



Configuring Data Integration in Cisco Vision Dynamic Signage Director

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This module describes the requirements and how to configure support for data sources in Cisco Vision Director.

This module includes the following topics:

- [Before You Begin, page 27](#)
- [Workflow Summary for Data Integration, page 33](#)
- [How to Configure Data Integration, page 35](#)

Before You Begin

Before you configure Cisco Vision Director for Data Integration, be sure that the following requirements are met for the system that you are integrating with:

- [Prerequisites for Configuring NFL GSIS Integration, page 27](#)
- [Prerequisites for Configuring OES ISC9000 Scoreboard Integration, page 28](#)
- [Prerequisites for Configuring Daktronics All Sport 5000 Scoreboard Integration, page 28](#)
- [Prerequisites for Configuring Generic Data Sources, page 31](#)
- [Prerequisites for Configuring POS Data Sources, page 32](#)
- [Prerequisites for Configuring RSS and Atom Data Sources, page 32](#)

Prerequisites for Configuring NFL GSIS Integration

Before you configure the National Football League (NFL) Game Statistics and Information System (GSIS) integration, be sure that the following requirements are met:

- The required Cisco Vision Director server hardware is installed and running Cisco Vision Release 6.0 or later.
- The NFL Stats-in-a-Box (SIAB) server is installed at the venue and is connected to the NFL GSIS database. Advise your network Administrator to allow communication between these two servers.
- The SIAB server is reachable by the Cisco Vision Director server on the Internet Protocol (IP) network.
- For support of the NFL GSIS clock, a router in the network must be configured for Network Address Translation (NAT) to change the local broadcast address to the unicast IP address of the Cisco Vision Director server.

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- A router in the network is configured for Network Address Translation (NAT) to change the local broadcast address to the unicast IP address of the Cisco Vision Director server.

TIP: You can verify reachability using the **ping** command from the Cisco Vision Director server to the SIAB server.

- You have obtained the UDP port number used by the vendor.
- The NFL GSIS representative has provided the SIAB IP address and account information, which will be needed to configure Cisco Vision Director connectivity to the SIAB server.

Prerequisites for Configuring OES ISC9000 Scoreboard Integration

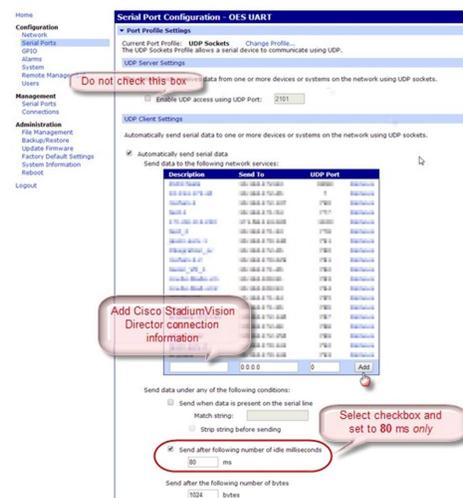
Before you configure the OES ISC9000 Intelligent Scoreboard Controller integration, be sure that the following requirements are met:

- The required Cisco Vision Director server hardware is installed and running Cisco Vision Release 6.0 or later.
- The OES ISC9000 Scoreboard controller is installed at the venue (preferably in the Cisco Vision network).
- The OES ISC9000 Scoreboard controller is reachable by the Cisco Vision Director server on the Internet Protocol (IP) network.
- A site Administrator or OES equipment vendor has added the Cisco Vision Director server IP address and UDP port number in the OES controller.

NOTE: Be sure to record the UDP port number used in the OES ISC9000 controller so that you can configure the same port in the network connection information for Cisco Vision Director.

Figure 1 on page 28 shows an example of the interface for the Serial Port Configuration on the OES ISC9000 controller where the Cisco Vision Director server information must be added.

Figure 1 OES ISC9000 Configuration



Prerequisites for Configuring Daktronics All Sport 5000 Scoreboard Integration

Before you configure the Daktronics All Sport 5000 Scoreboard integration, be sure that the following requirements are met:

- The required Cisco Vision Director server hardware is installed and running Cisco Vision Release 6.0.

Before You Begin

- The Daktronics Scoreboard controller is installed at the venue (preferably in the Cisco Vision network).
- The Daktronics Scoreboard controller is reachable by the Cisco Vision Director server on the Internet Protocol (IP) network.
- The Lantronix UDS 1100-POE Device Server is installed on the network.
- A computer is set up with the Daktronics Scoring and Timing Interface (DSTI) software and has two serial ports available (or use two USB ports with USB-to-serial adapter cables).
- If using the Daktronics scoreboard for NBA basketball, be sure that the Daktronics software uses *Rev 1* of the Daktronics Basketball TV Feed Specification for compatibility with Cisco Vision Director Release 4.0 and Release 4.1.A.

TIP: The basketball protocol changes whenever there are NBA rules changes—contact your Daktronics representative to determine your protocol version.

- Be sure that you have the UDP port number that is hard-coded in the DSTI configuration file so that you can configure the same port in the network connection information for Cisco Vision Director.
- You have the Daktronics configuration file with the baud rate and port information.
- You have the IP address of the Cisco Vision Director server.
- The Daktronics Scoreboard controller is reachable by the Cisco Vision Director server on the network.
- The devices are connected using straight-through DB-25 male to DB-9 female serial cables:
 - The scoreboard controller is connected to the DSTI computer.
 - The DSTI computer is connected to the Lantronix device serial port.
- You have completed the following configuration tasks on the Daktronics scoreboard controller, DSTI computer, and Lantronix devices:
 - [Configuring the Serial Ports on all Devices, page 29](#) (required)
 - [Configuring the Network Connections, page 30](#) (required)

Configuring the Serial Ports on all Devices

- Configure the serial COM port on the Daktronics scoreboard controller with the following settings:
 - Baud 9600

NOTE: Use the baud rate in the configuration file provided by Daktronics. For example, it could be 19200.

- Parity None
 - Data Bits 8
 - Stop Bit 1
- Configure all serial COM ports on the DSTI computer, and Lantronix device with the following settings:
 - Baud 9600

NOTE: Be sure that the serial ports on the DSTI computer and Lantronix device have matching baud rates.

- Parity None

Before You Begin

- Data Bits 8
- Stop Bit 1

Figure 5 on page 31 shows the serial configuration on the Lantronix device.

Figure 2 Lantronix USD 1100–POE Serial Settings

The screenshot shows the 'Serial Settings' page for Channel 1. The settings are as follows:

- Port Settings:** Protocol: RS232, Baud Rate: 9600, Data Bits: 8, Parity: None, Stop Bits: 1, Flow Control: None.
- Pack Control:** Enable Packing: . Idle Gap Time: 12 msec. Match 2 Byte Sequence: Yes, No. Send Frame Immediate: Yes, No. Match Bytes (Hex): 0x00, 0x00. Send Trailing Bytes: None, One, Two.
- Flush Mode:**
 - Flush Input Buffer:** With Active Connect: Yes, No; With Passive Connect: Yes, No; At Time of Disconnect: Yes, No.
 - Flush Output Buffer:** With Active Connect: Yes, No; With Passive Connect: Yes, No; At Time of Disconnect: Yes, No.

Configuring the Network Connections

Be sure that the Lantronix device and the DSTI software is network connections are configured:

- Using the port information provided in the Daktronics configuration file, configure the Lantronix device connection settings for the UDP protocol, Daktronics port, and the IP address of the Cisco Vision Director server as shown in the example in Figure 3 on page 30

Figure 3 Lantronix USD 1100–POE Connection Settings

The screenshot shows the 'Connection Settings' page for Channel 1. The settings are as follows:

- Connect Protocol:** Protocol: UDP.
- Datagram Mode:** Datagram Type: 01, Accept Incoming: Yes.
- Endpoint Configuration:** Local Port: 21300, Remote Port: 21300, Remote Host: 10.194.171.34, Use Broadcast: .
- Device Address Table:**

No.	Dev Addr						
0	0	1	0	2	0	3	0
4	0	5	0	6	0	7	0
8	0	9	0	10	0	11	0
12	0	13	0	14	0	15	0

- In the Hostlist settings on the Lantronix device, configure the IP address of the Cisco Vision Director server and port as shown in the example in Figure 4 on page 31.

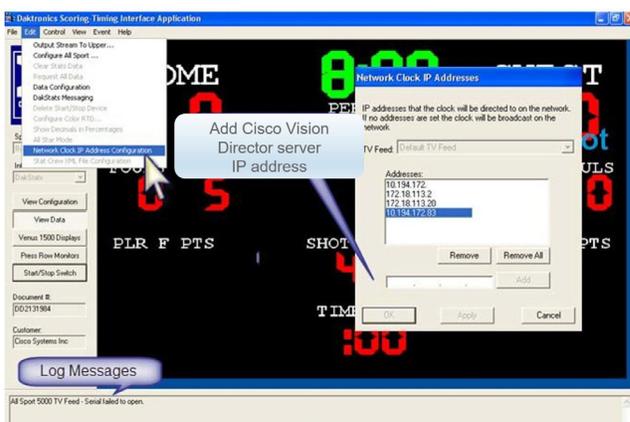
Before You Begin

Figure 4 Lantronix UDS 1100-POE Hostlist Settings



- Configure the DSTI application for the Daktronics controller with the IP address of the Cisco Vision Director server as shown in the example in [Figure 5 on page 31](#).

Figure 5 Daktronics All Sport 5000 Configuration



Prerequisites for Configuring Generic Data Sources

Before you configure generic data sources, be sure that the following requirements are met:

- You know the message type of the data source (TCP, HTTP, UDP, FTP, or Database).
- You have the corresponding connection information for the specified message type.
- You have a copy of one unique sector of the XML data from the source feed that can be used as sample data for the External Content Integration configuration or a sample file that can be uploaded to Cisco Vision Director.
- Cisco Vision Director must be able to reach any externally referenced source data (for example, referenced images) on the network
- You are aware of the following dependencies for proper rendition of fonts:

For information about installing fonts, see the “[Using the Software Manager to Upgrade Cisco Vision Director Software, Language Packs, and Fonts](#)” module in the *Cisco Vision Director Software Installation and Upgrade Guide*.

Before You Begin

- For the SV-4K or DMP-2K—Most unicode characters can be rendered as part of the DMP system fonts. This means that the system font is available as a substitution font to HTML pages or feeds that might not explicitly reference web fonts in their CSS.

Prerequisites for Configuring POS Data Sources

Cisco Vision Director supports the following types of POS data sources: Generic PoS, Internal Database PoS, and Menu Theme. Before you configure a POS data source, be sure that you understand the differences between these types and when to use them by seeing [Information About POS Data Sources in Cisco Vision Director, page 21](#).

This section includes the following topics:

- [Prerequisites for Generic POS Data Sources, page 32](#)
- [Prerequisites for Internal Database POS Data Sources, page 32](#)
- [Prerequisites for Menu Theme POS Data Sources, page 32](#)

Prerequisites for Generic POS Data Sources

Before you configure generic POS data sources, be sure that the following conditions are met:

- POS vendors host an API over HTTP/HTTPS for menu retrieval, and you have the URL for the vendor API.
- POS data must conform to Cisco Vision Director POS API XML schema. You must have the vendor name and store name for the data source.
- If you want to categorize menu items into groups, then you should have a data source for each menu category from the POS vendor.

Prerequisites for Internal Database POS Data Sources

Before you configure internal database POS data sources, be sure that the following requirements are met:

- You have an existing Micros or Quest POS configuration in Cisco Vision Director using stores.
- You accept that all menu data is ingested as one data source without support for category groupings.

Prerequisites for Menu Theme POS Data Sources

Before you configure menu theme POS data sources, be sure that the following requirements are met:

- You already support menus in DMB using Cisco or POS stores.
- You have created menus for the stores using DMB themes.
- You want to support groups on your menu and use the Widgets tool to design the layout of your menu.
- Data changes, such as price updates, must be made in the DMB application.

Prerequisites for Configuring RSS and Atom Data Sources

Before you configure RSS data sources, be sure that the following requirements are met:

- You have the source URL for the data feed.
- You are aware of the following dependencies for proper rendition of fonts:

Workflow Summary for Data Integration

For information about installing fonts, see the “Using the Software Manager to Upgrade Cisco Vision Director Software, Language Packs, and Fonts” module in the *Cisco Vision Director Software Installation and Upgrade Guide*.

- For the SV-4K or DMP-2K—Most unicode characters can be rendered as part of the DMP system fonts. This means that the system font is available as a substitution font to HTML pages or feeds that might not explicitly reference web fonts in their CSS.

Workflow Summary for Data Integration

NOTE: This workflow assumes that you have completed the required backend network installation and integration at your venue for the external data sources that you plan to support, such as with the NFL GSIS network and Stats-in-a-Box (SIAB) server, or scoreboard device.

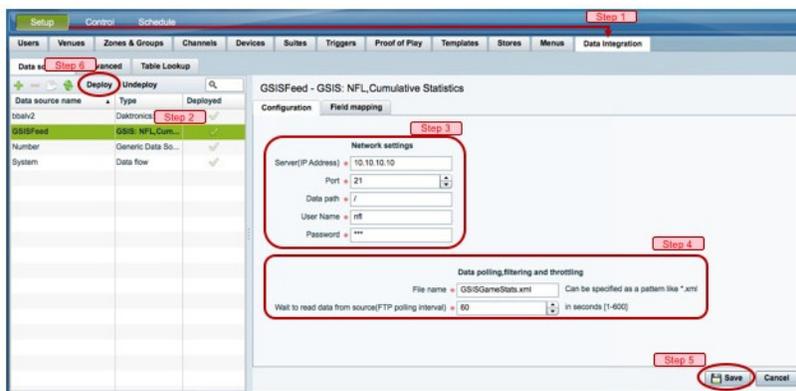
The following steps summarize the overall workflow to integrate data into Cisco Vision Director and display that content on a TV (Figure 6 on page 33).

Control Panel Setup Interface—Data Integration Tab

1. From the Control Panel, access the Data Integration interface.
2. Select the data source that you want to configure.
3. Complete the network connection configuration.
4. Modify any configuration options, such as data throttling, as applicable.
5. Enable the configuration and save the configuration.
6. Enable the data source (click **Deploy**).

NOTE: Whenever you modify and save the Data Integration configuration, you must activate and restart the application in the Management Dashboard. Cisco Vision Director prompts you to do this; it can be done at this step or after you finish mapping and formatting your statistics.

Figure 6 Data Integration Configuration Workflow

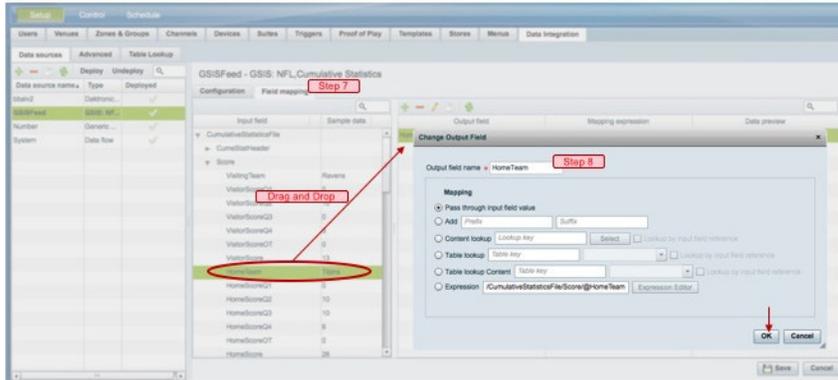


NOTE: For generic data sources, provide sample XML data before you complete field mapping.

7. Format each statistic to set the output field name and any other output criteria as desired (Figure 7 on page 34). Click **OK**. Save the mapping.

Workflow Summary for Data Integration

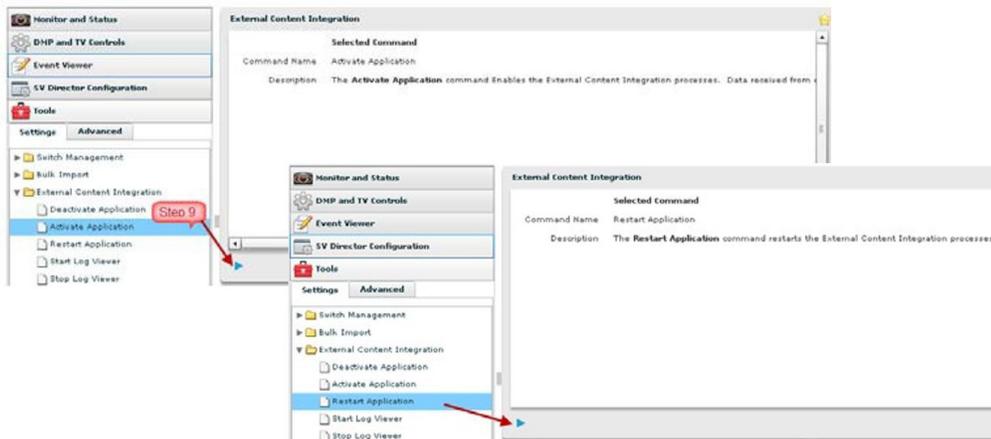
Figure 7 Field Mapping Workflow



Management Dashboard—Data Integration

8. Activate *and* restart the Data Integration application from the Management Dashboard (Figure 8 on page 34).

Figure 8 Data Integration Application in Management Dashboard



Control Panel Widgets Interface

9. Use the Widgets tool from the Main Menu to design a layout of the statistics that you configured to add graphics and bind/position data fields and save the widget (Figure 9 on page 34). See [Designing the Layout of Content Using the Widgets Tool, page 73](#) for more information.

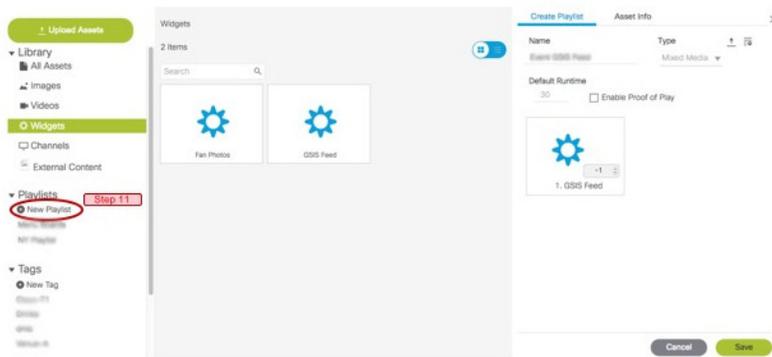
Figure 9 Widget Tool



10. Create a playlist from the Main Menu for the widget that you created (Figure 10 on page 35). Widgets are categorized in the “By Type” folder under the “widget” type.

How to Configure Data Integration

Figure 10 Create Playlist from Main Menu



11. Create an event script to run the playlist.
12. Schedule the script to display the content on a TV just like other pieces of content in Cisco Vision Director.

How to Configure Data Integration

This section includes the following tasks:

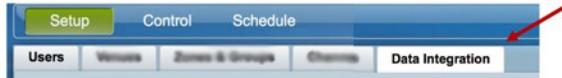
- [Accessing the Data Integration Interface, page 35](#) (required)
- [Adding a New Data Source, page 36](#) (required)
- [Configuring the Network Connection to the Data Source, page 36](#) (required)
- [Configuring Data Options, page 45](#) (optional)
- [Configuring the Image Display Size for Atom and RSS Feeds, page 48](#)
- [Providing Sample XML or JSON Data for Generic Data Sources, page 48](#)
- [Selecting Input Statistics and Mapping to Output Fields for Display, page 51](#) (required)
- [Enabling the Data Source Configuration, page 52](#) (required)
- [Activating Data Integration System-Wide From the Management Dashboard, page 52](#) (required)
- [Restarting the Data Integration Application, page 54](#) (required)
- [Verifying the Integration, page 54](#) (required)

Accessing the Data Integration Interface

To access the data integration interface:

1. Log into Cisco Vision Director as an Administrator.
2. From the **Main Menu**, click **Event Management**.
3. Click **Control Panel**. Click the **Setup** button. Click the **Data Integration** tab.

The Data Sources information displays.



Adding a New Data Source

To add a new data source:

1. From the Data Sources tab view on the Data Integration screen, click the plus (+) icon. The Create new data source connection dialog box displays.
2. In the Data source name box, type a name for the data source that you want to add.

TIP: Specify a name using upper or lowercase alphabetical characters, digits 0–9, hyphen (-), or underscore (_). Spaces are not supported.

3. Under the Type column, select the data source type that you want to add.
4. (Generic Data Source only) For a Generic Data Source, select the message type from the drop-down box.
5. Click Create. The New Data Source displays in the Data Sources panel view and the Configuration panel displays.

What To Do Next

Configure the network connection for your data source type. For more information, see [Configuring the Network Connection to the Data Source, page 36](#).

Configuring the Network Connection to the Data Source

Complete one or more of the following tasks according to the external data sources that your site is going to use:

- [Configuring the Connection to an Atom or RSS Feed, page 36](#)
- [Configuring the Connection to a Generic Data Source, page 37](#)
- [Configuring the Connection to a Generic POS Data Source, page 40](#)
- [Configuring the Connection to an Internal Database POS Data Source, page 41](#)
- [Configuring the Connection to a Menu Theme POS Data Source, page 42](#)
- [Configuring the Connection to the NFL GSIS SIAB Server, page 43](#)
- [Configuring the Connection to the Scoreboard Controllers, page 44](#)

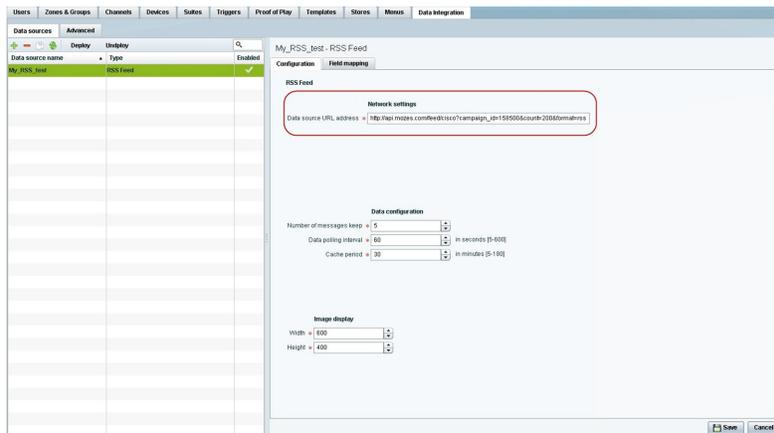
Configuring the Connection to an Atom or RSS Feed

To configure the connection to an Atom or RSS feed:

1. Go to the **Configuration** screen for the selected Atom Feed or RSS Feed data source.
2. In the Network settings section, specify the URL in the Data source URL address box ([Figure 11 on page 37](#)):

How to Configure Data Integration

Figure 11 RSS Network Configuration



3. Click **Save**. A message box appears asking you to restart the application.
4. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

What To Do Next

Configure the data options as needed for the Atom or RSS feed data source. For more information, see [Configuring Data Options, page 45](#).

Configuring the Connection to a Generic Data Source

The connection settings for a generic data source type depend on the message type that is configured when creating the data source. The generic data source can be configured to support one of the following message types:

- Database
- FTP
- HTTP (or HTTPS)
- TCP
- UDP

In addition, each generic data source connection type allows you to specify either JSON or XML data format.

To configure the connection to the generic data source:

1. Go to the **Configuration** screen for the selected Generic Data Source name.
2. Do one of the following to specify the generic data source location:

To configure the connection using FTP, specify the following information ([Figure 12 on page 38](#)):

How to Configure Data Integration

Figure 12 Generic Data Source Configuration FTP

- Server (IP address)—IP address of the FTP server.
- Port—FTP port used in Cisco Vision Director for the FTP server connection. The default is 21.
- Data path—Folder path for the data. The default is “/”.
- User—Username for the FTP server connection.
- Password—Password for the user account on the FTP server.
- Polling frequency—Number (in seconds) that specifies how often to poll data from the source. The default is 60.
- File name filter—Fully-qualified file name or file name with an asterisk (*) wildcard

To configure the connection using HTTP, specify the following information (Figure 13 on page 38):

Figure 13 Generic Data Source Configuration: HTTP

- HTTP URL—Fully qualified HTTP or HTTPS URL to the data source.
- Polling frequency—Number (in seconds) that specifies how often to poll data from the source. The default is 60.

To configure the connection using TCP or UDP, specify the following information (Figure 14 on page 39):

How to Configure Data Integration

Figure 14 Generic Data Source Configuration: TCP and UDP

- Cisco Vision Director (IP Address)
- Cisco Vision Director port

To configure the connection for a Database, specify the following information ([Figure 15 on page 39](#)):

Figure 15 Generic Data Source Configuration: Database

- Database—Name of the database. Supported values are: MySQL (default), PostgreSQL, or SQLServer.

NOTE: Do not use Underscore characters “_” in the database name.

- Host—IP address of the server where the database is hosted.
 - Port—Server port where the database is hosted. Default is 3306.
 - Schema—Name of the database schema or instance.
 - Username—Name of the user for authentication to access the database.
 - Password—Password for the specified Username for authentication to access the database.
 - Table Name—Name of the table in the database to retrieve data from.
 - Number of Rows to Retrieve (-1 for all)—Number of data rows to be retrieved from the table.
3. (For all message types except Database) In the Data Format drop-down box, select JSON or XML to correspond to the data format of the source you are configuring.

How to Configure Data Integration

4. Click **Save**. A message box appears asking you to restart the application.

If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

What To Do Next

Provide sample XML or JSON data for the generic data source. For more information, see [Providing Sample XML or JSON Data for Generic Data Sources, page 48](#).

Configuring the Connection to a Generic POS Data Source

Use the Generic POS data source under the following conditions:

- You need to support POS data from a vendor other than Quest or Micros.
- You only want to use Data Integration and the Widgets tool for your menu creation.

To configure the connection to the generic POS data source:

1. Go to the **Configuration** screen for the selected generic POS data source name.
2. Specify the Database Settings ([Figure 16 on page 40](#)):

Figure 16 Generic POS–Database Settings

Generic PoS

Database Settings

Vendor Name *

Store Name *

- Vendor Name (required)—Name of the vendor for the POS data source.
 - Store Name (required).
3. Specify the Network Settings ([Figure 17 on page 40](#)):

Figure 17 Generic POS–Network Settings

Generic PoS

Network settings

Data source URL address *

User Name

Password

- Data source URL address (required)—HTTP or HTTPS URL of the POS vendor API.
If an HTTPS URL is specified, the User Name and Password must be specified for authentication.
 - User Name
 - Password
4. Specify the Polling Interval (required)—Number (in seconds) for the frequency to poll data from the source feed. Default is 60. ([Figure 18 on page 41](#)):

How to Configure Data Integration

Figure 18 Generic POS–Polling Interval

Data polling, filtering and throttling

Polling Interval * in seconds [5-600]

5. Specify the dimensions to which menu item images are resized ([Figure 19 on page 41](#)).

Figure 19 Generic POS–Image Display Settings

Image display

Width *

Height *

- Width—Number of horizontal pixels. Default is 600.
 - Height—Number of vertical pixels. Default is 400.
6. Click **Save**. A message box appears asking you to restart the application.
 7. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

Configuring the Connection to an Internal Database POS Data Source

Use the internal database POS data source under the following conditions:

- You have very simple menu data.
- You only need your menu data to appear in a single list.
- You already use Quest or Micros POS but want to build Menu Boards using Widgets instead of the DMB application.

To configure the connection to an internal database POS data source:

1. Go to the **Configuration** screen for the selected internal database POS data source name.
2. Specify the Database Settings ([Figure 20 on page 41](#)):

Figure 20 Internal Database POS–Database Settings

Generic PoS

Database Settings

Vendor Name *

Store Name *

- Vendor Name (required)—Name of the existing DMB vendor already integrated with Cisco Vision Director to be the POS data source. Possible values are Micros or Quest.
- Store Name (required)—Name of the store configured in the DMB application for the vendor.

How to Configure Data Integration

3. Specify the Polling Interval (required)—Number (in seconds) for the frequency to poll data from the source feed. Default is 60. (Figure 21 on page 42):

Figure 21 Internal Database POS—Polling Interval

4. Click **Save**. A message box appears asking you to restart the application.
5. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

Configuring the Connection to a Menu Theme POS Data Source

Use the Menu Theme POS data source under the following conditions:

- You already support menus in DMB using Cisco or POS stores.
- You have created menus for the stores using DMB themes.
- You want to support groups on your menu and use the Widgets tool to design the layout of your menu.

To configure the connection to a menu theme POS data source:

1. Go to the **Configuration** screen for the selected menu theme POS data source name.
2. Under Database Settings, specify the Theme Name (required) (Figure 22 on page 42):

NOTE: This Theme Name must match the name configured in the DMB application.

Figure 22 Menu Theme POS—Database Settings

3. Specify the Polling Interval (required)—Number (in seconds) for the frequency to poll data from the DMB application. Default is 60. (Figure 23 on page 42):

Figure 23 Internal Database POS—Polling Interval

4. Click **Save**. A message box appears asking you to restart the application.
5. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

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Configuring the Connection to the NFL GSIS SIAB Server

This section includes the following topics:

- [Configuring the Network Settings for NFL Cumulative Statistics, page 43](#)
- [Configuring the UDP Connection for the NFL Game Clock, page 43](#)

Configuring the Network Settings for NFL Cumulative Statistics

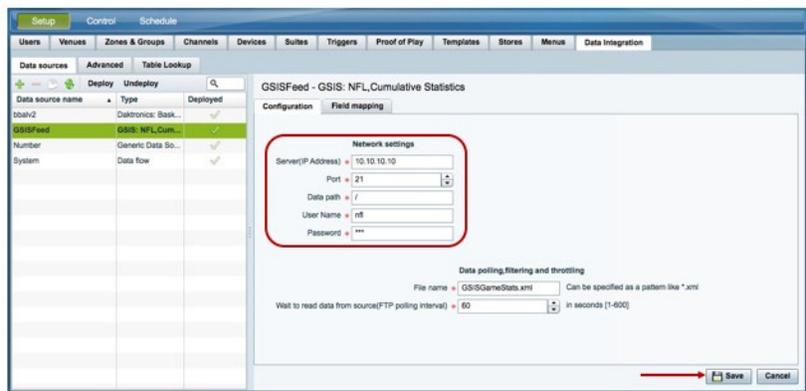
NOTE: Before you configure the FTP connection, be sure that you have the IP address and account credentials for the SIAB server from your NFL GSIS representative.

Cisco Vision Director uses FTP port 21 to communicate to the NFL GSIS SIAB server to obtain the GSIS statistics.

To configure the network connection to the NFL GSIS SIAB server:

1. Go to **Control Panel > Setup > Data Integration > Data sources**.
2. Select the **GSIS: NFL, Cumulative Statistics** data source type.
3. Click the **Configuration** tab.
4. In the Network settings section, configure the following options ([Figure 24 on page 43](#)):
 - a. In the Server (IP Address) box, type the IP address of the SIAB server.
 - b. In the Port box, type **21**. The default is 21.
 - c. In the Data path box, type **"/"**. The default is **/**.
 - d. In the User box, type the username for the SIAB server account. The default is **nfl**.
 - e. In the Password box, type the password for the SIAB server account. The default is **nfl**.

Figure 24 NFL Cumulative Statistics Network Configuration



5. Click **Save**. A message box appears asking you to restart the application.
6. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

Configuring the UDP Connection for the NFL Game Clock

NOTE: Acquire the UDP port number to communicate with the NFL GSIS SIAB server to obtain the GSIS game clock.

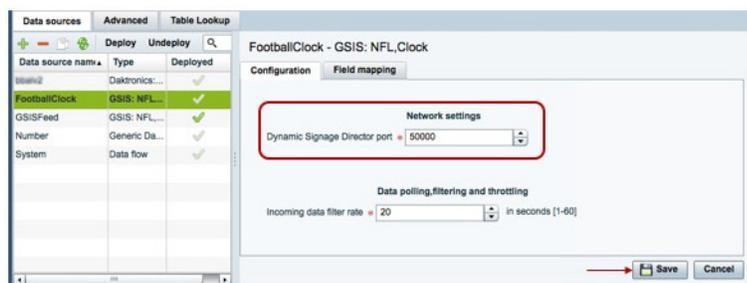
How to Configure Data Integration

To configure the UDP connection for the NFL game clock:

1. Go to the **Configuration** screen for the selected GSIS: NFL,Clock data source.
2. In the Network settings section, configure the following options ([Figure 25 on page 44](#)):
 - a. In the Cisco Vision Director (IP Address) box, type the IP address of the Cisco Vision server.

TIP: The actual IP address of the Cisco Vision server that you are logged into is provided in shadow, but you must type the address in the box to configure it.

- b. In the Cisco Vision Director port box, type the port number being used by the GSIS server. The default is 0. In the left pane, select the **GSIS: NFL,Clock** data source type.

Figure 25 NFL Game Clock Network Configuration

3. Click **Save**. A message box appears asking you to restart the application.
4. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

What To Do Next

Configure the data options for the NFL Clock data source. For more information, see [Configuring the Incoming Data Filter Rate for Data Sources, page 47](#).

Configuring the Connection to the Scoreboard Controllers

Cisco Vision Director uses a UDP port to communicate to the controllers to obtain the scoreboard statistics.

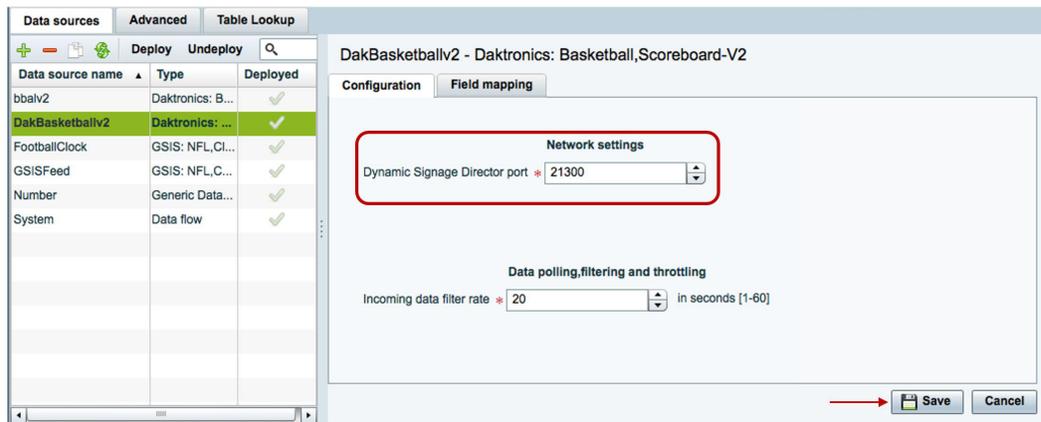
NOTE: The UDP port for the OES ISC9000 Scoreboard controller varies, but the UDP port for the Daktronics All Sport 5000 Scoreboard controller is always 21300. Be sure that you know the UDP port being used for the scoreboard controller.

To configure the UDP connection to the scoreboard controllers:

1. Go to the **Configuration** screen for the selected scoreboard data source.
2. In the Network settings section, configure the following option ([Figure 26 on page 45](#)):

In the Cisco Vision Director port box, type the UDP port number used to connect to the scoreboard controller.

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Figure 26 Daktronics Scoreboard Controller UDP Connection Configuration

3. Click **Save**. A message box appears asking you to restart the application.
4. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

What To Do Next

Configure the data options for the scoreboard data source. For more information, see [Configuring the Incoming Data Filter Rate for Data Sources, page 47](#).

Configuring Data Options

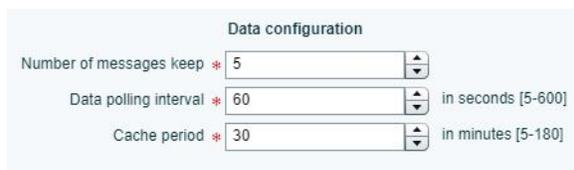
The data configuration options vary by the data source type:

- [Configuring Data Options for Atom and RSS Feeds, page 458](#)
- [Configuring Data Options for Generic Database Sources, page 46](#)
- [Configuring Data Options for NFL Cumulative Statistics, page 46](#)
- [Configuring the Incoming Data Filter Rate for Data Sources, page 47](#)

Configuring Data Options for Atom and RSS Feeds

To configure data options for Atom and RSS feeds:

1. Go to the **Configuration** screen for the selected Atom Feed or RSS Feed data source.
2. In the Data configuration section, set one or more of the following options ([Figure 27 on page 45](#)):

Figure 27 Data Configuration Options for Atom and RSS Feeds

- a. Number of messages keep—Number of messages to keep from the feed. The default is 5.

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TIP: If planning to use images from the feed for the PicToScreen component in the Widgets tool, then a maximum of 5 images can be displayed. It is recommended that the number of messages to keep is 5 for images.

b. Data polling interval—Number (in seconds) for the frequency to poll data from the source feed. The default is 60.

TIP: 60 seconds is the recommended polling interval for images. Consider a longer interval for text feeds.

c. Cache period—Amount of time (in minutes) to retain polled data. The default is 30.

What To Do Next

Configure the image size as needed for the Atom or RSS feed data source. For more information, see [Configuring the Image Display Size for Atom and RSS Feeds, page 48](#).

Configuring Data Options for Generic Database Sources

To configure data options for generic database sources:

1. Go to the **Configuration** screen for the selected generic database data source.
2. In the Data polling, filtering, and throttling section, set one or more of the following options ([Figure 28 on page 46](#)):

Figure 28 Data Configuration Options for Generic Database Sources

The screenshot shows a configuration panel titled "Data polling, filtering and throttling". It contains two input fields, each with a red asterisk indicating a required field. The first field is labeled "Polling Interval" and has a value of "60" with a range of "in seconds [5-600]". The second field is labeled "Incoming data filter rate" and has a value of "20" with a range of "in seconds [5-60]". Both fields have up and down arrow buttons for adjustment.

a. Polling interval—Number (in seconds) for the frequency to poll data from the source feed. The default is 60.

b. Incoming data filter rate—Number (in seconds) that specifies the amount of time to ignore duplicate data and process only new data. The default is 20.

3. Click **Save**. A message box appears asking you to restart the application.
4. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see the [Restarting the Data Integration Application, page 54](#).

What To Do Next

Enable the data source. For more information, see [Enabling the Data Source Configuration, page 52](#).

Configuring Data Options for NFL Cumulative Statistics

To configure data options for NFL cumulative statistics:

1. Go to the **Configuration** screen for the selected GSIS: NFL, Cumulative Statistics data source.
2. In the Data polling, filtering, and throttling section, set one or more of the following options ([Figure 29 on page 47](#)):

How to Configure Data Integration

Figure 29 NFL Cumulative Statistics Data Configuration Options

Data source name	Type	Enabled
MyNFL_test	GSIS NFL Cumulative Statistics	✓

Configuration **Field mapping**

Network settings

Server(IP Address) =

Port = 21

Data path = /

User = nfl

Password = ***

Data polling, filtering and throttling

File name = GSISGameStats.xml Can be specified as a pattern like *.xml

Wait to read data from source (TP polling interval) = 60 in seconds [5-600]

Save Cancel

- File name—Name of the cumulative statistics file on the SIAB server. The default is GSISGameStats.xml.
 - Wait to read data from source (FTP polling interval)—Number (in milliseconds) that specifies how often to retrieve data from the SIAB server. The default is 60.
3. Click **Save**. A message box appears asking you to restart the application.
 4. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.
- For more information, see [Restarting the Data Integration Application, page 54](#).

What To Do Next

Enable the data source. For more information, see [Enabling the Data Source Configuration, page 52](#).

Configuring the Incoming Data Filter Rate for Data Sources

NOTE: This data option is available for GSIS NFL clock, Daktronics, OES scoreboard, and Generic database data sources.

To configure the incoming data filter rate for data sources:

1. Go to the **Configuration** screen for the selected NFL clock or scoreboard controller data source.
2. In the Incoming data filter rate box, specify the number (in seconds) that specifies the amount of time to ignore duplicate data and process only new data ([Figure 30 on page 47](#)). The default is 20.

Figure 30 Incoming Data Filter Rate Options

Data polling, filtering and throttling

Incoming data filter rate * 20 in seconds [5-60]

3. Click **Save**. A message box appears asking you to restart the application.
4. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

What To Do Next

Enable the data source. For more information, see [Enabling the Data Source Configuration, page 52](#).

Configuring the Image Display Size for Atom and RSS Feeds

Image dimensions are retained from the original source unless you change the image display size options from the default values of width 0 and height 0. If you specify the image width and height, then the source images from that data feed will be resized.

To configure the image display size:

1. Go to the **Configuration** screen for the selected data source type.
2. In the Image display section, set one or more of the following options using the spinner control:
 - a. In the Width box, select the horizontal dimension of the image (in pixels).
 - b. In the Height box, select the vertical dimension of the image (in pixels).
3. Click **Save**. A message box appears asking you to restart the application.
4. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see [Restarting the Data Integration Application, page 54](#).

What To Do Next

Select the input statistics that you want to map for output display. For more information, see [Selecting Input Statistics and Mapping to Output Fields for Display, page 51](#).

Providing Sample XML or JSON Data for Generic Data Sources

NOTE: This task is only required when you are configuring a Generic Data Source.

The sample XML/JSON data is used to “train” the system on the content to be expected from the configured generic data source. You can provide sample XML/JSON data for generic data sources in two ways:

- Uploading a sample XML or JSON file (Recommended).
- Pasting a sample of the XML or JSON data.

NOTE: The JSON is internally converted to XML for use by Cisco Vision Director.

Prerequisites

Before you begin this task, be sure that the following requirements are met:

- You have obtained a sample of your XML or JSON data, or you have a file available to be uploaded to Cisco Vision Director.
- If you are going to paste sample data in the Field Mapping screen, be sure that you have groomed the sample to remove any repeating elements. This will help streamline the processing and avoid reaching limits on the size of the file that can be used in the Data Integration interface.

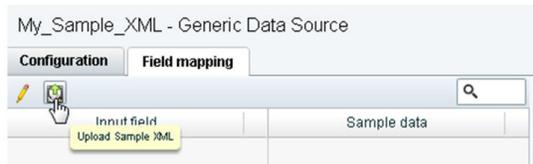
Recommended Procedure

NOTE: The following example describes how to do this procedure for an XML file, but the same steps also apply to uploading a JSON sample.

To upload a sample XML file for generic data sources:

1. Go to the **Field Mapping** screen for the selected generic data source.
2. To upload a sample XML file, complete the following steps:
 - a. Click the upload arrow icon (Figure 31 on page 49).

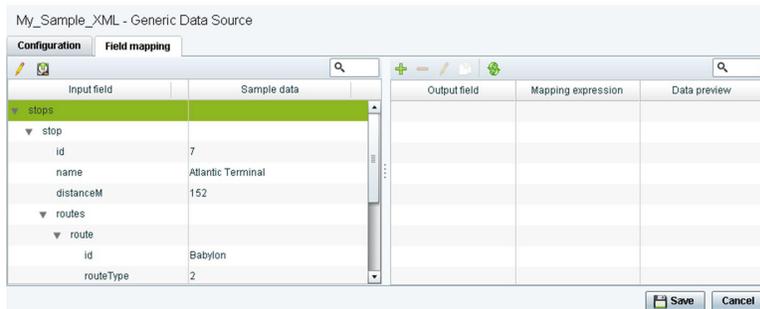
Figure 31 Upload Sample XML File for Generic Data Source Field Mapping



- b. In the Open dialog box, go to the location of your XML sample file and select it.
- c. Click **Open**.

The data fields from the XML file are listed in the Input field box (Figure 32 on page 49). You can click the arrows to verify the available input fields and sample data that were uploaded.

Figure 32 Sample XML File Input Fields



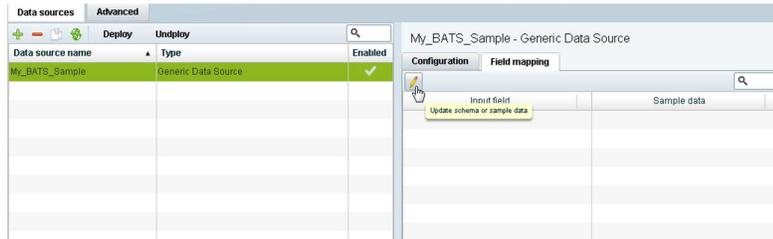
- d. Click **Save**.

Alternate Procedure

To provide sample XML data for generic data sources:

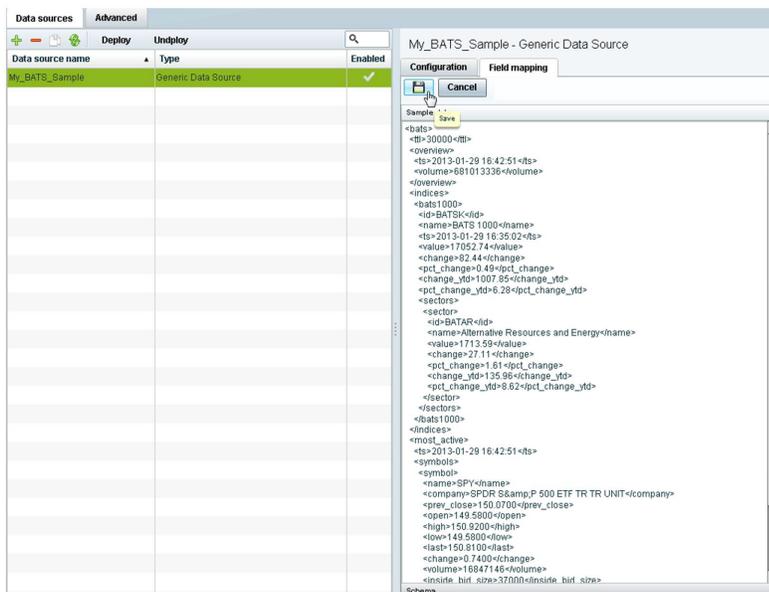
1. Go to the **Field Mapping** screen for the selected generic data source.
2. To manually provide sample XML data, click the pencil icon (Figure 33 on page 50).

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Figure 33 Update Sample Data for Generic Data Source Field Mapping

3. In the Sample data panel, paste the representative XML code from your sample file and click the Save icon.

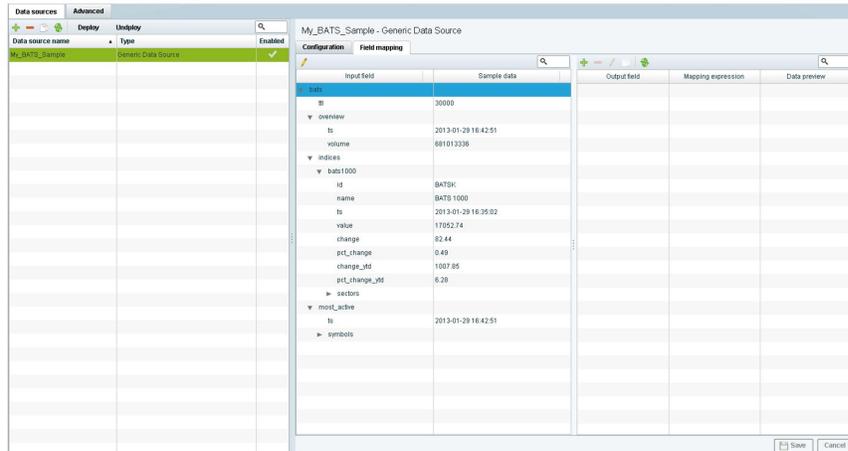
Figure 34 on page 50 shows an excerpt of XML code from a source for BATS Exchange data.

Figure 34 Paste XML into Sample Data Panel

The input fields with sample data from the saved XML source that you pasted are shown in the Field Mapping screen. You can expand the fields to show more data elements (Figure 35 on page 51).

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Figure 35 Paste XML into Sample Data Panel



What To Do Next

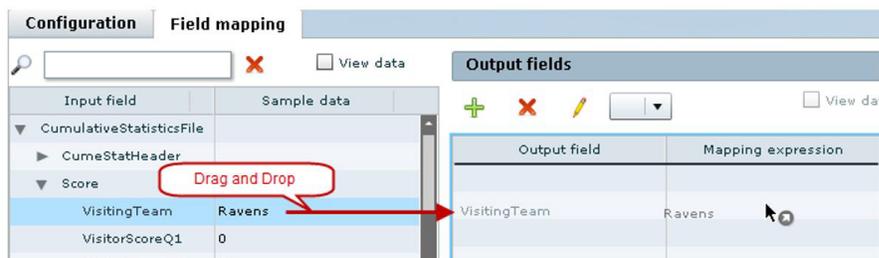
Select the input statistics that you want to map for output display. For more information, see [Selecting Input Statistics and Mapping to Output Fields for Display, page 51](#).

Selecting Input Statistics and Mapping to Output Fields for Display

To select input statistics and map to output fields for display:

1. Go to the **Field Mapping** screen for the selected data source.
2. To view the available statistics, click the arrow beside the data file name to expand the list.
The Sample Data column displays a representative value for each statistic.
3. With your mouse, select a statistic and drag-and-drop it to the Output Fields panel on the right ([Figure 36 on page 51](#)).

Figure 36 Field Mapping



The Add Output field dialog box displays ([Figure 37 on page 52](#)).

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Figure 37 Add Output Field Dialog Box

4. Modify the Output field name or other mapping options as needed.

For more information, see [Modifying the Output Format of a Statistic, page 63](#).

5. Continue to select and add statistics to the Output fields panel.
6. Click **Save**.

What To Do Next

Enable the data source. For more information, see [Enabling the Data Source Configuration, page 52](#).

Enabling the Data Source Configuration

By default, external data collection and configuration is disabled. Once you have completed your configuration, you must both enable the data source and save the configuration to allow collection of the data.

Disabled data sources are indicated by a gray checkmark in the Enabled column of the corresponding data source name. When a data source is enabled, the checkmark turns green.

NOTE: Real-time data collection from the SIAB server will not begin until the External Content Integration application has been both enabled and restarted in Cisco Vision Director. For more information, see the [Activating Data Integration System-Wide From the Management Dashboard, page 52](#) and [Restarting the Data Integration Application, page 54](#).

To enable the data source configuration:

1. In the left pane, select the data source.
2. Click **Deploy**. A message box appears asking you to restart the application.
3. If you have completed all of the changes that you want to make on the Configuration tab, restart the application.

For more information, see the [Restarting the Data Integration Application, page 54](#).

NOTE: To disable a data source configuration, repeat this task but click **Undeploy** at Step 2.

Activating Data Integration System-Wide From the Management Dashboard

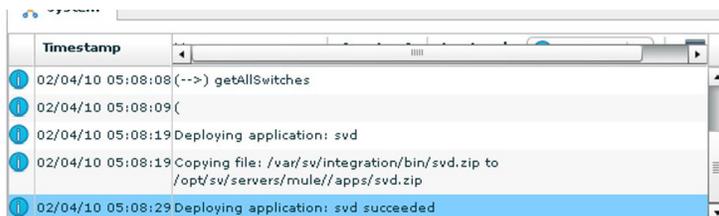
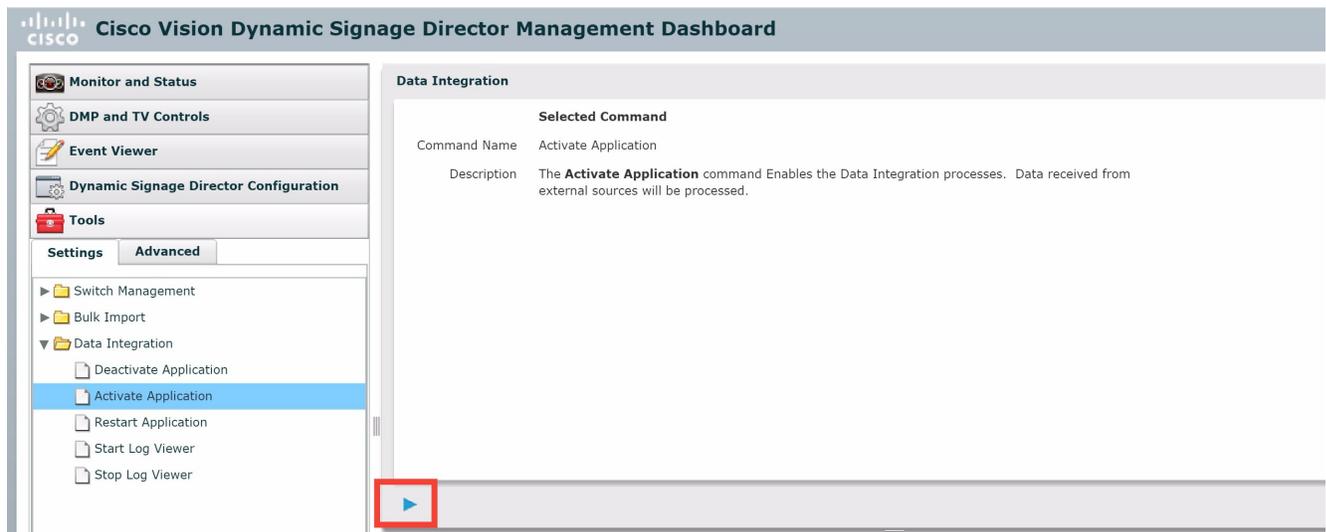
By default, External Content Integration is disabled system-wide in Cisco Vision Director. After you have saved and enabled your data source configuration, you must activate the application **and** restart it from the Management Dashboard before data collection can begin.

How to Configure Data Integration

If you disabled the Data Integration application, it must only be activated once to deploy it in the Cisco Vision Director server. Once the Data Integration application has been activated in the system, then any time the configuration has been changed, the application only must be restarted.

To activate Data Integration system-wide:

1. Log into Cisco Vision Director as an Administrator.
2. From the Cisco Vision Director Main Menu, click the **Gear** icon > **Management Dashboard**.
3. Using the Management Dashboard drawers, go to **Tools** > **Settings** > **Data Integration**.
4. Select **Activate Application**.
5. Click the **Play** button.
6. When the confirmation message box appears, click **OK** to run the command.
7. To verify the application activation, look for the success message in the log display area of the screen.

Figure 38 Activate Application

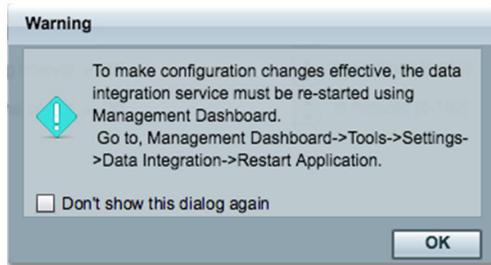
8. After the processing has completed, select **Restart Application**.

For more information, see the [Restarting the Data Integration Application, page 54](#).

Restarting the Data Integration Application

Any time that you have made a change to the Data Integration settings on the Configuration tab for external data sources, you must restart the application from the Cisco Vision Director Management Dashboard.

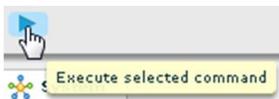
When you save the configuration, a message displays as a reminder to restart:



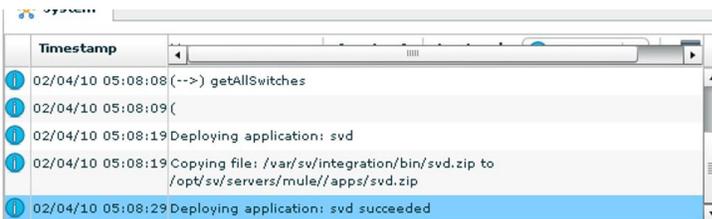
NOTE: Changes to the data source field mapping only need to be saved, but the application does not have to be restarted. However, if for some reason you did not do a restart of the application after making changes in the Configuration tab before going on to save changes in Field mapping, then you also will see this message about the required restart at the time you save the Field mapping.

To restart the Data Integration Application:

1. Log into Cisco Vision Director as an Administrator.
2. From the Cisco Vision Director Main Menu, click the **Gear** icon > **Management Dashboard**.
3. Using the Management Dashboard drawers, go to **Tools > Settings > Data Integration**.
4. Select **Restart Application**.
5. Click the **Play** button to run the command.



6. When the confirmation message box appears, click **OK** to run the command.
7. To verify the application activation, look for the success message in the log display area of the screen.



Verifying the Integration

This section includes the following topics:

- [Verifying Receipt of Real-Time Data, page 55](#)

How to Configure Data Integration

- [Verifying the Integration Broker Service Status, page 55](#)

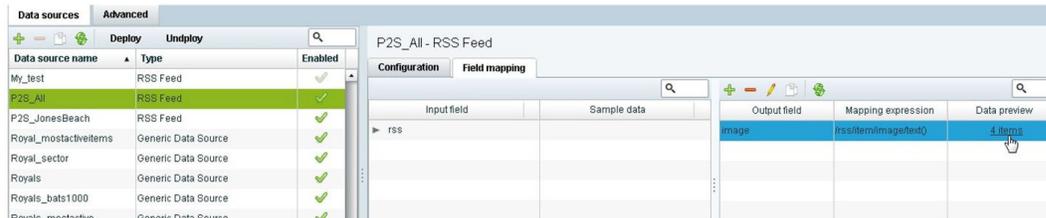
Verifying Receipt of Real-Time Data

Assuming that your network connection to the external data source is available and you have enabled the data source, real-time data is collected after you both activate and restart the application in the Management Dashboard.

To verify the receipt of real-time data:

1. From the Data Integration interface, select the data source that you want to verify.
2. Click **Field mapping**.
3. In the Output fields panel, select the link in the Data Preview column.

[Figure 39 on page 55](#) shows selection of a Mozes RSS feed with two image items available for data preview from the active feed.

Figure 39 Data Preview Example

After you click the link, a Preview window opens displaying the live data from your feed.

[Figure 40 on page 55](#) shows an example of the images along with their corresponding URLs that are displayed in the preview window.

TIP: Use the scroll bar to see all the available preview data.

Figure 40 Image Preview of Active RSS Feed

4. Click X to close the window.

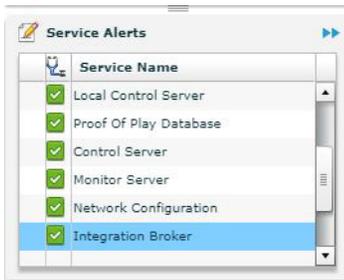
Verifying the Integration Broker Service Status

To verify the integration broker service status:

1. From the Management Dashboard, go to the **Service Alerts** pane in the bottom right corner.

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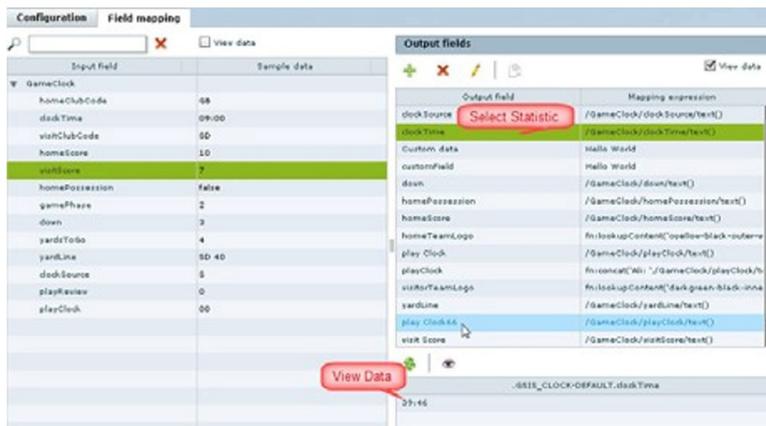
2. Navigate to find the **Integration Broker** service name and observe its status icon.



When the icon is green, the Data Integration service is successfully activated.

Figure 41 on page 56 shows an example of real-time data for the NFL GSIS clockTime statistic.

Figure 41 Clock Time Real-Time Data Statistic



3. Click the Refresh icon (Figure 42 on page 56) and observe that the value is changing to confirm receipt of real-time data.

Figure 42 Refresh Icon for Real-Time Data



Modifying the Default Data Throttling

The following data throttling options are provided in Cisco Vision Director:

- Wait to read data from source (FTP polling interval)—NFL cumulative statistics only

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Specifies how often (in milliseconds) to retrieve data from the SIAB server. The recommended value is 5000 ms (5 seconds).

- Wait to push data to destination

Specifies the frequency with which the data is multicast to all DMPs in the Cisco Vision Director server. The recommended value is 5000 ms (5 seconds).

- Push data if wait exceeds

If there has not been any change in data since the last poll, then this throttle specifies the longest amount of time to wait before sending the multicast of unchanged data to all DMPs. The recommended value is 15000 ms (15 seconds).

To configure data throttling:

1. In the left pane, select the data source type.
2. Click the **Configuration** tab.

The configuration for the selected data source appears in the right pane.

3. In the Data throttling section, set one or more of the throttling values.

Figure 43 on page 57 shows a throttling configuration example for the NFL cumulative statistics data source.

Figure 43 NFL Cumulative Statistics Throttling Configuration Example

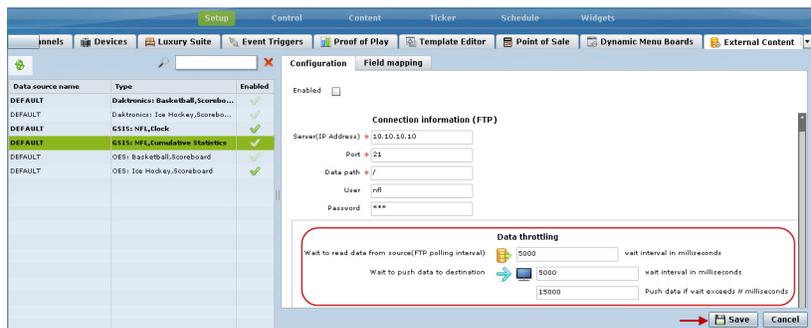


Figure 7 on page 34 shows a throttling configuration example for the NFL clock UDP data source.

The same throttling options are available for the scoreboard controller UDP connection.

