Decisions Deployment Guide

Decisions 9.0.0

11/21/2023

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Decisions Deployment

Genesys Decisions is a multi-user what-if analysis staff planning and budget planning system for contact center networks. Using Genesys Decisions, users will quickly and accurately develop weekly, monthly, annual, and multi-year planning scenarios. Each scenario delivers:

- Forecasts of key drivers (for example, contact volume, handle time, shrinkage)
- Weekly and monthly hiring, as well as overtime and leave plans
- Weekly and monthly ASA, abandon rate, occupancy, and service level predictions
- Detailed budgeting and variable labor cost variance analysis

This guide is intended for system administrators, network engineers, and others who plan to install the Decisions application and Data Mart. It includes the prerequisites, installation, and post-installation procedures necessary for a successful installation of Decisions. This guide is valid for the 9.0 releases of this product.

Before you begin a new installation, Genesys strongly recommends that you read the release and installation documentation for this product:

- Release Notes
- Genesys Decisions Deployment Guide (this Guide)
- Genesys Decisions Data Mart Data Dictionary

Release Package

The Decisions Release Package includes the following:

- Client application installation executable
- Database deployer executable
- Data Bus service installation executable
- Documentation

System Requirements and Architecture

This page provides information about the hardware and software requirements for Genesys Decisions software deployment. You can also find information about the typical Decisions deployment architecture.

This page contains the following topics:

- Prerequisites: Hardware and Software Requirements
- Genesys Decisions Architecture

Prerequisites: Hardware and Software Requirements

This section provides information about the hardware and software that you require to deploy the Genesys Decisions applications.

In general terms, you will need:

- Client PCs
- At least one server. Also review additional information about the Data Bus service server.
- File and data storage space
- At least one database
- If you use the Decisions Forecast module, then you require access to the Decisions Cloud Service.

In addition, you need to ensure your network is set up for communication amongst the Decisions components. For visual representations of typical Genesys Decisions deployment scenarios, see Genesys Decisions Architecture.

Client PC Requirements

You need the following to successfully install or upgrade Genesys Decisions software:

- 4 processor cores are required, but Genesys recommends that you use 6 processor cores
    - 2.0 GHz processor speed or greater
- 200 Mb free disk space
- 4 GB system memory
- Windows 7, 8, 10, or 11 (x86 or x64)
- .NET Framework version 4.5 or later

- A desktop (physical or virtual) for each client application instance in your enterprise

Server Requirements

Demand and storage requirements are largely dependent on after-deployment configuration of the Decisions product. The two configurations described in this section are not necessarily minimum requirements, but they are the configurations that Genesys recommends. During your planning phase, determine which of the following configurations will work best in your enterprise:

- Both OLTP and Data Mart are on the same server with the Data Bus service
- Separate servers for OLTP and Data Mart

Important

- Although backup systems are not part of the sizing information provided for the two recommended configurations (see below), Genesys recommends that you always deploy backup systems. Be sure to add backup systems to the configuration plan for your enterprise.

- Genesys Decisions runs on Windows Server 2008+/MS SQL 2008+. See the Decisions page in the *Genesys Supported Operating Environment Reference Guide* for detailed information about the supported operating environments, including requirements, supported versions, and any conditions or limitations.

- Genesys Decisions uses an OLTP system, which is the database used for Decisions transactions. The OLTP system serves the Decisions user and administrative applications.

- Genesys Decisions Data Mart is the reporting database.

Configuration 1 – Both OLTP and Data Mart are on the same server with the Data Bus service

SQL Database server:

- Windows Server 2012 R2 (or higher)
- MS SQL 2012 SP2 (or higher)
- 4 CPU
- 16 GB RAM
- Binaries: 5 GB required for the Data Bus service (mostly room for logs)
- Data: 100 GB
- Logs: 20 GB. Flexible depending on your SQL Server policies

Configuration 2 – Separate servers for OLTP and Data Mart

SQL Database server – Decisions OLTP system:

- Windows Server 2012 R2 (or higher)
- MS SQL 2012 SP2 (or higher)
- 2 CPU
- 8 GB RAM
- Binaries: No additional storage requirement
- Data: 50 GB
- Logs: 10 GB. Flexible depending on your SQL Server policies

SQL Database server – Decisions Data Mart with the Data Bus service:

- Windows Server 2012 R2 (or higher)
- MS SQL 2012 SP2 (or higher)
- 2-4 CPU
- 16 GB RAM
- Binaries: 5 GB required for the Data Bus service (mostly room for logs)
- Data: 50 GB
- Logs: 10 GB. Flexible depending on your SQL Server policies

Forecasting Requirements

The Decisions Forecasting module requires access to the Decisions Cloud Service. Genesys provides an encrypted file that contains connection information that allows you to access the Forecasting Service. The encrypted file that you receive is unique to your organization. Ensure that the file is in the folder where the database deployment wizard is stored; the wizard reads the file from this location during deployment.

Storage Requirements

- The Decisions database resides on a SQL server, and is initially 2 GB in size. Data size grows in the order of hundreds of megabytes each year.
- The Decisions scenarios reside on a file share and each one consumes approximately 20 MB of disk space.
- The historical data files reside on a file share and consume approximately 10-20 MB each week.

Database Requirements

Genesys provides an installation package that deploys or upgrades the Decisions applications and the Decisions Data Mart databases on the selected server(s). The Decisions database and Data Mart database must both reside in a Microsoft SQL Server instance. Both databases can be in the same instance.

Decisions databases

The Decisions database stores the following:

- configuration and mapping information
- historical data

The Decisions Data Mart database is an open schema that contains the following:

- Decisions historical data
- published scenario data

MS SQL Server

Decisions supports the following Microsoft SQL Server versions. For Microsoft products with sub-versions such as R1/R2, all versions are supported unless noted otherwise.

- Microsoft SQL Server 2008 Standard/Enterprise
- Microsoft SQL Server 2012 Standard/Enterprise
- Microsoft SQL Server 2014 Standard/Enterprise
- Microsoft SQL Server 2016 Standard/Enterprise
- Microsoft SQL Server 2019 Standard/Enterprise

> ### Tip
> SQL Server can be configured for either Mixed Authentication mode or Windows Authentication.

Backup Requirements

Use the normal database backup procedures as described in your Microsoft SQL Server documentation. Genesys recommends daily backups of the Decisions database and Decisions Data Mart database with a 14-day retention period for backup files.

Network Requirements

The Decisions client application needs to communicate with the SQL database server. The

appropriate ports need to be opened in the firewall.

To accommodate scenario publishing, you must assign an open port to the Data Bus so that the client application can communicate with the Data Bus service. The Data Bus service listens for publication requests. You can configure it to listen on any port. You will require this port number when installing the Decisions Administration and User applications, as well as the Data Bus service.

- Decisions users create planning scenario files (*.cbg format) that can be saved locally or on network drives.

- During installation, the option of setting up a nonstandard port for SQL server is available.

Network bandwidth is very low. Upon starting the application, it reads in the configuration information from the database as well as monthly and weekly history back for a maximum of one (1) year. Additionally, when a user wishes to "publish" a scenario to the Data Mart, the application will contact the Data Bus windows service to transfer the data. It transfers weekly and monthly information and the typical scenario length is 12-18 months.

Data Bus Requirements

The following operating systems are supported for the Data Bus service server:

- Microsoft Windows 7, 8, 10, 11, Server 2008, 2012, 2012 R2, or 2019

The Data Bus is a service that synchronizes historical data from the Decisions database into the Decisions Data Mart and publishes data from client application scenarios into the Decisions Data Mart.

The Data Bus service can be configured to write to only one Data Mart database, so you will need a new installation of the service for your production instance. Once installed, the Data Bus Service will synchronize the data from the production Decisions Database into the production Data Mart.
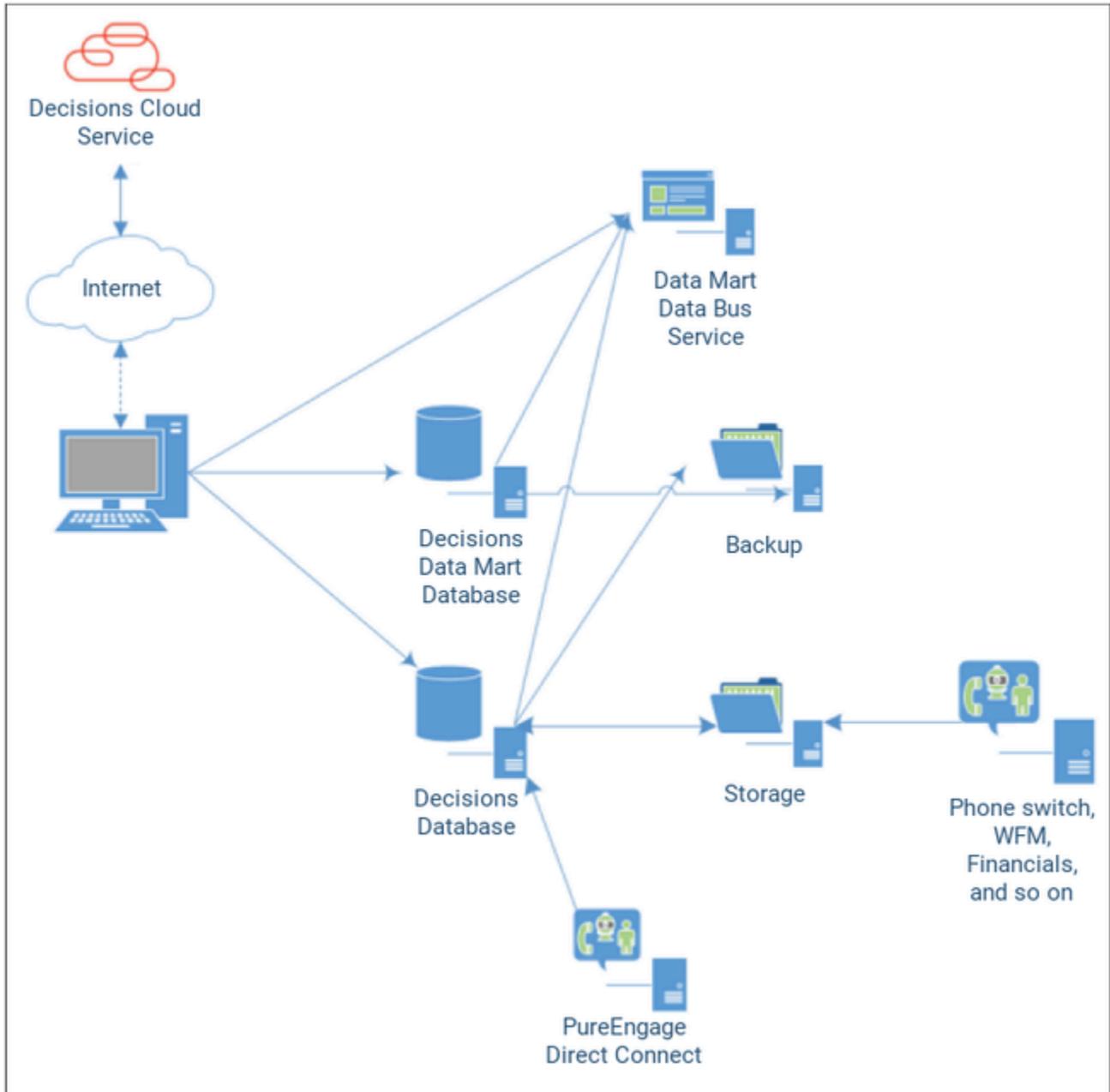
Genesys uses Windows Communication Foundation (WCF) to connect the Decisions user and administration applications to the Data Bus service. There are many combinations of settings available to make these connections secure, but the default configurations should work for almost all installations.

Genesys Decisions Architecture

The Decisions application can connect directly to Genesys Info Mart and the Genesys Workforce Management (WFM) API to pull historical data directly into Decisions. Deployments can gather historical data from flat files, or through the Genesys Engage Direct Connect Adapter. For information about the Genesys Engage Adapter, see Using the Genesys Engage Adapter.

The Decisions Forecast module requires access to the Decisions Cloud Service. For more information, see Forecasting Requirements on this page. For information about using the Forecasting module, see the Decisions Forecasting documentation.

The following figure illustrates the Genesys Decisions architecture and data flow.

Security

This page describes the requirements that must be fulfilled prior to Decisions installation.

Decisions Application Security

The following topics provide information about recommended procedures to follow to securely manage your Decisions applications:

- Decisions_Administrators Active Directory Group
- Decisions_Users Active Directory Group
- User Management

Decisions_Administrators Active Directory Group

The Decisions_Administrators Active Directory (AD) group contains the users that will be responsible for adding/updating configuration and mapping, building simulation models, managing Data Mart users, and importing weekly data.

> **Important**
>
> Genesys recommends that you limit access to the administration application because changes to the configuration and simulation models impact the outputs in the user application.

Create the Decisions_Administrators AD group for your enterprise prior to deployment of Genesys Decisions. The person who deploys Decisions in your enterprise requires the AD group information; the group will be entered in the Database Deploy tool as the AD Group for administrative access.

To create the Decisions_Administrators AD group:

- Create an AD group for Decisions_Administrators.
    - Add this AD group to the SQL server as a new login.
    - Set the server role to `Public`.
    - On the User Mapping page, select the checkbox next to the Decisions database.
    - In the Database role membership window, check `ctb_admin`, `db_datareader`, `db_datawriter`, and `public`.

Decisions_Users Active Directory Group

The Decisions_Users AD group contains the users that generate, maintain and develop what-if plans, run reports, and so on, in the user application. Users need to understand the configuration in order to effectively develop and interpret plans.

Create the Decisions_Users AD group for your enterprise prior to deployment of Genesys Decisions. The person who deploys Decisions in your enterprise requires the AD group information; the group will be entered in the Database Deploy tool as the AD group for user access.

To create the Decisions_Users AD group:

- Create an AD group for Decisions_Users.
- Add this AD group to the SQL Server as a new login.
    - Set the server role to `Public`.
    - On the User Mappings page, select the checkbox next to the Decisions database.
    - In the database role membership window, make sure that `public` is the only role that is checked.

User Management

To add a new user to the Decisions applications, the user will need to be added to the appropriate active directory group.

Decisions Data Mart Security

Service Account

- A Service Account is required for the Data Bus log in and must be configured as the owner of the Data Mart database.
    - In Active Directory create a user account to serve as a Service User
    - Password should be set to never expire
    - Service User account must have the rights to start and stop a service
- Administrators and Users will have to have accounts in the SQL Server. These can be individual accounts or Active Directory groups.

Data Mart Roles

There are two roles built into the Decisions Data Mart:

Data Mart Administrators Active Directory Group

- Data Mart Administrators can enable/disable Data Mart Security, give permission to a database user to

become a Data Mart user and can grant or revoke permissions to any Folder to any user.

- To be a Data Mart Administrator the SQL user must be assigned the DataMartAdmins database role.

- A user that is only a member of the DataMartAdmins database role does not have access to the actual data inside the Data Mart. A member of the DataMartAdmins database role only has access to those artefacts needed to perform administrative tasks.

Data Mart Users Activity Directory

- Data Mart Users are those people who either need to publish data to the Data Mart from the Decisions application or report on data from the Data Mart.

- To be a Data Mart User, the SQL user must be assigned the DataMartUsers database role.
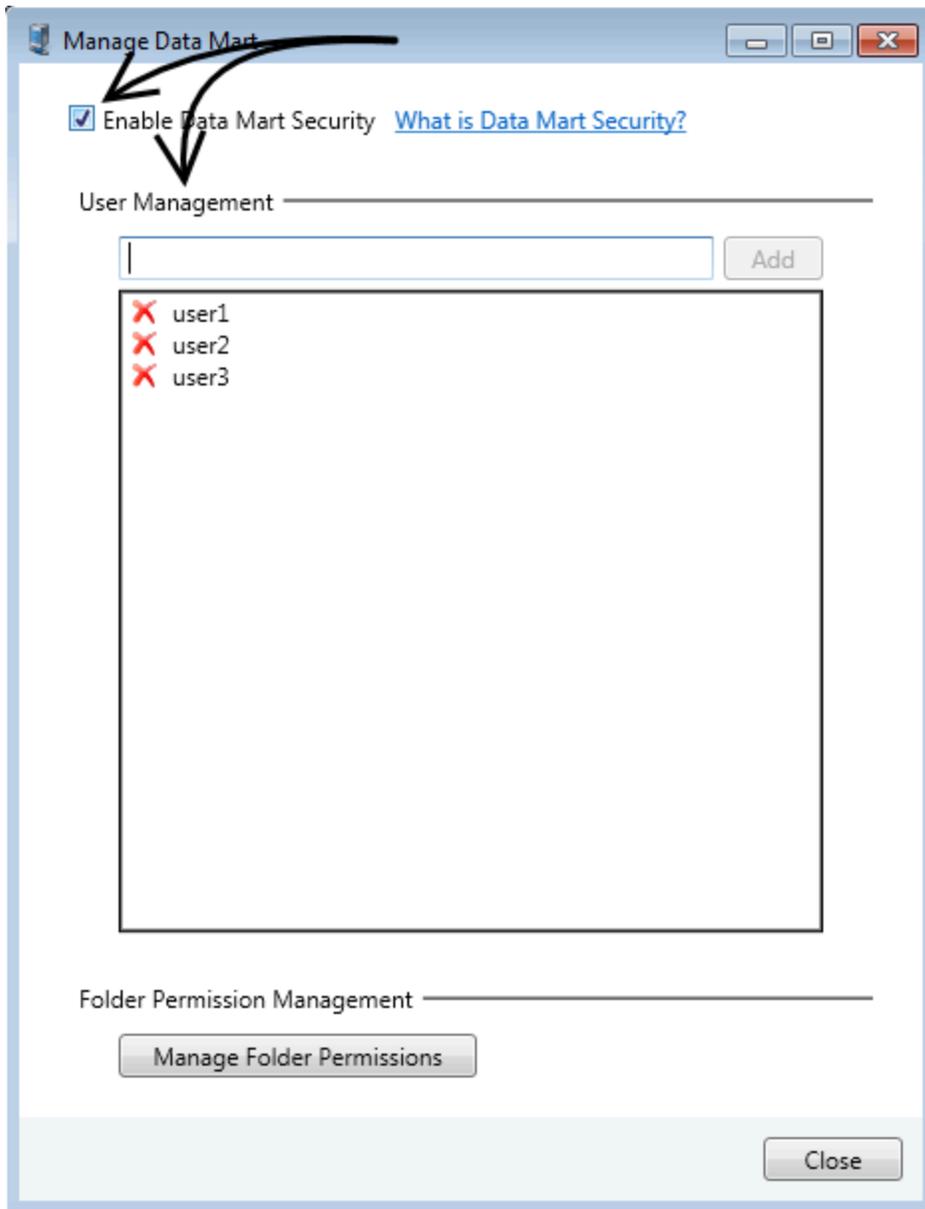
Enable Data Mart Advanced Security

Advanced Security for the Data Mart can be enabled or disabled by a Data Mart Administrator. Advanced Security is disabled by default.

- With Data Mart Advanced Security disabled, every user who has the DataMartUsers role can access the data in the Decisions Data Mart.

User Management

To add a new user to the Decisions Data Mart, you must add the user to the appropriate active directory groups. A user can be a member of the Data Mart Admin and/or the Data Mart User group.

In addition to the active directory groups, you must also add Data Mart users to the Data Mart through the Decisions Administration application.

- For users who will only publish scenarios to Data Mart, enter the Windows login name, including domain, as the new user name.
- For users who will create reports using the Data Mart data, but who will not publish to the Data Mart, enter the Windows or SQL login name, including domain, as the new user name. Whether you use the Windows or SQL login name depends, of course, on how the user will typically access the Data Mart.

Add a new Data Mart user

1. In the **User Management** text box on the **Manage Data Mart** dialog box (see the figure), enter the username of the new user.
   Enter usernames that are either a Windows or SQL login name.

2. Click **Add**.

Shared File Storage

You require a shared file storage location for the Decisions applications. Files that are generated from the phone switch, WFM system, and other systems are put into the shared storage location before they are imported into the Decisions database.

Recommended Structure

The Decisions Administration application reads flat files from the file share. The Decisions_Administrators AD group must be able to read from this file share. Genesys recommends the following structure:

- \\Import Files\ACD
- \\Import Files\Shrinkage
- \\Import Files\Staffing
- \\Import Files\Chat
- \\Import Files\Email
- \\Import Files\Casework

Deployment

Ensure you have met the requirements for the networking, database server, client workstations, and services before you install the Decisions software. The Task List on this page will help you prepare for installation. The following topics provide additional information about each part of the deployment process:

- Database Deployments
- Data Bus Installation
- Client Installation

New Installation Task List

Using the Task List on this page ensures that you perform the required Genesys Decisions deployment and installation tasks, while taking the necessary considerations into account.

Task	Sub-task	Steps	Completed (✔)	Notes
Release Package		1. Download the release package. 2. Review the installation instructions.		
Server Configuration	Hardware Procurement	1. The database server is built according to the hardware specifications provided. 2. The software requirements are met, including OS operating system, SQL Microsoft SQL Server, MS Microsoft		

Task	Sub-task	Steps	Completed (✓)	Notes
		.NET Framework.		
	Import File Directory Structure	1. Create a folder structure to store the import files. 2. Share the parent folder with the Decisions Administrators AD group.		
Active Directory and Application Server Security	Active Directory Group creation	1. Create and populate a group for Decisions_Administrators. 2. Create and populate a group for Decisions_Users. 3. Create and populate a group for Decisions_DataMartAdministrators. 4. Create and populate a group for Decisions_DataMartUsers.		
	Service Account Creation for Data Bus	1. In Active Directory, create a user account to serve as a Service User. 2. Set the password to never expire. 3. Make sure that the		

Task	Sub-task	Steps	Completed (✓)	Notes
		Service User account has rights to start and stop services.		
Database (SQL Server) Security	Decisions Administrators Active Directory Group	1. For the server role, select `bulkadmin` 2. On the User mapping page, select the check box beside the Decisions database. 3. For database role, select `db_datarea der,` `db_datawri ter,` `ctb_admin,` and `public.`		
	Decisions Users Active Directory Group	1. For server role, select `public.` 2. On the User mapping page, select the check box beside the Decisions database. 3. For database role, select `public.`		
	Service Accounts	1. Create a SQL service account to		

Task	Sub-task	Steps	Completed (✓)	Notes
		run the Data Bus service. 2. Assign the db_owner permission to the Data Mart database. 3. Assign the public permission to the Decisions database.		
Network Communications		1. Port 1433 (the standard SQL Server port) – Client PC to database server 2. Data Bus Publication Port 808 (default, non-standard is configurable) 3. Port 445 (between SQL server and the file share)		

Database Deployments

This page provides step-by-step instructions related to the deployment of the Genesys Decisions database and the Data Mart database. You can find additional information in the installation instructions that are provided in the Release Package. You will find the following information on this page:

- Installation Checklist
- Using the Database Deployment Wizard

Installation Checklist

Before you begin installation, review this section to ensure that you have everything you need to complete the installation.

Task	Steps	Completed (✓)	Notes
Permissions	1. Ensure that the individual who will deploy the Decisions database has been assigned the `dbcreator` permissions on the database server. 2. Ensure that the individual who will deploy the Data Mart database has been assigned the `serveradmin` permission on the database server.		
Release Package	1. Download the release package. 2. Review the installation instructions.		
Collect information	Collect the following information about your organization:		

Task	Steps	Completed (✓)	Notes
	• Hours per week (FTE) • Start day of the planning week • Applicable Active Directory (AD) groups, including the domain • Decisions database server and database name		

Using the Database Deployment Wizard

Procedure:

Purpose: This procedure describes the screens in the Decisions database deployment wizard.

You require a Decisions database in your deployment in order to run the Decisions application in a production environment. The Decisions Data Mart database is optional in a Decisions deployment. While it is not necessary to deploy both databases simultaneously (that is, in one run of the deployment wizard), it is possible to do so.

Steps

1. Run the database deployment wizard:

   a. Double-click the `DecisionsDatabaseDeployer.exe` file, located in the Release Package, to open the deployment wizard.

   b. Select the database to install.

   c. Click **Install**.

2. If you opted to install the Decisions database on the **Select database(s) to install/upgrade** screen, then you are presented with a screen in which you enter the Decisions database information:

   a. Enter the SQL Server instance name.

   b. Enter the database name.

   c. If you select Windows Authentication, the deployment wizard will use the Windows

credentials of the logged-in user to access the database server and execute the commands. You have the option to supply a SQL login name and password to perform the operations, instead of the Windows login.

d. Click **Next**.

3. If you opted to install the Decisions Data Mart database on the **Select Database(s) to install/upgrade** screen, then you are presented with a screen in which you enter the Decisions Data Mart database information:

a. Enter the SQL Server instance name.

b. Enter the Data Mart database name.

c. If you select Windows Authentication, the deployment wizard will use the Windows credentials of the logged in user to access the database server and execute the commands. You have the option to supply a SQL login name and password to perform the operations, instead of the Windows login.

d. Click **Next**.

4. Configure the Decisions database:

a. Select the day that begins the planning week (see the Installation Instructions provided in the Release Package).

b. Enter the number of hours in each week for FTE (see the Installation Instructions provided in the Release Package).

c. Enter the Admin Active Directory (AD) group name (domain name must be included). You can enter only one group name.

d. Enter the User Active Directory (AD) group name (domain name must be included). You can enter only one group name.

e. Click **Next**.

5. Complete the database deployment:

a. Review the summary data screen. If the data is correct, proceed with installation. Otherwise, go back to any page that contains incorrect data and correct the information before proceeding.

b. Click **Install**.

c. Wait for the **Process Complete** window to display.

d. Click **Exit**.

Next Steps

If the process does not complete successfully, review the log file in the temporary folder for an error message.

Data Bus Service Installation

This page provides step-by-step instructions related to the installation of the Data Bus service. You must install the Data Bus service if you deploy and use the Decisions Data Mart database. Install the Data Bus service only if the Data Mart database is being installed.

You will find the following information on this page:

- Installation Checklist
- Run the Data Bus Service Installation Executable

Installation Checklist

Before you begin installation, review this section to ensure that you have everything you need to complete the installation.

Task	Steps	Completed (✓)	Notes
Permissions	1. Ensure that the individual who will deploy the Data Mart database has been assigned the `serveradmin` permission on the database server.		
Release Package	1. Download the release package. 2. Review the installation instructions.		
Collect information	Collect the following information: • Service account information • Decisions database server and database name • Decisions Data Mart database		

Task	Steps	Completed (✓)	Notes
	server and database name • Data Bus service publication port		
Port Setup	1. Ensure that the Net.TCP Port Sharing Service is running. 2. Ensure that all required ports are open.		

Run the Data Bus Service Installation Executable

Procedure:

Purpose: This procedure describes the screens in the wizard that you use to deploy the Decisions Data Bus service.

Steps

1. Double-click the `DataBus.exe` file.
2. Enter the Decisions Data Mart database information:
   a. Enter the Data Mart server instance name.
   b. Enter the Decisions Data Mart database name.
   c. (Optional) Enter the non-standard port number.
   d. Click **Next**.
3. Enter the Decisions database information:
   a. Enter the SQL server instance name.
   b. Enter the Decisions database name.
   c. (Optional) Enter the non-standard port number.
   d. Enter the Data Bus publication port number.

      e. Click **Next**.

4. To complete the installation, click **Install**.

Client Installation

This page provides step-by-step instructions related to the installation of the Decisions Administration and User applications.

You will find the following information on this page:

- Installation Checklist
- Run the Client Installation Executable

Installation Checklist

Before you begin installation, review this section to ensure that you have everything you need to complete the installation.

Task	Steps	Completed (✓)	Notes
Permissions	1. Ensure that the individual who will install the Decisions applications is an administrator on the machine. 2. Ensure the Data Bus service has been started.		
Release Package	1. Download the release package. 2. Review the installation instructions.		
Collect information	Collect the following information: • Decisions database server and database name • Data Bus service publication port (defaults to 808)		

Task	Steps	Completed (✓)	Notes
	• Non-standard SQL Server port information (if applicable)		
Prepare for access to the Decisions Cloud Service	The Decisions Forecasting module requires access to the Decisions Cloud Service. Ensure that the encrypted file that you received from Genesys is in the folder where the database deployment wizard is stored. For more information, see Forecasting Requirements.		

Run the Client Installation Executable

Procedure:

Steps

1. Right-click the `DecisionsSetup.exe` file, and run the file as Administrator.
2. Click **Next**.
3. Select the installation location (the default value is listed in the screen prompt).
4. Click **Next**.
5. Enter the Decision database information:
   a. Enter the Decisions database server name.
   b. Enter the Decisions database name.
   c. Click **Next**.
6. If you are deploying the Data Bus service, enter the relevant information (otherwise, skip this screen):

a. Select the **Configure connection to Data Bus Service** box.

b. Enter the Data Bus service server name.

c. Enter the Data Bus service publication port number.

d. Click **Next**.

7. To complete the installation, click **Install**.

Move to Production

After the successful deployment and installation of the Decisions database(s) and applications in a test/non-production environment, Genesys recommends that you perform some basic connectivity testing. This page includes the list of tasks to perform as part of this testing, as well as links to additional content. This page also includes a task list for deploying Decisions to a production environment after you have successfully completed testing in a non-production environment.

Basic Connectivity Testing

Genesys recommends that you perform some basic connectivity testing in your test or lab environment. Detailed steps for the following connectivity testing tasks can be found in the Genesys Decisions Administration guide:

1. Log in to the application(s).
2. Add the unmapped routing.
3. Map the import file path.
4. Test the import.

After the successful completion of basic user testing, you can deploy Genesys Decisions in your production environment.

Move the Decisions Installation to Production

Use the following task list to move your Decisions installation to your production environment:

1. Back up the Decisions database on the test SQL Server instance.
2. Restore the Decisions database on the production SQL Server instance.
3. Follow the steps for deploying the Decisions Data Mart Database.
4. Follow the steps for installing the Decisions Data Bus service.
5. Follow the steps for adding the appropriate AD groups.
6. Follow the steps for adding the SQL Server Authentication account.
7. Modify the Administration application, User application, and Data Bus service configuration files to include the production environment information.

Modify Configuration Files

Modify the `AdminCenterbridge.exe.config` file and the `Centerbridge.exe.config` file to point to your production SQL Server instance and the production database. If Data Mart is configured, you also must update the files with the Data Mart and Data Bus binding information.

Example

```
<Database connectionType="SQLServer" databaseServer="Test" databaseName="Test"/></Server>
<client>
      <endpoint binding="netTcpBinding" address="net.tcp://YOURSERVERNAME:808/
PublicationService"
```

Using the Genesys Engage Adapter

This page lists the requirements for creating Decisions data feeds using the Genesys Engage Adapter to pull data from the Genesys Info Mart database and the Genesys Engage Workforce Management (WFM) service.

Requirements for the Direct Pull of Data from Genesys Info Mart and Genesys Engage WFM

To create Decisions data feeds using the Genesys Engage Adapter, you require the following software for Genesys Info Mart and the WFM server:

- Genesys Info Mart database:

  - Host machine: Windows OS

  - Database engine: MS SQL 2008 (or above) or Oracle 11.2 (or above)

  - Info Mart database 8.5.002 (or above) with Reporting and Analytics Aggregates(RAA) installed

    The Decisions Admin AD group must have read permission to access the Info Mart database. If Oracle is used, users of the Administration application must be configured to connect with Windows authentication.

    The host machine must be accessible to the Decisions Administration application (in other words, the machine running the Administration application must be able to "see" the Genesys Info Mart machine).

- Genesys Engage WFM Server:

  - Genesys Engage WFM Server: 8.5.205.10 (or above)

  - Users of the Decisions Administration application must have a user account in the Genesys Engage WFM Server.

  - The Genesys Engage WFM Server must be accessible to the Decisions Administration application (in other words, the machine running the Administration application must be able to "see" the WFM server).