Vocollect VoiceConsole® 4.2 Implementation Guide

ETP.IG.4200B.2013.01

Copyright

Copyright © 2013 Vocollect, Inc. All rights reserved.

Vocollect and the Vocollect logo are registered trademarks of Vocollect #1 in the Business of Voice™ is a trademark of Vocollect.

All other product names mentioned herein are trademarks or registered trademarks of their respective owners, who may or may not be affiliated with, connected to, or sponsored by Vocollect. Reference to any product, process, publication, service, or offering of any third party by trade name, trademark, manufacturer or otherwise does not necessarily constitute or imply the endorsement or recommendation of such by Vocollect.

Published by Vocollect
703 Rodi Road
Pittsburgh, PA 15235
(412) 829-8145
fax (412) 829-0972
http://www.vocollect.com

Vocollect has carefully checked the information in this document and believes it to be accurate. However, Vocollect assumes no responsibility for any inaccuracies that this document may contain. In no event will Vocollect be liable for direct, indirect, special, exemplary, incidental, or consequential damages resulting from any defect or omission in this document, even if advised of the possibility of such damages.

Any alterations or inconsistent replications of this document cannot be considered accurate and are void. Vocollect may not be able to support issues related to altered documents that are not approved by subject matter experts.

In the interest of product development, Vocollect reserves the right to make improvements to the information in this document and the products that it describes at any time, without notice or obligation.

Table of Contents

1 Preface **1**

1.1 About This Guide 1

1.2 Contact Information 2

2 VoiceConsole System Requirements **4**

2.1 Server Requirements 4

2.1.1 Hardware Requirements 4

2.1.2 Software Requirements 5

Supported Operating Systems 5

Supported Application Servers 6

Supported Languages 6

2.1.3 Database Requirements 6

Supported Databases 7

2.1.4 Client Requirements 8

2.2 Network Bandwidth Requirements 8

2.2.1 Network Bandwidth Calculations 10

Assumptions & Comments 10

3 Planning Your VoiceConsole Installation **12**

3.1 Single Site or Multiple Site Architecture Mode 12

3.1.1 Decentralized Architecture (Single-Site Mode) 12

3.1.2 Centralized Architecture (Multi-Site Mode) 13

3.2 Single-Server Implementations with VoiceConsole and VoiceLink 14

3.3 Multi-Server or Multi-Site Implementations with VoiceConsole and VoiceLink 15

3.3.1 Time Zone Considerations 15

3.3.2 Working with Voice Process Software in Multi-Site Implementations 15

3.4 Creating Additional Sites in VoiceConsole for Multiple Site Implementations 17

3.4.1 Creating Sites 17

3.4.2 Creating Site-Specific Task Files 17

3.4.3 Creating a Site-Specific User for the Site 18
3.4.4 Migrating Operators from an Existing VoiceConsole Database 19
3.4.5 Importing a Task to the New Site 19
Creating a Task Package for the New Site 20
Creating a Device Profile for the New Site 20
3.5 Creating Additional Sites in VoiceLink for Multiple Site Implementations 20
3.5.1 Creating Sites 21
3.5.2 Running an Import Job for the Site 21
3.5.3 Creating a Site-Specific User for the Site 21
3.5.4 Creating Regions for the Site 22
3.5.5 Deleting Sites in VoiceLink 22
3.6 Managing Multiple Sites 22
3.6.1 Benefits of Multi-Site Management 23
3.6.2 Limitations of Multi-Site Management 23
3.7 Clustered and Load Balanced Environments 23
3.7.1 Single Database with Clustered Application Servers 24
3.7.2 Single Application Server with Clustered Database 24
3.7.3 Clustered Database and Application Servers 25
3.7.4 Benefits of Clustering/Load Balancing 26
3.7.5 Limitations of Clustering/Load Balancing 26
3.7.6 What You Need 27
3.8 Security Options 27
3.8.1 Hypertext Transfer Protocol Secure (HTTPS) 27
What You Need 27
3.8.2 Extensible Authentication Protocol 28
Site-wide Configuration 28
Restricted User 28
Association Types 29
What You Need 29

3.9 Configuring the Browser 30
3.9.1 Internet Explorer Configuration 30
Configuring Internet Explorer for the Device Dialog Display Feature 31
3.9.2 Firefox Configuration 31
Configuring Firefox for the Device Dialog Display Feature 32
4 Installing VoiceConsole for the First Time 33
4.1 System Components 33
4.2 Available Ports and Protocols 33
4.3 Standard Installation Procedure 34
4.4 Installing into a Clustered Environment 46
4.4.1 Installing Into the First Node 47
4.4.2 Installing into Additional Nodes 51
5 Upgrading from Previous Versions 53
5.1 Upgrading from VoiceConsole 4.1 to VoiceConsole 4.2 53
5.1.1 Upgrading from VoiceConsole 4.1 with an Embedded Database to VoiceConsole 4.2 54
5.2 Upgrading from VoiceConsole 3.x, 4.0, or 4.0.1 to VoiceConsole 4.2 55
5.2.1 Upgrading from VoiceConsole 3.2, 4.0, or 4.0.1 with an Embedded Database to VoiceConsole 4.2 58
5.3 Upgrading from VoiceConsole 2.4 to VoiceConsole 4.2 59
5.3.1 Upgrading from VoiceConsole 2.4 to VoiceConsole 4.2 with an Embedded Database 59
5.4 Upgrading in a Clustered Environment 60
5.4.1 Upgrading from an Existing VoiceConsole Cluster Installation to VoiceConsole 4.2 in a Fail-Over Clustered Environment 60
5.4.2 Upgrading from an Existing VoiceConsole Cluster Installation to VoiceConsole 4.2 in a Load Balancing Clustered Environment 61
5.5 Performing a Silent Installation or Upgrade 62
5.5.1 Performing a Silent Installation 62
Configuration Fields 65
Notes on install file formatting 69
5.5.2 Performing a Silent Upgrade from VoiceConsole 4.1 70
Standard upgrade 70

5.5.3 Performing a Silent Upgrade from VoiceConsole 3.x, 4.0, or 4.0.1 71
Standard upgrade from 3.x, 4.0, or 4.0.1 72
5.5.4 Initiating a Silent Installation or Upgrade 73
5.6 Migrating from One Database to Another 73
5.7 Securing the Database Password 74
5.7.1 Changing the Embedded Database Password 75
6 Licensing 76
6.1 Importing the License File 76
7 Configuring Security 77
7.1 Creating and Installing a Certificate for HTTPS 77
7.1.1 Creating a Certificate Signing Request 77
7.1.2 Getting a Certificate from a Certificate Authority 78
7.1.3 Installing the Certificate 78
From a Certificate Authority 78
Generating Your Own Self-Signed Certificate 78
7.1.4 Configuring Tomcat 79
7.2 Configuring EAP for the Site 79
7.2.1 Step 1 of 4: Configure Behavior 79
7.2.2 Step 2 of 4: Configure LDAP 80
7.2.3 Step 3 of 4: Configure Credentials 80
7.2.4 Step 4 of 4: Summary 81
7.3 Configuring the Device Profiles with EAP 81
8 Configuring VoiceConsole Logs 82
8.1 Log Count and Maximum Size 82
8.2 Log Location 83
9 Data Protection 84
9.1 Backing Up and Restoring the Database 84
9.2 Application Redundancy 84
9.3 If VoiceConsole Becomes Unresponsive or Shuts Down Suddenly... 84

9.3.1 Save the Log Files 84
9.3.2 Stop and Restart the Service 85
10 Uninstalling VoiceConsole 86
10.1 Uninstalling VoiceConsole for Windows 86
10.2 Uninstalling VoiceConsole for Linux 86
10.3 Uninstalling in a Clustered Environment 86
10.4 Performing a Silent Uninstall 87
Appendix A: Implementation Checklist 88
Appendix B: Backing Up and Restoring the VoiceConsole Database 92
B.1 Introduction 92
B.2 Oracle 11g Enterprise 92
B.2.1 Assumptions 92
B.2.2 How to create a backup of the VoiceConsole database 92
B.2.3 How to Restore a Database Backup 94
B.3 SQL Server 95
B.3.1 Assumptions 95
B.3.2 How to Create a Backup of the VoiceConsole Database 95
B.3.3 How to schedule a backup of the VoiceConsole database 96
B.3.4 How to Restore the VoiceConsole Database 96
B.4 Embedded Data Storage/ Embedded Database 98
B.4.1 How to Create a Backup of the VoiceConsole Database 98
B.4.2 How to Restore the VoiceConsole Database 98
Appendix C: Initial Setup 100

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 content:

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

Appendix C shows an overview of the initial setup in *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 your reseller first for support or to purchase a support plan.

For order placement, order status, returns, Return Material Authorization (RMA) status, or other customer service issues, contact Vocollect Customer Service at:

United States:
E-mail: voccustsupp@vocollect.com
Phone: 866 862 6553, Option 3, Option 2

Americas (outside U.S.), Australia, New Zealand:
E-mail: voccustsupp@vocollect.com
Phone: 412 829 8145, Option 3, Option 2

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

To return equipment for repair contact Vocollect RMA to request an RMA number:
Email: vocollect-rma@vocollect.com

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

United States:
E-mail: support@vocollect.com
Phone: 866 862 7877

Americas (outside U.S.), Australia, New Zealand:
E-mail: support@vocollect.com
Phone: 412 829 8145, Option 3, Option 1

Europe, Middle East, and Africa:
E-mail: emeasupport@vocollect.com
Phone: +44 (0) 1628 55 2902

Japan:
E-mail: japansupport@vocollect.com
Phone: +813 3769 5601

For sales or any other inquiry, please contact Vocollect at info@vocollect.com or 412 829 8145.

Vocollect Corporate Headquarters
703 Rodi Road
Pittsburgh, PA 15235 US
Phone: +1 412 829 8145
Fax: +1 412 829 0972
Web: http://www.vocollect.com/contact.aspx

Vocollect Japan
Shiba 2-Chome Bldg. 8F
2-2-15 Shiba, Minato-ku,
Tokyo 105-0014 Japan
Phone: +813 3769 5601
Fax: +813 3769 5608

Email: japan@vocollect.com

Vocollect EMEA
Gemini House
Mercury Park
Wycombe Lane, Wooburn Green
Buckinghamshire, HP10 0HH UK
Phone: +44 (0) 1628 55 2900
Email: voc_emea@vocollect.com

Vocollect Asia-Pacific
2903 Sino Plaza, 255-257 Gloucester Road
Causeway Bay
Hong Kong
Hong Kong: +852-3917 7000
China: +86-10 5957 2685
Australia: +61 409 527 201
Email: apac@vocollect.com

Vocollect Latin America
Latin America: +1.412.349.2470
Brazil: +1.412.349.2477
Email: latin_america@vocollect.com

Vocollect Singapore
151 Lorong Chuan
#05-02A/03 (Lobby C)
New Tech Park
Singapore 556741
Phone: +65 6303 2100
Email: singapore@vocollect.com

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	Hard Drive of Server Machine
< 300	<150	<3 minutes	Dual Core Intel 2.0GHz	2GB DDR	40GB
300-600	150-300	3-5 minutes	Dual Core Intel 3.0GHz	4GB DDR	80GB
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	120GB each machine

Table 1.1 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 an 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 2.0GHz	2GB DDR	40GB	300	400

CPU	Memory	Hard Drive	Device Concurrent Loads	Average Transaction Time in ms
Dual Core Intel 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 1.2: Average Transaction Times

Note: Transaction performance with implementations of *VoiceConsole* running on a VMware® virtual server may be slower than the averages shown.

2.1.2 Software Requirements

Supported Operating Systems

The following operating systems are supported with *VoiceConsole* 4.2.

VoiceConsole currently only supports systems with the x86-64 architecture.

- Microsoft® Windows® 2008 (64-bit version), Standard and Enterprise
- Microsoft Windows 2008 Server (32-bit version), Standard and Enterprise
- Microsoft Windows 2003 Server (32-bit version), Standard and Enterprise
- Red Hat® Enterprise Linux® version 6.x (64-bit version)
- Red Hat Enterprise Linux version 6.x (32-bit version)
- Red Hat Enterprise Linux version 5.x (32-bit version)

  Note: Root user privileges are required to install on Red Hat Linux operating systems.

- CentOS Linux version 6.x

  Note: Vocollect does not recommend using CentOS Linux installations with a system running more than 300 operators per shift.

- VMWare® ESX 4.x running a supported operating system and *VoiceConsole* Embedded Database. (x86)

Tested Operating Systems

Vocollect has completed functionality testing for the following operating systems:

- Microsoft Windows 2008 Server Release 2 with Service Pack 1 (64-bit version), Standard
- Microsoft Windows 2008 Server with Service Pack 2 (32-bit version), Standard

- Microsoft Windows 2003 Server with Service Pack 2 (32-bit version), Standard
- Red Hat Enterprise Linux version 5.8 (32-bit version)
- Linux version 6.2 (32-bit version)
- Linux version 6.2 (64-bit version)
- CentOS Linux version 6.x
- VMWare ESX 4.x running a supported operating system and *VoiceConsole* Embedded Database. (x86)

Supported Application Servers

The following application servers are supported with *VoiceConsole* 4.2:

- Apache Tomcat™ version 7.0

Note: Tomcat version 7.0 is installed when *VoiceConsole* is installed.

Supported Languages

The following languages are supported with this version of *VoiceConsole*:

- Danish
- Dutch
- English – US
- Finnish
- French
- French – Canadian
- German
- Italian
- Japanese
- Norwegian
- Portuguese
- Portuguese – Brazilian
- Spanish
- Spanish - Latin American
- Swedish
- Korean
- Polish
- Simplified Chinese
- Russian
- Traditional Chinese

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.

Notes for VoiceConsole Databases:

- *VoiceConsole* currently only supports systems with the x86-64 architecture.
- Vocollect has only done testing of upgrades with supported databases. You may still upgrade from an unsupported database at your own risk.
- **Oracle**: When creating a new Oracle database, ensure you are using the AL32UTF8 character set for non-English versions of *VoiceConsole*.

- **SQL**: 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.
- **Embedded**: Embedded database is not supported in a clustered environment.

Supported Databases

The following databases are supported with *VoiceConsole* 4.2.

- Oracle® 11g, Standard and Enterprise
- Microsoft SQL Server® 2012, Standard and Enterprise
- Microsoft SQL Server 2008, Standard and Enterprise
- Embedded Data Storage/ Embedded Database (no database needed)

Tested Databases

Vocollect has completed functionality testing for the following databases:

- Oracle 11g Release 2, Standard
- Microsoft SQL Server 2012, Standard
- Microsoft SQL Server 2008 Release 2, Standard
- Embedded Data Storage/ Embedded Database (no database needed)

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
4	96	200	200	4	8	3	4	50	161632 KB
4	96	200	246	5	10	3	4	50	193658 KB

Table 1.3 Common Database Usage Scenarios

The estimated minimum database size you could experience is based on 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.

2.1.4 Client Requirements

The following operating systems are supported for the *VoiceConsole* client:

- Microsoft Windows 7
- Microsoft Windows Vista
- Microsoft Windows XP with Service Pack 2
- Red Hat Linux Workstation ES for Intel processors

The following browsers are supported for the *VoiceConsole* client:

- Microsoft Internet Explorer® 7.x, 8.x and 9.x
- Mozilla® Firefox® 4.x and newer

All browsers require that Java™ JRE™ 1.6 or 1.7 be installed and configured.

Note: The Java JRE is required on the client computer to perform a serial device profile load. If the JRE plugin is blocked by either the operating system or browser level security settings, a serial device profile load will not be possible until these settings are resolved. Vocollect recommends upgrading to the latest version of JRE 1.6 or 1.7.

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 4.1 .

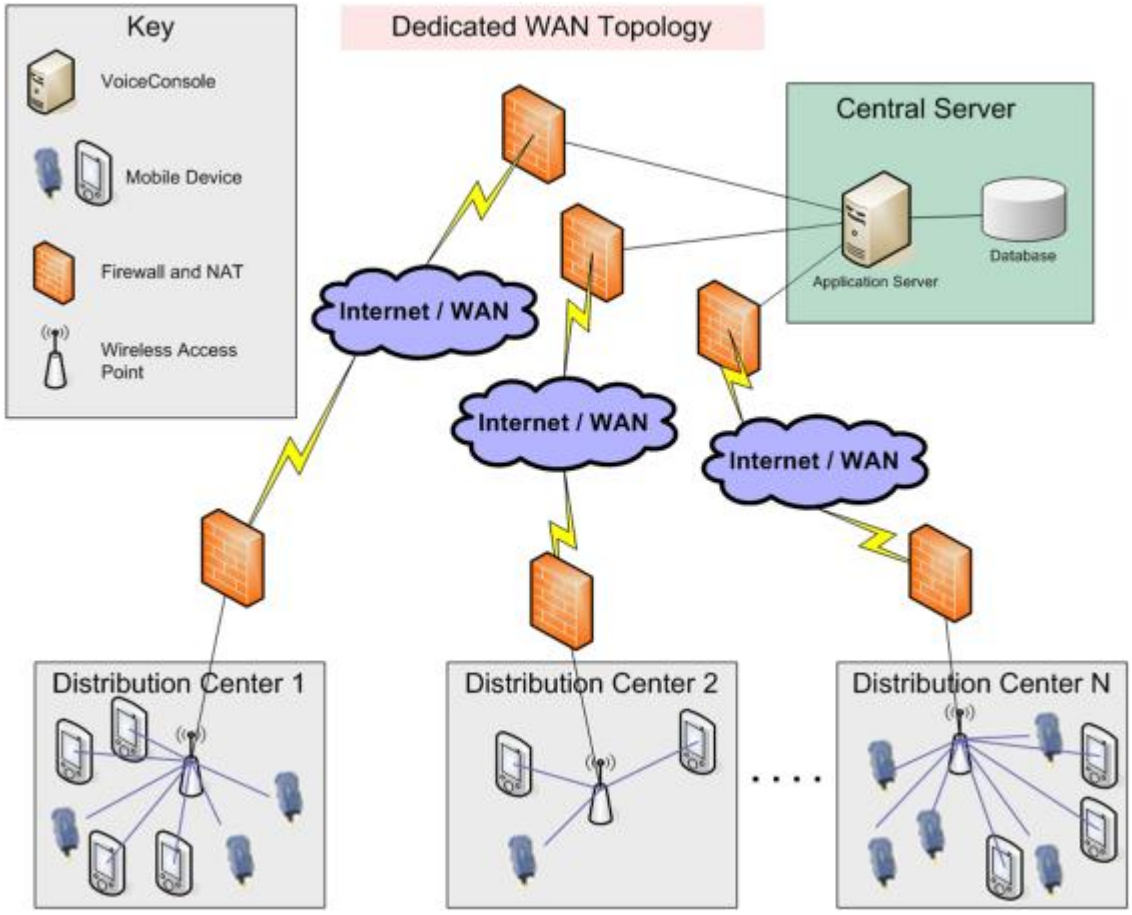


Figure 4.1 Direct Line from Each Site to Server

# 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 1.4 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.

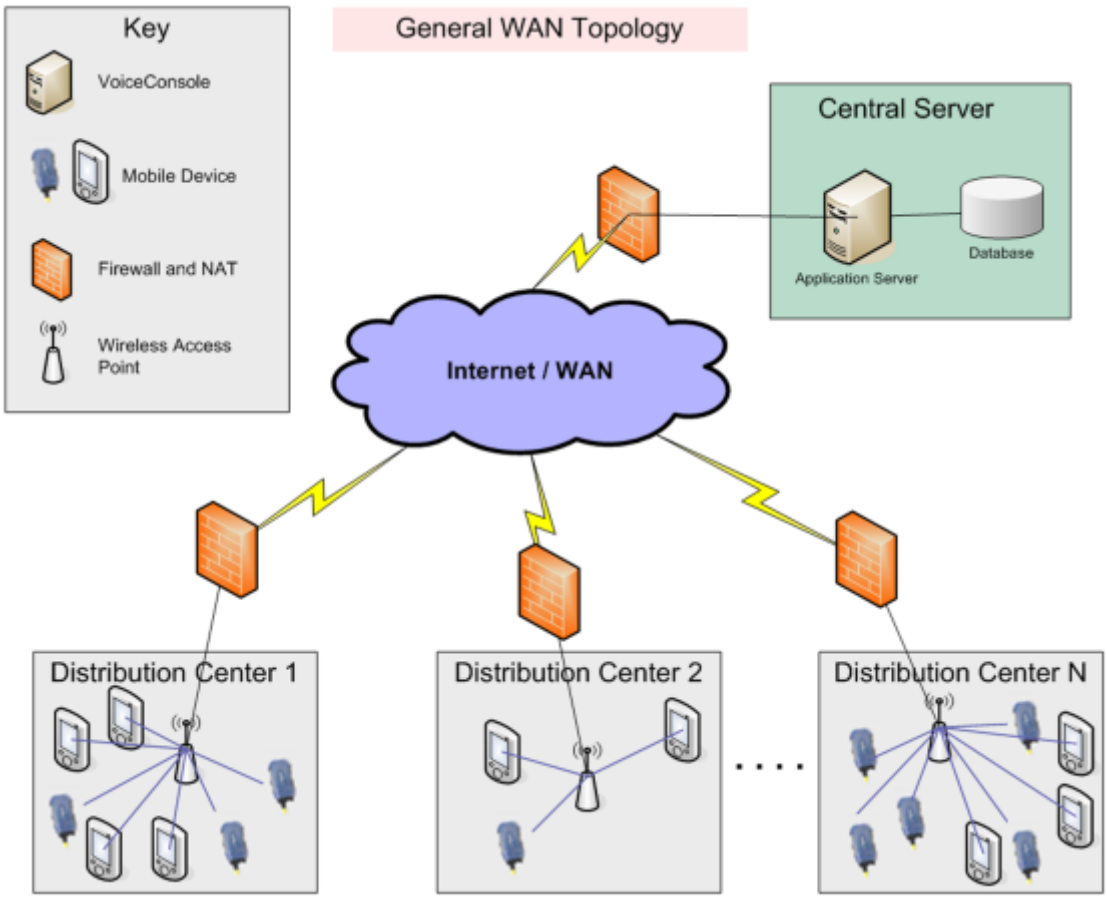


Figure 4.2 Single Line from All Sites to Server

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 1.5Bandwidth Required at the Centrally Connected Site (no dedicated lines)

2.2.1 Network Bandwidth Calculations

Assumptions & Comments

- Application and/or operator loading are 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 1.4 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:
    - o Typical Operator Load Transfer = 232KB (1856Kb) of data per device
    - o Typical Task Package Load Transfer = 288KB (2304 Kb) of data per device
- The Site Bandwidth requirements (SBWR) shown in Table 1.4 based on these assumptions can be determined using the following calculation:
    - o SBWR Operator Load = (Devices per Site * 1856Kb) / 300sec
    - o SBWR Application Load = (Devices per Site * 2304Kb) / 300sec
- The Central Site Bandwidth Requirements (CSBWR) shown in Table 1.5 based on these assumptions can be determined using the following calculation:
    - o CSBWR Operator Load = 1/5 * SBWR Operator Load * Number of Sites
    - o 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 4 for more information.

3.1 Single Site or Multiple Site Architecture Mode

VoiceConsole installation offers two architecture modes:

- Single-site mode where a separate instance of *VoiceConsole* is installed at each voice-enabled site.
- Multi-site mode where a single instance of *VoiceConsole* is used to manage the voice system components at multiple sites.

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.

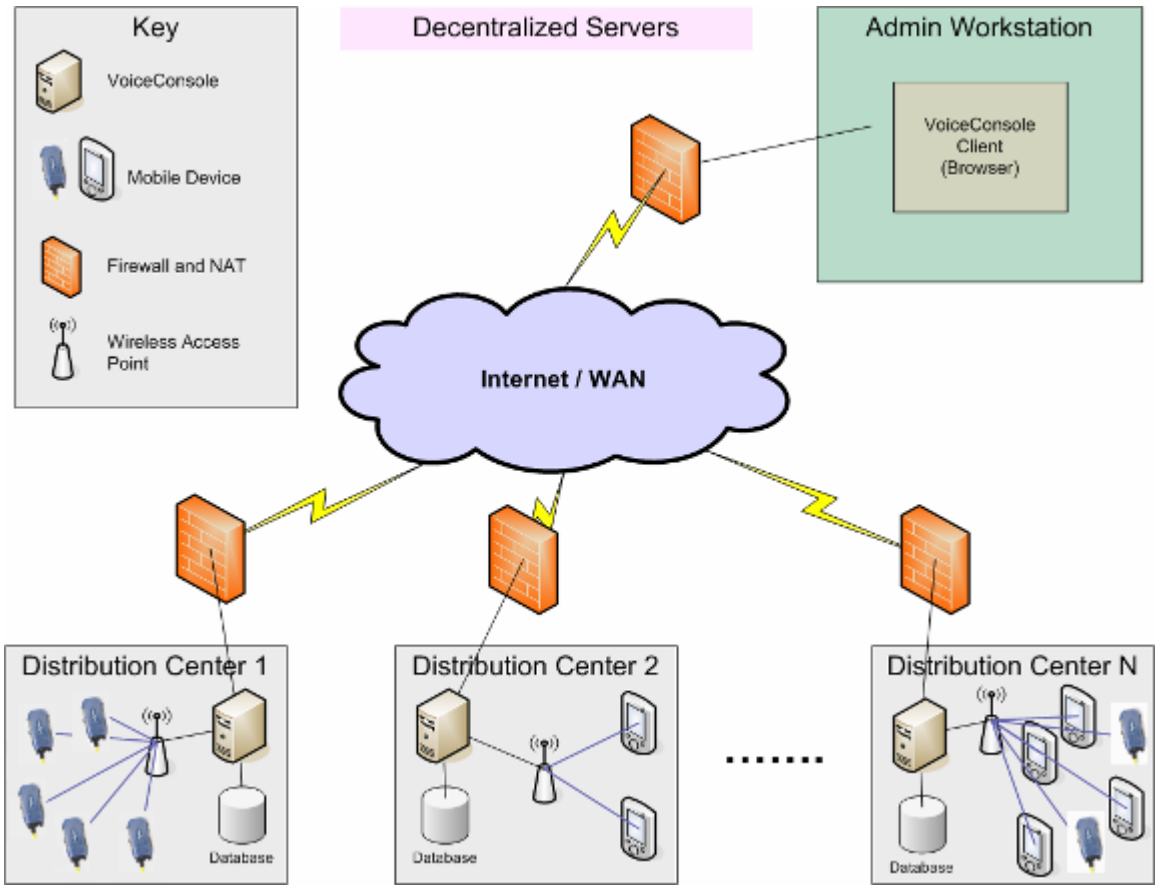


Figure 5.1 Decentralized Architecture Diagram

3.1.2 Centralized Architecture (Multi-Site Mode)

VoiceConsole can also be implemented in a centralized architecture, or 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 22 for more information on the benefits and limitations of this configuration.

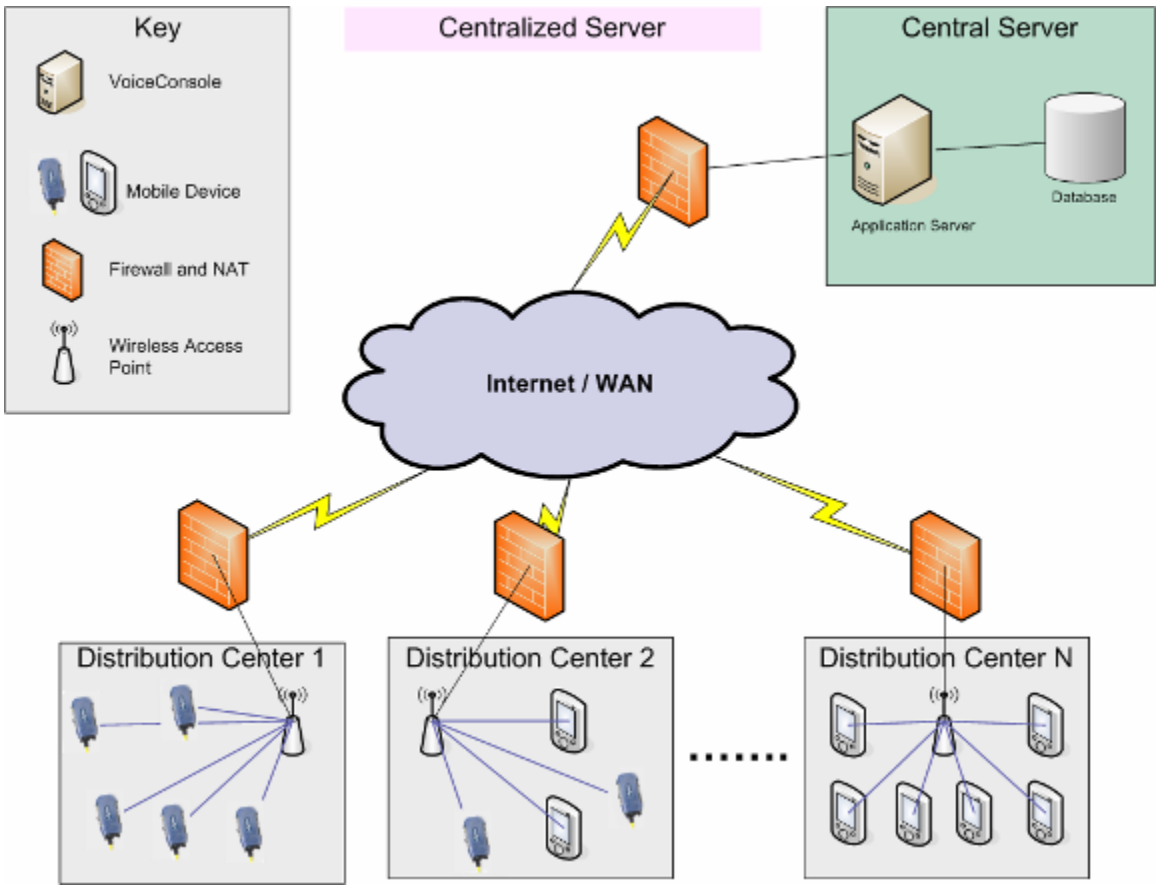


Figure 5.2 Centralized Architecture Diagram

3.2 Single-Server 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.

VoiceLink and *VoiceConsole* can be installed on the same server, in any order, but cannot share the same database. However, the database information for the first application installed can often make it easier to install the second application.

The two applications do require separate installations of Apache Tomcat and must be configured to use separate TCP/IP communication ports in order to avoid port conflicts. Vocollect recommends that the first installed application be running when the second is installed so that ports in use can be detected.

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

3.3.1 Time Zone Considerations

It is important to consider time zones in any implementation where *VoiceLink* and *VoiceConsole* are installed on different servers and where multiple sites are set up in both *VoiceLink* and *VoiceConsole*.

Time zones affect the time stamps that are recorded for *VoiceLink* and *VoiceConsole* activity.

- Actions performed by device operators: The time zone is defined by the *VoiceConsole* site with which each device is associated. Therefore, time stamps in device messages are set according to the time zone on the *VoiceConsole* server.
- Actions performed by *VoiceConsole* users: The time stamps are set by the *VoiceConsole* server.
- Actions performed by *VoiceLink* users: The time stamps are set by the *VoiceLink* 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.

- **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.
- **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.

3.3.2 Working with Voice Process Software in Multi-Site Implementations

VoiceLink is designed to work with either of Vocollect's voice process software products—tasks or voice applications. This section addresses *VoiceLink* implementations using either type of voice process software. See separate documentation included in your product package for information on deploying voice application software to multiple sites.

Working with Voice-Process software in Multi-site Implementations

Perform the following procedure:

1. Load the voice process software DVD or navigate to the location where the voice process software files were copied as per *VoiceLink* post-installation procedures.

Note: Your *VoiceLink* product includes separate DVDs - a **VoiceLink Server Application** and **voice process software**. For most customer implementations, the voice process software used in communicating with devices will be based on either Vocollect voice application technology or Vocollect task technology. If your implementation will use a hybrid of Vocollect technologies, however, both types of voice process software can be installed.

2. 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.
3. On the **Create Task Package (Page 2 of 2) : Set Values** page on the **Task Settings** tab, enter the site for which you are creating the task package in the **Site Name** field

Note: If the **Site Name** field is not available, you cannot perform this process.

4. Complete the task package creation process.
5. Repeat the previous three steps for each site you are supporting.

Working with Tasks in Multi-Site Implementations

When using multiple sites in *VoiceLink* with task software, each site needs to have its 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. Load the voice process software DVD or navigate to the location where the voice process software files were copied as per *VoiceLink* post-installation procedures.

Note: Your *VoiceLink* product package includes separate DVDs - a VoiceLink Server Application and voice process software. For most customer implementations, the voice process software used in communicating with devices will be based on either Vocollect voice application technology or Vocollect task technology. If your implementation will use a hybrid of Vocollect technologies, however, both types of voice process software can be installed.

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:
    - 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".)
    - Save the file, retaining the original file name (tasksite.txt).
    - 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".)
    - 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. 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. 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.

    - Browse for and upload the site-specific zip file to complete the task import process

- Complete the task package import process.

3.4 Creating Additional Sites in VoiceConsole for Multiple Site Implementations

In order to support multiple site implementations, several steps need to be taken within *VoiceConsole* and within *VoiceLink*. The *VoiceConsole* steps are documented below and must be performed first. See "Creating Additional Sites in VoiceLink for Multiple Site Implementations" on page 20 for the *VoiceLink* steps.

The *VoiceConsole* steps you must perform to create additional sites in *VoiceConsole* when *VoiceLink* is also implemented are:

- Create site-specific task files for each site
- Create a new site in *VoiceConsole*
- Create a site-specific user in *VoiceConsole*
- Migrate operators from an existing *VoiceConsole* database
- Import a task to the new site
- Create a task package for the new site
- Create a device profile for the new site

Each step is described in the following subsections.

Note: You will need to verify that your license supports the number of operators you are adding.

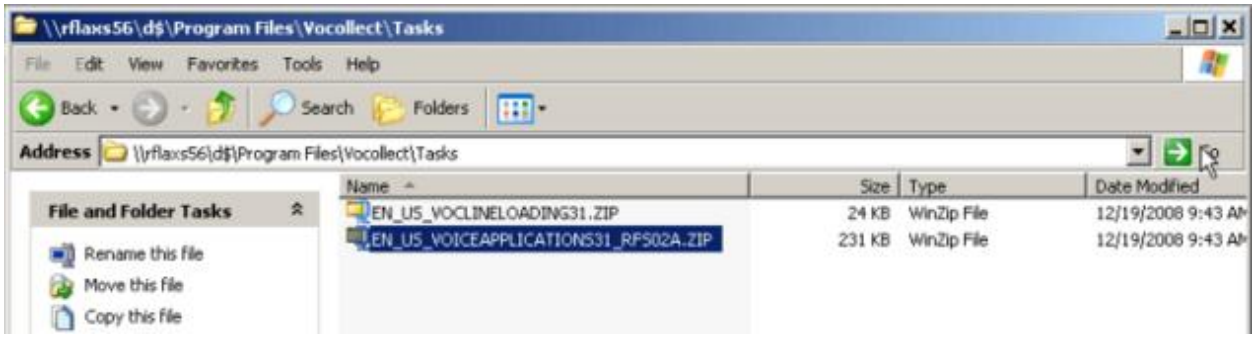
3.4.1 Creating Sites

1. Log into *VoiceConsole* as an administrator.
2. In the **Administration** section under **Administration**, click **Sites**.
3. Under **Site Actions**, select **Create new site**. The **Create Site** page opens.
4. Enter the site-specific information for the new site.
5. Click the **Create site**.

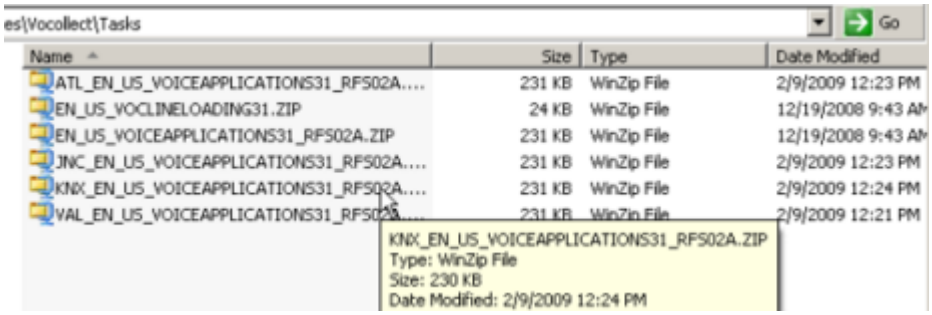
3.4.2 Creating Site-Specific Task Files

For each site being used, a site-specific task file must be created.

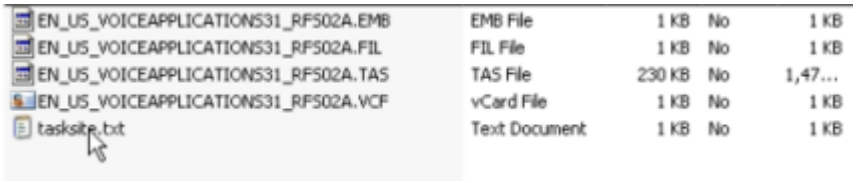
1. Navigate to the task directory in the Vocollect Tasks directory and highlight the task zip file in use.



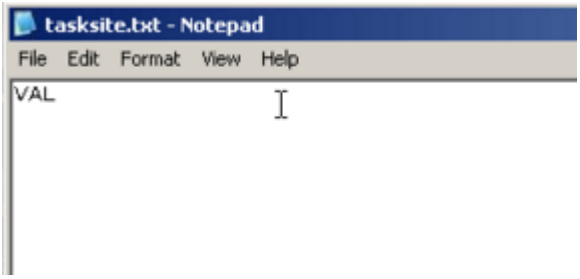
2. Create a copy of this file (being used in production) and rename it with a meaningful name for each new site that will be created.



3. Open the first of the newly created task zip files. Within the zip file, the **tasksite.txt** file needs to be renamed to 'point' to the new site. Initially, all of the tasks have a **tasksite.tx**t file that specifies "DEFAULT."
4. To change the **tasksite.txt** file, extract the contents of each newly created zip file to a working directory. Open the **tasksite.txt** file.



5. Edit the **tasksite.txt** file and change the word "DEFAULT" to the name of the new site. In the example below, the site is named VAL.



6. Repeat this process for all of the sites that were created.

3.4.3 Creating a Site-Specific User for the Site

You need to create a site-specific administrator who can only view the site to which they are assigned.

1. Click the **Administration** tab, and select the newly created site from the **Site Information** drop down list.
2. Under **Administration**, click **Users**.
3. Under **User Actions**, click the **Create new user**. The **Create User** page opens.
4. Enter the **Name** (username) and **Password** for the new site administrator.
5. Select **Administrator** in the **Roles** field for the user.
6. Select the one site to which they are granted access in the **Sites** field.
7. Click **Create user**.

3.4.4 Migrating Operators from an Existing VoiceConsole Database

If implementing a new system, you may not need to perform the steps in this section. The steps below show how to migrate operator templates from an existing *VoiceConsole* implementation.

1. To move operators from one site to another, click the **Operator Management** tab.
2. Under **Navigation**, click **Operators**.
3. On the **View Operators** page, select the rows for the operators you want to move.

Note: You can select multiple operators by using the [Shift] or [Ctrl] key when clicking on the individual operator names.

4. Under **Operator Actions**, select **Move Operators | Move/Add selected operators to a site**.
5. From the **Destination Site** drop-down list in the **Move/Add selected operators to site** window, select the newly created site.
6. Select **Move the Operator to the selected site**.
7. Click **OK**.
8. Confirm the operators appear in the new site by switching the **Site Information** drop down list.

3.4.5 Importing a Task to the New Site

1. Click the **Device Management** tab.
2. Under **Task Actions**, select **Import Task**.

   The **Import Task (Step 1 of 3): Select Task File** page opens.
3. Select the **Task File (*.vad, *.zip, *.tas)** radio button.
4. Click **Browse** to navigate to and open the file containing the updated tasksite.txt file you created..
5. Click **Next**. The application analyzes the selected file to determine which files must be imported for the task to function properly.

   The **Import Task (Step 2 of 3): Select Task Components** page opens, and the appropriate files are displayed in the **bottom** section of that page.
6. Give the task a meaningful name. For example, append the default task name with the site name as a prefix.

7. Click **Next**.

   The **Import Task (Step 3 of 3): Select Sites** page opens.
8. Select the sites at which this task will be available.

Note: *VoiceConsole* does not prevent you from selecting a site that differs from the site names in the tasksite.txt file; make sure that the correct task and site combination is chosen in this process.

9. Click **Import Task**.

Creating a Task Package for the New Site

1. Under **Navigation**, click **Task Packages**.
2. Under **Task Package Actions**, select **Create new task package**.

   The **Create Task Package (Page 1 of 2): Select Task** page opens.
3. Create the task package as normal, by providing information in the fields on this page. Consult the *VoiceConsole* Online Help for more information.
4. Click **Create Task Package**.

Note: Every task package requires that the advanced settings be specified for each new site. Vocollect recommends that these settings be saved in a separate text document and then pasted in the advanced settings box at the time of creating the new task package.

Creating a Device Profile for the New Site

1. Click the **Device Management** tab.
2. Under **Navigation**, click **Device Profiles**.
3. Under **Device Profile Actions**, select **Create new device profile**.
4. On the **Create Device Profile (Page 1 of 3): Select Vocollect VoiceClient** page, enter a meaningful name for the device profile in the **Profile Name** field.
5. Select the appropriate version of *VoiceClient* from the drop-down list, and click **Next**.
6. On the **Create Device Profile (Page 2 of 3): Select Configuration Source** page, click **Next**.
7. On the **Create Profile (Page 3 of 3): Configure Profile** page, enter the applicable settings for wireless security on the **Network Configuration** and **Advanced Settings** tabs.
8. Click **Finish**.

3.5 Creating Additional Sites in VoiceLink for Multiple Site Implementations

In order to support multiple site implementations, several steps need to be taken within *VoiceConsole* and within *VoiceLink*. The *VoiceLink* steps are documented below. See "Creating

Additional Sites in VoiceConsole for Multiple Site Implementations" on page 17 for the *VoiceConsole* steps.

For multiple-site installations of *VoiceLink*, you must create sites in addition to the singular default site. If you perform this work ahead of time, then once you are implementing *VoiceLink* on-site, the only requirement left is to load the regions.

3.5.1 Creating Sites

Note: Creating a new site will create the additional import and export directories for the site. See "Running an Import Job for the Site" on page 21 for steps to take to run the import job and import picking data into the new site.

1. Log in as the global administrator of *VoiceLink*, and select the **Administration** tab.
2. In the left navigation pane, click **Sites**.
3. Under **Site Actions**, click **Create a New Site**.
4. On the **Create Site** page, enter the new site name and site-specific information.
5. Click **Save**. The new site appears in the **View Sites** list.

3.5.2 Running an Import Job for the Site

To view the newly created import directories for the site, the import job must be run. Perform the following steps to run the import job manually.

1. Navigate to the **Administration** tab and select **Schedules**.
2. Highlight the import job, and click the **Run Selected Job** action link.
3. Use Windows Explorer to navigate to the directory showing the resulting folders created by the job.

Note: Be sure to note and communicate the change in import and export file paths for the new site, especially for import, so that the original site's data does not get placed into the new site's folder.

3.5.3 Creating a Site-Specific User for the Site

Note: Before creating any users, check the *VoiceLink* license to verify that your license supports the number of operators being added.

1. to create a site-specific administrator go to the **Administration** tab, and click the **Users** link in the left navigation pane. The **View Users** page opens.
2. Click the **Create New Login** action link.
3. Enter the new user **Name** and **Password**, and click **Save**.

   Note: Do not use "Admin" and "Admin" as the user name and password for this site-specific login.

4. On the **Create User** page, enter the Role, Sites, and Status information.
    - For **Role**, select **Administrator**.
    - For **Sites**, select the site that you just created.
    - For **Status**, select **Enabled**.
5. Click **Save** to complete the creation of the user

Tip: For other users who will have access to this site, you will need to go back to the original site and edit the users so that they have access to view or use this new site.

Tip: You should create a workgroup for this site and make it the default. Refer to instructions in the *VoiceLink Online Help* for more information.

3.5.4 Creating Regions for the Site

Next, you must create the regions to enable the site to import data.

1. In the left navigation pane, select **Regions** from the drop-down menu. The **View Regions** page opens.

    Note: If using the site-specific administrator login, the drop-down list of sites (under Site Information) will NOT appear. The site-specific administrator has the ability to create regions ONLY within their site.

2. Click the **Create New Regions** action link.
3. On the **Create Region (Step 1 of 3)** page, select the region profile for the new region from the **Normal Profile** drop-down list and configure the region.
4. Repeat this step for any new regions within the site.

3.5.5 Deleting Sites in VoiceLink

1. Delete the site from the *VoiceLink* interface.
2. Edit the **import.xml** and **export.xml** files and remove the references to the deleted site; otherwise, the next time the import job runs, the folders will be re-created.
    - Find the import.xml file at ***<VoiceLink install directory>\apache-tomcat-6.0\webapps\VoiceLink\WEB-INF\classes\import-setup.xml***

3.6 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.

3.6.1 Benefits of Multi-Site Management

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.

3.6.2 Limitations of Multi-Site Management

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 4 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.

3.6.3 What You Need

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

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

3.7 Clustered and Load Balanced Environments

Note: The embedded database is not supported in a clustered environment.

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 5.3 , Figure 5.4 , and Figure 5.5 . Note that these are simple examples; they may not correspond exactly to your configuration.

3.7.1 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 5.3 .

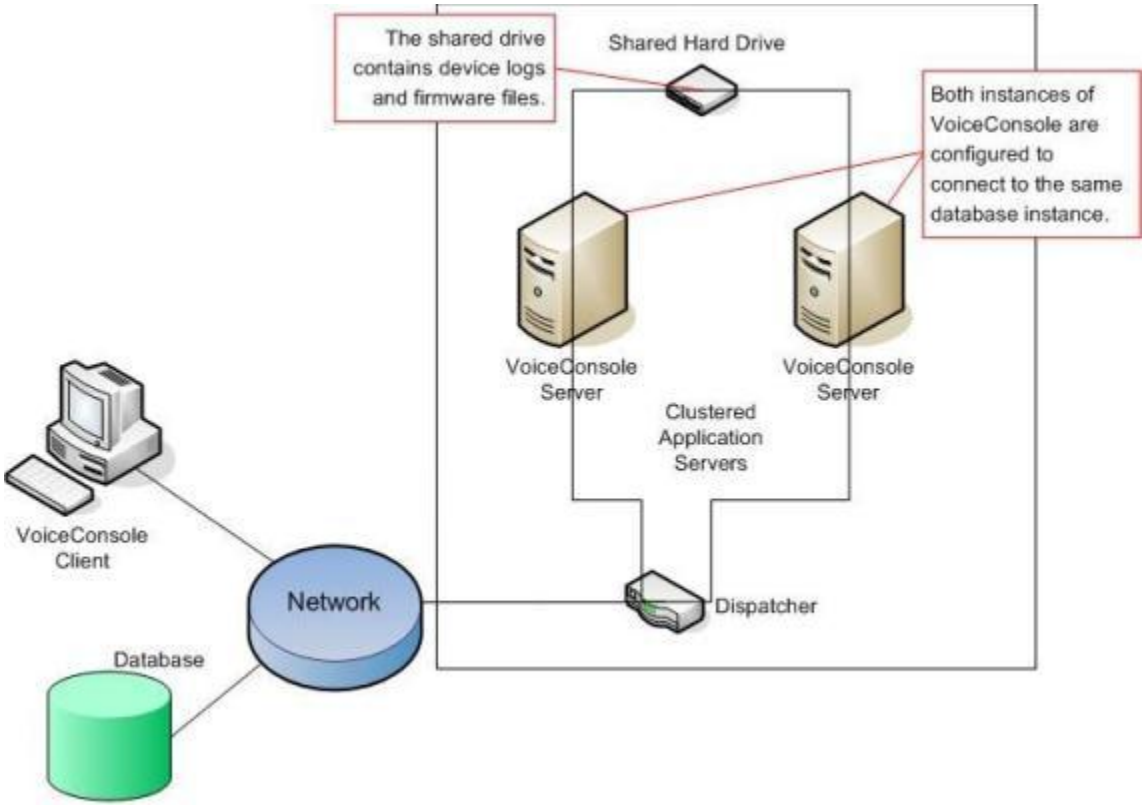


Figure 5.3 : Single Database with Clustered Application Servers

3.7.2 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 5.4 .

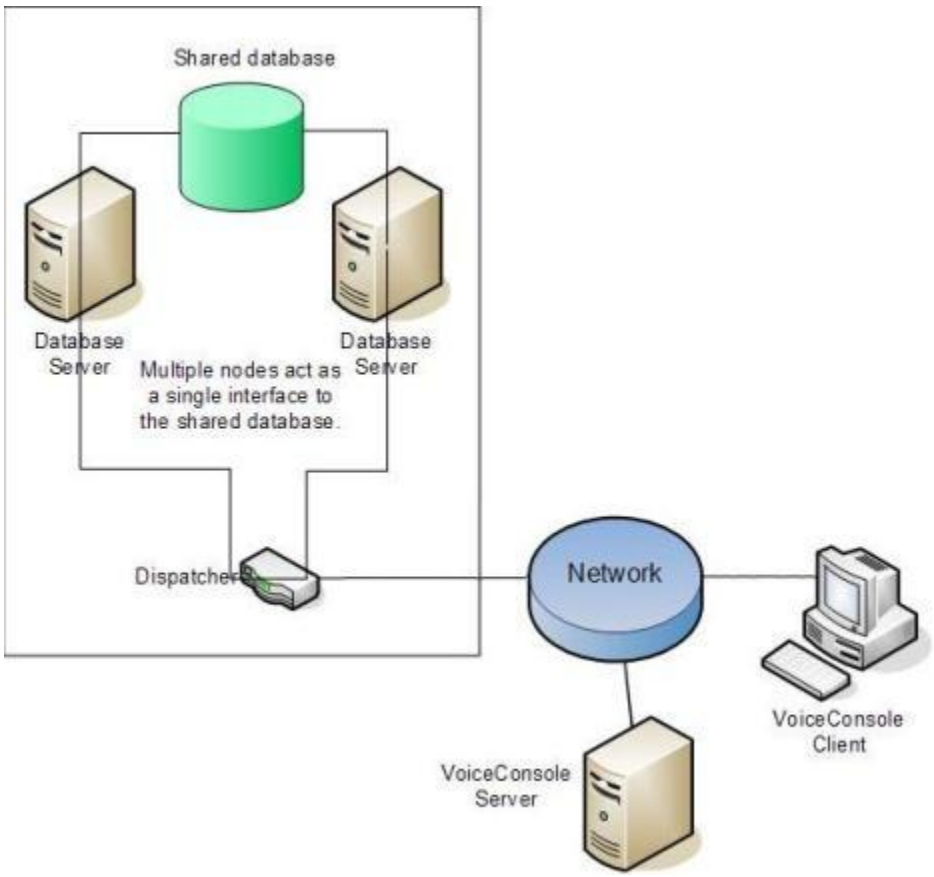


Figure 5.4 : Single Application Server with Clustered Database

3.7.3 Clustered Database and Application Servers

This configuration, shown in Figure 5.5 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.

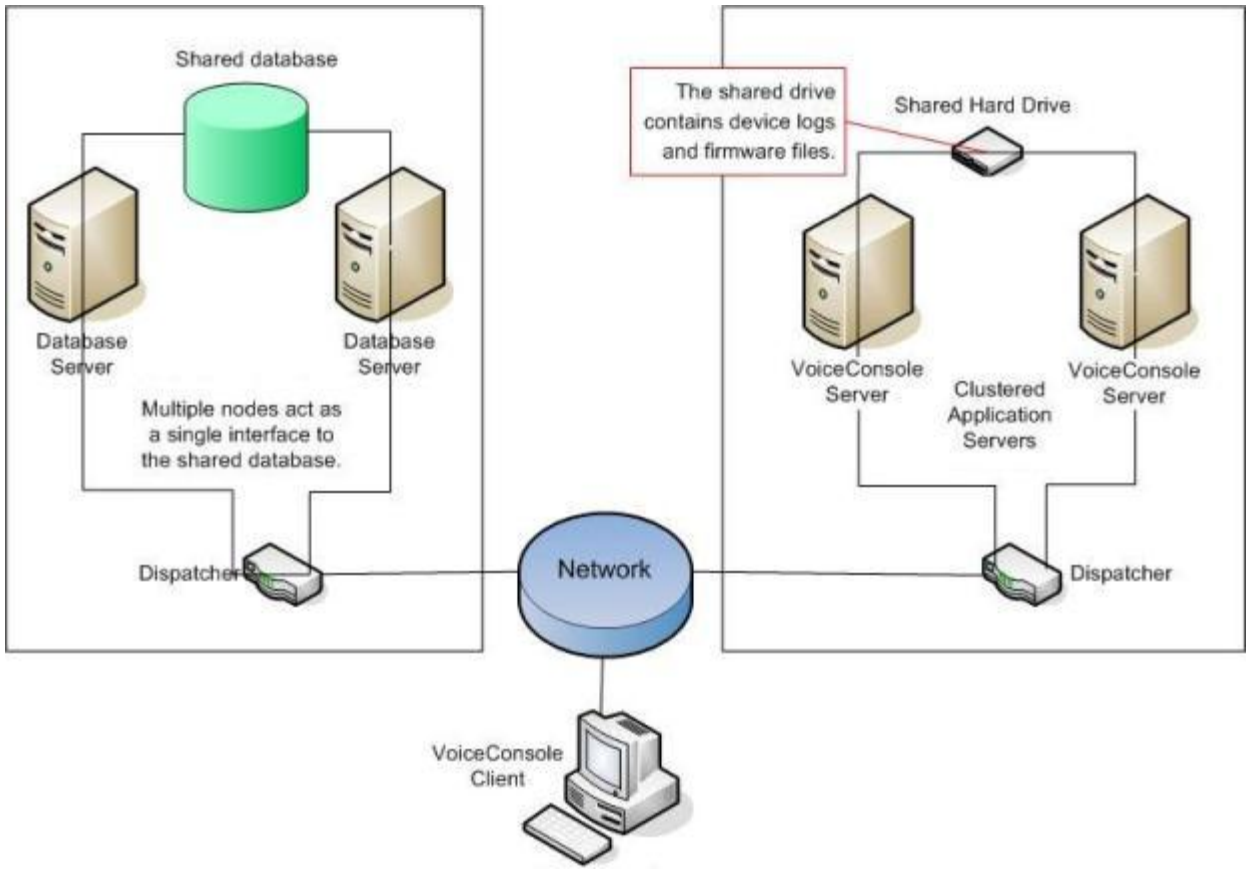


Figure 5.5 : Both Database and Application Server Clustering

3.7.4 Benefits of Clustering/Load Balancing

Increase performance	Performance can be increased 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.
Fault tolerant	Depending on implementation, *VoiceConsole* can continue to operate after an application server and/or database failure.

3.7.5 Limitations of Clustering/Load Balancing

Visible failed node symptoms	If using the *VoiceConsole* user interface when a node fails, you may have to log in again or repeat some actions.
Risk of 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.
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.

3.7.6 What You Need

If *VoiceConsole* will be installed into a clustered environment, you will need the following information.

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

3.8 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.

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

To secure web server communications, *VoiceConsole* supports HTTPS. To secure the connection to an embedded database, *VoiceConsole* supports SSL. To secure the device connectivity on a wireless network, *VoiceConsole* uses Extensible Authentication Protocol (EAP). This section provides a brief description of these options. See "Configuring Security" on page 77 for setup information.

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

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

3.8.1 Hypertext Transfer Protocol Secure (HTTPS)

HTTPS is a networking protocol that secures web- or browser-based transactions over a network that is not secure. All HTTPS user connections are encrypted with digital certificates which tell the browser to use encryption to protect data transmissions.

This protection is effective only if the browser verifies a certificate as valid and issued by a trusted authority. Therefore, you must ensure that the server certificate is installed correctly and the browser used for *VoiceConsole* administration is configured to accept the certificate.

What You Need

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

- Java keytool utility to create a certificate request
- A signed certificate

See "Creating and Installing a Certificate for HTTPS" on page 77 for more information.

3.8.2 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 "Configuring EAP for the Site" on page 79.

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 29 for more information on these types.

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

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:

Association Type	Description
Site Based	There is a single username and password or certificate for all operators and devices at a given site.
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.

What You Need

If you are configuring *VoiceConsole* for EAP, you will need the following information.

- 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

3.9 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.

3.9.1 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:

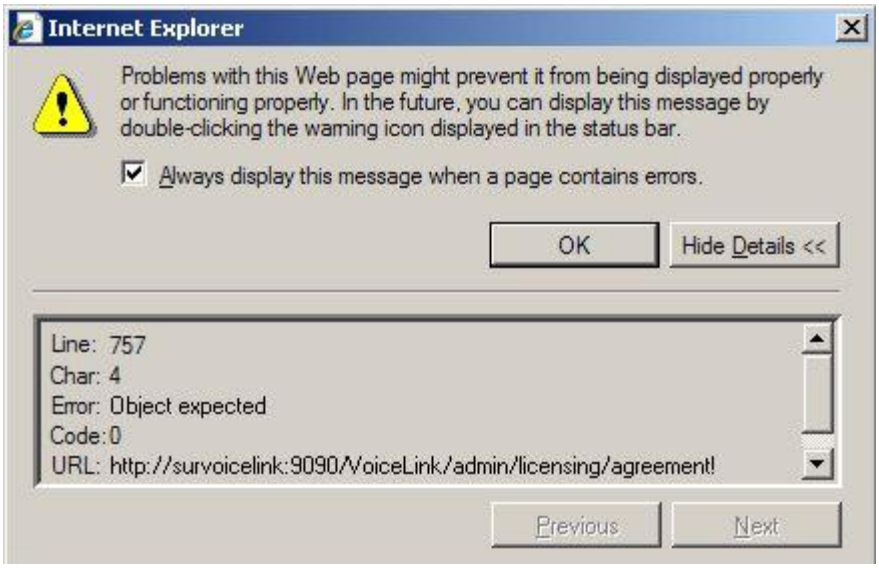


Figure 5.6 : Internet Explorer Notification

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.

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>

3.9.2 Firefox Configuration

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

Before you can use certain features in the Firefox browser, 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 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**.

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.

Notes when installing

To avoid any potential issues, Vocollect highly recommends **against** installing *VoiceConsole* from a shared network drive. If the application cannot be installed directly from the distribution media (DVD) it must be copied to local drive prior to install.

- When installing with Windows, you must run the installer as an administrator. When installing with Linux, the installer must be run as root.
- If you have a DVD and are using Windows, the installer should start automatically when you place the DVD in the DVD drive. If you do not have a DVD or the installer does not start automatically, navigate to the **install.exe** on the DVD or other location on Windows if the files were copied from the DVD to another location, On Linux, if you are using Intel or AMD architecture, copy the files from the *VoiceConsole* DVD, or other source, to your computer and execute the install.sh file.
- When you install this version of *VoiceConsole* for the first time, the following two users are installed with the application with default passwords:

User	Default Password
admin	admin
vocollect	voiceworks

4.1 System Components

The following system components are installed when you install *VoiceConsole* 4.2.

- Apache Tomcat 7.0
- Java™ Development Kit 1.6 (JDK)
- *VoiceConsole* Web Application
- *VoiceConsole* Online Help
- Vocollect Hardware Documentation

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:

Use	Default	Direction
HTTP	9090	Inbound
COMET	9091	Both
HTTPS	9443	Inbound (Browser Only)
Shutdown	9006	Internal
AJP	9010	Internal
The following TCP port must be available for communication between *VoiceConsole* and *VoiceClient*:		
TERMINAL_TCP_PORT	21050	Both
The following UDP port must be available for communication between *VoiceConsole* and *VoiceClient*:		
UDP	20155	Both

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

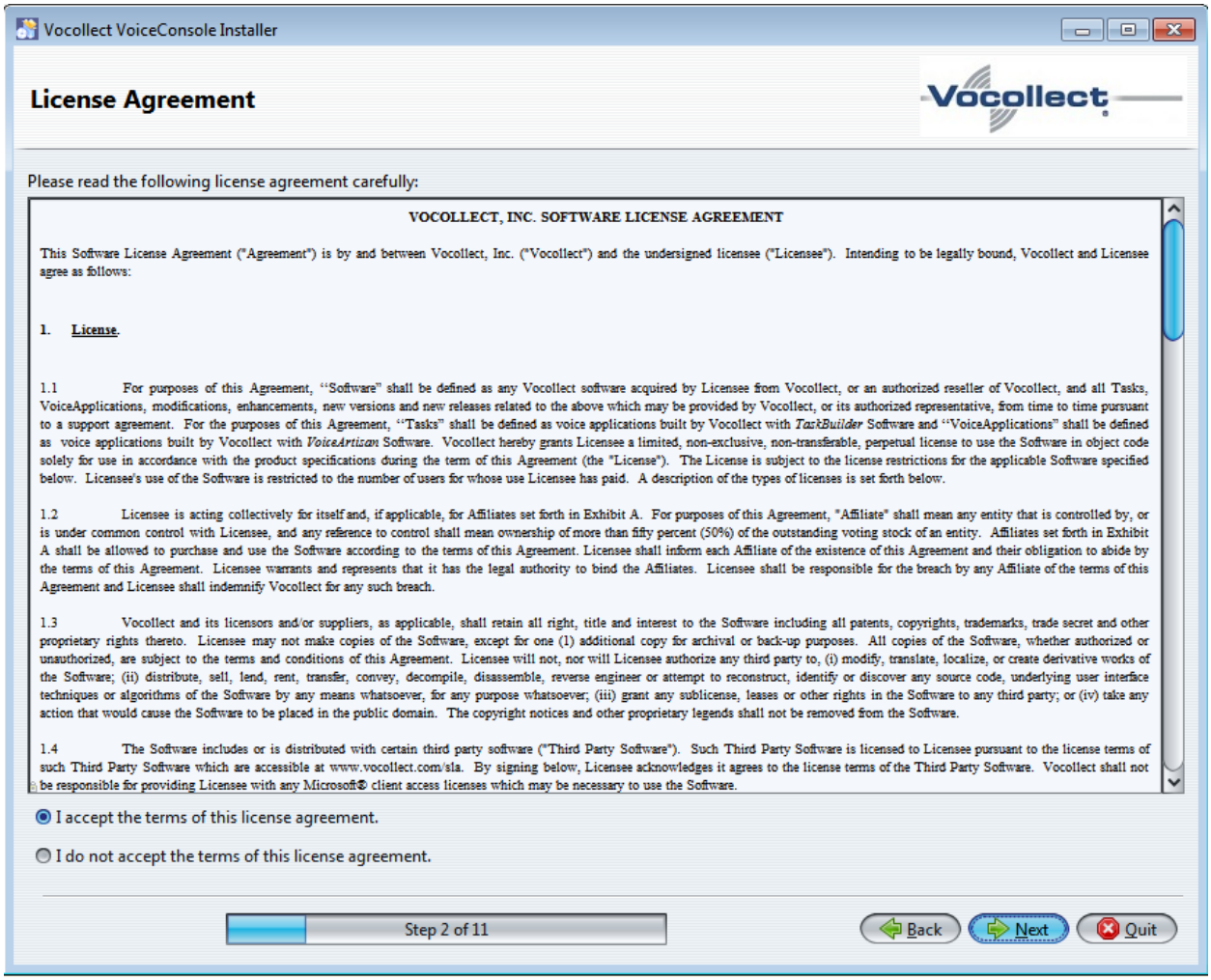
4.3 Standard Installation Procedure

Note: Images of the install screens in this section contain example values. Your installer may display different values depending on your environment.

1. If one is not already installed, install the database platform. If you are using the Embedded Database, proceed to step 3.
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.

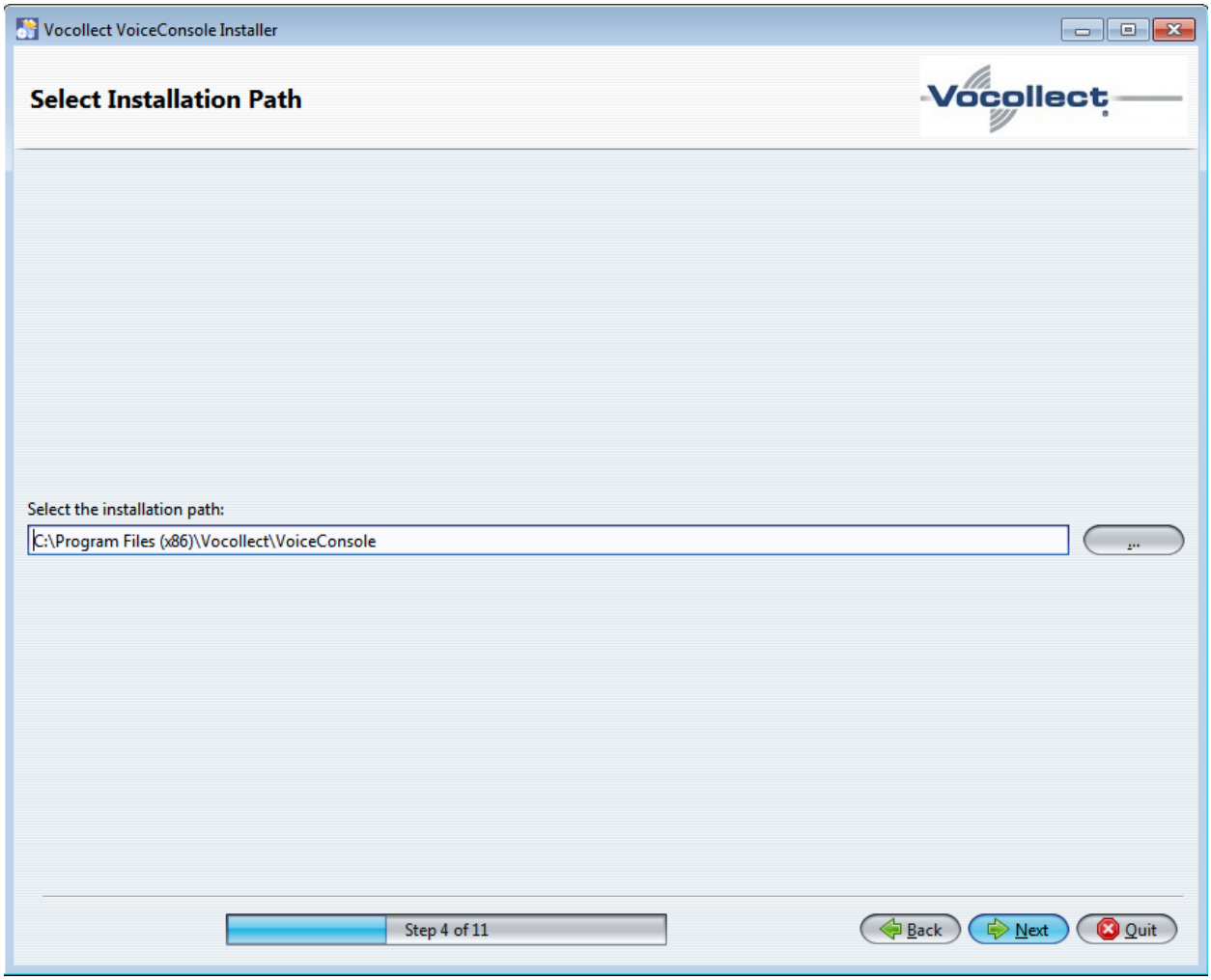
   The **Introduction** window displays.
4. Click **Next**.

   The **License Agreement** window displays.



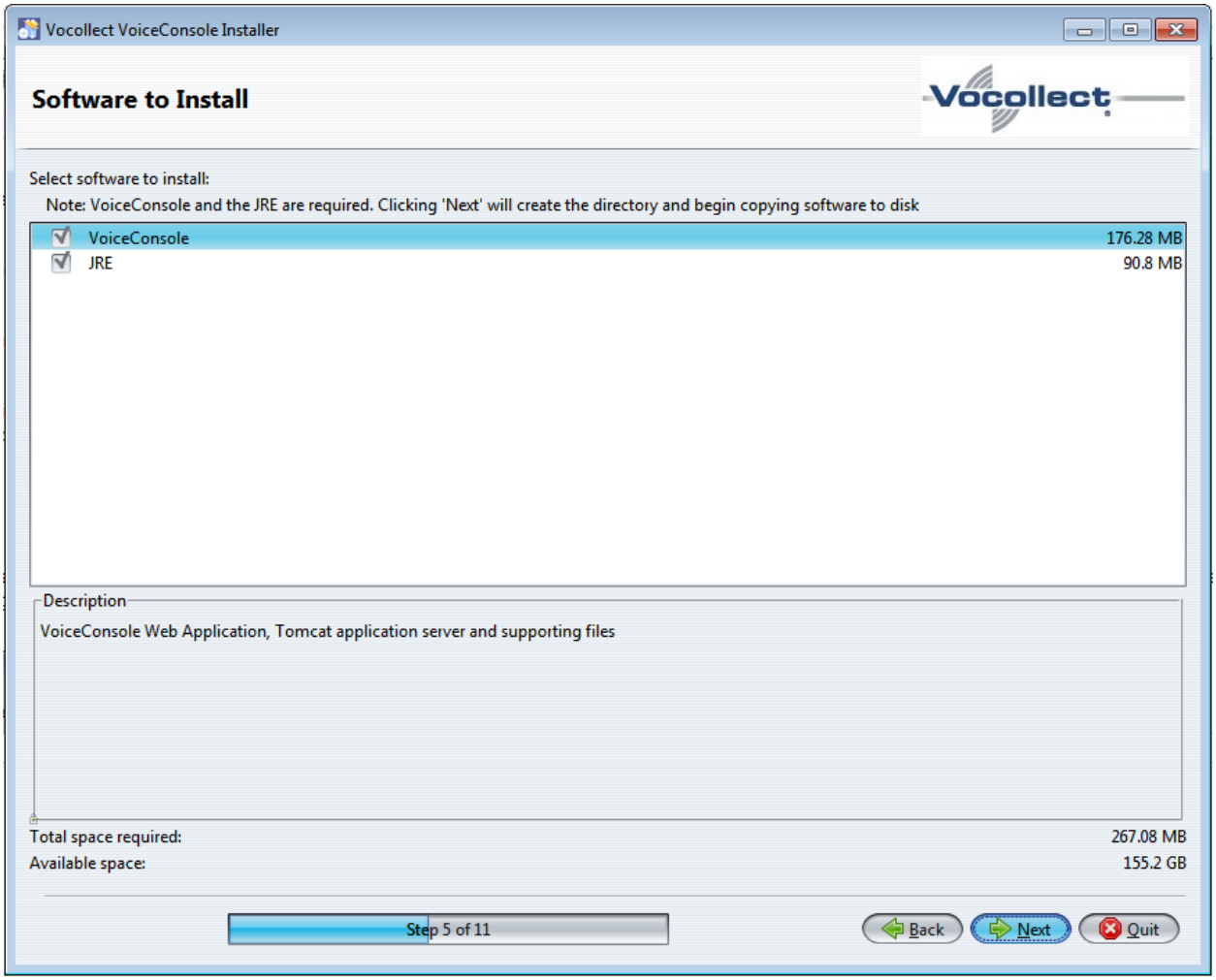
5. Accept the terms of the license agreement and click **Next**.

   The **Select Installation Path** window displays.



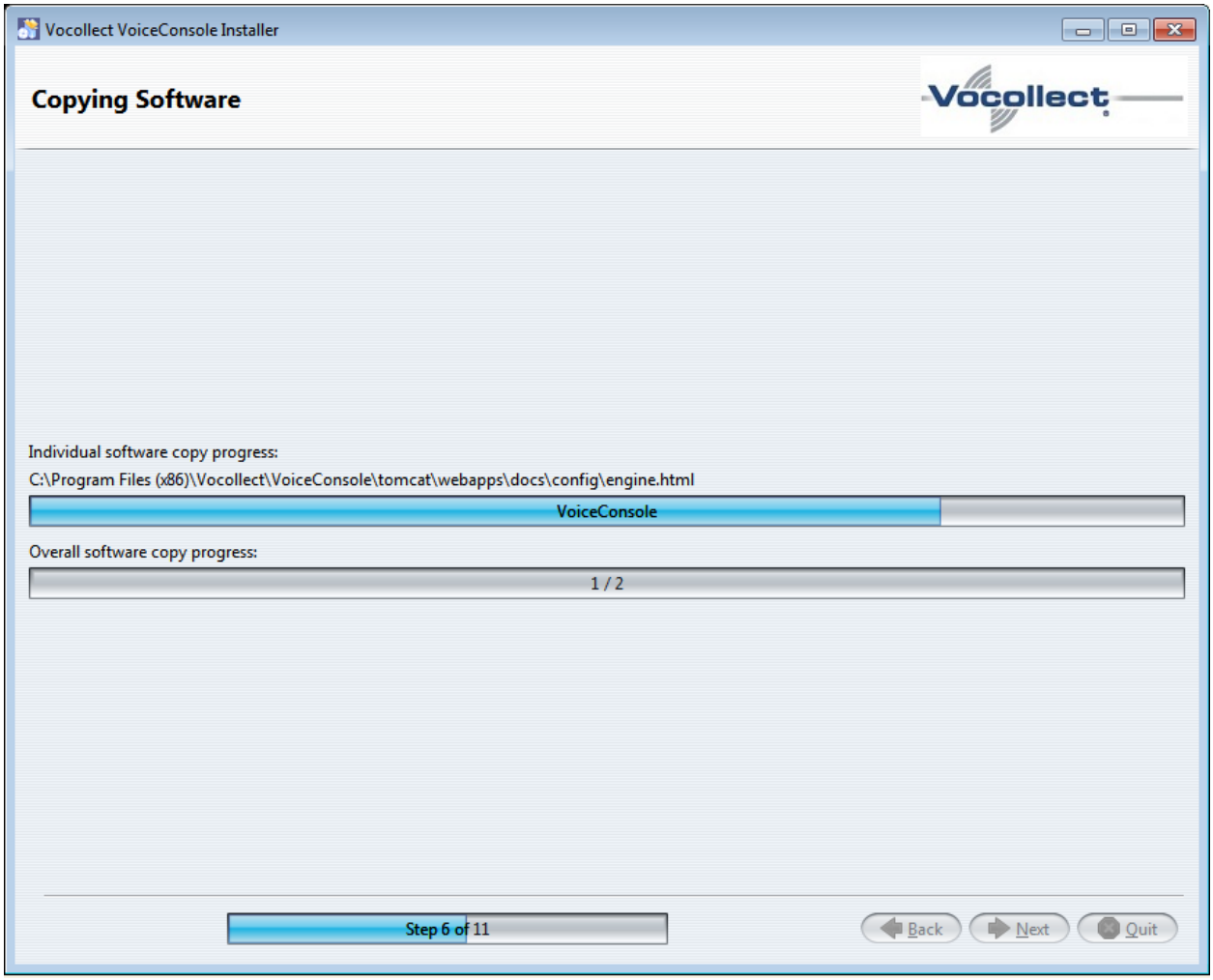
6. Click **Next** to install to the default path or, if necessary, browse to the desired installation path and click **Next.**

   The **Software to Install** window displays.



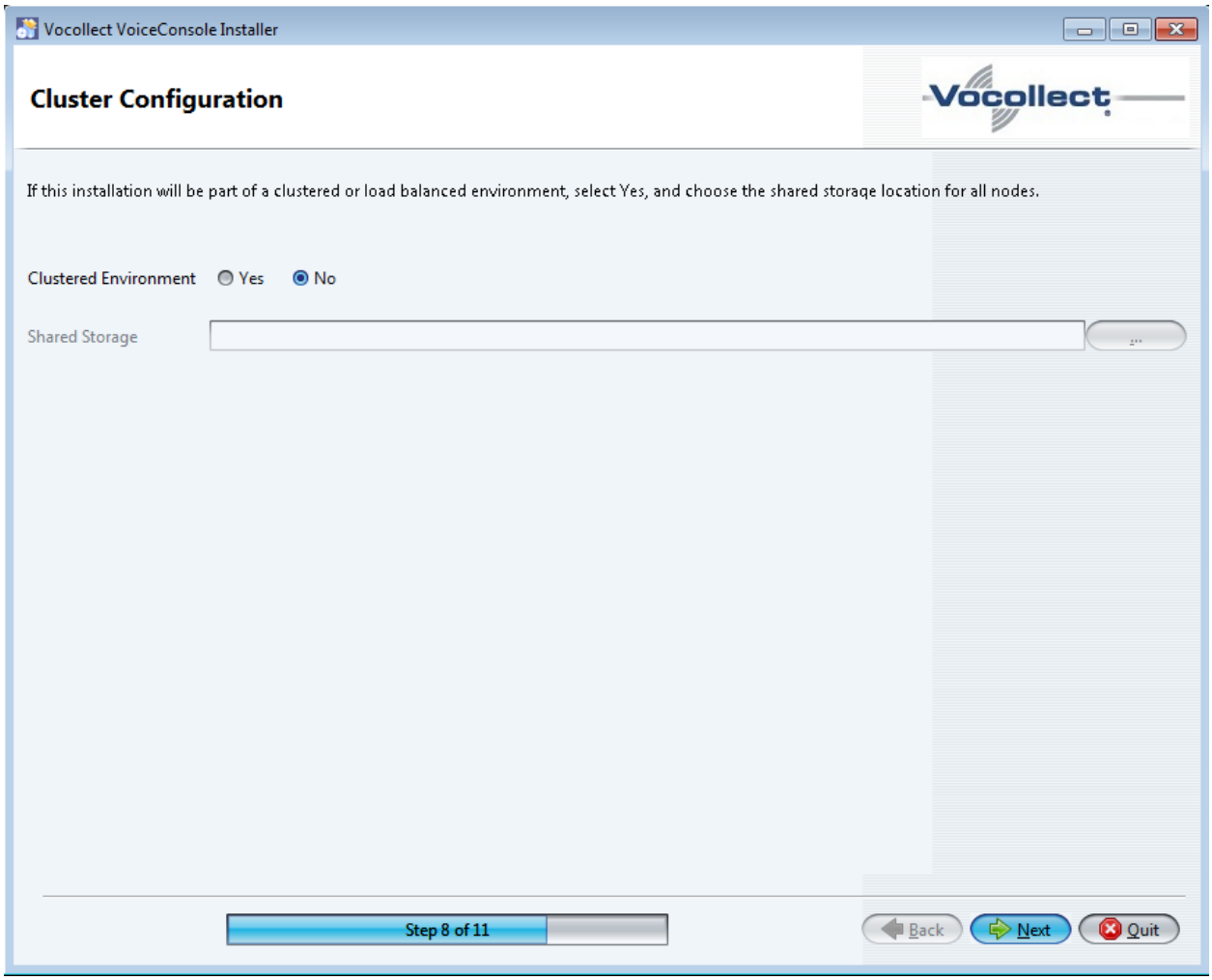
7. Click **Next**.

   The **Copying Software** window displays the installer's progress during the copy of the individual selected software and the entire copying process.



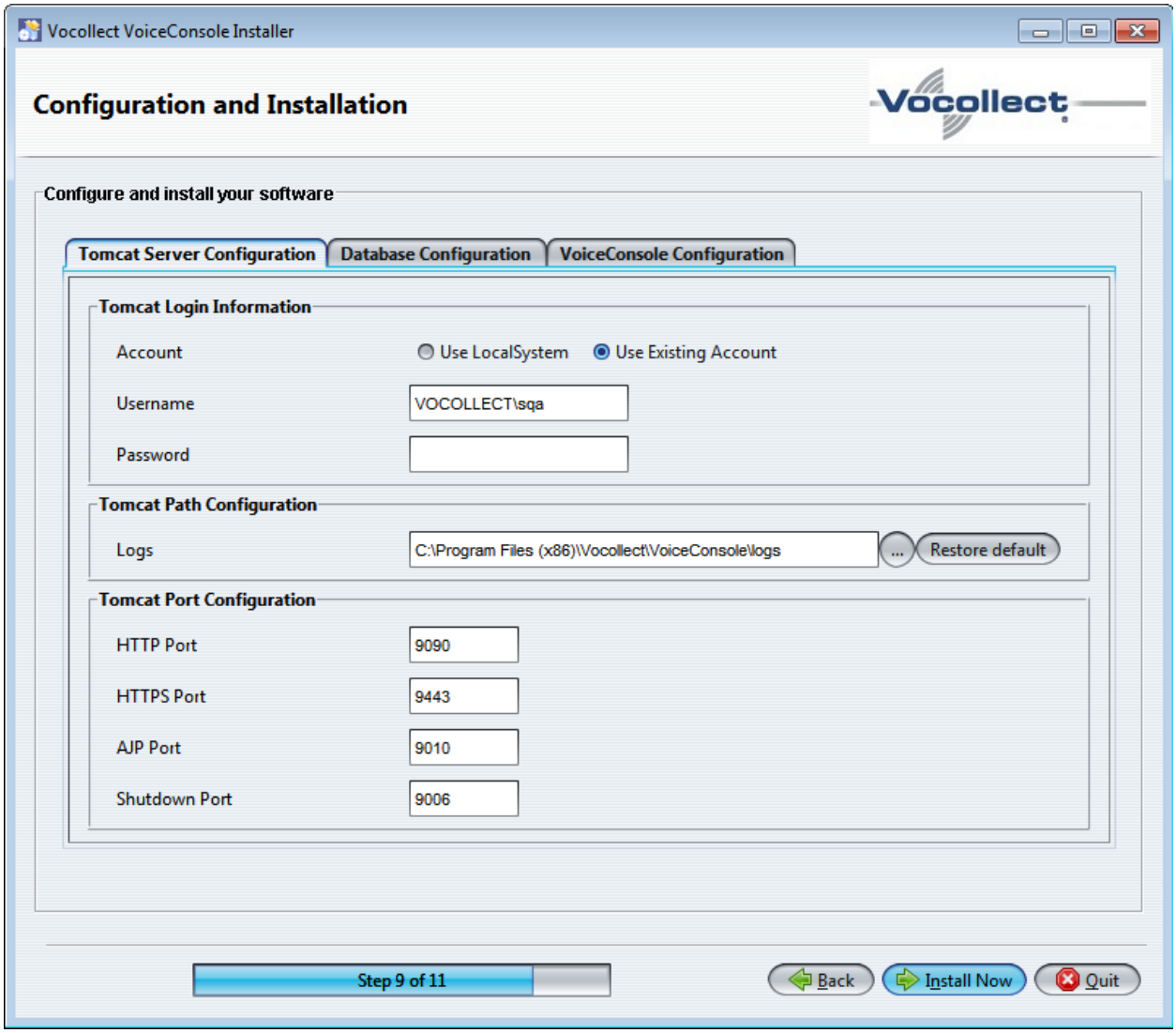
8. When the copying process is finished, click **Next**.

   The **Cluster Configurations** window displays.



9. Select **No** to select a standard installation and click **Next**. If you want to install to a clustered environment, see "Installing into a Clustered Environment" on page 46 for more information.

   The **Configuration and Installation** window displays three tabs to configure your installation.
10. Click the **Tomcat Server Configuration** tab.

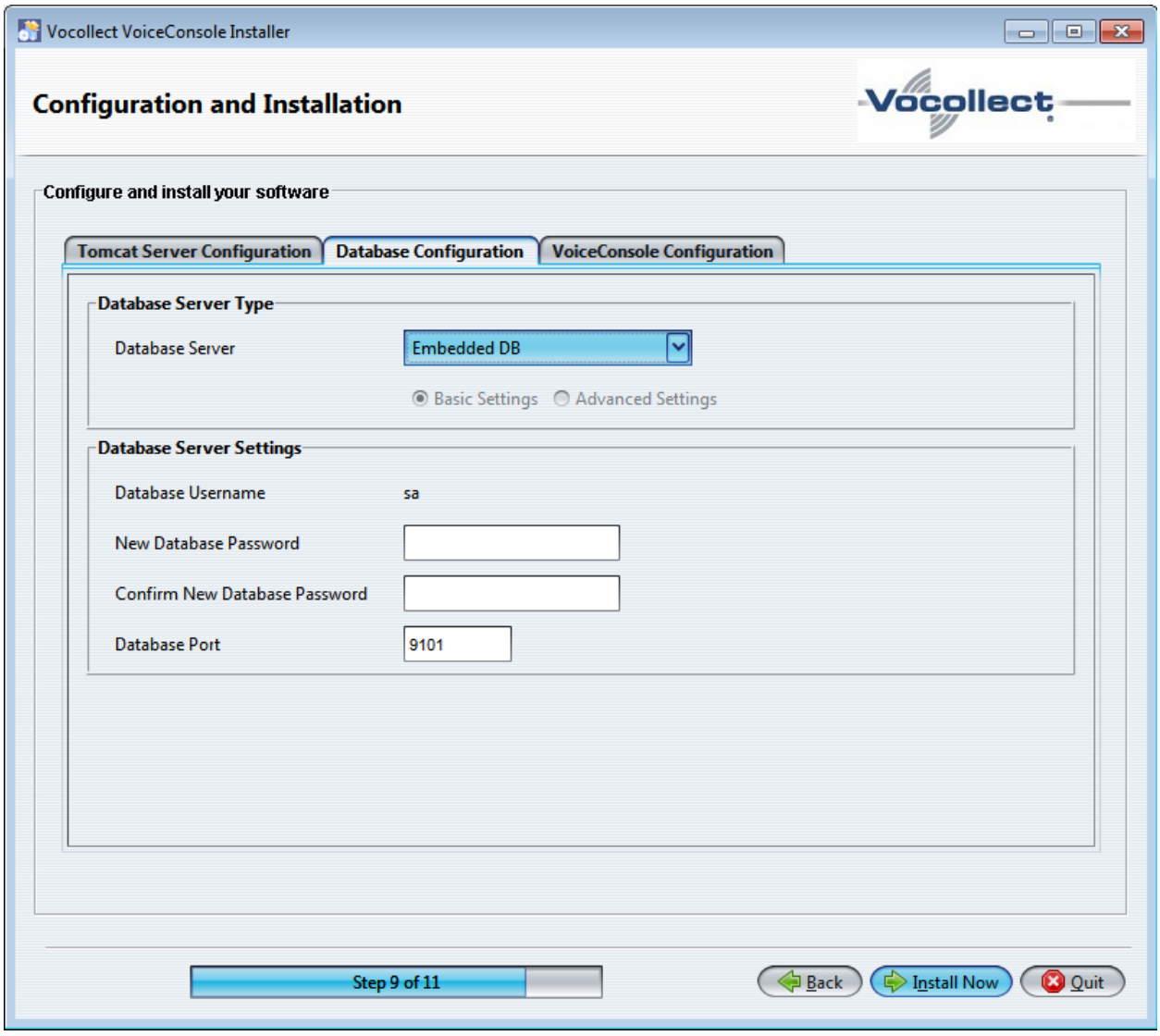


11. Enter the appropriate information for your Tomcat server configuration.

Tomcat Login Information	Choose an account and enter the account username and password, if necessary. In Windows, if you select **Use Existing Account**, ensure the account entered has the necessary permission described below:
	Note: If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.
	• **Read** permission to the directory from which the installation program is being run • **Log On As a Service** rights and permissions (refer to http://support.microsoft.com/kb/327545 for setup information). • **Write** permissions to all paths provided during installation for the install folder, log files directory, application files location • **Write** permissions to the shared drive for a clustered install (if

	applicable)
Tomcat Path Configuration	Confirm the default path to the location where log files will be stored or, if necessary, browse to the desired path. Log files track user activities in the *VoiceConsole* application.
Tomcat Port Configuration	Confirm the default ports the application server will use, or, if necessary, enter different ports.

12. Click the **Database Configuration** tab,



13. Enter the appropriate information for your database.

Embedded Database

Field	Description	Valid Entry Format
New Database	The password of the database administrator	If left blank, the “sa” user will not

Field	Description	Valid Entry Format
Password	account that the application will use to log into the database. The embedded database will be configured to use this password. After installation, users can connect remotely using the "sa" username and this password	require a password. Cannot contain single or double quotation marks. Must be retyped in the **Confirm New Database Password** field.
Database Port	The port that the database uses.	Must be an integer between 1 and 65535. Default is 9101.
		Note: For the proper startup and shutdown of the database, these ports cannot overlap with the ports used by Apache Tomcat.

SQL Server

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

Note: SQL Server 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**
Database Hostname	DNS name or IP address of the machine hosting the database.	
Database Port	The port that the database uses.	Must be an integer between 1 and 65535. Default 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)	The authentication type used to connect to the database.	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	

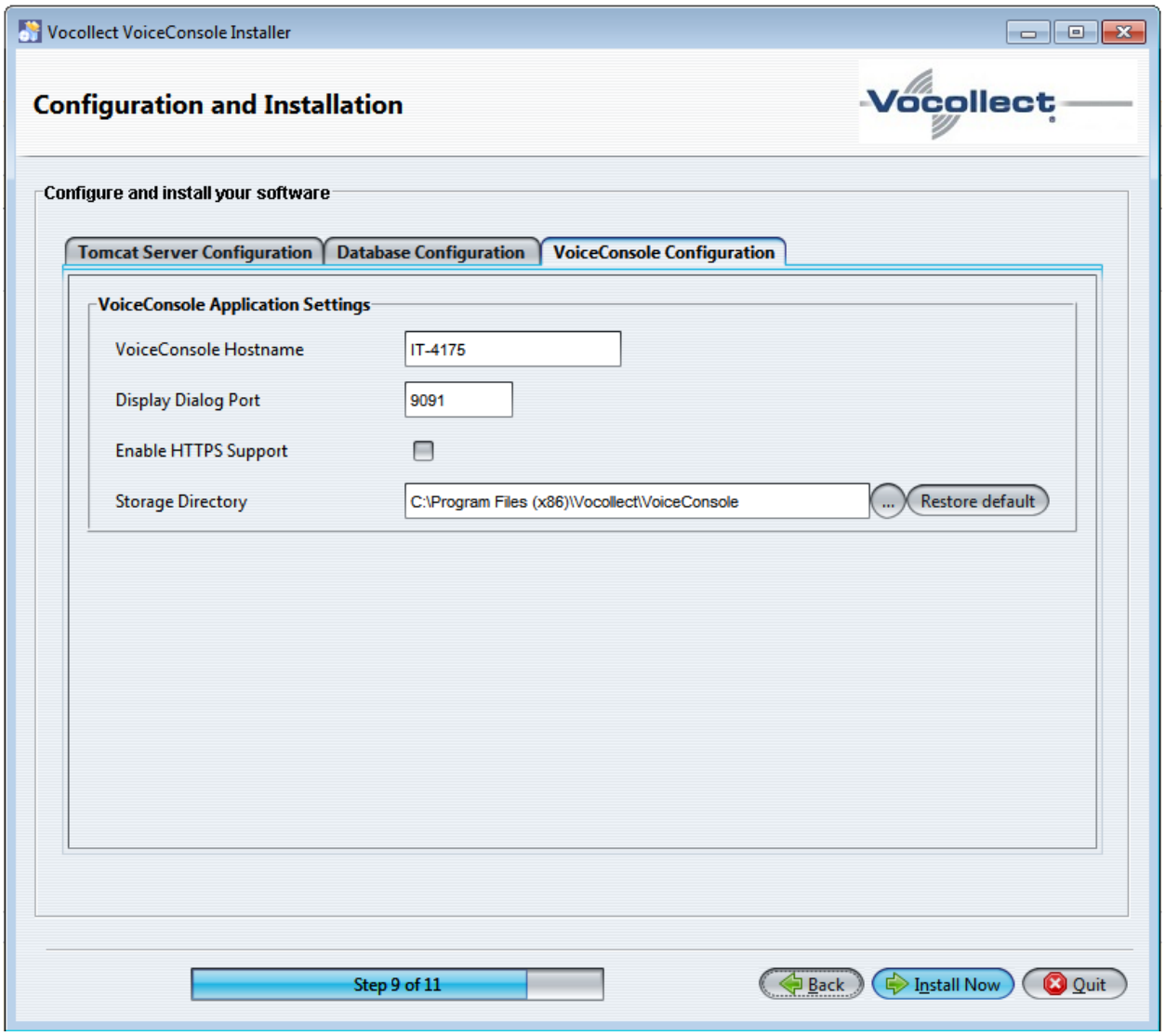
	application should use to log into the database. This is disabled if using NT Authentication.	
Database Password	The password of the user that the application should use to log into the database. This is disabled if using NT Authentication.	
Database schema	The database schema you are using.	

Oracle

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

For Basic		
Field	**Description**	**Valid Entry Format**
Database Hostname	DNS name or IP address of the machine hosting the database.	
Database Port	The port that the database uses.	Must be an integer between 1 and 65535. Default 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>
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.	

14. Click the **VoiceConsole Configuration** tab,



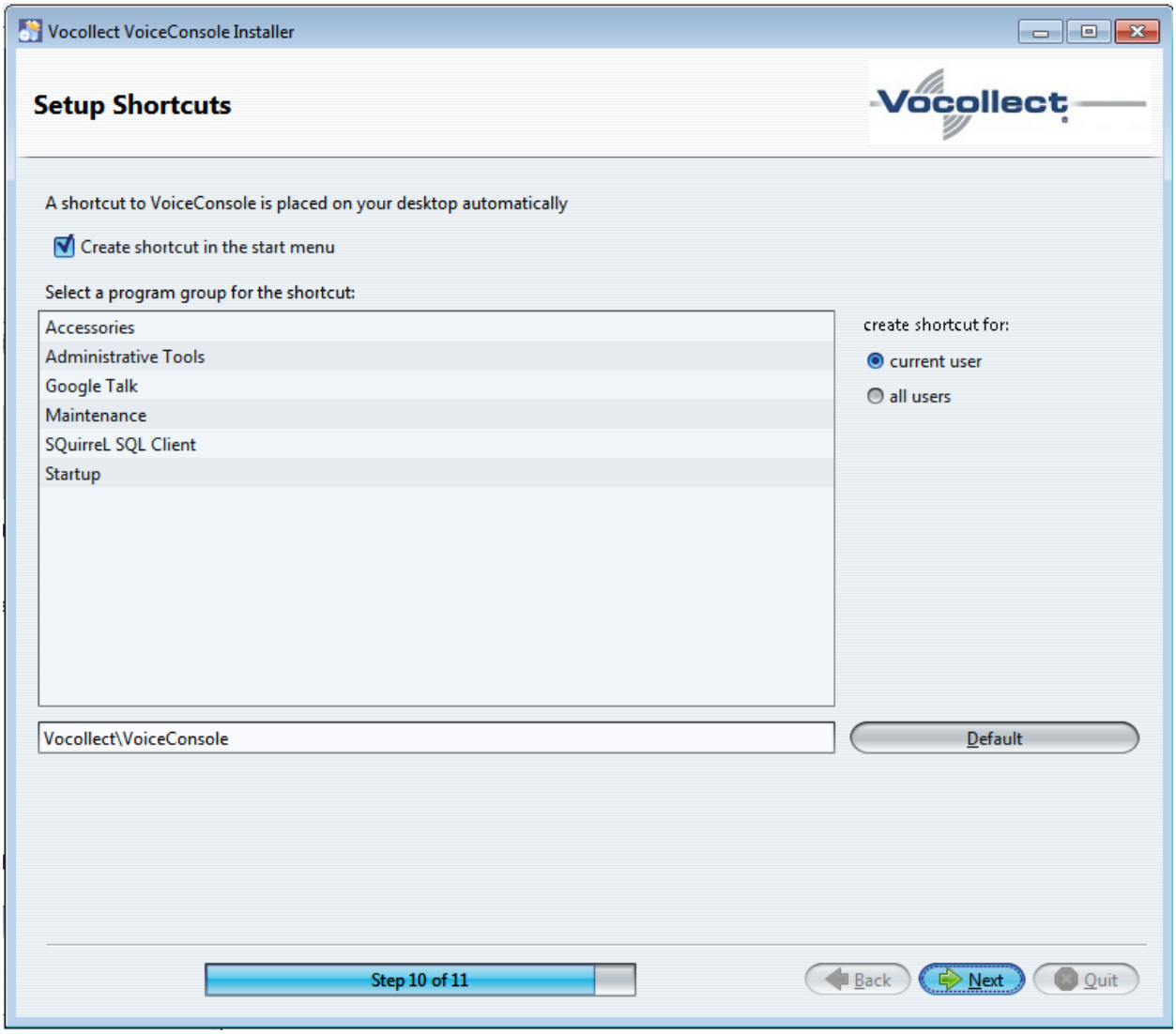
15. Enter the appropriate information for your *VoiceConsole* configuration.

VoiceConsole Hostname	Specify the hostname of the machine onto which you are installing *VoiceConsole*.
Display Dialog Port	Confirm the default port the application server will use for the Display Dialog feature.
Enable HTTPS Support	Select to enable secure HTTPS on all pages of VoiceConsole. Certain pages are still secure if this check box is not selected.
Storage Directory	Specify where you would like to have application files stored
	Note: The storage directory must have enough room to store device logs, which could grow very large in a short amount of time. See "VoiceConsole System Requirements" on page 4 for more information. In addition, *VoiceConsole* performance may be negatively affected if the storage directory is on a shared network drive with low throughput. If not required for clustering, Vocollect

	recommends this location be on a local drive.

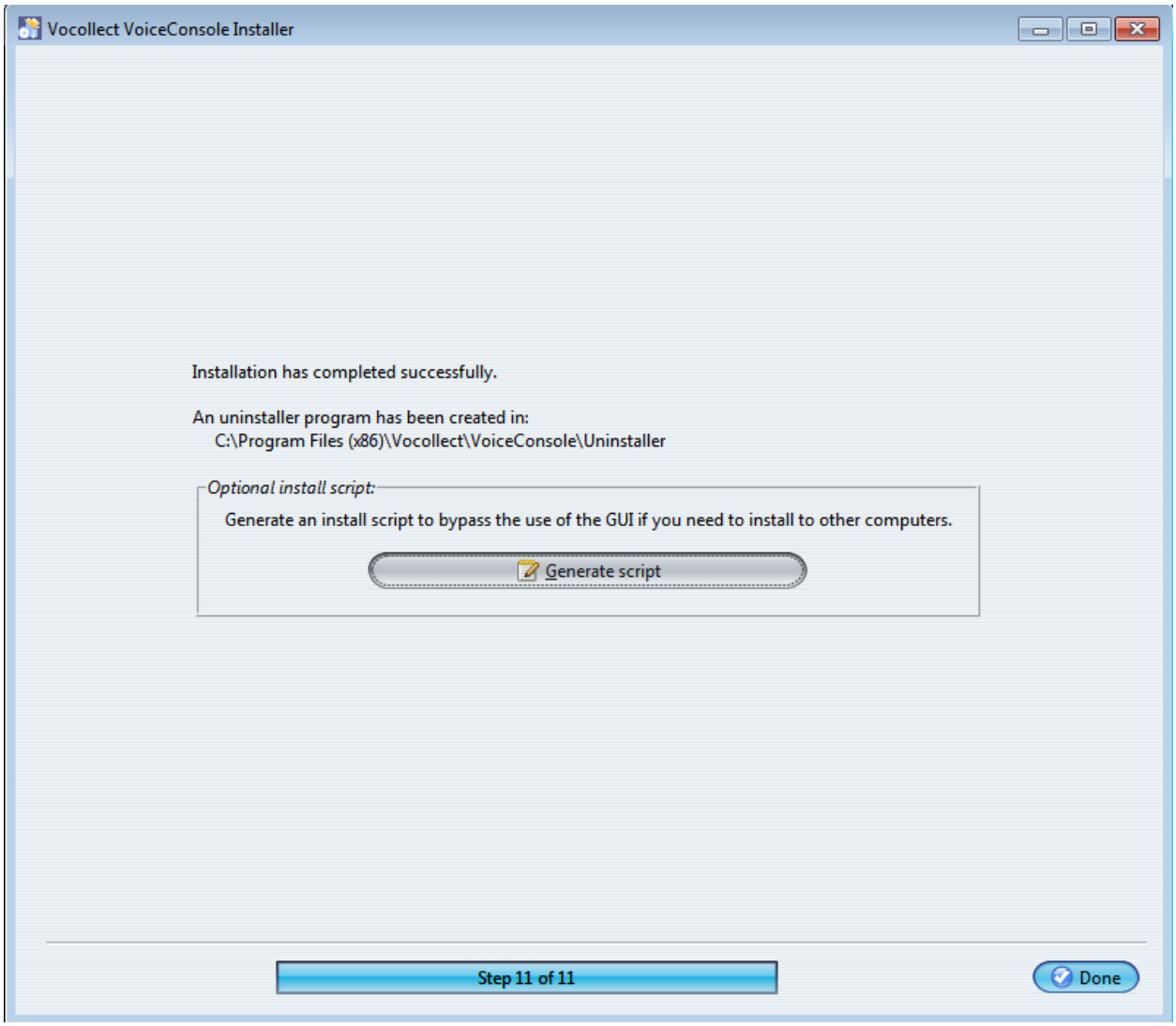
16. Click **Install Now**.

    The installation begins. When the first part of the *VoiceConsole* installation is successfully completed, click **OK**.
    If installing on Windows, the **Setup Shortcuts** window displays. If installing on Linux, go to step 19.



17. If desired, select the program group in the Start menu to place the shortcut within or edit the path of the shortcut. If you do not want a *VoiceConsole* shortcut on the Start menu, clear the **Create shortcut in the Start menu** checkbox**.** A shortcut to VoiceConsole is placed on the desktop automatically after the installation process completes.
18. Click **Next**.

    When the installation is complete, the **Installation Finished** window displays.



19. If desired, click **Generate an automatic installation script** to generate an .xml file with your installation choice data to use for silent or automatic installations.
20. Click **Done**.

    The Vocollect VoiceConsole Installer closes, and the *VoiceConsole* application opens.

4.4 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.

Notes on installing in a clustered environment:

- The embedded database is not supported in a clustered environment.
- 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.

4.4.1 Installing Into the First Node

1. If one is not already installed, install the database platform.
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.

   The **Introduction** window displays.
4. Click **Next**.

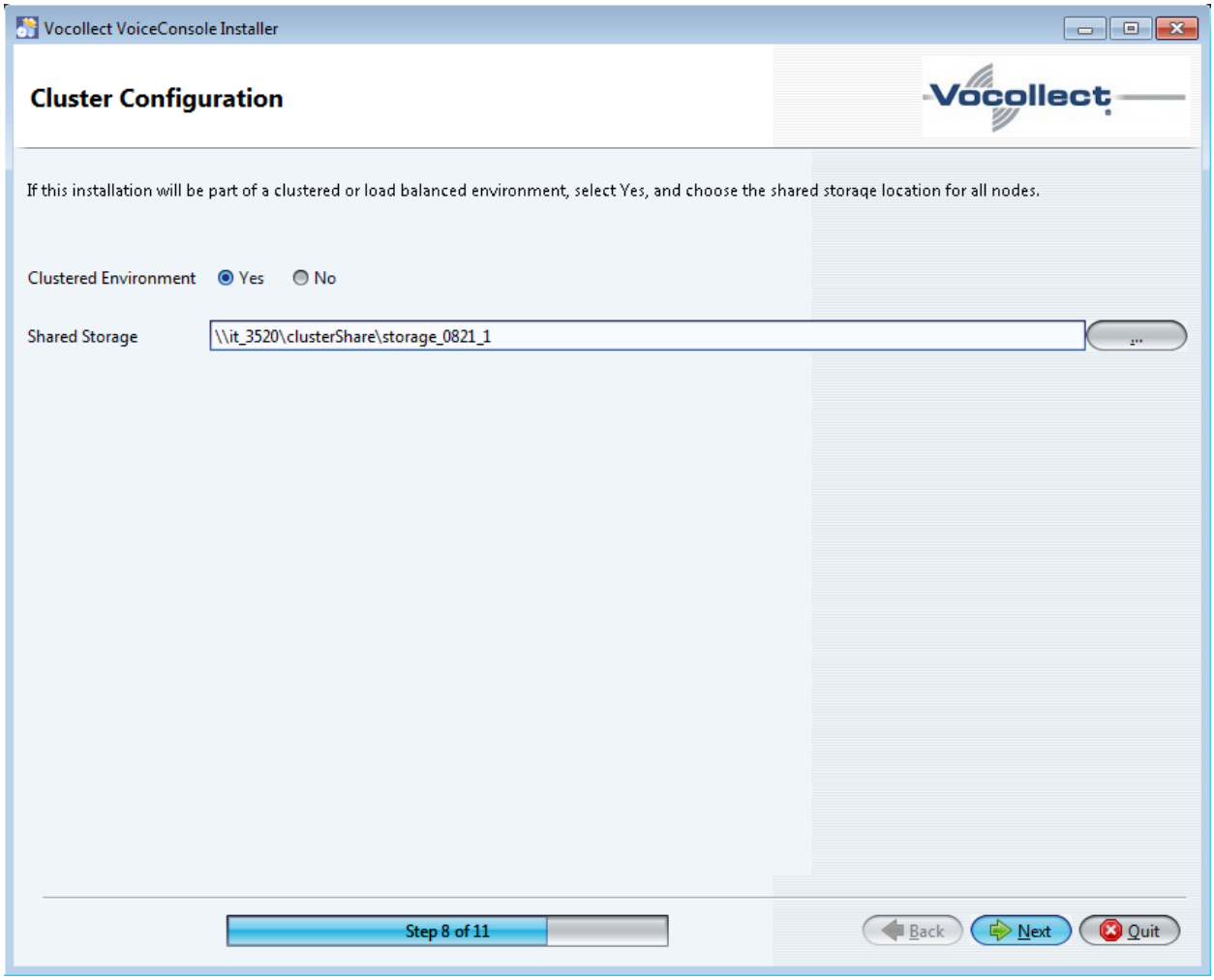
   The **License Agreement** window displays.
5. Accept the terms of the license agreement and click **Next**.

   The **Select Installation Path** window displays.
6. Click **Next** to install to the default path or, if necessary, browse to the desired installation path and click **Next.**

   The **Software to Install** window displays.
7. Click **Next**.

   The **Copying Software** window displays the installer's progress during the copy of the individual selected software and the entire copying process.
8. When the copying process is finished, click **Next**.

   The **Cluster Configurations** window displays.



9. Select **Yes**, select a directory that can be accessed by all cluster nodes by the same path, and click **Next**.

Note: For Windows operating systems, Vocollect recommends using a UNC path (ex. \\ComputerName\Path) as the **Shared Storage** directory.

The **Configuration and Installation** window displays three tabs to configure your installation.

10. Enter the appropriate information for your Tomcat server configuration.

Tomcat Login Information	Choose an account and enter the account username and password, if necessary. In Windows, if you select **Use Existing Account**, ensure the account entered has the necessary permission described below:
	Note: If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.
	• **Read** permission to the directory from which the installation program is

	being run • **Log On As a Service** rights and permissions (refer to http://support.microsoft.com/kb/327545 for setup information). • **Write** permissions to all paths provided during installation for the install folder, log files directory, application files location • **Write** permissions to the shared drive for a clustered install (if applicable)
Tomcat Path Configuration	Confirm the default path to the shared storage location where log files will be stored or, if necessary, browse to the desired path. Log files track user activities in the *VoiceConsole* application.
Tomcat Port Configuration	Confirm the default ports the application server will use, or, if necessary, enter different ports.

11. Click the **Database Configuration** tab,
12. Enter the appropriate information for your database.

SQL Server

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

Note: SQL Server 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**
Database Hostname	DNS name or IP address of the machine hosting the database.	
Database Port	The port that the database uses.	Must be an integer between 1 and 65535. Default 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)	The authentication type used to connect to the database.	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

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

For Basic		
Field	**Description**	**Valid Entry Format**
Database Hostname	DNS name or IP address of the machine hosting the database.	
Database Port	The port that the database uses.	Must be an integer between 1 and 65535. Default 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>
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.	

13. Click the **VoiceConsole Configuration** tab,
14. Enter the appropriate information for your *VoiceConsole* configuration.

VoiceConsole Hostname	Specify the hostname or IP address of the machine controlling the cluster.
Display Dialog Port	Confirm the default port the application server will use for the Display Dialog feature.
Enable HTTPS Support	Select to enable secure HTTPS on all pages of VoiceConsole. Certain pages are still secure if this check box is not selected.
Storage Directory	Confirm the default path to the shared storage location accessible by all cluster nodes where you would like to have application files stored.
	Note: The storage directory must have enough room to store device logs, which

	could grow very large in a short amount of time. See "VoiceConsole System Requirements" on page 4 for more information. In addition, *VoiceConsole* performance may be negatively affected if the storage directory is on a shared network drive with low throughput. If not required for clustering, Vocollect recommends this location be on a local drive.

15. Click **Install Now**.

    The installation begins. When the first part of the *VoiceConsole* installation is successfully completed, click **OK**.
    If installing on Windows, the **Setup Shortcuts** window displays. If installing on Linux, go to step 18.
16. If desired, select the program group in the Start menu to place the shortcut within or edit the path of the shortcut. If you do not want a *VoiceConsole* shortcut on the Start menu, clear the **Create shortcut in the Start menu** checkbox**.** A shortcut to *VoiceConsole* is placed on the desktop automatically after the installation process completes.
17. Click **Next**.

    The installation continues. When the installation is complete, the **Installation Finished** window displays.
18. If desired, click **Generate an automatic installation script** to generate an .xml file with your installation choice data to use for silent or automatic installations.
19. Click **Done**.

    The Vocollect VoiceConsole Installer closes, and the *VoiceConsole* application opens.

4.4.2 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

   The **Introduction** window displays.
2. Click **Next**.

   The **License Agreement** window displays.
3. Accept the terms of the license agreement and click **Next**.

   The **Select Installation Path** window displays.
4. Click **Next** to install to the default path or, if necessary, browse to the desired installation path and click **Next.**

   The **Software to Install** window displays.
5. Click **Next**.

   The **Copying Software** window displays the installer's progress during the copy of the individual selected software and the entire copying process.
6. When the copying process is finished, click **Next**.

   The **Cluster Configurations** window displays.

7. Select **Yes,** select a the directory you entered in step 9 of "4.4.1Installing Into the First Node" on page 47, and click **Next**

   The **Configuration and Installation** window displays three tabs to configure your installation.
8. Click the **Tomcat Server Configuration** tab.
9. In the **Tomcat Path Configuration** field, confirm the default path to the shared storage location where log files will be stored or, if necessary, browse to the desired path.

Note: Fields on the tabs of the **Configuration and Installation** window are populated with installation information entered when you installed VoiceConsole on the first node. Only the **Tomcat Path Configuration** field can be edited.

10. Click the **Database Configuration** tab and the **VoiceConsole Configuration** tab to verify the information automatically entered.
11. Click **Install Now**.

    The installation begins. When the first part of the *VoiceConsole* installation is successfully completed, click **OK**.
    If installing on Windows, the **Setup Shortcuts** window displays. If installing on Linux, go to step 14.
12. If desired, select the program group in the Start menu to place the shortcut within or edit the path of the shortcut. If you do not want a *VoiceConsole* shortcut on the Start menu, clear the **Create shortcut in the Start menu** checkbox**.**
13. Click **Next**.

    The installation continues. When the installation is complete, the **Installation Finished** window displays.
14. If desired, click **Generate an automatic installation script** to generate an .xml file with your installation choice data to use for silent or automatic installations.
15. Click **Done**.

    The Vocollect VoiceConsole Installer closes, and the *VoiceConsole* application opens.

5 Upgrading from Previous Versions

Notes when upgrading

Vocollect strongly recommends you back up the database you are using for the previous version of *VoiceConsole* before upgrading to this version.

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

To avoid any potential issues, Vocollect highly recommends **against** installing *VoiceConsole* from a shared network drive. If the application cannot be installed directly from the distribution media (DVD) it must be copied to local drive prior to install.

- When upgrading with Windows, you must run the installer as an administrator. When installing with Linux, the installer must be run as root.
- Vocollect has only tested upgrades with supported databases. The installer may prohibit you from upgrading from an unsupported database. To upgrade *VoiceConsole* in this scenario, contact Vocollect Technical Support.
- If you have a DVD and are using Windows, the installer should start automatically when you place the DVD in the DVD drive. If you do not have a DVD or the installer does not start automatically, navigate to the **install.exe** on the DVD or other location on Windows if the files were copied from the DVD to another location, On Linux, if you are using Intel or AMD architecture, copy the files from the *VoiceConsole* DVD, or other source, to your computer and execute the install.sh file.

Default Ports

- Ports 9090, 9443, 9010, 9006, and 9091 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.
- TERMINAL_TCP_PORT port 21050 must be available.
- UDP port 21055 must be available.

See "Installing VoiceConsole for the First Time" on page 33 for more information on these ports.

5.1 Upgrading from VoiceConsole 4.1 to VoiceConsole 4.2

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

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

1. Run the installer.

   The **Introduction** window displays.
2. Click **Next**.

   The **License Agreement** window displays.
3. Accept the terms of the license agreement and click **Next**.

   The **Upgrade VoiceConsole** window displays.
4. Click **Next**.

   The **Software to Install** window displays.
5. When the copying process is finished, click **Next**.

   The **Configuration and Installation** window displays.

   Note: Fields on the tabs of the **Configuration and Installation** window are populated with previous installation information and only the **Enable HTTPS support** checkbox can be edited.

6. Click **Install Now**.

   The installation begins. When the first part of the *VoiceConsole* installation is successfully completed, click **OK**.
   If installing on Windows, the **Setup Shortcuts** window displays. If installing on Linux, go to step 9.
7. If desired, select the program group in the Start menu to place the shortcut within or edit the path of the shortcut. If you do not want a *VoiceConsole* shortcut on the Start menu, clear the **Create shortcut in the Start menu** checkbox**.** A shortcut to *VoiceConsole* is placed on the desktop automatically after the upgrade process completes.
8. Click **Next**.

   The upgrade continues. When the upgrade is complete, the **Installation Finished** window displays.
9. If desired, click **Generate an automatic installation script** to generate an .xml file with your installation choice data to use for silent or automatic installations.
10. Click **Done**.

    The Vocollect VoiceConsole Installer closes, and the *VoiceConsole* application opens.

5.1.1 Upgrading from VoiceConsole 4.1 with an Embedded Database to VoiceConsole 4.2

If you are upgrading from an installation with an embedded database, you must first shutdown the embedded database by issuing the shutdown command in the Embedded Database Utility and then upgrade to VoiceConsole 4.2.

To launch the Embedded Database Utility:

1. If Java is installed, navigate to and open **<installFolder>\apache-tomcat-x.x\webapps\VoiceConsole\WEB-INF\lib\ hsqldb-2.2.8.jar**.

   If Java is not installed, from the command line, run "<installFolder>\VoiceConsole\jdk\jre\bin\java.exe" -jar "<installFolder>\VoiceConsole\apache-tomcat-7.0\webapps\VoiceConsole\WEB-INF\lib\hsqldb-2.2.8.jar".

   The **HSQL Database Manager** opens displaying the Connect window.
2. Enter the following connection settings:

Field	Setting
Setting Name	VoiceConsole DB
Type	HSQL Database Engine Server
Driver	org.hsqldb.jdbc
URL	jdbc:hsqldb:hsql://localhost:<port entered on install>/vcdb
User	sa
Password	Enter the password for the database specified during install. If a password was not specified, leave this field blank.

3. Click **OK**.

   You are now connected to the database.
4. In the text box, type SHUTDOWN.
5. Click **Execute SQL**.

Note: The following error displays because the HSQL Database Manager is no longer connected to the database. This is expected. Click **OK**.

6. Close the **HSQL Database Manager**.
7. Upgrade to VoiceConsole 4.2 following the steps described in “Upgrading from VoiceConsole 4.1 to VoiceConsole 4.2” on page 50 or “Performing a Silent Upgrade from VoiceConsole 4.1” on page 65.

5.2 Upgrading from VoiceConsole 3.x, 4.0, or 4.0.1 to VoiceConsole 4.2

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

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

1. Run the installer.

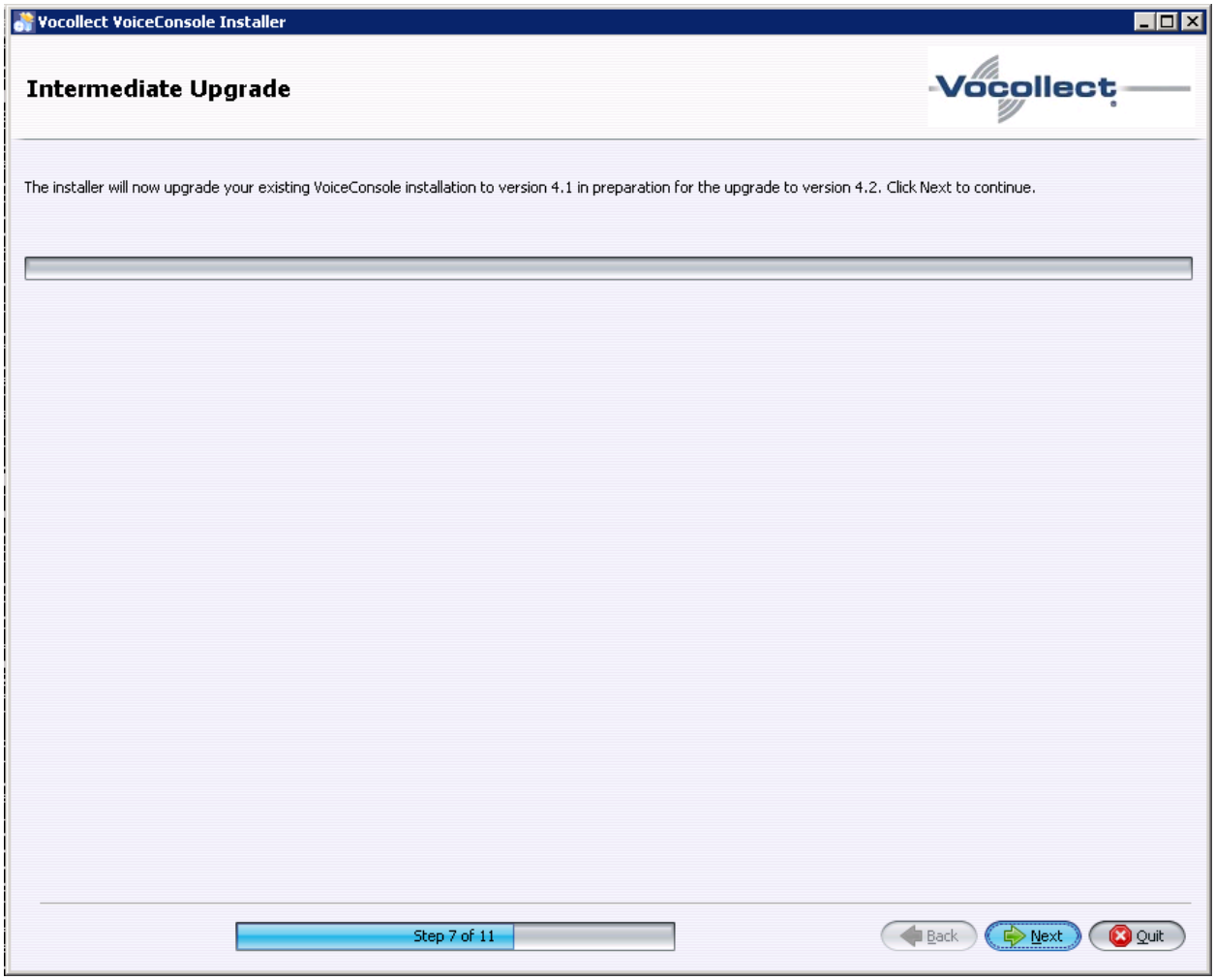
   The **Introduction** window displays.
2. Click **Next**.

   The **License Agreement** window displays.
3. Accept the terms of the license agreement and click **Next**.

   The **Upgrade VoiceConsole** window displays.
4. Click **Next**.

   The **Software to Install** window displays.
5. When the copying process is finished, click **Next**.

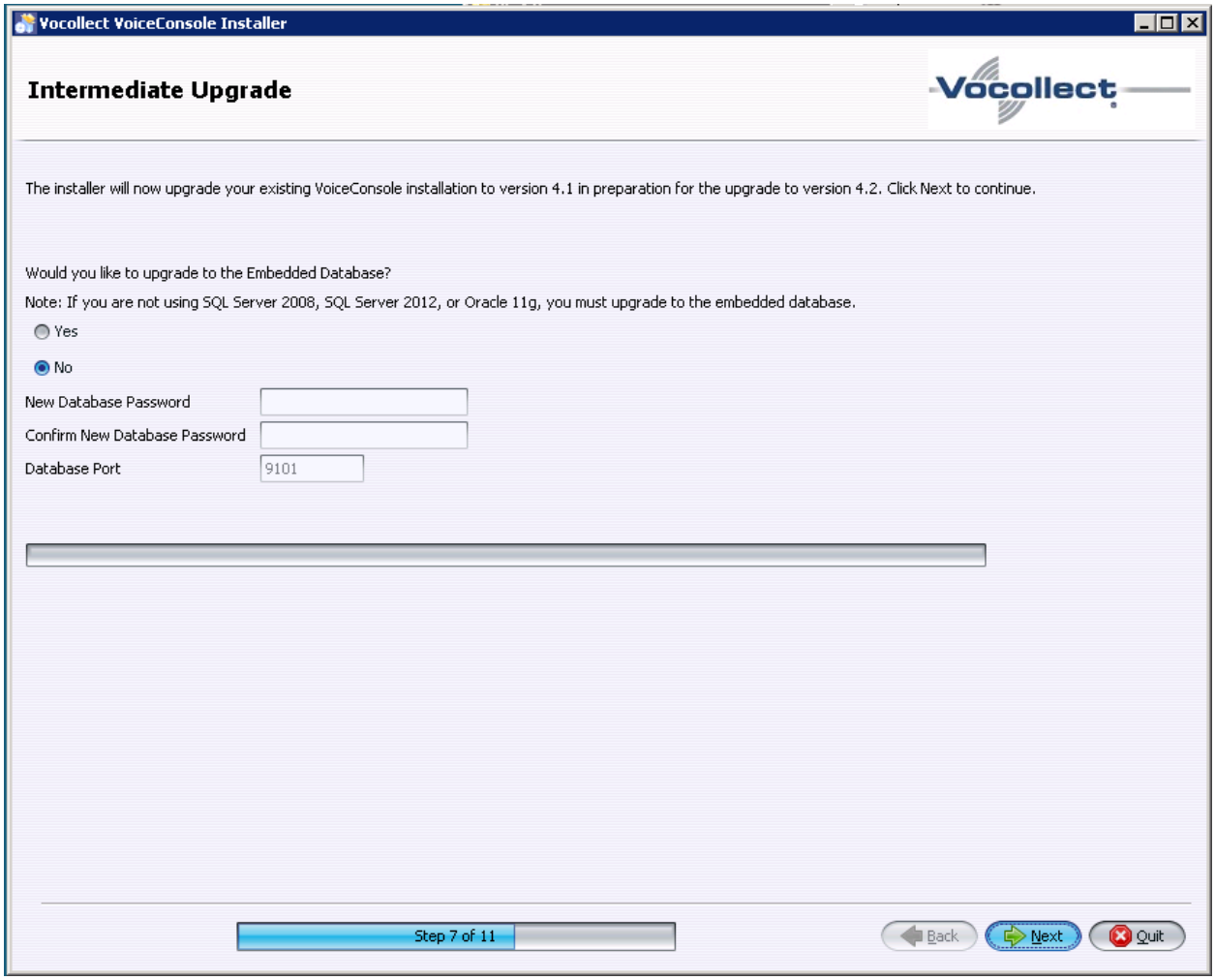
   The **Intermediate Upgrade** window displays.



6. Click **Next**.

   If the previous installation of *VoiceConsole* was not using an embedded database, you are prompted to select if you would like to upgrade to the embedded database. If not, select **No**.

Otherwise, select **Yes** and enter the appropriate information for the embedded database. Click **Next**.



The **Configuration and Installation** window displays.

Note: Fields on the tabs of the **Configuration and Installation** window are populated with previous installation information and only the **Enable HTTPS support** checkbox can be edited.

7. Click **Install Now.**

   The upgrade begins. When the first part of the *VoiceConsole* upgrade is successfully completed, click **OK**.
   If installing on Windows, the **Setup Shortcuts** window displays. If installing on Linux, go to step 10.
8. If desired, select the program group in the Start menu to place the shortcut within or edit the path of the shortcut. If you do not want a *VoiceConsole* shortcut on the Start menu, clear the **Create shortcut in the Start menu** checkbox**.** A shortcut to *VoiceConsole* is placed on the desktop automatically after the upgrade process completes.
9. Click **Next**.

The upgrade continues. When the upgrade is complete, the **Installation Finished** window displays.

10. If desired, click **Generate an automatic installation script** to generate an .xml file with your installation choice data to use for silent or automatic installations.
11. Click **Done**.

    The Vocollect VoiceConsole Installer closes, and the *VoiceConsole* application opens.

5.2.1 Upgrading from VoiceConsole 3.2, 4.0, or 4.0.1 with an Embedded Database to VoiceConsole 4.2

If you are upgrading from an installation with an embedded database, you must first shutdown the embedded database by issuing the shutdown command in the Embedded Database Utility and then upgrade to VoiceConsole 4.2.

To launch the Embedded Database Utility:

1. If Java is installed, navigate to and open **<installFolder>\apache-tomcat-x.x\webapps\VoiceConsole\WEB-INF\lib\ hsqldb-2.2.8.jar**.

   If Java is not installed, from the command line, run "<installFolder>\VoiceConsole\jdk\jre\bin\java.exe" -jar "<installFolder>\VoiceConsole\apache-tomcat-7.0\webapps\VoiceConsole\WEB-INF\lib\hsqldb-2.2.8.jar".

   The **HSQL Database Manager** opens displaying the Connect window.
2. Enter the following connection settings:

Field	Setting
Setting Name	VoiceConsole DB
Type	HSQL Database Engine Server
Driver	org.hsqldb.jdbc
URL	jdbc:hsqldb:hsql://localhost:<port entered on install>/vcdb
User	sa
Password	Enter the password for the database specified during install. If a password was not specified, leave this field blank.

3. Click **OK**.

   You are now connected to the database.
4. In the text box, type SHUTDOWN.
5. Click **Execute SQL**.

Note: The following error displays because the HSQL Database Manager is no longer connected to the database. This is expected. Click **OK**.

6. Close the **HSQL Database Manager**.
7. Upgrade to VoiceConsole 4.2 following the steps described in "Upgrading from VoiceConsole 3.x, 4.0, or 4.0.1 to VoiceConsole 4.2" on page 52 or "Performing a Silent Upgrade from VoiceConsole 3.x, 4.0, or 4.0.1" on page 65.

5.3 Upgrading from VoiceConsole 2.4 to VoiceConsole 4.2

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

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

1. Upgrade to *VoiceConsole* 4.1 on the same database as the *VoiceConsole* 2.4 install. See the *VoiceConsole* 4.1 implementation guide for details.
2. Export and/or backup the following:
   - Operators
   - Tasks
   - Device profiles (as .vrg files)
   - VoiceClient/VoiceCatalyst .vos files
3. Uninstall *VoiceConsole* 4.1. See the *VoiceConsole* 4.1 implementation guide for details.
4. Install *VoiceConsole* 4.2. "Installing VoiceConsole for the First Time" on page 33 Do not perform an upgrade.
5. Import the data you exported in step 2.

5.3.1 Upgrading from VoiceConsole 2.4 to VoiceConsole 4.2 with an Embedded Database

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

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

1. Upgrade to *VoiceConsole* 3.2 on the same database as the 2.4 install. See the *VoiceConsole* 3.2 implementation guide for details.
2. Upgrade to *VoiceConsole* 4.2 with an embedded database. See "Upgrading from VoiceConsole 3.x, 4.0, or 4.0.1 to VoiceConsole 4.2" on page 55.

5.4 Upgrading in a Clustered Environment

These procedures are for upgrading from *VoiceConsole* 4.1 in a clustered environment to *VoiceConsole* 4.2 in a clustered environment.

Notes on upgrading in a clustered environment:

- You can only upgrade to *VoiceConsole* 4.2 in a clustered environment from *VoiceConsole* 4.1.
- The embedded database is not supported in a clustered environment.
- 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.
- You must delete the cluster resource associated with the VocollectWebApplicationsVC service prior to initiating the upgrade. After the upgrade is complete on all nodes, add the cluster resource again to prevent application irregularities and failures because the cluster manager interferes with the upgrade process. During the upgrade, the installer stops the VocollectWebApplicationsVC service then attempts to delete and recreate it. With a clustered service, however, the cluster manager attempts to restart the service causing Tomcat to restart; then it prevents the installer from deleting the service.

5.4.1 Upgrading from an Existing VoiceConsole Cluster Installation to VoiceConsole 4.2 in a Fail-Over Clustered Environment

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

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

1. Stop the *VoiceConsole* service on all nodes.
2. On the active node, upgrade *VoiceConsole* to *VoiceConsole* 4.2.

In a cluster environment, if you are upgrading from *VoiceConsole* 3.x, 4.0, or 4.0.1 with a database supported in *VoiceConsole* 4.2, you must first manually upgrade the active node to *VoiceConsole* 4.1 using the *VoiceConsole* 4.1 installer located in the **LegacySupportFiles** folder on the DVD or other location on Windows if the files were copied from the DVD to another location. Then, upgrade to *VoiceConsole* 4.2. If

your previous installation of *VoiceConsole* 3.x, 4.0, or 4.0.1 uses a database that is not supported in *VoiceConsole* 4.2, you cannot upgrade in a clustered environment.

3. Failover by shutting down the cluster service on the currently active node.

   The other cluster node becomes active.
4. On the new active node, upgrade *VoiceConsole* to *VoiceConsole* 4.2.

   In a cluster environment, if you are upgrading from *VoiceConsole* 3.x, 4.0, or 4.0.1 with a database supported in *VoiceConsole* 4.2, you must first manually upgrade the active node to *VoiceConsole* 4.1 using the *VoiceConsole* 4.1 installer located in the **LegacySupportFiles** folder on the DVD or other location on Windows if the files were copied from the DVD to another location. Then, upgrade to *VoiceConsole* 4.2. If your previous installation of *VoiceConsole* 3.x, 4.0, or 4.0.1 uses a database that is not supported in *VoiceConsole* 4.2, you cannot upgrade in a clustered environment.

5. Repeat steps 3 and 4 for all nodes in the cluster.
6. Restart your computer.
7. Restart the cluster.

VoiceConsole is upgraded in your clustered environment.

5.4.2 Upgrading from an Existing VoiceConsole Cluster Installation to VoiceConsole 4.2 in a Load Balancing Clustered Environment

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

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

1. On the first node, upgrade *VoiceConsole* to *VoiceConsole* 4.2.

   In a cluster environment, if you are upgrading from *VoiceConsole* 3.x, 4.0, or 4.0.1 with a database supported in *VoiceConsole* 4.2, you must first manually upgrade the active node to *VoiceConsole* 4.1 using the *VoiceConsole* 4.1 installer located in the **LegacySupportFiles** folder on the DVD or other location on Windows if the files were copied from the DVD to another location. Then, upgrade to *VoiceConsole* 4.2. If your previous installation of *VoiceConsole* 3.x, 4.0, or 4.0.1 uses a database that is not supported in *VoiceConsole* 4.2, you cannot upgrade in a clustered environment.

2. Repeat step 1 for all nodes in the cluster.

VoiceConsole is upgraded in your clustered environment.

5.5 Performing a Silent Installation or Upgrade

Notes when installing/upgrading

To avoid any potential issues, Vocollect highly recommends **against** installing *VoiceConsole* from a shared network drive. If the application cannot be installed directly from the distribution media (DVD) it must be copied to local drive prior to install.

- When you install this version of *VoiceConsole* for the first time, the following two users are installed with the application with default passwords:

User	Default Password
admin	admin
vocollect	voiceworks

A silent install or upgrade is available by providing an .xml file with the information that would be provided during a user interface installation. The .xml file is provided as a command line argument to the installer executable, batch, or script file to perform the installation.

5.5.1 Performing a Silent Installation

You have two options for generating an .xml file for a silent installation:

1. Run the installer, choose all the options you need, and then on the **Installation Finished** window (last window), click **Generate an automatic installation script** to generate the .xml file with your installation choice data. See "Installing VoiceConsole for the First Time" on page 33 or "Upgrading from Previous Versions" on page 53 for instructions for installing or upgrading and generating the script.
2. Manually create the .xml file. Below are some examples of .xml files.

Standard installation

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<AutomatedInstallation langpack="eng">

<ImagePanel id="UNKNOWN (ImagePanel)"/>

<com.izforge.izpack.panels.HTMLLicencePanel id="licencepanel"/>

<com.izforge.izpack.panels.UpgradePanel id="upgradepanel"/>

<com.izforge.izpack.panels.TargetPanel id="targetpanel">

<!-- Installation Directory -->

<!-- ###EDIT THE INSTALLATION DIRECTORY PATH.### -->

<installpath>C:\Program Files (x86)\Vocollect\VoiceConsole</installpath>

</com.izforge.izpack.panels.TargetPanel>

<com.izforge.izpack.panels.PacksPanel id="packspanel">
```

```
<pack index="0" name="application" selected="true"/>

<pack index="1" name="jreWindowsx86" selected="true"/>

</com.izforge.izpack.panels.PacksPanel>

<com.izforge.izpack.panels.InstallPanel id="installpanel"/>

<com.izforge.izpack.panels.ClusterPanel id="clusterpanel"/>

<com.izforge.izpack.panels.configurator.ConfiguratorPanel
id="configuratorPanel">

<configuratorData>

<!-- Configuration fields that need user specified values. -->

<!-- ###EDIT THE CONFIGURATION FIELDS. SEE CHART FOR ALL POSSIBLE FIELDS.### --
>

<configuratorProperty
configItemNameToModify="01voiceConsoleHostname">vc_hostname</configuratorProper
ty>

<configuratorProperty configItemNameToModify="01tomcatLogDirectory">C:\Program
Files (x86)\Vocollect\VoiceConsole\logs</configuratorProperty>

<configuratorProperty configItemNameToModify="#date">Aug 16, 2012 1:14:03
PM</configuratorProperty>

<configuratorProperty
configItemNameToModify="04voiceConsoleStorageDirectory">C:\Program Files
(x86)\Vocollect\VoiceConsole</configuratorProperty>

</configuratorData>

</com.izforge.izpack.panels.configurator.ConfiguratorPanel>

<com.izforge.izpack.panels.ShortcutPanel id="shortcutpanel">

<!-- Start menu shortcut settings -->

<!-- ###EDIT SHORTCUT SETTINGS.### -->

<programGroup name="Vocollect\VoiceConsole"/>

<shortcut KdeSubstUID="false" categories="" commandLine="start"
createForAll="false" description="Go to VoiceConsole web application"
encoding="" group="true" icon="C:\Program Files
(x86)\Vocollect\VoiceConsole\tools\vocollect_icon.ico" iconIndex="0"
initialState="1" mimetype="" name="VoiceConsole" target="C:\Program Files
(x86)\Vocollect\VoiceConsole\bin\WebApplication.url" terminal=""
terminalOptions="" tryexec="" type="1" url="" usertype="0"
workingDirectory="C:\Program Files (x86)\Vocollect\VoiceConsole\bin"/>

</com.izforge.izpack.panels.ShortcutPanel>

<com.izforge.izpack.panels.VocollectFinishPanel id="finishpanel"/>

</AutomatedInstallation>
```

Clustered installation

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<AutomatedInstallation langpack="eng">

<ImagePanel id="UNKNOWN (ImagePanel)"/>

<com.izforge.izpack.panels.HTMLLicencePanel id="licencepanel"/>

<UpgradePanel id="upgradepanel"/>

<com.izforge.izpack.panels.TargetPanel id="targetpanel">

<!-- Installation Directory -->

<!-- ###EDIT THE INSTALLATION DIRECTORY PATH.### -->

<installpath>C:\Program Files (x86)\Vocollect\VoiceConsole</installpath>

</com.izforge.izpack.panels.TargetPanel>

<com.izforge.izpack.panels.PacksPanel id="packspanel">

<pack index="0" name="application" selected="true"/>

<pack index="1" name="jreWindowsx86" selected="true"/>

</com.izforge.izpack.panels.PacksPanel>

<com.izforge.izpack.panels.InstallPanel id="installpanel"/>

<com.izforge.izpack.panels.ClusterPanel id="clusterpanel">

<!-- Cluster settings -->

<!-- ###EDIT CLUSTER SETTINGS.### -->

<clusteredInstall>true</clusteredInstall>

<clusterSharePath>\\FileServer\Shared\Map4</clusterSharePath>

</com.izforge.izpack.panels.ClusterPanel>

<com.izforge.izpack.panels.configurator.ConfiguratorPanel
id="configuratorPanel">

<configuratorData>

<!-- Configuration fields that need user specified values. -->

<!-- ###EDIT THE CONFIGURATION FIELDS. SEE CHART IN NEXT SECTION FOR ALL
POSSIBLE FIELDS.### -->

<configuratorProperty
configItemNameToModify="07sqlDatabaseSchema">dbo</configuratorProperty>

<configuratorProperty
configItemNameToModify="01voiceConsoleHostname">cluster_hostname</configuratorP
roperty>

<configuratorProperty configItemNameToModify="01databaseServer">SQL
Server</configuratorProperty>
```

```
<configuratorProperty
configItemNameToModify="05sqlDatabaseUsername">database_user</configuratorPrope
rty>

<configuratorProperty
configItemNameToModify="01tomcatLogDirectory">\\FileServer\Shared\Map4\logs</co
nfiguratorProperty>

<configuratorProperty configItemNameToModify="#date">Aug 20, 2012 5:03:17
PM</configuratorProperty>

<configuratorProperty
configItemNameToModify="jvmMaxHeapSize">512</configuratorProperty>

<configuratorProperty
configItemNameToModify="06sqlDatabasePassword">database_password</configuratorP
roperty>

<configuratorProperty
configItemNameToModify="04voiceConsoleStorageDirectory">\\FileServer\Shared\Map
4</configuratorProperty>

<configuratorProperty
configItemNameToModify="03sqlDatabaseName">cluster_test</configuratorProperty>

<configuratorProperty
configItemNameToModify="01sqlDatabaseHostname">database_hostname</configuratorP
roperty>

</configuratorData>

</com.izforge.izpack.panels.configurator.ConfiguratorPanel>

<com.izforge.izpack.panels.ShortcutPanel id="shortcutpanel">

<!-- Start menu shortcut settings -->

<!-- ###EDIT SHORTCUT SETTINGS.### -->

<programGroup name="Vocollect\VoiceConsole"/>

<shortcut KdeSubstUID="false" categories="" commandLine="start"
createForAll="false" description="Go to VoiceConsole web application"
encoding="" group="true" icon="C:\Program Files
(x86)\Vocollect\VoiceConsole\tools\vocollect_icon.ico" iconIndex="0"
initialState="1" mimetype="" name="VoiceConsole" target="C:\Program Files
(x86)\Vocollect\VoiceConsole\bin\WebApplication.url" terminal=""
terminalOptions="" tryexec="" type="1" url="" usertype="0"
workingDirectory="C:\Program Files (x86)\Vocollect\VoiceConsole\bin"/>

</com.izforge.izpack.panels.ShortcutPanel>

<com.izforge.izpack.panels.VocollectFinishPanel id="finishpanel"/>

</AutomatedInstallation>
```

Configuration Fields

Field	Description	Values	Installation Type
Tomcat Settings			

Field	Description	Values	Installation Type
00tomcatAccount	Type of Tomcat account **Note:** If you want to use NT authentication for SQL Server databases for a Windows installation, you must use an existing account.	tomcatExisting tomcatLocalSystem (Windows) (default) tomcatVocollectUser (Linux) (default)	All
01tomcatExistingUsername	Existing account username		Tomcat Existing User
02tomcatExistingPassword	Exist account password		Tomcat Existing User
01tomcatLogDirectory	location where log files will be stored	path	All
01tomcatListenPort	HTTP Port	9090 (default)	All
02tomcatSSLPort	HTTPS Port	9443 (default)	All
03tomcatAjpPort	AJP port	9011 (default)	All
04tomcatShutdownPort	Shutdown Port	9006 (default)	All
Database Settings			
01databaseServer	Type of database	Embedded DB (default) SQL Server Oracle	All
02databaseSettingsMode	Type of setting	Basic Settings Advanced Settings	SQL/ Oracle
02embeddedDatabasePassword	The password of the		Embedded DB

Field	Description	Values	Installation Type
	database administrator account that the application will use to log into the database.		Basic Settings
02embeddedDatabasePasswordConfirmation			Embedded DB Basic Settings
03embeddedDatabasePort	The port that the database uses	9101 (default)	Embedded DB Basic Settings
01sqlDatabaseHostname 01oraDatabaseHostname	DNS name or IP address of the machine hosting the database.		SQL Server/ Oracle Basic Settings
02sqlDatabasePort 02oraDatabasePort	The port that the database uses	1433 (SQL default) 1521 (Oracle default) Must be an integer between 1 and 65535.	SQL Server/ Oracle Basic Settings
03sqlDatabaseName 03oraDatabaseName	The name of the database		SQL Server/ Oracle Basic Settings
01sqlDatabaseJdbcUrl 01oraDatabaseJdbcUrl	The JDBC URL for the database.	jdbc:sqlserver://<host>:<port>; DatabaseName=<database name> jdbc:oracle:thin:@<host>:<port>:DatabaseName=<database name>	SQL Server/ Oracle Advanced Settings
04sqlDatabaseAuthMode	The authentication type	SQL Server Authentication	SQL Server

Field	Description	Values	Installation Type
	used to connect to the database.	NT Authentication	Basic Settings
04adv_sqlDatabaseAuthMode			SQL Server Advanced Settings
05sqlDatabaseUsername 05oraDatabaseUsername	The username that the application should use to log into the database. This is disabled if using NT Authentication.	SQL Server Authentication NT Authentication	SQL Server/ Oracle Basic Settings
03adv_sqlDatabaseUsername 03adv_oraDatabaseUsername			SQL Server/ Oracle Advanced Settings
06sqlDatabasePassword 06oraDatabasePassword	The password of the user that the application should use to log into the database. This is disabled if using NT Authentication.		SQL Server/ Oracle Basic Settings
04adv_sqlDatabasePassword 04adv_oraDatabasePassword			SQL Server/ Oracle Advanced Settings
07sqlDatabaseSchema 07oraDatabaseSchema	The database schema you are using.		SQL Server/ Oracle Basic Settings
05adv_sqlDatabaseSchema 05adv_oraDatabaseSchema			SQL Server/ Oracle Advanced Settings

Field	Description	Values	Installation Type
VoiceConsole Settings			
01voiceConsoleHostname	hostname of the machine onto which you are installing		All
02displayDialogPort	default port the application server will use for the Display Dialog feature	9091 (default)	All
03voiceConsoleHTTPSOption	enable secure HTTPS on all pages of VoiceConsole. Certain pages are still secure if this check box is not set.	true false	All
04voiceConsoleStorageDirectory	Specify where you would like to have application files stored	path	All

Notes on install file formatting

- Line endings must match the requirements of the server operating system in use.
- Property names are case sensitive.
- Property values must not end in whitespace.

If you performed a silent install of *VoiceConsole* version 3.0 or 3.0.1 in a Linux or Unix environment and now want to run a silent upgrade, you will have to reset directory permissions after the upgrade is complete.

As root user, stop the VoiceConsole service. Reset the installation directory ownership to the expected user account using the **chown** command with the recursive switch, then restart the service. For example:

chown -R vocollect /opt/Vocollect/VoiceConsole

5.5.2 Performing a Silent Upgrade from VoiceConsole 4.1

If you are upgrading from an installation with an embedded database, you must first shutdown the embedded database by issuing the shutdown command in the Embedded Database Utility and then upgrade to VoiceConsole 4.2. See "Upgrading from VoiceConsole 4.1 with an Embedded Database to VoiceConsole 4.2" on page 51 for instructions for that scenario.

Vocollect strongly recommends you back up the database you are using for the previous version of VoiceConsole before upgrading to this version.

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

Note: If you are upgrading in Windows with an existing Tomcat user, ensure the account used has the necessary permission described below.

- **Read** permission to the directory from which the installation program is being run
- **Log On As a Service** rights and permissions (refer to http://support.microsoft.com/kb/327545 for setup information).
- **Write** permissions to all paths provided during installation for the install folder, log files directory, application files location
- **Write** permissions to the shared drive for a clustered install (if applicable)

You have two options for generating an .xml file:

1. Run the installer, choose all the options you need, and then on the **Installation Finished** window (last window), click **Generate an automatic installation script** to generate the .xml file with your installation choice data. See "Installing VoiceConsole for the First Time" on page 33 or "Upgrading from Previous Versions" on page 53 for instructions for installing or upgrading and generating the script.
2. Manually create the .xml file. Below are some examples of .xml files.

Note: When upgrading from VoiceConsole 4.1, only the **03voiceConsoleHTTPSOption** field can be edited to enable/disable HTTPS support. All other settings are inherited from the initial *VoiceConsole* installation.

Standard upgrade

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<AutomatedInstallation langpack="eng">

<ImagePanel id="UNKNOWN (ImagePanel)"/>

<com.izforge.izpack.panels.HTMLLicencePanel id="licencepanel"/>

<com.izforge.izpack.panels.UpgradePanel id="upgradepanel"/>

<com.izforge.izpack.panels.TargetPanel id="targetpanel">

</com.izforge.izpack.panels.TargetPanel>
```

```
<com.izforge.izpack.panels.PacksPanel id="packspanel">

<pack index="0" name="application" selected="true"/>

<pack index="1" name="jreWindowsx86" selected="true"/>

</com.izforge.izpack.panels.PacksPanel>

<com.izforge.izpack.panels.InstallPanel id="installpanel"/>

<com.izforge.izpack.panels.LegacyUpgradePanel id="legacyupgradepanel"/>

<com.izforge.izpack.panels.ClusterPanel id="clusterpanel">

</com.izforge.izpack.panels.ClusterPanel>

<com.izforge.izpack.panels.configurator.ConfiguratorPanel id="configuratorPanel">

<configuratorData>

<!-- Configuration fields that need user specified values. -->

<!— ###ONLY THE 03voiceConsoleHTTPSOption FIELD CAN BE EDITED.### -->

<configuratorProperty
configItemNameToModify="03voiceConsoleHTTPSOption">false</configuratorProperty>

</configuratorData>

</com.izforge.izpack.panels.configurator.ConfiguratorPanel>

<com.izforge.izpack.panels.ShortcutPanel id="shortcutpanel"/>

<com.izforge.izpack.panels.VocollectFinishPanel id="finishpanel"/>

</AutomatedInstallation>
```

5.5.3 Performing a Silent Upgrade from VoiceConsole 3.x, 4.0, or 4.0.1

If you are upgrading from an installation with an embedded database, you must first shutdown the embedded database by issuing the shutdown command in the Embedded Database Utility and then upgrade to VoiceConsole 4.2. See “Upgrading from VoiceConsole 4.1 with an Embedded Database to VoiceConsole 4.2" on page 51 for instructions for that scenario.

Vocollect strongly recommends you back up the database you are using for the previous version of VoiceConsole before upgrading to this version.

Vocollect strongly recommends first testing the upgrade in a lab environment prior to upgrading in production. The test environment should contain the most recent snapshot of your production database to provide the most accurate representation for your upgrade test efforts.

Note: If you are upgrading in Windows with an existing Tomcat user, ensure the account used has the necessary permission described below.

- **Read** permission to the directory from which the installation program is being run

- **Log On As a Service** rights and permissions (refer to http://support.microsoft.com/kb/327545 for setup information).
- **Write** permissions to all paths provided during installation for the install folder, log files directory, application files location
- **Write** permissions to the shared drive for a clustered install (if applicable)

If you are upgrading from a *VoiceConsole* version prior to 4.1, you must also set these permissions for the existing user on the *VoiceConsole* 4.2 directory and the **LegacyUpgradeHelper** folder located in the *VoiceConsole* 4.2 directory.

You have two options for generating an .xml file:

1. Run the installer, choose all the options you need, and then on the **Installation Finished** window (last window), click **Generate an automatic installation script** to generate the .xml file with your installation choice data. See "Installing VoiceConsole for the First Time" on page 33 or "Upgrading from Previous Versions" on page 53 for instructions for installing or upgrading and generating the script.
2. Manually create the .xml file. Below is an example of an .xml file.

Note: When upgrading from *VoiceConsole* 3.x, 4.0, or 4.0.1, only the properties within the **LegacyUpgradePanel** tags and the **03voiceConsoleHTTPSOption** configuration field can be edited to enable/disable HTTPS support. All other settings are inherited from the initial *VoiceConsole* installation.

Standard upgrade from 3.x, 4.0, or 4.0.1

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<AutomatedInstallation langpack="eng">

<ImagePanel id="UNKNOWN (ImagePanel)"/>

<com.izforge.izpack.panels.HTMLLicencePanel id="licencepanel"/>

<com.izforge.izpack.panels.UpgradePanel id="upgradepanel"/>

<com.izforge.izpack.panels.TargetPanel id="targetpanel"/>

<com.izforge.izpack.panels.PacksPanel id="packspanel">

<pack index="0" name="application" selected="true"/>

<pack index="1" name="jreWindowsx86" selected="true"/>

</com.izforge.izpack.panels.PacksPanel>

<com.izforge.izpack.panels.InstallPanel id="installpanel"/>

<!— ###EDIT THE LEGACY UPGRADE INFORMATION
IF YOU ARE UPGRADING TO AN EMBEDDED DATABASE.
IF YOU ARE UPGRADING FROM AN UNSUPPORTED DATABASE,
YOU MUST UPGRADE TO AN EMBEDDED DATABASE### -->

<com.izforge.izpack.panels.LegacyUpgradePanel id="legacyupgradepanel">

<upgradeToEmbedded>false</upgradeToEmbedded>
```

```
<embeddedPassword></embeddedPassword>

<embeddedPort>9101</embeddedPort>

</com.izforge.izpack.panels.LegacyUpgradePanel>

<com.izforge.izpack.panels.ClusterPanel id="clusterpanel"/>

<com.izforge.izpack.panels.configurator.ConfiguratorPanel
id="configuratorPanel">

<configuratorData>

<!-- Configuration fields that need user specified values. -->

<!-- ###ONLY THE 03voiceConsoleHTTPSOption FIELD CAN BE EDITED.### -->

<configuratorProperty
configItemNameToModify="03voiceConsoleHTTPSOption">false</configuratorPrope
rty>

</configuratorData>

</configuratorData>

</com.izforge.izpack.panels.configurator.ConfiguratorPanel>

<com.izforge.izpack.panels.ShortcutPanel id="shortcutpanel"/>

<com.izforge.izpack.panels.VocollectFinishPanel id="finishpanel"/>

</AutomatedInstallation>
```

5.5.4 Initiating a Silent Installation or Upgrade

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:

  ```
  install.exe <xmlFileName>.xml

  install.bat <xmlFileName>.xml
  ```

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

  ```
  install.sh <xmlFileName>.xml
  ```

5.6 Migrating from One Database to Another

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

By performing the steps below, you can migrate from one database to another and keep existing operators and tasks, but devices, device profiles, task packages and voice process software must be created/imported in the *VoiceConsole* on the new database.

Contact your Vocollect representative about services that Vocollect may offer to support migration between databases that allow you to keep all your existing information and automate this process below.

Notes on migrating from one database to another:

- This database migration procedure does not apply if you are using the *VoiceConsole* embedded database.
- The process below is for *VoiceConsole* 3.0 and newer. For migration on prior versions of *VoiceConsole*, contact your Vocollect representative.
- Vocollect recommends exporting operators in small groups of less than 100 if you have a large number in your system.
- Vocollect recommends downloading tasks in small groups of less than 100 if you have a large number in your system.

1. Within each site, if applicable, export all operators and their templates from your *VoiceConsole* system by selecting **Move Operators | Export all operators** under **Operator Actions** on the **View Operators** page in your currently installed *VoiceConsole* system.
2. Download all tasks from your *VoiceConsole* system by selecting every task row on the **View Tasks** page, and selecting the **Download selected task** action under **Task Actions** in your currently installed *VoiceConsole* system.
3. Install the new, supported database.
4. Install *VoiceConsole*.
5. If necessary, create sites in the new installation of *VoiceConsole*.
6. Within each site, if applicable, import the operators you exported in step 1 by selecting **Move Operators | Import operators** under **Operator Actions** on the **View Operators** page, and selecting the appropriate .zip file. Repeat this step for each .zip file you exported in step 1.
7. Import the tasks you downloaded in step 2 by selecting **Import Task** under **Task Actions** on the **View Tasks** page, and selecting the appropriate .zip file. If applicable, indicate the site into which the imported task(s) should go. Repeat this step for each .zip file you exported in step 2.
8. For each site, if applicable, connect devices, import your process software, and create task packages and device profiles in *VoiceConsole* on the new database.

5.7 Securing the Database Password

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). To protect the database user, database passwords in this file **are encrypted**. However, 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 or Linux file permissions, depending on the operating system you are using.

5.7.1 Changing the Embedded Database Password

This section describes the process to change the embedded database password on a previously installed version of VoiceConsole.

1. Ensure *VoiceConsole* is running.
2. Open a command prompt/terminal window.
3. Navigate to the *VoiceConsole* lib directory.

   Default locations are C:\Program Files\Vocollect\VoiceConsole\apache-tomcat-7.0\webapps\VoiceConsole\WEB-INF\lib on Windows or /opt/Vocollect/VoiceConsole/apache-tomcat-7.0/webapps/VoiceConsole/WEB-INF/lib on RedHat Linux or CentOS Linux.
4. Type the command java –cp ./hsqldb-2.2.8.jar org.hsqldb.util.DatabaseManagerSwing.
5. Press **Enter**.

   The **Connect** window opens.
6. Enter the following connection settings:

Field	Setting
Setting Name	VoiceConsole DB
Type	HSQL Database Engine Server
Driver	org.hsqldb.jdbc
URL	jdbc:hsqldb:hsql://localhost:<port entered on install>/vcdb
User	sa
Password	leave this field blank

7. Click **OK**.

   The **HSQL Database Manager** window opens.
8. Type `SET PASSWORD '<YourNewPassword>';checkpoint;` into the text box.
9. Click **Execute SQL**.
10. Open the *VoiceConsole* database.properties file in a text editor.

    Default locations are C:\Program Files\Vocollect\VoiceConsole\apache-tomcat-7.0\webapps\VoiceConsole\WEB-INF\classes\database.properties on Windows or /opt/Vocollect/VoiceConsole/apache-tomcat-7.0/webapps/VoiceConsole/WEB-INF/classes/database.properties on RedHat Linux or CentOS Linux.
11. Change the values for hibernate.connection.password and archive.hibernate.connection.password to the new password.
12. Save the file.
13. Restart *VoiceConsole* and log into *VoiceConsole* with the existing admin account to confirm the database connection has been established.

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

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.

To secure web server communications, *VoiceConsole* supports HTTPS. To secure the connection to an embedded database, *VoiceConsole* supports SSL. To secure the device connectivity on a wireless network, *VoiceConsole* uses Extensible Authentication Protocol (EAP).

- Enabling HTTPS involves obtaining and installing a certificate. See the section below for detailed steps.
- Enabling SSL for an embedded database involves obtaining and installing a certificate, and modifying the **database.properties** file. See the section below for detailed steps.
- Enabling EAP consists of the following procedures. This chapter describes the first two procedures. See *VoiceConsole* help for more details of loading device profiles.
    - o Configuring EAP for each site
    - o Creating device profiles with EAP selected
    - o Loading the device profiles

Note: These security configurations should be performed by a System Administrator, or the settings should be provided by a System Administrator.

7.1 Creating and Installing a Certificate for HTTPS

VoiceConsole provides a self-signed certificate to be used when Hypertext Transfer Protocol Secure (HTTPS) is enabled. This certificate provides a heightened level of security with HTTPS.

If you want a higher level of security, Vocollect recommends creating and installing your own certificate.

7.1.1 Creating a Certificate Signing Request

To create a certificate, you need to first create a certificate signing request.

1. Copy and paste the following command into a terminal session on the machine where the Java keytool is located. The command assumes that the Java keytool is installed on your server.

   Replace the variables that appear in bold with your own information.

   ```
   keytool -genkey -alias tomcat -keyalg RSA -keysize 2048 -keystore
   <keystorePath>/.keystore -dname "CN=<Domain name of server>, O=<Your
   Organization>, OU=<Organizational Unit>, L=<City>, ST=<State>, C=<Country>"
   ```

   Note: If you are running this command on Windows, paste it into the command prompt and ensure the JDK bin folder is in your PATH environment.

2. Press **Enter**.
3. Enter a keystore password.
4. Press **Enter**.
5. Copy and paste the following command, replacing the bold variables with your information.

   ```
   keytool -certreq -alias tomcat -file <csrPath>/<csrFileName>.csr -keystore
   <keystorePath>/.keystore
   ```

6. Verify keystore password.
7. Press **Enter** and complete the creation.

The Java keytool utility creates your private key and certificate signing request as <keystorePath>/.keystore and <csrPath>/<csrFileName>.csr.

7.1.2 Getting a Certificate from a Certificate Authority

1. Send the files created by the Java keytool to a certificate authority, such as WebTrust.
2. Purchase a certificate.

7.1.3 Installing the Certificate

From a Certificate Authority

1. Place the certificate file you received from a certificate authority into the directory where your private key and certificate signing request were saved.
2. Run the following command, replacing the bold variables with your information.

   ```
   Keytool -import -trustcacerts -alias tomcat -file <certificateFileName>.p7b -
   keystore <keystorePath>/.keystore
   ```

3. A confirmation of installation appears.

Generating Your Own Self-Signed Certificate

To generate a self-signed certificate that is valid for a specified number of days, perform the following steps.

1. Copy and paste the following command into a terminal session on the machine where the Java keytool is located. The command assumes that the Java keytool is installed on your server.

   Replace the variables that appear in bold with your own information.

   ```
   keytool -genkey -validity <number of days> -alias tomcat -keyalg RSA -keysize
   2048 -keystore <keystorePath>/.keystore -dname "CN=<Domain name of server>,
   O=<Your Organization>, OU=<Organizational Unit>, L=<City>, ST=<State>,
   C=<Country>"
   ```

   Note: If you are running this command on Windows, paste it into the command prompt and ensure the JDK bin folder is in your PATH environment.

2. Press **Enter**.

3. Enter a keystore password and press **Enter**.
4. Enter the same password to confirm and press **Enter**.
5. Press **Enter** again to confirm using the same password for the Tomcat alias.

7.1.4 Configuring Tomcat

1. In a text editor, open the Tomcat server.xml file.
2. Update the location of the keystore file and the keystore password in the Tomcat connector definitions in Tomcat's **server.xml** file. Note that there are two connector definitions that will require this change — each connector definition is a separate Connector XML element.

   Example:

   ```
   <Connector port="9091" protocol="org.apache.coyote.http11.Http11NioProtocol"
   connectionTimeout="10000" tomcatAuthentication="false"

   keepaliveTimeout="5000" backlog="50" maxThreads="10" scheme="https"
   secure="true" SSLEnabled="true" clientAuth="false" sslProtocol="TLS"

   keystorePass-"<keystorePasswordEnteredAbove>"
   keystoreFile="<keystorePath>/.keystore"/>
   ```

3. Save the file.
4. Restart Tomcat.

7.2 Configuring EAP for 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.

7.2.1 Step 1 of 4: Configure Behavior

1. Select one of the EAP types. For information on each of these types, see "Extensible Authentication Protocol" on page 28.

   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 28.

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.

> 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.

7.2.2 Step 2 of 4: Configure LDAP

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.

7.2.3 Step 3 of 4: Configure 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.

7.2.4 Step 4 of 4: 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.

7.3 Configuring the Device Profiles with EAP

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 on the **Network Configuration** tab, including selecting a security option available in the **Security** drop-down list.
11. Enter any advanced device or radio settings on the **Advanced Settings** tab.
12. Click **Finish**.

8 Configuring VoiceConsole Logs

The **Logs** page in the **Administration** tab of the *VoiceConsole* user interface displays several types of logs. Logs track user activities in the application and are useful for analyzing unexpected issues. Many of the logs listed on this page are generated by Apache Tomcat. In most cases, you will not need to reference these logs.

For troubleshooting purposes, you may need to review VoiceConsole-specific logs. These logs are created using log4j (learn more at http://logging.apache.org/log4j/docs/manual.html).

- **VoiceConsole.log**: Contains INFO, WARN, ERROR, and FATAL level messages that result from device communication or user actions.
- **VoiceConsole.err**: Contains a subset of the VoiceConsole log. It contains all information logged at a level ERROR or more critical.

8.1 Log Count and Maximum Size

By default, *VoiceConsole* keeps up to 30 files, each at a maximum size of 4 MB. You can increase the number or size of the log files if necessary.

To change the log size and count for VoiceConsole.log and VoiceConsole.err, perform the following steps.

1. Stop the VocollectWebApplicationsVC service.
2. Find the logging configuration file at **<InstallLocation>\VoiceConsole\apache-tomcat-7.0\webapps\VoiceConsole\WEB-INF\classes\log4j.properties**.
3. Open **log4j.properties** in a text editor.
4. Modify the **MaxFileSize** or **MaxBackupIndex** properties as shown below.

   VoiceConsole.log parameters

   ```
   log4j.appender.voc.MaxFileSize=4MB

   log4j.appender.voc.MaxBackupIndex=30
   ```

   VoiceConsole.err parameters

   ```
   log4j.appender.voc_err.MaxFileSize=4MB

   log4j.appender.voc_err.MaxBackupIndex=30
   ```

   Note: The MaxFileSize and MaxBackupIndex values should not exceed the space available where the logs are stored.

5. Save your changes.
6. Restart the VocollectWebApplicationsVC service.

8.2 Log Location

The location of the **VoiceConsole.log** and **VoiceConsole.err** is specified during installation.

To change the log location at any time after installation, perform the following steps.

1. Stop the VocollectWebApplicationsVC service.
2. Find the logging properties files at **<InstallLocation>\VoiceConsole\apache-tomcat-7.0\webapps\VoiceConsole\WEB-INF\classes**.
3. Open log.properties in a text editor.
4. Modify the **system.log.directory** value.

```
system.log.directory=C\:\\Program
Files\\Vocollect\\VoiceConsole4.2\\Logs
```

5. Save your changes.
6. Open log4j.properties in a text editor.
7. modify the **applicationLogs** value.

```
applicationLogs=C:\\Program Files\\Vocollect\\VoiceConsole4.2\\Logs
```

8. Save your changes.
9. Restart the VocollectWebApplicationsVC service.

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.

For detailed procedures on how to back up the various types of databases, Section Appendix B: , "Backing Up and Restoring the VoiceConsole Database", starting on page 92.

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, 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 or C:\Program Files (x86)\Vocollect\VoiceConsole\Logs
- RedHat Linux, SUSE Linux, and CentOS Linux: /opt/Vocollect/VoiceConsole/Logs

9.3.2 Stop and Restart the Service

Stop and restart the *VoiceConsole* 4.2 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 Service**.
5. Stop and restart the service.

RedHat Linux, SUSE 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

Notes about uninstalling:

If an embedded database was used, the database is not preserved. If a SQL or Oracle database was used, the database is preserved.

- The *VoiceConsole* service stops automatically during this process.
- 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.

10.1 Uninstalling VoiceConsole for Windows

1. With administrator privileges, run the **uninstall.bat** file at **<InstallDirectory>/Uninstaller.**

   The uninstall application opens and verifies the uninstall.
2. Click **Uninstall**.
3. When the uninstall process is finished, click **Quit**.
   A command window displays and the uninstall begins. Do not close the window until the uninstall is complete.

   VoiceConsole is uninstalled, and all *VoiceConsole* data is removed.

10.2 Uninstalling VoiceConsole for Linux

1. With root privileges, run the **uninstall.sh** file at **<InstallDirectory>/Uninstaller.**

   The uninstall application opens and verifies the uninstall.
2. Click **Uninstall**.
3. When the uninstall process is finished, click **Quit**.

   VoiceConsole is uninstalled, and all *VoiceConsole* data is removed.

10.3 Uninstalling in a Clustered Environment

Follow the appropriate process above for Windows or Linux.

10.4 Performing a Silent Uninstall

If *VoiceConsole* was installed or upgraded using a silent installation, Vocollect recommends you uninstall the application by running the **silent_uninstall.bat** file (Windows) as an administrator or the **silent_uninstall.sh** file (Linux) with root privileges located at **<InstallDirectory>/Uninstaller**.

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 (64-bit) ☐ Microsoft Windows 2008 Server (32-bit) ☐ Microsoft Windows 2003 Server (32-bit) ☐ Red Hat Enterprise Linux 6.x (64-bit) ☐ Red Hat Enterprise Linux 6.x (32-bit) ☐ Red Hat Enterprise Linux 5.x (32-bit) ☐ Red Hat Enterprise Linux 4.x (32-bit) ☐ CentOS Linux version 6.x ☐ VMWare® ESX 4.x
Client Operating System	☐ Microsoft Windows 7 ☐ Microsoft Windows Vista ☐ Microsoft Windows XP with Service Pack 2 ☐ Red Hat Linux Workstation ES for Intel processors
Browser	☐ Microsoft Internet Explorer 7.x, 8.x, or 9.x with Java JRE 1.6 or 1.7 configured ☐ Mozilla Firefox 4.x

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	☐ Embedded Data Storage ☐ Microsoft SQL Server 2012 ☐ Microsoft SQL Server 2008

Database Information	
	☐ Oracle 11g
Hostname of Database Server	
Port Number for Database	
Database Administrator Username and Password	

JDBC URL:
 	
Oracle Example:
`jdbc:oracle:thin:@localhost:1521:VC`
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	
Hostname for VoiceConsole Installation	
Time for VoiceConsole to Perform Database Maintenance	

Installation Information	
Directory into which VoiceConsole Should Be Installed	

Security	
Encryption	☐ WEP ☐ WPA ☐ WPA-2
Authentication	☐ PSK ☐ EAP
HTTPS (optional)	☐ Signed Certificate ☐ Tomcat configured
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 section 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.

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

- Oracle 11g: http://www.oracle.com/technetwork/database/features/availability/br-overview-097160.html
- SQL Server: http://msdn.microsoft.com/en-us/library/ms189621.aspx

B.2 Oracle 11g Enterprise

For more information on backing up and restoring the Oracle 11g enterprise database, please see the information found in the document *Oracle Database 2 Day DBA* and the section titled *Performing Backup and Recovery*.
(http://download.oracle.com/docs/cd/E11882_01/server.112/e10897/backrest.htm#i1004902)

B.2.1 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.2.2 How to create a backup of the VoiceConsole database

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.

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.

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 11g 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 five 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 drop-down list. After you restart the database the *VoiceConsole* system can be used again.

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**.

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.2.3 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 **VoiceConsole42** 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 VoiceConsole service.

B.3 SQL Server

For more details regarding backup and restore in SQL Server 2008, 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*.
(http://www.microsoft.com/download/en/details.aspx?id=1054)

For more details regarding backup and restore in SQL Server 2012, please see the information found on Microsoft's website in Back Up and Restore of SQL Server Databases.
(http://msdn.microsoft.com/en-us/library/ms187048.aspx)

B.3.1 Assumptions

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

- The *VoiceConsole* database is using the simple recovery model.
- Vocollect *VoiceConsole* 4.2 is installed on the server to which a database is being restored. The instructions below include stopping the *VoiceConsole* 4.2 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 *VoiceConsole* 4.2service 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.

B.3.2 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.3.3 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 95.
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.3.4 How to Restore the VoiceConsole Database

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 VoiceConsole 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 VoiceConsole service.

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 VoiceConsole 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.

For this procedure to be successful, you must perform the following steps.

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 VoiceConsole service.

B.4 Embedded Data Storage/ Embedded Database

B.4.1 How to Create a Backup of the VoiceConsole Database

VoiceConsole uses HSQLDB as the embedded database.

How to back up the VoiceConsole database using the VoiceConsole application

VoiceConsole is configured by default to take back up your database daily. To manually create a back up, in the *VoiceConsole* application under **Administration**, click **Schedules**. Select the **Backup Data** process and click the **Run selected job** action.

By default, backup .tar files are stored in:

- Windows: C:\Program Files\Vocollect\VoiceConsole\Database\Backup
- Linux: /opt/Vocollect/VoiceConsole/Database/Backup

B.4.2 How to Restore the VoiceConsole Database

You can restore the VoiceConsole Database by performing the following steps:

1. Shut down *VoiceConsole*.
2. Delete existing database files in **<InstallDir>/Database/vcdb.**
3. Execute the command

   java -cp {path-to-hsqldb-jar}/hsqldb-2.2.8.jar org.hsqldb.lib.tar.DbBackup --extract {path-to-backup}/{backup-file-name} {destination-directory-for-datafiles}

   The database, HSQLDB, will extract the datafiles to the named data directory

Example:

```
"C:\Program Files\Vocollect\VoiceConsole\jdk\bin\java" -cp "C:\Program
Files\Vocollect\VoiceConsole\apache-tomcat-7.0\webapps\VoiceConsole\WEB-
INF\lib\hsqldb-2.2.8.jar" org.hsqldb.lib.tar.DbBackup --extract "C:\Program
Files\Vocollect\VoiceConsole\Database\Backup\vcdb-20100519T125001.tar.gz"
"C:\Program Files\Vocollect\VoiceConsole\Database\vcdb"
```

Note: If a previous backup detected corrupt data, the backup file created from that process is named **vc_backup.bad**. Do not use this file, but it may be helpful to Vocollect technical support for diagnosis.

4. **Apply read/write permissions to the vcdb folder in <InstallDir>/Database.**
5. Restart *VoiceConsole*.

Appendix C: Initial Setup

Figure 15.1 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.

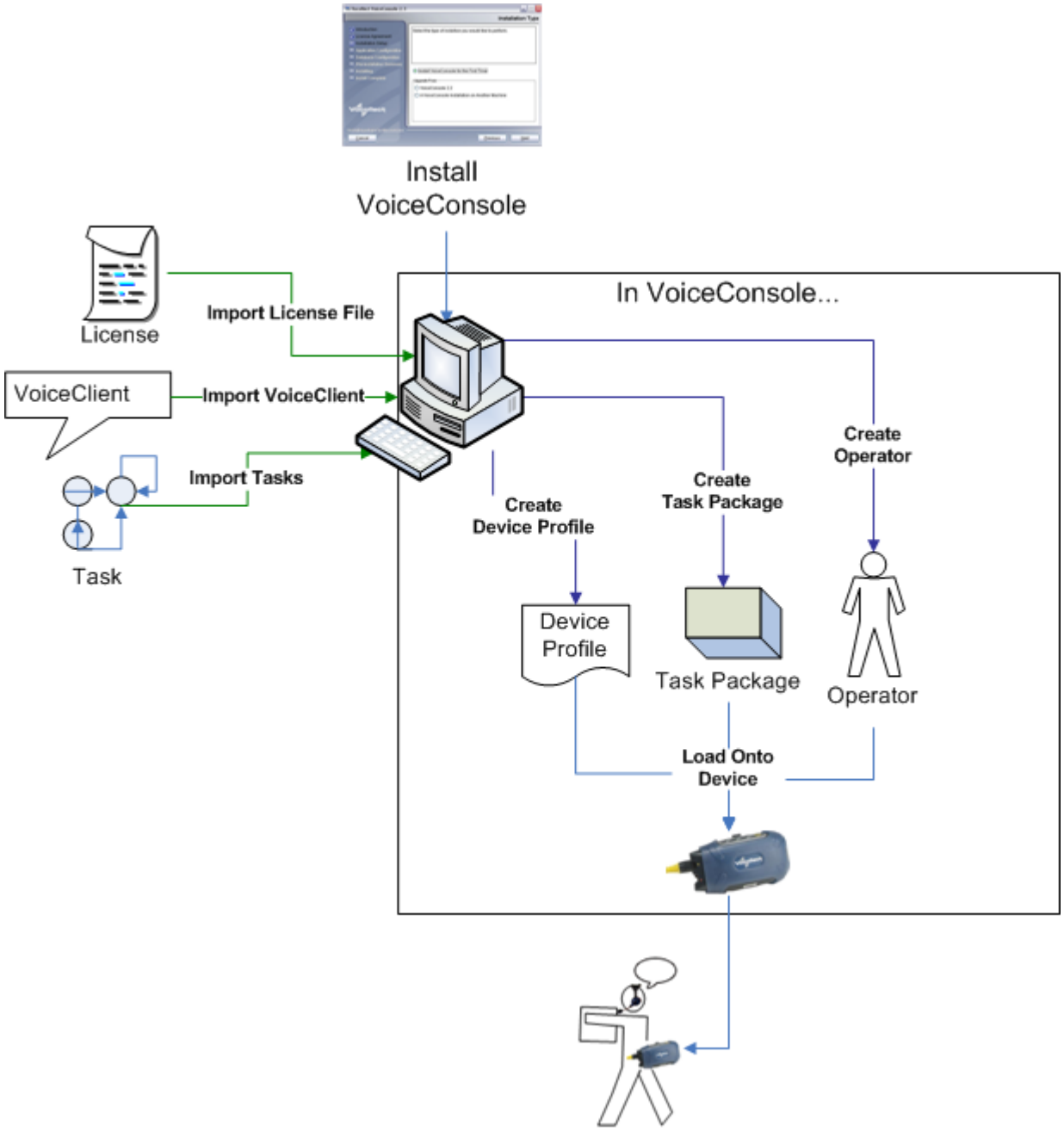


Figure 15.1 Setting Up VoiceConsole