



SuperSystems
incorporated

DATA CENTER DATA MANAGEMENT SOFTWARE FOR INSTRUMENTATION OPERATIONS MANUAL

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DataCenter Operations Manual

Contents

Introduction.....	4
Prerequisites.....	4
SQL Setup.....	4
SQL Server Database Backups.....	5
Using T-SQL:.....	5
Using SQL Server Management Studio	5
SQL Backup Restore Info	5
Installation	6
Software Licensing	8
Initial Setup.....	8
Operation.....	9
Main Page.....	9
Navigation Bar.....	10
Connections View.....	10
Overview Display.....	11
Configuration	12
Adding a New Connection	12
MODBUS Ethernet.....	13
MODBUS Serial.....	15
OPC	17
Setting Up Tags	17
Generate Tags	18
Import Template	18
Bulk Tag Creator	19
Tag Browser	19
Export Template	19
Setting Up Users	19
Setting Up Alarms	22
Bit Alarm.....	23
CompareFixedValueAlarm	23
CompareTagsDifferenceAlarm	24
Configuring OPC Client to Connect to Data Center	25
Revision History	25

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Introduction

Data Center is SSI's data acquisition and report software suite for multiple instruments and I/O points. Compatible with a variety of SSI and other instruments, Data Center offers a robust set of features, reporting and monitoring capabilities.

Data Center is compatible with SDIO, the communications engine used with SuperDATA, particularly for legacy applications. Users are encouraged to utilize the communication protocols built into Data Center with new instruments and as applications are updated.

Data Center includes a built-in OPC server and OPC client. The OPC server allows third-party Human-Machine Interfaces (HMIs) to access data from Data Center using an OPC connection. The OPC client allows Data Center to obtain instrument data from an external OPC server.

Data Center creates log data in Microsoft SQL Server that cannot be altered without detection. Data Center provides software and playback utilities (SDRecorder PRO) as a means of examining and/or compiling the data but does not allow the user any means for altering the source data. *If data is modified in any way, that data will not be retrievable via SDRecorder, Datacenter, or other SSI software.*

Datacenter provides the ability to generate accurate and complete copies of records in both human-readable and electronic form suitable for inspection, review, and duplication through SDRecorder PRO.

Prerequisites

The computer on which Data Center will be run must run Windows XP or higher. Windows 7 or higher is recommended.

► .NET Framework 4.5+, SQL Server 2012 or SQL Server 2012 Express

Data Center requires **Microsoft .NET Framework 4.5 or higher** and **Microsoft SQL Server 2012** or **Microsoft SQL Server 2012 Express**. If not present on the computer where Data Center is being installed, .NET Framework will be installed by the Data Center installation program when it is run.

► Administrative Privileges to Data Center Database

By default, Data Center will create the Data Center Database on the computer where Data Center is being installed. In order to work properly, Data Center must have administrative privileges to the Load Database.

The Setup Flowchart below illustrates the recommended steps to follow when setting up and installing Data Center, especially for the first time. These features will be used after the initial setup as new loads are added, process requirements change, etc.

SQL Setup

Please refer to the *SQL Server Setup Guidelines for SSI Software Installations Reference Guide* found on the Manuals page of the Super Systems website: www.supersystems.com. If you have

DataCenter Operations Manual

questions about your specific installation, please consult your IT administrator or contact SSi at (513) 772-0060.

SQL Server Database Backups

NOTE: The backup process takes a great deal of computer resources. Avoid backups during normal working hours. Also, monitor your computer's resources during your initial backups to ensure that Data Center can still function properly.

SSi recommends creating SQL Server backups (sometimes called database backups). This will create a complete backup of your database and part of the transaction log in one backup, so the database can be easily recovered.

NOTE: The examples below use "DataCenter.BAK" which is the default database name.

Using T-SQL:

Enter the following:

```
BACKUP DATABASE DataCenter TO DISK = 'C:\DataCenter.BAK'  
GO
```

(SSi recommends using the .BAK file extension to help identify the file as a backup.)

Using SQL Server Management Studio

Right click on the desired database.

Select Tasks > Backup, then select the following information in the ensuing window:

- Backup type: Full
- Destination: Disk

Click "Add..." then type "C:\DataCenter.BAK" and click "OK"

When ready, select the destination you just created, then click "OK" to create the backup.

SQL Backup Restore Info

When restoring a SQL backup, the DataCenter files will be located in the DataCenter install directory (default C:\SSi\Bin\DataCenter).

Installation

To install the software, first run the setup file.

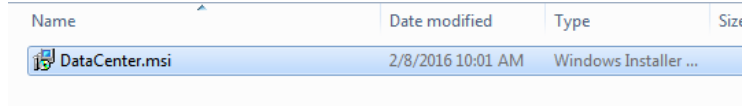
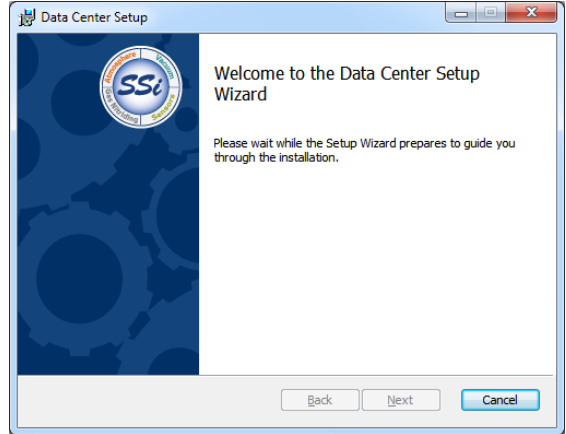
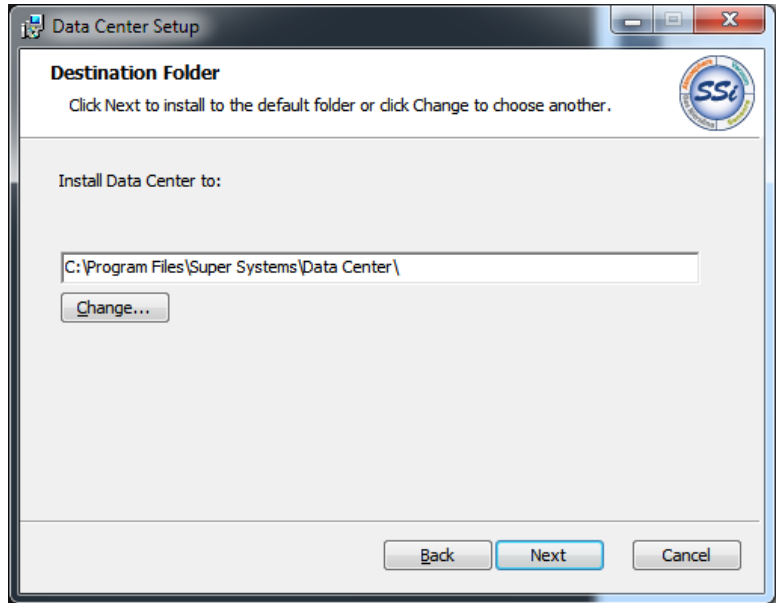


Figure 1 - Setup File for Installation

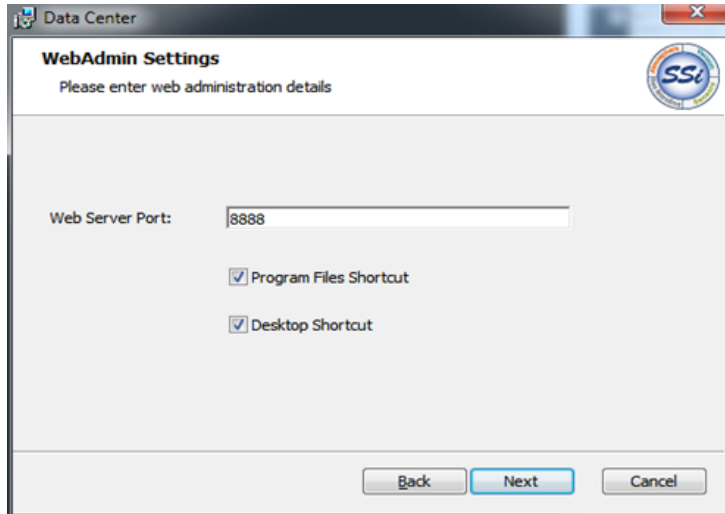
The setup screen will appear. Click "Next" when ready.



Data Center Setup will give you the option of where to install the software. By default, the installation folder will be something like "C:\Program Files\Super Systems\Data Center", but this can be changed to nearly any folder you wish. Simply click the **Change...** button to specify a different installation folder.

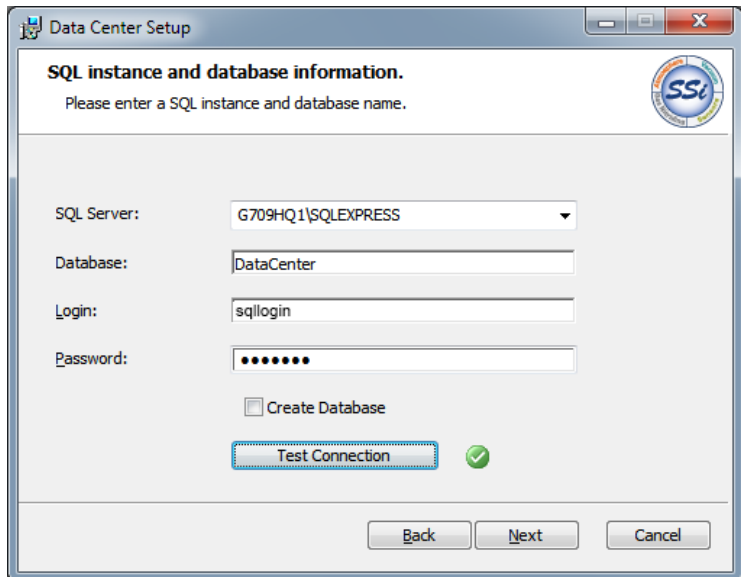


The next screen presents the option of changing the web server port. The default port of 8888 can be used unless another port is needed (for example, in the case of a port conflict with another piece of software). If you have questions about which port to use, please consult your IT administrator.



On the next screen, enter the SQL instance and database information associated with Data Center. These details must be set up before Data Center can operate.

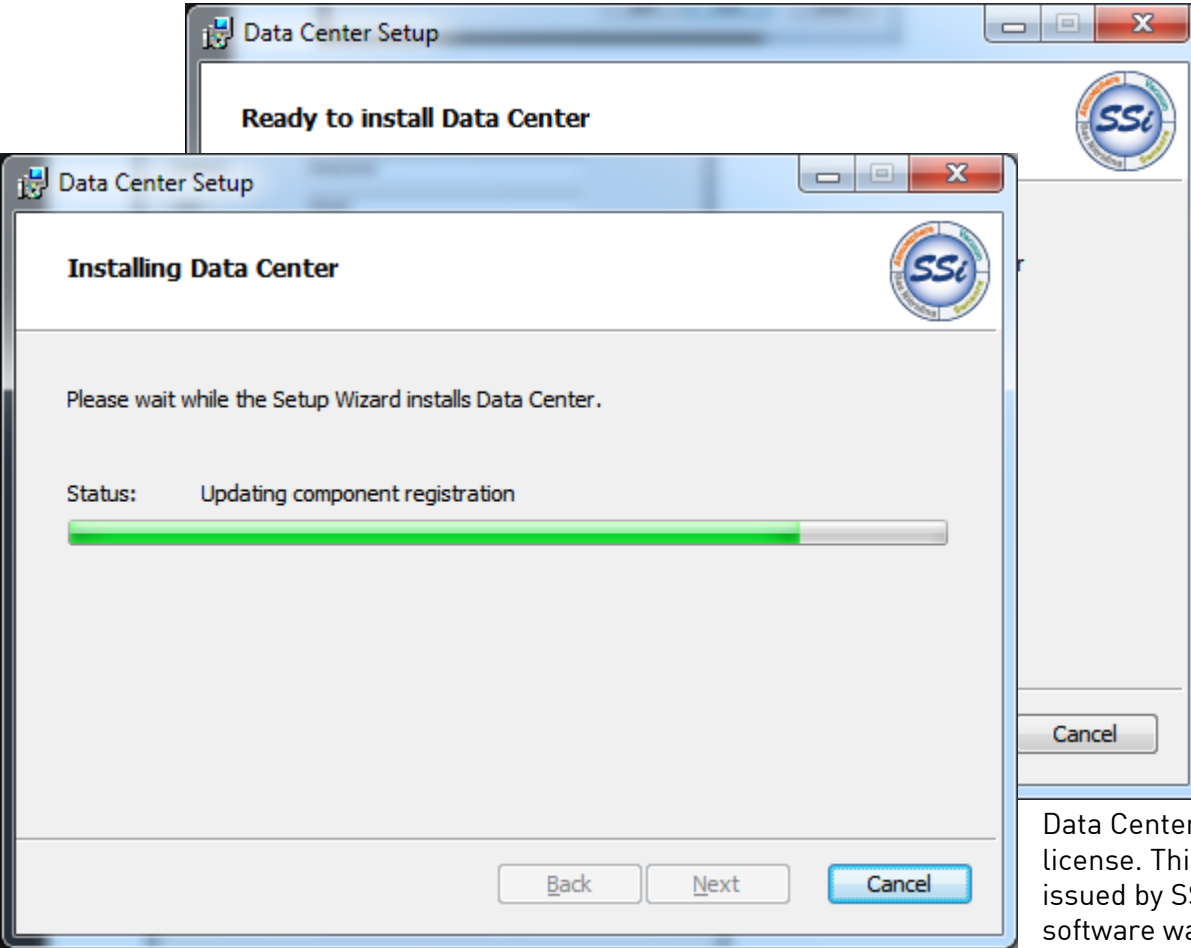
IMPORTANT: Use the **Create Database** checkbox to create a new database for all new Data Center installations. If the software installation is going to use an existing Data Center database, leave this box unchecked and make sure that the needed database details are entered.



To test whether the database connection can be made, click the **Test Connection** button. This step is required before proceeding.

Click Next when ready to proceed with the installation.

The installation will proceed at this point.



Once the installation is complete, a Data Center shortcut will be placed on the desktop.

Software Licensing

On startup, Data Center will verify its license. This is the license issued by SSI when the software was purchased. If the license cannot be verified,

call SSI at (513) 772-0060 to resolve this issue.

Initial Setup

In order to use Data Center, the following must be set up:

- **Connections and tags (See Page 12 and 17).** Connections and tags are integral to Data Center's operation. A Connection is a logical association between Data Center and a physical device, such as a control instrument. A Tag consists of a name used to refer to a register (data location) in that device, as well as formatting and multiplier information. Connection and tag data are stored in the SQL database associated with Data Center.

DataCenter Operations Manual

- **Users (See Page 19).** A set of Users must be defined for use with Data Center. Each User will have certain permissions that help manage access.
- **Alarms (See Page 22).** Typically, Alarms are defined for different conditions. For example, an alarm can be generated when a device reports that a furnace is not getting sufficient output to maintain setpoint. Alarms can be defined at a time of your choosing.

These setup options can be used after initial configuration is complete for the purpose of adding, editing, or removing connections, tags, users, and alarms.

IMPORTANT!




Before running Data Center for the first time, make sure that the SQL database has been set up properly. The Data Center software will **not** run properly without an associated SQL database that it can connect to.


Operation

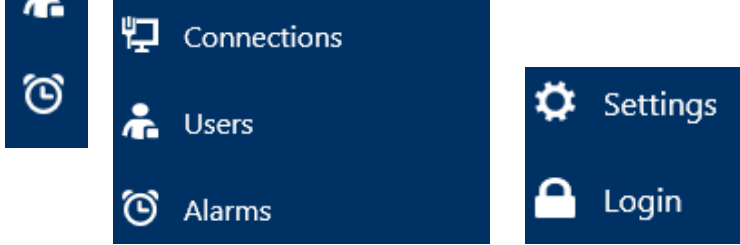
Main Page

The main page of Data Center provides a dashboard-like interface designed for ease of use and rapid access to software functions and configuration options.

Navigation Bar















Along the left-side blue bar are the **Connections** , **Users** , and **Alarms**  icons. Clicking on an icon will bring up the display for that option.

The Menu icon  also allows the user to select from the above displays. In addition, the user can adjust Settings and Login from the bottom of this menu.



Connections View

Any configured connections are displayed in individual boxes showing the name of the connection.




Vacuum	 ...	HC900_Prog_1	 ...
9205_2	 ...	Base 5	 ...
9220_30	 ...	9130_1	 ...
9220_7	 ...	Base 1	 ...
Base 4	 ...	VR2	 ...
9220	 ...	VR1	 ...
Base 6	 ...	9205_1	 ...

NOTE:


Green bar indicates good comms

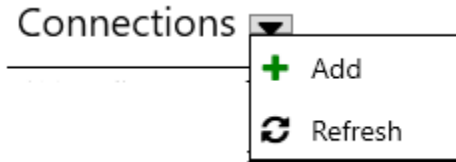
Red bar indicates bad comms

Grey bar indicates inactive connection.

HC900_Prog_1	 ...
Base 5	 ...
9130_1	 ...

The “Filter” option at top right can be used to limit the displayed connections or to find a specific connection. Simply begin to type the desired connection name to filter unwanted connections.


Clicking the Expand  button will open up a submenu with the “Add” and “Refresh” options.



Clicking “Add” will bring up the “New Connections” display. For more information on this feature, see PAGE 12.

Clicking “Refresh” will refresh the current view.

Overview Display

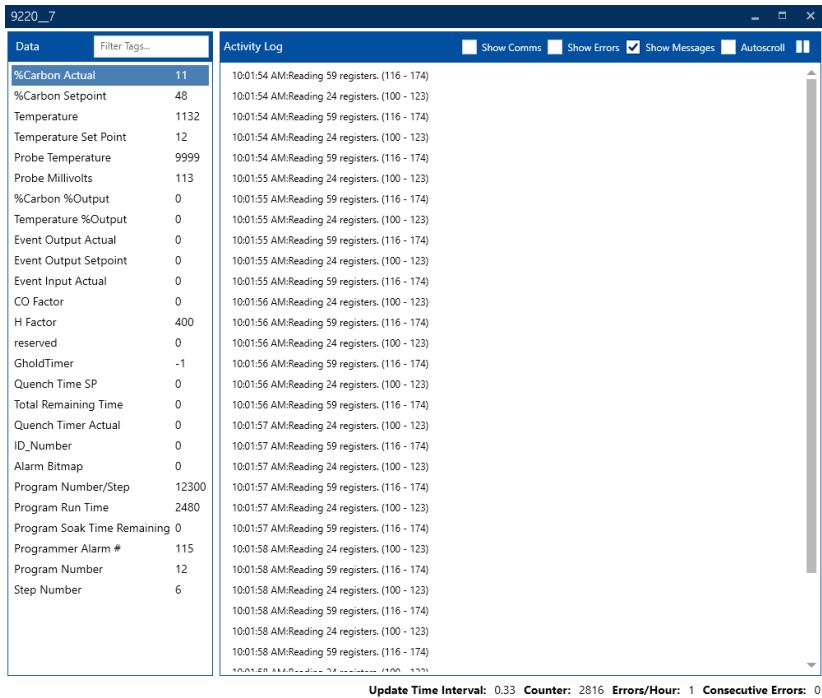
To view detailed information about a connection, either double-click the connection box, or click on the Overview  icon.

The Overview display includes the Data pane and Activity Log.

The Data pane shows the current tags for this connection.

The “Filter” option can be used to limit the displayed tags or to find a specific tag. Simply begin to type the desired tag name to filter unwanted tags.

You can write data to some tags by double clicking, then entering a new setting in the “WriteValue” box that appears.



Update Time Interval: 0.33 Counter: 2816 Errors/Hour: 1 Consecutive Errors: 0




The Activity Log can display Comms Activity, Errors, and Messages. Use the checkboxes to select which information to display.



To keep the Activity Log displaying the most recent data, click the Autoscroll checkbox.


The Pause button  will pause the display.


When paused, this button becomes a Play button . Click the Play button to resume.


At the bottom of the Overview Display, information is displayed for the Update Time Interval, the Counter, Errors/Hour, and Consecutive Errors.

Update Time Interval: 0.32 Counter: 4907 Errors/Hour: 1 Consecutive Errors: 0

To minimize the Overview Display for a connection, click .

To maximize, click .

To close, click .

Additional options for each connection are available by clicking the  icon in the connection box: Edit, Copy, Activate/Deactivate, and Delete.

Selecting “Edit” will open the Connection Overview screen with all the details of the current connection. For more information on this screen, see PAGE 10.

-  Edit
-  Copy
-  Activate
-  Delete

Selecting “Copy” will open the “New Connection” screen with all the details of the selected connection duplicated. For more information on this screen, see PAGE 12.

Selecting “Activate” will activate a connection. If the connection is activated, this option becomes “Deactivate.” When deactivated, the connection settings will still be stored in Data Center, but no active connection or data logging will be maintained.

Selecting “Delete” will delete the connection. **Use this option with caution—once deleted, the connection data cannot be recovered.**

NOTE: These functions may require login privileges.

Configuration

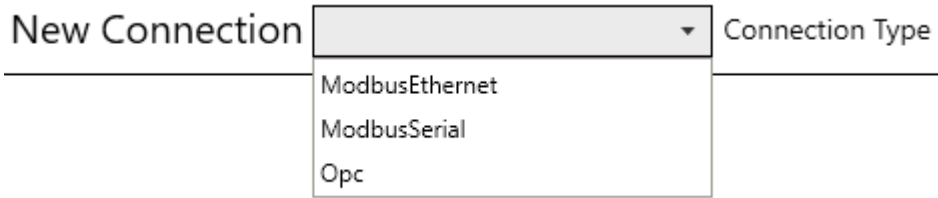
Adding a New Connection

NOTE: The functionality for Adding a Connection is similar to Editing or Copying a Connection.

For each connection you create, you have the choice of several protocols:

- MODBUS Ethernet – used for MODBUS connections over an Ethernet network

- MODBUS Serial – used for MODBUS connections over serial RS232 or RS485
- OPC – used for connections to an OPC server



The following sections describe how to set up each connection type.

MODBUS Ethernet

The MODBUS Ethernet connection screen contains options for connecting to devices that use the MODBUS TCP communications protocol. Numerous control instruments, including SSi's 9000 Series and others, are included in this list.

The following settings are used with this connection type:

- Name: A name assigned to the connection.
- Host: The IP address or host name of the MODBUS Ethernet host.
- Slave Address: The IP address or host name of the Slave Instrument.
- Max Read Length: The maximum number of registers Data Center will read in one message.
- Timeout: How long (in milliseconds) Data Center will wait for a response from a device before giving up. NOTE: This is an advanced setting and should not be changed unless problems are being experienced. Contact SSi for guidance with this feature.
- Read Interval: How often (in milliseconds) Data Center will poll the device. NOTE: This is an advanced setting and should not be changed unless problems are being experienced. Contact SSi for guidance with this feature.
- Floating Point Byte Order: The floating point byte order for the connection over Modbus Ethernet. For SSi instruments, the default setting of **Big Endian** will generally work. For non-SSi instruments, consult the product documentation or, if necessary, contact the manufacturer or distributor directly. Possible settings are **Big Endian**, **Big Endian w/ Byte Swap**, **Little Endian**, and **Little Endian w/ Byte Swap**.
- Integer Byte Order: The integer byte order for the connection over Modbus Ethernet. For SSi instruments, the default setting of **Big Endian** will generally work. For non-SSi instruments, consult the product documentation or, if necessary, contact the manufacturer or distributor directly. Possible settings are **Big Endian**, **Big Endian w/ Byte Swap**, **Little Endian**, and **Little Endian w/ Byte Swap**.
- Port: The port number of the MODBUS host.
- Device: A drop-down list of devices. If the MODBUS Ethernet device to which you want to connect is in this list, select that device. If not, use one of the generic devices: **Generic Device**, **Honeywell Generic Device**, or **Generic MMI**.

DETAILS	
Name	<input type="text" value="Connection Name"/>
Host	<input type="text" value="Host"/>
Slave Address	<input type="text" value="0"/>
Max Read Length	<input type="text" value="0"/>
Timeout	<input type="text" value="1000"/>
Read Interval	<input type="text" value="250"/>
Floating Point Byte Order	<input type="text" value="BigEndian"/>
Integer Byte Order	<input type="text" value="BigEndian"/>
Port	<input type="text" value="502"/>
Device	<input type="text" value="Device"/>

This menu also contains icons for Generate Tags , Import Template , and Bulk Tag Creator . For information on these features, see PAGE 18.

MODBUS Serial

The MODBUS Serial connection screen contains options for connecting to devices that use the MODBUS communications protocol over an RS232 or RS485 serial instrument. Numerous control instruments, including SSI's 9000 Series and others, are included in this list.




The following settings are used with this connection type:

- Name: A name assigned to the connection.
- Slave Address: The IP address or host name of the Slave Instrument.
- Baud Rate: The baud rate (speed) of the serial connection.
- Floating Point Byte Order: The floating point byte order for the connection over Modbus Ethernet. For SSi instruments, the default setting of **Big Endian** will generally work. For non-SSi instruments, consult the product documentation or, if necessary, contact the manufacturer or distributor directly. Possible settings are **Big Endian**, **Big Endian w/ Byte Swap**, **Little Endian**, and **Little Endian w/ Byte Swap**.
- Integer Byte Order: The integer byte order for the connection over Modbus Ethernet. For SSi instruments, the default setting of **Big Endian** will generally work. For non-SSi instruments, consult the product documentation or, if necessary, contact the manufacturer or distributor directly. Possible settings are **Big Endian**, **Big Endian w/ Byte Swap**, **Little Endian**, and **Little Endian w/ Byte Swap**.
- Parity: A method used to detect any errors in character transmission. Options include even, mark, none, odd, and space.
- Com Port: The Com Port number.
- Stop Bits: Stop bits are the part of the serial character that defines the location where the current character ends and the next character can begin. This value should match what is called for in the instrument. Refer to the manufacturer or distributor documentation for more information. There must always be at least one stop bit. Possible values are **None**, **1**, **1.5**, or **2**.
- Data Bits: Data bits are the part of the serial character that contain data transmitted to and from the instrument. The number of data bits should match what is called for in that instrument. Refer to the manufacturer or distributor documentation for more information. Possible values are **5**, **6**, **7**, or **8**.

DETAILS

Name	<input style="width: 90%;" type="text" value="Connection Name"/>
Slave Address	<input style="width: 90%;" type="text" value="0"/>
Baud Rate	<input style="width: 90%;" type="text" value="Baud Rate"/>
Floating Point Byte Order	<input style="width: 90%;" type="text" value="BigEndian"/>
Integer Byte Order	<input style="width: 90%;" type="text" value="BigEndian"/>
Parity	<input style="width: 90%;" type="text" value="None"/>
COM Port	<input style="width: 90%;" type="text" value="COM Port"/>
Stop Bits	<input style="width: 90%;" type="text" value="One"/>
Data Bits	<input style="width: 90%;" type="text" value="Data Bits"/>
Device	<input style="width: 90%;" type="text" value="Device"/>

- Device: A drop-down list of devices. If the MODBUS Ethernet device to which you want to connect is in this list, select that device. If not, use one of the generic devices: **Generic Device**, **Honeywell Generic Device**, or **Generic MMI**. *Create Default Tags* adds default tags for the selected instrument.

This menu also contains icons for Generate Tags , Import Template , and Bulk Tag Creator . For information on these features, see PAGE 18.



OPC

The OPC connection option allows for setup of a connection to an OPC server, which will handle the physical connection to the device and serve as the data source for Data Center.

The following settings are used with this connection type:


- Name: A name assigned to the connection.
- Host: The path to the server. This will often be localhost
- Server: The OPC server name.

This menu also allows the user to Import a Template and utilize the Tag Browser (see page 18).


DETAILS	
Name	<input type="text" value="Connection Name"/>
Host	<input type="text" value="localhost"/>
Server	<input type="text" value="Server"/>
	
	

Setting Up Tags

Tags can be set up when creating a connection, and when copying or editing an existing connection.

Generate Tags 

Some devices from the Connection Details box dropdown menu include a set of default Tags.


To load these Tags to use and/or edit, click the Generate Tags  icon. The “Filter” option at top right can be used to limit the displayed tags or to find a specific tag. Simply begin to type the desired tag name to filter unwanted tags.

NAME	REGISTER	LOG INTERVAL	FORMAT	MULTIPLIER	UNIT	TYPE	READ ONLY	DERIVED	DERIVED EXPRESSION	CHANNEL	SLOT
SPP3 - CO factor for %C calculator	26016	60	0	1		Int16	<input checked="" type="checkbox"/>	<input type="checkbox"/>		0	0
SPP3 - Hydrogen factor for dewpoi	26017	60	0	1		Int16	<input checked="" type="checkbox"/>	<input type="checkbox"/>		0	0
SPP3 - Quench Time SP	26020	60	0	1		Int16	<input type="checkbox"/>	<input type="checkbox"/>		0	0
SPP3 - Total Remaining Time	26021	60	0	1		Int16	<input checked="" type="checkbox"/>	<input type="checkbox"/>		0	0
SPP3 - Quench Timer Actual	26022	60	0	1		Int16	<input checked="" type="checkbox"/>	<input type="checkbox"/>		0	0

To edit the settings for these tags, double click on a value to enter new data; click to check or uncheck a checkbox; or enter a desired value in the dialog box as appropriate.

- Register: This is the tag’s register location. Double click to edit.
Log Interval: How often (in seconds) Data Center will log a value. Double click to edit.
- Format: The displayed decimal format (0.0=one decimal point; 0.00=two decimal points, etc). Double click to edit
- Multiplier: Changing this value will multiply the reading by the entered value. This is useful for reading percentages and in other specific situations. Double click to edit.
- Unit: Units to add to the data when displayed. Double click to edit
Type: The data type. For most situations, “Int16” (16-bit integer) is the desired option. Double click and select from the drop-down menu. If unsure, contact your IT professional or SSi for guidance.
- Read Only: When checked, data cannot be written through the interface.
- Derived: When checked, this tag will not be read from the device, but “Derived” from a function entered in the “Derived Expression” box (see below). This is useful when a more complicated function is required.
- Derived Expression: Used with the “Derived” feature (see above). Data Center will perform this function on the reading and display the result.
- Channel: Used to associate the tag with an old SDIO installation, allowing SDRRecorder to display the data seamlessly after an upgrade.
- Slot: Used to associate the tag with a previous SDIO installation. This allows SDRRecorder to display the data seamlessly after an upgrade.

Import Template 

If you have a pre-existing template (json file), you can import it using the Import Template  icon. Click the icon, then browse your computer or network for the desired file to import. Templates can be created in the Export Template feature (See below)

Bulk Tag Creator 

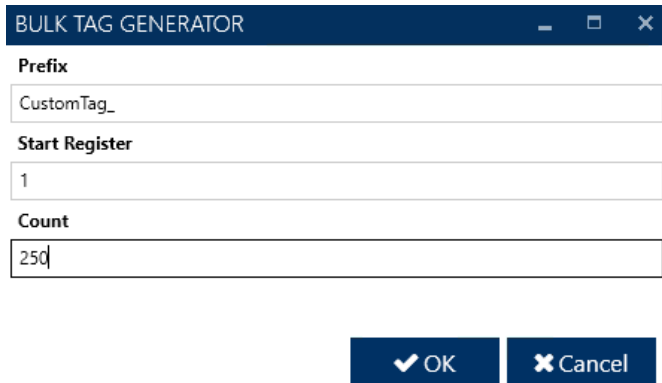
The Bulk Tag Creator generates a set of tags based on a Start Register, a Count, and a tag name Prefix.

EXAMPLE: If you enter

- “CustomTag_” as the Prefix,
- “1” as the Start Register, and
- “250” as the Count,

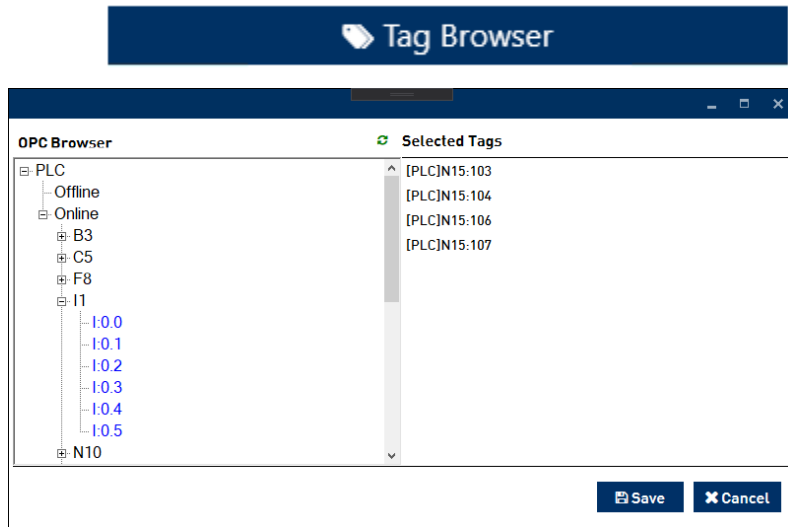
Data Center will generate a series of tags named

- “CustomTag_1”
- “CustomTag_2”...and so on up to
- “CustomTag_250”




Tag Browser

The Tag Browser is only available when setting up an OPC connection. This feature allows the user to browse the available tags in the chosen OPC server. Double click a tag to add it to the connection.






Export Template 

At any point during the Tags setup process (either when adding a new connection or editing an existing connection), the current list of tags can be exported as a template. To do so, click the Export Template  button at the top right corner of the Tag display area. Simply name the template file and choose a save location.

Templates can then be imported during the creation/editing process.

Setting Up Users

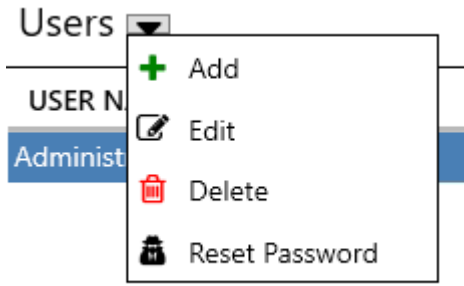
To set up users in Data Center, simply click on the User  icon in the left-hand menu bar. (You can also click the Menu  icon and then click Users  Users)

The User display shows the User Name, Full Name, and email Address of all current users. This screen will be blank until users have been added.

Users ▾

USER NAME	FULL NAME	EMAIL ADDRESS
Administrator	Administrator	support@supersystems.com

To add a user, simply click the Expand ▾ icon and select “Add” from the menu that appears.



This will open the User Details screen.

NOTE: The User Details screen is also used for the “Edit” option.

Here you will enter details relevant to the new user you are creating. The checkboxes allow you to set which permissions, or “claims,” the new user will have. The fields are as follows.

Username: The login ID of the user.

Full Name: The full name of the user (for reference purposes).

Phone Number: The phone number of the user.

Email Address: The email address of the user. This address may be used for account issues, alarm notifications, and other purposes.

Password and Confirm Password: These fields are used to assign a password to the user.

The User Claims are as follows. Note that charts and notes are handled in SSI’s SDRRecorder II software.

User Details

Username

Full Name

Phone Number

Email Address

Password

Confirm Password

Claims
 Admin

Available Claims	Selected Claims
CreateCharts	
EditCharts	
DeleteCharts	
CreateConnections	
EditConnections	
DeleteConnections	
DeleteNotes	
CreateNotes	
EditNotes	
WriteTagValues	
CreateUsers	
EditUsers	

Creatcharts: Allows the user to create charts based on logged data.

EditCharts: Allows the user to edit chart contents. This option may have regulatory implications and should be used with caution.

DeleteCharts: Allows the user to delete existing charts.

CreateConnections: Allows the user to create connections.


EditConnections: Allows the user to edit properties of an existing connection.


DataCenter Operations Manual



DeleteConnections: Allows the user to delete connections.
DeleteNotes: Allows the user to delete existing notes.
CreateNotes: Allows the user to create notes.
EditNotes: Allows the user to edit existing notes.
WriteTagValues: Allows the user to write values to tags.
CreateUsers: Allows the user to create users.
EditUsers: Allows the user to edit properties of an existing user.
DeleteUsers: Allows the user to delete users.
CreateAlarms: Allows the user to create alarms.
EditAlarms: Allows the user to edit properties of an existing alarm.
DeleteAlarms: Allows the user to delete alarms.
Admin: Provides the user with all listed User Claims.


Clicking the “Admin” checkbox will give the user all claims. Clicking “Select All” also gives the user all claims.

Clicking “Unselect All” will clear the “Selected Claims” box.

To select specific claims, highlight them in the “Available Claims” box, then click the  icon to move them to the “Selected Claims” box.


To remove specific claims, highlight them in the “Selected Claims” box, then click the  icon to place them back in the “Available Claims” box.

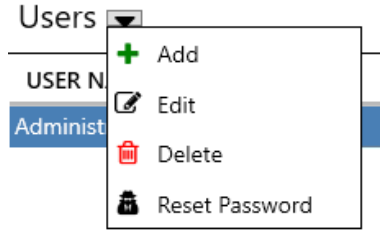
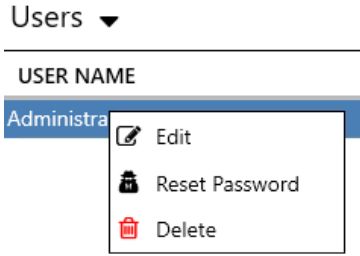
When finished, click  to save the user information, or  to exit without saving.

To Edit existing user information, first click on the User Name in the User Display list. Then, either right-click and select “Edit” from the menu that appears, or click the Expand  icon followed by “Edit” in the ensuing menu:






From here, use the User Details menu as described above to make changes to the User information.


To Delete existing user information, first click on the User Name in the User Display list. Then, either right-click and select “Delete” from the menu that appears, or click the Expand  icon followed by “Delete” in the ensuing menu:

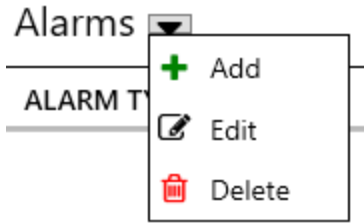


Setting Up Alarms

To set up alarms in Data Center, simply click on the Alarms  icon in the left-hand menu bar. (You can also click the Menu  icon and then click Alarms )

The Alarm display shows the Alarm Type and Name of all current alarms.

To add an alarm, simply click the Expand  icon and select "Add" from the menu that appears.



This will open the Alarm Details screen.


NOTE: The Alarm Details screen is also used for the "Edit" option.

Alarm Type: Select the desired alarm type from the drop down menu. Descriptions of the available alarm types can be found in the following section.

Name: Name the alarm.

Cause: Define the cause of the alarm.

Action: Define an action to take when the alarm is active.

Tag: Click the  icon to bring up the TagModal window. From here you can select the connection and tag to be evaluated by the alarm. Click "Save" to save the information or "Cancel" to continue without saving.

Delay Minutes: Enter the number of minutes for Data Center to wait once a potential alarm state has been reached before activating the alarm.

Type Specific Details: These options will vary based on the alarm type. See the alarm type descriptions below for more details.

The image shows a screenshot of the "Alarm Details" form. The form has a dark blue header with the text "Alarm Details". Below the header, there are several input fields: "Alarm Type" (a dropdown menu with "BitAlarm" selected), "Name" (a text input field with an 'x' icon), "Cause" (a text input field with an 'x' icon), "Action" (a text input field with an 'x' icon), "Tag" (a text input field with a magnifying glass icon), and "Delay Minutes" (a text input field with an 'x' icon). Below these fields is a section titled "TYPE SPECIFIC DETAILS" with a dark blue header. This section contains two fields: "Bit Index" (a text input field with the value "0") and "Bit Alarm Type" (a dropdown menu with "BitOn" selected).

Bit Alarm

A Bit Alarm is used to alert the user when a selected bit is on or off. The following unique settings apply.

- Bit Index: The index of the bit, 0 to 15. **Required field.**
- Bit Alarm Type: This setting determines when the alarm will be generated. If set to **BitOn**, the alarm will be generated when the bit is on. If set to **BitOff**, the alarm will be generated when the bit is off.


CompareFixedValueAlarm

A CompareFixedValueAlarm is used to compare a tag's value with another defined value. The following unique settings apply.

- Comparison Type: The type of comparison that will be made between the value of the tag and the Comparison Value. Options are **GreaterThan**, **LessThan**, and **Equal**. For example, if the Comparison Type is set to **GreaterThan**, DataCenter will check to see whether the value of the tag is greater than the Comparison Value. If the value of the tag is greater than the Comparison Value, the alarm will be triggered.
- Comparison Value: The value to which the value of the tag will be compared. **Required field.**

CompareTagsDifferenceAlarm

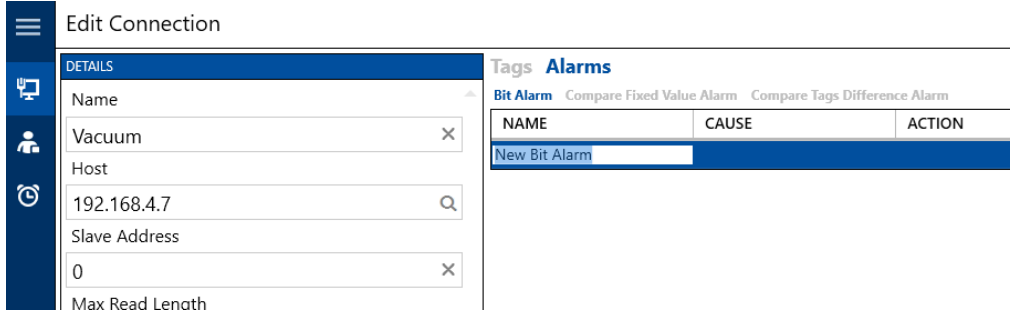
A CompareTagsDifferenceAlarm will take the difference in two tag values and compare that difference with another predefined value. The following unique settings apply.

- Minus Tag: Click the  icon to bring up the TagModal window. From here you can select the second connection and tag to be evaluated by the alarm. Click "Save" to save the information or "Cancel" to continue without saving.
- Comparison Value: The value to which the difference in the values of the two tags will be compared. **Required field.**
- Comparison Type: The type of comparison that will be made between the value of the tag and the Comparison Value. Options are **GreaterThan**, **LessThan**, and **Equal**. For example, if the Comparison Type is set to **GreaterThan**, DataCenter will check to see whether the value of the tag is greater than the Comparison Value. If the value of the tag is greater than the Comparison Value, the alarm will be triggered.
- Absolute Difference (checkbox): If checked, then the absolute value of the difference between the two tags is taken before the comparison is made with the Comparison Value. (The absolute value is the difference without a positive or negative applied to the difference. Therefore, if the difference is 30 or -30, each will have an absolute value of 30.)

Use the **Edit** option to edit existing alarm settings.

Use the **Delete** option to delete an existing alarm.

NOTE: Alarms can also be created through the "Edit Connection" screen. Simply click on "Alarms" in the right-hand Tags and Alarms display, then click on the desired alarm type. Click below the column header to enter the relevant information.



Configuring OPC Client to Connect to Data Center

Data Center’s built-in OPC server can be used as a data source for a third-party application, such as a Human-Machine Interface (HMI) program. The third-party application—or the computer running it—must have an OPC client configured to connect to Data Center’s OPC server. For assistance configuring an OPC client, contact your IT professional or SSI.

Revision History

Rev.	Description	Date	MCO #
New	Initial Release	9/25/2019	2271

DataCenter Operations Manual
