TEKSPEECH PRO
Device Operator Manager

Installation Guide
for Version 1.3.14
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Revision History

Changes to the original guide are listed below:

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<tr>
<td>Rev A</td>
<td>07/16</td>
<td>Initial Release</td>
</tr>
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</table>
| -03    | 07/17 | Updates to:
                  Instructions for handling HTTPS protocol.
                  Downloading and deploying DB Server specific java connector components.
                  Update versions and requirements. |
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<td>45</td>
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<tr>
<td>Version 1.2.7</td>
<td>45</td>
</tr>
<tr>
<td>Version 1.2.6</td>
<td>45</td>
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About This Guide

Introduction

This installation guide describes how to install TekSpeech Pro Device and Operator Manager (DOM).

Topics covered in this guide are as follows:

• Introduction
• File Storage Setup
• Database Server Setup
• Application Server Setup
• Web Server Setup
• Network Load Balancing Setup
• DOM Upgrade
• Data Backup and Restore
• Rollback to Previous Version
• Setup Verification
• Version Information

Notational Conventions

The following conventions are used in this document:

• **Bold** text is used to highlight the following:
  • Dialog box, window and screen names
  • Drop-down list and list box names
  • Check box and radio button names
  • Icons on a screen
  • Key names on a keypad
  • Button names on a screen.
• Bullets (•) indicate:
  • Action items
  • Lists of alternatives
  • Lists of required steps that are not necessarily sequential.
• Sequential lists (e.g., those that describe step-by-step procedures) appear as numbered lists.

---

**Icon Conventions**

The documentation set is designed to give the reader more visual clues. The following graphic icons are used throughout the documentation set. These icons and their associated meanings are described below.

⚠️ **WARNING!** The word WARNING with the associated safety icon implies information that, if disregarded, could result in death or serious injury, or serious product damage.

⚠️ **CAUTION** The word CAUTION with the associated safety icon implies information that, if disregarded, may result in minor or moderate injury, or serious product damage.

⚠️ **IMPORTANT**

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**Related Documents and Software**

For the latest version of this guide and all related documentation, go to: [zebra.com/support](http://zebra.com/support).

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• Model number or product name
• Software type and version number.

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If your problem cannot be solved by Zebra Customer Support, you may need to return your equipment for servicing and will be given specific directions. Zebra is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty.
If you purchased your Zebra business product from a Zebra business partner, contact that business partner for support.

Provide Documentation Feedback

If you have comments, questions, or suggestions about this guide, send an email to EVM-Techdocs@zebra.com.
Introduction

Overview

TekSpeech Pro Device and Operator Manager (DOM) consists of four main components:

- Web server
- Application server
- Database server
- Data server.

This guide is presented in order of installation steps. All of the servers can be installed on one machine (see Single Instance Application Server with Local DB and Data on page 13), be installed as clusters (see Multiple Application Server Instance on page 15), or installed on multiple machines (see Multiple Application Server and Web Server Instance on page 16). This guide also presents one example of load balancing in the clustered setup.

For an understanding of the solution stack, see Software Solution Stack on page 11.

TekSpeech Pro DOM System Architecture

Figure 1  TekSpeech Pro DOM in Relation to Other Components in the Complete System
Hardware Components

Table 1 Hardware Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Description/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Server</td>
<td>Provide structured data access to the application.</td>
</tr>
<tr>
<td>Application Server</td>
<td>Provide the execution of the TekSpeech Pro DOM application.</td>
</tr>
<tr>
<td>Web Server</td>
<td>Provide the web frontend to the Application Server. Includes browser access for administrators and web service access for device clients.</td>
</tr>
<tr>
<td>Data Storage</td>
<td>Provide unstructured data access to the application. Includes PDK files, firmware files, operator profiles, configurations, and extra resources. This can be provided locally on the same machine as the Application server or provided remotely (For example, using NAS technology).</td>
</tr>
</tbody>
</table>

Software Solution Stack

Table 2 Required Software components

<table>
<thead>
<tr>
<th>Stack Component</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows Server 2008 R2, 64-bit or Windows Server 2012, 64-bit or Windows Server 2012 R2, 64-bit or Windows Server 2016, 64-bit</td>
</tr>
<tr>
<td>Database Server</td>
<td>MySQL Server, 64-bit (5.6 or 5.7) or PostgreSQL, 64-bit (9.4.x or 9.6.x) and supporting Java DB connector library</td>
</tr>
<tr>
<td>Java Runtime</td>
<td>Java SE Runtime Environment 8uXX, 64-bit (version 1.8.0_131-b11 verified)</td>
</tr>
<tr>
<td>Java Server</td>
<td>Apache Tomcat 7.0.x, 64-bit (version 7.0.78 verified)</td>
</tr>
<tr>
<td>Application</td>
<td>TekSpeech Pro Device and Operator Manager (DOM)</td>
</tr>
<tr>
<td>Web Server</td>
<td>Microsoft IIS (as included with Operating System)</td>
</tr>
</tbody>
</table>

Machine Size Recommendations

Table 3 Recommended Hardware (or virtual) Resource Requirements

<table>
<thead>
<tr>
<th>Server</th>
<th>Cores</th>
<th>RAM</th>
<th>Disk Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Server</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small (&lt; 100 operators)</td>
<td>2</td>
<td>4 GB</td>
<td>5 GB</td>
</tr>
<tr>
<td>Medium (100 - 500 operators)</td>
<td>4</td>
<td>8 GB</td>
<td>20 GB</td>
</tr>
</tbody>
</table>
**Table 3**  
Recommended Hardware (or virtual) Resource Requirements (Continued)

<table>
<thead>
<tr>
<th>Server</th>
<th>Cores</th>
<th>RAM</th>
<th>Disk Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large (&gt; 500 operators)</td>
<td>8</td>
<td>16 GB</td>
<td>50 GB</td>
</tr>
<tr>
<td>Database Server</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small (&lt; 100 operators)</td>
<td>2</td>
<td>2 GB</td>
<td>5 GB*</td>
</tr>
<tr>
<td>Medium (100 - 500 operators)</td>
<td>4</td>
<td>4 GB</td>
<td>20 GB*</td>
</tr>
<tr>
<td>Large (&gt; 500 operators)</td>
<td>8</td>
<td>8 GB</td>
<td>50 GB*</td>
</tr>
<tr>
<td>* Database Size: 1 GB + 10 MB per device</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network Storage Server</td>
<td></td>
<td></td>
<td>5 GB + 60 MB per operator</td>
</tr>
</tbody>
</table>

**System Architecture Scenarios**

Consider the information in the following table when planning a TekSpeech Pro DOM system installation. The information provided should help determine the correct architecture based on an organization’s goals for size, performance and reliability.

**Table 4**  
System Architecture Scenarios

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Features</th>
</tr>
</thead>
</table>
| Single Instance Application Server      | • Single local application server instance  
• Single local web server instance  
• Single local (or remote) database server  
• Single local (or remote) data storage (NAS)  
• Intended for small systems with less than 250 operators.  
• The web server, application server, database server, and storage could be provided on the same machine.  
• The database and/or data storage could be provided on separate machines for improved performance and reliability. |
| Multiple Instance Application Servers   | • Multiple application server instances.  
• Single or multiple, local or remote web server instances.  
• Remote database server  
• Remote data storage (NAS)  
• Provides for best performance.  
• Provides for best redundancy and availability.  
• Load balancing and application server affinity is provided by the web server.  
• Further redundancy can be provided with a frontend load balancing technology. |
Administrator Access

Table 5  Administrator Access

<table>
<thead>
<tr>
<th>Browser Parameter</th>
<th>Minimum Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Screen Resolution</td>
<td>1280 x 1024 pixels</td>
</tr>
<tr>
<td>Name and Version</td>
<td>Google Chrome 34</td>
</tr>
<tr>
<td></td>
<td>Safari 7</td>
</tr>
<tr>
<td></td>
<td>Firefox 27</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer 10</td>
</tr>
</tbody>
</table>

System Architecture Scenarios

Single Instance Application Server with Local DB and Data

In this scenario, all of the software stack components are installed on one machine. This scenario should only be used for small systems.

Figure 2  Single Instance Application Server with Local DB and Data
Single Instance Application Server with Remote DB and NAS

In this scenario, the web server and application server are installed on one machine. The database server and NAS are installed on separate machines. This scenario can be used in small to medium sized systems where performance is important but redundancy is not important.

Figure 3  Single Instance Application Server with Remote DB and NAS
Multiple Application Server Instance

In this scenario, there are multiple instances of the application server, a single instance of the web server, and remote database and NAS servers. This provides improved performance and allows for some redundancy.

**Figure 4** Multiple Application Server Instance
Multiple Application Server and Web Server Instance

In this scenario, there is a web server and application server per machine. A frontend network load balancer redirects traffic to one of the web servers. This provides improved performance and allows for maximum redundancy.

**Figure 5**  Multiple Application Server and Web Server Instance
Configuration Topology

The configuration topology diagram below shows an overview of the hierarchy of configuration items in the Device And Operator Manager (DOM). The DOM define sites, applications, devices, and operators that are used to administer a TekSpeech Pro solution.

Figure 6  Configuration Topology
File Storage Setup

Introduction to File Storage Setup

TekSpeech Pro DOM requires user data storage for the PDK files, firmware files, operator profile, configurations, extra resources, and so on. For information about disk size requirements, see Machine Size Recommendations on page 11.

If you want to use the local folder as storage or are performing an upgrade, you may skip this section.

Remote File Share

To provide a remote file share:

1. Create a new shared directory.
2. Change the folder permissions and shared users so that a particular user or group of domain-level users can have full access (create, write, read) to the directory from the web server.
   
   It cannot be a local user because it needs to be accessible from other machines in the same domain.

Migrating to a Remote File Share

To migrate to a remote file share:

1. If you are migrating from a local storage location to a remote file share, copy the entire content of your user data to your remote file share.
   
   Default location of user data: c:\tekspeechmanager-data

   CAUTION: If you have symbolic links in the folder (you most likely will if you migrated from TekSpeech Pro DOM version 1.2.X), use robocopy or xcopy with the appropriate flag (robocopy /sl or xcopy /b). You will also need to verify the symbolic links are still valid after the move. Symbolic links are not used in TekSpeech Pro DOM version 1.3.x and later.
Introduction to Database Server Setup

The supported database server types are MySQL and PostgreSQL. The installation of the databases is not covered in this guide, but the configuration after installation is. TekSpeech Pro DOM needs two databases: one for static data and another for dynamic user data.

When performing an upgrade using an existing database, you may skip this section.

Requirements

The database server must be configured to allow up to 120 concurrent connections for each TekSpeech Pro DOM application server to provide connection polling. If you have two application servers, allow a minimum of 240 connections. For information about disk size requirements, see Machine Size Recommendations on page 11

MySQL Database Server Configuration

For MySQL setup, you will need to manually create one database for the static data. The second database will be created by TekSpeech Pro DOM automatically after activation.

To create the databases on the server:

1. For a MySQL database server, the following commands are (minimally) required to create the databases on the server:
   
   mysql> CREATE DATABASE tsm DEFAULT CHARACTER SET utf8;

2. Edit the my.ini file (usually found in %PROGRAMDATA%\MySQL\MySQL Server 5.6) to set the max_connections to 120 (or larger if desired) per application server.

3. Restart the database.

To allow remote access to the server:

1. For a MySQL database server, the following commands are (minimally) required to allow remote access to the server for user root. If you are installing the database on the same host as the application, then you may skip this step. If you have created another user other than root for remote access by TekSpeech Pro DOM, substitute that user and <password> for the root user.
   
   mysql> GRANT ALL PRIVILEGES ON *.* TO '<user>''@'%' IDENTIFIED BY '<password>';
   
   mysql> FLUSH PRIVILEGES;

Where <user> is the user that will connect to the database (default root) and <password> is the password of the user that will connect to the database.
**PostgreSQL Database Server Configuration**

For PostgreSQL setup, you will need to create two databases manually, unlike the MySQL setup.

To create the databases on the server:

1. For PostgreSQL database server, the following commands are (minimally) required to create the databases on the server:
   ```
   CREATE DATABASE tsm WITH OWNER "postgres" ENCODING 'UTF8'
   CREATE DATABASE tsmaccount WITH OWNER "postgres" ENCODING 'UTF8'
   ```

2. Edit the **postgresql.conf** file (usually found in the data subdirectory of the `\PostgreSQL\<version>` installation directory) to set the **max_connections** to **120** (or larger if desired) per application server.

3. Save the file.

4. Edit the **pg_hba.conf** file (usually found in the data subdirectory of the `\PostgreSQL\<version>` installation directory) to add the following lines using the appropriate subnetwork at your site.

   - If your sub-network is "B-class", then provide 2 octets from your sub-network and use the trailing /16 to indicate that the first 16-bits of your sub-network is fixed and the remaining 16-bits are variable. If your sub-network is "C-class", then provide 3 octets from your sub-network and use the trailing /32 to indicate that the first 32-bits of your sub-network is fixed and the remaining 8-bits are variable.

   The following is an example for a sub-network of 10.72.x.x for a "B-class" sub-network:
   ```
   # TYPE DATABASE USER ADDRESS      METHOD
   # Remote connections on same sub-network.
   host  all    all  10.72.0.0/16  md5
   ```

5. Restart the database.

**Migration**

You can migrate from one database to another if they are of the same type (For example, from MySQL to MySQL).

To migrate from one database to another:

1. Stop all your applications (For example, Tomcat services).
2. Perform a full backup from the existing database.
3. Recreate/restore the database and schema on the new server.

**NOTE:** For MySQL, you may need to disable foreign_key_checks before you restore the database and enable foreign_key_checks after the restore.

**Replication or Backup (optional)**

You may enable database replication or schedule a backup in case of failure.
Introduction to Application Server Setup

Requirements

- Java SE Runtime Environment version 8uXX, 64-bit.
- Apache Tomcat version 7.0.xx, 64 bit.
- TekSpeech Pro DOM Application (tsm.war and tsmapi.war).
- Dom-config.properties template files
- Access to the following server:
  - License server: https://ls-msi.mcl4e.com or 54.195.246.173 port 443
  - Reference Data Server: http://refdb-msi.mcl4e.com or 54.195.246.173 port 80

For information about the machine size recommendation for the host's RAM and disk size requirement, see Machine Size Recommendations on page 11

Java Runtime Environment Install

To install Java Runtime:

1. Download the latest version 8uXX installer from Oracle.
2. Follow the installer to complete the setup.
3. Add a System Environment variable `JRE_HOME` that contains the installation folder name.
   
   **Example:** `C:\Program Files\Java\jre1.8.0_77`

   **WARNING:** If an update of JRE is installed later, this variable needs to be updated accordingly.
Apache Tomcat Install

To install Tomcat:

1. Download the Apache Tomcat version specified. For convenience, you may choose the installer version of Apache Tomcat. When running the installation wizard, ensure to choose the option to run Apache Tomcat as a service. At the end of the installation, Apache Tomcat should be installed into the following directory:
   C:\Program Files\Apache Software Foundation\Tomcat 7.0.

2. If you choose the Windows zip file instead of the installer, for example, apache-tomcat-7.0.68-windows-x64.zip, perform the following procedure:
   a. Create the directory: C:\Program Files\Apache Software Foundation.
   b. Unzip the contents to C:\Program Files\Apache Software Foundation.
   c. Rename the folder from the extracted name to "Tomcat 7.0". For example,
      > rn "apache-tomcat-7.0.68" "Tomcat 7.0"
   d. Add the System Environment variable "CATALINA_HOME" to be the root of the Tomcat folder. For Example: C:\Program Files\Apache Software Foundation\Tomcat 7.0.
   e. Open the command prompt as administrator and navigate to %CATALINA_HOME%\bin and execute the command service.bat install.

3. If not already performed in step 2.d., above, ensure to add the System Environment variable "CATALINA_HOME" to be the root of the Tomcat folder. For example, C:\Program Files\Apache Software Foundation\Tomcat 7.0.

4. Open the command prompt as administrator and navigate to %CATALINA_HOME%\bin and execute the command "tomcat7w.exe" and wait for the Tomcat properties window to open.
   a. Set startup type to automatic in the General tab.
   b. Set the following fields under the Java tab:
      i. Initial memory pool = 256 MB
      ii. Maximum memory pool = 1024 MB
   c. Add the following in the Java options (including the dash (-)) under the Java tab:
      i. -XX:MaxPermSize=256m
      ii. -Dfile.encoding=UTF8

   **WARNING:** If an update of JRE is installed later, then the Java Virtual Machine path under the Java tab needs to be updated accordingly to that specific version.

5. This step is only required if you encounter "Application System Error Access is denied. Unable to open the service 'Tomcat7'" during service startup.
   a. Navigate to %CATALINA_HOME%\bin in Explorer and right-click tomcat7w.exe.
   b. Select properties and go to the Compatibility tab.
   c. Select Run this program as an administrator under privilege level.
   d. Click OK.

Tomcat Log Configurations

By default, Tomcat logs keep growing as you use it. You want to set up log rotation or schedule archiving/deleting of the log files to avoid filling up the disk. The logs are stored in %CATALINA_HOME%\logs. To understand Tomcat
logging, see http://tomcat.apache.org/tomcat-7.0-doc/logging.html. The following sections are examples of what you can configure for the logs.

**Turn off Tomcat STDOUT and STDERR Logs**

In most cases, stdout and stderr logs contain the information from all the applications you enabled under webapps. You can enable logging for the applications of interest (For example, tsm and tsmapi).

To disable stdout and stderr logging:

1. Open the Tomcat Java properties (by running Tomcat7w)
2. Clear the fields for Redirect stdout and redirect stderr in the Logging tab.
3. Save and restart Tomcat.

**Turn off Localhost Access Logs**

It is recommended to turn the localhost connection log off in the production environment as the number of transactions will cause the disk to fill up really quickly and may impact performance.

To turn the logging off:

1. Open %CATALINA_HOME%\conf\server.xml and comment the following property out:
   `<Valve className="org.apache.catalina.valves.AccessLogValve" directory="logs"
   prefix="localhost_access_log." suffix=".txt"
   pattern="%h %l %u %t "%r" %s %b" />
   2. Restart Tomcat.

**Turn off or Log Rotate Miscellanies Logs**

Standard Tomcat installation uses java.utils.logging (JULI) and produces catalina, localhost, manager, and host-manager log files. These files most likely are small files but they will eventually add up. You can safely disable these logs for the purpose of TekSpeech Pro DOM.

To disable these log files:

1. Remove %CATALINA_HOME%\conf\logging.properties and restart Tomcat.
   It will not create more logs but you will need to purge the old logs manually.
2. If you would still like to keep the logs but keep them under a size limit, you have to configure Tomcat to use log4j instead of JULI.
   Instructions to convert to log4j can be found at http://tomcat.apache.org/tomcat-7.0-doc/logging.html#Using_Log4j.
3. Instead of using DailyRollingFileAppender, you want RollingFileAppender to control the size and the number of backup files.
   Class reference can be found at http://logging.apache.org/log4j/1.2/apidocs/org/apache/log4j/RollingFileAppender.html.

**Nightly Schedule Task**

You may create a batch file that monitors the log folder to compress logs and purge the ones that are over a certain age. If you do not have this mechanism and do not have the log rotation setup, your disk will eventually fill up.
Tomcat Connection Limits

This guide uses the Tomcat's HTTP Connector to server as a stand-alone server. Depending on the number of devices you have, you may need to adjust the `maxThreads` and `maxConnections` setting by modifying the `%CATALINA_HOME%\conf\server.xml` file.

Example:

```xml
<Connector port="8080" protocol="HTTP/1.1"
   connectionTimeout="20000"
   redirectPort="8443"
   maxConnections="-1"
   maxThreads="500" />
```

For descriptions of the two attributes and additional attributes, see [http://tomcat.apache.org/tomcat-7.0-doc/config/http.html](http://tomcat.apache.org/tomcat-7.0-doc/config/http.html).

Install Java JDBC Driver

**MySQL**

To install the MySQL Java Database Connector (JDBC) driver:

   Select the driver that matches your versions of MySQL database and Java runtime.
2. Extract the contents of the compressed file and locate the .jar library file.
3. Copy the .jar file to `%CATALINA_HOME%\lib`.

**PostgreSQL**

To install the PostgreSQL Java Database Connector (JDBC) driver:

1. Download the Java Database Connector from [http://jdbc.postgresql.org/download.html](http://jdbc.postgresql.org/download.html).
   Select the driver that matches your version of PostgreSQL database and Java runtime.
2. Extract the contents of the compressed file and locate the .jar library file.
3. Copy the .jar file to `%CATALINA_HOME%\lib`.

Install the tsm and tsmapi Applications

**Install Applications**

To install the applications:

1. Ensure the Apache Tomcat service is stopped.
2. Copy tsm.war and tsmapi.war to `%CATALINA_HOME%\webapps`.

**Configure User Data Location**

To configure the user data location:

1. Choose the correct dom-config.properties file from the template and copy to `%CATALINA_HOME%\conf`. Make sure the file name is renamed to dom-config.properties.
2. Open dom-config.properties in `%CATALINA_HOME%\conf`.
3. Enter the path of the data folder on the right hand side of "filerepository.shared.root.directory=".
   Example: filerepository.shared.root.directory=c:/tekspeechmanager-data/
4. Save the file when finished.

   NOTE: For this path, ensure to use “forward slash” characters (/) and not “back slash” characters (\).

If you use remote file server, please open command prompt as administrator to c:\ and enter the following commands:

1. mklink /D tekspeechmanager-data \\<fileshareserver>\<sharedfoldername>
   Example: mklink /D tekspeechmanager-data \10.72.1.7\DOM-data
2. fsutil behavior set SymlinkEvaluation R2R:1 R2L:1

As the Tomcat service is going to access this link, you will need to configure the “Log on” tab for Tomcat. Steps are described in Start Tomcat Service and Login section.

Configure Database Connection

To configure the database connection:

1. Edit dom-config.properties in %CATALINA_HOME%\conf
   a. Replace the properties with square brackets with your specific setup.
      [SERVER_IP]
      [SERVER_PORT]
      [DB_USERNAME]
      [DB_PASSWORD]
      Default port for MySQL is 3306 and PostgreSQL is 5432. Please ensure the username of password you provided here has the privileges to create new schema and tables in the database.

Start Tomcat Service and Log In

To start the Tomcat Service and log in:

1. Open the services application in the control panel.
2. If you are using remote file storage location, go to the Log on tab and specify a user with read/write permission to the file location.
3. Start the Tomcat service. It may take a few minutes before the application is ready.
4. Open a web browser to http://localhost:8080/tsm/admin/login.html. You should be able to see the login page once it is loaded.
5. Log in using the credentials "admin/admin".

Enable tsm and tsmapi Log4j Logs

If you have disabled stdout and stderr logging in the previous section, you may want to enable logging for tsm and tsmapi. Open tsm\WEB-INF\classes\log4j.properties and tsmapi\WEB-INF\classes\log4j.properties. The following shows a sample configuration for the tsm application's properties file:

```java
#log4j.rootLogger=INFO, stdout
log4j.rootLogger=INFO, stdout, logfile
log4j.appender.logfile.org.apache.log4j.RollingFileAppender
```
log4j.appender.logfile.File=${catalina.base}/logs/tsm.log
log4j.appender.logfile.MaxFileSize=100MB
# Keep five backup files.
log4j.appender.logfile.MaxBackupIndex=5
# Pattern to output: date priority [category] - message
log4j.appender.logfile.layout=org.apache.log4j.PatternLayout
log4j.appender.logfile.layout.ConversionPattern=%d %p [%c] - %m%n

There are some lines that begin with `log4j.appender.stdout` and `log4j.logger` that can be kept as they are. The example above for tsm app configures logging so that each file will be a maximum of 100 MB and up to five previous files will be kept (with one active file written by Tomcat). If you do not have catalina.base variable set in your java options, then you can replace it with the absolute path.

For information on RollingFileAppender, see http://logging.apache.org/log4j/1.2/apidocs/org/apache/log4j/RollingFileAppender.html.

For information on how to change the format of the lines in the log files, see http://logging.apache.org/log4j/1.2/apidocs/org/apache/log4j/PatternLayout.html.

Restart Tomcat after changes are completed.

**Configure Webservice Domain**

The Webservice Domain in the Properties of Administration Dashboard needs to point to the web server's domain. It is used when generating the configuration file (For example, loader.ini) for the devices so that they can connect to this server. The Webservice Domain is the hostname or IP address of this server or the hostname or IP address of the eventual load balancing server. If your web server is behind a load balancer, set this value to hostname or IP address of the load balancer. Restart Tomcat services (on all application servers) once you saved the change. Its pattern is as follows: `<hostOrIpAddress>/tsmapi`.

**Activate License**

If this is a first-time installation (i.e., not an upgrade), you will need to activate the TekSpeech Pro DOM at this time before configuring the web server. Register the license first (link from the license email) before clicking on the Activation icon on the Administration Dashboard.

**Firewall Setting**

If you are going to install the web server on another host, allow access to the Tomcat port (For example, port 8080). Add a rule in the firewall to allow port 8080 to be accessed. Skip this section if you are using the single instance installation.

**Clustering**

For clustered setup, repeat this entire section to set up the second server. The load balancing is handled by the web server in Web Server Setup.
Introduction to Web Server Setup

This chapter provides instructions to install the web server on a Windows server using IIS and ARR. If you use another method of balancing other than ARR, remember to enable sticky session. Note that in this guide, the "Default web site" is used for configuration. If you would like to reserve this site for another purpose, you may create a new site for TekSpeech Pro DOM.

NOTE: JK ISAPI redirector with IIS is not supported by Apache on Windows 2008 and later. There are some issues with using it for a clustered application server setup. JK ISAPI redirector may work for a single instance but it is not the supported configuration going forward. ARR is better supported from Microsoft and is directly integrated with IIS.

Activate IIS

If IIS is not enabled in the server manager, enable it in this step.

Install Application Request Routing (ARR)

Access the Microsoft support site and download the latest ARR for your IIS version. IIS 7.5 uses ARR v3. The simplest method to install ARR is by using the Web Platform Installer (Web PI) at www.microsoft.com/web/downloads/platform.aspx. If you would like to install manually, Microsoft suggests following the instructions:


Once it is installed, launch IIS Manager and you should see a new node “Server Farms” under the server name.

Configure Server Farms

Prior to configuring the server farms in this section, you should know the host names and ports for your application servers. Your web server needs to be able to access http(s)://[host ip address]:[port]/tsm/admin/login.html before attempting the following steps. If you are performing a single instance installation, then you only need to enter one host.

Create Server Farm

To create a server farm:

1. Launch IIS manager and expand your server node.
2. Right-click Server Farms and click Create Server Farm.
3. Enter the farm name Tomcat, verify Online is checked, and click Next.
4. In this step, you will need to provide the application server details:
   a. Enter the Server address (For example, 127.0.0.1 for the local system).
   b. Click the Advanced Settings link, and enter the httpPort value under the applicationRequestRouting node. Default for Tomcat is 8080.
   c. Click Add and continue to add all of the application servers.

5. Click Finish.

Enable Routing Rules

To enable routing rules:

1. Click Tomcat server farm, and then open Routing Rules.
2. Check Use URL Rewrite to inspect incoming requests.
3. Click Apply in the Actions pane.

Use Server Affinity

Enable this feature to preserve sticky sessions. It is optional for a single instance setup but is still recommended to configure this.

To use server affinity:

1. Click Tomcat server farm.
2. Click Server Affinity in the feature view.
3. Check the Client Affinity option to enable Client Affinity.
4. Ensure the default value of ARRAffinity is used as the value for the Cookie name field.
5. Click Apply.

NOTE: In order for client affinity to work as expected, you need a browser with cookies enabled. Also, your host name in the URL is required to contain a "." (dot) for your browsers to correctly return the cookie. For example, a host name that does not comply: http://localhost/tsm/admin/login.html will not correctly return cookies to the server. However, if you change the URL address to http://127.0.0.1/tsm/admin/login.html, then cookies will be returned correctly.

Configure Health Test

The URL Test feature allows ARR to mark servers as unhealthy if it fails the check and mark them as healthy once it passes the check at a later time.

To configure the health test:

1. Click Tomcat server farm.
2. Click Health Test in the feature view.
3. Enter http://localhost/tsm/notfounddispatcher.html in the URL field under URL Test.
4. Click Apply in the Actions pane.

You can verify the URL test after you have configured the URL Redirect in the next section.

CAUTION: It is advised that you come back to verify the URL test after you configured the URL redirect. If you make a mistake, ARR will mark your servers as unhealthy and they will be inaccessible.
Add Virtual Directory to File Storage

This virtual directory points the path to user data for TekSpeech Pro DOM. The web server needs to have at least read access to the file share.

To add virtual directory to file storage:

1. Verify that you have a folder named with your account number in your user data directory (For example, `c:\tekspeechmanager-data\files\4313190257` if your user data directory is set to the default.) If this folder does not exist, create it. You can find out your account number by going to [http://localhost:8080/tsm/admin/home.html](http://localhost:8080/tsm/admin/home.html) and click Account. Your account number is in the URL immediately after "tsm/" and before "/admin" (For example, [http://localhost:8080/tsm/4313190257/admin/home.html](http://localhost:8080/tsm/4313190257/admin/home.html)).

2. In IIS manager, right-click Default Web Site (or the site you are using for this application) and choose Add Virtual Directory.

3. Fill in the alias = files and choose the physical path to be the file share host, pointing to the license number. Example: `\10.72.1.7\DOM-data\files\4313190257` for a remote share or `c:\tekspeechmanager-data\files\4313190257` for a local folder.

4. Click Connect as and fill in the credentials that have the permissions to the folder. (skip this for a local folder).

5. Click OK.

Configure URL Rewrite for HTTP

Configuring URL Rewrite rules differ depending on whether you intend to expose the application via HTTP (unencrypted via port 80) or HTTPS (encrypted via port 443) protocol. Only configure the URL Rewrite rule for your intended protocol. It is recommended to use the HTTP protocol for better performance.

In this section, use IIS to redirect the tsm and tsmapi requests to the Tomcat Application server. Instead of passing the get requests (during deployment for example), create a rule to get the file directly.

For the following two sections, click on the server name in the connection pane in IIS and open URL Rewrite.

NOTE: URL Rewrite rules should be created at the server (top) level.

URL Redirect for tsm and tsmapi

To configure the URL redirect for tsm and tsmapi:

1. In the URL Rewrite feature, highlight the ARR_Tomcat_loadbalance rule and then click Edit from the Inbound Rules section of the Actions list.

2. Enter the following:

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>ARR_Tomcat_loadbalance</td>
</tr>
<tr>
<td>Match URL:</td>
<td></td>
</tr>
<tr>
<td>Requested URL</td>
<td>Matches the Pattern</td>
</tr>
<tr>
<td>Using</td>
<td>Regular Expressions</td>
</tr>
</tbody>
</table>
To configure the URL rewrite for files:

1. In the URL Rewrite feature, click Add Rules from the Actions list.
2. Under the Inbound rules section, select the blank rules template and click OK.
3. Enter the following:

### Table 6  URL Redirect for tsm and tsmapi

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>^((tsm)</td>
</tr>
<tr>
<td>Ignore case</td>
<td>Checked</td>
</tr>
<tr>
<td>Condition</td>
<td>None</td>
</tr>
<tr>
<td>Server variables</td>
<td>None</td>
</tr>
<tr>
<td>Action</td>
<td></td>
</tr>
<tr>
<td>Action type</td>
<td>Route to Server Farm</td>
</tr>
<tr>
<td>Scheme</td>
<td>http</td>
</tr>
<tr>
<td>Server farm</td>
<td>Tomcat</td>
</tr>
<tr>
<td>Path</td>
<td>/{R:0}</td>
</tr>
<tr>
<td>Stop processing of subsequent rules</td>
<td>Checked</td>
</tr>
</tbody>
</table>

### URL Rewrite for Files

To configure the URL rewrite for files:

1. In the URL Rewrite feature, click Add Rules from the Actions list.
2. Under the Inbound rules section, select the blank rules template and click OK.
3. Enter the following:

### Table 7  URL Rewrite for Files

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Rewrite rule for files</td>
</tr>
</tbody>
</table>

**Match URL:**

<table>
<thead>
<tr>
<th>Requested URL</th>
<th>Matches the Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using</td>
<td>Regular Expressions</td>
</tr>
<tr>
<td>Pattern</td>
<td>^tsmapi/file/(files/.*$</td>
</tr>
<tr>
<td>Ignore case</td>
<td>Checked</td>
</tr>
<tr>
<td>Condition</td>
<td>None</td>
</tr>
<tr>
<td>Server variables</td>
<td>None</td>
</tr>
<tr>
<td>Action:</td>
<td></td>
</tr>
<tr>
<td>Action type</td>
<td>Rewrite</td>
</tr>
<tr>
<td>Rewrite URL</td>
<td>{R:1}</td>
</tr>
<tr>
<td>Append query string</td>
<td>Unchecked</td>
</tr>
<tr>
<td>Stop processing of subsequent rules</td>
<td>Checked</td>
</tr>
</tbody>
</table>
4. Click **Apply**.
5. Click **Back to Rules**.
6. Highlight this rule and move it to the top.

**Configure URL Rewrite for HTTPS**

Configuring URL Rewrite rules differ depending on whether you intend to expose the application via HTTP (unencrypted via port 80) or HTTPS (encrypted via port 443) protocol. Only configure the URL Rewrite rule for your intended protocol.

**IIS Web Server Role and Features**

Ensure to disable all Performance (Web Server (IIS)/Web Server/Performance) features for compression. That is, disable Static Content Compression and Dynamic Content Compression.

**Disable URL Rewrite Rules**

If you previously configured the IIS server with URL Rewrite Rules, ensure to disable any URL Rewrite Rules at the Server (parent) level that might conflict with these rules outlined below.

**URL Rewrite for Files**

To configure the URL rewrite for files:

1. In the **URL Rewrite** feature (at the "Default Web Site"), click **Add Rules** from the **Actions** list.
2. Under the **Inbound rules** section, select the **blank rules** template and click **OK**.
3. Enter the following:

**Table 8  URL Rewrite for Files**

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Rewrite rule for files</td>
</tr>
<tr>
<td>Match URL:</td>
<td></td>
</tr>
<tr>
<td>Requested URL</td>
<td>Matches the Pattern</td>
</tr>
<tr>
<td>Using</td>
<td>Regular Expressions</td>
</tr>
<tr>
<td>Pattern</td>
<td>^tsmapi/file/((files/.*))$</td>
</tr>
<tr>
<td>Ignore case</td>
<td>Checked</td>
</tr>
<tr>
<td>Condition</td>
<td>None</td>
</tr>
<tr>
<td>Server variables</td>
<td>None</td>
</tr>
<tr>
<td>Action:</td>
<td></td>
</tr>
<tr>
<td>Action type</td>
<td>Rewrite</td>
</tr>
<tr>
<td>Rewrite URL</td>
<td>{R:1}</td>
</tr>
<tr>
<td>Append query string</td>
<td>Unchecked</td>
</tr>
<tr>
<td>Stop processing of subsequent rules</td>
<td>Checked</td>
</tr>
</tbody>
</table>
4. Click Apply.
5. Highlight this rule and move it to the top.

Reverse Proxy URL Rewrite Rule
1. In the URL Rewrite feature (at the "Default Web Site"), click Add Rules from the Actions list.
2. Under the Inbound and Outbound Rules section, select the Reverse Proxy template and click OK.
3. Enter the following:

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound Rules/ Enter the server name …</td>
<td>localhost:8080</td>
</tr>
<tr>
<td>Enable SSL Offloading</td>
<td>Checked</td>
</tr>
<tr>
<td>Outbound Rules/ Rewrite the domain names …</td>
<td>Checked</td>
</tr>
<tr>
<td>From:</td>
<td>localhost:8080</td>
</tr>
<tr>
<td>To:</td>
<td>&lt;domain name of ARR server&gt;</td>
</tr>
<tr>
<td>Example: dom.mycompany.net</td>
<td></td>
</tr>
</tbody>
</table>

4. Click OK.

Edit Outbound Rule ReverseProxyOutboundRule1
1. In the URL Rewrite feature, double-click the ReverseProxyOutboundRule1 in the Outbound rules … area.
2. Click the Edit button next to the Precondition.
3. Add a new precondition:

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition Input</td>
<td>{REQUEST_URI}</td>
</tr>
<tr>
<td>Check if input string</td>
<td>Matches the Pattern</td>
</tr>
<tr>
<td>Pattern</td>
<td>.<em>tsm.</em></td>
</tr>
<tr>
<td>Ignore case</td>
<td>Checked</td>
</tr>
</tbody>
</table>

4. Click Apply.

Edit Inbound Rule ReverseProxyInboundRule1
1. In the URL Rewrite feature, double-click the ReverseProxyInboundRule1 in the Inbound rules … area.
2. Update the following:
3. Click Apply.

Add MIME Types

To add MIME types:

1. In IIS, click the server name.
2. Open MIME Types in the feature pane.
3. Add the following:

<table>
<thead>
<tr>
<th>File name extension</th>
<th>MIME Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>.apk</td>
<td>text/plain</td>
</tr>
<tr>
<td>.pdc</td>
<td>text/plain</td>
</tr>
<tr>
<td>.pdk</td>
<td>text/plain</td>
</tr>
<tr>
<td>.mvt</td>
<td>text/plain</td>
</tr>
<tr>
<td>.mtp</td>
<td>text/plain</td>
</tr>
<tr>
<td>.lmd</td>
<td>text/plain</td>
</tr>
<tr>
<td>.dat</td>
<td>text/plain</td>
</tr>
</tbody>
</table>

Dashboard URL Reference

Now that the web server is set up, use the following URL reference to access common targets.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration Dashboard</td>
<td>http(s)://&lt;host&gt;/tsm/admin/home.html</td>
</tr>
<tr>
<td>Account</td>
<td>http(s)://&lt;host&gt;/tsm/&lt;account id&gt;/admin/home.html</td>
</tr>
<tr>
<td>Site</td>
<td>http(s)://&lt;host&gt;/tsm/&lt;account id&gt;/&lt;site name&gt;/home.html</td>
</tr>
</tbody>
</table>
Network Load Balancing Setup

Introduction to Network Load Balancing Setup

This chapter provides an example on how to set up a clustered web server using the network load balancing feature from Windows server. Skip this section if you are on a single instance install. If you choose another load balancing method, make sure you enable sticky sessions. Perform the following steps on your web server (where you installed your IIS).

First Instance

For the first instance, perform the following steps:

1. Using the Server Manager, navigate to the Features node.
2. Click the Add Features link.
3. Select the Network Load Balancing feature.
4. Click the Next/Install button to install the feature.
5. Launch the Network Load Balancing Manager application.
6. For the first application server, choose the menu path Cluster/New to create a new cluster instance.
7. In the New Cluster: Connect dialog, enter the host name of the current application server in the Host entry field and click the Connect button.
8. Click the network interface to use for the cluster and click Next.
9. On the New Cluster: Host Parameters dialog, (assuming that a static IP address has been given already for this interface), there should be an entry in the Dedicated IP addresses section, and the Default state should be set to Started. Click Next.
10. On the New Cluster: Cluster IP Addresses dialog, click the Add button to add the shared IP address for the cluster.
11. Enter the appropriate static IP address and subnet mask for the IPv4 address fields. Click OK.
13. On the New Cluster: Port Rules dialog, if required, edit the port rules to restrict the range or instances of port to 80 (and optionally 443 if HTTPS is to be used). Verify the filtering mode is selected as Multiple host and Affinity to Single. Click Finish.

Second or Later Instance

For the second or later instance, perform the following steps:

1. Launch the Network Load Balancing Manager application.
2. For the second (or later) application server, choose the menu path **Cluster/Connect to Existing** to create a new cluster instance.

3. In the **Connect to Existing: Connect** dialog, enter the host name of the first application server in the existing cluster into the Host entry field and click the **Connect** button.

4. In the **Clusters** section, ensure the existing cluster instance is selected and then click **Finish**.

5. Ensuring that the cluster instance is selected in the tree-view, choose the context menu, **Add Host to Cluster** option.

6. On the **Add Host to Cluster: Connect** dialog, enter the name of the current application server in the Host field. Click the **Connect** button.

7. Click the network interface to use for the cluster and click **Next**.

8. On the **Add Host to Cluster: Host Parameters** dialog, (assuming that a static IP address has been given already for this interface), there should be an entry in the Dedicated IP addresses section, and the **Default state** should be set to **Started**. Click **Next**.

9. On the **Add Host to Cluster: Port Rules** dialog, if required, edit the port rules to restrict the range or instances of port to 80 (and optionally 443 if HTTPS is to be used). Verify the filtering mode is selected as **Multiple host** and Affinity to **Single**. Click **Finish**.
Introduction to DOM Upgrade

This section describes the steps to upgrade your DOM to 1.3.14 while keeping your data and configurations.

WARNING: If you would like to roll back to the DOM version, please perform a backup of the database and the user data directory before performing the upgrade. The steps for the backup could be found in Data Backup and Restore. Optionally, you can back up the tsm and tsmapi folder, as well as the catalina folder under %CATALINA_HOME%\conf folder (for the database connection).

Upgrade from V.1.3.12

Since version 1.3.12, the configuration is stored in the dom-config.properties file that can be found in the %CATALINA_HOME%\conf directory. The contents of the dom-config.properties file are the same as in version 1.3.14. and are not modified during the upgrade.

If changes were made to either %CATALINA_HOME%\webapps\tsm\WEB-INF\classes\log4j.properties or %CATALINA_HOME%\webapps\tsmapi\WEB-INF\classes\log4j.properties, make a copy of these files before upgrading the tsm and tsmapi applications. Restore the backup version of these files after upgrading.

As of version 1.3.14, the database JDBC driver must be downloaded and installed separately. For information on installing the Java JDBC driver, see Install Java JDBC Driver on page 24.

Upgrade from V.1.3.6

Preserve the previous configurations

There are some changes to the location of configurations in DOM 1.3.14. Prior to the upgrade, please take a note on the parameters as described below.

1. Open %CATALINA_HOME%\conf\catalina\localhost\tsm.xml in a text editor and locate jdbc/mclv4 resource tag and bean/account-db1 resource tag. For both resource tag, please note down the following 3 values:
   • username
   • password
   • url

   Determine the database used by the DOM by looking at the driverClassName value (mysql or postgresql).

2. Open %CATALINA_HOME%\webapps\tsm\WEB-INF\classes\customapplication.properties in a text editor and find the following 2 values:
   a. PROPERTY_FILE_REPOSITORY_TMP_DIR
b. PROPERTY_DOMAIN_LIC_FILE

3. Go to the DOM admin dashboard (http(s)://<host>/tsm/admin/home.html) and click on Properties. Locate the property that sets the user data location (eg. c:\tekswagen-data). If this field does not exist, you may use the PROPERTY_FILE_REPOSITORY_ROOT in the customapplication.properties (default: c:/tekswagen-data/).

4. Extract the dom-config.properties from template that corresponds to the database and open the file in a text editor. Fill in the database section with 6 values you obtained in step 1.

5. Remove the hash “#” in front of filerepository.tmp.directory and replace the right hand side with value from step 2a.

6. Remove the hash “#” in front of licensing.licfile.path and replace the right hand side with value from step 2b.

7. Fill in the right hand side of filerepository.shared.root.directory with the value obtained in step 3.

8. Save the file as %CATALINA_HOME%\conf\dom-config.properties.

Update tsm and tsmapi Application

1. Stop Apache Tomcat service either through services.msc or Tomcat service monitor.

2. Move the tsm and tsmapi folder away from %CATALINA_HOME%\webapps folder.

   NOTE: Do not just rename the folders in the same directory. These folders must be move out of the %CATALINA_HOME%\webapps folder.

3. Follow Install Applications on page 24.

4. Remove or move the tsm.xml and tsmapi.xml from %CATALINA_HOME%\conf\catalina\localhost folder.

5. Start Tomcat service.

Upgrade from Version earlier than V1.3.6

Prior to TekSpeech Pro DOM 1.3.6, the setup has been for a single instance. This section describes the steps to take to upgrade to the latest version while keeping the single instance setup.

Tomcat Application Update

   NOTE: The %CATALINA_HOME% refers to the path to the Tomcat directory on your system. The default path is C:\Program Files\TekSpeech Pro Device and Operator Manager\tomcat.

To update Tomcat:

1. Stop Apache Tomcat service.

2. Perform Tomcat Log Configurations on page 22.

3. Move the tsm and tsmapi folder away from the %CATALINA_HOME%\webapps folder.

   Note: Do not just rename the folders in the same directory. These folders must be moved out of the %CATALINA_HOME%\webapps folder.

4. Follow section Install the tsm and tsmapi Applications on page 24, with these special notes:

   a. At Configure Local User Data Location section and Configure Database Connection section, simple just use the provided dom-config-single-instance.properties file. Rename this file as dom-config.properties file and put in tomcat\conf folder.

   b. You may skip Configure Webservice Domain on page 26 and later.
IIS Reconfiguration

In previous versions of the TekSpeech Pro DOM installation guide, the Jakarta IIS Tomcat connector was used to redirect JSP and JSPX contents to Tomcat. This section provides the procedure to use Microsoft Application Request Routing instead. See the note on Using ISAPI Redirector with IIS for reasons for the change.

1. Open IIS Manager and Delete the Tomcat site.
2. Change the binding for **Default Web Site** to 80.
3. Follow the instructions in [Web Server Setup](#).
4. Restart the IIS server.
Data Backup and Restore

Introduction to Data Backup and Restore

To back up the data in TekSpeech Pro DOM, there are two components that need to be backed up when the application server is stopped: database and user data files. The reason for stopping the application server is to prevent inconsistency between the database and user data files.

Stop all Tomcat services that access the database and user data files when you are doing either a backup or restore. If you have a clustered setup, you will need to stop all of them. The database and user data files should be backed up together and restored together.

Database Backup

MySQL Backup

To perform a MySQL backup:

1. Open a command prompt as an administrator and navigate to the bin folder of your MySQL install, where mysqldump.exe and mysql.exe are located.
2. Type the following commands:
   
   mysqldump -u[username] -p[password] tsm > tsm.sql
   
   mysqldump -u[username -p[password]] account[account-number] > account[account-number].sql
   
   Replace [username], [password], and [account-number] appropriately.
3. Open both .sql files and add SET foreign_key_checks = 0; as the first SQL command executed and SET foreign_key_checks = 1; as the final SQL command executed.
4. Save the resulting .sql files.

PostgreSQL Backup

To perform a PostgreSQL backup:

1. Open pgAdmin III and add a connection to the PostgreSQL server with DB owner credentials.
2. Under Databases, right-click the name of the database for DOM DB1 (For example, tsm) and select Backup.
3. Chose the backup file location and name. You can leave the format as custom.
4. Select any other appropriate option as needed and click Backup.
5. Repeat for DB2 (For example, tsmaccount).
Data Backup and Restore

User Data Backup

By default, the user data files are stored in `c:\tekspeechmanager-data`. If TekSpeech Pro DOM was updated from version 1.2.x, it will contain symbolic links with an absolute path reference. See the section below Contain Symbolic Links on page 40. Otherwise, if TekSpeech Pro DOM was updated from version 1.3.x, it will not contain symbolic links. See the section below No Symbolic Link on page 40.

Contain Symbolic Links

Perform the following if TekSpeech Pro DOM was updated from version 1.2.x.

Use xcopy with VHD

1. Open Disk Management.
2. Click Action, Create VHD.
3. Follow the wizard to create a VHD with sufficient size for the entire user data directory.
4. Attach the VHD and format the volume. In this section, assume the drive letter for the VHD is E:\.
5. Create a directory called UserDataBackup under E:\.
6. Open a command prompt as a local administrator and execute the following command:

   ```
   xcopy /B /E c:\tekspeechmanager-data\*.* E:\UserDataBackup\n   ```

   1. When all files are transferred, you may detach the VHD and store the file.

No Symbolic Link

Perform the following if TekSpeech Pro DOM was updated from version 1.3.x.

Either copy the entire `c:\tekspeechmanager-data` folder to the backup location or zip the contents to the backup location.

Database Restore

This section contains information on how to restore the database from backup files.

WARNING: A database with a newer schema (For example, with TekSpeech Pro DOM 1.3.6) is not backward compatible with older versions of TekSpeech Pro DOM (For example 1.2.7). You may have an older database schema attaching to a newer version of DOM.

MySQL Restore

To perform a MySQL restore:

1. Locate the backup .sql file.
2. Open a command prompt as an administrator and navigate to the bin folder of the MySQL install.
3. Verify the backup .sql file turns the foreign key check off before restoring and turns the check back on after the restore.
4. Type the following commands:

   ```
   mysql.exe -u[username] -p[password] tsm < [full path to your tsm backup file]
   ```

   ```
   mysql.exe -u root -p[password] account[account-number].sql
   ```
Replace [username], [password], and [account-number] appropriately.

**PostgreSQL Restore**

To perform a PostgreSQL restore:

1. Open pgAdmin III and add a connection to the PostgreSQL server with DB owner credentials.
2. Under Databases, right-click the name of the database you want to restore and then click **Restore**.
   
   If you do not have a database that already exists, you may create one at this time by right-clicking **Databases** and **New Database**.
3. Select the database file that you want to restore from.
4. Choose any other appropriate option as needed and click **Restore**.
5. Repeat for each additional database to restore.
6. If you are moving the databases between servers, make sure that you also restore the login roles for TekSpeech Pro DOM.

**User Data Restore**

**Restore from Zip**

Extract the content of the archive to your destination user data folder. By default, this path is `c:\tekspeechmanager-data`.

**Restore from VHD**

To restore from VHD:

1. Mount the VHD through Disk Management. This section assumes the mounted drive letter is E:.
2. Open a command prompt as a local administrator and type in the following:
   ```
   xcopy /B /E E:\ UserDataBackup \*.* C:\tekspeechmanager-data
   ```
3. Once the transfer is complete, you may detach the VHD.
Rollback to Previous Version

Introduction to Rollback to Previous Version

Rollback of the TekSpeech Pro DOM application can be achieved only if you kept the older version of the database backup and the user data folder. The reason for this is the newer version of the database is not backward compatible to the older version of TekSpeech Pro DOM. Although the installation of TekSpeech Pro DOM 1.3.6 is vastly different from previous versions, the web server setup can be kept the same across different versions.

Install the Older Version

The only component that is changed from version to version is the TekSpeech Pro DOM application (For example, tsm and tsmapi). To restore the TekSpeech Pro DOM to an older version, replace webapps\tsm and webapps\tsmapi with the content of tsm.war and tsmapi.war, respectively. If you made any changes in these two folders, (For example, a logging change), then you need to reapply them. Keep in mind that the user data folder location is c:\tekspeechmanager-data for older versions and the domain.lic file needs to be in that folder.

Restore the Database and User Data Folder

After the installation of the previous TekSpeech Pro DOM application, the database and user data need to match with the version of TekSpeech Pro DOM. With Tomcat service stopped, restore the database and user data according to section Introduction to Data Backup and Restore on page 39 from your backup files.
Setup Verification

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Introduction to Verifying Your Setup

After you have fully configured TekSpeech Pro DOM, verify the installation and configuration were successful by performing the following actions in TekSpeech Pro DOM:

- Deployment of an existing configuration (if TekSpeech Pro DOM was upgraded)
- Deployment of a new configuration (with a new application)
- Login on the terminal.

Troubleshooting

“Connection Error” or Deployment Failure

Check your virtual directory configuration and URL rewrite rule for the file. If it is configured properly, you should be able to download the PDK file and configuration file using the browser. For example, `C:\tekspeechmanager-data\files\[Lic_number]\applications\[app_name].pdk` can be downloaded using the link `http://[host]/tsmapi/file/files/applications/[app_name].pdk`.

Unable to Login - Keeps Showing Me the Logon Page

Most likely you have clustered application servers. Verify your NLB affinity setting and ARR affinity setting is correct.

500 level Error

The Tomcat server is not ready for requests.

Not Responding or Page Not Found after Clicking on the Account icon at Admin Page

Please make sure the application server has access to the license server and the reference data server as outlined in the requirement section of application server. Double check your firewall rules/proxy settings.
Version Information

TekSpeech Pro DOM Version Information

This section points out the changes between versions that may affect the setup.

Version 1.3.14

• Fixed issue operator password stored as encrypted value in database
• Fixed issue delete site not allowed unless all related data to that site is deleted first
• Fixed issue related to encoding of voice logs files
• Fixed issue related to moving operator to a different site and updating link to a speech profile
• New feature DOM health check
• Fixed issue operator login status consistency

Version 1.3.12

• Support for license replacement
• Added cleanup policy for user data and database
• Added license server connection status
• Support for TekSpeech Pro V4
• Updated browser support for Internet Explorer 11
• Fix for operator voice logging issue when logs exceed a certain size
• Updated Tomcat support
• Fixed update policy for user data folder to remove symbolic links
• Fixed deleting files through admin dashboard\files
• Added license server connection status
• Improved English and French localization
• General performance improvements
• Fixed issue related to multiple active deployment plans for the same group

Version 1.3.6

• Support for configurable location of user data folder.
• Support for configurable location of domain.lic file and temp directory.
Version 1.3.2

- Initial support for PostgreSQL database.
- No longer using symbolic links in the user data.

Version 1.2.7

- Support for HTTP proxy.

Version 1.2.6

- Initial release.