

GRANTA MI™ version 11

GRANTA MI Installation Guide

GRANTA MI™ is the leading system for materials information management in engineering organizations. It enables you to control, analyze, and securely share critical corporate data on materials and processes, managing the materials information lifecycle.

www.grantadesign.com

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Release notes, documentation, and Knowledge Articles for the current and all previous GRANTA MI releases are all available on the Granta Support website. Go to www.grantadesign.com and click SIGN IN to log into your My Granta page, then click on **Documentation**.

We welcome feedback on this documentation. Please let us know if anything is unclear, if you spot an error, or have an idea for new content, by emailing docs@grantadesign.com.

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1 Introduction

This document covers installing GRANTA MI for the first time and also upgrading your GRANTA MI installation. For information on additional post-install configuration of any of the components of the system, see the *GRANTA MI Configuration Guide*.

1.1 GRANTA MI core system components

A GRANTA MI system consists of one or more GRANTA MI databases hosted on SQL Server, plus a suite of core software components:

Component	Description	Installation
MI:Server	GRANTA MI application server	Included in the core GRANTA MI download package, and installed with MI Installation Manager
Service Layer	Software component that provides an interface between MI:Server and client applications	
MI:Viewer	A web application for browsing, querying, editing, exporting, & comparing data	
MI:Explore	Web application for finding, visualizing, & applying data	
Remote Import	Web application for uploading data	
MI:Admin	Windows client application for managing GRANTA MI databases	
MI:Toolbox	Windows client application for bulk data management	
MI:Mat Analyzer	Windows client application for detailed plotting and analysis of materials data	Delivered in a standalone download package with its own installer
MI:Workflow	Applications for defining and managing materials data management workflows	Delivered in a standalone download package with its own installer

1.2 Supporting data modules

A wide range of supporting data modules provide reference data on plastics, metals, composites, ceramics, and natural materials. Data modules can be loaded into your GRANTA MI software for browsing, searching, and use. Data is either licensed from other leading providers or researched, collated, and maintained by Granta.

GRANTA MI data modules are supplied as backup (.bak) files, and may be installed (restored) on your SQL Server instance either before or after the GRANTA MI software is installed; see Section 7.

You can read more about the available data modules on the *Data products* pages of the Granta Design website here: www.grantadesign.com/products/data.

1.3 Additional Granta tools and packages

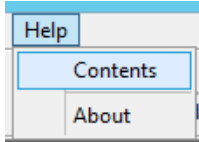
A range of additional tools and packages are available from Granta that work with the core MI software modules to help you to apply materials knowledge throughout the enterprise. These are all installed separately from the core GRANTA MI components described in this document.

For more information on these and other Granta products, see the relevant pages on the Granta Design website:

- [Data Products](#) provide a comprehensive library of reference data on plastics, metals, composites, ceramics, natural materials.
- MI:Reports allows users to analyze the data in your corporate materials database and generate standard reports or interactive dashboards for MI:Viewer, MI:Materials Gateway, and MI:BoM Analyzer users.
- [MI:Materials Gateway](#) allows users to access and apply materials data within their existing CAD, CAE, and PLM tools, and ensures consistent use of up-to-date, approved materials data across the enterprise.
- [MI:BoM Analyzer](#) is a web application that connects to a GRANTA MI database and enables Bills of Materials ('BoMs') for products or product designs to be created, imported, and edited.
- [GRANTA MI templates](#) includes best practice, “ready-to-go” templates that provide a starting point for particular materials types or applications, and can be quickly configured to your exact needs to help you to get up-and-running quickly. Templates are available for metals, composites, additive manufacturing, medical devices, and restricted substances data.
- [MI:Scripting Toolkit](#) is a development kit for MATLAB and Python that enables you to build apps to analyze the data in your GRANTA MI system, apply algorithms to data, or support advanced visualization.
- [MI:SDK](#) is the Software Developer Kit for GRANTA MI and includes the MI:Scripting Toolkit (MATLAB and Python), and Application Programming Interfaces (APIs), providing access to data managed in GRANTA MI via Custom Reports, Web Services or C#. Use the MI:SDK to develop your own software tools and custom reports to run on GRANTA MI, or to integrate GRANTA MI programmatically with other systems.

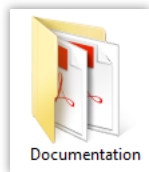
1.4 User assistance for GRANTA MI

User assistance for GRANTA MI is delivered in a number of different ways:



Help for application users

Help for all GRANTA MI applications and tools, providing procedural information on how to use the features within the application, is installed along with the software and can be accessed from the Help menu.



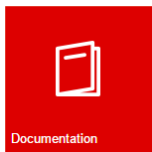
Reference documentation on the MI:Server or MI:Toolbox host

GRANTA MI reference documentation aimed at IT Administrators, Granta System Admins and Data Admins, and people importing/exporting data, is installed on the MI:Server and MI:Toolbox host servers during product installation. For MI:Server, typically: C:\Program Files\Granta\GRANTA MI\Server\Documentation



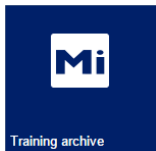
Reference documentation in MI:Viewer

The GRANTA MI PDF documentation can be accessed in MI:Viewer from the Help menu: click **Help > Reference Documentation** and then click on a document to download the PDF file.



Documentation on the Granta Support website

Release notes, documentation, and Knowledge Articles for the current and all previous GRANTA MI releases are all available on the Granta Support website. Go to www.grantadesign.com and click **SIGN IN** to log into your My Granta page, then click on **Documentation**.



GRANTA MI training videos on the Granta Support website

Short videos aimed at experienced users and Granta administrators are available on the Support website, exploring a range of topics including tabular data, embedded equations and logic, and best practices for importing and exporting data. Go to www.grantadesign.com and click **SIGN IN** to log into your My Granta page, then click on **MI Training archive**.

1.5 Your feedback

We welcome your feedback on Granta help and documentation; please email your comments to: <mailto:docs@grantadesign.com>

For product-related questions, please contact [Granta Technical Support](#).

2 Deployment and installation planning

This section is intended for IT/operations specialists to use, in consultation with SQL Server administrators, to coordinate and plan the pre-installation tasks. This includes making decisions about servers, deployment topologies, authentication, and more.

2.1 Overview

At the core of the MI system is the MI:Server. This is where materials data is manipulated and processed. The MI:Server process runs as a Windows Service on the application server.

Users do not interact directly with MI:Server. Instead, they use client programs such as MI:Admin, and MI:Viewer, which in turn access MI:Server. Persistent storage of materials data for MI:Server is provided by SQL Server.

MI:Server must communicate with SQL Server both to access and store materials data and also to manage the configuration of an MI:Server instance. In order to communicate with SQL Server the MI:Server service must be authenticated and this may be done either by using Windows Authentication, or by using SQL Server Authentication. In either case MI:Server uses one account to connect to SQL Server - the *databaseAccount*.

- If Windows Authentication is required then the *databaseAccount* should be a Windows domain account and the MI:Server service must run under this account
- If SQL Server authentication is to be used then the *databaseAccount* must be a SQL Server account created in the SQL Server instance and in this case the MI:Server service should run as Local System

Normally the decision about whether to use Windows or SQL Server authentication is a matter of local IT policy but it is important to understand which type of authentication is to be used before starting installation. The relevant account name and password will be required during installation.

The *databaseAccount* must have the db_owner role for all GRANTA MI databases.

Users access GRANTA MI through client programs such as MI:Admin and MI:Viewer. Their rights to access data or run these applications are determined by which MI role they have. This is in turn determined by which group they have membership of. These groups are referred to in GRANTA MI documentation as *security groups*. For example, to run the MI:Admin program, a user must have the MI_ADMIN role. In a standard installation this is controlled by whether their Windows account is a member of the MI_ADMIN group local to the application server. This can be configured after installation to use alternatives such as domain groups if required. (Application and data access control is discussed in detail in the *GRANTA MI Access Control and Security Guide*).

There are several roles in a GRANTA MI installation ranging from MI_READ to MI_ADMIN, and to have access to GRANTA MI, a user must have at least one of them. As part of the installation process a local Windows group is created on the application server to correspond to each role.

Many users use a web browser to access the GRANTA MI system. The web browser connects to a web server, IIS, which is typically running on the same application server as MI:Server. The web server hosts a web application called MI:Viewer and this web application accesses the MI:Server process. The web application uses a dedicated *MiServerConnection* account to communicate with

MI:Server and to convey information about the user. This account must have the MI_ADMIN role but requires no special Windows administration rights. Typically, this account will be a local account on the application server and the installation process will create an account for this purpose.

Credentials of the *MIConnectionAccount* are stored encrypted in a file called *Connection.xml*; this file is used for other component web applications such as the Service Layer and Remote Import.

2.2 Choosing a deployment architecture

GRANTA MI can be set up in a variety of configurations, depending on your existing IT architecture and the scale of your implementation. The most common configuration is a two-server configuration, where;

- SQL Server is running on a database server, *Server1* in the figure below.
- MI:Server and MI:Viewer are installed on a separate application server, *Server2*. Remote Import and the Service Layer are also installed on this server.
- The MI:Admin and MI:Toolbox tools are installed on client PCs as required. They may also be installed on the application server for convenience.
- Clients connect via a web browser to MI:Viewer, Remote Import, and the Service Layer on the application server.

This is suitable for a deployment where SQL Server is already installed for other applications.

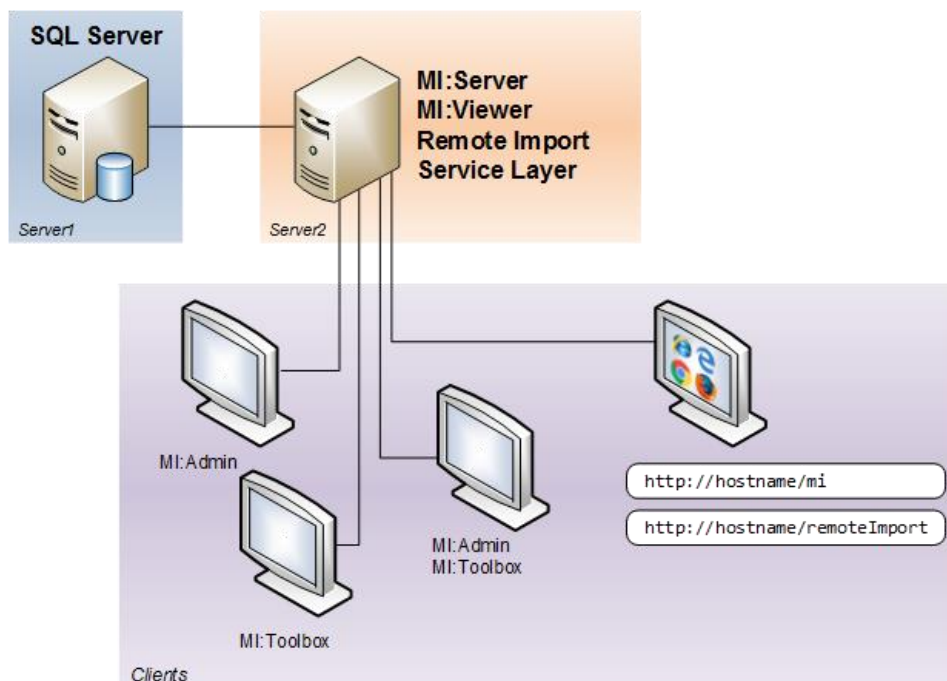


Figure 1. Typical GRANTA MI configuration (two servers)

Note that, to ensure that reports located in the Service Layer can be accessed from within MI:Viewer, the Service Layer should always be installed on the same machine as MI:Viewer.

2.2.1 Alternative server configurations

Three-server configuration

This configuration is suitable for a large enterprise deployment of GRANTA MI, or where other existing SQL Server applications and web applications are already installed.

- SQL Server is running on a database server, *Server1* in the figure below.
- MI:Server installed on a separate application server, *Server2*.
- MI:Viewer, Remote Import, and the Service Layer are installed on a web server, *Server3*.
- The MI:Admin and MI:Toolbox tools are installed on client PCs as required
- Clients connect via a web browser to the web server hosting MI:Viewer, Remote Import, and the Service Layer.

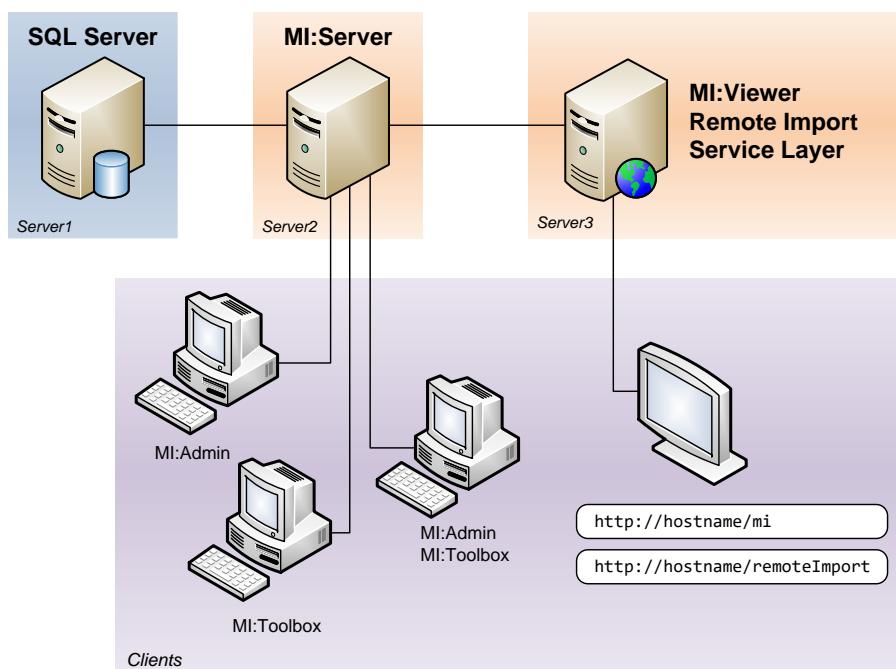


Figure 2. Three-server GRANTA MI configuration

Single-server configuration

This configuration is suitable for a smaller deployments or evaluation, where there is currently no SQL Server installation or any other web application being run.

- SQL Server and the Granta software components (MI:Server, MI:Viewer, Remote Import, Service Layer) are all installed on the same server.
- MI:Admin and MI:Toolbox are installed on client PCs as required and optionally on the server.

- Clients connect via a web browser to MI:Viewer, Remote Import, and the Service Layer.

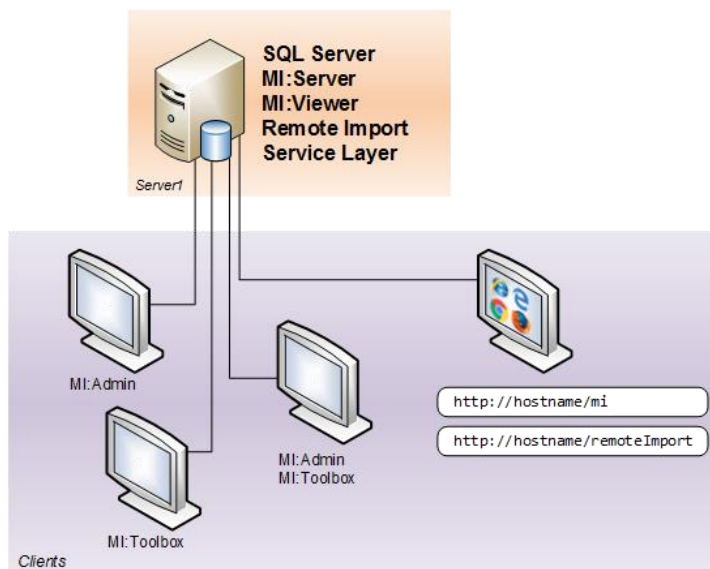


Figure 3. Single-server GRANTA MI configuration

2.3 System requirements

Software and hardware requirements for this release of GRANTA MI, including required operating system and SQL Server platforms, are detailed in the *GRANTA MI 11.0 System Requirements* document, included in the *Documentation* folder in the GRANTA MI software download package and available online on the [GRANTA MI System Information](#) page.

2.3.1 Indexing software (iFilters)

iFilters ('indexing filters') allow the text content of different files types imported into a GRANTA MI database to be indexed, enabling those files to be searched in GRANTA MI. Storage and display of files does not require an iFilter, only searching.

GRANTA MI does not include any indexing software. To ensure that text within Microsoft Office and Adobe® PDF files stored in GRANTA MI is searchable, iFilters must be installed on the GRANTA MI application server. Note that Granta cannot guarantee the working of any third party iFilter.

- **Office iFilters.** If Microsoft® Office is not installed on your GRANTA MI server, then Office iFilters will need to be installed to allow any *.docx*, *.pptx*, or *.xlsx* files in the GRANTA MI database to be searched. Microsoft Office Filter Packs can be downloaded from the Microsoft Download Center [here](#).
- **PDF iFilters.** Use of the Adobe PDF iFilter is not supported with GRANTA MI. The GRANTA MI Version 11 download package includes a compatible third-party PDF iFilter which has been evaluated against GRANTA MI Version 11, and which is licensed for use with GRANTA MI. See the README in the download package for information about installing this.

2.4 Port requirements for GRANTA MI

The GRANTA MI Windows clients connect to MI:Server on ports 8737/8738 using the TCP protocol “gtcp”. The GRANTA MI system requires these ports to be opened through the firewall of the MI:Server host when GRANTA MI is deployed across a network.

Other GRANTA MI component port requirements are shown below.

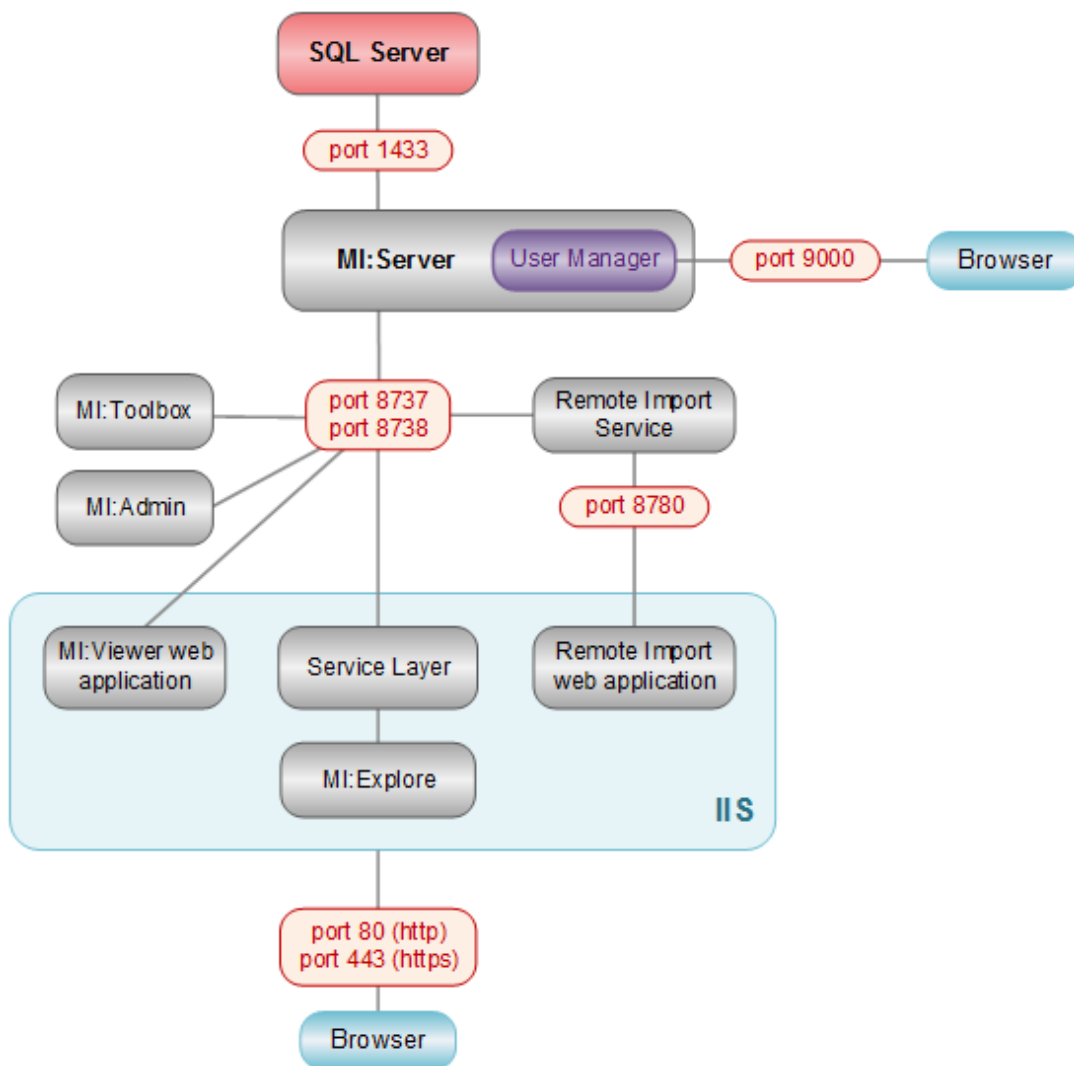


Figure 4. Ports Used by GRANTA MI software

2.5 Required user accounts

2.5.1 GRANTA MI Application Connection Account

This is the account that will be used by applications such as MI:Viewer and Remote Import to connect to the GRANTA MI application server. This can be a local account or a domain account.

You will need to enter the account credentials during installation of MI:Server.

A local user account on the application server will be automatically created during product installation, if necessary; the default name for this account is *MiConnectionAccount*.

2.5.2 GRANTA MI Service User Account

This is the account that will be used to run the GRANTA MI service. This depends on the server authentication mode in SQL Server:

- **Windows authentication mode:** the Service User account can be any suitable domain account; the account should be created before installing MI:Server.
- **SQL Server and Windows Authentication mode:** a specific Service User account is not required, and the LocalSystem account can be used.

You will need to enter the account credentials during installation of MI:Server.

2.5.3 Database Connection Account

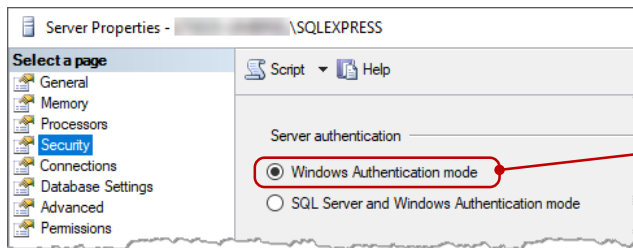
This is the account that will be used by MI:Server to access the GRANTA MI databases installed on your SQL Server instance. The account used will depend on the server authentication mode configured on your SQL Server instance:

- **Windows authentication mode:** the Database Connection account must be a Windows domain account; this can be the GRANTA MI Service User account (see 2.5.2).
- **SQL Server and Windows Authentication mode:** the Database Connection Account must be a SQL Server login that is not based on a Windows user account. Ensuring that this account is correctly set up is a responsibility of the SQL Database Administrator (DBA) in your organization, and the account must exist before GRANTA MI is installed.

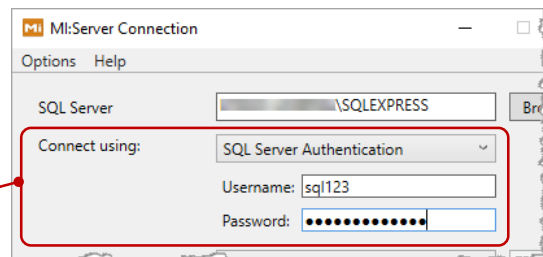
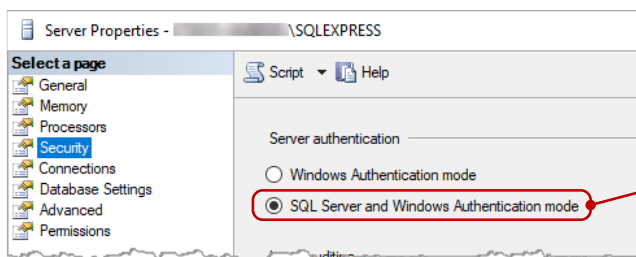
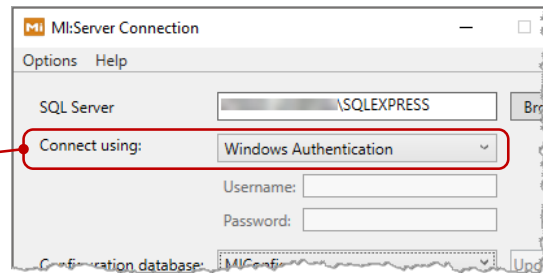
In both cases, the chosen account must have db_owner role in all GRANTA MI databases, including the MI configuration database (*MIConfig*).

You will need to enter the account name and password in the MI:Server Connection tool after the MI:Server software is installed.

SQL Server Management Studio



MI:Server Connection tool



2.6 Security

2.6.1 GRANTA MI system security

In a standard installation, GRANTA MI will use Windows Active Directory for both authentication and authorization of application users. This means that users will use their Windows logon account to log in to GRANTA MI. In most cases, this means that login takes place automatically without requiring the re-entering of passwords.

If you wish to use User Manager instead of Windows for GRANTA MI user authentication, this must be configured for each core component after installation; see the *GRANTA MI System Configuration Guide* for details.

2.6.2 GRANTA MI Security Groups

The installation process will create the following set of local Windows security groups on the application server:

- MI_ADMIN
- MI_GRANT
- MI_POWERUSER
- MI_WRITE
- MI_READ

The GRANTA MI Connection Account (see 2.5.1) and the account used to run the Installation Manager will both be automatically added to the MI_ADMIN group during installation.

3 Downloading installation packages

GRANTA MI software installation packages are downloaded from [My Granta](#). These packages can be used for new installations or to upgrade existing MI version 10 or earlier installations, and may include:

Product	Download package includes
GRANTA MI	<ul style="list-style-type: none"> • Setup.exe installer program and MSI files for MI:Server, Service Layer, MI:Viewer, MI:Explore, Remote Import, MI:Admin, and MI:Toolbox • MIConfig.bak, the MI configuration database • <i>MI Installation Guide, MI System Requirements</i>
MI:Reports	<ul style="list-style-type: none"> • ReportsInstaller_x64.msi installer file • <i>MI:Reports Release Notes, MI:Reports Installation & Configuration Guide, MI:Reports User Guide</i>
MI:Workflow	<ul style="list-style-type: none"> • Workflow Designer and Workflow Server installer files • MIWorkflow.bak, the workflow configuration database • <i>MI:Workflow Installation Guide, MI:Workflow Designer Guide</i>
MI:Mat Analyzer	<ul style="list-style-type: none"> • mimatanalyzer_setup.exe installer program • <i>Release Notes, Installing and Using MI:Mat Analyzer</i>
MI:Training database	<ul style="list-style-type: none"> • MI_Training_11.0.n.bak database backup file • training.xamlx—a sample MI:Workflow configuration file
Granta reference databases	<ul style="list-style-type: none"> • Each data module is supplied as a .bak file

3.1 Extracting the installation packages

After downloading your installation packages from My Granta, extract (unzip) each one into a temporary folder on your application server.

Note: After downloading the software package, check that the zip file is not blocked, as attempting to run the setup.exe program extracted from a blocked zip file may result in blocked DLLs being installed; see Appendix B.1 *Problems with blocked zip files* for details.

3.2 MI:Reports installer

If you have licensed a Report package, MI:Reports may be downloaded in a standalone package with its own MSI installer. This can then be installed ‘standalone’, or via the GRANTA MI Installation Manager, if preferred. To allow MI:Reports to be installed via the MI Installation Manager, the *ReportsInstaller* MSI file should be extracted from the download package into the *MIReports* subfolder under the *InstallationManager* folder, for example:

```
C:\Files\grantami\InstallationManager\MIReports\ReportsInstaller_x64_en-us.msi
```

Once the MSI installer is copied to this location, the option to install, upgrade, or uninstall MI:Reports will appear in the MI Installation Manager along with the other core MI components; see Section 6.10, *Installing MI:Reports*.

4 SQL Server setup

GRANTA MI databases are delivered as full database backup (.bak) files.

1. The .bak files must be restored to your SQL Server instance by a SQL Server Database Administrator.
2. Ensure that the Granta Database Connection Account (see 2.5.3) has db_owner role in each database, including the *MIConfig* database.

4.1 Installing the GRANTA MI configuration database

The GRANTA MI configuration database *Miconfig* stores GRANTA MI configuration settings on the SQL Server instance.

This database is supplied as *MIconfig.bak* in the GRANTA MI software download package.

This configuration database must be restored on the SQL Server instance using SQL Server Management Studio before you install GRANTA MI software.

4.2 Installing additional databases

A number of additional databases, also supplied as backup (.bak) files, may also be restored to the SQL Server instance.

MI:Training—A lightweight tutorial database that contains a small selection of Granta data, suitable for use in training classes and for users who wish to familiarize themselves with GRANTA MI. This is delivered as database backup file *MI_Training.bak* in a standalone download package.

Granta materials reference data—Granta data modules that contain data on the properties and processing of metals, plastics, ceramics, and composites. Data modules are delivered as full database backup (.bak) files.

Templates—Template databases designed for particular materials types or applications, such as metals, composites, or additive manufacturing. GRANTA MI templates are delivered as full database backup (.bak) files

MI:Workflow configuration database—A configuration database that stores MI:Workflow application settings. This is delivered as a *Workflow.bak* file in the MI:Workflow download package, and must be restored on the SQL Server instance **before** the MI:Workflow software is installed. See the installation documentation for MI:Workflow for more information, including required SQL Server security settings for this database.

5 Installation prerequisites checklist

Use this list to ensure that all essential preparation tasks are completed before you begin installing the GRANTA MI software.

	Task	More information
1	Review the system requirements documentation to ensure your server hardware meets recommended specification.	See Section 2.3
2	Confirm that the required ports are not blocked by your firewall.	See Section 2.4
3	Ensure that you have administrative access privileges on the GRANTA MI server where the software will be installed.	
4	Download the relevant installation packages from My Granta and extract the installation files to the chosen location on your server.	See Section 3
5	<p>Ensure all essential SQL Server setup is done (you will likely need support from your SQL Server DBA to complete these steps):</p> <ul style="list-style-type: none"> i) Determine which SQL Server instance will be used to host the MI configuration database and Granta reference databases. ii) Agree with your SQL Server DBA which form of server authentication will be used for the Database Connection Account, and confirm that this account is trusted to log in to the SQL Server. iii) Ensure the <i>MIConfig</i> database (included in the product download package) and any additional new Granta reference databases are restored in SQL Server, and that the Database Connection Account has db_owner role in all these databases. 	See Section 4

6 Installing GRANTA MI

This section walks through a full, new installation of all core GRANTA MI components, based on a typical deployment where the Granta software is installed on an application server and the GRANTA MI databases are installed on a separate database server.

This section applies to new installations. If you are upgrading an existing GRANTA MI installation, please read Section 9 instead.

6.1 Required information for a new install

Use this list to help you make a note of the key information that you will need to provide during the installation.

Required information	Details	Note value here
Application server host name	The name of your GRANTA MI application server.	
License key	The license key for this GRANTA MI release and your organization. If a license key is not available, contact Granta Support to request one.	
MI Service User Account credentials	The account that will be used to run the GRANTA MI service on the application server. Write down the account name and password.	
MI Application Connection Account credential	The account that will be used by GRANTA MI applications to connect to the application server. This can be a local account or a domain account. Write down the account name and password.	
SQL Server instance	The name of the SQL Server instance where the GRANTA MI configuration database is hosted. For example: dbserver\squlexpress	
Database Connection Account credentials	The account that will be used by MI:Server to access the GRANTA MI databases hosted on the SQL Server instance. This account must exist before proceeding with the installation of GRANTA MI.	
Configuration database name	The name of the GRANTA MI configuration database hosted on the SQL Server instance. By default, this will be <i>MIConfig</i> .	

6.2 Starting the Installation Manager

The GRANTA MI Installation Manager guides you through the process of installing, upgrading and uninstalling GRANTA MI software packages. To start the Installation Manager, double-click on *Setup.exe*. The components should be installed in the order in which they are listed in the Installation Manager.

Note: If *Setup.exe* fails to start, or starts with errors, check that the downloaded zip file is not blocked, as described in [Appendix A.2](#).

6.3 Installing MI:Server

1. On the first page of the Installation Manager, select the **Install GRANTA MI components** option and click **Next**.
2. Click on **Install MI:Server**.
3. Enter your GRANTA MI license key, then click **Next**.
4. **Application Connection Account:** enter the credentials for the user account that will be used for connections to MI:Server from MI applications such as MI:Viewer; the Installation Manager will create this local account if required (default name *MiConnectionAccount*), see [2.5.1](#). Click **Next**.
5. **Service User Account:** enter the credentials for an existing service user account that will be used to run the MI:Server service, and then click **Next**. (Local System account should only be used if SQL Server authentication is being used on your SQL Server instance). See [2.5.1](#).

The **MI:Server Setup** wizard will open.

6. On the Destination Folder page, click **Next** to use the default installation location, or specify an alternative location, then click **Install**.
7. When the installation has completed, click **Finish** to close the MI:Server Setup wizard and then click **Finish** again to close the setup wizard.

The MI:Server Connection tool will open automatically after a few moments.

8. Enter the **Database Connection Account** details that will be used by MI:Server to connect to the GRANTA MI configuration database on your SQL Server instance:
 - a. **SQL Server:** the name of the SQL Server instance where the GRANTA MI configuration database has been installed.
 - b. **Connect using:** select the method and account used to authenticate to SQL Server:
 - If Windows Authentication is used, then the *databaseAccount* should be a Windows domain account and the MI:Server service must run under this account.
 - If SQL Server authentication is used, then the *databaseAccount* must be a SQL Server account created in the SQL Server instance.
 - c. **Configuration database:** select the MI configuration database; by default, this is called *MIConfig*.
 - d. Click **Save changes & restart service** then close the MI:Server Connection tool.

After this service restart, installation and setup of MI:Server is complete. To verify the new installation, check that the GRANTA MI Windows service is running in the Services Microsoft Management Console (MMC) snap-in.

6.4 Installing the Service Layer

The Service Layer should be installed on the same machine as MI:Server and MI:Viewer

On the *Install GRANTA MI components* page in the Installation Manager, click **Install MI:Service Layer** and then follow the on-screen instructions in the Setup wizard:

- *IIS configuration*: By default, the service layer application is called *mi_servicelayer* and it will be installed under the Default web site.
- *Destination Folder*: choose the web application root folder. By default, this is `C:\inetpub\wwwroot\mi_servicelayer\`

When the installation has completed, the MI:Server Setup wizard will close and you will be returned to the Installation Manager.

6.5 Installing the MI:Viewer web application

On the *Install GRANTA MI components* page in the Installation Manager, click **Install MI:Viewer** and then follow the on-screen instructions in the Setup wizard:

- *IIS Configuration* page: By default, the MI:Viewer web site will be called *mi* and it will be installed under the Default web site.
- *Destination Folder* page: choose the web application root folder. By default, this is `C:\inetpub\wwwroot\mi\`

When the installation has completed, the MI:Viewer Setup wizard will close and you will be returned to the Installation Manager again.

Note: To allow MI:Viewer users to create analysis reports and Comparison table Excel reports, some additional application configuration is required. This can be done by users with Granta Administrator privileges from the Admin page in the MI:Viewer application (**Admin > General > Configure reporting**), or in the MI:Viewer Configuration tool (**Options > Configure reporting**). See the help in those applications for further details.

6.6 Installing the MI:Explore web application

On the *Install GRANTA MI components* page in the Installation Manager, click **Install MI:Explore** and then follow the on-screen instructions in the Setup wizard:

- *Service Layer for MI:Explore*: specify name of your Service Layer application. By default, this will be *mi_servicelayer* (see 6.4 above).
- *IIS Configuration*: by default, the MI:Explore application will be called *Explore* and it will be installed under the Default web site.

- *Destination folder*: choose the web application root folder. By default, this is C:\inetpub\wwwroot\Explore\

When the installation has completed, the MI:Explore Setup wizard will close and you will be returned to the Installation Manager again.

6.7 Installing Remote Import

On the *Install GRANTA MI components* page in the Installation Manager, click **Install Remote Import** and then follow the on-screen instructions in the Setup wizard:

- *Destination folder*: the folder where the Remote Import server will be installed. By default, this is C:\Program Files\Granta\GRANTA MI\RemoteImportServer\
- *IIS Configuration*: by default, the Remote Import web application will be called *remoteimport* and it will be installed under the Default web site.

When the installation has completed, the Setup wizard will close and you will be returned to the Installation Manager.

6.8 Installing the MI:Admin client application

MI:Admin is an application for database schema configuration. It is a Windows client tool that can be installed on the MI application server as well as on client computers, allowing MI Admins to make schema changes to MI databases without requiring a login on the MI application server.

To install it, on the *Install GRANTA MI components* page in the Installation Manager, click **Install MI:Admin** and then follow the on-screen instructions in the MI:Admin Setup wizard.

When the installation has completed, the Setup wizard will close and you will be returned to the Installation Manager.

6.9 Installing the MI:Toolbox client application

MI:Toolbox is an application for carrying out large scale data import, export, and manipulation. It is a Windows client tool that can be installed on the MI application server as well as on client computers, allowing users to perform bulk data import, export, and manipulation.

To install it, on the *Install GRANTA MI components* page in the Installation Manager, click **Install MI:Toolbox** and follow the on-screen instructions in the MI:Toolbox Setup wizard.

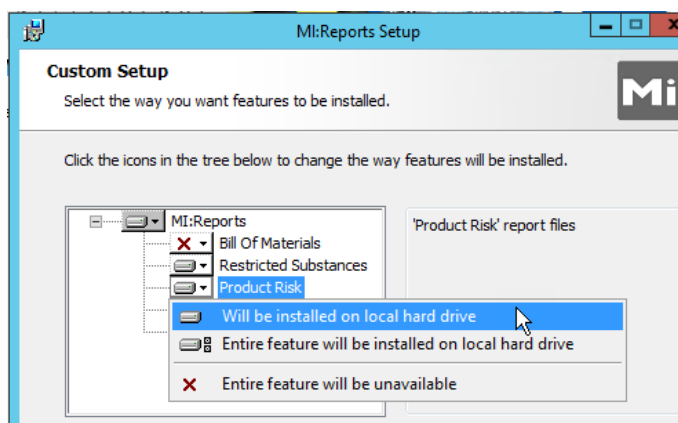
When the installation has completed, the Setup wizard will close and you will be returned to the Installation Manager.

6.10 Installing MI:Reports (optional)

If the MI:Reports installer MSI has been copied into the correct *InstallationManager* folder as described in Section 3.2, an **Install MI Reports** option will appear on the **Install GRANTA MI**

components page in the Installation Manager. Click **Install MI:Reports** and follow the on-screen instructions in the MI:Reports Setup wizard.

- On the **Custom Setup** page, select the report features you want to install by clicking on the menu next to the package name and selecting **Will be installed on local hard drive**. For example:



- By default, reports will be installed into a *reports* subfolder in the default Service Layer installation folder, C:\inetpub\wwwroot\mi_servicelayer. If you installed the Service Layer in a different folder, use **Browse** on this page to select the correct folder.
- When you have selected the reports you want to install, click **Next** and then **Install**.

When the installation has completed, the Setup wizard will close.

Note: After the reports have been installed, some additional configuration is required to allow MI:Viewer users to access them. This can be done in the MI:Viewer Configuration tool or in MI:Viewer; see the *MI:Reports Installation and Configuration* document for details.

6.11 Installation log files

GRANTA MI installation log files are created in your local Application Data folder:

%LOCALAPPDATA%\Granta Design\MI\logs

This folder will contain log files for the Installation Manager and for each component installer.

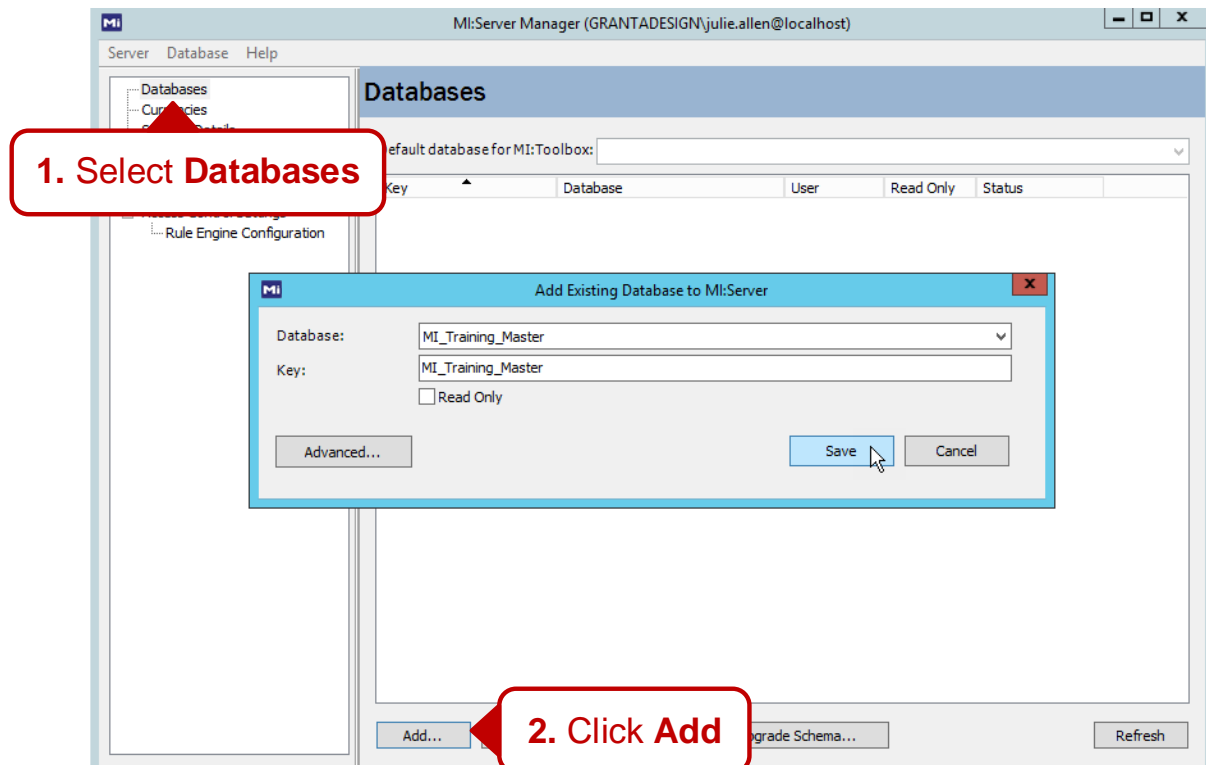
6.12 Next...

At this point, installation of the core GRANTA MI software is complete. However, before any of the GRANTA MI components can be used, you will need to add one or more databases to the GRANTA MI system.

7 Adding databases to GRANTA MI

Materials reference databases, template databases, and the MI:Training database are all supplied as backup (.bak) files that must be restored to the SQL Server instance before they can be made available in GRANTA MI; see Section 4, *SQL Server setup*.

Once the GRANTA MI software is installed, and the required databases have been restored to the SQL Server instance, the databases can be made available to GRANTA MI users using the MI:Server Manager tool which is installed with the MI:Server.



To run MI:Server Manager, you need to be a member of the MI_ADMIN security role.

In a standard installation the MI_ADMIN role is represented by a local group on the application server called MI_ADMIN. As part of the installation process, the installing user, as well as the *MiConnectionAccount*, is added to the MI_ADMIN group. Other users who will be GRANTA MI Administrators should be added to this role.

7.1 To add a database to GRANTA MI

Note: To allow PDF content to be indexed and searched, you should ensure that a PDF iFilter is installed before adding databases; see Section 2.3.1, *Indexing software (iFilters)*.

1. Start the MI:Server Manager tool and log in using your Windows account credentials (or the credentials of the *MiConnectionAccount*): **Start > All Programs > GRANTA MI > MI Server Manager**
2. Select **Databases** in the left-hand pane and then click **Add**.
3. Select the database from the **Databases** list.
4. **Database key**: you can use the suggested database key or enter a new one. This is used to uniquely identify the database throughout the software and settings. The database key is not case-sensitive. It is recommended that the key name does not contain the ampersand '&' character, or any other character that requires special URL encoding for a web browser.
5. Select or clear the **Read Only** check box to specify whether data can be edited.
6. Click **Save**.
7. If the database being added has a schema that is not compatible with your current GRANTA MI software version, click **Yes** to upgrade it at the same time as adding it.

The database will begin loading into the GRANTA MI system (and its status will change to *Loading*) in the Databases list. It will become available to GRANTA MI client applications when loading has completed. You can add further databases while loading is in progress.

In the procedure above, the default SQL server instance and login credentials for MI:Server are used. It is possible to add a database from a different SQL Server instance or using different authentication credentials; see the Help for MI:Server Manager for details of how to do this.

8 Verifying the installation

You must be an authenticated GRANTA MI user to perform the following checks on the installed components.

After installing GRANTA MI, you should log out of the application server and then log in again. This is because the installation process creates new local, groups and the identity of the installing user needs to be refreshed to reflect membership of these groups.

8.1 Checking MI:Viewer

Ensure that at least one database is available; see Section 7, *Adding databases to GRANTA MI*.

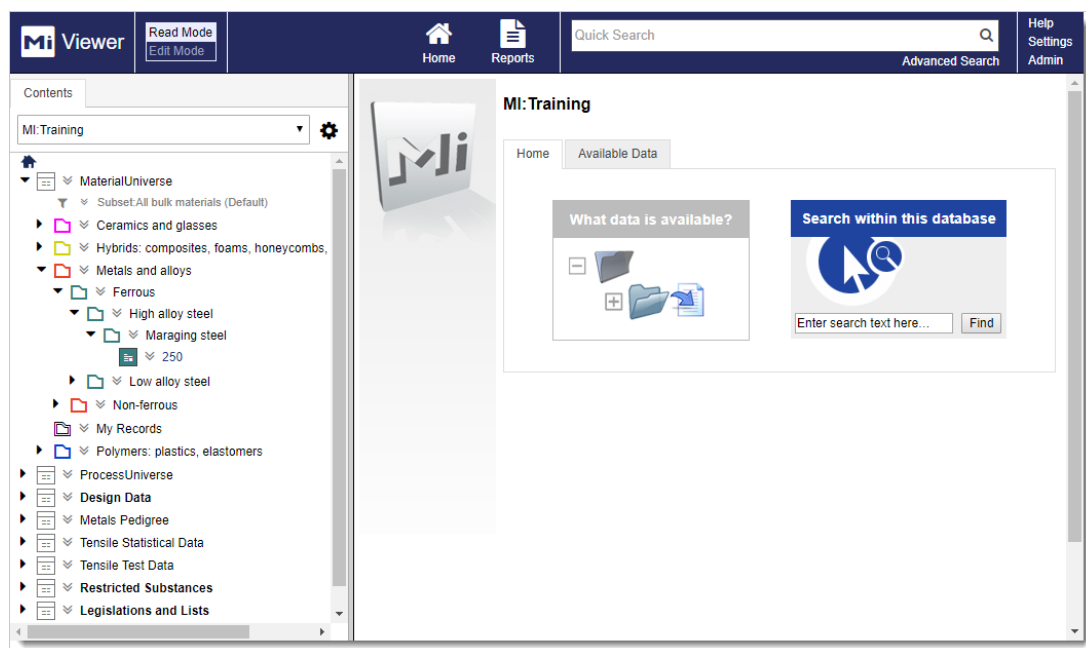
In a web browser, open the MI:Viewer application:

`http://<servername>/mi`

You can use **localhost** for <servername> if testing on the application server.

Note: when accessing MI:Viewer for the first time after installing the software, there will be a delay as the application is partially recompiled.

You should see the MI:Viewer application interface, with the available databases available for selection on the left of the window, and the homepage of the selected database shown in the main page, for example:



Try expanding the tree and opening some datasheets.

If you see a message saying **No Databases Available**, add a database in MI:Server Manager as described in Section 7 and, when the database has finished loading, refresh your browser.

8.2 Checking the Service Layer

In a web browser, enter the following:

`http://<yourservername>/mi_servicelayer`

You should see the landing page of the Service Layer, where you can see some status information. Check that the page reports a good connection (in the Status panel).

GRANTA Service Layer 39.0.4313.1610 IIS Host for Granta MI 11.0
MATERIAL INTELLIGENCE

Status (For:) [Refresh...](#)
 MI connection status good.
 Number of databases: 4
 Custom Reports status good.
 Number of reports: 0

SOAP Services Available
 These URLs are the service endpoints, but there is no service description at these URLs. Human-readable documentation can be accessed elsewhere on this page. Use the Service Layer SDK for machine-readable service WSDL.

- http://localhost/mi_servicelayer/Browse.svc
- http://localhost/mi_servicelayer/DataExport.svc
- http://localhost/mi_servicelayer/DataImport.svc
- http://localhost/mi_servicelayer/EngineeringData.svc
- http://localhost/mi_servicelayer/GatewayOptions.svc
- http://localhost/mi_servicelayer/ReportFormatter.svc
- http://localhost/mi_servicelayer/Search.svc
- http://localhost/mi_servicelayer/Trace.svc

SOAP Interface Versions Available
 Click a version to obtain its HTML documentation.

- 10/06 (services disabled)
- 10/10 (services disabled)
- 12/05 (services disabled)
- 14/06
- 14/11
- 15/03
- 15/06
- 15/09
- 15/10
- 15/11
- 16/01
- 16/10
- 17/09 (disabled)

Non-SOAP HTTP Services Available
 Click a link to obtain HTML documentation of the selected version of a service.

- Assets (v1)
- AsyncJobs (v1)
- Logout (v2)
- Logout (v1)
- LogUsage (v1)
- NotificationAdmin (v1)
- SystemInfo (v2)
- SystemInfo (v1)

MI Administrators Only

[Click here to download snapshot of live logs](#)

[Click here to download logs, including archived](#)

Performance Monitor | Validator | MI Report Monitor

8.3 Checking the Remote Import application

Open the application by entering the following in your browser:

`http://<yourservername>/remoteimport`

Mi Remote Import
MI TOOLBOX

Help
Settings
Templates

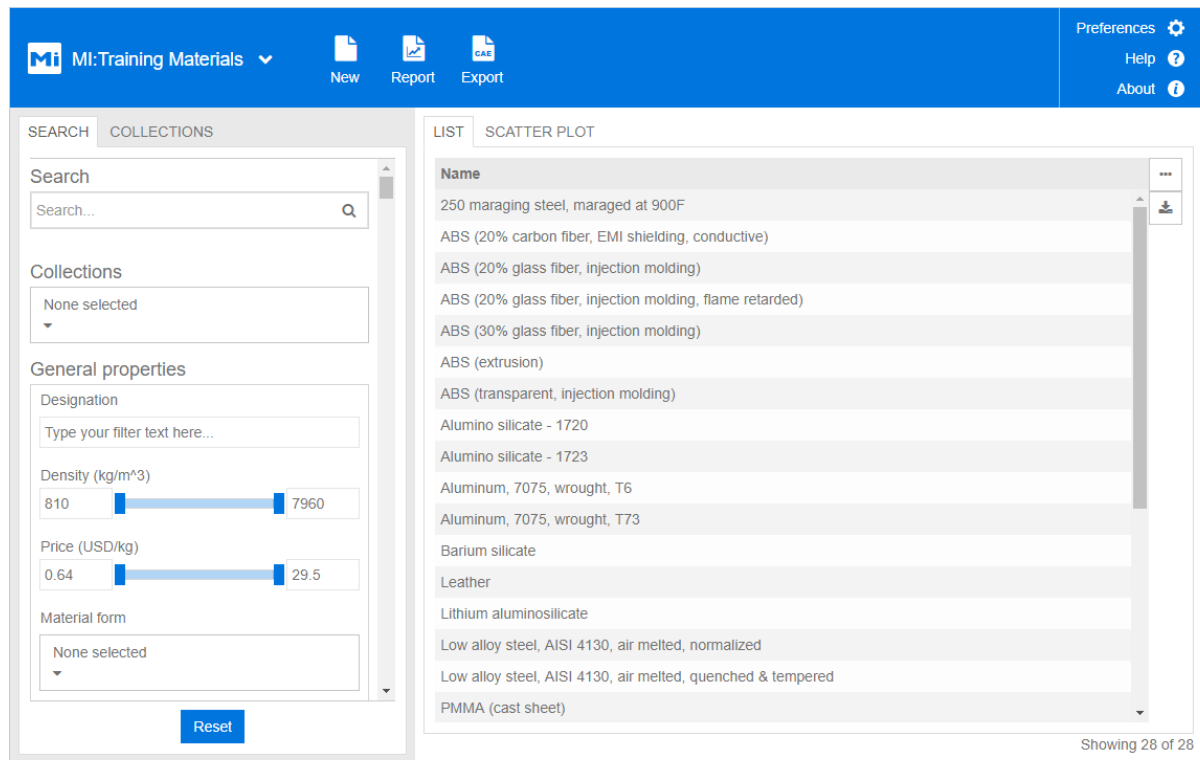
+ Create New Job 0 Jobs

8.4 Checking the MI:Explore application

Open MI:Explore by entering the following in your browser:

`http://<yourservename>/explore`

All Version 11 Granta reference databases, including MI:Training, include embedded MI:Explore configuration information. If any Version 11 databases are available (see Section 7, *Adding databases to GRANTA MI*), MI:Explore will open with a database loaded and ready to view and search; for example:



If there are no Version 11 databases available, the Switch data view window will appear, allowing you to choose a database, table, and layout.

More information

- See the MI:Admin help for information about uploading and managing configuration files for MI:Explore.
- See the *MI:Explore Configuration Guide* for information about configuration settings for MI:Explore, for example, to ensure that the application settings match your installation and company standards for unit systems and number formatting, and to ensure that MI:Explore works with other applications such as MI:Viewer and Teamcenter.

9 Upgrading GRANTA MI

Granta releases a new major version of GRANTA MI every 12 months. In addition, regular, optional feature updates for GRANTA MI major versions are released; these typically include bug fixes, improvements to quality, performance, and usability, and some new features.

All GRANTA MI releases—major versions and feature updates—are distributed as a full product installation package and are installed in the same way, using the GRANTA MI Installation Manager. In both cases, the Installation Manager will back up your existing software, then uninstall it and install the new version.

After upgrading to a new major version, for example, moving up from Version 9 or 10 to Version 11, existing GRANTA MI databases will need to be upgraded; this modifies the database schema to make it compatible with the current GRANTA MI software version. Database upgrades are not required when installing a feature update for the current major version.

9.1 Downloading the installation package

See Section 3, *Downloading installation packages*.

Note that GRANTA MI Version 11 does not include any indexing software for PDF files. To enable PDF files stored in GRANTA MI to be searched, a compatible third-party iFilter must be installed on the GRANTA MI application server. The GRANTA MI Version 11 download package includes a compatible third-party PDF iFilter which has been evaluated against GRANTA MI Version 11, and which is licensed for use with GRANTA MI. See the README in the download package for information about installing this.

9.2 Backing up your existing installation

The Installation Manager will attempt to back up GRANTA MI components before uninstalling the old software and installing the new version. You should ensure that sufficient disk space is available on the application server before upgrading GRANTA MI.

Backup files made by the Installation Manager are written to:

`%ProgramData%\Granta\GRANTA MI\Backup\application\version\dateandtime`

Note, however, that some MI:Viewer application configuration settings are not preserved, and must be reset after upgrade: see Section 9.7, *Upgrading MI:Viewer* for details.

System home page files

You should make a copy of any customized application (system) home page files before upgrading, as the existing ones stored in the MI:Viewer application root folder

C:\inetpub\wwwroot\mi\homepage.aspx will be overwritten during upgrade. (Database and profile home pages are stored in the database, not on disk, and so will be automatically retrieved after upgrade.)

9.3 Required information for an upgrade

Use this list to ensure you have the key information that will be required during the upgrade.

Required information	Details	Your notes
Application server host name	The name of your GRANTA MI application server.	
MI Service User Account credentials	The account that will be used to run the GRANTA MI service on the application server. Write down the account name and password.	
MI Application Connection Account credential	The account that will be used by GRANTA MI applications to connect to the application server. This can be a local account or a domain account. Write down the account name and password.	
SQL Server instance	The name of the SQL Server instance where the GRANTA MI configuration database is hosted. For example: dbserver\squlexpress	
Database Connection Account credentials	The account that will be used by MI:Server to access the GRANTA MI databases hosted on the SQL Server instance. This account must exist before proceeding with the installation of GRANTA MI.	
Configuration database name	The name of the GRANTA MI configuration database hosted on the SQL Server instance. By default, this will be <i>MIConfig</i> .	

9.4 Starting the Installation Manager

Use the GRANTA MI Installation Manager to upgrade your installed GRANTA MI software components. Double-click on *Setup.exe*, then click **Upgrade GRANTA MI components**.

The components should be upgraded in the order in which they are listed in the Installation Manager.

Note: If *Setup.exe* fails to start, or starts with errors, check that the downloaded installation package zip file is not blocked, as described in Appendix A.2.

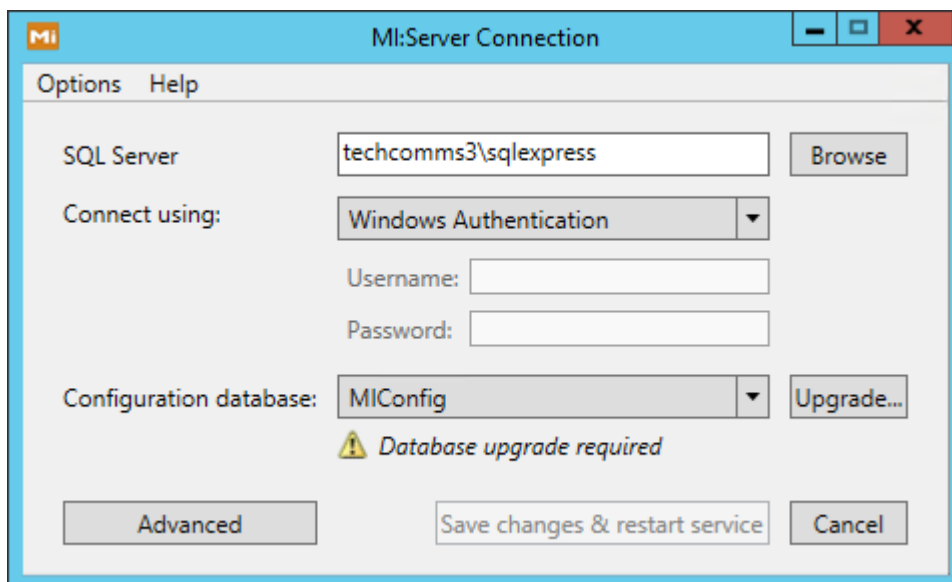
9.5 Upgrading MI:Server

Click the **Upgrade MI:Server** option on the *Upgrade GRANTA MI components* page, and then click **Next** to perform the upgrade.

The existing MI:Server installation folder is backed up, the application is uninstalled, and the new version is installed, and the GRANTA MI service is restarted.

After upgrading to a new major version of GRANTA MI, you will need to upgrade your existing GRANTA MI databases to make them compatible with the new version of the software:

- **Granta reference databases:** to upgrade Granta reference databases, use the MI:Server Manager application (the application will open automatically once the new version of MI:Server has finished installing). See Section 9.10.
- **Configuration database:** If the GRANTA MI configuration database needs to be upgraded, the **Upgrade** button will be enabled in the MI:Server Connection tool; click this to upgrade your configuration database:



Database upgrades are not required when installing a feature update release for the same major version.

9.6 Upgrading the Service Layer

Click the **Upgrade MI:Service Layer** option on the *Upgrade GRANTA MI components* page, and then click **Next** to perform the upgrade.

The existing Service Layer installation folder is backed up, the application is uninstalled, and then the new version is installed.

9.7 Upgrading MI:Viewer

Click the **Upgrade MI:Viewer** option on the *Upgrade GRANTA MI components* page, and then click **Next** to perform the upgrade.

The existing MI:Viewer application folder is backed up, the application is uninstalled, and then the new version is installed.

Note that the following MI:Viewer application configuration settings are not preserved through an upgrade, and will need to be reset after the MI:Viewer upgrade is complete, if they were previously configured:

- **Reporting configuration settings.** To allow MI:Viewer users to create analysis reports and Comparison table Excel reports, the Service Layer URL must be specified as an application configuration setting. This can be specified in the **Admin** page in the MI:Viewer application (**Admin > General > Configure reporting**), or in the MI:Viewer Configuration tool (**Options > Configure reporting**).
- **MI:Workflow integration settings.** To allow MI:Viewer users to launch the Workflow Manager from menu links in MI:Viewer, the MI:Workflow server URL must be specified as an application configuration setting. This is specified on the MI:Viewer **Admin** page (**Admin > General > Workflow options**).

9.8 Upgrading MI:Explore

Click the **Upgrade MI:Explore** option on the *Upgrade GRANTA MI components* page, and then click **Next** to perform the upgrade.

The existing MI:Explore installation folder will be backed up, the application uninstalled, and then the new version installed.

Any existing JSON search configurations will be backed up before the new software is installed, and can be retrieved from the Explore backup folder, for example:

C:\ProgramData\Granta\GRANTA MI\Backup\Explore\4.1.963.0\20171206172608

See the *MI:Explore Configuration Guide* for more information about how configuration settings may be specified and published.

9.9 Upgrading other GRANTA MI applications

You can upgrade each of the GRANTA MI applications by selecting the appropriate option on the **Upgrade GRANTA MI components** page in turn.

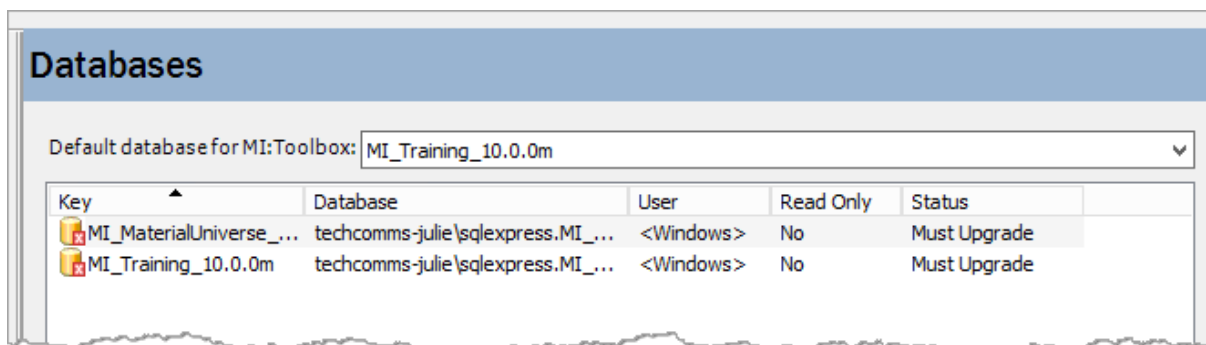
9.10 Upgrading GRANTA MI databases

Upgrading a GRANTA MI database modifies the database schema to make it compatible with the current GRANTA MI software version. A schema upgrade must be applied to all existing databases after installing a new major version of GRANTA MI (that is, when moving up from one major software

version to a later major version). A database upgrade only modifies the database schema; no changes are made to the data content as a result of a database upgrade.

Note that Granta reference databases are often enhanced with revised content when a new major version of GRANTA MI is released. If you have existing Granta reference databases installed, and they have not been extended with additional customer data that you want to keep, you should consider replacing your existing databases with the latest version (where available), rather than upgrading them.

Databases that require a schema upgrade will be listed on the Databases page of MI:Server Manager with the status **Must Upgrade**:



9.10.1 Before you start

Ensure that the databases are backed up in SQL Server before proceeding with a database upgrade. This will require a SQL Server login with sysadmin privileges.

9.10.2 Upgrading a GRANTA MI database

1. Ensure you have made a database backup (see above).
2. Open the MI:Server Manager tool (**Start > All Programs > GRANTA MI > MI Server Manager**) and connect to MI:Server as a user with administrative privileges for the GRANTA MI system (that is, a user who is a member of the MI_ADMIN security group)
3. In **MI:Server Manager**, click **Databases** in the left pane.
Databases with status *Must Upgrade* should be upgraded.
4. Select the database(s) and click **Upgrade Schema**. You can select multiple databases in the same SQL Server instance.

If the upgrade is successful, the database will begin loading into the GRANTA MI system (and its status will change to *Loading*) in the Databases list. It will not become available to GRANTA MI client applications until loading has completed.

If the upgrade fails, an error message will be displayed.

Appendix A. Troubleshooting

A.1 Backup files and installation log files

When Installation Manager upgrades an earlier installation of GRANTA MI, it backs up configuration files, uninstalls earlier versions, and installs the new version.

Backup files are written to:

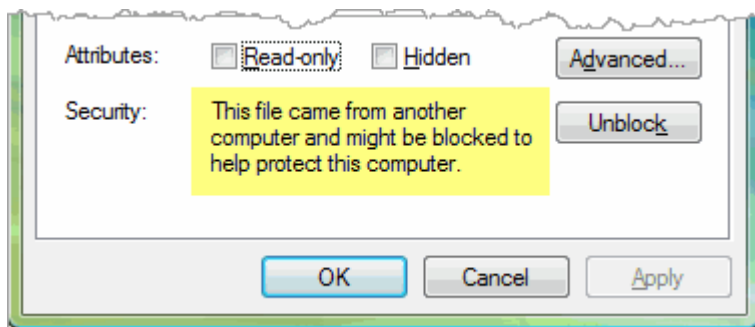
%ProgramData%\Granta\GRANTA MI\Backup\application\version\dateandtime

Installation Manager writes log files to your local application data folder:

%LOCALAPPDATA%\Granta Design\MI\logs

A.2 Problems with blocked zip files

After downloading a software package from Granta, you should check that the zip file has not become blocked by the operating system. You can verify this by looking at the properties of the zip file and seeing whether an **Unblock** button has appeared on the **General** tab in the file's Properties dialog:



If the zip file is blocked, then you must unblock it before unzipping and proceeding with the installation. Note that a zip file can become blocked while copying across a network and not only by downloading.

If you do not unblock the zip file, then running the *setup.exe* program may cause the Installation Manager to fail or generate other errors.

In some environments it may not be sufficient to unblock the zip file prior to unpacking. If this is the case you should try a non-Windows zip utility. Programs from 7-zip or Winrar are examples of such utilities.

A.3 ‘No Profiles Available’ in MI:Viewer

The message ‘No Profiles Available’ on opening the MI:Viewer application indicates that no GRANTA MI databases can be accessed. Ensure that:

- The required databases have been installed on your SQL Server instance; see Section 4, *SQL Server setup*.
- The GRANTA MI database connection account has a db_owner role in all Granta databases on the SQL Server instance; see Section 2.5.3, *Database Connection Account*.
- The databases on the SQL Server instance have been added to the GRANTA MI system by a Granta Administrator using MI:Server Manager; see Section 7, *Adding databases to GRANTA MI*.

A.4 503 errors on Windows 7 machines

When running MI:Viewer on a non-server operating system such as Windows 7, use IIS Manager to ensure that the **Load User Profile** option in the Advanced Settings of the Application Pool is set to False. This will help to prevent 503 (service unavailable) browser errors when using MI:Viewer or the Service Layer.

A.5 MI:Viewer log files not being created

MI:Viewer log files are written to this folder:

```
C:\inetpub\wwwroot\mi\App_Data\logs\MIViewer.log  
C:\inetpub\wwwroot\mi\App_Data\logs\Sessions.log
```

If these log files have not been created, check that MI:Viewer has write access to the C:\inetpub\wwwroot\mi\App_Data\logs\ folder: check the folder security permissions, and ensure that the MIViewer_AppPool group has full access.

A.6 Can't connect to configuration database

By default, the GRANTA MI service runs under the *MiServiceAccount* user account set up during installation.

It is possible to run the Service under the Local System user account instead. If you choose to do this, you may find that GRANTA MI is unable to connect to the *MIConfig* database with Windows Authentication in SQL Server 2012. This is because Local System (NT AUTHORITY\SYSTEM) is not automatically provisioned in the sysadmin fixed server role, as was the case in older SQL Server versions. A number of workarounds for this are available:

- Grant the NT AUTHORITY\SYSTEM user in SQL Server sysadmin privileges, or
- Run the GRANTA MI Service as a domain user with datareader/datawrite privileges in SQL Server, or
- Add NT AUTHORITY\SYSTEM to the db_owner role for the *MIConfig* database.