

AVALANCHE MC 5.0 AND DATABASE MANAGEMENT SYSTEMS

Avalanche Mobility Center (MC) offers support for other database management systems (DBMS) as alternatives to the built-in PostgreSQL DBMS. This was prompted by requests from a few enterprise customers who have database administrators on staff and/or who have corporate policies driving database standardization on a specific platform. While Wavelink recommends that customers use the built-in Avalanche DBMS (PostgreSQL) when possible, they also have the option of using Microsoft SQL Server 2005, SQL Server 2008, Oracle 11g, or PostgreSQL installed separately. These options are referred to as external databases.

The basic assumption with an alternate DBMS is that the customer takes responsibility for some of the database administration tasks that are otherwise handled in an automated manner with the built-in Avalanche DBMS. This document describes the considerations you must make when deciding to use an alternate DBMS with Avalanche MC.

This document provides a comparison chart for installing with either the internal PostgreSQL DBMS or an external DBMS. It also provides information regarding installation, migration, backup and restoration when operating with an alternate database.

OVERVIEW

The following information is contained in this document:

- Avalanche with Internal vs. External Databases
- Installation
- Migration
- Backup and Restoration

AVALANCHE WITH INTERNAL VS. EXTERNAL DATABASES

Avalanche MC utilizes two databases to store and manage information for your network: the enterprise database and the statistics database (optional). The databases can be run on a PostgreSQL, Microsoft SQL Server 2005, SQL Server 2008, or Oracle 11g DBMS. Avalanche MC comes with PostgreSQL as part of the installation and several of the database tools included in Avalanche MC are designed for working with PostgreSQL. However, those who have experienced database administrators on staff and/or who have corporate policies driving database standardization may choose to use an alternate DBMS instead.

NOTE: Cross-platform migration (i.e., from SQL Server to PostgreSQL) is not supported.

The following table presents a comparison of available features when Avalanche MC is installed with either internal PostgreSQL or an alternate DBMS.

	Built-in PostgreSQL	SQL Server 2005, SQL Server 2008	Oracle 11g, external PostgreSQL
Installing Avalanche MC	PostgreSQL is built into the Avalanche MC installation process, can be installed simultaneously, and requires no extra steps for installation.	DBMS must already be installed and the databases and logins created manually before installing to allow Avalanche MC access.	DBMS must already be installed and the databases and logins created manually before installing to allow Avalanche MC access.
Creating the database	The databases are created automatically during Avalanche installation.	The databases must be created manually before installing Avalanche.	The databases must be created manually before installing Avalanche.
Migrating to a new version of Avalanche MC	The databases are automatically backed up and then reformatted to work with the new version of Avalanche MC.	The new databases must be created/backed up manually. The installer will reformat the information to work with the new version of Avalanche MC.*	Support for these DBMSs is new to Avalanche 5.0. For migration information, please contact Wavelink Technical Support.
Backing up and restoring the databases	Avalanche MC has a backup and restore tool on the Console that can automatically back up or restore the database, firmware and deployment packages, and software files.	The databases must be backed up or restored manually and simultaneously with a manual backup/restore of Avalanche MC software files.	The databases must be backed up or restored manually and simultaneously with a manual backup/restore of Avalanche MC software files.
Wavelink customer support	Wavelink support handles questions about PostgreSQL database management.	Wavelink support handles questions about the interface with Avalanche MC but does not address issues specific to the DBMS.	Wavelink support handles questions about the interface with Avalanche MC but does not address issues specific to the DBMS.
Licensing the DBMS	There is no additional licensing cost for PostgreSQL.	The user is responsible for ensuring licensing compliance.	The user is responsible for ensuring licensing compliance.

* If you are migrating to a new version of Avalanche (e.g., from Avalanche 4.8 to 5.0), then you can also migrate from SQL Server 2005 to SQL Server 2008.

INSTALLATION

The hardware, software, and other requirements that the Avalanche MC installation requires for best performance vary depending on the number of mobile devices you want to manage and your overall network setup. Refer to *Avalanche MC 5.0 Installation Requirements* on the Wavelink Web site for a more detailed list of requirements for Avalanche installation. For requirements for a specific DBMS, see the documentation for that product.

When installing Avalanche MC with an alternate DBMS, you must install the DBMS, create the databases, and create the login roles for the databases before you initiate the Avalanche MC installation. You will also need the DBMS client installed.

Depending on the database platform you are using, there are some tasks that must be accomplished before you install Avalanche with external databases.

BEFORE YOU BEGIN (POSTGRESQL)

You must complete the following tasks before you can install Avalanche to work with external PostgreSQL databases:

- Install PostgreSQL 8.4.
- Create the Avalanche databases. The databases must be named `avalanche50` and `avastats50`.
- Create the login role for the databases.
- If you are installing Avalanche in a different location than the database server, modify `pg_hba.conf` and `postgresql.conf` to support a remote connection.

BEFORE YOU BEGIN (SQL SERVER)

You must complete the following tasks before you can install Avalanche with SQL Server:

- Install Microsoft SQL Server and obtain DBMS licenses.
- Create the Avalanche databases. The databases must be named `avalanche50` and `avastats50`.
- Create the login role for the databases.

NOTE: Avalanche does not support Windows Authentication for the SQL Server login.

- If you are installing Avalanche in a different location than the database server, you must configure the server to allow remote access.
- Install the Microsoft SQL Server Native Client and SQL Server Command Line Query Tool for your edition of SQL Server on the machine where you will be installing Avalanche.

NOTE: You must use the Client and Query Tool specific to your edition. If you are using SQL Server 2005, the files will be named `sqlncli.msi` and `SQLServer2005_SQLCMD.msi`. If you are using SQL Server 2008, the files will be named `sqlncli.msi` and `SqlCmdLnUtils.msi`.

BEFORE YOU BEGIN (ORACLE)

You must complete the following tasks before you can install Avalanche with Oracle:

- Install Oracle 11g and obtain DBMS licenses.
- Perform an Administrator installation of the Oracle Client Utility (`win32_11gR1_client.zip`) at the location where you will be installing Avalanche.

NOTE: If you do not use the Administrator installation type, Avalanche will not have all the tools necessary to communicate with the databases.

- Create or determine the SID Avalanche will use.
- Create the Avalanche schemas (i.e., user logins and passwords). The schema names will vary from release to release of Avalanche. For Avalanche 5.0, Wavelink recommends the schema names `avalanche50` and `avastats50`. The schemas will need sufficient privileges to create, alter, drop, select, delete, or update any table, index, view, or sequence.

- Update the `tsanames.ora` file to contain the configuration information for the chosen SID. The file should be available to the Client Utility.
- If you are installing Avalanche in a different location than the database server, you must configure the server to allow remote access.

COMPLETING AN EXTERNAL DATABASE INSTALLATION

Once you have created the database, created the login and assigned the login to the database, you can complete the Avalanche installation. Obtain the Avalanche MC for External Databases installer, save it to the system where you want to install Avalanche, and double-click it to install. The installer will prompt you to enter your database information so that Avalanche has access.

MIGRATION

Avalanche MC allows automated migration with SQL Server 2005 to Avalanche 5.0. You can also migrate from SQL Server 2005 to SQL Server 2008 when you are moving to a new version of Avalanche. For instructions on migrating, see *Migrating to Avalanche 5.0 with MS SQL Server*, available from the Wavelink Web site.

NOTE: Cross-platform migration (i.e., from SQL Server to PostgreSQL) is not supported.

BACKUP AND RESTORATION

The databases for Avalanche MC should be backed up regularly. Plan to back up the databases before uninstalling or upgrading to a newer version of Avalanche MC. If for any reason the databases are deleted or corrupted, you can restore them from the backup files.

In order for a backup of the Enterprise Server database to be valid, you must back up the Avalanche software packages at the same time. Restoring your database without restoring the correct software package files may cause problems. While backing up or restoring your databases and software packages, you must stop the Avalanche Enterprise Server.

To maintain accurate reporting information, you should also back up the Statistics Server database on the same schedule as the Enterprise Server database. You must stop the Statistics Server in order to back up the Statistics Server database.

NOTE: You should create a backup directory before performing the backup procedure. Use the same directory for storing the database backups and the software packages backup.

NOTE: These processes are from a Windows OS and use WinZip to compress the software packages. If you use a different OS or choose to use another compression method, refer to the respective user guides.

To back up the databases and Avalanche software packages:

1. To access the **Services** list, click **Start > Control Panel > Performance and Maintenance > Administrative Tools** and then double-click **Services**.

The **Services** window appears.

2. To stop the Enterprise Server, select **Wavelink Avalanche Enterprise Server** from the list and click **Stop the service**.

To stop the Statistics Server, select **Wavelink Stat Server Enterprise** from the list and click **Stop the service**.

3. Open the **Windows Explorer** and navigate to **Program Files > Wavelink > Avalanche MC**.

4. Right-click the `avapackages` folder and select **Winzip > Add to Zip file**.

The *Add* dialog box appears.

5. Type the location of the backup directory in the **Add to archive** text box and click **Add**.

6. The software packages are zipped and saved in the backup directory.

7. Backup the Avalanche databases.

8. To restart the Enterprise Server from the **Services** window, select **Wavelink Avalanche Enterprise Server** from the list and click **Start the service**.

To restart the Statistics Server from the **Services** window, select **Wavelink Stat Server Enterprise** from the list and click **Start the service**.

The databases and software packages are backed up.

To restore the databases and Avalanche software packages:

1. To access the **Services** list, click **Start > Control Panel > Performance and Maintenance > Administrative Tools** and then double-click **Services**.

The **Services** list appears.

2. To stop the Enterprise Server, select **Wavelink Avalanche Enterprise Server** from the list and click **Stop the service**.

To stop the Statistics Server, select **Wavelink Stat Server Enterprise** from the list and click **Stop the service**.

3. Open the Windows Explorer and navigate to your backup directory.

4. Right-click on `avapackages.zip`. Select **WinZip > Extract to....**

The *WinZip Extract* dialog box appears.

5. Type `C:\Program Files\Wavelink\AvalancheMC` in the **Extract to** text box.

-Or-

Use the tree to navigate to **Program Files > Wavelink > Avalanche MC**.

6. Click **Extract**.

The software packages are restored to Avalanche MC.

7. Restore the Avalanche databases.

8. To restart the Wavelink Avalanche Enterprise Server from the **Services** window, select **Wavelink Avalanche Enterprise Server** from the list and click **Start the service**.

To restart the Statistics Server from the **Services** window, select **Wavelink Stat Server Enterprise** from the list and click **Start the service**.

The databases and software packages are restored to Avalanche MC.

ADDITIONAL RESOURCES

For more information, refer to the following related document located on the Wavelink web site or available from Wavelink customer service:

- *Wavelink Avalanche MC Java Console User Guide*

REVISION HISTORY

- 15/04/2009. Document created.
- 16/11/2009. Comparison table and backup/restore processes added.
- 19/01/2011. Updated for 5.0 release.



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