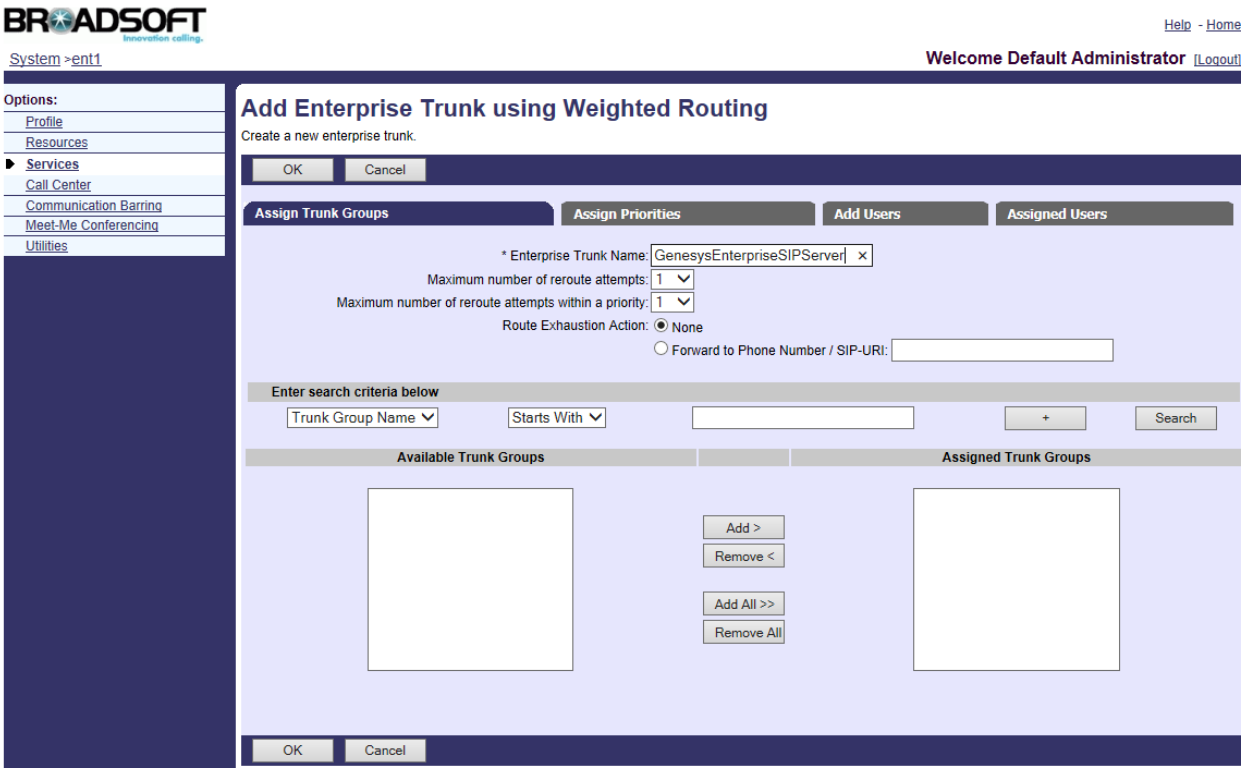


- Enterprise Trunk Configuration

We will create a placeholder Enterprise Trunk. This information is used in Device Configuration in the future.

From Profile Web page for the enterprise, click Services link.
From Services Web page, click Enterprise Trunk, then add the site's preferred attribute.

For example, in the Genesys lab:



- Trunk Group Configuration

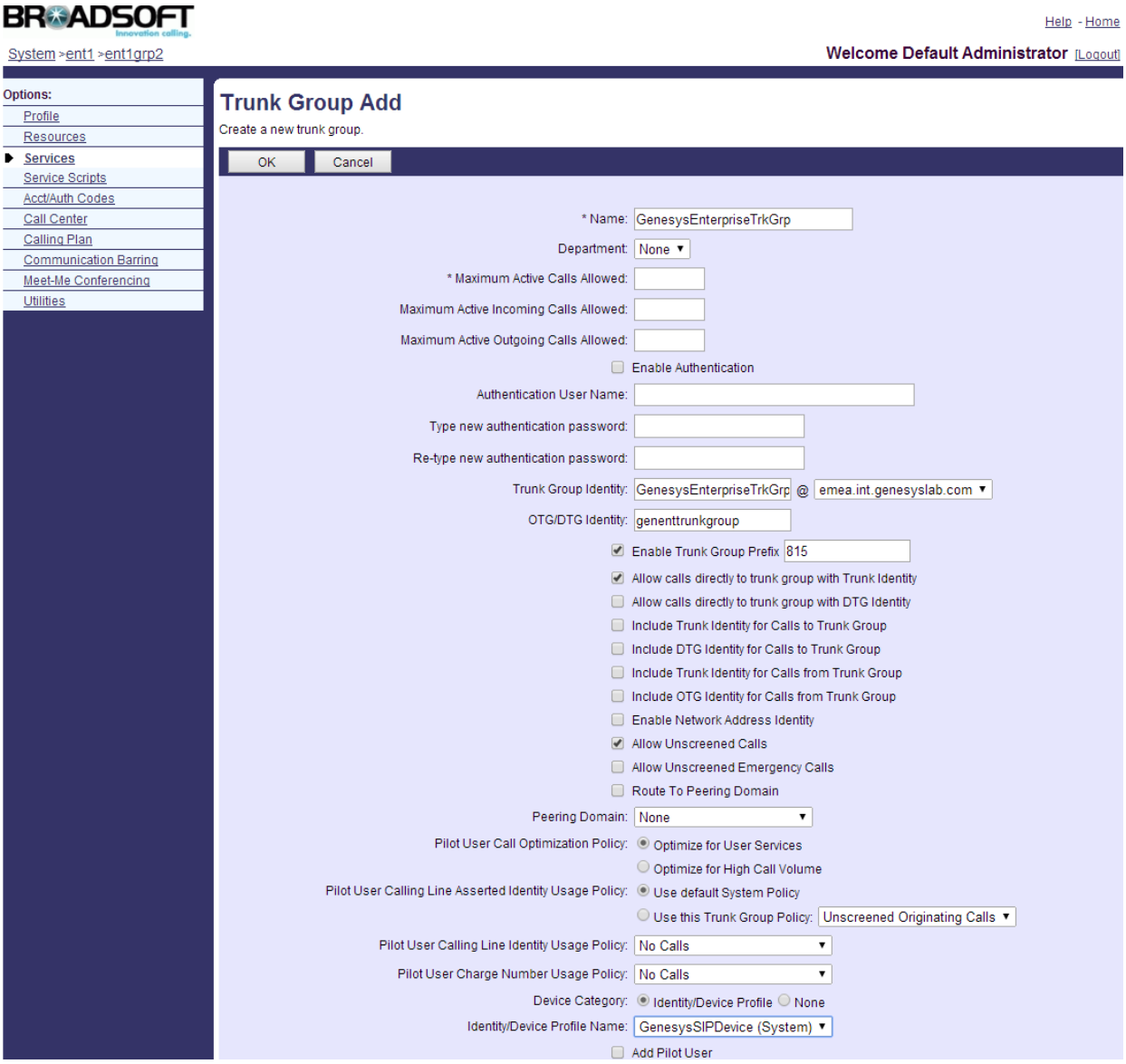
After the Identity/Device Profile is created, the trunk group configuration can be started. Go to the Group page where the trunk group is to be added:

- Click Add.
- Enter the unique Trunk Group name.

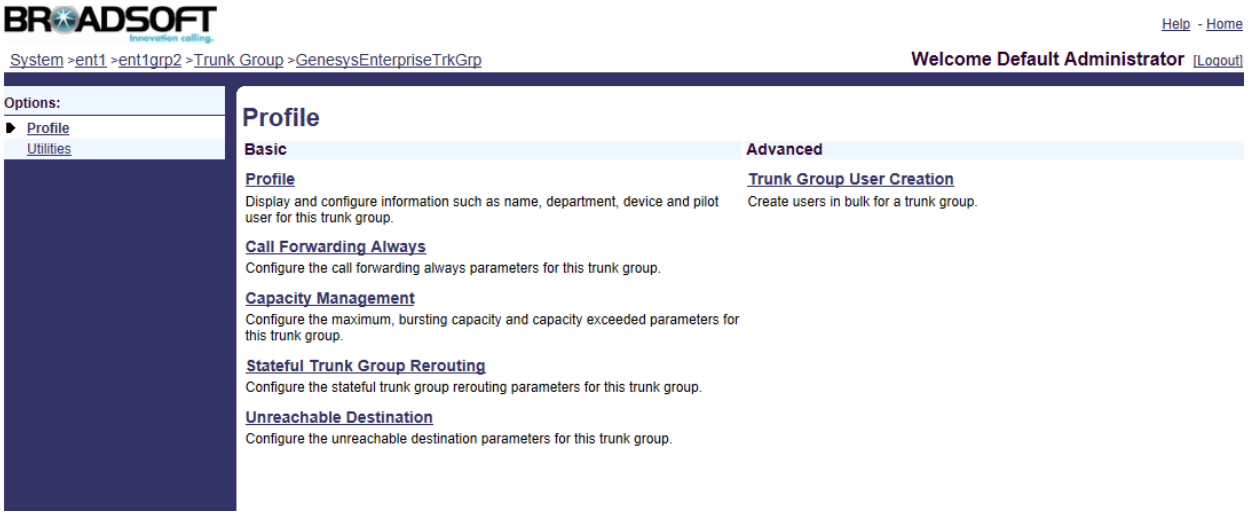
In Device Category, select Identity/Device Profile, and then select the Identity/Device Profile created earlier.

Note: At this point, do not add a Pilot user (we will visit this step again).

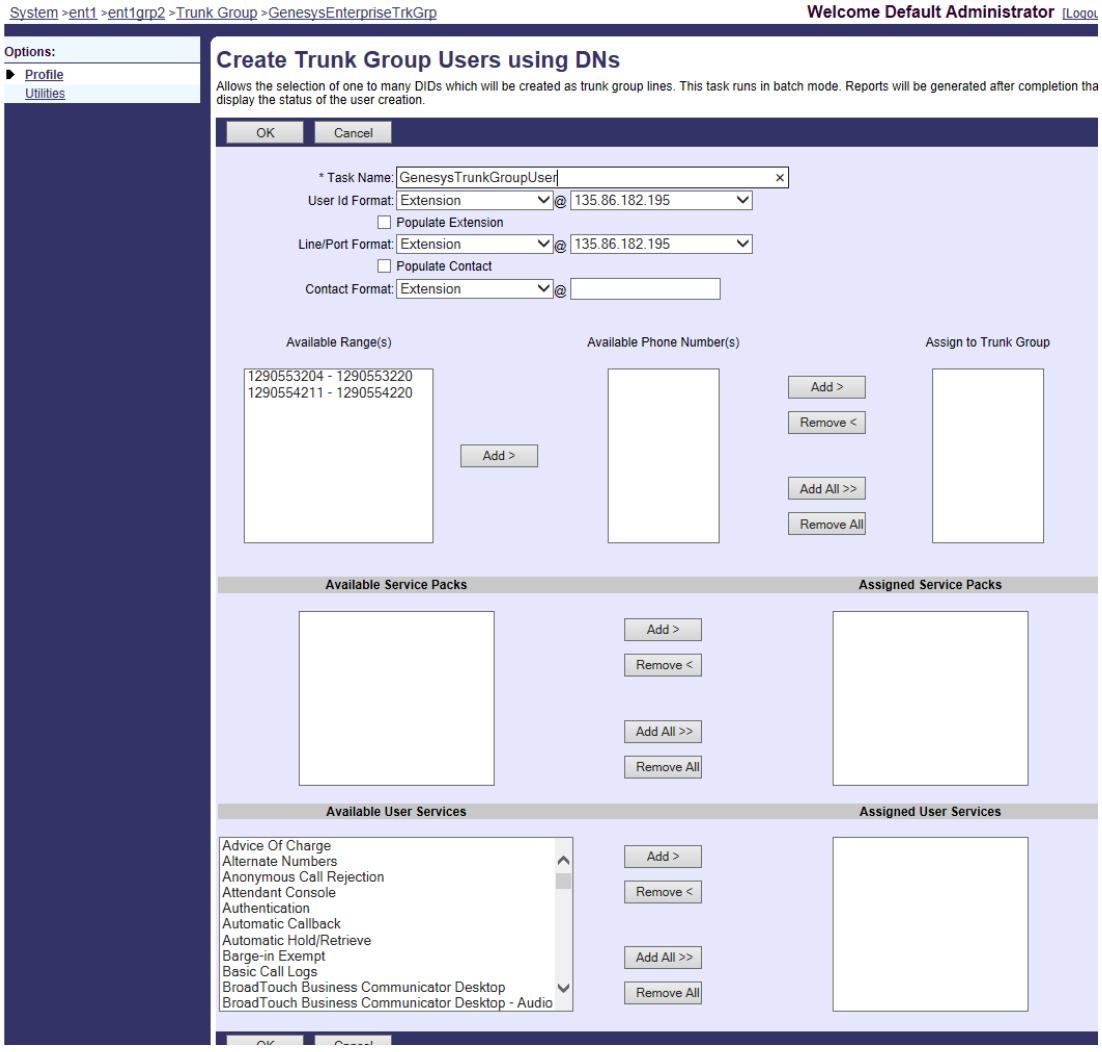
In the example below, we are adding a prefix 815 when the trunk is seized to call TrunkUsers. When calling these users the trunk replaces prefix 012905 with 815. In SIP Server we can register eight-digit DNs with prefix 815 for example 81551220. Or, in the SIP Server switch, we have an Inbound Trunk device with prefix 815 replaced by nothing and have five-digit SIP endpoints.



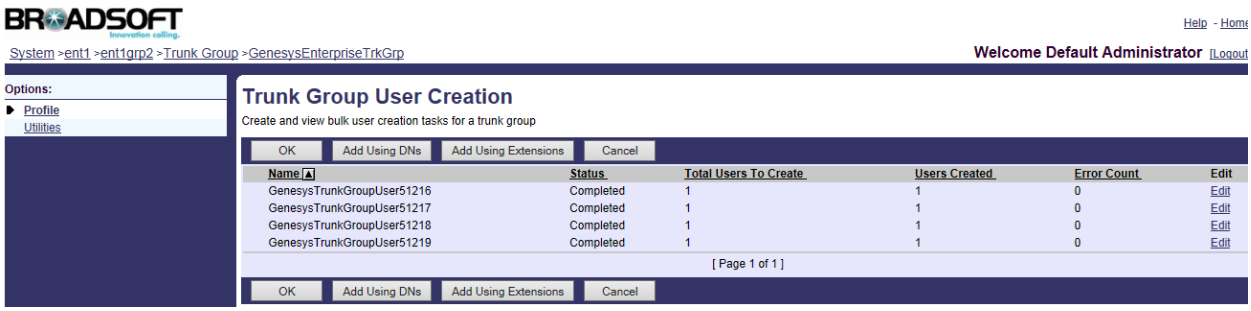
- Trunk Group User Creation: create users for the trunk group GenesysEnterpriseTrkGrp. In the Profile Web page of the trunk group created, select Trunk Group User Creation.



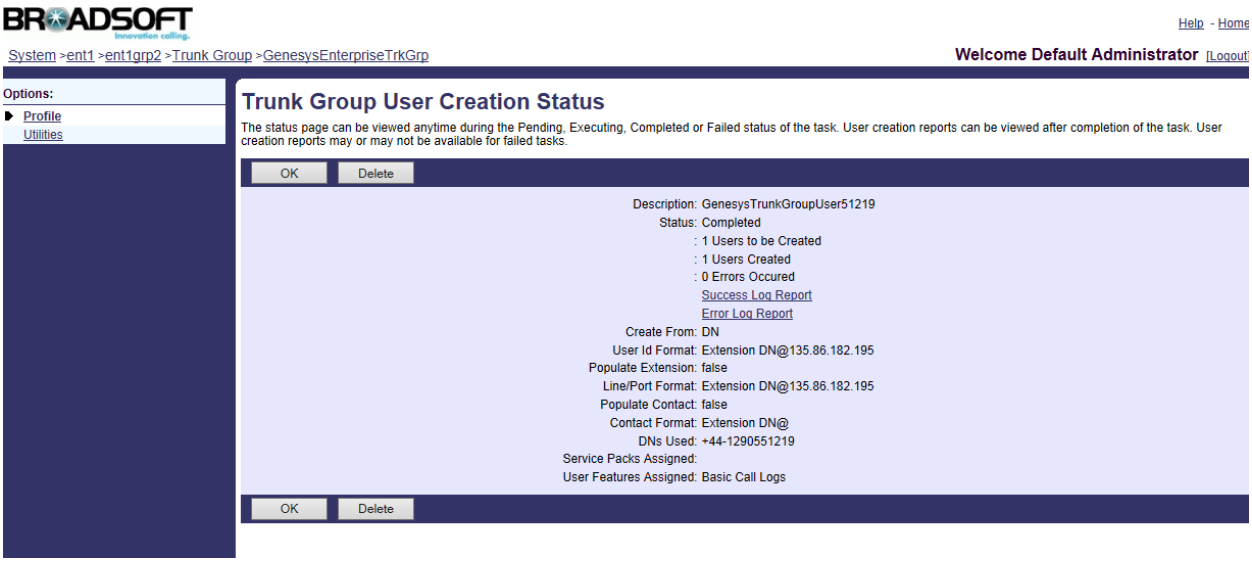
To create a few TrunkGroupUsers, use the “Add Using DNs” tab for testing from the available range of numbers and assign to the TrunkGroup.



Example in the Genesys Lab:



Example of Trunk Group User:

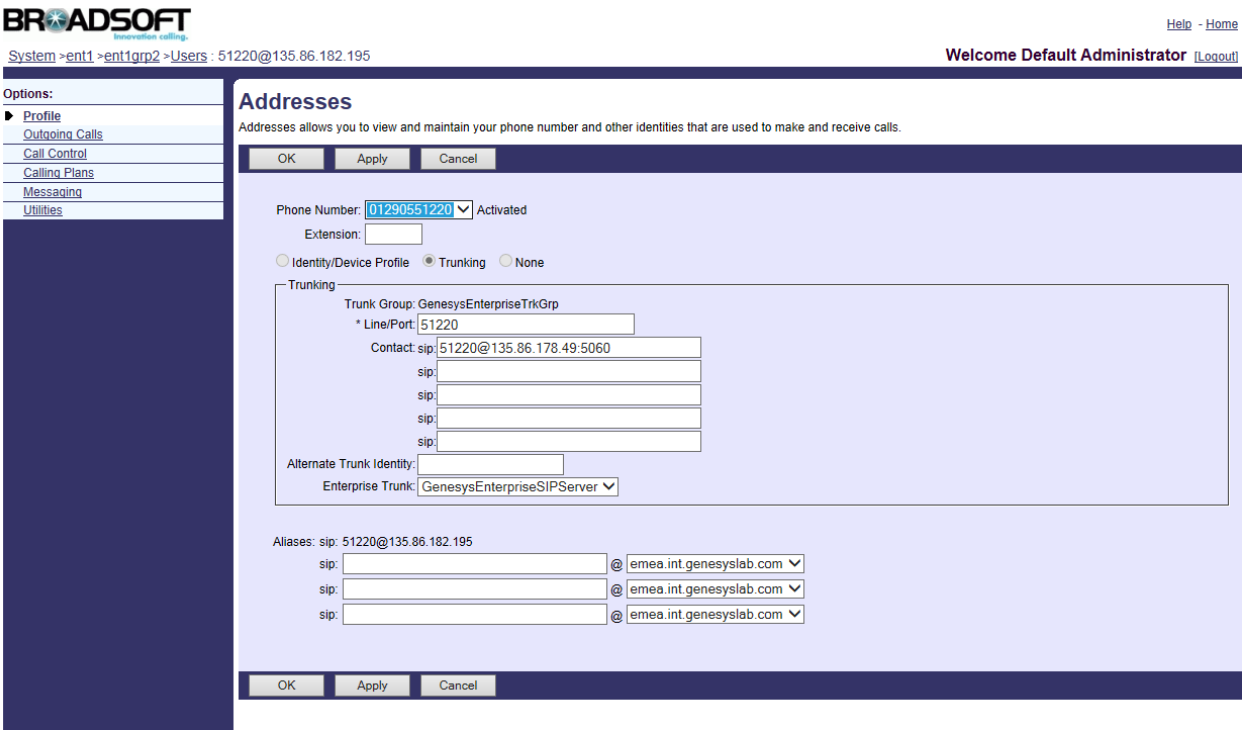


- Business Trunking User Configuration

From the Profile Web page for the user, click the Addresses link.

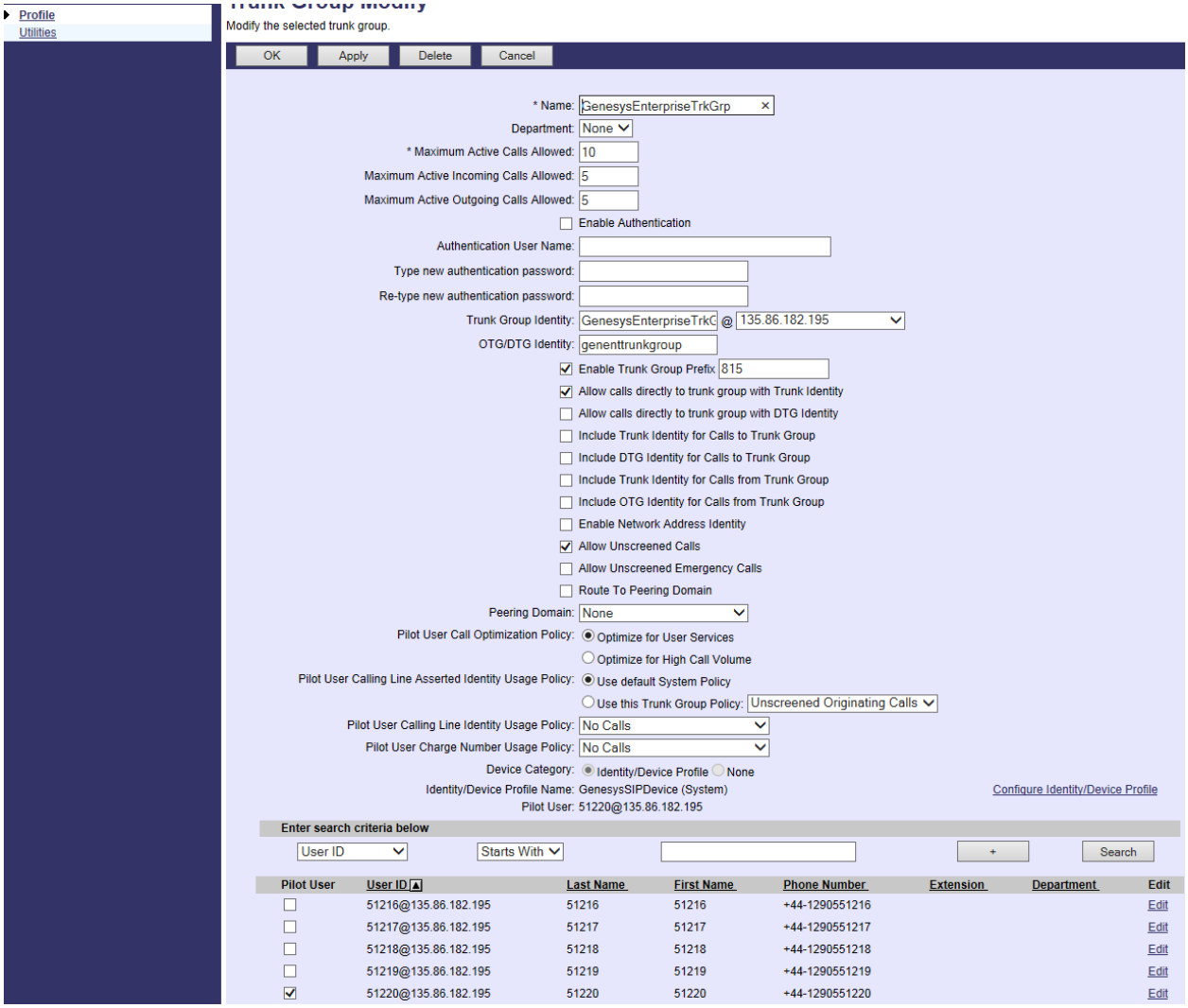
On the Addresses Web page:

- Select the “Trunking” button
- Enter the Trunk Group Name created

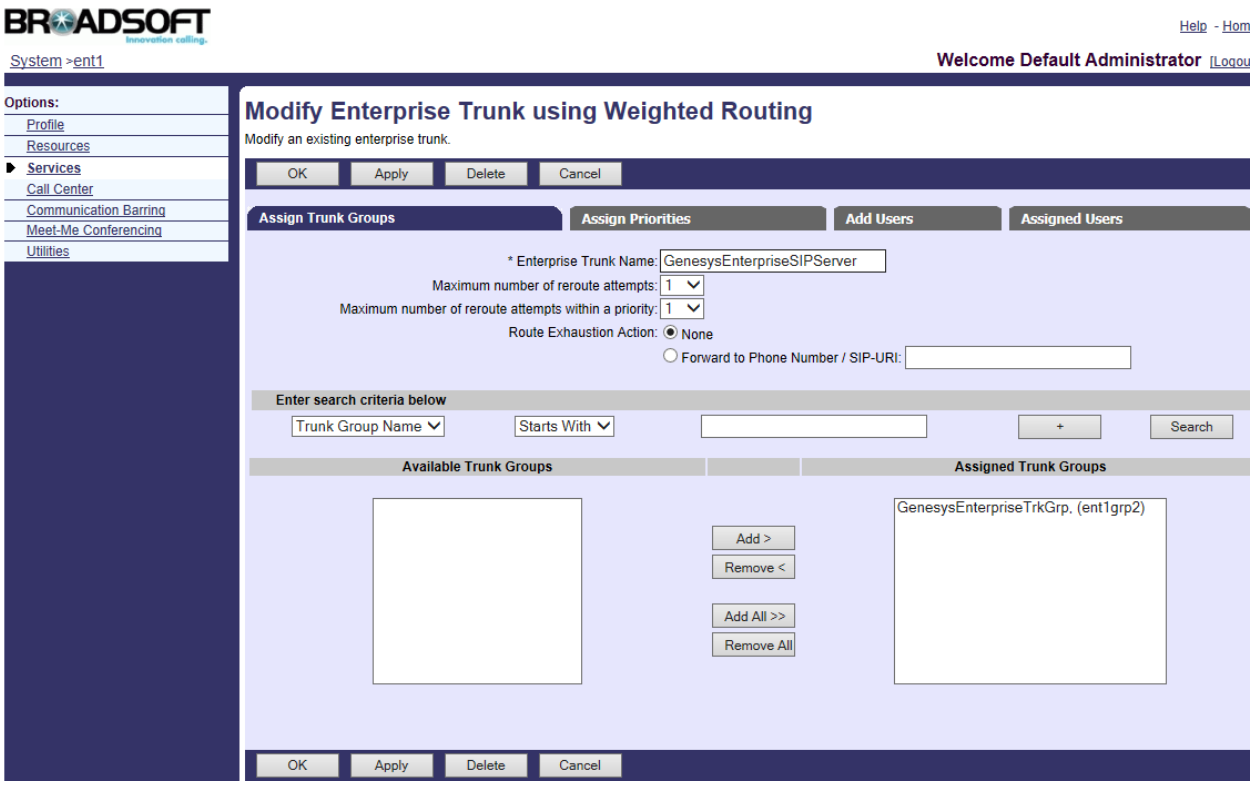


Note: One of the main criteria Trunk Group must meet for it to be added in Enterprise Trunk is for the trunk group to have an Identity/Device Profile and a pilot user assigned.

- Edit Trunk Group Configuration to add PilotUser
- Add the trunking user created above as PilotUser



- Edit Enterprise Trunk Configuration to add the Trunk Group and users.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Options:
Profile
Resources
Services
Call Center
Communication Barring
Meet-Me Conferencing
Utilities
Modify Enterprise Trunk using Weighted Routing
Modify an existing enterprise trunk.
OK
Apply
Delete
Cancel
Assign Trunk Groups
Assign Priorities
Add Users
Assigned Users
* Enterprise Trunk Name: GenesysEnterpriseSIPServer
Maximum number of reroute attempts: 1
Maximum number of reroute attempts within a priority: 1
Route Exhaustion Action: None
Forward to Phone Number / SIP-URI:
Enter search criteria below
Trunk Group Name
Starts With
+
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GenesysEnterpriseTrkGrp, (ent1grp2)
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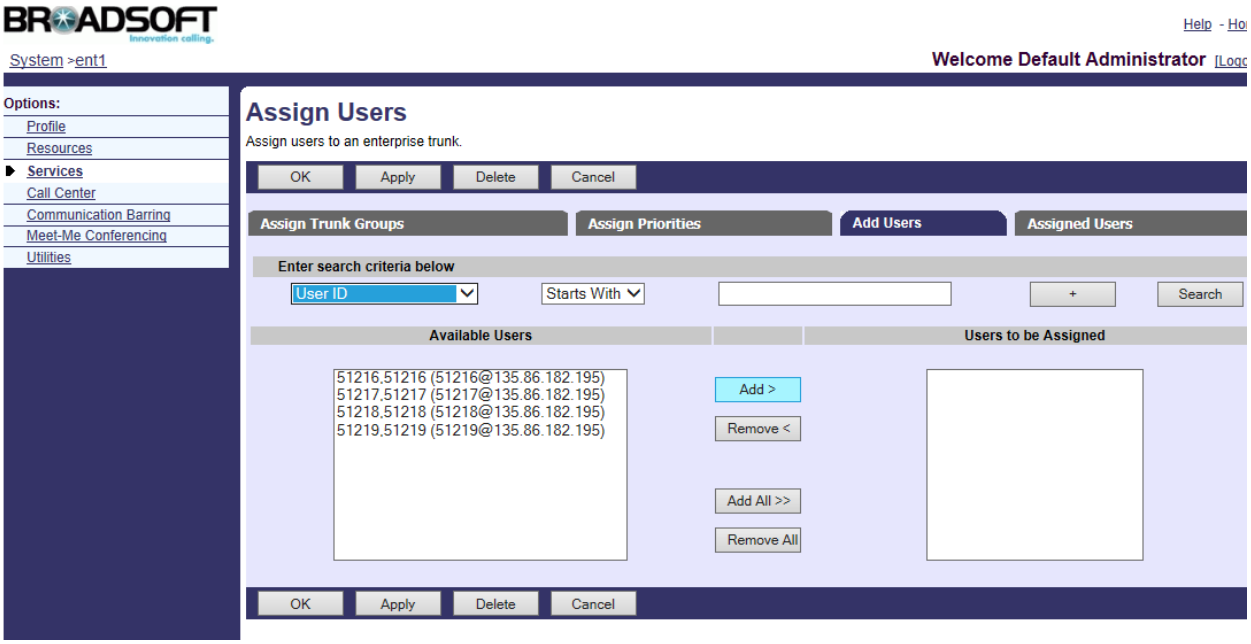
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Assign Trunk Groups
Assign Priorities
Add Users
Assigned Users
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User ID
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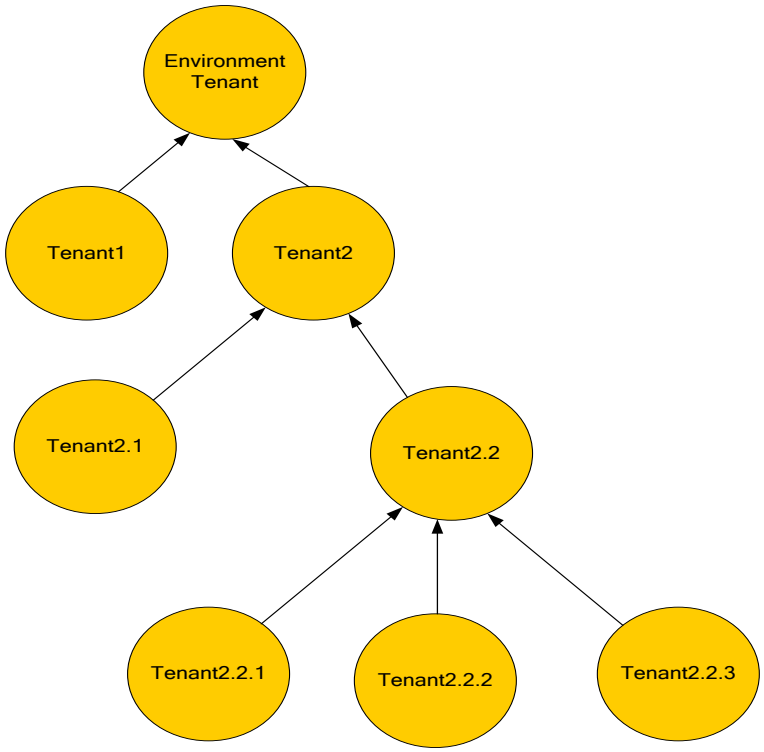
Users to be Assigned
51216,51216 (51216@135.86.182.195)
51217,51217 (51217@135.86.182.195)
51218,51218 (51218@135.86.182.195)
51219,51219 (51219@135.86.182.195)
Add >
Remove <
Add All >>
Remove All
OK
Apply
Delete
Cancel

5.3 Hierarchical Multi-Tenancy

The key concept of the tree structure in Management Framework is the introduction of a parent pointer. Each tenant object, other than the root tenant (called Environment), uses the parent TenantDBID to reference its parent tenant object.

Before the introduction of hierarchy multi-tenancy, tenancy is structured as flat tenants and the tenants exist as peers to each other. HMT and flat tenants can co-exist with each other, and multiple hierarchies can be built out of the flat tenants as multiple root-level tenants



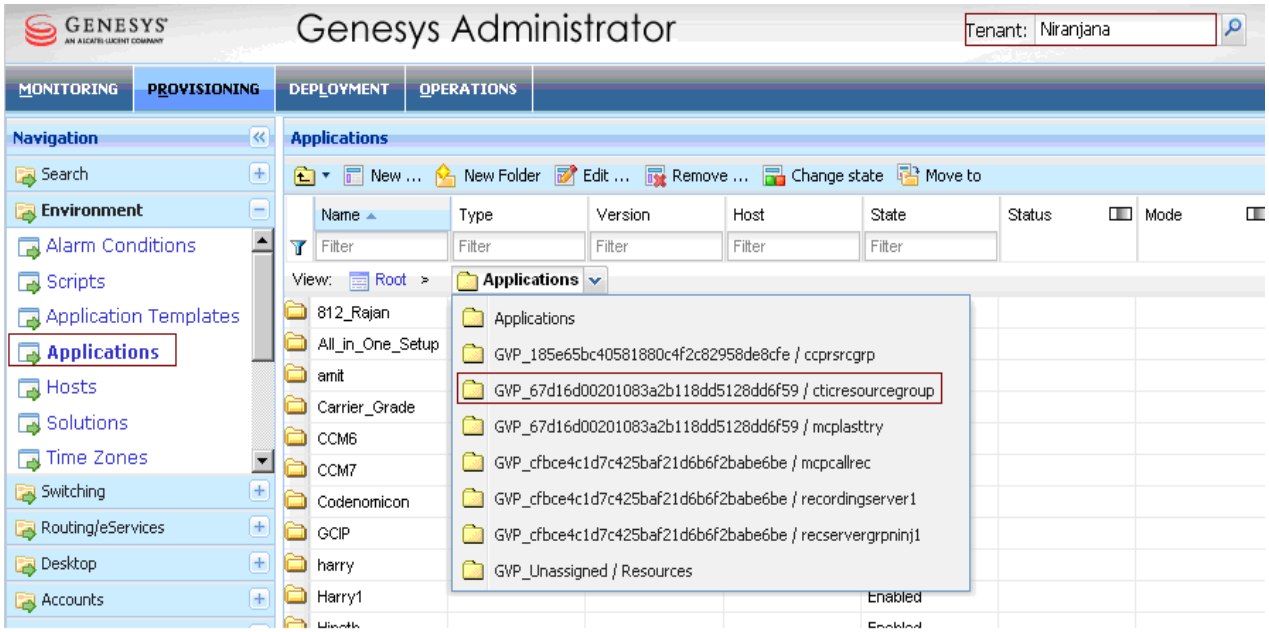
Some of the main characteristics of using a hierarchal model for GVP are as follows:

1. Inheritance of preferences and properties from the parent tenant
2. Allocation of physical resources from parent tenant to child tenants
3. Allocation of DNs from parent tenant to child tenants

While creating the Resource Group, the appropriate tenant under the Resource needs to be allocated and selected in the Tenant selector.

Finally, when the Resource Group is configured, the Resource is moved under the Tenant, which can be viewed by selecting the appropriate Resource Group name in the Application window's Drop Down list (highlighted in the figure below.)

Apart from this, Resource can be "exclusively" assigned to either the parent tenant or any of the child tenants by the inclusion of "exclusive" check box during the creation of the resource groups.



5.4 VPS Components Deployment and Configuration

Refer to the GVP Deployment Guide at http://docs.genesys.com/Documentation/GVP.

5.5 Creating Switch

Refer to the GVP Deployment guide at: http://docs.genesys.com/Documentation/GVP.

5.6 Creating Resource Group

Create the Resource Groups for the following (refer to the GVP deployment guide if required):

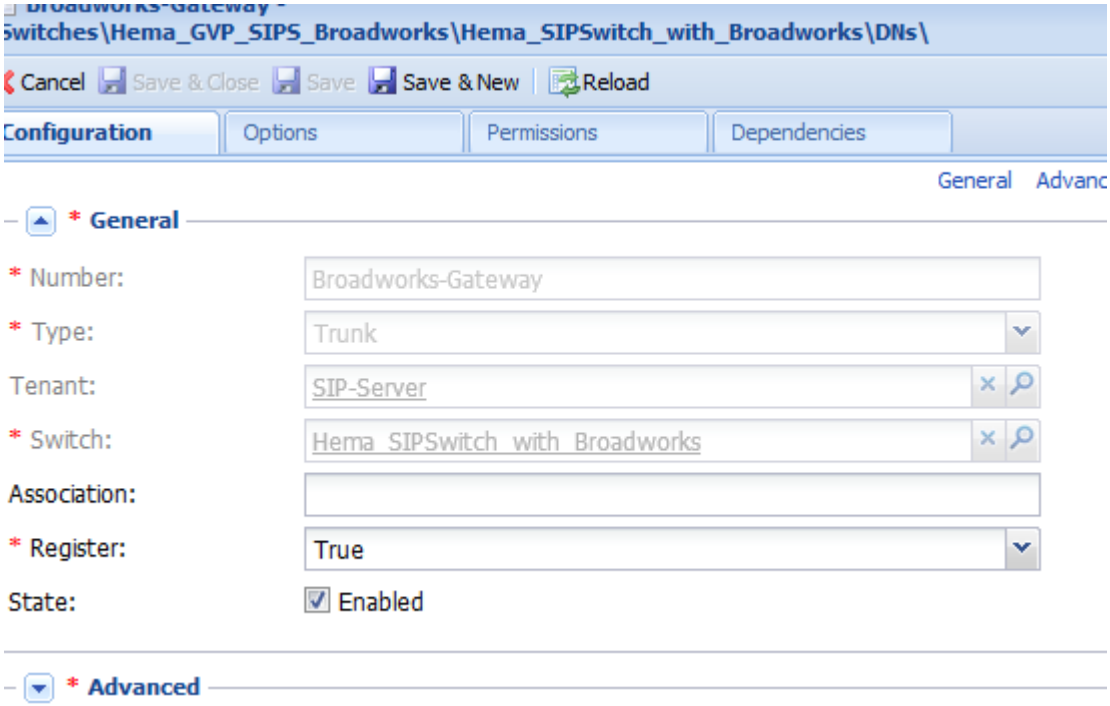
- Media Control Platform
- Call Control Platform
- CTI Connector
- Gateway

5.7 Configuration of DN in SIP Switch, Specific To BroadWorks Interop

5.7.1 Properties of Trunk DN to point at BroadWorks gateway

a) Provisioning -->Switching --> Switches --> Choose the Switch --> DNs --> New Configuration:

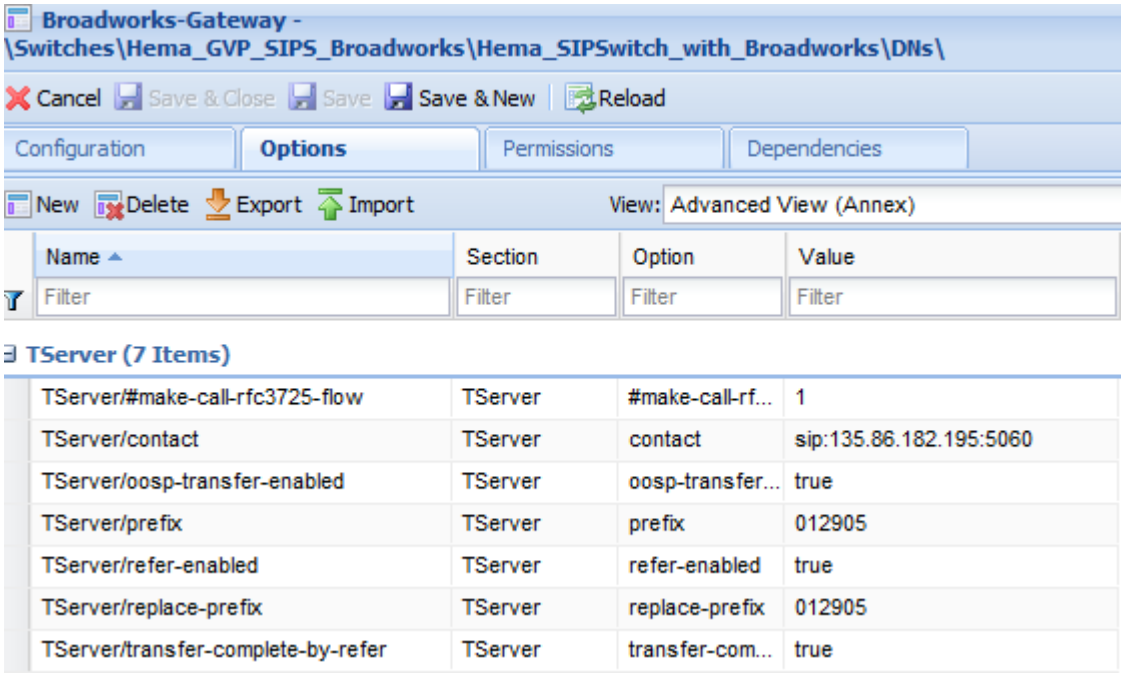
Number: Choose any number
Type: Choose Trunk from the drop down menu
Tenant: Choose the desired Tenant
Switch: The particular SIP Switch is chosen



b) Options --> New

Section:	TServer
contact:	Provide the IP address and SIP port of switch gateway
oosp-transfer-enabled:	Provide the values True/False
prefix:	012905
refer-enabled:	Provide the values True/False
replace-prefix:	012905

The prefix is set to 012905 since the users on BROADWORKS have prefix 012905.



For all other GVP related DNs required for testing, please refer to the GVP deployment guide.

6 TEST CASES EXECUTED

Test cases written for the solution-level testing comprise primarily of positive test cases that are based on use cases and a few related negative test cases. Each test case added to the solution testing verifies some aspect of the functionality.

We have tried our best to keep each test case unique so that we can achieve maximum completeness in the testing, per the schedule of VPS 817.

Load and performance test cases are not covered, per the VPS testing.

Jira is the test management system.

6.1 Test Project

Jira Test Project was used to schedule the resources. The actual test cases are covered in the test specification document: ODS-BroadWorks-GVP8-SIPServer-TestCases.docm.

6.2 Transfer Scenarios

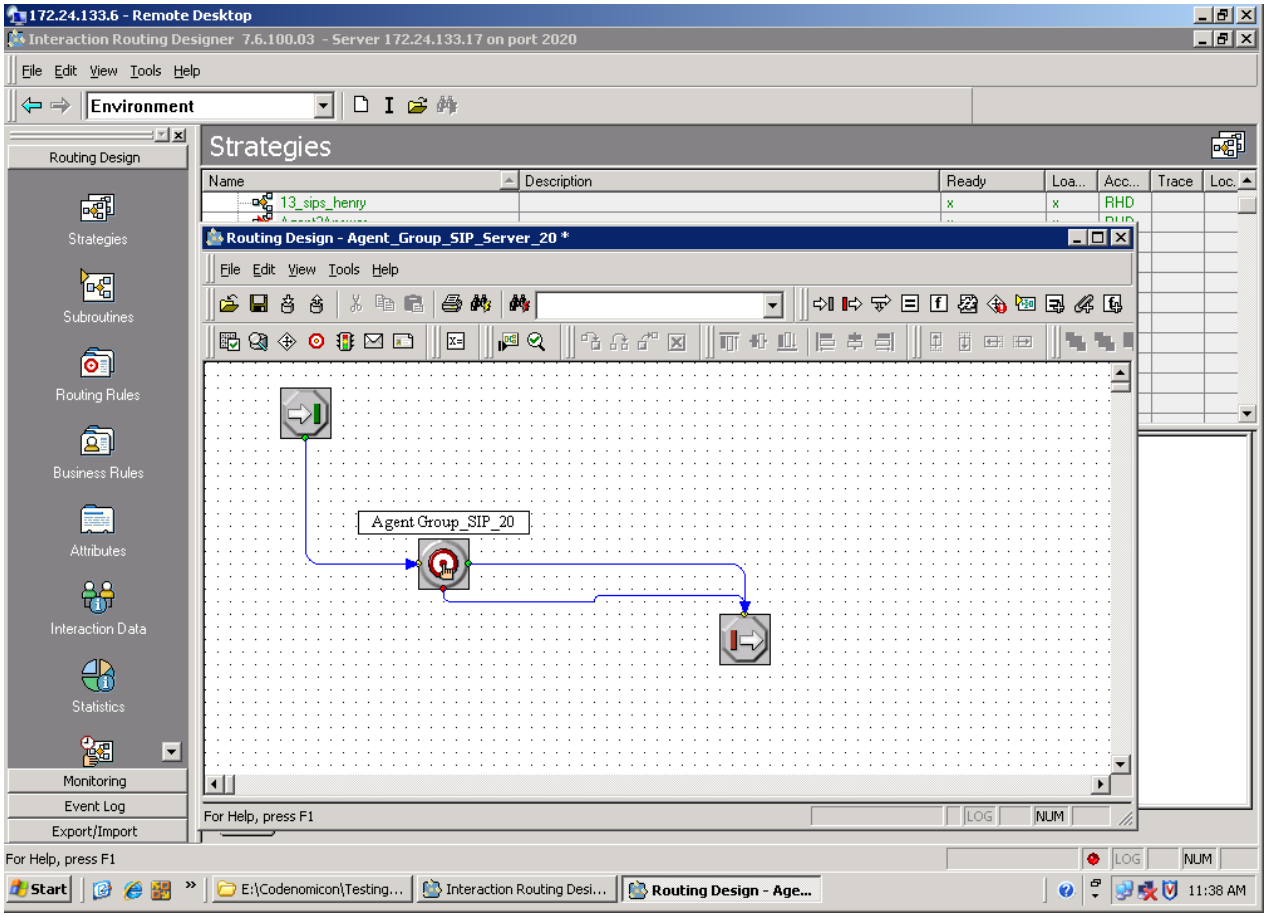
VXML Bridge, Blind, and Consultation transfers were tested. Transfers were tested to both RP, a direct extension on SIP-Server and to an extension on BROADWORKS switch.

6.3 IVR Centric Scenarios

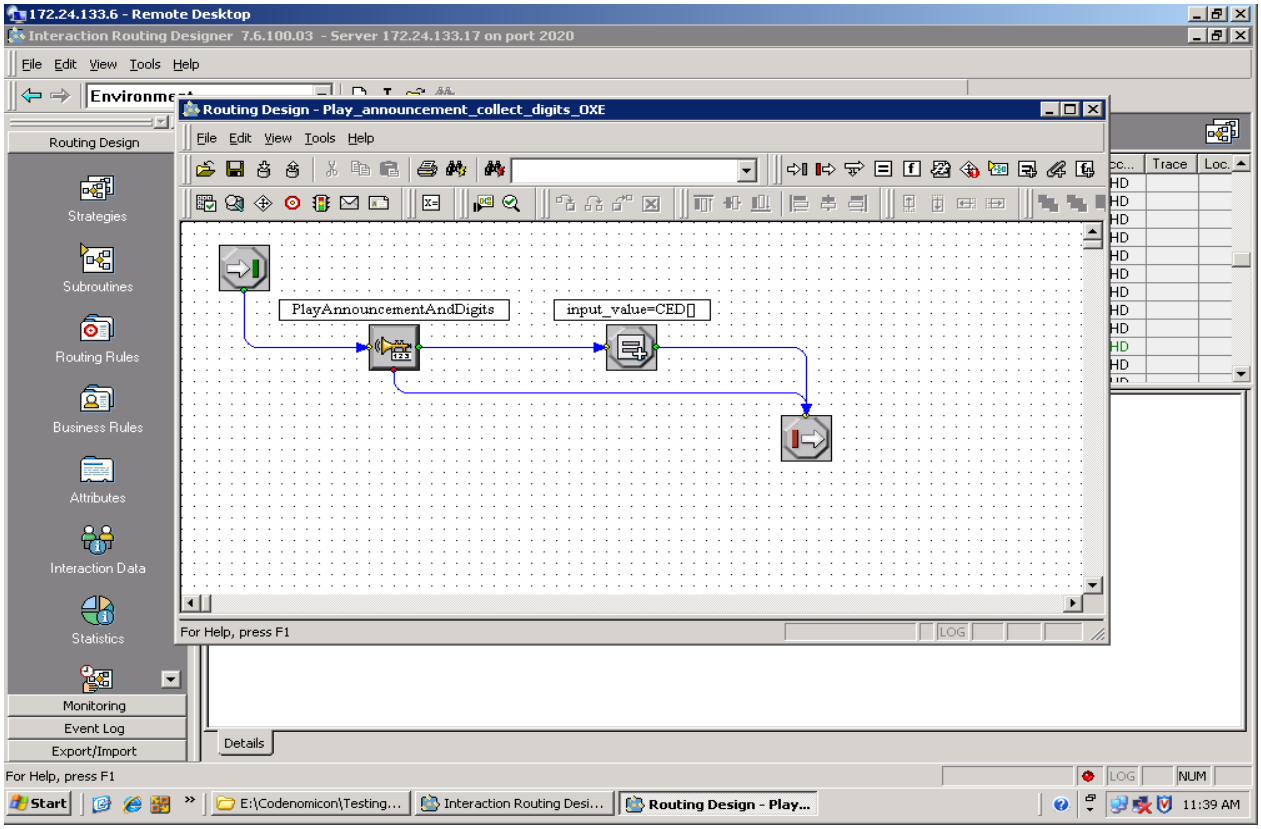
In this configuration, the IVR Server is involved in Behind-Mode with respect to SIP Server; simple inbound calls and playing of supported treatments were tested. SIP Server is added to the connections of I-Server for IVR centric scenarios.

6.4 Routing Strategy Used For Testing

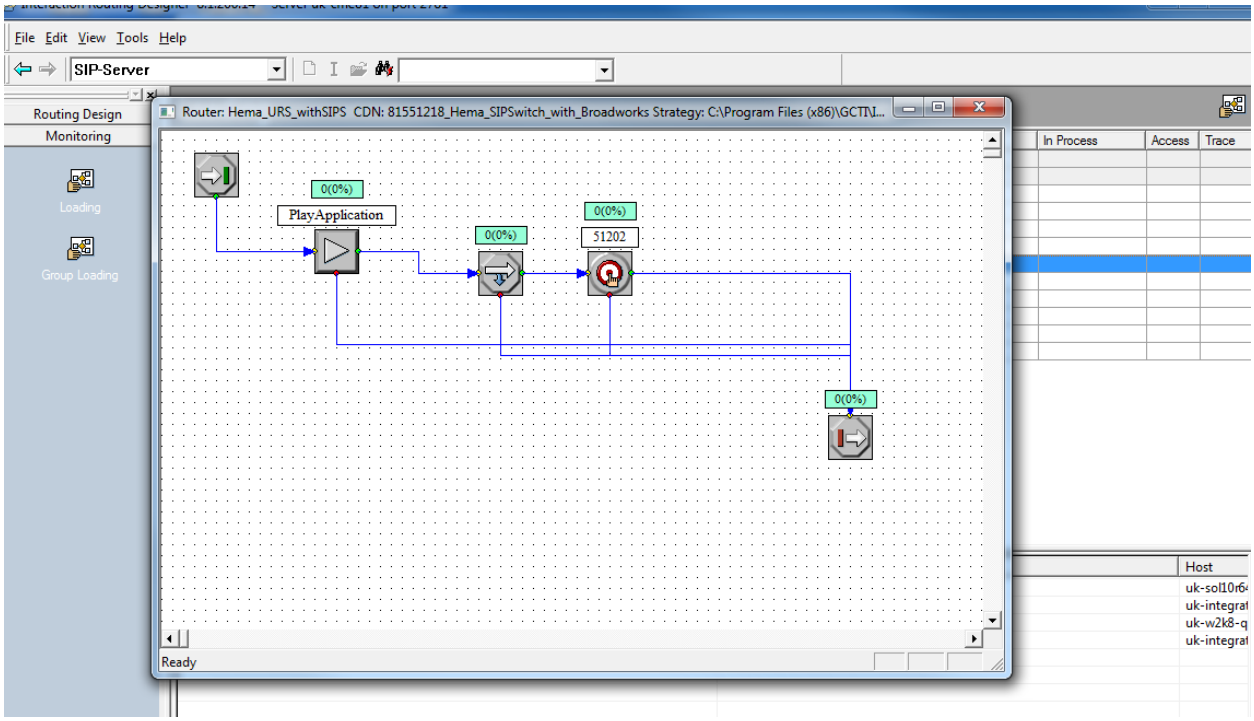
6.4.1 Routing to Agent Group on SIP Server



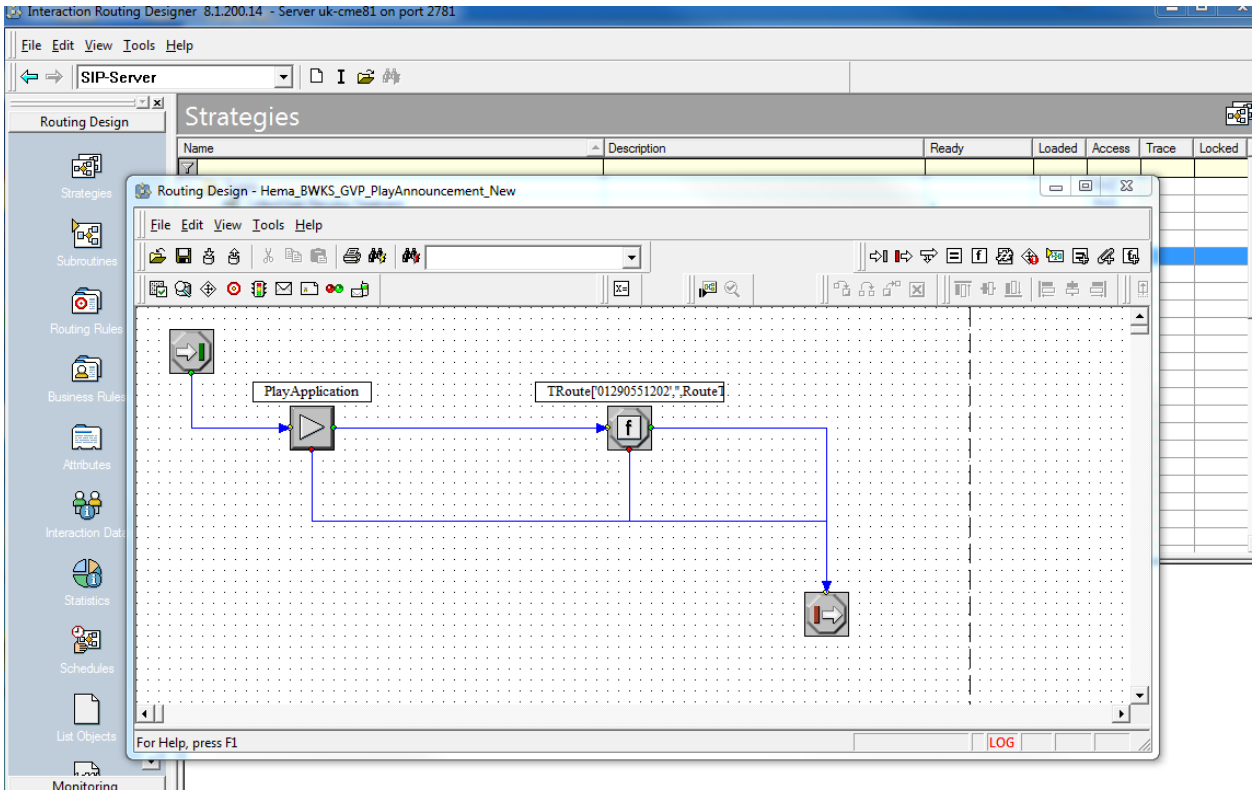
6.4.2 Play Announcement and Collect Digits



6.4.3 Play Application and Routing to Agent depending on the Input Value

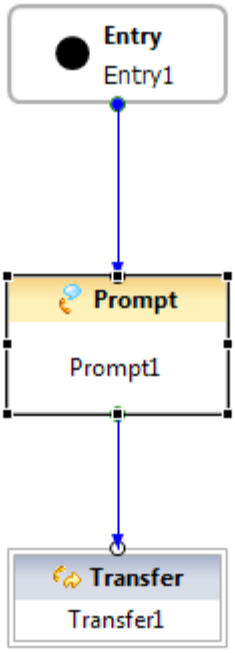


6.4.4 Play Application and Route to Agent



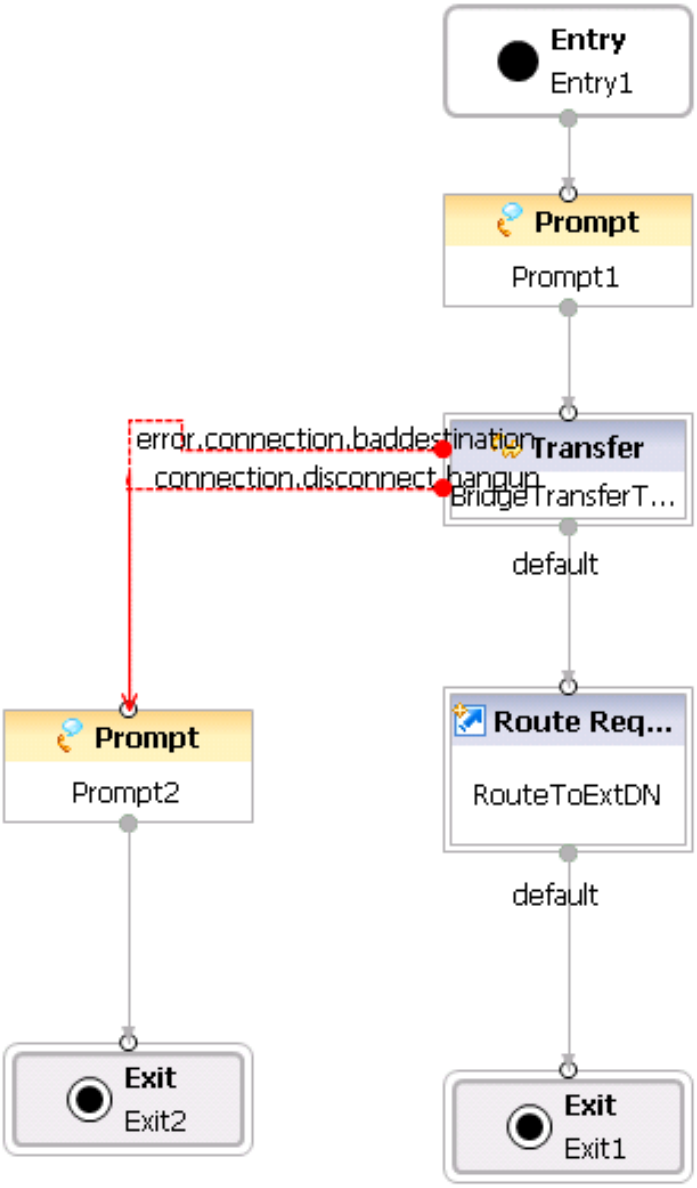
6.5 VXML Application Used For Testing

6.5.1 Blind Transfer Application designed using Composer



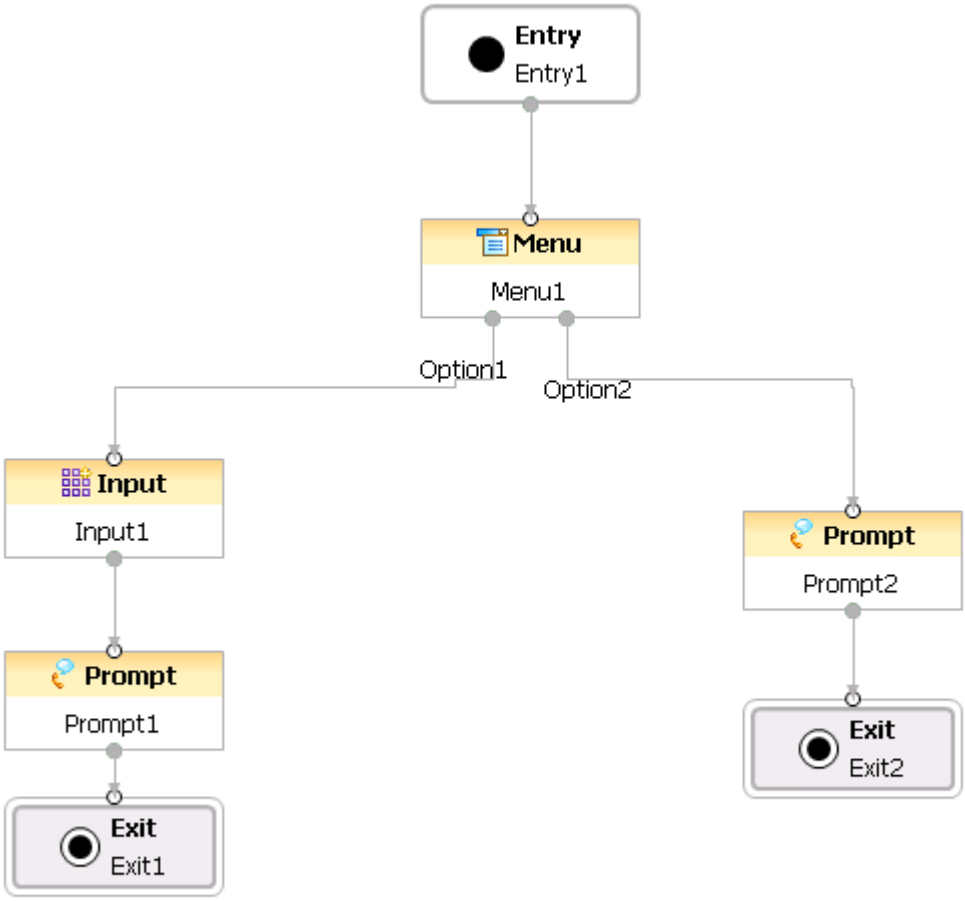
Description: The VXML application consists of Entry1 block, Prompt1 block with a text message and Transfer block with a destination provisioned as Extension on the BroadWorks switch, Transfer Type=Blind, and Method=Refer.

6.5.2 Bridge Transfer Application with RouteRequest block designed using Composer



Description: The VXML application consists of Entry1 block, Prompt1 block with a text message, and Route Request1 block with the destination provisioned as Route Point at SIP Server, Transfer Type=Bridge, Method=Bridge, Prompt2 block with a text message and Exit block.

6.5.3 DTMF Application with Input block designed using Composer



Description: The VXML application consists of Entry1 block; Prompt1 block with a text message, Input1 block prompts the user to enter the DTMF Input, Prompt2 block with a text message and Exit1 block.

7 TROUBLESHOOTING

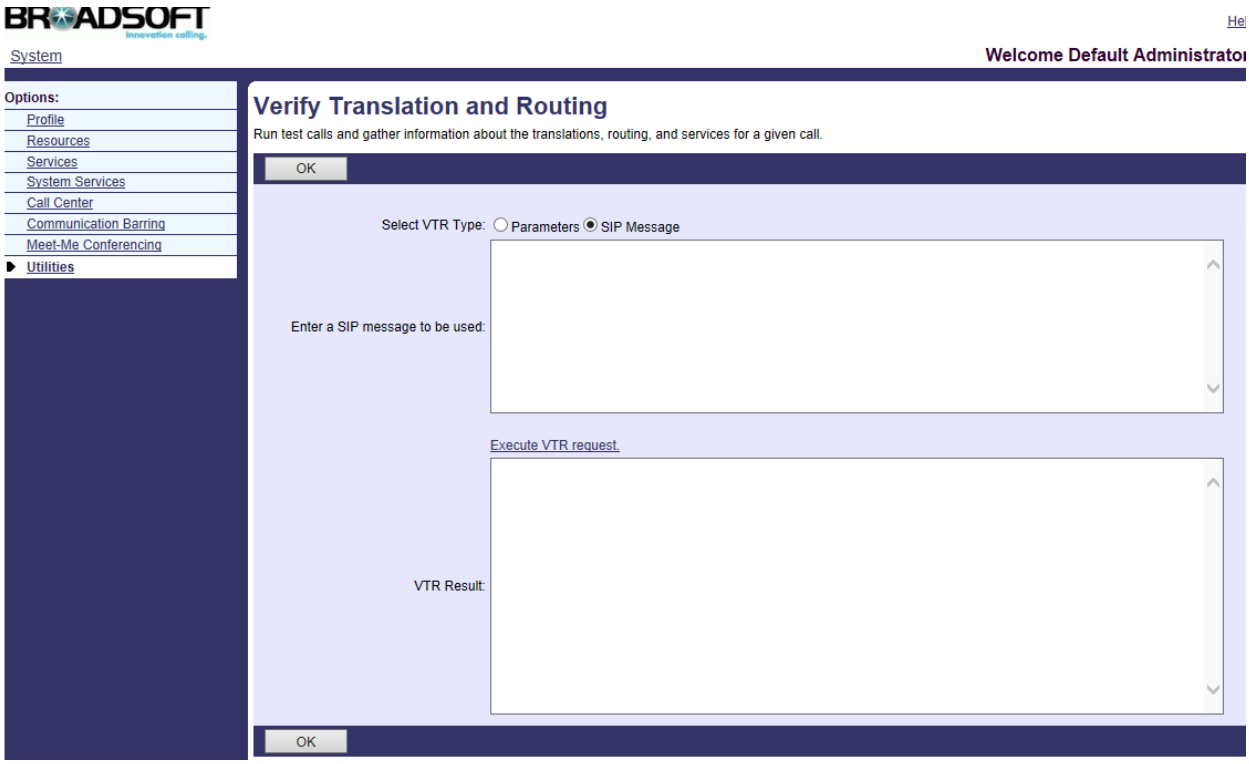
7.1 Capturing Switch Logs on BroadWorks

- Log in to BroadWorks Application Server
- Go to directory: /bw/broadworks/logs/appserver
- File XSLog<date/time>.txt has the call logs
- File PSLog<date/time>.txt has the configuration logs
- Get the files if required using sftp/winscp

7.2 Using Verify Translation and Routing Tool in BroadWorks

This tool can be used to Run test calls. By selecting SIP Message you can verify how the BroadWorks responds to your SIP messages.

- Log in onto BroadWorks Profile Web page
- In Utilities select “Verify Translation and Routing”
- Select SIP Message
- Enter the SIP message to be used
- Select Execute VTR request
- Check the response



8 GLOSSARY AND ACRONYMS

Term	Definition
CCP	Genesys GVP Call Control Platform Application
CTI	Computer Telephony Integration
DNIS	Dialed Number Identification Service
DTMF	Dual Tone Multie Frequency
GVP	Genesys Voice Portal Suite
GW	Gateway
HTTP	Hypertext Transfer Protocol
IP	Internet Protocol
IRD	Genesys Interaction Routing Designer Application
MCP	Genesys GVP Media Control Platform
PSTN	Public System Telephone Network
RM	Genesys GVP Resource Manager
RP	Genesys Routing Point Device
RTP	Real-Time Transport Protocol
SDP	Session Description Protocol
SIP	Session Initiation Protocol
SIP-S	Genesys SIP Server Application
SS	Genesys Stat Server Application
SSG	Genesys GVP Supplementary Services Gateway Application
URS	Genesys Universal Routing Server Application