Vocollect VoiceConsole® 3.1

Implementation Guide

Revision 1

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1 Preface

This document is intended for Vocollect personnel and certified partners and assumes a working knowledge of the following:

- Function and use of voice system management software
- Operating systems
- Wireless networking hardware and architecture
- Relational database structure and administration
- Extensible Authentication Protocol (EAP) based security

1.1 About This Guide

This guide contains the following chapters:

Chapter 2: VoiceConsole System Requirements contains the hardware, software, database and other requirements for running *VoiceConsole*.

Chapter 3: Planning Your VoiceConsole Installation describes available configuration options. Each section is followed by a section titled **What You Need**, which describes what information you will need during the installation and configuration of *VoiceConsole*.

Chapter 4: Installing VoiceConsole For the First Time describes how to install *VoiceConsole*, both in clustered and single node environments, when it has never been installed before.

Chapter 5: Upgrading From Previous Versions describes how to upgrade to this release of *VoiceConsole* from the Talkman Management System (TMS) and from previous versions of *VoiceConsole*.

Chapter 6: Licensing explains the license file and how to import it into *VoiceConsole*.

Chapter 7: Configuring Security explains how to configure EAP security settings.

Chapter 8: Configuring Tomcat provides information on how to configure the Tomcat log directory to keep a certain number of the most recent log files accumulated and delete older log files.

Chapter 9: Data Protection provides recommendations for keeping your data safe and steps to follow in the event *VoiceConsole* becomes unresponsive or shuts down unexpectedly.

Chapter 10: Uninstalling VoiceConsole describes how to remove the *VoiceConsole* program from a computer.

Appendix A is a checklist of information that is needed before installing *VoiceConsole*.

Appendix B provides procedures for backing up and restoring each type of database supported by *VoiceConsole*.

1.2 Contact Information

If you have difficulty with any of the procedures described in this document, contact Vocollect Technical Support.

Note: If you purchased equipment or services through a Vocollect reseller, please contact that reseller first for support or purchase questions.

For returns, order placement, to check the status of an order or RMA, or other customer service issues, contact Customer Service at:

Within the United States:
E-mail: voccustsupp@vocollect.com
Phone: 866.862.6553, Option 3, Option 2

Outside the United States:
Phone: 412.829.8145, Option 3, Option 2

Europe, Middle East, and Africa:
E-mail: CustomerServicesEMEA@vocollect.com
Phone: +44 (0) 1628 55 2903

For product related technical questions, system support incidents, and related technical issues, contact the Technical Support Center at:

Within the United States:
E-mail: support@vocollect.com
Phone: 866.862.7877

Outside the United States:
Phone: 412.829.8145, Option 3, Option 1

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2 VoiceConsole System Requirements

This chapter provides the server and client hardware, software and bandwidth requirements for running *VoiceConsole* based on the number of devices you will have in operation at any one time at your site.

2.1 Server Requirements

The requirements in the following sections are for the server on which you will be installing the *VoiceConsole* server components.

2.1.1 Hardware Requirements

The requirements shown are the **minimum recommended**. For better performance, increase the amounts shown here.

Total Number of Devices Being Managed	Average Operator Shift Size	Average Operator Shift Startup Time Period	CPU of Server Machine	Memory of Server Machine
< 300	<150	<3 minutes	Dual Core Intel® 4 2.0GHz	2GB DDR
300-600	150-300	3-5 minutes	Dual Core Intel 4 3.0GHz	4GB DDR
600-2500	300-900	5-15 minutes	Two machines running with Dual Core Intel 3.0GHz each. Vocollect recommends you install two load balance application servers and a single database server.	4GB DDR each machine

Table 2.1: Hardware Requirements

Note: If you want to install *VoiceConsole* for demonstration or evaluation purposes, it is recommended you use a machine that meets the following specifications, at a minimum: Intel Pentium 4 2.6GHz machine, 1GB DDR of memory and a 40GB hard drive. Vocollect does not recommend running more than 10 devices in a demonstration or evaluation environment.

VoiceConsole running on these hardware components will produce the following average transaction times for operator loads during instances of peak load such as shift changes.

CPU	Memory	Hard Drive	Device Concurrent Loads	Average Transaction Time in ms
Dual Core Intel 4 2.0GHz	2GB DDR	40GB	300	400
Dual Core Intel 4 3.0GHz	4GB DDR	80GB	600	400
Two machines running with Dual Core Intel 3.0GHz each	4GB DDR each machine	120GB each machine	2500	1300

Table 2.2: Average Transaction Times

2.1.2 Software Requirements

2.1.2.1 Supported Operating Systems

The following operating systems are supported with *VoiceConsole*:

- Microsoft® Windows® 2008 Server (32-bit version)
- Microsoft Windows 2003 Server Release 1 with Service Pack 2 (32-bit version)
- Red Hat® Enterprise Linux® version 4 Update 6 (32-bit version)
- IBM® AIX version 5.3 (with Oracle databases only)

Note: Vocollect does not recommend using AIX version 5.3 with a system running more than 300 operators per shift.

- CentOS Linux version 5.2 (with MySQL databases only)

Note: Vocollect does not recommend using CentOS Linux and MySQL 5.0 Community Server with a system running more than 300 operators per shift.

2.1.2.2 Supported Application Servers

The following application servers are supported with *VoiceConsole*:

- Apache Tomcat™ version 6.0
- BEA WebLogic® version 10.0 (with RedHat Linux operating systems only)

Note: Tomcat version 6.0 is installed when *VoiceConsole* is installed. If you choose to use WebLogic as your application server, it must be installed separately from the *VoiceConsole* installation. See "Installing Into the First Node" on page 42.

2.1.3 Database Requirements

Because the database installation is performed separately and is not part of the *VoiceConsole* installation, you can either install *VoiceConsole* on the same server as the database or you can install it on a separate machine. When prompted by the installer, provide the location of the local or remote database.

2.1.3.1 Certified Operating System/Database Combinations

The table below shows the operating system/database combinations on which Vocollect has certified *VoiceConsole* 3.1.

Note: While the combinations shown have been fully tested by Vocollect's Quality Assurance staff, *VoiceConsole* can be run successfully on other platforms.

Vocollect cannot, however, test every possible combination, so using a combination other than those shown here is at your own risk.

Vocollect does not support *VoiceConsole* being run on VMware®.

Operating System	Microsoft® Windows®	Microsoft Windows 2003	Red Hat® Enterprise	CentOS® Linux 5.2	AIX

→ **Database ↓**	2008 Server (32-bit version)	Server Release 1 with Service Pack 2 (32-bit version)	Linux® version 4 Update 6 (32-bit version)		
Oracle 10*g* Express Edition (recommended for demonstration and evaluation purposes only)	X	X	X		
Oracle 10*g* Enterprise Edition Release 2/ Oracle 10*g* Standard Edition	X	X	X		X
Microsoft SQL Server 2005 Enterprise with Service Pack 2/ Microsoft SQL Server 2005 Standard with Service Pack 2	X	X			
MySQL 5.0 Community Server Vocollect does not recommend using CentOS Linux and MySQL 5.0 Community Server with a system running more than 300 operators per shift.			X	X	

Table 2.3: Supported Operating Systems and Databases

If the SQL Server database collation is not set to be case-insensitive, *VoiceConsole* may not work properly. When creating a new SQL Server database, ensure you choose the proper collation for the language the system is in with _CI included in the collation name.

The size of your database depends on the amount of data you have in *VoiceConsole*. Table 3.4 lists the totals for the data elements that require database space and the estimated size your database could be based on those numbers.

License Size	Settings Translator Size	Number of Operators	Number of Operator Templates	Number of Task Packages	Number of Tasks	Number of Imported VoiceClients	Number of Device Profiles	Number of Devices	Estimated Minimum Database Size
4	96	100	100	2	2	2	2	20	1912 KB
4	96	50	50	2	2	3	3	30	10536 KB
4	96	100	120	2	2	2	2	20	48833 KB

License Size	Settings Translator Size	Number of Operators	Number of Operator Templates	Number of Task Packages	Number of Tasks	Number of Imported VoiceClients	Number of Device Profiles	Number of Devices	Estimated Minimum Database Size
4	96	200	200	4	8	3	4	50	161632 KB
4	96	200	246	5	10	3	4	50	193658 KB

Table 2.4Common Database Usage Scenarios

The estimated minimum database size you could experience is based off the following calculation:

> Estimated Size of Database (in KB) = 4 + 96 + (Number of Operators * 6.5) + (Number of Operators * Number of Operator Templates * 4) + Number of Task Packages + (Number of Tasks * 12.5) + (Number of Imported VoiceClients * 4.5) + (Number of Device Profiles * 3.5) + (Number of Devices* 2)

Note: 4 = size of license and 96 = size of settings translators.

2.1.3.2 MySQL 5.0 Community Server

MySQL is a no fee database with no restrictions when run on the supported Windows and RedHat Linux operating systems.

Note: Vocollect does not recommend using CentOS Linux and MySQL 5.0 Community Server with a system running more than 300 operators per shift. This restriction is limited to this operating system and database only.

When using a MySQL database with *VoiceConsole*, ensure the database tables are configured to utilize the Inno-Db feature of MySQL by setting the **default_table_type=InnoDB** in the **my.ini** file located in the installation directory (Windows) or **my.cnf** file located in the **/etc/** directory (CentOS Linux).

To configure MySQL to run at an optimal performance level with *VoiceConsole*, you should configure the following settings in the **my.ini** file located in the installation directory (Windows) or **my.cnf** file located in the **/etc/** directory (CentOS Linux):

- default-character-set = utf8
- back_log = 50
- max_connect_errors = 10
- table_cache = 2048
- max_allowed_packet = 16M
- binlog_cache_size = 1M
- max_heap_table_size = 64M
- sort_buffer_size = 8M
- join_buffer_size = 8M
- thread_cache_size = 8
- thread_concurrency = 8
- query_cache_limit = 2M
- ft_min_word_len = 4
- thread_stack = 192K
- tmp_table_size = 64M
- innodb_log_buffer_size = 1M
- innodb_buffer_pool_size = 47M
- innodb_log_file_size = 24M
- innodb_thread_concurrency = 8
- max_connections = 100

2.1.3.3 Oracle® Database 10*g* Express Edition

Vocollect recommends only using Oracle 10g Express for demonstration and evaluation purposes. The database (Oracle Database XE) is an entry-level database that will only store up to 4GB of user data, use up to 1GB of memory, and use one CPU on the host machine. This database is not recommended for product environments.

Note: For a basic installation using Oracle 10g Express, the most commonly used username is system and JDBC URL: jdbc:oracle:thin:@localhost:1521:XE.

Note: Vocollect does not recommend Oracle 10*g* Express for production enviornments. An enterprise class platform is recommended for these installations.

Installation Notes When Using Oracle 10*g* Express

When using the Oracle 10*g* Express platform:

- The XE SID is created automatically when you install Oracle 10*g* Express. You do not have to create a *VoiceConsole* database when installing or upgrading, but you must use XE as the SID when entering the database information in the **Database Server Settings** window when installing or upgrading.

2.1.4 Client Requirements

The following operating systems are supported for *VoiceConsole* clients:

- Microsoft Windows Vista
- Microsoft Windows XP with Service Pack 2
- Microsoft Windows 2000 with Service Pack 4
- Red Hat Linux Workstation ES for Intel processors

The following browsers are supported for *VoiceConsole* clients:

- Microsoft Internet Explorer 6.0 or 7.0 with Java™ JRE™ 1.5 or 1.6 configured
- Mozilla® Firefox® 3.0.5

2.2 Network Bandwidth Requirements

VoiceConsole bandwidth requirements depend on the network traffic generated during peak times. Peak times for *VoiceConsole* are characterized by shift startup activities such as loading operators and Task Packages to devices.

Depending on the network topology, a network may have a direct line from each site to the server location, as shown in Figure 2.1.

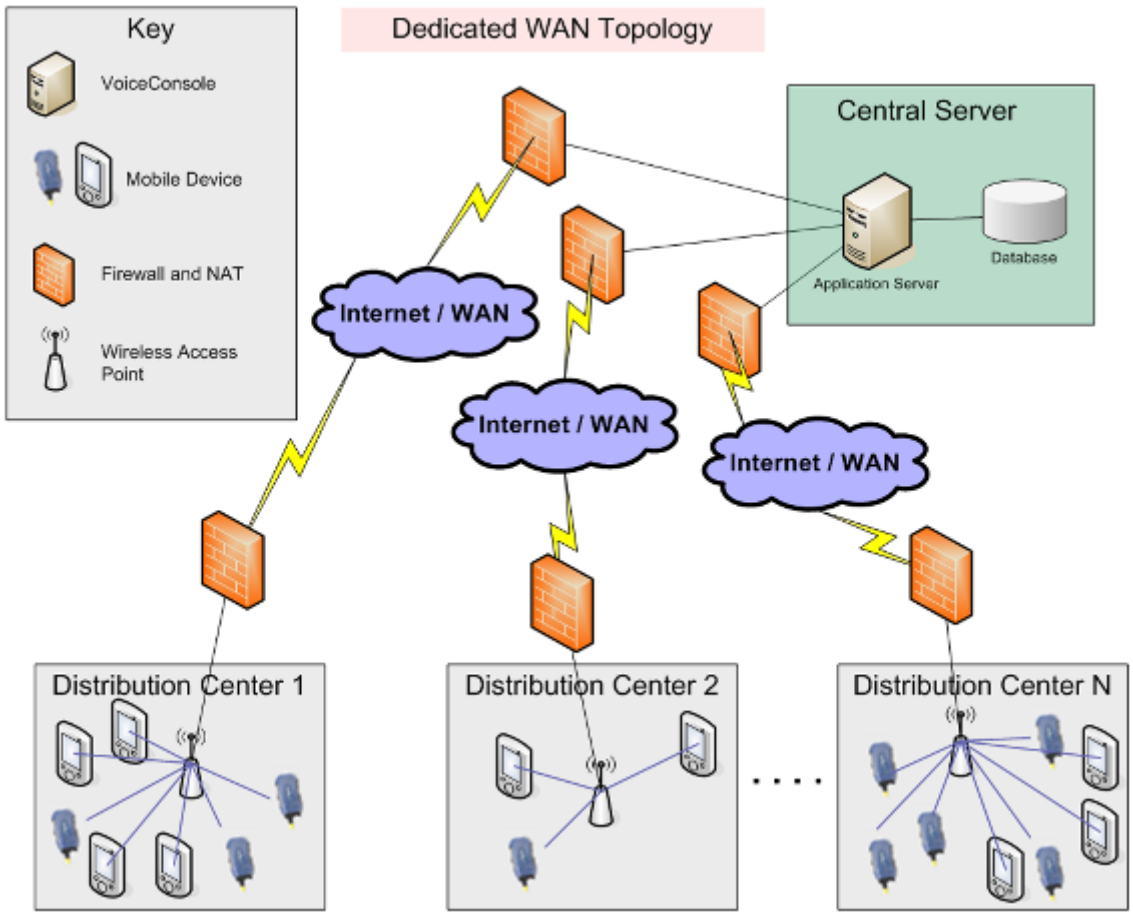


Figure 2.1: Direct Line from Each Site to Server

# Active Devices per Site (or shift)	Operator Load	Task Package Load	Minimum Recommended Bandwidth
10	.062Mb/sec	.076Mb/sec	1Mb/sec
50	.309Mb/sec	.384Mb/sec	1Mb/sec
100	.618Mb/sec	.768Mb/sec	1Mb/sec
200	1.237Mb/sec	1.536Mb/sec	2Mb/sec
300 (+)	1.856Mb/sec	2.304Mb/sec	3Mb/sec

Table 2.5: Bandwidth Required Per Individually Connected Site

A network may be configured such that a single line services the communication from each site to the server location.

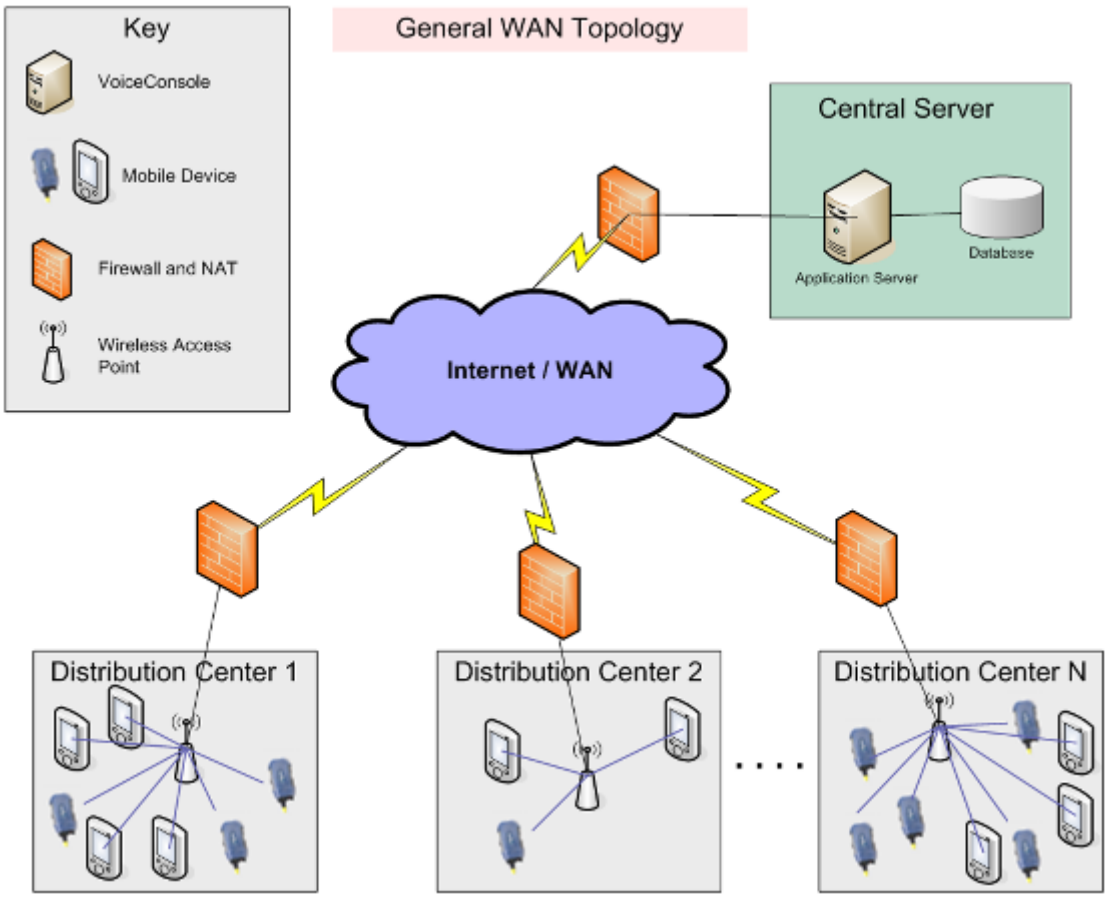


Figure 2.2: Single Line from All Sites to Server

Total # of Devices Being Managed	Operator Load	Task Package Load	Minimum Recommended Bandwidth
100	.1236Mb/sec	.1536Mb/sec	1Mb/sec
300	.3708Mb/sec	.4608Mb/sec	1Mb/sec
500	.618Mb/sec	.768Mb/sec	1Mb/sec
2500	3.19Mb/sec	3.840Mb/sec	4Mb/sec

Table 2.6: Bandwidth Required at the Centrally Connected Site (no dedicated lines)

2.2.1 Network Bandwidth Calculations

2.2.1.1 Assumptions & Comments:

Application and/or operator loading is completed within a 5-minute window. This is a very conservative assumption. In real-world conditions, operator loads are typically staggered over a longer period of time.

The bandwidth requirements specified in Table 2.5 assume that only 1/5 of the total number of devices in the entire system will concurrently download operators within a five-minute window.

Application loads are only required when the device application is updated. Operator loads occur at every shift change

The network bandwidth requirements are calculated values that assume the following for typical operator and Task Package loads:

Typical Operator Load Transfer = 232KB (1856Kb) of data per device

Typical Task Package Load Transfer = 288KB (2304 Kb) of data per device

The Site Bandwidth requirements (SBWR) shown in Table 2.5 based on these assumptions can be determined using the following calculation:

SBWR Operator Load = (Devices per Site * 1856Kb) / 300sec

SBWR Application Load = (Devices per Site * 2304Kb) / 300sec

The Central Site Bandwidth Requirements (CSBWR) shown in Table 2.6 based on these assumptions can be determined using the following calculation:

CSBWR Operator Load = 1/5 * SBWR Operator Load * Number of Sites

CSBWR Application Load = 1/5 * SBWR Application Load * Number of Sites

3 Planning Your VoiceConsole Installation

VoiceConsole is designed to integrate with and support various IT infrastructures, databases and operating systems. This section is designed to help you to understand the various implementation options available with *VoiceConsole* and the best practices in planning a *VoiceConsole* implementation.

Depending on your system configuration, the hardware and software requirements may vary. See "VoiceConsole System Requirements" on page 7 for more information.

3.1 Single Site or Multiple Site Architecture Mode

VoiceConsole can be installed in a single-site mode where a separate instance of *VoiceConsole* is installed at each voice-enabled site.

It can also be installed in a centralized architecture where a single instance of *VoiceConsole* is used to manage the voice system components at multiple sites.

Each of these types of installations are described in detail below.

3.1.1 Decentralized Architecture (Single-Site Mode)

A distribution center with multiple sites may want to use a single-site implementation, installing a *VoiceConsole* server at each site where voice is supported.

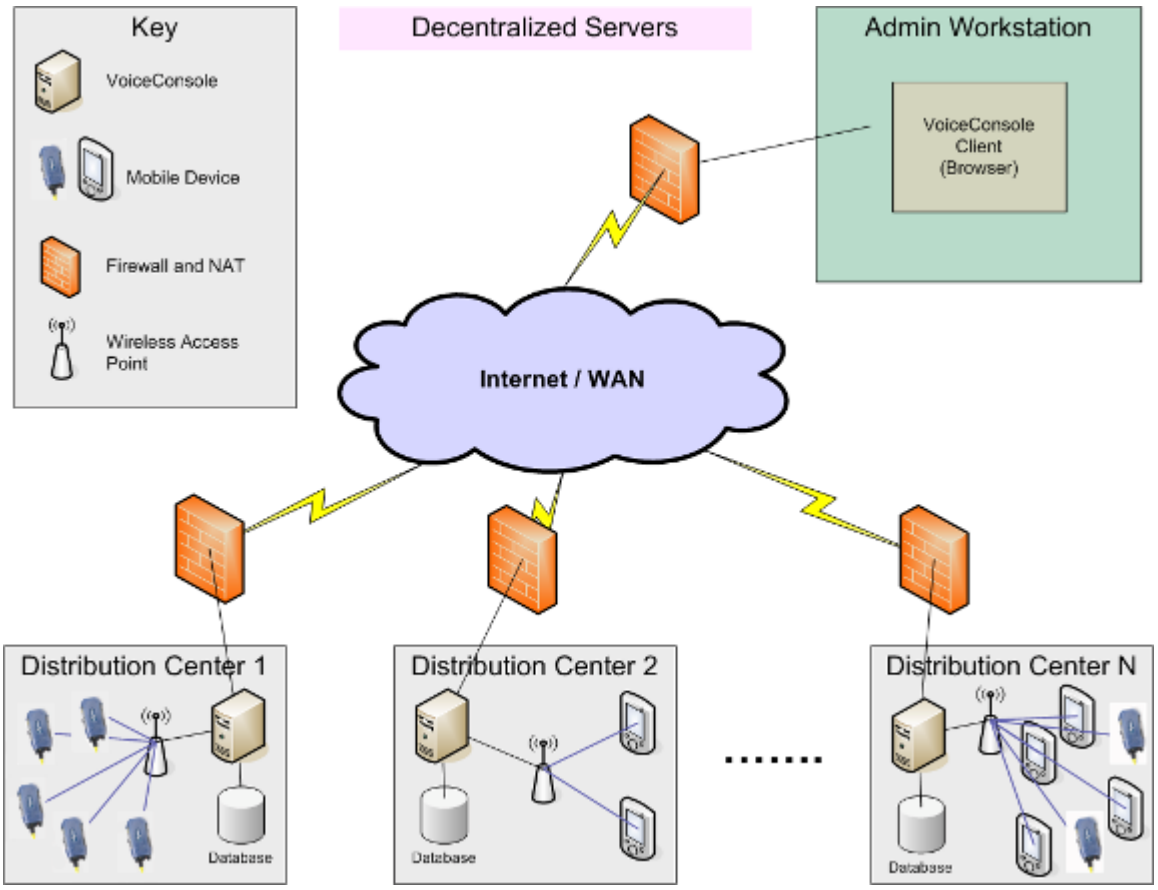


Figure 3.1: Decentralized Architecture Diagram

3.1.2 Centralized Architecture (Multi-Site Mode)

VoiceConsole can also be implemented in a centralized architecture or in multi-site mode, where one instance of *VoiceConsole* is used to manage the voice system components at multiple sites. In this scenario, the database and application are installed at a single site, and that installation is used to manage one or more remote sites. See "Managing Multiple Sites" on page 19 for more information on the benefits and limitations of this configuration.

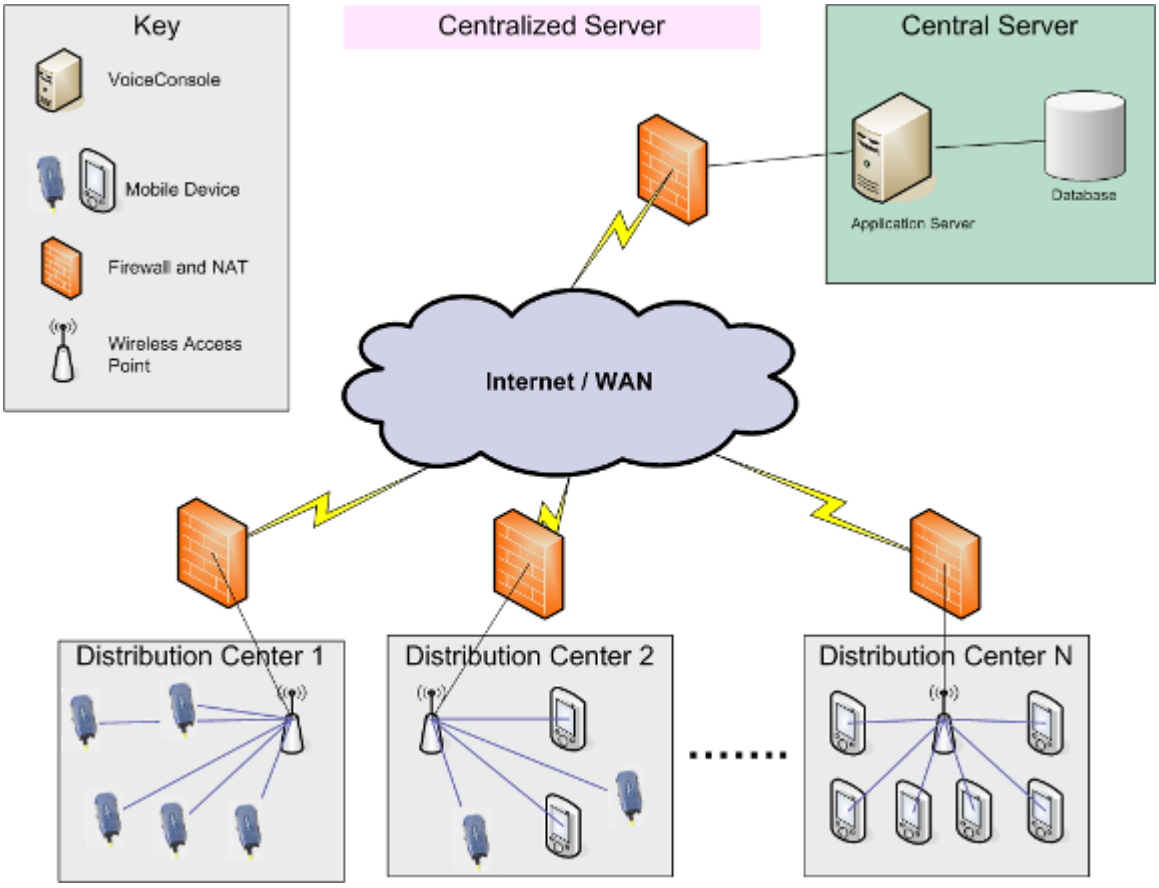


Figure 3.2: Centralized Architecture Diagram

3.2 Implementations with VoiceConsole and VoiceLink

Note: When installing this version of *VoiceConsole* along with *VoiceLink* 3.0 or newer, use a different database for *VoiceConsole* than what you are using for *VoiceLink*. Refer to the *VoiceLink* Implementation Guide for *VoiceLink* system requirements.

3.2.1 Single-Server Implementations with VoiceConsole and VoiceLink

When installing *VoiceConsole* and *VoiceLink* on the same server, it does not matter which application is installed first. The database information for the first application installed can often make it easier to install the second application.

3.2.2 Multi-Server or Multi-Site Implementations with VoiceConsole and VoiceLink

It is important to consider time zones in any implementation where the following conditions exist:

- When *VoiceConsole* and *VoiceLink* are installed on different servers
- When multiple sites are set up in both *VoiceConsole* and *VoiceLink*

Time zones are important because time stamps are saved for operator actions performed by device operators and for user actions performed by *VoiceConsole* and *VoiceLink* users.

The time zone setting for a site set up in *VoiceConsole* sets is the time zone used by the device in that site. Therefore, time stamps in device messages are set according to the time zone on the *VoiceConsole* server. The time stamps of user actions in *VoiceLink* are set by the *VoiceLink* server, and the time stamps of user actions in *VoiceConsole* are set by the *VoiceConsole* server.

Both *VoiceConsole* and *VoiceLink* have rules about when certain actions can be performed. If time stamps differ, due to either of the scenarios described below, it can cause unexpected errors.

These scenarios are discussed separately.

3.2.2.1 Multi-Server Implementations

In implementations where *VoiceConsole* and *VoiceLink* are installed on different servers, it is important to ensure that the time on these servers is synced. This is not an issue if *VoiceConsole* and *VoiceLink* are installed on the same server. However, if you install *VoiceConsole* and *VoiceLink* on different servers, then you must ensure that these servers are synced to the same time.

3.2.2.2 Multi-Site Implementations

When you set up a site in *VoiceConsole* and *VoiceLink*, you must specify the time zone where that site is located. You must ensure that the same time zone is specified for a site in both applications. You are not required to specify the same site name; however, it is recommended that you use the same site name for simplicity.

Once your sites are set up in both applications, you have to load a device profile for each site.

Working with Tasks in Multi-Site Implementations

When using multiple sites in *VoiceLink*, each site needs to have it's own **tasksite.txt** file that contains that site's name within the task package. This file then needs to be imported into *VoiceConsole* as part of a task.

Perform the following procedure:

1. With the machine on which *VoiceLink* is installed, locate the **C:\Program Files\Vocollect\Tasks** directory.
2. Create a zip file of all the files in that directory and provide a name for the zip file (for example, "Default.zip".)
3. For each non-default site you are supporting, perform the following steps:
    1. Using a text editor, open the tasksite.txt file, and change the site name listed there (for example, from "Default") to the name of the site you are using (for example, "Site1".)
    2. Save the file, retaining the original file name (tasksite.txt).
    3. Create another zip file of all the files in the directory and name the zip file based on the site name (for example,"Site1.zip".)
    4. In *VoiceConsole*, create a new task package and select to **Import New Task** from the **Name** drop-down list on the **Create Task Package (Page 1 of 2): Select Task** page.

    Note: When this task is imported into *VoiceConsole*, it will have a number appended to it.

    For example, when Default.zip is imported, *VoiceConsole* will contain a task named VoiceApplications311.

When Site1.zip is imported, *VoiceConsole* will have another task named VoiceApplications311 2

When creating the task packages for the respective sites, you will need to select the version of the task that was imported for the given site.

5. Browse for and upload the site-specific zip file to complete the task import process
6. Complete the task package import process.

3.3 Managing Multiple Sites

This section provides an overview of multi-site management within *VoiceConsole*, its benefits and its limitations.

When *VoiceConsole* is installed, one default site named **Default** will exist in the system. You can create named sites and assign various other data elements to those sites as well as import software across multiple sites.

Note that while this feature is primarily used for different physical locations, you can define a site as anything that you want to segregate. For example, you can define sites as different operational areas within a site or you can set up separate test and production sites.

3.3.1 Benefits

The benefits of multi-site management include the following:

Centralized Management	*VoiceConsole* does not need to be implemented separately at each site or distribution center.
Site-Segregated View	A user with the proper privileges can easily switch between one site's data and another site's data
Secure Access	Only users with the proper privileges can view and manage multiple sites.
Importing Software Components Across Multiple Sites	A user can select one or more sites when importing *Vocollect VoiceClient* software and *Vocollect VoiceApps* (tasks) into the system, giving consistency throughout the company.
Device Management	Device profiles are linked to a site, which in turn is linked to a time zone. When a device profile is loaded to a device, the device will automatically be assigned to the proper site and time zone.

3.3.2 Limitations

The following are current limitations of multi-site management in *VoiceConsole*:

Network Requirements	Because the network must handle a larger number of parallel operator loads during the start of a shift, a centralized *VoiceConsole* installation requires an appropriate amount of network bandwidth between each site being managed and the *VoiceConsole* server. See "VoiceConsole System Requirements" on page 7 for information on how much bandwidth is required.
Viewing Multiple Sites Within a Single VoiceConsole Session	You can switch between different sites within *VoiceConsole*, but there is currently no way to view or manage multiple sites within a single browser session. However, the **Home** page in the application displays a **Site Summary** that provides a summary of the sites in the system.

3.3.3 What You Need

If *VoiceConsole* will be installed into a multi-site environment, you will need:

- Total number of sites
- Total number of devices
- Number of devices per site
- Shift size
- Shift startup times per site

3.4 Clustered and Load Balanced Environments

VoiceConsole can be installed on servers that are grouped for *load balancing* or *failover*. *Failover* systems provide a fully redundant instance of each node, which is only brought online when its associated primary node fails. In *Load Balancing* systems, when a node fails, traffic intended for that node is either passed onto an existing node or load balanced across the remaining nodes.

Note that in load balanced environments, the dispatcher in the cluster needs to be configured for *session affinity*. This configuration causes the client to always be connected to the same server in the cluster.

Clusters can be of three types, as shown in Figure 3.3, Figure 3.4, and Figure 3.5. Note that these are simple examples; they may not correspond exactly to your configuration.

3.4.1 Single Database with Clustered Application Servers

VoiceConsole is installed on multiple nodes of a clustered application server that communicates with a single instance of a database. All *VoiceConsole* clients communicate through a dispatcher. This configuration is shown in Figure 3.3.

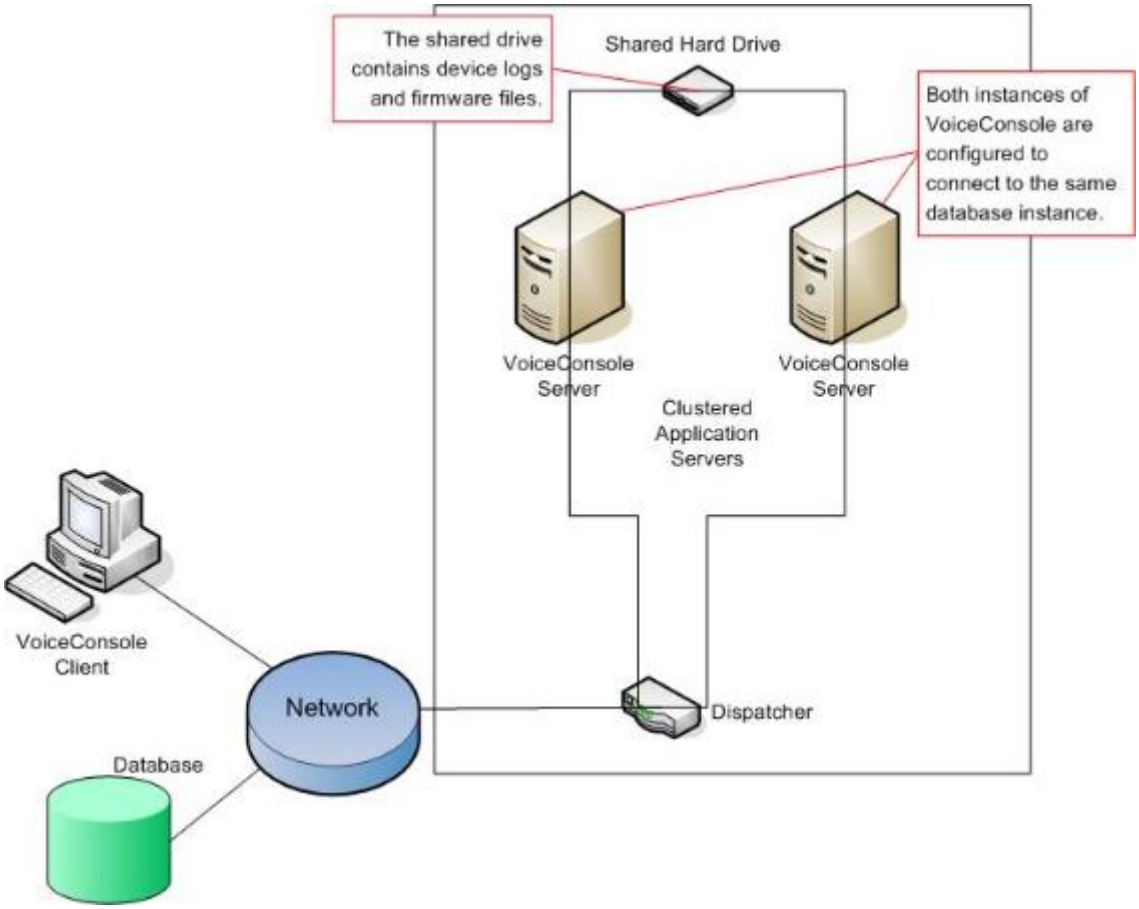


Figure 3.3: Single Database with Clustered Application Servers

3.4.2 Single Application Server with Clustered Database

VoiceConsole is installed on a single application server. It communicates with a database that has multiple nodes acting as a single interface for a common underlying database. This configuration is shown in Figure 3.4.

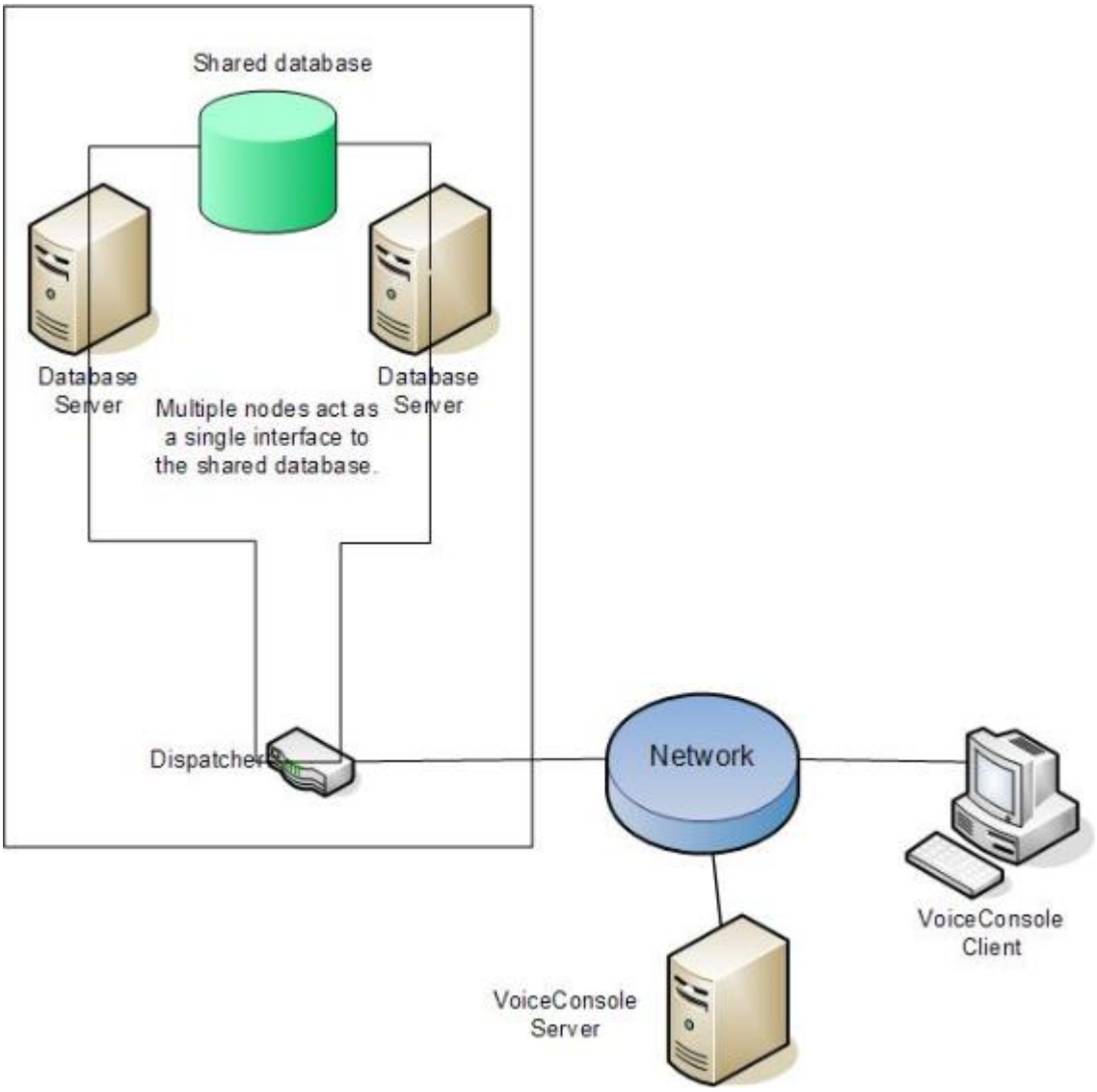


Figure 3.4: Single Application Server with Clustered Database

3.4.3 Clustered Database and Application Servers

This configuration, shown in Figure 3.5 is just a combination of the two scenarios described above.

In this scenario there are no single points of failure as both the application servers and the databases have some form of redundant response mechanism.

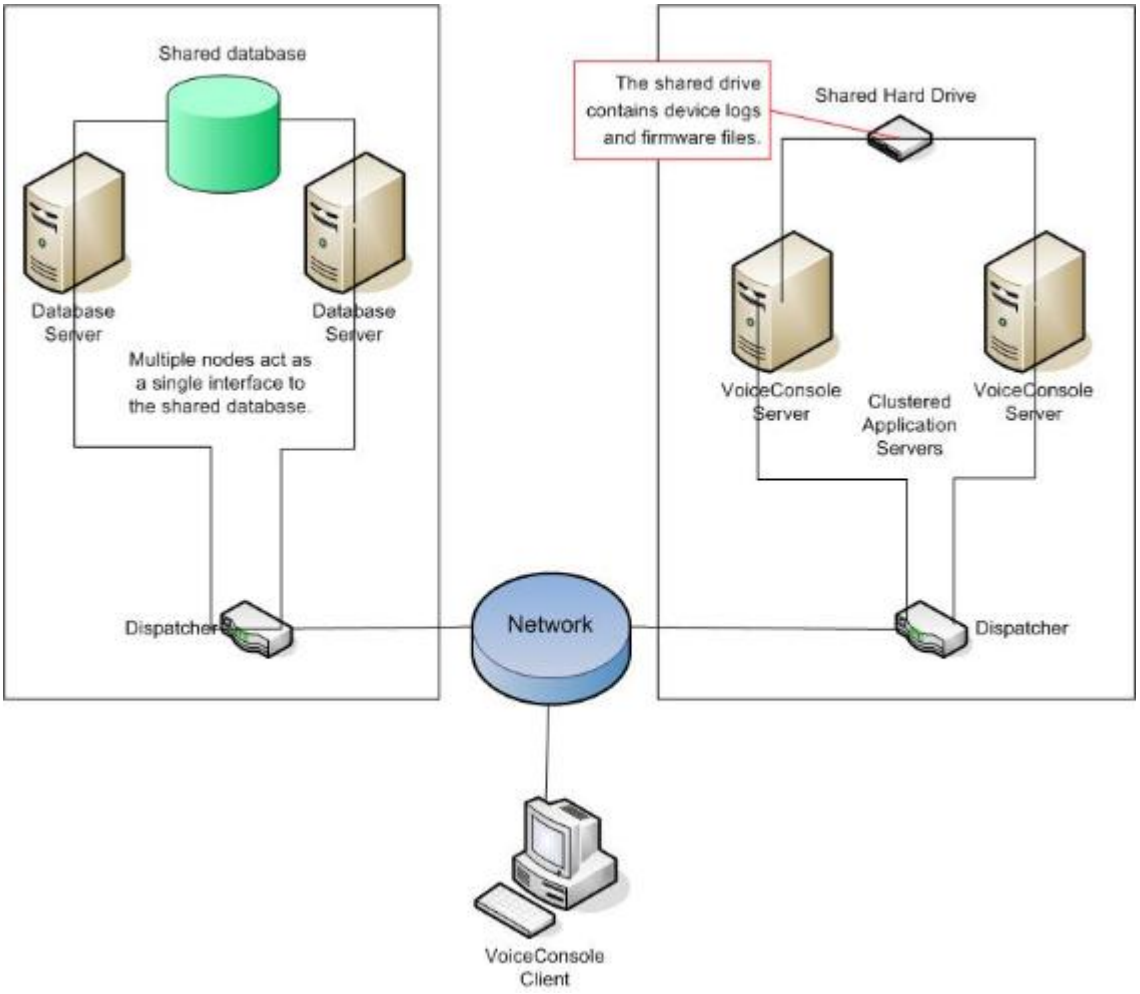


Figure 3.5: Both Database and Application Server Clustering

3.4.4 Benefits

The benefits of clustered and load balanced environments include the following:

Load Balancing	
Increase performance	Performance can be increase if the system is going to be under heavy stress.
Facilitate scaling	Depending on implementation, *VoiceConsole* could grow by adding cluster nodes without drastic changes to implementation architecture.
Failover	
Fault tolerant	Depending on implementation, *VoiceConsole* can continue to operate after an application server and/or database failure.

3.4.5 Limitations

The following are current limitations of clustered and load balanced environments in *VoiceConsole*:

Load Balancing	
Visible failed node	If using the *VoiceConsole* user interface when a node fails, you may have to log in

symptoms	again or repeat some actions.
Risk of potential network bottlenecks	Potential network bottlenecks based on network infrastructure between load balancer, *VoiceConsole* servers, and database servers. Implementing database clustering supported by database vendor may be necessary.
Failover	
Visible Failover Symptoms	If using the *VoiceConsole* user interface while a failover occurs, you may have to log in again or repeat some actions. Devices may report some errors and have to resend data if performing actions during a failover. If database failover is desired, the customer must implement it as recommended by their database vendor.

3.4.6 What You Need

If *VoiceConsole* will be installed into a clustered environment, you will need:

- The logical hostname of the application server and/or database server cluster
- The shared location of the device log and firmware files

3.5 Security Options

VoiceConsole provides support for several methods of authentication and encryption.

To keep networks secure, authentication combined with a protocol that supports authentication methods is recommended.

Authentication is simply verifying that the user who is attempting to contact the network is who he says he is. Server certificates provide verification to the user that he is connecting to the proper network.

Additionally, *encryption* is a way of changing data into a secret code. The recipient of the data requires a pre-supplied *key* to decode it.

You can set up the following types of authentication and encryption in device profiles:

- WEP: Wired Equivalent Privacy
- WPA/PSK and WPA2/PSK: WiFi Protected Access with a Pre-shared Key

3.5.1 Extensible Authentication Protocol

VoiceConsole will be distributing credentials to devices in the device profile. Once these credentials are on the devices, the devices will use them to connect to the wireless network. Credentials only need to be entered once per site, operator or device until the credentials need to be changed. When necessary, *VoiceConsole* will manage the distribution of the new credentials. If the client is using *Talkman T5* devices and the *Talkman T5 Combination Charger*, if enabled, one *Talkman T5* device will distribute the configuration file to all the other the devices in the charger saving time and effort.

How to configure EAP in *VoiceConsole* is discussed in detail in Chapter 1: Configuring Security.

3.5.1.1 Site-wide Configuration

Although Vocollect offers three credential association types (site-based, device-based, and operator-based) in *VoiceConsole*, each of these must be configured on a site-wide basis. That is, even if the client selects to

have device- or operator-based security, all devices and operators at a particular site must use the same type of security. This is reinforced by the User Interface, which requires that you select one and only one EAP type per site. See the section labeled "Association Types" on page 25 for more information on these types.

3.5.1.2 Restricted User

If EAP authentication is selected for the restricted user the device connect to the network with a restricted set of credentials, identifying itself as a Vocollect device. It can only connect to *VoiceConsole* for the purpose of loading the proper credentials. You can further restrict this user's access by assigning it to a different SSID that only has access to a portion of the network. This different SSID may be on an open network. In this case, you would not need credentials for the restricted user. Without the restricted user solution, Vocollect would require that the credentials be loaded onto each device through the serial port if the credentials expire or become obsolete when the password is changed.

The restricted user also has the following roles:

- When the device is in the charger, the restricted user is used to log onto the network.
- Credentials are distributed through the restricted user through the *Talkman T5 Combination Charger* or over the network.
- The restricted user can load tasks and operators.

Note: If you are using static IP addresses rather than DHCP, the restricted user must be on the same network as the non-restricted network, as devices cannot support two static IP addresses.

You can configure the following Extensible Authentication Protocol methods for each site:

EAP-TLS	EAP-Transport Layer Security
EAP-TTLS/MSCHAPv2	EAP-Tunneled Transport Layer Security/Microsoft Challenge Handshake Authentication Protocol
PEAPv0/EAP-MSCHAPv2	Protected Extensible Authentication Protocol/Microsoft Challenge Handshake Authentication Protocol
PEAPv1/EAP-GTC	Protected Extensible Authentication Protocol/Generic Token Card
LEAP	Lightweight Extensible Authentication Protocol

3.5.1.3 Association Types

Because the devices do not provide a user interface for entering usernames, passwords and Personal Identification Numbers, Vocollect developed the concept of *Association Types*. Association types determine the point at which credentials are required.

For each site, you can select one of the following:

Site Based	There is a single username and password or certificate for all operators and devices at a given site. This option is the closest to what existed in versions previous to *VoiceConsole* 2.4.
Device Based	Each device will have its own username and password or certificate. In this configuration, operators don't need to be involved in the authentication process, as all authentication is between the device and the authentication server.
Operator Based	Each operator must log onto *VoiceConsole* to enter a username and password and, optionally, a PIN. The operator must enter that password (and PIN, if selected) on the device before he can connect to the full network.

The EAP options will either be configured by or with significant input from an IT professional. It is this person who will make the decision as to which type of configuration will be used at this site and will have the needed information.

3.5.1.4 What You Need

If you are configuring *VoiceConsole* for EAP, you will need:

- The EAP type used
- Association type
- Type of credentials the client wants the device to use to authenticate to the network
- Whether the user will need to enter a PIN to get onto the network
- Whether the device will log off when it goes into the charger
- The username and password or certificate of the restricted user that the device will use when it is in the charger in order to communicate to *VoiceConsole*

Note: If Certificate is selected, Vocollect strongly recommends using PEM or base 64 formatted certificates.

- The PIN that the user must enter to log onto the network

LDAP settings are optional for site- and device-based association types. They are required for the operator-based association type. If you choose to use LDAP, you will also need:

- The hostname of the machine on which the LDAP server is running
- The port on which the LDAP server is listening
- The username that *VoiceConsole* will use when attempting to find the distinguished name of an operator in the Directory Service
- The password that *VoiceConsole* will use when attempting to find the distinguished name of an operator in the Directory Service
- The search base that *VoiceConsole* will use when trying to find a particular user in the Directory Service
- The attribute that *VoiceConsole* will search on when trying to find a particular user in the Directory Service
- The attribute that *VoiceConsole* will modify when changing the password of a user in the Directory Service

3.6 Configuring the Browser

Prior to installation, you need to ensure that your browser is configured properly.

Regardless of which browser you are using, you must configure your browser as follows to enable the application to work correctly and provide security:

- Browser must be set to reload the page at each visit.
- JavaScript must be enabled.
- Browser must be configured to accept cookies.
- Browser must have the maximum number of simultaneous connections set to your preference for the Device Dialog Display feature.

These browser settings are typically accessed by selecting **Tools | (Internet) Options**.

The following subsections cover browser configurations specific to the type of browser you may be using.

3.6.1 Internet Explorer Configuration

This change is only required when viewing *VoiceConsole* in Internet Explorer 6.0.

1. Go to **Internet Options**.
2. Click the **Advanced** tab.
3. Under **Browsing**, uncheck **Display a notification about every script error**.
4. Save your changes.

This change keeps notifications for minor JavaScript issues from being displayed. If your browser is configured to display notifications, you may encounter a notification as shown below:

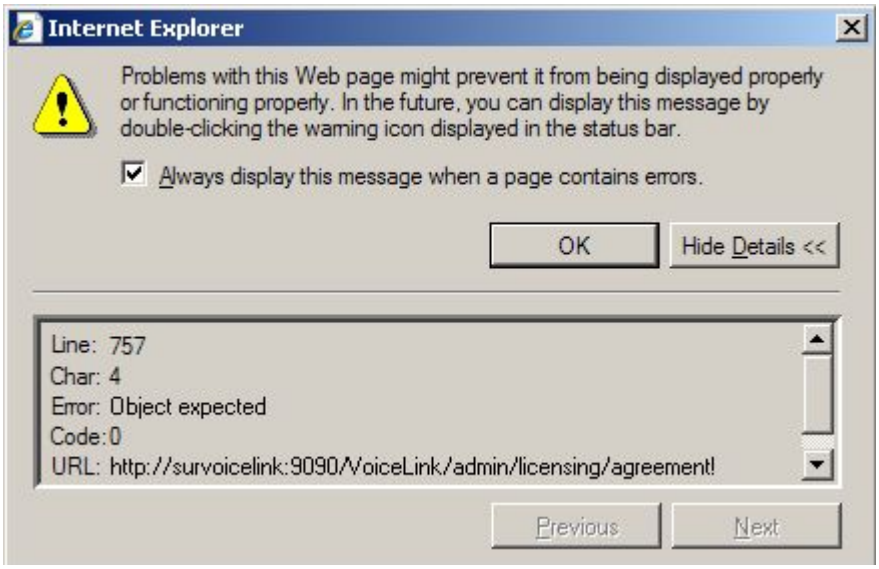


Figure 3.6: Internet Explorer Notification

In this message, you can uncheck **Always display this message when a page contains errors** to avoid seeing this type of notification in the future.

3.6.1.1 Configuring Internet Explorer for the Device Dialog Display Feature

In order to fully use the Device Dialog Display feature, Vocollect recommends configuring Internet Explorer to modify the limit of simultaneous connections.

To do this, add the following registry keys and set the dword values to the maximum number of simultaneous connections you want:

- HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Internet Settings\"MaxConnectionsPerServer"=dword:<maximum number of browser windows open at once>
- HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Internet Settings\"MaxConnectionsPer1_0Server"=dword:<maximum number of browser windows open at once>

3.6.2 Firefox Configurations

These changes are only required when viewing *VoiceConsole* in Firefox browsers.

Before you can use certain features in Firefox browsers, you must make the following configuration changes:

1. In your browser's address bar, type: **about:config**
   The browser then displays a list of properties.
2. Type **signed** in the filter box, just above the list of properties.
3. Find the entry named **signed.applets.codebase_principal_support** in the property list, and double-click the entry to change the value from **false** to **true**. This change will enable you to copy records from *VoiceConsole* tables to the Windows, RedHat Linux or CentOS Linux clipboard.
4. Click **OK**.
5. Type **browser.link** in the filter box, just above the list of properties.
6. Find the entry named **browser.link.open_newwindow** in the property list, and double-click the entry. Change the value to **2**. This change will enable context-sensitive help links to open in a new browser window.
7. Restart the browser.

In addition to the previous process, do the following to verify that your browser is configured to open new pages in a new window:

1. Select **Tools | Options**.
2. Click **Tabs**.
3. For the parameter, **New pages should be opened in**, click the option to open new pages in a new window.
4. Click **OK**.

3.6.2.1 Configuring Firefox for the Device Dialog Display Feature

In order to fully use the Device Dialog Display feature, Vocollect recommends configuring Firefox to modify the limit of simultaneous connections.

To do this,

1. In your browser's address bar, type: **about:config**
   The browser then displays a list of properties.
2. Type **max-con** in the filter box, just above the list of properties.
3. Find the entry named **network.http.max-connections-per-server** in the property list, and double-click the entry.
4. Change the value to the maximum number of simultaneous connections you want.
5. Click **OK**.
6. Type **max-per** in the filter box, just above the list of properties.
7. Find the entry named **network.http.max-persistent-connections-per-server** in the property list, and double-click the entry.
8. Change the value to the maximum number of simultaneous connections you want.
9. Click **OK**.
10. Restart the browser.

4 Installing VoiceConsole for the First Time

This chapter describes how to install *VoiceConsole* for the first time; that is, when there are no previous instances of *VoiceConsole* at your site.

4.1 System Components

The following system components are installed when you install *VoiceConsole*:

- Apache Tomcat 6.0
- Java™ Development Kit 1.6 (JDK)
- *VoiceConsole* Web Application
- *VoiceConsole* Online Help
- Vocollect Hardware Help

Note: If you choose to use WebLogic as your application server, *VoiceConsole* must be installed using a different process. See "Installing Into the First Node" on page 42.

4.2 Available Ports and Protocols

VoiceConsole uses the following protocols:

- Internet Control Message Protocol (ICMP)
- Hypertext Transfer Protocol (HTTP)
- Hypertext Transfer Protocol with Secure Sockets Layer (HTTPS)

The following ports are used by default by the Apache Tomcat Service for proper startup and shutdown:

- 9090
- 9091
- 9443
- 9005
- 9009

If these ports are not available, the next available ports are used.

The following TCP port must be available for communication between *VoiceConsole* and *VoiceClient*:

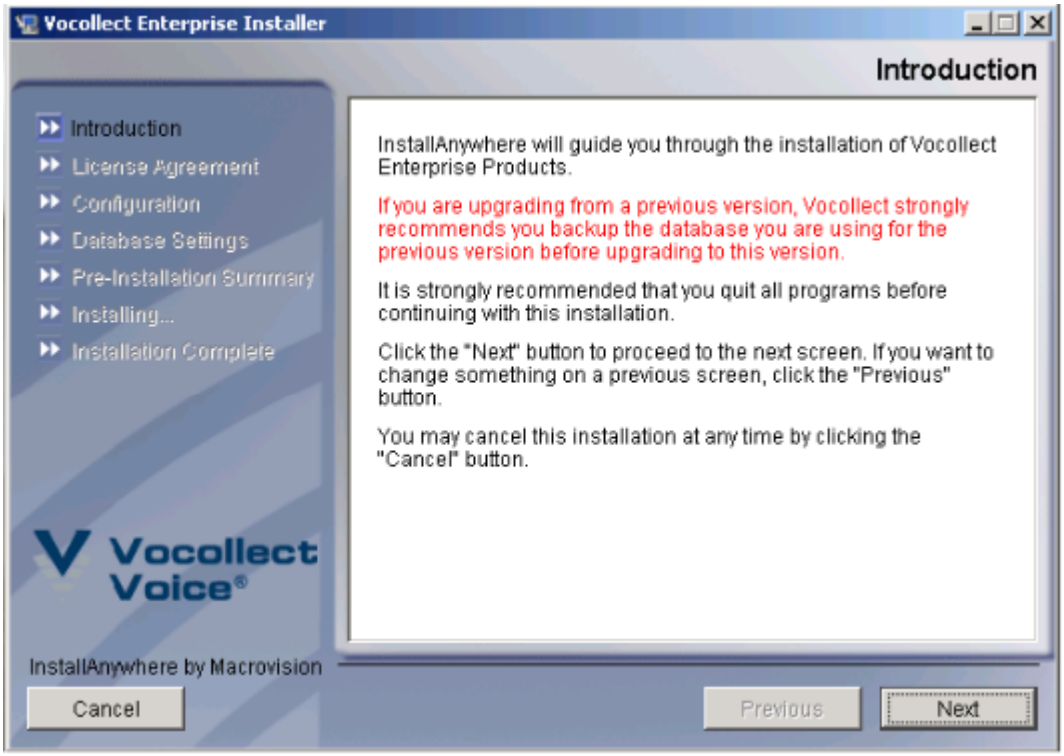
- TCP: 21050

4.3 Standard Installation Procedure

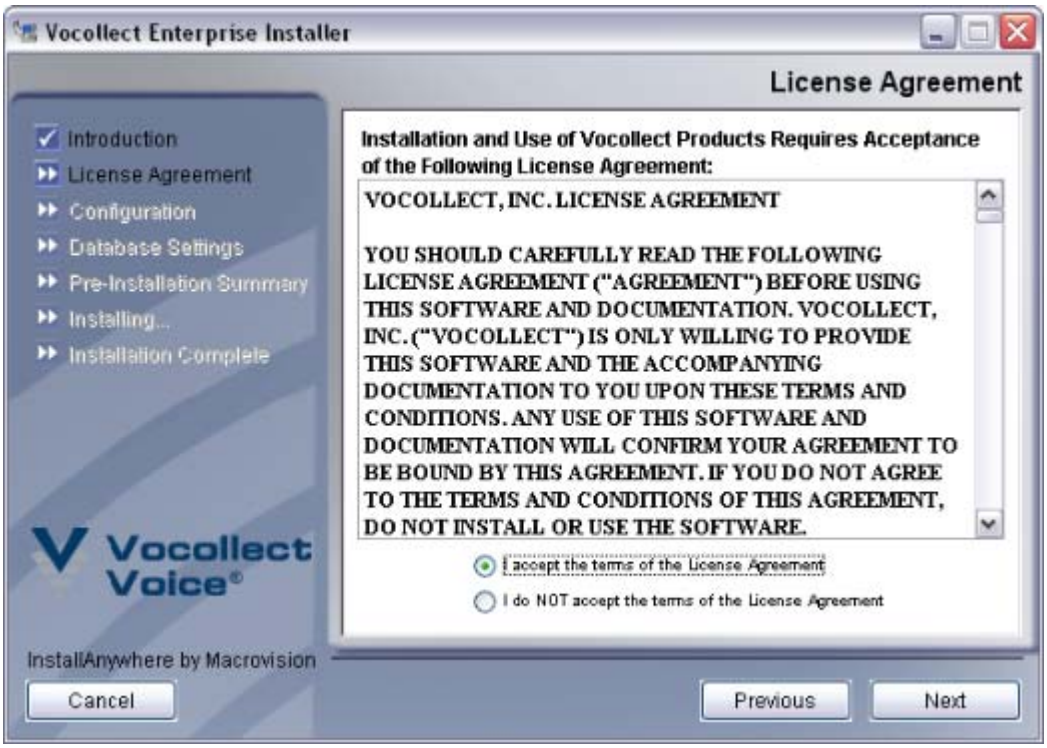
If you are installing with AIX, you cannot use the process below. You must perform a silent installation. See "Initiating a Silent Installation" on page 60.

Note: If you choose to use WebLogic as your application server, *VoiceConsole* must be installed using a different process. See "Deploying VoiceConsole to WebLogic " on page 42.

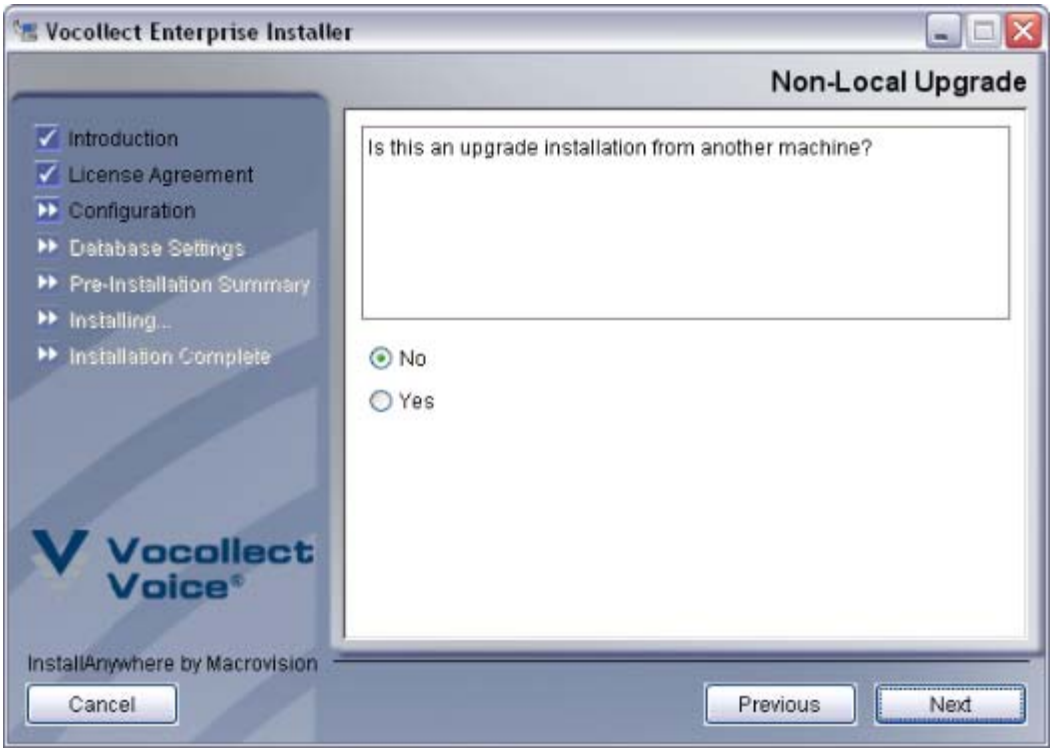
1. If one is not already installed, install the database platform. See "Oracle® Database 10g Express Edition" on page 11 for special installation steps if using Oracle 10g Express. See "MySQL 5.0 Community Server" on page 10 for special installation steps if using MySQL.
2. Create a blank *VoiceConsole* database and a user with create, read, and write permissions to the database. When you run the installer in the next step, the database schema will be created automatically.
3. Run the installer. It should start automatically when you place the DVD in the DVD drive if you are using Windows. If it does not, navigate to the DVD drive and double-click **VocollectEnterpriseInstaller.exe** on Windows or **VocollectEnterpriseInstaller.bin** on RedHat Linux or CentOS Linux.



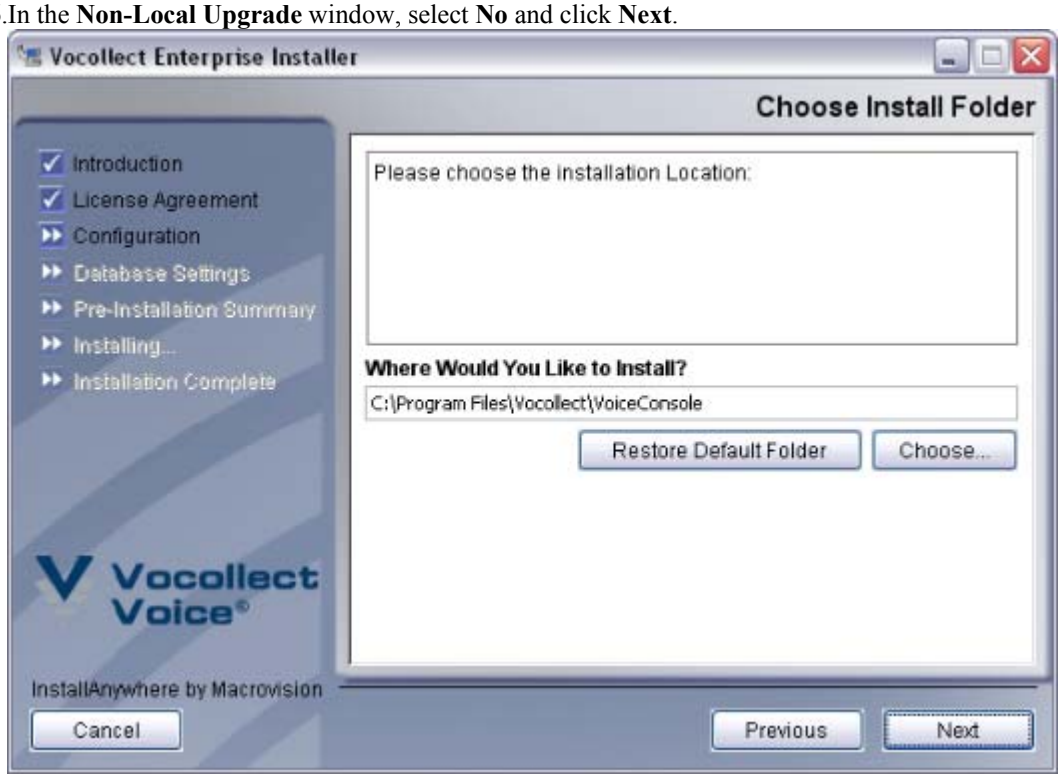
4. The **Introduction** window will appear. As suggested, close all other programs on the machine on which you are installing. Click **Next**.



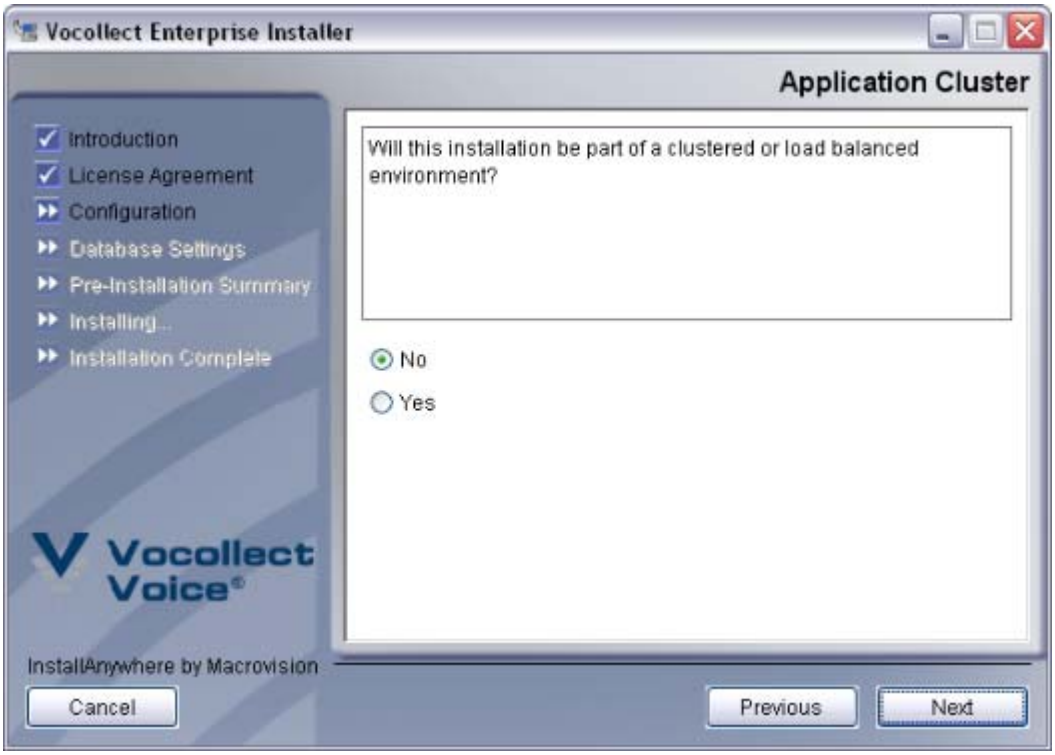
5.In the **License Agreement** window, you must accept the agreement to continue. Click **Next**.



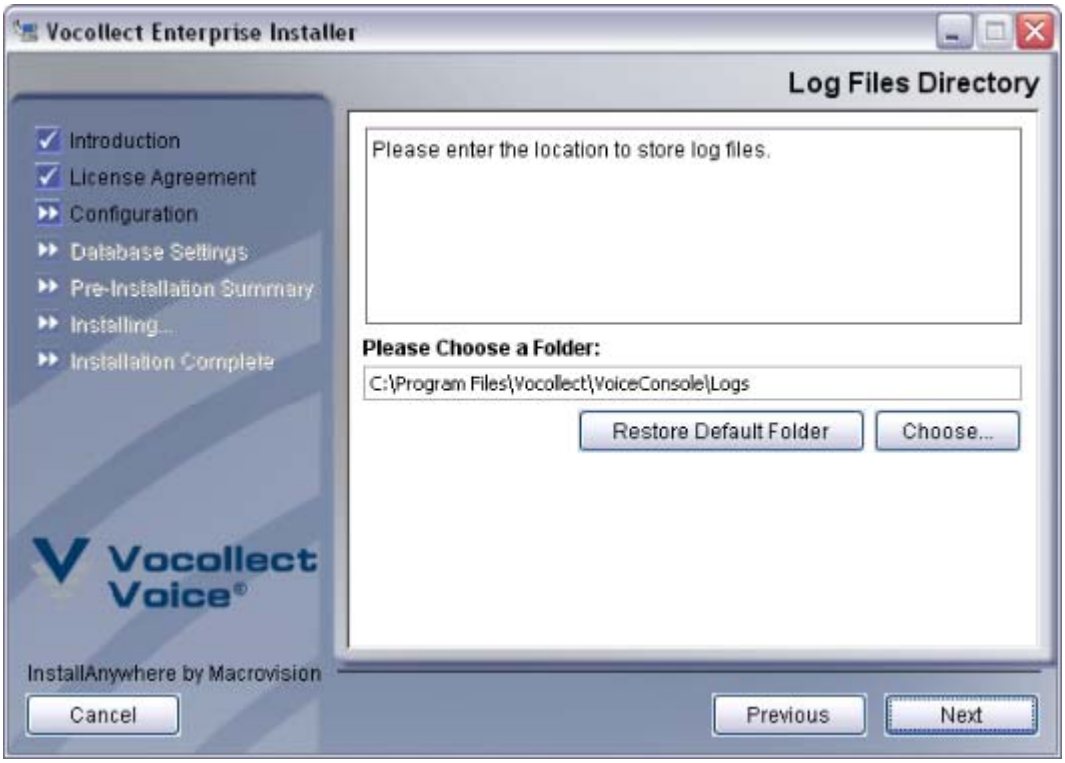
6. In the **Non-Local Upgrade** window, select **No** and click **Next**.



7. In the **Choose Install Folder** window, you are prompted to select a directory into which to install *VoiceConsole*. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.



8. In the **Application Cluster** window, select **No** to select a standard installation and click **Next**. If you want to install to a clustered server environment, see "Installing into a Clustered Environment" on page 45 for more information.



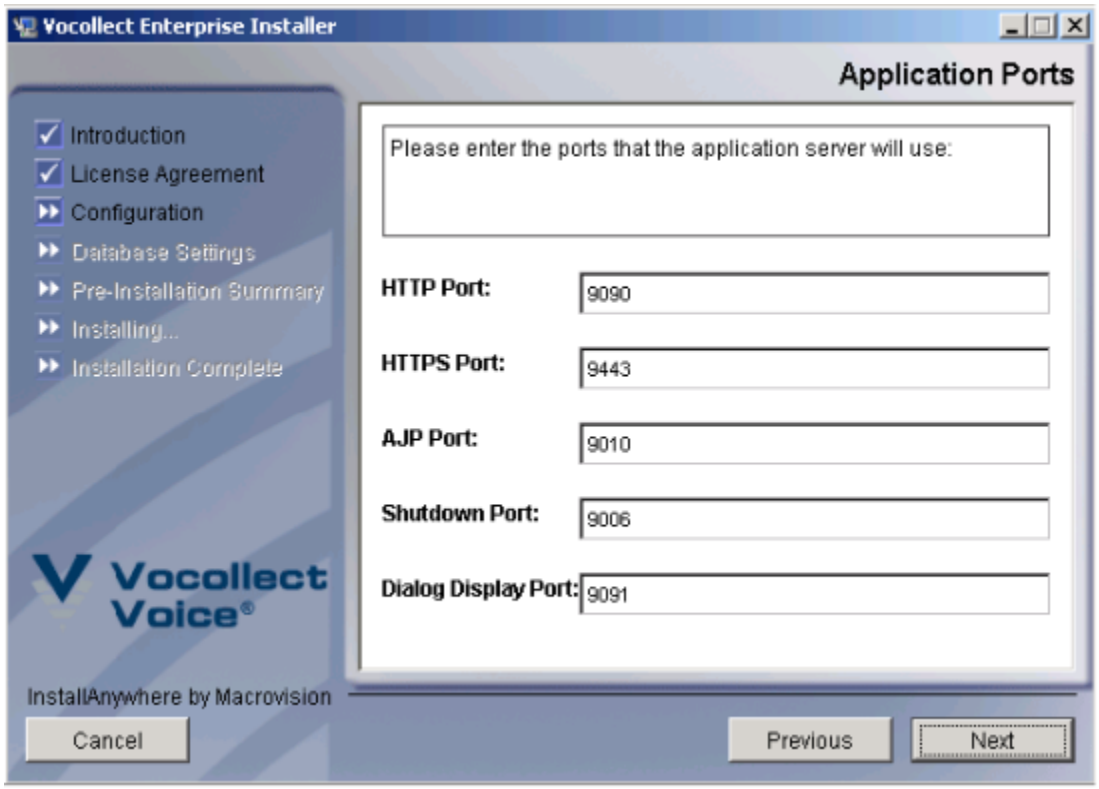
9. In the **Log Files Directory** window, specify where you would like to have log files stored. These log files track user activities in the *VoiceConsole* application. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.

10. In the **Tomcat Service Settings** window,

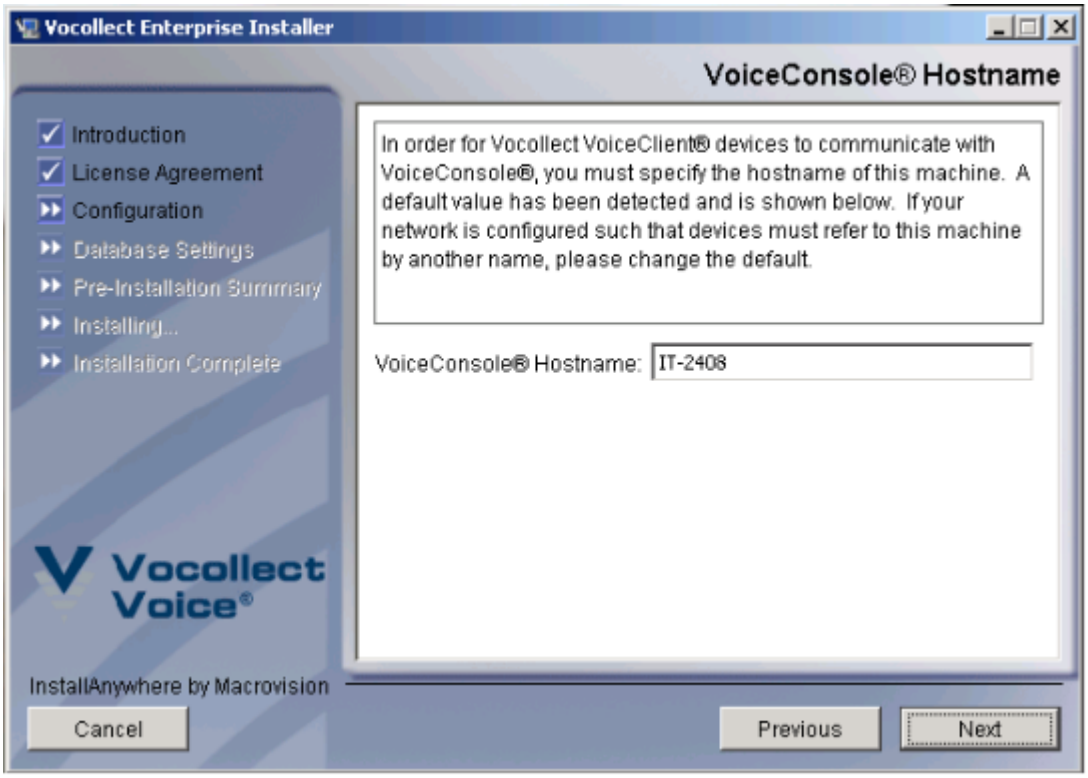
- if you use Windows, select **Use LocalSystem** or **Use Existing Account**. The LocalSystem account does not require a username and password.
- if you use RedHat Linux or CentOS Linux, select **Use Vocollect User** or **Use Existing Account**. The Vocollect User account does not require a username and password.

If you selected **Use Existing Account**, enter the username and password for the account. This user must have read permissions to the directory from which the installation program is being run. In addition, this user must have permissions to log on as a service.

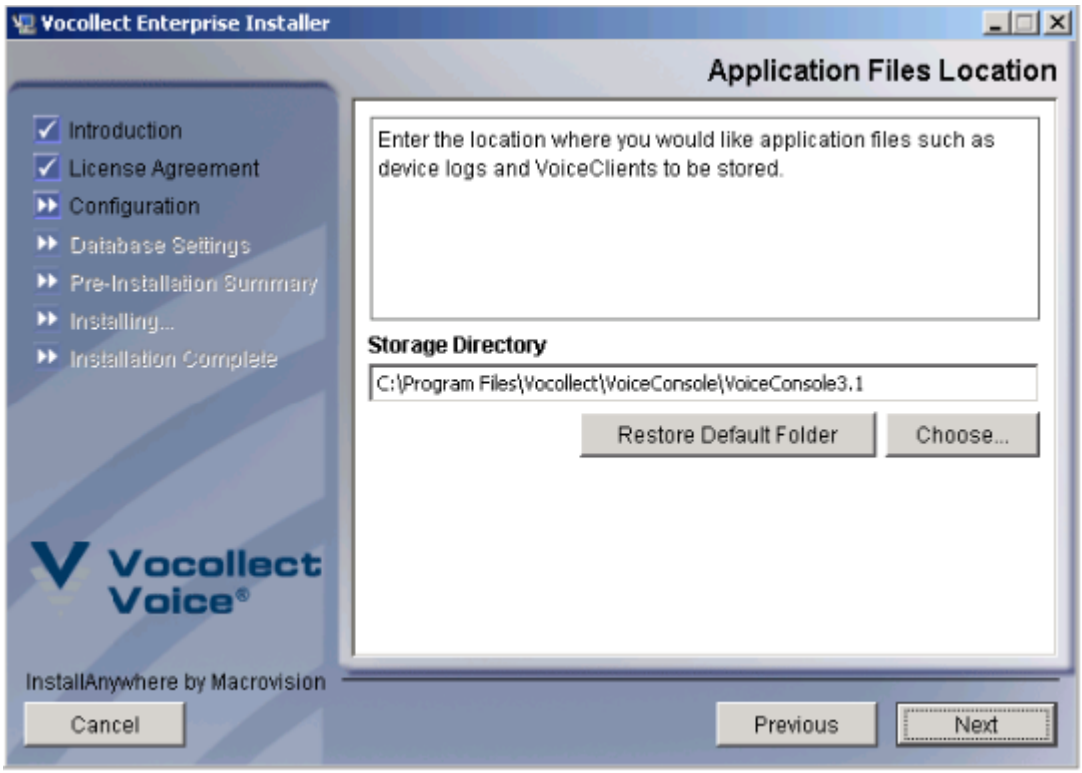
Note: If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.



11. In the **Application Ports** window, the port fields display the ports that the application server will use. If necessary, you can enter different ports. Click **Next**.



12. In the **VoiceConsole Hostname** window, enter the hostname of the machine onto which you are installing *VoiceConsole* or accept the detected name and click **Next**.



13. In the **Application Files Location** window, specify where you would like to have application files stored. Click **Choose** to navigate to a location other than the default, or click **Next** to accept the default location. Click **Next**.

Note: The **Application Files Location** must have enough room to store device logs, which will grow very large in a short amount of time. See "VoiceConsole System Requirements" on page 7 for more information.

14. In the **Database Server Type** window, select the database server you will use and select if you want to use basic or advanced settings. Click **Next**.

Note: The database server should be installed prior to running this installation program.

15. In the **Database Server Settings** window, enter the information for one of the following database server types:

SQL Server 2005

For installations using SQL Server 2005, you must enter the information listed in the following table:

Note: SQL Server 2005 does not enable TCP/IP by default. You must manually enable TCP/IP before the installation can complete successfully.

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for SQL Server is 1433.
Database name	The name of the database.	
For Advanced		

JDBC URL	The JDBC URL for the database.	jdbc:sqlserver://<host>:<port>;DatabaseName=<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Authentication Type (Windows installs only where existing user specified for Tomcat Server configuration)	If installing on Windows and an existing user was specified for the Tomcat Service configuration, you can select to use NT Authentication. Otherwise, select SQL Server Authentication.	
Database username	The username that the application should use to log into the database. This is disabled if using NT Authentication.	
Database password	The password of the user that the application should use to log into the database. This is disabled if using NT Authentication.	
Database schema	The database schema you are using.	

Oracle 10g Standard, Enterprise or 10g Express

For installations using Oracle 10g Enterprise or 10g Express, you must enter the following information:

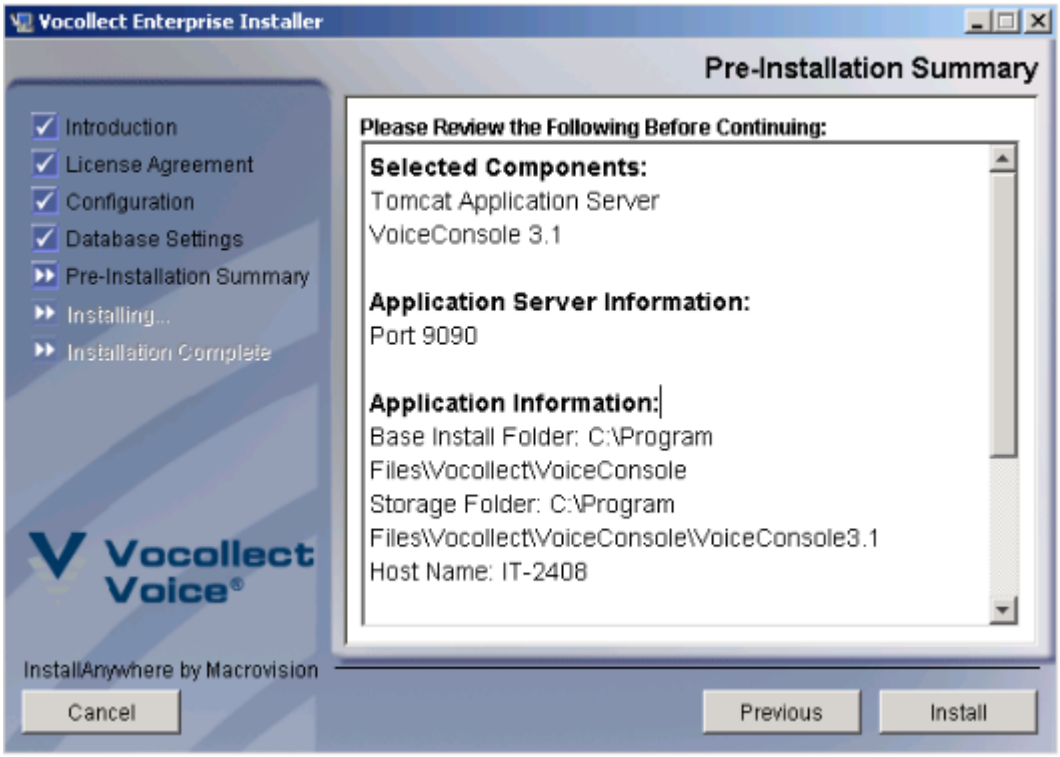
For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for Oracle is 1521.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:oracle:thin:@<host>:<port>:<database name>
		Note: For a basic installation using Oracle 10g Express, the most commonly used username is system and JDBC URL: jdbc:oracle:thin:@localhost:1521:XE.

For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username of a user with administrative privileges.	
Database password	The password of a user with administrative privileges.	

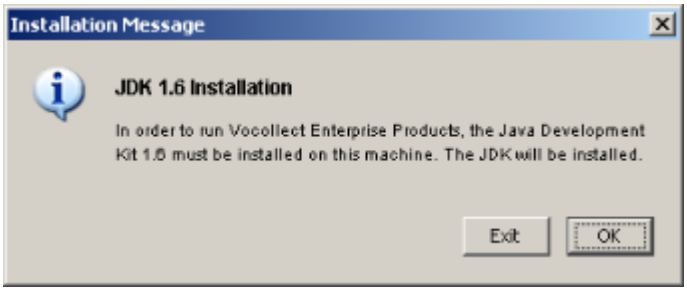
MySQL

For installations using MySQL, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for MySQL is 3306.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:mysql://<server>:<port>/<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username that the application should use to log into the database.	
Database password	The password of a user that the application should use to log into the database.	Invalid character: $

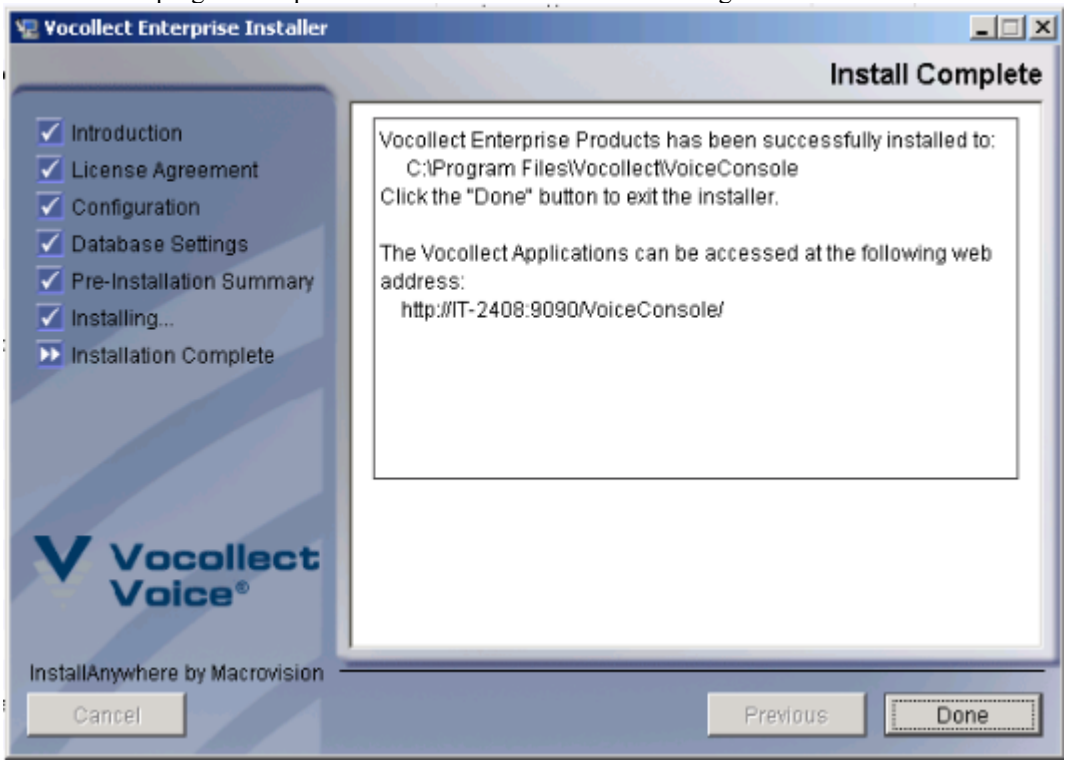


16. In the **Pre-Installation Summary** window, review the settings. Click **Previous** to go back and change settings; click **Install** to proceed with the installation.



17. You will be notified that the installer is about to install the Java Development Kit (JDK). Click **OK**.

18. The installation will begin. A series of windows will appear, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.



19. When the installer is done, you will see a window letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.

4.4 Deploying VoiceConsole to WebLogic

If you choose to use WebLogic as your application server, perform the following steps to deploy *VoiceConsole* to WebLogic.

Note: WebLogic is only supported with RedHat Linux.

Note: Java JRE 1.5 or newer is required for this process to run the .sh files.

Note: If you have any issues running shell scripts (.sh files), try converting line endings to your native platform's line endings with a program like dos2unix.

1. Create a weblogic folder in the *VoiceConsole* folder in the location you chose to install *VoiceConsole*. By default this location is **/opt/Vocollect/VoiceConsole<version>**
2. Copy the contents of the **weblogic** folder from the *VoiceConsole* DVD to the **weblogic** folder you created in Step 1. You have now created the WebLogic directory.
3. Create a system environment variable called **JAVA_HOME** pointing to the JAVA installation folder by editing the **profile** file in a text editor.
4. Create a system environment variable called **VOICE_CONSOLE_HOME** pointing to the WebLogic directory by editing the **profile** file in a text editor.

   Example: Edit /etc/profile and add a line as follows:

   ```
   export
   VOICE_CONSOLE_HOME=/opt/Vocollect/VoiceConsole3.1/weblogic
   ```

5. Save the file.
6. Open the **install.properties** file in the **tools** folder located in the WebLogic directory, and enter all of the properties for *VoiceConsole*.

   You will need the database connection URL, schema name, user name, password, host name, WebLogic port (default 7001) and SSL port (default 7002).

   Example file contents (RedHat Linux on Oracle):

   ```
   database.type=oracle

   database.url=jdbc:oracle:thin://@localhost:1521:orcl

   database.username=vc

   database.password=vc

   database.schema=VC

   file.basedir=/opt/Vocollect/VoiceConsole/Files

   vc.hostname=10.0.0.1

   vc.port=7001

   vc.ssl.port=7002
   ```

7. Save the file.
8. Open a terminal prompt, and go to the **tools** folder located in the WebLogic directory.
9. Run the **./RunWLSetup.sh** file located in the tools folder.

10. In the WebLogic directory, go to the **config** folder, open the **log.properties** file in a text editor, and modify the **system.log.directory** property to point to the directory where the WebLogic logs are stored.
11. Create a WebLogic domain named **vocollect**. Note the domain location for use later.
12. Open **setDomainEnv.sh**, located in **<domain location from step 11>/bin**, in a text editor and change the following lines:

Note: To ensure accuracy, copy and paste the lines to replace the original text.

add -Dvc.home={voice_console_home} to JAVA_PROPERTIES as follows: -Dvc.home=${VOICE_CONSOLE_HOME} Example: JAVA_PROPERTIES="-Dplatform.home=${WL_HOME} -Dwls.home=${WLS_HOME} -Dweblogic.home= Dvc.home=${VOICE_CONSOLE_HOME}"
add a definition for PRE_CLASSPATH as follows: PRE_CLASSPATH=${VOICE_CONSOLE_HOME}/lib/antlr-2.7.6.jar: ${VOICE_CONSOLE_HOME}/lib/rhino-1.6R 1.4.jar: ${VOICE_CONSOLE_HOME}/lib/commons-logging-1.1.jar: ${VOICE_CONSOLE_HOME}/config: ${VOIC

Note: The definition for PRE_CLASPATH must be all on one line.

13. Save and close the file.
14. Run the **startWebLogic.sh** file.
15. Open and log into the Admin Server for WebLogic using a Web browser and go to the WebLogic console. Use the admin user and password you created for the domain in Step 11.
16. Under the Domain Structure, click **Deployments**.
17. Click **Lock & Edit**.
18. In the **Deployments** table, click **Install**.
19. Navigate to the **webapps** folder located in the WebLogic directory, select the **VoiceConsole.war** file, and click **Next.**
20. Select **Install this deployment as an application**, and click **Next**.
21. Select **DD Only: Use only roles and policies that are defined in the deployment descriptors** and **I will make the deployment accessible from the following location**, and click **Finish**.
22. Select **VoiceConsole**, and click **Activate Changes**.The application status changes to **Prepared**.
23. Select **VoiceConsole**, and click **Start** in **Deployments.**
24. Select **Servicing All Requests.**
25. Click **Yes**.

    The deployment of *VoiceConsole* on WebLogic begins, and the application status changes to **Start Running**.

    Now, you must configure SSL for WebLogic, by performing the steps that follow.

26. Open and log into the Admin Server for WebLogic.
27. Under **Domain Structure**, click **Environment**.
28. In the **Summary**, click **Servers**.
29. Click **Lock & Edit**.
30. Click **AdminServer**.

31. Activate the **SSL Listen Port Enabled** check box, and in the **SSL Listen Port** text box, enter the SSL port you want to use.
32. Click **Save**.
33. Select the **Keystores** tab.
34. From the **Keystores** drop-down box, select **Custom Identity and Java Standard Trust**.
35. In the **Custom Identity Keystore** field, enter the path to the .keystore file in the webapps directory of the deployment directory.
36. In the **Custom Identity Keystore Type** field, enter **jks**.
37. In the **Keystore Passphrase** field, enter **changeit**.
38. In the **Java Standard Trust Keystore** field, enter **changeit**.
39. In the **Java Standard Trust Keystore Type** field, enter **changeit**.
40. In the **Custom Java Standard Trust Keystore Passphrase** field, enter **changeit**.
41. Click **Save**.
42. Select the **SSL** tab.
43. In the **Identity and Trust Locations** drop-down list, select **Keystores**.
44. In the **Private Key Alias** field, enter **tomcat**.
45. In the **Keystore passphrase** field, enter **changeit**.
46. Click the **Save**.
47. Click **Activate Changes**.

Now you must set up Web Services by performing the steps that follow.

48. Open and log into the Admin Server for WebLogic.
49. Under **Domain Structure**, click **Security Realms**.
50. Click **myrealm**.

Note: The default admin user for VoiceConsole has a five character password, which will not pass the default password security for WebLogic. To change that setting:

1. Select **Provider**.
2. Click **Default Authenticator**.
3. Select the **Provider Specific** tab.
4. Click **Lock & Edit**.
5. Set the minimum password length to **5**.
6. Click **Save**.
7. Click **Activate Changes**.
8. Log out of Admin Server.
9. Stop the WebLogic process and restart WebLogic.
10. Start again with step 48. You will not need to perform these steps again to change the password length.

51. In **myrealm**, select the **Users and Groups** tab, and click **New**.
52. Enter details about the user who is accessing Web (SOAP) Services, and click OK. Repeat this step for all the users who are going to access Web Services.

Note: These WebLogic users must also exist in *VoiceConsole*, and use the same user ID and password as they do in *VoiceConsole*.

53. Open a terminal prompt, and go to the install folder in the WebLogic directory.
54. Run the command **chmod +x *.sh**, and then run the **./deploySOAPServices.sh** file indicating the proper hostname/IP address, port number, user name and password.

    Example: ./deploySOAPServices.sh 10.0.0.1 7001 admin admin

55. After that file has run, run the **./listSOAPServices.sh** file indicating the proper hostname/IP address, port number, user name and password. The output of this file lists the Web Services that have been installed and the URN for each installed Web Service.

    There should be the following services listed:

    urn:com.vocollect.voiceconsole.web.soap.OperatorAccess

    urn:com.vocollect.voiceconsole.web.soap.TerminalAccess

    urn:com.vocollect.voiceconsole.web.soap.TaskAccess

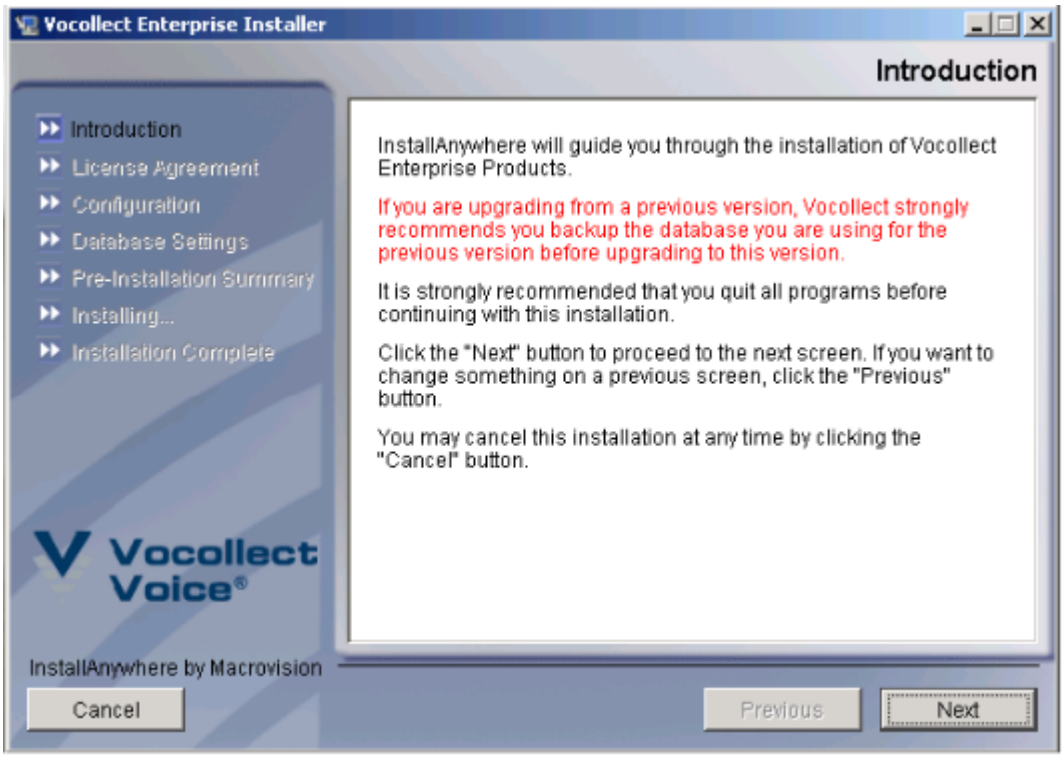
WebLogic will now be used as the Application Server and all *VoiceConsole* log files are created in the logs folder of the folder you indicated in step 10.

4.5 Installing into a Clustered Environment

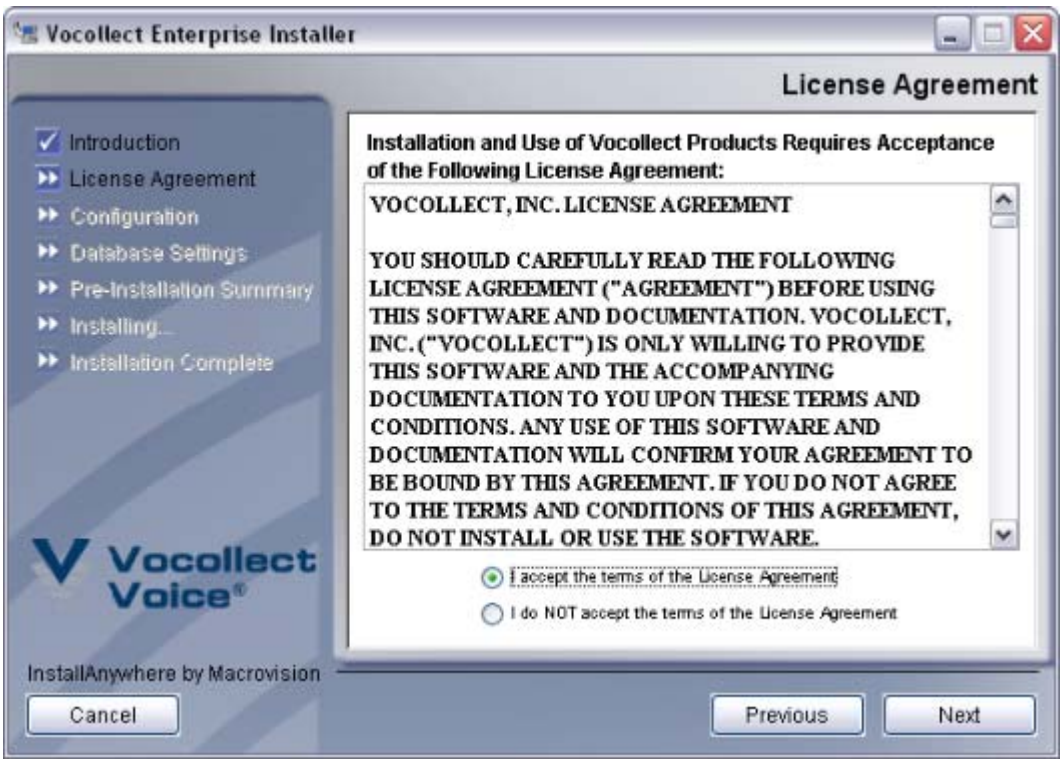
This installation procedure is different from the standard installation procedure in that you must install on each node in the cluster individually. The license that was provided to you must be imported into each installation.

4.5.1 Installing Into the First Node

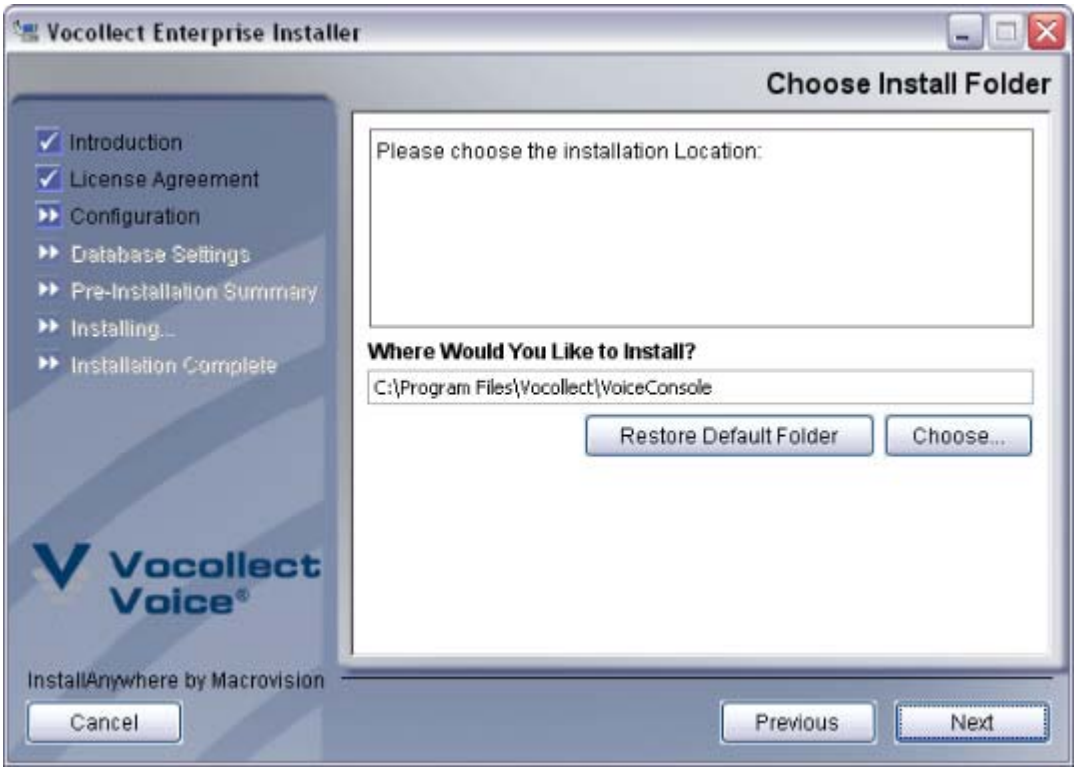
1. If one is not already installed, install the database platform. See "Oracle® Database 10g Express Edition" on page 11 for special installation steps if using Oracle 10g Express. See "MySQL 5.0 Community Server" on page 10 for special installation steps if using MySQL.
2. Create a blank *VoiceConsole* database and a user with create, read, and write permissions to the database. When you run the installer in the next step, the database schema will be created automatically.
3. Run the installer. It should start automatically when you place the DVD in the DVD drive. If it does not, navigate to the DVD drive and double-click **VocollectEnterpriseInstaller.exe** on Windows or **VocollectEnterpriseInstaller.bin** on RedHat Linux or CentOS Linux**.**



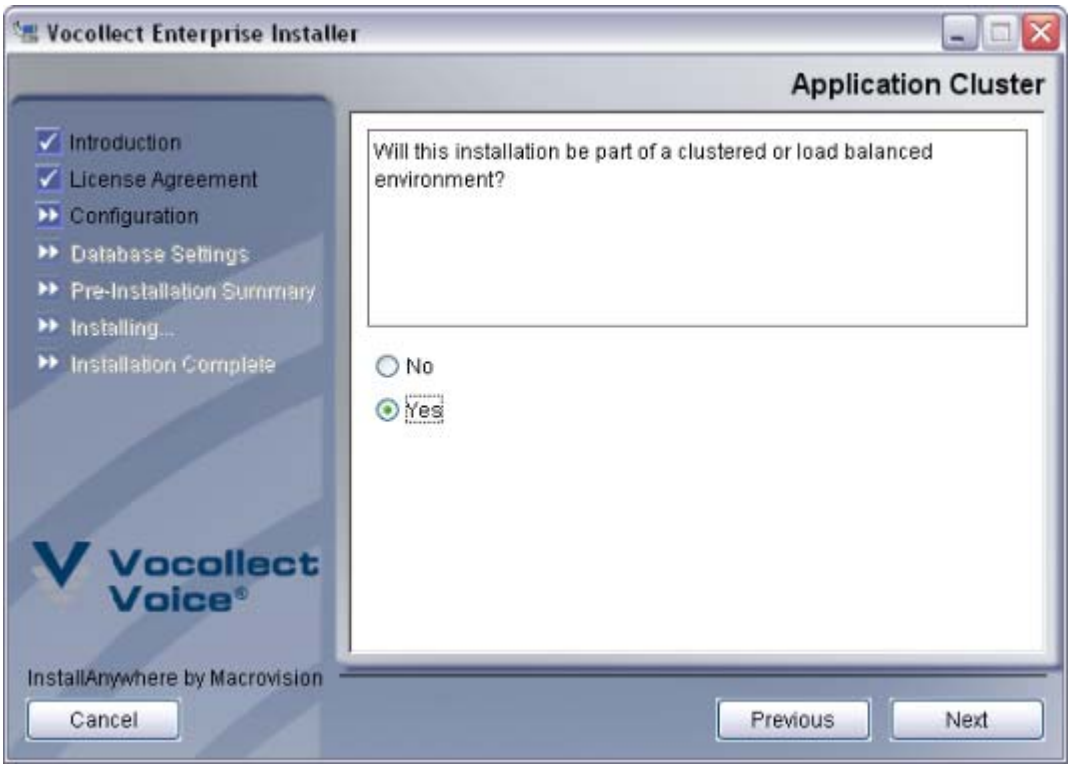
4. The **Introduction** window will appear. As suggested, close all other programs on the machine on which you are installing. Click **Next**.



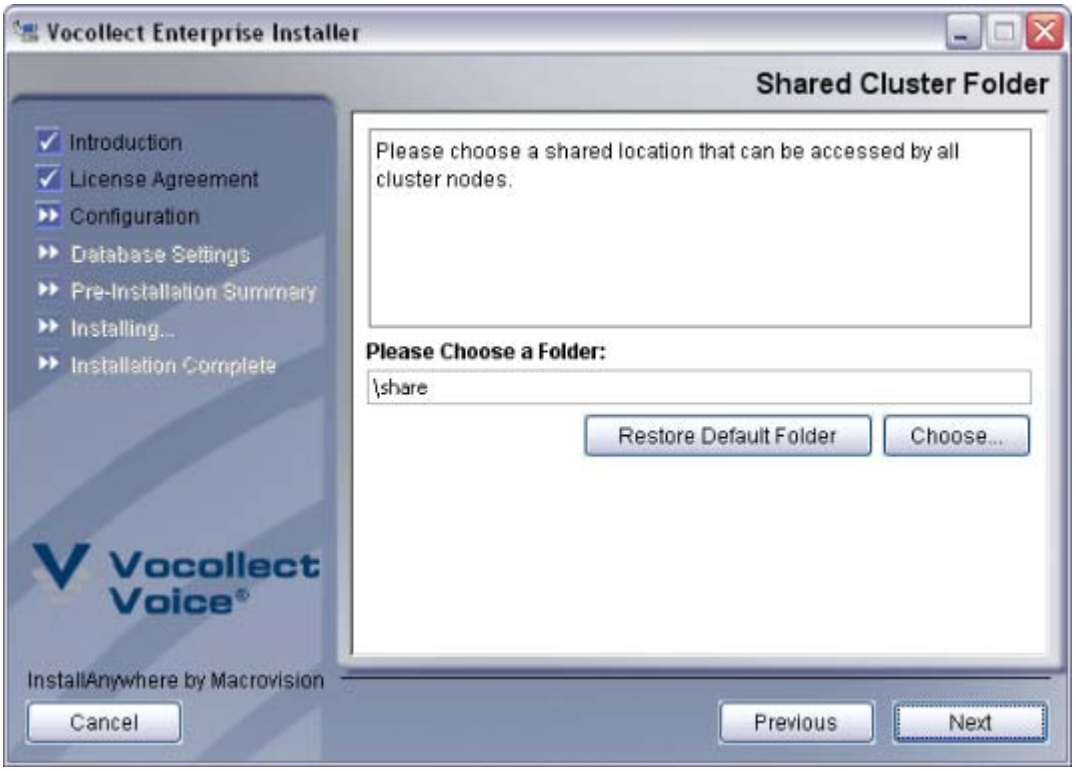
5.In the **License Agreement** window, you must accept the agreement to continue. Click **Next**.



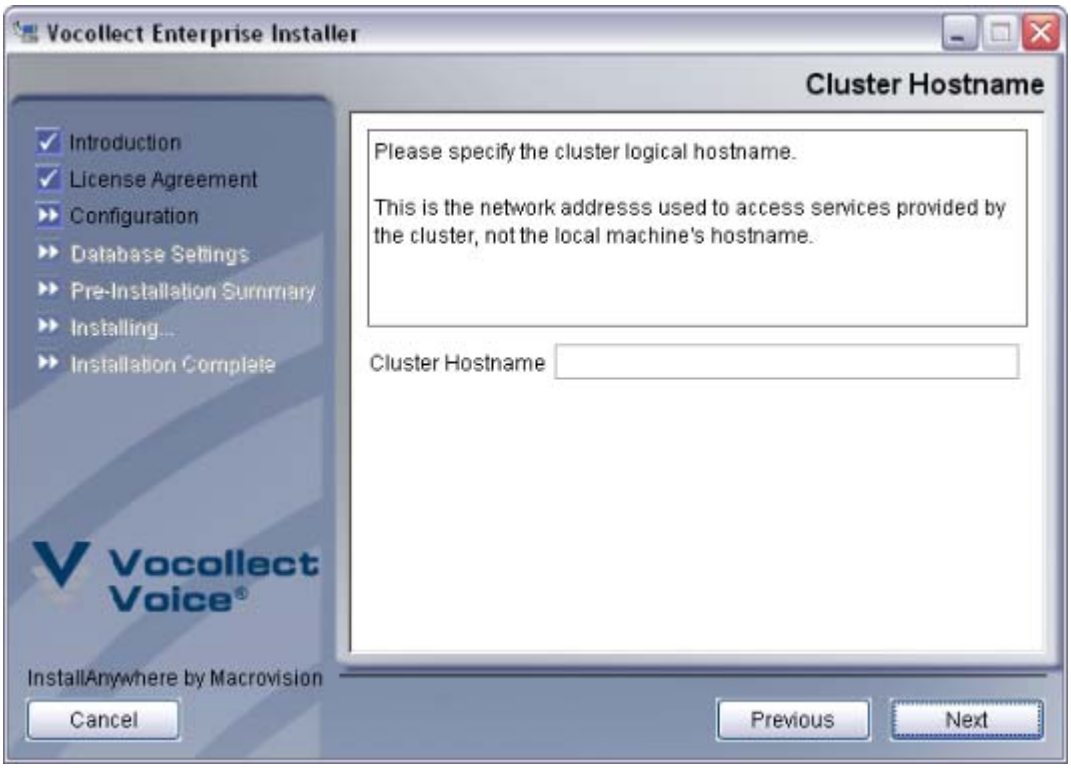
6.In the **Choose Install Folder** window, select a directory into which to install *VoiceConsole*. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.



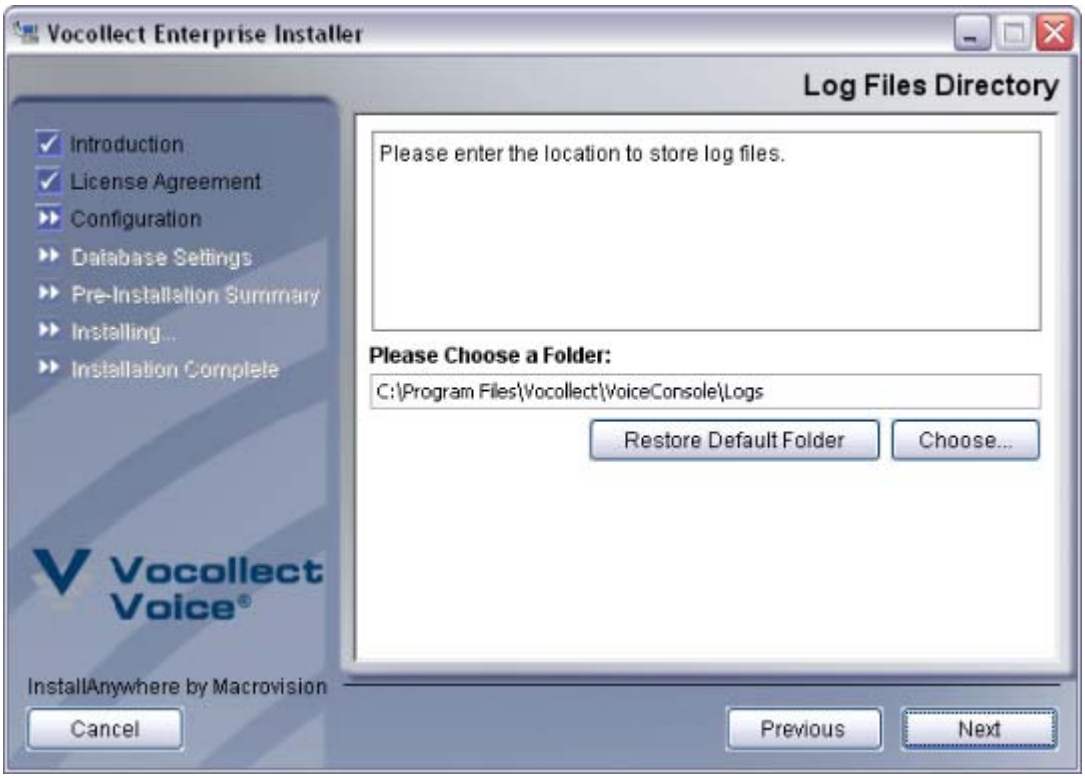
7.In the **Application Cluster** window, select **Yes** and click **Next**.



8.In the **Shared Cluster Folder** window, select a directory that can be accessed by all cluster nodes. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.



9. In the **Cluster Hostname** window, enter the logical hostname of the cluster onto which you are installing *VoiceConsole* and click **Next**.



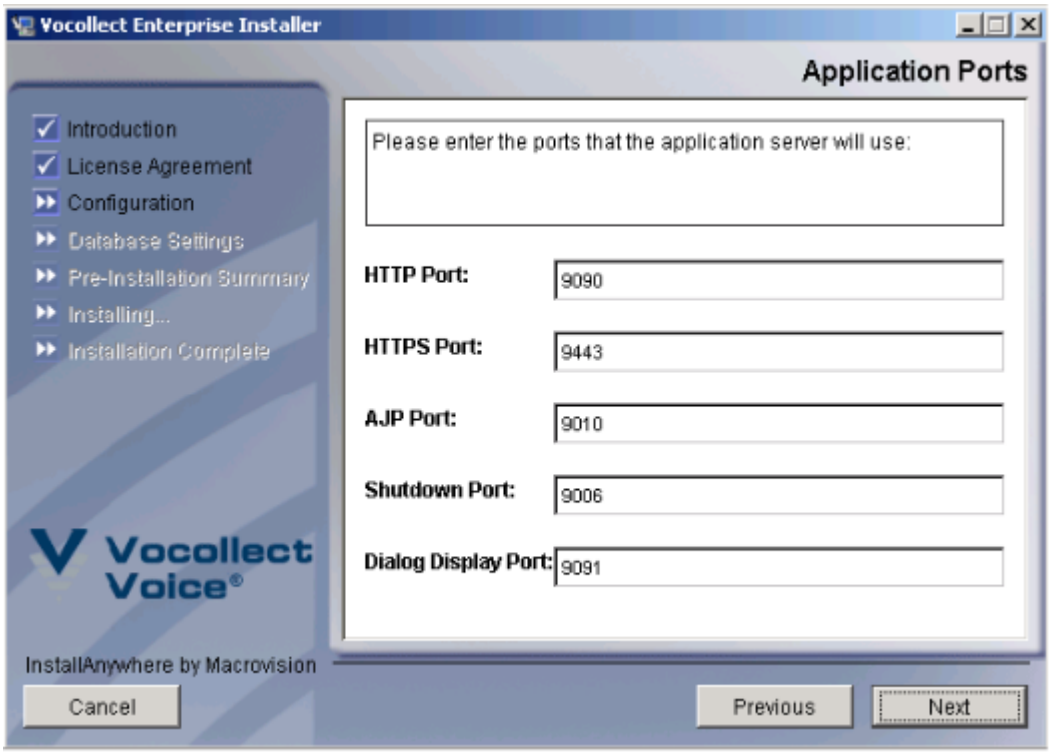
10. In the **Log Files Directory** window, specify where you would like to have log files stored. These log files track user activities and information on any abnormal findings and errors that may occur in the *VoiceConsole* application. Click **Choose** to navigate to a location other than the default, or click **Next** to accept the default location. Click **Next**.

11. In the **Tomcat Service Settings** window,

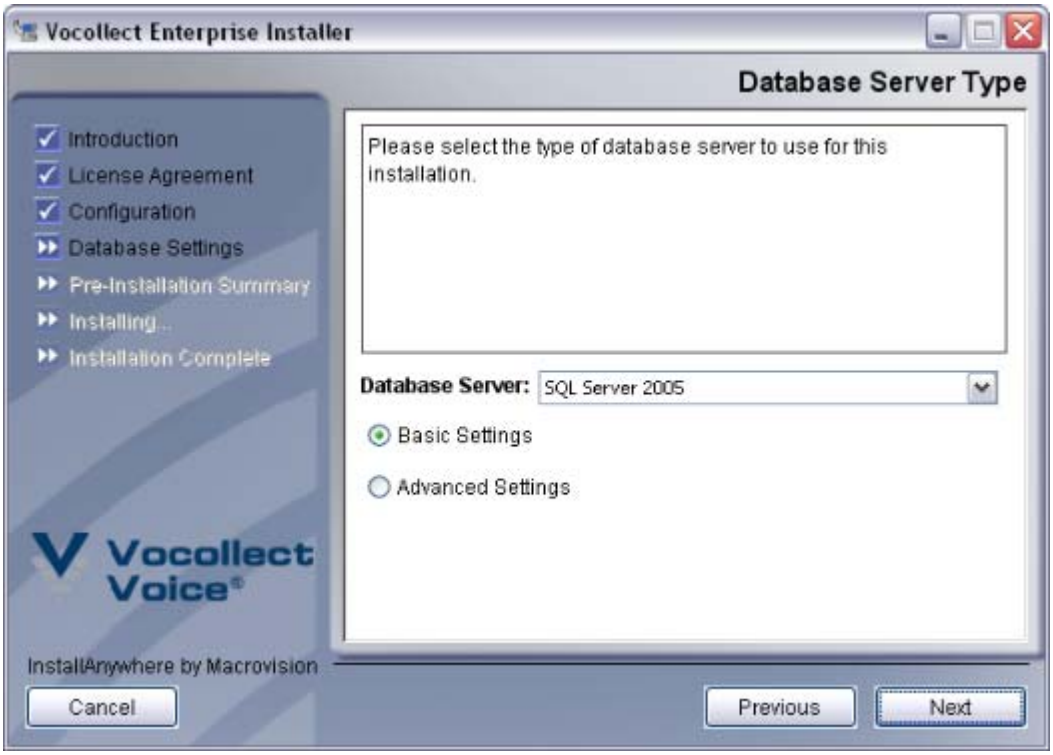
- if you use Windows, select **Use LocalSystem** or **Use Existing Account**. The LocalSystem account does not require a username and password.
- if you use RedHat Linux or CentOS Linux, select **Use Vocollect User** or **Use Existing Account**. The Vocollect User account does not require a username and password.

If you selected **Use Existing Account**, enter the username and password for the account. This user must have read permissions to the directory from which the installation program is being run. In addition, this user must have permissions to log on as a service (refer to http://support.microsoft.com/kb/259733/EN-US/ for more information on how to set up these permissions).

Note: If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.



12. In the **Application Ports** window, the port fields display the ports that the application server will use. If necessary, you can enter different ports. Click **Next**.



13. In the **Database Server Type** window, select the database server you will use and select if you want to basic or advanced settings. Click **Next**.

Note: The database server should be installed prior to running this installation program.

14. In the **Database Server Settings** window, enter the information for one of the following database server types:

SQL Server 2005

For installations using SQL Server 2005, you must enter the information listed in the following table:

Note: SQL Server 2005 does not enable TCP/IP by default. You must manually enable TCP/IP before the installation can complete successfully.

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for SQL Server is 1433.
Database name	The name of the database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:sqlserver://<host>:<port>;DatabaseName=<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Authentication Type (Windows installs only where existing user specified for Tomcat Server configuration)	If installing on Windows and an existing user was specified for the Tomcat Service configuration, you can select to use NT Authentication. Otherwise, select SQL Server Authentication.	
Database username	The username that the application should use to log into the database. This is disabled if using NT Authentication.	
Database password	The password of the user that the application should use to log into the database. This is disabled if using NT Authentication.	
Database schema	The database schema	

	you are using.	

Oracle 10g Standard, Enterprise or 10g Express

For installations using Oracle 10g Enterprise or 10g Express, you must enter the following information:

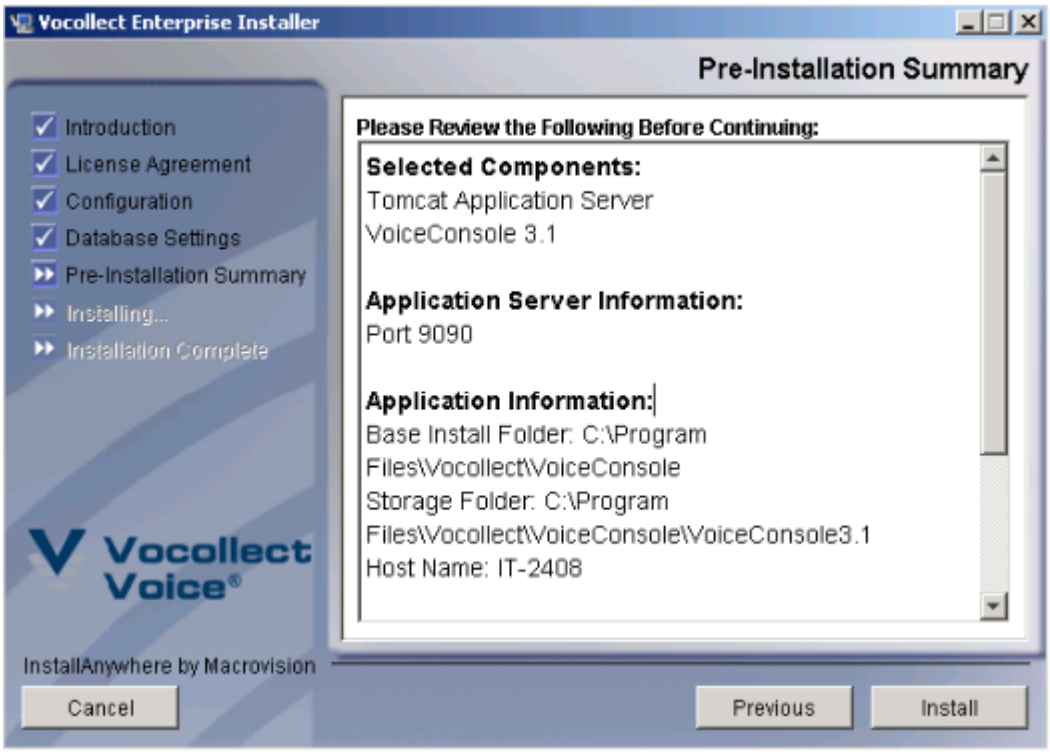
For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for Oracle is 1521.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:oracle:thin:@<host>:<port>:<database name>
		Note: For a basic installation using Oracle 10g Express, the most commonly used username is system and JDBC URL: jdbc:oracle:thin:@localhost:1521:XE.
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username of a user with administrative privileges.	
Database password	The password of a user with administrative privileges.	

MySQL

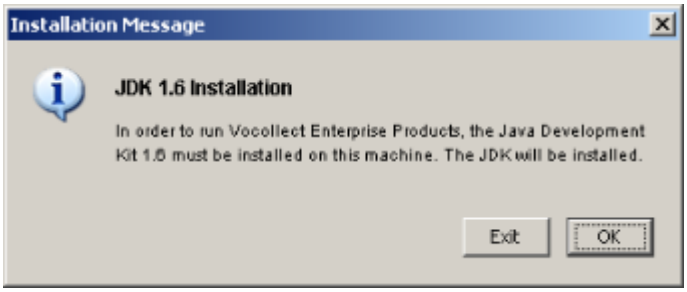
For installations using MySQL, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for MySQL is 3306.
SID	The SID of the Oracle database.	

For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:mysql://<server>:<port>/<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username that the application should use to log into the database.	
Database password	The password of a user that the application should use to log into the database.	Invalid character: $

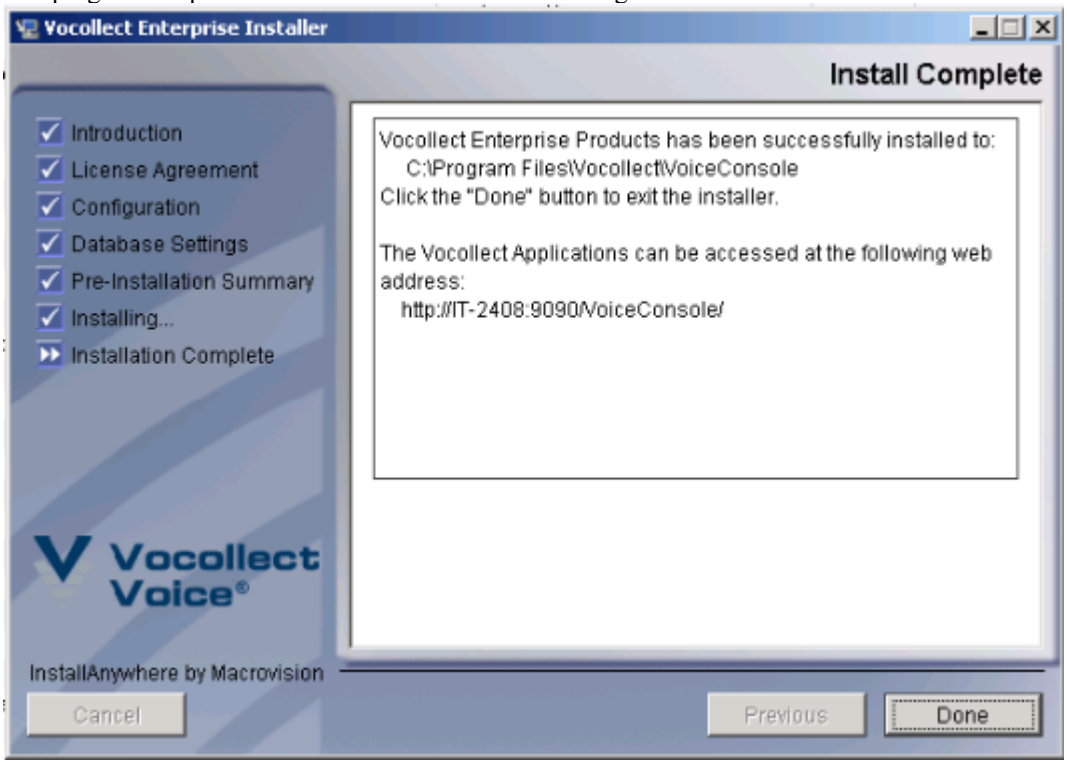


15. In the **Pre-Installation Summary** window, review the settings. Click **Previous** to go back and change settings; click **Install** to proceed with the installation.



16. An Installation Message appears notifying you that the installer is about to install the Java Development Kit (JDK). Click **OK**.

17. The installation begins. A series of windows will appear, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.



18. When the installer is done, a window appears letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.

4.5.2 Installing into Additional Nodes

Note: If you are installing into an Active/Passive cluster configuration, make sure that the active node has access to shared resources–for example, the log and firmware files location.

1. Run the installer.
2. The **Introduction** window appears. As suggested, close all other programs on the machine on which you are installing. Click **Next**.
3. In the **License Agreement** window, you must accept the agreement to continue. Click **Next**.
4. In the **Non-Local Upgrade** window, select **No** and click **Next**.
5. In the **Choose Install Folder** window, select a directory into which to install *VoiceConsole*. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
6. In the **Application Cluster** window, select **Yes** and click **Next**.
7. In the **Shared Cluster Folder** window, select the directory you set when you installed into the first node. Click **Next**.
8. In the **Log Files Directory** window, specify where you would like to have log files stored. Click **Next**.
9. In the **Tomcat Service Settings** window,
   - if you use Windows, select **Use LocalSystem** or **Use Existing Account**. The LocalSystem account does not require a username and password.
   - if you use RedHat Linux or CentOS Linux, select **Use Vocollect User** or **Use Existing Account**. The Vocollect User account does not require a username and password.

   If you selected **Use Existing Account**, enter the username and password for the account. This user must have read permissions to the directory from which the installation program is being run. In addition, this user must have permissions to log on as a service (refer to http://support.microsoft.com/kb/259733/EN-US/ for more information on how to set up these permissions).

   Note: If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.
10. In the **Database Server Settings** window, enter the database password set when you installed into the first node.
11. In the **Pre-Installation Summary** window, review the settings. Click **Previous** to go back and change settings; click **Install** to proceed with the installation.
12. An Installation Message appears notifying you that the installer is about to install the Java Development Kit (JDK). Click **OK**.
13. The installation begins. A series of windows will appear, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.
14. When the installer is done, a window appears letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.

4.6 Initial Setup

Figure 4.1 shows an overview of the initial setup in *VoiceConsole*. This diagram shows only required steps; optional configurations, such as setting up sites and setting up operator teams are discussed in detail in *VoiceConsole* Online Help.

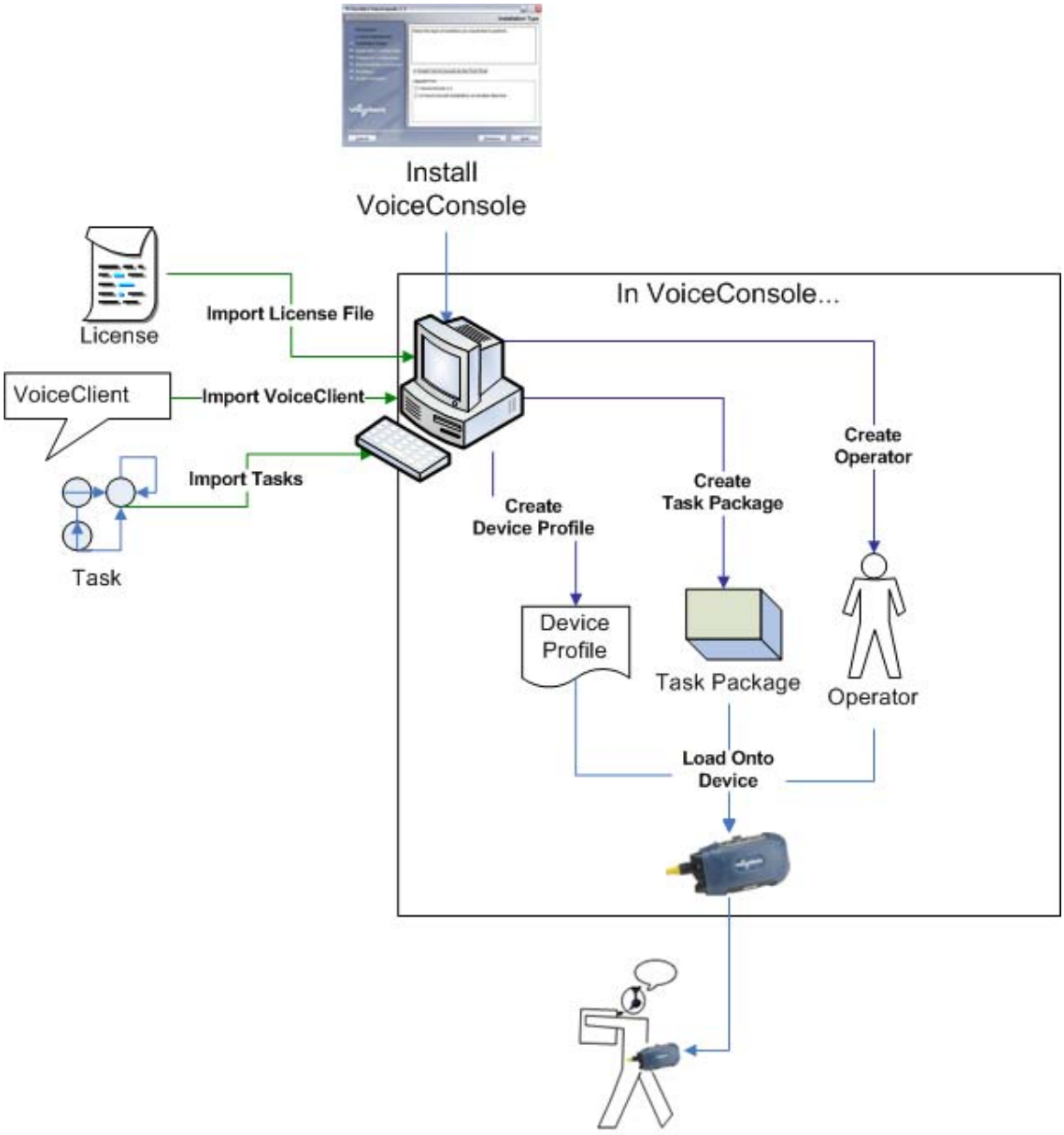


Figure 4.1: Setting Up VoiceConsole

4.7 Performing a Silent Installation

A silent install is available by providing command line arguments to the installer and a properties file with the information that would be provided during a user interface installation.

To run a silent install, the properties file must first be created and saved as a plain text file. Examples are provided for most of the properties.

The following information can be copied into a text file to create the properties file. Optional information is preceded by # to comment those lines out. Be sure to remove the # for any lines that apply to your installation. Comments are also provided to explain why certain data elements are optional.

Note: The information written for the USER_INSTALL_DIR= and LOGGING_DIR= settings are for Windows installations. If you are using RedHat Linux or CentOS Linux, replace the USER_INSTALL_DIR= and LOGGING_DIR= settings appropriately.

Note: If you are using CentOS Linux and choose to install in the default directory, the directory will be /opt/Vocollect/VoiceConsole/VoiceConsole.

```
############################################################

# Instructions #

# Path Separators should be $/$, \\ for Windows, or / for RedHat Linux
and CentOS Linux. #

############################################################

INSTALLER_UI=silent

#####Vocollect Enterprise Installer Variables#####

USER_INSTALL_DIR=C:\\Program Files\\Vocollect\\VoiceConsole

LOGGING_DIR=C:\\Program Files\\Vocollect\\VoiceConsole\\Logs

###The following indicate if installing in a load balanced or clustered
environment###

#Set CLUSTER to 1 if installing to a cluster.

CLUSTER=0

#Set CLUSTER_SHARE and CLUSTER_HOSTNAME if CLUSTER is set to 1.

#CLUSTER_SHARE=

#CLUSTER_HOSTNAME=

#####Tomcat Variables#####

#Set the following if installing Tomcat

#INSTALL_TOMCAT=true

#UNINSTALL_TOMCAT=true

#APPLICATION_PORT_SILENT=

#AJP_PORT_SILENT=

#SSL_PORT_SILENT=

#SHUTDOWN_PORT_SILENT=

#COMET_PORT_SILENT=

#TOMCAT_USER_TYPE=Existing

###### Valid values for TOMCAT_USER_TYPE are "Default" or "Existing"

# Only set these if TOMCAT_USER_TYPE=Existing
```

```
#TOMCAT_USER=

#TOMCAT_PASSWORD=

#####VoiceConsole Variables#####

INSTALL_VOICECONSOLE=true

#Set the following if installing VoiceConsole

#HOSTNAME is optional. It’s only needed if it’s not a cluster setup and
the machine

# must be accessed through the network by an ip address or a name other
than the

# machine name.

# HOSTNAME=

# STORAGE_DIRECTORY=

#UNINSTALL_VOICECONSOLE=true


##### Database Variables #####

#Set the following if database setup is necessary

#INSTALL_DATABASE=true

#PROMPT_FOR_DATABASE=true

#DATABASE_USER=

#DATABASE_PASSWORD=

#DATABASE_SCHEMA=

#####If using MySQL5, DATABASE_SCHEMA must be the same as
DATABASE_NAME.

#DATABASE_TYPE=

###### Valid values are "Oracle10g", "SQLServer2005", or "MySQL5"

#DATABASE_SETTINGS_TYPE=Basic

###### Valid values are "Basic" or "Advanced"


# Set ADVANCED_JDBC only if DATABASE_SETTINGS_TYPE is "Advanced"

#ADVANCED_JDBC=


# Set host, port, and name only if DATABASE_SETTINGS_TYPE is "Basic"
```

```
#DATABASE_HOST=

#DATABASE_PORT=

#DATABASE_NAME=

#####If using MySQL5, DATABASE_NAME must be the same as
DATABASE_SCHEMA.


# Set the following if DATABASE_TYPE is Oracle10g

#ORACLE_SID=

#DATABASE_AUTHENTICATION_TYPE=SQL_AUTH

###### Valid Values are "SQL_AUTH" and "NT_AUTH".

###### "NT_AUTH" is only valid for SQL Server.


##### Uninstallation Variables #####

#Set DROP value to true to drop Database tables upon uninstallation

DROP=true

############################################################

############################################################
```

4.7.1 Initiating a Silent Installation

Once the properties file is created and saved in the appropriate location, the user can run the silent installer using one of the following commands.

- To execute the silent installer on Windows, open the Command prompt and type the following:

```
VocollectEnterpriseInstaller.exe -f
<PathToPropertiesFile>/silent.properties
```

- To execute the silent installer on RedHat Linux or CentOS Linux, run the command:

```
./VocollectEnterpriseInstaller.bin –f
<PathToPropertiesFile>/silent.properties
```

- To execute the silent installer on AIX, run the command:

```
./VocollectEnterpriseInstaller_AIX.bin –f
<PathToPropertiesFile>/silent.properties
```

4.7.2 Storage of Database Passwords

Regardless of the database used, the installation program stores the database.properties file in the target installation folder. This file includes the database password and username that the application uses to log into the database (unless you are using SQL Server with NT Authentication). This file is a plain text file that can be read by any text editor. Therefore, if you want to secure this file, follow the appropriate steps to

secure it with Windows, Red Hat Linux or CentOS Linux file permissions, depending on the operating system you are using.

5 Upgrading From Previous Versions

Warning: If you are migrating from a previous version of *VoiceConsole*, Vocollect strongly recommends you backup the database you are using for the previous version before upgrading to this version of *VoiceConsole*.

Note: Ports 9090, 9091, 9443, 9005 and 9009 are used by default by the Apache Tomcat Service for proper startup and shutdown. If these ports are not available, the next available ports are used. TCP port 21050 must be available.

5.1 Upgrading from Talkman Management Software with a Single-Site Configuration to VoiceConsole 3.1

You can install *VoiceConsole* in the same location as TMS was installed, as long as the *VoiceConsole* system requirements are met. See "VoiceConsole System Requirements" on page 7 for complete system requirements.

Warning: When you migrate data from *TMS* to *VoiceConsole* all operators and devices will be assigned to the Default site. If the same operator ID exists in *TMS* and in the Default site in *VoiceConsole*, the operator is not migrated to *VoiceConsole*.

1. If one is not already installed, install the database platform. See "Oracle® Database 10g Express Edition " on page 11 for special installation steps if using Oracle 10g Express. See "MySQL 5.0 Community Server" on page 10 for special installation steps if using MySQL.
2. Create a blank *VoiceConsole* database and a user with create, read, and write permissions to the database. When you run the installer in the next step, the database schema will be created automatically.
3. Run the installer. It should start automatically when you place the DVD in the DVD drive. If it does not, navigate to the DVD drive and double-click **VocollectEnterpriseInstaller.exe** on Windows or **VocollectEnterpriseInstaller.bin** on RedHat Linux.
4. The **Introduction** window appears. As suggested, close all other programs on the machine on which you are installing. Click **Next**.
5. In the **License Agreement** window, you must accept the agreement to continue. Click **Next.**
6. In the **Non-Local Upgrade** window, select **No** and click **Next**.
7. In the **Choose Install Folder** window, select a directory into which to install *VoiceConsole*. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
8. In the **Component Choice** window, click **Next**.
9. In the **Application Cluster** window, select **No** to select a standard installation and click **Next**. If you want to upgrade to a clustered server environment, see "Upgrading in a Clustered Environment" on page 79 for more information.
10. In the **Log Files Directory** window, specify where you would like to have log files stored. These log files track user activities and information on any abnormal findings and errors that may occur in the *VoiceConsole* application. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
11. In the **Tomcat Service Settings** window,
    - if you use Windows, select **Use LocalSystem** or **Use Existing Account**. The LocalSystem account does not require a username and password.

- if you use RedHat Linux, select **Use Vocollect User** or **Use Existing Account**. The Vocollect User account does not require a username and password.

If you selected **Use Existing Account**, enter the username and password for the account. This user must have read permissions to the directory from which the installation program is being run. In addition, this user must have permissions to log on as a service (refer to http://support.microsoft.com/kb/259733/EN-US/ for more information on how to set up these permissions).

Note: If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.

Note: Tomcat 6.0 is installed when *VoiceConsole* is installed. If you choose to use WebLogic as your application server, it must be installed separately from the *VoiceConsole* installation. See "Upgrading From Previous Versions" on page 66.

12. In the **Application Ports** window, the port fields display the ports that the application server will use. If necessary, you can enter different ports. Fields entered in these fields must be open. Click **Next**.
13. In the **VoiceConsole Hostname** window, enter the hostname of the machine onto which you are installing *VoiceConsole* or accept the detected name and click **Next**.
14. In the **Application Files Location** window, specify where you would like to have application files stored. Click **Choose** to navigate to a location other than the default, or click **Next** to accept the default location. Click **Next**.

Note: The **Application Files Location** must have enough room to store device logs, which will grow very large in a short amount of time. See "VoiceConsole System Requirements" on page 7 for more information.

15. In the **Database Server Type** window, select the database server you will use and select if you want to use basic or advanced settings. Click **Next**.

Note: The database server should be installed prior to running this installation program.

16. In the **Database Server Settings** window, enter the information for one of the following database server types:

SQL Server 2005

For installations using SQL Server 2005, you must enter the information listed in the following table:

Note: SQL Server 2005 does not enable TCP/IP by default. You must manually enable TCP/IP before the installation can complete successfully.

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for SQL Server is 1433.

Database name	The name of the database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:sqlserver://<host>:<port>;DatabaseName=<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Authentication Type (Windows installs only where existing user specified for Tomcat Server configuration)	If installing on Windows and an existing user was specified for the Tomcat Service configuration, you can select to use NT Authentication. Otherwise, select SQL Server Authentication.	
Database username	The username that the application should use to log into the database. This is disabled if using NT Authentication.	
Database password	The password of the user that the application should use to log into the database. This is disabled if using NT Authentication.	
Database schema	The database schema you are using.	

Oracle 10g Standard, Enterprise or 10g Express

For installations using Oracle 10g Enterprise or 10g Express, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for Oracle is 1521.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:oracle:thin:@<host>:<port>:<database name>
		Note: For a basic installation using Oracle 10g Express, the most

		commonly used username is system and JDBC URL: jdbc:oracle:thin:@localhost:1521:XE.
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username of a user with administrative privileges.	
Database password	The password of a user with administrative privileges.	

MySQL

For installations using MySQL, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for MySQL is 3306.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:mysql://<server>:<port>/<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username that the application should use to log into the database.	
Database password	The password of a user that the application should use to log into the database.	Invalid character: $

17. In the **Pre-Installation Summary** window, review the settings. Click **Previous** to go back and change settings; click **Install** to proceed with the installation.
18. An Installation Message appears notifying you that the installer is about to install the Java Development Kit (JDK). Click **OK**.
19. The installation begins. A series of windows will appear, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.
20. When the installer is done, a window appears letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.
21. Restart your computer.

22. Once installation is complete, open the *VoiceConsole* online help by clicking the **Application Help** link in the ***VoiceConsole*** or **Administration** navigation bar in *VoiceConsole*.

Note: You must be an admin user to perform a migration from *TMS*.

23. Click **Administration** in the help's Table of Contents (TOC), and click **Migrating from TMS to VoiceConsole**.
24. Click the **Migration: System Data** link in the **Migrating from TMS to VoiceConsole** help topic.
25. *VoiceConsole* will search for the *Terminal Manager* executable (**tmgr.exe**). If it locates it, the migration will begin. If it does not, you will be prompted to browse for and select the executable to start the migration.

    The following data elements are migrated from *TMS* to *VoiceConsole* and can be accessed in the **VoiceConsole** navigation bar in the **Default** site in *VoiceConsole*:

    - **Operators**: Operator Names, Operator IDs, Spoken Names, Templates, Notes and Settings
    - **Operator Teams**: Operator Team Names, Spoken Names, Descriptions and the Operators in the teams
    - **Devices**: Device Names and Serial Numbers
    - **Device Groups**: Device Group Name, Default Task Package, Device Names and Device Serial Numbers
    - **Tasks**: Task Names and Task Files
    - **Task Packages**: Task Package Names, Spoken Names, Hosts and Services

5.2 Upgrading from Talkman Management Software with a Multi-Site Configuration to VoiceConsole 3.1

1. Follow the steps listed for "Upgrading from Talkman Management Software with a Single-Site Configuration to VoiceConsole 3.1" on page 62

2. Create the new sites as described in the *VoiceConsole* Online Help.

   Data elements that were migrated from *TMS* to *VoiceConsole* (operators, operator teams, devices, device groups, tasks and task packages) appear in the **Default** site in *VoiceConsole*. You can move the data into the sites you just created by performing the following steps.

3. Display the view page for one data element you want to move to another site.
4. In the view data element list, select the rows of the data you want to move, and click the **Move/Add selected <data element> to a site** action.

   If you want to move all the data, click the **Move/Add all <data element> to a site** action.

   The **Move/Add <Data Element> to Site** dialog box opens.
5. Select the site to which you want to move the selected data elements from the **Destination Site** drop-down list.
6. Select **Move the <data element> to the selected site (removes from current site)**.
7. Click **OK**.

   You are returned to the view page for the data element with a message displayed indicating the total number of the selected data that was moved. If an error occurred while moving the selected data, the message displays the total number of the selected data that was moved and the **View Details** link. Click the **View Details** link to view information about the data that was not successfully moved.

8. Repeat steps 3 through 7 for each set of data elements you want to move.

See *VoiceConsole* Online Help for more information about moving data between sites.

5.2.1 Upgrade the VoiceClient Version

The following versions of *VoiceClient* are compatible with *VoiceConsole* 3.1:

Device	VoiceClient Version
Talkman T2	VoiceClient 2.6.x
Talkman T2x	VoiceClient 3.2 or newer
Talkman T5	VoiceClient 3.2 or newer
Talkman T5m	VoiceClient 3.4 or newer
Motorola MC9090 and WT4000 Series	VoiceClient 1.3 or newer
Motorola MC9060	VoiceClient 1.1 or newer
Psion Teklogix WORKABOUT PRO 7525	VoiceClient 1.0 or newer
Psion Teklogix WORKABOUT PRO 7527	VoiceClient 1.1 or newer
LXE MX7 and HX2	VoiceClient 1.0
Intermec	VoiceClient 1.0 or newer

To determine which version you are running, in *Terminal Manager*, check the **Cur. Software** field.

5.2.2 Configure Devices to talk to VoiceConsole

After the data migration is complete, you must configure your devices to communicate with *VoiceConsole*. To configure the devices, you can use *Terminal Manager* to update them with the individual .bbi and .ffi files found on the *Vocollect VoiceClient* CD/DVD that was included with the *VoiceConsole* release. For information about using Terminal Manager to update the firmware, refer to the online help included with the *Terminal Manager* application. When using *Terminal Manager* to configure the devices, add the following parameter to the configuration file loaded onto the devices:

"VoiceConsoleUrl"="http://xxxx:9090/VoiceConsole/Tmgr"

where xxxx = the DNS name or IP address of the application server on which VoiceConsole was installed.

Note: 9090 is the default HTTP port specified during the installation of *VoiceConsole*. If you entered a different HTTP port number in the **Application Ports** window during installation, enter that port number in place of 9090 in the *VoiceConsole* URL.

5.3 Upgrading from VoiceConsole 3.0 and newer to VoiceConsole 3.1

Warning: Vocollect strongly recommends you backup the database you are using for you current version of *VoiceConsole* before upgrading to this version.

Note: If you chose to use WebLogic as your application server, *VoiceConsole* must be upgraded using a different process. See "Upgrading when VoiceConsole was Deployed to WebLogic" on page 68

1. Run the installer. It should start automatically when you place the DVD in the DVD drive. If it does not, navigate to the DVD drive and double-click **VocollectEnterpriseInstaller.exe** on Windows or **VocollectEnterpriseInstaller.bin** on RedHat Linux.
2. The **Introduction** window appears. As suggested, close all other programs on the machine on which you are installing. Click **Next**.
3. In the **License Agreement** window, you must accept the agreement to continue. Click **Next**.
4. In the **Component Choice** window, the components being upgraded are displayed. Click **Next**.
5. In the **Pre-Installation Summary** window, review the settings. Click **Install** to proceed with the installation.
6. An Installation Message appears notifying you that the installer is about to install the Java Development Kit (JDK). Click **OK.**
7. The installation will begin. A series of windows appears, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.
8. When the installer is done, a window appears letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.
9. VoiceConsole opens

5.3.1 Upgrading when VoiceConsole was Deployed to WebLogic

If you choose to use WebLogic as your application server, perform the following steps to deploy *VoiceConsole* to WebLogic.

Note: WebLogic is only supported with RedHat Linux.

Note: Java JRE 1.5 or newer is required for this process to run the .sh files.

Note: If you have any issues running shell scripts (.sh files), try converting line endings to your native platform's line endings with a program like dos2unix.

1. Create a weblogic folder in the *VoiceConsole* folder in the location you chose to install *VoiceConsole*. By default this location is **/opt/Vocollect/VoiceConsole<version>**
2. Copy the contents of the **weblogic** folder from the *VoiceConsole* DVD to the **weblogic** folder you created in Step 1. You have now created the WebLogic directory.
3. Modify the system environment variable called **VOICE_CONSOLE_HOME** pointing to the WebLogic directory.

Example: Edit /root/.bash_profile and add a line as follows:

```
export
VOICE_CONSOLE_HOME=/opt/Vocollect/VoiceConsole3.1/weblogic
```

4. Save the file.
5. Copy the **install.properties** file in the **tools** folder located in the current*VoiceConsole* version WebLogic directory and paste the file in the **tools** folder located in the WebLogic directory for *VoiceConsole* 3.1.
6. Open a terminal prompt, and go to the **tools** folder located in the WebLogic directory for *VoiceConsole* 3.1.
7. Open and log into the Admin Server for WebLogic using a Web browser and stop *VoiceConsole*.
8. Run the script **RunWLSetup.sh** located in the **tools** directory with the parameters **-from=<previous_version_of_voiceconsole> -to=3.1**
9. Delete the current deployment of *VoiceConsole* from Weblogic
10. Stop and restart the **startWebLogic.sh** (located in the bin folder in the domain location) process to stop and restart the *VoiceConsole* WebLogic domain.
11. In the WebLogic directory, go to the **config** folder, open the **log.properties** file in a text editor, and modify the **system.log.directory** property to point to the directory where the WebLogic logs are stored.
12. In the Admin Server for WebLogic go to the WebLogic console.
13. Under the Domain Structure, click **Deployments**.
14. Click **Lock & Edit**.
15. In the **Deployments** table, click **Install**.
16. Navigate to the **webapps** folder located in the WebLogic directory, select the **VoiceConsole.war** file, and click **Next.**
17. Select **Install this deployment as an application**, and click **Next**.
18. Select **DD Only: Use only roles and policies that are defined in the deployment descriptors** and **I will make the deployment accessible from the following location**, and click **Finish**.
19. Select **VoiceConsole**, and click **Activate Changes**.The application status changes to **Prepared**.
20. Select **VoiceConsole**, and click **Start** in **Deployments.**
21. Select **Servicing All Requests.**
22. Click **Yes**.

    The deployment of *VoiceConsole* on WebLogic begins, and the application status changes to **Start Running**.

    Now, you must configure SSL for WebLogic, by performing the steps that follow.

23. Open and log into the Admin Server for WebLogic.
24. Under **Domain Structure**, click **Environment**.
25. In the **Summary**, click **Servers**.
26. Click **Lock & Edit**.
27. Select the **Keystores** tab.
28. From the **Keystores** drop-down box, select **Custom Identity and Java Standard Trust**.
29. In the **Custom Identity Keystore** field, enter the path to the .keystore file in the webapps directory of the deployment directory.

30. In the **Custom Identity Keystore Type** field, enter **jks**.
31. In the **Keystore Passphrase** field, enter **changeit**.
32. In the **Java Standard Trust Keystore** field, enter **changeit**.
33. In the **Java Standard Trust Keystore Type** field, enter **changeit**.
34. In the **Custom Java Standard Trust Keystore Passphrase** field, enter **changeit**.
35. Click **Save**.
36. Select the **SSL** tab.
37. In the **Identity and Trust Locations** drop-down list, select **Keystores**.
38. In the **Private Key Alias** field, enter **tomcat**.
39. In the **Keystore passphrase** field, enter **changeit**.
40. Click the **Save**.
41. Click **Activate Changes**.

    Now you must set up Web Services by performing the steps that follow.

42. Open a terminal prompt, and go to the install folder in the WebLogic directory.
43. Run the command **chmod +x *.sh**, and then run the **./deploySOAPServices.sh** file indicating the proper hostname/IP address, port number, user name and password.

    Example: ./deploySOAPServices.sh 10.0.0.1 7001 admin admin

44. After that file has run, run the **./listSOAPServices.sh** file indicating the proper hostname/IP address, port number, user name and password. The output of this file lists the Web Services that have been installed and the URN for each installed Web Service.

    There should be the following services listed:

    urn:com.vocollect.voiceconsole.web.soap.OperatorAccess

    urn:com.vocollect.voiceconsole.web.soap.TerminalAccess

    urn:com.vocollect.voiceconsole.web.soap.TaskAccess

WebLogic will now be used as the Application Server for VoiceConsole 3.1 and all *VoiceConsole* log files are created in the logs folder of the folder you indicated in step 11.

5.4 Upgrading from VoiceConsole 2.4 to VoiceConsole 3.1

Note: If you wish to use a different database or version of the database used for your current version of *VoiceConsole*, you must install or update the database prior to installing *VoiceConsole* 3.1. See your database administrator for assistance.

Warning: Vocollect strongly recommends you backup the database you are using for you current version of *VoiceConsole* before upgrading to this version.
Warning: Once you begin installing *VoiceConsole* 3.1, you will not be able to go back to *VoiceConsole* 2.4 by stopping the installation.

1. Run the installer. It should start automatically when you place the DVD in the DVD drive. If it does not, navigate to the DVD drive and double-click **VocollectEnterpriseInstaller.exe** on Windows or **VocollectEnterpriseInstaller.bin** on RedHat Linux.
2. The **Introduction** window appears. As suggested, close all other programs on the machine on which you are installing. Click **Next**.

3. In the **License Agreement** window, you must accept the agreement to continue. Click **Next**.
4. In the **Non-Local Upgrade** window, select **No** and click **Next**.
5. In the **Choose Install Folder** window, select a directory into which to install *VoiceConsole*. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location
6. In the **Component Choice** window, the components being upgraded are displayed. Click **Next**.
7. In the **Log Files Directory** window, specify where you would like to have log files stored. These log files track user activities in the *VoiceConsole* application. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
8. In the **Application Files Location** window, specify where you would like to have application files stored. Click **Choose** to navigate to a location other than the default, or click **Next** to accept the default location. Click **Next**.

Note: The **Application Files Location** must have enough room to store device logs, which will grow very large in a short amount of time. See "VoiceConsole System Requirements" on page 7 for more information.

9. In the **Pre-Installation Summary** window, review the settings. Click **Previous** to go back and change settings; click **Install** to proceed with the installation.
10. An Installation Message appears notifying you that the installer is about to install the Java Development Kit (JDK). Click **OK.**
11. The installation will begin. A series of windows appears, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.
12. When the installer is done, a window appears letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.
13. Restart your computer.

5.5 Upgrading from Pre-2.4 Versions of VoiceConsole to VoiceConsole 3.1

Warning: Vocollect strongly recommends you backup the database you are using for the previous version before upgrading to this version of *VoiceConsole*.

Note: If you wish to use a different database or version of the database used for your current version of *VoiceConsole*, you must install or update the database prior to installing *VoiceConsole* 3.1. See your database administrator for assistance.

1. If one is not already installed, install the database platform. See "Oracle® Database 10g Express Edition" on page 11 for special installation steps if using Oracle 10g Express. See “MSQL 5.0 Community Server" on page 10 for special installation steps if using MySQL.
2. Create a blank *VoiceConsole* database and a user with create, read, and write permissions to the database. When you run the installer in the next step, the database schema will be created automatically.

Note: If you are using Oracle 10g Express you do not need to create a blank database. Be sure to use XE as the SID when entering the database information in the **Database Server Settings** window to use the existing database that was created when you installed Oracle 10g Express.

3. Run the installer. It should start automatically when you place the DVD in the DVD drive. If it does not, navigate to the DVD drive and double-click **VocollectEnterpriseInstaller.exe** on Windows or **VocollectEnterpriseInstaller.bin** on RedHat Linux.

4. The **Introduction** window appears. As suggested, close all other programs on the machine on which you are installing. Click **Next**.
5. In the **License Agreement** window, you must accept the agreement to continue. Click **Next.**
6. In the **Non-Local Upgrade** window, select **No** and click **Next**.
7. In the **Component Choice** window, click **Next**.
8. In the **Log Files Directory** window, specify where you would like to have log files stored. These log files track user activities in the *VoiceConsole* application. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
9. In the **Application Files Location** window, specify where you would like to have application files stored. Click **Choose** to navigate to a location other than the default, or click **Next** to accept the default location. Click **Next**.

Note: The **Application Files Location** must have enough room to store device logs, which will grow very large in a short amount of time. See "VoiceConsole System Requirements" on page 7 for more information.

10. In the **Migrate Device Logs** window, activate the **Migrate Existing Device Logs** checkbox if you want to migrate the content of device logs from your previous version of *VoiceConsole*, if logging was enabled, to your new version.
11. In the **Database Server Type** window, select the database server you will use and select if you want to use basic or advanced settings. Click **Next**.

Note: The database server should be installed prior to running this installation program.

12. In the **Database Server Settings** window, enter the information for one of the following database server types:

SQL Server 2005

For installations using SQL Server 2005, you must enter the information listed in the following table:

Note: SQL Server 2005 does not enable TCP/IP by default. You must manually enable TCP/IP before the installation can complete successfully.

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for SQL Server is 1433.
Database name	The name of the database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:sqlserver://<host>:<port>;DatabaseName=<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**

Authentication Type (Windows installs only where existing user specified for Tomcat Server configuration)	If installing on Windows and an existing user was specified for the Tomcat Service configuration, you can select to use NT Authentication. Otherwise, select SQL Server Authentication.	
Database username	The username that the application should use to log into the database. This is disabled if using NT Authentication.	
Database password	The password of the user that the application should use to log into the database. This is disabled if using NT Authentication.	
Database schema	The database schema you are using.	

Oracle 10g Standard, Enterprise or 10g Express

For installations using Oracle 10g Enterprise or 10g Express, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for Oracle is 1521.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:oracle:thin:@<host>:<port>:<database name>
		Note: For a basic installation using Oracle 10g Express, the most commonly used username is system and JDBC URL: jdbc:oracle:thin:@localhost:1521:XE.
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username of a user with administrative privileges.	

Database password	The password of a user with administrative privileges.	

MySQL

For installations using MySQL, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for MySQL is 3306.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:mysql://<server>:<port>/<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username that the application should use to log into the database.	
Database password	The password of a user that the application should use to log into the database.	Invalid character: $

13. In the **Pre-Installation Summary** window, review the settings. Click **Previous** to go back and change settings; click **Install** to proceed with the installation.
14. You will be notified that the installer is about to install the Java Development Kit (JDK). Click **OK**.
15. The installation will begin. A series of windows will appear, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.
16. When the installer is done, you will see a window letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.
17. Restart your computer.

5.6 Upgrading from an Existing Installation on a Different Computer

Warning: Vocollect strongly recommends you backup the database you are using for the previous version before upgrading to this version of *VoiceConsole*.

Warning: Before beginning the installation, stop the *VoiceConsole* service on the computer *from which you are installing*. Failure to do so may result in corrupt data in your new installation.

Note: Locations specified throughout this procedure must be shared by the computers containing the existing installation and the location of the new installation.

Note: If you are upgrading from *VoiceConsole* 2.0, 2.0.1 or 2.1 on a different computer, you must configure the PostgreSQL database to allow remote connections before performing an upgrade to this version of *VoiceConsole.*

1. Open the file **$PGSQL_DATA_D/postgresql.conf** in a text editor.
2. Add **listen_addresses = '*'** to the file.
3. Save the file.
4. Openthe file **$PGSQL_DATA_D/pg_hba.conf** in a text editor.
5. Add **host all all <network/mask>/0 md5** to the file.
6. Save the file.
7. Restart the PostgreSQL server.

1. If one is not already installed, install the database platform. See "Oracle® Database 10g Express Edition " on page 11 for special installation steps if using Oracle 10g Express. See "MySQL 5.0 Community Server" on page 10 for special installation steps if using MySQL.
2. If you are upgrading from *VoiceConsole* 2.4, proceed to Step 3.

   If you are upgrading from a pre-2.4 version of *VoiceConsole*, create a blank *VoiceConsole* database and a user with create, read, and write permissions to the database. When you run the installer in the next step, the database schema will be created automatically.
3. Run the installer. It should start automatically when you place the DVD in the DVD drive. If it does not, navigate to the DVD drive and double-click **VocollectEnterpriseInstaller.exe**.
4. The **Introduction** window appears. As suggested, close all other programs on the machine to which you are installing. Click **Next**.
5. In the **License Agreement** window, you must accept the agreement to continue. Click **Next**.
6. In the **Non-Local Upgrade** window, select **Yes** and click **Next.**
7. In the **Specify Source Install Folder** window, enter the full path of the location of the installation from which you are upgrading or click **Choose** to navigate to the location. Click **Next**.
8. If you are upgrading from *VoiceConsole* 2.2 or older, proceed to Step 9.

   If you are upgrading from *VoiceConsole* 2.3 or newer, in the **Specify Source Files Directory** window, enter the location of the existing log and firmware files or click **Choose** to navigate to the location. Click **Next**.
9. If you are upgrading from *VoiceConsole* 2.2 or newer, proceed to Step 10.

   If you are upgrading from *VoiceConsole* 2.0 or 2.1, in the **Specify Source Hostname** window, enter the hostname of the machine with the previous installation of *VoiceConsole* or accept the detected name and click **Next.**
10. In the **Choose Install Folder** window, specify where the new installation will be located. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
11. In the **Application Cluster** window, select **No** and click **Next**. If you want to upgrade to a clustered server environment, see "Upgrading from Previous Versions of VoiceConsole to VoiceConsole 3.1 in a Clustered Environment" on page 79 for more information.
12. In the **Log Files Directory** window, specify where you would like to have log files stored. These log files track user activities in the *VoiceConsole* application. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
13. In the **Tomcat Service Settings** window,

- if you use Windows, select **Use LocalSystem** or **Use Existing Account**. The LocalSystem account does not require a username and password.
- if you use RedHat Linux, select **Use Vocollect User** or **Use Existing Account**. The Vocollect User account does not require a username and password.

If you selected **Use Existing Account**, enter the username and password for the account. This user must have read permissions to the directory from which the installation program is being run. In addition, this user must have permissions to log on as a service (refer to http://support.microsoft.com/kb/259733/EN-US/ for more information on how to set up these permissions).

Note: If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.

14. In the **Application Port** window, the port fields display the ports that the application server will use. If necessary, you can enter different ports.
15. In the **VoiceConsole Hostname** window, enter the hostname of the machine onto which you are upgrading *VoiceConsole* or accept the detected name and click **Next.**In the **Application Files Location** window, specify where you would like to have application files stored. Click **Choose** to navigate to a location other than the default, or click **Next** to accept the default location. Click **Next**

Note: The **Application Files Location** must have enough room to store device logs, which will grow very large in a short amount of time. See "VoiceConsole System Requirements" on page 7 for more information.

16. In the **Migrate Device Logs** window, activate the **Migrate Existing Device Logs** checkbox if you want to migrate the content of device logs from your previous version of *VoiceConsole*, if logging was enabled, to your new version.
17. In the **Database Server Type** window, select the database server you will use and select if you want to use basic or advanced settings. Click **Next**.

Note: The database server should be installed prior to running this installation program.

18. In the **Database Server Settings** window, enter the information for one of the following database server types:

SQL Server 2005

For installations using SQL Server 2005, you must enter the information listed in the following table:

Note: SQL Server 2005 does not enable TCP/IP by default. You must manually enable TCP/IP before the installation can complete successfully.

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for SQL Server is 1433.

Database name	The name of the database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:sqlserver://<host>:<port>;DatabaseName=<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Authentication Type (Windows installs only where existing user specified for Tomcat Server configuration)	If installing on Windows and an existing user was specified for the Tomcat Service configuration, you can select to use NT Authentication. Otherwise, select SQL Server Authentication.	
Database username	The username that the application should use to log into the database. This is disabled if using NT Authentication.	
Database password	The password of the user that the application should use to log into the database. This is disabled if using NT Authentication.	
Database schema	The database schema you are using.	

Oracle 10g Standard, Enterprise or 10g Express

For installations using Oracle 10g Enterprise or 10g Express, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for Oracle is 1521.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:oracle:thin:@<host>:<port>:<database name>
		Note: For a basic installation using Oracle 10g Express, the most

		commonly used username is system and JDBC URL: jdbc:oracle:thin:@localhost:1521:XE.
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username of a user with administrative privileges.	
Database password	The password of a user with administrative privileges.	

MySQL

For installations using MySQL, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for MySQL is 3306.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:mysql://<server>:<port>/<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username that the application should use to log into the database.	
Database password	The password of a user that the application should use to log into the database.	Invalid character: $

19. In the **Pre-Installation Summary** window, review the settings. Click **Previous** to go back and change settings; click **Install** to proceed with the installation.
20. You will be notified that the installer is about to install the Java Development Kit (JDK). Click **OK**.
21. The installation will begin. A series of windows will appear, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.
22. When the installer is done, you will see a window letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.
23. Restart your computer.

5.6.1 Migrating the Devices to the New Computer

After installing *VoiceConsole*, you need to configure the devices to point to the new server. Follow these steps:

1. Change the hostname of the original instance of *VoiceConsole* to the hostname specified in Step 14 in "Upgrading from an Existing Installation on a Different Computer" on page 74.
   - If the original instance is a 2.1 or older *VoiceConsole* installation, run the following SQL statement against the database:

     ```
     UPDATE property SET value = <NEW_HOSTNAME/IP ADDRESS> WHERE
     name = 'VOICE_CONSOLE_HOSTNAME'
     ```

   - If the original instance is a 2.2 or newer *VoiceConsole* installation, change the hostname in the **System Properties** page in *VoiceConsole*. See the *VoiceConsole* online help for that version of *VoiceConsole* for more information.
2. In the original instance of *VoiceConsole*, reload device profiles to selected devices that will use *VoiceConsole* 3.1. See the *VoiceConsole* online help for that version of *VoiceConsole* for more information.

   These devices can now be used with the new installation.

5.7 Upgrading in a Clustered Environment

5.7.1 Upgrading from Previous Versions of VoiceConsole to VoiceConsole 3.1 in a Clustered Environment

Warning: Vocollect strongly recommends you backup the database you are using for the previous version before upgrading to this version of *VoiceConsole*.

This procedure is for if you are upgrading from a previous version of *VoiceConsole* that is not in a clustered environment to *VoiceConsole* 3.1 in a clustered environment.

Note: If you are upgrading from *VoiceConsole* 2.4 and it is already installed in a clustered environment, perform the upgrading procedure in Upgrading from *VoiceConsole* 2.4 to *VoiceConsole* 3.1.

1. If you are upgrading from *VoiceConsole* 2.4, upgrade that version by following steps 1 through 9 in "Upgrading from VoiceConsole 2.4 to VoiceConsole " on page 70.

   If you are upgrading from a pre-2.4 version of VoiceConsole, upgrade that version by following steps 1 through 14 in "Upgrading from Pre-2.4 Versions of VoiceConsole to VoiceConsole 3.1" on page 71.

2. Create a blank *VoiceConsole* database and a user with create, read, and write permissions to the database. When you run the installer, the database schema will be created automatically. This database can be deleted once the upgrading process is complete.
3. Run the installer again to install *VoiceConsole* 3.1 on the cluster.
4. The **Introduction** window will appear. As suggested, close all other programs on the machine on which you are installing. Click **Next**.
5. In the **License Agreement** window, you must accept the agreement to continue. Click **Next**.
6. In the **Non-Local Upgrade** window, select **No** and click **Next.**
7. In the **Component Choice** window, click **Next**.

8. In the **Choose Install Folder** window, select a directory into which to install *VoiceConsole*. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
9. In the **Application Cluster** window, select **Yes** and click **Next**.
10. In the **Shared Cluster Folder** window, select a directory that can be accessed by all cluster nodes. Click **Choose** to navigate to a location other than the default and click **Next**, or click **Next** to accept the default location.
11. In the **Cluster Hostname** window, enter the logical hostname of the cluster onto which you are installing *VoiceConsole* and click **Next**.
12. In the **Log Files Directory** window, specify where you would like to have log files stored. These log files track user activities and information on any abnormal findings and errors that may occur in the *VoiceConsole* application. Click **Choose** to navigate to a location other than the default, or click **Next** to accept the default location. Click **Next**.
13. In the **Tomcat Service Settings** window,
    - if you use Windows, select **Use LocalSystem** or **Use Existing Account**. The LocalSystem account does not require a username and password.
    - if you use RedHat Linux, select **Use Vocollect User** or **Use Existing Account**. The Vocollect User account does not require a username and password.

    If you selected **Use Existing Account,** enter the username and password for the account. This user must have read permissions to the directory from which the installation program is being run. In addition, this user must have permissions to log on as a service (refer to http://support.microsoft.com/kb/259733/EN-US/ for more information on how to set up these permissions).

    Note: If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.
14. In the **Application Ports** window, the port fields display the ports that the application server will use. If necessary, you can enter different ports. Click **Next**.
15. In the **Database Server Type** window, select the database server you will use and select if you want to use basic or advanced settings. Click **Next**.

    Note: The database server should be installed prior to running this installation program.
16. In the **Database Server Settings** window, enter the information for one of the following database server types:

SQL Server 2005

For installations using SQL Server 2005, you must enter the information listed in the following table:

Note: SQL Server 2005 does not enable TCP/IP by default. You must manually enable TCP/IP before the installation can complete successfully.

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.

Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for SQL Server is 1433.
Database name	The name of the database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:sqlserver://<host>:<port>;DatabaseName=<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Authentication Type (Windows installs only where existing user specified for Tomcat Server configuration)	If installing on Windows and an existing user was specified for the Tomcat Service configuration, you can select to use NT Authentication. Otherwise, select SQL Server Authentication.	
Database username	The username that the application should use to log into the database. This is disabled if using NT Authentication.	
Database password	The password of the user that the application should use to log into the database. This is disabled if using NT Authentication.	
Database schema	The database schema you are using.	

Oracle 10g Standard, Enterprise or 10g Express

For installations using Oracle 10g Enterprise or 10g Express, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for Oracle is 1521.
SID	The SID of the Oracle database.	

For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:oracle:thin:@<host>:<port>:<database name>
		Note: For a basic installation using Oracle 10g Express, the most commonly used username is system and JDBC URL: jdbc:oracle:thin:@localhost:1521:XE.
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username of a user with administrative privileges.	
Database password	The password of a user with administrative privileges.	

MySQL

For installations using MySQL, you must enter the following information:

For Basic		
Field	**Description**	**Valid Entry Format**
Hostname	DNS name or IP address of the machine hosting the database.	Must be less than 64 characters in length. Valid characters: letters, numbers, periods, and hyphens. Cannot begin or end with a period or hyphen.
Port	The port that the database uses.	Must be an integer between 0 and 65535. Default for MySQL is 3306.
SID	The SID of the Oracle database.	
For Advanced		
JDBC URL	The JDBC URL for the database.	jdbc:mysql://<server>:<port>/<database name>
For Both Basic and Advanced		
Field	**Description**	**Valid Entry Format**
Database username	The username that the application should use to log into the database.	
Database password	The password of a user that the application should use to log into the database.	Invalid character: $

17. In the **Pre-Installation Summary** window, review the settings. Click **Previous** to go back and change settings; click **Install** to proceed with the installation.
18. An Installation Message appears notifying you that the installer is about to install the Java Development Kit (JDK). Click **OK.**
19. The installation begins. A series of windows will appear, informing you of what is being installed. The progress bar provides an indication of how much longer the installation will run.
20. When the installer is done, a window appears letting you know where the application is installed and where a file containing information about the installation is located. Click **Done** to exit this window.

VoiceConsole opens.

21. Repeat Steps 3 through 20 for each node in the cluster.
22. Restart your computer.
23. Restart the cluster.

VoiceConsole is upgraded in your clustered environment.

6 Licensing

Vocollect generates and provides you with a license file that lets you run the software according to your purchase agreement.

You must enter a valid license before you can load device profiles, operators, or task packages onto devices. The license must also support the total number of devices connecting to *VoiceConsole*, not the number of devices per site. That is, you only need one license to cover all of your sites, but that license must support the total of all devices at all of the sites. If you need to add more devices, contact Vocollect Customer Service for a new license.

If you are installing into a clustered environment, you will need to know both the number of devices and the number of nodes into which you will be installing. You will need to import the license into each installation of *VoiceConsole* on each node.

6.1 Importing the License File

1. In the **Administration** section, click **Licenses**.
2. Under **License Actions**, select **Import License**.
3. Click **Browse** and navigate to and select the file to import.
4. Click **Import License**.
5. After reading the license agreement, click **I accept the license agreement** located at the bottom of the page. The license is imported. Once the application is licensed, the licensee's company name is displayed in the top right corner of the application.

7 Configuring Security

Enabling EAP consists of the following:

- Configuring EAP for each site
- Creating device profiles with EAP selected
- Loading the device profiles

This chapter describes the first two procedures. See *VoiceConsole* help for details on these procedures.

Note: This configuration should either be done by a System Administrator or the settings should be provided by a System Administrator.

7.1 Configuring the Site

To get to the pages letting you configure EAP for a site, perform the following steps:

1. In the **Administration** section, click **Sites**.
2. In the **View Sites** list, select the row for the site you want to configure.
3. Under Site Actions, select the **Configure EAP for selected site**.

   The **Configure EAP for <SIte Name> Site (Page 1 of 4): Configure Behavior** page opens.

7.1.1 Step 1 of 4: Configure Behavior

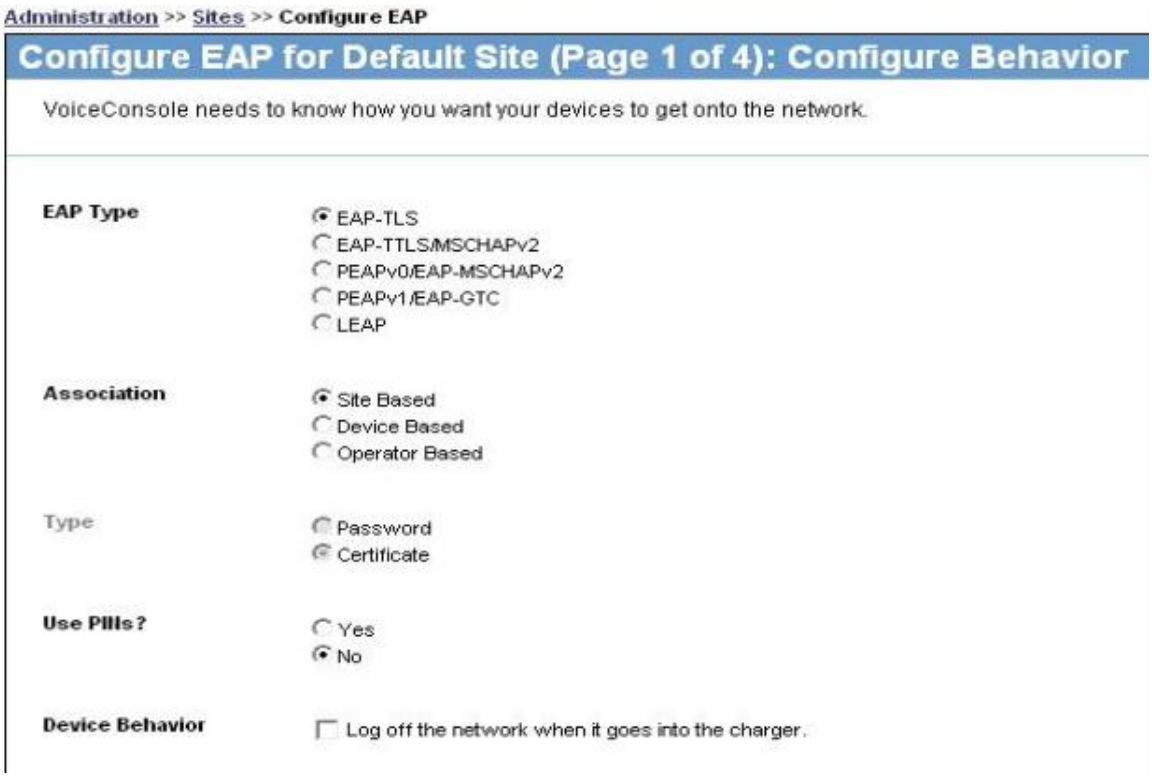


Figure 7.1: Set Up EAP Behavior

1. Select one of the EAP types. For information on each of these types, see "Extensible Authentication Protocol" on page 24. Either **Password** or **Certificate** will be automatically selected in the **Type** section depending on what EAP type you selected.

Note: If Certificate is selected, Vocollect strongly recommends using PEM or base 64 formatted certificates.

2. Select the manner in which the devices will connect to the network in the **Association** section. For more information on association types, see "Extensible Authentication Protocol" on page 24.
3. Specify whether you want to use PINs in addition to a username and password. This is recommended if you are setting up an operator-based configuration.
4. Specify whether you want to force the device to log off of the network when it is placed in the charger. It will then log onto the network as the restricted user.

Warning: If you opt to force a logoff, you should provide restricted user credentials for the device to use while in the charger. You may proceed without providing valid restricted user credentials, but if you choose to do so, the devices must be serially loaded every time they are removed from the charger.

5. Click **Next**.

   The **Configure EAP for <Site Name> Site (Page 2 of 4): Configure LDAP** page opens.

7.1.2 Step 2 of 4: Configure LDAP

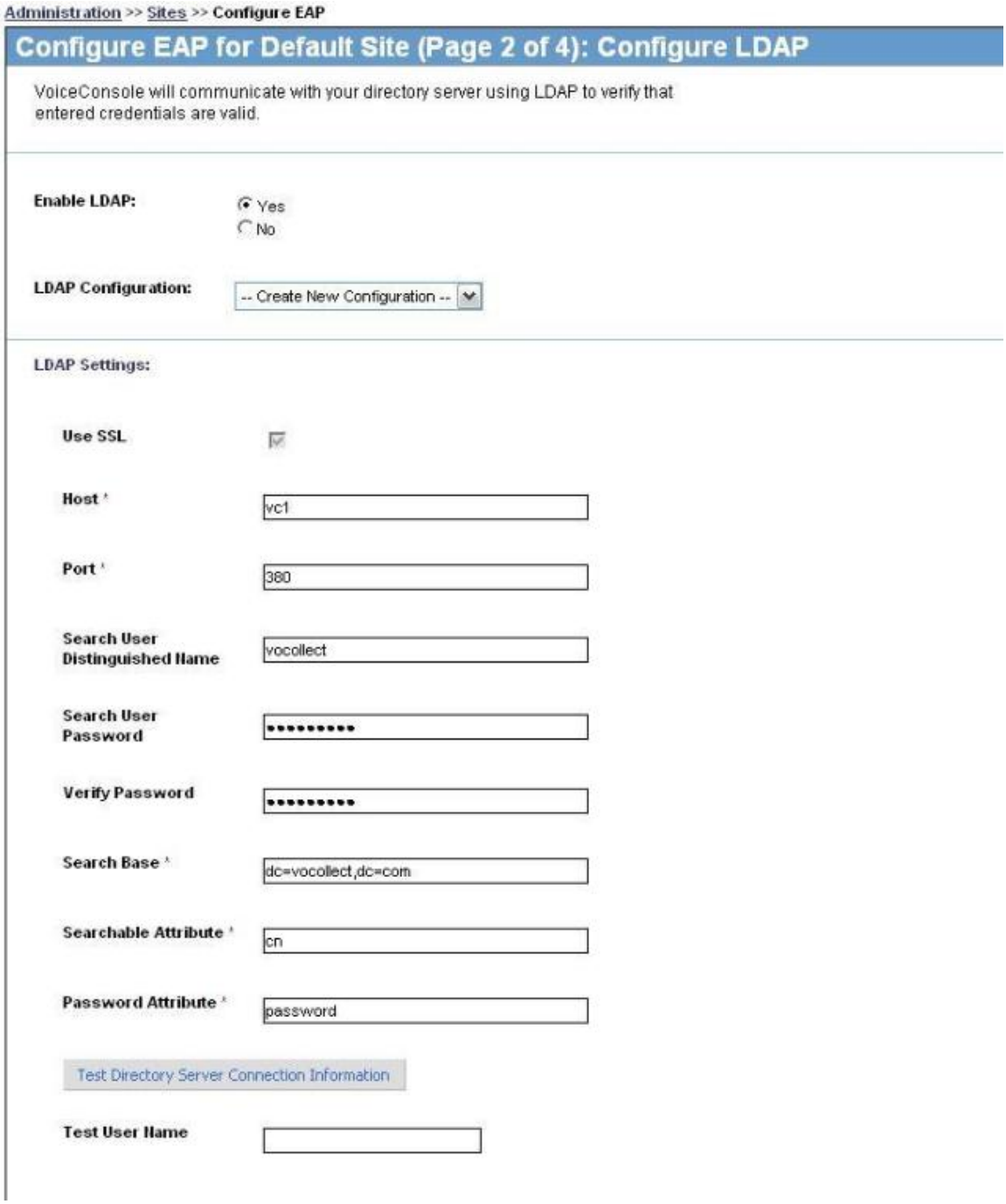


Figure 7.2: Set Up EAP Directory Server

1.Select whether to enable LDAP.

Note: If you selected operator-based association, LDAP settings are required.

2.If an LDAP configuration already exists, you can select it. Otherwise, select **Create New Configuration**.

3. Specify whether you want to use SSL. If so, you can view trusted certificate sites and add to them by clicking the **View Trusted Certificates** action.
4. Enter the server host and port.
5. Specify the search user distinguished name and password *VoiceConsole*
6. Enter the search base (where to look) and searchable attribute (what to look for) on the LDAP server.
7. Enter the password that it is to change once it is located.
8. If you want to test the Directory Server you entered, enter the test user name and clicking the **Directory Server Connection Information** button.
9. Click **Next**.

   The **Configure EAP for <Site Name> Site (Page 3 of 4): Configure Credentials** page opens.

7.1.3 Step 3 of 4: Configure Credentials

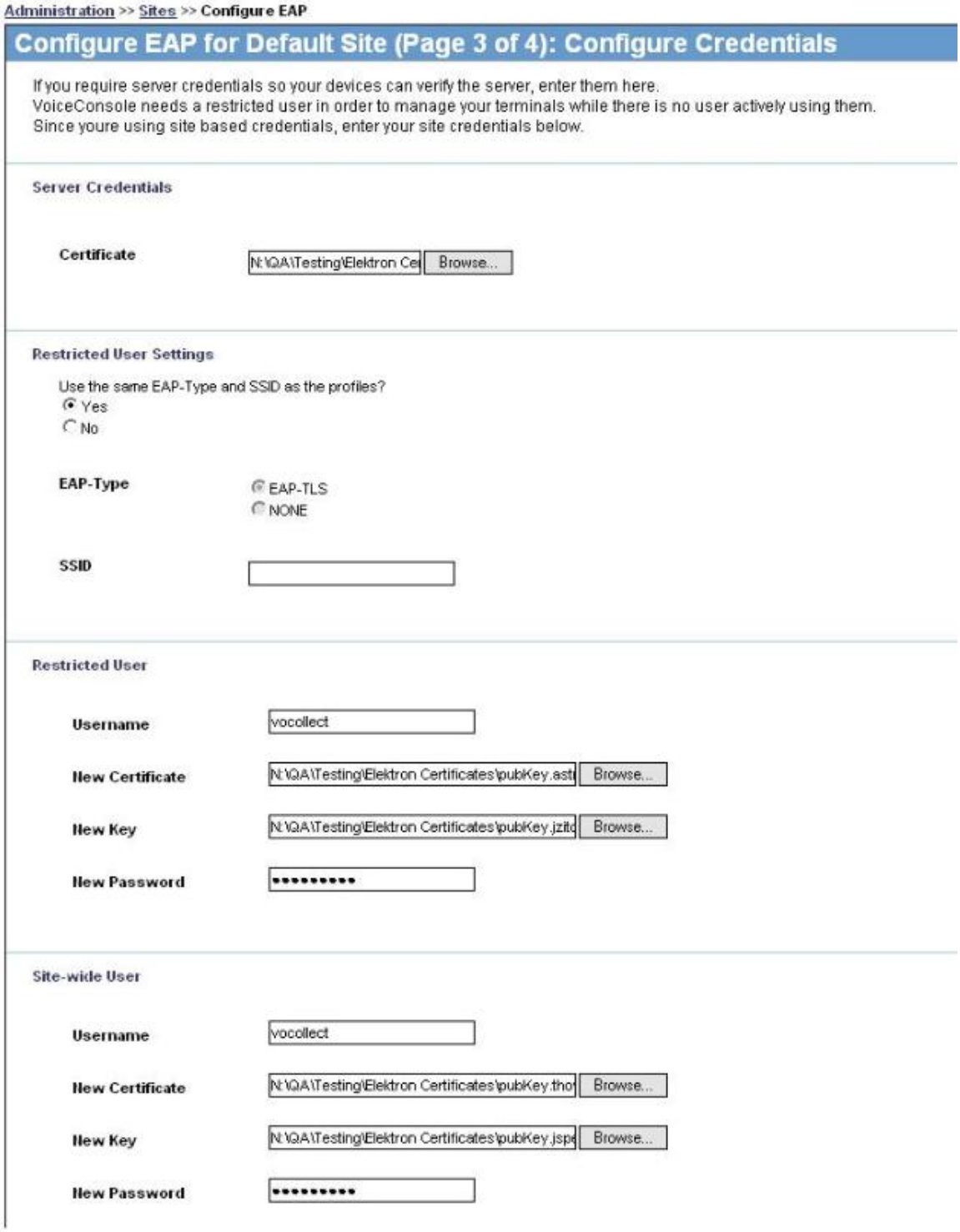


Figure 7.3: Set Up EAP Credentials

1.Enter or change the server credentials by selecting a certificate, if desired.

Note: You may choose to not use a certificate, but Vocollect strongly recommends you do use one for added security.

2. Specify whether to use the same SSID and EAP type for the restricted user as entered in the **Configure EAP for <Site Name> Site (Page 2 of 4): Configure LDAP** page. If you do not want to use the same EAP type and SSID, enter the EAP type and SSID for the restricted user. If you want the restricted user to have only access to a portion of the network, this is where you would enter that information.
3. Enter information for the users.
4. Click **Next**.

   The **Configure EAP (Page 4 of 4): Summary** page opens.

7.1.4 Step 4 of 4: Summary

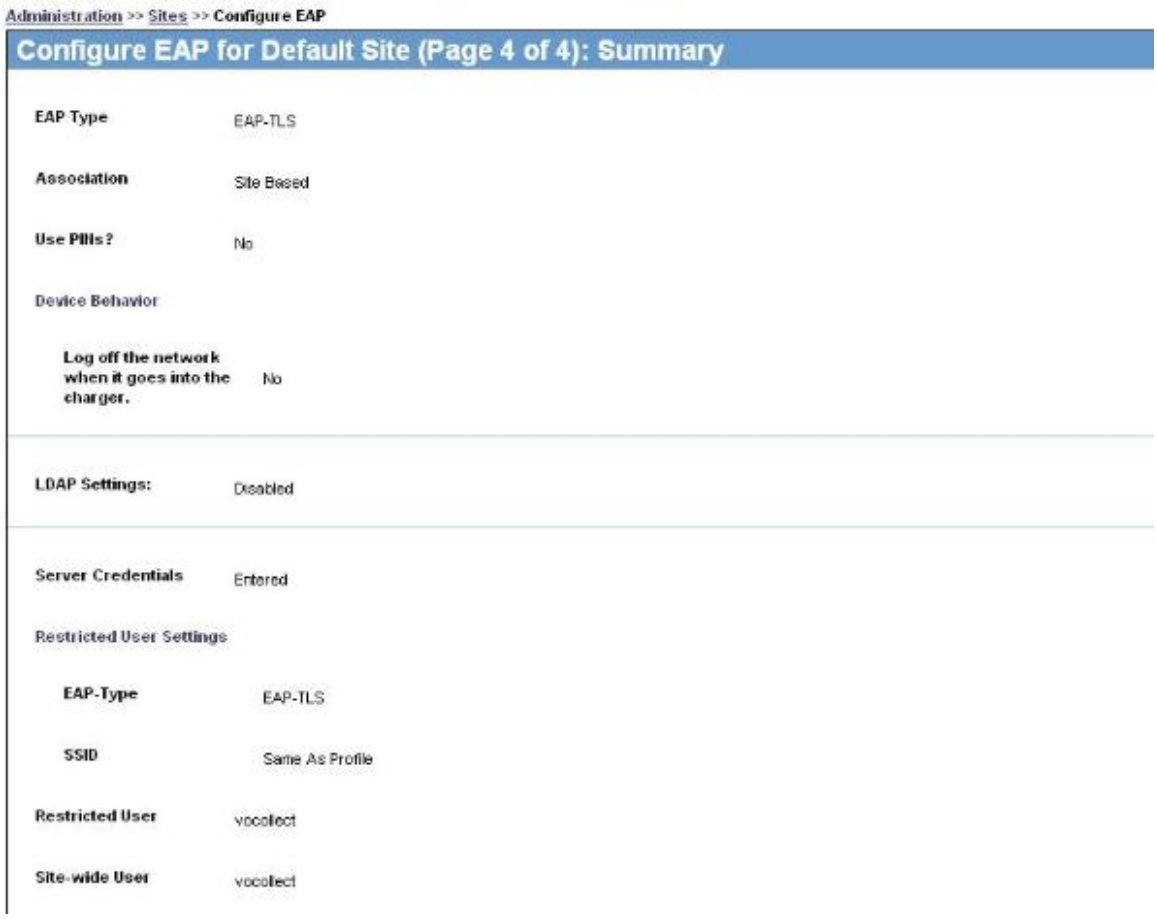


Figure 7.4: Set Up EAP Summary

1. Review the summary of the selections you made in the previous steps.
2. Click **Done**.

Note: If you created an operator-based association, Vocollect recommends you create a shortcut to the **Operator Login** page and place the shortcut on the desktop of the computer on which operators will be changing their credentials.

7.2 Configuring the Device Profiles

To begin creating a device profile, perform the following steps:

1. In the **Device Management** section under **Navigation**, click **Device Profiles**.
2. Under **Device Profile Actions**, select **Create new device profile.** The **Create Device Profile (Page 1 of 3): Select Vocollect VoiceClient** page opens.
3. Enter the **Profile Name**.
4. In the **Profile Type** list, select **Full Profile**.
5. From the **Vocollect VoiceClient** drop-down list, select a *VoiceClient* to associate with the profile or select **Import New VoiceClient** to import a file.
6. From the **Voices** drop-down list, select a **Voice** to associate with the profile.
7. Click **Next**.

   The **Create Device Profile (Page 2 of 3): Select Configuration Source** page opens.

8. Select one of the following:
   - **Create a new configuration** if you are creating the configuration in *VoiceConsole*.
   - **Import from file** if you are importing the configuration from a .cci or .vrg file. Click **Browse** to navigate to and open the .cci or .vrg file.
   - **Copy from existing profile** if you are copying the profile from one in *VoiceConsole*. Select the name of an existing profile from the drop-down list.
9. Click **Next**.

   The **Create Profile (Page 3 of 3): Configure Profile** page opens.

10. Set up the configuration for the new profile, including the security options available in the **Security** drop-down list.
11. Enter any advanced device or radio settings.
12. Click **Finish**.

8 Configuring the Tomcat Log Directory Size

Over time, the log directory Tomcat generates as the server runs increases. You can configure the Tomcat log directory to keep a certain number of the most recent log files accumulated and delete older log files.

8.1 Configuring the Number of Log Files Stored

1. Stop Tomcat.
2. Open the Java logging configuration file, located at <tomcat home>\conf\logging.properties, in a text editor.
3. Edit the following properties to the desired value:

Property	Description
java.util.logging.FileHandler.limit	the maximum file size to store (in bytes)
java.util.logging.FileHandler.count	the maximum number of the most recent files to keep

   For example, setting these values as follows sets the file size to 4 megabytes and the number of files to keep to 10:

   ```
   java.util.logging.FileHandler.limit=4000000

   java.util.logging.FileHandler.count=10
   ```

4. Save and close the file.
5. Restart Tomcat.

9 Data Protection

This section contains some procedures you can follow to protect your data and what to do in the event your *VoiceConsole* installation becomes unresponsive or shuts down unexpectedly.

Vocollect strongly recommends that your IT staff develops and implements a disaster recovery plan specific to your company's needs.

9.1 Backing Up and Restoring the Database

Vocollect strongly recommends that you schedule regular database backups. If a disaster occurs in which the database is corrupted or no longer available, you can restore a previous backup to use.

During installation, you were prompted for the database's JDBC URL. This is the database you should mark to be backed up. Refer to the documentation provided by Oracle or Microsoft for information on how to back up and restore your database.

The following links can be used to reference the vendor specific instructions for the database platforms *VoiceConsole* supports:

- Oracle 10g: http://www.oracle.com/technology/deploy/availability/htdocs/BR_Overview.htm
- Oracle 10g Express: Chapter 11 in http://downloadeast.oracle.com/docs/cd/B25329_01/doc/admin.102/b25107.pdf
- SQL Server 2005: http://msdn2.microsoft.com/en-us/library/ms208420.aspx

For detailed procedures on how to back up the various types of databases, see "Backing Up and Restoring the VoiceConsole Database" on page 99.

9.2 Application Redundancy

The ability to failover the application server is also an option. You can install an instance of the *VoiceConsole* application server installed on multiple machines, all configured to communicate with the same database. This configuration will work with two or more application server nodes. In this configuration, the database is the single point of failure.

VoiceConsole can also be configured to be on a single application server that communicates with a database that has been clustered, meaning that the database has multiple nodes acting as a single interface for the common underlying database.

In the case of Microsoft SQL Server and MySQL Community Server, the database nodes are given a single interface for the JDBC connection string. In the case of Oracle, multiple database application nodes are connected to a common underlying database structure and the JDBC connection string contains a multiple host listing. If a database node fails, either the Oracle JDBC thin client or the Windows SQL Server management utility would automatically switch to a new connection to the appropriate database server.

9.3 If VoiceConsole Becomes Unresponsive or Shuts Down Suddenly...

9.3.1 Save the Log Files

The first thing you should do if *VoiceConsole* becomes unresponsive is to save all of the *VoiceConsole* log files because Vocollect may need them to properly troubleshoot the situation. By default, the log files are stored in:

- Windows: C:\Program Files\Vocollect\VoiceConsole\Logs
- RedHat Linux and CentOS Linux: /opt/Vocollect/VoiceConsole/Logs

9.3.2 Stop and Restart the Service

Stop and restart the *VoiceConsole* 3.1 service as follows:

Windows:

1. Click the **Start** button and select **Settings | Control Panel**.
2. Double-click **Administrative Tools**.
3. Double-click **Services**.
4. In the **Services** window, locate **VoiceConsole 3.1**.
5. Stop and restart the service.

RedHat Linux and CentOS Linux:

Type the following:

```
/bin/sh /etc/init.d/VocollectWebApplicationsVC start

/bin/sh /etc/init.d/VocollectWebApplicationsVC stop

/bin/sh /etc/init.d/VocollectWebApplicationsVC restart
```

If this is unsuccessful, shut down and restart the machine hosting the server and verify that VocollectWebApplicationsVC service successfully started. You should also verify that the database is up and available.

10 Uninstalling VoiceConsole

10.1 Uninstalling VoiceConsole for Windows

You can uninstall *VoiceConsole* if you are using Windows by executing the uninstall application found here:

> <InstallDirectory>/Uninstall_Vocollect_Enterprise_Products/Uninstall Vocollect Enterprise Products.exe

The uninstall application prompts you as to which component you want to uninstall. Select **VoiceConsole 3.1**.

Note: You may have to manually remove any desktop shortcuts to *VoiceConsole* after uninstalling the application.

10.2 Uninstalling VoiceConsole for Linux

You can uninstall *VoiceConsole* if you are using Linux by executing the uninstall application found here:

> <InstallDirectory>/Uninstall_Vocollect_Enterprise_Products/Uninstall Vocollect Enterprise Products.bin

The uninstall application prompts you as to which component you want to uninstall. Select **VoiceConsole 3.1**.

Note: You may have to manually remove any desktop shortcuts to *VoiceConsole* after uninstalling the application.

10.3 Uninstalling VoiceConsole for AIX

You can uninstall *VoiceConsole* if you are using AIX by executing the uninstall application found here:

> <InstallDirectory>/Uninstall_Vocollect_Enterprise_Products/Uninstall Vocollect Enterprise Products.bin

10.4 Uninstalling in a Clustered Environment

When you are prompted to remove data from the database, you will be warned that if you do remove data, any additional nodes onto which *VoiceConsole* has been installed will no longer function correctly.

Note: If you are uninstalling an instance of *VoiceConsole* that was installed in a clustered server environment, the uninstaller will not remove files from the shared files directory. To completely remove *VoiceConsole*, remove all log and firmware files from the shared directory.

Appendix A: Implementation Checklist

The following is a checklist of information that you must obtain or decisions you must make before installing *VoiceConsole*.

Basic System Information	
Server Operating System	☐ Microsoft Windows 2008 Server ☐ Microsoft Windows 2003 Server Release 1 with Service Pack 2 ☐ Red Hat Enterprise Linux version 4 Update 6 ☐ CentOS Linux version 5.2 ☐ IBM AIX V5.3 (with Oracle databases only)
Client Operating System	☐ Microsoft Windows Vista ☐ Microsoft Windows XP with Service Pack 2 ☐ Microsoft Windows 2000 with Service Pack 4 ☐ Red Hat Linux Workstation ES for Intel processors
Browser	☐ Microsoft Internet Explorer 6.0 or 7.0 with Java JRE 1.5 configured ☐ Mozilla Firefox 3.0.5

Personnel - Provide the Name and Phone Number for Each	
Your Database Administrator	Name: Phone:
Your System Administrator	Name: Phone:
Voice Champion	Name: Phone:
Warehouse Supervisor	Name: Phone:

Pre-Implementation Information
Total devices for each VoiceConsole server Server Requirements Bandwidth Requirements

Database Information	
Relational Database Management System	☐ Oracle 10g Enterprise Release 2 ☐ Oracle 10g Express ☐ Oracle 10*g* Standard Edition ☐ Microsoft SQL Server 2005 Standard with Service Pack 2 ☐ Microsoft SQL Server 2005 Enterprise with Service Pack 2 ☐ MySQL 5.0 Community Server
Hostname of Database Server Port Number for Database Database Administrator Username and Password	

JDBC URL:
 	
Oracle Example:
`jdbc:oracle:thin:@localhost:1521:VC`
 	
Oracle 10g Express Edition Example:
 	
`jdbc:oracle:thin:@localhost:1521:XE`
 	
SQL Example:
`jdbc:sqlserver://localhost:1433;DatabaseName=VC`	

Multi-site Information
Total Number of Sites Total Number of Devices Number of Devices per Site Shift Size Shift Startup Times per Site

Clustered Server Information
The logical hostname of the application server and/or database server cluster The shared location of the device log and firmware files

Installation Information
Windows User with Administrator Privileges *OR* RedHat Linux/CentOS Linux User with Root Privileges Hostname for VoiceConsole Installation Time for VoiceConsole to Perform Database Maintenance Directory into which VoiceConsole Should Be Installed

Security	
Encryption	☐ WEP ☐ WPA ☐ WPA-2
Authentication	☐ PSK ☐ EAP
EAP Type (If using EAP)	☐ EAP-TLS ☐ EAP-TTLS/MSCHAPv2 ☐ PEAPv0/EAP-MSCHAPv2 ☐ PEAPv1/EAP-GTC ☐ LEAP
Association Type	☐ Site Based ☐ Device Based ☐ Operator Based

LDAP settings are optional for site- and device-based association types. They are required for the operator-based association type. If you choose to use LDAP, you will also need the following:

LDAP Settings
Host Port Search User Distinguished Name Search User Password Search Base Searchable Attribute Password Attribute

Appendix B: Backing Up and Restoring the VoiceConsole Database

B.1 Introduction

This document describes how to back up and restore the *VoiceConsole* database. Note that the methods described here are among the many options available.

Vocollect strongly recommends that your Database Administrator develop and implement a disaster recovery plan specific to your company's needs.

B.2 Oracle 10g Express

For details on backing up and restoring Oracle 10g Express databases, please see the documentation on the Oracle web site: http://www.oracle.com/pls/xe102/homepage

This document does not cover the process of restoring an Oracle database to another server. You can find more information at http://download-west.oracle.com/docs/cd/B14117_01/server.101/b10734/rcmrecov.htm#1009919 or http://download-uk.oracle.com/docs/cd/B19306_01/backup.102/b14192/recov004.htm#sthref564 or consult with an Oracle Database Administrator.

You must have log archiving mode enabled to perform a backup without stopping the *VoiceConsole*30 service. Log archiving mode must also be enabled to automate the default backup script provided by Oracle.

B.2.1 How to Enable ARCHIVELOG Mode

1. Stop the VoiceConsole30 service by either
   selecting **Start | Settings | Control Panel | Administrative Tools | Services | VoiceConsole30**
   or
   the command line: `net stop VoiceConsole30`
2. Open the Oracle 10g Express command line and execute the following commands:

   ```
   SQL> connect system/<password> as sysdba
   ```

   (you will need to supply the password you created during the initial Oracle 10g Express installation)

   ```
   SQL> shutdown immediate

   SQL> startup mount

   SQL> alter database archivelog;
   ```

3. After making these changes, restart the OracleServiceXE, OracleTNSListener and VoiceConsole30 services.

B.2.2 How to create a backup of the VoiceConsole database

Run the backup script **<installation drive>\oraclexe\app\oracle\product\10.2.0\server\BIN\backup.bat**

This script will create a backup in the flash recovery area.

The flash recovery area, **\oraclexe\app\oracle\flash_recovery_area**, contains the backup files. We recommend that you copy or back up this area to external media.

B.2.3 How to schedule a backup of the VoiceConsole database

1. Open the Windows Scheduler by selecting **Start | Settings | Control Panel | Scheduled Tasks**.
2. Select **Add Scheduled Task**.
3. Click **Browse** to navigate to and select the Oracle backup script, **<installation drive>\oraclexe\app\oracle\product\10.2.0\server\BIN\backup.bat**
4. Enter a name for the task.
5. Enter information about when to perform this task. Vocollect recommends backing up the database daily and scheduling the backup to run at a time of light system usage.
6. Provide a user name and password that is a member of the ORA_DBA group.
7. Select **Finish** to complete the task schedule.

B.2.4 How to restore a backup of the VoiceConsole database

1. Stop the VoiceConsole30 service.
2. Run the restore batch file **\oraclexe\app\oracle\product\10.2.0\server\BIN\restore.bat**.
3. Start the VoiceConsole30 service.

B.3 Oracle 10g Enterprise

For more information on backing up and restoring the Oracle 10g Enterprise database, please see the information found in the document *Oracle Database 2 Day DBA* and the section titled *Performing Backup and Recovery*.

B.3.1 Assumptions

The procedures in this document were developed based upon the following assumptions:

The default Flash Recovery Area settings were chosen in the **Database Configuration Assistant** when the *VoiceConsole* database was created.

B.3.2 How to create a backup of the VoiceConsole database

B.3.2.1 Log into the database

1. Open the Oracle Enterprise Manager Database Control for the *VoiceConsole* database.
2. Log in with the SYS username and password
3. Select **Connect As SYSDBA** from the dropdown list.
4. Click the **Login** button.

B.3.2.2 Configure ARCHIVELOG mode for the VoiceConsole database.

1. From the Database Instance home page select **Maintenance | Recovery Settings.**
2. In the **Media Recovery** section check the box for **ARCHIVELOG Mode** if it is not already checked.
3. Click **Apply** to save your changes. You will now be taken to the **Confirmation** screen. It will inform you that you need to restart the database for the change to take effect.

Warning: Restarting the database will make the *VoiceConsole* system unusable for a short period of time. Perform this step when there is no one using the *VoiceConsole* system.

4. Click **Yes** on the **Confirmation** screen. A page asking you to input **Host and Target Database Credentials** will appear.
5. Enter the OS username and password you used to install Oracle 10g Enterprise for the **Host Credentials**
6. Leave the **Database Credentials** user name and password blank.

If you receive an error like *RemoteOperationException: ERROR: wrong password for user* try entering *both* the **Host Credentials** and **Database Credentials**. If this doesn't work, set up the OS user to be able to log on as a batch job in the server's Local Security Policy. To do this, follow these steps:

a. Select **Start | Settings | Control Panel | Administrative Tools | Local Security Policy**.
b. In **Local Policies** select **User Rights Assignment**.
c. Add the OS user to Log on as a Batch Job. Now you should be able to get past the **Host and Target Database Credentials** page.
d. In **Restart Database: Confirmation** page, click the **Yes** button. You will be taken to the **Restart Database: Activity Information** page informing you that the database restart may take some time.
e. Wait about 5 minutes and then click the **Refresh** button. This should take you back to the **Database Login** page.

7. Log back in using the SYS username and password and then choose **Connect As SYSDBA** from the dropdown list. After you restart the database the *VoiceConsole* system can be used again.

B.3.2.3 Configure the Backup Policy

1. From the Database Instance home page go to **Maintenance | Backup Settings | Policy.**
2. Under **Backup Policy**, check the box beside **Automatically backup the control file and server parameter file (SPFILE) with every backup and database structural change**.
3. Scroll to the bottom of the page and under the **Host Credentials** section enter the OS username and password.
4. Click **OK**.

B.3.2.4 Schedule a database backup

1. From the Database Instance home page go to **Maintenance | Schedule Backup**.
2. At the bottom of the **Schedule Backup**page enter your OS Host Credentials.
3. Under the section **Oracle-Suggested Backup,**click **Schedule Oracle-Suggested Backup**.
4. Select **Disk** as the destination media for the backup.

5. Click **Next**. You will now be taken to the **Setup** page which explains how the Oracle-suggested backup works.
6. There are no settings on this page so click **Next**.
7. You will now be taken to the **Schedule** page where you will need to specify the start date, time zone, and daily backup time.
8. We recommend that you schedule the daily backup for a time when database activity will be low.
9. Click **Next**. You will be taken to the **Review** page. Here you will see some details of the backup schedule.
10. Click **Submit Job** to complete the process.
11. In the **Status** page you can click **View Job** or click **OK** to return to the database home page.

B.3.3 How to Restore a Database Backup

1. From the Database Instance home page select **Maintenance | Perform Recovery**.
2. Recover to the current time or a previous point-in-time.
3. Scroll to the bottom of the page. In the **Host Credentials** section enter the OS username and password.
4. Click **Perform Whole Database Recovery**. A **Confirmation** page now appears informing you that this operation will temporarily shut down the database.
    a. Stop the VoiceConsole30 service.
    b. On the **Confirmation** page click **Yes**. You will be taken to a **Recovery Wizard** page informing you that it will take a few minutes to shutdown and restart the database.
    c. Wait a few minutes, then click the **Refresh** button on this page.
5. On the **Database Instance** page, click **Perform Recovery**.
6. Enter your **OS Host Credentials**.
7. Click **Continue**. Another **Database Login** window will appear.
8. Enter the SYS username and password.
9. Select **SYSDBA** from the **Connect As** login. You will be taken back to the **Perform Recovery** page with an information message at the top saying that the current status is **MOUNTED**.
10. Click the **Recover to the current time or a previous point-in-time** radio button.
11. Scroll to the bottom of the page and under the **Host Credentials** section enter the OS username and password.
12. Click **Perform Whole Database Recovery**.
13. On the **Perform Whole Database Recovery: Point-in-time** page, specify whether to recover all transactions to your database up to the present time (complete recovery), or only transactions up through some point in time (point-in-time recovery).
14. Select **Recover to the current time**.
15. Click the **Next** button.
16. The next page will ask if you want to restore the files to a different location. Choose **No**.
17. Click the **Next** button. The **Review** page will display the options you chose.
18. Click the **Submit** button. A window indicating progress will appear.
19. When the process is complete, the **Perform Recovery: Result** page will appear with a message the operation succeeded.
20. Scroll to the bottom of the page and click the **Open Database** button.

21. Click **OK** on the **Result** page.
22. Start the VoiceConsole30 service.

B.4 SQL Server 2005

For more details regarding backup and restore in SQL Server 2005, please see the information found in *SQL Server Books Online* in the section *SQL Server Database Engine > Administering the Database Engine > Backing Up and Restoring Databases*.

B.4.1 Assumptions

The procedures in this document were developed based upon the following assumptions:

- The *VoiceConsole* database is using the simple recovery model.
- Vocollect *VoiceConsole* 3.1 is installed on the server to which a database is being restored. The instructions below include stopping the VoiceConsole30 service on the machine to which the database is being restored.
- This document addresses the architecture of a primary server with *VoiceConsole* and the database installed on the same server, and one or more backup servers with *VoiceConsole* and the database installed. If a different architecture is being used, then some of the steps will be different.
- The database cannot be in use during the time of a restore operation, so any instance of the VoiceConsole30 service pointing to the database being restored must be stopped.
- The restore operation is always restoring an existing *VoiceConsole* database. The procedures listed below do not address restoring the database to a database server on which there is no existing *VoiceConsole* database. This is possible, but the procedure is not covered in this document.
- Microsoft SQL Server 2005 is installed identically on all servers involved and is using the same system paths for physical database file storage.

B.4.2 How to Create a Backup of the VoiceConsole Database

1. Open **SQL Server Management Studio** and connect to the database server.
2. Click Databases.
3. Right-click on the *VoiceConsole* database (the actual name is whatever was chosen at install time).
4. Select **Tasks**.
5. Select **Back Up**. The **Back Up Database** window will appear.
6. In the **Backup type** drop-down list, select **Full**.
7. For **Backup component**, select **Database**.
8. In the **Backup set** section, enter a name for the backup or accept the default.
9. Enter a description if desired.
10. In the **Destination** section select **Disk** for **Back up to**.
11. Accept the default destination or use the **Add** and **Remove** buttons to specify a different destination.
12. In the **Select a page** navigation bar on the left, select **Options**.
13. In the **Overwrite media** section, select **Back up to the existing media set**.
14. Select **Overwrite all existing backup sets**.
15. In the **Select a page navigation bar** on the left, select **General**.

16. Click **OK** at the bottom of the window. The progress meter at the bottom left of the window indicates the status of the process.
17. When the backup is complete, click **OK** to close the **Back Up Database** window.

B.4.3 How to schedule a backup of the VoiceConsole database

1. Follow the steps in "How to Create a Backup of the VoiceConsole Database" on page 103.
2. On the menu bar at the top of the **Back Up Database** window, select **Script | Script Action to Job**. The **New Job** window will appear.
3. On the **General** page, change the name of the job, the owner, and description if desired or accept the default settings.
4. In the **Select a page** navigation bar on the left, select **Schedules**.
5. Click the **New** button at the bottom of the window. The **New Job Schedule** window appears.
6. In the **Name** field, give the schedule a name.
7. Make sure the **Schedule type** is set to **Recurring**.
8. Use the rest of the fields in this window to set the schedule and time that the backup will run. Vocollect recommends backing up the database daily and scheduling the backup to run at a time of light system usage.
9. When you are done configuring the schedule, click **OK** in the **New Job Schedule** window.
10. In the **New Job** window, click **OK**. The script that creates the backup will run. The progress meter at the bottom of the **Back Up Database** window indicates the status of the process.
11. When the process is complete, click **Cancel** at the bottom of the **Back Up Database** window to close the window.
12. Verify that the backup job was created by expanding **SQL Server Agent**, and then expanding **Jobs**. The new backup job will appear.

B.4.4 How to Restore the VoiceConsole Database

B.4.4.1 How to restore a backup of the VoiceConsole database to the server on which the backup was created.

1. *VoiceConsole* needs to be stopped in order to restore the database. The application will be unavailable while the database is being restored.
2. Select **Start | Control Panel | Administrative Tools | Services**.
3. Select the VoiceConsole30 service and stop the service.
4. Open **SQL Server Management Studio** and connect to the database server.
5. Expand Databases.
6. Right-click on the *VoiceConsole* database (the actual name that was chosen at install time).
7. Select **Tasks**.
8. Select **Restore**.
9. Select **Database**. The **Restore Database** window will appear.
10. The default settings should be correct. Click **OK**. The restore process begins. The progress meter at the bottom left of the window indicates the status of the process.
11. When the process is complete, click **OK** to close the window.
12. Start the VoiceConsole30 service.

B.4.4.2 How to restore a backup of the VoiceConsole database to a different server than the one on which the backup was created.

1. Copy the backed up database file to the server to which the backup will be restored.
2. Select **Start | Control Panel | Administrative Tools | Services**.
3. Select the VoiceConsole30 service and stop the service.
4. Open **SQL Server Management Studio** and connect to the database server.
5. Expand Databases.
6. Right-click on the *VoiceConsole* database (the actual name that was chosen at install time).
7. Select **Tasks**.
8. Select **Restore**.
9. Select **Database**. The **Restore Database** window will appear.
10. In the **Source for restore** section, select **From device**.
11. Click the **…** button. The **Specify Backup** window appears.
12. For **Backup Media**, select **File (.bak)**.
13. Click the **Add** button to navigate to the location of the backup file.
14. Browse to the backup file and click **OK**. The backup location will now be listed in the **Specify Backup** window.
15. Click **OK**.
16. In the **Select the backup sets to restore** table, check the box in the **Restore** column for the backup.
17. In the **Select a page** navigation bar on the left, select **Options**.
18. Activate the check box for **Overwrite the existing database**.
19. All other settings should be correct. Click **OK** at the bottom of the **Restore Database** window. The restore process will begin. The progress meter located in the bottom left corner of the window indicates the status of the process.
20. When it is complete, click **OK** to close the **Restore Database** window.

IMPORTANT! For this procedure to be successful, you must do the following:

1. SQL Server logins have a unique Security ID (SID) that belongs to a particular instance of SQL Server.
2. If there are any users in the *VoiceConsole* database, you must update the user records in the restored database so they refer to the SID of the corresponding SQL Server login on the instance of SQL Server on this server.
3. Run the following command against the *VoiceConsole* database in SQL Query Analyzer to find users that must have their SID changed:

   ```
   EXEC sp_change_users_login 'Report'
   ```

4. If any records are returned, run the following command for each user returned:

   ```
   EXEC sp_change_users_login ‘Auto_Fix’, ‘<username>’
   ```

   where <username> represents the user name that needs to have its SID fixed.

   The command should display the following output indicating that the user’s SID was fixed:

   ```
   The row for user 'voice_console_db_22' will be fixed by updating
   its login link to a login already in existence.
   ```

```
The number of orphaned users fixed by updating users was 1.
The number of orphaned users fixed by adding new logins and then
updating users was 0.
```

5. Start the VoiceConsole30 service.

B.5 MySQL Community Server

B.5.1 Assumptions

The procedures in this document were developed based upon the following assumptions:

- The *VoiceConsole* database is using the simple recovery model.
- Vocollect *VoiceConsole* 3.1 is installed on the server to which a database is being restored.
- This document addresses the architecture of a primary server with *VoiceConsole* and the database installed on the same server, and one or more backup servers with *VoiceConsole* and the database installed. If a different architecture is being used, then some of the steps will be different.
- The database cannot be in use during the time of a restore operation, so any instance of the VoiceConsole31 service pointing to the database being restored must be stopped.
- The restore operation is always restoring an existing *VoiceConsole* database. The procedures listed below do not address restoring the database to a database server on which there is no existing *VoiceConsole* database. This is possible, but the procedure is not covered in this document.
- MySQL Community Server is installed identically on all servers involved and is using the same system paths for physical database file storage.

B.5.2 How to Create a Backup of the VoiceConsole Database

B.5.2.1 How to back up the VoiceConsole database using the mysqldump command

You can back up your *VoiceConsole* database using the mysqldump command if you have either a shell or telnet access to your database server.

- For a standard database backup, run the following command:

  mysqldump -u <database username> -p<database password> <database name> < <backupfilename.sql>

- If you want to rewrite an existing database from the backup file with out having to delete the database first, run the following command:

  mysqldump --add-drop-table -u <database username> -p <database password> <database name> < <backupfilename.sql>

- If you want to back up specific tables in the database, run the following command:

  mysqldump --add-drop-table -u <database username> -p<database password> <database name> <list of table names separated by spaces> < <backupfilename.sql>

B.5.3 How to Restore the VoiceConsole Database

You can restore the VoiceConsole Database by running the following command:

mysql -u <database username> -p<database password> <database name> < <backupfilename.sql>