VoiceGenie 7.2.1

OA&M Framework – SMC

User's Guide

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Chapter

1 Introduction

This document describes the functionality of the SMC, which is a web based interface to the OA&M Framework. The SMC is written in JSP/Java and runs with the Tomcat application server. For more information about Tomcat please visit `http://jakarta.apache.org/tomcat/index.html`.

Chapter

2 System Management Console (SMC) Overview

This section provides overall information about the SMC.

2.1 Starting, Stopping or Restarting the SMC

On Linux, you must be the root user to start, stop or restart the SMC. To become the root user log in to the system and type in `su`, then enter the root password when prompted.

Then, to start the SMC, issue the following command:
`/etc/init.d/vgtomcat start`

To stop the SMC, issue the following command:
`/etc/init.d/vgtomcat stop`

To restart the SMC, issue the following command:
`/etc/init.d/vgtomcat restart`

On Windows, the SMC can be started, stopped or restarted from the `Services` window, which can be accessed from the `Administrative Tools` section under the Control Panel. To start the SMC, click on the `Apache Tomcat Service` entry and click the `Start Service` button. To stop the SMC, click on the `Apache Tomcat Service` entry and click the `Stop Service` button. To restart the SMC, click on the `Apache Tomcat Service` entry and click the `Restart Service` button.

2.2 Accessing the SMC

The System Management Console can be accessed via a web browser at the URL `http://[SMC Server Name]:8080/smc/`, where `[SMC Server`

Name] is the hostname of the server where the SMC has been installed, this is usually the CMP Server. Note that this port should be opened on a firewall so that the SMC can be accessed.

Notes: The System Management Console is designed to be accessed via Microsoft Internet Explorer v6.0. Using any other browser may result in incorrect or unpredictable behavior.

Please do not access the SMC using localhost in the URL, for example, the following: `http://localhost:8080/smc/`, is not acceptable. This is not preferred since for certain operations related to deployment the SMC require the actual IP or hostname in the URL.

The following screenshot shows the top bar of the SMC.

The top bar consists of the Tabs Bar, which contains five tabs: `Monitoring`, `Operations`, `Configuration`, `Administration` and `Tools`. The functionality available in each tab is discussed in the next section.

The area below the Tabs Bar is called the Status Bar; it shows the current status of the SMC. The left side of the Status Bar shows what server the SMC is running on (i.e. `ca-to-willie`), and whether its CMP Java Agent is connected to the CMP network. The table below shows what statuses that exist and their meaning:

Status	Meaning
Not Connected to CMP Proxy	The CMP Java Agent is not connected to a CMP Proxy.
Connected to CMP Proxy	The CMP Java Agent is connected to a CMP Proxy, which is connected to a CMP Engine; the CMP network is fully functional.
Connected to CMP Proxy | CMP Server Down	The CMP Java Agent is connected to a CMP Proxy, but the CMP Engine is down; the CMP network is not fully functional.

The right side of the Status Bar shows the username that the user is logged in with and what group he/she is part of, as well as the version of the SMC and its licensing scheme. The following table explains the group access rights that are available in the SMC and what privileges they have:

Group	Privileges
Administrator	Full access.

Group	Privileges
Supervisor	Full access but not able to Manage Users or change the network of managed components using the Cluster Manager.
User	Can access all functionality on the `Monitoring` and `Operations` tab as well as Other Configuration such as DNIS-URL Mapping, etc.
Guest	Can access all functionality on the `Monitoring` tab only.
Customer	Can access the Tools data for specific targets that are assigned to this Customer him/her

2.3 SMC Navigation

The SMC is divided into a number of tabs. Each of these tabs contains a set of functionality. The names of these tabs and their purpose are outlined in the table below:

Tab Name	Description
Administration	The `Administration` section of the SMC allows users to define the clusters and servers that are connected and managed via the OA&M Framework, as well as manage users and their access privileges.
Configuration	The `Configuration` section of the SMC allows users to configure the various server components that are managed by the web interface; this includes configuration as well as provisioning. In addition, this section allows users to install and deploy VoiceGenie and third party software, as well as upload VoiceGenie licenses.
Operations	The `Operations` section of the SMC allows users to perform various operations on the clusters, servers and server components that are managed by the OA&M Framework.
Monitoring	The `Monitoring` section of the SMC allows users to monitor the status of the various clusters, servers and components that are connected to the CMP infrastructure. Also, users can generate historical reports and view call log metrics data.

Tab Name	Description
Tools	The `Tools` section of the SMC contains various statistics data about the applications that are running, notably statistics about the quality of service provided by the VoiceGenie deployment and summary statistics.

Each tab has a menu on the left side that provides access to the various functionalities provided by that tab. The remaining sections of this document discuss the various tabs and pages of the SMC and the capabilities they provide.

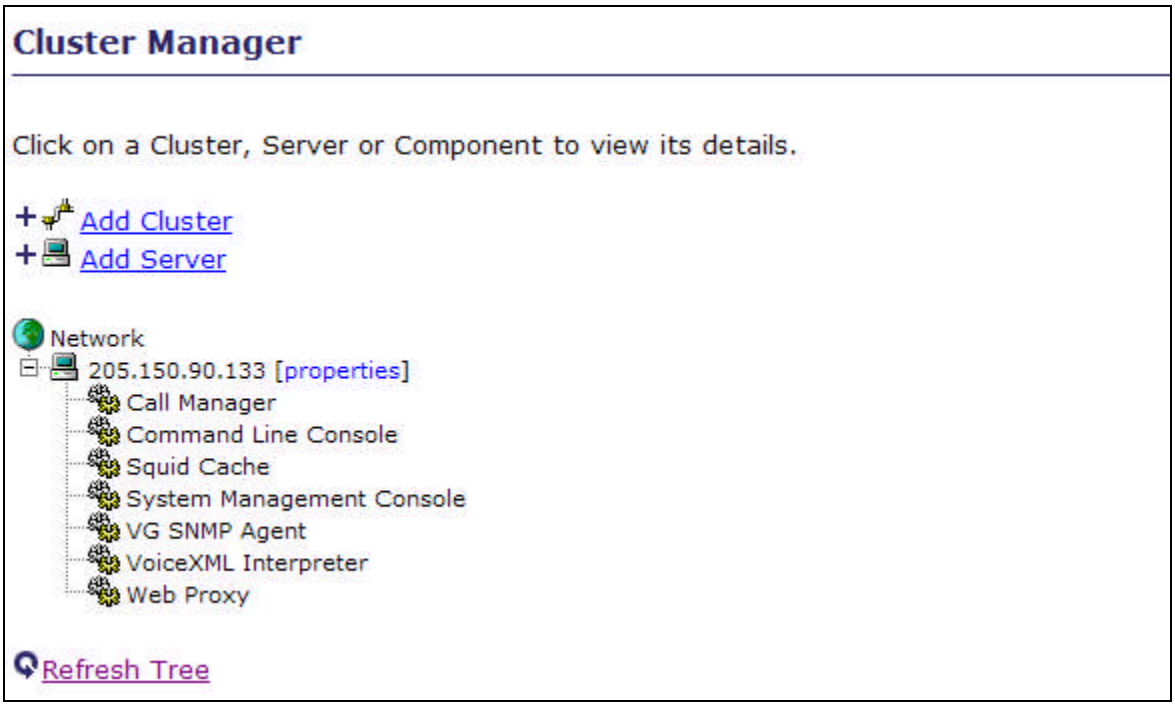
Chapter

3 Administration

The `Administration` section of the SMC allows users to define the clusters and servers that are connected and managed via the OA&M Framework, as well as manage users and their access privileges.

3.1 Cluster Manager

The Cluster Manager shows a tree representation of the entire network of clusters and servers that are managed by the OA&M Framework. The following is a screen shot of the Cluster Manager:



3.1.1 Add Cluster

The `Add Cluster` page allows the user to add *clusters* to the network of managed servers. A cluster is simply a logical grouping of servers to facilitate management by allowing users to assign configuration or other administrative operations against a single entity. A cluster may define a group of servers that share a common operational purpose, physical location, configuration, etc.

When adding a cluster, users must define a name for the cluster as well as the parent cluster(s) of the newly defined cluster and the clusters and servers that are children of the newly added cluster. Once all these values are set the user can click on `Add Cluster` to create the cluster with the entered properties.

3.1.2 Edit Cluster Details

To edit the properties of a cluster the user can click on the “properties” link beside the cluster name in the tree representation of the network on the `Cluster Manager` page. This takes the user to the `Cluster Details` page. This page allows the user to edit the name of the cluster as well as change what child cluster(s) or server(s), and what parent cluster(s) the cluster has.

3.1.3 Delete Cluster

A cluster can be deleted by clicking `Delete Cluster` on the `Cluster Details` page. Clicking on the cluster name in the tree representation of the network on the `Cluster Manager` page takes the user to the `Cluster Details` page. When a cluster is deleted it is completely removed from the network of managed clusters and servers. Any servers that are part of the deleted cluster are listed under the root of the network.

3.1.4 Add Server

A new server can be added by clicking on `Add Server.` When adding a new server the user must specify a name to identify the server, the cluster(s) that the server is part of, the type of server being added, and the hostname of the server. Generally, this capability is not required since a CMP Server will automatically add a previously unknown VoiceGenie server to CMP network when connecting.

Note: The CMP Server configuration contains a parameter called `cmp.automatically_add_undefined_components`. If this parameter is set to `TRUE` (the default setting), any unknown components will be automatically added. If this parameter is set to `FALSE`, any unknown components will be refused connection. Note that a server must first be added to the network before it can be managed by the OA&M Framework.

3.1.5 Edit Server Details

To edit the properties of a server the user can click on the "properties" link beside the server name in the tree representation of the network on the `Cluster Manager` page. This takes the user to the `Server Details` page. This page allows the user to edit the name of the server, the hostname of the server as well as change what cluster(s) the server is part of. Also, users can add and delete server components using the `Server Details` page. A component needs to be offline before it can be deleted.

Note: The SMC allows users to add components to a server. The VoiceXML Interpreter is a component that can have multiple instances. The instance number is denoted by a number after the name of the component. The SMC only allows 2 VoiceXML Interpreter instances to be added. To add more the CLC should be used.

3.1.6 Delete Server

A server can be deleted by clicking `Delete Server` on the `Server Details` page. Clicking on the server name in the tree representation of the network on the `Cluster Manager` page takes the user to the `Server Details` page. When a server is deleted it is completely removed from all clusters in the network of managed clusters and servers. A server needs to be offline before it can be deleted.

3.2 User Administration

The `User Administration` section allows users to change their password, manage users as well as view user access logs. Only users with administrator privilege can manage users as well as view all user access logs. Users with supervisor and user privileges can only change their own passwords and view their own access logs, while users with guest privileges cannot see any access logs.

3.2.1 Change Password

Users can change their password by entering their original password along with their new password and confirmation of the new password.

3.2.2 Manage Users

The `Manage Users` page allows administrators to add new users, as well as update the access privileges of existing users or reset their passwords. When a password is reset it is set to the same as the username of the user. Also, this page allows administrators to delete existing users.

3.2.3 View User Access Logs

The `View User Access Logs` page allows administrators to look at all user access logs, this is useful for tracking what users have made what changes to the system. Administrators can search the access logs by session ID or by a keyword in the log message. Also, administrators can delete access logs by clicking the `Delete All` button.

Chapter

4 Configuration

The `Configuration` section of the SMC allows users to configure the various server components that are managed by the web interface; this includes configuration as well as provisioning. In addition, this section allows users to install and deploy VoiceGenie and third party software, as well as upload VoiceGenie licenses.

4.1 Installation

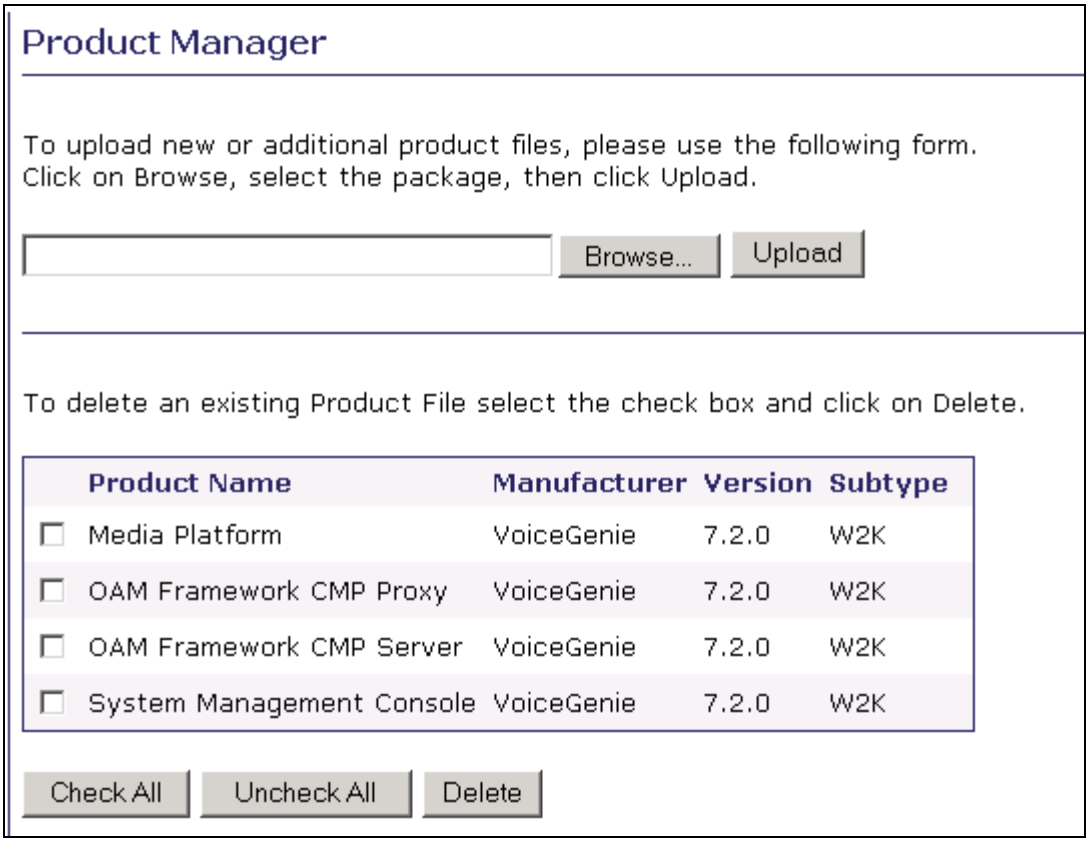
Under the `Configuration` tab of the SMC the last section in the menu is the `Installation` section. The `Installation` section allows users to install VoiceGenie software. VoiceGenie software is provided to customers in the form of a *Product File*. A Product File is bundle that contains the software as well as the information necessary to automatically install and configure the software. Product Files that are delivered for the Linux operation systems are TAR files that have the file extension `.tar.gz` (i.e. `phoneweb-7.2.0-3.tar.gz`). Product Files that are delivered for Windows are ZIP files that have the extension `.zip` (i.e. `phoneweb-7.2.0-3.zip`).

To install and deploy these Product Files, customers must use the `Installation` section of the SMC. Note that installation of VoiceGenie software consists of two parts, firstly, installation, and secondly, deployment. Installation is the act of uploading a Product File (also called a package) into the SMC. Once a package is uploaded, customers can create configuration profiles which consist of customized configuration based on user input. Finally, the package can be deployed to one or more machines. Consequently, deployment is the act of deploying a package onto a physical machine as well as automatically configuring and setting up the software.

For more details on installation please refer to the *VoiceGenie Installation Guide*. This section contains details about the `Product Manager`, `Config Profile Manager`, `Deployment Manager` and `Deployment History` pages.

4.1.1 Product Manager

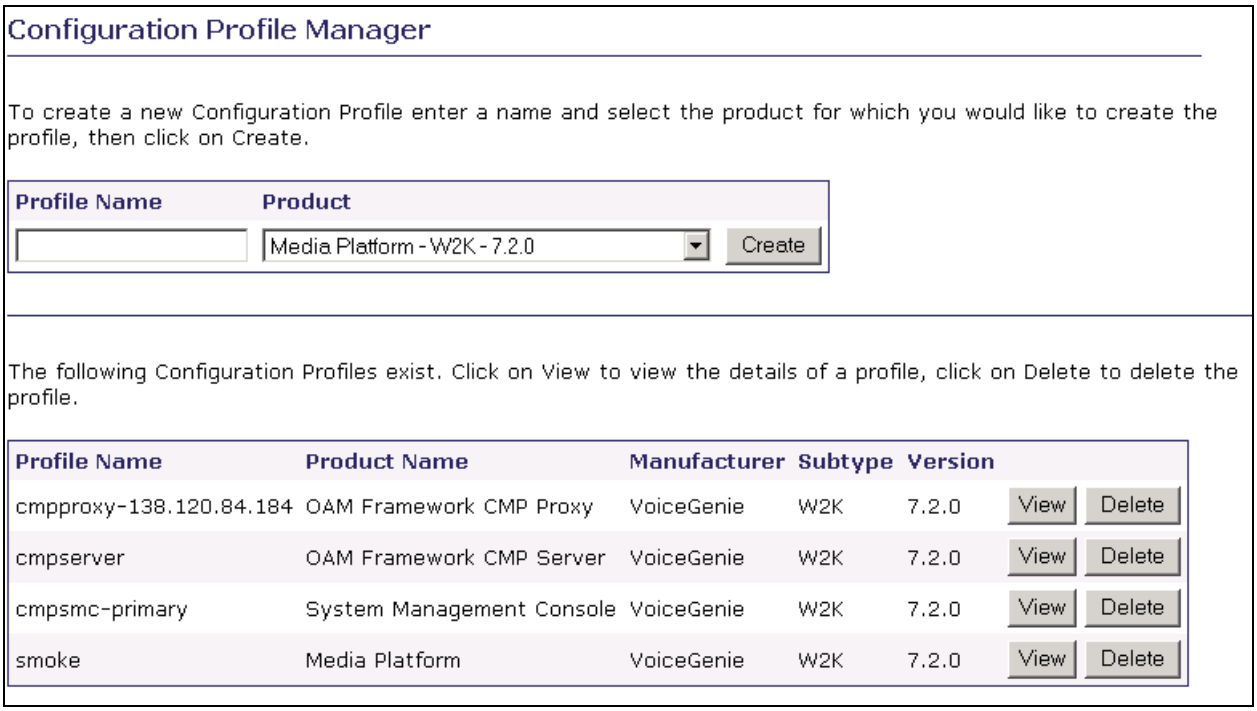
The Product Manager allows users to upload VoiceGenie products into the SMC. A product must be uploaded into the SMC before it can be deployed onto a VoiceGenie machine. The following is a screenshot of the Product Manager:



Users can click on the `Browse` button to find the product file that needs to be uploaded, then click on `Upload` to upload it to the SMC. Note that a product can only be deployed from the SMC in which it was uploaded. Once a product is uploaded it will be listed in the table at the bottom of the screen. Note that a large product file may take up to 20 minutes to load via the SMC. An uploaded product can be deleted to free up hard drive disk space if required.

4.1.2 Config Profile Manager

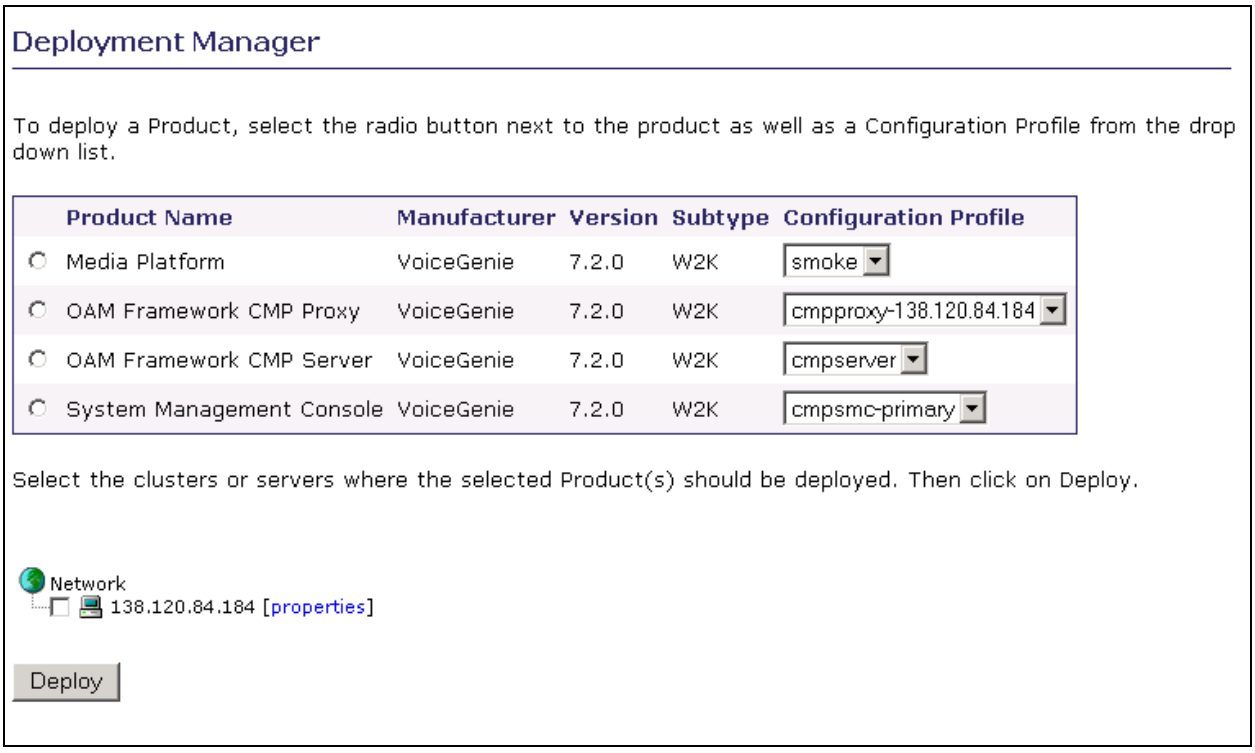
The Config Profile Manager allows users to create a *configuration profile* for an uploaded product. A configuration profile is a set of customized configurations that are created by asking the user a set of questions. Some products do not required customized configurations, for these products no questions are asked. The following is a screenshot of the Config Profile Manager:



To create a new profile enter a name for the profile in the `Profile Name` text box and select the product for which you would like to create a profile, then click on `Create.` If the profile creation requires questions to be answered they will be presented to the user. Once all questions have been answered the newly created profile will be shown in the table at the bottom of the screen.

4.1.3 Deployment Manager

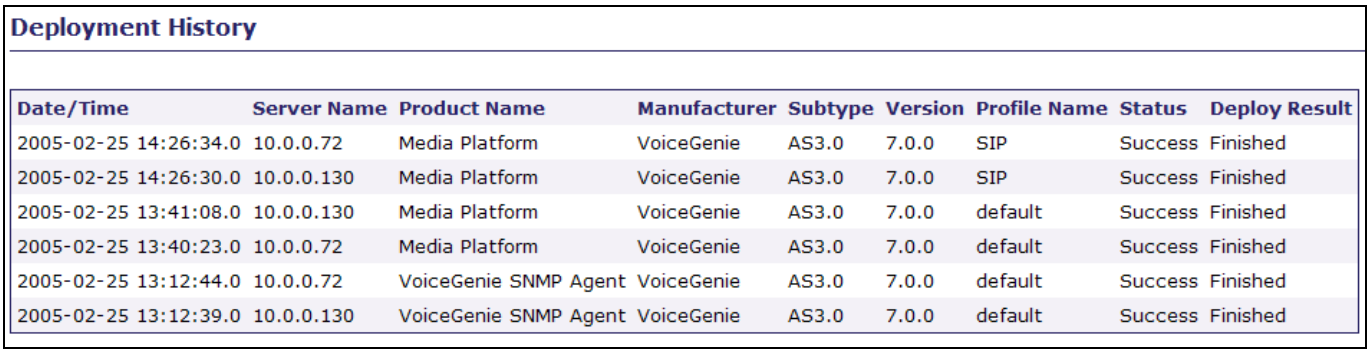
The Deployment Manager allows users to deploy a product with a given configuration profile onto a VoiceGenie machine. Note that a product can be deployed on more than once machine at a time. The following is a screenshot of the Deployment Manager:



To deploy a product select the radial button next to it as well as the desired profile from the drop down. Also, select the servers that the product should be deployed on. Note that a product may not be deployable from a SMC if it was not uploaded to that SMC, or if a configuration profile does not exist.

4.1.4 Deployment History

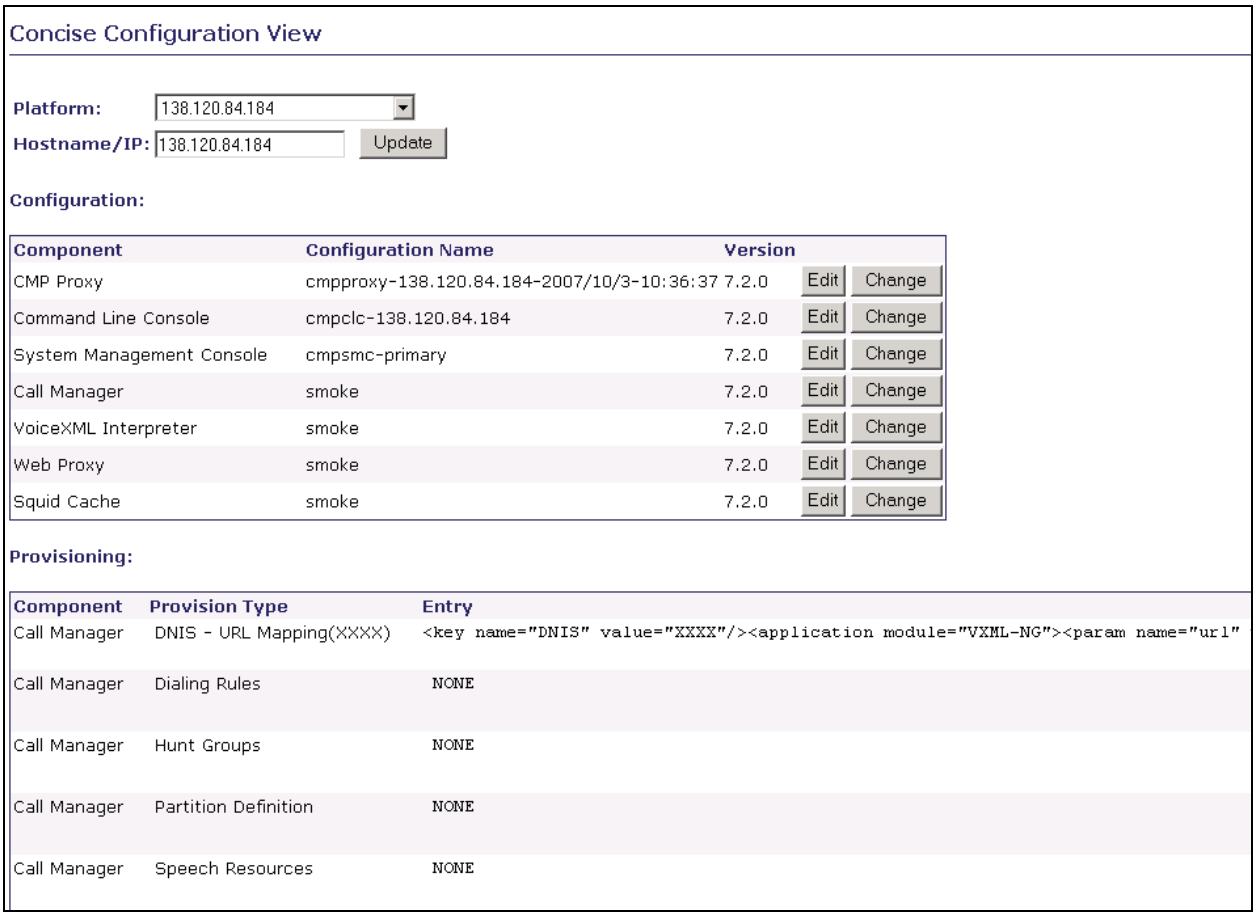
The `Deployment History` page allows users to see what products have been deployed on the various systems, as well as the status of any deployments that are currently occurring. The following is a screenshot of the Deployment History page:



4.2 Concise Configuration View

The SMC contains a view that succinctly shows the configuration and provisioning being used by all components on a given server. This view is called the `Concise Configuration View`. To access this view simply click on the `Configuration` tab and click on the `[configuration]` link in the tree view of the network next to the server that you are interested in. The following is a screenshot of the `Configuration` tab:

Clicking on the `[configuration]` link brings up a concise view of the configuration; the following is an example screenshot:



From this view you can jump to the configuration of any component on that machine by clicking on `Edit`. Also, you can update the hostname/IP of the machine as well as view the provisioning assigned to that machine.

4.3 Product Configuration

Once a product is installed using the Product Manager, users can create and edit configuration for that product. The various products that are listed in the `Configuration` menu include:

- OA&M Framework
- Media Platform
- Speech Resource Manager (i.e. MRCP Proxy)
- CCXML Platform
- SIP Proxy
- Call Analyst

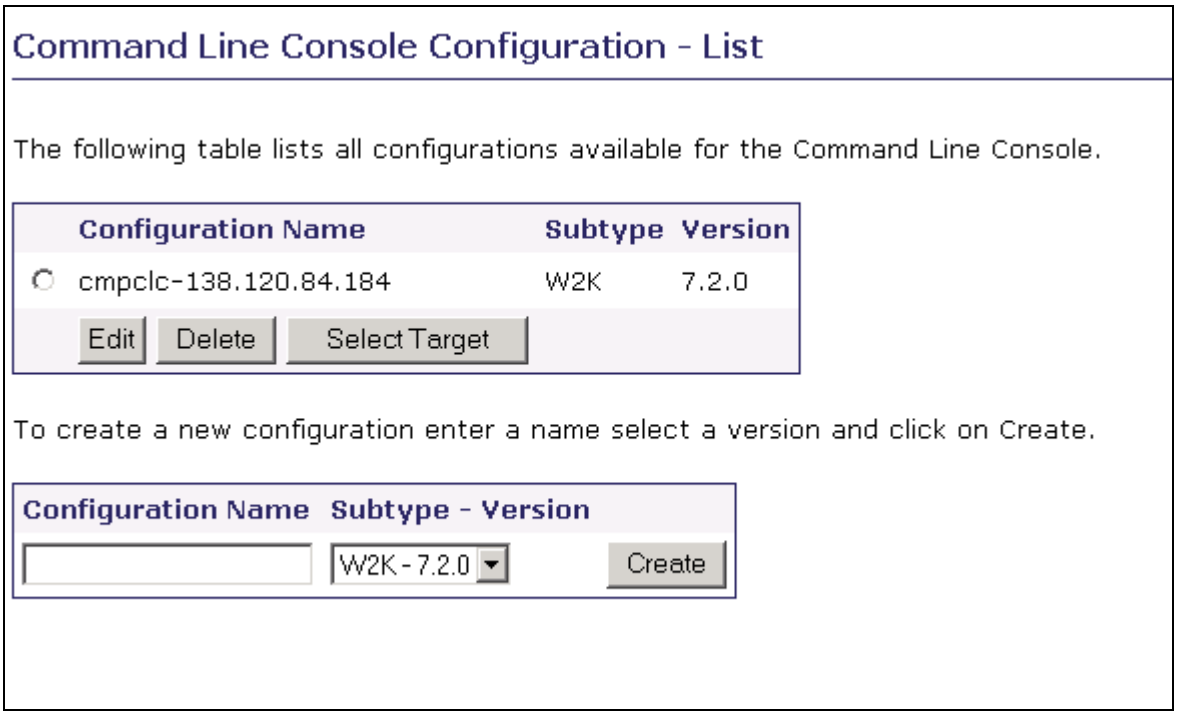
All configuration information is stored centrally in the database; however, each component also stores a cached version of its configuration in a file on the local disk. All configuration changes must be made via the SMC or CLC.

When changes are made to the configuration, the component that the configuration pertains to is immediately notified provided that the SMC or CLC is connected to the OA&M Framework and that the component is online. The changes will be reflected in the local configuration file. If the component is offline, the local configuration will be synchronized when the component is started.

The procedure for adding, editing, targeting and deleting configurations for any VoiceGenie component is described in this section.

4.3.1 Adding Configurations

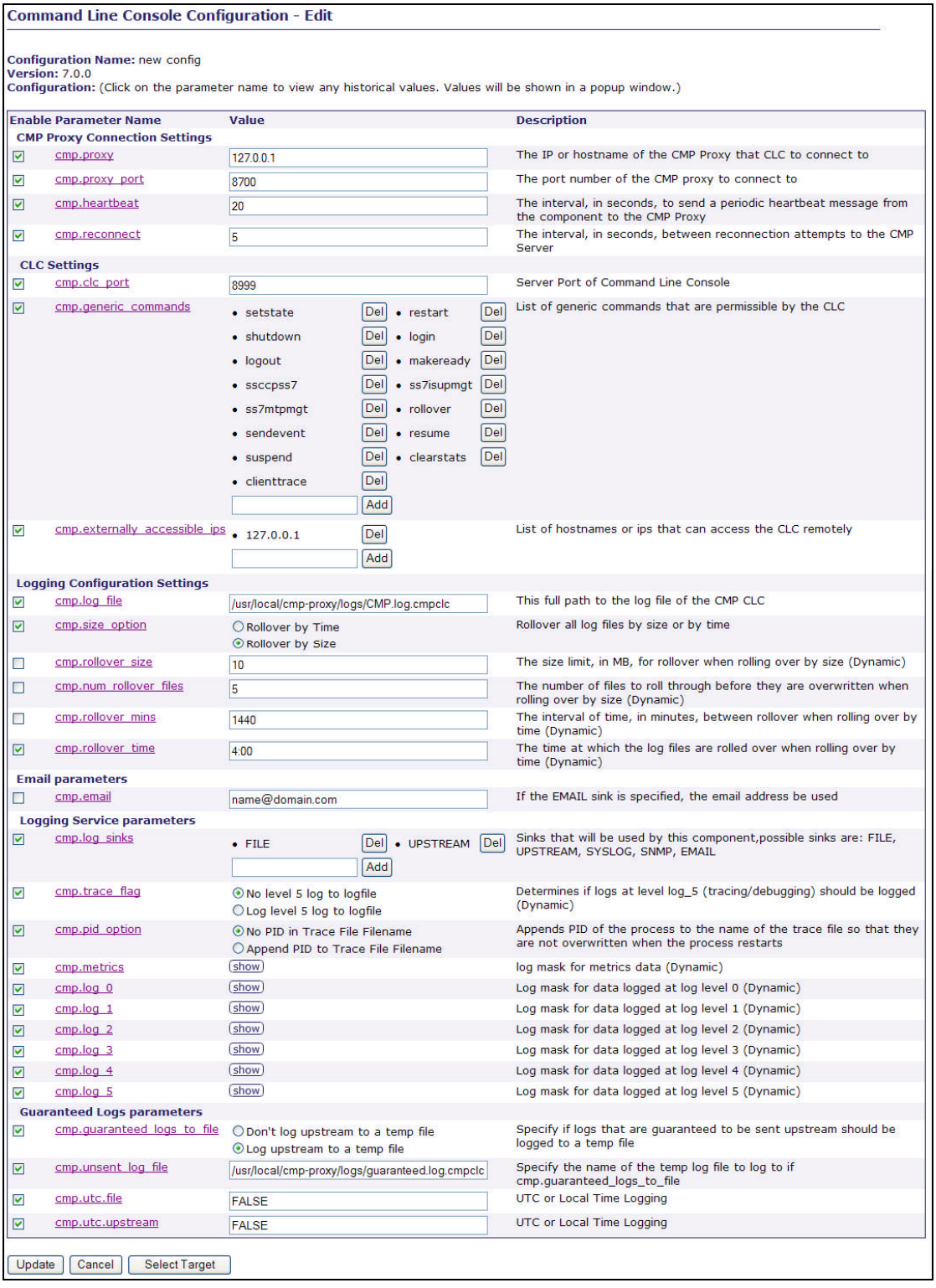
Clicking on any component name in the `Configuration` menu will show a listing of all configurations for a particular component. The following screenshot is an example:



To create a new configuration enter a unique configuration name and select the *subtype – version* from the drop down list. The subtype refers to the OS or other product specific information. The version corresponds to the version number of the VoiceGenie software, i.e. `7.2.0.` Then click on `Create` to create the new configuration. A new configuration will be created with all default values and settings. The resulting page shows the configuration ID of the configuration created and a link to view the newly created configuration. Clicking on the link will bring up the edit page which allows the user to view and edit the configuration.

4.3.2 Editing Configurations

To edit an existing configuration, click on the radial button next to the configuration you wish to edit and click the `Edit` button. This will bring up the edit page which allows users to edit the value of configuration parameters, enable or disable parameters and see historical values. The following is a screenshot of the configuration edit page:



Command Line Console Configuration - Edit

Configuration Name: new config
Version: 7.0.0
Configuration: (Click on the parameter name to view any historical values. Values will be shown in a popup window.)

Enable	Parameter Name	Value	Description
	CMP Proxy Connection Settings		
☑	cmp.proxy	127.0.0.1	The IP or hostname of the CMP Proxy that CLC to connect to
☑	cmp.proxy_port	8700	The port number of the CMP proxy to connect to
☑	cmp.heartbeat	20	The interval, in seconds, to send a periodic heartbeat message from the component to the CMP Proxy
☑	cmp.reconnect	5	The interval, in seconds, between reconnection attempts to the CMP Server
	CLC Settings		
☑	cmp.clc_port	8999	Server Port of Command Line Console
☑	cmp.generic_commands	• setstate Del • restart Del • shutdown Del • login Del • logout Del • makeready Del • ssccpss7 Del • ss7isupmgt Del • ss7mtpmgt Del • rollover Del • sendevent Del • resume Del • suspend Del • clearstats Del • clienttrace Del Add	List of generic commands that are permissible by the CLC
☑	cmp.externally_accessible_ips	• 127.0.0.1 Del Add	List of hostnames or ips that can access the CLC remotely
	Logging Configuration Settings		
☑	cmp.log_file	/usr/local/cmp-proxy/logs/CMP.log.cmpclc	This full path to the log file of the CMP CLC
☑	cmp.size_option	○ Rollover by Time ◉ Rollover by Size	Rollover all log files by size or by time
☐	cmp.rollover_size	10	The size limit, in MB, for rollover when rolling over by size (Dynamic)
☐	cmp.num_rollover_files	5	The number of files to roll through before they are overwritten when rolling over by size (Dynamic)
☐	cmp.rollover_mins	1440	The interval of time, in minutes, between rollover when rolling over by time (Dynamic)
☑	cmp.rollover_time	4:00	The time at which the log files are rolled over when rolling over by time (Dynamic)
	Email parameters		
☐	cmp.email	name@domain.com	If the EMAIL sink is specified, the email address be used
	Logging Service parameters		
☑	cmp.log_sinks	• FILE Del • UPSTREAM Del Add	Sinks that will be used by this component,possible sinks are: FILE, UPSTREAM, SYSLOG, SNMP, EMAIL
☑	cmp.trace_flag	◉ No level 5 log to logfile ○ Log level 5 log to logfile	Determines if logs at level log_5 (tracing/debugging) should be logged (Dynamic)
☑	cmp.pid_option	◉ No PID in Trace File Filename ○ Append PID to Trace File Filename	Appends PID of the process to the name of the trace file so that they are not overwritten when the process restarts
☑	cmp.metrics	show	log mask for metrics data (Dynamic)
☑	cmp.log_0	show	Log mask for data logged at log level 0 (Dynamic)
☑	cmp.log_1	show	Log mask for data logged at log level 1 (Dynamic)
☑	cmp.log_2	show	Log mask for data logged at log level 2 (Dynamic)
☑	cmp.log_3	show	Log mask for data logged at log level 3 (Dynamic)
☑	cmp.log_4	show	Log mask for data logged at log level 4 (Dynamic)
☑	cmp.log_5	show	Log mask for data logged at log level 5 (Dynamic)
	Guaranteed Logs parameters		
☑	cmp.guaranteed_logs_to_file	○ Don't log upstream to a temp file ◉ Log upstream to a temp file	Specify if logs that are guaranteed to be sent upstream should be logged to a temp file
☑	cmp.unsent_log_file	/usr/local/cmp-proxy/logs/guaranteed.log.cmpclc	Specify the name of the temp log file to log to if cmp.guaranteed_logs_to_file
☑	cmp.utc.file	FALSE	UTC or Local Time Logging
☑	cmp.utc.upstream	FALSE	UTC or Local Time Logging

Update Cancel Select Target

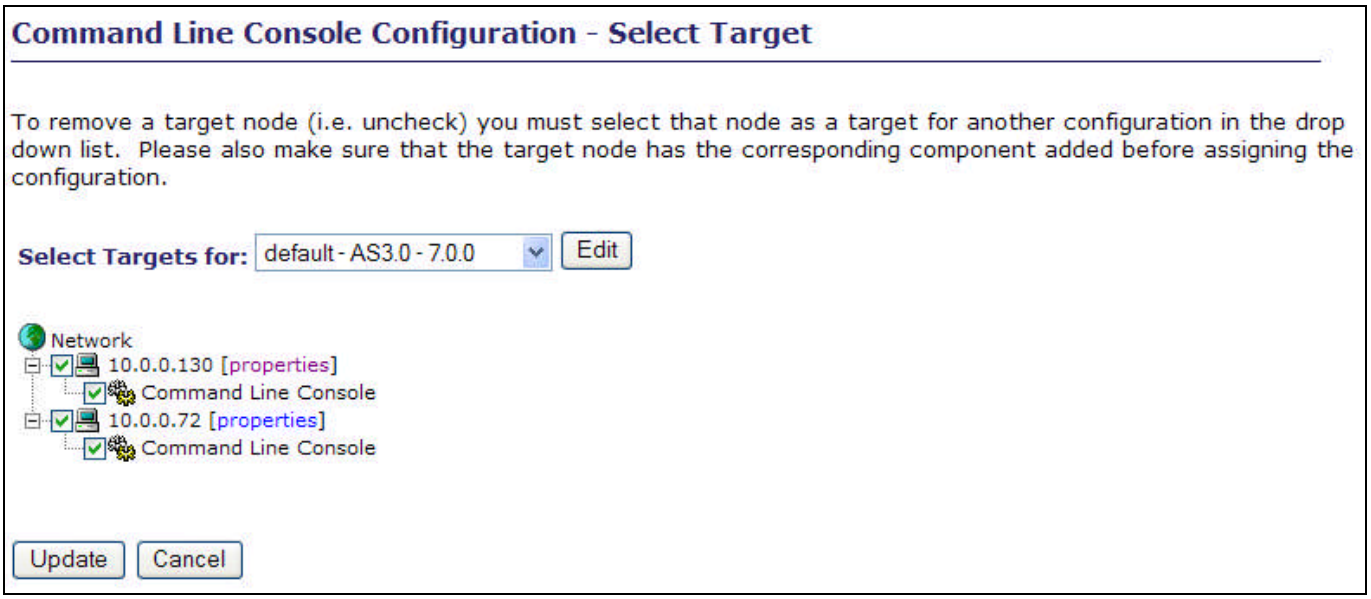
The check box next to each parameter can be used to enable or disable a parameter. To see the historical values of a parameter, users can click on a parameter name. Once a user has changed any configuration the `Update` button must be clicked to submit the changes. Any changes made to the

configuration will be sent directly to the components that the configuration is targeted to.

4.3.3 Selecting Targets

Each component can have many configurations; however, only one of these configurations can be targeted to a particular instance of a component. The `Select Target` page allows users to select which configuration is targeted to which component instance. Users can select the target for a configuration by clicking on the `Select Target` button.

The target selection screen consists of a tree view of the cluster with checkboxes indicating if the selected configuration is deployed on that particular server or not. The following screen shot is an example.



To change what clusters/servers the configuration is deployed to, check or uncheck the checkbox next to the cluster/server and click on `Update.` To view where other configurations are deployed, use the drop down box to select another configuration.

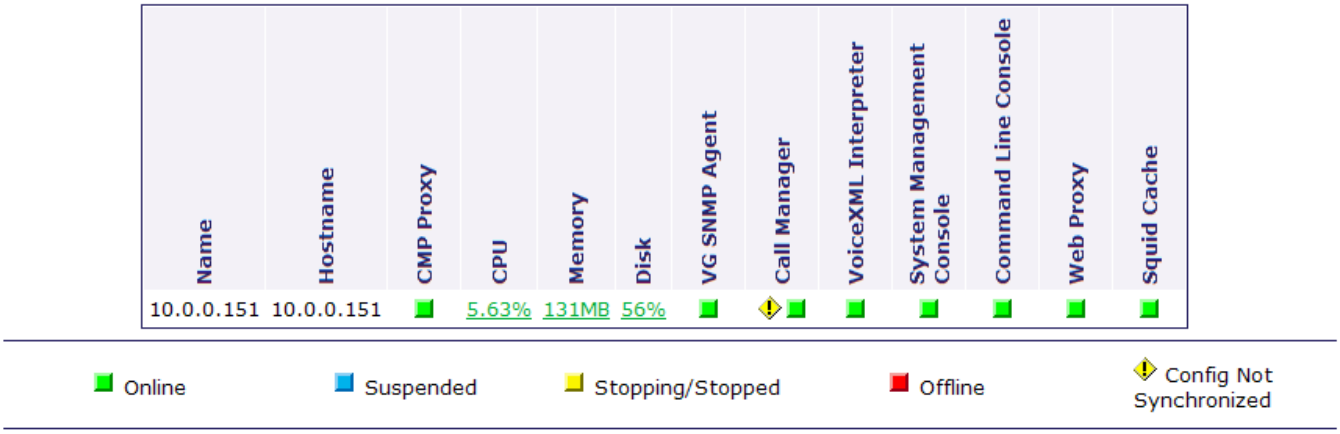
4.3.4 Deleting Configurations

To delete a configuration, users can click on the radial button next to the particular configuration in the list of configurations and click on the `Delete` button. A configuration cannot be deleted if it is currently being used.

4.3.5 Configuration Synchronization Status

When a VoiceGenie software component starts, it requests its configuration from the centralized database via the CMP Server. Thus, it synchronizes its configuration with what is stored in the centralized database. When a configuration change is made via the SMC or CLC, this configuration change is propagated to the software component, however, it may not take effect until the software is restarted. As a result, the SMC indicates the synchronization status of the configuration to inform the user if a software restart is required so that the software component uses the latest configuration.

The following screen shot shows how the SMC indicates the synchronization status. In the screen shot below we see that the Call Manager has a configuration that is not synchronized. As a result, it will need to be restarted in order for it to run with the latest configuration parameter values.



4.4 Product Provisioning

Once a product is installed using the Product Manager, users can create and edit provisioning data for that product. Provisioning information ranges from DNIS-URL mapping, Dialing Rules, Hunt Groups, Partition Definition and Speech Resources for the Media Platform; SIP Resources and SIP Services for SIP Proxy to name a few.

All provision information is stored centrally in the database; however, each component also stores a cached version of its provisioning information in a file on the local disk. All provisioning changes must be made via the SMC or CLC. When changes are made to the provisioning, the component that the provisioning is targeted to is immediately notified provided that the SMC or CLC is connected to the OA&M Framework and that the component is online. The changes will be reflected in the local provisioning file. If the component is offline, the local file will be synchronized when the component is started.

The purpose of the various provisioning types and how they are used are discussed in the individual product user guides.

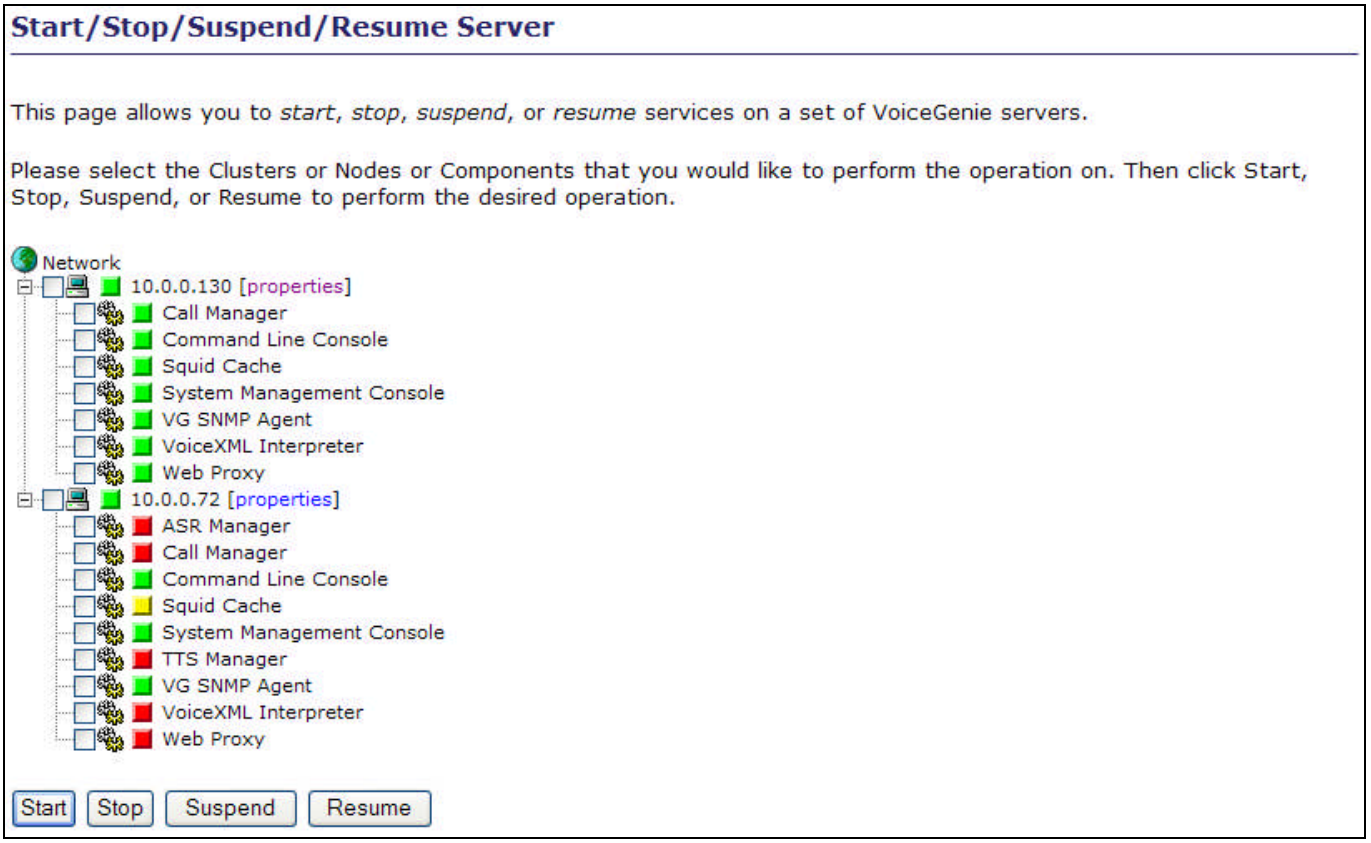
Chapter

5 Operations

The `Operations` section of the System Management Console allows users to perform various operations on the clusters, servers and server components that are managed by the OA&M Framework. The operations that can be performed include starting, stopping, suspending and resuming software components; web cache (i.e. Squid Cache) operations such as starting, stopping, preloading and purging; and license maintenance.

5.1 Start/Stop/Suspend/Resume Software

The `Start/Stop/Suspend/Resume Software` page allows users to start, stop, suspend, or resume services on one or more platforms. The following is a screenshot of the page:



5.1.1 Start

To start a set of components check the checkboxes next to the components that need to be started and click on `Start`. To start all services on a platform click the checkbox next to the server name/IP and click on `Start`. The resulting page shows the outcome of the operation. If some components are already started, only those that are offline are started. Note that components such as the CLC, SMC and VG SNMP Agent cannot be started or stopped via the SMC or CLC.

5.1.2 Stop

To stop a set of components check the checkboxes next to the components that need to be stopped and click on `Stop`. To stop all services on a platform click the checkbox next to the server name/IP and click on `Stop`. The resulting page shows the outcome of the operation. If some components are already stopped, only those that are online are stopped. Note that components such as the CLC, SMC and VG SNMP Agent can not be started or stopped via the SMC or CLC.

Note: VoiceGenie software can take up to 1 minute to stop. As a result, please be sure to wait at least 1 minute before trying to restart the software.

5.1.3 Suspend

To suspend a set of components check the checkboxes next to the components that need to be suspended and click on `Suspend.` Note that not all components can be suspended. Components that can be suspended include the Call Manager, CLC, and SRM Server. When a component is suspended the box next to it will appear blue. A suspended component is still online, but will process no more new requests. In the case of the Call Manager this is useful for graceful shutdowns of the Media Platform.

Note: The underlying mechanism used to suspend the platform is the same mechanism as the CLC; however, the CLC allows greater control by allowing users to specify if the suspend should be a forced suspend (i.e. stop existing processing) while the SMC only allows a graceful suspend that allows existing processing to continue and no new processing to occur.

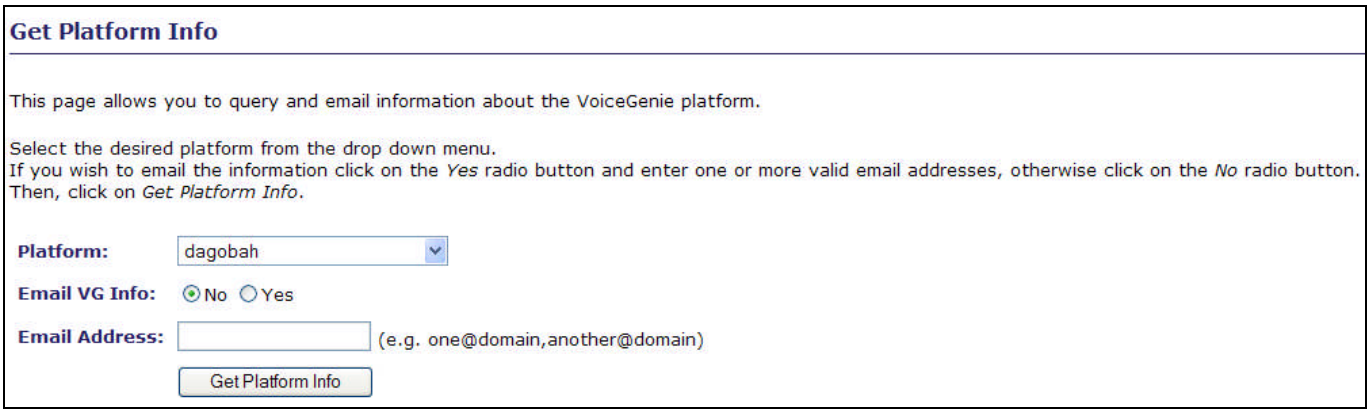
5.1.4 Resume

To resume a set of components check the checkboxes next to the components that need to be resumed and click on `Resume.` Note that only components that are suspended can be resumed. A suspended component has a blue box next to it in the tree view. Once a component is resumed it will appear online.

5.2 Get Platform Information

The `Get Platform Info` section allows users to get information about a platform and/or email the information to a provided email address. This platform information is often useful for the Genesys support team since it allows them to quickly gather the information required to debug any problems associated with the configuration of the platform.

The get the platform information, select a platform from the drop down list and click on the `Get Platform Info` button. The resulting page will provide a link to the file with the platform information. If it is more desirable to email the information, users can select `Yes for Email VG Info` and enter a list of comma separated email addresses.



5.3 Web Cache

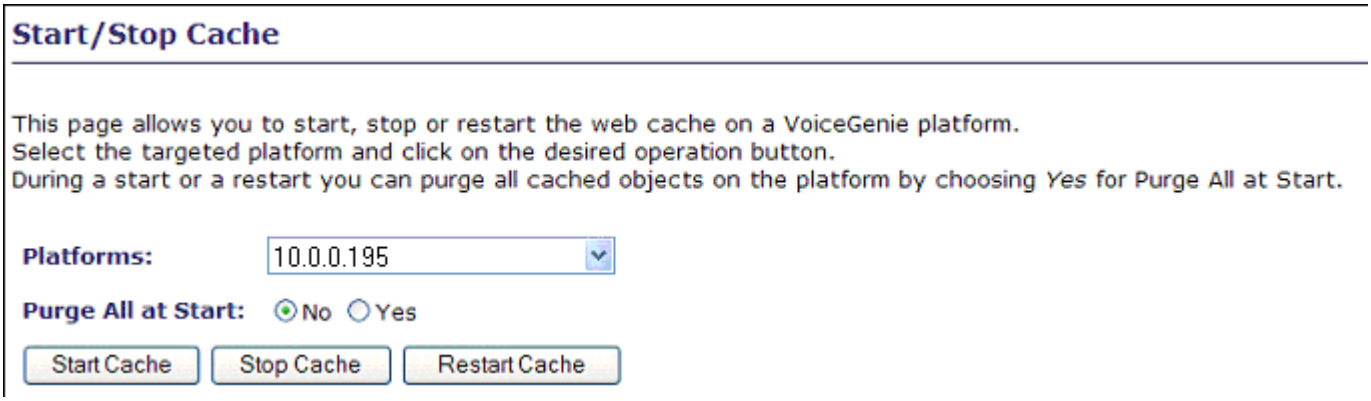
The `Web Cache` section allow users to start or stop the web cache, view the contents of the web cache, manage the cache manifest, perform preloads and purges, as well as view access and event logs.

Note: The `Web Cache` feature is not available to RHEL4 systems that have the default `squid` package installed. Please refer to `Squid-cache` web site and the *Red Hat Enterprise Linux 4* documentation for topics on operation and administration of the `Squid cache`.

5.3.1 Starting, Stopping, Restarting & Purging the Cache

The `Start/Stop Cache` page allows users to start, stop or restart the web cache on a VoiceGenie server.

To perform an operation select the desired operation from the drop down list, as well as the server where the operation should be performed. Also, users can choose to purge the entire cache while performing a start or restart by selecting the `Yes` radial under `Purge All at Start.`



5.3.2 Viewing the Cache

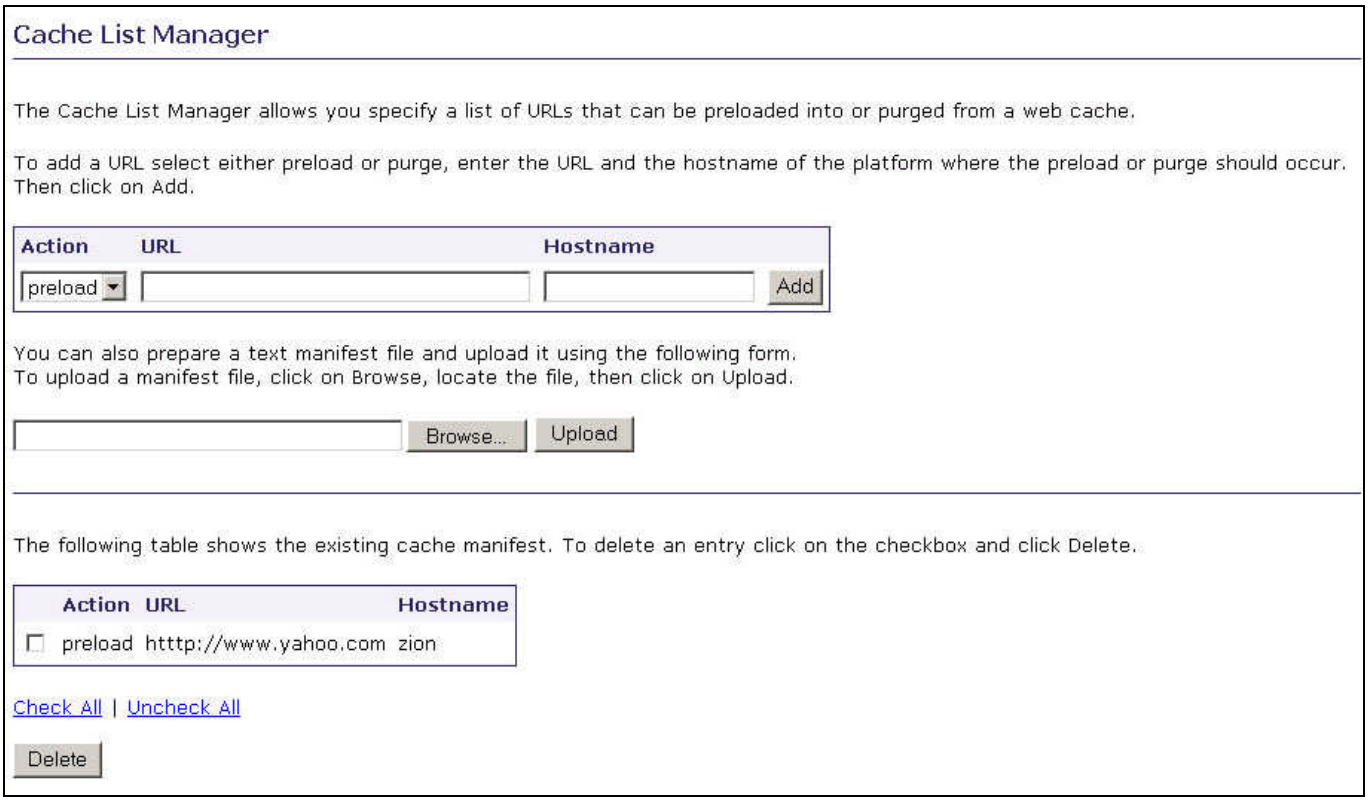
The `View Cache` page allows users to view the contents of the web cache on a VoiceGenie server, this includes both in memory and on disk cache. To view the cache contents select the desired platform from the drop down menu and click on either `View In Memory Cache` or `View All Cache`. `View In Memory Cache` shows all cached objects that reside in the web cache's memory. `View All Cache` shows all cached objects stored in memory as well as on disk.

Note: The results of `View All Cache` may take a long period of time to return since the result may consist of a large number of URLs.

The resulting page shows a listing of the cached objects along with a link that allows users to either reload the object or purge the object from the web cache.

5.3.3 Cache List Manager

The Cache List Manager allows users to specify a list of URLs that can be preloaded into, or purged from a web cache on a specified VoiceGenie server.



5.3.4 Adding URLs to the Cache List

To add a URL to the Cache List select either preload or purge from the drop down menu, enter the URL and the hostname of the platform where the preload or purge should occur, and then click on `Add` to add the URL to the cache list.

Also, users can prepare a text manifest file and upload it to the Cache List Manager; this is useful for adding a number of URLs at once. The text file should contain one line per cache list entry where each value, `Action, URL` and `Hostname,` is delimited by a space. The following is an example of the contents of the text file.

```
preload http://www.yahoo.com cmpdev.voicegenie.com
purge http://www.google.com cmpdev.voicegenie.com
...
```

5.3.5 Deleting URLs from the Cache List

To delete an entry from the Cache List click on the checkbox next to the URL in the Cache List and click on the `Delete` button. Multiple entries can be deleted at a time.

5.3.6 Purging and Preloading Cache List Entries

To perform the purges and preloads defined in the Cache List Manager go the `Perform Preload/Purge` page in the `Web Cache` section. Click on the VoiceGenie servers where either preloads or purges need to be carried out. Then click on either the `Preload` or `Purge` button depending on the task you wish to carry out. The resulting page will show the outcome of the operation, including what cache objects were purged or preloaded and the result of the action.

5.3.7 View Access Log

The `View Access Log` page allows users to view the access logs of the web cache. This includes the URLs that were accessed and the results of the web fetch. The logs can be filtered by a set of words or a phrase. These logs are useful for debugging.

5.3.8 View Event Log

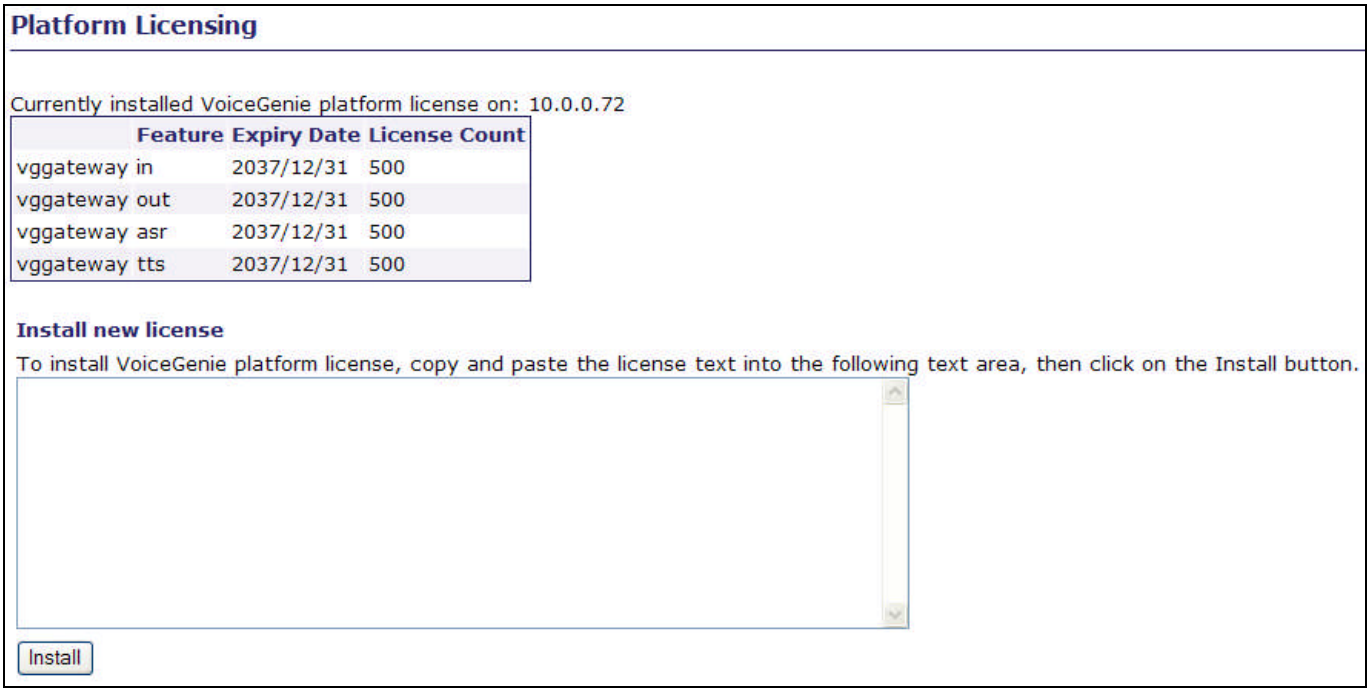
The `View Event Log` page allows users to view the event logs of the web cache. This includes when the web cache was restarted and any event that took place during execution. These logs are useful for debugging.

5.4 Platform Licensing

This section allows users to view the VoiceGenie license on a machine as well as upload a new license to a machine.

5.4.1 Checking/Viewing the License

To view the license on a platform select it from the drop down list and click on `Continue`. The screenshot below shows the results when a valid license is found:



The table at the top shows how many ports are licensed as well as the expiry date.

5.4.2 Uploading/Updating the License

To upload a new license copy and past the contents of the license file into the text box and click on the `Install` button.

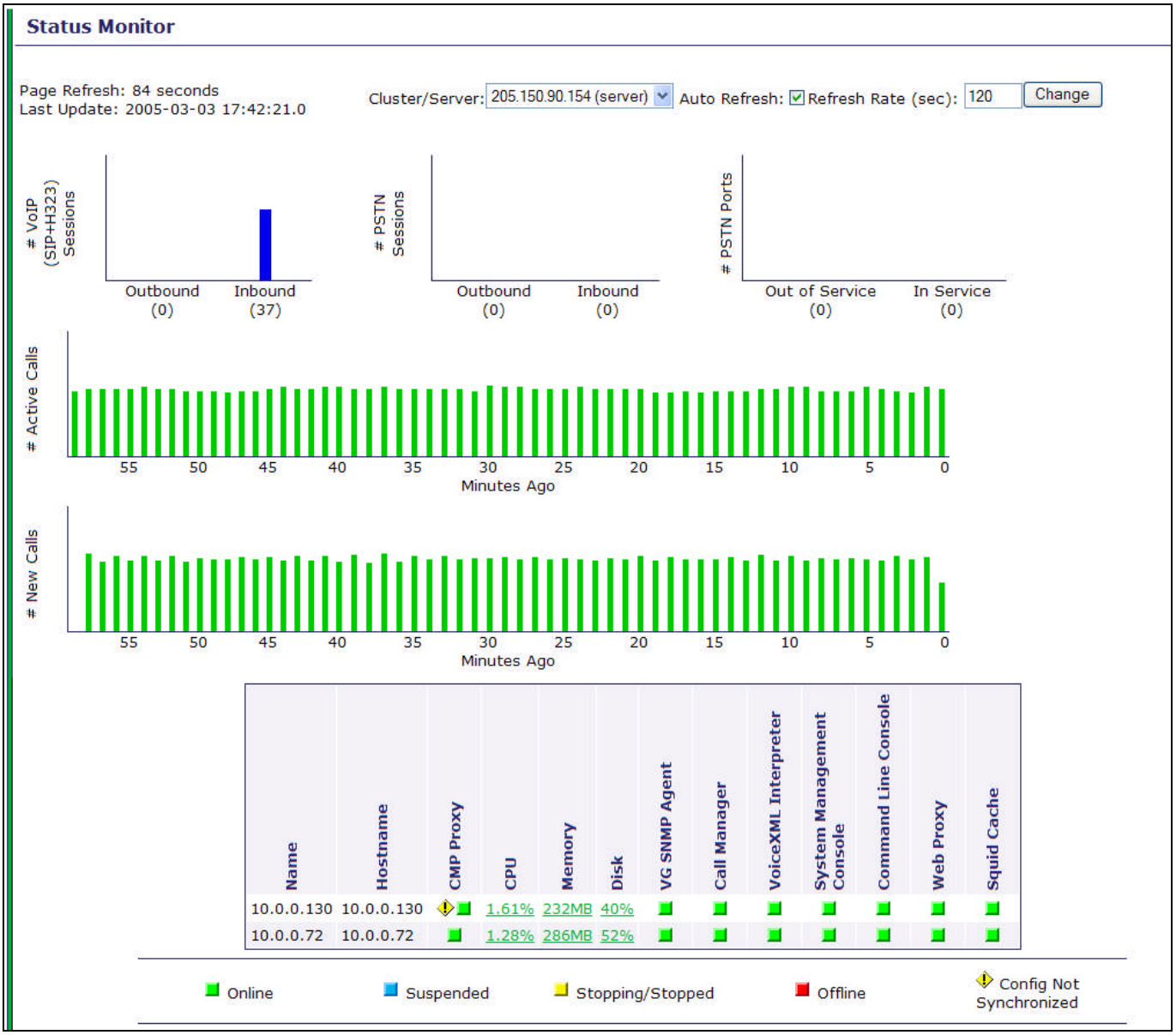
Chapter

6 Monitoring

The `Monitoring` section of the System Management Console allows users to monitor the status of the various clusters, servers and components that are connected to the CMP infrastructure. Also, users can generate historical reports and view call log metrics data.

6.1 Status Monitor

The Status Monitor provides a one page overall status view of all OA&M Framework managed servers. This page provides a good overall status of the cluster.



The colored bar on the left side of the page changes color if any components in the cluster are `Offline, Suspended` or `Stopping/Stopped.` Components that are in the state of `Stopping/Stopped` are external agent components and show the status of third party software. Examples of external agent components are Squid, TTS Clients, ASR Clients, TTS Servers and ASR Servers.

The `Status Monitor` page can be set to refresh automatically on a periodic basis. The refresh rate can be adjusted by editing the `Refresh Rate` value and clicking `Change.` A countdown until the next page refresh is shown at the top left of the page, while the last time the page was refreshed is shown on the top left. The `Cluster/Server` dropdown determines what cluster or server the

view is representing, this can be useful to drill down on the data for a particular server or cluster.

The next part of the page shows a number of graphs. The top graphs are the current number of VoIP session (inbound and outbound) on the platform as of the `Last Update` time, the current number of PSTN sessions (inbound and outbound) on the platform as of the `Last Update` time, and the current number of PSTN ports that are in service or out of service.

The next two graphs show the number of active sessions sampled on a one minute basis, and the number of new sessions per minute for the last hour.

The next section contains a table that shows the `Online/Suspended/Stopping/Stopped/Offline` status of every component managed by the OA&M Framework. Each row shows the overall status of a VoiceGenie machine, this includes average CPU utilization, overall memory utilization, disk usage, and component status, which is represented by a colored light.

Notes: The status `Online/Suspended/Stopping/Offline` status shown throughout the SMC is based on information received by the CMP Server and CMP Proxy. If the CMP Server or CMP Proxy on a given machine is not functional, the information shown will not be correct.

The disk usage percentage shown is the largest percentage used on any local partition on a platform; to get more detail click on the disk usage to see the usage percentage for all local partitions. Also, the CPU usage is the user time plus the system time.

In addition, the status of configuration changes can be seen from this view. If the configuration used by a particular component has been changed and the change can not take effect at runtime, a warning symbol will be present. This indicates that this component should be restarted so that the latest configuration is used.

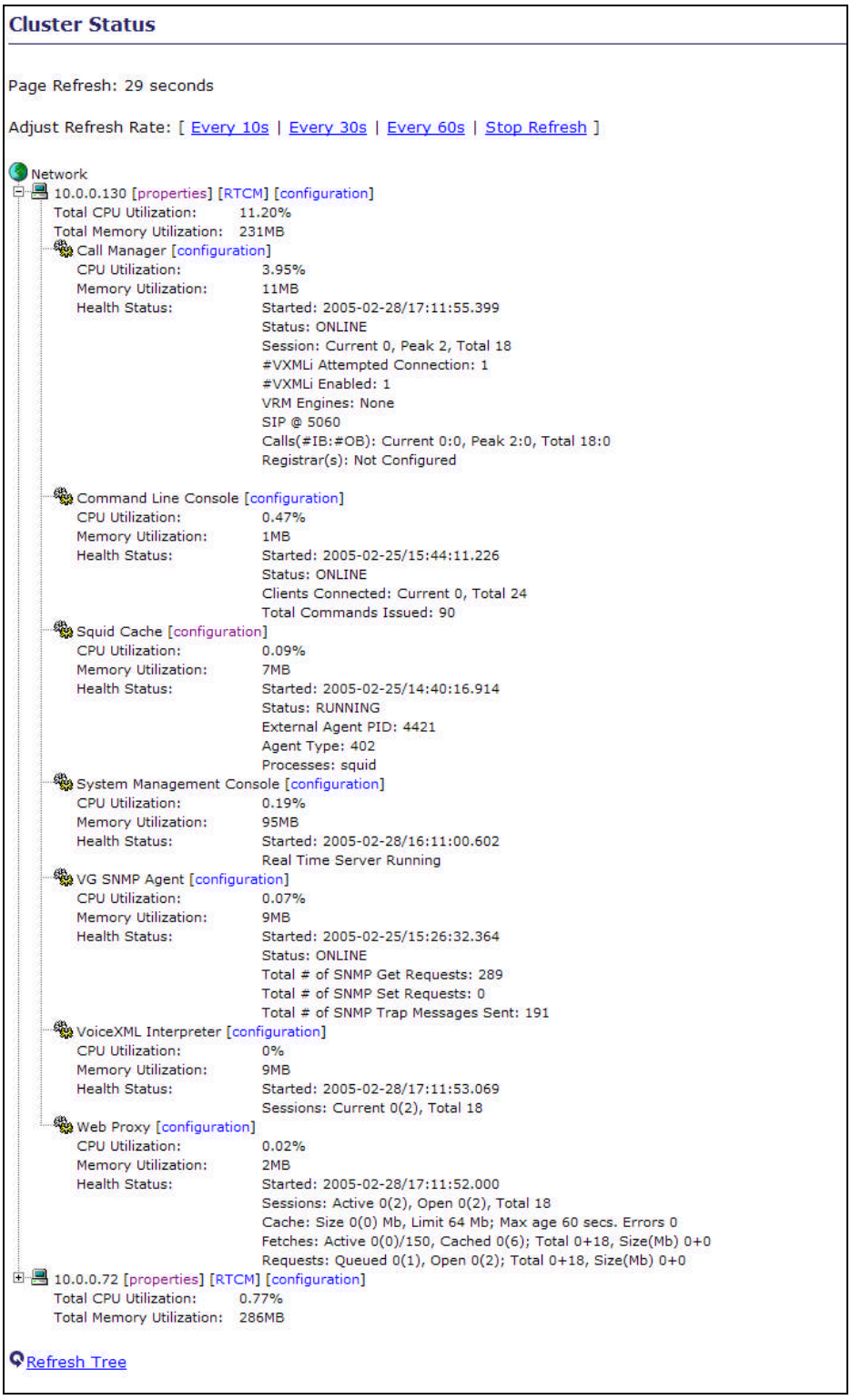
Clicking on any of the values (CPU, memory and disk usage) presents the user with more detailed information about the status of the server.

Clicking on any of the colored lights presents the user with the most recent health information of that particular component. The contents of the health information are component specific.

6.2 Cluster Status

The `Cluster Status` page shows similar information to the `Status Monitor` page. On the `Cluster Status` page the network is represented as a collapsible tree of clusters, servers and server components. Also, all recent health information is shown on one page.

Much like the `Status Monitor` page, the refresh rate of the page can be adjusted. Also, the tree representation can be refreshed by clicking on the `Refresh Tree` link at the bottom of the page. This is necessary if the network tree has changed while the `Cluster Status` page has not reloaded.

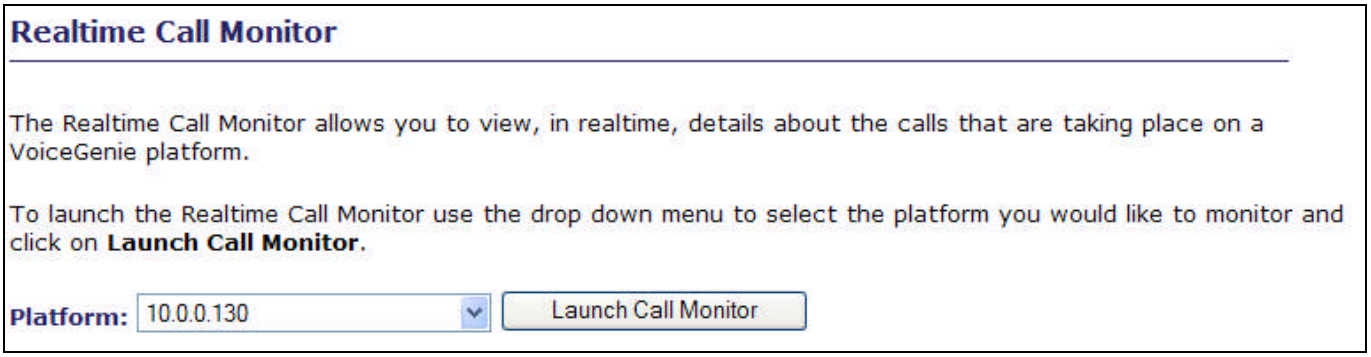


Each component has a `[configuration]` link next to it; this is a link to the configuration of that component. Also, each server has a `[RTCM]` link next to it; clicking this link launches the Realtime Call Monitor for that server. In

addition, the [properties] link takes the user to the Server Properties page. Under each server the latest information about server CPU and memory utilization is displayed. Also, under each component the CPU and memory utilization of that component, along with its health status is displayed.

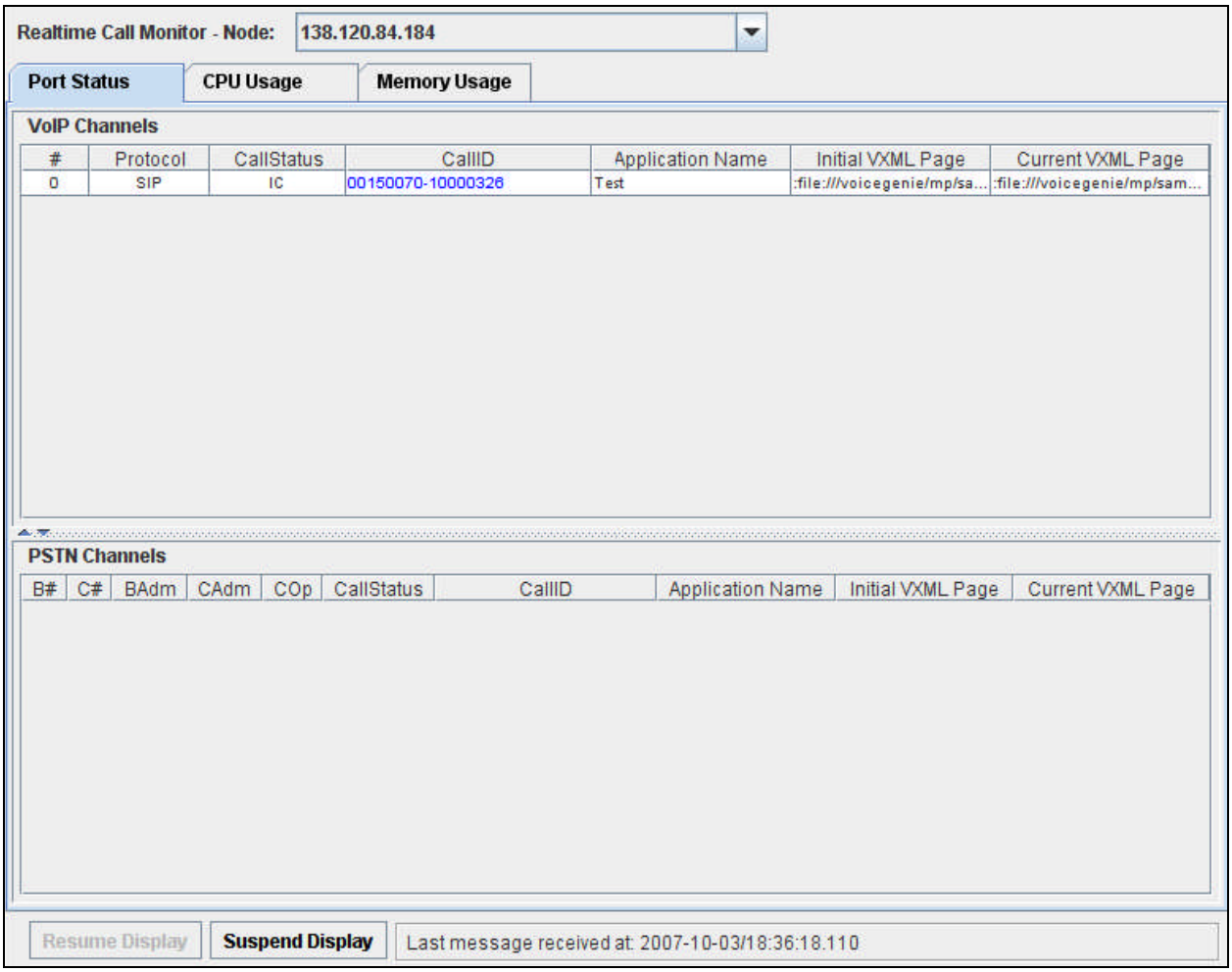
6.3 Realtime Call Monitor (RTCM)

The Realtime Call Monitor (RTCM) is a Java applet that shows the real-time status of the channels on a VoiceGenie server. This includes what boards exists, what channels are present, their administrative and operational status, the callID of any calls in progress as well as the application name, initial URL and current URL of the call. To launch the Realtime Call Monitor select the VoiceGenie platform from the drop down list and click on Launch Call Monitor.



The Realtime Call Monitor connects to a Realtime Call Monitor (RTCM) Server on the SMC server. The RTCM Server is responsible for sending real-time status updates.

The following is a screen shot of the Realtime Call Monitor.



At the top of the RTCM is a drop down box that can be used to change what server is being monitored by the RTCM. Under this drop down box are three tabs, `Port Status`, `CPU Usage` and `Memory Usage`.

The `Port Status` tab shows a real time display of the port status, this includes both VoIP channels as well as PSTN channels. For VoIP channels the channel number (`C#`), the protocol (i.e. `SIP` or `H323`), and the call status is displayed, as well as the call ID, application name, initial VXML page and current VXML page if a call is in progress. For PSTN channels the board number (`B#`), the channel number (`C#`), board administrative status (`BAdm`), channel administrative status (`CAdm`), channel operating status (`COp`), and the call status is displayed, as well as the call ID, application name, initial VXML page and current VXML page if a call is in progress. Clicking on the call ID will show the detailed information about that call.

Notes: The last change in call status on either VoIP or PSTN is always highlighted in blue.

Valid `BAdm` and `CAdm` status' are `D` = `Duplex`, `I` = `Inbound`, `O` = `Outbound` and `X` = `Disabled`, valid `COp` status' are `D` = `Duplex`, `I` = `Inbound`, `O` = `Outbound`, `X` = `Disabled` and `E` = `Error`.

Valid `Call Status` values are `NO` = `No Call in Progress`, `II` = `Inbound Initiated`, `IC` = `Inbound Connected`, `OI` = `Outbound Initiated`, `OC` = `Outbound Connected`.

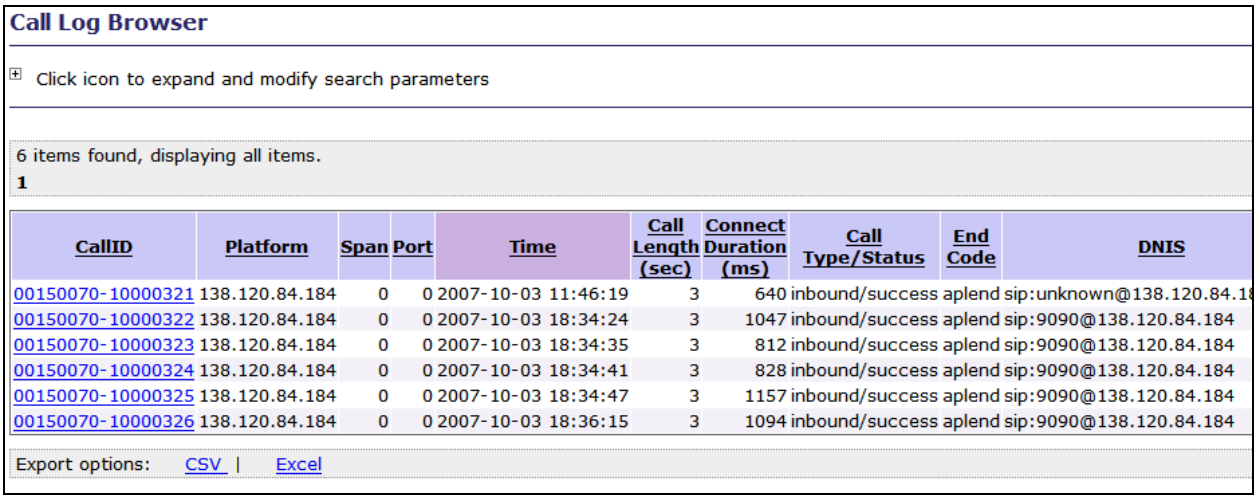
The RTCM will not function if the CMP Server or CMP Proxy is not operating correctly.

The `CPU Usage` tab shows a graph of the overall average system CPU usage as well as the average CPU usage of all server components. It is updated every heartbeat interval, which is 20 seconds by default.

The `Memory Usage` tab shows a graph of the system memory usage as well as the memory usage of all server components. It is updated every heartbeat interval, which is 20 seconds by default.

6.4 Call Log Browser

The Call Log Browser allows users to browse through the call logs that are being logged to the database. Users can search these logs by time, by cluster or by server. The following is a screenshot with the result of a search:



Call Log Browser

Click icon to expand and modify search parameters

6 items found, displaying all items.
1

CallID	Platform	Span	Port	Time	Call Length (sec)	Connect Duration (ms)	Call Type/Status	End Code	DNIS
00150070-10000321	138.120.84.184	0	0	2007-10-03 11:46:19	3	640	inbound/success	aplend	sip:unknown@138.120.84.1
00150070-10000322	138.120.84.184	0	0	2007-10-03 18:34:24	3	1047	inbound/success	aplend	sip:9090@138.120.84.184
00150070-10000323	138.120.84.184	0	0	2007-10-03 18:34:35	3	812	inbound/success	aplend	sip:9090@138.120.84.184
00150070-10000324	138.120.84.184	0	0	2007-10-03 18:34:41	3	828	inbound/success	aplend	sip:9090@138.120.84.184
00150070-10000325	138.120.84.184	0	0	2007-10-03 18:34:47	3	1157	inbound/success	aplend	sip:9090@138.120.84.184
00150070-10000326	138.120.84.184	0	0	2007-10-03 18:36:15	3	1094	inbound/success	aplend	sip:9090@138.120.84.184

Export options: CSV | Excel

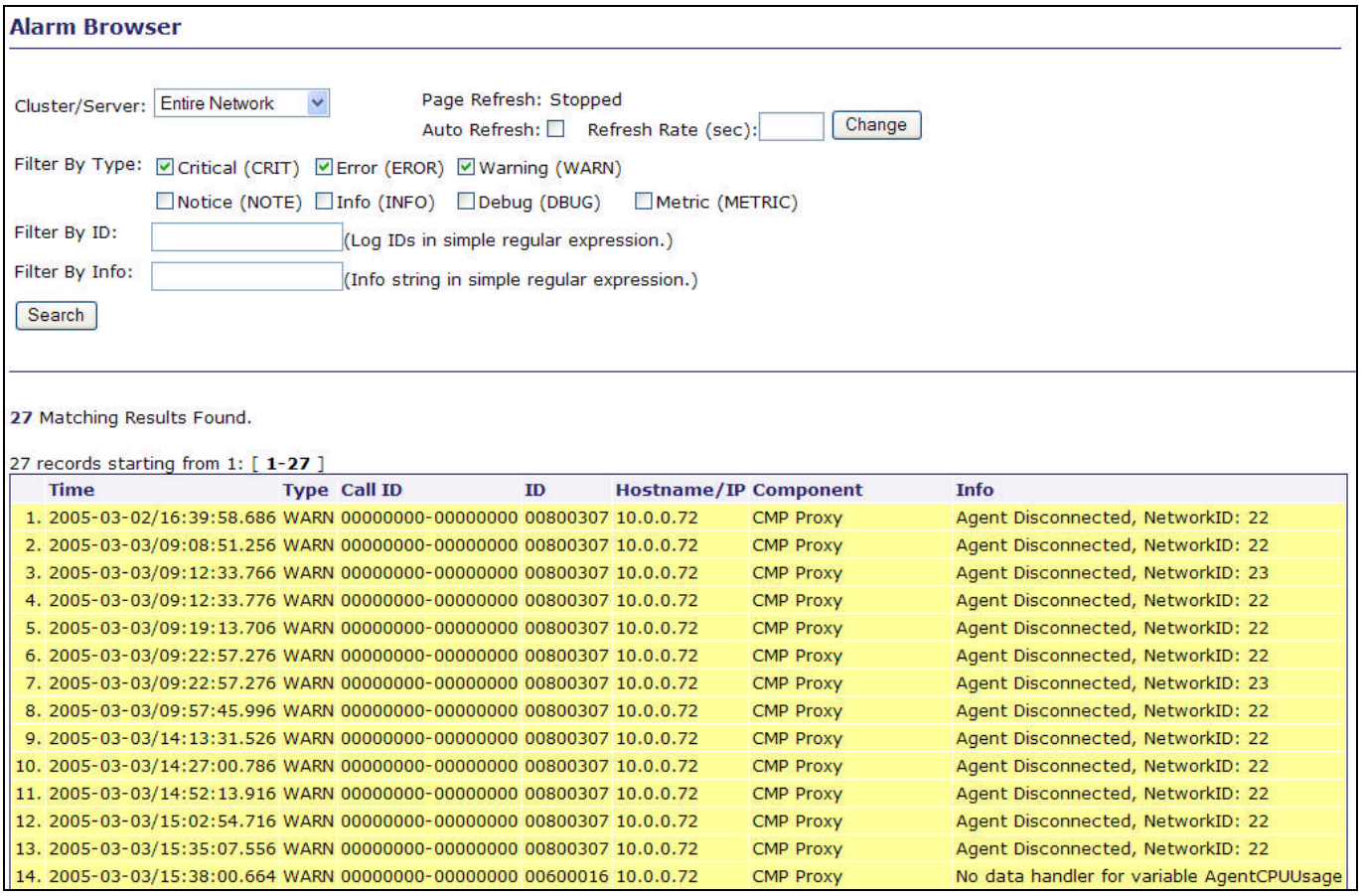
Each row in the results table is a call details record. The callID of the call, the server that the call occurred on, the span, the port, the start time of the call, the call length, connect duration, call type/status, end code, DNIS, ANI and initial URL are listed. Users can click on the callID of a call to get more detailed information. The call detail information consists of the metrics data that is logged to the database, typically this consists of the start and end information

as well as the application name being accessed and the URLs visited during call execution. To increase the amount of metrics data logged users can change configuration of the CMP Proxy and CMP Server to direct more metrics data to the database.

Note: By default, only 24 hours of call detailed information is kept in the database while 7 days of high level call detail records are kept in the database.

6.5 Alarm Browser

The Alarm Browser allows users to view all detailed logging and alarming data that is logged into the database. This includes any alarms (i.e. `Critical`, `Error`, `Warning`), any general logs (`Notice`, `Info`, `Debug`) and call metrics information. The following is a screenshot of the Alarm Browser:



	Time	Type	Call ID	ID	Hostname/IP	Component	Info
1.	2005-03-02/16:39:58.686	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
2.	2005-03-03/09:08:51.256	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
3.	2005-03-03/09:12:33.766	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 23
4.	2005-03-03/09:12:33.776	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
5.	2005-03-03/09:19:13.706	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
6.	2005-03-03/09:22:57.276	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
7.	2005-03-03/09:22:57.276	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 23
8.	2005-03-03/09:57:45.996	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
9.	2005-03-03/14:13:31.526	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
10.	2005-03-03/14:27:00.786	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
11.	2005-03-03/14:52:13.916	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
12.	2005-03-03/15:02:54.716	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
13.	2005-03-03/15:35:07.556	WARN	00000000-00000000	00800307	10.0.0.72	CMP Proxy	Agent Disconnected, NetworkID: 22
14.	2005-03-03/15:38:00.664	WARN	00000000-00000000	00600016	10.0.0.72	CMP Proxy	No data handler for variable AgentCPUUsage

Users can search the logs using the various search criteria. The search criteria include the cluster or server from where the log was created, the type of log (i.e. `Critical`, `Error`, `Warning`, `Notice`, `Info`, `Debug` or `Metric`), the Log ID of the log or by text in the info field. Note that this page can be set to

be refreshed if desired. In general this is a good place to check for alarms and for system and service impacting conditions.

The color of the row in the results table signifies the severity of the logged event. The events are color coded by severity as follows:

Color	Severity
	Critical
	Error
	Warning
	Notice
	Information
	Debug
	Metrics

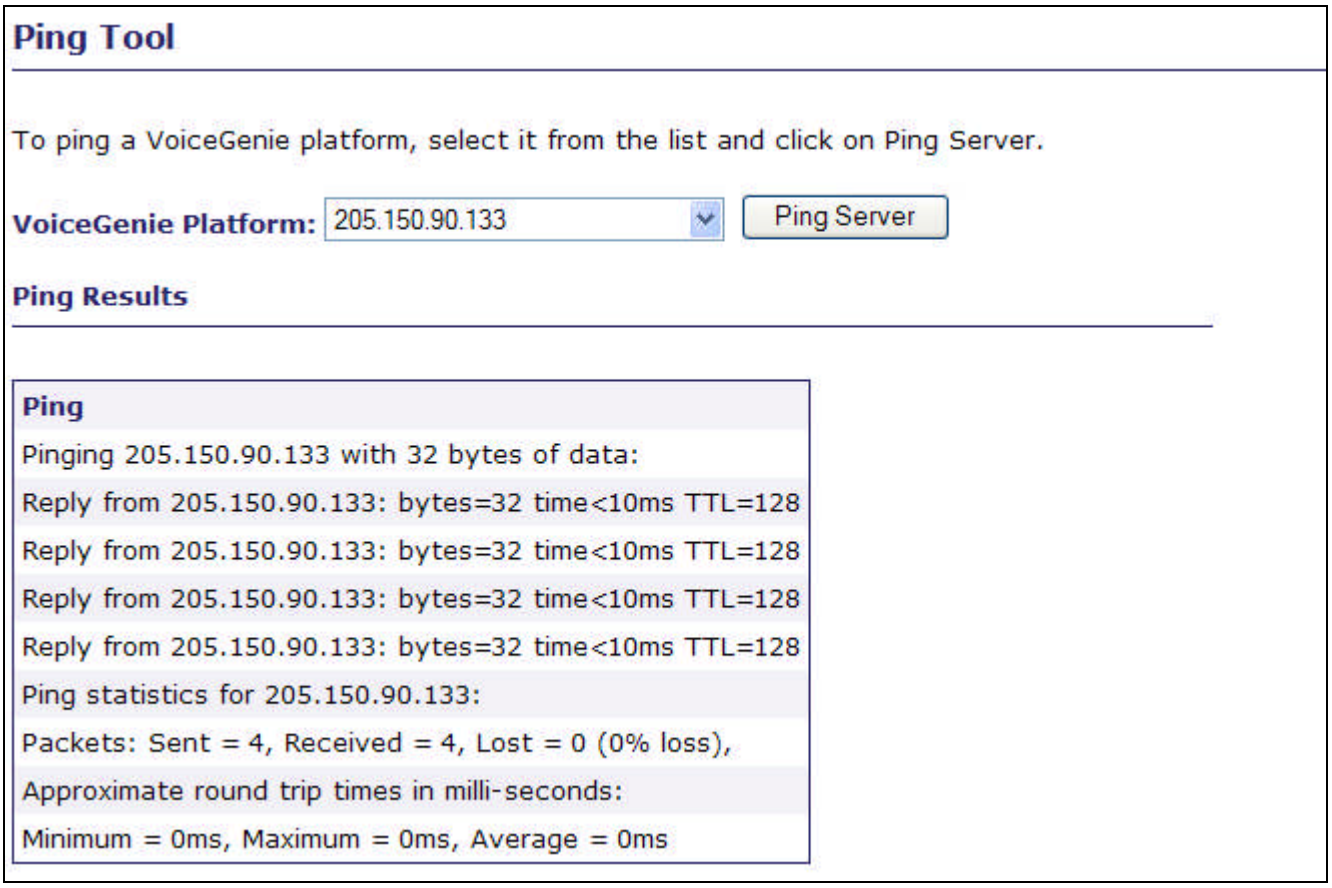
Also, each event has a timestamp for time at which the event occurred, the type (i.e. severity), the associated callID if one exists, the Log ID of the log (this value is a hexadecimal value), the source IP of the log, the source component of the log and the information text.

6.6 Diagnostic Tools

The `Diagnostic tools` section contains two tools, Ping Tool and SNMP Walk Tool that can be used to get more information about the status of the VoiceGenie servers.

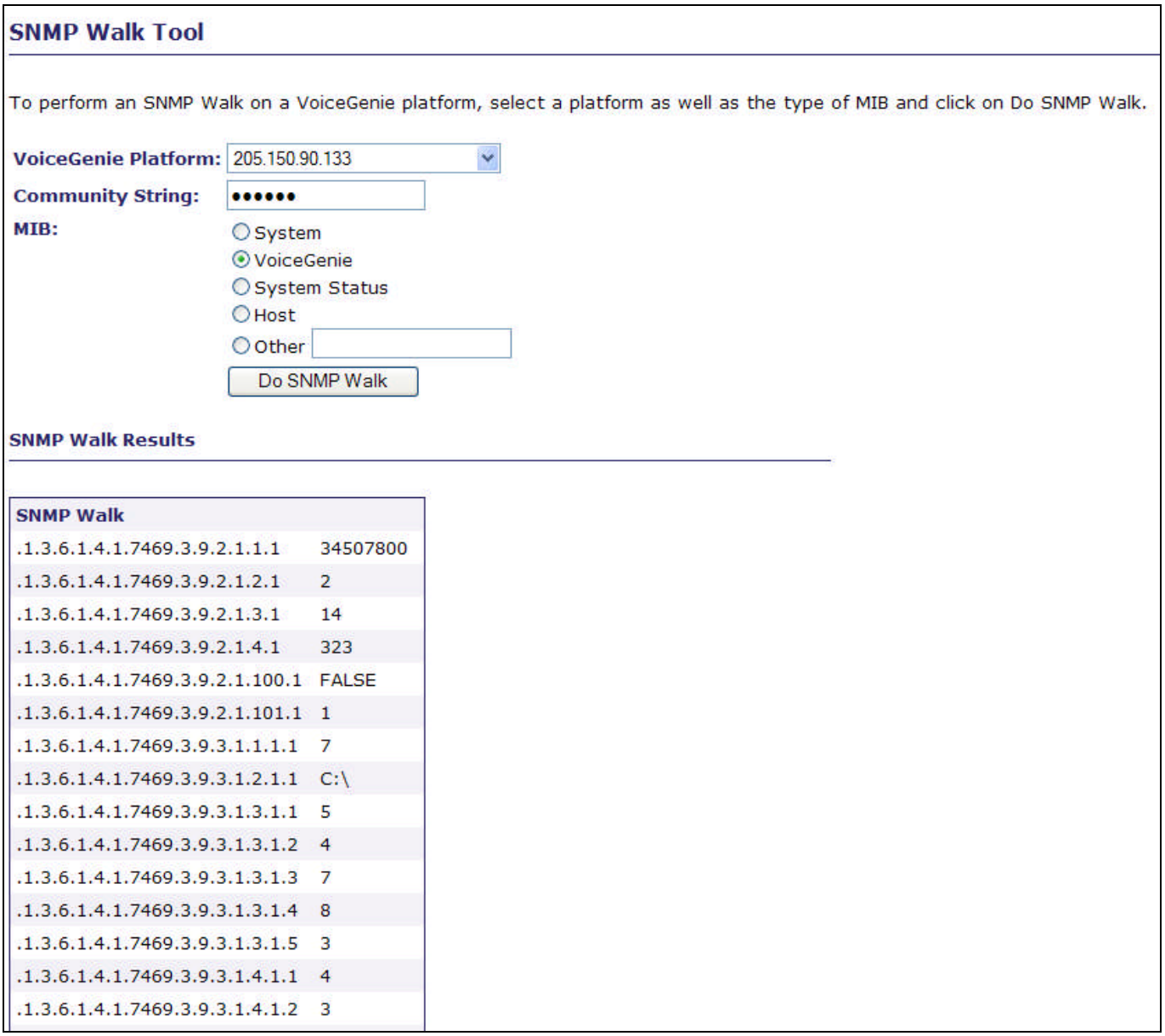
6.6.1 Ping Tool

The Ping Tool allows you to ping a VoiceGenie server from the SMC and see the results of the ping. This is useful for quickly checking that the platform has network connectivity. The following is a screenshot:



6.6.2 SNMP Walk Tool

The SNMP Walk Tool can be used to perform a SNMP walk on a particular platform with a selected MIB. Four MIBs are available, System, VoiceGenie, System Status and Host. Also, others can be specified using an OID or a keyword. The following is a screenshot:



SNMP Walk Tool

To perform an SNMP Walk on a VoiceGenie platform, select a platform as well as the type of MIB and click on Do SNMP Walk.

VoiceGenie Platform: 205.150.90.133

Community String: ••••••

MIB:

- System
- VoiceGenie
- System Status
- Host
- Other

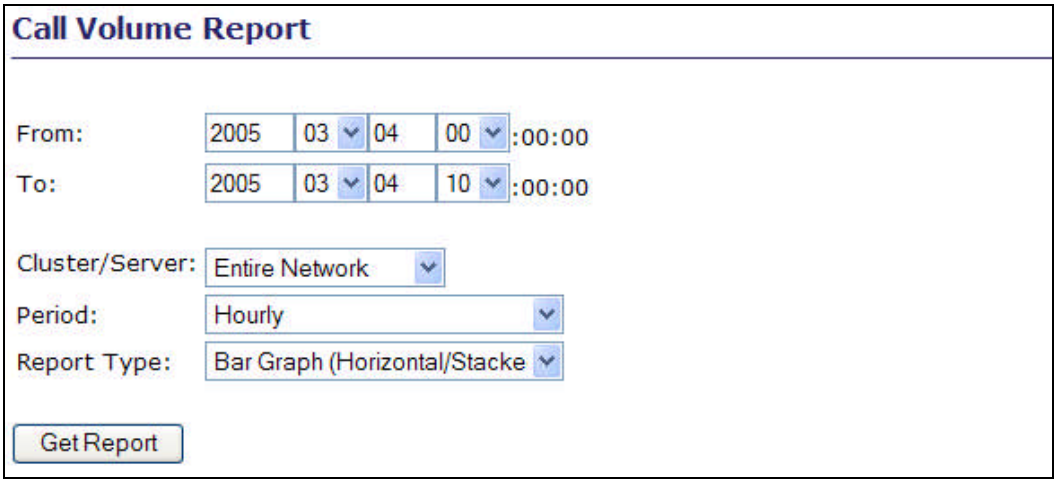
Do SNMP Walk

SNMP Walk Results

SNMP Walk	
.1.3.6.1.4.1.7469.3.9.2.1.1.1	34507800
.1.3.6.1.4.1.7469.3.9.2.1.2.1	2
.1.3.6.1.4.1.7469.3.9.2.1.3.1	14
.1.3.6.1.4.1.7469.3.9.2.1.4.1	323
.1.3.6.1.4.1.7469.3.9.2.1.100.1	FALSE
.1.3.6.1.4.1.7469.3.9.2.1.101.1	1
.1.3.6.1.4.1.7469.3.9.3.1.1.1.1	7
.1.3.6.1.4.1.7469.3.9.3.1.2.1.1	C:\
.1.3.6.1.4.1.7469.3.9.3.1.3.1.1	5
.1.3.6.1.4.1.7469.3.9.3.1.3.1.2	4
.1.3.6.1.4.1.7469.3.9.3.1.3.1.3	7
.1.3.6.1.4.1.7469.3.9.3.1.3.1.4	8
.1.3.6.1.4.1.7469.3.9.3.1.3.1.5	3
.1.3.6.1.4.1.7469.3.9.3.1.4.1.1	4
.1.3.6.1.4.1.7469.3.9.3.1.4.1.2	3

6.7 Historical Reports & Charts

This section allows users to produce historical reports about various call and platform related statistics including call volume, call length distribution, application distribution and process status. Each report generator allows filtering and grouping on a number of different criteria. Also, the raw data used to produce the charted results can easily be exported in comma separated (csv) format for post processing. The following is an example of the report generator:



Note: The reports generated by the SMC have a limited number of unique colors. As a result, all graphed values in the generated reports may not have unique colors; some colors may be used multiple times. To determine what item is graphed in a generated report it may be necessary to look at the raw data.

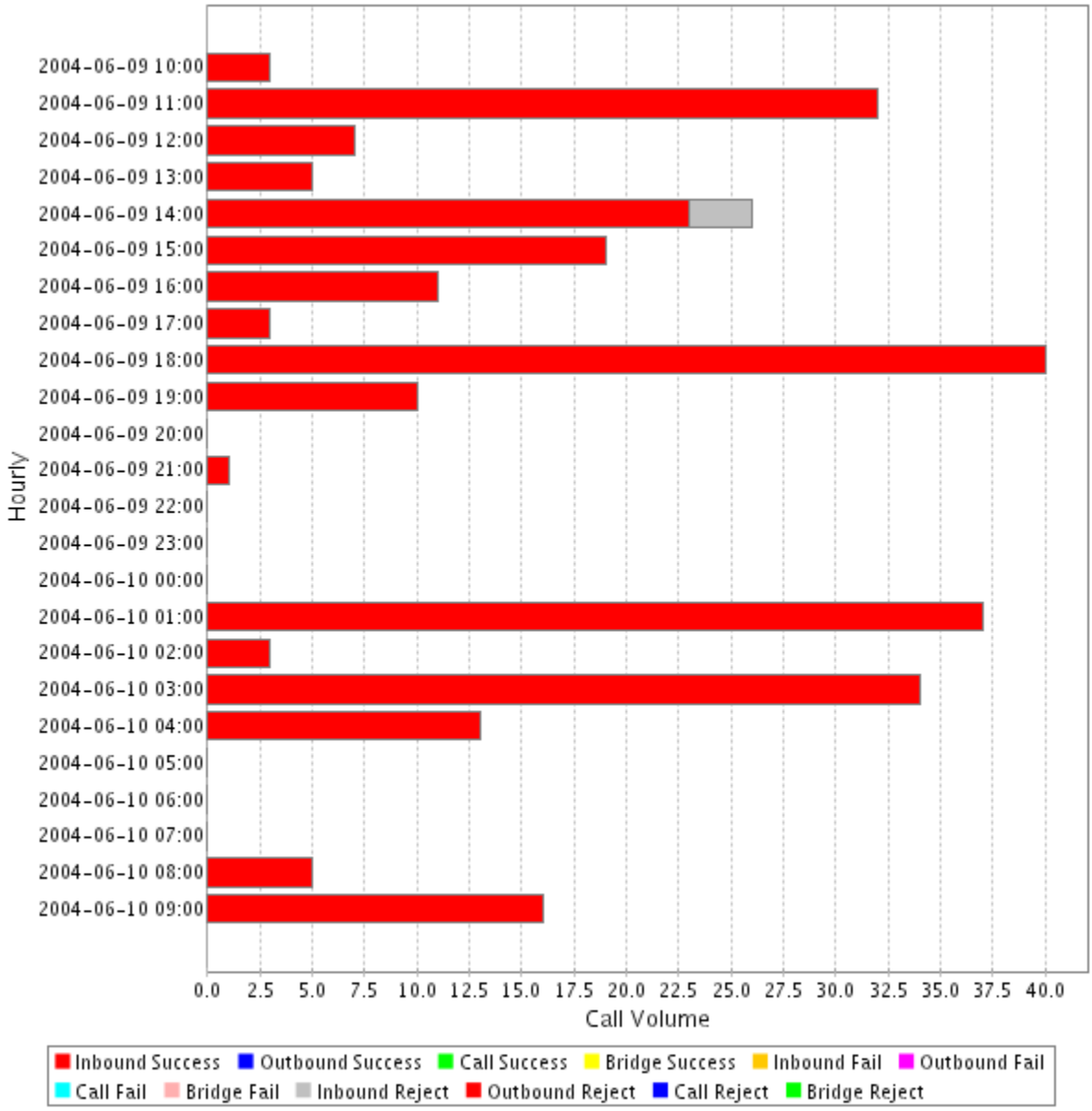
6.7.1 Call Volume Report

This report shows the volume of calls on a given cluster/server during a given time period. Filter criteria include time and cluster/server; results are grouped by time period (weekly, daily, and hourly) as well as call type and status. These call types and status are explained below:

Call Type/Status	Description
Inbound Success	A successful inbound call.
Inbound Reject	An unsuccessful inbound call, i.e. the call reached the platform but was rejected for a reason. To get more details look at the reject code in the Call Log.
Inbound Fail	An inbound call that ended with an error code.
Outbound Success	A successful outbound call. Call was initiated by Remote Dialer (remdial).
Outbound Reject	An unsuccessful outbound call, i.e. the call was not connected correctly. To get more details look at the reject code in the Call Log.
Outbound Fail	An outbound call that ended with an error code.

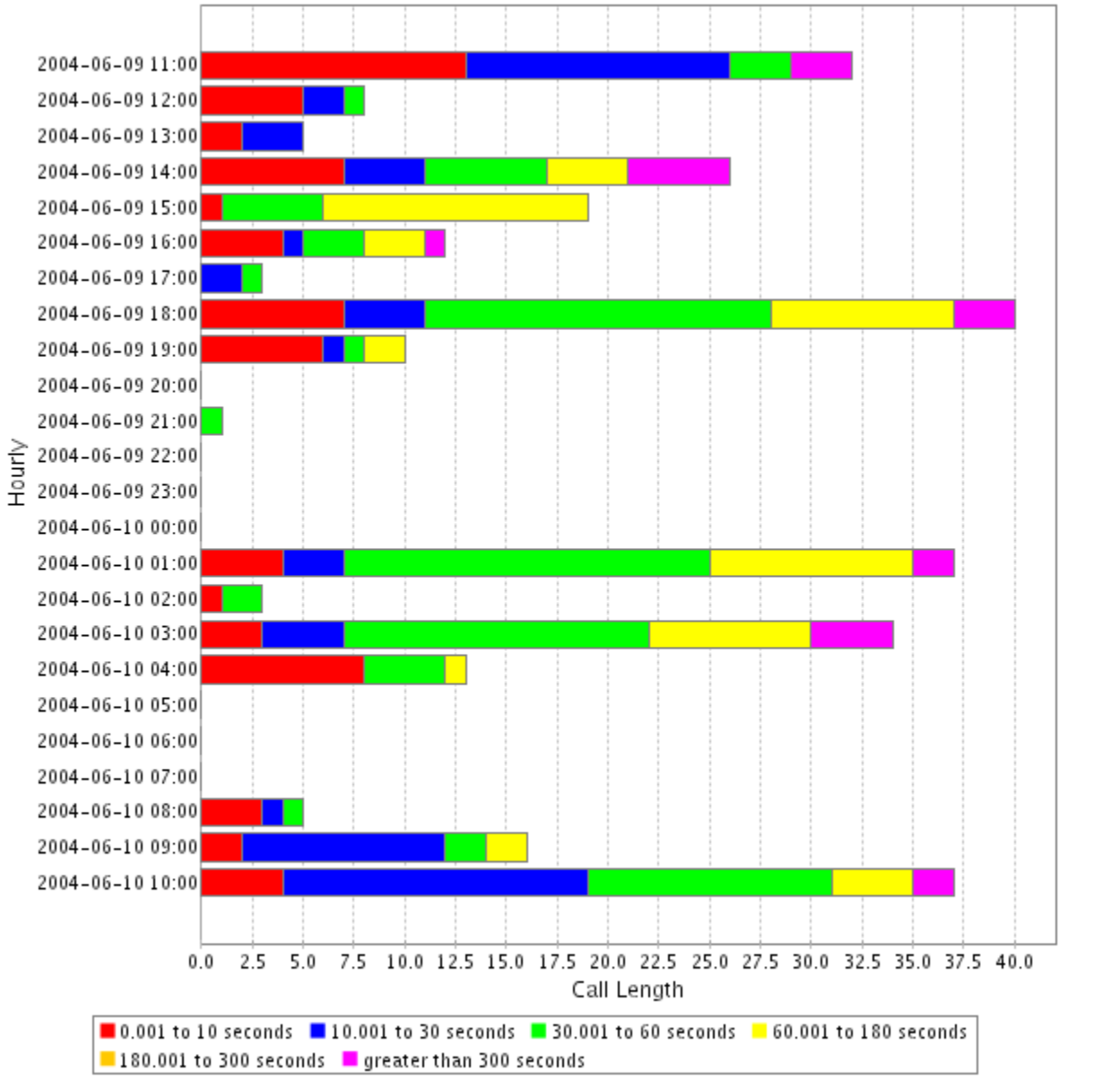
Call Type/Status	Description
Call Success	A successful call using the <call> tag in a VoiceXML page.
Call Reject	An unsuccessful <call> tag call, i.e. the call was not connected correctly. To get more details look at the reject code in the Call Log.
Call Fail	A call using the <call> tag that ended with an error code.
Bridge Success	A successful bridge call. A bridge call is initiated using the <transfer> tag.
Bridge Reject	An unsuccessful bridge call, i.e. the call was not connected correctly. To get more details look at the reject code in the Call Log.
Bridge Fail	A bridge call that ended with an error code.

The following is an example:



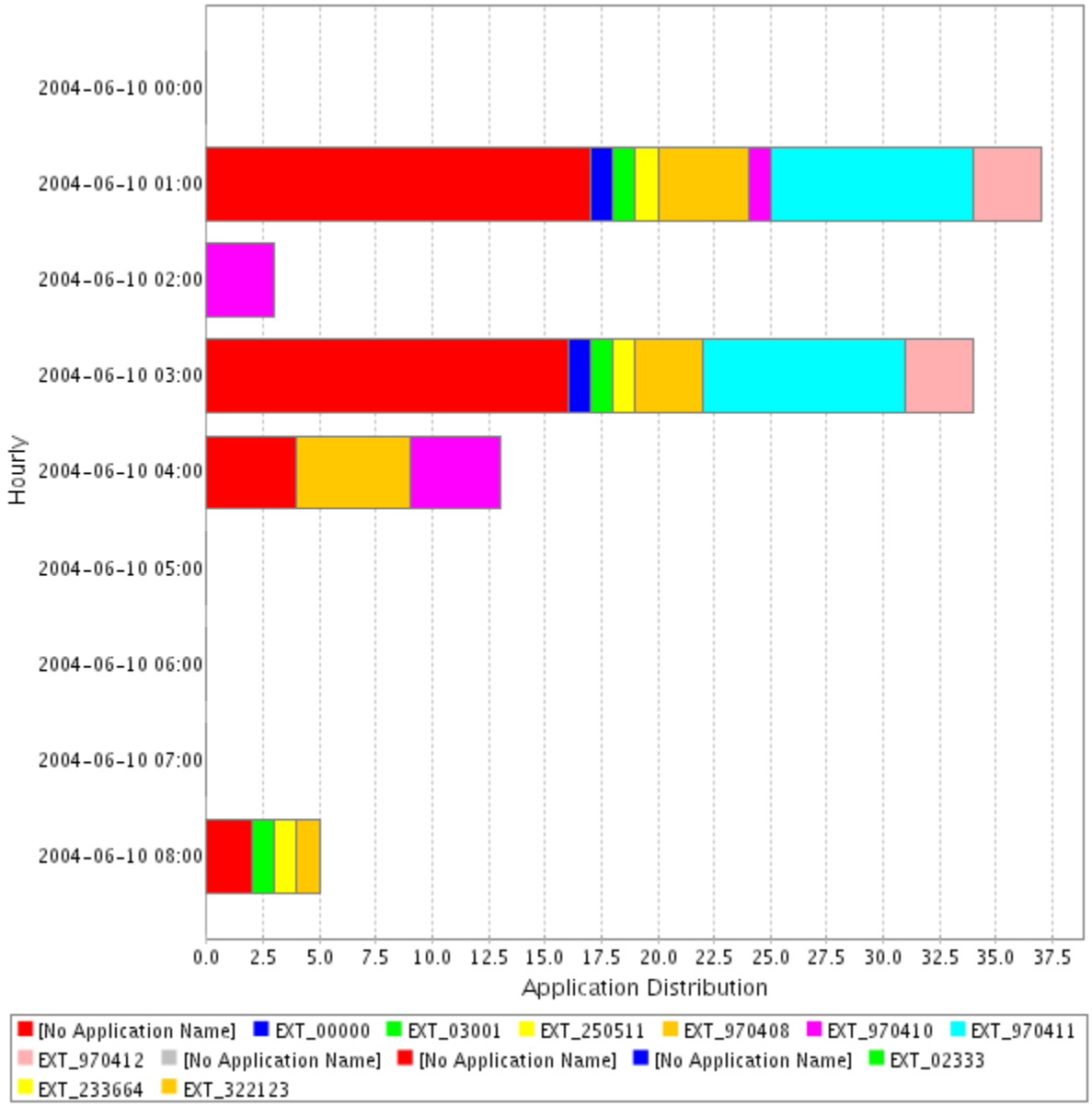
6.7.2 Call Length Distribution

This report shows the distribution of the length of the calls on a given cluster/server. Filter criteria include time and cluster/server, and results are grouped by call length. The call length groupings are defined in the `MetaData` table of the database. The following is an example:



6.7.3 Application Distribution

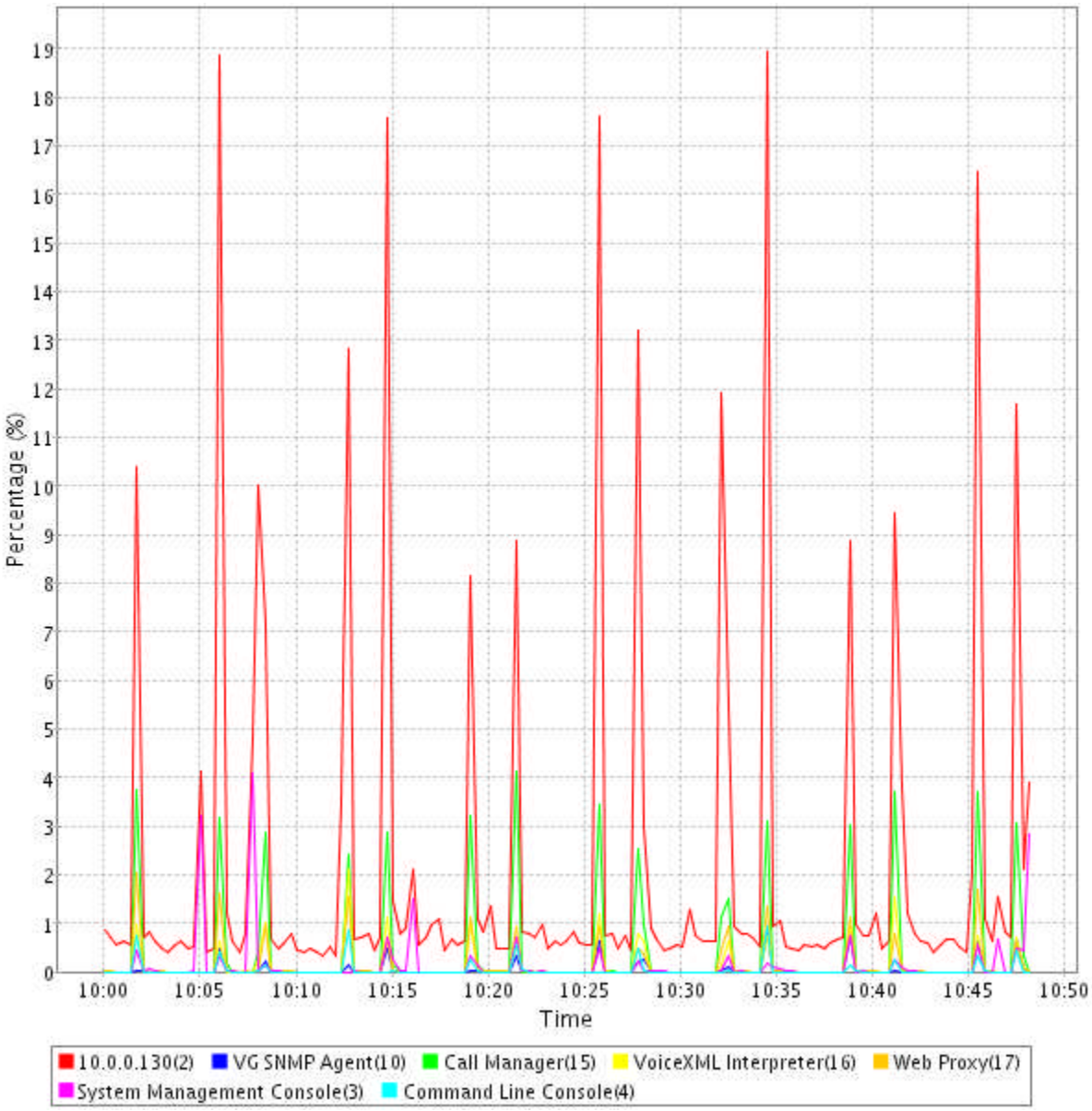
This report shows the number of times different applications are accessed. Filter criteria include time and cluster/server, and results are grouped by time period (weekly, daily, hourly) and application name. The following is an example:



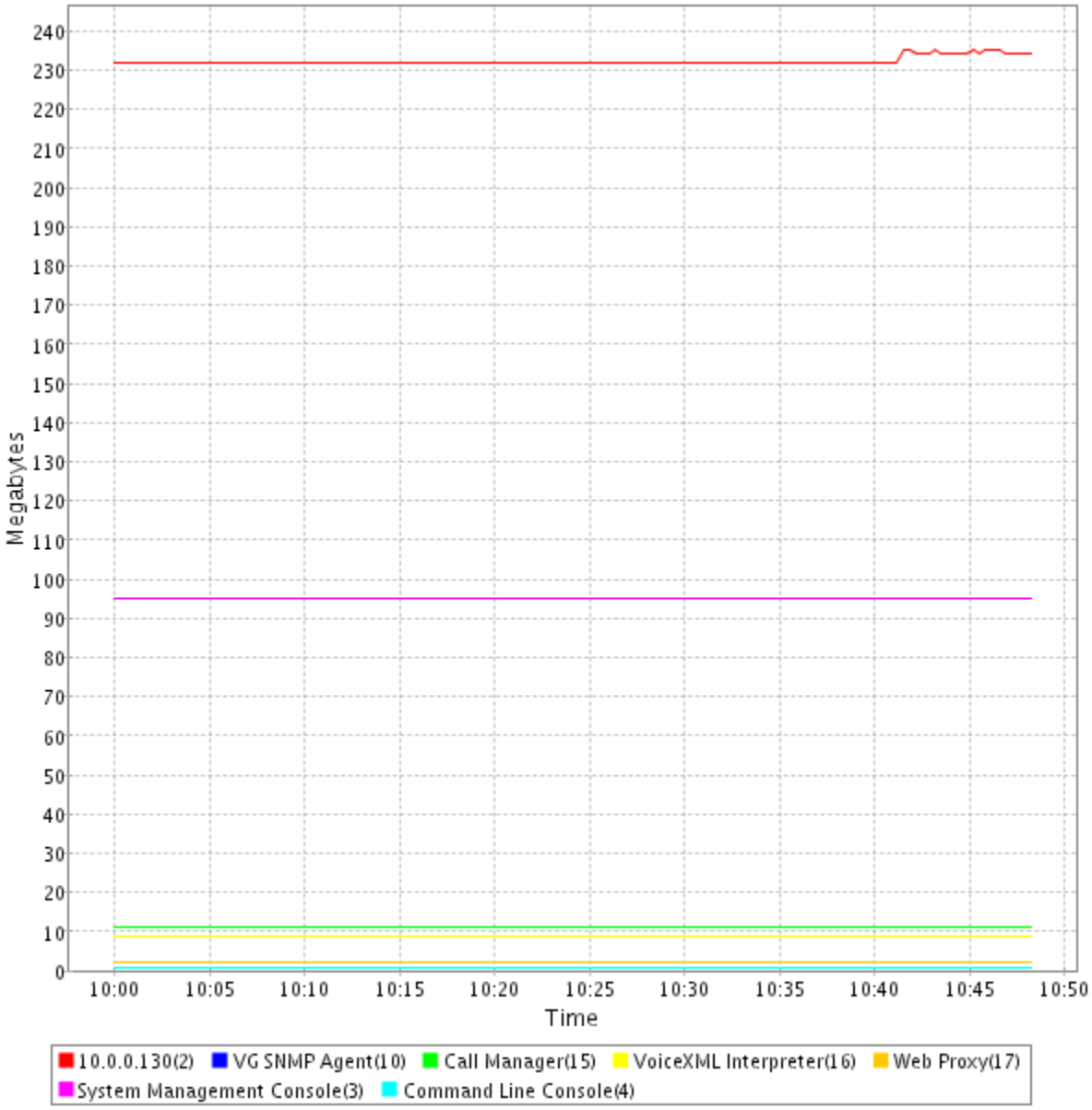
6.7.4 Process Status Report

This report shows CPU and memory usage statistics for servers and server components. Filter criteria include time and cluster/server, and results are grouped by component and CPU/memory usage. This report generator produces two charts one for CPU usage and another for memory usage.

The following is an example of CPU usage:



The following is an example of memory usage:



Note: By default, only 24 hours of usage data are kept in the database.

Revision History

Version	Date	Change Summary	Author/Editor
1	August 13th 2003	Initial release	Rakesh Tailor
	September 19th 2003	Updated configuration files in appendices. Update sections 2.1.1, 5.1, 7. Added 6.4 for Provisioning service.	Monti Ghai
	September 23rd 2003	Updated sections on SMC configuration as well as details on Hunt Groups and Dialing Rules.	Wen Wang
2	December 17th 2003	Updated document to reflect changes for CMP2.1.	Rakesh Tailor
3	March 2nd 2004	Updated document to reflect changes for CMP2.2	Rakesh Tailor
4	June 19th 2004	Added details for new features in CMP2.3, including Logging, Alarming and SNMP changes	Rakesh Tailor
5	February 28th 2005	Added details for new features in VoiceGenie 7.0.0	Rakesh Tailor
6	April 5th, 2005	Updates for final release.	Rakesh Tailor
7	February 27th, 2006	Updates for VoiceGenie 7.1	Rakesh Tailor
8	September 5th, 2006	Updates for VoiceGenie 7.1	Monti Ghai
9	September 21st, 2007	Updates for VoiceGenie 7.2	Wen Wang
10	March 5th, 2008	Updates for VoiceGenie 7.2.1	Wen Wang