Migration Guide for Cisco Virtualized Voice Browser, Release 12.6(1)

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Preface

Change History

Change	See	Date
Initial Release of Document for Release 12.6(1)		May 2021

About This Guide

This document outlays the guidelines for migrating Cisco IOS based Voice Browser to Cisco Virtualized Voice Browser (Cisco VVB) in a Contact Center deployment. Review all the installation instructions carefully before you install Cisco VVB.

Audience

This guide is intended for administrators who are migrating from Cisco IOS based Voice Browser to Cisco Virtualized Voice Browser.

Related Documents

Cisco VVB provides the following documentation:

- *Solution Design Guide for Cisco Unified Customer Voice Portal*
- *Configuration Guide for Cisco Unified Customer Voice Portal*

- *Installation and Upgrade Guide for Cisco Virtualized Voice Browser*
- *Developer Guide for Cisco Virtualized Voice Browser*
- *Solution Port Utilization Guide for Cisco Virtualized Voice Browser*
- *Operations Guide for Cisco Virtualized Voice Browser*

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CHAPTER 1

System Requirements

System Requirements

For details on system requirements, refer to Virtualization page at:https://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-cisco-virtualized-voice-browser.html.

CHAPTER 2

Installation and Configuration

Installation and Configuration

For more details on installation, see Installation and Upgrade guide https://www.cisco.com/c/en/us/support/customer-collaboration/virtualized-voice-browser/products-installation-guides-list.html.

For more details on configurations, see Configuration Guide for Cisco Unified Customer Voice Portal https://www.cisco.com/c/en/us/support/customer-collaboration/unified-customer-voice-portal/products-installation-and-configuration-guides-list.html.

CHAPTER 3

Features Comparison

Feature Comparison

The Feature Comparison table lists the features that are available on Cisco IOS and Cisco VVB.

Feature	Cisco IOS	Cisco VVB
Comprehensive Call Model	Supported	Supported
Standalone Call Model	Supported	Supported
VRU-only Call Model	Supported	Supported
WAAG	Supported	Supported
CCB	Supported	Supported
Sigdigit	Supported	Supported
Codec: G.711 a law / u law	Supported	Supported
Codec: G.729	Supported	Supported
HTTPS	Supported	Supported
Transfer	Blind and Consultative Transfer in Standalone Call Model	Blind Transfer in Standalone Call Model. (Uses REFER method)
MRCPv1 and v2	Supported	Supported
Local Prompts	Supported	Supported
Hostname Resolution	Supported	Supported
Rest API for Configuration	Not supported	Supported
CLIs	Vast	Platform, Call summary, Cache, HTTP client, MRCP statistics

Feature	Cisco IOS	Cisco VVB
Real Time Reporting	Not supported	Supported
RTMT Support	Not supported	Supported
Prime Support	Limited	Supported
TLS	1.0, 1.1	1.2
Cisco VXML Tags (CVP Call Studio)	Supported	Supported
Hardware Platforms	See https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-device-support-tables-list.html	Spec based hardware, see https://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-cisco-virtualized-voice-browser.html
RTSP Streaming	Supported	Not supported
Video in Queue	Supported	Not supported
RSM	Supported	Not supported
Grammar Types	Supported	Supported types: *application/srgs+xml*, *application/grammar+xml*, and *application/grammar+regex*
Digit Element	Grammar accepts only digits from 0 – 9	Grammar accepts digits from 0 – 9 , "#", and "*". "#" is the default termination character. You can mark any digit or DTMF character as termination character by adding it in custom VXML property.
HTTP Streaming	Not Supported	Supported For more information, see the *Audio* chapter in *Element Specifications Guide for Cisco Unified CVP VXML Server and Call Studio* at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-customer-voice-portal/tsd-products-support-series-home.html
Custom SIP header passing to a VXML server	Supported	Supported For more information, see Custom SIP header passing to a VXML server in *Solution Design Guide for Cisco Unified Contact Center Enterprise* and *Solution Design Guide for Cisco Packaged Contact Center Enterprise.*

To know whether any script changes are required while migrating from IOS VXML to VVB for Conformance 2.0 and Conformance 2.1, refer to CSCvk32060.

CHAPTER 4

Understanding the Difference

Differences

The following table lists the feature and configuration differences between Cisco IOS-VB and Cisco VVB.

Feature	Cisco IOS-VB Configuration	Cisco VVB Configuration
Service/Application	Service Configuration	Application configuration in Cisco VVB
Dial-Peer	Dial peer Configuration	Trigger configuration in Cisco VVB
TCL Scripts	CVP OAMP downloaded TCL scripts: • bootstrap.tcl • CVPSelfService.tcl • cvp_ccb_poll.tcl • ringtone.tcl • ccb tcl scripts	AEF applications. By default, Cisco VVB includes the following prepackaged applications: • CVPComprehensive.aef • Ringtone.aef • Error.aef • SelfService.aef • VRUComprehensive.aef **Note** You can't modify these applications.
CVP VXML documents	CVP OAMP downloaded VXML scripts: • bootstrap.vxml • CVPSelfServiceBootstrap.vxml • recovery.vxml	Cisco VVB has prepackaged the VXML document files for various AEF applications. **Note** You can't modify these applications.

Feature	Cisco IOS-VB Configuration	Cisco VVB Configuration
Codec config	Codec defined at dial-peer level	Codec defined at System level
MRCP Interface and Configuration	ASR/TTS configuration. • voice class uri • Using Dial-Peer to load balance ASR/TTS	ASR/TTS server configuration by specifying the hostname or IP Address of speech servers. Load balancing is done on a round-robin basis.
	Maximum sessions that can be set for a server	No such configuration
	Weight-based load balancing between various servers configured	Weight-based load balancing isn't supported.
	CVP microapps dependency on MRCP v1	No dependency of CVP microapps on MRCP v1
	Option to configure MRCP client timers	No option to configure MRCP client timers
HTTP cache Configuration	Various CLIs for HTTP Cache Configuration	Equivalent CLI commands to configure HTTP cache for media files
HTTP timers	Can be configured	Can be configured
Call Throttling	Based on RAI parameters (CPU and memory utilization, DSO, DSP)	Max calls supported by OVA profile. Cisco VVB supports sending RAI information. For more details, see SIP RAI, on page 14 section.
Audio prompts	All prompts are played from start to end.	Cisco VVB is compliant with VoiceXML, so prompts are queued instead of being played when the Audio element is run. The queued prompts are played: • When the browser reaches a waiting state such as recognition. • When the browser fetches a resource while the fetchaudio attribute is set on the corresponding fetch element. • When the browser has reached the end of the application.

CHAPTER 5

Migration Process

Migration Process

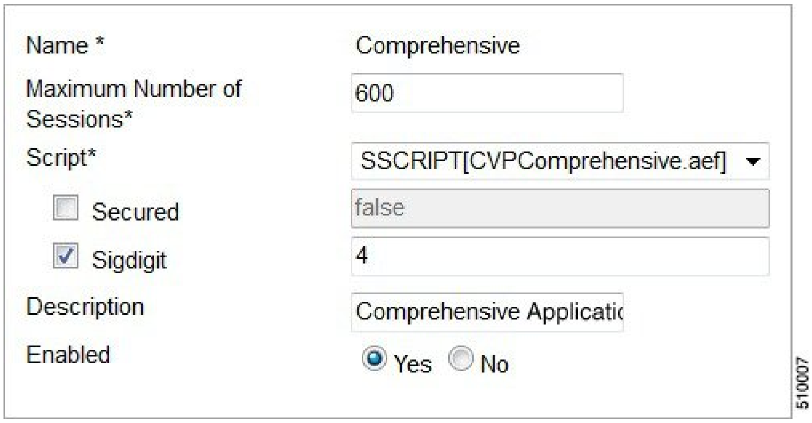
To migrate from a Cisco-IOS-VB to Cisco-VB, the first step is installation and configuration of Cisco-VVB followed by adding the Cisco-VVB to the CVP deployment. This will require some configuration on CVP OAMP and Egress routing routes.

Service and Dial-Peer Configuration

1. For comprehensive, standalone and ringtone service, create equivalent application in Cisco-VVB.
2. For each corresponding dial-peer on Cisco-IOS-VB, add corresponding trigger on the Cisco-VVB.
3. For SigDigit is defined at dial-peer level in Cisco-IOS-VB, configure SigDigit at corresponding application of the trigger, for example:

```
dial-peer voice 60001 voip
 description CVP VRU LABEL, SIGDIGITS 555XXX
 preference 1
 service bootstrap
 incoming called-number 555.....1111119999T
 voice-class sip rel1xx disable
 dtmf-relay rtp-nte
 codec g711ulaw
 param sigdigits 4
 no vad
```

Service and Dial-Peer



Comprehensive Service or Application

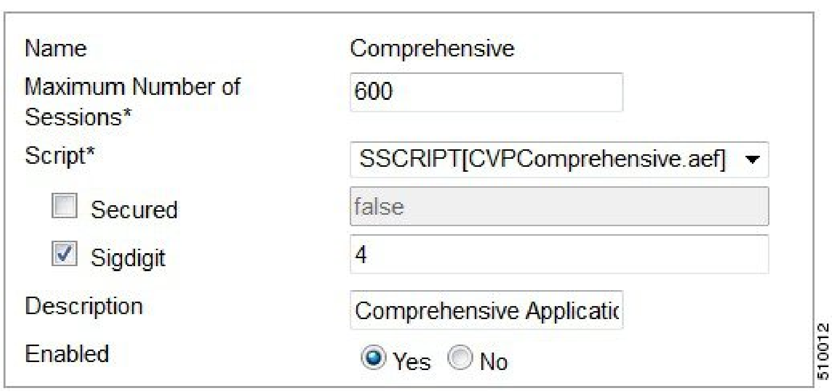
In a comprehensive call model administrator needs to add application and set various parameters.

Note SigDigit is defined as parameter at the service level in Cisco-IOS-VB.

For example:

```
service comprehensive flash:bootstrap.tcl
  paramspace english index 0
  paramspace english language en
  paramspace english location flash
  paramspace english prefix en
  param sigdigits 4
```

Comprehensive Service



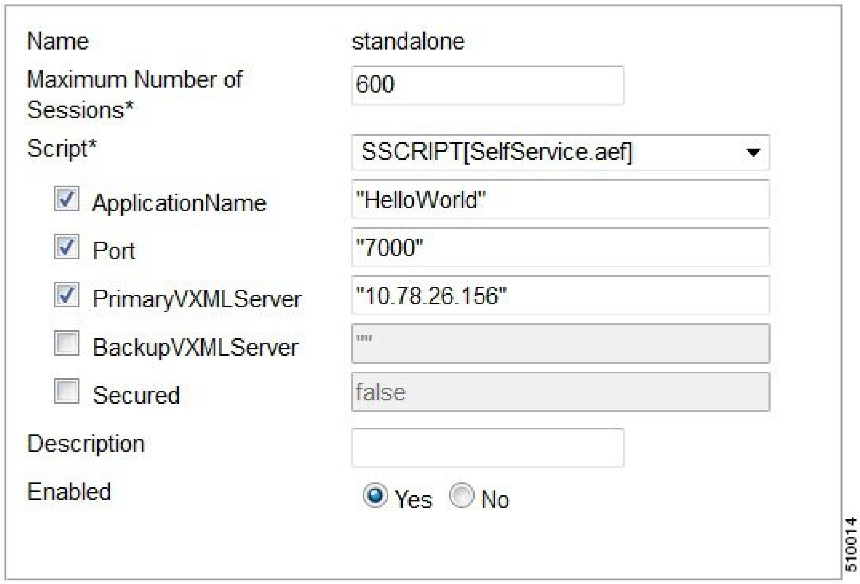
Standalone Service or Application

In a standalone call model, the administrator has to add application and set various parameters like VXML application name, primary/secondary server, port and other related.

For example:

```
service standalone flash:CVPSelfService.tcl
  paramspace english language en
  paramspace english index 0
  param CVPPrimaryVXMLServer 10.78.26.38
  paramspace english location flash:
  param CVPSelfService-port 7000
  param CVPSelfService-app AgeIdentification
```

Service standalone



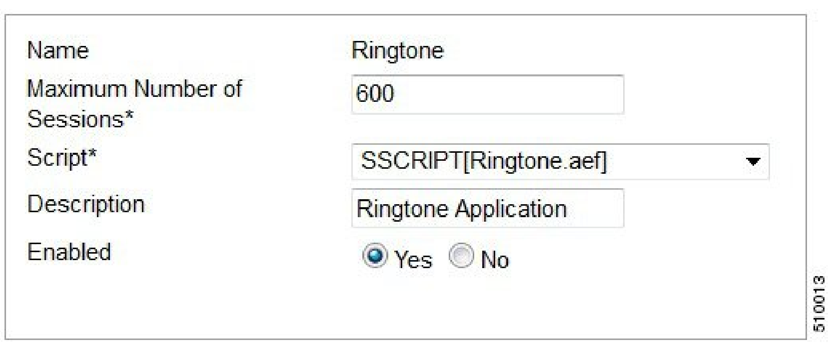
Ringtone Service or Application

For ringtone service, add application and set various parameters, VXML application name, primary/secondary server, and port.

For example:

```
service ringtone flash:ringtone.tcl
  paramspace english index 0
  paramspace english language en
  paramspace english location flash
  paramspace english prefix en
```

Ringtone



MRCP Configuration

1. If ASR and TTS are configured in Cisco-IOS-VB, then add these in the Cisco-VVB for the following scenarios:-
   a. Multiple servers are configured for ASR or TTS, for load balancing, using dial-peer. In this case multiple servers can be configured on Cisco VVB. These will be used in round robin configuration. You cannot set a maximum session limit on CiscoVVB for the configured servers .
   b. IOS-VB has single server and a corresponding backup server configured. You can add multiple servers and these can be used in round-robin basis.

Note Cisco VVB does not use the concept of backup server.

2. For Cisco VVB the client timeout timers are not configurable. Cisco VVB uses optimized values for the client timeout for connect, disconnect etc.
3. For Microapps, when the url (rtsp://tts-en-us:4900/synthesizer or rtsp://asr-en-us:4900/recognizer), is processed by Cisco VVB, only hostname or IP-address in the url is used by Cisco VVB. Hostname is matched to locally configured server and corresponding port name is used to setup the connection. Depending on MRCP v1 or v2 configured on the system, session is setup to the server. So practically, you can use MRCP v2 also to for Microapps.

Call Throttling

Cisco VVB throttles the call to prevent overload.

For maximum calls supported, see VVB virtualization https://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-cisco-virtualized-voice-browser.html.

Each OVAs defines the maximum number of calls supported. The maximum concurrent calls count is aggregated call count of various types of calls in the system (IVR, ringtone, whisper etc.).

In a deployed VVB, if the concurrent calls reaches maximum supported calls, any new call requests received beyond this number will be rejected. Each OVA defines maximum calls per second (cps) that a specific OVA supports. Any higher call rate beyond this number will trigger overload (see Solution Design Guide for Cisco Unified Contact Center Enterprise for details). When migrating Cisco-IOS-VB to Cisco VVB, this factor should be considered in sizing.

SIP RAI

1. If SIP RAI is configured in the Cisco-IOS-VB to send the RAI report to the remote server every interval, then the RAI needs to be configured for the remote server on Cisco VVB.
2. If the Remote server is using SIP OPTIONS method to get out the RAI data, then no additional configuration is required in the Cisco VVB. Cisco VVB will report system, cpu, memory, DS0 and DSPs like Cisco-IOS-VB. But given that Cisco VVB does not have DS0, the number of available ports will be reported on this.

DSP data can be ignored.

```
X-cisco-rai : SYSTEM; almost-out-of-resource=false
X-cisco-rai : CPU; almost-out-of-resource=false;total=100%;available=77
X-cisco-rai : MEM; almost-out-of-resource=false;total=100%;available=71
X-cisco-rai : DSO; almost-out-of-resource=false;total=600;available=148
X-cisco-rai : DSP; almost-out-of-resource=false
```

Adding Cisco-VVB to Deployment

Cisco VVB can be added to the deployment using any one of these methods:

1. Comprehensive deployment model
   a. After Cisco VVB is configured (through Cisco VVB AppAdmin or CVP-OAMP bulk configuration), add the newly configured Cisco VVB to the CVP 'Dialed Number Pattern' or 'SIP Server Group'.
   b. CVP will initiate SIP Heartbeat with the Cisco VVB and if SIP RAI is configured
2. Standalone deployment model

After the Cisco VVB is configured (through Cisco VVB AppAdmin or CVP-OAMP bulk configuration), add the dial-peer in the Ingress-gateway (Cube or PSTN-GW) to point to the Cisco VVB.

CHAPTER 6

High Availability Consideration

High availability Consideration

In Cisco VVB there are two types of high availability models:

- Comprehensive
- Standalone

Comprehensive Model

Cisco Virtualized Voice Browser is a single node and there is no high availability inbuilt for active redundancy. In order to improve level of availability and to eliminate single point of failure, deploy additional Cisco VVB(s) to build passive redundancy by including the additional Cisco VVB(s) in the CVP SIP Server group.

When CVP detects failure of one of the Cisco VVB's in the SIP Server group, CVP will continue to route calls to remaining active Cisco VVBs, thereby, allowing new calls to be accepted.

Note All active calls on the failed Cisco VVB will disconnect and all the call data is lost.

When the failed Cisco VVB recovers and is detected by CVP heartbeat mechanism, CVP will start routing calls to the recovered Cisco VVB. So by deploying redundant Cisco VVBs, you can manage unscheduled and scheduled downtime of one of the Cisco VVBs.

Standalone Model

For standalone call model, user can configure primary and secondary VXML servers for an application. On arrival of a new call, if the primary server fails to respond to new session request, Cisco VVB will attempt to establish new session with the secondary server. If VXML server goes down when a session is already established, Cisco VVB will play a critical error message as part of error handling.

In order to improve level of availability and to eliminate single point of failure, deploy additional Cisco VVB(s) to build passive redundancy. One of the methods by which this can be done is by including the additional Cisco VVB(s) in the Ingress GWs dial-peer configuration. For this create ‘voice class uri’ for ‘VVB’ and then add dial-peers for various VVBs which define destination session target for the uri ‘VVB’ (refer to IOS-GW documentation for more details). This way the Ingress GW will load balance between the various deployed VVBs and if any of the VVB serving standalone call model fails, then Ingress-GW will continue to route new calls to remaining active VVBs.

Note Survivability is currently unavailable for Standalone Model deployment.

CHAPTER 7

Sizing

Sizing

All sizing considerations in CVP are supported in Cisco VVB. For more information, see *Solution Design Guide for Cisco Unified Contact Center Enterprise* available at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-implementation-design-guides-list.html.