

VOICEGENIE

VoiceGenie 7 MRCP Proxy Users' Guide

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Revision History

Version	Date	Change Summary	Author/Editor
0.1	March 23 rd , 2005	Initial release	Alex Lee Lin Chen Andrew Ho
1.0	April 13 th , 2005	Revised version for VoiceGenie 7 Release	Andrew Ho

1 Introduction

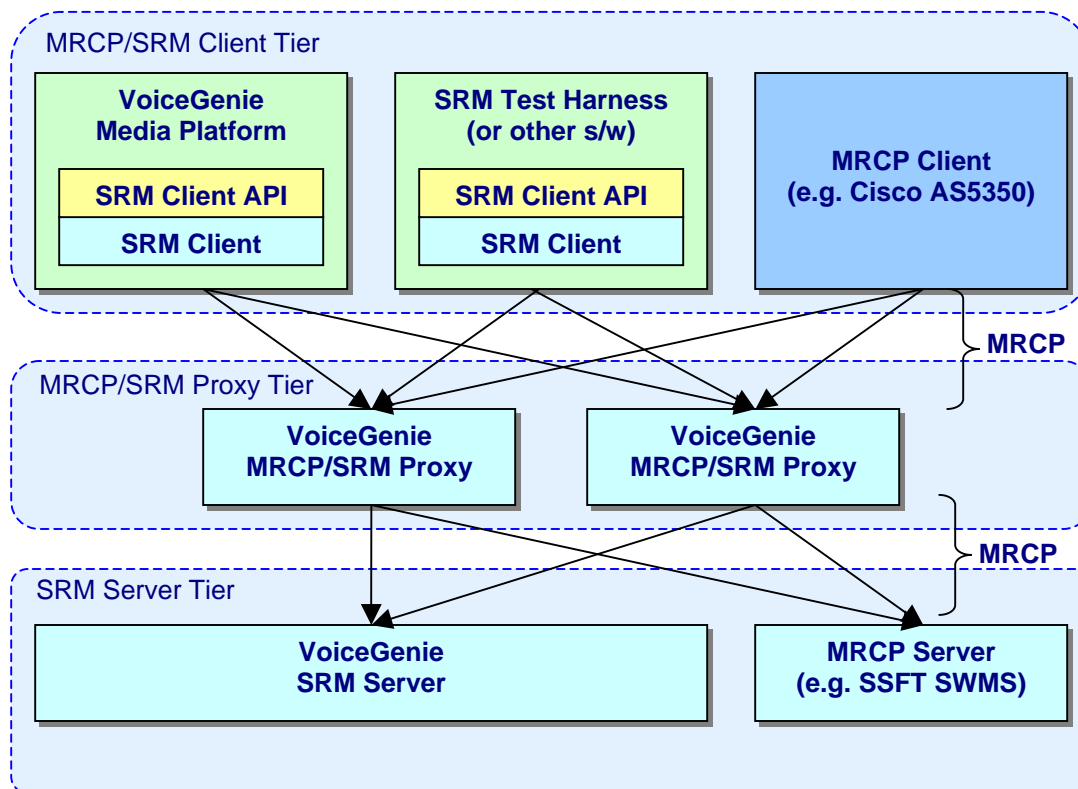
The MRCP Proxy (also known as the SRM Proxy) is a component for distributing and re-directing MRCP requests from many different clients to the many different servers. This allows more efficient use and sharing of the ASR/TTS resource between VoiceGenie media platforms, and also allows the use of resources managed by the MRCP Proxy by other MRCP-based clients.

Please see the [VoiceGenie 7 MRCP Proxy System Reference Guide](#) for general MRCP configuration parameters, metric/logging entries and alarm information.

1.1 Architecture Overview

The usage of MRCP Proxy is based on a three-tiered client/proxy/server model. Communication between each of the client, proxy, and server uses the open standard MRCP protocol rather than the proprietary messaging protocols. The SRM architecture is based on independent scaling of client, proxy, and server components based on load. Thus, the number of SRM clients is independent of the number of SRM proxies and the number of SRM servers. The capacity and number of each of the clients, proxies, and servers must naturally ensure sufficient resources for the intended application, but no fixed cardinality exists in the relationships between these three components.

The following diagram offers an architectural view of where the MRCP Proxy can be deployed in situations where ASR/TTS resources are required:



Although multiple MRCP proxies are not required, the proxy tier will generally consist of two or more proxies (for redundancy). The above architecture shows clients that are aware of multiple proxies; however, it is entirely possible that some devices will be capable of using only a single proxy.

1.2 MRCP Native and MRCP Direct

From the VoiceGenie Media Platform's point of view (which by itself is a MRCP Client), accessing Speech Resources are always via MRCP. However, since not all Speech Resources are fully MRCP compliance, there are two approaches, **MRCP Native** and **MRCP Direct**.

Fig. 1 illustrates MRCP direct integration architecture. The SRM server is essential when the 3rd party Speech Resource products are not MRCP compliance. The communication between the SRM client and the SRM server are based on MRCP protocol while the communication between SRM server and Speech Resources are based on vendor's proprietary protocol. We name such integration as MRCP Native. Fig.2 illustrates the architecture of the MRCP Native integration.

Fig. 1 MRCP Direct Integration Architecture

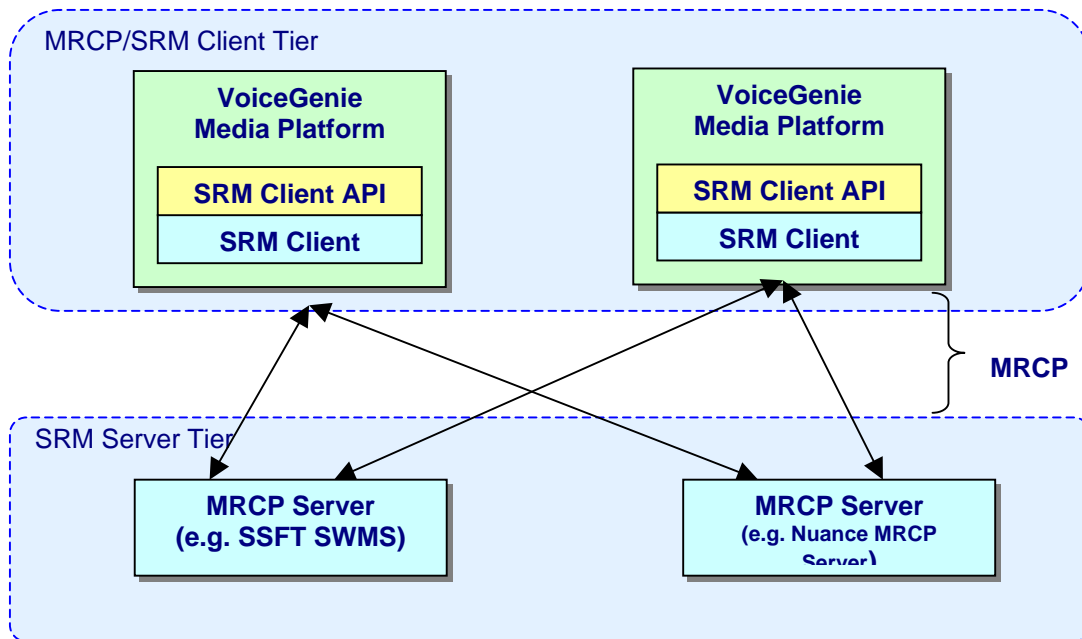
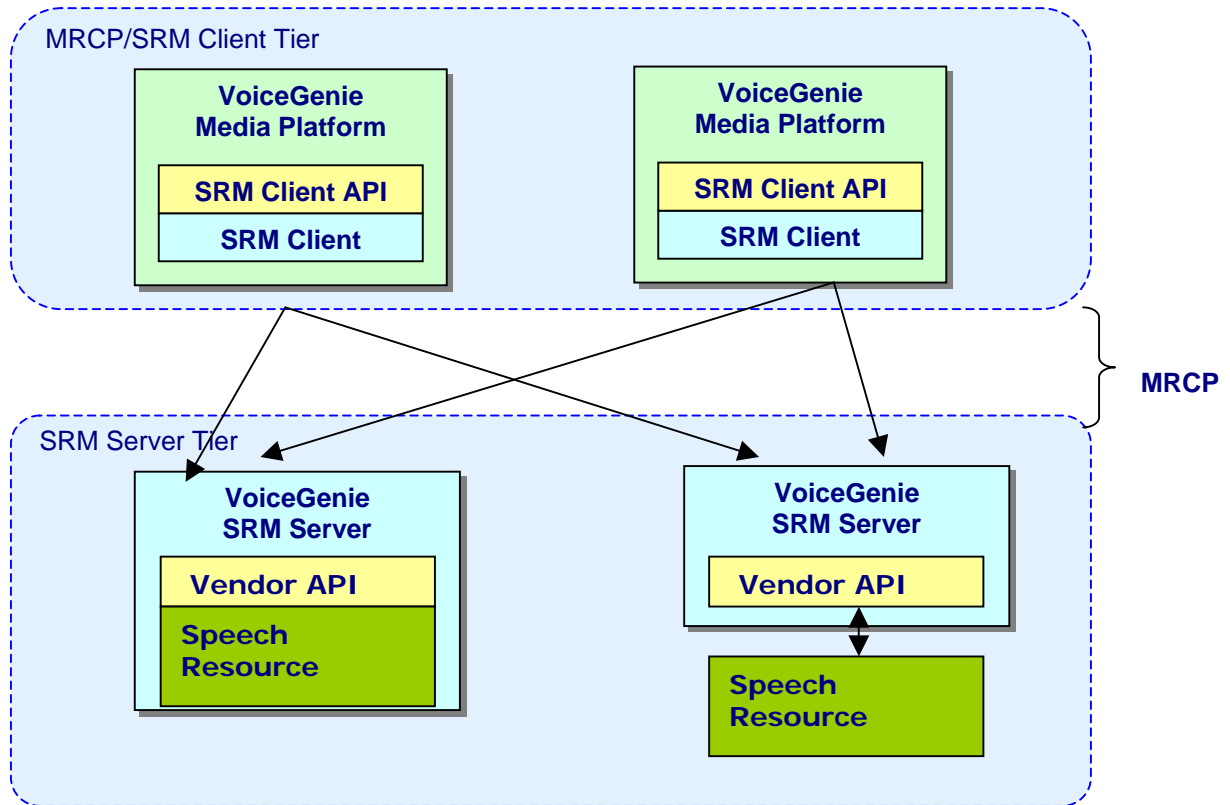


Fig. 2 MRCP Native Integration Architecture

In this situation, the VoiceGenie SRM server contains software from both VoiceGenie and other 3rd party vendors that provides ASR/TTS software.



2 The MRCP Protocol

The MRCP Proxy uses the MRCP protocol, as defined by the IETF, to control ASR and TTS resources. The latest version of the spec may be found at <http://www.ietf.org/internet-drafts/draft-shanmugham-mrcp-06.txt>. In this regard, the MRCP Proxy is acting as an MRCP client to use the ASR/TTS Servers.

The MRCP Proxy also accepts MRCP requests as defined by the above standard, then choosing an appropriate ASR/TTS resource to route the request to. In this regard, the MRCP Proxy is acting as a MRCP server.

In addition to the standard MRCP messages, VoiceGenie has made a couple extensions to make the MRCP Proxy work well as an ASR/TTS resource distributor:

- The MRCP Proxy assumes that the ASR/TTS servers that it is connected to will respond to the RTSP DESCRIBE message. This message is used for checking server health status, and when the MRCP Proxy receives a response to the DESCRIBE message the MRCP Proxy would consider the ASR/TTS server "Healthy".
- When the MRCP Proxy needs to change the ASR server (either because the original ASR server has become unavailable, or a new ASR request has come in which uses a different language supported by a different server), the MRCP Proxy would need to inform the client to change the destination to which it sends the audio data for recognition. The MRCP Proxy sends an RTSP ANNOUNCE message to the MRCP Client, and expects the client to change the destination IP address and port number as written in the SDP message.

The SpeechSC working group is currently evolving the MRCP protocol -- this new protocol is called MRCPv2, and will be supported by a future release of the MRCP Proxy.

3 Installation

For details as for how to install a MRCP Proxy, please refer to:
[VoiceGenie 7 Installation Guide](#)

4 Starting and Stopping the MRCP Proxy

The command-line-based Command Line Console (CLC) and the web-based System Management Console (SMC) can be used to perform various operations for the MRCP Proxy. For details about these two components please see:

[VoiceGenie 7 OA&M – CLC Guide](#)

[VoiceGenie 7 OA&M – SMC Guide](#)

From CLC, user can type

```
stop srmproxy <localhost><instance>
```

to stop the MRCP proxy process

```
start srmproxy <localhost><instance>
```

will start the MRCP server process.

5 Provisioning

The MRCP Proxy can be configured to host multiple MRCP servers. When a Speech Resource is deployed, its MRCP Proxy provisioning data is generated by OA&M Framework. The provision data is stored in srmproxy.prov which cannot be modified directly.

The MRCP Proxy Speech Resource provisioning data can be accessed through the Configuration page in SMC under the Speech Resource Mgr section. The following picture is a snapshot from a typical MRCP Proxy Speech Resource Provisioning section.

Resource Proxy URI:	<input type="text" value="rtsp://chalk.voicegenie.com/nuance_asr"/>		ID: 40
Hostname/IP:	<input type="text" value="10.0.0.149"/>	Port:	<input type="text" value="554"/>
Resource URI:	<input type="text" value="rtsp://10.0.0.149:554/recognizer/"/>		
Resource Type:	ASR <input type="button" value="v"/>		
Parameter Name:	<input type="text" value="vrmproxy.allocation_alg"/>	Value:	<input type="text" value="ROUND_ROBIN"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text" value="vrmproxy.max_sessions"/>	Value:	<input type="text" value="24"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text" value="vrmproxy.routing_mode"/>	Value:	<input type="text" value="REGULAR"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text" value="vrmproxy.languages"/>	Value:	<input type="text" value="en-us"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text" value="vrmproxy.ping_interval"/>	Value:	<input type="text" value="0"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text" value="vrmproxy.reconnect_inte"/>	Value:	<input type="text" value="30000"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text" value="vrmproxy.protocol"/>	Value:	<input type="text" value="MRCP1.0"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text" value="vrmproxy.maxclient"/>	Value:	<input type="text" value="12"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text" value="vrmproxy.vendor"/>	Value:	<input type="text" value="vg"/> <input type="button" value="Remove"/>
Parameter Name:	<input type="text"/>	Value:	<input type="text"/> <input type="button" value="Add"/>
<input type="button" value="Update"/> <input type="button" value="Delete"/> <input type="button" value="Select Target"/>			

The function of the control buttons is similar to the function of the respective ones in Media Platform Speech Resource provisioning:

- Click "Select Target" to select the servers for updating the provisioning data
- Click "Delete" to remove an existing Speech Resource Proxy Entry
- Click "Update" to update an existing Speech Resource Proxy Entry
- Click "Create", with filled fields to create a new Speech Resource Proxy Entry

For the list of all possible resource provisioning entry parameter names and explanations about their usages, please refer to the [VoiceGenie 7 MRCP Proxy System Reference Guide](#), the "MRCP Proxy Resource Provisioning entry parameters" section.