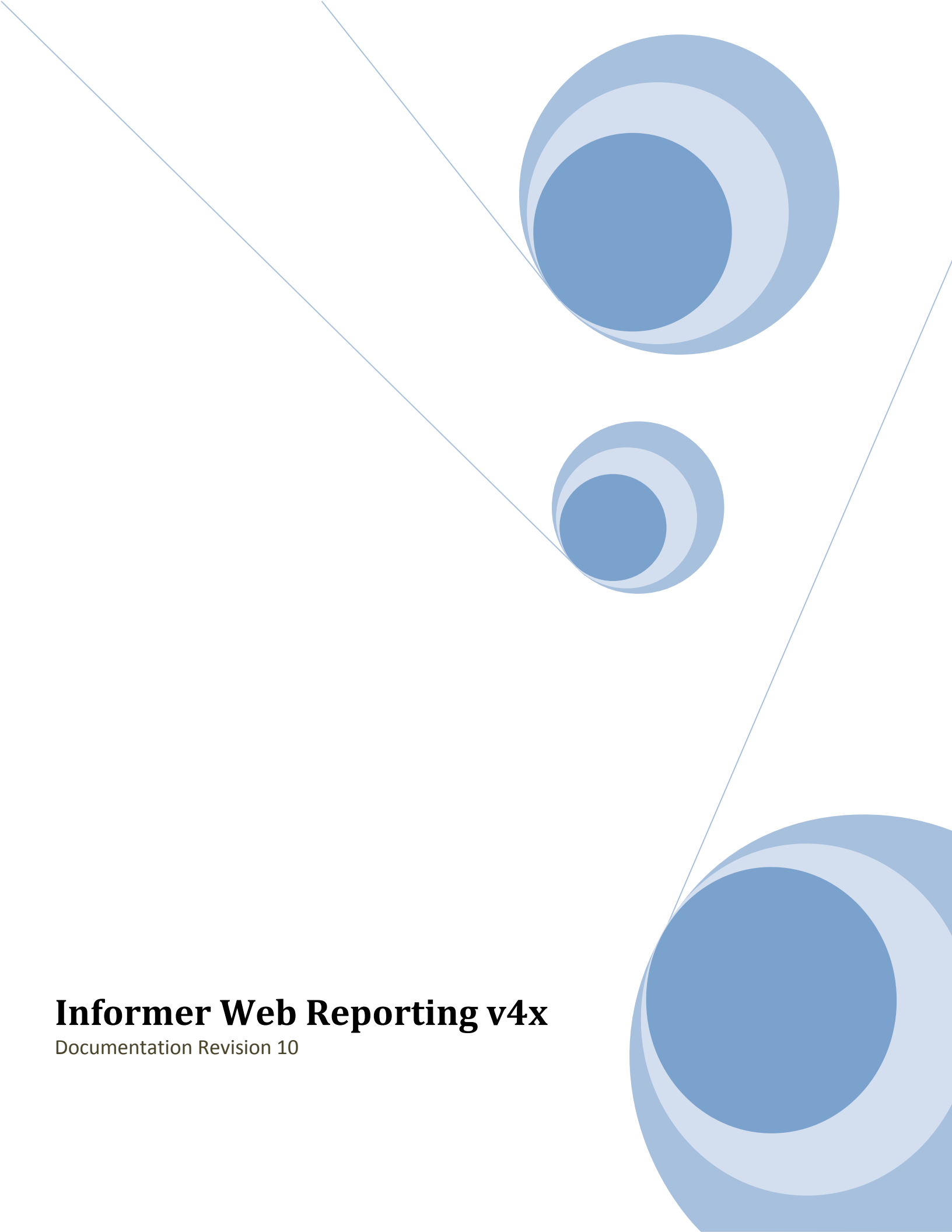


Informer Web Reporting v4x

Documentation Revision 10

Table of Contents

Welcome to Informer 4x

Welcome to Informer 4x! We are excited to welcome you to our growing user community and to make every commitment to ensure your implementation exceeds your expectations.

Introduction to this Document

This document is intended as a reference for both the novice and advanced Informer user. Whether you've never logged into the product, or if you manage a global implementation with thousands of users, this document is for you.

This is the official documentation reference for Informer, and will be continuously updated with more helpful knowledge and additional feature explanation as the product itself evolves. If at any point in this document you find an explanation to be lacking or unclear, or if you find errors, please do not hesitate to contact us at support@entrinsik.com and let us know of your concerns. We are always looking for feedback to improve our product and documentation.

Product Description

Informer provides simultaneous access to real time operational data in multiple databases from one intuitive interface anytime, anywhere, enabling organizations to extend reporting capabilities and make full use of their data. Informer leverages 25 years of industry expertise with the latest web technology to deliver powerful reporting and analysis functionality. Some key components of the application include:

Live Data : You make hundreds of business affecting decisions each day. You require up-to-the-minute information about your organization, and Informer fulfills this need allowing you to make quicker, more informed decisions.

Web User Interface : With a few clicks, Informer generates custom reports based on live data from your SQL and MultiValue databases, and makes them accessible securely via the Web. Using the latest in Web User Interface technology, Informer then provides a rich set of UI tools to manipulate the reporting environment to fit your individual needs.

Multiple Data Sources : Informer connects SQL and MultiValue databases seamlessly, providing a single point of access to interactive reports, allowing you to create a single source repository for all reporting needs across your organization, without regard for the database flavor.

SDK and Development Toolkit: Your development team can create implementation specific behavior in the system including modifying user interface look and feel, creating 3rd party authentication drivers, attaching to system events as they happen and manipulating workflows, packaging reports and mappings into data bundles for distribution, and connecting remotely to Informer from other applications.

Conventions in this Document

If you are unfamiliar with Informer, or if you're new to a particular feature set, you may be exposed to a new set of naming conventions. Each section of the document should describe in detail the definitions of any new conventions. There is also a User Interface Explanation appendix to assist with named areas of the system to which this document refers. Please familiarize yourself with these names as the documentation will be much clearer.

Contacting Support

If you received your Informer software from a third party application vendor, please refer to their specific support policies.

At Entrinsik we pride ourselves on outstanding support for all our Informer customers, and provide several outlets for you to find the answer to your question.

For general support questions, we ask that you first visit our Entrinsik support website at http://support.entrinsik.com/informer.php. There you will find a message board, an up-to-date list of known issues, video tutorials, a community supported wiki, HOW-TO's, and other reference materials you might find useful. We constantly update our support site so check back often for updates and new features.

Entrinsik technical support is available Monday through Friday 8am – 6pm EST. You can contact our support team at support@entrinsik.com or by phone toll-free at (888) 703-0016, option 3.

Other Support Resources

Other support resources available are:

- YouTube Informer Channel: http://www.youtube.com/user/EntrinsikInc
- LinkedIn Informer Users Group: http://www.linkedin.com/groups?gid=2121361
- Twitter: http://www.twittercom/entrinsik

Note about User Security

The Informer security model allows administrators to control access to features, reports, and data on a per-user basis. If you are not the Informer Administrator, there is a chance you may not have access to a particular feature discussed in this document.

Installation

This section describes installing Informer 4x and assumes you have an installation package provided by your issuing partner.

Pre-Installation Instructions

1. The installer is a Java application and requires a Java 1.6 compliant runtime in order to operate (note: the JDK is not necessary). See http://www.oracle.com/technetwork/java/javase/downloads/index.html to download a Java 1.6 JRE if you do not have one installed on the host computer.
2. Choose an Informer web server. Most customers choose to install Informer on a separate server that is ideally configured for hosting web traffic. You will be asked what http port to use. If you are installing on a server that already hosts a web application (such as a previous version of Informer), you may need to select a different port. Common ports to use are 80 (the default), 8080, and 9090.
3. You will be asked for a context name. This will be the part of the informer web address after the server name. The default is 'informer'.
4. The server name, port, and context name combine to form a unique Informer URL. Here are two examples:
    - Example One:
        - Server: myserver
        - Port: 80
        - Context: informer
        - The URL will be: http://myserver/informer
    - Example Two:
        - Server: 192.168.1.1
        - Port: 9090
        - Context: reporting
        - The URL will be: http://192.168.1.1:9090/reporting

When setting the memory for Informer it is important not to allocate more than your JVM can handle. Depending on the type of JVM and the type of operating system on the web server your maximum memory allocation will be different. Allocating too much memory may result in the JVM defaulting to the standard value, or throwing an error on startup.

Installing on a Windows Machine

1. Copy or download the informer-setup.exe file to the installation machine.
2. Double-click informer-setup.exe.
3. The installer may indicate that a previous version of Informer 4x is already installed. If so, you may wish to uninstall the previous version using the Windows Add/Remove Programs feature.

Please follow the instructions that accompany the release announcement for installing the upgrade or contact Entrinsik support for assistance.

4. Click "next".
5. Review 4x features and click "next".
6. Review the license agreement fully. If you wish to proceed, check the button that says you agree to the license, and click "next".
7. Enter the context, port, and memory that you decided on in the pre-installation steps. Click "next".
8. Choose where on the server to install the software. Click "next". If it says the target directory will be created, click "OK". If it says that the directory exists already, decide if you want to proceed.
9. Installation progress will show in the next window. Once it is finished, click "next".
10. Click "Done".

Running Informer

There are two ways to run the Informer server on a Windows machine: as a foreground application or as a Windows Service.

Running Informer as a foreground application

1. Start Informer by double-clicking the “startup.bat” program located in the “bin” folder where you installed Informer. This will open a new console window that will remain open while the Informer server runs.
2. Stop Informer by double-clicking the “shutdown.bat” program in the same folder. The console window should disappear shortly.

Running Informer as a Windows Service

1. Run "service-install.bat" located in the “bin” folder where you installed Informer.
2. Use the Windows Services panel to start and stop Informer.

> Note: If your service starts then immediately stops, you either allocated too much memory to the JavaService, or the Java bin path is not listed in your PATH environment variable.

Installing on a UNIX Machine (GUI Install)

1. Ensure that you are logged into an X-Windows environment.
2. Extract the contents of the informer-install.tgz file.
3. Add JAVA_HOME/bin to your path if it is not already.
4. Execute the informer-install.sh shell script to launch the installer.
5. If you get a warning that says Informer is already installed, you may click "no" and uninstall the old one, or click yes and proceed.
6. Click "next"
7. Review 4x features and click "next".

8. Review the license agreement fully. If you wish to proceed, check the button that says you agree to the license, and click "next".
9. Enter the context, port, and memory that you decided on in the pre-installation steps. Click "next".
10. Choose where on the server to install the software. Click "next". If it says the target directory will be created. Click "OK". If it says that the directory exists already, decide if you want to proceed.
11. Installation progress will show in the next window. Once it is done, click "next".
12. Click "Done".

Starting Informer

1. Run “startup.sh" located in the “bin” folder where you installed Informer.

Stopping Informer

1. Run “shutdown.sh" located in the “bin” folder where you installed Informer.

Installing on a UNIX Machine (Command-line Install)

1. Extract the contents of the informer-install.tgz file.
2. Add JAVA_HOME/bin to your path if it is not already.
3. Open autoinstall.xml in an editor.
4. If necessary, modify the web.port, web.heapsize, web.contextroot, and install path settings.
5. Save and return to the UNIX shell.
6. Execute the command "./informer-install.sh autoinstall.xml" to complete the installation.

Starting Informer

1. Run “startup.sh" located in the “bin” folder where you installed Informer.

Stopping Informer

1. Run “shutdown.sh" located in the “bin” folder where you installed Informer.

Logging into Informer for the First Time

1. Open a web browser to the informer URL. That URL was determined in the pre-installation step.
2. Enter username **administrator** with a blank password to login.

Modeling Your Data Schema

Informer allows you to define the portions of your data schema you find relevant for reporting purposes. This added layer of abstraction above your normal data schema allows you to expose "report-friendly" tables and columns to your users and leave out internal, cryptic, or "housekeeping" ones.

Additionally, because Informer allows you to connect to and link between multiple datasources of varying types, Informer's view of your data schema becomes a meta-schema from which your users can extract and present information seamlessly across datasource boundaries.

> Note: Different databases use different vernacular for similar concepts, such as SQL Table and UniData File. For the purposes of this documentation, we use the SQL terms.

By the end of this section you will be able to:

- Define a connection to a new Datasource
- Manage your data schema through Table Mappings
- Manage Property Mappings in individual Table Mappings
- Modify field display settings
- Create Links between Table Mappings
- Create a Mapping Suite for tables which share an identical structure
- Define functions for use in calculated columns

The success of your Informer implementation depends heavily on the quality of your Informer metadata. Care taken in mapping your database schema results in a system easier for you to secure and for your end users to use.

Datasource Mappings – How to create and manage an Informer reference to your datasources, including connection options and datasource properties

Table Mappings – How to create and manage an Informer reference to tables within a defined datasource

Property Mappings – How to create and manage Informer references to individual columns within your data schemas.

Links – How to define and manage logical key relationships between mapped tables from your data source, including the ability to maintain references between data sources of different types

Mapping Suites – How to define and manage tables, such as Fiscal Year based tables, which share an identical table structure but store different data, e.g., GL.2009, GL.2010, GL.2011

Datasource Mappings

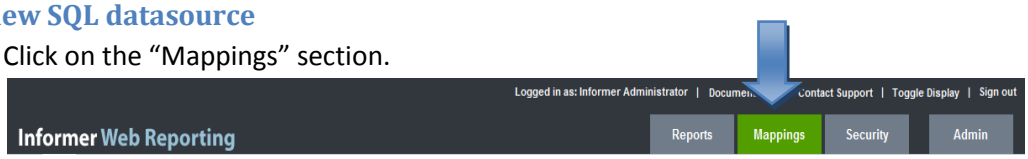
A datasource mapping represents a connection to any database on your network accessible from the web server. The following datasources are available as of the 4x release, with more coming in future maintenance releases:

- Microsoft SQL Server
- Microsoft Access 2003/2007
- Apache Derby
- B TRIEVE
- Oracle
- MySQL
- IBM UniVerse
- IBM UniData
- IBM DB2
- Informix
- PostgreSQL
- TigerLogic D3

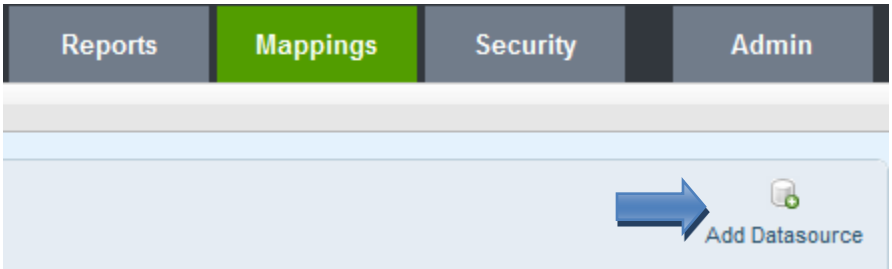
To create a new datasource mapping, click the new datasource action in the action bar of the datasource home page. After choosing the appropriate datasource type, you will be prompted to enter the connection properties for that specific type of datasource. Each datasource type has different requirements for creating a connection. If you are unfamiliar with connection requirements for a specific database, please review the tables below and speak with your database administrator for the appropriate values.

Adding a new SQL datasource

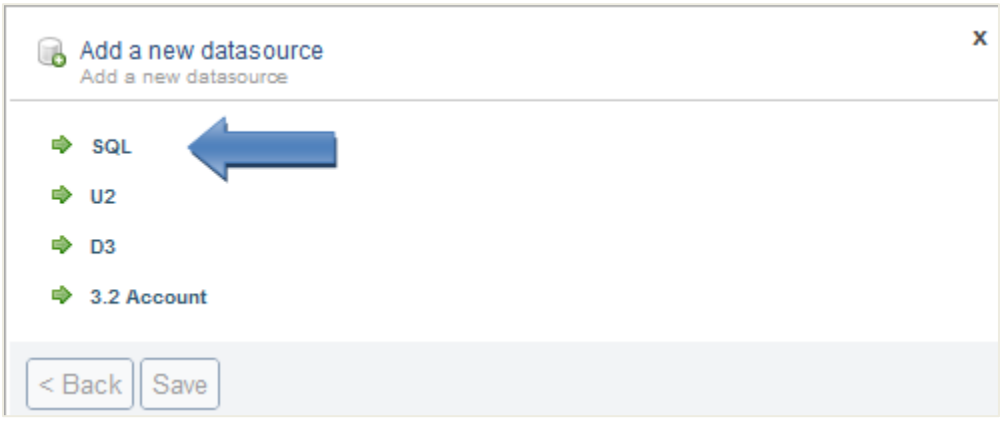
1. Click on the “Mappings” section.



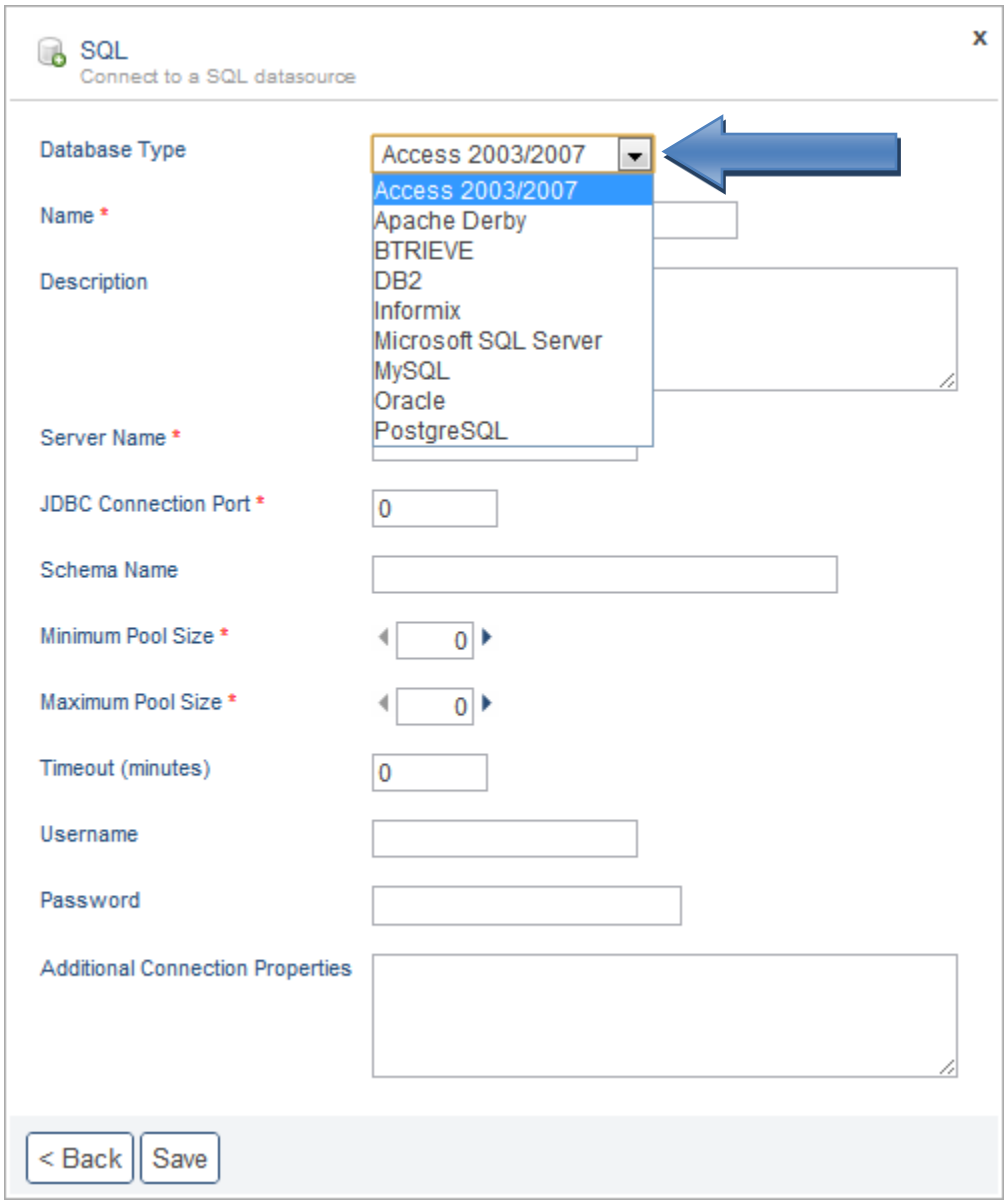
2. Click on Add Datasource.



3. Select SQL



4. Choose the appropriate SQL datasource from the dropdown



Microsoft SQL Server

1. Create a new SQL datasource, and select "Microsoft SQL Server" from the drop down combo box next to "Database Type".
2. Enter the connection properties:
   a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example "My Datasource", "Database1", and "Backup Account" are all acceptable.
   b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
   c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
   d. JDBC Port: This is the port that your database system uses to be accessed from Java. The default port for Microsoft SQL Server is 1433.
   e. Schema Name: This is the schema name of the tables within your database. For Microsoft SQL Server, enter "dbo" (without quotations).
   f. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example, Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.
   g. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.
   h. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is released. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.
   i. Username: This is the Username Informer uses to connect to your database. It is recommended that you use the owner of the database to connect to your database.
   j. Password: The password associated with the username used to connect to your database.
   k. Additional Properties: For Microsoft SQL Server you must list the name of your database in this box, using the format "database=database_name" (without quotations). Where "database_name" is replaced with the actual name of your database. If you intend to connect to a named instance of Microsoft SQL then you must specify that here by adding "instance=instance_name". Where "instance_name" is the name of your instance.

Microsoft Access 2003/2007

1. Create an ODBC data source that points to your Microsoft Access Database.

a. Go to Control Panel -> Administrative Tools -> Data Sources (ODBC)
b. Click “Add”
c. Select “Microsoft Access Driver (.mdb)”
d. Click “Finish”
e. Enter a Data Source Name (this will be the same name you use for “database” below in additional properties – step 3k)
f. Under “Database” click “Select” and browse to your Microsoft Access file.
g. Click “Ok”

2. Select “Microsoft Access 2003” from the drop down combo box next to “Database Type”.
3. Enter the connection properties:
    a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example “My Datasource”, “Database1”, and “Backup Account” are all acceptable.
    b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
    c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
    d. JDBC Port: This value can be left at 0, for Microsoft Access 2003 we use an ODBC connection that does not require a port number.
    e. Schema Name: This can be left blank.
    f. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example, Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.
    g. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.
    h. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is released. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.
    i. Username: This is the Username Informer uses to connect to your database.
    j. Password: The password associated with the username used to connect to your database.
    k. Additional Properties: For Microsoft Access 2003 you must specify that you intend to connect to an access datasource by typing “access=yes” (without quotations) into additional properties. You must also specify the name of your ODBC data source (Step 1.e above) by typing “database=odbc_connection”. Where “odbc_connection” is the name of your ODBC data source.

Oracle

1. Select “Oracle” from the drop down combo box next to “Database Type”.
2. Enter the connection properties:
    a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example “My Datasource”, “Database1”, and “Backup Account” are all acceptable.
    b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
    c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
    d. JDBC Port: This is the port that your database system uses to be accessed from Java. The default port for Oracle is 1521.
    e. Schema Name: This is the schema name of the tables within your database.
    f. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example, Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.
    g. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.
    h. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is released. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.
    i. Username: This is the Username Informer uses to connect to your database. It is recommended that you use the owner of the database to connect to your database.
    j. Password: The password associated with the username used to connect to your database.
    k. Additional Properties: For Oracle datasources you must list the name of your system identifier (SID) in this box, using the format “SID=oracle_sid” (without quotations). Where “oracle_sid” is replaced with the actual system identifier.

MySQL

1. Select “MySQL” from the drop down combo box next to “Database Type”.
2. Enter the connection properties:
    a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example “My Datasource”, “Database1”, and “Backup Account” are all acceptable.

b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
d. JDBC Port: This is the port that your database system uses to be accessed from Java. The default port for MySQL is 3306.
e. Schema Name: This is actually the name of your database in MySQL.
f. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example, Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.
g. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.
h. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is released. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.
i. Username: This is the Username Informer uses to connect to your database.
j. Password: The password associated with the username used to connect to your database.
k. Additional Properties: You do not need any additional properties for MySQL.

Derby

1. Select "Derby" from the drop down combo box next to "Database Type".
2. Enter the connection properties:
    a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example "My Datasource", "Database1", and "Backup Account" are all acceptable.
    b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
    c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
    d. JDBC Port: This is the port that your database system uses to be accessed from Java. The default port for Derby is 1527.
    e. Schema Name: This is the schema name of the tables within your database.
    f. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example,

Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.

g. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.
h. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is released. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.
i. Username: This is the Username Informer uses to connect to your database. It is recommended that you use the owner of the database to connect to your database.
j. Password: The password associated with the username used to connect to your database.
k. Additional Properties: For Derby datasources you must list the path to your derby database. Enter "database=path" (without quotations), where "path" is the absolute path to the derby database directory on the server.

IBM DB2

1. Select "IBM DB2" from the drop down combo box next to "Database Type".
2. Enter the connection properties:
    a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example "My Datasource", "Database1", and "Backup Account" are all acceptable.
    b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
    c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
    d. JDBC Port: This is the port that your database system uses to be accessed from Java. The default port for IBM DB2 is 50000.
    e. Schema Name: This is the schema name of the tables within your database.
    f. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example, Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.
    g. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.

h. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is released. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.
i. Username: This is the Username Informer uses to connect to your database. It is recommended that you use the owner of the database to connect to your database.
j. Password: The password associated with the username used to connect to your database.
k. Additional Properties: For IBM DB2 you must list the name of your database in this box, using the format "database=database_name" (without quotes). Where "database_name" is replaced with the actual name of your database.

Informix

1. Select "IBM Informix" from the drop down combo box next to "Database Type".
2. Enter the connection properties:
    a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example "My Datasource", "Database1", and "Backup Account" are all acceptable.
    b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
    c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
    d. JDBC Port: This is the port that your database system uses to be accessed from Java. The default port for Informix is 1533.
    e. Schema Name: This is the schema name of the tables within your database.
    f. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example, Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.
    g. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.
    h. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is released. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.
    i. Username: This is the Username Informer uses to connect to your database. It is recommended that you use the owner of the database to connect to your database.

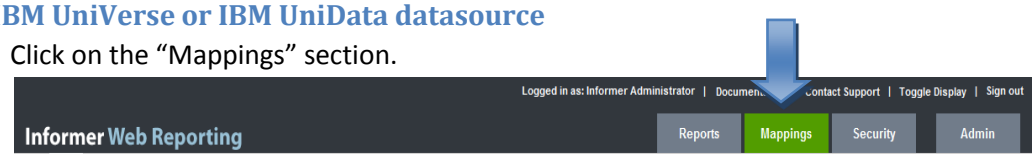
j. Password: The password associated with the username used to connect to your database.

a. Additional Properties: For Informix datasources you must list the database name and the service name. Enter “database=databasename” (without quotations), where “databasename” is the name of the Informix database. You must also enter on a new line “informixserver=servicename” (without quotations), here “servicename” is the name of the default database server, this attribute is listed in your instance’s ONCONFIG file.

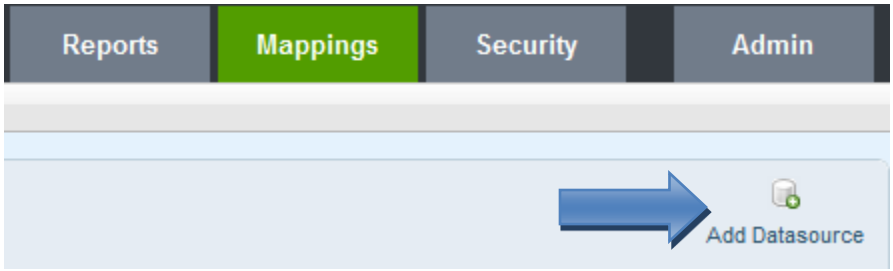
Note: If you are attempting to convert data from a 3.2.4 Informer datasource, please see the Converting from 3.2.4 to 4x Appendix

Adding a IBM UniVerse or IBM UniData datasource

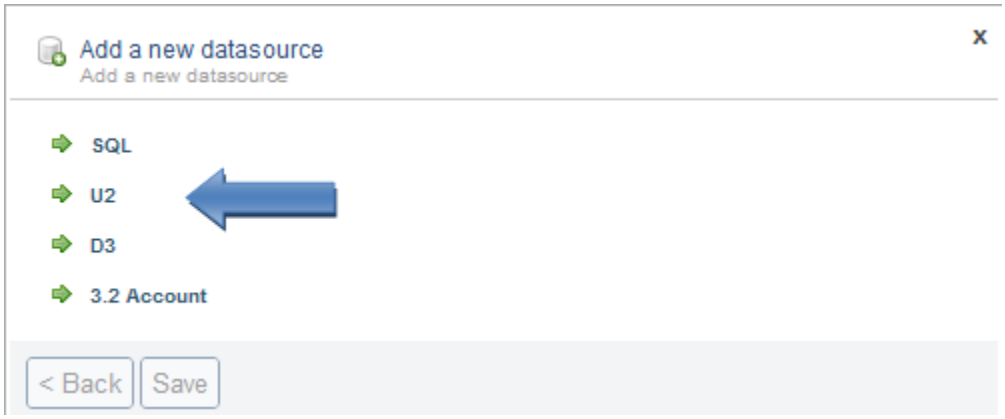
1. Click on the “Mappings” section.



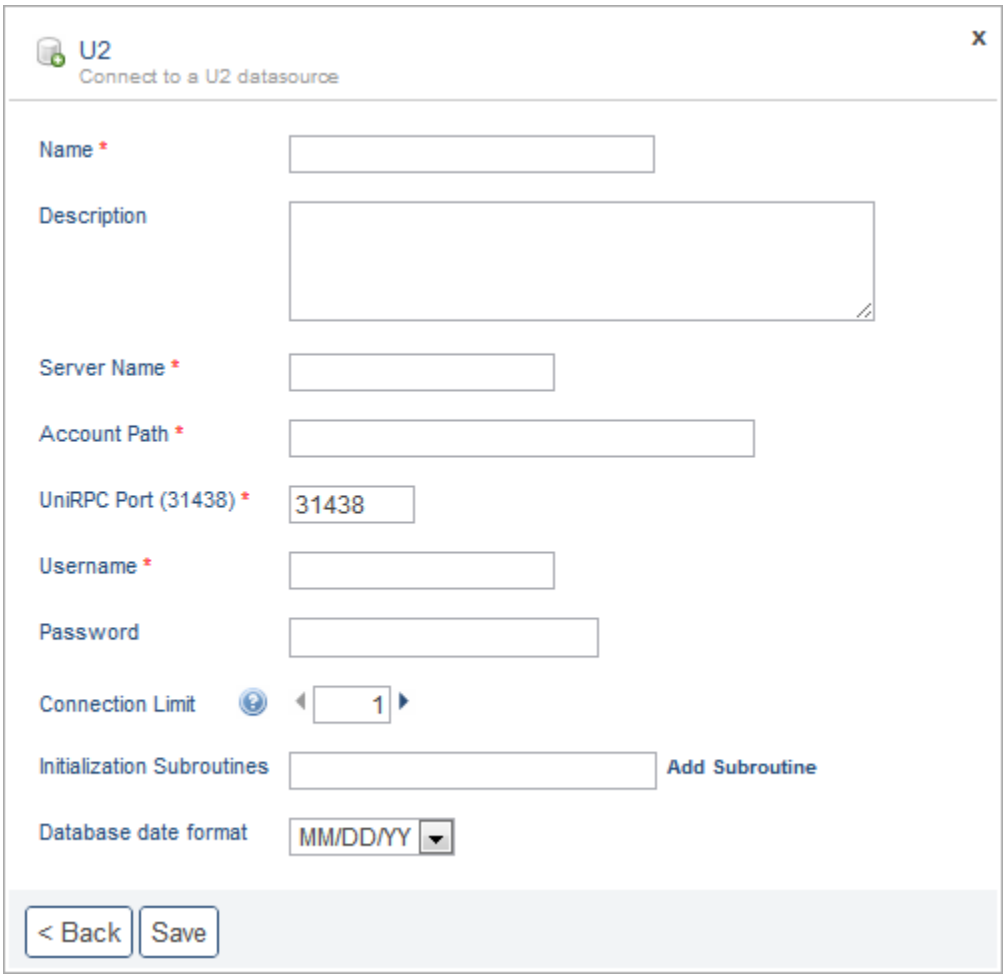
2. Click “Add datasource”.



3. Click “U2”.



4. Enter the connection properties:



a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example “My Datasource”, “Database1”, and “Backup Account” are all acceptable.
b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
d. Account Path: This is the absolute path to your UniData or UniVerse account on the server.
e. Username: This is the Username Informer uses to connect to your database. If you were to execute the LISTUSER command at your database prompt, all connections held by Informer would display as connected via this username. Entrinsik recommends you create a database user named 'informer' in order to easily identify which connections belong to Informer.
f. Password: The password associated with the username used to connect to your database.

g. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example, Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.

h. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.

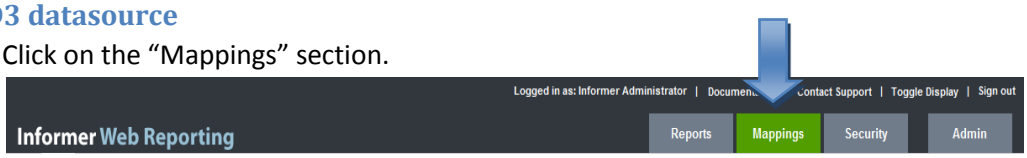
i. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is returned back to the standard U2 connection manager. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.

j. Initialization Subroutines: Informer does not run any login script when it starts. If you have a login script that you use normally, you must list the subroutines run by that script here.

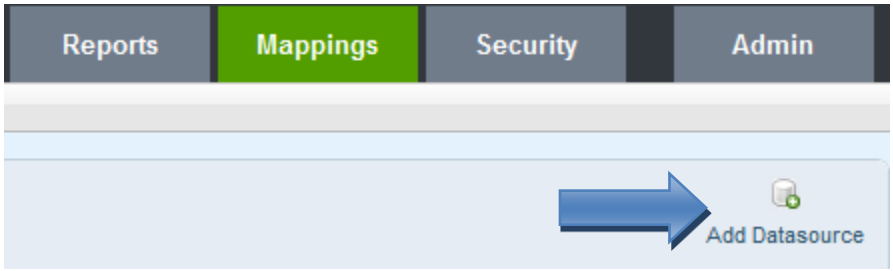
If you continue having difficulty connecting Informer to a datasource, please contact your Informer support provider.

Adding a D3 datasource

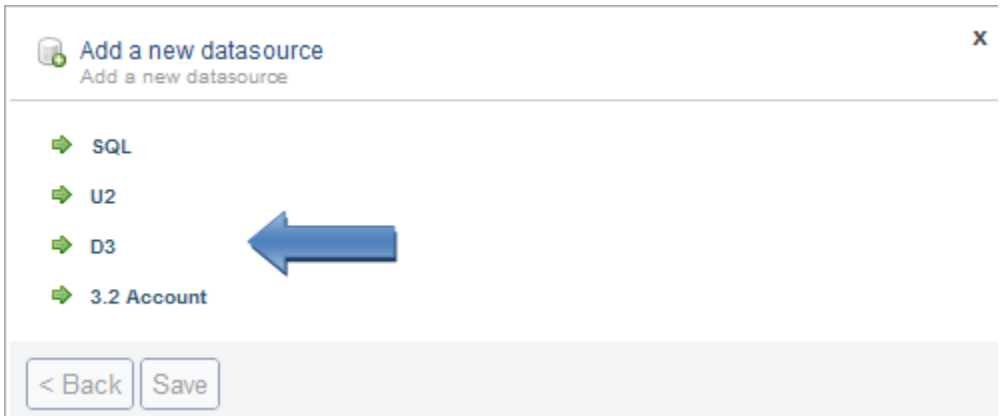
1. Click on the "Mappings" section.



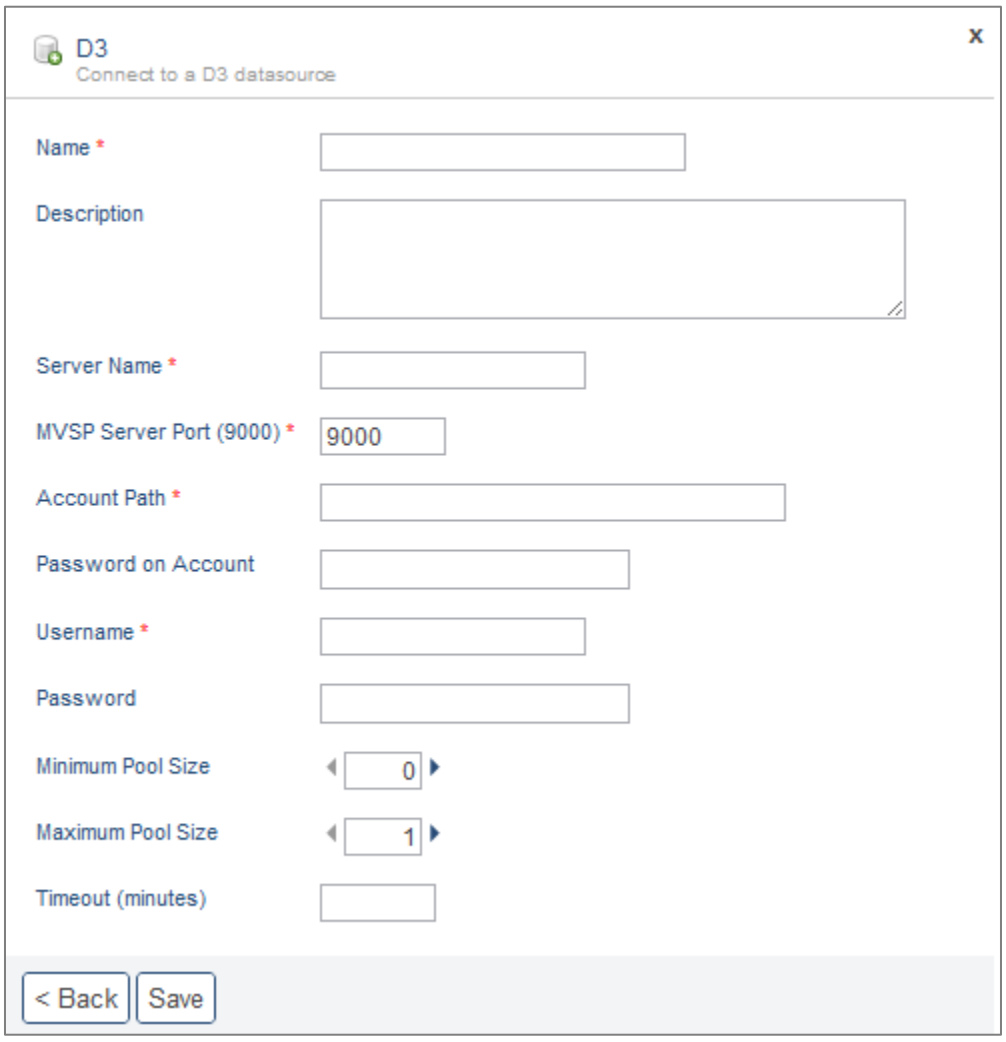
2. Click "Add datasource".



3. Click “D3”



4. Enter the connection properties:



   a. Name: This is the identifier of your datasource within Informer. It can contain any string of letters or numbers. For example “My Datasource”, “Database1”, and “Backup Account” are all acceptable.

b. Description: This is the description of the datasource that will be displayed under the datasource name in the mappings section of Informer.
c. Server Name: This is the host name, or IP Address of the machines that stores your datasource. The web server that runs Informer must be able to see this machine on your network.
d. Account Path: This is the absolute path to your MVSP-enabled D3account on the server.
e. Password on Account: If the account you are connecting to also has a password, enter that here.
f. Username: This is the Username Informer uses to connect to your database. If you were to execute the "list-users" command at your database prompt, all connections held by Informer would display as connected via this username. Entrinsik recommends you create a D3 database user named 'informer' in order to easily identify which connections belong to Informer.
g. Password: The password associated with the username used to connect to your database.
h. Minimum Pool Size: The minimum number of connections Informer should keep in the connection pool at all times. Default is 0. If this number is 1, for example, Informer will take a connection at startup and never let it go, thereby guaranteeing there will always be at least one connection available for Informer users.
i. Maximum Pool Size: The maximum number of connections Informer is allowed to use at any one point in time. This has no direct correlation whatsoever to the number of Informer users logged into the system at one time, but may affect performance in some cases. Informer will not always maintain this number of connections, but is allowed to if necessary.
j. Timeout: This is the amount of time an unused connection will remain in the connection pool before it is returned back to the standard D3 MVSP connection manager. Default is 0 minutes. Having a value greater than 0 is particularly useful for enhancing performance, as there is some startup cost associated with creating a connection from scratch.

Understanding the Connection Pool

Informer maintains its own connection pool for managing connections to each of your defined datasources. This connection pool will always contain at least X number of connections alive, with X being the value you provide for Connection Pool Minimum in the New Datasource dialog. Likewise, the connection will never maintain more than the value you provide for Connection Pool Maximum in the New Datasource dialog. You can always edit the datasource properties to modify the connection pool minimum and maximum if you later determine it is necessary.

The optimal values for pool minimum and maximum vary at each site, and often at different times of year when heavier or lighter use of Informer is expected. Because there is not a one-to-one correlation

between Informer users and connections, it is impossible to know without some observance what the optimal setting for your environment will be. For example, in a UniVerse or UniData environment, a good rule of thumb might be a connection pool minimum of 4 and a maximum of 8 for every 100 database license you maintain. Again, you should test particular values to see what works best for you and your users.

Informer takes great care to be as efficient as possible with connections. Connections in the pool are shared among all Informer users and are used only when executing queries against the underlying database. The number of connections in the pool ranges based on usage between the minimum and maximum specified for the datasource. If no connections are available when a user executes a query, his or her request will wait until one becomes available.

The Datasource Detail Page

The datasource detail page provides quick access to datasource specific properties and to table mappings added to the datasource, as well as other common action functions like security. Adding a datasource does not add any tables by default, you must add them either in bulk or individually from the mappings tab on the detail page.

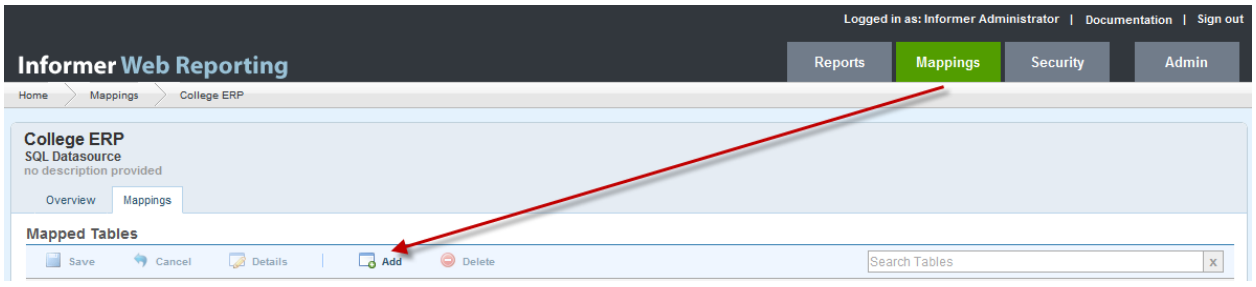
Table Mappings

A Table mapping represents an Informer reference to a table within a specific datasource. There is a one-to-one relationship between table mappings in Informer and tables within your datasource.

Most database systems contain tables which aren't useful for reporting purposes. You should add tables to Informer judiciously so as to ensure your users have access to only those files they require for use within Informer. Remember you are merely creating a reference to the actual table – any changes you make to Informer's view of a table will not affect the actual target database.

Adding Table Mappings to Informer

In order for your users to create selects against and include columns from a table in a report, the table itself must be added as a mapping to Informer. Manage which tables are included for use in Informer through the mappings tab on the Datasource Detail Page.



Click the Add button in the menu bar of the Mapped Tables listing. This will bring up a dialog displaying all the tables existing in the target datasource. Tables which are already available through Informer will display in bold text. You can optionally choose to show only unmapped tables by toggling the checkbox above the grid.

To add a table to Informer, either begin typing its name in the search provided, or find it in the list using the pager bar. You may have other options for finding a specific table depending on the type of underlying datasource. Once you find the table you want, you can either double-click the table name, or click and drag the named row onto the mapped tables listing.

> Note: As with other click select grids in the system, you can select multiple items using the shift or ctrl key and drag multiple records at one time

Once you've added tables to the mapped listings grid, they will display in red, meaning the tables are not yet saved to the system. Continue finding and adding the tables you need, then click Save in the mapped listings menu bar.

This is also a good time to assign the table a user-friendly name for reporting. Often table names are cryptic with unnecessary special characters. Improved descriptions make navigation much easier to end users. You can edit a table's name in one of two ways:

a) Editing the individual record and changing its name, or
b) Double clicking on an empty part of line with Meta reference and using the in-line editing capability of Informer to give the table a more useful name. In-line editing can be done on multiple records at a time. Once completed, click the "save" button to bulk save your edited changes.

These tables are now available to users in Informer provided they have the appropriate security access. However, the tables you just added do not have any columns, or property mappings, by default. You must identify specifically which columns you'd like to add using the property listing on the Table Details page.

Property Mappings

A Property Mapping is a reference to a specific table column. There is a one-to-one relationship between property mappings in Informer and columns from tables within your datasource.

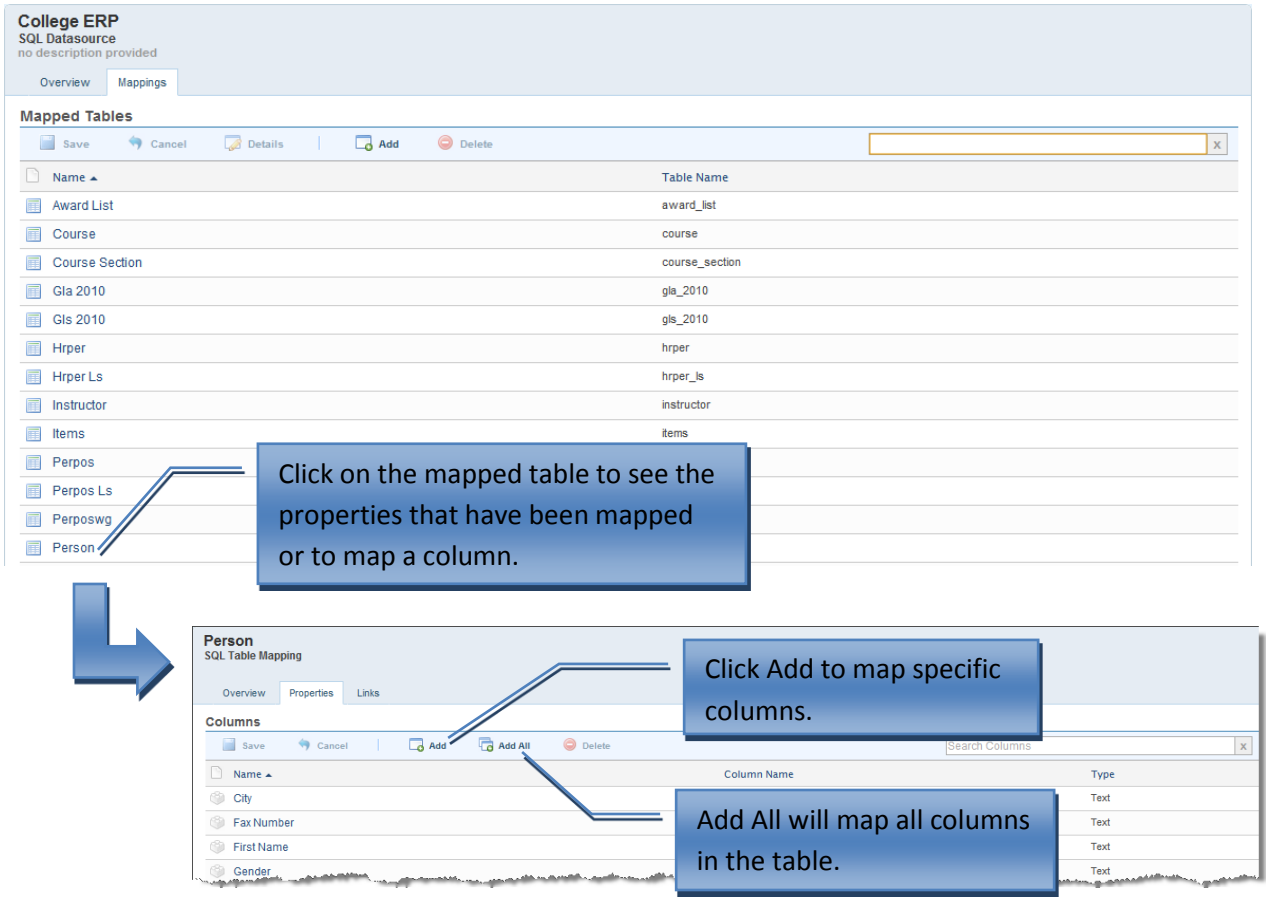
As with tables, you should only map properties that are useful for reporting purposes. You should add columns to Informer judiciously so as to ensure your users have access to only those data elements they require for use within Informer. Remember you are merely creating a reference to the actual column – any changes you make to Informer's view of a table will not affect the actual target database.

Informer assigns a data type (Text, Numeric, Date, Time, or DateTime) to each property that you map. The data type determines formatting options as well as how the property behaves within calculated columns. Informer assigns a best guess default data type that can be overridden. Note again, any modifications will only affect Informer's view of the data, not the datasource definition itself.

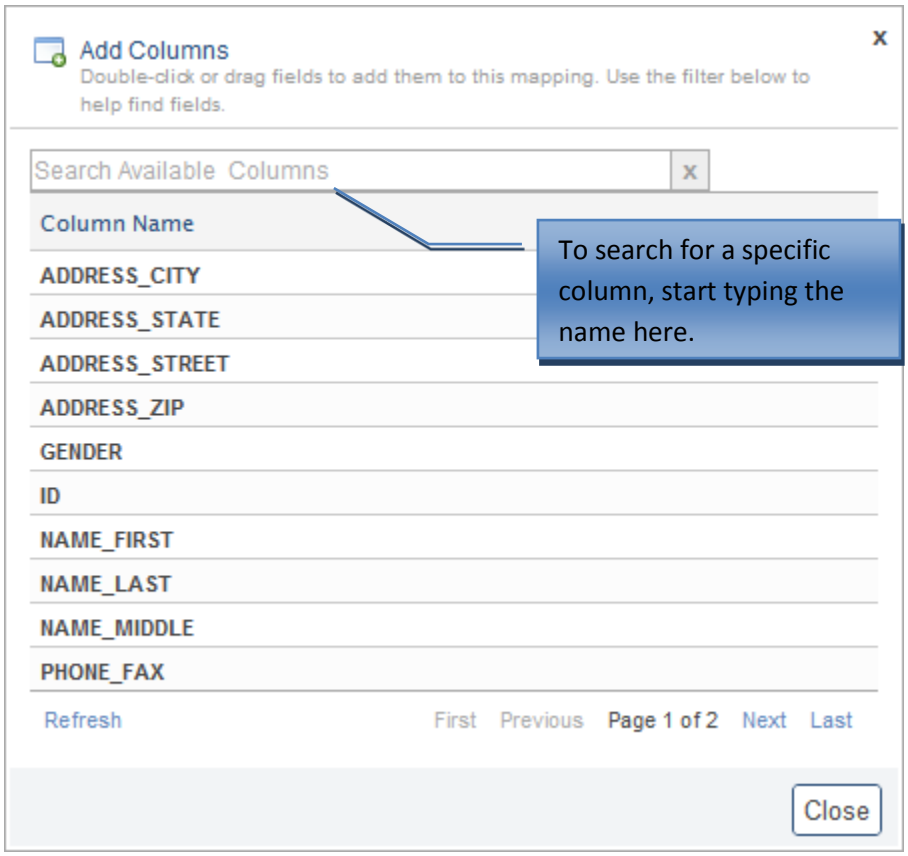
Adding Property Mappings to Informer

In order for your users to create selects against and include columns from a table in a report, the column itself must be added as a property mapping to Informer. Managing which columns are included for use in Informer is done through the properties tab on the table mappings page.

To add a new property mapping to Informer, browse to the properties tab on the table mappings page by following the path Datasource > Table > Properties tab. Click the Add button in the menu bar of the properties listing. This will bring up a dialog displaying all the properties existing in the target table. Columns from the table already available as properties display in bold text.


College ERP
SQL Datasource
no description provided
Overview
Mappings
Mapped Tables
Save
Cancel
Details
Add
Delete
Name
Table Name
Award List
award_list
Course
course
Course Section
course_section
Gla 2010
gla_2010
Gls 2010
gls_2010
Hrper
hrper
Hrper Ls
hrper_ls
Instructor
instructor
Items
items
Perpos
Perpos Ls
Perposwg
Person
Click on the mapped table to see the properties that have been mapped or to map a column.
Person
SQL Table Mapping
Overview
Properties
Links
Columns
Save
Cancel
Add
Add All
Delete
Search Columns
Name
Column Name
Type
City
Text
Fax Number
Text
First Name
Text
Gender
Text
Click Add to map specific columns.
Add All will map all columns in the table.

You have different options for searching the fields listing in the Add Fields dialog depending on the type of datasource the target table belongs to. Once you find the field you want, either double-click the field name, or click and drag the named row onto the mapped tables listing to create the new property mapping in Informer.



You can also bulk add all fields from a table by clicking the Add All button, though it is recommended you add properties individually to ensure you are only retrieving the properties required for reporting.

Once you've added properties to the mapped properties grid, they will display in red, meaning they are not yet saved to the system. Continue finding and adding the properties you need, then click Save in the mapped properties menu bar.

Managing Property Mappings

Once a property is mapped, you can choose a number of display options for use within Informer depending on the data type. For numeric properties, you can choose decimal places; for date and time properties you can choose the appropriate format. These options globally affect field display within Informer. There are also Informer specific options for property definitions as detailed below:

Alphanumeric	There are no formatting options for text fields. Informer displays the property's raw value as text. You can limit the number of characters displayed by specifying the number in the Character Length field. Any additional characters will be truncated on the report.
Numeric	Decimal Places: Signifies how many decimal places are displayed for numeric values. For example, if your numeric record value is 139.60, increasing the decimal places value to 3 displays as 139.600. Likewise, decreasing the decimal places value to 1 displays as 139.6. Use 1000 Separator: If checked this will separate every three digits with a comma. Currency: Informer allows you the option to display a currency sign with your numerical or monetary field. Negative Number: Informer allows you to customize the way negative numbers are displayed on reports.
Date, Time, and Datetime	You can choose the appropriate default format for date, time, and datetime (SQL only) fields.

Note: Some property fields, such as Description, are available for edit right in the grid itself. Simply double-click the cell of the grid containing the data you'd like to change, and an editor will appear. Once you've made changes to all the cells you'd like, simply hit the Save button in the listing menu bar to commit all edits.

Modifications made to Properties affect how that property behaves globally throughout Informer. Users also have the opportunity, provided they have the appropriate security rights, to modify property display on a report-by-report basis. For example, one report may display a particular date property in short format, while another may display the same property in long format.

Links

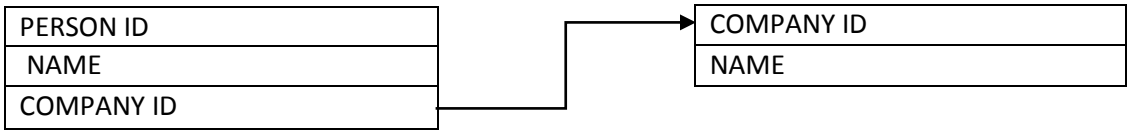
A Link represents a simple defined relationship between two of your mapped tables, very much like a join in traditional SQL vernacular. These relationships can be defined as being local Links, meaning the two tables involved are mapped from the same datasource, or remote, meaning the tables involved are mapped from two different datasources.

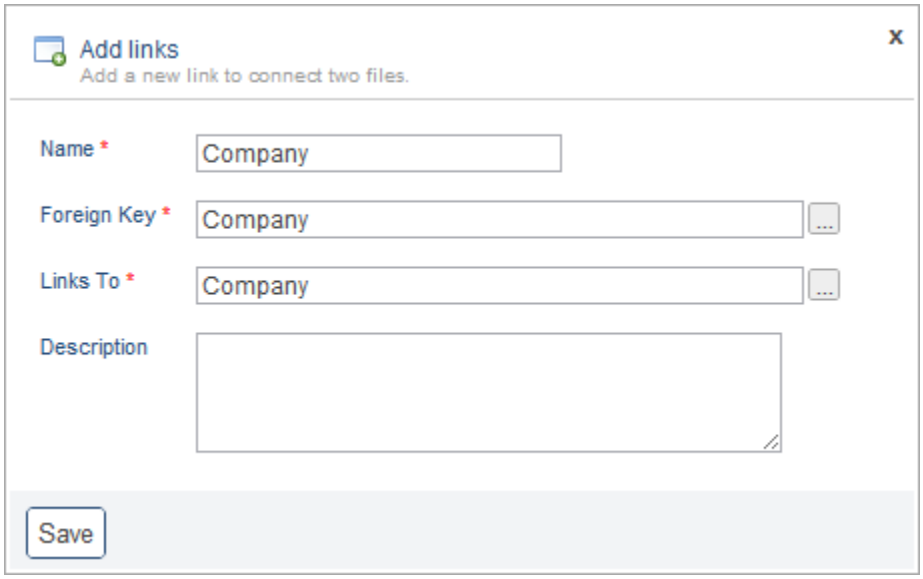
Defining your link structure to create a meta-schema of all the datasources in your organization provides your report consumers tremendous power to retrieve information seamlessly from many different sources, never needing to know that one field was retrieved from an Oracle database, while another from a UniData database, and yet another from MySQL. You have the ability therefore to create a "reporting schema" for your organization which spans multiple databases.

Internal Links

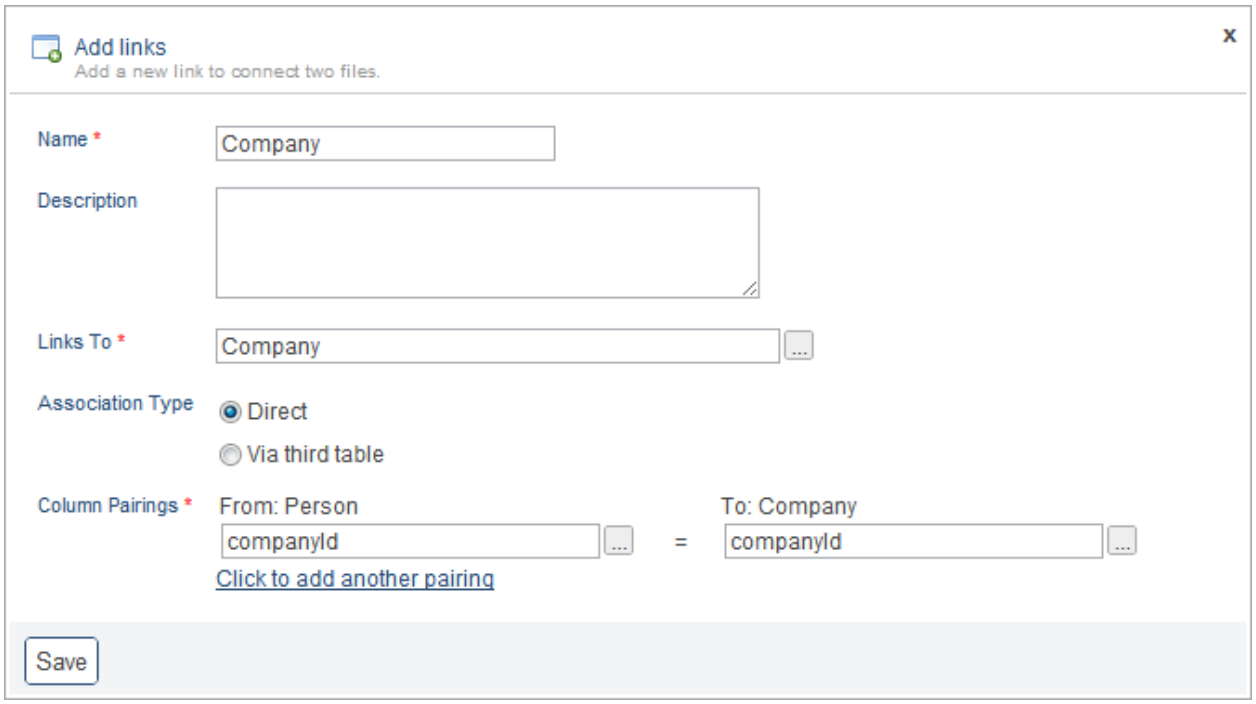
An internal link defines a relationship between two mapped tables from the same datasource. The types of links available to you depend on the type of the datasource from which the source table was mapped. For SQL tables, there are two types of links available: Direct (or Foreign Key) and Key from Third Table. For MultiValue datasources only Foreign Key links are supported for internal relationships.

Foreign Key : If you know that a property within your source table mapping is the key to another table mapping, you can create a Foreign Key link. This is the equivalent of the standard SQL LEFT OUTER join type. This type of link is also referred to as a Direct link. For example, a hypothetical Person mapping links to a Company mapping with a Foreign Key link built from the companyId property on the Person mapping.



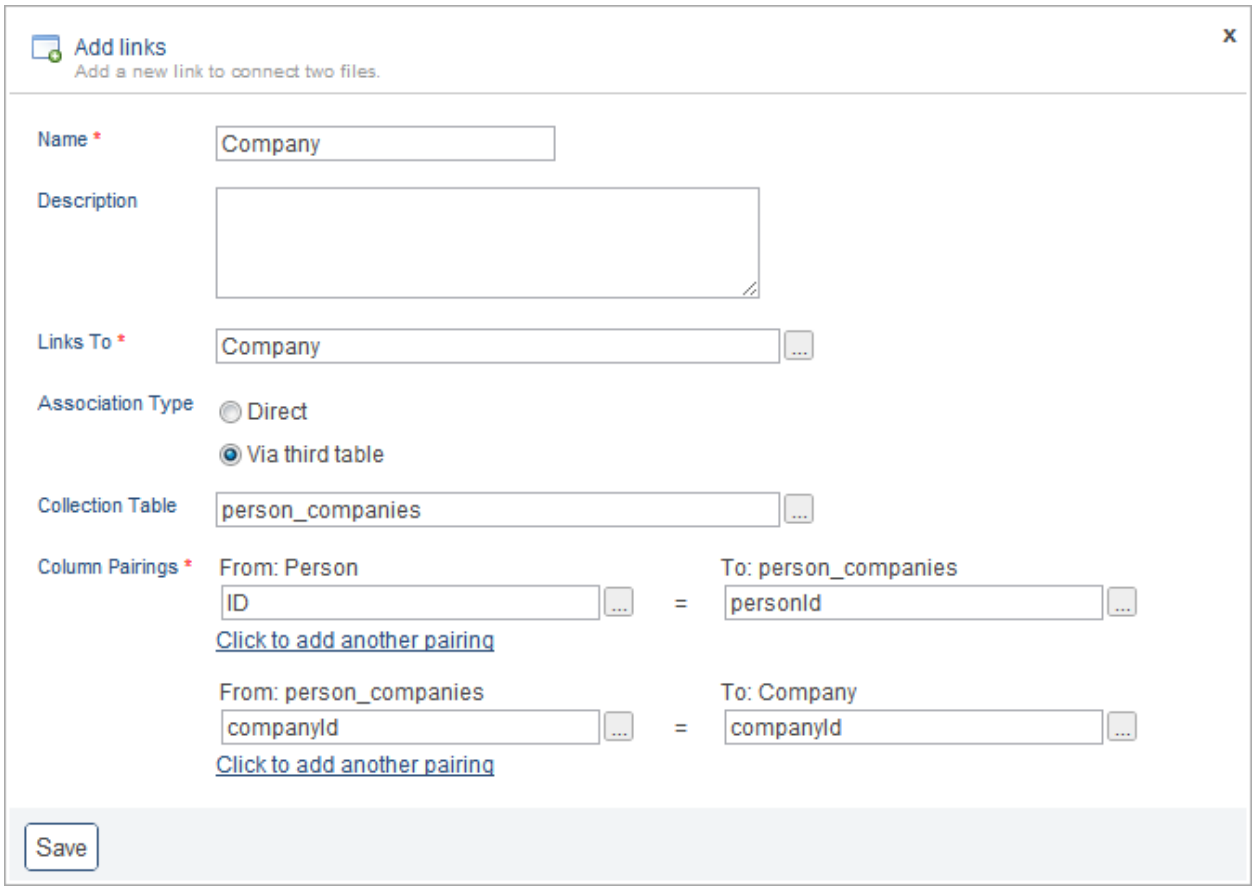


For SQL datasources, you specify the properties on either side of the link. In the aforementioned hypothetical Person mapping, you would specify the property in Person and the property in Company that defines the link.



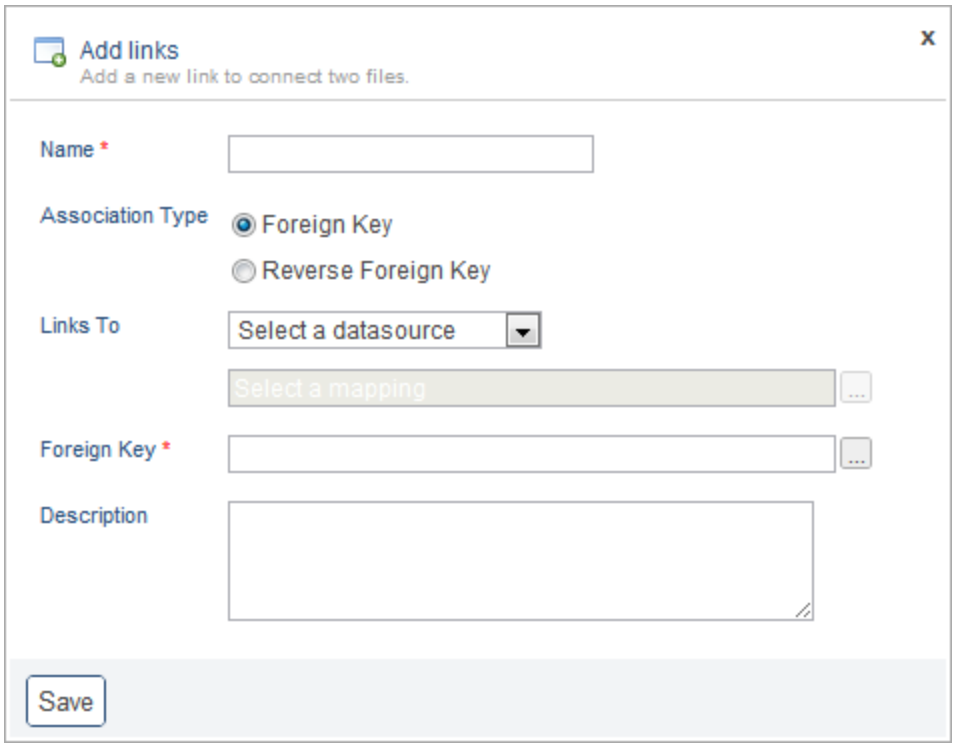
You can also use more than one property to define the link. Use the 'Click to add another pairing' hyperlink to add additional properties to the link definition.

Key from Third Table : If you know that you have a standard third-normal table defining relationships between two of your mapped tables, you can create a Key from Third Table link. Let's modify our Person / Company example and assume a Person can work for multiple Companies. In this case, you would not have the companyId field defined on the Person table, but instead you would have the relationship between Persons and Companies defined in a third-normal table hypothetically named persons_companies.



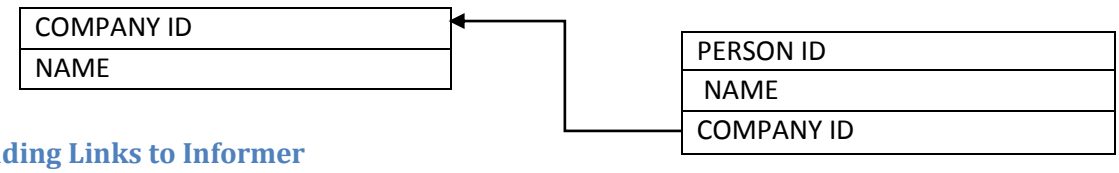
Remote Links

Remote Links allow you to define a meta-schema of all useful reporting data from all datasources in your organization – all seamlessly to your end users.



If you have more than one datasource mapped in Informer you can create Remote Links between them so users can include properties from multiple sources for display in results. Remote Links can be created between datasources of any supported type, meaning you can create a join-like relationship between two SQL datasources, between a SQL and a UniData datasource, between a UniData and MySQL datasource, etc.

The link types available for Remote Links are Foreign Key and Reverse Foreign Key. Foreign Key links are described in the Internal Links section. Reverse Foreign Key means that the field being used to define the link exists in the target table. For example, if Company and Person were in separate databases, and we wanted to link Company to Person, there is no direct relationship between Company and Person. There is, however, a relationship between Person and Company. We can use that relationship to define the link between Company and Person:



Adding Links to Informer

In order for your users to create selects against and include fields from a multiple tables in a report, the relationship between the tables must be defined as Links in Informer. Managing which links are included for use in Informer is done through the Links tab on the associated Mapping Detail page.

To add a new link to Informer, browse to the links tab on the table mappings page by following the path Datasource > Table > Links tab. Click the Add button in the menu bar to create an internal link, click the

Add Remote button in the menu bar to create a link to a table mapping from another datasource. This will bring up a dialog allowing for you to define the link on the selected table.

The options within the dialog depend on both the datasource type of the source table mapping and the type of link (internal / remote) you choose to create. Refer to the previous section for descriptions of each of these types.

Once you've provided the information required to create your link, click Save and your new link will appear in the Links listing and is now available for use in reports. Note a table mapping can and should have many links defined; the quality of your Informer implementation will improve as you allow your end users the ability to traverse your datasources.

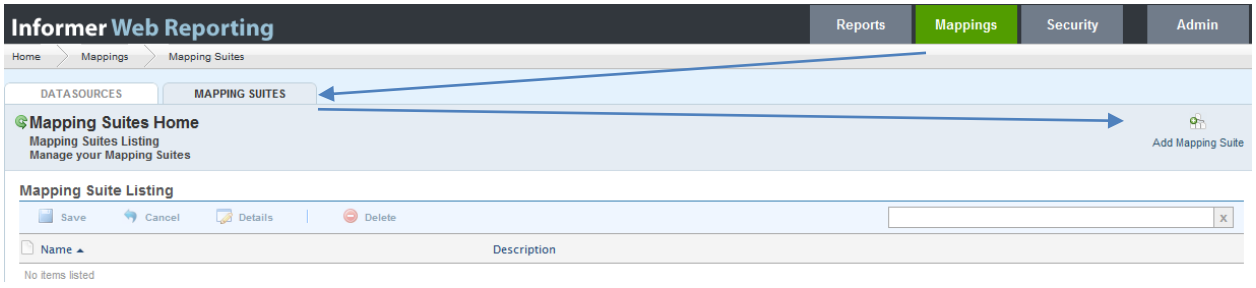
> Note : Informer does not check to see if the links you create are in fact valid given your data schema, but instead assumes they are correct.

Mapping Suites

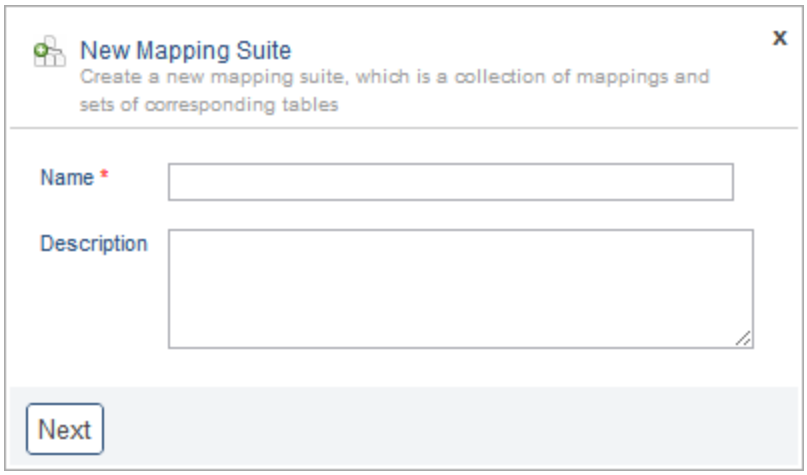
Mapping suites are a collection of individual tables that are related by some common value, typically a year. Informer allows you to easily manage mapping suites by defining a base table mapping for each table in the suite, and then creating table sets that lists the specific tables for each common value. For example, you may have general ledger tables for each fiscal year. You can define a general ledger mapping suite that lists each table in the suite and specify each year as a table set without having to maintain a mapping for each year.

Defining Mapping Suites

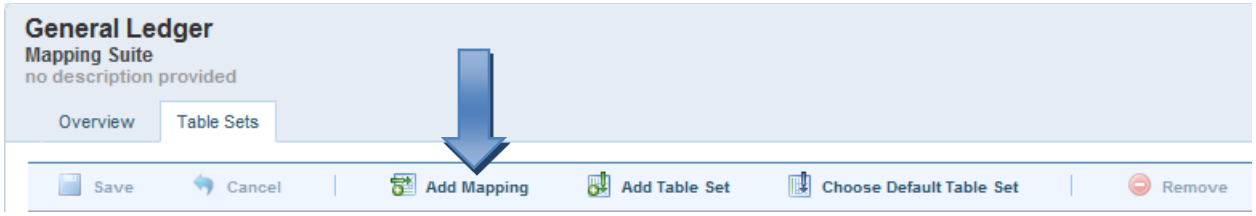
1. Go to the Mapping Suite tab under Mappings, and then click on Add Mapping Suite.



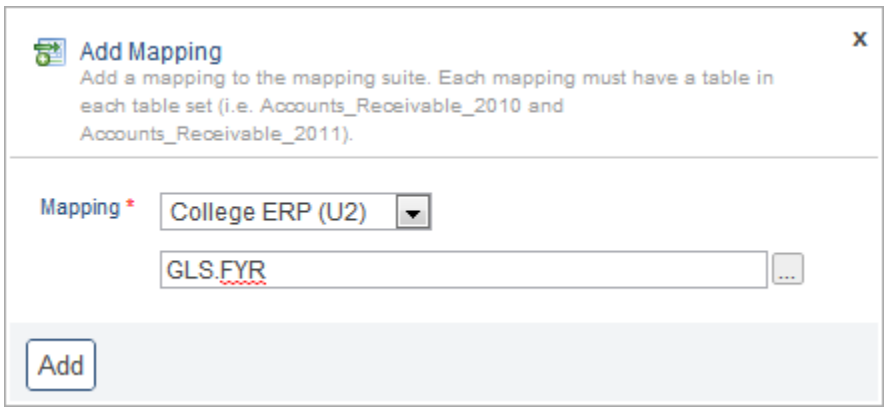
2. The New Mapping Suite dialog box opens. Enter the name of the mapping suite, optionally provide a description of the mapping suite, and then click Next.



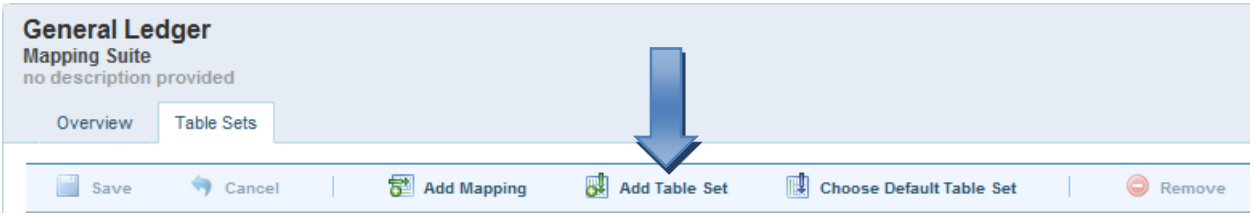
3. Once you have created the mapping suite, you can start specifying the base mappings for the tables that will be a part of the suite by clicking Add Mapping.



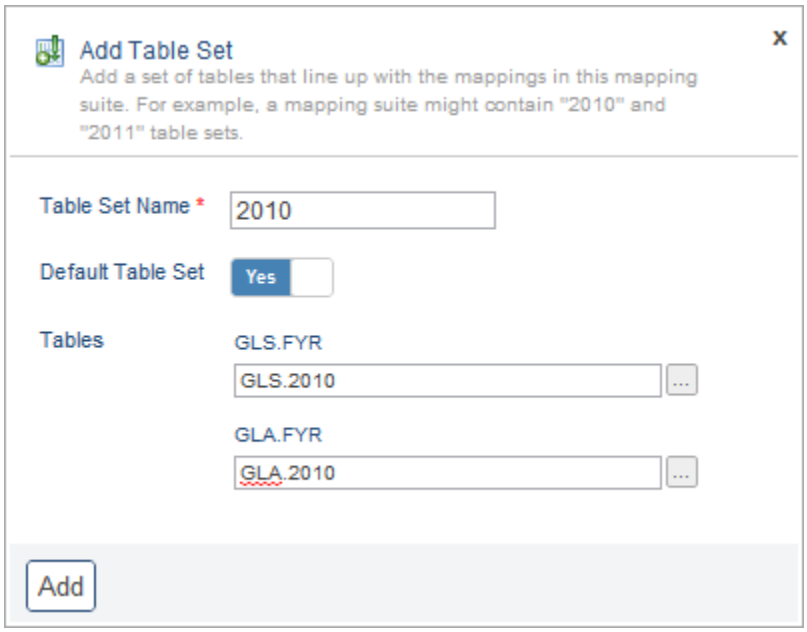
4. For each mapping, you must specify the data source and the mapping to be used in the table sets. The mapping must refer to a table that has been mapped in Informer. The table does not need to contain data. It is strictly used for its column definitions. The tables containing the data are identified in the table sets.



5. Table sets define the different common values that segregate the individual tables within the mapping suites. To add a table set, click “Add Table Set”. You can define as many table sets as you need.



6. Enter the name of the table set and specify whether this table set will be the default set for the suite. Choose the tables to be used for this set under each mapping. The tables must be from the same data source as the base mappings.

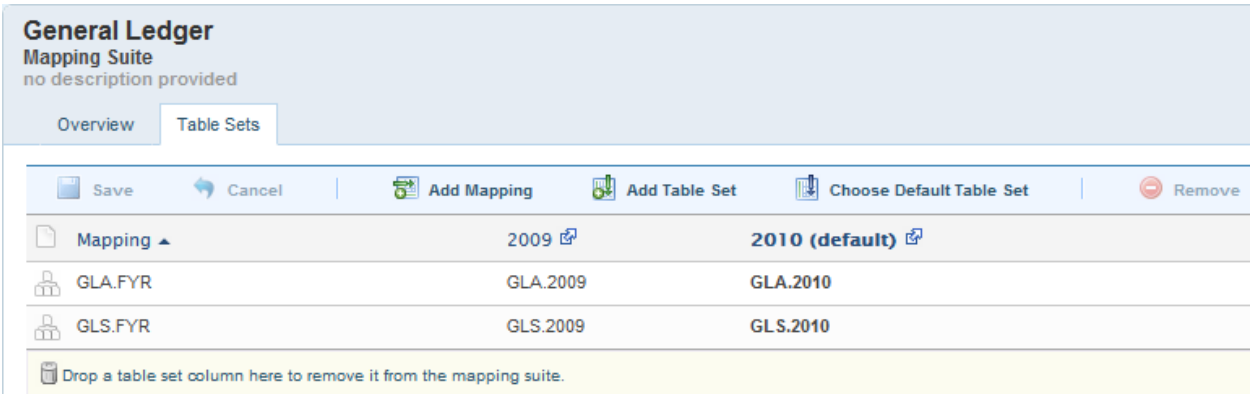


Click the Add button when finished.

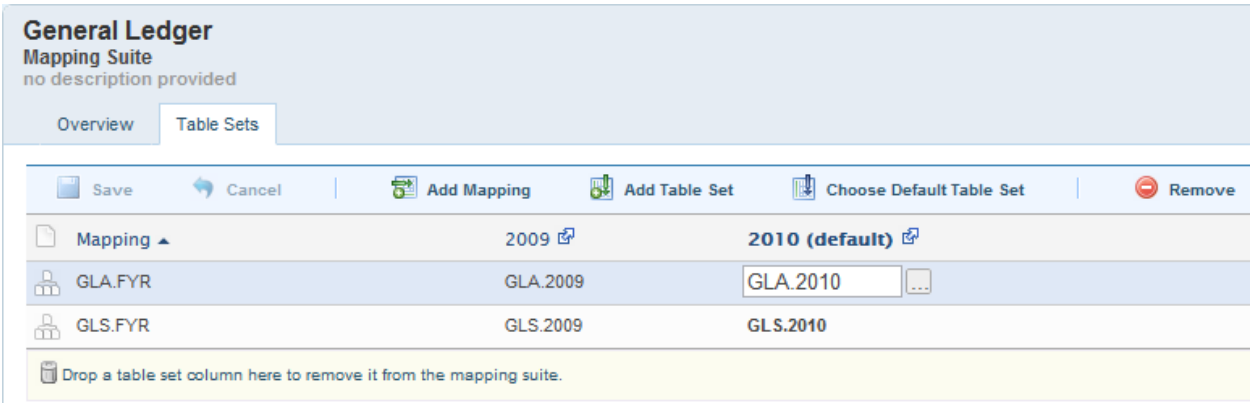
> Note: The default table set is used in reports that reference a file in a suite and that also specify the default set should be used. Reports can optionally prompt for the table set to be used.

7. Click Save when you are finished adding table sets.

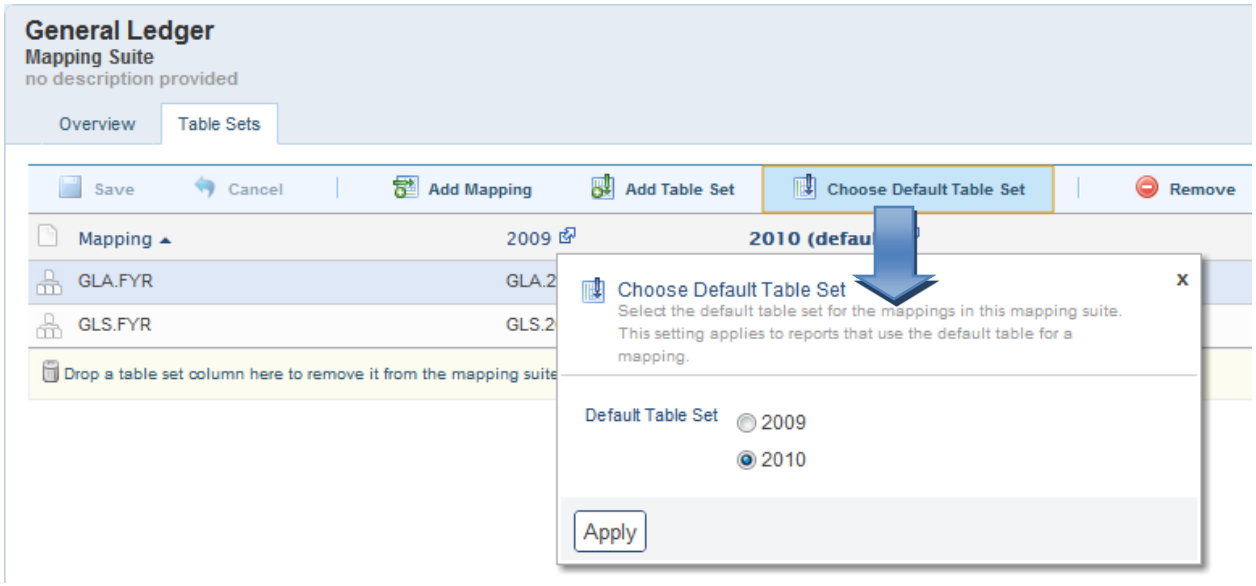
8. As new files become available (i.e. a new fiscal year starts), you can add additional table sets and specify new defaults.



9. Click on the table set column heading to modify the table set name, the tables used in the set, or to make the table set the default.
10. You can also double-click the table name in the table set to change the table used in the set.

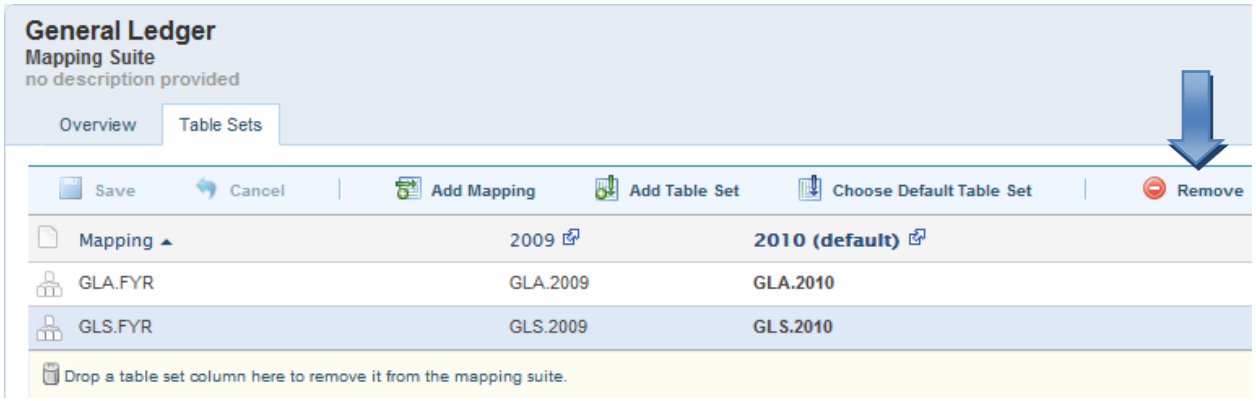


11. Another way to set the default table set is to click on Choose Default Table Set.

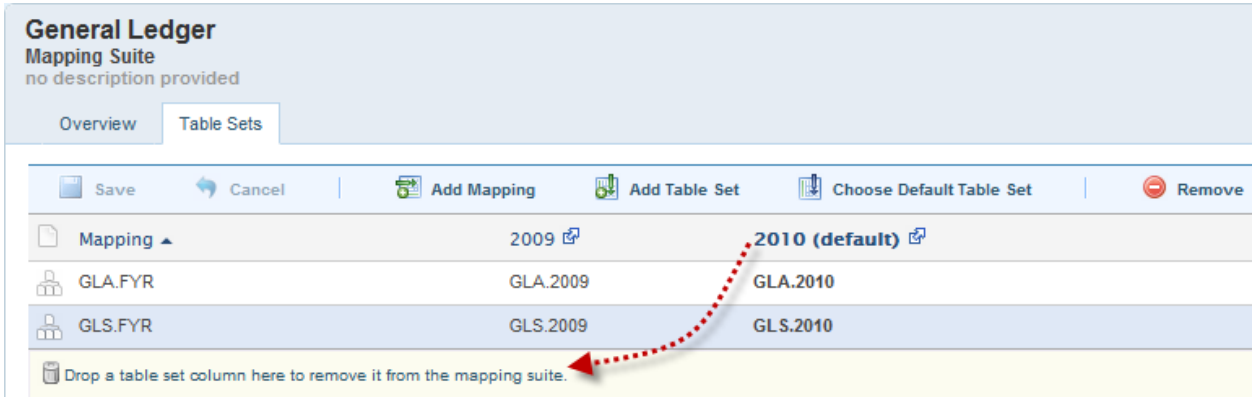


Select the new default table set and click Apply.

12. To delete a mapping, highlight the mapping and click Remove.



13. To delete a table set, drag the table set column heading to the "Drop columns here to remove" area.



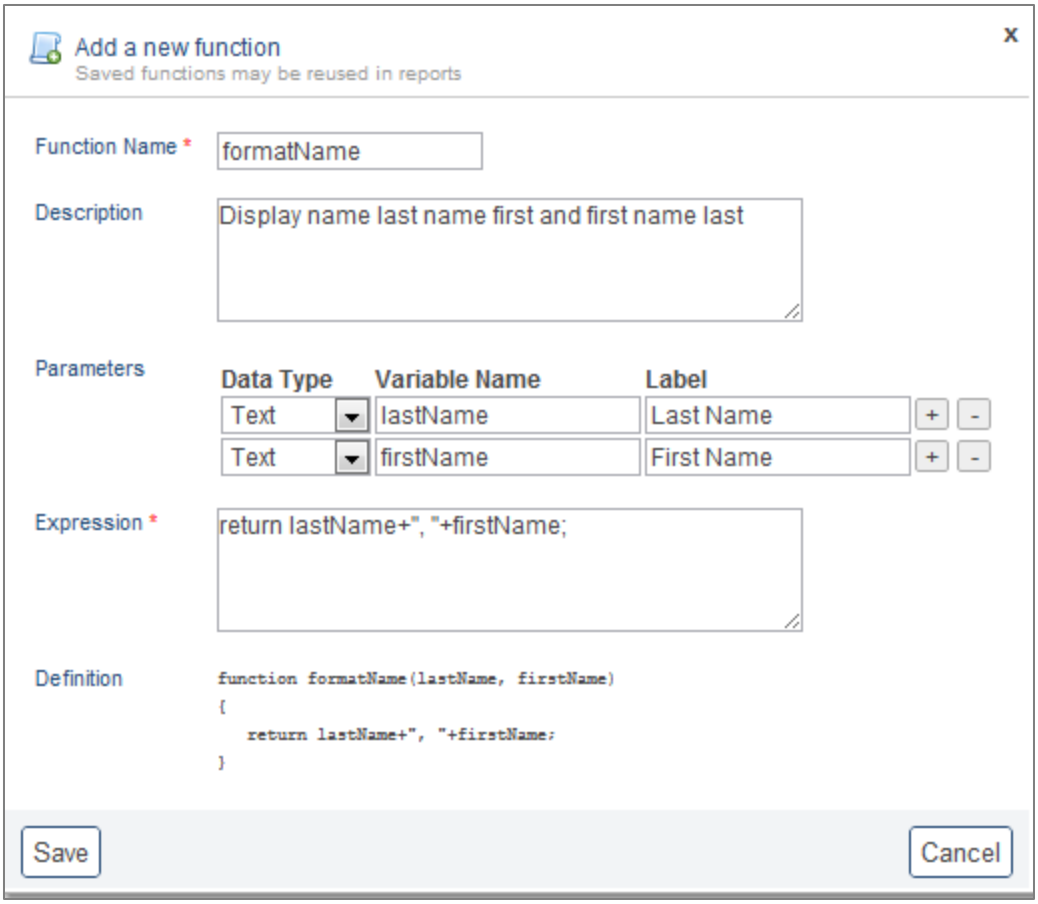
Functions

Functions are script calculations defined in informer that may be used in script columns in reports. Administrators may define functions under the “Functions” tab in the “Mappings” module.

Defining functions

This example will walk through setting up a function that will format a name with last name first.

1. Click the “Add Function” button.
2. Give the function a name. It must not contain spaces. Typically they will be “camel case” which denotes multiple words by upcasing the first letter in subsequent words, like “formatName” or “addNumericValues”. We will use “formatName”.
3. Fill out the description of what the function will do. This is important for other users to know what the function exactly does.
4. For parameters, these are variables that will be used in the script for your calculation. For our example we need 2, lastName and firstName:
    a. Click to add an argument.
    b. Data Type is a loose typing that enables Informer to suggest column that are types compatable with the value you are looking for. E.g. if you are using this parameter for a numeric calculation, select “Numeric”. Ours is “Text”
    c. First variable name we will call “lastName”.
    d. Label is a friendly name the suggests what this parameter represents. We will put “Last Name”;
    e. To add our other parameter, we click the little “+” button to the right of our first one.
5. Our actual script goes in the “Expression” box:
   ```
   return lastName+", "+firstName;
   ```
6. Save the function.

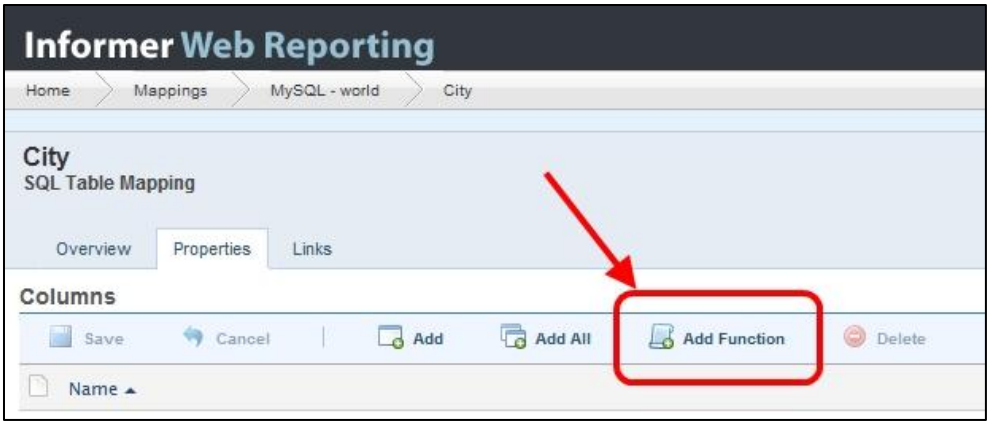


SQL Function Mappings

A SQL Function property mapping is a concrete reference to some specific built-in or user-defined function that exists on an SQL Database, including values for each parameter in the function definition. In order for the mapped SQL Function Property to perform as expected when used in an Informer Report, the user that is configured on the function's parent Datasource must have the appropriate permissions granted on the database server allowing that user to access the defined function. Each mapped SQL Function property represents a single valid call to some function with the specified parameter values. Because of this, a SQL Function is allowed to be mapped in Informer any number of times, with different parameter values, and on any number of Mappings, provided that the function's parameter values are defined properly in each instance. When mapping a SQL Function property, the User is required to have detailed knowledge about the function as it appears in its raw form on the SQL database server in order to properly define the function in Informer.

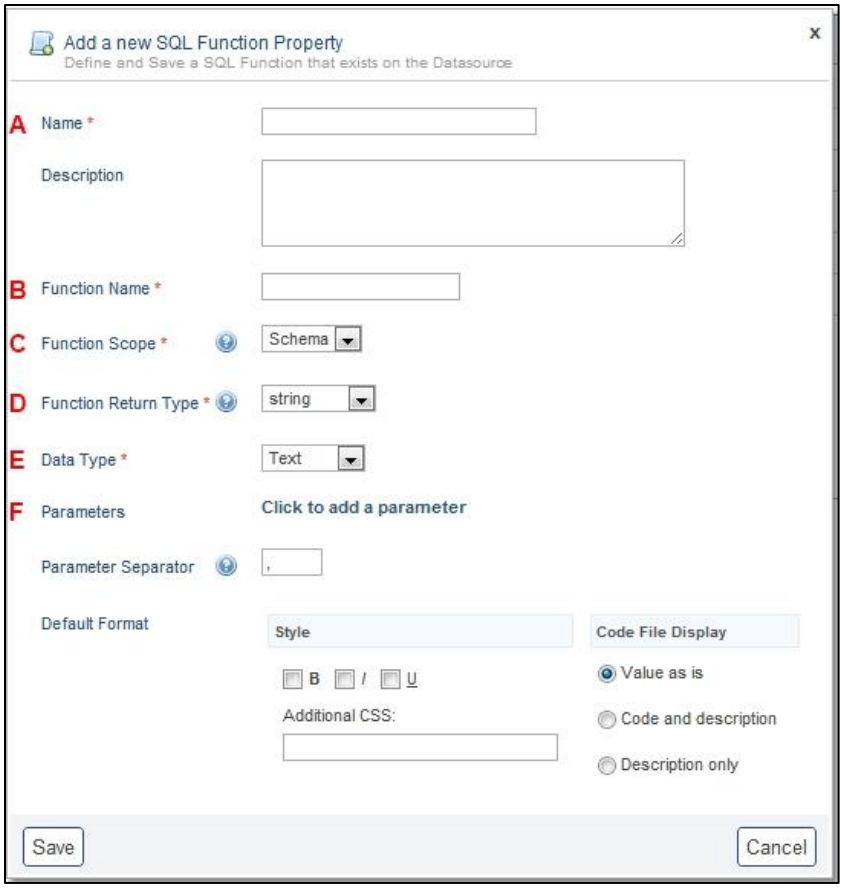
Adding SQL Functions to Informer

After successfully mapping a SQL Datasource and a valid SQL Table mapping in Informer, a new "Add Function" button is available on the menu bar that is visible when viewing the SQL Table's Property management sub-tab. Clicking this button will bring up a dialog to aid in properly defining the SQL Function definition.



Function Definition Dialog

After clicking the "Add Function" button on the Mapping's Property management tab, a dialog will appear allowing the user to provide the information needed to properly define and map the SQL Function in Informer. Once all of the required information is filled out, clicking the *Save* button will add that SQL Function definition to the mapping as a modified entry in the Mapping's Property table (in red text) and clear the dialog's definition form so the user can create additional SQL Function definitions. When all desired function definitions have been added to the mapping, click the *Cancel* button in the lower right of the dialog or the *X* in the upper right of the dialog to close the dialog. All newly created SQL Function property mappings will be displayed in the Table Mapping's Property table in red text and the *Save* button on the menu bar should now be enabled. Clicking *Save* at this point permanently saves the newly created SQL Function property mapping definitions and they may now be used in Informer Reports as Columns, in Selection Criteria, or as Function-type parameters for future SQL Function property mappings.



- **A.** Name and Description
- **B.** Function Name
- **C.** Scope
- **D.** Function Return Type (Raw)
- **E.** Data Type (Informer)
- **F.** Parameters & Values

Name and Description

Name of the function as it will be displayed as in Informer and an optional Description of the function.

Function Name

Exact Name of the function as it appears on the database schema or as it would appear when used in a raw SQL query.
For Example: UPPER, ucase, my_function, etc.

Scope

Scope of the function.

- ***Global***

The function is accessible by any user at any time.

For Example: upper, lower, max, min, avg, sum, etc.

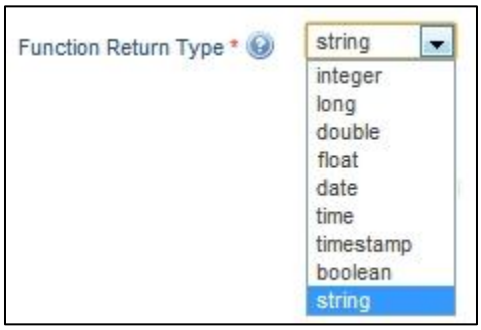
- **Schema**

The function can only be accessed by the Datasource's configured user if granted permission to do so, as is the case with most user-defined custom functions, and/or the function is required to be qualified by the schema by which it is owned when the function is referenced in a query.

For Example: [dbo].[my_customFunction()]

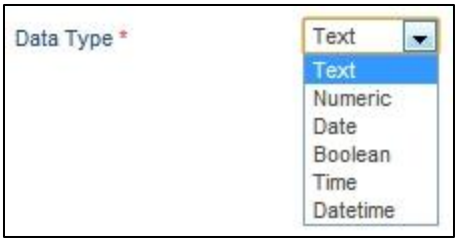
Function Return Type (raw)

Simplified version of the raw SQL Data Type of the value that the function returns as defined on the database (or as close to it as possible). If the Data Type (Informer) field below this field is changed, Informer will change the value of this field making a best-guess as to which return type corresponds to the newly changed Informer Data Type.



Data Type (Informer)

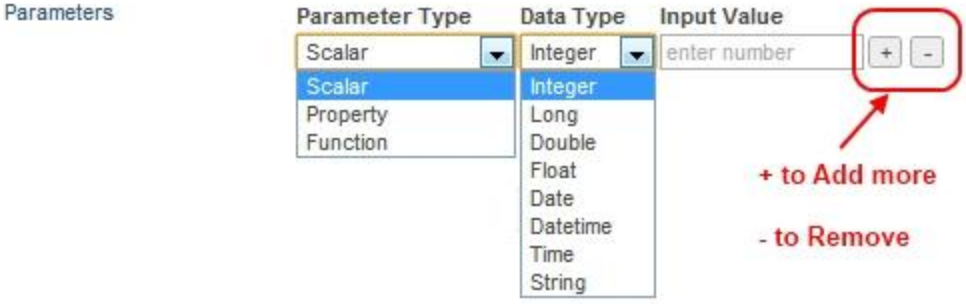
Informer Data Type of the value that the function returns. If the Function Return Type (Raw) field above this field is changed, Informer will change the value of this field making a best-guess as to which Informer Data Type corresponds to the newly changed Function Return Type.



Parameters and Values

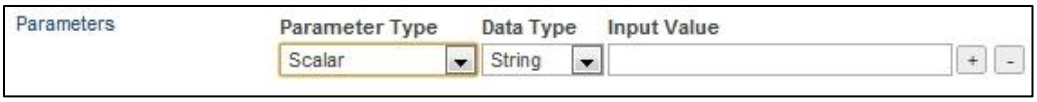
Collection of Parameter values and their simplified raw Data Types (similar to **D** above) for each individual parameter the user wants to store for this mapped SQL Function property. Only 1 value per parameter is allowed, and each parameter is required to have a value, or it will be interpreted as a "NULL" input value. To begin adding parameters to the SQL Function property mapping definition, click on the link illustrated below.

After clicking on the link to being adding parameters, a single parameter form will appear with drop-down fields for the *Parameter Type*, the simplified raw *Data Type*, and an *Input Value* field which changes based on the simplified raw Data Type chosen. Additionally, there are 2 buttons on the right hand side of each parameter form marked with a '+' and a '-' sign for adding/inserting additional parameters or removing existing parameters (respectively) from the definition.



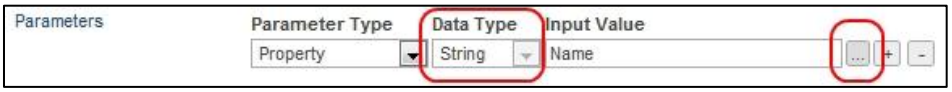
The *Parameter Type* that is currently selected determines how parameter values are required to be specified in the parameter value form.

Scalar



A SQL Function Parameter of SCALAR type means a literal value (just like with Selection Criteria Literals) of whatever simplified raw Data Type is currently chosen. Different Data Types will change the appearance of the Input Value field to better aid the user in supplying a properly formed value.

Property and Function



A Parameter that is of PROPERTY or FUNCTION type means that the parameter value will reference an existing Property or SQL Function that is currently mapped in Informer on the current Table Mapping. When PROPERTY or FUNCTION is selected as the Parameter Type, the Data Type dropdown box will become disabled and a property chooser dialog button will appear next to the Input Value field. Users have the option to type freely in the Input Value field and utilize Informer's Auto-Complete to choose a Property or SQL Function, or the user may click on the chooser button, which is indicated with an elipses [...], to bring up a Property Chooser Dialog in order to select the desired Property or Function. When a Property or Function is chosen, the appropriate Parameter Type and Data Type will automatically adjust to correct values based on the Property or Function that was chosen from the auto-complete or dialog.

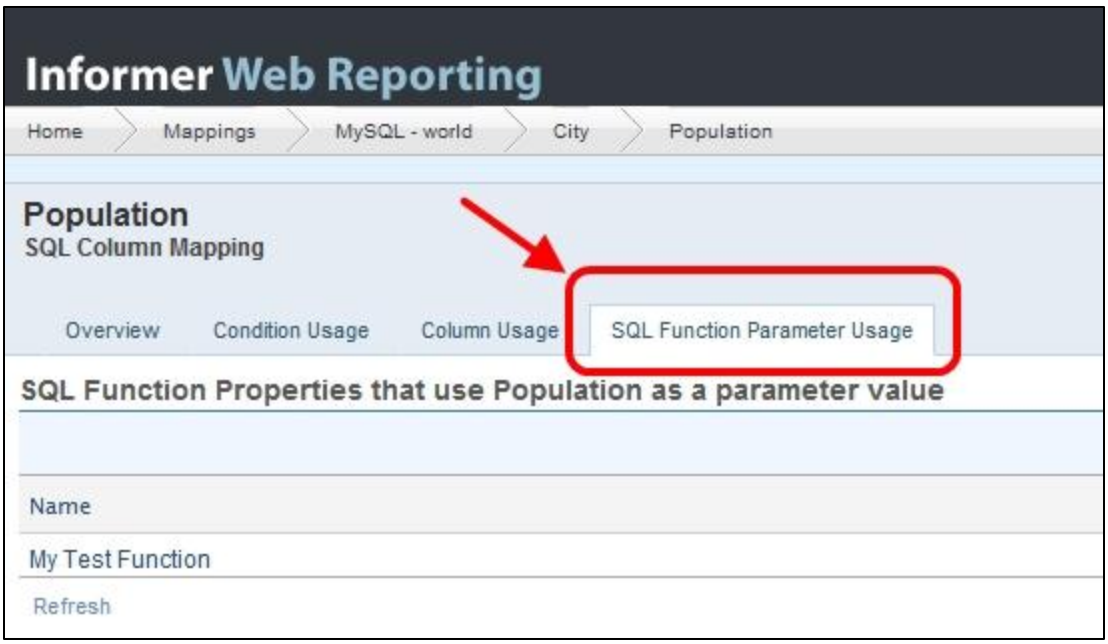
NOTE: After a SQL Function property mapping is saved and contains parameters of type PROPERTY or FUNCTION, those respective properties and/or functions are now tied to the containing SQL Function. If at any time, a mapped Property or SQL Function is deleted from Informer that also is referenced by some other SQL Function property Mapping as one of its parameters, that other SQL Function property Mapping will not function properly. The user will be warned about this upon attempting to delete a Property or SQL Function from Informer.

Managing mapped SQL Functions and their Parameters

A mapped SQL Function property is managed just like any other mapped Property in Informer. All aspects of the SQL Function property may be edited by users with appropriate permissions, and Informer permissions for mapped SQL Function properties are managed in the same ways as other Property mappings. Additionally, Informer security settings for the mapped SQL Function does not inherit from any of the Properties or Functions that are referenced as parameters in the SQL Function. This means that if a user has permission in Informer to use a mapped SQL Function property but does not have permission to use one or more of the

Property-type or Function-type parameters of that mapped SQL Function, the user will still be able to use the SQL Function in its entirety based on the Informer permissions granted on the SQL Function itself. Because of this, one must be careful as to which Properties and/or Functions are used as parameter references inside of a mapped SQL Function and which users are allowed to use that mapped SQL Function.

A new sub-tab is now available when managing individual SQL Properties. The sub-tab with the heading "SQL Function Parameter Usage" appears to the right of the tab labeled "Column Usage". Viewing this tab allows users to see a tabulated list of the Names and Descriptions of mapped SQL Functions in which this Property is referenced as a Parameter, if any. This gives users the ability to see which mapped SQL Function properties will be affected if this mapped Property is modified or deleted from Informer.



Using a SQL Function property mapping in an Informer Report

All SQL Function property Mappings may be used in Informer in all of the same ways that a normal Property mapping can. This means that a SQL Function property Mapping may be used as a Column in a Report or as part of a Report's Selection Criteria.

Creating a Report

The reporting engine is the core of your Informer application, allowing you to execute reports based on data stored in various data sources throughout your organization. You do not need to know a query language in order to build a sophisticated report.

By the end of this section you will be able to:

- Create a report from scratch using your web browser
- Publish a report to your colleagues allowing them to customize the results
- Use the Select Filter to control which records are selected from your database
- Use the Column Editor to modify the columns returned from your report and their associated formatting
- Use the Column Editor to create Calculated Fields and Functions
- Sort, Group, and Normalize your data for a default view setting
- Tag a report so you and your colleagues can find them quickly
- Manage your report through deletion, permissions, locking, and copying

Being comfortable creating reports and using all of the provided functionality will provide you and your colleagues the ability to view data in exciting new ways. Your reports are no longer simple query result listings, but instead are interactive, customizable views into your database.

This section contains the following topics:

Before Creating a Report – How to prepare to build your report, including defining report requirements, searching for existing similar reports, and abstractly defining the overall goal of the report

Create Your Report – How to begin the report creation process

Report Overview – An explanation of the report overview page and how it assists in creating and manipulating your report

Select Filter - How to use the Select Filter to ensure you are selecting the appropriate data from your database

Columns – How to use the Edit Columns page to select database fields, calculations, and functions for display in your report

Column Editor – How to manipulate column formatting and style within your report

Sorting – How to apply a default sort to your report results

Grouping – How to apply default grouping to your report results

Normalization – How to apply normalization defaults to your report through with defined normalization sets or custom associations

General Information – How modify your report title, description, datasource, mapping, default PDF template, and tags

Report Actions – A review of the various common actions you can take on a report

Types of Reports

Informer provides two methods of generating report data:

Standard Informer Reports

Standard Informer Reports derive selection criteria and column selection from user interaction with the standard selection criteria and column chooser screens. Informer constructs a syntactically correct query statement for the user based on the selection criteria and columns selected. The columns available for display must be defined in existing mappings, and the user creating the report must have the appropriate security settings within those mappings. Users that have permission to do so may add or remove columns from these types of reports . Changing selection criteria does not affect the columns displayed.

Native SQL Query Reports

Native SQL Query reports derive their filter criteria and columns from a single user provided SQL statement or call to a SQL stored procedure. Columns included in these reports are not secured within informer. If a Native SQL report includes a column, all users with launch permission for the report will see the column and the data within. Users with the appropriate permission may not add data columns to these reports, but may add scripted columns based on the included data columns in the SQL statement.

Before Creating a Report

Before creating a new report, it is always best to ensure there is not an existing report already available in the system which fits your needs. Use tags to categorize reports and cut down on redundancy. Also remember you can maintain custom views of a report – meaning if there is a report in the system which returns the records you want but you need to view the results in a different format, use the ability to customize fields, groups, sorts, etc. rather than creating an entirely new report.

If you indeed determine you need a completely new report, follow the instructions below before clicking the new report action:

1. Identify Base Report Type
   Determine what it is you are actually attempting to return from the database. Is it a list of PERSON records, a list of INVOICE records, etc.? Informer requires each report to have a base type, and you are required to provide that type in the new report dialog.

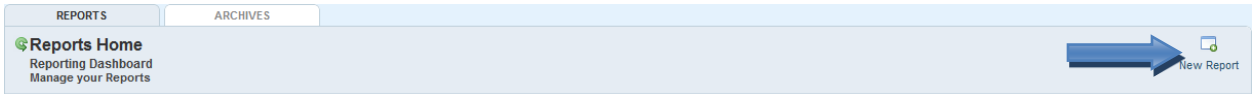
2. Identify Selection Criteria
   Determine which records you want to return. Do you want the entire list of PERSON records in your database, or only those who were born after a certain date? Knowing beforehand what your selection criteria is will make it easier for you to understand what you need from the criteria palette. Remember you can get as sophisticated as you want with your criteria, including selecting based of values from liked mappings, using compound conditions to create sub-query like functionality, and more.

3. Identify Fields to Display
   Once you know what type of records you require, and which of those records you want returned, next determine what data you want to see for each record. If you are selecting PERSON records born after a specific date, what fields do you want to show as columns in the report? Remember that also, provided appropriate security, users of your report will be allowed to add and remove fields from their custom view if need be.

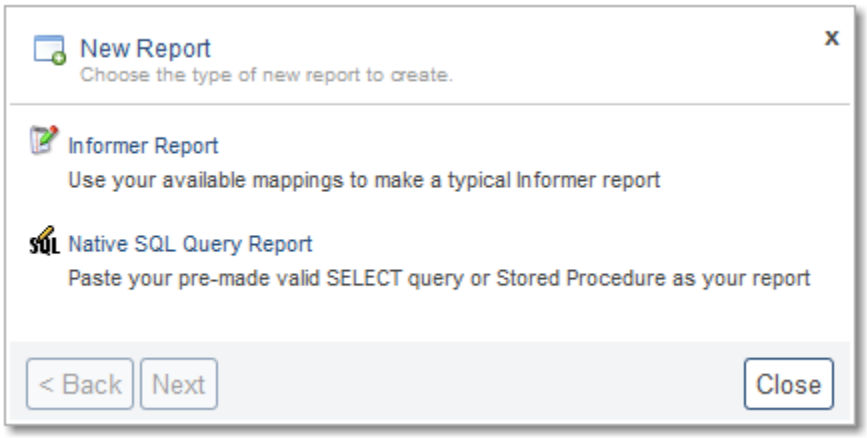
4. Identify the Type of Report
   Informer has 2 report types: Standard Reports with graphical criteria and dynamic selection of columns, and Native SQL Query reports which derive criteria filters and column selection from a single user provided SQL select statement. Typically you choose the second type if you are well versed in writing SQL statements, want to make use of a SQL stored procedure, or have an existing SQL statement already for use.

Creating a Standard Informer Report

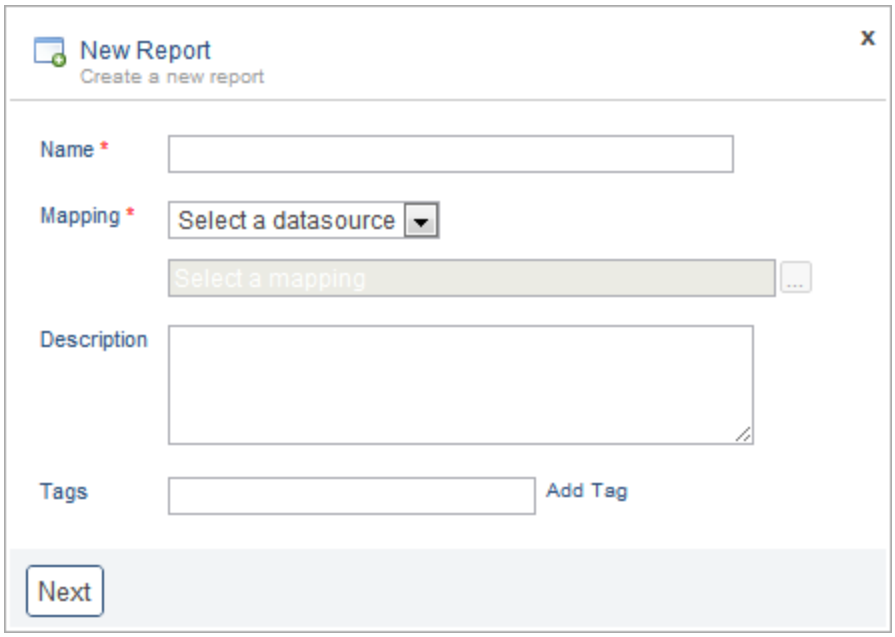
If you have the security settings required to create a report, you will see a New Report action in the Action Bar of the Report Home Page.



Clicking that icon pops the New Report Dialog. If you have SQL datasources defined, and you have permission to create Native SQL Reports, you will see this dialog box:



Click “Informer Report” you will see the following dialog. If you do not have access to Native SQL reporting, you will be taken to this dialog directly:



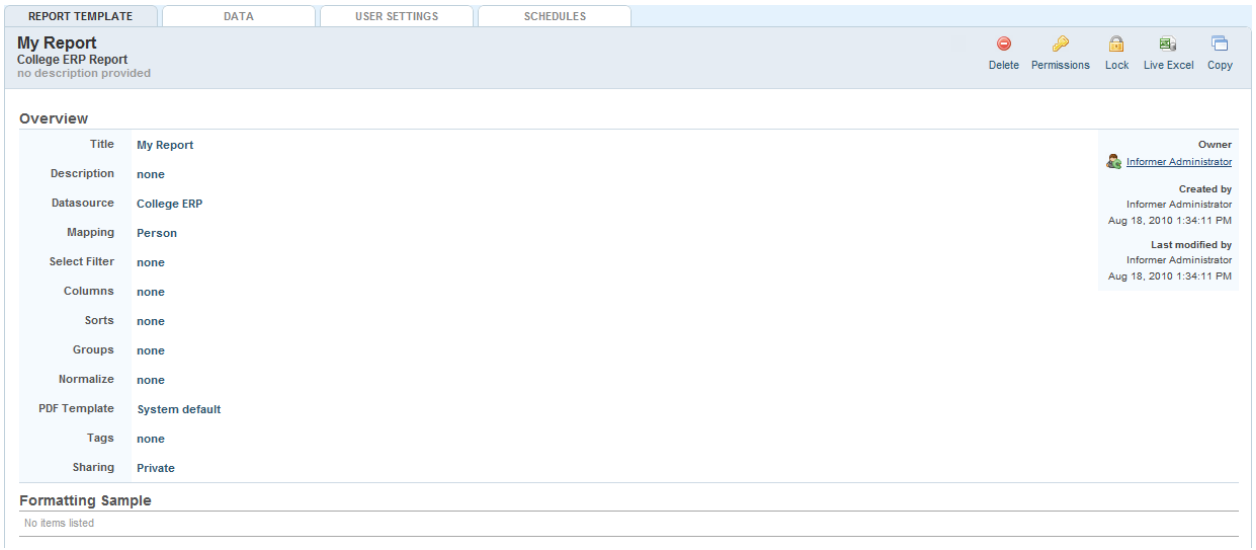
The New Report Dialog prompts you to provide the title for your report, then the datasource and mapping for your base report type. Remember – you are free to execute selects off linked files, and you are free to include fields for display from linked files as well. The base report type is simply the file from which your select statement will return records.

You are also allowed the opportunity to provide a brief description for the report and tags. The report description will display in the report listing on Report Home and the tags will display in the Filter Reports By Tag navigation section. The more descriptive you can be the better as it will help your users determine which reports they need to launch.

Click next to enter the Report Overview page of the report you just created.

Report Overview

The Report Overview page details specifics about your report. This is the page you will use to make global changes to the report. Consider this page as a report blueprint, detailing what users will see in report results provided they haven't created a custom view.

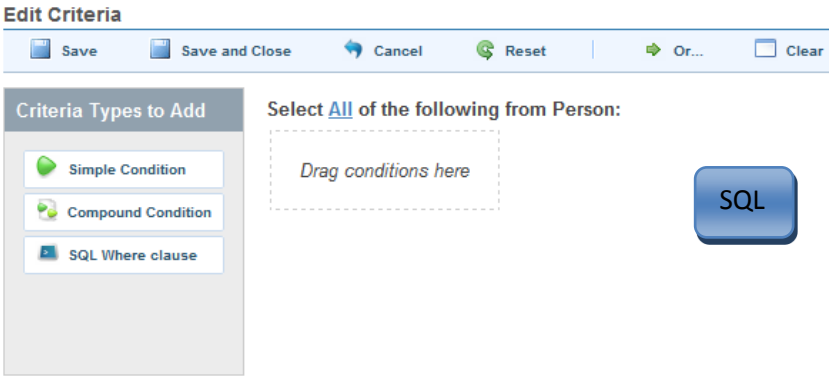


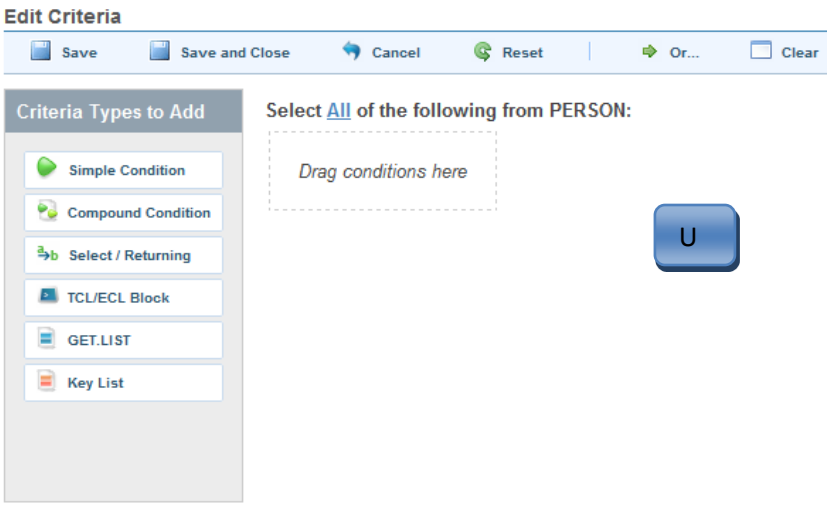
When you first create a report, the options in this page will be empty except for those values you provided in the New Report Dialog. This is now your opportunity to define how this report will select and display by default.

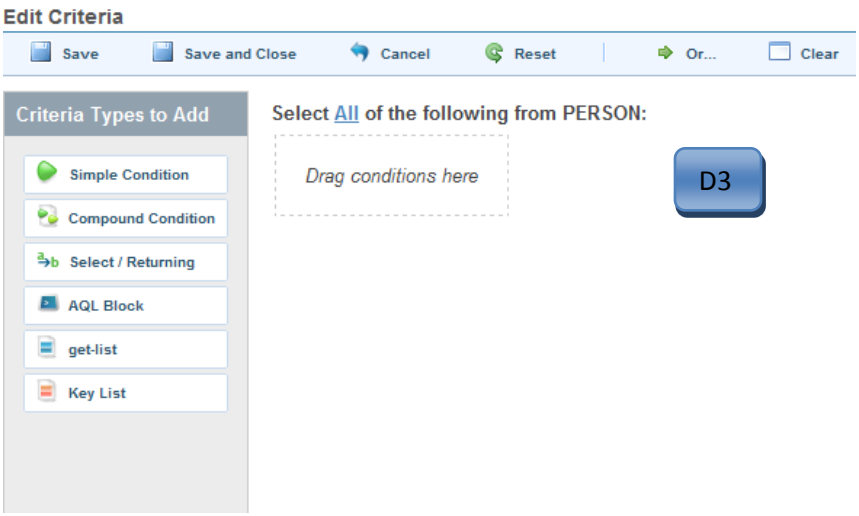
Also note this page contains a report sample. The sample by default does not pull live data. In order to view live data in the sample, click on the "Show Live Data" link below the report sample. The live sample display retrieves 5 random records *which do not necessarily qualify your selection criteria* and displays the fields you've chosen. You can toggle back to the sample data by clicking on the "Show sample data" link.

Select Filter

From the report overview page, click 'none' beside Select Filter to enter the Selection Criteria Palette and Canvas editor. The selection criteria palette and canvas editor is your opportunity to define the select statement required to return the records you want displayed in report results.







The criteria palette is a drag and drop editor for visually creating selection criteria statements, regardless of complexity, to execute against mapped datasources. The type of condition statements available on the palette depend on the type of database chose for the report datasource.

To add a criteria block to the canvas, simply click the criteria type you need to add, or click-drag the criteria type to the desired spot in the canvas. Note you can drag criteria blocks within the canvas as well. To remove a criteria block from the canvas, click the x in the upper right hand corner of the criteria block.

Use the Clear button in the Edit Criteria menu bar to clear all statements from the criteria palette. Use the Or button in the Edit Criteria menu bar to create a new set of a logical Or block.

Criteria Types

The following two conditions are available regardless of datasource type:

Simple Condition : The most basic of condition types. A simple condition provides the ability to compare two values. For example:

```
Person with Last Name begins with R, Company with Billing Address
State exactly matches NC, Product with Cost is at least {?Prompt
User}.
```

Simple condition editors are context sensitive to the data type of the property selected in the following ways:

- The limiter option is only active when the property selected is defined as multivalued. If active, you can choose Any, Every, No, and When.

> Note: On UniVerse and Unidata platforms, in some cases a "WHEN" selection will not work. If you are linking from a single-valued foreign key to a multi-valued field, you cannot use a "WHEN". This is a database limitation. You can however, use "ANY" and then filter with normalization.

- The condition values are type-specific. Textual conditions are offered when querying text-based fields, numeric conditions for numeric fields, time conditions for time fields, and date conditions for date fields. For example, alphanumeric properties are provided conditions such as: exactly matches, does not match, like, unlike, contains, etc. Numeric and Monetary values are provided conditions such as: equals, does not equal, is at most, is at least, is more than, etc. Date values are provided conditions such as: on, on or after, on or before, not on, last seven days, etc. Time values are provided conditions such as: on, on or after, before, between, and anytime.

- On U2 platforms, "like" and "unlike" will do standard pattern matches. "Contains", "begins with", "ends with" and their inverses do not do U2 pattern matching. Consult your database documentation for acceptable pattern matching text for "like" and "unlike". "Like" and "unlike" cannot be used for property to property comparisons.

- Between inclusive and between exclusive options are available for Numeric, Date and Time value comparisons. Between inclusive from value A to value B includes values A and B and all values in between. Between exclusive from value A to value B does not include values A and B but does include all values in between.

Simple conditions also allow for three types of input for Value to evaluate against the elected property:

- Literal. This is a literal value entered at design time of the report. If selected, this portion of the select statement will not be displayed to the executing user. You can enter free text in the Literal textbox, as well as any valid runtime keywords. For a list of supported runtime keywords and syntax, please review the Runtime Keywords Appendix.

- Prompt. The user will be prompted to enter a value at runtime for this portion of the select statement. You can enter a custom prompt in the Prompt textbox, or leave empty to prompt with the description of the selected property. Selecting the Require Value checkbox ensure the

user will not be able to run the report without providing a value for this portion of the select statement.

- Property. Selecting this value compares two properties for evaluating the condition.

Compound Condition : A compound condition assembles one or more sub-conditions into a logical and ("All"), or ("At least one of"), and nor ("None") expression. `Person with Last Name begins with R and At Least One of (Person Company Zip begins with 27 –or- City exactly matches New York).`

This statement uses a compound condition to return: Everyone from the Person table with the last name R who also has at least one of the following conditions: an associated Company Zip Code beginning with 27, or a city name exactly matching New York. Compound Conditions can themselves contain any number of nested compound conditions.

If you are executing your select statement against a SQL-based datasource, you have access to the following additional condition types:

SQL Where Clause (SQL only) : Free text entry for syntactically correct SQL statements.

If you are executing your select statement against a Multivalue-based datasource, you have access to the following additional condition types:

Select / Returning (U2 and D3) : Allows you to execute queries off linked mappings and return keys of appropriate type. Informer will not allow you to execute queries off mappings which do not contain a link back to the mapping required to logically continue the flow of the criteria statement. If you need to execute a query against a table not included in the dropdown displayed within your select/returning condition block, you need to create a link. For Example:

```
Person with Zip Code exactly matches 21001 and All of the following
from Orders returning Person – Order Invoice Amount greater than 500.
```

This select/returning block requires that a link from the Orders mapping to the Person mapping exists, but not a mapping from Person to Orders. The first dropdown in the select/returning block (All, At least one/none of the following from X) contains all mappings which include a link to the mapping required to logically continue the statement flow, in this case, Person. The second dropdown (returning X) contains all links *from the mapping selected in the first select* which point back to the parent file.

TCL /ECL Block (U2 Only): Free text entry for syntactically correct TCL/ECL statements. If you select the Use Active Select List checkbox, your statement is expected to use the active select when executing. If you leave the box unchecked, your statement executes independently.

AQL Block(D3 Only): Free text entry for syntactically correct AQL statements. If you select the Use Active Select List checkbox, your statement is expected to use the active select when executing. If you leave the box unchecked, your statement executes independently.

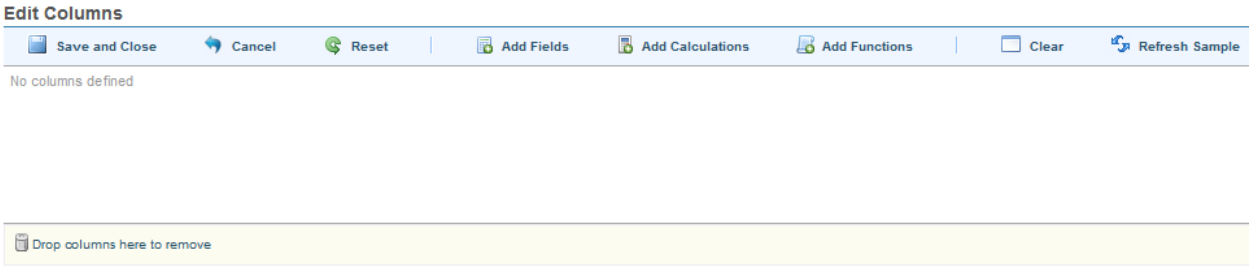
GET.LIST (U2 and D3) : Executes a GET.LIST command for the specified List Name.

Key List (U2 and D3) : Retrieves Keys specified in the comma-delimited list provided.

When you complete designing your select statement, click Save and Close to return to the Report Overview page. An English-like representation of the statement you created now appears next to the Select Filter property of your report.

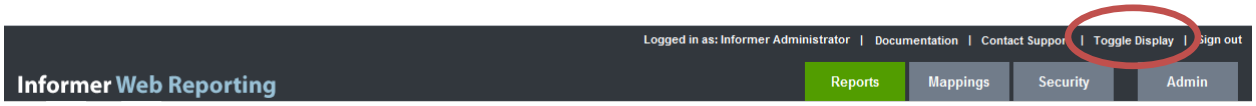
Columns

From the report overview page, click 'none' - or the value displayed if one exists - beside Columns to enter the Edit Columns page. This page allows you to add fields to your report for display in results, including both fields from your databases as well as calculated fields evaluated on the fly as the report executes.



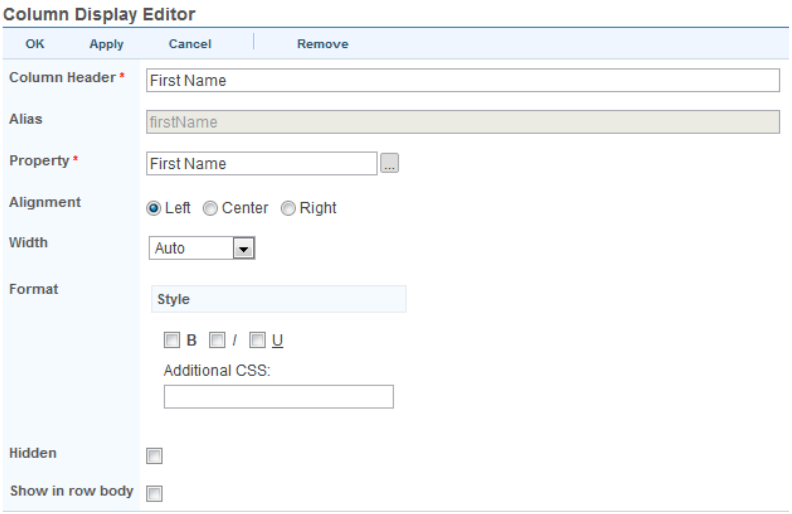
To add a field from your database, click the Add Fields button in the Edit Columns menu bar. This will launch the field chooser, which displays link explorer on the left, and a fields listing on the right. To add fields to your report, either double click the field row in the list, or ctrl-click and drag to select multiple fields at a time. Your field will display in place where you dropped it, and provide sample data. Exactly like the report sample on the report overview page, this sample listing does not reflect the selection criteria of your report.

The column headers display by default the Informer column name. If you wish to see the database name for the column, click on the Toggle Display link in the upper-right corner of the page.



To change the display back to the Informer column names, click on Toggle Display again.

Adding a new column or clicking the header of an existing column opens the Column Display Editor. The display editor contains different options for displaying the results of a particular column based on the data type defined for the field. The editor allows you to provide specific formatting for the column in question including custom CSS, alignment, width, and hidden or show in body.



Column width can be specified as auto, percentage, pixels or characters.
Auto: Informer will calculate the best-fit value for width based on the size of the data displayed in the column as well as the surrounding columns. PDF export uses Auto by default.
Percentage: Defined as the percentage of available space. For example, setting width to 50% for a PDF report on 8 ½ x 11 page will cause the column to take up half the page. When viewing the same report in a browser window, the column will take up 50% of the available display space. If you resize the browser window, the column will adjust to 50% of the display space.
Pixels: Informer sets the column width to the specific number of pixels. Values that take up more space than the specified number of pixels will wrap within the column. The number of actual characters that fit in the column will vary depending on the font and font size used.
Characters: Informer will display a fixed number of characters. Additional characters will be truncated on the report.

Hiding a column will remove it from the list view, but allow for your users to still sort or group on the value.

Show in Row Body will suppress the values of your field into a collapsible row beneath the standard row listing.

Take special notice of the Alias value. This is a syntactically correct alias of your field name used for the calculated columns feature of the column editor.

To add a calculated column, click Add Calculations in the Edit Columns menu bar. This pops the Add Calculation dialog allowing you to create a new calculated column for your report which are evaluated when the report is run. There are two types of calculated columns you can create:

1. Template
   A Template Field must be a syntactically correct JavaServer Pages Standard Tag Library (JSTL) expression. Reference for JSTL is available here:

http://java.sun.com/products/jsp/jstl/. Template fields are most useful for simple string substitutions, such as concatenating two fields together, for example:

```
${lastName}, ${firstName}
```

or producing a dynamic chunk of HTML, for example:

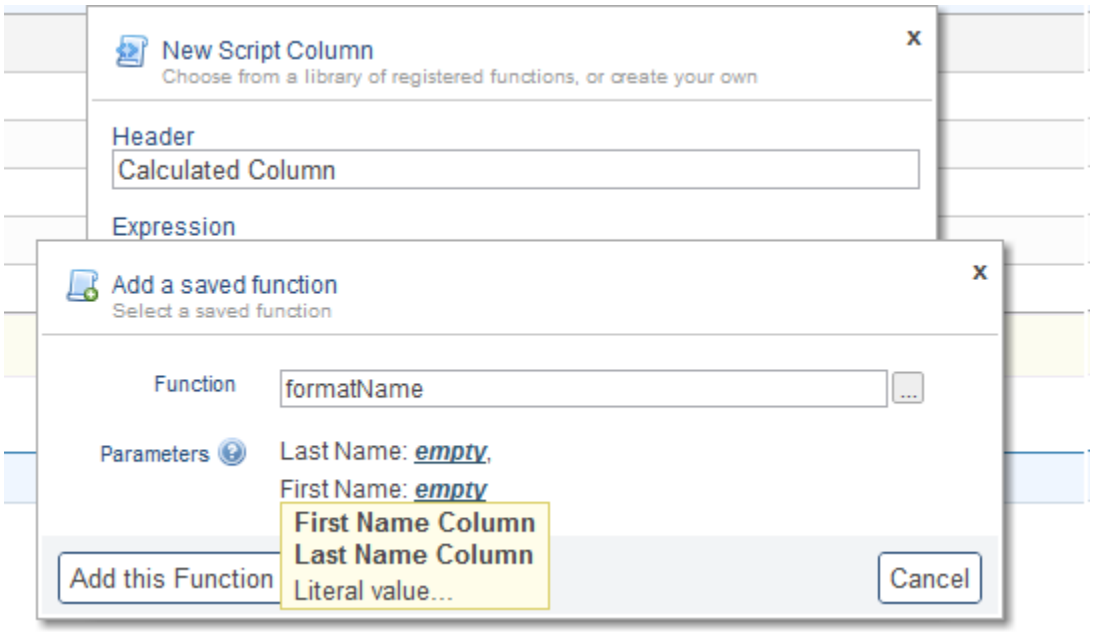
```
<img src='${imgUrl}'>
```

2. Script

A Script Field must be syntactically correct JavaScript. Reference for JavaScript is available here: http://www.w3schools.com/JS. The entire syntax of the language is available (references to DOM objects and methods are not allowed). Script fields are useful for creating logical expressions, such as formulas (e.g. “price * 1.07”) or conditional HTML. An example of a script formula is:

```
price * 1.07
```

Predefined functions may be used directly by name preceded by “informer.”, or chosen from the function menu. Column values may be used as inputs, as well as any text “literals”.



Clicking on the parameters suggests columns in the report to use for the values.

You can reference certain metadata about the report launch in scripts, through the “_context” object:
_context.report.name = report title
_context.report.mapping = report mapping

_context.user = exposes current logged on user object
_context.arguments = exposes a map of runtime parameters keyed off the prompt text. E.g. if you have prompt "Enter the due date" and you want the value the user entered to be used in a script, you can set a variable like this:

```
var ddate = _context.arguments.get("Enter the due date");
```

These are the text values exactly as entered, not the translated objects; so dates are the text values entered and not date objects.

Note: See the support portal at http://delivery.entrinsik.com/portal for calculated column examples, and to post your own! For a video on how to write basic calculated columns, and other training videos, go to http://www.youtube.com/user/EntrinsikInc.

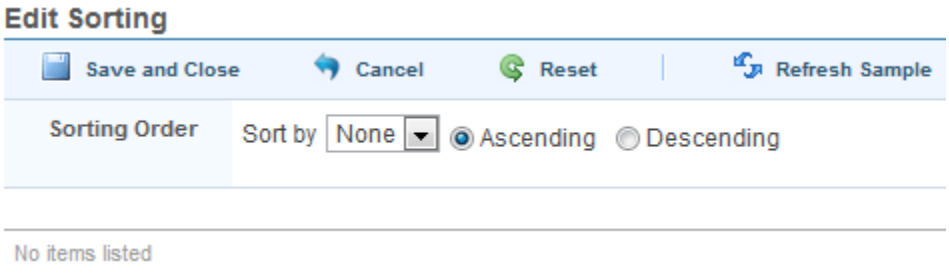
To add an aggregate function column, click Add Aggregate in the Edit Columns menu bar. This opens the Add an Aggregate Function dialog allowing you to add the aggregate values of Count, Minimum, Maximum, Average, and Total based on any numeric, monetary, and date (Max and Min only) fields you've chosen for display in the report. Note that adding aggregate values will cause your report to group by fields in your report.

The Clear button in the Edit Columns menu bar will remove all columns from display. The Refresh Sample button will reevaluate the sample records selected.

Once you've added the columns you would like to display in the default view of your report, click Save and Close in the Edit Columns menu bar to return to the Report Overview page.

Sorting

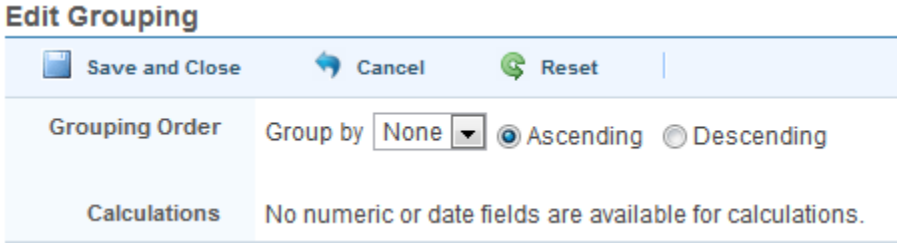
From the report overview page, click 'none' - or the value displayed if one exists - beside Sorts to enter the Edit Sorts page. Here you can provide default sorting views for your report. You can sort ascending or descending by any fields you've chosen in the Edit Columns page, including those you've hidden or are showing in the row body.



Grouping

From the report overview page, click 'none' - or the value displayed if one exists - beside Groups to enter the Edit Groups page. Here you can provide default grouped view for your report. You can group

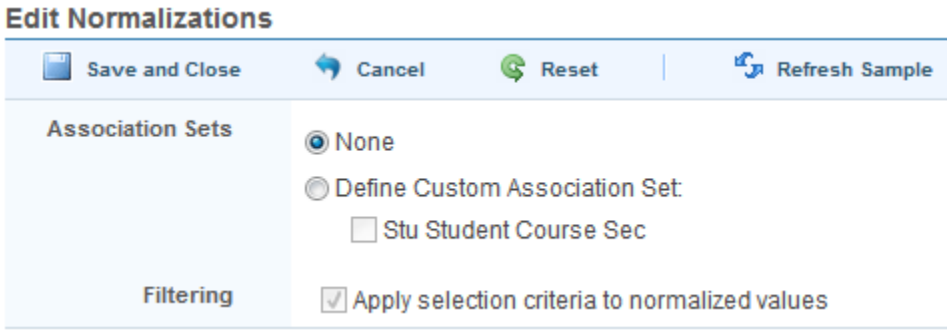
ascending or descending by any fields you've chosen in the Edit Columns page, including those you've hidden or are showing in the row body.



In addition to applying groups, you can add aggregate calculations for any numeric, monetary, or date columns you've added to the report. The aggregate values you choose will display per group and as grand totals at the bottom of your report.

Normalization

From the report overview page, click 'none' – or the value displayed if one exists – beside Normalize to enter the Edit Normalizations page.



Assigning normalizations to a report will provide a single row of data for each instance of a multivalue, and repeat single valued associations. For example, if you have a report which in one row shows a PERSON id and a multivalue list of COURSES 5 items long, choosing to normalize those two as a set will repeat the PERSON id 5 times, while providing one row each for individual COURSE items.

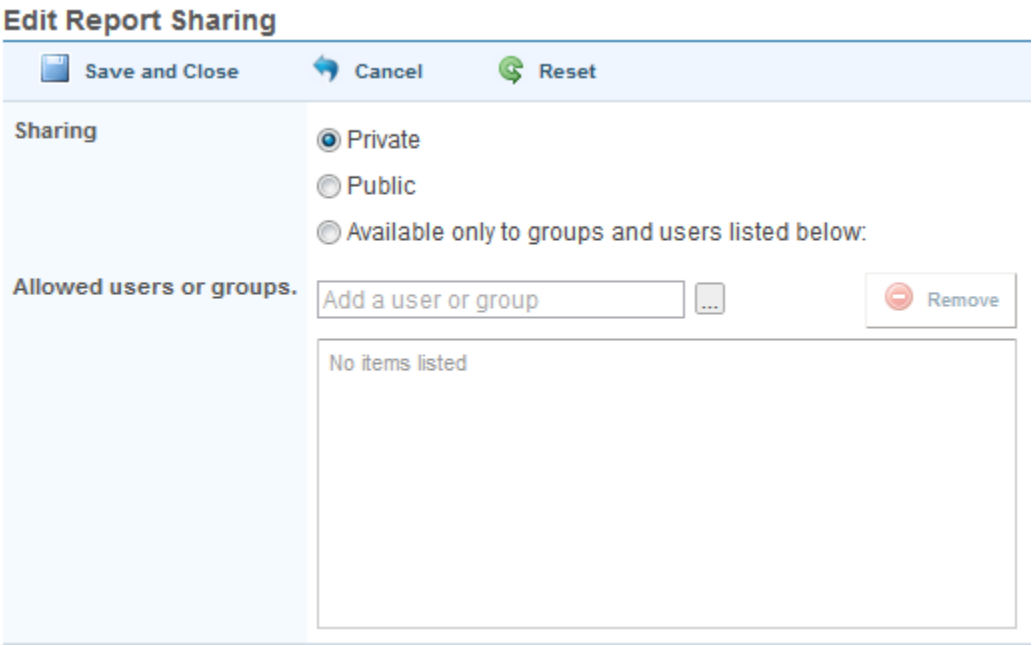
The Edit Normalization page forces you to choose from existing sets of associated multivalues as defined by your database. If you have a logical multivalue association set available in the report, but the associations are not defined on the database, you can choose to define a custom set using any of the fields in the report.

"Filtering" applies your selection criteria to the normalized rows that you return. It limits the rows based on the individual values of the multivalues.

> Note: On U2 systems the "like" and "unlike" operators allow pattern matching. These pattern matches do not filter multivalues properly. If you intend to do wildcard type criteria and use normalization filtering, you must use "begins with", "ends with" or "contains", or their inverses.

Sharing

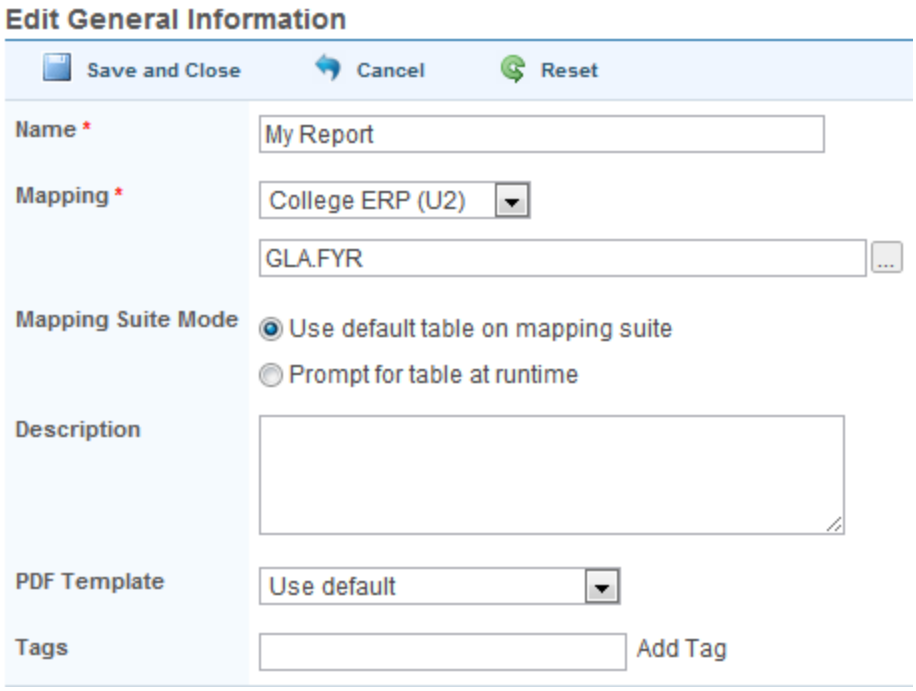
Launches the report sharing dialog.



Report Sharing allows you to select between one of three sharing possibilities. A report can be shared as Private, Public, or Visible to Named Users and Groups. If a report is Private, only the owner of the report and the global system administrator have access. If the report is Public, anyone can execute the report provided they have the security privileges required to see the mappings used. If the report is Visible to Named Users and Groups, the report is accessible only to the named principals selected in the Allowed users or groups panel.

General Information

From the report overview page, click the value beside Title, Description, Datasource, Mapping, PDF Template, or Tags to enter the Edit General Information page for your report. This page allows you to edit any values you entered while filling out the New Report dialog.



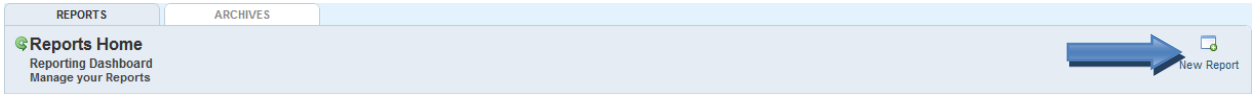
It is important to be as descriptive as possible in both the description and the tags, as this will help you and others quickly find and understand the purpose of the report on the report home page.

If you specified a table that is listed in a mapping suite, you can set the option to use the default table set in the mapping suite, or to prompt the user for the table set.

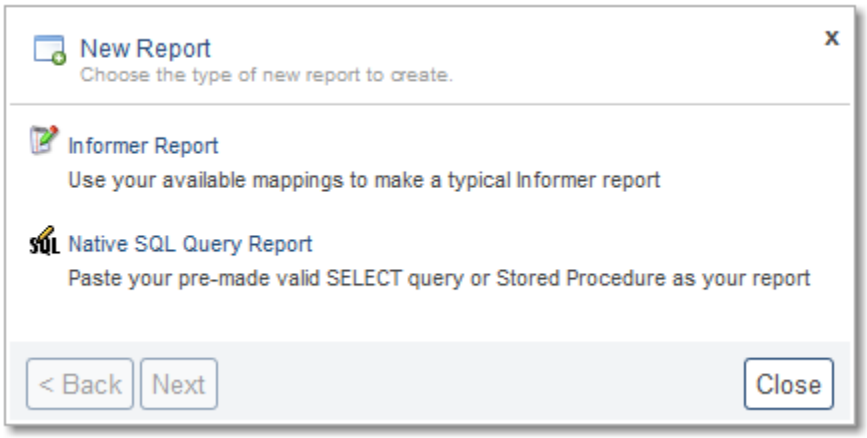
Click Save and Close to apply your changes and return to the report overview page.

Creating a Native SQL Informer Report

If you have the security settings required to create a report, you will see a New Report action in the Action Bar of the Report Home Page.

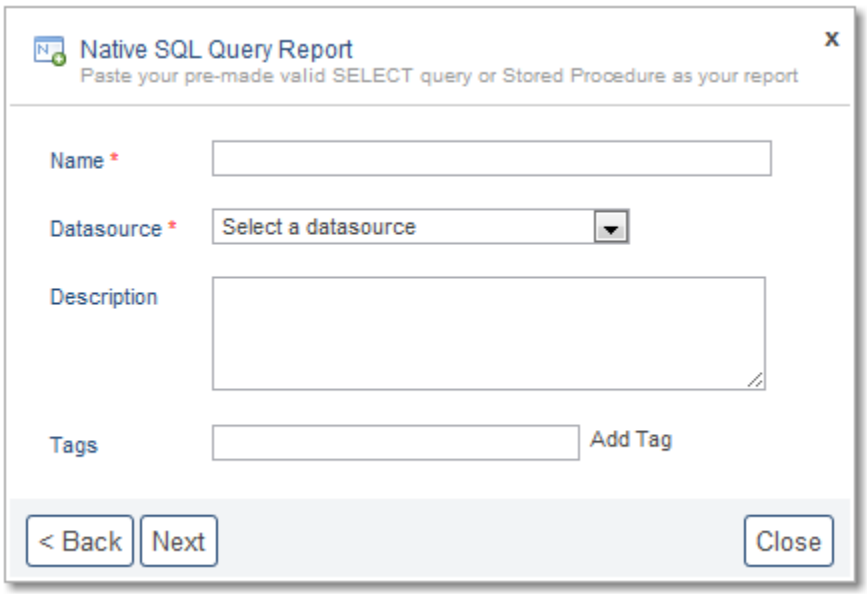


Clicking that icon pops the New Report Dialog. If you have SQL datasources defined, and you have permission to create Native SQL Reports, you will see this dialog box:



> If you don't have any SQL datasources defined, or you do not have permission to create native SQL reports, you will not see this dialog and this option is not available.

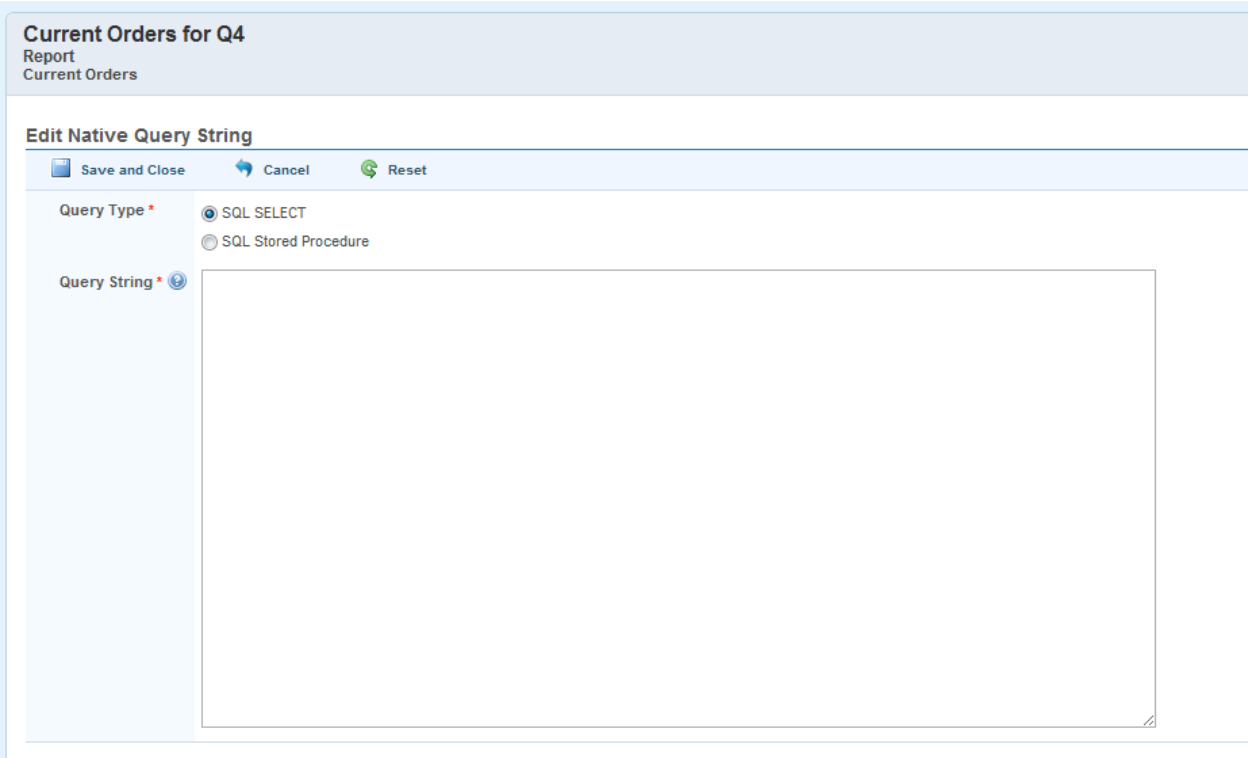
Click "Native SQL Query Report" and you will see the following dialog.



The Native SQL Query Report Dialog prompts you to provide the title for your report, then the datasource to execute the SQL statement against.

You are also allowed the opportunity to provide a brief description for the report and tags. The report description will display in the report listing on Report Home and the tags will display in the Filter Reports By Tag navigation section. The more descriptive you can be the better as it will help your users determine which reports they need to launch. Click “Next”.

Enter your SQL command



You now have the option of entering in an SQL select statement, or the name of a stored procedure.

1. SQL Select Statement
   This is a SQL select statement, or something similar that returns a result set. These must be read-only operations, Informer will not allow INSERT or UPDATE or DELETE statements.
2. SQL Stored Procedure
   Enter the name of the stored procedure directly here. If a parameter needs to be passed in, include it in your local databases syntax. Omit any “CALL” verbs, just enter in the procedure name. Example: MYPROCEDURE(‘Value1’,10)

Runtime Prompts in Native SQL Reporting

Runtime prompts should be well-formed text in the query string that indicates what the prompt text should be, what data type is expected for input, and whether the prompted value supports multiple inputs such as an “IN” or “NOT IN” condition (to allow for use of multiple prompt values). If the prompt definition does not indicate allowing multiple values, the input value for the prompt when executing the

report will be taken as is, with any commas to be used as the prompt value. All runtime prompts require values. Any wildcard usage will be governed by the syntax for the particular underlying datasource.

Syntax for prompts:

<<PROMPT_TEXT[INFORMER_DATA_TYPE]MULTI_INPUT_FLAG>>

PROMPT_TEXT = (required) any non-null String

INFORMER_DATA_TYPE = (required) 1 out of the set {Text, Numeric, Date, Datetime, Time, Boolean}

MULTI_INPUT_FLAG = (optional) the character '+', for instances where multiple inputs are possible such as an IN expression for a WHERE clause condition

Examples:

When you want to have variable amounts of inputs:

SELECT * FROM ORDERS WHERE ORDER_DATE IN (<<Enter dates separated by commas[Date]+>>)

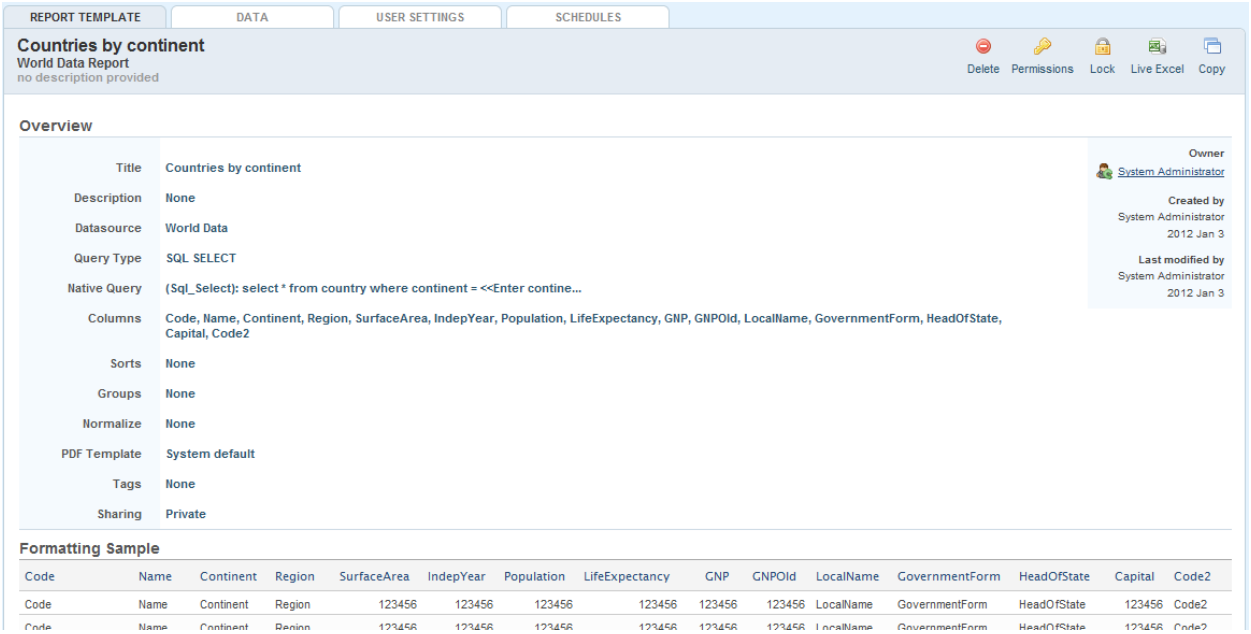
When just one input is allowed:

SELECT * FROM ORDERS WHERE ORDER_ID = <<Enter the order number[Numeric]>>

NOTE: If you edit the SQL Command after the report has initially be created, you will receive a warning that all user customizations will be removed. This is because the columns that are present in the report are determined by this command, so when it is being changed, Informer must assume that none of the original columns are there, or the existing user customizations may malfunction.

Report Overview

The Report Overview page details specifics about your report. This is the page you will use to make global changes to the report. Consider this page as a report blueprint, detailing what users will see in report results provided they haven't created a custom view.



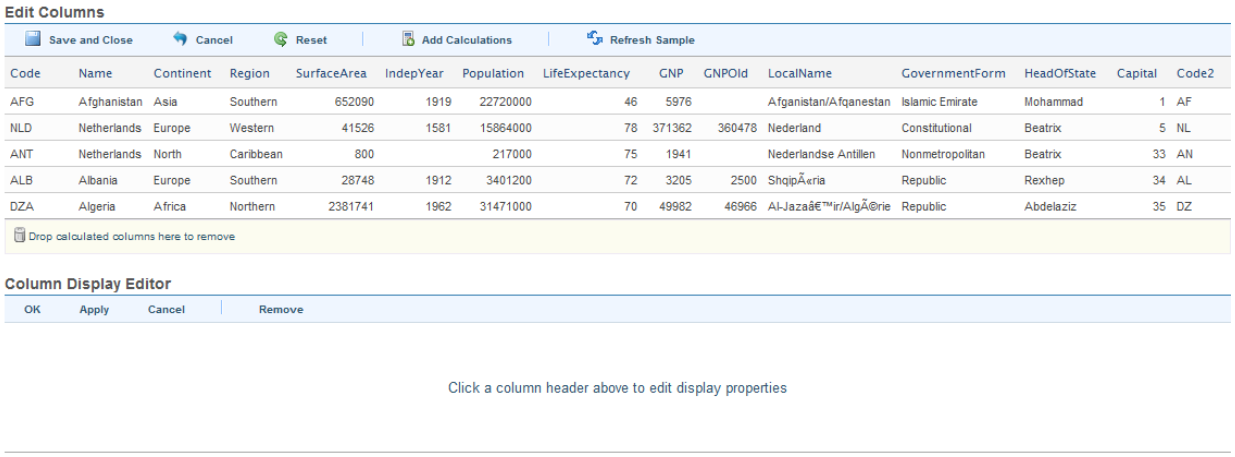
Once you have entered in your select statement or procedure, you will then see the report overview. Note that at this point this is a fully functional Informer report. The formatting sample shows sample generated text, or you may optionally “Show live data”. Note that a queries and procedures that have runtime prompts cannot show live data.

Query Editing

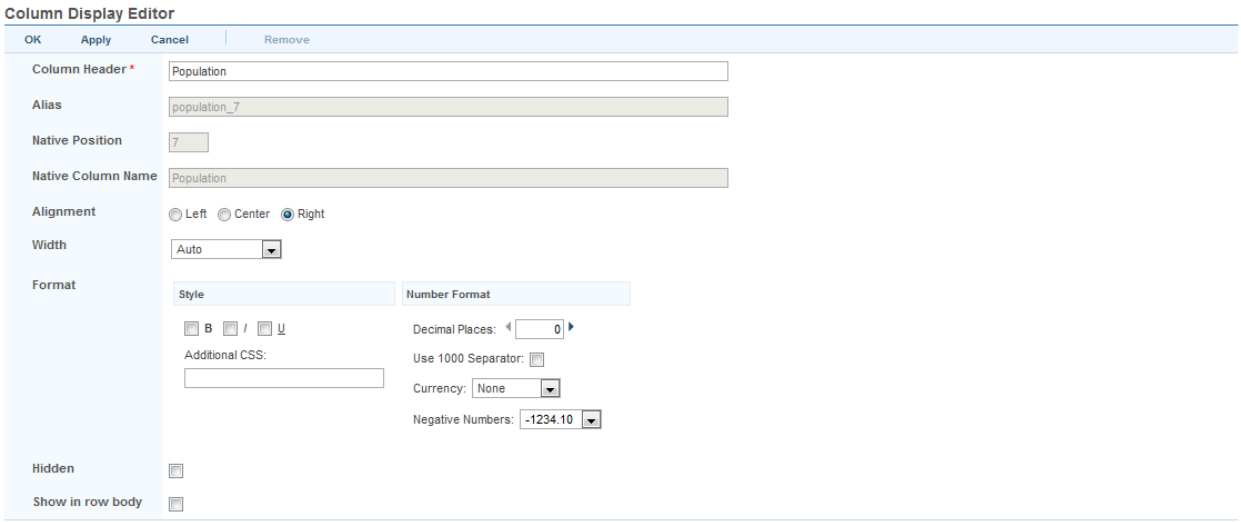
Clicking on “Query Type” or “Native Query” takes you to the same page where the query was entered. You may access this editor if you have both the “Edit Native Report Criteria” and the “Create Native Query-Based Report” permission on the datasource. This is because Native Queries allow access to any data on the datasource, and editing them provides no restrictions on that.

Columns

From the report overview page, click the list of column beside “Columns” to enter the Edit Columns page. For Native SQL Queries, this page allows you re-order, re-name and re-format fields in your report as well as adding calculated fields evaluated on the fly as the report executes.



Clicking the header of an existing column opens the Column Display Editor. The display editor contains different options for displaying the results of a particular column based on the data type defined for the field. The editor allows you to provide specific formatting for the column in question including custom CSS, alignment, width, and hidden or show in body. The Column Header is the column name in the table, or an alias generated from an “as” expression in your SQL command.



Column width can be specified as auto, percentage, pixels or characters.

Auto: Informer will calculate the best-fit value for width based on the size of the data displayed in the column as well as the surrounding columns. PDF export uses Auto by default.

Percentage: Defined as the percentage of available space. For example, setting width to 50% for a PDF report on 8 ½ x 11 page will cause the column to take up half the page. When viewing the same report in a browser window, the column will take up 50% of the available display space. If you resize the browser window, the column will adjust to 50% of the display space.

Pixels: Informer sets the column width to the specific number of pixels. Values that take up more space than the specified number of pixels will wrap within the column. The number of actual characters that fit in the column will vary depending on the font and font size used.

Characters: Informer will display a fixed number of characters. Additional characters will be truncated on the report.

Hiding a column will remove it from the list view, but allow for your users to still sort or group on the value.

Show in Row Body will suppress the values of your field into a collapsible row beneath the standard row listing.

Take special notice of the Alias value. This is a syntactically correct alias of your field name used for the calculated columns feature of the column editor.

To add a calculated column, click Add Calculations in the Edit Columns menu bar. This pops the Add Calculation dialog allowing you to create a new calculated column for your report which are evaluated when the report is run. There are two types of calculated columns you can create:

1. Template
   A Template Field must be a syntactically correct JavaServer Pages Standard Tag Library (JSTL) expression. Reference for JSTL is available here: http://java.sun.com/products/jsp/jstl/. Template fields are most useful for simple string substitutions, such as concatenating two fields together, for example:

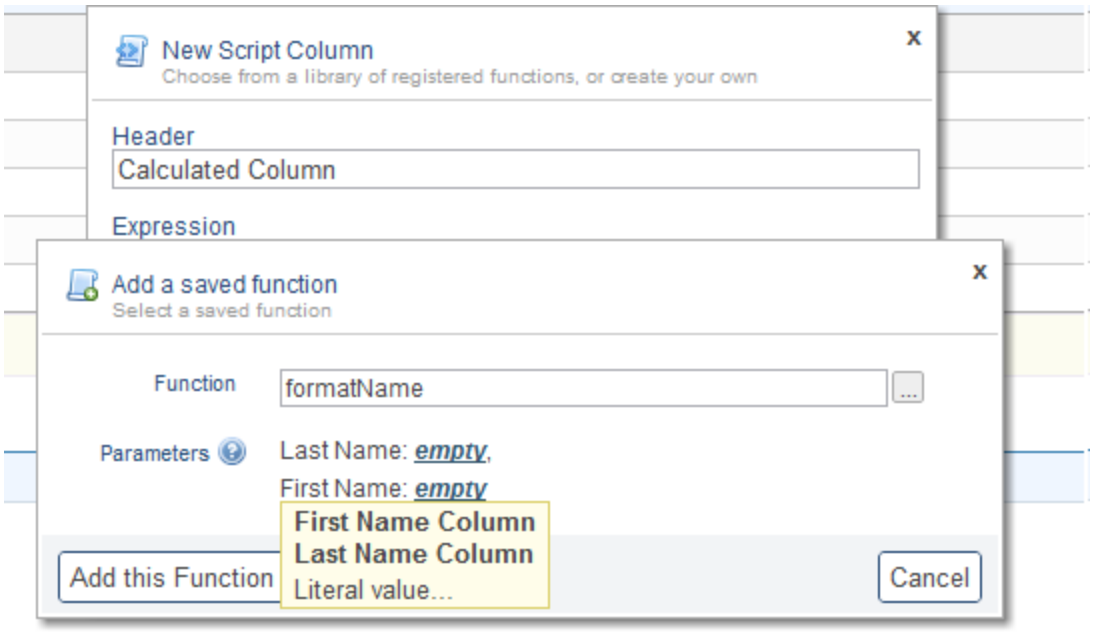
   ```
   ${lastName}, ${firstName}
   ```

   or producing a dynamic chunk of HTML, for example:

   ```
   <img src='${imgUrl}'>
   ```

2. Script
   A Script Field must be syntactically correct JavaScript. Reference for JavaScript is available here: http://www.w3schools.com/JS. The entire syntax of the language is available (references to DOM objects and methods are not allowed). Script fields are useful for creating logical expressions, such as formulas (e.g. “price * 1.07”) or conditional HTML. An example of a script formula is:
   ```
   price * 1.07
   ```

   Predefined functions may be used directly by name preceded by “informer.”, or chosen from the function menu. Column values may be used as inputs, as well as any text “literals”.



Clicking on the parameters suggests columns in the report to use for the values.

You can reference certain metadata about the report launch in scripts, through the "_context" object:
_context.report.name = report title
_context.user = exposes current logged on user object
_context.arguments = exposes a map of runtime parameters keyed off the prompt text. E.g. if you have prompt "Enter the due date" and you want the value the user entered to be used in a script, you can set a variable like this:

```
var ddate = _context.arguments.get("Enter the due date");
```

These are the text values exactly as entered, not the translated objects; so dates are the text values entered and not date objects.

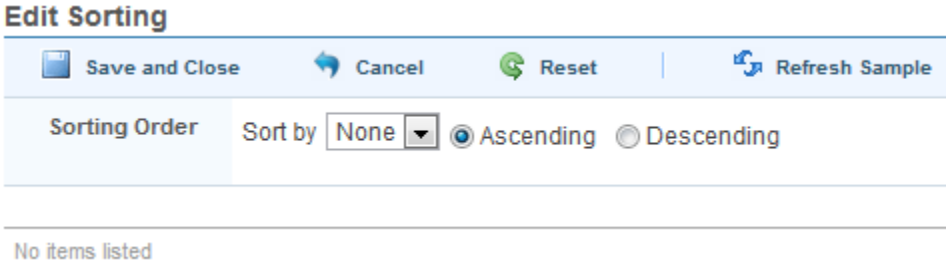
Note: See the support portal at http://delivery.entrinsik.com/portal for calculated column examples, and to post your own! For a video on how to write basic calculated columns, and other training videos, go to http://www.youtube.com/user/EntrinsikInc.

Once you've modified the columns you would like to display in the default view of your report, click Save and Close in the Edit Columns menu bar to return to the Report Overview page.

Sorting

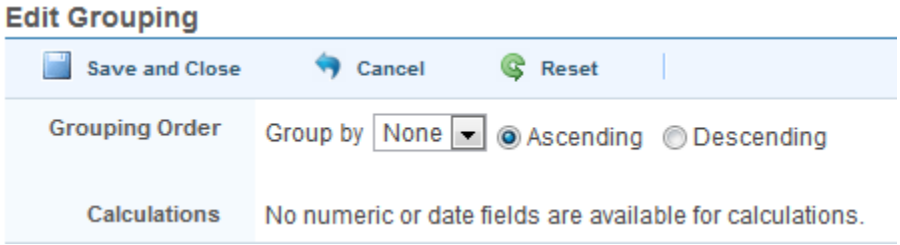
From the report overview page, click 'none' - or the value displayed if one exists - beside Sorts to enter the Edit Sorts page. Here you can provide default sorting views for your report. You can sort ascending

or descending by any fields you've chosen in the Edit Columns page, including those you've hidden or are showing in the row body.



Grouping

From the report overview page, click 'none' - or the value displayed if one exists - beside Groups to enter the Edit Groups page. Here you can provide default grouped view for your report. You can group ascending or descending by any fields you've chosen in the Edit Columns page, including those you've hidden or are showing in the row body.



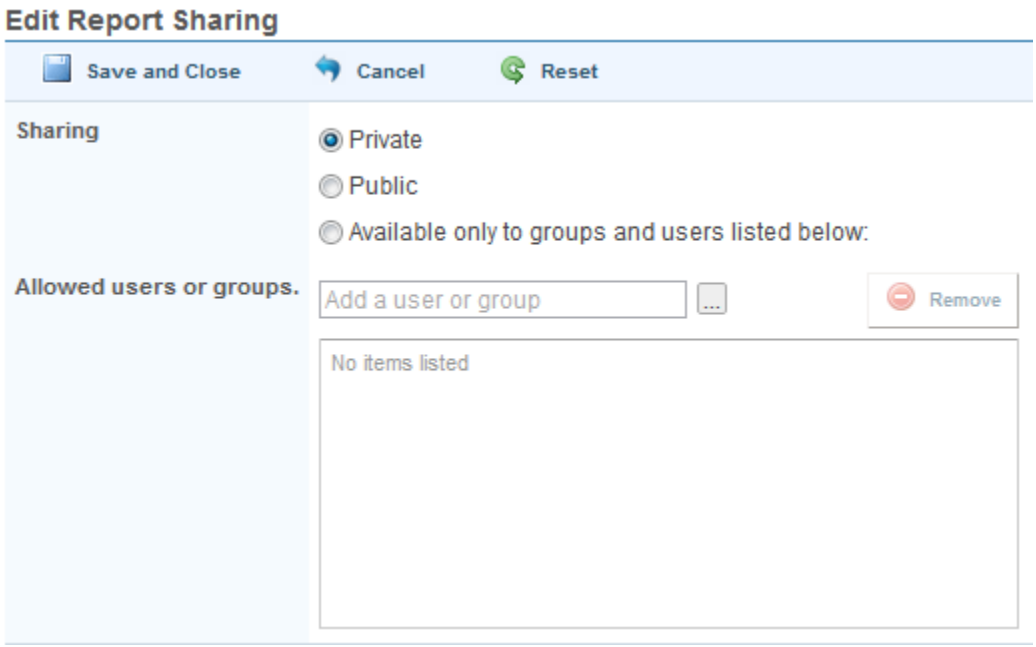
In addition to applying groups, you can add aggregate calculations for any numeric, monetary, or date columns you've added to the report. The aggregate values you choose will display per group and as grand totals at the bottom of your report.

Normalization

This will not apply to Native SQL Query Reports.

Sharing

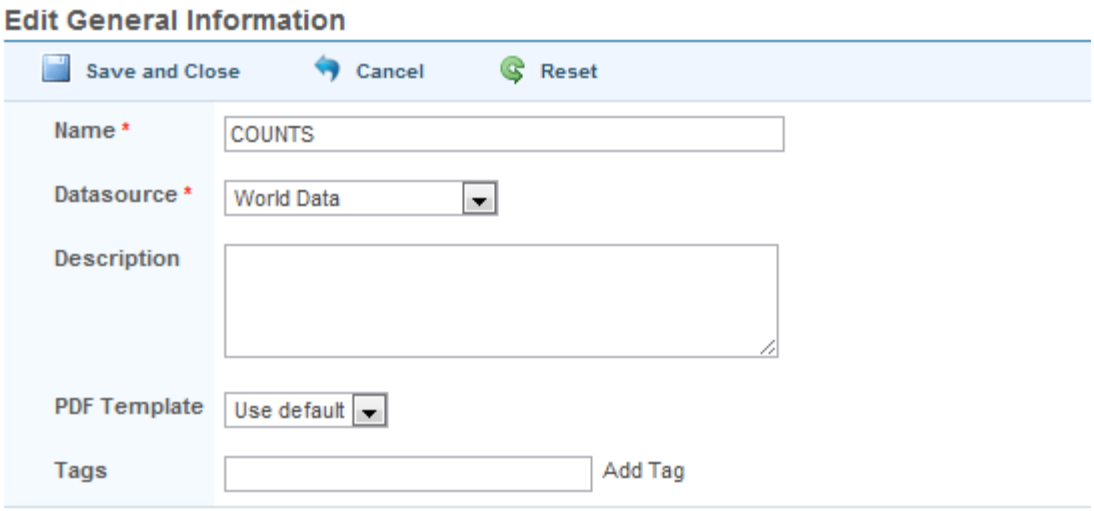
Launches the report sharing dialog.



Report Sharing allows you to select between one of three sharing possibilities. A report can be shared as Private, Public, or Visible to Named Users and Groups. If a report is Private, only the owner of the report and the global system administrator have access. If the report is Public, anyone can execute the report provided they have the security privileges required to see the mappings used. If the report is Visible to Named Users and Groups, the report is accessible only to the named principals selected in the Allowed users or groups panel.

General Information

From the report overview page, click the value beside Title, Description, Datasource, PDF Template, or Tags to enter the Edit General Information page for your report. This page allows you to edit any values you entered while filling out the New Report dialog.



It is important to be as descriptive as possible in both the description and the tags, as this will help you and others quickly find and understand the purpose of the report on the report home page.

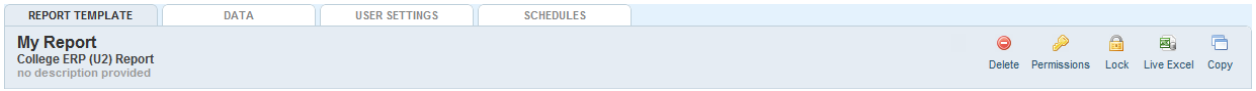
Click Save and Close to apply your changes and return to the report overview page.

Native SQL Query Security Concerns

Special consideration should be given to who is allowed to create and execute Native SQL Query reports. This type of report has no restrictions on which tables or columns may be accessed in a datasource. If you need those kinds of security restrictions, use Standard Informer reports.

Report Actions

There are a number of actions available per report displayed in the action bar of the Report Details page provided you have the appropriate security to execute them.



The available actions are:

Delete : Deletes the report and all associated custom user views of the report

Permissions : Launches the permissions dialog allowing you to modify which principals have what type of access to the report

Lock / Unlock : Locking a report prevents other users from modifying the base report. In this way you can protect the integrity of the base report select statement, sorts, groups, etc. Users are free to

customize the report, but they cannot change the base defaults. If a report is unlocked, the Lock icon will appear. If a report is locked, the Unlock icon will appear.

Live Excel : Creates and makes available for download a Live Excel Spreadsheet. You may change the text of the note to record why you exported this Live Excel. In a future release we will allow individual Live Excels to be disabled, and this will help you identify which ones should be. If your data contains multi-byte characters like Chinese, choose the UTF-8 encoding type. Copy : Creates a copy of the report and redirects you to the newly created report.

Changing Report Ownership

There may be times when you need to change the owner of a report. To do that, go to the Reports Overview Page. The owner, creator, and last modifier are listed on the right.

To change the owner, click the current owner name and specify a new owner. The previous owner will no longer have access to the report unless otherwise granted by a user or group security setting.

Launching and Manipulating a Report

Access to launch and manipulate reports provides users the ability to customize standard report results through adding and removing fields, grouping, sorting, normalizing, visualizing, and analyzing result sets as needed without affecting the views of other users.

By the end of this section you will be able to:

- Organize reports for yourself and others using tags, favorites, and more utilities
- Execute a report with various runtime options
- Customize reports in-place for one-time optional view
- Save customizations so you will always view a report with your customizations applied
- Use the Analytics Panel to drill down into large result sets
- Use the Charting Panel to visualize result sets
- Export report results to a number of formats

Informer is designed to provide quick access to the most common use cases. You can log in, execute a report, manipulate and visualize the results, then export to a desired format within seconds.

This section contains the following topics:

Using the Report Dashboard – How to use the report dashboard to search for and organize reports

Executing a Report – How to execute a report and retrieve results

In-Place Report Customization – How to use in-place customizations to affect your current report view

User Settings – How to manipulate a report view to fit your specific needs and have your modifications saved, without affecting the view for other users

Exporting Report Results – Export your report to a number of different file formats.

Analytics – How to use the Analytics Panel for advanced pivot table like views of report results

Charting – How to use the charting panel to visualize report results

Using the Report Dashboard

Once you have logged into Informer with your username and password, you will be presented with the Informer homepage. This displays your report dashboard including two main components, the Filter Reports panel on the left side and the Reports Listing to the right of the panel.

Under Filter Reports, you will see that you will have the following options to filter the report listing :

By Set : choose to display all reports or only those you've tagged as favorites

By Datasource : choose to list reports from a specific database.

By Tag : choose to list reports by a specific tag.

Once you highlight the desired filter, the Report Listing displays the associated reports. Each report in the list provides the following items:

Report Title **:** is the name the report author provided for the report. The title is also a link to the details tab of the report page.

Report Description **:** is a more extensive description of the purpose and operation of the report.

Launch hyper text **:** launches the report.

Details hyper text **:** is a link to the details tab of the report page.

Favorite **:** identifies the report as one of your favorites. If colored gold, the report is designated as one of your favorites. You can change the favorite status by clicking on the star.

Created by : identifies the full name of the report author.

Last Executed **:** can be a time, day, or date. If the report was last executed today, it will show the time. If it was last executed this week, it will show the day. If it was last executed prior to this week, it will show the date.

Report Filtering

Informer allows you to filter the reports displayed with filter controls to the left of the report listing. Filtering can be applied by set, by datasource, and by tag. Combining these filters help you quickly and easily find the reports you need.

You can select only those reports that run against a specific data source, and / or fall in a specific tag, and / or you have designated as one of your favorites. When specifying your filtering, it is important to make your filter selections from the top down. For example, if you want only your favorite reports on the ERP Datasource in the Accounting area, it is important to designate your filtering in that order. If you first designate Accounting and then Favorites, you will see all favorites regardless of designated tag.

By set : If you want only your reports you've previously noted as favorite, click the My Favorites link filter.

By datasource : By clicking on the designated datasource all reports designated for that datasource will be displayed. If you want only your favorite reports for that datasource, first click on favorites and then click on the desired datasource.

Tags : Tags allow you to group similar reports according to report focus, author, sensitivity, etc. By tagging 8 reports as accounting reports, a tag will allow a quick reference to this group of reports.

Searching : Perhaps the easiest way to find a specific report is to use the search function. Informer will display all reports that contain any part of the search argument in its title. For example, a search argument of "Order" will find all reports that contain the word "order" regardless of location in the title or case.

Executing a Report

When you click the Launch hyper text link, Informer will immediately launch the report. For many reports, runtime criteria are required and you will be prompted to enter values. For reports without runtime criteria, the report will immediately execute and a loading message circle is displayed indicating the report execution is processing.

You can also launch a report from the report page by clicking the Data tab.

Runtime Criteria

Many reports are authored to allow for runtime selection criteria. Runtime criteria allow the user to focus results on the designated criteria. Some Informer features assist this process:

a) For criteria involving dates, Informer provides a calendar Icon allowing the user to review and designate date ranges by clicking on the calendar dates.

b) For selection criteria confined by validation codes (or code files) Informer allows the user to review a list of acceptable codes and select from known values for results.

c) For selection criteria that allows for unconstrained choices, for example Company Name, as the end-user begins typing the criteria, Informer will autosuggest known values from the database. The option to provide this list is defined on the property mapping. With each letter, the available choices will become more focused.

d) Runtime Keywords such as TODAY, MONTH_END, can be entered for selection criteria. These will substitute the corresponding date for the value of the keyword. They can be also complemented with numeric expressions, for example “Today -7”. See the Runtime Criteria Appendix for all available options.

e) A criterion that is not completely intuitive can be further explained by Comments defined on the specific property mapping. If this comment is available, a “?” will appear next to the criteria in the selection box. By clicking the “?”, the user is presented with a popup containing the comments

f) Once the criteria are entered, click on the “Launch Report” button to initiate the selection process.

g) A report may be launched with runtime criteria values in the browser address (URL). So if the report has 3 runtime values, the url may be contructed like this:

http://informerserver/informer/?#action=ReportRun&reportId={reportid}&param.0={1stvalue}&param.1={2ndvalue}&param.2={3rdvalue}&launch=true

Where {reportid} is the informer assigned id of the report, which may be derived from the url of the report, {1stvalue} is the value you would like to be in the first parameter box, {2ndvalue} is what would be in the 2nd box, etc. "launch=true" indicates that the report should immediately be launched with those values. If you choose "launch=false", the values are placed in the runtime criteria input boxes, but the user will need to click the launch button. URL values may be the following:

"param.0", "param.1" … "param.n"	Parameter values case sensitive
"paramic.0", "paramic.1" … "paramic.n"	Parameter values case insensitive
"table.0", "table.1" … "table.n"	Mapping suite names to be selected
"launch=(true|false)"	Launch immediately (true)

In-place Report Customization

The results of a report execution, unless previously customized by the user viewing the report, are in the format defined by the report author. This includes default columns, column order, sorts, and normalization. Note that the following in-place customizations are not saved, so will not be applied the next time you execute the report.

You can then perform fast and immediate manipulations of the data several ways:

Column sorting : You can quickly sort report results by clicking any column header. Informer will use that column to sort the data in ascending order. By clicking the column header again, Informer will reverse the sort and sort the column in descending order.

Column reordering : Columns can be rearranged by simply dragging and dropping a column to the desired location. Simply click and hold a column to display the column drag controller, once you let go of the column, it will be placed in location.

Column grouping : You can display your results grouped by any column displayed in the report. Simply click and hold a column header, and drag it to the grouping box titled 'drop columns here to group'. Your results will immediately return grouped by the selected column and a grouping indicator for that column will appear at the top of the report noting the column being grouped and the sort order. Group by as many columns as you require. To remove a column from the grouping order simply click the delete button next to its' grouping indicator. You can also apply aggregates to display total value, average value, maximum value, and minimum value for each group. These options appear in the group indicator row as checkboxes, and are applied per group. Any columns displaying properties defined as numeric, monetary, or date will display the select aggregates per group.

Your in-place customizations are not saved. If you customize a report in-place and navigate away from the report results page, you lose your customizations. If you wish to always apply a specific set of customizations to your personal view of a particular report, be sure to make use of the User Settings tab.

User Settings

If you create a report for public use, chances are many of the users who will use that report need a slightly different view. Their needs may require an additional property or two added to the column list, they may require the report always be grouped or sorted a specific way, etc. Informer empowers end-users to make these customizations intuitively and at will, without affecting the default report template, and without affecting how other users in the system view the same report. A single report can be viewed and saved in a number of different ways.

> Note: One enormous benefit of Informer is it allows end-users to modify reports based on specific individual needs without affecting the way the same report is viewed by other users in the system.

In many cases, in-place customization will suffice for the needs of these users. However, some users may choose to save their customizations, effectively creating a new, personal view based on the default. They want the report to be grouped by a specific column, and they want to view the report that way each time they launch it. This is accomplished through the application of User Settings on a report-by-report basis.

> Note: If you create a customized view of a report through User Settings, any changes made to the default report view will not appear in your customization.

To access User Settings, browse to a report and click the User Settings tab. The following options for viewing user settings are available:

Overview : Displays the current settings for customizable options of the report, If you have current user settings applied to the report, a information bar appears on the page letting you know.

Columns : Allows you to modify the column order for your customized view, and add or remove columns displayed, including columns from your datasources as well as calculated columns. This page also allows you to modify column display properties for individual column display options.

Sorts : Allows you to modify the default sorts for your customized display.

Groups : Allows you to modify default groups and per-column aggregate selections for your customized display.

Normalize : Allows you to modify normalization settings for your customized report

There are two actions available from the User Settings tab as well:

Clear Settings : Clears all customizations and returns the report to the state as originally authored

Copy as New Report : Copies your customized report as a new report in the system available for sharing. Your customized view then becomes the default template for the new report.

Exporting Report Results

Once you have executed your report, you can export the results to several different formats. The name of the export file may not have spaces or special characters other than underscore ("_"). You may name the exported file prior to download in the "Output Filename" box.

Excel Comma-Separated Values (CSV): The report is exported to comma-separated value format. The CSV format does not keep any formatting done within Informer (column widths, bold, italic, underline, CSS formatting, HTML, etc.).

Adobe PDF: The report is exported to Adobe PDF format. PDF format maintains any formatting done within Informer (column widths, bold, italic, underline, CSS formatting, HTML, etc.). Using PDF Export Templates, you can modify the look and feel of the PDF document by placing watermarks, special headers, etc. in the document. You can also override some the template defaults at the time of export (font, font size, margins, etc.).

Webpage (HTML): The report is exported to HTML format for viewing on the web. Formatting from Informer is maintained. HTML will use the PDF template assigned to the report, or the system default.

Customized Delimiter: The report is exported in plain text format with delimiters you specify separating each column and row.

Tab-Delimited : The report is exported in plain text format with tabs separating the columns.

XML: The report is exported to XML format.

Fixed Length Columns: The report is exported in plain text format. Each column is a fixed number of characters wide. This type of file is generally used by another software application as input for processing.

Live Excel: A Live Excel spreadsheet allows you to execute the Informer report from within Excel. The file that is created contains the encrypted connection information and credentials for the Informer report. The data on the report can be refreshed using the Data->Refresh All option in Excel. You may change the text of the note to record why you exported this Live Excel. In a future release we will allow individual Live Excels to be disabled, and this will help you identify which ones should be. If your data contains multi-byte characters like Chinese, choose the UTF-8 encoding type.

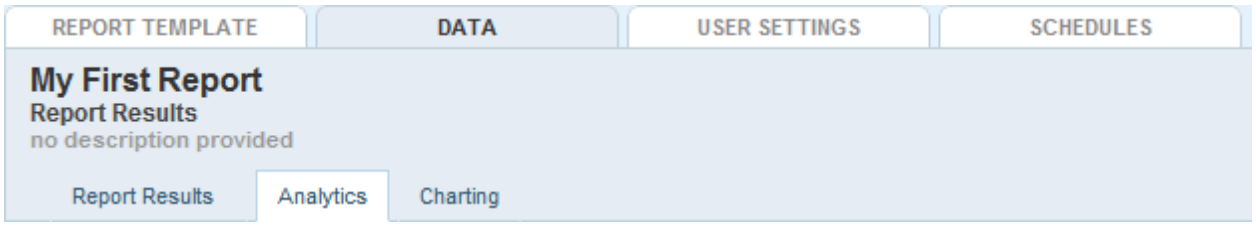
> Note: When you execute a Live Excel spreadsheet, you are running the report as the user who created the Live Excel file.

Saved-List: This option is only available when the primary file on the report is from a U2 or D3 data source. This option saves the @ID's (primary key values) for each record selected from the primary file on the report. The saved-list is written to the SAVELIST file in the data source directory.

Note: Encoding Radio Buttons on the Export dialog and Scheduled Export dialog allow the user to designate the character encoding in which data is exported. The default is 'ANSI', which is suitable for the majority of data. The option for 'UTF-8' is now available for text-based documents so the multi-byte Unicode characters that appear in many Asian and European languages will be displayed properly when viewed in a UTF-8 compatible viewing application. For PDF exports and Templates a new Font option, 'Arial Unicode MS', is now available and is bundled with Informer. When exporting to PDF using this Font option, the only CSS styling that can be applied to the data is Color, Font Size, and Underline.

Analytics

The analytics panel allows you to display summary data based on any combination of columns or column aggregates included in the report, creating pivot table like drill-down capability. Though useful for any size result set, analytics become especially powerful when a report contains an enormous number of records, providing instant retrieval of particular values within the results, sortable aggregates per column combination, and more. The analytics panel is available as a tab from the report result screen.



Working with the Analytics Panel

The analytics panel displays each column in the report as well as aggregates options for numeric, monetary, and date values. Check the checkbox beside a column or aggregate title to display in the analytics result. Uncheck the checkbox to remove from display. Selecting a column for display displays all unique values from the result set. Selecting an aggregate displays the associated aggregate value for the selected combination of columns.

If your result contains thousands of records but, say, only five distinct values for “Company Name”, then selecting the Company Name column displays only those five values in the analytics panel. If you then select “Total” aggregate beneath “Invoices Amount”, the analytics panel displays the total of the Invoices Amount column for each distinct company name.

Below the list of available columns and associated aggregates from your report is an implicit aggregate available for every report titled “Count”. Selected alone, count simply displays the number of records in the result set. Selected in conjunction with columns and aggregates, count displays the total number of records comprising the given row in the analytics set.

Filtering Reports through Analytics

Analytics provides one-click drill down into your report by filtering the report results to display only those records you select in the analytics listing. Simply click one or more rows in the analytics results listing and notice the Report Results tab now is displayed with a *. This indicates the results are now

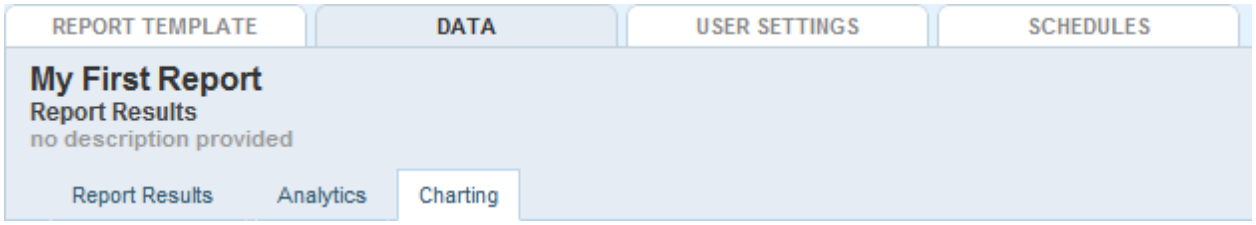
filtered by the selection from the analytics results listing. Double-clicking a row in the analytics panel will automatically navigate to the relevant detail records.

To expand on the previous example, let's once again assume you have five distinct company names displayed in your analytics results listing. If you select two of them using ctrl+click, you will notice the * appear beside the Report Results tab header. Clicking back into report results now displays only the records associated with the selected analytics rows. To remove the filter from your result set, simply click the Clear Filter button in the results menu bar.

Charting

The charting panel allows you to visualization of report results in chart format for column by numeric or monetary aggregate value and record count. Graphs are two-axis with X axis displaying the distinct column values, and Y axis displaying the aggregate.

> Note : The charting panel requires your browser contain the most recent Adobe Flash plug-in.



Any aggregate value available from your report, in addition to the implicit "Count" aggregate can be assigned to the X axis against any column value selected. Again, using the example from the previous analytics section, you can chart Company Name by Invoice Amount (total).

Current charting options include bar, pie, and area. By default, Informer will show only the top 10 results of your chart. Displaying many results might result in poor chart performance and decreased chart legibility. You can choose to display more than ten results by modifying the top/bottom X value, or by selecting show 'all' from the chart controls beneath the chart. You can also choose to hide or display label values by toggling the Show Labels checkbox.

Archives and Schedules

Informer provides two ways to save out results to be viewed at a later date, archives and schedules. These functions allow you to execute a report for later viewing, either through an archived set of results or through scheduled recurring executions, or both.

By the end of this section you will be able to:

- Create new archives of your reports
- Manipulate archived report results
- Create a scheduled execution recurrence for your reports
- Manipulate delivery options for scheduled reports
- Create a recurring archive schedule

This section contains the following topics:

Understanding Archives and Schedules – Learn the difference between archives and schedules, and when which option is appropriate for your use

Creating and Manipulating Archives – How to create and manipulate an archived view of your report

Creating and Managing Schedules – How to create and managing a scheduled execution of your report

Understanding Archives and Schedules

One of the obvious benefits of Informer is its' ability to execute queries against your datasources in real-time, providing access to live data for all your users. However, in some cases, you may choose a user should have access to only archived results instead of real-time. Likewise, it may be necessary to create a scheduled recurrence for a report to show date or time sensitive results of the same report. And in still other cases, you may need to schedule recurring executions to in turn create archived result sets your users can manipulate as reports.

What is an Archive

An archive is a saved result set based on a particular execution of a report. You can have as many archives of a particular report as you'd like. Common situations where you might choose to create an archive are:

- You require a snapshot of data from the same report over time
- A results set is difficult or impossible to reproduce because it is date sensitive
- You require results from the same report but executed with different runtime parameters
- A report is known to take significant time to execute, and you'd like to provide view but not execute privileges to users
- You want to provide your management users quick access to analytics and charting
- Data in your target database changes over time but you require date specific views

An archived result set can be launched and manipulated with all the functionality of a standard report save the ability to modify the runtime parameters and execute schedules. This means you can use the analytics and charting panels, filter the results, group, sort, assign security privileges, etc.

What is a Schedule

A schedule is a definition for recurring report execution. You can have as many schedules for a particular report as you'd like. Common situations where you might choose to create a schedule are:

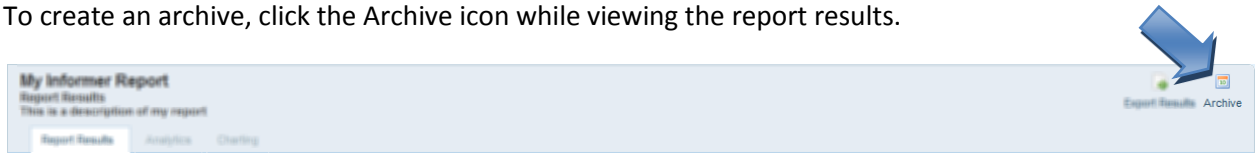
- You want a single report to execute on a recurring schedule with the same parameters
- You want a single report to execute on a recurring schedule with parameters keyed by the date of the individual execution
- You want a single report to execute for delivery to two or more users with varying security privileges
- You want to send a report execution result to individuals who don't have informer access, or you'd like them to not log in to informer in order to view results
- You want to schedule a report to execute during off-peak usage hours

A schedule provides a template for creating recurring executions of a particular report. If your report contains runtime criteria, you must provide that criteria at the time you create your schedule. You can use variables, such as user defined fields and date keywords for runtime parameters during scheduling, as you can with any report execution. For a complete list of Date Keywords, please see the Runtime Variables Appendix.

Creating and Manipulating Archives

When you execute a report and receive results, you have the option to create an archive of those results via the Archive action in the action bar displayed on the report results page. Executing the archive action pulls the results from the database at the time of the execution and saves them serialized in the local Informer database. For this reason, subsequent requests for the archived set do not result in a call to your target database, and can be saved forever – even if the data in your target database changes.

To create an archive, click the Archive icon while viewing the report results.



You can name the archive or accept the default name based on the title of the report. Once you create an archive, you can access it via the Archives tab on the Report Home page. The Archives Listing will display all archives you have permission to view, exactly as the Report Listing does. You can filter your view of archives by title, tag, datasource, etc.

> Note: Because an archive behaves exactly as an actual report in the system, individual user permissions are maintained during report view.

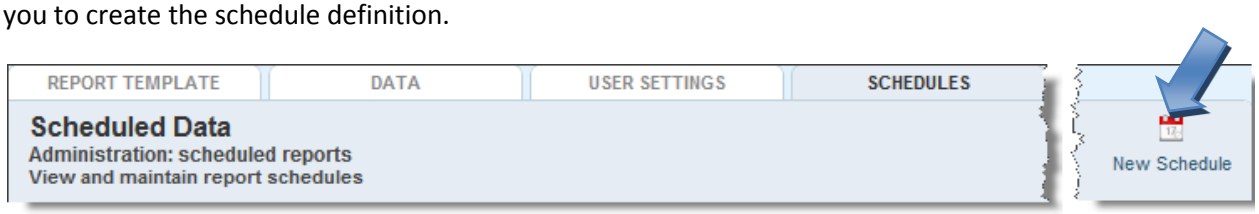
The Archive Listing displays the date created, report title, report creator, record count, and size in KB of the archived set in the database.

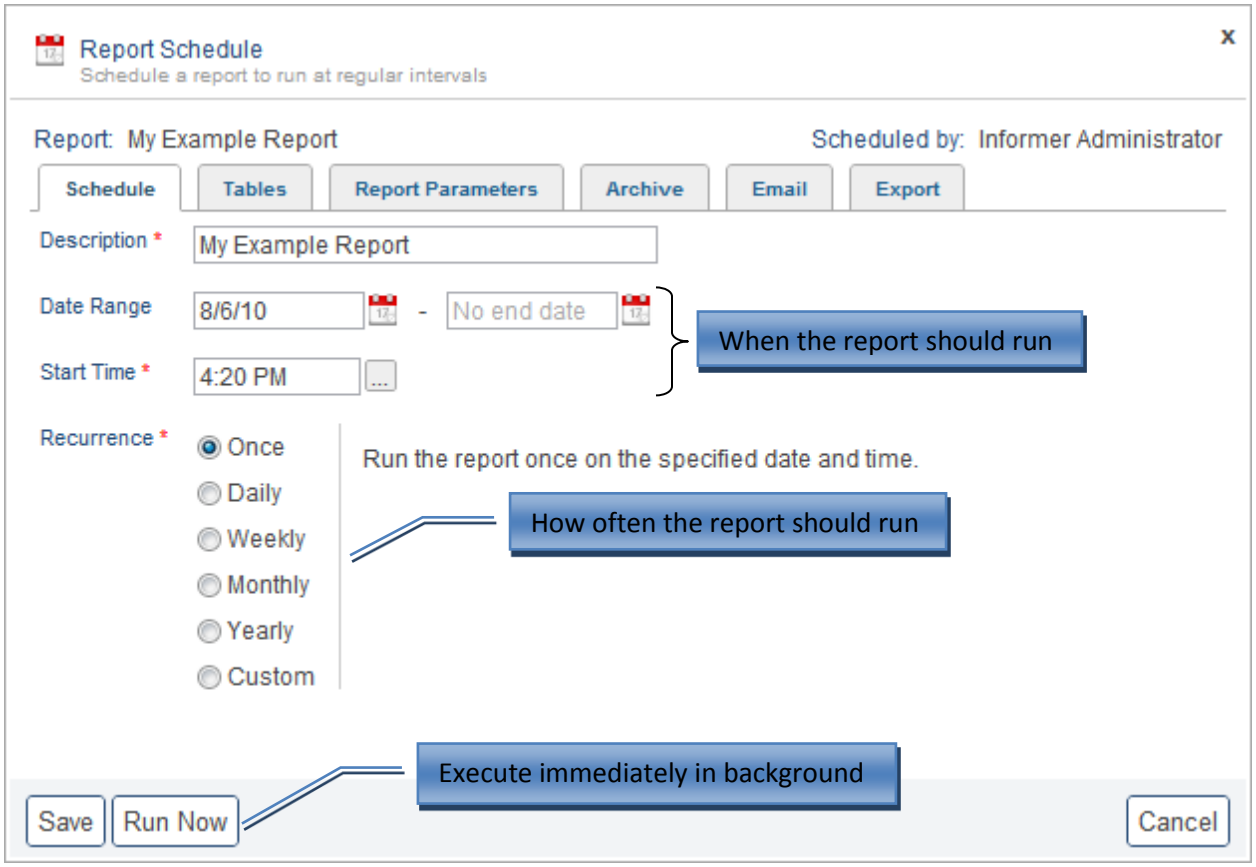
Clicking an archive title from the listing launches the results. Because the archived results are serialized to the local Informer database, there is no communication with your target database for viewing archived results. Instead, you can return large result sets instantly to the browser. Once viewing an archive, it behaves exactly as real-time report execution, with all the same options for manipulation save changing the runtime parameters and creating a schedule.

Creating and Managing Schedules

Many reports in your system will be prime candidates for executing on a recurring basis without need for user interaction. A great example being Weekly Revenue – this might be a report you would like to execute every Monday morning at 8:00 am and have the results delivered to your staff or management team. Informer satisfies this recurrence requirement through the use of the scheduling functionality, and also provides many delivery options to fit the needs of different types of users.

To create a schedule for a given report, simply browse to the report details page and inside the Schedules tab click the New Schedule action in the action bar. This pops up the New Schedule dialog for you to create the schedule definition.





The Schedule tab in the New Schedule dialog provides inputs for the schedule (defaults to the report title), a beginning and optional ending date for the schedule, a start time for the execution to run, and a variable recurrence. This is your opportunity to provide specifics about when and how often the scheduler should fire, creating a new scheduled instance each time. Informer provides standard recurrence intervals, such as daily, weekly, etc., and also provides you the ability to enter a custom cron expression for any type of recurrence definition. You can also execute the schedule in background immediately by clicking on the Run Now button.

> Note: For cron syntax, use the help popup for common usage or see
> http://en.wikipedia.org/wiki/Cron#Usage for more links and syntax references

If the report uses tables from a mapping suite, the Tables tab allows you to specify which table from the mapping suite you wish to use for the scheduled report run. See the Mapping Suites section for more information on defining and using mapping suites.

The Runtime Parameters tab in the New Schedule dialog provides inputs for report runtime parameters if any exist. Just like with standard report executions, if you choose to leave a non-required field blank, that query option will be ignored and all results will be returned. This is also your opportunity to use user defined fields such as {user.companyId}, and date sensitive keywords such as TODAY-7 to provide

context sensitive results with each new execution of the schedule. For a complete list of these runtime keywords, please refer to the Runtime Keywords Appendix.

The Archive tab allows you to specify if a new archived result set should be created each time the schedule executes. If you select 'Create a New Archive', a new archive will be created with each execution and assigned to the schedule creator and any additional users and groups defined in the space provided. Note you also have the option to create the archive only if > X records are selected by the scheduled execution.

If you'd like an email to be sent to the users specified as recipients, check the 'Send email' checkbox.

Creating an archive as the result of a schedule is particularly useful for large reports you'd like your users to view but not execute. For example, if you have a large sales report which executes monthly and returns a large amount of data, you may choose to not allow users to execute the report, but instead assign them as recipients of the scheduled archived results. Using this method, the query is only executed once against your database, and subsequent requests will return the records already serialized to the Informer database. This enables the optimal situation of instant results secured per user without performing queries against the target database.

The Email tab allows you to provide a list of email addresses to receive scheduled report results in the file format specified. These emails do not need to be actual Informer users. In fact, if you are intending to send results to Informer users, it is suggested you use the archive tab instead as those users will view the results with their security settings applied. Emailed scheduled results execute with the security privileges of the individual who defined the schedule.

The Export tab allows you to define a server side export for the schedule on each execution. You can export to Informer supported export formats and have the results saved to a network location visible from the Informer web server. For the Output File or Folder option, specify a folder or file to save report results. If a folder is specified, Informer will save the report results there and will give the file a unique name each time based on the date of execution. If a file is specified, Informer will save the results, overwriting the file each time the report is run.

Click Save on the New Schedule dialog once you've completed defining your schedule. It will then appear in the Active Schedules listing for your report. You can view, edit, and delete active schedules at any time by clicking the schedule title in the list. You can also view and English-like translation of the defined recurrence, and the next fire time.

If you have access to the Admin module, you can view, edit, and delete all schedules defined in the system by going to the Admin home page and clicking the Schedules tab. For more information on the Admin module, please see the Administration section of the documentation.

Security Overview

Informer employs a rich security infrastructure to ensure complete administrative control over access to both system functionality and data available to the end user. Groups and Users can be imported from your network LDAP, as well as created and maintained within Informer.

By the end of this section you will be able to:

- Understand the base Principal Types defined in Informer
- Manage system principal Administrator and implicit principals Everyone and Owner
- Integrate your LDAP implementation with Informer
- Create and manage Principals for use only in Informer
- Understand how Informer employs cascading permissions
- Manage access to system functionality
- Manage access to source data
- Use the Root Permissions panel to define global defaults
- Impersonate users to troubleshoot security settings

This section contains the following topics:

Principal Types – Understand the Informer Principal types including system type Administrator, and implicit types Everyone and Owner

Managing Users and Groups – Create and Manage user principals from internal and external sources including LDAP and Active Directory

Root Permissions – Manage global default permissions and use cascading permissions

Object Permissions – Manage access to individual reports, mappings, and other objects in the system

User Impersonation –Access user security in real-time with impersonation

Principal Types

You define Informer permissions to specific principals. Principals can be created in Informer or imported from network LDAP repositories. There are five types of Informer Principals:

User : a principal with an associated Informer username and password. A user principal is a specific Informer user. You can assign permissions directly to a user, or indirectly by assigning permissions to one of their associated groups.

Group : a principal containing a collection of user principals. Assigning permissions to an Informer Group indirectly assigns permissions to all of the groups' members.

Informer Administrator : the only principal shipped with Informer, with username: administrator and no password. The Informer Administrator principal has global access to all Informer features. You cannot

modify the security privileges of the Informer Administrator. There is only one Informer Administrator account.

Everyone : an implicit principal used for assigning global permission defaults.

Owner : an implicit principal always assigned to the user responsible for creating the associated Informer object (report, mapping, etc.)

Managing Users and Groups

You can create Informer users and groups or import them from LDAP repositories. Regardless of source, you are free to assign permissions to any user or group principal.

Informer Users and Groups can come from one of two sources:

Internal Users and Groups : created from and maintained within Informer. Complete details are stored in the local Informer database and managed internally.

External Users and Groups : maintained in an external in LDAP, Active Directory, or custom repository. Informer maintains a reference to the repository and relevant principal records. Changes made to principals in an external source are reflected immediately within Informer.

For information on referencing external repositories for user and group management, please see the LDAP section of this chapter.

Users

The Users tab in the Security Module provides user search functionality across all user repositories. Provide the filters you require and click Search. The Users Listing displays qualifying users with their associated Full Name, Title, Informer Username, and Source (Local for internal users, External otherwise).

To create a new internal user, click the New User action in the Users Home action bar to pop the New User dialog. The dialog prompts for the following:

First Name : first name of the new user

Last Name : last name of the new user

Display Name : display name within Informer

Title: title of the new user

Email Address: email address of the new user, used for scheduled reports and notifications

Username : Informer username for the new user

Password / Retype Password : Informer password for the new user

Internal ID : legacy placeholder for external unique identifiers in previous versions of Informer. Unless already in use, it is suggested you forego Internal ID for the more descriptive and manageable User Defined Fields.

Time Zone : time Zone for the new user. System default defers to the setting provided in Admin > System Settings

Active Status : status of the new user. Active users can log in, inactive users cannot.

<All User Defined Fields> : allows for entry related to User Defined Fields.

Click Save to save user details. Your new user is now defined in Informer.

Click a Full Name value inside the users listing to view associated User Details. The user details page allows the ability to view and edit all values associated with a user save those which are maintained by the external repository. To change the password for an internal user, click the New Password action on the user detail page to pop the New Password dialog.

Delete a user by clicking the Delete action in the User Details page, or by selecting one or more records on the Users Home page and clicking the Delete button in the Users Listing menu bar. Note you can only delete internal users.

Groups

The Groups tab in the Security Module provides group search functionality across all user repositories. Provide a name filter if you require and click Search. The Groups Listing displays qualifying groups with their associated Group Name and Source (Local for internal users, External otherwise).

To create a new internal group, click the New Group action in the Groups Home action bar to pop the New Group dialog. The dialog prompts only for a Group Name and Group Description. Click Save to save group details. Your new group is now defined in Informer. Click a Group Name value inside the groups listing to view associated Group Details.

Delete a Group by clicking the Delete action in the Group Details action bar, or by selecting one or more records on the Groups Home page and clicking the Delete button in the Groups Listing menu bar. Note you can only delete internal groups.

Managing Group and User Relationships

A user can belong to many groups and a group can contain many users. You can add users to groups individually on the User Detail page or in bulk on the Group Detail page. You can manage an external group as if it were local, adding and removing external and local users. Note that modifications made to external groups and users only affect Informer; the application does not write modifications to your external source.

Informer will not allow you to remove an external from their assigned external groups, though you can add external users to groups they do not belong to inside LDAP. You can also add local users to external

groups, external users to local groups, etc., though it is not considered best practice to modify external group memberships.

Using LDAP and Active Directory

Informer can authenticate against multiple LDAP and Active Directory user repositories, meaning users can log in with their network username and password, and site administrators do not have to maintain an additional user data base for use only in Informer.

To create a reference to LDAP or Active directory, browse to the LDAP Reporsitories tab in the Security module and click the New Repository action in the action bar to open the New User Repository dialog. Provide the following:

URL : location of your LDAP server, e.g. ldap://ldap.mydomain.com

Type : select LDAP or Active Directory

Username DN : the username Informer will use to search the LDAP Repository. Leave blank for anonymous searching.

Username DN : the password for the username Informer will use to search the LDAP Repository. Leave blank for anonymous searching.

Root DN : the password for the username Informer will use to search the LDAP Repository. Leave blank for anonymous searching.

Search Paths : list of LDAP directories and associated filters to search for users and groups. If left blank, the entire tree is searched starting at the provided Root DN. To add a new search path, click the Add New Search path to open the New LDAP Search path dialog. Define your search path as subtree or top-level only, provide a filter and a Search DN. Click Save to save and close the dialog. You can add multiple search paths.

Group Class : class for retrieving groups. If left blank, Informer uses `objectclass=group`

User Class : class for retrieving groups. If left blank, Informer uses `objectclass=group`

Page Size : use paging if there is a result size limit on your LDAP server. Size 0 is unlimited.

Click Save to save and close the New LDAP Repository dialog, Informer now maintains a reference to your LDAP Repository. Click the repository name in the repositories listing To view and edit details.

LDAP Attribute Mappings

With a successful connection to a repository, you can map external attributes to user properties for use within Informer. To edit the default user attribute values, double click inside the User Attribute Mappings, provide the appropriate value, and click Save.

You can also support custom attributes. To add a new custom attribute, click the Add button in the custom attributes listing to open the Map an LDAP Attribute dialog. Custom attributes add custom user

fields to each Informer user from the LDAP repository which maps to a specific LDAP attribute value. Click Save to add your new attribute.

Root Permissions

Informer uses cascading permissions to determine if a particular user has access to a particular feature. This determination is made at the most granularly defined access value. Meaning, if a user belongs to a group which does not have access to delete reports, you can override that permission and allow that feature access to that particular user. These global permission defaults are managed on the Root Permissions tab in the Security module.

The two implicit principals, Everyone and Owner, are defined by default in Root Permissions. Add a user or group to the Users or Groups panel by typing in the Add a user or group textbox, or by searching through the popup principal search dialog. To modify permission values, select the principal to change, and their defined permissions are displayed in the Edit Permissions table.

The Edit Permissions table displays the implied permission assigned to the selected principal. To override a permission, click Edit in the menu bar to enable the Grant and Deny checkboxes. The inherited permission displays as a disabled checkbox. To override the inherited permission, click the enabled checkbox. Select Full Control to apply all associated permissions Grant. When you finish editing, click Save in the Edit Permissions menu bar to apply your new settings.

To remove a principal from the Root permissions set, thereby assigning that principal the default inherited permission, select the principal name in the Users or Groups panel and click remove. You cannot remove the two implied principals.

Object Permissions

Each securable object in Informer contains a Permissions action in the action bar of its associated detail page. Whereas Root Permissions defines what a user can do globally within the system, each individual system object can override this setting. For example, a user may be granted the ability to create Live Excel spreadsheets through the Root Permissions panel, but you can restrict that user and others from doing so on a specific report.

Browse to an Informer object, such as a report, and click the Permissions action in the menu bar to open the Manage Permissions dialog for that object. Much like the Root Permissions page, the Manage Permissions dialog allows you to select specific permissions for specific principals.

Object permissions also define what specific reporting data a user is allowed to access within Informer. This data security is accomplished through assigning object permissions on datasources, mappings, and properties. For example, if you only want your HR user group to have access to the SSN field in a Person table, you would:

- Browse to the SSN property detail page
- Open its Manage Permissions dialog
- Select the Everyone principal and deny access to all permissions

- Add the HR group to the principals panel through type-ahead or search
- Select the HR principal and grant access to all permissions
- Save and close the Manage Permissions dialog.

User Impersonation

Impersonating an Informer user allows you to view their effective permissions as you browse through the application. To impersonate a user, you must be logged in as the 'administrator' user. Users with administrator rights cannot impersonate other users. This prevents someone from impersonating a user with more access. Browse to their User Detail Page and click Impersonate in the action bar. You will have all the rights and privileges of that user. Any reports created while impersonating the user will be owned by the user but will show that the Informer Administrator created the report.

Once you begin impersonating a user, your login session loses all your previous permissions and groups, and you gain those of the selected user. You must log out to stop impersonation.

Administration Module

Provided you have the appropriate security privileges required to view at least one component of the administration portion of the application, you will see the Admin module tab in the module navigation bar. Clicking this tab presents administration options for your Informer installation.

By the end of this section you will be able to:

- Manage base System Settings to accurately reflect your Environment
- Update your Informer License
- Review your license specifics
- Manage your Informer Log File
- Manage datasets cached on the server
- Manage Export Templates for user export options
- Manage Schedules from all users
- Manage custom User Fields
- Define System Code Files and import Code Files from your database

The administration module provides administration level access to many portions of your Informer installation. Note that changes to administration options affect your installation globally, so should be executed with caution.

This section contains the following topics:

System Management – Use the System tab to manage global system settings, update your Informer license, review your Informer license details, and manage your Informer Log File

Cache Management – Use the Active Datasets panel to manage the web server dataset cache

Export Templates – How to use in-place customizations to affect your current report view

Schedule Management – Manage all schedules in your system through the admin Schedules tab

User Defined Fields – Manage custom User Fields for all users through the User Fields tab

Code File Management – How create custom Code Files as well as how to import existing Code Files

System Management

The System tab in the administration module allows you to manage your global system settings and your Informer license details. Any modification to the Settings will affect your entire installation.

System Settings

The following options are available for view and edit in the Settings tab:

Support Email : the email address associated with the Support link in the welcome bar. This email address should be populated with the individual or group email responsible for administrating your Informer installation.

Note: The Support Email link is not intended to be a link to support@entrinsik.com. Please use an internal contact for your support link.

Default System Locale : define a default system locale or use the system locale defined by the Informer web server

Default Time Zone : define a default time zone or use the time zone defined by the Informer web server

Default PDF Template: define the default PDF template for your implementation

Mail Server: server name of the web server Informer uses to send Scheduled result emails

Mail Server Port: port number of same

Mail Server User: username for mail server if your network requires

Change Password Checkbox: select to change mail user password if required

New Password : supply a new password if a change is needed

Verify Password : retype the new password

Admin user email : email address to use for the user with username administrator

Change admin password Checkbox : select to change the password for the user with username administrator

New Password : supply a new password if a change is needed

Verify Password : retype the new password

Live Excel Mode: As of version 4.2.10, Live Excel downloads and requests will be tracked in a lookup table. This will be used in a future enhancement where individual Live Excels may be disabled. There are 4 modes: (Legacy Live Excel means a Live Excel downloaded prior to 4.2.10)

Legacy: Older Live Excels will not be tracked: This means that legacy Live Excels won't be tracked but will continue to work. New Live Excels will be tracked.

Conversion: Older Live Excels will be recorded for tracking: This means that any incoming legacy Live Excel request will be tracked. This is useful to move already downloaded Live Excels to a tracked status the next time they are executed.

Compatible: Older Live Excels not previously tracked no longer execute: This means that any legacy Live Excel that has been previously tracked will work, but any Live Excel that is not being tracked will not work.

Strict: Only newer Live Excels will execute: Live Excels created in version 4.2.10 and forward will work. Legacy Live Excels will not work regardless of tracking.

The intent of these modes is so you may prepare your existing Live Excels that are in use for the new tracking. The recommended approach to doing this is to set the mode to “Track All Live Excels” for a certain time frame. After setting this mode, notify your user base that they must refresh their Live Excels within this period. After the period ends, change the mode to “Only Allow Tracked Live Excels”. This will enable previously downloaded Live Excels to be tracked for later enhancements.

To remove the mode options and have only newly created Live Excels work, add this to informer.properties:

informer.disableLiveExcelModes=true

System Registration

Your Informer installation is registered with your issuing agent and provides the following details of the environment:

System ID : a unique identifier designating your specific Informer installation

Registered To : name of the purchasing party

Issued By: name of the issuing partner

Issued on: date the registration was created

Expires: date the registration will expire

System Licensing: the manner in which your system is licensed. Depending on your purchasing contract, this can be Per Database, Per User Set, Per Server, etc.

If you need to update your license to implement additional functionality or because your license is set to expire, click the Update License action in the System Information menu bar to pop the License Installation dialog. You will need a new License file to upload, which you should receive by request from your issuing agent.

License Details

Depending on how your Informer is licensed, you may see a License Details tab under System. If so, the content of that tab will display information associated with specific license details and provide the ability to add or remove licenses from entities if available. If you are unsure how to manage the specific license details, please review your license agreement with your issuing partner.

The Informer Log File

Informer writes detailed technical logging information to the informer log file. This file is accessible through the System Settings tab in the administration module. Click the View Log action in the System Settings action bar to pop the View Log dialog.

The View Log dialog displays the last 10,000 characters of the informer log by default. It is highly suggested that you download the log file if you require more information. You can download the log file directly from the View Log dialog, or by clicking the Download Log action in the System Settings action bar. To clear the log file, click the Clear Log action in the System Settings action bar.

Cache Management

Informer uses aggressive caching to ensure the quickest possible delivery of user requested data. These result sets, regardless of size, are always cached by Informer in web server memory to enable quick access should a request be made again for the same dataset. Informer will flush the cache of any dataset after ten minutes of idle time.

The Active Details tab in the administration module provides a view of currently cached datasets. From this panel you can effectively measure current web server memory load as it is related to cached data associated with Informer. Datasets from report results, requests to the internal informer database, all requests within the system are cached and listed here.

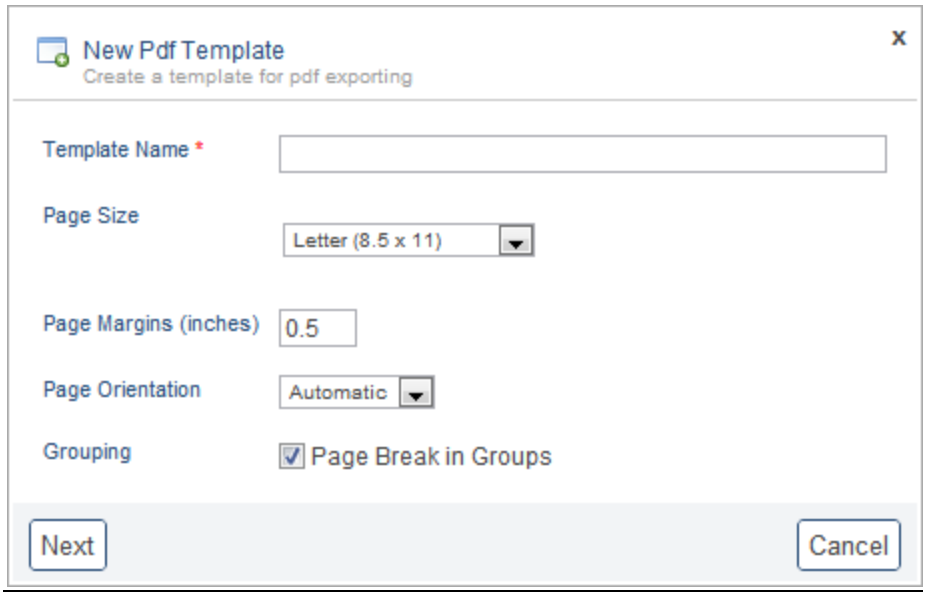
To delete items from the cache, simply select one or more records and click the delete button in the menu bar. A user will never experience an error because you've deleted a dataset, but if you delete and they request a portion of the same dataset within the timeout period, they will experience a performance lag.

Export Templates

One of the most common uses of Informer is to execute report, then export to a desktop tool or format such as Adobe. Informer facilitates this export process not only be providing a number of export format options, but also by allowing users with the appropriate security privileges to create and manage export templates. To manage export templates, browse to the Export Templates tag in the administration module.

Informer ships with a template installed, which you cannot delete or modify, named Entrinsik Default Template. This is the default system template until you create one of your own. The Entrinsik Default Template does not display in the Template Listing page. Once you create a template satisfying your organization default needs, identify it as your Default Template in the Admin > System Settings page.

The export templates tab begins with the export templates listing displaying each defined template. To edit, simply click the name of the template in the list. To create a new template, click the New Template action the export templates action bar. This will pop the New Template Dialog.



Template : name of your export template

Page Size : printing page size of your template

Page Margins : margin width to apply to your template

Page Margins : margin width to apply to your template

Page Orientation : Automatic, Portrait, or Landscape orientation of your template

Grouping : if the results exported to this template contain, define whether the exported document should insert page breaks after each group.

Click Save and View to enter edit mode for the newly created template. The template edit page allows you to further apply design specifications to templates your users can choose to associate with specific reports. The following options are available in the template edit screens:

Sample : displays a sample document using the settings you've defined for your template

Page Setup : allows you to edit Template Name, Page Size, Page Margins, Page Orientation, and Grouping options

Styles : provides options for font specifications such as color (hexadecimal color values as, more information here: http://en.wikipedia.org/wiki/Web_colors) , size, and family. These values are applied as the page style, with optional overrides for Even and Odd row modifications. You are also allowed the option to specify style specifics, including custom CSS.

Header and Footer : provides a WISYWIG drag and drop editor for designing export templates. In the Template Designer, simply drag and drop from the Add Elements panel to create new sections of your template including New Row, Text Cell and Image Cell. As you drag elements onto the designer, or if you

double click an existing element, an editor dialog for that element type will appear, allowing for element specific modifications.

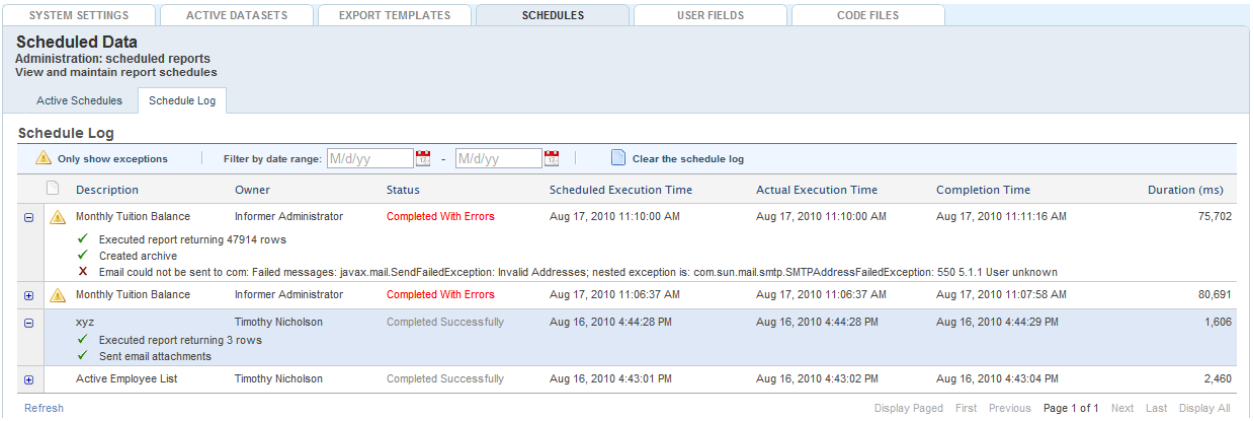
An image cell allows you to upload an image from your desktop to include in the template. A text cell allows you to define text elements to appear on each page. Text elements can be dynamic based on the execution using the variables provided in the Select a Keyword dropdown. For example, if you execute a report titled “Weekly Invoices”, the text element Title: ${reportTitle} will resolve to Title: Weekly Invoices at runtime.

Watermark : allows you to specify a watermark and associated opacity level to appear on each page of the exported document.

Schedule Management

Administrators are allowed global view of all schedules in the system through the Schedules tab in the administration module. The Active Schedules listing displays all current schedules by Description, Owner, Schedule, and Next Fire Time. To delete, simply select one or more schedules and click the delete button in the active schedules listing menu bar. To edit, click the desired schedule description.

The Schedule Log tab allows you to view the history of all scheduled jobs that have executed. For each execution, the log lists the completion status, the scheduled execution time, the actual execution time, the completion time, and how long it took for the report to run. You can also see the details of the job to determine what caused the failure, or how many records were processed.



For details about specific edit options for schedules, please see the Archives and Schedules section of this document.

User Defined Fields

You can create any number of user-defined fields to contain data specific to individual Informer users. These fields, along with the standard user fields described in the Runtime Keywords Appendix, may then be used within report selections to implement row-level security.

Creating User Defined Fields

Administrators manage user defined fields through the User Fields tab in the administration module. A list of existing user defined fields is provided in the User Fields listing. To edit an existing field, simply click the Field Name in the listing. To create a new field, click the New User Field action in the User Fields action bar. The following options are available for field definition:

Field Name: choose a name for your user field. This name should be a simple word or phrase (without spaces) that you will use to reference the data. For example, a user-defined field named "department" would be referenced in report selections as "{user.department}". The name is case insensitive.

Label: how the field is displayed to end users within Informer in the user maintenance screen, selection criteria, and as a parameter

Description: verbose description defining the purpose of the user field

Default Value : value assigned to all users for this field unless otherwise specified on their user record

Auto Suggest Type : describes how Informer should provide auto suggestions for this field. If you select None, Informer does not provide auto suggestions. If you select Use Previous Values, Informer uses the set of all existing values for this field to populate auto suggestions. If you select Code File, Informer uses the keys and values from the specified Code File to populate auto suggestions.

For more details about how Informer makes use of User Defined fields throughout the application, please see the Security section of this document.

Code File Management

Code Files, sometimes referred to as validation tables, are code/description pairs associated with one or more properties. These code/description pairs are known to be the only valid values for a specified property. Some database models support code file definitions internally, such as the U2 family of databases. Informer supports both database code files and custom code files defined by Informer administrators. Both code file types behave the same for end users. Administrators manage code files through the Code Files tab in the administration module.

Creating a New Datasource Code File

To create a new datasource code file, click the New Datasource Code File action in the Code Files action bar. This pops the New Datasource Code File which prompts for:

Name : name of the code file

Description : description of the code file as displayed within Informer

Datasource : datasource containing the table from which code file values are retrieved

Click Save and Edit to enter the edit screen for the datasource code file you just created. The following values are prompted in addition to those supplied in the New Datasource Code File dialog:

Code File Table : the table in the selected datasource containing the records from which the code file will be built

Table Format : the Informer driver associated with the code file Table Format. Available drivers will vary among implementations. If you are uncertain which Table Format Type to choose, please speak with your administrator. In general, the Custom Code File provides the most open format.

You must provide the attribute value for both the Code and Description in the Code Location and Description Location textboxes, respectively. If the dictionaries selected are multivalued, select the Multivalued checkbox.

If you need to filter the code file selections based on a custom select statement, select the Use Custom Select Statement checkbox to enable the Custom Select Statement textbox. This is useful if you need the code file to only return specific rows from the selected Code File Table. For example, if you maintain a COURSE table with a field ACTIVE containing Y for active and N for inactive, you can create a custom code file to only include active courses by specifying a custom select of SELECT COURSE WITH ACTIVE EQ "Y". Be sure the keys returned from the custom select statement are valid for the table defined as the Code File Table.

Creating a New Custom Code File

To create a new custom code file, click the New Code File action in the Code File action bar. This pops the New Code File which prompts for:

Name : name of the code file

Description : description of the code file as displayed within Informer

Click Save and Edit to enter the edit screen for the custom code file you just created.

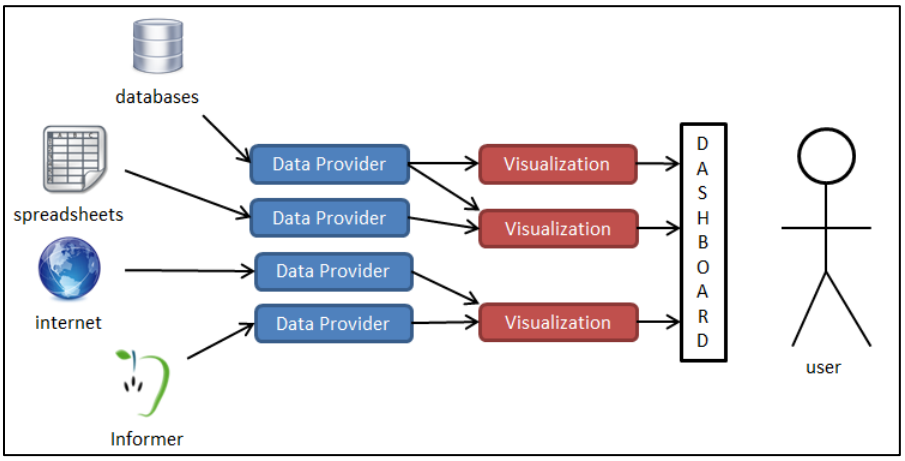
A custom code file requires you to provide the code/description pairs manually. Custom Code Files are especially useful for associating particular users with known internal values. For example, let's say individuals within your internal sales team are assigned particular regions by State. In this case, it may be useful to create a custom code file named State and assign code/description pairs as, for example, NY/New York, etc.

To add code values, enter text in to the Custom Codes Code and Description textboxes and click the + sign to the right of the entry. To remove a particular code/description pair, click the – sign to the right of the entry. Once you've completed entering all possible code/description pairs, click Save and Close to save your custom code file.

Creating Dashboards

Starting your dashboard

If you are beginning to create a new dashboard you should already have an idea of what data you need to acquire and how you wish to display that data. Dashboards are essentially collections of data providers and visualizations. Data providers capture information from all kinds of different environments. Data providers can return data from a database, the internet, an Informer report, or any number of other places. Once a data provider has captured the information it is able to feed this data to one or more different visualizations. Once you have added your first visualization that pulls data from a data provider, you have a view-able dashboard!



Dashboard Viewer

When you first click on a dashboard from the dashboard list page, or when you click on the "view" link next to a dashboard name, you will be presented with the Dashboard Viewer page. This is the page that the users will go to in order to see the visualizations for a dashboard. From this page, users will also have the option to refresh the data contained in data providers (if the dashboard creator has allowed the data provider to be refreshed), view the underlying data of a dashboard, and apply filters to the data. To get to any of the options below, either click on or drag out the control panel on the left-hand side of the screen.

Edit

This button will take you to the dashboard edit page. You will only see this button listed on the control panel if you have access to edit the dashboard. If this button does not appear, you should ask your administrator to grant you edit permissions.

Embed

This button will present you with options to embed your dashboard into another webpage. For more information see our section on Sharing your Dashboard.

Refresh

This button will refresh all the data in each of the data providers, and re-draw all the visualizations. Be aware that if your data providers are running database queries, clicking this button will cause each of these queries to run.

Auto Update

This option will poll the server for changes to the dashboard. This feature is useful if any of the data providers are updated on a schedule or if visualizations change frequently. Please note: **Auto update does not cause any of the data providers to refresh.**

Dashboard Editor

The Dashboard Edit page will be where you add data providers and visualizations to your dashboard. You can reach this screen by either clicking on the "edit" link from the dashboard listing page, or by clicking on the "Edit" button from the Dashboard Viewer Control Panel.

Save

Remember to save often! Adding a data provider or dragging a visualization onto the canvas does not save your dashboard. You will have to click this button after performing any of these actions if you wish to save your changes. This is also true when changing the configuration options for any visualization; clicking "Apply" from the configuration screen will not save the changes, you must also click this save button.

Delete

Clicking this button will delete the dashboard permanently. You will only see this option if you have permission to delete the dashboard.

Cancel

The Cancel button will take you back to the Dashboard Viewer page without saving any of the changes you have made since the last time you clicked "Save".

Options

Edit dashboard name and description

This will allow you to change the dashboard name and description. The changes will only take effect once you save your dashboard.

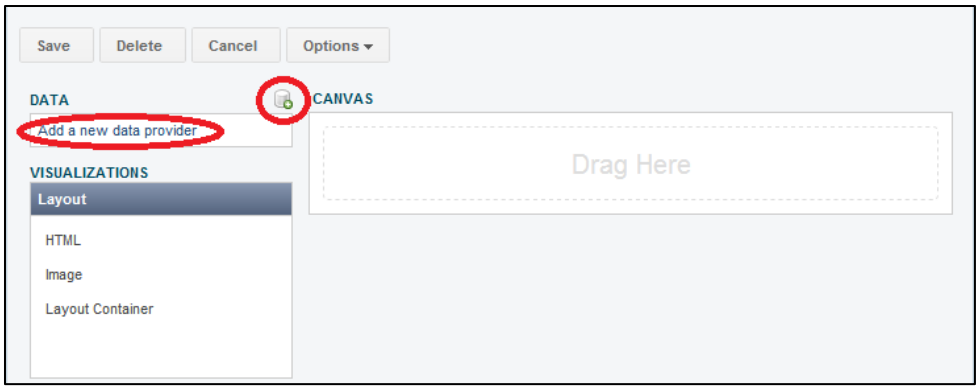
Clear Canvas

This will remove all visualizations from your dashboard.

Adding Data Providers

Data providers are the conduit through which a dashboard receives data from outside sources. These outside sources can be Informer reports, external databases, or internet resources. All visualizations will require one or more data providers. You cannot link a visualization directly to an Informer report or database, it must go through a data provider first.

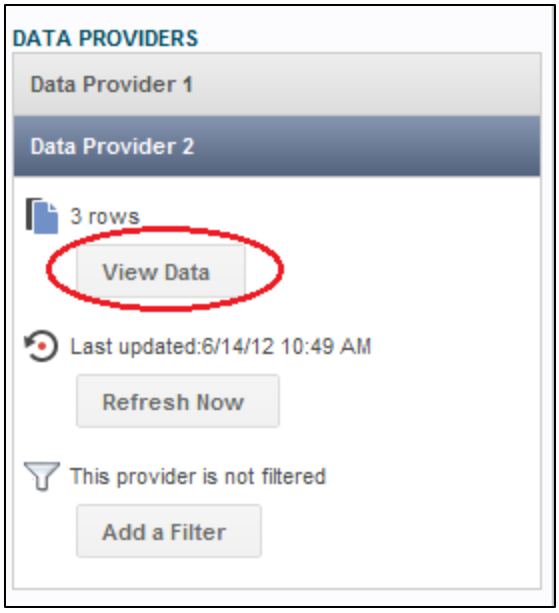
To add a new data provider, edit your dashboard, and select either the "Add a new data provider" link (if you don't already have at least one data provider on your dashboard), or select the add new data provider icon:



Once you click to add a new data provider, you will be presented with a list of available data providers. This list may look different depending on the installed plugins for the Informer installation, you may also have additional data providers listed depending on the existing data providers for the dashboard:

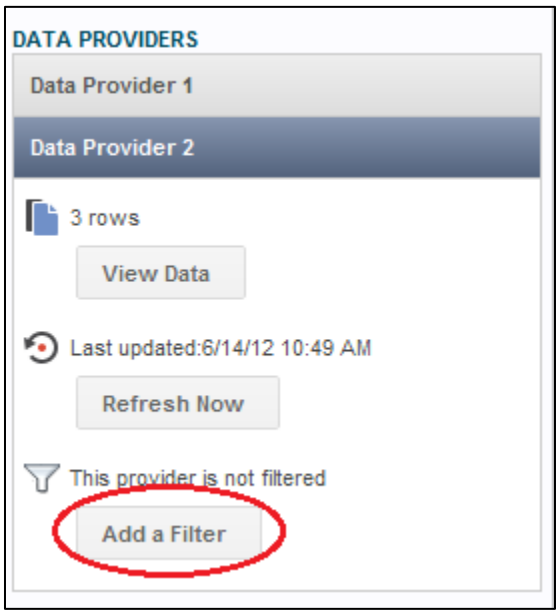
Viewing Data

You can view the raw data returned by any data provider from the Dashboard Viewer page by clicking on "Data..." then "View Data" under the desired data provider. The resulting screen will be a Data Table that contains all the raw data returned by the data provider.



Filtering Data

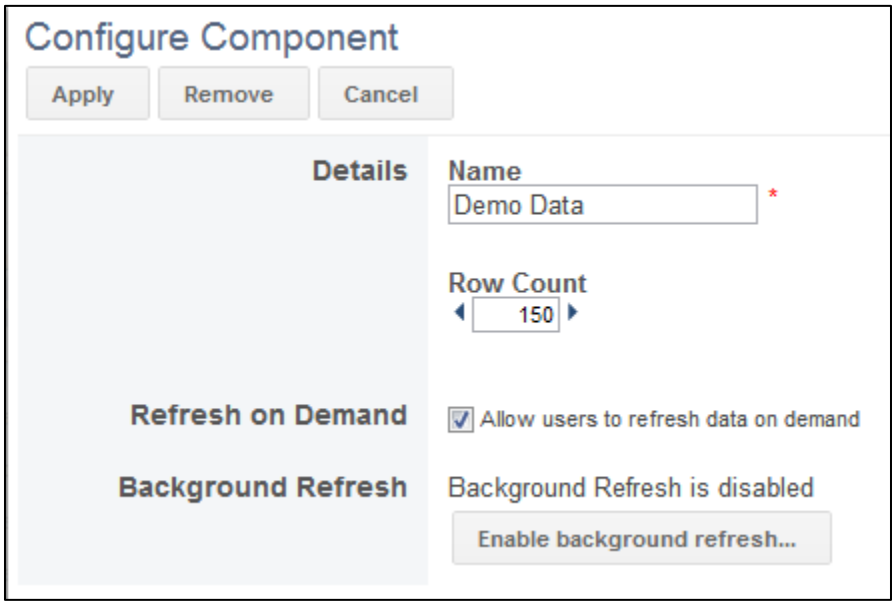
There are several ways to filter your data, you can use the filtered data provider, you can use User Filters, or you can use input control visualizations. Use the filtered data provider when you wish to allways have your data filtered a certain way. If you want your users to each have a custom view of the data (a customized filter) you should use User Filters. User filters are created by individual users (dashboard viewers). Your users can access this feature by clicking on the "Data..." button from the Dashboard Viewer page, then clicking on "Filter" under the desired data provider.



Once the user clicks on "Filter", they will be presented with the configuration screen. Here they can setup different criteria for the data returned by a provider. This filter will only effect the user that creates it, and will no effect the view of the dashboard for any other user. This filter will be applied to all visualizations that use the provider for that user.

Refreshing Data

When you first add a data provider to your dashboard, the data is collected and shared among all users. That data is not refreshed until a user manually refreshes the data, or it is scheduled to refresh on its own. Once any user refreshes the data provider, the data is updated for all users. When a data provider is schedule to refresh, the same is also true, the data is refreshed for all users. These are the two options you are presented with for any data provider, Refresh on Demand, and Background Refresh. You can configure these options by clicking on the data provider from the Dashboard Edit page. You are also presented with these options when you first add any data provider.



Refresh on Demand

If this checkbox is checked, it will allow users to refresh data from the Dashboard Viewer page by clicking on "Data..." then "Refresh" under the desired provider. This is useful if you want

users to be able to see up-to-date information, but should be avoided if the data provider query puts a significant strain on your database.

Background Refresh

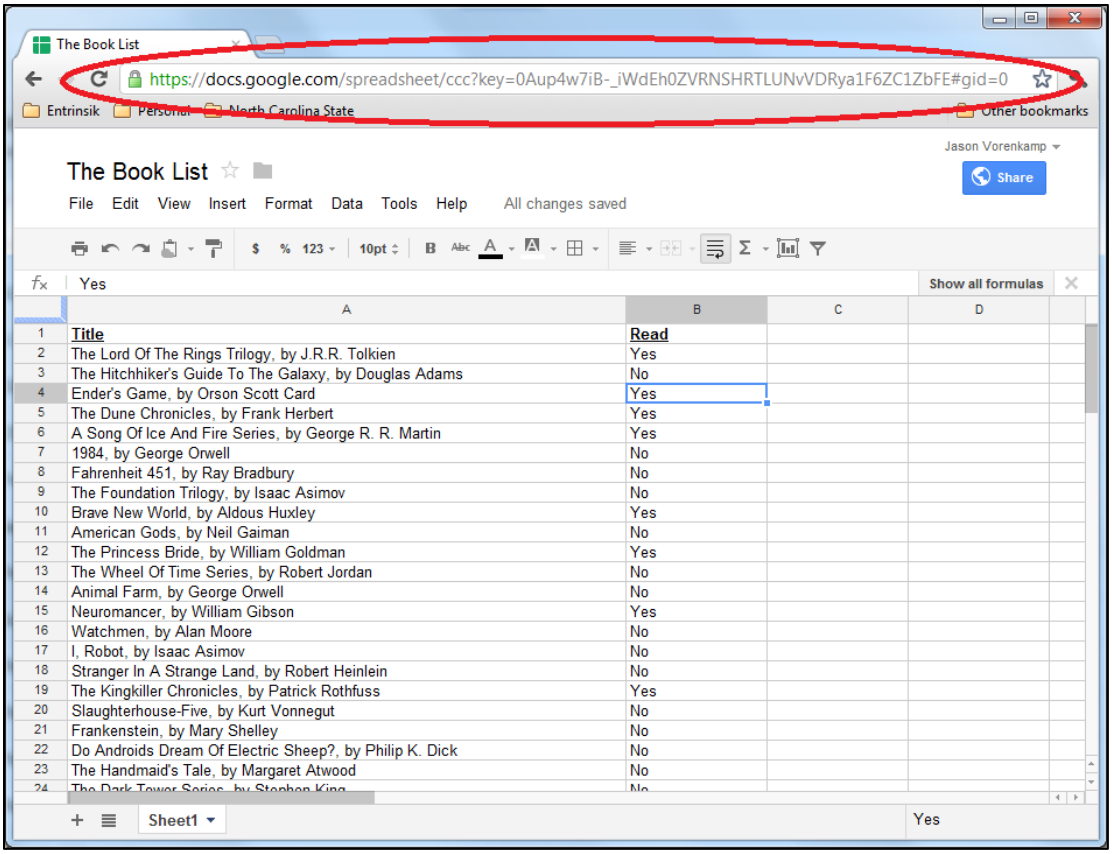
This option will allow you to set this data provider to refresh on its own based on a regular interval. This option is most useful when you have refresh on demand disabled. For data providers that run large cumbersome queries against your database it is best to disable refresh on demand, and enable background refresh to happen when the database is mostly idle (after normal working hours for example). This way users see data that is up-to-date based on your scheduled interval.

List of Data Providers

Google Spreadsheet Data Provider

Informer is capable of connecting with Google Docs and retrieving data from a Google Docs spreadsheet to use in any of our visualizations. By leveraging the Google Data Protocol we can access data stored on the web through Google supplied APIs. To setup this connection to Informer you will first have to create a Google Docs spreadsheet, or open an existing spreadsheet in a web browser. For additional help on how to use Google Docs you can visit the Google Docs Help page.

Once you have created or opened your spreadsheet, you need to copy the URL



Notice in the above screenshot that the URL is the following:

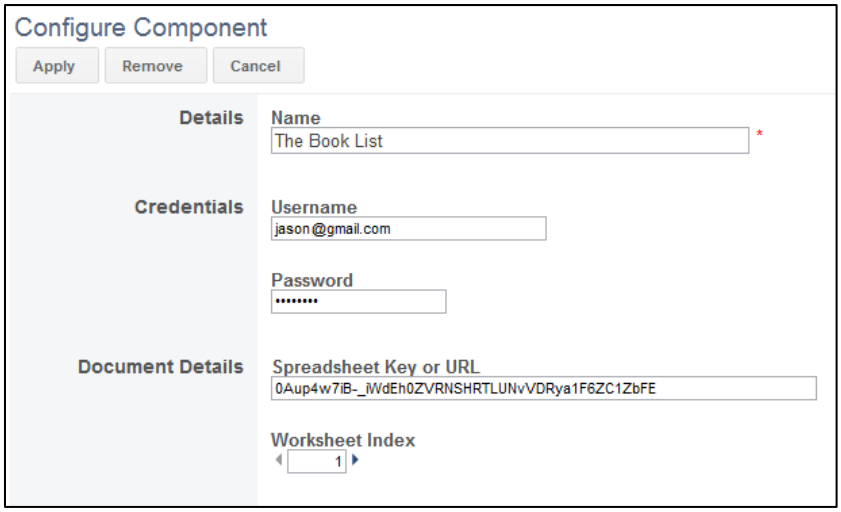
```
https://docs.google.com/spreadsheet/ccc?key=0Aup4w7iB-_iWdEh0ZVRNSHRTLUNvVDRya1F6ZC1ZbFE#gid=0
```

When you add a Google Spreadsheet Data Provider, you will be asked for the key. The key in this example is:

```
0Aup4w7iB-_iWdEh0ZVRNSHRTLUNvVDRya1F6ZC1ZbFE
```

If you wish to use the URL instead of the key, you must remove any options from the end of the URL:

```
https://docs.google.com/spreadsheet/ccc?key=0Aup4w7iB-_iWdEh0ZVRNSHRTLUNvVDRya1F6ZC1ZbFE
```

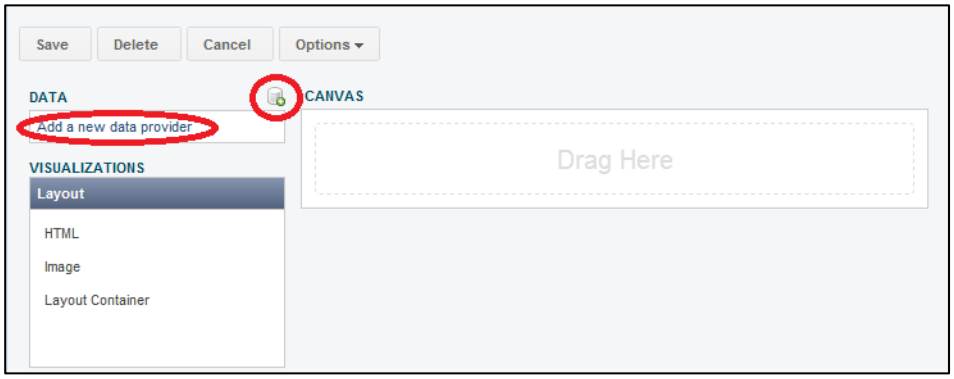


Informer Report Data Provider

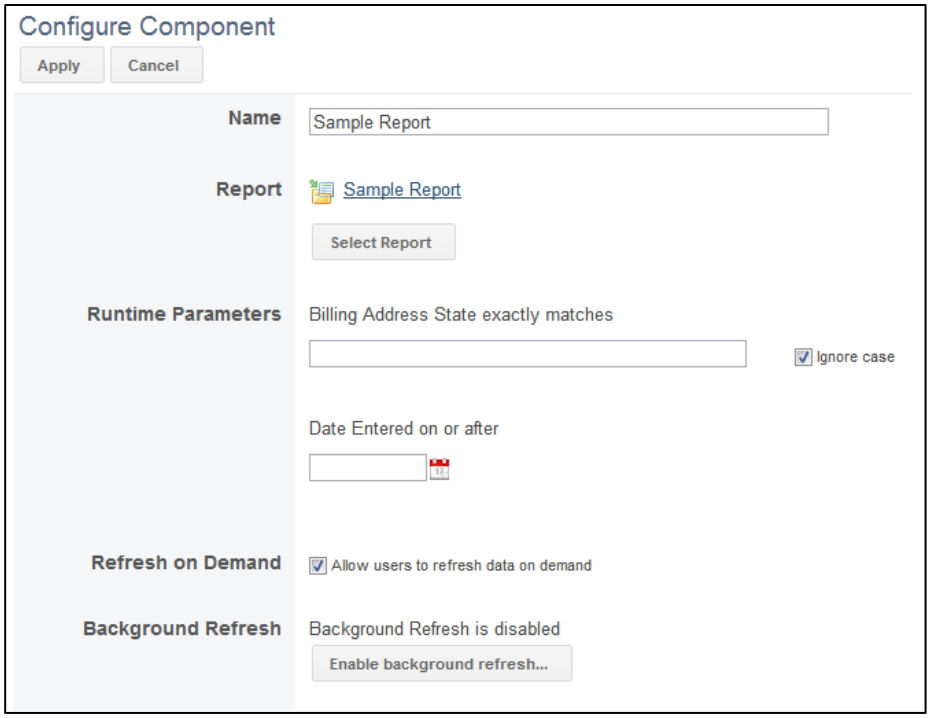
The Informer Report data provider allows you to take the result set returned by a report and use that data set in visualizations for your dashboard.

Adding an Informer Report data provider

1. To use the results of an Informer report in your dashboards, you will first need to create a report. For help with creating Informer reports see the page on "Report Overview".
2. Once you have your report, edit your dashboard and select "Add a new data provider" if you don't have any already, or click on the add data provider icon as shown here:



3. Choose the "Informer Report" data provider under the "Informer" category.
4. You will now be presented with the data provider configuration screen. From here click on the "Select Report" button and choose your report.
5. You can now fill in the rest of the configuration options:



Component Configuration

- **Name**: This is the name of your data provider. You will see this name listed when you choose data providers for your visualizations. This name can be different from the report title.
- **Report**: This report will supply the data set for this provider.
- **Run time Parameters**: Just like setting up a schedule, Informer is going to automatically run this report when the data is requested. Therefore, Informer needs to know what values you want to enter for any prompts in your report. Remember, if you leave them blank it will skip over that selection!
- **Refresh on Demand**: See our explanation on the Adding Data Providers page
- **Background Refresh**: See our explanation on the Adding Data Providers page

Filtered Data Provider

The filtered data provider is special because it doesn't provide data on its own, but rather provides further filtered data from another data provider. For this reason, you will not see the filtered data provider listed unless you already have an existing data provider on your dashboard.

There are several ways to filter your data, using the filtered data provider is one of those ways. However, you should only use the filtered data provider when you wish to always have your data filtered a certain way. If you want your users to each have a custom view of the data (a customized filter) you should use User Filters. If you want to filter your data for different values as you view your dashboard, then you should use input control visualizations.

Adding an Informer Report Data Provider

1. First, you must add a data provider to your dashboard if you don't already have one. Please see Adding Data Providers for help with this.
2. Once you have added a data provider, you will now see two additional options on the New Data Provider panel: "Filtered Data" and "Analytics"
3. Choose "Filtered Data" and fill in the configuration options.

Component Configuration

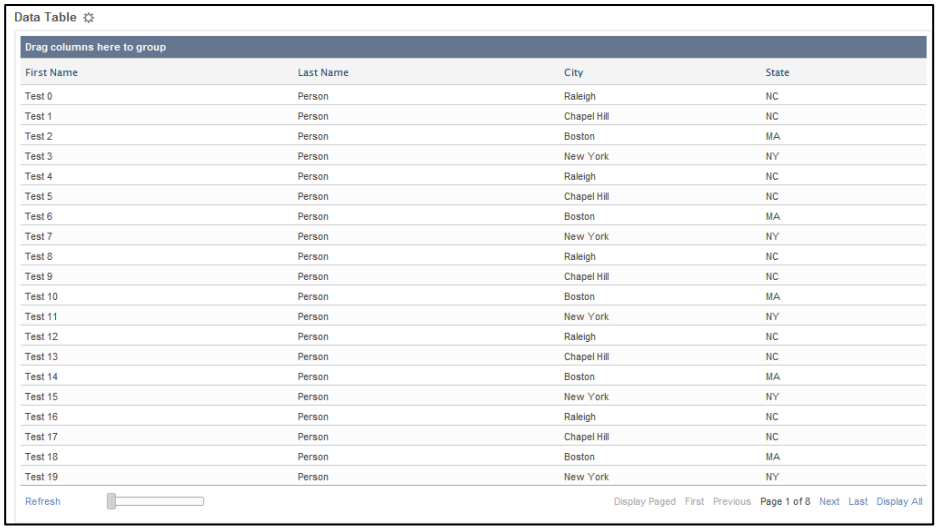
- **Name**: This is the name of your data provider. You will see this name listed when you choose data providers for your visualizations. This name can be different from the report title.
- **Refresh on Demand**: See our explanation on the Adding Data Providers page
- **Background Refresh**: See our explanation on the Adding Data Providers page
- **Data Provider**: This data provider will supply the raw data to our filtered data provider, which will then filter the raw data according to your criteria.

Filter

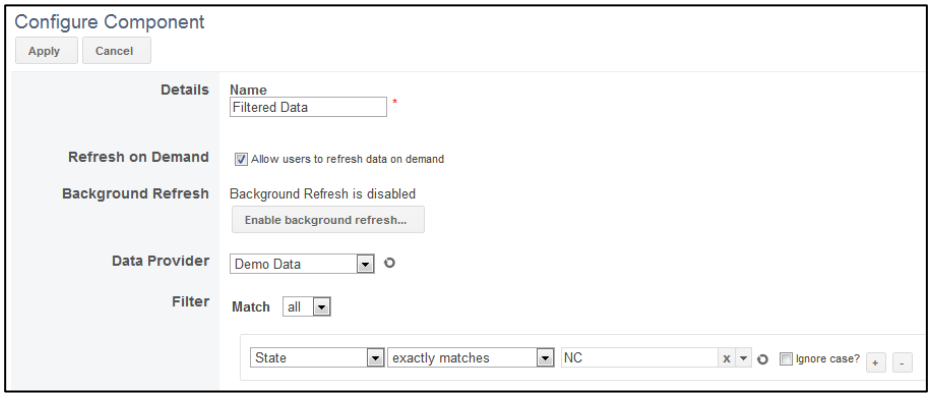
The filter section is where you define the criteria that the data has to match. First you must decide if you want the data to match all of your criteria or just some of the criteria. Once you have selected this, you can add one or more criterion. Once you choose a property, the conditions will change to match the property data type. You are allowed to use run time date keywords or user defined fields in this area. You can add or remove criteria by clicking on the + and - buttons next to each one.

Example

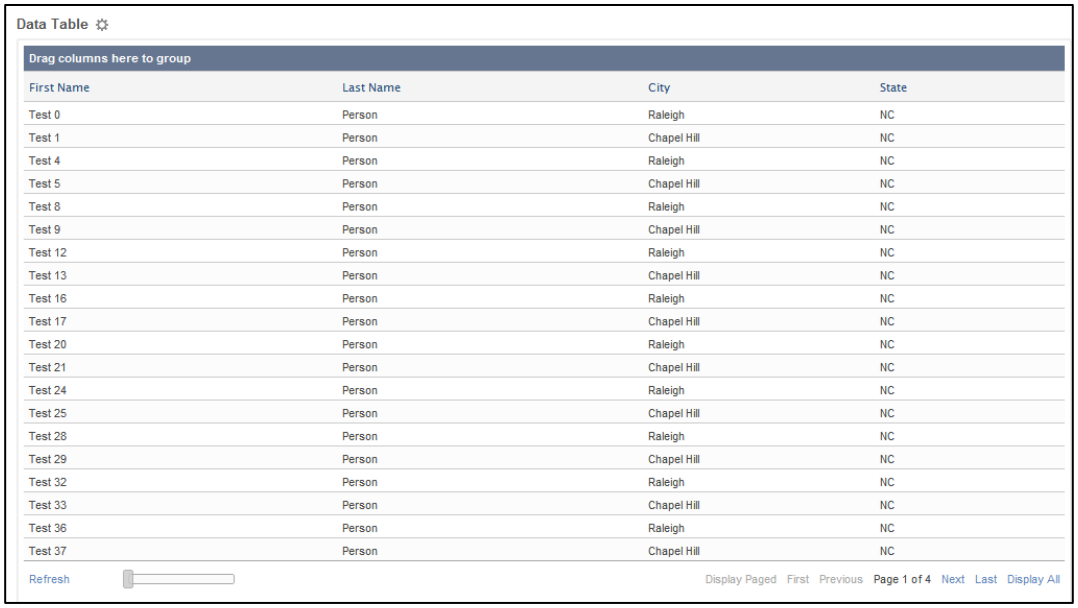
1. The very first thing will we do in this example is add an Informer Report Data Provider to our dashboard
2. Next, we will create a Data Table showing all the data returned by that report:



3. However, we do not want to see information in people from states other than North Carolina, so we add another data provider, this time we add a filtered data provider, and give it one criteria that the state must exactly match North Carolina:



4. We now go back to our data table configuration, and switch the data provider from the Informer report to the filtered data provider, the resulting data table will now look like this:



Filter Chaining

If you need to combine an "any" and "all" filter, you can accomplish this by creating a new filtered data provider and selecting your first filter as the data provider for the second filter.

Analytics Data Provider

The analytics data provider is special because it doesn't provide data on its own, but rather provides analytical data from another data provider. For this reason, you will not see the analytics data provider listed unless you already have an existing data provider on your dashboard.

Adding an Analytics Data Provider

1. First, you must add a data provider to your dashboard if you don't already have one. Please see Adding Data Providers for help with this.
2. Once you have added a data provider, you will now see two additional options on the New Data Provider panel: "Filtered Data" and "Analytics"
3. Choose "Analytics" and fill in the configuration options.

Component Configuration

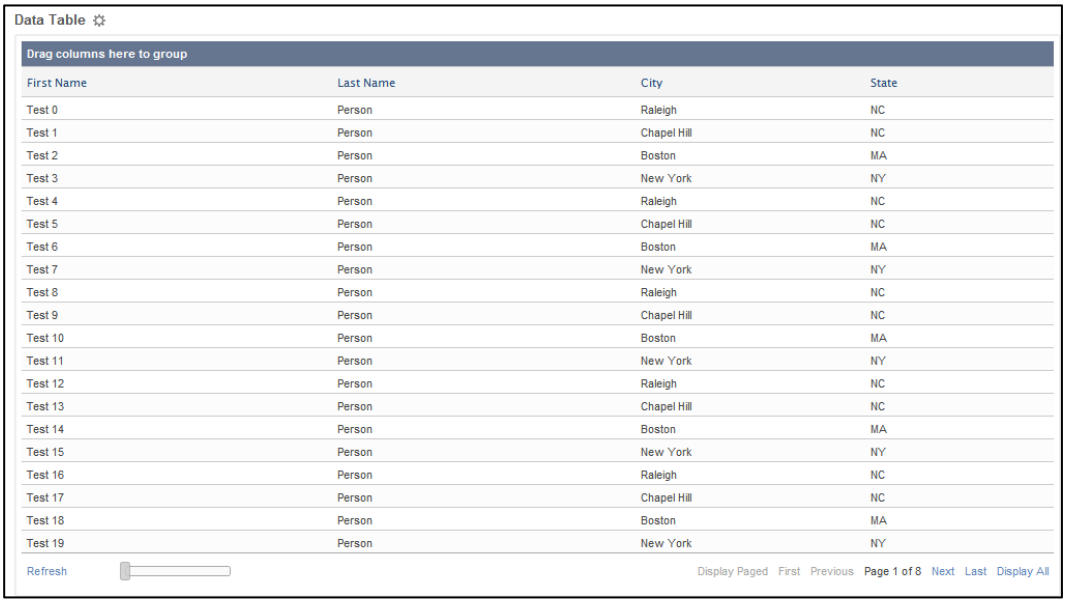
- **Name**: This is the name of your data provider. You will see this name listed when you choose data providers for your visualizations. This name can be different from the report title.
- **Refresh on Demand**: See our explanation on the Adding Data Providers page
- **Background Refresh**: See our explanation on the Adding Data Providers page
- **Data Provider**: This data provider will supply the raw data to our analytics data provider, which will then show a summary of the raw data according to your column selection.

Columns

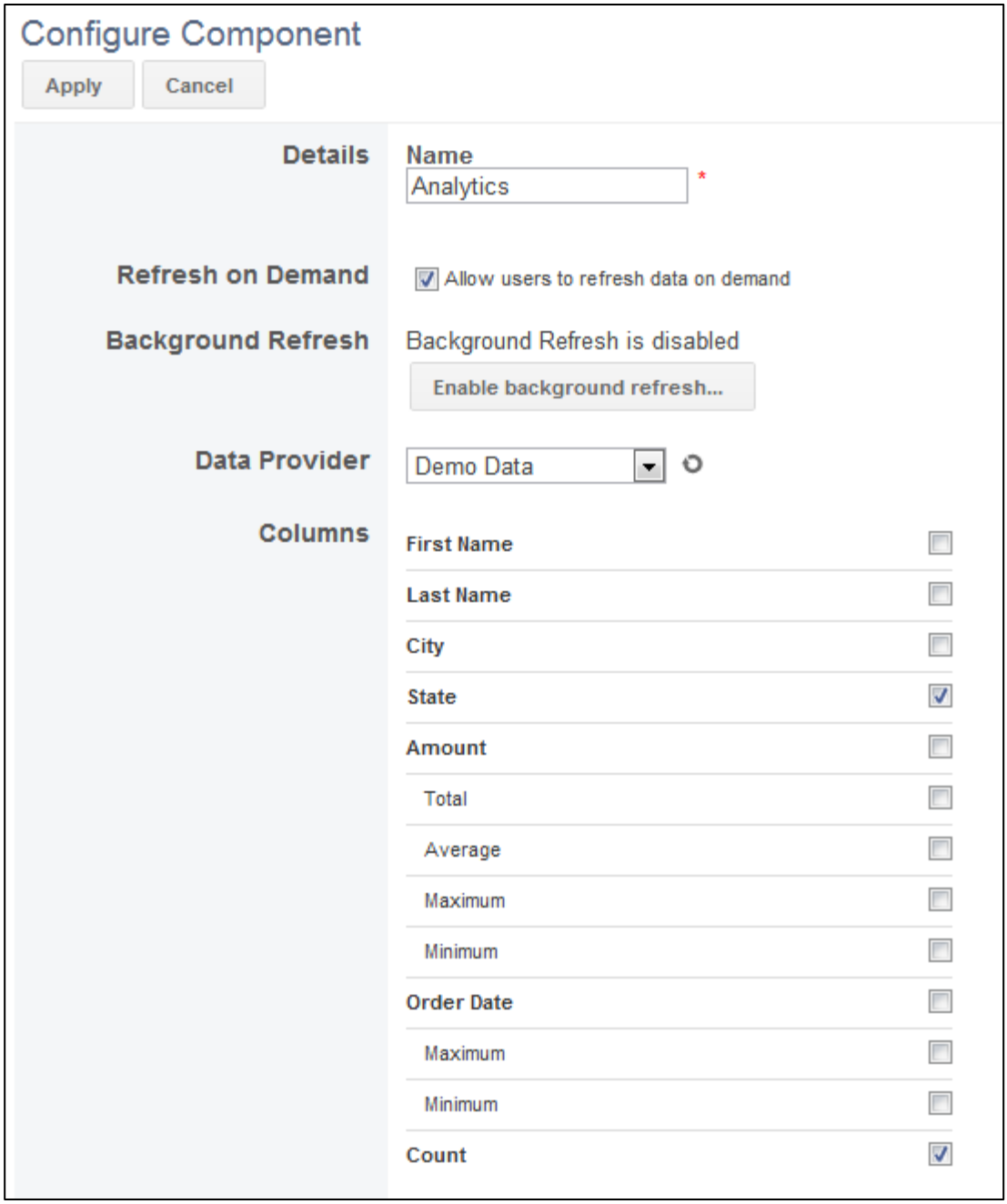
Once you select your data provider, you are presented with a section that looks very similar to the analytics tab of your report results page. This data provider will allow you to save an analytical view of your data to use in other visualizations. For more information on how to setup your columns, see our documentation on Analytics.

Example

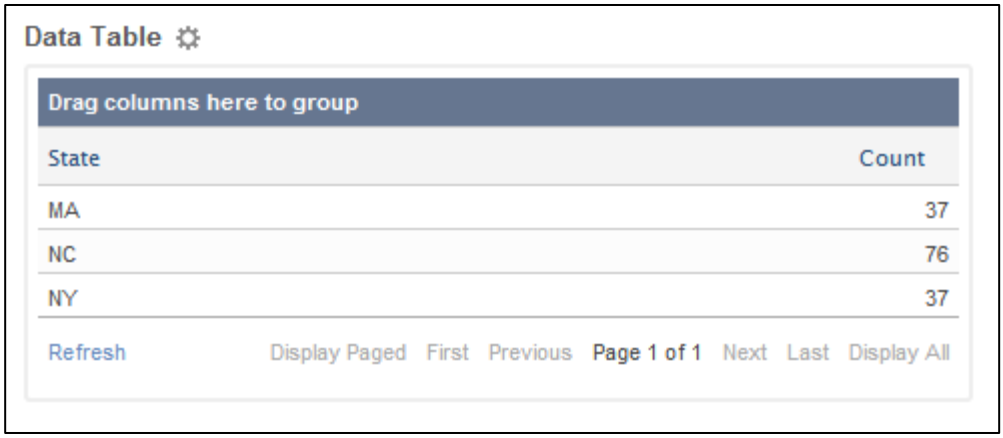
1. The very first thing will we do in this example is add an Informer Report Data Provider to our dashboard
2. Next, we will create a Data Table showing all the data returned by that report:



3. However, we do not wish to see each person contained in the data set, we only wish to see how many people are from each state. To do this we will add a new analytics data provider, using our initial report as the source, and check off "state" and "count":



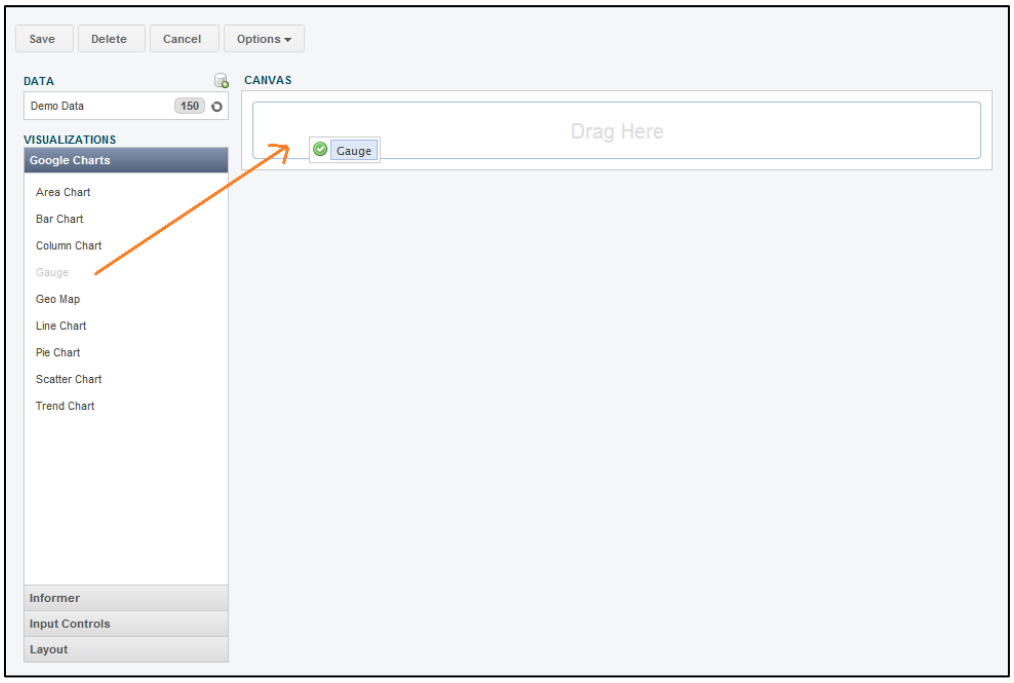
4. We now go back to our data table configuration, and switch the data provider from the Informer report to the analytics data provider, the resulting data table will now look like this:



Adding Visualizations

Visualizations take the data returned by data providers and transforms that data into useful graphics and animations. All visualizations will require one or more data providers. If you have not added any data providers, many of the visualizations will not even show up in the list of available options. Your first step should always be to add a data provider.

To add a visualization to your dashboard, simply drag the visualization from the left-hand menu and drop onto the canvas.



Most visualizations will be blank when you first add them to your canvas. You have to configure your visualization before it will show appropriate data. To configure any visualization simply click on the gear next to the title:

List of Visualizations

Gauge

The Google Charts Gauge visualization will render one or more gauges in your dashboard. This type of visualization is useful if you are keeping track of a certain activity that has a goal state. The client browser must have live access to http://www.google.com/jsapi in order to use the gauge.

Component Configuration

Name: This is the title displayed at the top of the visualization when viewing the dashboard.
Width: The width of the entire widget
Height: The height of the entire widget
Data Source: This is the data provider you will be pulling your data from. In the example below we use an Informer Report Data Provider, but you can use any type of data provider here.
Use Aggregates: Keep this box checked to show the aggregate values per group. Otherwise you will get a gauge for each row in your data set.
Group By: This will be the entity that each gauge represents.
Value: This will be the value each gauge represents.
Thresholds: Here you can assign the range of values that each of the colors will represent.

Example

In this example, we are going to track the number of sales made by each of our salesmen. Our CRM System keeps track of all the sales made, and we know that each salesperson's quota for the quarter is 50 sales.

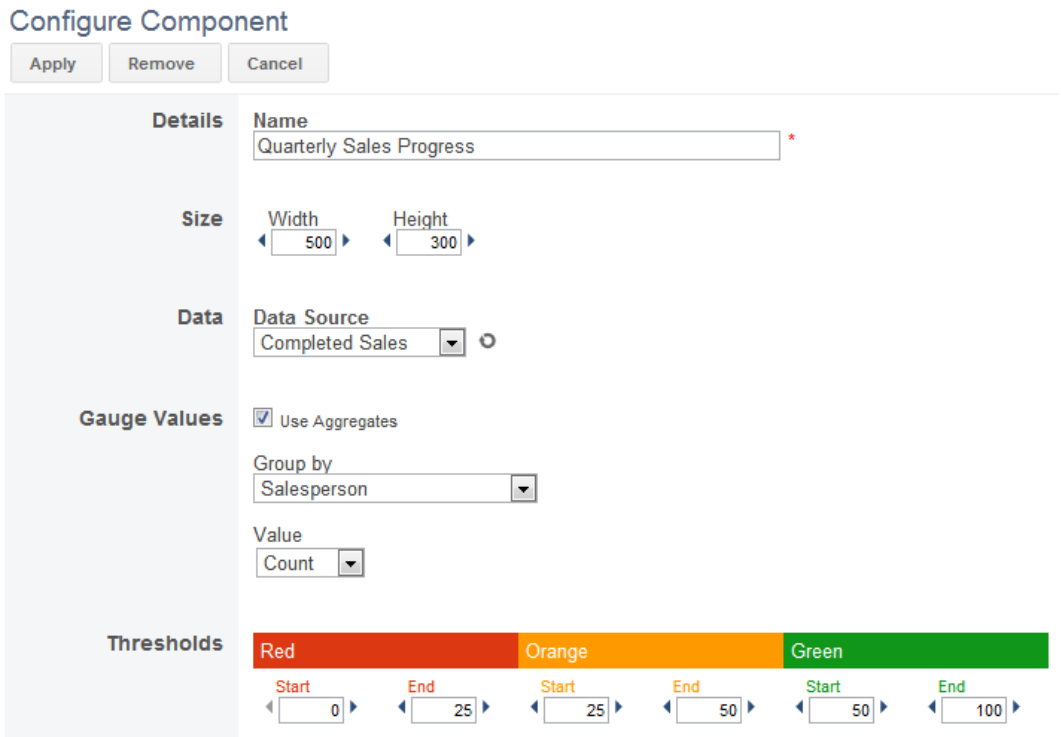
1. First we make a report that shows each of the sales made this quarter and who was the assigned salesperson.

Report Results

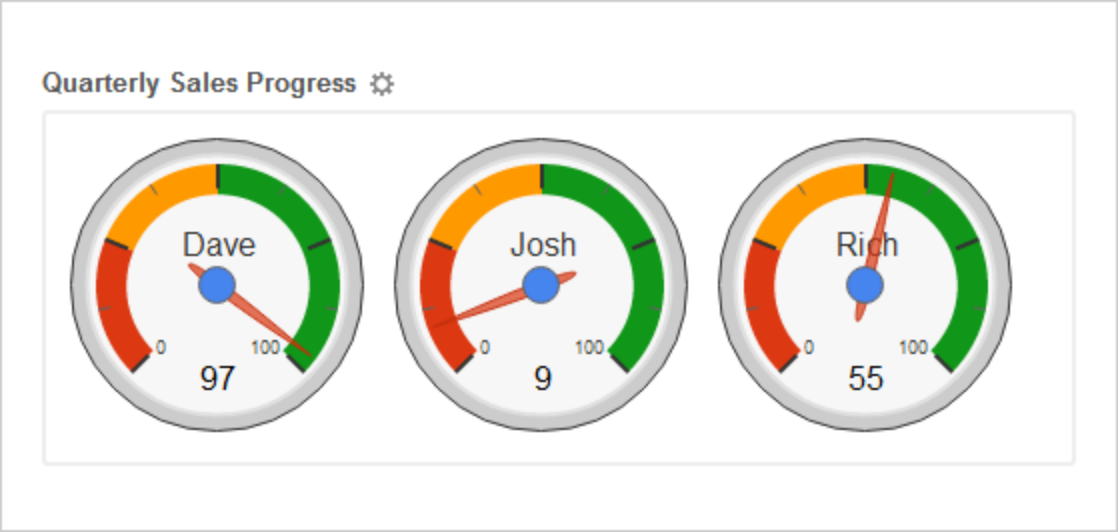
Refresh | Clear Filter | Drag columns here to group

Salesperson	Sales Stage	Amount	Anticipated Close Date
Rich	Closed Won	$13,500.00	May 5, 2008
Dave	Closed Won	$2,500.00	Nov 2, 2010
Rich	Closed Won	$13,500.00	Feb 22, 2008
Dave	Closed Won	$15,000.00	Jun 30, 2009
Dave	Closed Won	$16,200.00	Aug 31, 2010
Rich	Closed Won	$24,750.00	May 6, 2009
Josh	Closed Won	$17,500.00	Aug 31, 2011

2. Once we have our report, we can add an Informer Report Data Provider linking our report to a dashboard.
3. We are now ready to add the Gauge visualization to our canvas. Simply select the "Google Charts" category from the visualizations menu, and drag the "Gauge" visualization into the canvas.
4. You should now be presented with a blank gauge window.
5. Click on the gear icon next to the gauge title, and you will be presented with the configuration window.



We set the color thresholds manually, I chose 50 as the beginning of green because that was our quota for each salesperson. When I save my configuration, this is what the gauge will look like:



Google Charts

The Google Charts visualization will render your data into one of several different chart types: Line, Area, Bar, Column, Pie chart. Even though these different charts are listed separately from the visualizations list, they are really all the same visualization with different display options. The client browser must have live access to http://www.google.com/jsapi in order to use Google charts.

Component Configuration

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.

- **Type**: The type of chart you wish to display
- **Display**: The style of chart you wish to display

- **Width**: The width of the entire widget
- **Height**: The height of the entire widget

- **Data Source**: This is the data provider you will be pulling your data from. In the example below we use an Informer Report Data Provider, but you can use any type of data provider here.

- **Use Aggregates**: Keep this box checked to show the aggregate values per group. Otherwise each row will be considered a unique value.
- **Group By**: This will be the value represented by each line, column, bar, or pie slice.
- **Value**: This will be the value given to each group.
- **Decimal Places**: If any of your values contain decimals, you can define how many decimals you wish to display here.
- **Range**: If you do not wish to show all values in your chart, you can choose a subset of values to show here. Either a certain amount from the top values, or a certain amount from the bottom values.

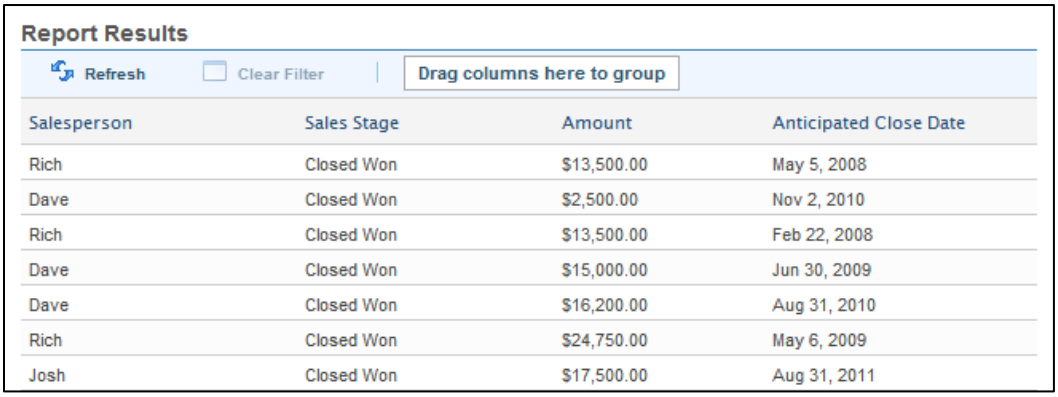
- **Baseline:** Here you can set the baseline for your chart. The default baseline is zero. The value you set here will be the starting point of values on your chart's axis.
- **Ordering**:
    - **Alphabetical**: Order groups from left to right, based on group name
    - **Reverse Alphabetical**: Order groups from right to left, based on group name
    - **Values Ascending**: Order groups from left to right, based on group value
    - **Values Descending**: Order groups from right to left, based on group value

- **Legend**: These options let you set whether or not to display a legend on your chart, and if you decide to show a legend, it gives you options on where to place that legend in relation to the chart body.

- **Labels**:
    - **Chart Title**: The chart title is not to be confused with the visualization name. The name of the component will appear at the top of the widget. The chart title will appear within the widget, above the chart graphic.
    - **Vertical Axis**: Label for the vertical Axis, this will be the label for the vertical axis no matter what the orientation of your chart is. So if you switch between a bar chart and a column chart you will also want to switch your labels.
    - **Horizontal Axis**: Label for the horizontal Axis, this will be the label for the horizontal axis no matter what the orientation of your chart is. So if you switch between a bar chart and a column chart you will also want to switch your labels.

Example

In this example we want to show who the top salespeople are at our company. So first we create a report that lists each sale for the quarter and who the salesperson is. We then create an Informer report data provider to link our report to the dashboard. Here is what the raw data looks like:



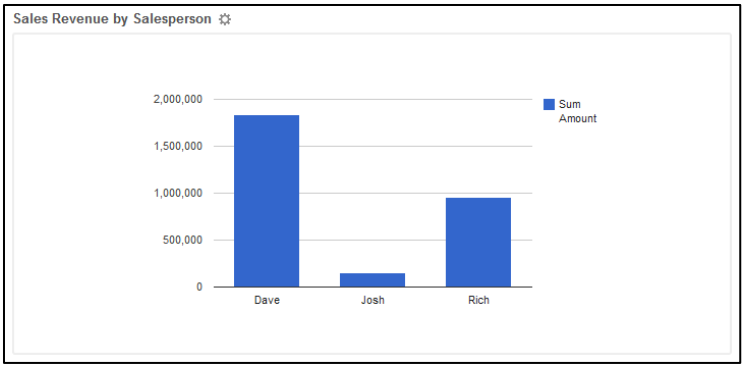
Report Results

Refresh | Clear Filter | Drag columns here to group

Salesperson	Sales Stage	Amount	Anticipated Close Date
Rich	Closed Won	$13,500.00	May 5, 2008
Dave	Closed Won	$2,500.00	Nov 2, 2010
Rich	Closed Won	$13,500.00	Feb 22, 2008
Dave	Closed Won	$15,000.00	Jun 30, 2009
Dave	Closed Won	$16,200.00	Aug 31, 2010
Rich	Closed Won	$24,750.00	May 6, 2009
Josh	Closed Won	$17,500.00	Aug 31, 2011

We now add a Column Chart to our canvas, and setup our configuration:

When we save our configuration, here is the resulting chart:



Geo Maps

A geomap is a map of a country, continent, or region map, with colors and values assigned to specific regions. Values are displayed as a color scale, with hovertext for regions. Please be aware that your region data has to be formatted in a particular way in order to be interpreted by the Geo Map. Click on the question mark next to the Use Aggregates check box on the configuration screen to get a list of available formats. The client browser must have live access to http://www.google.com/jsapi in order to use the geo map.

In most cases, you can make a template or script calculated column in your report data provider to get the data in the appropriate format.

Component Configuration

Details

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.

Chart Type

- **Regions**: The regions style fills entire regions (typically countries or states) with colors corresponding to the values that you assign.
- **Markers**: The "markers" style displays a circle, sized and colored to indicate a value, over the regions that you specify.

Region

This setting defines the area of the world displayed by your Geo Map.

Size

- **Width**: The width of the entire widget
- **Height**: The height of the entire widget

Source

This is the data provider you will be pulling your data from. In the example below we use an Informer Report Data Provider, but you can use any type of data provider here.

Chart Values

- **Use Aggregates**: Keep this box checked to show the aggregate values per group. The only reason you would want this unchecked for a Geo Map is if your data is already formatted to show the count per region (i.e. you only have one row in your data for each region).
- **Label**: This needs to be the column that holds the region information. The data in this column has to formatted in a particular way in order for the Geo Map to recognize the different regions. Click on the question mark next to the Use Aggregates check box to get a list of available formats.
- **Value**: This will be the value given to each group. The larger the value the denser the region will be.

Decimal Places

If any of your values contain decimals, you can define how many decimals you wish to display here.

Range

If you do not wish to show all values in your Geo Map, you can choose a subset of values to show here. Either a certain amount from the top values, or a certain amount from the bottom values. For example, you can show only the top 5 most densely populated states. When setting the range, pay attention to what you have set as the ordering. The ordering of the rows occurs BEFORE we take the range, so changing the ordering will also change what values are in the range.

Baseline

This has no use for a Geo Map.

Ordering

Ordering has no effect on the Geo Map unless you have set a range of values. If you have set a range of values ("Top 5 Values" for example), then the ordering will determine which are are considered at the top and which are considered at the bottom.

- **Alphabetical**: Order groups from left to right, based on group name
- **Reverse Alphabetical**: Order groups from right to left, based on group name

- **Values Ascending**: Order groups from left to right, based on group value
- **Values Descending**: Order groups from right to left, based on group value

Legend

This has no use for a Geo Map.

Labels

- **Chart Title**: This has no use for a Geo Map.
- **Vertical Axis**: This has no use for a Geo Map.
- **Horizontal Axis**: This has no use for a Geo Map.

Scatter Chart

A Scatter Chart is used to map correlation between sets of numbers. The client browser must have live access to http://www.google.com/jsapi in order to use the scatter chart.

Component Configuration

Details

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.

Size

- **Width**: The width of the entire widget
- **Height**: The height of the entire widget

Data

- **Data Source**: This is the data provider you will be pulling your data from. In the example below we use an Informer Report Data Provider, but you can use any type of data provider here.

Display Mode

- **Use Aggregates**: Keep this box checked to show the aggregate values per group. Otherwise each row will be considered a unique value, and you will have one dot for each row.
- **Horizontal Axis**: Values to plot along the horizontal axis.
- **Vertical Axis**: Values to plot along the vertical axis.

Trend Chart

The Trend Chart is used to make future predictions based on the flow of data for a particular period of time. You can add multiple data series to a trend chart, and have a regression line for each series; but you cannot have one regression line for multiple series. The client browser must have live access to http://www.google.com/jsapi in order to use the trend chart.

Component Configuration

Details

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.
- **Chart Type**: You are allowed to change this chart to any of the Google Charts types. However, to see your trend analysis you should leave this set to either Area, or Line.
- **Period**: This is where you choose your time steps for the horizontal axis.
- **Width**: The width of the entire widget
- **Height**: The height of the entire widget

Series

This section lists the different data series you have tied to this chart. To add a new series, click on the "New Series..." button. You can also add new series to this chart by clicking on the chart icon on the Dashboard Editor screen, next to the chart name.

Source

This is the data provider you will be pulling your data from.

Label

This is the text that will show up when you mouse over your data line and also in the chart legend.

Chart Axes

- **X Axis**: This is the value that will be plotted along the horizontal axis. This value must be a date field, so only date fields from your data source will be listed.
- **Y Axis**:
- **Decimal Places**: When plotting points on the graph, we will use this many significant digits. When you mouse over points on the graph, the data shown will have this number of decimal places.

- **Show value as running total**: Values from the previous period will be added to the values for the next period and so on. This is useful to check if you wish to see growth of income over time for example.

Group By

Here you have the option of breaking up your data set into multiple series. By grouping on a value, you will produce a different series line for each unique value in a group.

Trend Line

- **Show Forecasting Trend Line as Series on Chart**: Here you can choose to show a trend line for your data set as a whole, or for each group if you decided to group on a value.
- **Forecast Future Values Until**: You can extend the trend line until a particular date in the future. Otherwise it will stop at the last date in the data set.
- **Trending Algorithm**: Here you can choose the trend algorithm for calculating the slope of the trend line.

Data Table

The Data Table visualization mimics the report result screen. It shows your data organized into columns and rows. You can sort and group data contained in this visualization just like you would on the report result screen.

Component Configuration

Name

This is the title displayed at the top of the visualization when viewing the dashboard.

Source

This is the data provider you will be pulling your data from. In the example below we use an Informer Report Data Provider, but you can use any type of data provider here.

Rows

This will be the number of rows displayed per page.

Columns

Here is where you designate which columns are to appear in the data table. Any fields you add can be further formatted by clicking the "Format" button on the right hand side.

Query Monitor

The query monitor will show you the number of connections Informer opens with a particular datasource over time. Please note, this only applies to connections opened through reports, and does not take into any connections to a database made by dashboards.

Component Configuration

Name

This is the title displayed at the top of the visualization when viewing the dashboard.

Datasource

This is the data source the visualization will monitor. Any connections opened to this data source will be listed in the chart.

Query Statistics

The Query Statistics visualization is a summary of different key performance values in Informer.

- **Total Queries Run**: This is the row count from the launchaudit table, and the sum of all the result counts.
- **Average Execution Time**: This is the average execution time for all reports, schedules, and live excels.
- **Worst Performing Report**: It is sometimes useful to review the setup of your worst running report and see if the processing time can be optimized by changing the selection filter or columns returned.
- **Most Enlightened User**: The "Most Enlightened User" is the user that requests the most rows of data from your database(s). You may want to double check with this user and make sure that all queries are necessary and that they are not using up too much database processing time. Users that run the same report multiple times may benefit from learning about Archiving and Scheduling.

Component Configuration

Name

This is the title displayed at the top of the visualization when viewing the dashboard.

Users

The Users visualization will show you a list of currently logged in users, the length of their session time, and their last executed report if one exists.

Component Configuration

Details

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.

Property Filter

A Property Filter is a way to dynamically change the data sets of visualizations by filtering the data on a particular property. A Property Filters can be a Auto-suggest Box, Date Range, Number Range, Number Slider, Select Box, Text Box, or Time Range. When you configure your visualizations, you will have the option set the data source to any pre-existing property filters.

Component Configuration

Details

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.

Width

The width of the selection box in pixels.

Source

- **Component**: This is the data provider you will be pulling your data from. It can also be another Property Filter.
- **Column**: This is the property you will be filtering on.

Input Type

This setting will change the type of Property Filter. When changing the Input Type make sure your column matches your selection (i.e. make sure you have a numeric column selected if you want a number slider)

- **Auto-suggest Box**: This allows the user to select from a list of unique values for the column.
- **Date Range**: Rows returned will have values for the column on within the range selected (inclusive).
- **Number Range**: Rows returned will have values for the column on within the range selected (inclusive).
- **Number Slider**: Rows returned will have values for the column on or after the number selected.
- **Select Box**: This allows you to present to the user a finite number of choices which can be filtered on.

- **Text Box**: This allows the user to enter their on values with no suggestions.
- **Time Range**: Rows returned will have values for the column on within the range selected (inclusive).

HTML

The HTML visualization will render any HTML script in the dashboard area.

Component Configuration

Details

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.

HTML

You can input your HTML script here. We do offer some useful buttons for formatting if you with to display some simple text or pictures.

Image

The Image visualization lets you upload a picture to the Informer web server and display the picture on the dashboard.

Component Configuration

Details

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.

Upload

- **File**: Browse to your file here, the maximum file size is 750 KB

Size

- **Actual Size**: Select this option to display the picture with its original size
- **Custom Size**: Select this option to stretch or skew the picture by a certain number of pixels or percentage.

Layout Container

The Layout Container is a space for you to put groups of other visualizations. Once you put a Layout Container on a canvas, you can then drag and drop other visualizations inside the Layout Contain,

including other Layout Containers. By utilizing this visualization you can better customize the look and feel of your dashboard.

Component Configuration

Details

- **Name**: This is the title displayed at the top of the visualization when viewing the dashboard.

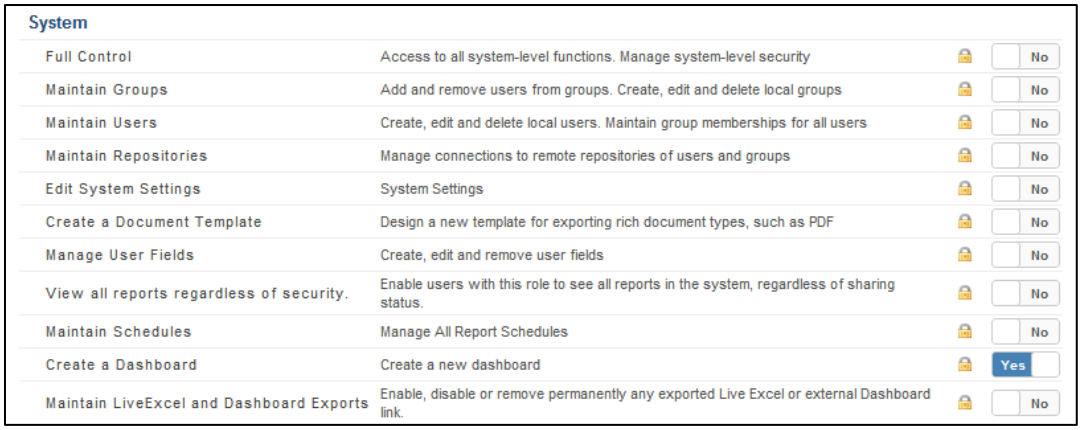
Securing your Dashboard

All users, regardless of their permissions, will be able to see the Dashboards tab on the Informer home screen. However, if they do not have permission to view a dashboard, they will not see that dashboard listed. If you wish to grant a user access to view all dashboards you can set that in the Root Permissions. If you wish to grant a user or group permission to view only a certain subset of dashboards, you will need to edit each of the dashboards and grant the view permission from those dashboards. The same is true if you wish to grant a user or group the ability to edit or delete a dashboard or dashboards.

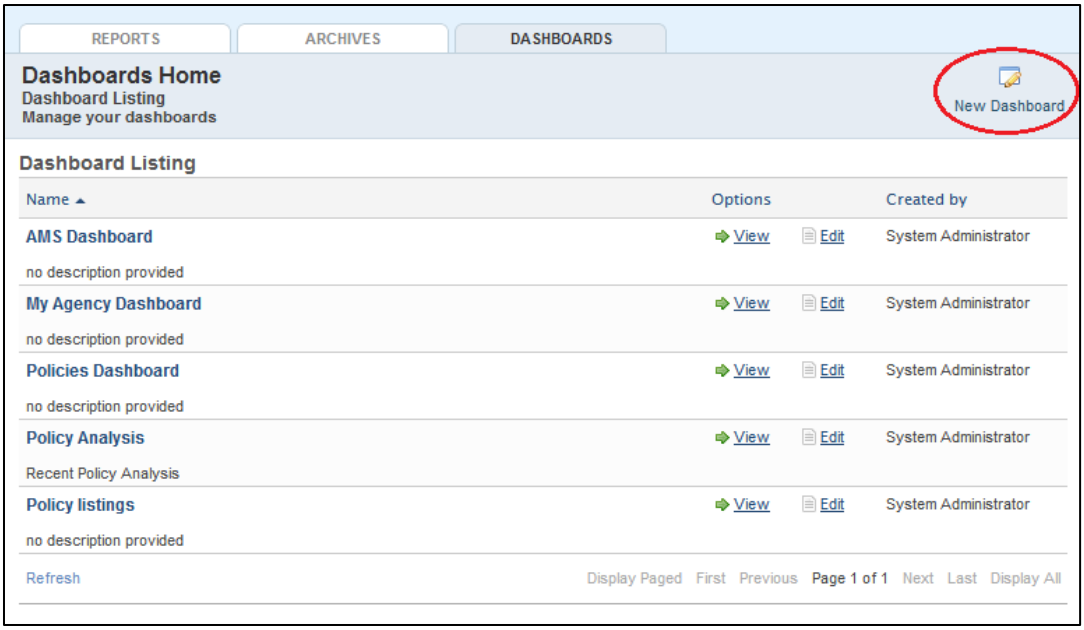
Root Permissions

Creating a Dashboard

If you wish to grant a user or group the ability to create new dashboards, you must set this permission at the Root Permissions page. They only need one permission granted: the "Create a Dashboard" permission.



Once this is granted to a user they will see the "New Dashboard" button when they go to the Dashboard listings page:

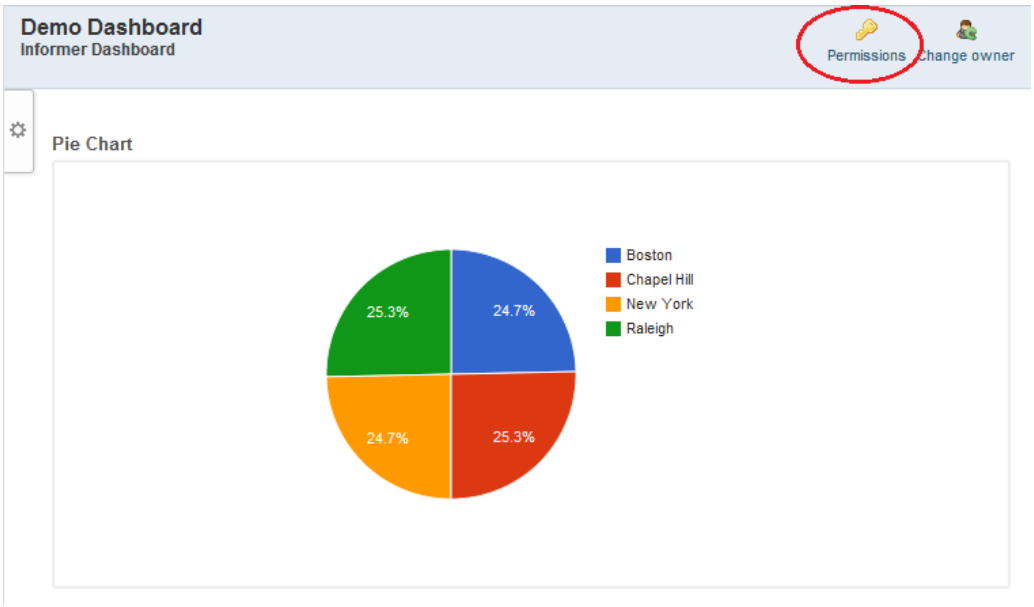


If grant a user or group permission to create dashboards but do not give them permission to edit at the Root Permissions level, they will be stuck on a loading screen each time they attempt to create a dashboard. If you are granting a user or group permission to create dashboards, you need to make sure they either have permission to edit at the Root Permissions level or the OWNER group has permission to edit dashboards at the Root Permissions level.

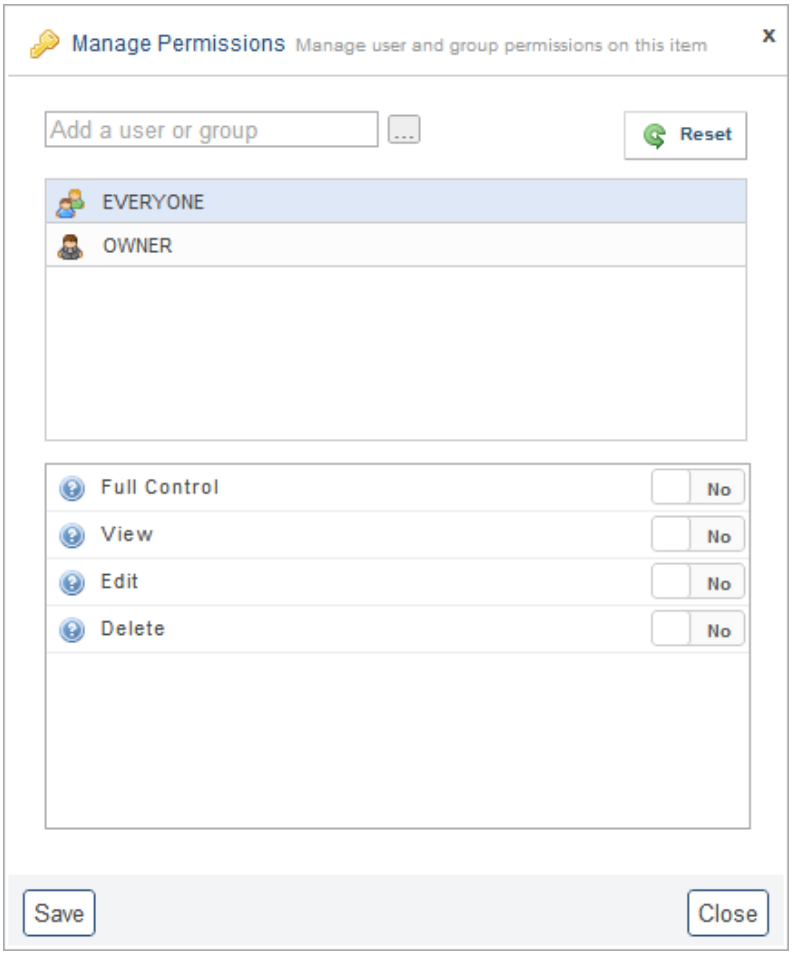
Dashboard Permissions

Full Control

Granting a user or group full control over a dashboard means they will be granted permission to view, edit, delete, and assign permissions to that dashboard. A user will full control over a dashboard will see the Permissions button when viewing or editing that dashboard:



By clicking on the dashboard permission button, you can set permissions on individual dashboards, instead of setting permissions globally on all dashboards from the Root Permissions.



Edit

This permission, when grated to a user or group, will allow that principal to use the control panel and access the Dashboard Edit screen. From this screen they will be allowed to edit and save existing dashboards. If you grant a user the Edit permission, they will also need the View permission. Otherwise they wouldn't be able to see any dashboards to edit.

By granting the edit permission only to the OWNER group at the Root Permission level, you will essentially allow users with the Create Dashboard permission to make and edit their own dashboards, but not be able to change anyone else's dashboards.

View

The View permission will allow users to see a dashboard. It will also allow them to place User Filters on data providers and give them the ability to drill down and see the data underlying any chart on the dashboard.

When creating a dashboard it is important to realize that users who have the View permission for the dashboard will also have access to the underlying data regardless of their other Informer security permissions.

Delete

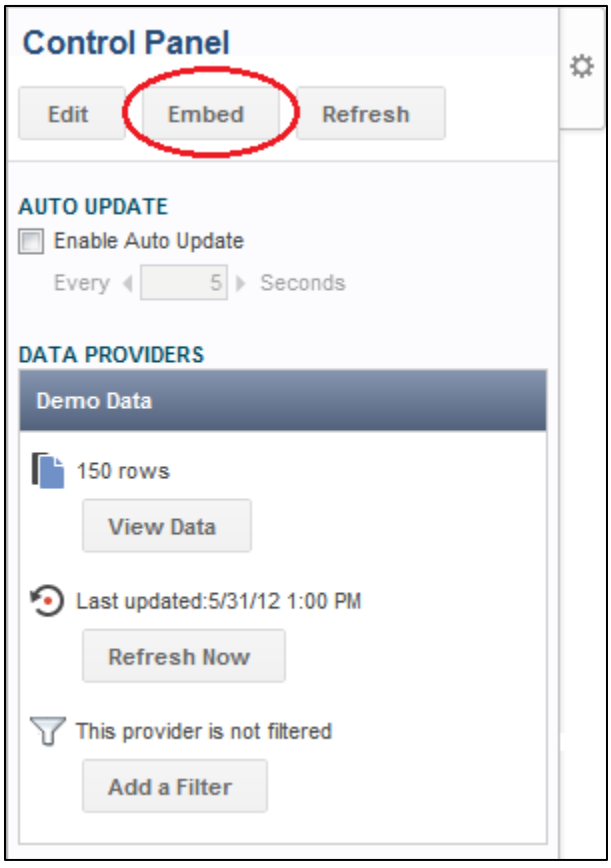
This permission allows users to remove a dashboard from Informer. However, the delete command is only available from the Dashboard Edit page. Therefore, in order for this permission to be of any use to a user or group, they will also need permission to Edit the dashboard.

Sharing your Dashboard

There are currently two supported ways for sharing your dashboards: the first is by granting permission to users to view dashboards; the second is to export an HTML link and embed that link in an existing web page.

Configuring External Links

To get to the Configure External Links page, simply open your dashboard, slide the control panel out from the left, and click on the "Embed" button:

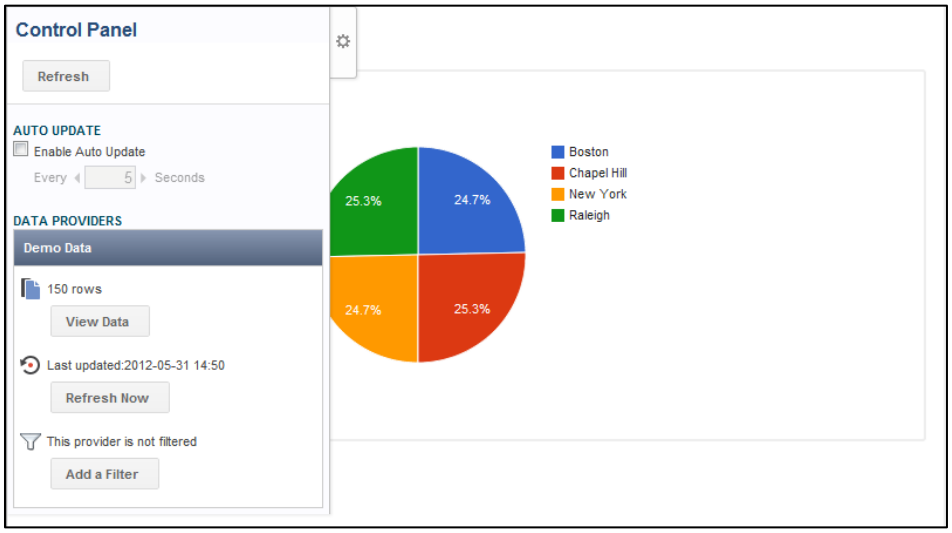


Link Options

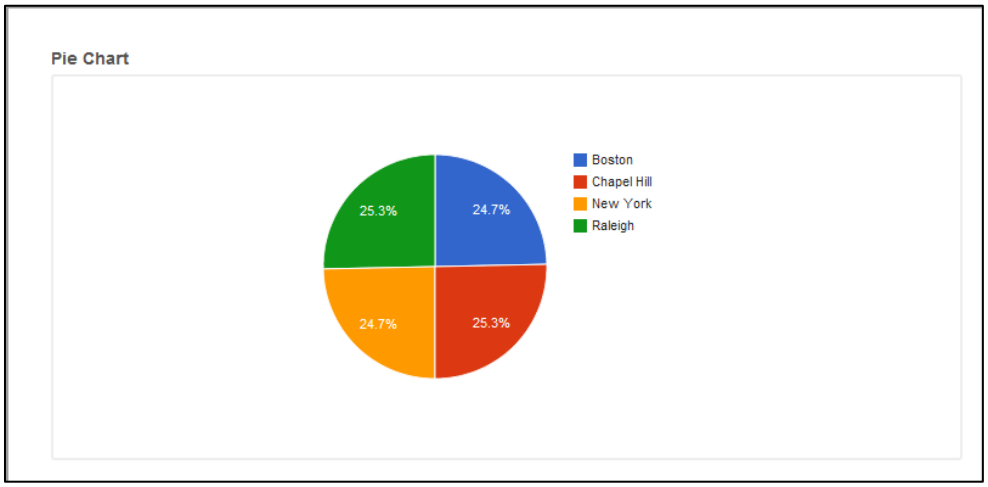
Include Viewer Controls

When you have this box checked, the link will contain a code that allows users to add filters to the data providers, refresh data providers, and view the underlying data set of a dashboard. It may be difficult to notice but each time you check and uncheck the box the "Direct Link" text and also the "Paste HTML to Embed" text will be updated to reflect your selection. You can have multiple embedded links for the same dashboard, some with viewer controls and some without; it just depends on whether or not you have this check-box checked at the time when you copy the HTML script.

With the check-box checked the embedded dashboard will contain these options:



Without the check-box checked the embedded dashboard will not contain the control panel and look like this:



Code

Direct Link

The direct link is a URL which you can go to that will show your dashboard, and only your dashboard. The direct link can have viewer controls or not, depending on you selection. You can either bookmark this URL or use it in an existing web page as a link.

Past HTML to Embed

The HTML script contained here can be copied and pasted into an existing web page in order to show the dashboard within existing content. This type of link can also have viewer controls associated with it, depending on what your selection was.

Appendix : Converting from Informer 3.2.4 to 4x

Informer 4x can convert all objects from an existing 3.2.4 account through New U2 Datasource action on the Mappings Home screen. This process is a conversion, not an upgrade, and will not affect your existing 3.2.4 in any way.

> Note: if your Informer installation is part of a third-party application created in conjunction with an Entrinsik Partner, please contact your solution provider before executing your conversion. Many Partners create application specific functionality which may require additional conversion steps.

You can and are encouraged to run 4x and 3.2.4 simultaneously on the same webserver as you test your implementation. Please note this conversion is known to take a significant amount of time for large implementations. If at any point in the conversion you require assistance, please contact your Informer support provider.

Pre-conversion Requirements

You will need the following information to convert your Informer 3.2.4 data into the new Informer 4x:

- The account xml file from your 3.2.4 installation containing your connection information. This is in the path “informer-web/accounts” in the 3.2.4 installation directory. This file will contain the context of the account you wish to convert. So if your 3.2.4 web address for informer is http://myserver/myinformer, then the file in the accounts folder should contain the context attribute “myinformer”.
- The “informer.properties” file from your 3.2.4 installation. This is located in the “informer-web” directory.

Conversion Process

Once you have access to these two files, open Informer 4x in a web browser and log in. Then proceed through the following steps to convert your Informer 3.2.4 account:

1. Click on “Mappings” in the upper right corner.
2. Click on “New U2” underneath the “Admin” button.
3. Click on “Import a Informer 3.2 datasource”.
4. Upload the account .xml file.
5. Upload the informer .properties file.
6. Name your datasource. This is the identifier of your datsource within Informer. It can contain any string of letters or number. For example “My Datasource”, “Database1”, or “Backup Account” are all acceptable.
7. Check all boxes representing informer objects you wish to convert to Informer 4x.
8. You have the option to schedule this conversion as some conversions can take some time to process. It is highly recommended that you schedule this conversion to run during a time you can leave it running for up to several minutes.
    a. Check the box “Schedule this conversion?”.
    b. Enter the date to schedule the conversion.
    c. Enter the time to schedule the conversion.
    d. Click “Save”.
    e. Your conversion is now scheduled to run at the selected time. As long as Informer is running and has a connection to your Informer 3.2.4 database the conversion will commence as scheduled.
9. If you choose not to schedule the conversion, Informer will begin to convert the datasource immediately and you will have to wait for it to complete.

Known Conversion Issues and Troubleshooting Upgrades

There are two known conversion issues when upgrading a 3.2.4 account to 4x. They are:

- Reports which compare non-numbers with a greater than or less than operator will not convert.
- PDF Templates do not convert. Their names to convert, and they are still assigned to the same reports, but the templates themselves will all convert as the default Export Template style in 4x. Be sure to refer to the Export Templates section of this document to modify your converted templates to the desired format.

If for whatever reasons your 3.2.4 conversion did not perform as expected, you can roll back the conversion by simply bulk deleting the deleting the converted datasource, ldap repository, users, groups, and code files. Reports which did not convert are listed with details in unconvertedreports.log on your Informer web server. If you have difficulty beyond the known issues, please contact your Informer support provider.

Appendix : Runtime Keywords

Runtime keywords can be used in the selection criteria of any report, either listed as a literal term, or used at a prompt.

Date Specific Keywords

Use the date keywords below in your selection criteria. (+/- n) means days before or after the keyword. You may also use (+/- nM) to mean months before or after the keyword. For example, "TODAY – 7" evaluates to seven days prior to the current day. To specify one month in the future, use "TODAY + 1M".

Keyword	Meaning
TODAY (+/-n)	Will put the value of the date the report is run (plus or minus n number of days).
WEEK_BEGIN (+/-n)	Will put the value of the date of the beginning of the week the report is run.
WEEK_END (+/-n)	Will put the value of the date of the end of the week the report is run.
MONTH_BEGIN (+/-n)	Will put the value of the date of the beginning of the month the report is run.
MONTH_END (+/-n)	Will put the value of the date of the end of the month the report is run.
QTR_BEGIN (+/-n)	Will put the value of the date of the beginning of the quarter the report is run.
QTR_END (+/-n)	Will put the value of the date of the end of the quarter the report is run.
YEAR_BEGIN (+/-n)	Will put the value of the date of the beginning of the year the report is run.
YEAR_END (+/-n)	Will put the value of the date of the end of the year the report is run.
MONTH_AGO (+/-n)	Will put the value of the date of one month before the report is run.
MONTH_FROM_NOW (+/-n)	Will put the value of the date of one month after the report is run.
YEAR_AGO (+/-n)	Will put the value of the date of one year before the report is run.
YEAR_FROM_NOW (+/-n)	Will put the value of the date of one year after the report is run

User Specific Keywords

User specific keywords include the following variables in the form {user.keyword}, where "keyword" can be any of the terms listed below:

- id
- firstName
- lastName
- email
- title

- username
- active
- Any User Defined Fields

Appendix : SSL Configuration

Follow the instructions on apache.org to set up your certificate and import it into the java virtual machine: http://tomcat.apache.org/tomcat-5.5-doc/ssl-howto.html.

Disregard the Tomcat configuration notes. Open 'informer.properties' located in your Informer installation directory and uncomment (remove the '#') the following:

```
#informer.ssl.port=443
#informer.ssl.keystore=<path to keystore>
#informer.ssl.password=
```

Set "<path to keystore>" to the path of your keystore. If your path contains backslashes, double them, as the backlash is a control character. Below is an example of an ssl configured informer.properties file:

```
informer.port=80
informer.contextroot=/informer
informer.db.driverClassName=org.apache.derby.jdbc.EmbeddedDriver
informer.db.url=jdbc:derby:db/informer;create=true
informer.db.username=root
#informer.db.password=
informer.ssl.port=443
informer.ssl.keystore=C:\\keystore\\mykeystore.key
informer.ssl.password=password
#informer.ssl.keyPassword=
#informer.ssl.truststore=
#informer.ssl.trustPassword=
derby.drda.startNetworkServer=true
com.mchange.v2.log.MLog=com.mchange.v2.log.log4j.Log4jMLog
```

Restart the Informer service and access it via the secure port you listed in the properties file.

Appendix : Upgrading Informer 4

To upgrade Informer 4 to the most recent build, follow the steps listed below. ***If you are upgrading from 4.0.x to 4.1 or greater, please see the next appendix.***

1. Contact your Informer support provider and request the latest upgrade file.
2. Place the upgrade file on your web server.
3. Stop the Informer service.
4. Place the upgrade file in the install directory in the 'webapp' folder.
5. Restart the Informer service.
6. Note the new version number at the bottom of the login screen.
7. Ensure you have the latest revision of this documentation.

Note: The upgrade file is a .war file. In some Windows environments, the operating system will automatically convert the .war extension to a .zip. If this happens, simply rename the file within Windows after downloading.

Appendix : Upgrading from Informer 4.0.x

To upgrade Informer 4.0.x to the current release, follow the steps listed below:

1. Stop Informer 4.0.x
2. Install Informer 4.x on the same server on the same port.
3. Replace the db folder in the Informer 4.x home directory with the db folder in the Informer 4.0 home directory.
4. Replace the informer.properties file in the Informer 4.x home directory with the informer.properties file in the Informer 4.0 home directory.
5. Copy the license.db file in the Informer 4.0 home directory into the Informer 4.x home directory.
6. Run the service-remove.bat file in the Informer 4.0 bin directory (Windows only).
7. Run the service-install.bat file in the Informer 4.x bin directory (Windows only).
8. Start Informer 4.x
9. Add the Informer 4.x db folder to your backup schedule.

Appendix: Useful Informer System Properties.

Informer has configuration settings that can alter behavior for specific installations. Here is a list of those properties. Changing a system property requires a restart of Informer. A system property is set in the file “informer.properties” located in the root of the Informer installation directory. They all take this form:

Example: for property “informer.example.property” to be set to the value “false”, you would do:

informer.example.property=false

Where you put the property in the file doesn’t matter, but they are all case-sensitive.

informer.port - (integer - set during installation) http port to access Informer. May be changed but watch for hardcoded urls in scripts. Would affect LiveExcels as well

informer.contextroot - (string - set during installation) part of the URL to access informer after the "http://{server}:{informer.port}/". May be changed but watch for hardcoded urls in scripts. Would affect LiveExcels as well

informer.rmi.registry.port - (integer) port to get a reference to rmi services - default: 1199

informer.rmi.service.port - (integer) port to connect to the rmi service. defaults to 0, which means that the rmi registry will assign any open port. If accessing informer behind a firewall, and you need a specific port, specify here.

com.entrinsik.egw.encryptionMode - ("SECURE_SESSION" or "EXTERNALLY_SECURE_PROXY_SESSION") Used for securing uniobjects connections. Since they are typically within a secure firewall, this is rarely used.Default: no encryption

com.entrinsik.informer.uoj.unisessionTimeout - (integer) sets the uniSession timeout when connecting to uniObjects. Defaults to 0, meaning server controls timeout.

com.entrinsik.informer.uv.flavor.* - (string) If your Universe account has a non-standard UV flavor type in attrubute 3 of the CONFIG VOC entry, specify the type inplace of * "=" the standard type (e.g "PICK")

informer.useU2FieldDescriptions - (true|false) Use the field descriptions on U2 dictionary entries as property names, rather than deriving the property name from the field name. Default: false

informer.useU2FieldNamesAsDescriptions - (true|false) Use the field name as the property name Default: false

informer.skipInitialScheduleRuns - (integer) skip schedules for this number of minutes. Useful for skipping all the missed schedules would have executed while informer was turned off. Default: false

informer.skipUpgradeBackups - don't automatically back up the informer database when upgrading Default: false

informer.autosuggestDisabled - (true|false) globally prevents any auto-suggest on any prompt. Default: false

derby.drda.startNetworkServer - (true|false) Have the informer internal db listen for jdbc connections Default: false, but we ship it set to true in informer.properties. This setting does not affect how informer's internal data is saved. It is merely to expose the data to informer reports. This setting only applies if your Informer uses the embedded Derby database.

derby.drda.portNumber - (integer) The port that the derby listener listens on. Default: 1527. Useful to change if you have 2 informers running on same machine. This setting does not affect how informer's internal data is saved. It is merely to expose the data to informer reports. This setting only applies if your Informer uses the embedded Derby database.

com.entrinsik.informer.reportresults.timeout – (integer) The amount of time idle (not paged or used in export or analytics) report results should be available, in seconds. The default is 600 seconds (10 minutes)

informer.disableLiveExcelModes – (true|false) Disable all Live Excels downloaded prior to version 4.2.10. Default: false.