GVP Deployment Guide

Prerequisites and Planning

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Prerequisites and Planning

This chapter describes the prerequisites and planning considerations for the deployment of Genesys Voice Platform (GVP) 9.0 on Windows and Linux operating systems and includes information about the required software. It contains the following sections:

Prerequisites

> **Important**
>
> Genesys recommends that you review Preparing the Hosts for GVP and Task Summary: Preparing Your Environment for GVP, Task Summary: Preparing Your Environment for GVP (Windows), or Task Summary: Preparing Your Environment for GVP (Linux) before you install any software.

Software Requirements for Windows

The table below summarizes the software requirements for GVP 9.0 deployments on Windows.

Table: Software Requirements for Windows

Category	Requirements and comments
Operating system on GVP servers	
Genesys Voice Platform 9.0 (Mandatory)	For full information about supported operating systems, databases, browsers, and virtualization platforms, refer to the Genesys Voice Platform and Genesys Media Server pages of the *Genesys Supported Operating Environment Reference Guide* **Notes:** • "Update for Visual C++ 2013 Redistributable Package" should be installed for MCP IP.
Operating system supporting components	

Category	Requirements and comments
Reporting Server and Policy Server	Oracle JRE / OpenJDK **Notes:** • Download Oracle JRE from the Oracle website (or) OpenJDK from the OpenJDK website. • If using Windows 2008 64-bit, download the 64-bit Sun JRE platform. • If using Oracle Database, use JRE 1.8.
Reporting Server Database requirements	Required only on GVP servers that have Reporting Server DB installed: • Microsoft SQL Server 2008, 2012, 2014, 2016 (clustered and/or replicated), or 2005 SP2 (Standard and Enterprise editions), or Oracle 10g, 10g Real Application Cluster (RAC), or 11g RAC Database Server (Standard and Enterprise editions), or Oracle 12c, 12c RAC, Oracle 19c/ Oracle 19c RAC. **Notes:** • For additional information about supported operating systems for the Reporting Server Database, see Host Setup. • Download the SQL Server or the Oracle Database Server software from the vendor's website. It is your responsibility to obtain the appropriate licenses for this software. • During the deployment of VP Reporting Server, the installer prompts the user to choose the Database engine in step 8 of the section "Procedure: Using the Deployment Wizard to Install GVP" in the GVP Deployment Guide. This section currently doesn't list all the supported Oracle & MS SQL server versions. Instead, you can use the software edition (i.e, Standard or Enterprise) in step 8 as guidance to move forward with the deployment. See the Genesys Media Server page in the *Genesys Supported Operating Environment Reference Guide* for more detailed information and a list of all supported databases.
Management and monitoring tools (Optional)	• Net-SNMP • SNMP Network Management Software (NMS)(Optional) **Note:** Net-SNMP is installed on the same host(s) as the VP Resource Manager, VP Media Control Platform, VP Call Control Platform, and VP Fetching Module components.

Category	Requirements and comments
Specific services and settings (Mandatory)	You must configure certain specific services and settings on each host before you install GVP. For more information, see Windows Services and Settings.
Automatic speech recognition (ASR) (Optional)	Genesys recommends that the ASR servers are installed and operational before you install the Genesys Voice Platform. Genesys has validated the following third-party ASR software: • Nuance Recognizer 10.2.3 with Nuance Speech Server (NSS) 6.2.4 • Nuance Recognizer 9.0.18 with Nuance Speech Server (NSS) 5.1.7 • Telisma Telispeech ASR 2.0 SP1. • IBM WebSphere Voice Server (WVS) 6.1.1 ASR or higher. **Notes:** • It is your responsibility to obtain the software and the appropriate licenses. Media Resource Control Protocol version *(MRCPv1) and MRCP version 2 (MRCPv2) are supported. • For more speech information, see the Genesys Supported Media Interfaces Reference Manual.
Text-to-speech (TTS) (Optional)	Genesys recommends that the TTS servers are installed and operational before you install the Genesys Voice Platform. Genesys has validated the following third-party TTS software: • Nuance Vocalizer 6.0.2 with Nuance Speech Server (NSS) 6.2.5 • Nuance Vocalizer 5.7.3 with Nuance Speech Server (NSS) 6.2.4 • IBM WebSphere Voice Server (WVS) 6.1.1 TTS or later, with IBM TTS connector **Notes:** • It is your responsibility to obtain the software and the appropriate licenses. • MRCPv1 and MRCPv2 are supported. • For more speech information, see the Genesys Supported Media Interfaces Reference Manual.

Software Requirements for Linux

The table below summarizes the software requirements for GVP 9.0 deployments on Linux:

Table: Software Requirements Linux

Category	Requirements and comments
Operating System on GVP Servers	
For Genesys Voice Platform 9.0 (Mandatory)	For full information about supported operating systems, databases, browsers, and virtualization platforms, refer to the Genesys Voice Platform and Genesys Media Server pages of the *Genesys Supported Operating Environment Reference Guide*.
Reporting Server and Policy Server	Oracle JRE / OpenJDK **Notes:** • Download Oracle JRE from the Oracle website (or) OpenJDK from the OpenJDK website. • If using Oracle Database, use JRE 1.8.
Operating System Supporting Components	
Reporting Server Database	Required only on GVP servers that have Reporting Server DB installed: • Microsoft SQL Server 2008 (clustered and/or replicated), or 2005 SP2 (Standard and Enterprise editions), or Oracle 10g, 10g , 11g Real Application Cluster (RAC) Database Server (Standard or Enterprise editions), 12c or 12c RAC. **Notes:** • For additional information about supported operating systems for the Reporting Server Database, see Host Setup. • Download the Oracle Database Server software from the Oracle website. It is your responsibility to obtain the appropriate licenses for this software.
Management and monitoring tools (Optional)	• Net-SNMP. • SNMP Network Management Software (optional). **Note:** Net-SNMP is installed on the same host(s) as the VP Resource Manager, VP Media Control Platform, VP Call Control Platform, and VP Fetching Module components.
Specific services and settings (Mandatory)	**Notes:** • You must configure certain specific services and settings on each host before you install GVP.

Category	Requirements and comments
	• For more information, see the Task Summary: Preparing Your Environment for GVP (Linux).
Third-party Supporting Components	
Automatic speech recognition (Optional)	Genesys recommends that the ASR servers are installed and operational before you install the Genesys Voice Platform. Genesys has validated the following third-party ASR software: • Nuance Recognizer 10.2.3 with Nuance Speech Server (NSS) 6.2.4 • Nuance Recognizer 9.0.18 with Nuance Speech Server (NSS) 5.1.7 • Nuance Recognizer 9.0.16 with Nuance Speech Server (NSS) 5.0.10 • Telisma Telispeech ASR 2.0 SP1. • IBM WebSphere Voice Server (WVS) 6.1.1 ASR or higher. **Notes:** • It is your responsibility to obtain the software and the appropriate licenses. MRCPv1 and MRCPv2 are supported. • For more speech information, see the Genesys Supported Media Interfaces Reference Manual.
Text-to-speech (Optional)	Genesys recommends that the TTS servers are installed and operational before you install the Genesys Voice Platform. Genesys has validated the following third-party TTS software: • Nuance Vocalizer 6.0.2 with Nuance Speech Server (NSS) 6.2.5 • Nuance Vocalizer 5.7.3 with Nuance Speech Server (NSS) 6.2.4 • IBM WebSphere Voice Server (WVS) 6.1.1 TTS or later, with IBM TTS connector **Notes:** • It is your responsibility to obtain the software and the appropriate licenses. • MRCPv1 and MRCPv2 are supported. • For more speech information, see the Genesys Supported Media Interfaces Reference Manual.

Antivirus Software

Antivirus software can affect system performance and call response time. In an ideal deployment, antivirus software is disabled on GVP systems. However, Genesys understands the need to have antivirus protection on servers and, therefore recommends, at a minimum, that you exclude the GVP directory from virus scanning, and that you schedule system scans to occur at times when traffic is low.

Also, be aware that antivirus software may interfere with the installation of GVP during initial deployment. Make sure that the server is not running antivirus software, or any other third-party software, during installation.

Host Setup

GVP provides some flexibility in combining various components on one host; however, the following restrictions apply:

- If you are installing Genesys Administrator and (a single instance of) the Media Control Platform on the same host, you must install GVP by using the manual procedures and ensure that Genesys Administrator is shut down during the installation. Genesys does not recommend that you install Genesys Administrator on a host that has multiple instances of the Media Control Platform.
- If the Resource Manager is in active standby High Availability (HA) mode, Genesys recommends that other SIP components that communicate with the Resource Managers are installed on different servers, unless they support static routing and do not interfere with the Resource Manager's HA mechanism. When the Resource Manager is in active backup mode, it uses Network Load Balancing (NLB) (on Windows) or Virtual IP takeover (on Linux or Windows). Other SIP HA components (for example, SIP Server) that use the same HA mechanism as the Resource Manager can interfere if deployed on the same servers within the cluster. In addition, when a Virtual IP address is used, Windows NLB has a limitation, where the Virtual IP always resolves to localhost on servers within the NLB cluster.
- If you are installing the Media Control Platform and the PSTN Connector on the same host, ensure the value of the `rtpthreadlevel` option in the `mpc` section of the Media Control Platform to TIME_CRITICAL.

The following are some additional restrictions or requirements:

- In GVP 8.1.2 and Genesys Administrator 8.0.3, multiple instances of the Media Control Platform on a single server are supported. See Deploying Multiple Media Control Platforms.
- In GVP 8.1.2 and above, the Fetching Module is integrated with the Media and Call Control Platforms and the Squid proxy is optional.
- The Reporting Server can be deployed with one Resource Manager instances only, unless the Resource Manager is deployed in HA mode. When the Resource Manager is in HA mode, the Reporting Server recognizes the HA pair as a single instance.
- The Reporting Server Database (DB) is supported in the following ways:
  - The Reporting Server DB does not have to reside on the server where Reporting Server is installed.
  - The Reporting Server DB can be installed on Windows or Linux.
- The Reporting Server DB and the Reporting Server can be installed on different operating systems. (For

example, the Reporting Server can be on Windows and the DB on Linux).

> **Tip**
>
> There are additional restrictions for the Reporting Server host if it is configured for High Availability, see Reporting Server High Availability.

- You can mix GVP components that are installed on different operating systems within a deployment.

Voice Platform Solution Components

This section describes the recommended, required and optional components, and the dependencies present in a successful deployment of a Voice Platform Solution.

> **Important**
>
> The table below lists the versions of Management Framework components and SIP Server that are recommended for each GVP release. However, the newest GVP version may still be compatible with a previous version of SIP Server, Genesys Administrator or Configuration Server. Please verify with Genesys Customer Care if you wish to keep a previous version of any of these components.

Table: Versions Compatible With GVP

GVP	Management Framework		SIP Server
	Genesys Administrator	Configuration Server	
9.0	8.1.3	8.5.1	8.1.103.xx
8.5.1	8.1.3	8.1.3	8.1.1
8.5.0	8.1.3	8.1.3	8.1.1
8.1.7	8.1.3	8.1.3	8.1.1
8.1.6	8.1.3	8.1.2	8.1.0
8.1.5	8.1.2	8.1.1	8.1.0
8.1.4	8.1.0	8.1.0	8.0.4
8.1.3	8.0.3	8.02	8.0.3
8.1.2	8.0.3	8.02	8.0.3
8.1.1	8.0.11	8.0.1	8.0.2
8.1.0	8.0.1	8.0.1	8.0.2

> **Tip**
> If you plan to install the MRCP Proxy and Policy Server, you must upgrade to Genesys Administrator 8.1.0 and Configuration Server 8.1.1. If not, the 8.0.2 versions are acceptable and compatible with all other GVP 8.1.4 components.

Voice Platform Solution and Dependencies

The following is an overview of a VPS and the associated dependencies:

- A centralized instance of Genesys Management Framework that includes the following components:
  - Configuration Database
  - Log DB Server
  - Microsoft SQL Server or Oracle Database Server
  - Configuration Server
  - Genesys Administrator
  - Solution Control Server
  - Solution Control Interface (optional)
  - Message Server
  - Local Control Agent required on all GVP 9.0 hosts
  - Required: one Net-SNMP for each GVP component (See Table: Versions Compatible With GVP for Management Framework versions that are compatible with each GVP release.)
- Session Initiation Protocol (SIP) Server
- IVR Server 8.0
- Stat Server
- Universal Routing Server
- T-Server (switch-specific)
- Voice Platform (VP) Resource Manager:
  - Mandatory component one or more per deployment
  - Can be deployed as an active active or active standby pair for high availability
  - Prerequisite: Local Control Agent
  - Required: one Net-SNMP for each GVP component
- VP Media Control Platform:
  - Mandatory component one or more per deployment
  - Prerequisite: Local Control Agent

    - Required: one Net-SNMP for each GVP component
- VP Call Control Platform:
    - Optional component one or more per deployment
    - Prerequisite: Local Control Agent
    - Required: one Net-SNMP for each GVP component
- VP Reporting Server:
    - Optional component one or more per deployment
    - Prerequisite: Local Control Agent
    - Prerequisite: Database Server

    (Microsoft SQL Server 2005, 2008 or Oracle 10 g, 11g)
    - Prerequisite: Oracle JRE / OpenJDK
    - Required: one Net-SNMP for each GVP component
- VP CTI Connector:
    - Optional component one per deployment
    - Prerequisite: Local Control Agent
    - Prerequisite: IVR Server or Cisco Intelligent Contact Management (ICM) (based on the deployment)
    - Required: one Net-SNMP for each GVP component
- VP PSTN Connector:
    - Mandatory component for TDM integration many per deployment
    - Prerequisite: Local Control Agent
    - Prerequisite: Dialogic v6.0 with Service Update 241
    - Required: one Net-SNMP for each GVP component
- VP Supplementary Services Gateway:
    - Optional component many per deployment
    - Prerequisite: Local Control Agent
    - Required: one Net-SNMP for each GVP component
- VP Policy Server
    - Optional component many per deployment
    - Prerequisite: Local Control Agent
    - Required: one Net-SNMP for each GVP component
- VP MRCP Proxy
    - Optional component many per deployment
    - Prerequisite: Local Control Agent
    - Optional: Net-SNMP

> **Tip**
> You can deploy many UCM Connectors in your environment. However, a single UCM Connector can interact with only one Cisco T-Server. Alternatively, a single Cisco T-Server can interact with multiple UCM Connectors.

VPS Components Minimum Deployment

At a minimum, the following components are required to deploy the VPS:

- Management Framework components
- Genesys Administrator
- SIP Server
- GVP components
  - One Resource Manager
  - One Reporting Server (optional)
  - One Media Control Platform
  - Fetching Module
  - Squid Caching Proxy

> **Tip**
> For GVP version 8.1.2 and above, the Fetching Module is integrated with the Media Control and Call Control Platforms and is no longer a separate Installation Package. Also, the Squid caching proxy is optional.

Optional Components

The following components are optional:

- One or more additional Supplementary Services Gateways More than one instance can communicate with the same SIP Server, but each Supplementary Services Gateway instance must have a unique Resource DN.
- Multiple VP Resource Managers For high availability in active standby and active active HA modes.
- Multiple VP Reporting Servers For high availability in Active Standby.
- One or more additional VP Media Control Platforms with VP Fetching Module and VP Squid Depends on sizing.
- One or more VP Call Control Platforms with VP Fetching Module and VP Squid Depends on sizing.
- Net-SNMP See Voice Platform Solution and Dependencies.

- CTI Connector See CTI Connector and How the CTI Connector Works.
- PSTN Connector Optional only for customer who do not use traditional TDM technology in their environment, otherwise, it is required. See PSTN Connector and How the PSTN Connector Works.
- Policy Server Optional, but recommended for enterprise environments that include multi-tenant hierarchies. See How the Policy Server Works.
- MRCP Proxy Optional, but recommended in environments where MRCPv1 ASR/TTS usage reporting is required. See How the MRCP Proxy Works.

Options to Deploying VP Reporting Server

Genesys recommends that you deploy at least one VP Reporting Server per deployment. When VP Reporting Server is installed, GVP Reporting data can be viewed on the Monitoring tab in the Genesys Administrator GUI. VP Reporting Server also provides an API, which allows GVP reporting data to be used with third party reporting products.

If you do not require GVP historical reporting in your deployment, you can deploy VP Reporting Server without a Reporting Server database. This deployment option retains support for the GVP dashboard reports. If you do not require the historical or dashboard reports, installation of the VP Reporting Server is not required.

Startup Sequence for the VPS

The table below describes the recommended startup sequence that is used to start the VPS successfully at initial startup, or if any component in the solution is stopped and must be restarted. It includes only those components that are listed in VPS Components Minimum Deployment.

See the following procedures describe ways to stop and start GVP Application and Solution objects:

- Procedure: Starting and Stopping GVP Solution Objects
- Procedure: Starting and Stopping GVP Application Objects
- Procedure: Configuring Application Objects to Start Automatically

Table: Startup Sequence VPS (Minimum Deployment)

Requirement	VPS component
Components that must be operational before you start the GVP components	• Management Framework components • SIP Server • Database Server prerequisite for the Reporting Server, but optional.
GVP Components	• Reporting Server • Resource Manager • Media Control Platform

Requirement	VPS component
	• Call Control Platform

HMT Permissions and Access Rights

If you are deploying GVP in a multi-tenant environment, you must ensure that the service provider or GVP enterprise manager is the only user assigned to the super-users access group, and therefore, is solely responsible for managing DID Groups and defining tenants. In addition, to maintain numbering and naming uniqueness, which is a GVP requirement, tenants must not be assigned edit permissions for their own configurations. However, tenant users can be assigned read permissions, which enable them to read and modify their configurations and reports.

The tenant that is defined as the parent becomes the reference entry point in the tenant hierarchy. The parent tenant with read permissions can view their child tenants and their configurations and reports, but cannot view the child tenants below them (their grandchild tenants).