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Spectrum™ Technology Platform

Version 12.0 SP2

Spectrum Visual Insights™ Guide

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1 - Introduction

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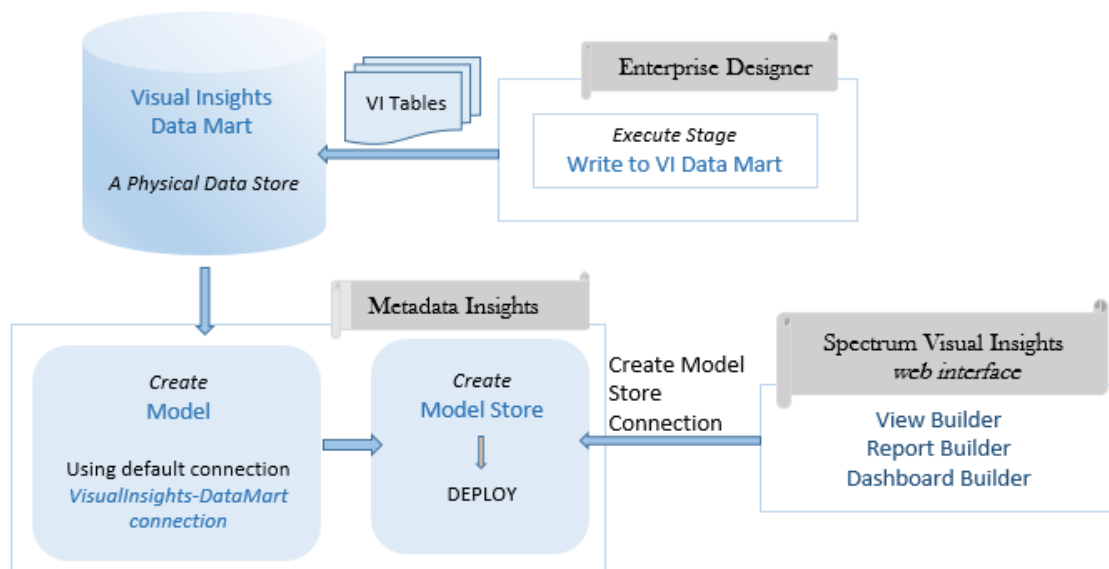
What is Spectrum Visual Insights™?

The Spectrum Visual Insights™ Module allows you to visualize complex data from heterogeneous data sources using powerful dashboard, reporting, and charting tools. It allows you to take informed business decisions by effectively analyzing the reports and charts.

The Spectrum Visual Insights™ Module provides:

- Platform to view information in a uniform user interface through unified views of data.
- Consolidation of data from multiple data sources in common reports, thus saving you from combining data manually.
- Analytical and adhoc reporting capabilities that facilitate quick retrieval of new or different combinations of data.
- Capability to design reports autonomously, rather than depending upon experts.
- Access rights based on roles for generating reports and charts.
- User-friendly user interface with multiple visualization options, such as graphs and charts to choose from.
- Reduced time and effort for generating standard reports for the organization.
- Rich, exact, up-to-date and visually appealing information formats for decision makers.

To visualize data and generate reports, the Spectrum Visual Insights™ Module utilizes data through the Model Store created and deployed through Metadata Insights. For more information about Model Store creation, see *Metadata Insights Guide*.

Architecture

Visual Insights - Components

Component	Purpose	Process
Enterprise Designer	Create physical data stores in the Spectrum `Visual Insights Data Mart` database	Run a dataflow containing the **Write to VI Data Mart** stage, which copies data from the desired data sources and creates physical data stores in the database *Visual Insights Data Mart*. For this, the default Spectrum connection *VisualInsights-DataMart* is used. For more information, see **Write to VI Data Mart** on page 24.
Visual Insights Data Mart	The default Spectrum database	The *Visual Insights Data Mart* acts as a container that stores the physical data stores created by the **Write to VI Data Mart** stage.
Metadata Insights	Create Models and Model Stores	Sign in to Metadata Insights web interface. Create a Model based on the *Visual Insights Data Mart*. Then, create and deploy a Model Store based on the Model.

Component	Purpose	Process
Spectrum Visual Insights™ web interface	Visualize the data using reports, charts and graphs	Sign in to Spectrum Visual Insights™ web interface. Create Model Store connection. Data in model stores is used as input to generate the desired reports, charts, and graphs as output. For more information, see **Model Stores**.
Management Console	Manage the Visual Insights data stores	Sign in to Management Console. You can manage the Visual Insights Data Marts. This allows functions such as deleting data stores and configuring data stores to be cleared at specific intervals.

Key Features

The key features of Spectrum Visual Insights™ web interface include:

Key Features	Description
Data Sources	Stores connection details of how Spectrum Visual Insights™ uses to connect to the external database based on which the reports are to be generated. Refer to **Data Sources** on page 19 for more details. **Note:** Source connections can have many views.
Views	Acts as the metadata layer that allows you to define which fields, from which tables in your source database can be made available for reporting. Refer to **Views** on page 19 for more details. **Note:** Multiple reports can be generated based upon any view.
Reports	Report can be generated based upon any view. **Note:** Reports can be used on one or more dashboard.

Key Features	Description
Charts/Graphs	Provides option to represent data graphs/charts format.
Dashboard Tab	Facilitates the creation of customized dashboard, once the report is generated. Report can be generated with one or more reports. The feature is designed to display Key Performance Indicators (KPI) in order to allow quick and clear examination of actual performance. A typical dashboard is designed with high level reports that can drill down to more detail when required. You can display all key reports on a single page, using tabs to organize by subject and type.
Storyboard	Helps you create slide shows with fully functional reports, text, images, and videos. You can share your storyboard with various users, collaborate with other viewers of the storyboard for reviews on slides, and also make private notes on the slides during presentation.
Collaboration	Allows you to collaborate by using various features such as 'Timeline', which help track events occurring within the system. You can comment on reports, perform discussions while referencing to several reports simultaneously, perform annotations on dates so that you can comment on the occurred events leading to trend changes and more.

Version 12 SP1 onwards, Visual insights is a standalone application, which can be installed anywhere as opposed to the compulsion of installing it at Spectrum™ Technology Platform location in the earlier versions. The table below gives a comparative list of upgrades in Visual Insights.

Earlier versions	Version 12 SP1 onwards
Repository set up through scripts	Repository set up done along with installation.
Runs on Spectrum™ Technology Platform	It is standalone and runs in its own environment. It can be installed anywhere, not necessarily at Spectrum™ Technology Platform location.
Log in is customized for Spectrum™ Technology Platform users only.	Spectrum™ Technology Platform users need new credentials to log in to SVI.
Creation of roles through Management Console	User management to be done in SVI, using the pre-defined roles.
List of model stores available automatically in the Admin Console. Users need to import these using their login credentials	User needs to create individual connections to the Model Stores

Earlier versions	Version 12 SP1 onwards
Automated creation of Views after importing Model Store	Views need to be created after connecting to Model Store.
Default content category and subcategory called as **Visual Insights Reports** and **Visual Insights Entities** are available to the user	There are no default categories. User needs to create categories.
Upgrade is a part of Spectrum™ Technology Platform upgrade process	To upgrade user data, this version requires exporting user-created components from 12.0 version and importing it back to the Visual Insights12.1 installation. **Note:** Upcoming versions will provide a separate upgrade installer.

2 - Installation

In this section

Installing Spectrum Visual Insights™

Spectrum Visual Insights™ is a standalone installation, which runs in its own environment, outside Spectrum™ Technology Platform server. The installer, in the form of an executable jar, is located at: `<Spectrum Installation path>/server/modules/svi/installer`. You need SVI license file for completing the installation.

Pre-requisites:

- Java version is same as that required for Spectrum™ Technology Platform installation or later than that.
- Spectrum™ Technology Platform 12.1 is installed.

Perform these steps to install Spectrum Visual Insights™:

1. Click the `svi-installer<version number>.jar` at this file path on your Spectrum™ Technology Platform installation: `<Location of Spectrum Installation>/server/modules/svi/installer`.

2. Select the language, and click **Next**.

    Note: The language options are: English, French, Spanish, Dutch, and German.

    The Spectrum Visual Insights™ installation home panel is displayed.

3. Select the appropriate pack and click **Next**. The **Core** pack is mandatory and is auto selected.

    Note: As you click the packs, information about the related content and total space required to install it is displayed below the package snapshot.

    You can also select multiple packs.

4. Locate the license file using the **Browse** button, select it, and click **Next**.

5. In the **General Options**, specify these details and click **Next**:

Web Server Port	The HTTP port that you want to use for running Spectrum Visual Insights™. The default port is 8080.
Windows Service	Select **Install Windows service** check box to install Spectrum Visual Insights™ as a Windows service (with name: SpectrumVisualInsights).

6. Specify the type of database on which you want to install Spectrum Visual Insights™. The supported databases are: AS400, CacheDB, DB2, HSQLDB, Ingres, Microsoft SQL Server, MySQL, Oracle, PostgreSQL, Progress, and Sybase ASE/ASA/IQ.

    Note: TiDB is in beta phase and HSQL embedded Configuration Database is not supported in production in this release.
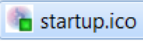
7. Specify these connection details for the selected database, and click **Next.**:

Database Server Location	Enter the host, port, and name of the selected database server. Select the **Create new database** check box to create a new database.

> **Note:** Only a user having administrator-level access to the database server can create a new database. Enter the credentials, if you have that access, in the **Administrator User** section.

Database User	Enter the credentials of the database user. If you are a new user, select the **Create new user** check box and enter details.

The installation completes and you receive a message: **Spectrum Visual Insights <version> is now installed!**

8. Select the path where you want to install tSpectrum Visual Insights™. The default path installs it in the same directory as Spectrum™ Technology Platform.

9. Click **Done** to exit the installer window.
Spectrum Visual Insights™ is installed in the same folder where you have installed Spectrum™ Technology Platform.

10. To start the Spectrum Visual Insights™ server, click the startup icon [startup.ico] at the location where SVI is installed, or alternately, run the `startup.bat` at this location: <SVI install location>\appserver\bin.

The Spectrum Visual Insights™ is installed with repository configured. You now need to log in to it to create a data source connection, views, content categories and perform other activities. For details, see **Signing In to Spectrum Visual Insights™** on page 15.

Upgrading Spectrum Visual Insights™

You need to export the SVI contents from the current Spectrum™ Technology Platform version before running the upgrade process.

Perform these steps for the upgrading Spectrum Visual Insights™:

1. Export these user-created components in the current installation to a location from where you will later import these to the new installation.

> **Note:** You do not need to export tutorial data.

- Content Category 'Visual Inisghts Reports' and Content Subcategory 'Visual Insights Entities' and any other content category and subcategory you added.
- Imported model stores. You can find these under Datasources category
- Views
- Reports

- Dashboards
- Storyboard

2. Take a back-up of the exported components (in the step above) and the configuration database specified in the install.properties at: `<Spectrum server location>/modules/svi/repositoryinstaller`.

3. Upgrade Spectrum™ Technology Platform from your current version to 12.1.

> **Note:** For the installation steps, see **Installing Spectrum Visual Insights™** on page 10.

4. Start the Spectrum Visual Insights™ server and log in with default credentials.

> **Note:** For steps to sign in to Spectrum Visual Insights™, see **Signing In to Spectrum Visual Insights™** on page 15.

5. Import the user-created components (exported in the first step) as described below.

> **Note:** To run the upgrade successfully, the components need to be imported in the sequence given below.

   a) In the Administration menu, click **Import**.
   b) Browse the location where you exported the file, select the file, click **Custom Import**, and click **Continue**.
   All the components in the file get listed on the left panel of the **Import** page.
   c) Drag the components one at a time to the right panel, specify settings for the components as described below, and click **Import**.

> **Note:** You need to import Content Category and Content Subcategory first. The other components can be imported at one go after specifying the settings as described below.

- **Content Category and Content Subcategory**: Click ⚙ followed by **Import**.

  > **Note:** No warning is displayed when you click **Import**. If the import is successful, the pop-up automatically closes.

- **Database connections**: Click ⚙ and in the pop-up displayed, enter the **Host** detail of Spectrum™ Technology Platform server, click **Test Connection**, and click **Import**.

  > **Note:** Perform this for all the connections you import

  > **Note:** For the test connection to be successful, ensure that Spectrum™ Technology Platform server is up and the relevant model stores are deployed in Metadata Insights. The default port to connect to the model stores is 32750.

- **Views**: Click and in the pop-up displayed, click **Match Linked Content**. Since the datasources are already imported, it will auto-populate it for the view. You can leave the **Subfolder** field blank, and click **Import**.

    Note: Perform this for all the views.

- Reports, Dashboard and Storyboards: Click and in the pop-up displayed, click **Match Linked Content**, and click **Import**.

    Note: On clicking the **Match Linked Content** the associated items are auto-populated.

All the user-defined components are now imported to this version of Spectrum Visual Insights™. You can now start working on these.

3 - Signing In

In this section

Signing In to Spectrum Visual Insights™

Spectrum Visual Insights™ is a browser-based tool that allows you to visualize and analyze your business data using advanced features like highly interactive dashboards and reporting tools.

This procedure describes how to access Spectrum Visual Insights™ using a web browser.

> **Note:** Ensure you install the Spectrum Visual Insights™ Module before signing in. For more information, see **Installing Spectrum Visual Insights™**.

1. Open a web browser.
2. Go to the URL `http://server:port`.

   where:

   server: Server name or IP address of your Spectrum Visual Insights™ server.

   port: HTTP port used by Spectrum Visual Insights™ server.

   This is the port you have entered while installing Spectrum Visual Insights™.
3. Enter a valid user name and password.

   The administrative user name is `admin` and the default password is `admin`. You should change the admin password immediately after installing Spectrum Visual Insights™ to prevent unauthorized administrative access to your system.

   > **Note:** Even existing users of the SVI module need new credentials for successful login to Spectrum Visual Insights™ 12 SP1. The administrative user creates other user IDs with relevant roles.

4. Click **Login**.
5. On the NOT FOR RE-SALE LICENSE information, click the **Click Here To Continue** link. The Spectrum Visual Insights™ home page is displayed.

Roles and Permissions

Spectrum Visual Insights™ consists of pre-defined roles with pre-set privileges for each specific role. Any Spectrum Visual Insights™ user can be assigned any of these pre-defined roles. This set of pre-defined roles are:

- Consumer and Collaborator
- Personal Content Writer and Collaborator
- Public Content Writer and Collaborator

- System Administrator

For a description of these roles and process to create a new role, see
http://wiki.yellowfin.com.au/display/USER73Plus/Roles

4 - Data Visualization

In this section

Connecting to Data Source

In Spectrum Visual Insights™, the only data source you can connect to is Model Stores configured and deployed in the Metadata Insights module.

> **Note:** For details on creating and deploying model stores, refer to the Metadata Insights guide.

To connect to a data source, perform these tasks:

1. On the Spectrum Visual Insights™ home page, click (+) **Add** > **Data Source**.
   The **New Connection** pop-up window is displayed.
2. Select **Create a data source connection using JDBC**.
3. In the **New Connection** pop-up window, specify these connection parameters:

   - A name for the connection
   - Description of the connection
   - Spectrum Model Store as the database type

   > **Note:** This is the only database type you can connect to in Visual Insights.

   - Spectrum™ Technology Platform host detail
   - Port for connecting to the model store

   > **Note:** The default port is `32750`.

   - Name of the model store to which you are connecting
   - Credentials to connect to the model store in Metadata Insights

4. Click ⌄ and select **Test Connection**.
   If the connection succeeds, **Connection Succeeded** message is displayed.
5. Click **Create View** to move to the next stage, and specify these details:

   - Your view type

   > **Note:** Details of the view type are displayed when you select the option.

   - The table of the model store that you want to analyze.
   - Name your view and its description

6. Click **Create Analysis** to begin creating reports and charts using data in the selected table of the model store.

Admin Console

This *Administration* feature allows you to customize views, reports, and dashboards. It is a centralized configuration page that allows the admin users fast access to all controls required to maintain the system.

To access the **Administration** tab, login into Spectrum Visual Insights™ web interface, and go to **Administration** > **Admin Console**.

For more information, see **Signing In to Spectrum Visual Insights™** on page 15.

Data Sources

The **Data Sources** page contains the connection details, which the system uses to access source data for reporting. The only data source connection available is to the model stores created and deployed in the Metadata Insights module.

For more information, see **Connecting to Data Source** on page 18.

Views

A View is a metadata layer that defines the relationships between tables.

Go to **Administration** > **Admin Console** > **Views**. The deployed model stores, created using the `Visual Insights-Data Mart` connection, are listed.

For more information, see **http://wiki.yellowfin.com.au/display/USER73Plus/Creating+a+View**.

Users

Users provides access to the system based on users logins. The user list provides administrators with the ability to browse all the users within the system.

To access this list, expand the **Users** section in the main panel of the **Admin Console**.

> **Note:** Users are read-only and can be managed using Management Console.

Go to **Administration** > **Admin Console** > **Users**.

For more information, see **http://wiki.yellowfinbi.com/display/USER73Plus/Users**.

User Groups

User Groups feature groups together a common set of people. Groups can be created and managed through the Admin Console.

Go to **Administration** > **Admin Console** > **User Groups**.

For more information, see **http://wiki.yellowfinbi.com/display/USER73Plus/User+Groups**.

Content Folders and Content Subfolders

Content Folders are used to group similar Subfolders. These do not contain any content directly.

Content Subfolders are located within the respective folders and are used to store content with specified function and access permissions. The content types that are stored in this case are Reports and Dashboard Tabs.

Go to **Administration** > **Admin Console** > **Content Folders**.

For more information, see **http://wiki.yellowfinbi.com/display/USER73Plus/Content+Categories**.

Content Tags

Content Tags allow labeling a certain similar entities.

Tags can be used by these content types:

- Discussions
- Reports
- Dashboards
- Images
- Annotations

Go to **Administration** > **Admin Console** > **Content Tags**.

For more information, see **http://wiki.yellowfinbi.com/display/USER73Plus/Content+Tags**.

Date Filter Periods

Date Filter Periods provide various date filtration options.

Go to **Administration** > **Admin Console** > **Date Filter Periods**.

For more information, see **http://wiki.yellowfinbi.com/display/USER73Plus/Date+Filter+Periods**.

GeoPacks

GeoPack Management is designed to work with your data without being incorporated and stored into your source database.

Packs provide three types of data:

- Geographical Labels
- Geographical Fields (Points, and sometimes Polygons)
- Demographic Metrics

Go to **Administration** > **Admin Console** > **GeoPack Management**.

For more information, see **http://wiki.yellowfinbi.com/display/USER73Plus/GeoPacks**.

Creating Reports and Charts

The **Create** feature allows you to build and generate reports and charts.

It contains these sub-features:

- **Report** on page 21
- **Data** on page 21
- **Charts** on page 22
- **Output** on page 22

Report

Reports are created based on Views.

Go to **Create** > **Report**.

For more information, see **http://wiki.yellowfin.com.au/display/USER73Plus/Creating+a+Report**.

Data

The **Data** page allows you to build, edit and view the report data definitions used to generate reports.

Go to **Create** > **Report** > **Data**.

For more information, see
http://wiki.yellowfinbi.com/display/USER73Plus/Report+Builder+-+Data+Step.

Charts

Charts are the graphic equivalent of tables and cross-tab tables.

Go to **Create** > **Report** > **Charts**.

For more information, see
http://wiki.yellowfinbi.com/display/USER73Plus/Report+Builder+-+Charts+Step.

Output

The **Output** has two different functions, based on the status of the report:

Draft When a report is in the *draft* mode, the Output allows you to format the display of tables, and define a multi-chart canvas if required.

Active When a report is in the *active* mode, the Output allows you to report action. Based on role permissions, a report also provides the option for appropriate users to place the report back into *draft* mode and edit various components. Report actions include exporting, sharing, and broadcasting the report.

Go to **Create** > **Report** > **Output**.

For more information, see
http://wiki.yellowfinbi.com/display/USER73Plus/Report+Builder+-+Output+Step.

Creating a Storyboard

Storyboard facilitates creation of slide shows with fully functional reports as well as text, images, and videos.

Go to **Create** > **Storyboard** to create slide shows.

For more information, see **http://wiki.yellowfinbi.com/display/USER73Plus/Storyboard**.

5 - Stage References

In this section

Write to VI Data Mart

The **Write to VI Data Mart** stage allows creation of a physical data store by collating data from multiple data sources, in the Spectrum database *Visual Insights Data Mart*.

The *Model Stores* created in Metadata Insights, based on the *Visual Insights Data Mart* data stores are accessible both from within Spectrum™ Technology Platform as well as from outside using JDBC connections.

> **Note:** For more information about JDBC driver configurations, see the *Data Sources* chapter of the *Administration Guide*.

Field	Description
Data Store Name	Enter a unique name for the virtual data source. **Note:** If you enter a duplicate name in *Data Store Name*, an error is returned. Underscore (_) is allowed in the name.
Create Data Store	Click **Create Data Store** to create the data store. This is mandatory to create the Virtual Data Source. On clicking **Create Data Store**, a Virtual Data Source is created in Metadata Insights. **Attention:** Before clicking **Create Data Store**, you must configure all other stage options, including reloading the fields if required.
Reload Fields	Reloads all fields as present in input, allowing selection of the required fields.
VI Fields	Indicates all fields present in the selected data sources.
Data Store Field	Indicates each field present in the selected data source. **Note:** Only uppercase characters, numeric values, and underscore (_) are allowed in the names of the data store fields. Special characters must not be entered. **Warning:** Usage of special characters in the data store field names results in an exception. Ensure you remove all special characters, apart from underscore, from the field names in the input stage to the **Write to VI Data Mart** stage. Alternatively, you can edit the field names in the **Write to VI Data Mart** stage.
Stage Field	Indicates the actual name of each field received from the source stage.

Field	Description
Type	Indicates the datatype of each field.
Include	Select fields to be passed to Spectrum Visual Insights™ module for processing and visualization. By default, all fields are selected. Unselect the fields which are not to be included while creating the Virtual Data Source.

To manage the Spectrum™ Visual Insights Data Mart through Management Console, refer to **Managing the Data Store** on page 25.

Important: To access a VI data mart, you must establish JDBC connections using the database name `VIDataMart` and the port number for the respective VI data mart. The default port for VI data marts is `9003`.

To change the default port value, open the configuration file `<Spectrum installation folder>\server\modules\svi\conf\vidatamart\internaldatastore_config.properties` and modify the property:

```
vidatamart.server.port=<desired port number>
```

Managing the Data Store

To manage the Spectrum™ Visual Insights Data Mart through Management Console:

1. Log in to Management Console.
2. Click **Resources** > **Visual Insights Data Mart Management**.

Visual Insights Data Mart Management

The **Visual Insights Data Mart Management** screen displays the data stores and their details.

Functionality	Description
Filter	Enter any specific data store name to filter out the data stores.
Delete data store	Select the specific data store to be deleted and click the **Delete data store** icon above the data store list. **Note:** On deleting a Visual Insights data store from Management Console, the deleted virtual data source is also deleted from the list of data stores on the Spectrum™ Visual Insights web interface.

Functionality	Description
View data store details	Select the data store and click the **View data store details** icon above the data store list. Details of the fields listed in the selected data store and the data type of each of the fields are displayed in the **Properties** section. To configure the time for clearing the selected data store: 1. Mark the **Empty Data Store** checkbox. 2. Select the clear time in the **Clear timeout in mins** field. **Note:** The default clear time is 240 minutes.
Name	Indicates the data store name.
Dataflow Name	Indicates the dataflow name using which a dataflow is created and data is populated into the data store.
Stage Name	Indicates the stage name that created that specific data store.
Size	Indicates the number of records existing in a specific data store.
Last Modified At	Indicates the date and time when the data store was last modified.
Last Modified By	Indicates the name of the user who modified the data store.
Rows Per Page	Select the number of records to be displayed on each page.

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