# Installing Interactive Voice Gateway (IVG) version 3.5

This page was not added to the PDF due to the following tag(s): article:topic-guide

# Prerequisites for installing IVG

Satisfy the following prerequisites to prepare your environment for Interactive Voice Gateway (IVG) installation. These prerequisites reduce installation errors or failures that may occur.

# Installation prerequisites

**Important:**

VHT requires a "clean" Virtual Machine (VM) for each IVG instance.

## Preparing the VM

1. Allocate dedicated VMs for IVG.
    - The IVG Installer installs supported versions of required OS dependencies, and uninstalls any unsupported OS dependency versions. Installing IVG on dedicated servers or VMs ensures the OS dependencies installed with IVG do not conflict with previously installed dependencies for other applications.
2. Update RHEL or CentOS to the supported versions:
    - RHEL Version 6.8
    - RHEL Version 7.3
    - CentOS Version 6.8
    - CentOS Version 7.3
3. If using RHEL, verify the subscription is registered.
    - To verify the subscription of RHEL is registered, enter command **rhn_check**.
        a. If the message **Error: unable to read system ID** displays, refer to the Red Hat documentation for instructions on how to register the subscription.
        b. If no output is generated, the subscription is registered.
4. Verify system architecture is 64-bit using the **nano /etc/redhat-release** command.
5. Verify the x86_64 version of MySQL-libs is installed on the VM using the **rpm --query centos-release** command.
6. Uninstall Apache Tomcat from the VM where IVG will be installed. If necessary, use the **yum list installed tomcat** command to verify Tomcat is uninstalled.
    - The supported version of Apache Tomcat is installed by the IVG Installer. If Apache Tomcat is already installed, the installation process fails.
7. Enable root user access.

**Notes:**

- Root user access is only required for the duration of the installation process.
- If root user access cannot be granted, please refer to the Installating as a sudo user instructions.

8. Add **root** as a sudo user.

### Verifying system requirements

1. Allocate storage for the required directories as defined in the IVG technical overview:
   - Avaya
   - Cisco
   - Genesys
2. Verify system requirements as outlined in the IVG technical overview:
   - Avaya
   - Cisco
   - Genesys

**Important:**

The VHT Compatibility and Integration Matrix details the supported system specifications for each IVG release. Please refer to the matrix for compatible versions of:

- CentOS
- RHEL
- Java
- Tomcat
- Apache
- PostgreSQL

3. Select deployment model to be used prior to installation.

## Next steps

After completing the prerequisites, proceed to Creating the IVG configuration file to execute the IVG setup wizard.

## Creating the IVG configuration file

The IVG setup wizard is used to build the configuration file required for IVG installation. Each screen of the setup wizard collects installation details for IVG and its components, and compiles the user input into a single configuration file. This configuration file is then used to install IVG on each VM in the deployment.

For more information on the supported IVG deployment models, please see the IVG technical overview:

- Avaya
- Cisco
- Genesys

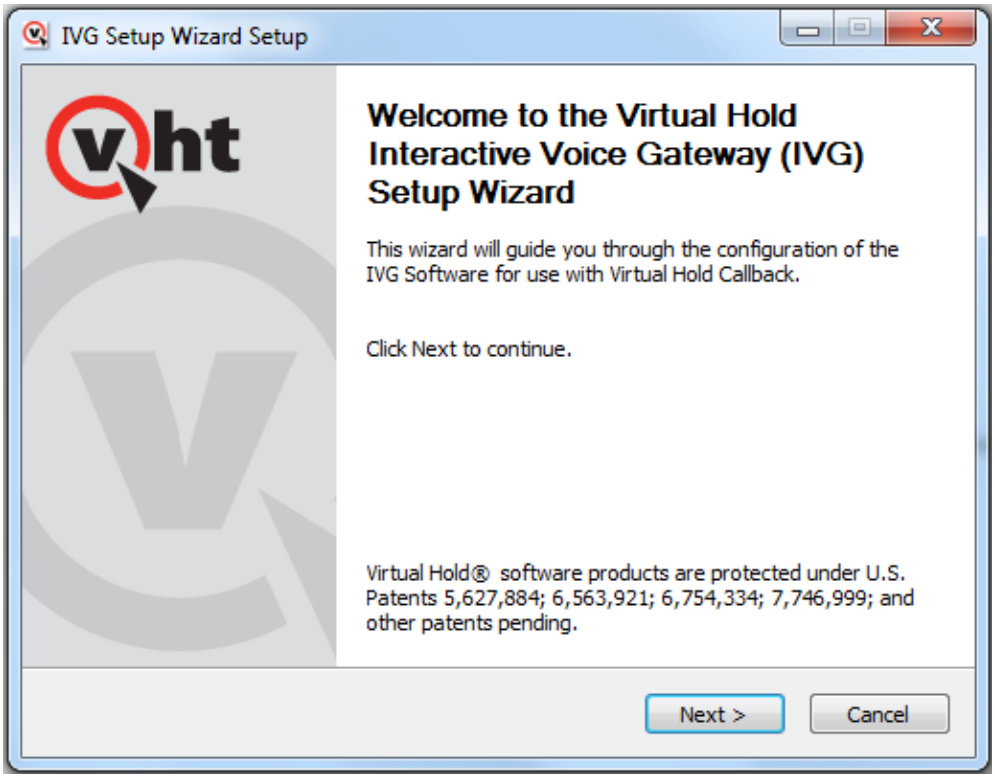
The IVG setup wizard is run using Windows, and the configuration file is then copied to each Linux VM to be installed with IVG.

## Before you begin

- Verify all prerequisites have been completed.
- Download the **ivginstaller-3.5.0** file from the VHT download center and locate the IVG Setup Wizard application.

## Welcome screen

The Welcome screen signifies the beginning of the IVG configuration for use with VHT Callback.




Click **Next** to continue and proceed to the configuration file screen.

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## Configuration file

The Configuration file screen allows the user to:

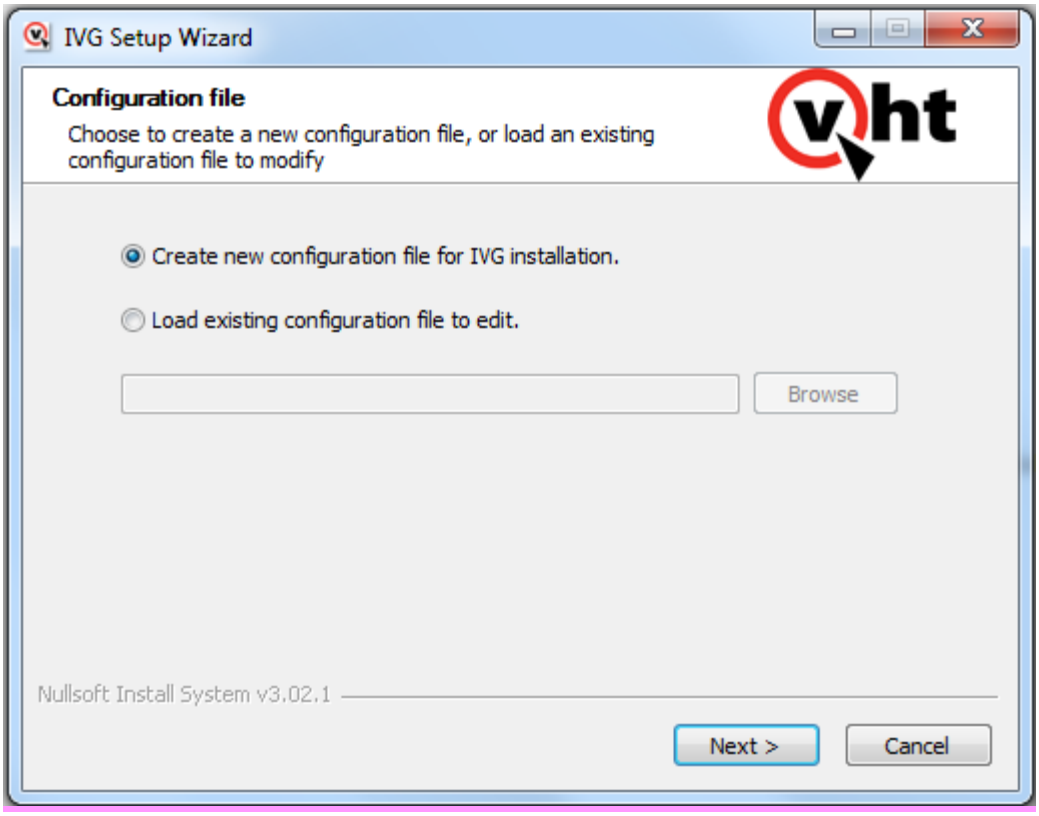
- Create a new configuration file for IVG installation

OR

- Load and edit an existing configuration file for IVG installation

**Important:**

An existing configuration file from IVG 3.4.0 or earlier cannot be used for IVG 3.5.0 or later. Please reference IVG upgrade 3.0.0 or later to version 3.5.x for instructions on how to upgrade from a previous version of IVG.




## Creating a new configuration file

Creating a new configuration file allows the user to create a new configuration file for installing IVG. This option walks you through the process of building a new configuration file to use with IVG installation.

To create a new configuration file:

1. Select the **Create a new configuration file for IVG installation** radio button.
2. Click **Next** to proceed to server pool definition.

## Loading an existing configuration file

Loading an existing configuration file allows the user to load and edit an existing IVG configuration file for installation. As you step through the installation process, the values of the existing configuration file are populated on each screen. These values can be modified or preserved.

To load an existing configuration file:

1. Select the **load existing configuration file to edit** radio button.
2. Enter the path where the IVG configuration file is located.

OR

3. **Browse** for the configuration file if the location is not automatically populated.
4. Click **Next** to proceed to server pool definition.

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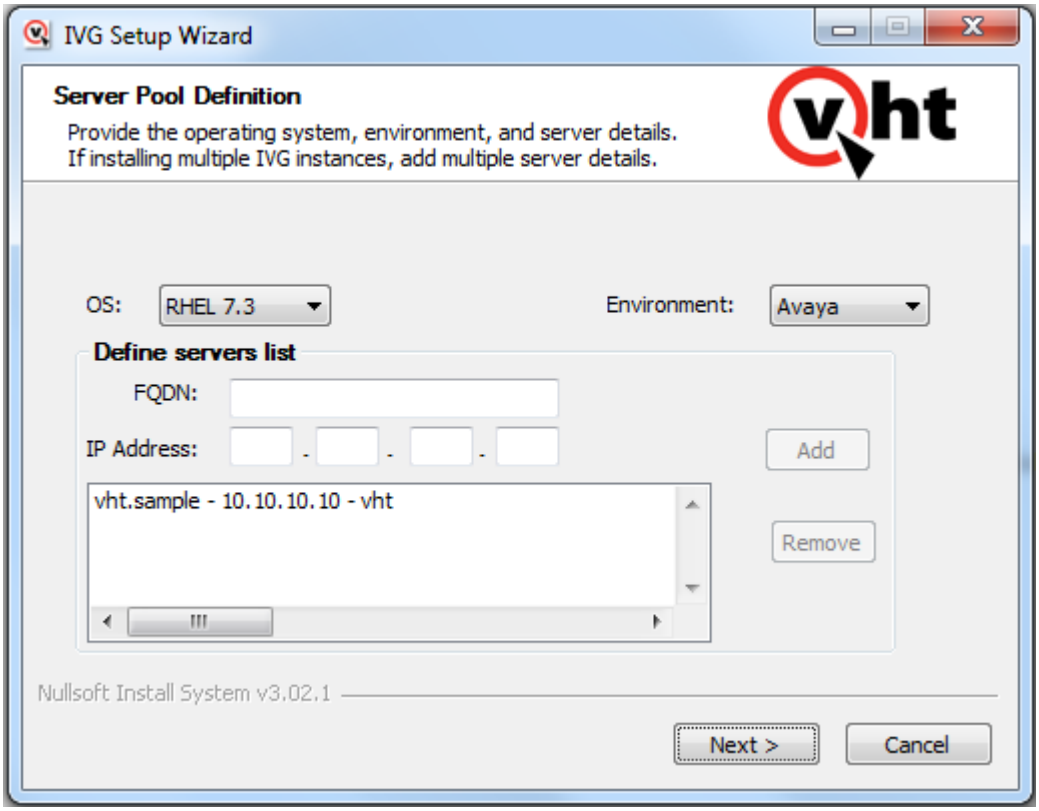
## Server pool definition

The server pool definition screen allows the user to identify the operating system, telephony environment, and VM information.




1. Select an operating system from the **OS** dropdown menu. Available options are:
   - RHEL 7.3
   - CentOS 7.3
   - RHEL 6.8
   - CentOS 6.8
2. Select an environment from the **Environment** dropdown menu. Available options are:
   - Avaya

- Cisco UCCE
- Genesys

3. Enter the VM's fully qualified domain name (FQDN) in the **FQDN** field.
4. Enter the server IP address in the **IP Adress** field.
5. Click **Add** to add the the VM to the server list. Each VM is added in the format *FQDN* **-** *IP Address* **-** *Short name*.
6. If creating a configuration for a multi IVG deployment, repeat Steps 3-5 for each VM in the solution.

**Need to remove a VM from the list?**

1. Click the VM name to highlight the name in the list.
2. Click the **Remove** button.

7. Click **Next** to proceed to application distribution.

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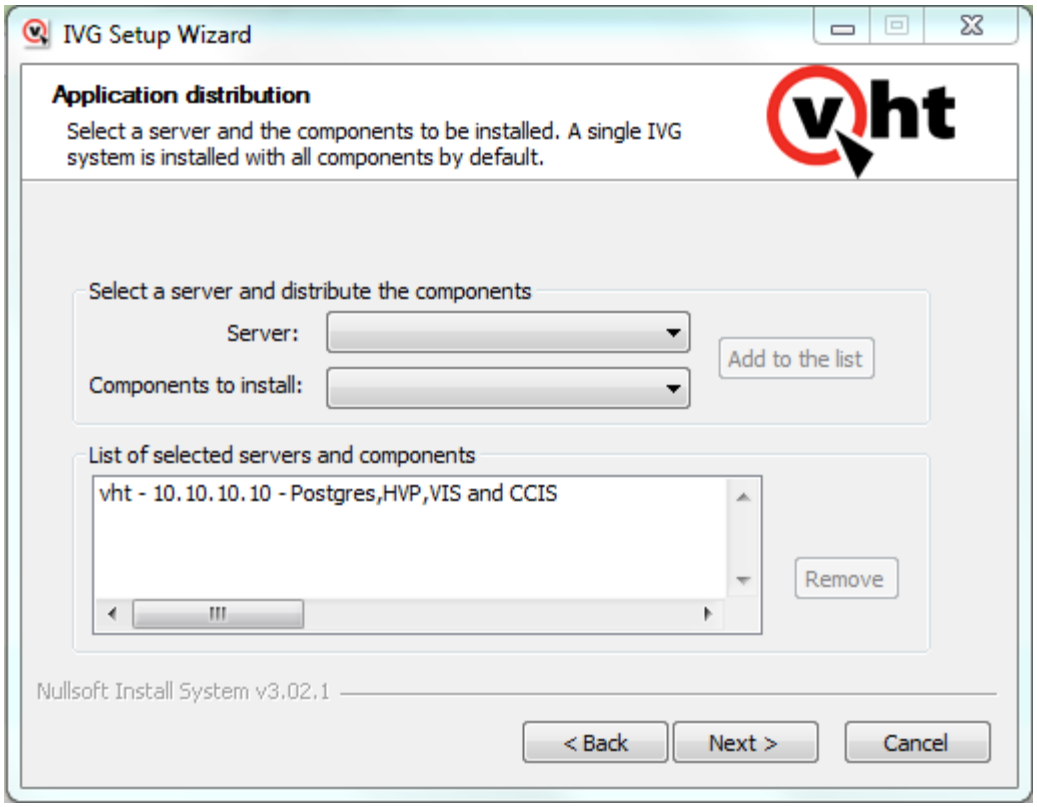
## Application distribution

The application distribution screen determines what components to install on each VM of the IVG deployment.

In a single IVG deployment, the setup wizard automatically distributes all components to the VM identified during Server pool definition, and the **Server** and **Components to install** fields will be inactive.

In a multiple IVG deployment, each VM identified on the Server pool definition screen is listed in the **Server** dropdown list. The **Components to install** dropdown contains each possible component combination available, based on the supported deployment models. After selecting a VM and distributing the components, the **Components to install** dropdown dynamically updates to include the remaining components available to install.




To distribute the components for a multiple IVG deployment:

1. Select a VM from the **Server** dropdown list.
2. Select the components to install on the VM from the **Components to install** dropdown.
3. Click **Add to the list** to add the server and its components to the list.
4. Repeat Steps 1-3 for each remaining server.

***Need to remove a server and its components from the list?***

1. *Click the server name to highlight the name in the server list.*
2. *Click the **Remove** button.*

5. Click **Next** to proceed to PostgreSQL application distribution.

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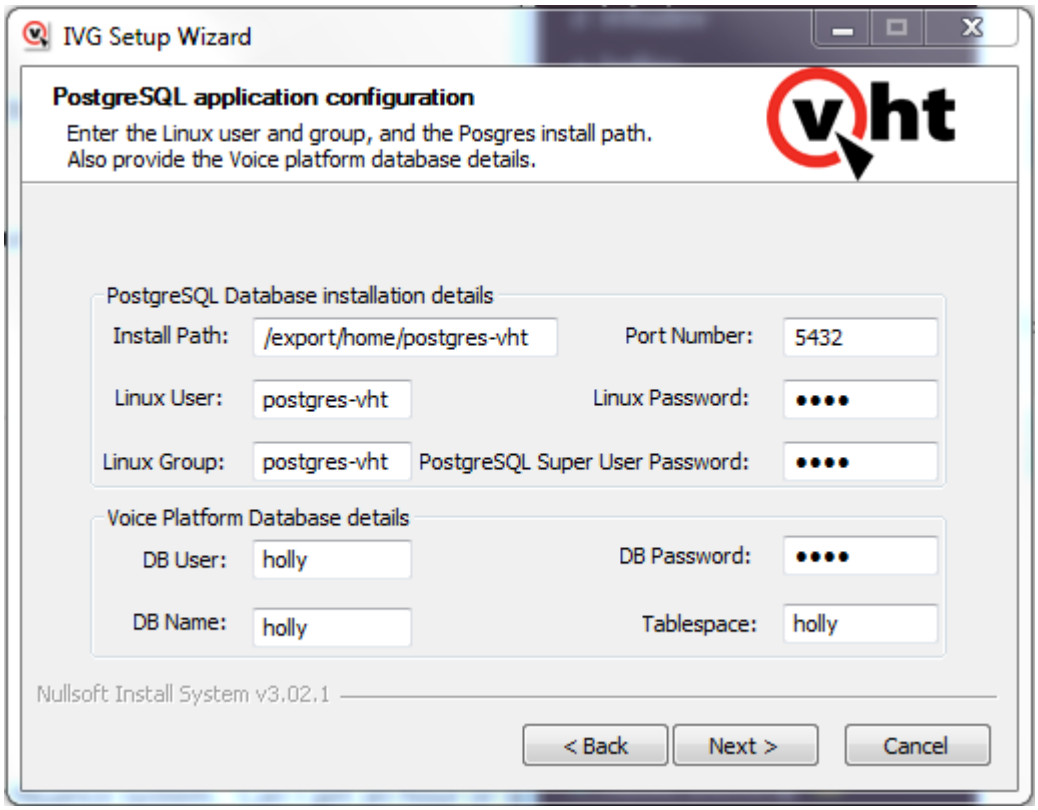
# PostgreSQL application configuration

The PostgreSQL application configuration screen captures the details to install the PostgreSQL database, and also the voice platform database configuration.




Populate each field on the screen using the following table for descriptions and default values:

| Section | Field | Description | Default value |
|---|---|---|---|
| PostgreSQL database | Install path | Path where PostgreSQL is installed. A folder named **9** is installed in this path, and contains PostgreSQL 9.5. | /export/home/postgres-vht |
| | Port number | Port number used for the PostgreSQL server. VHT recommends using the default port number of **5432**. | 5432 |

| Section | Field | Description | Default value |
|---|---|---|---|
| | Linux user | The OS user to be used for the PostgreSQL database.<br>The Linux user field has the following constraints;<br>• cannot begin with a hyphen (-)<br>• cannot end with a period (.)<br>• dollar sign ($) only at the end<br>• cannot be root<br>• cannot contain spaces<br>• must be less than or equal to 32-characters<br>**Important:**<br>The Linux user cannot be **root**. | postgres-vht |
| | Linux password | The password for the Linux user.<br>**Note:**<br>All passwords are encrypted in the installation file. | NA |
| | Linux group | The name of the Linux group to be created. the Linux user is added to this group.<br>The Linux group field has the following constraints:<br>• cannot begin with a hyphen (-)<br>• cannot end with a period (.)<br>• dollar sign ($) only at the end<br>• cannot be root<br>• cannot contain spaces<br>• must be less than or equal to 32-characters | postgres-vht |

| Section | Field | Description | Default value |
|---|---|---|---|
| | PostgreSQL super user password | The password for the PostgreSQL super user.<br>The PostgreSQL super user is created with the user name **postgres** when the database is installed. This user has database super user permissions, and can be used for administrative purposes.<br>**Note:**<br>All passwords are encrypted in the installation file. | NA |
| Voice platform database | DB user | The user to be used for the voice platform database.<br>The DB user field has the following constraints:<br>• valid characters are alphanumeric and underscore (_)<br>• cannot begin with a digit<br>• cannot contain spaces<br>• cannot be root<br>• must be 64-characters or less<br>**Important:**<br>The database user cannot be **root**. | holly |
| | DB password | The password for the database user.<br>**Note:**<br>All passwords are encrypted in the installation file. | NA |

| Section | Field | Description | Default value |
|---|---|---|---|
| | DB name | The voice platform database name used by the voice platform application.<br>The DB name field has the following constraints:<br>• valid characters are alphanumeric and underscore (_)<br>• cannot begin with a digit<br>• cannot contain spaces<br>• cannot be root<br>• must be 64-characters or less | holly |
| | Tablespace | The tablespace created in the voice platform database | holly |

Click **Next** to proceed to voice platform configuration.

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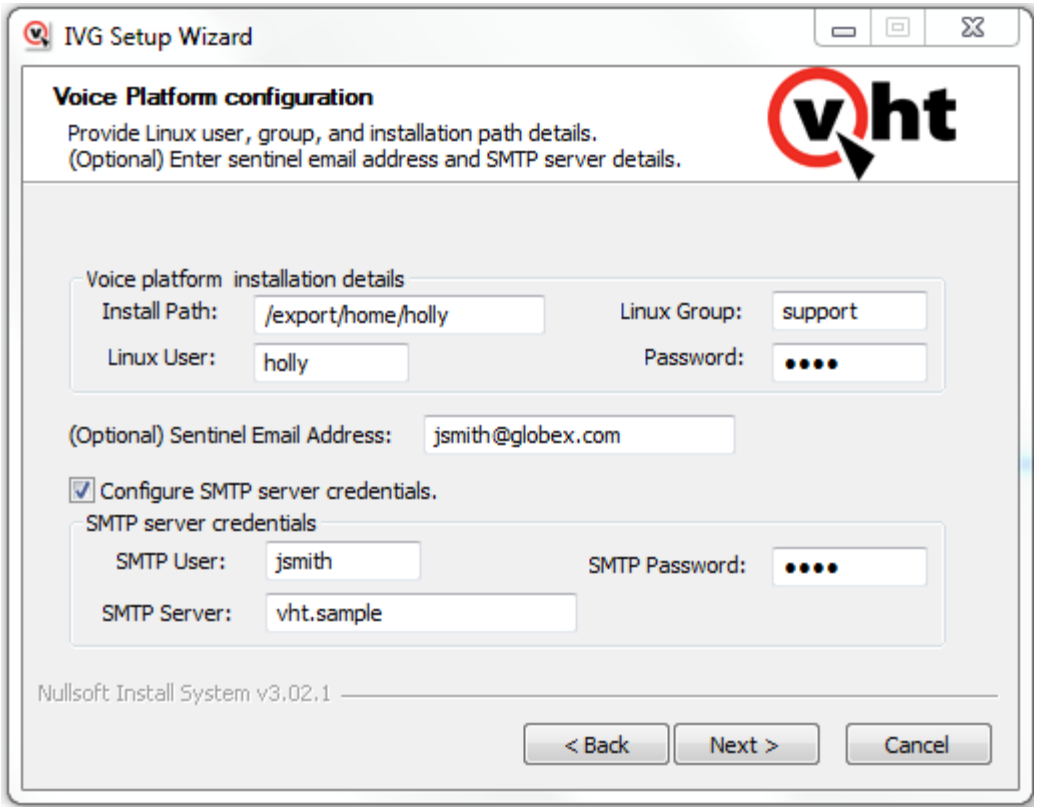
## Voice platform configuration

The voice platform configuration screen captures the installation details for the voice platform application. Additionally, a Sentinel email address to receive voice platform notifications, and SMTP server credentials can be configured on this screen.




Populate each field in the section using the following table for descriptions and default values:

| Field | Description | Default value |
|---|---|---|
| Install path | Path where the voice platform is installed.<br>**Note:**<br>The following files are also installed to this location:<br>• CCISimport.log<br>• hvp_params_*environment*.cfg<br>• hvp_params_common.cfg | /export/home/holly |
| Linux group | Operating system group name created during IVG installation. The Linux user is added to this group. | support |

| Field | Description | Default value |
|---|---|---|
| Linux user | Operating system user name to log into the voice platform management system.<br>**Important:**<br>The Linux user cannot be **root**. | holly |
| Password | Password used to log into the voice platform management system.<br>**Note:**<br>All passwords are encrypted in the installation file. | NA |

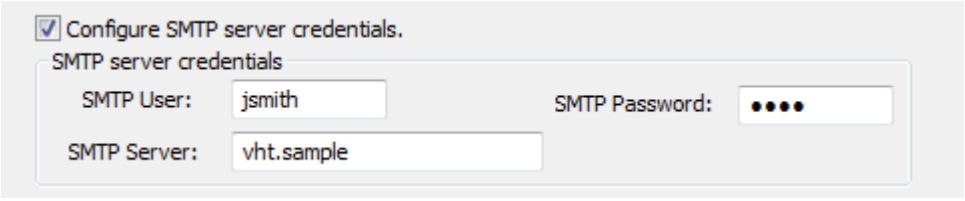
## Sentinel email address

The Sentinel email address is used to send voice platform notifications to the worker services. The configured email address receives emails **only** if a worker service is down.

To configure the Sentinel email, enter a valid email address. The user associated with the email address should be the VHT Linux administrator.

## SMTP server credentials

The Simple Mail transfer Protocol (SMTP) credentials can also be configured. The SMTP server credentials are enabled when the **Configure SMTP server credentials** box is checked.




Populate each field in the section using the following table for descriptions:

| Field | Description |
|---|---|
| SMTP user | SMTP user that connects to the SMTP server. |

| Field | Description |
|---|---|
| SMTP password | Password of the SMTP user.<br>**Note:**<br>All passwords are encrypted in the installation file. |
| SMTP server | The SMTP server used for sending email from the IVG server. Enter the SMTP server's FQDN OR IP address. |

Click **Next** to proceed to voice platform parameters.

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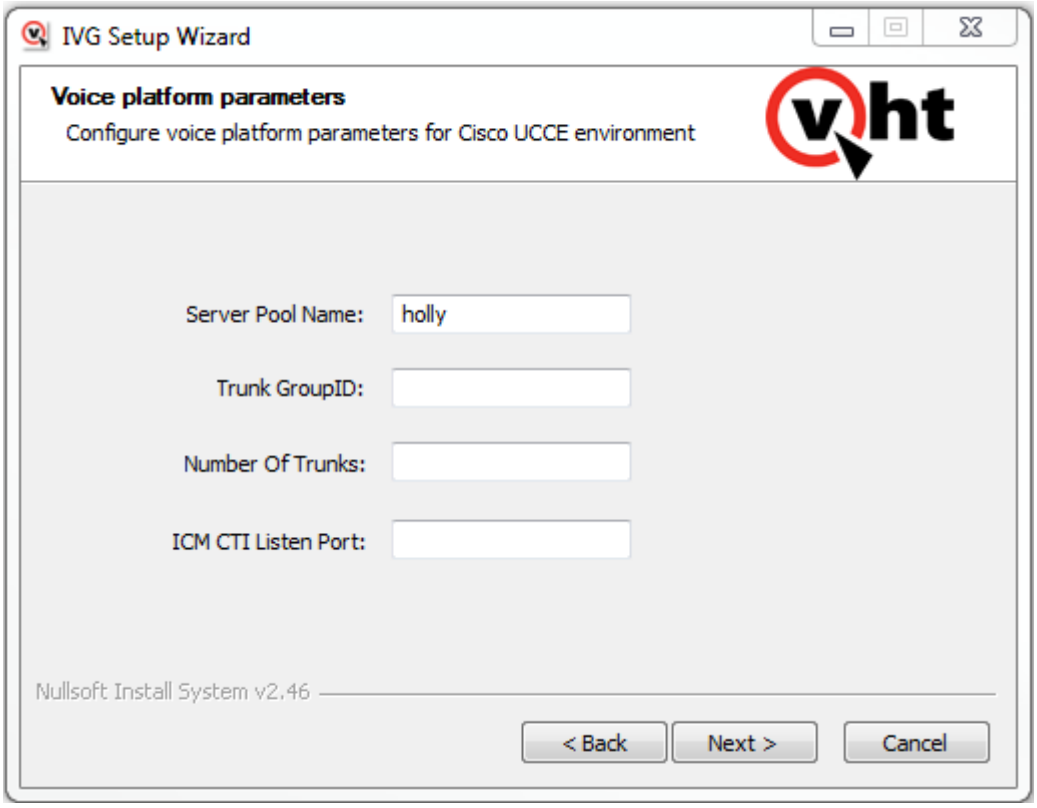
## Voice platform parameters

The voice platform parameters screen captures the environment-specific parameters for the IVG installation. The environment selected on the Server pool definition screen determines the what parameters are required.

The voice platform parameters screen for Avaya and Genesys environments only contains **Server Pool Name**.




Populate each field in the section using the following table for descriptions and default values:

| Environment | Field | Description | Default value |
|---|---|---|---|
| • Avaya<br>• Genesys<br>• Cisco UCCE | Server pool name | Name for the pool of servers in the IVG deployment. | holly |
| • Cisco UCCE | Trunk group ID | Peripheral number for the Network Trunk Group in Cisco UCCE.<br>Used in combination with Number of Trunks to create the **trunkgroups** value in the configuraiton file. | 102 |
| | Number of Trunks | Maximum number of trunks<br>Used in combination with the Trunk group ID to create the **trunkgroups** value in the configuration file. | 30 |

| Environment | Field | Description | Default value |
|---|---|---|---|
| | ICM CTI Listen Port | ICM CTI listen port to be opened. | 5000 |

Click **Next** to proceed to Tomcat application configuration.

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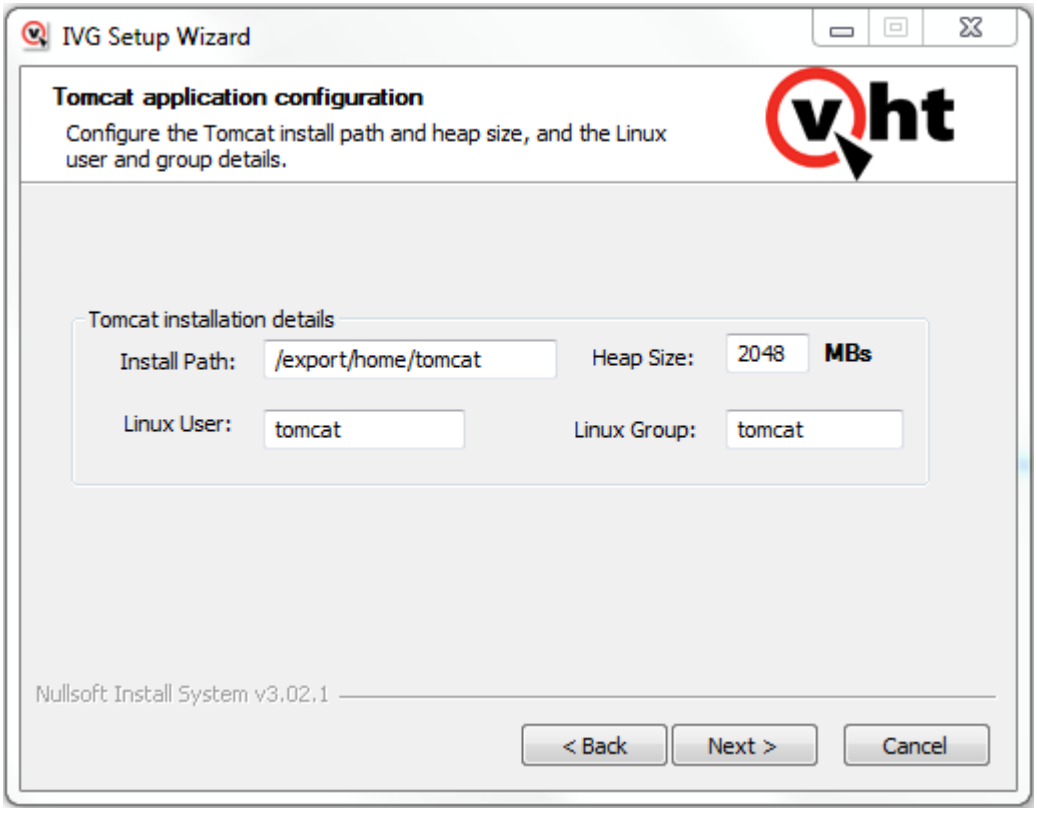
## Tomcat application configuration

The Tomcat application configuration screen captures the Tomcat installation details required for VIS setup.




Populate each field in the section using the following table for descriptions and default values:

| Field | Description | Default value |
|---|---|---|
| Install path | Path where Tomcat is installed. | /export/home/tomcat |

| Field | Description | Default value |
|---|---|---|
| Heap size (in MBs) | VHT recommends not decreasing this value. | 2048 |
| Linux user | Operating system user used to install Tomcat. The user is created during IVG installation as a nologin user | tomcat |
| Linux group | Operating system group name created during IVG installation. The Linux user is added to this group. | tomcat |

Click **Next** to proceed to NFS configuration for name file sharing.

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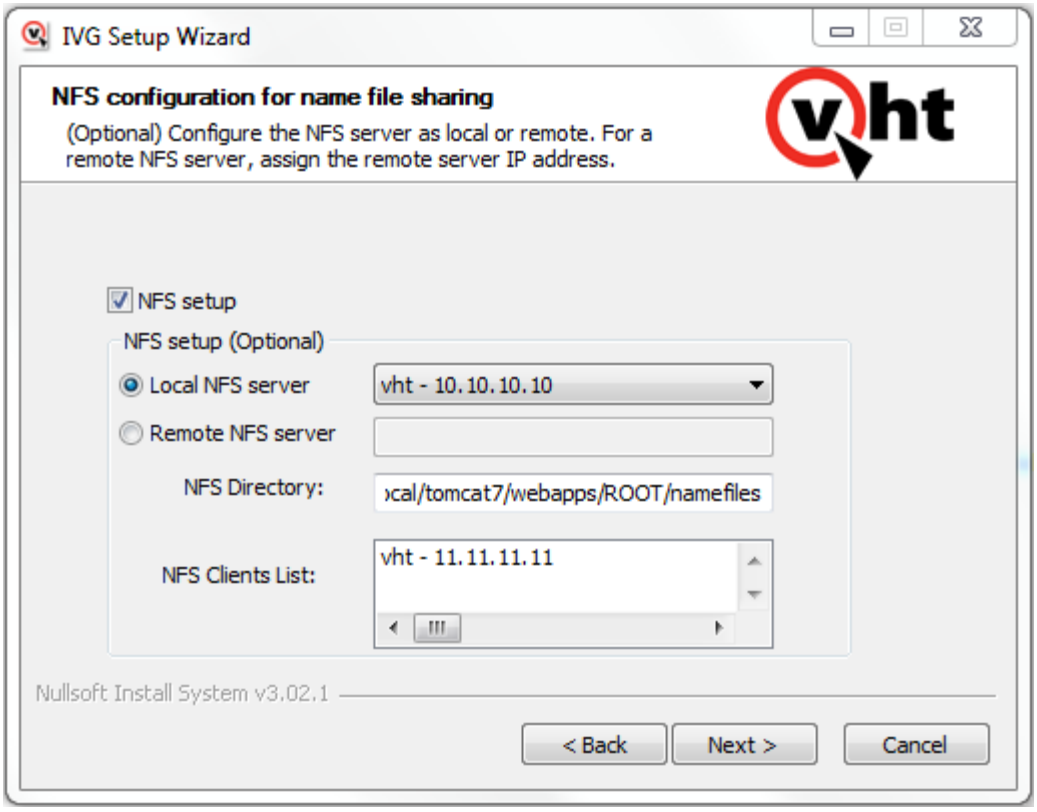
## NFS configuration for name file sharing

The NFS configuration is an optional configuration screen to configure a Network File System (NFS). An NFS configures a Linux machines as a network drive to share name files at a common location across other Linux machines in a Network File System (NFS).

When the NFS setup checkbox is enabled, the NFS setup fields become active.




Populate each field in the section using the following table for descriptions:

| Field | Description |
|---|---|
| Local NFS server | Radio button to use a local NFS server. When selected, a dropdown list of all servers added during server pool definition displays. Selecting a server from this list identifies the server as the server sharing its name files.<br>To select a local NFS server:<br>1. Select this radio button if the NFS server is **local** to the IVG deployment.<br>2. Select a server from the dropdown menu |
| Remote NFS server | Radio button to use a remote NFS server. When selected, identify a remote server to use as the server sharing its name files.<br>To enter a remote NFS server:<br>1. Select this radio button if the NFS server is **remote** to the IVG deployment.<br>2. Enter the IP address of the remote server. |

| Field | Description |
|---|---|
| NFS directory | The directory path on the NFS server which is shared across the Linux machines. |

The **NFS client list** is populated based on whether the Local NFS server or Remote NFS server radio button is selected.

- Local NFS server - remaining IVG servers added during server pool definition display.
- Remote NFS server - all IVG servers added during server pool definition display.

Click **Next** to proceed to the IVG configuration summary.

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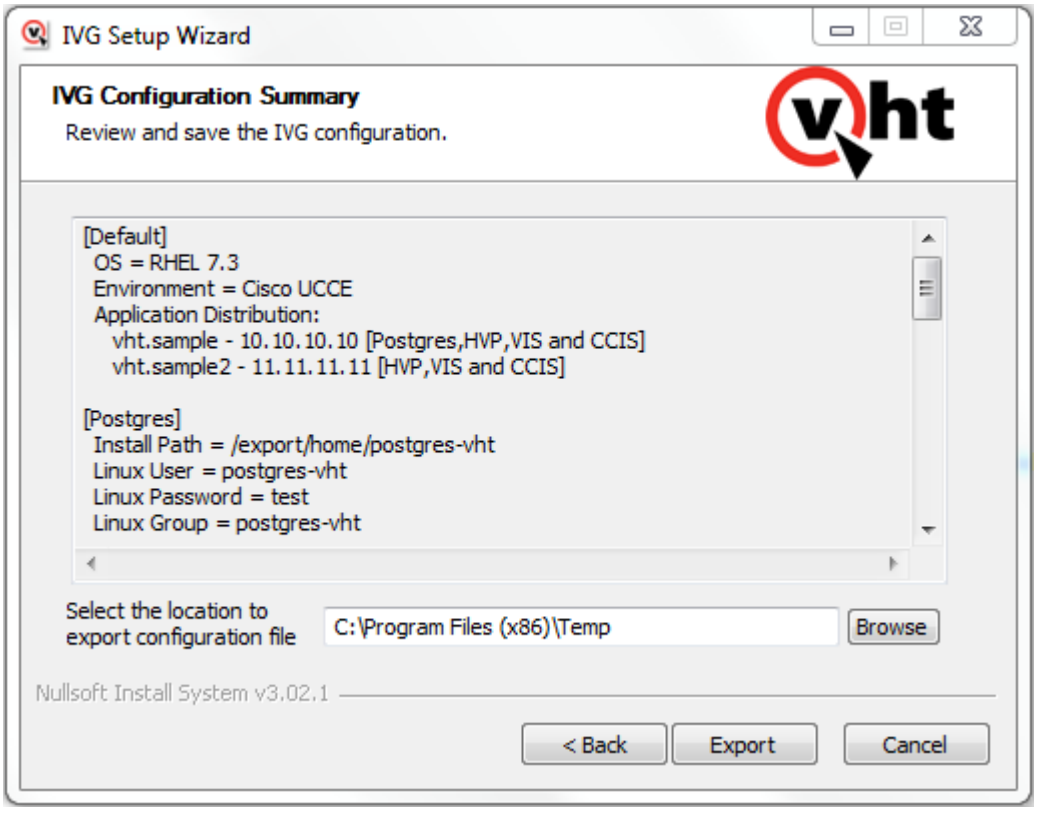
## IVG configuration summary

The IVG configuration summary screen displays a detailed summary of the IVG components to be installed. The location to export the configuration file to is also designated on this screen.



To review and export the configuration file:

1. Review the installation summary and verify the components have been correctly configured.
    a. Default - lists the OS, environment, and application distribution
    b. Postgres - lists the PostgreSQL application configuration details.
    c. VoicePlatform - lists the voice platform configuration details
    d. VoicePlatform-Params - lists the voice platform parameters configuration details
    e. Tomcat - lists the Tomcat application configuration details
    f. NFS - lists the NFS configuration details (if configured).
2. Designate the location where the configuration will be exported.
    a. Click **Browse**.
    b. Navigate to the location where the configuration file should be exported.
3. Click **Export** to export the configuration file.
4. When the configuration file has been successfully exported, click **Next** to proceed to the finish screen.

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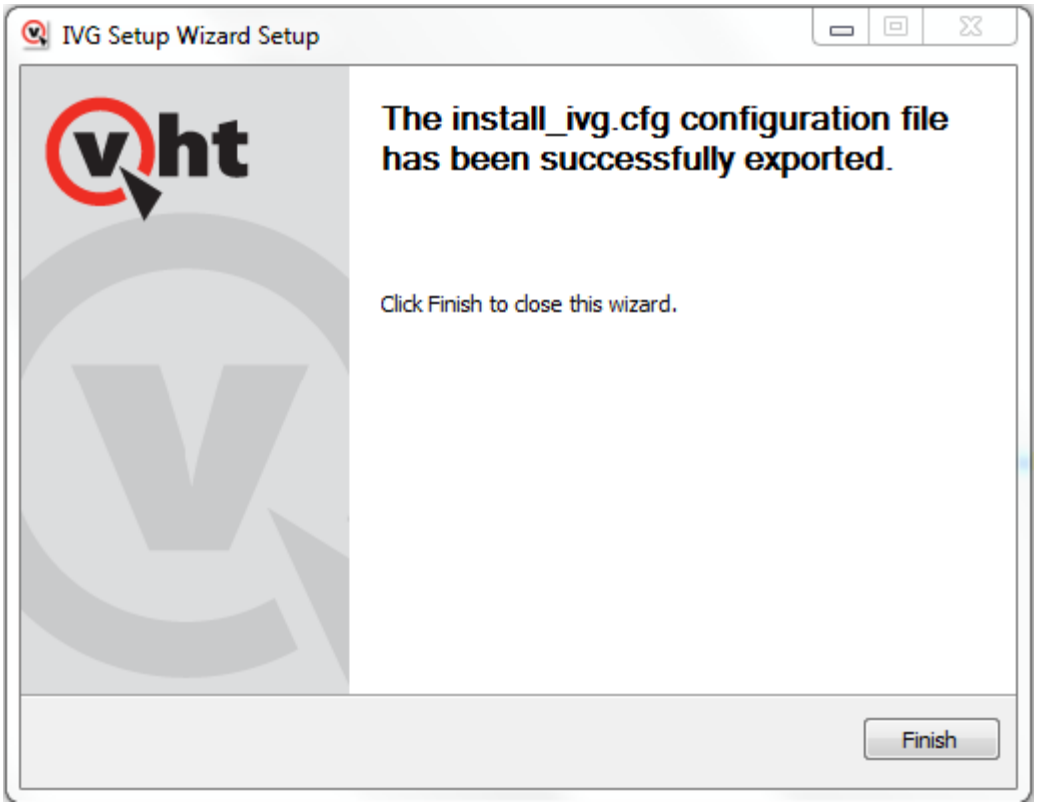
## Finish screen

The finish screen marks the successful completion of the IVG setup wizard. Click **Finish** to close the wizard and proceed to Installing IVG.




**Error messages?**

To diagnose and resolve any error messages from the IVG configuration wizard, see Troubleshooting IVG installation.

## Sample configuration files

For reference, sample configuration files are attached to this topic for:

- Single IVG deployment
  - RHEL 7.3
  - Avaya environment
  - Sentinel email employed
- Multiple IVG deployment
  - CentOS 7.3
  - Cisco UCCE environment
  - PostgreSQL remote to IVG instances
  - Sentinel email employed

- NFS employed

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## Next steps

After completing the IVG setup wizard and exporting the configuration file, proceed to Installing IVG to install the IVG instance on the designated VM.

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# Adding additional installation parameters

## Overview

The install_ivg.cfg file created by the IVG setup wizard includes several optional keys and values that are not populated by the wizard. These fields are not mandatory, and are either left blank or populated with the recommended default settings.

## Modifying optional parameters

The installation process ignores any blank values.

| Field | Description | Default value |
|---|---|---|
| ivg_ports | List of ports required to be opened by the IVG application. Additional ports can be added in a comma delimited list. | 5432,4080,5080,4081,8040,8041,4095,6399,17 |
| logtokeep | Maximum number of days PostgreSQL database log records are kept.<br>**Note:** This value can also be modified post-installation in Configuring log purging. | 10 |
| logtodelete | PostgreSQL database log records up to this value (in days) are deleted.<br>**Note:** This value can also be modified post-installation in Configuring log purging. | 30 |

| Field | Description | Default value |
|---|---|---|
| realtime_group | The realtime group name for performance tuning. | realtime |
| datatodelete | Maximum number of days to keep data files inside the call data directory structure. Data files older than the datatodelete value are deleted.<br>**Note:**<br>This value can also be modified post-installation in Configuring log purging. | 10 |
| postgres_linux_userid | | NA |
| postgres_linux_groupid | | |
| holly_linux_groupid | | |
| tomcat_linux_userid | | |
| tomcat_linux_groupid | | |

**SMTP, Sentinel, and NFS**

The values for SMTP, Sentinel, and NFS are left blank if not configured in the IVG setup wizard. These values can be manually configured in the install_ivg.cfg file if required.

# Installing IVG

Interactive Voice Gateway (IVG) is installed on designated Linux VMs using the configuration file created by the IVG setup wizard. The single IVG configuration file is used to install IVG on each VM in the IVG deployment.

*For more information on the supported IVG deployment models, please see the IVG technical overview.*

## Before you begin

- Verify the IVG prerequisites to prepare the VM and environment
- Complete the IVG setup wizard to create the configuration file
- Download the **ivginstaller-3.5.0.***xx* from Flexera

## Installing IVG

1. Copy the **ivginstaller-3.5.***xxxx* file to the VM where the first instance of IVG will be installed.
2. Copy the install_ivg.cfg file created by the IVG setup wizard to the VM where the first instance of IVG will be installed.

**Important:**

The target directory name where the files are copied must not contain spaces.

3. Navigate to the directory where the **ivginstaller-3.5.***xxxx* was saved and open the installer.
4. Enter the following command to change the permissions:

   **chmod a+x ivginstaller-3.5.***xxxx*

5. Enter the following command to execute the installer:

   **./ivginstaller-3.5.***xxxx* **| tee install_***mmddyy***.txt**

   Where *mmddyy* is the date of the installation. This saves a dated installation log of the IVG installation process.

**Notes:**

- To see the commands executed by the installer, please reference IVG installer process.

- The installer may take 10-15 minutes to complete, which is marked by a IVG server restart.

6. Repeat Steps 1-5 on each VM in the IVG deployment.

### Verifying IVG installation

After the IVG installer process has finished, verify the installation by completing the following:

1. Navigate to **http://***server_address***:2020** and verify the management system interface displays.
2. If the homepage does not display, open the install_mmddyy.txt and verify no errors or exceptions are present. Refer to IVG troubleshooting for information on how to resolve any errors.
3. Repeat Steps 1-2 for each VM in the IVG deployment.

## Next steps

After installing IVG, log in to the IVG Management System to begin configuring the IVG solution for your environment:

- Avaya
- Cisco
- Genesys

# IVG installer process

## Overview

After configuring the configuration files, the IVG Installer automatically installs the necessary components onto the designated Virtual Machine (VM). The details of what the IVG Installer installs are detailed by deployment model below.

## Standalone IVG

A single IVG Installation installs all necessary components and prerequisites onto a single VM. The automatic installation process performs the following:

1. Verifies CentOS or RHEL version 6.8 or 7.3 are installed.
    - Verifies the RHEL subscription is registered (if applicable).
    - Verifies the OS architecture is 64-bit.

**Note:**

Refer to the Virtual Hold Compatibility and Integration Matrix for supported OS versions.

2. Prepares the Linux environment.
    - Adds hostname and FQDN to /etc/hosts file.
    - Enables Firewalls (CentOS or RHEL 7.3)
    - Turns on IP tables (CentOS or RHEL 6.8)
    - Checks for SELinux as enabled or disabled.

**Notes:**

- If only the FQDN exists in the /etc/hosts file, the installer adds the hostname in this step.
- For a list of ports opened by the platform, please reference Appendix A of the *HVP Linux Installation* Guide.

3. Verifies the / partition has 1 GB of free disk space.

- If the / partition has less than 1 GB of free disk space, a warning message stating that Virtual Hold recommends at least 1 GB of disk space for installation of the necessary Linux operating system dependencies is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

4. Verifies the hollyinstallpath partition has 5 GBs of free disk space.

- If the hollyinstallpath partition has less than 5 GBs of free disk space, a warning message stating that Virtual Hold recommends at least 5 GBs of disk space for installation of the HVP components used by IVG is displayed. Enter **y**to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

5. Verifies the /tmp partition has 4 GBs of free disk space.

- If the /tmp partition has less than 4 GBs of free disk space, a warning message stating that Virtual Hold recommends at least 4 GBs of disk space for temporary storage of fetched audio, documents, and scripts is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

6. Verifies the Swap space is equal to the amount of memory (RAM).

- If the Swap space is less than the amount of  memory (RAM), a warning message stating that Virtual Hold recommends the Swap space be equal to the memory space for installation of IVG is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

7. Sets server umask value to **0022**.

**Note:**

Setting umask to 0022 instead of 0027 allows all users to read, write, and run files from all directories. This permits full usage of IVG.

8. Verifies the installation and correct version of the following OS dependencies for the voice platform. The prerequisites and their supported versions are located in the **prerequisites** folder of the **ivginstaller-*XXXX*.zip**file:
    - cyrus-sasl-plain
    - expat
    - expect
    - gzip
    - ksh
    - libaio
    - libcurl
    - libogg
    - libvorbis
    - libxml2
    - libxslt
    - libyaml
    - mailx
    - ncurses
    - net-snmp
    - nfs-utils
    - openssl
    - pcre
    - perl
    - postgresql92-server
    - speex
    - xerces (CentOS)
    - xerces-c (RHEL)
    - tcsh
    - zsh

**Notes:**

- If a supported version of a dependency is already installed, the installer skips to the next dependency.
- If an unsupported version of a dependency is installed, the installer uninstalls the unsupported version and

installs the supported version.

9. Installs the PostgreSQL database.
10. Installs HVP and any required patches.
    - Creates the voice platform database with tablespace for:
      - Configuration
      - Logs
    - Starts the required HVP workers.
    - Applies performance enhancement default values.
11. Installs the SELinux security policies (if enabled in Step 2) by executing the install_hollyhvp_selinux_policy.ksh script.

**Note:**

If SELinux is enabled, the IVG Installer provides an option to install SELinux policies. The policies allow HVP to function normally during SELinux enforcement, and avoid SELinux imposing limitations on the installation and operation of the platform. Please refer to Section 6 of the *HVP Installation* Guide for further information.

12. Installs VXML Interaction Server (VIS) and its dependencies:
    - Verifies the supported version of Java Runtime Environment (JRE) is installed.

**Notes:**

- If a supported version of Java is already installed, the installer skips this step.
- If an unsupported version of Java is installed, the installer uninstalls the unsupported version and installs the supported version.

- Verifies the supported version of Apache Tomcat Version installed.
- Publishes the VIS .war files under tomcat/webapps folder.
- Publishes the voices media files to webapps folder.
- Creates the name files folder under tomcat/webapps/ROOT.
- Configures the toolkit.properties file under /etc/VirtualHold folder.
- Creates a cron job for deleting old name files older than 8 days.

13. Runs the HVP Call Control Interaction Server (CCIS) installation.
    a. Publishes the vht-ivg.war file under tomcat webapps.

b. Configures the voice platform parameters from the **hvp_params.cfg** file.

14. Creates the **uninstall_ivg.cfg** file and places it at **/etc/VirtualHold/**.
15. The installer restarts HVP to complete installation.
16. The installer restarts the VM.

## Multiple IVG

The IVG Installer must be executed on multiple VMs: the first VM will contain the database and the first IVG instance, and subsequent VMs will contain the additional IVG instances. The installation process of each VM is detailed below.

## IVG and local PostgreSQL database

The IVG Installer performs the following steps to install the PostgreSQL database on the first VM.

1. Verifies CentOS or RHEL version 6.8 or 7.3 are installed.
    - Verifies the RHEL subscription is registered (if applicable).
    - Verifies the OS architecture is 64-bit.

**Note:**

Refer to the Virtual Hold Compatibility and Integration Matrix for supported OS versions.

2. Prepares the Linux environment.
    - Adds hostname and FQDN to /etc/hosts file.
    - Enables Firewalls (CentOS or RHEL 7.3)
    - Turns on IP tables (CentOS or RHEL 6.8)
    - Checks for SELinux as enabled or disabled.

**Notes:**

- If only the FQDN exists in the /etc/hosts file, the installer adds the hostname in this step.
- For a list of ports opened by the platform, please reference Appendix A of the *HVP Linux Installation* Guide.

3. Verifies the / partition has 1 GB of free disk space.

- If the / partition has less than 1 GB of free disk space, a warning message stating that Virtual Hold recommends at least 1 GB of disk space for installation of the necessary Linux operating system dependencies is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

4. Verifies the hollyinstallpath partition has 5 GBs of free disk space.

- If the hollyinstallpath partition has less than 5 GBs of free disk space, a warning message stating that Virtual Hold recommends at least 5 GBs of disk space for installation of the HVP components used by IVG is displayed. Enter **y**to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

5. Verifies the /tmp partition has 4 GBs of free disk space.

- If the /tmp partition has less than 4 GBs of free disk space, a warning message stating that Virtual Hold recommends at least 4 GBs of disk space for temporary storage of fetched audio, documents, and scripts is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

6. Verifies the Swap space is equal to the amount of memory (RAM).

- If the Swap space is less than the amount of  memory (RAM), a warning message stating that Virtual Hold recommends the Swap space be equal to the memory space for installation of IVG is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

7. Sets server umask value to **0022**.

**Note:**

Setting umask to 0022 instead of 0027 allows all users to read, write, and run files from all directories. This permits full usage of IVG.

8. Verifies the installation and correct version of the following OS dependencies for the voice platform. The prerequisites and their supported versions are located in the **prerequisites** folder of the **ivginstall-*XXXX*.zip** file:
    - cyrus-sasl-plain
    - expat
    - expect
    - gzip
    - ksh
    - libaio
    - libcurl
    - libogg
    - libvorbis
    - libxml2
    - libxslt
    - libyaml
    - mailx
    - ncurses
    - net-snmp
    - nfs-utils
    - openssl
    - pcre
    - perl
    - postgresql92-server
    - speex
    - xerces (CentOS)
    - xerces-c (RHEL)
    - tcsh
    - zsh

**Notes:**

- If a supported version of a dependency is already installed, the installer skips to the next dependency.
- If an unsupported version of a dependency is installed, the installer uninstalls the unsupported version and

installs the supported version.

9. Installs the PostgreSQL database.
10. Installs HVP and any required patches.
    - Creates the voice platform database with tablespace for:
      - Configuration
      - Logs
    - Starts the required HVP workers.
    - Applies performance enhancement default values.
11. Installs the SELinux security policies (if enabled in Step 2) by executing the install_hollyhvp_selinux_policy.ksh script.

**Note:**

If SELinux is enabled, the IVG Installer provides an option to install SELinux policies. The policies allow HVP to function normally during SELinux enforcement, and avoid SELinux imposing limitations on the installation and operation of the platform. Please refer to Section 6 of the *HVP Installation* Guide for further information.

12. Installs VXML Interaction Server (VIS) and its dependencies:
    - Verifies the supported version of Java Runtime Environment (JRE) is installed.

**Notes:**

- If a supported version of Java is already installed, the installer skips this step.
- If an unsupported version of Java is installed, the installer uninstalls the unsupported version and installs the supported version.

- Verifies the supported version of Apache Tomcat Version installed.
- Publishes the VIS .war files under tomcat/webapps folder.
- Publishes the voices media files to webapps folder.
- Creates the name files folder under tomcat/webapps/ROOT.
- Configures the toolkit.properties file under /etc/VirtualHold folder.
- Creates a cron job for deleting old name files older than 8 days.

13. Runs the HVP Call Control Interaction Server (CCIS) installation.
    - Publishes the vht-ivg.war file under tomcat webapps.

- Configures the voice platform parameters from the **hvp_params.cfg** file.

14. Creates the **uninstall_ivg.cfg** file and places it at **/etc/VirtualHold/**.
15. The installer restarts the HVP to complete installation.
16. The installer restarts the VM.

## IVG and remote PostgreSQL database

The IVG Installer performs the following steps to install IVG on subsequent VMs.

1. Verifies CentOS or RHEL version 6.8 or 7.3 are installed.
   - Verifies the RHEL subscription is registered (if applicable).
   - Verifies the OS architecture is 64-bit.

**Note:**

Refer to the Virtual Hold Compatibility and Integration Matrix for supported OS versions.

2. Prepares the Linux environment.
   - Adds hostname and FQDN to /etc/hosts file.
   - Enables Firewalls (CentOS or RHEL 7.3)
   - Turns on IP tables (CentOS or RHEL 6.8)
   - Checks for SELinux as enabled or disabled.

**Notes:**

- If only the FQDN exists in the /etc/hosts file, the installer adds the hostname in this step.
- For a list of ports opened by the platform, please reference Appendix A of the *HVP Linux Installation* Guide.

3. Verifies the / partition has 1 GB of free disk space.

- If the / partition has less than 1 GB of free disk space, a warning message stating that Virtual Hold recommends at least 1 GB of disk space for installation of the necessary Linux operating system dependencies is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources

accordingly.

4. Verifies the hollyinstallpath partition has 5 GBs of free disk space.

- If the hollyinstallpath partition has less than 5 GBs of free disk space, a warning message stating that Virtual Hold recommends at least 5 GBs of disk space for installation of the HVP components used by IVG is displayed. Enter **y**to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

5. Verifies the /tmp partition has 4 GBs of free disk space.

- If the /tmp partition has less than 4 GBs of free disk space, a warning message stating that Virtual Hold recommends at least 4 GBs of disk space for temporary storage of fetched audio, documents, and scripts is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

6. Verifies the Swap space is equal to the amount of memory (RAM).

- If the Swap space is less than the amount of  memory (RAM), a warning message stating that Virtual Hold recommends the Swap space be equal to the memory space for installation of IVG is displayed. Enter **y** to continue or **n** to exit IVG installation.

**Note:**

Your IVG system will required more free disk space than this minimum value. Adjust your system resources accordingly.

7. Sets server umask value to **0022**.

**Note:**

Setting umask to 0022 instead of 0027 allows all users to read, write, and run files from all directories. This permits full usage of IVG.

8. Verifies the installation and correct version of the following OS dependencies for the voice platform.The prerequisites and their supported versions are located in the **prerequisites** folder of the **ivginstall-*XXXX*.zip** file:
    - cyrus-sasl-plain
    - expat
    - expect
    - gzip
    - ksh
    - libaio
    - libcurl
    - libogg
    - libvorbis
    - libxml2
    - libxslt
    - libyaml
    - mailx
    - ncurses
    - net-snmp
    - nfs-utils
    - openssl
    - pcre
    - perl
    - postgresql92-server
    - speex
    - xerces (CentOS)
    - xerces-c (RHEL)
    - tcsh
    - zsh

**Notes:**

- If a supported version of a dependency is already installed, the installer skips to the next dependency.
- If an unsupported version of a dependency is installed, the installer uninstalls the unsupported version and installs the supported version.

9. Installs HVP and any required patches.
    - Creates the voice platform database with tablespace for:
        - Configuration

        - Logs
    - Starts the required HVP workers.
    - Applies performance enhancement default values.

10. Installs the SELinux security policies (if enabled in Step 2) by executing the install_hollyhvp_selinux_policy.ksh script.

**Note:**

If SELinux is enabled, the IVG Installer provides an option to install SELinux policies. The policies allow HVP to function normally during SELinux enforcement, and avoid SELinux imposing limitations on the installation and operation of the platform. Please refer to Section 6 of the *HVP Installation* Guide for further information.

11. Installs VXML Interaction Server (VIS) and its dependencies:
    - Verifies the supported version of Java Runtime Environment (JRE) is installed.

**Notes:**

- If a supported version of Java is already installed, the installer skips this step.
- If an unsupported version of Java is installed, the installer uninstalls the unsupported version and installs the supported version.

- Verifies the supported version of Apache Tomcat Version installed.
- Publishes the VIS .war files under tomcat/webapps folder.
- Publishes the voices media files to webapps folder.
- Creates the name files folder under tomcat/webapps/ROOT.
- Configures the toolkit.properties file under /etc/VirtualHold folder.
- Creates a cron job for deleting old name files older than 8 days.

12. Runs the HVP Call Control Interaction Server (CCIS) installation.
    - Publishes the vht-ivg.war file under tomcat webapps.
13. Creates the **uninstall_ivg.cfg** file and places it at **/etc/VirtualHold/**.
14. The installer restarts HVP to complete installation.
15. The installer restarts the VM.

**Notes:**

This installation process is repeated for any additional IVG instances installed on dedicated VMs.

## Standalone PostgreSQL

The IVG Installer performs the following steps to install the PostgreSQL database on the first VM.

1. Run the IVG Installer to complete the installation process. The IVG Installer installs the PostgreSQL database on the server by performing the following:
2. Install the prerequisites for PostgreSQL. The prerequisites and supported versions are located in the **prerequisites** folder of the **ivginstaller-*XXXX*.zip** file.
    - expect
    - ksh
    - perl
    - postgresql95
    - postgres-client
    - ruby
3. Install the PostgreSQL database.
4. Creates the **uninstall_ivg.cfg** file and places it at **/etc/VirtualHold/**.

# Troubleshooting IVG installation

## Overview

This page contains troubleshooting information for the Interactive Voice Gateway (IVG) installation process. Use the topics on this page to identify and resolve any issues encountered during the installation process.

## Installing as a sudo user

In the event root user access cannot be granted, the IVG installer can be run as a sudo user. Use the following instructions to run the installation process as a sudo user:

### Creating the sudo user account

Use the following instructions to create a sudo user.

1. Enter the following command to create the sudo user account:

   **adduser** *SudoUserName*

   Where *SudoUserName* is the sudo user

2. Enter the following command to enter a password for the sudo user account:

   **passwd** *SudoUserName*

3. Enter the following command to add the sudo user account to the wheel group:

   **usermod -aG wheel** *SudoUserName*

4. Enter the following command to edit the sudoers file:

   **VIM /etc/sudoers**

5. When the sudoers file opens in vim, add the following lines near the end of the file to give sudo access to the root account and the newly created sudo user account:

   *SudoUserName* **ALL=(ALL)  ALL**

   **root ALL=(ALL)  ALL**

### Executing the installer as a sudo user

1. Copy the following files to the sudo user using root:
   a. ivginstaller-3.4.0.*xx*
   b. install_ivg.cfg
   c. hvp_params_common.cfg
   d. hvp_params_avaya.cfg
   e. ivg_encrypt.out (if using password encryption)
2. Enter the following command to give the sudo user ownership of the installer files:

   **chown -R** *SudoUserName InstallPathName*

   Where *SudoUserName* is the name of the sudo user, and *InstallPathName* is the directory where the installer files are placed.

3. Enter the following command to give the group containing the sudo user access to the installer files:

   **chgrp -R** *SudoUserGroupName InstallPathName*

   Where *SudoUserGroupName* is the name of the group the sudo user belongs to, and *InstallPathName* is the directory where the installer files are placed.

4. Navigate to the directory where **ivginstaller-3.4.0.***xx* was saved and open the installer.
5. Enter the following command to log in to the sudo user:

   **su** *SudoUser*

6. Enter the following command to change the permissions of the installer:

   **chmod a+x ivginstaller-3.4.0.***xx*

7. Enter the following command to execute the installer:

   **su ./ivginstaller-3.4.0.***xx* **| tee install_***mmddyy***.txt**

   Where *mmddyy* is the date of the installation

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## Adding HostNames

If the HostNames are not added during installation, the HostNames can be manually added. Use the following instructions to add the HostName and start the workers for each IVG VM:

1. Navigate to **http://***server_address***:2020**.
2. Navigate to **Configuration > Hosts** and enter each HostName and PoolName.

> **Note:**
>
> If not updated in the install_ivg.cfg file, the default PoolName is **holly**.

3. Navigate to **Configuration > Workers** and verify the workers for each server have started.
4. Proceed to IVG Avaya Configuration to complete the required configuration steps.

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## Using Symbolic Links to relocate PostgreSQL

PostgreSQL consumes a significant amount of disk space, and can be relocated using symbolic links.

Use the following instructions to create a symbolic link and move the PostgreSQL install:

1. Use the service command to stop the postgreSQL server

```
service postgresql-version_number stop
```

2. If not already created, create the directory to which postgreSQL will be relocated

```
mkdir -p /home/postgres-data/
```

3. Use the chown -R command to change directory ownership (chown -R postgresvht:postgresvht /sd01/mydata, for example).
4. Use the chmod -R command to change access to the appropriate user and group (chmod -R 700 /sd01/mydata/, for example).
5. Use the mv command to move the existing files from the configured location to the linked location (mv /export/home/postgres/9/data/ /sd01/data-secured/data, for example).
6. Use the ln -s command to create a symbolic link from the configured location to the linked location (ln -s /sd01/data-secured/data /export/home/postgres/9/data, for example).
7. Use the service command to start the postgres server (service postgresqld start, for example).

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## Increasing the DNIS key length

The default 'keylength' parameter allows for a DNIS up to 20 characters. If more than 20 characters are required, the value for keylength can be updated by:

1. Log in to the management system and navigate to **Configuration > Holly Configuration**.
2. Select **Holly License Manager** from the **Component** dropdown.
3. Select the Pool form the **Pool** dropdown.
4. Locate the parameter **keylength** and increase the integer value.
5. Click **Add**.

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## Restarting Tomcat

During an IVG server restart where sudo user permissions are not enabled, the Tomcat service fails to restart. Modify the **/etc/init.d/tomcat** startup script to allow Tomcat to restart after a server restart.

1. Open the **/etc/init.d/tomcat** startup script.
2. Comment out the following line with the **#** character:

```
#sudo -u ${TOMCAT_USER} "$CATALINA_HOME/bin/startup.sh"
```

3. Add the following line beneath the commented out line:

```
su -s /bin/sh -c "$CATALINA_HOME/bin/startup.sh" ${TOMCAT_USER}
```

return to top

## Changing voice platform default prompt

The voice platform provides a default voice prompt for use when calls cannot execute provisioned applications. In cases where this prompt is inappropriate, it can be replaced with another prompt using the same name and recording format. The recording format must be:

RIFF (little-endian) data, WAVE audio, ITU G.711 mu-law, mono 8000 Hz

To replace the default voice prompt:

1. Record a new default prompt with the name technical-difficulties,wav in the required format.
2. Locate the technical-difficulties.wav prompt file within the holly_home_directory/etc/defaults/ directory.
3. Replace the current technical-difficulties.wav with the new technical-difficulties.wav file.

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## Resetting the management system administrator password

An IVG management system security feature locks a user account after three incorrect login attempts. Use the following instructions to reset the password for the **administrator** account:

1. Open a Linux shell command and log in with the holly user and password.
2. Use the following command to change the directory to bin:

```
cd ~/bin
```

3. Use the following command to execute the password reset script to reset the administrator password to **holly12**:

```
psql -f administrator_reset.pos.sql
```

4. When prompted, enter the administrator username and newly reset password **holly12**.

A confirmation appears that the account has been updated.

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## Locating the parameters configuration files

The IVG installation process writes the following files to the installation path identified during Voice Platform Configuration (default location is /export/home/holly):

- hvp_params_common.cfg
- CCISImport.log

And one of the following environment-specific configuration files:

- hvp_params_avaya.cfg
- hvp_params_cisco.cfg
- hvp_params_genesys.cfg

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## IVG setup wizard error messages

If an error occurs when executing the IVG setup wizard, use the following tables to identify where in the setup wizard process the error occurred, the cause of the error, and corresponding action steps.

## Server pool definition

| Error message | Cause | Action |
|---|---|---|
| An operating system has not been selected. Please select an operating system to proceed. | An operating system has not been selected from the **OS** dropdown. | Select and operating system from the **OS** dropdown. |
| An environment has not been selected. Please select an environment to proceed. | A telephony environment has not been selected from the **Environment** dropdown. | Select a telephony environment from the **Environment** dropdown. |
| Server details have not been added. Please add server details to proceed. | The FQDN and IP address of the VM have not been assigned. | Enter the FQD and IP address of each VM in the IVG deployment. |
| FQDN has already been added to the list. Please remove the FQDN OR add a new FQDN to proceed. | A duplicate FQDN has been added to the list. | Remove the FQDN from the list:<br>1. Click to highlight the FQDN.<br>2. Click **Remove**. |
| The IP address has already been added to the list. Please remove the IP address OR add a new IP address to proceed. | A duplicate IP address has been added to the list. | Remove the IP address from the list:<br>1. Click to highlight the IP address.<br>2. Click **Remove**. |
| IP Address octet value is not within range (0 to 255). Please provide IP address octet value between 0 and 255. | The IP address octet value is outside of the accepted 0-255 range. | Re-enter an IP address with an octet value between 0 and 255. |
| FQDN includes spaces. Please remove the spaces from the FQDN to proceed. | The FQDN includes spaces. | Remove the spaces from the FQDN. |
| A short name has been used instead of the FQDN. Please update the FQDN to proceed. | The VM's short name has been used instead of the FQDN. | Enter the VM's FQDN. |

| Error message | Cause | Action |
|---|---|---|
| FQDN begins or ends with a period (.) or hyphen (-). Please remove the period or hyphen to proceed. | The FQDN begins or ends with a period (.) or a hyphen (-). | Remove the period (.) or hyphen (-) from the beginning or ending of the FQDN. |
| FQDN labels are separated by more than one period (.). Please remove the additional period between labels to proceed. | The FQDN labels are separated by more than one period. | Remove the additional period between the labels. |
| FQDN includes invalid characters; valid characters are alphanumeric, period (.), and hyphen (-). Please update the FQDN to proceed | The FQDN includes invalid characters. | Update the FQDN to include valid characters. Valid characters are:<br>• alphanumeric<br>• period (.)<br>• hyphen (-) |
| FQDN is more than 255 characters. Please update the FQDN 255 characters or less to proceed. | The FQDN is more than 255 characters. | Update the FQDN to 255 characters or less. |
| FQDN's label length is more than 63 characters. Remove the FQDN and provide valid server name to proceed | The FQDN's label length is more than 63 characters. | Update the FQDN label to 63 characters or less |

## Application distribution

| Error message | Cause | Action |
|---|---|---|
| Server information has been modified. Please reconfirm the server and component distribution. | Information on the server pool definition screen was modified **after** the components were distributed to the server. | Distribute the components to the server:<br>1. Select a server from the **Server** dropdown list.<br>2. Select the components to install on the server from the **Components to install** dropdown list.<br>3. Click the **Add to the list** button.<br>4. Repeat Steps 1-3 for each server that requires component distribution. |
| Servers remain with no defined component distribution. Please distribute components to the remaining servers. | Servers in the **Server** dropdown list remain with no distributed components. | |

## PostgreSQL application configuration

| Error message | Cause | Action |
|---|---|---|
| A Linux user has not been assigned. Please provide Linux user to proceed. | A Linux user has not been assigned. | Assign the Linux user in the **Linux User** field.<br>The Linux user field has the following constraints:<br>• cannot begin with a hyphen (-)<br>• cannot end with a period (.)<br>• dollar sign ($) only at the end<br>• cannot be root<br>• cannot contain spaces<br>• must be less than or equal to 32-characters |
| The Linux user includes spaces. Please remove the spaces from the Linux user to proceed. | The Linux user includes spaces in the name. | |
| The Linux user cannot be root for the Postgres database installation. Please assign a non-root Linux user to proceed. | The assigned Linux user is root. | |
| The Linux user contains special characters which are either invalid, or in an unsupported position. Please enter a valid name to proceed. | The Linux user includes invalid special characters. | |

| Error message | Cause | Action |
|---|---|---|
| The Linux user begins with a hyphen (-). Please remove the hyphen OR place it within the Linux user name to proceed. | The Linux user begins with a hyphen. | |
| The dollar ($) symbol is only allowed at the end of the Linux user name. Please remove the dollar symbol OR place it at the end to proceed. | The Linux user contains a dollar in a location other than the end. | |
| The length of the Linux user is more than 32 characters. Please assign a Linux user less than or equal to 32 characters to proceed. | The length of the Linux user is more than 32-characters. | |
| The Linux group has not been assigned. Please provide the Linux group to proceed. | The Linux group has not been assigned. | Assign a Linux group to the **Linux Group** field.<br>The Linux group field has the following constraints:<br>• cannot begin with a hyphen (-)<br>• cannot end with a period (.)<br>• dollar sign ($) only at the end<br>• cannot be root<br>• cannot contain spaces<br>• must be less than or equal to 32-characters |
| The Linux group includes spaces. Please remove the spaces from the Linux group to proceed. | The Linux group includes spaces. | |
| The Linux group cannot be root for the Postgres DB installation. Please assign a non-root Linux group to proceed. | The assigned Linux group is root. | |
| The Linux group contains special characters. Please remove the special characters to proceed. | The Linux group includes invalid special characters. | |
| The Linux group begins with a hyphen (-). Please remove the hyphen OR place it within the Linux group name to proceed. | The Linux group begins with a hyphen. | |
| The dollar ($) symbol is only allowed at the end of the Linux group. Please remove the dollar symbol OR place it at the end to proceed. | The Linux group contains a dollar sign in a location other than the end. | |
| The length of the Linux group is more than 32 characters. Please assign a Linux group less than or equal to 32 characters to proceed. | The length of the Linux group is more than 32-characters. | |

| Error message | Cause | Action |
|---|---|---|
| The PostgreSQL installation path includes spaces. Please remove the spaces from the voice platform installation path to proceed. | The PostgreSQL installation path includes spaces. | Remove any spaces from the PostgreSQL installation path. |
| The PostgreSQL installation path has not been assigned. Please provide PostgreSQL installation path to proceed. | A PostgreSQL installation path has not been assigned. | Assign a PostgreSQL path to the **Install Path** field. |
| The Linux password has not been assigned. Please provide Linux password to proceed. | The Linux password has not been assigned. | Assign a Linux password in the **Linux Password** field to be used by the Linux user. |
| The Linux password includes spaces. Please remove the spaces from the Linux password to proceed. | The Linux password includes spaces. | Remove any spaces from the Linux password. |
| An invalid PostgreSQL port number has been assigned. Please use a port number between 0 and 65535 to proceed | An invalid PostgreSQL port number has been assigned. | Assign a valid PosrgreSQL port number between 0 and 65535. |
| A PostgreSQL port has not been assigned. Please provide PostgreSQL port to proceed. | A PostgreSQL port number has not been assigned. | |
| The PostgreSQL DB super password includes spaces. Please remove the spaces from the PostgreSQL DB super password to proceed. | The PosgreSQL DB super user password includes spaces. | Remove any spaces from the Linux super user password. |
| A PostgreSQL DB super password has not been assigned. Please provide PostgreSQL DB super password to proceed. | The PostgreSQL DB super user password has not been assigned. | Assign a PosgreSQL DB user user password in the **PostgreSQL Super User Password** field. |

| Error message | Cause | Action |
|---|---|---|
| The voice platform DB user has not been assigned. Please provide the voice platform DB user to proceed | The voice platform DB user has not been assigned. | Assign the voice platform DB user in the **DB User** field.<br>The DB user field has the following constraints:<br>• valid characters are alphanumeric and underscore (_)<br>• cannot begin with a digit<br>• cannot contain spaces<br>• cannot be root<br>• must be 64-characters or less |
| The voice platform DB user includes spaces. Please remove the spaces from the DB user to proceed. | The voice platform DB user includes spaces. | |
| The voice platform DB user can only include alphanumeric and the underscore (_) characters. Please enter a new voice platform DB user to proceed. | The voice platform DB user contains invalid characters. | |
| The voice platform user cannot begin with a digit. Please enter a name that begins with an alpha or underscore to proceed. | The voice platform DB user begins with a digit. | |
| The voice platform DB user cannot be root. Please assign a non-root DB user to proceed. | The assigned voice platform DB user is root. | |
| The voice platform DB user exceeds 64-characters. Please assign a value less than or equal to 64-characters to proceed. | The length of the voice platform DB user is more than 64-characters. | |
| The voice platform DB name has not been entered. Please provide a voice platform DB name to proceed. | A voice platform DB user has not been assigned. | Assign the voice platform DB name in the **DB Name** field.<br>The DB name field has the following constraints:<br>• valid characters are alphanumeric and underscore (_)<br>• cannot begin with a digit<br>• cannot contain spaces<br>• cannot be root<br>• must be 64-characters or less |
| The voice platform DB name includes spaces. Please remove the spaces from the voice platform DB name to proceed. | The voice platform DB name includes spaces. | |
| The voice platform DB name includes special characters. Only alphanumeric and underscore (_) characters are accepted. | The voice platform DB name contains invalid characters. | |

| Error message | Cause | Action |
|---|---|---|
| The voice platform DB name cannot begin with a digit. Please enter a new voice platform DB name that begins with an alpha or underscore (_) to proceed. | The voice platform DB name begins with a digit. | |
| The voice platform DB name cannot be root. Please assign a non-root DB name to proceed. | The assigned voice platform DB name is root. | |
| The length of the voice platform DB name is more than 64 characters. Please assign a voice platform DB name less than or equal to 64 characters to proceed. | The length of the voice platform DB name is more than 64-characters. | |
| The voice platform database password has not been entered. Please provide a voice platform database password to proceed. | A voice platform DB password has not been assigned. | Assign a voice platform DB password password in the **DB Password** field. |
| The voice platform DB password includes spaces. Please remove the spaces from the DB password to proceed. | The voice platform DB password includes spaces. | Remove any spaces from the voice platform DB password. |

## Voice platform configuration

| Error message | Cause | Action |
|---|---|---|
| The SMTP user has not been assigned. Please provide the SMTP user to proceed. | A SMTP user has not been assigned. | Assign an SMTP user in the **SMTP User** field. |
| The SMTP user includes spaces. Please remove the spaces from the SMTP user to proceed. | The SMTP user includes spaces. | Remove any spaces from the SMTP user. |
| The SMTP password has not been assigned. Please provide the SMTP password to proceed. | The SMTP password has not been assigned. | Assign an SMTP password in the **SMTP password** field. |

| Error message | Cause | Action |
|---|---|---|
| The SMTP password includes spaces. Please remove the spaces from the SMTP password to proceed. | The SMTP password includes spaces. | Remove any spaces form the SMTP password. |
| The SMTP server has not been assigned. Please provide the SMTP server to proceed. | The SMTP server has not been assigned. | Assign a SMTP server in the **SMTP Server** field. |
| The SMTP server includes spaces. Please remove the spaces from the SMTP server to proceed. | The SMTP server includes spaces. | Remove any spaces from the SMTP server. |
| The Sentinel email address includes spaces. Please remove the spaces form the Sentinel email address to proceed. | The Sentinel email address includes spaces. | Remove any spaces from the Sentinel email address. |
| An invalid Sentinel email address has been entered. Please provide a valid Sentinel email address to proceed. | An invalid Sentinel email address has been entered. | Assign a valid Sentinel email address in the **Sentinel Email Address** field. |

## Voice platform parameters

| Error message | Cause | Action |
|---|---|---|
| **Avaya, Genesys, Cisco** The server pool has not been entered. Please provide the server pool details to proceed. | The server pool has not been assigned. | Assign a server pool in the **Server Pool Name** field. |
| **Avaya, Genesys, Cisco** The server pool name includes spaces. Please remove the spaces form the server pool name to proceed. | The server pool name includes spaces. | Remove any spaces form the server pool name. |

| Error message | Cause | Action |
|---|---|---|
| **Cisco**<br>The trunk groups have not been entered. Please provide the trunk groups to proceed. | The trunk groups have not been assigned. | Assign the trunk groups in the **Trunk Groups** field. Use the following format:<br>*TrunkName*=*PortCount*:*GatewayName*<br>Where:<br>• TrunkName - Peripheral number for the Network Trunk Group in Cisco UCCE<br>• PortCount - Equal to the maximum number of ports<br>• GatewayName - The name of the gateway |
| **Cisco**<br>The trunk groups include spaces. Please remove the spaces from the trunk groups to proceed. | The trunk groups field includes spaces. | Remove any spaces from the trunk groups field. |

## Tomcat application configuration

| Error message | Cause | Action |
|---|---|---|
| The Tomcat heap size has not been entered. Please provide the Tomcat heap size to proceed. | Tomcat heap size has not been assigned. | Enter the Tomcat heap size.<br>VHT recommends not decreasing the size from 2048 |

## Name file sharing (NFS) configuration

| Error message | Cause | Action |
|---|---|---|
| A local NFS server has not been selected. Please select a local NFS server from the dropdown list to proceed. | The **Local NFS server** radio button has been selected, but a server was not selected from the dropdown. | Select a local NFS server from the dropdown list. |

| Error message | Cause | Action |
|---|---|---|
| The remote NFS server includes spaces. Please remove the spaces from the NFS remote server to proceed. | The remote NFS server includes spaces. | Remove any spaces from the local NFS server. |
| A remote NFS server has not been assigned. Please provide the remote NFS server to proceed. | The **Remote NFS server** radio button has been selected, but a server was not selected from the dropdown. | Select a remote NFS server from the dropdown list. |
| The NFS server has not been designated as local or remote. Please select either local or remote NFS server radio buttons to proceed. | The **NFS setup** checkbox is enabled, but the **Local** or **Remote** NFS server radio buttons have not been selected. | Select the local OR remote NFS server radio buttons, and select a server from the associated dropdown list. |
| The NFS directory has not been assigned. Please provide the NFS directory to proceed. | The NFS directory has not been assigned. | Assign a NFS directory to be shared. |

### IVG configuration summary

| Error message | Cause | Action |
|---|---|---|
| The selected file location does not exist. Please select a valid file location to export the IVG configuration file. | The location selected to export the installation configuration file to does not exist. | Select a valid export location for the installation configuration file. |
| A file location has not been selected. Please select a fie location to export the IVG configuration file in order to proceed. | A file location to export the installation configuration file to does not exist. | |

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## IVG installer process error messages

After installation, open the **installer_*mmddyy*.txt** to check for errors.

**Notes:**

If the Linux terminal is configured to the **Basic** default setting, messages display in the following format:

- Error messages, which cause the installation process to fail, display in **red**.
- Warning messages, which do not cause the installation process to fail, display in **orange**.
- Success messages display in **green**.

If an error occurs, use the following tables to identify where in the installation process the failure occurred, the cause of the failure, and corresponding action steps.

**Important:**

If the IVG installer process fails, execute the IVG Uninstall procedure before re-installing.

## Executing the installer

| Error Message | Cause | Action |
|---|---|---|
| Spaces are included in the current working directory name *NameOfDirectory*. Please rename the directory by removing spaces in its name and retry installation. | The install folder name contains spaces. | Rename the directory by removing the spaces and retry installation. |
| Installation config file is not found. Please contact system administrator. | The configuration file **install_ivg.cfg** should be in the same directory as the install script. | Copy the **install_ivg.cfg** file in the same folder as the installer script and run the installer again. |
| Config key is set as 'avaya', but 'hvp_params_avaya.cfg' file is not found. Please contact system administrator...<br>OR<br>'hvp_params_common.cfg' file is not found. Please contact system administrator... | The hvp_params_avaya or hvp_params_common file is not in the same location as the installer. | Copy the **hvp_params_avaya** or **hvp_params_common** to the same folder as the installer script and run the installer again. |

| Error Message | Cause | Action |
|---|---|---|
| Config file 'install_ivg.cfg' is not configured properly. Please contact system administrator. | The syntax of the key=value pairs in the configuration file are incorrect. | Correct the configuration file to follow the format key=value and run the installer again. |
| IVG encrypt binary file 'ivg_encrypt.out' not found. Please contact system administrator. | The ivg_encrypt.out file was not copied to the directory. | Copy the ivg_encrypt.out file to the directy and retry installation. |

## Verifying OS

| Error Message | Cause | Action |
|---|---|---|
| Required OS not found. We cannot proceed, hence exiting. | An unsupported version of Red Hat or CentOS is installed. | Install a supported version of Red Hat or CentOS.<br>Refer to the Virtual Hold Compatibility and Integration Matrix for supported integrations. |
| System is not 64-bit. We cannot proceed hence exiting. | A 64-bit architecture is not being used. | A 64-bit machine is a prerequisite for installation. Re-run the installer on a 64-bit machine. |

## Preparing Linux environment

| Error Message | Cause | Action |
|---|---|---|
| Unable to set umask. Please contact system administrator. | The umask could not be set to 0022. | Manually set the umask to 0022 and run the installer again. |
| "/" partition has less than 15 GB. Please allocate enough free space and rerun installer. Exiting... | The / partition has less than 15 GB of free space. | Allocate 15 GB of space in the / partition and rerun the installer. |

| Error Message | Cause | Action |
|---|---|---|
| '*hollyinstallpath*' partition has *X* GB, which is less than the recommended 40 GB. Do you still wish to proceed with installation (y/n): | The location designated for hollyinstallpath in the install-ivg.cfg file has less than 40 GB of free space. | Enter **y** to override the warning and continue with the installation process.<br><br>OR<br><br>Enter **n** to exit the installer. Allocate 40 GB of space in the hollyinstallpath location and rerun the installer. |
| Swap space is *X* MB, which is not equal to the memory size which is *Y* MB. Do you still want to proceed with installation (y/n): | The swap space memory is not equal to the amount of memory (RAM). | Enter **y** to override the warning and continue with the installation process.<br><br>OR<br><br>Enter **n** to exit the installer. Allocate swap space memory equal to the amount of memory and rerun the installer. |
| Could not stop IP tables. | The IP tables stop command failed. | The installer lacks the permission to stop the IP tables.<br>Verify installation is being run as a root user and run the installer again. |
| Unable to stop IP tables at boot time. | The chkconfg command on IP tables failed. | The installer lacks the permission to stop the IP tables at boot time.<br>Verify installation is being run as a root user and run the installer again. |

| Error Message | Cause | Action |
|---|---|---|
| Could not disable SELinux. Exiting. | Disabling SELinux failed. | The installer lacks the permission to stop the IP tables at boot time. Verify installation is being run as a root user and run the installer again. |
| No Hostname for this machine. Exiting. | The hostname of the machine is empty. | Assign a hostname to the machine or VM and run the installer again.<br>**Note:**<br>The hostname should not be **localhost**. |
| No IP address for this machine. Exiting. | The IP address of the machine is empty. | Assign an IP address for the machine or VM and run the installer again. |

## Installing OS dependencies

| Error Message | Cause | Action |
|---|---|---|
| No dependencies folder found. Exiting. | The dependency folder is missing from the installer. | Verify dependencies present in the specified folder and run the installer again. |
| Installation failed. Please contact system administrator. | The yum local installation failed. | Verify installation is being run as a root user and run the installer again. |

## Installing PostgreSQL database

| Error Message | Cause | Action |
|---|---|---|
| Unable to create group *PostgreSQLGroupName*. Please contact system administrator. | The group name creation failed. | Errors that occur when trying to install the PostgreSQL database occur with the installer encounters a permissions-based issue.<br>Verify installation is being run as a root user and run the installer again. |
| Unable to set password. Please provide password as directed. | Unable to set password for PostgreSQL user. | |
| Unable to create OS user *PostgreSQLUser*. Please contact system administrator. | Unable to create PostgreSQL user. | |
| Unable to install PostgreSQL database. Please contact system administrator. | The PostgreSQL installation failed. | |
| Unable to config your hosts for connection establishment. | Adding trusted hosts failed in PostgreSQL. | |
| Unable to add PostgreSQL service to autostartup scripts. Your hosts for connection establishment. | Making PostgreSQL start at boot time failed. | |
| Unable to restart PostgreSQL. Please contact system administration. Exiting. | Restarting PostgreSQL failed after making changes.<br>For example: adding trusted IP failed. | |
| Unable to execute pg_env.sh environment file. | Failed to load PostgreSQL environment. | |

## Installing voice platform

| Error Message | Cause | Action |
|---|---|---|
| Installer file is not found. Please contact system administrator. | The HVP installer file is not found in the current location. | Verify the HVP install file is present in the same folder as the installer script and run the installer again. |

| Error Message | Cause | Action |
|---|---|---|
| Execution of RUBY script PostDBScript.rb failed. Please contact system administrator. | The PosDBScript failed. | The HVP internal script failed while trying to create the required database objects.<br>Contact VHT with the error message. |
| Unable to create user for Holly installation. Please provide the password as directed. | The creation of the Holly user failed. | Verify installation is being run as a root user and run the installer again. |
| Unable to install HVP installer. Exiting. | The HVP installer failed. | The HVP installer script failed.<br>Contact VHT with the error message. |
| Not able to start HVP. Please contact system administrator. | HVP was successfully installed, but is unable to start. | |
| Not able to install configurations. Please contact system administrator. | The HVP configuration installation failed (install_cfg.ksh). | The HVP installer configuration script failed.<br>Contact VHT with the error message. |
| Not able to restart HVP. Please contact system administrator. | Unable to restart HVP services after configuration changes. | |
| Not able to check HVP operating status. Please contact system administrator | The HVP service status failed. | |
| *HVPPatchFileName* does not exist. Exiting. | The HVP patch file does not exist. | Verify the patch file name provided in the config matches the original filename.<br>OR<br>Verify the patch file is present in the current directory. |
| Unable to copy *HVPPatchFileName* to HVP application OS user *HollyUser* for patch deployment. | Unable to copy HVP patch file to the holly user space for installation. Patch should be installed as a Holly user. | Verify installation is being run as a root user and run the installer again. |

| Error Message | Cause | Action |
|---|---|---|
| Unable to deploy patch to HVP application. | The HVP patch installation failed. | Run the patch manually:<br>1. Enter *./IPatchFileName* in the command prompt.<br>2. The message **"Patch deployment is completed successfully"** displays in the **installer_log.txt**. |

## Installing VIS

| Error Message | Cause | Action |
|---|---|---|
| Unable to install Sun JRE. | Java installation failed. | Verify installation is being run as a root user and run the installer again. |
| Unable to create group tomcat. Please contact system administrator. | Unable to create Tomcat group. | |
| Unable to create user tomcat. Please contact system administrator. | Unable to create Tomcat user. | |
| Unable to modify user tomcat. Please contact system administrator. | Modification of existing Tomcat user failed. | |
| Unable to create tomcat install directory. | Creation of Tomcat install directory failed. | |
| Unable to extract tomcat *TomcatVersion*. | Extraction of Tomcat tar.gz file failed. | |
| Unable to remove default juli, hence exiting. | Failed to delete default juli.jar file to replace with log4j juli file. | |
| Unable to remove default logging properties file, hence exiting. | Removal of logging.properties file failed. | |
| Unable to copy Log4j juli, hence exiting. | Copy of Log4j juli failed. | |

| Error Message | Cause | Action |
|---|---|---|
| Unable to copy Log4j juli adapters, hence exiting. | Copy of Log4j juli adapter jar files failed. | |
| Unable to copy Log4j Jar, hence exiting. | Copy of Log4j Jar file failed. | |
| Unable to copy Log4j properties, hence exiting. | Copy of Log4j.properties file failed. | |
| Unable to copy Tomcat startup script. Please contact system administrator. | Copy of Tomcat startup script failed. | |
| Unable to stop tomcat. Please contact system administrator. | Stopping Tomcat failed. | Verify installation is being run as a root user and run the installer again.<br>OR<br>Verify Tomcat service is running. |
| Unable to delete Tomcat install directory. | Deleting the existing Tomcat install directory failed. | Verify installation is being run as a root user and run the installer again. |
| Unable to copy VIS.war file. Please contact system administrator. | Copy of VIS.war file to the Tomcat webapps folder failed. | |
| Unable to copy voices folder. Please contact system administrator. | Copy of voices folder to Tomcat webapps failed. | |
| Unable to copy toolkit.properties file. Please contact system administrator. | Copy of toolkit.properties file to /etc/VirtualHold failed. | |
| Unable to create cronjob for name file cleanup. Please contact system administrator. | Creation of cron job for Tomcat user to clean named .wav files. | |

## Configuring the voice platform

| Error Message | Cause | Action |
|---|---|---|
| HVP config paramas file is not found. Please contact system administrator. | The hvp_params.cfg file is not found. | Verify the hvp_params.cfg file is present in the same folder as the installer. |
| Unable to import config file. Please contact system administrator. | The HVP cs command import failed. | Verify the configuration file contains no spelling errors. |
| Not able to restart HVP. Please contact system administrator. | Unable to restart HVP after configuration parameters were updated. | Retry the installation process on a fresh VM. |

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