Connecting to Databases

Connect Once

Many of the advanced features of Ignition, such as the Transaction Groups and Tags Historian require a connection to an external database and most databases require special permissions for each computer that wants to connect. Fortunately, Ignition takes care of all of this for us. You can create a connection to your database once and every system in Ignition will use that central connection. There's no need to worry about updating your database settings to add another client.

This central database connection also makes it easy to swap between databases or schemas. You can tell every query to use the default connection, then just change the default to update everything. Alternatively, you can force specific queries or systems to use a particular connection. Create as many database connections as you want and start designing using all of them.
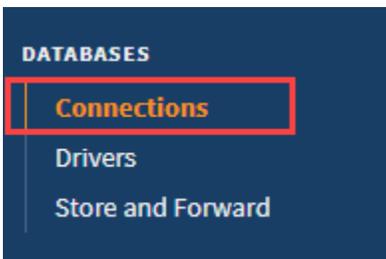
Add a Database Connection

Now that we've installed your database, let's connect to it. You can find detailed descriptions for many database connections in this User Manual, however, they all include the same steps:

1. On the Gateway Webpage, go to the Gateway **Config** tab. Scroll down to the **Databases > Connections** section.

2. On at the Database Connections page, click on the **Create new Database Connection...** link at the bottom of the table.
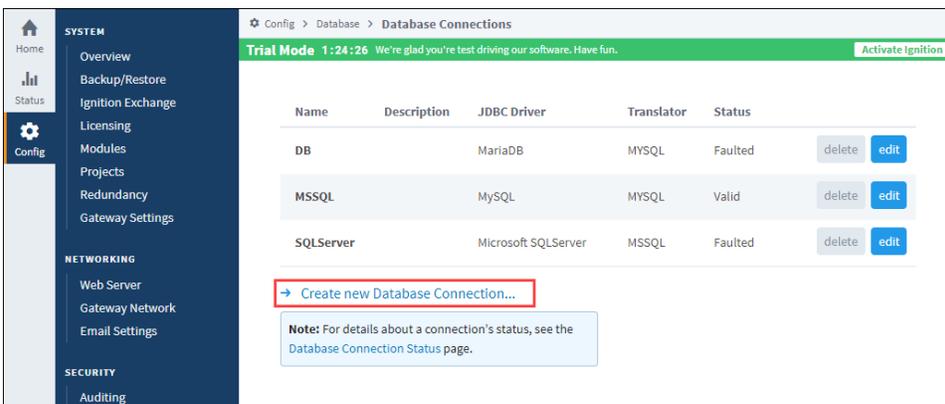
3. The next step is to choose a JDBC Driver.
   Ignition connects to databases using JDBC drivers that are unique to each database. Drivers for the most popular databases are included so there is usually no need to install the JDBC driver manually.

   Ignition ships with drivers for Microsoft SQL Server, MySQL, Oracle, and PostgreSQL. Pick the JDBC driver for your database, and click on the **Next** button.
   If a suitable driver is not available in the list, you need to add a new JDBC driver for other databases, like IBM DB2, which is not very difficult to do, see Adding a JDBC Driver.

4. **Configure the Connection**
After selecting the driver, you'll configure the settings for the connection. Some settings, such as the Connect URL are specific to the driver that you're using.

Main Database Connection Properties

Name	Each database connection needs a unique name, which consists of letters, numbers and underscores.
Description	A brief description of the database.
JDBC Driver	The JDBC driver dictates the type of database that this connection can connect to. It cannot be changed once created.
Connect URL	A string that instructs the driver how to connect to the database. This string is the server address, and may include the port, instance name, database name, and so on. The format and parameters depend on the driver being used.
Username	The username to use when connecting. Some databases support other authentication methods, such as Windows authentication, in which case this field is not used.
Change Password?	Check the box to change the existing password.
Password	Enter password.
Password	Re-type password for verification.
Extra Connection Properties	Depending on which database you are connecting to, there will be different default values placed in this box. MS SQL Server requires you to place your database name here, but for other databases you can usually leave this at its default values. Each database has its own set of available extra connection properties so you must refer to your Database documentation to determine what is valid here.
Enabled	Lets you to enable or disable a database connection.
Failover Datasource	The connection that is automatically used when this connection is not available.
Failover Mode	Lets you select how to handle the database connection failing and recovering. Database connections support *failover.* This means that the objects which use a database connection will use a different connection if the one they are using becomes unavailable. The **Failover Datasource** property determines which connection is used, and the **Failover Mode** determines when, if ever, the connection is switch back to the primary connection. There are two failover modes: • **STANDARD** mode means that this datasource will fail over when a connection cannot be retrieved, but when connectivity is restored, connections will again come from this datasource. • **STICKY** mode means that once this datasource fails over, connections will continue coming from the failover datasource until the failover datasource itself fails or the Gateway is restarted.
Slow Query Log Threshold	Queries that take longer than this amount of time, in milliseconds, will be logged. This helps to find queries that are not performing well. (default: 60,000)
Validation Timeout	The time in milliseconds between database validation checks. (default: 10,000)

Advanced Settings

There are many advanced settings that you don't need to change under normal circumstances. See the description for each property on the settings page.

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