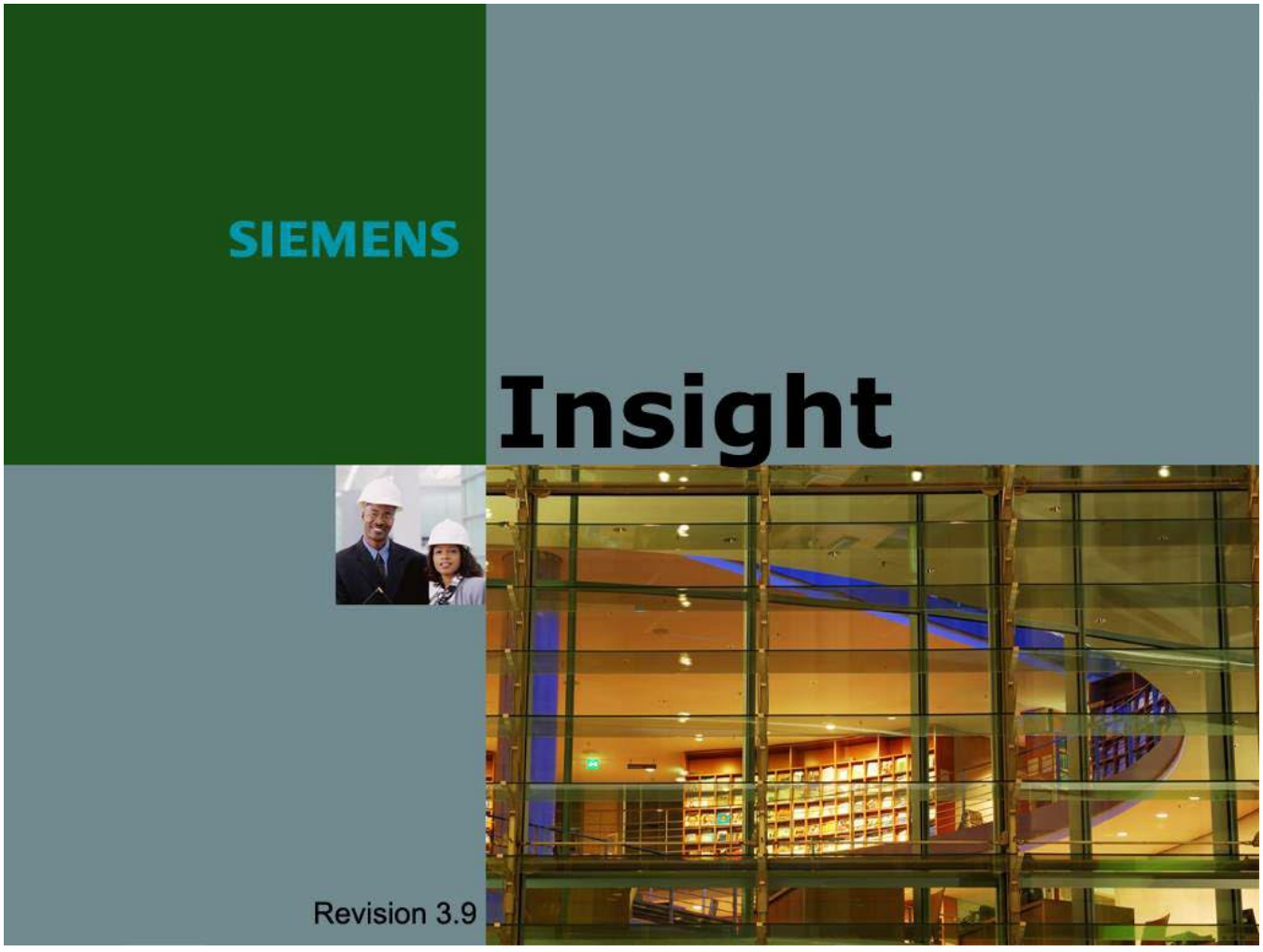
SIEMENS

CUSTOMER TRAINING GUIDE

Insight 3.9 for New Users



Insight 3.9 for New Users

(2/08)

Country of Origin: US

Table of Contents

Getting Started

Training Expectations

It is important that your instructor understand what you want to learn during your training session.

1. Please list five or more topics you would like to learn about.

_____

_____

_____

_____

_____

_____

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_____

2. Please list three major job responsibilities.

_____

_____

_____

Unit Training Objectives

At the end of this unit you should be able to:

1. Log on to the Insight workstation. Shut down the Insight workstation and return to the Windows start-up window.
2. Identify the components of a Panel Point Log.
3. Run a Panel Point Log for:
   - one point.
   - a group of points using wildcards.
   - points with specific characteristics and conditions.
4. Use Point Group Editor to organize points into groups.
5. Command points using the Commander application, and from a graphic, and then return commanded points to system control.
6. Display a dynamic graphic.
7. Determine when to trend a point by time and when to trend a point by Change-of-Value (COV).
8. Use the Trending Wizard.
9. Acknowledge and erase alarms. Drag a point alarm to the Commander to practice drag and drop.
10. View a memo for a point in alarm.
11. Use Online Documentation.
12. Use the Report Builder to build several routine reports.
13. Use the System Activity Log to organize alarm histories and point command histories by multi-selecting points and querying alarm levels and statuses.
14. Use point messages, including point memos, to display point information.
15. Discuss events and scheduling of events.

Also, if you have enabled the BACnet Option, you should be able to:

16. Set and relinquish BACnet Command Priority levels for BACnet points.
17. Add, modify, and edit schedules and calendars in BACnet devices.
18. Use the BACnet Object Browser application to view information about Siemens BACnet field panels and third-party BACnet field panels and devices.

About the Insight Product

Using the Insight Product

The Insight product is a graphics-based software package that provides a visual interface between you and your APOGEE Automation System. The Insight product allows you to operate your building, analyze building performance, and solve many problems without leaving your workstation.

Here are a few of the tasks you can do using the Insight product.

- Monitor and control your building through graphics.
- Diagnose and troubleshoot problems through graphics and reports.
- Schedule and modify equipment operations.
- Analyze energy efficiency by monitoring equipment operation and temperature changes.
- Use alarms to immediately identify a problem in your building.
- Gather information and analyze the efficiency of your system through reports.
- Run third-party Windows desktop applications while the Insight workstation is online and communicating with the field panel network.
- Export trended data into Microsoft Excel spreadsheets.

This training module will not discuss all of these tasks. As you become more skilled, you will learn more of the Insight features.

Many users find that graphics in the Insight software make it easier for them to visualize what is happening in their facility.

Insight 3.9 operates in the Windows 2000 Server or Professional, Windows XP, or Windows Server 2003 environment. You should have basic personal computer and Windows skills before you begin this training unit. If you do not have these skills, your instructor can provide you with some training options to increase your knowledge.

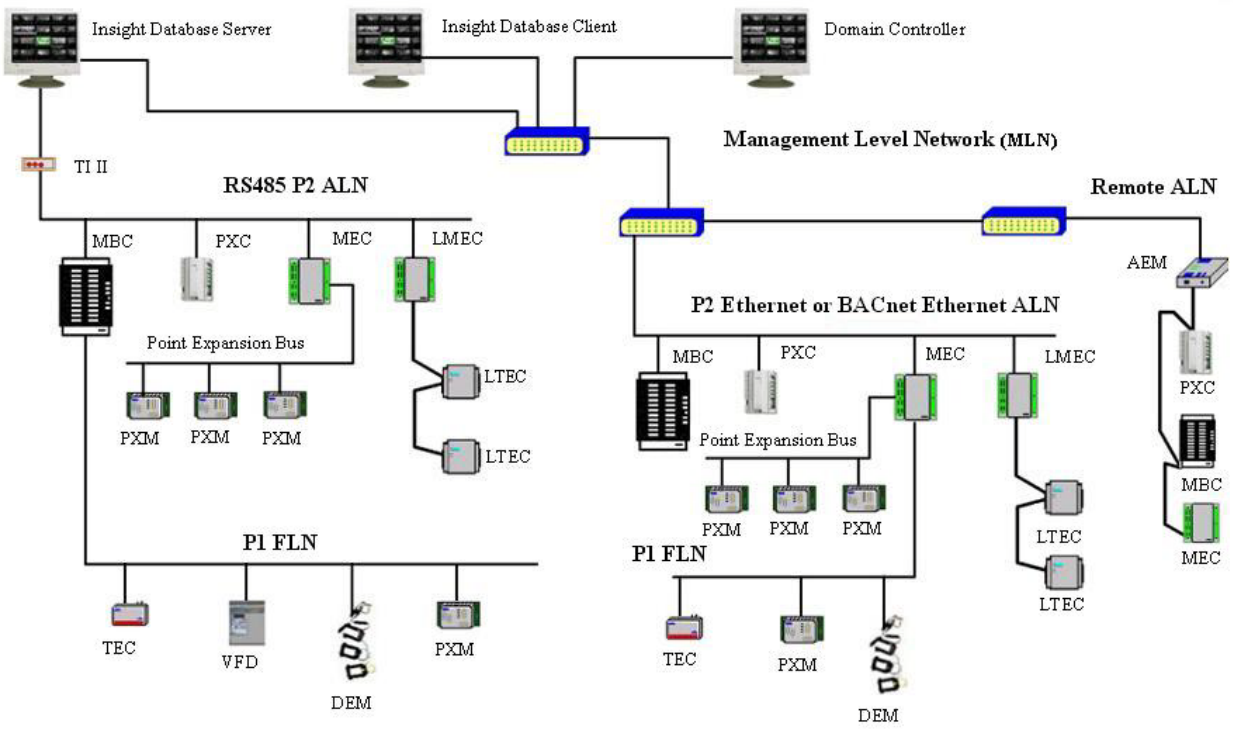
APOGEE Automation System Terminology

Your computer is likely connected to a trunk interface (TI). This device links the computer to the field panels in your building. The Transmit (TX) and Receive (RX) lights on the trunk interface should always be blinking. If they are not blinking, the computer is not communicating with the field panels.

Field panels are connected to each other via the Automation Level Network (ALN) trunk. Field Level Network (FLN) devices, such as Terminal Equipment Controllers (TECs) are connected to the field panels via the FLN trunk.

If you have more than one Insight workstation at your job site, they may be connected to one another in a Management Level Network (MLN). This configuration allows the computers to share information from different ALNs, and gives you multiple workstations with a graphical interface.

Your facility may also use the Auto Dial capability of the system to communicate with remote buildings over the telephone lines.



Basic APOGEE Automation System Architecture

Logging On To Windows

You must log on to Windows in order to start the Insight program and use any of its applications.

To log on to Windows:

Press **Control + Alt + Delete**.

The system will ask you to enter your user initials and password. Domain is the name for a group of networked computers.

The Insight software may start up automatically after logging on, or you may have to open an icon or go through the Start menu.

Shutting Down the Insight Workstation

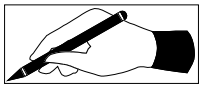
The major reason to shut down the Insight workstation is to protect the security of your operator initials and password.

To log off:

Exit the Insight workstation and press **Control + Alt + Delete**. The Logon/Logoff window is displayed.

Click **Log off**.

Your system may also have a screen saver which will log you off after a defined period of no activity. Your instructor can explain the proper procedures for leaving the Insight workstation unattended at your site.



Practice

Log off of Windows.

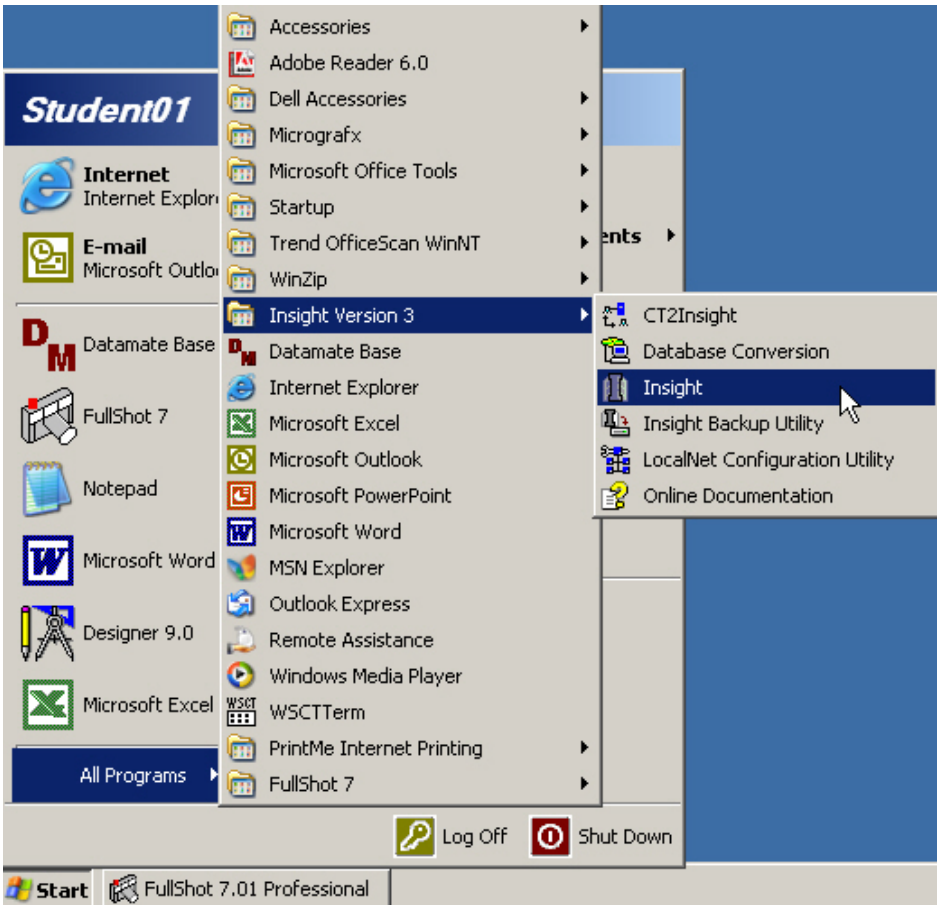
Starting Up the Insight Software

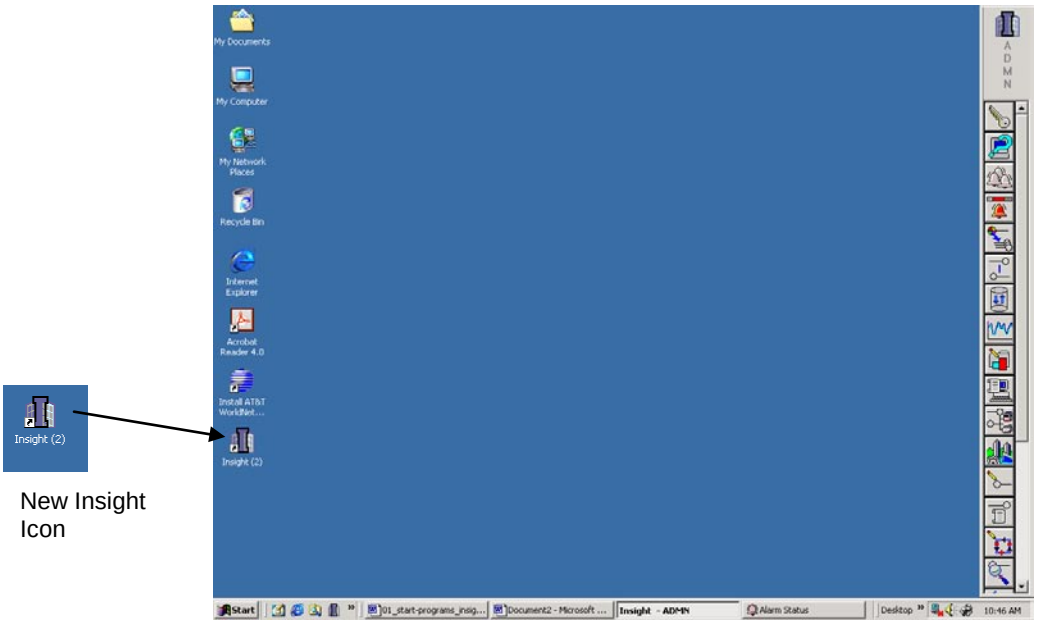
Once you have logged on to Windows, the Windows desktop displays. To open the Insight product:

Choose the **Start** button on the Windows task bar, select **Programs**, and then select **Insight**.

The Insight Main Menu is displayed.

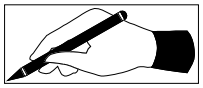
You may have an Insight icon on the desktop. If so, double-click on the icon to start up the Insight Main Menu.





This screen shows the Insight Main Menu Bar arranged vertically

The Insight Main Menu can be arranged vertically or horizontally by dragging the border of the menu. It can also be customized by clicking on the Insight icon in the Insight Main Menu and selecting **Customize**. It can also be "docked", or placed at any of the edges of your screen.



Practice

Identify the following components on your screen:

- Insight Main Menu
- Start Menu

Insight Main Menu

The Insight Main Menu is the central launching point for all Insight applications.

To open an application from the Insight Main Menu, you simply click on the appropriate icon. You may also open an application by dragging an object, such as a point, from one application to another icon on the Insight Main Menu.

In addition to the Insight applications that appear on the Insight Main Menu, you can create up to ten custom buttons that launch local or network programs, files, folders, or Internet/Intranet addresses.

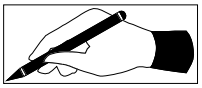
The icons which appear in the Insight Main Menu will vary, depending on your privilege level and how you have customized the Insight Main Menu.

The complete list of icons follows:

Button	Application	Description
	**User Accounts**	User Accounts is used to manage access and security for the Insight workstation and field panels.
	**Online Documentation**	Allows you to go to various help windows and online documentation.
	**Alarm Status**	Alarm Status displays point alarms and Building Level Network (BLN) messages detected in your building system.
	**Attribute Duplicator**	The Attribute Duplicator allows high-level user to modify several characteristics in groups of points, including BACnet point properties.
	**Commander**	Commander lets you take manual control of a point and override any pre-established automatic controls for the point.
	**Database Transfer**	Database Transfer provides you a way to manually upload and download the system databases between the Insight workstation and the field panels.
	**Dynamic Plotter**	Dynamic Plotter is used to plot point values in a continuous graph. Historical trend point values, dynamic point value changes, or a combination of historical and dynamic values can be used to analyze and report on point activity within your building system.
	**Event Builder**	The Event Builder provides a mechanism to define Zones and Events for your building system.
	**System Activity Log**	The System Activity Log allows you to view the activities such as alarms, database changes, point commands and operator actions.

Button	Application	Description
	**Global Commander**	The Global Commander allows you to issue a single command to a group of points. You can command the same subpoint in a group of TECs for example.
	**Graphics**	Graphics allows you to create and display color graphics of your facility and equipment for point monitoring and point commanding.
	**Point Editor**	The Point Editor is used to enter point information into the Insight software so that the APOGEE Automation System can monitor and control the equipment connected to the point. It also includes a BACnet Settings section.
	**Point Group Editor**	The Point Group Editor allows you to organize the points in your system by creating relationships and hierarchies.
	**Panel Point Log Report**	The Panel Point Log Report allows you to quickly create a Point Log Report without creating a report definition in the Report Builder.
	**Program Editor**	The Program Editor is used to create control programs with the Powers Process Control Language (PPCL).
	**Point Details**	Point Details is used to view information about a logical point defined in your building system, including BACnet points.
	**Report Builder**	The Report Builder is used to configure report definitions. When you select a report type, Report Builder opens the report definition for the report you want to create.
	**Report Viewer**	The Report Viewer is used to display reports on the screen, to the printer or to file.
	**Scheduler**	Scheduler provides a way for you to schedule zones, events, reports, and trend collection on the Insight calendar.
	**System Profile**	System Profile gives you graphical, system-wide control for defining, configuring, and maintaining your entire building control network. You can launch the BACnet Object Browser, which allows you to browse both Siemens and third-party BACnet devices and objects for diagnostic purposes, from System Profile.
	**Trend Definition Editor**	The Trend Definition Editor allows you to define trend points that will show how your building control equipment is operating over a specified time period.
	**Alarm Issue Management (AIM) Editor**	The AIM Editor allows you to create contacts and associate devices and equipment groups for alarm issues, as well as assign specific personnel to points.
	**Alarm Bar**	The Alarm Bar application provides an always-visible interface for viewing the highest priority and most recent alarms in your system.
	**Alarm Issue Management (AIM)**	AIM is an Insight product option that allows you to manage the life cycle of an alarm issue through all stages, from initiation to resolution.
	**Point Summary Report**	The Point Summary Report allows you to create custom point information reports for most field panels, including building automation and ALS3 fire alarm panels.
	**Time-of-Day (TOD)**	Time-of-Day (TOD) is used to automatically command points based on a 7-day schedule. This is only used if you have an APOGEE Automation System front end with pre-APOGEE firmware.
	**Main Menu (Custom Button)**	Part of the Main Menu functionality allows you to create up to ten custom buttons that launch local or network programs, files, folders, or Internet/Intranet addresses.

The Dynamic Plotter, the System Activity Log, and the Program Editor do not appear in the Insight Base Model. Also, Alarm Issue Management and Alarm Issue Management Editor need to have their licenses enabled.



Practice

1. Click on the Alarm icon if it is not already displayed.
2. Use the maximize symbol in the top right of the window to maximize this window.
3. Minimize the application.
4. Reposition the icon bar on your screen.
5. Resize it.
6. Open the Graphics application.

   What is the first to display?

   _____

7. Close the Graphics application.
8. Click on the Panel Point Log Report icon. What is the first window to display?

   _____

9. Close the Panel Point Log Report Application.

Naming Methods: “Objects”

The database for your system is organized as a large collection of “objects.” All of the elements which you have access to, such as points and graphics, are objects. The following items are considered objects:

- Equipment Scheduling Zones
- Event Definitions
- Field Panels
- Graphics
- Groups
- LTECs
- Points
- PPCL Programs (PPCL)
- Report Definitions
- Terminal Equipment Controllers (TECs)
- Unitary Controllers (UCs)

Object names can be up to 30 characters long.

All objects have two names, a **System Name** and a **Name**. In most situations you will only deal with the Name, and your user account is most likely configured to show only the Name. As you learn more about your system and how points are used, you will find out whether or not you need to work with the System Name as well.

Some typical names for points and other objects are as follows:

Point
LIB.CHILL02.CWT

Graphic
BLD3.AHU4.GRA

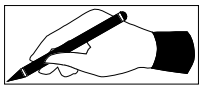
TEC
FLR2.VAV.TEC3

Program
BLD03.Cab02.PGM

Field Panel
BLD01.Cabinet02

Report
BLD01.CLR01.Ptdef.Rpt

Note that periods may be used as separators. (They count as characters.) The structure of the name moves from the broadest category of classification at the far left, to the most specific at the far right. The longer names may also be used without periods as separators.



Practice

Your instructor will discuss the point naming at your facility. List some of the point names:

Name:

_____

_____

_____

_____

List the names of some other objects at your site:

Graphics:

Name:

_____

_____

_____

_____

Reports:

Name:

_____

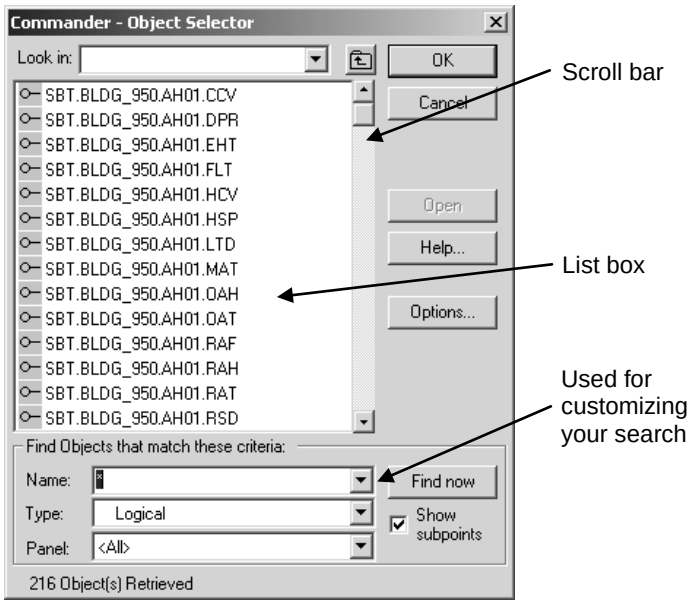
_____

_____

_____

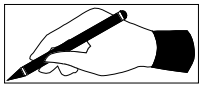
The Object Selector

The Object Selector is the tool you use to select objects. The Object Selector is displayed any time you are required to select an object or objects for an action.



The Object Selector contains two sections:

- The list box section displays the objects which you have selected. Each displayed object is accompanied by a small icon at the left of the window. The icon shows whether the item is a point, a graphic, etc. There is a scroll bar to use in case your list of objects is longer than the list box can display on one window.
- The Find Objects that match these criteria section enables you to select your criteria and search for a list of objects which is displayed in the list box section. You can search the database based on object name, type (graphic, program, etc.), or field panel name.



Practice

Display the Object Selector. Practice navigating by finding and displaying:

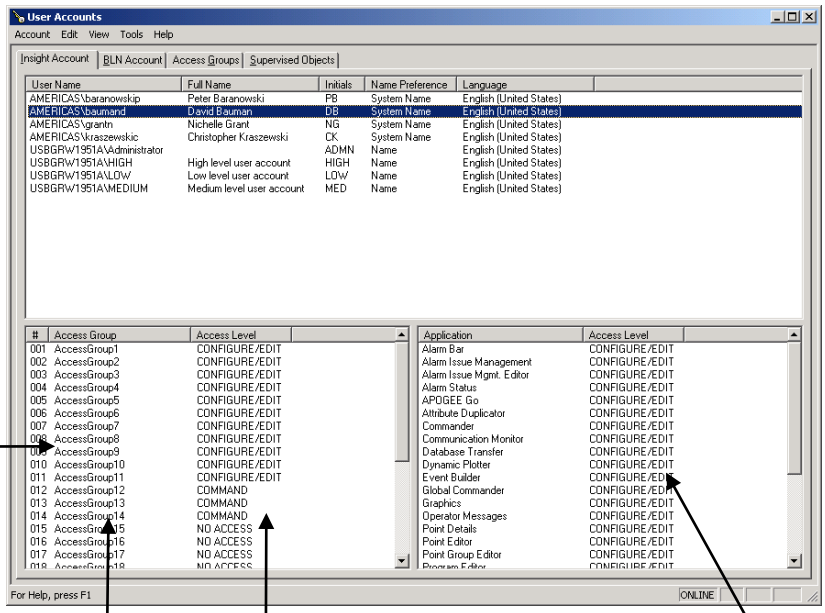
- Graphics
- Points
- Reports
- Events

Access Groups and Privilege Levels

Points, graphics, programs, and all other objects are organized into access groups to help manage users of the system. Every user is assigned access groups and privilege levels to those groups. Users are also assigned privilege levels to the various Insight applications. Privilege levels determine what you can do in the access groups and applications—view, command, etc.

An example of an access group is the points, programs, and graphics which all relate to the mechanical room, or to a floor of a building. Access groups can be created at the Insight workstation and at the field panel.

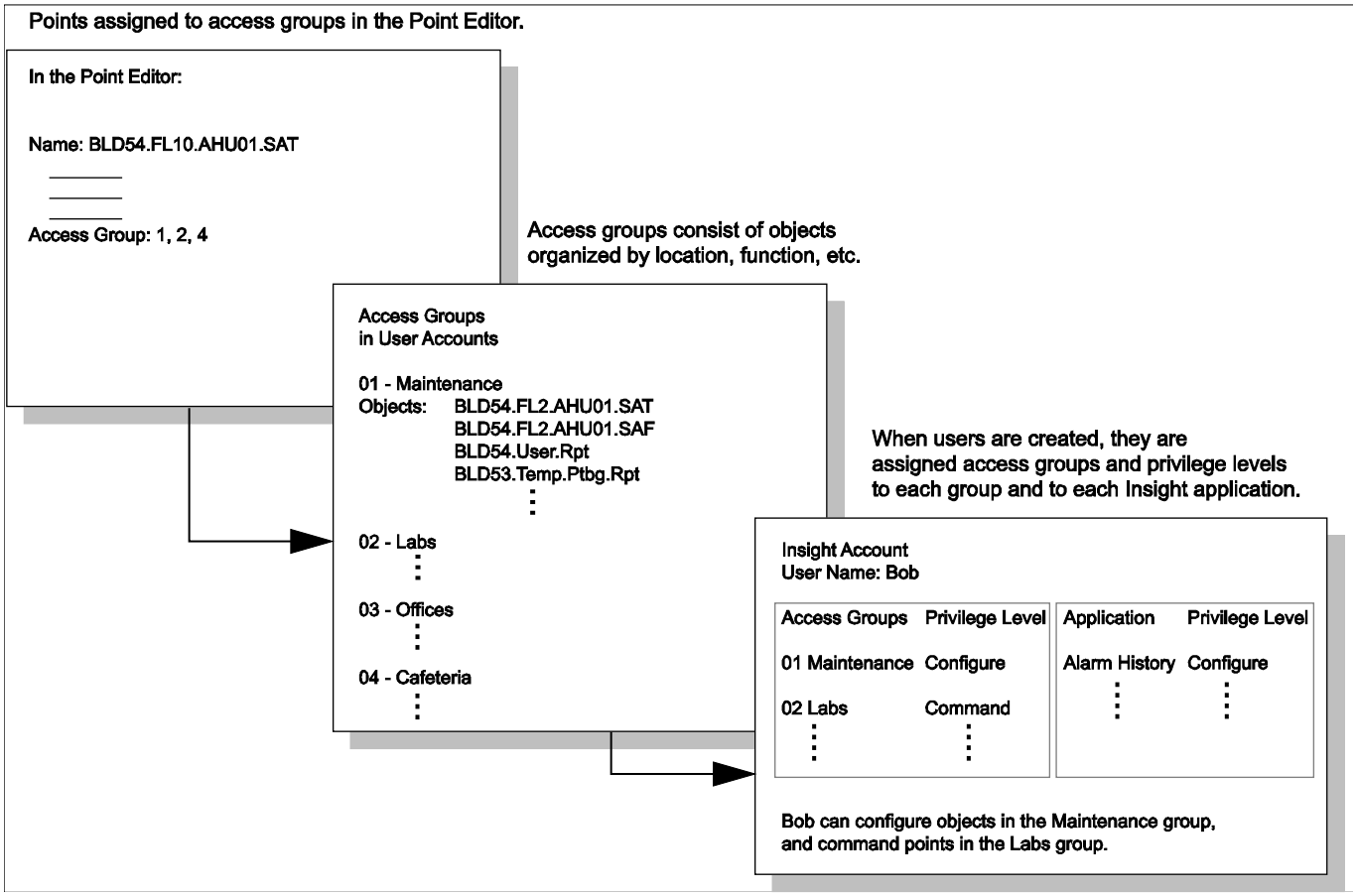
When setting up your user account, the system administrator will assign access groups and applications to your account, and then assign your privilege levels to each of these.



Access Groups consist of points and other objects organized by location of function.

When users are created, they are assigned Access Groups and privilege levels to these groups.

Users are also assigned privilege levels to Insight Main Menu applications.



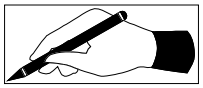
The access level allows you to perform a specific level of tasks on the objects within an access group or in an application. The available access levels are:

- **No access** - Prevents access of any kind.
- **Read Only** - Allows you to view and print information.
- **Command** - Gives you the ability to command points in the access group.
- **Configure/Edit** - Provides full editing capabilities for the access group.

The combination of access groups, applications, and privilege levels determines what you and other users will be able to do with the system. You may have the ability to look at the points and other objects in one access group, and to command the points and objects in another access group, and so on. The table below shows how users can be assigned to different access groups and have different privilege levels for those groups.

User	Access Groups	Privilege Level
Bob	1-10 (entire facility)	Configure/Edit (Bob is the system administrator for the facility.)
Mary	1-10 (entire facility)	1-10 Command (Mary can command all points, but does not have privilege to configure the system.)
Bill	1-10	1-4 Command, 5-10 Read Only (Bill can command all points related to mechanical systems, but can only view other points.)
Susan		1-4 Command, 5-10 No access (Susan can command the points in access groups related to the mechanical room. No access to other access groups.)

When you log on to Windows with your user name and password, the system will become available to you based on the access groups you are assigned, and the privilege levels, which are assigned to you for each access group.



Practice

How many users at your site?_____

How many access groups are there at your site?_____

Are there access groups which exist only at the field panel?_____

Discuss with your instructor the access privileges of the various users at your site.

How are points and other objects organized into access groups at your site?

_____

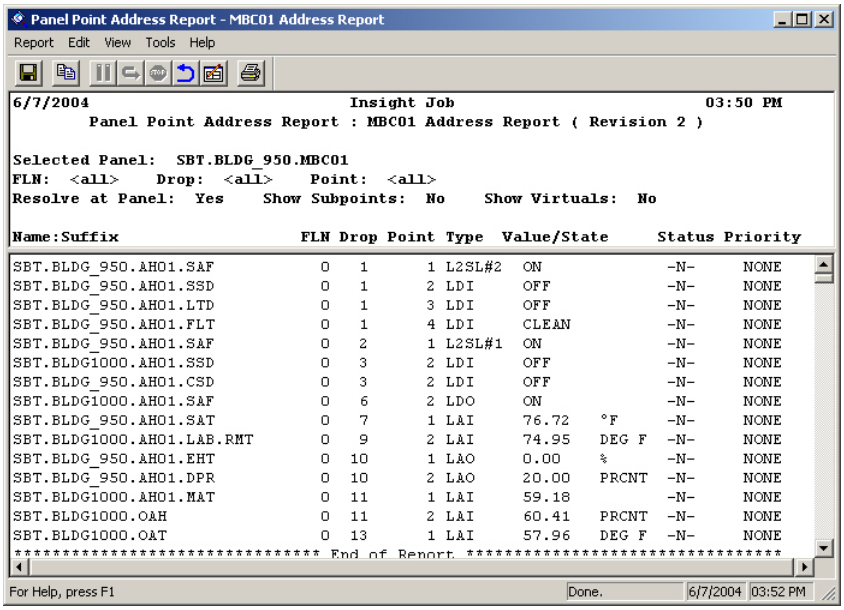
_____

Reports

About Reports

The Insight product allows you to customize standard reports in ways which are very flexible. The Report Builder allows you to design customized reports and save the report format to produce the report again at any time. A saved report becomes an object, which you can call up from the Object Selector to print or display. You can also place the object into the Scheduler to run automatically.

In many situations, points can be dragged directly from a report and dropped into another application to display more information about that point, such as dragging a point from the report to Point Details to display more detailed information about the point.



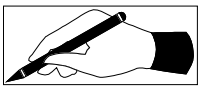
Sample Panel Point Address Report

Reports can be e-mailed as attachments by selecting the E-Mail output type when creating, viewing, and scheduling reports. This allows you more flexibility to receive reports when working outside the office or in remote locations. You can e-mail any report type except for the Trend Collection report.

BACnet Data in Reports

In addition, if you are using the BACnet option, many reports now include BACnet data, including:

- Panel Configuration Report
- Panel Display Report
- Panel Point Definition Report
- Panel Trend Definition Report
- Point Definition Report
- System Profile Report
- Trend Definition Report
- Trend Data Detail Report
- User Account Report



Practice

What reports are already set up at your facility? Your instructor will give you some examples.

_____

Are there reports which are also automatically scheduled?

_____

Discuss with your instructor the kinds of reports which would be helpful to schedule routinely in your facility.

Panel Point Log Report

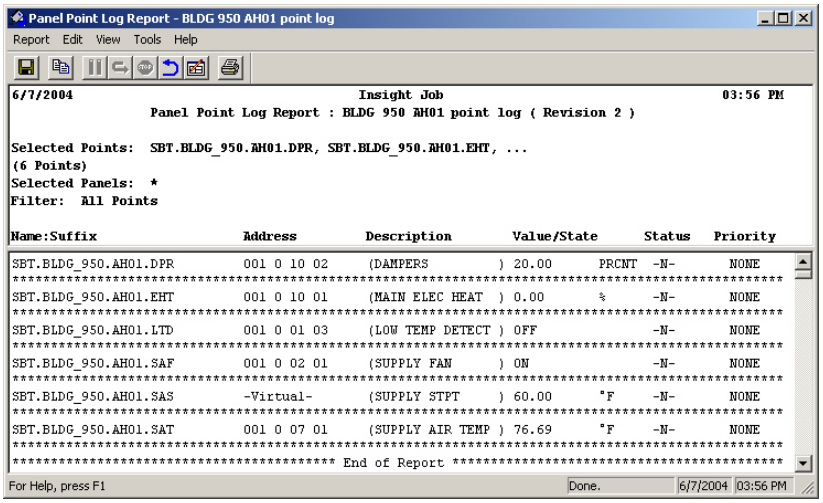
Checking the status of your building is one of the most frequent tasks you will perform. There are many ways to check building status, but one of the most common ways is to run a Panel Point Log. A Panel Point Log displays important point information on your screen.

You can print or display a Panel Point Log for a single point or a group of points.

Look at the sample Panel Point Log report to find out the types of information a Panel Point Log can provide.

Panel Point Log Terminology Definitions

Point Name	This is most often the User name. Can be up to 30 alphanumeric characters long. Each point must have a unique name within the APOGEE Automation System.
Suffix (Description)	Suffix refers to subpoint in an application: TEC subpoints, scheduling zone subpoints, and PPCL subpoints. The descriptor helps identify the point. Can be up to 16 alphanumeric characters long, not including the parentheses. The parentheses are added by the system.
Value/State	If the point is an analog point, the value and unit of measurement are displayed (such as 72 DEG F). A special type of analog point can display text to reflect a mode or condition, (such as Day, WARMUP, etc.) If the point is a digital point, the state is displayed (such as ON, OFF, CLEAN, DIRTY).
Status	Can be Normal, Alarm, Failed, Proofing, Operator Disabled, PPCL Disabled, Alarm Failed, or Alarm By Command (put into alarm by the operator). Acknowledged alarms will be noted.
Priority	The two most common priorities are NONE (the field panel is controlling the point) and OPER (the operator is controlling the point). Other priorities (PDL, SMOKE, EMER) are less common, and will not be discussed in this module.

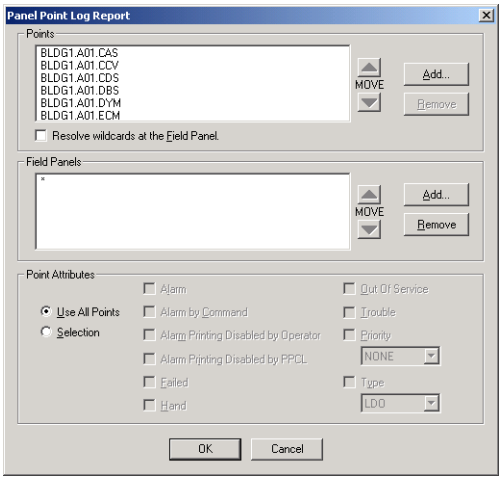


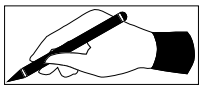
Sample Panel Point Log Report

Running a Panel Point Log Report from the Insight Main Menu

The Insight software allows you to quickly create and display a Panel Point Log from the Insight Main Menu.

1. Choose the Panel Point Log Report icon from the Insight Main Menu. The Object Selector is displayed.
2. Select the points for which you want to perform the report, and click **OK**. The Panel Point Log dialog box is displayed.
3. Click **OK** to display the Panel Point Log.





Practice

Log on to the Insight workstation.

Run a Panel Point Log for the _____ point. Display the report on the screen. Accept the defaults in the Panel Point Log fields.

What is the point descriptor? _____

What is the point value/state? _____

What are the engineering units? _____

What is the point condition? _____

What is the point priority? _____

Use the arrow on the menu to rerun the log.

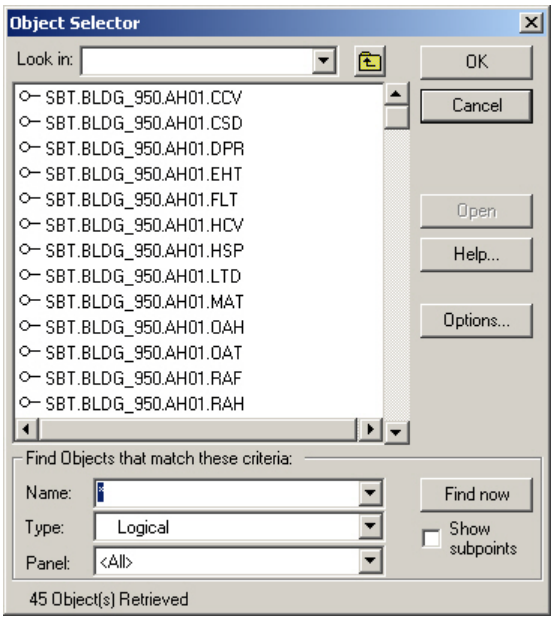
Run a Panel Point Log for the same or another point. This time print the log.

Running a Panel Point Log Using Wildcards

Many times you will want to run Panel Point Logs on groups of related points. For example, you want to check the status of all the supply fans in your building. You know all the fan point names end with the letters SAF, and in front of that character sequence there are different numbers and letters (AH1, AH2, etc.) You can use a wildcard to run a log for all points that end with the letters SAF.

Two wildcard characters you can use are the asterisk (*) and the question mark (?).

The asterisk is used more often than the question mark. The asterisk takes the place of one or more characters. For example, you want to list points that end with the letters SAF and have any other combination of letters and numbers in front of the letters SAF. When the Object Selector is displayed, you enter the wildcard sequence in the Name field at the bottom of the window:

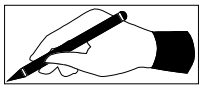


*SAF lists all points that end with the letters SAF. They may have any variety of characters in front of that sequence.

Wildcards can be used at the beginning and in the middle of point names. For example, entering BLD2*SAF will give you all the supply fans in Building 2.

The question mark “?” is a wildcard which takes the place of only one character. For example, displaying a Panel Point Log using the wildcard sequence BLD2.AH?.SAT will display the supply air temperatures for air handlers one through nine (AH1-AH9) in Building 2.

On the Panel Point Log displayed there is a small arrow symbol (). If you click on this symbol, the report will be repeated with the same selections.



Practice

Give the wildcard sequence which would:

List all the points that begin with BLD1 _____

All points which end with SAT _____

All points which begin with BLD2 and end with SAF.

_____

Run a Panel Point Log for a group of points using a wildcard. Display the log on the screen.

How many points are in this group? _____

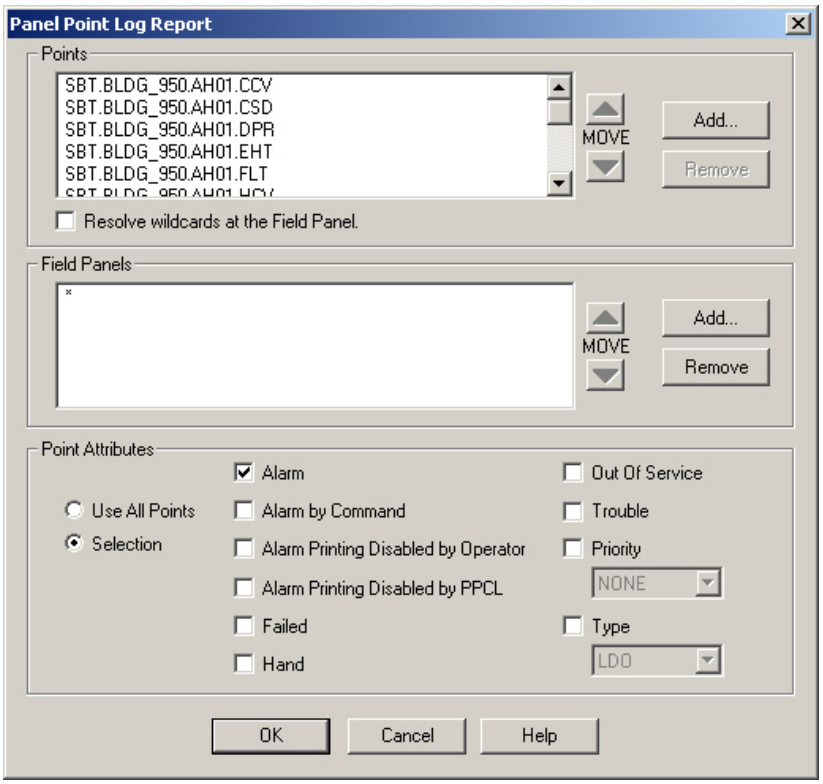
Running a Panel Point Log Report for Points with Specific Characteristics

Now that you know how to run Panel Point Logs for one point and for groups of points, you are ready to use the Panel Point Log to do some diagnostic reporting.

You can select criteria so that you run logs on points with specific characteristics. For example, you could choose to run a Panel Point Log report just on the points which are in alarm, or the points which are in Operator priority.

When you select options like this, you can also choose more than one characteristic. For example, you could run a Panel Point Log for all points which are in alarm and failed, or all points which are in alarm and are in Operator priority.

When you select the Panel Point Log icon and enter your point name or wildcard sequence, the Panel Point Log Report window is displayed. In the **Point Attributes** section, click **Selection** to enable the checkboxes. This section gives you the opportunity to select the criteria you want.

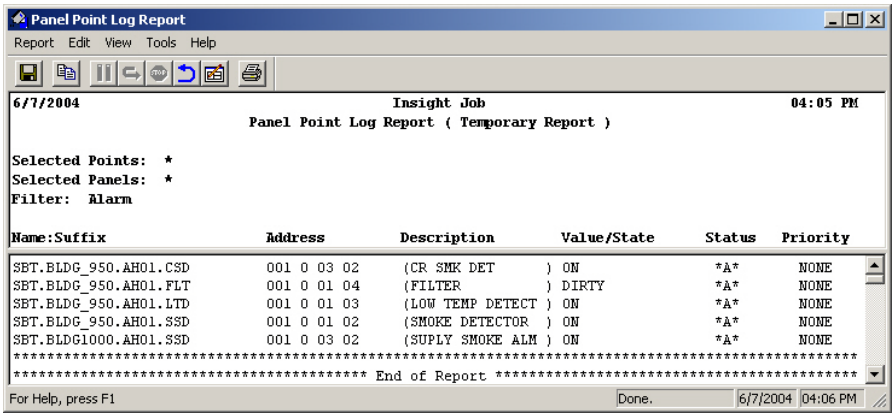


The following is a brief definition of the selection criteria options.

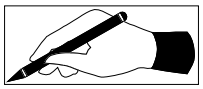
Selection option:	To run a Panel Point Log on:
Alarm	All points in alarm.
Disabled	All points that have been disabled by an operator or the program. Points are sometimes disabled for servicing.
Priority	Specific point priority. The two most commonly used priorities are Operator and None. You may use the list box to select the priority.
Failed	All points that have failed due to a mechanical or human error.
Hand	Points on a Point Termination Module (PTM) that are in HAND position.
Type	Specific types of points, such as analog input, digital output, etc. Use the list box to select the point type.
Trouble	Points specified as priority “Trouble.”

To run a Panel Point Log for all points in alarm:

1. Display the Panel Point Log Report window.
2. In the Object Selector, place the asterisk wildcard in the Name field, and click **OK**.
3. In the Point Attributes window, select **Alarm**, and click **OK**. The report is displayed:



Panel Point Log Report with Alarm Attribute



Practice

Run a Panel Point Log for all points in alarm.

How many points are in alarm? _____

Run a Panel Point Log for all points in Operator priority.

How many are there? _____

Run a Panel Point Log for all points that are in alarm and are in Operator priority. Are there any points that meet both of these criteria?

_____

Running a Report

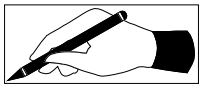
You can run a report from the Report Builder and Report Viewer applications.

To run a report from the Report Builder:

1. Open the report definition you want to run. The dialog box is displayed as if you were going to modify the report.
2. Select **Run Report**.

To run a report from the Report Viewer:

1. Select the **Report Viewer** icon from the Insight Main Menu. The Object Selector displays with the reports which exist as objects.
2. From the list, select the name of the report definition you want to run.
3. Click **OK**.



Practice

Run the report that you created in the previous Practice. Run the report from the Report Builder, as well as the Report Viewer.

Point Group Editor

About the Point Group Editor

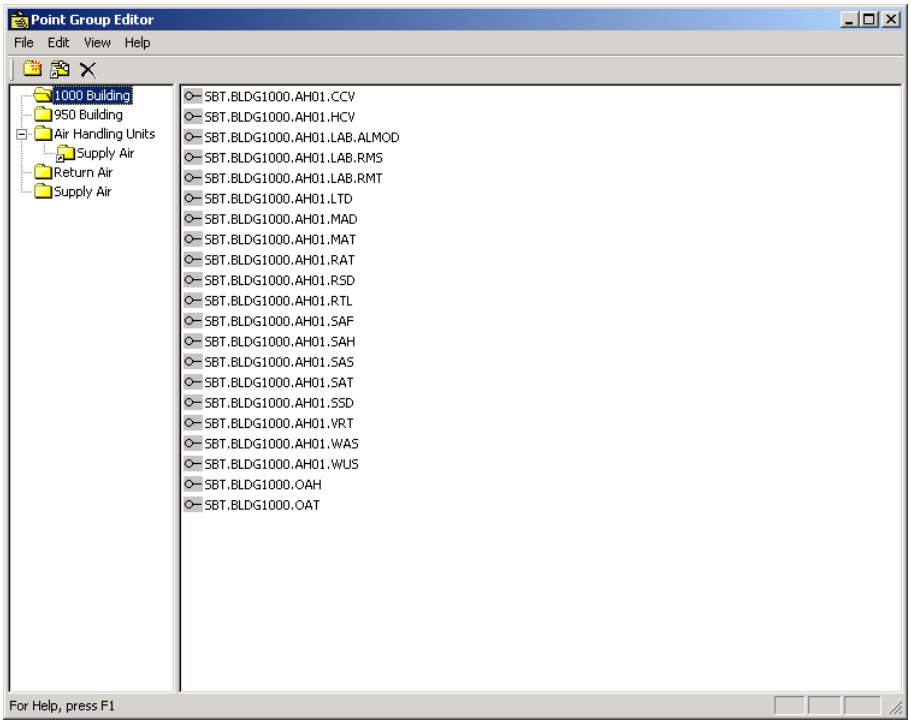
The Point Group Editor application allows you to organize the points in your system. Grouping points allows you to create relationships and hierarchies among the points. With groups, you don't have to remember all the point names in your system because you can open the group to display the contents. This is helpful when editing databases or interpreting changes in dynamic graphics.

When you convert an Insight PC 2.x Database to Insight 3.5, the Database Conversion will automatically convert your Insight PC 2.x point groups to Insight 3.x point groups. However, you must eliminate any circular references in your point groups prior to updating the Insight workstation, or your point groups will not convert.

Create point groups to establish a logical ordering of all the points in your system and to develop Point Group tables.

Examples of how to organize your points include the following:

- By location (rooms, buildings, floors)
- By functions (security, maintenance)
- By equipment (fans, sensors, pumps, chillers)



Sample Point Groups and Group Members

Guidelines for Creating Point Groups

Here are some general guidelines you should follow when creating point groups:

- The same point can exist in more than one group.
- Groups may be defined to contain other groups as well as single points.
- Groups can be in any number of other groups. If a point group is contained within another group, then the group in which the subgroup is contained is the parent group.
- Points residing in different field panels can be defined in the same group.
- You cannot create "circular" grouping. For example, you cannot have Group A as a subgroup of Group B, while Group B is a subgroup of Group A.

You cannot command point groups because the groups do not physically exist in the field panel. However, you can always display the points in a group and command them individually.

Dragging Point Groups From the Point Group Editor

You can drag and drop point groups to:

- **Dynamic Plotter** - Creates a graph of the points in a point group.
- **Graphics** - Creates a point information block group list of points in the group.
- **Panel Point Log Report** - Runs the Panel Point Log Report.
- **Point Editor** - Opens all points in a point group for editing.
- **Report Viewer** - Runs Point Group Report.

Dragging Objects to the Point Group Editor

You can drag and drop objects to the Point Group Editor from any application. In the system tree, drag and drop objects onto a group folder in the left-hand pane. Also, you can drag and drop objects to the right-hand pane to add points to a group.

Window Description

The Point Group Editor window displays a graphical representation of each point group in the system tree. You can use the system tree to see the hierarchy of groups and the members (points or groups) specified for each group. The properties for a selected group display to the right of the system tree.

The tree is dynamic, which means groups can be added, removed, deleted, and renamed in the tree. The view of the tree is also dynamic since levels can be expanded or collapsed.

Attribute Duplicator and Point Groups

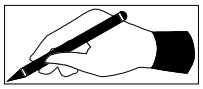
You have the ability to copy point group membership information into the Attribute Duplicator from the Point Group Editor application. This allows you to create a new point and use the same group memberships that another point already has.

Expanding and Collapsing System Tree Levels

The Point Group Editor allows you to view all or parts of the system tree by expanding and collapsing the different levels of the system tree. When the Point Group Editor window opens, you will see pluses and minuses to the left of a group. The plus indicates that there are additional levels under the group. The minus indicates that the group is fully expanded.

Object Selector and Point Groups

Object Selector also supports point groups. You can use Object Selector to find point groups that have been created.



Practice

Discuss with your instructor which points you would want to group together. What do the points have in common?

Based on your discussion, create several point groups, adding the appropriate members.

You may want to refer to the Online Documentation for the specific steps on creating new point groups and adding members to groups.

Points

Commanding Points

Your field panels contain programs which control points under normal operating conditions. There will be times, however, when you need to command points from the Insight workstation.

Commanding a point puts the point into Operator priority. (A Panel Point Log displays P:OPER.) Operator control overrides system control (P:NONE). The program in your field panel cannot take action on the point when it is in Operator priority.

An example of when you command a point: You get a call from someone in your building saying an area is too hot, and when you run a Panel Point Log for that area you see that it is indeed too hot. To provide the fastest solution to the problem, you want to command the damper (BLD2.AHU02.DMP) to 100 percent open to provide more cool air. (After getting cool air to the space, you can troubleshoot to find out why the space was too hot in the first place.)

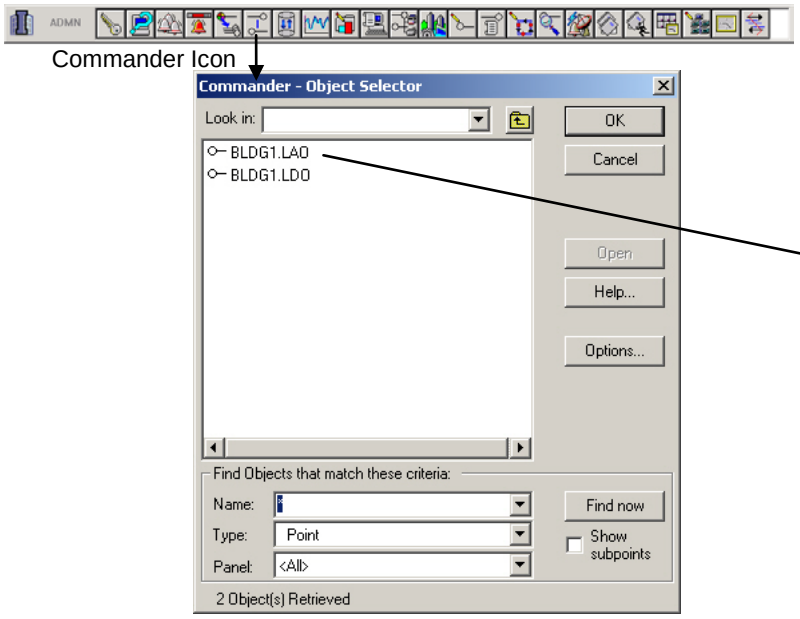
In this scenario, you would drag the point which needs to be changed from the Panel Point Log to the Commander icon on the Insight Main Menu. The Commander is displayed with the point you dragged already inserted to be commanded.

To command a point using drag and drop to the Commander:

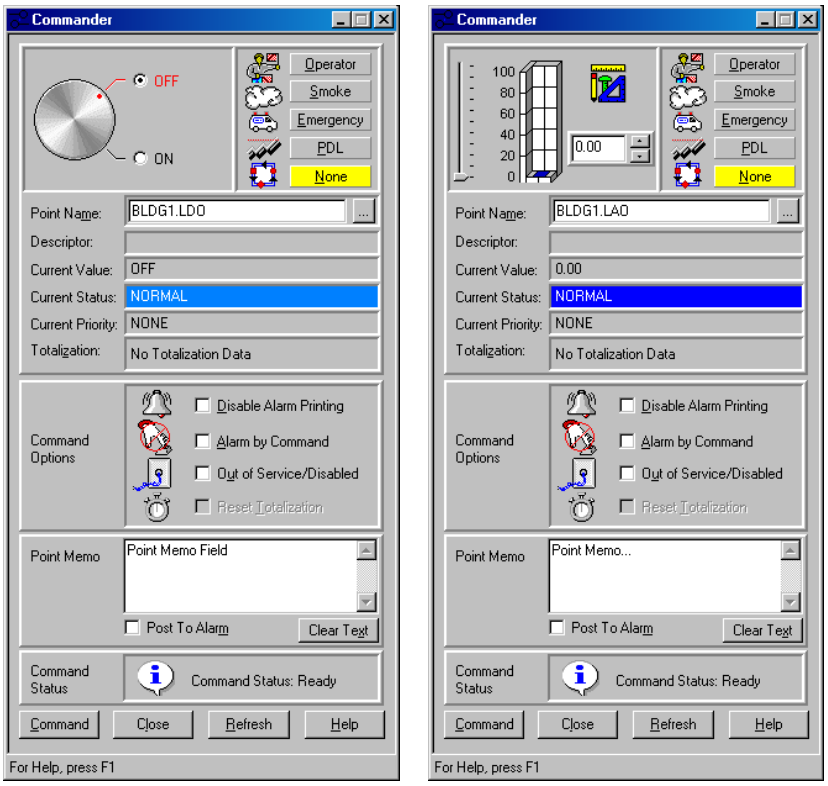
1. Run a Panel Point Log for the point or group of points you are interested in.
2. Drag the point you want to command to the Commander icon and release the mouse button.

   The Commander is displayed with the selected point inserted, ready to be commanded.
3. Make the necessary changes in the Commander window.
4. When you are finished making changes in the Commander, click **Command**.

You can also command a point at any time by clicking on the Commander icon, selecting the point from the Object Selector, and using the Commander after it is displayed.



Using Commander



Digital Point Analog Point

The Commander will differ for digital and analog points.

Commanding a BACnet Point

New features display when you select a BACnet point.

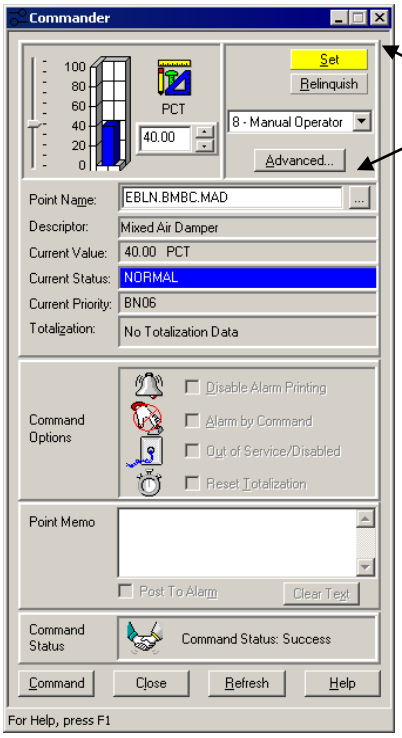
To command a BACnet point:

1. Select a BACnet point and drag and drop it to the Commander.
2. Review the command features available for BACnet points:

   BACnet Command Priority Level (drop-down list) - Select the priority level you want to set. (Only those levels you are authorized to command are displayed. This is based on your User Account access level privileges.)

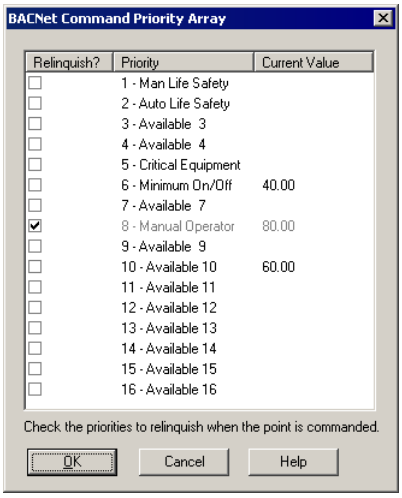
   Set button - Click to confirm the BACnet Command Priority level or setting you selected from the drop-down list.

   Relinquish button - Click to relinquish the BACnet Command Priority level or setting you selected from the drop-down list.

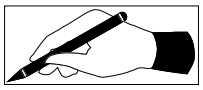


BACnet command features

3. Next, click on the **Advanced** button to display the BACnet Command Priority Array dialog box. Here you can view and/or relinquish the current values. This button is enabled for BACnet point types that have a Command Priority Array, for example, AO, BO, MO, AV, BV, and MV.



4. When finished, click **OK** and then **Close** to close the Commander.



Practice

Command a point in your building. Your instructor will tell you which point to command and to what value or state to command that point.

Run a Panel Point Log on the point to verify the command change.

What is the priority for the point you commanded?

_____

How will this priority affect point function and system function?

_____

If you have the BACnet Option, answer these additional questions:

Command a BACnet Point. Your instructor will tell you which point to command and to what value or state to command that point.

Run a Panel Point Log on the Point to verify the command change.

What is the priority for the point you commanded?

_____

How will this priority affect point and system function?

_____

Returning a Commanded Point to System Control

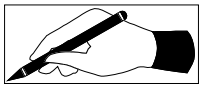
As soon as practical you should usually return commanded points back to system control (None priority). Failure to return a point to system control is a common cause of occupant complaints.

To return a point to system control:

1. Select the **Commander** from the Insight Main Menu.
2. In the Object Selector, enter the name of the point you want to command and click **OK**.
3. Click **None** in the Command box.
4. Then click **Command**.

To return a BACnet point to system control:

1. From the Command box, select the current Command Priority for the point.
2. Click the **Relinquish** button.
3. Then click **Command**.



Practice

Return the point you commanded in the previous exercise to system control.

Run a Panel Point Log report to verify the point has returned to system control.

Online Documentation

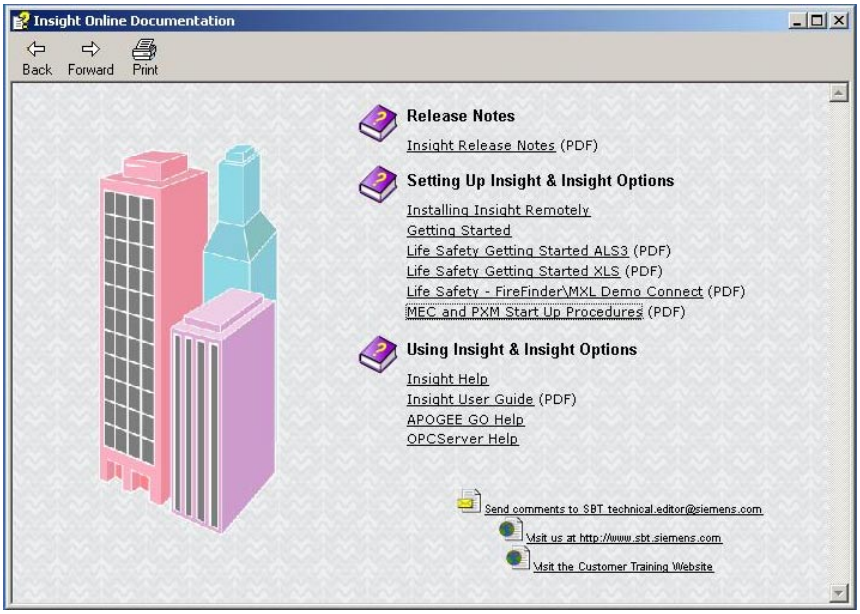
About Online Documentation

The Insight product contains online documentation which is available through the Online Documentation icon on the Insight Main Menu. Therefore, you can access documentation without having to open a specific application.

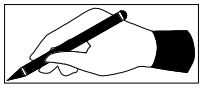
There is a Global Help feature which allows for searching throughout the documentation. You also have access to Insight manuals, and can print this information.

To access online documentation:

Click on the Online Documentation icon in the Insight Main Menu at any time.



Online Documentation window



Practice

Go back to the objects that you opened in the previous practice. Open each one again and bring up the Help file. See what information is available.

Use the Global search in help to find one of the topics, such as “object”, and see what information is displayed.

Access the User Guide section on the Object Selector.

Access the User Guide and locate the section on Point Editor.

Trend

About Trend

Trending keeps a record of a point's value or state over time. Use trending to see how equipment has operated over a period of time or to monitor different value and state changes.

Points can be trended in two ways:

- Time interval
- Change-of-Value (COV)

The field panel and the Insight workstation can record up to five different time intervals for a trended point, or four time intervals and a COV trend.

Trending by time interval

You can trend the temperature in a room for a given time interval, such as every fifteen minutes or every hour. Trending also allows you to trend by more than one time interval, so you can record the value of that room temperature every fifteen minutes and every hour.

Use trending by time interval to establish an association of point value changes over time, especially when you do not need the precision and detail of the COV method. Points often trended by time are outside air, energy usage, and room temperatures.

Trending by COV

You can trend the same room temperature point so that the system records the value and time whenever the temperature changes by a specific amount, such as one degree. This is trending by COV.

Trending a digital point by COV allows you to record all the times that the point turns on and off. For example, a fan may turn on and off several times in an hour, so trending the point by one-hour intervals would not let you see the cycling of the fan. Trending the point by COV would record each change of state (from Off to On and On to Off).

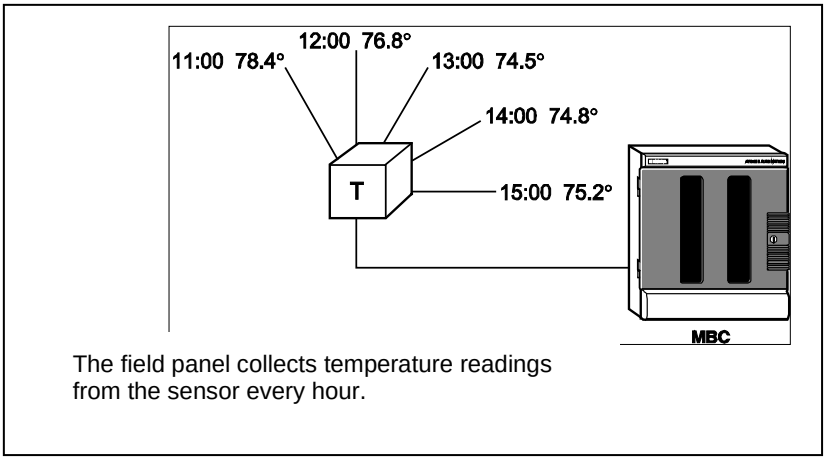
Trending by COV is precise and detailed. Use it to capture every significant change in value for the point. If your facility is regulated, such as pharmaceutical, manufacturing, or health care facilities, the

exact time of the value change could be critical to your building operation. With Firmware 2.6, you can enable conditional trending by specifying the desired condition of the trigger point when trending would begin.

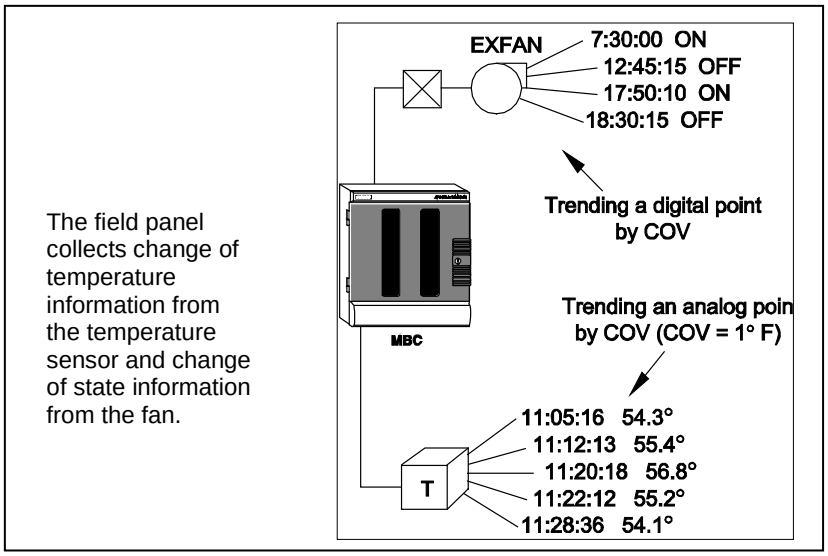
Setting up trending

When you add a point to trending you are asked to specify the number of samples to be stored at the field panel. If trending by time you are also asked to specify the time interval. For example, if you wanted to trend the outdoor air temperature for the last 24 hours, you would tell the system you want 24 samples taken in 60-minute intervals.

Trending samples are constantly updated, so you see the latest information. In the previous example, if the trend report lists hourly samples from 12 A.M. to 11 P.M., when the next sample comes in at 12 A.M., the previous 12 A.M. sample is erased.



Trending a Point by Time



Trending a Point by COV

Trending of data is actually done at the field panels. The Insight product is the tool that collects the data for analysis. The definitions you establish are downloaded from the Insight workstation to the field panel. The field panel samples point activity, collects data, and stores the data in its trend buffer to be uploaded to the Insight workstation.

Trending is set up either in the Trend Definition Editor or by using the Trending Wizard. Type of trending and number of samples are established.

To collect trend data from field panels, a trend collection report needs to be created in the Report Builder.

Once a trend collection report is built and saved, it can be run manually from the Report Viewer or automatically from the Scheduler application.

There are a variety of reports on trend information which are available from the Report Builder. Another way to run a report containing trend information is to right-click a trend point in the Alarm Status or Graphics applications, or in the Panel Point Log Report, and then select **Trend Data Detail Report**.

Trended information can be converted into a format which is used in a spreadsheet, such as Microsoft Excel. In the spreadsheet, the trended information can be analyzed and manipulated in a variety of ways.

Automatic Trend Collection

Each trend sample uses space in the field panel memory. Loss of trend data can occur when a field panel exceeds its storage capacity as it collects and saves trend samples. When the trend buffer in the field panel fills up with samples, the field panel begins to overwrite the oldest collected sample with the most current collected sample.

Automatic trend collection at the Insight workstation helps reduce overwriting and loss of collected trend data. The Insight workstation is notified whenever a trend buffer in the field panel exceeds 80% of its capacity. (With Firmware 2.6, you can set the buffer full threshold anywhere from 1 to 80%.) The Insight software responds by uploading the trend data for that trended point.

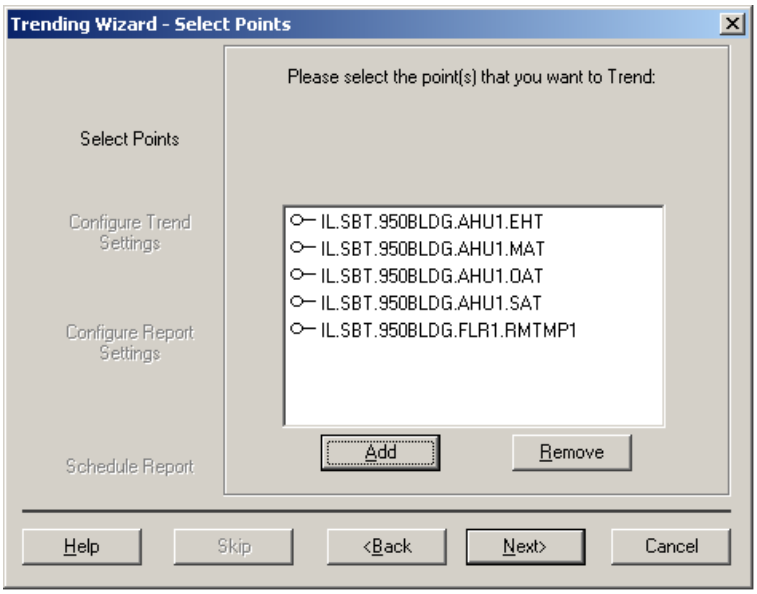
Trending Wizard

The Trend Definition Editor provides a Trending Wizard to simplify the process of creating trend definitions for multiple points, adding the points to a Trend Collection Report, and scheduling the report. The Trending Wizard allows you to navigate from the beginning to the end of the entire trend collection process without leaving the Trend Definition Editor.

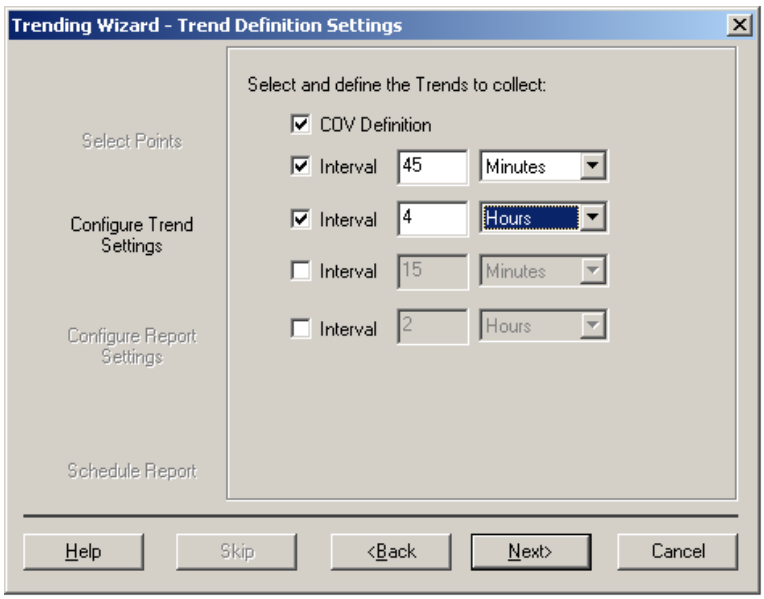
Using the Trending Wizard

To start the Trending Wizard, click  on the Insight toolbar. Follow these steps to use the Trending Wizard:

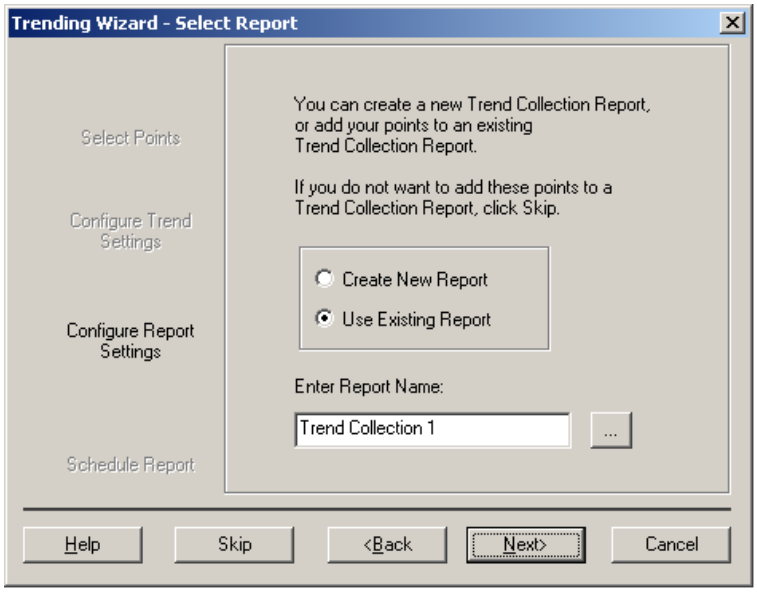
1. Select the points you want to add to the trend definition, and then click **Next**.



2. Select the type of trend data to collect and the sampling frequency.

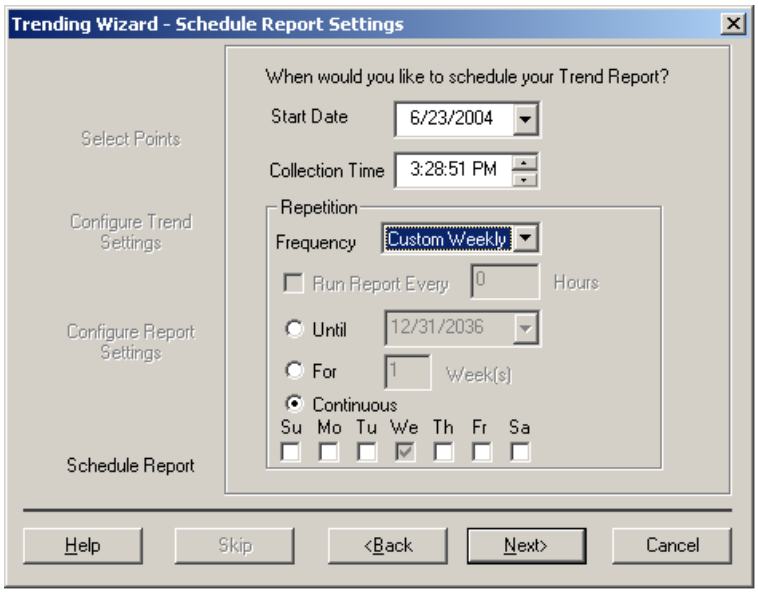


3. Define the number of samples you want to collect.
4. Define the COV limit for COV-based trending and set up conditional trending.
5. Configure report settings.

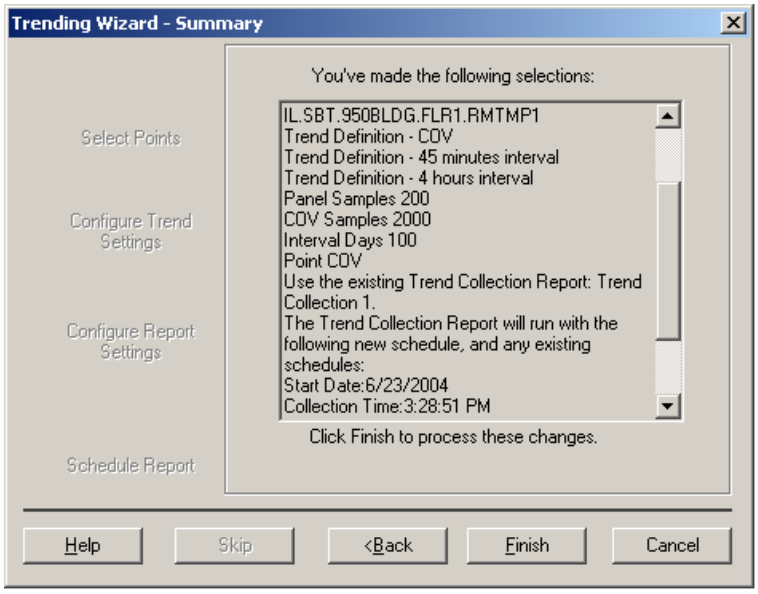


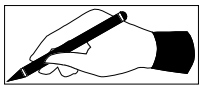
6. Select the scheduling method.

7. Define the schedule for the report.



8. The final frame of the wizard appears showing a summary of the trend definition you created with options for saving the summary information as a log file, running a Trend Definition Report, or running a Panel Trend Definition Report.





Practice

Have your instructor discuss the trending methods used at your facility. Give examples of points being trended by:

- time interval
- COV
- more than one time interval
- interval and COV

Display some of these points to view data on the screen.

Create a trend definition using the Trending Wizard. When you are finished, view the definition in the Trend Definition Editor.

Collecting Trend Data "Manually"

Manually collecting trend data means that you request that the Insight workstation notify the field panel immediately to upload information for a specific trend definition.

1. From the Trend menu, select **Open**.

   The Object Selector is displayed.

2. From the list of trended points, select the desired point and then click **OK**. The Trend Definition window for the point is displayed.
3. Select the Trend Definition that you want to upload.
4. From the Tools menu, select **Collect Trend Data**.

   A confirmation box is displayed. Choose **Yes** to confirm the upload.

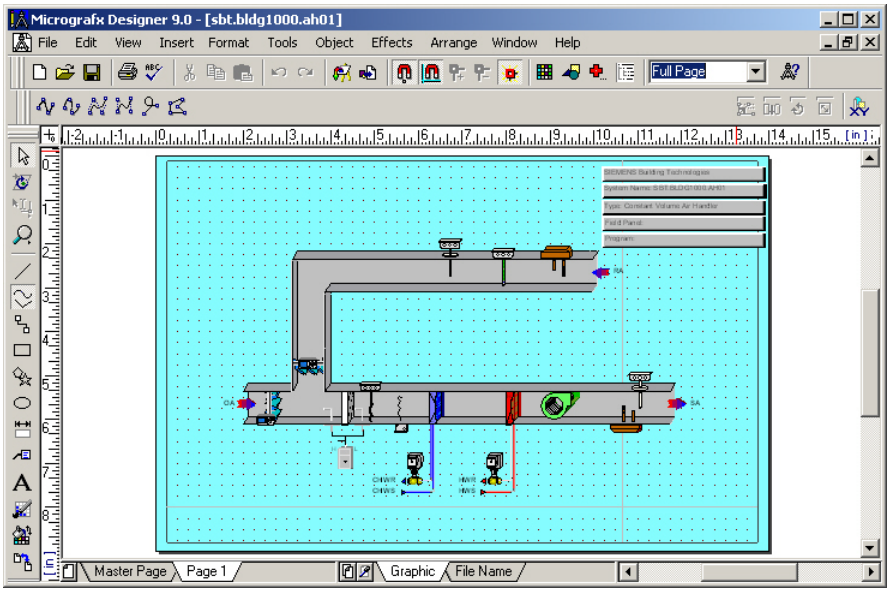
To upload more than one point, create a Trend Collection Report in the Report Builder and save it as an object. You can then use the Report Viewer to collect and display the trended information for these points whenever you want.

Graphics

About Graphics

As mentioned earlier, the graphics in the Insight product allow you to monitor and control your system using a visual interface. You can display graphics for areas of your facility, monitor point values and condition, and also command points from the graphic.

The background graphic is the basic system drawing. It represents the physical parts of your system, such as mechanical equipment, ducts, and sensors. It may also include text such as a title to the graphic or important information about the graphic.

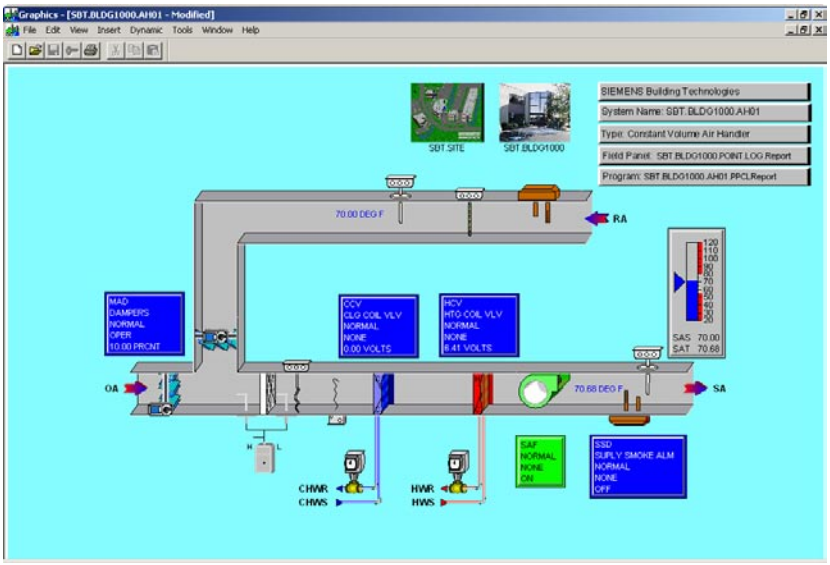


Background Graphic

Dynamic Graphics

A dynamic graphic contains point information that will update on the graphic. It displays the current values and conditions for the points in your building.

Dynamic graphics also use such elements as color, flashing, and animation to indicate system changes. For example, your system can be set up so that, when equipment is running, the symbol associated with the equipment is green. When the equipment is off the symbol turns blue. Also, when the point goes into alarm the symbol or information block can change its color to red and flash to indicate the alarm condition.

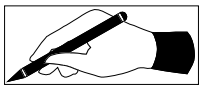


Dynamic Graphic

Dynamic graphic information can be displayed using the following Insight features.

Point Information Blocks — Point information blocks can supply the point name, descriptor, current status, value of the point, point priority, and totalized value.

Analog Bars	Analog bars monitor and command analog point values. A monitoring analog bar displays the current value of the point and updates information as the value changes. A commanding analog bar also monitors values and has a command mark which can be moved to command the value of the point. Analog bars can have several shapes and designs.
Associated Symbols	An associated symbol is a part of a graphic such as a fan or pump which has been related, or associated, with a point in the system. In this manner, the symbol can change its color or flash when that point changes status.
Picture Control Support	Images or frames can be displayed based on a point's state or value range. This can be used to display the state of dampers, valves, and other devices that change position but do not remain in motion.
Graphic Links	Graphic links allow you to jump from one graphic to another. By double-clicking either on the standard graphic link symbol () or on a customized link, you go to the other related graphic.
Advanced Link Control	This feature provides the ability to link to objects such as reports, PPCL programs, dynamic plots, and documents outside of the Insight product, such as Web pages and Microsoft Word and Excel documents.
Arrows	An arrow is a graphic symbol which looks like a speedometer. It monitors and commands the values of an analog point.
Animation	This feature allows an animated .GIF image to be displayed when associated with analog or digital points, giving you a visual indicator of when a points value changes.



Practice

How many dynamic graphics are there at your facility? _____

Display several of your graphics and identify on them:

Analog bars (different styles)

Associated symbols

Point information blocks

Linking symbols

Arrows

Why would you link graphics? _____

Which of your building graphics would be good to link to each other?

_____

Switching Between Dynamic Mode and Edit Mode

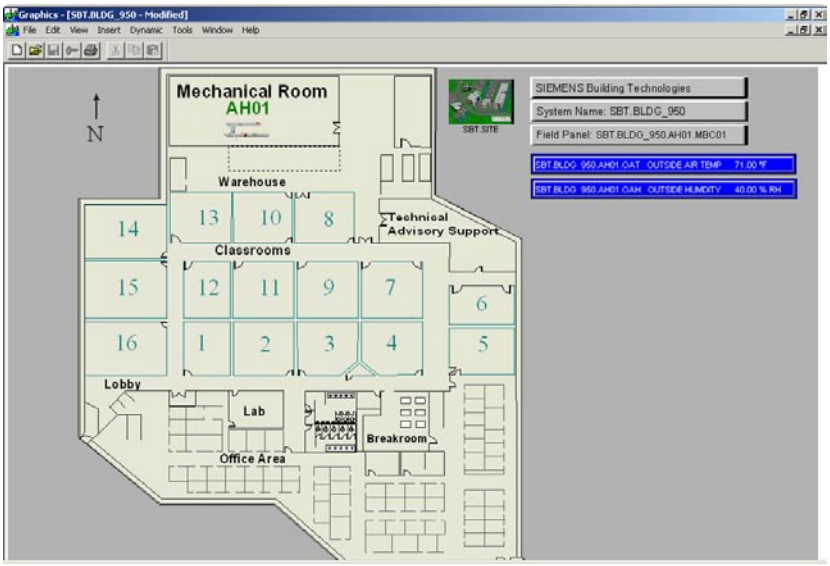
If you have the access level to configure/edit, you can switch between dynamic mode and edit mode in the Graphics application. The mode you are in is displayed in the bottom right corner of the graphics window. Dynamic mode is where you monitor and command points. Edit mode is where you create graphics.

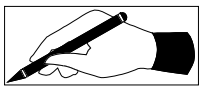
Simply click on the  icon in the tool bar to toggle between modes.

Displaying a Dynamic Graphic

To display a dynamic graphic:

1. Select the Graphics icon from the Insight Main Menu.
   Your default graphic is displayed.
2. From the File menu, select **Open**.
   The Object Selector is displayed.
3. Select the graphic you want, and click **OK**.
   The graphic is displayed.





Practice

Display a few dynamic graphics for your building. Your instructor will tell you which ones to display.

Graphic name _____

_____ Point information blocks

_____ Analog bars

_____ Associated symbols

_____ Linking symbols

Graphic name _____

_____ Point information blocks

_____ Analog bars

_____ Associated symbols

_____ Linking symbols

If your graphic has a linking symbol, double-click on it. What graphic is displayed?

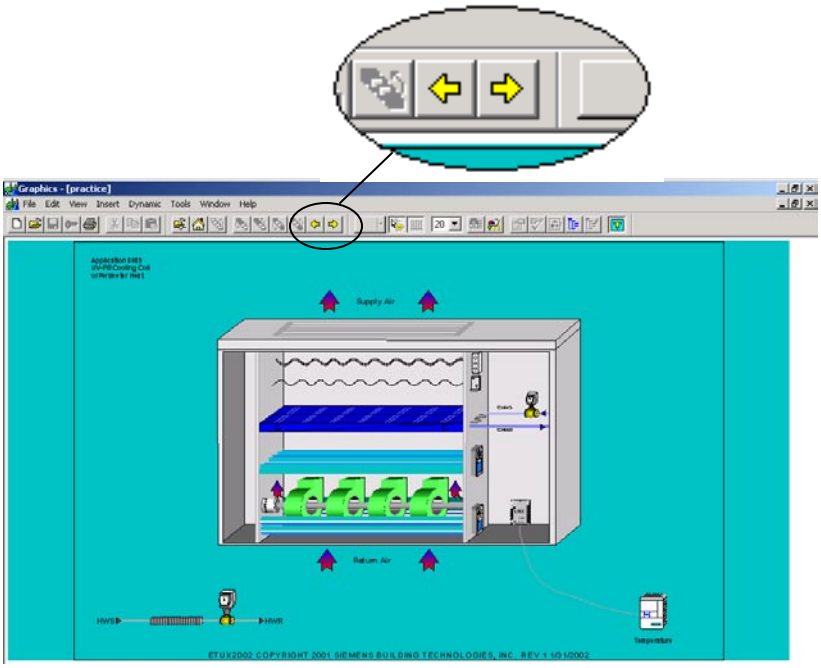
_____

The Default Graphic

Every time you open the Graphics application from the Insight Main Menu, the default graphic is the first graphic to appear. The default graphic can be set for each operator, or your system administrator may set up a default graphic for the entire site.

Navigating Through Graphics

The Graphics application contains forward and backward navigation buttons to make it easier to return to graphics previously viewed. You can navigate forward and backward through up to 100 previously opened graphic files.



When you open a graphic file through either the File menu, Window menu, a navigation link, or by dragging and dropping the graphic from Alarm Status or System Profile, a link to the graphic is added sequentially to a history list. Using the forward and backward buttons, you can scroll through the graphics in the list.

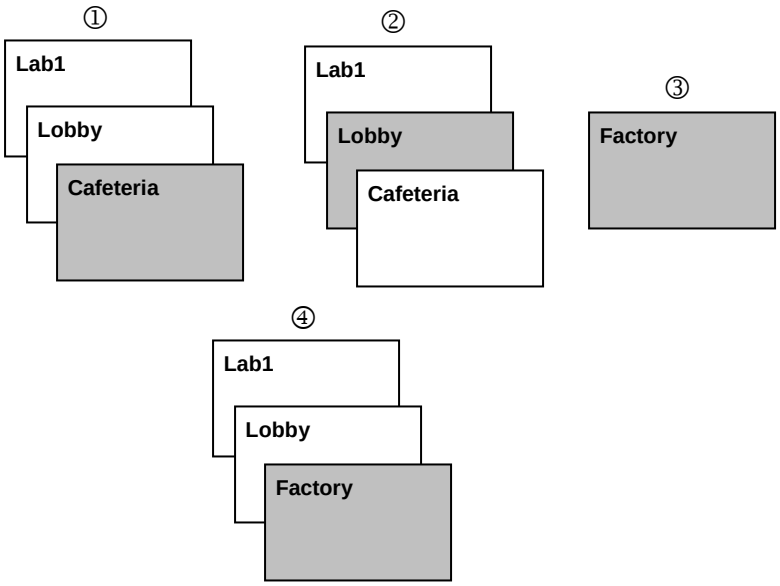
If you open a graphic while you are in the middle of navigating backward in the history list, you will not be able navigate forward to any previously opened graphics. The following example illustrates this point:

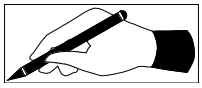
① You open the **Lab1** graphic, followed by **Lobby**, followed by **Cafeteria**.

② You navigate backwards from **Cafeteria** to **Lobby**.

③ You open the **Factory** graphic.

④ The resulting history list does not allow you to navigate to the **Cafeteria** graphic. Even though the **Cafeteria** graphic is open, you must select it to add it to the history list.





Practice

1. Start the Graphics application and open several graphics.
2. Click  to step backward through the graphics you opened.
3. Click  to step forward through the graphics.
4. Step backward one graphic, and then open a new graphic. What happens when you click  ?

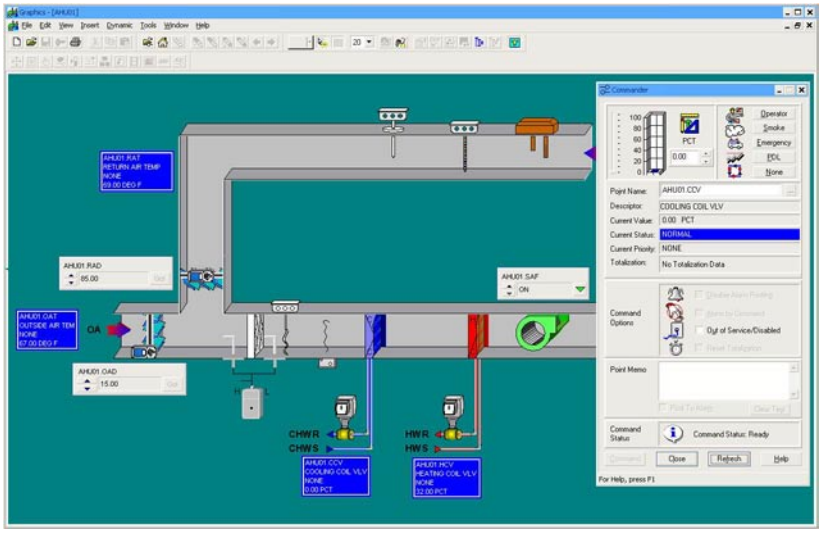
Commanding a Point from a Graphic

We have already talked about commanding points using the Commander application from the Insight Main Menu. It is also possible to command points while viewing a graphic. Depending on how the point was built within the graphic, there are two ways to command it.

Double-Clicking a Point

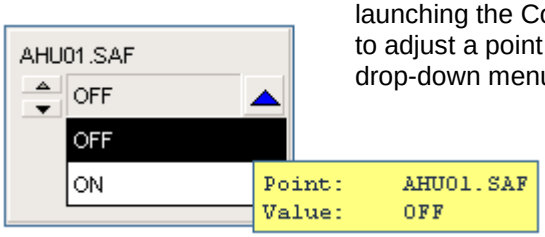
You can double-click on the point information block, the analog bar, arrow, or the associated symbol, and the Commander application displays. (You may also simply click on the Commander application in the Insight Main Menu to bring it up, or drag a point to the Commander icon on the Insight Main Menu.)

1. Open the graphic you want. Be sure that Dynamic Mode is displayed at the bottom of the window.
2. Double-click the point or associated symbol you want to command. The Commander window is displayed.
3. Command the point using the Commander in the manner already described.



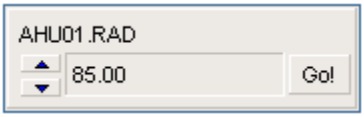
Commanding Command Objects

If the point was placed on the graphic as a command object, you will be able to command that point directly in the graphic without launching the Commander application. Command objects allow you to adjust a point value by clicking the up or down arrows or using a drop-down menu.



Command objects for digital and multistate points use up and down arrows and a drop-down menu. To change the value of the point, click the up or down arrow, or select the value from the drop-down menu.

Command Objects for analog points use only the up and down arrows. Each click of the arrow moves the value of the point up or down by the COV value defined for that point in the Point Editor.



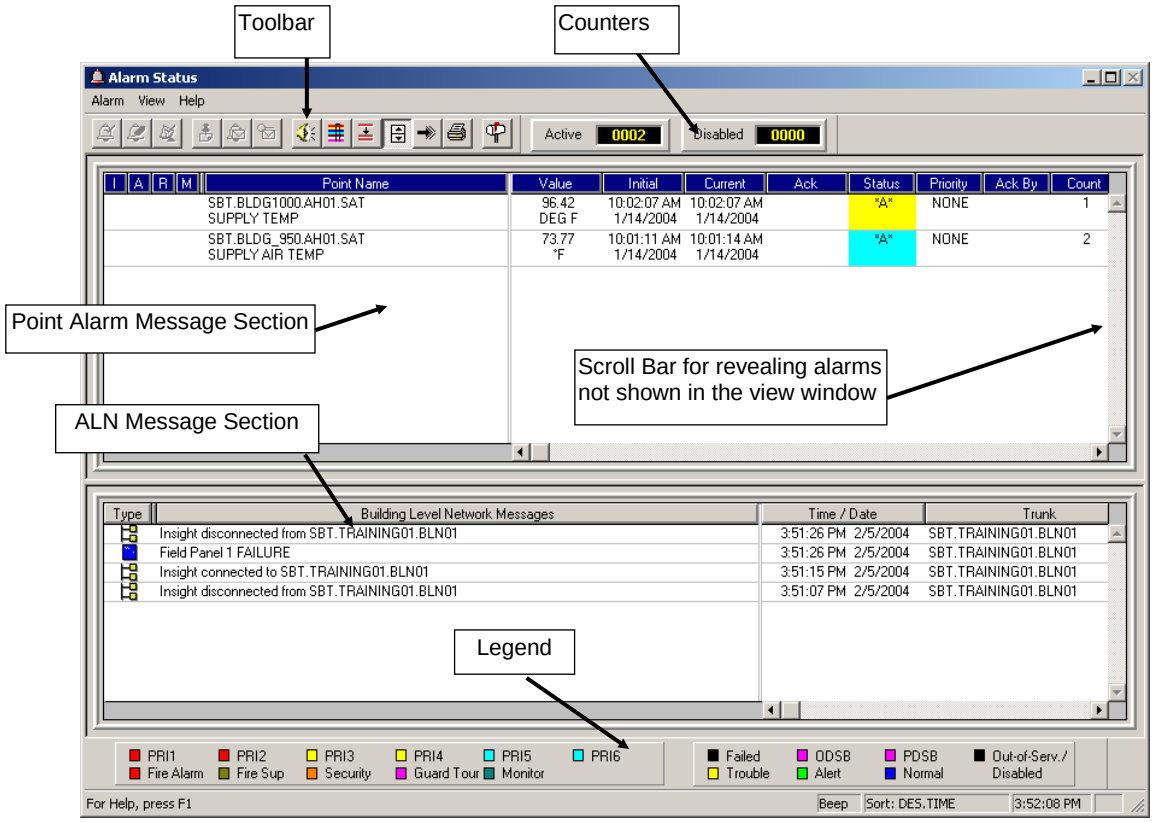
Command objects can be configured with or without the “Go!” button. Without the “Go!” button, the point will be commanded immediately when the value is changed. It is recommended that the “Go!” button be used for analog or multistate points, allowing you to select the new value before commanding the point.

Alarms

Displaying Alarms

To display the Alarm Status window, click on the  icon in the Insight Main Menu. The top of the window displays point alarms and the bottom window displays ALN (BLN) messages.

If BACnet is enabled, the point priority column will display BACnet point priorities. BLN messages are also displayed. You can also open the alarm window from the status bar at the bottom of the screen.



Point Alarm Section

The Point Alarm section displays all point alarms. Point alarms display in the color associated with the alarm priority or point status.

ALN Message Section

The ALN Message section displays system-based messages that provide information about system activity, logon attempts, hardware status, PPCL program statement failures, etc.

Acknowledging Alarms

When the points in your system were defined, some of them were made alarmable. This means that the system will notify your Insight workstation when the point is in alarm.

Most points can be made alarmable. Points are made alarmable according to customer requests and building-specific criteria.

There are six alarm levels for a point. Alarm levels are defined when points are made alarmable. Level 1 is for the most important alarms and Level 6 for the least important. When alarms display in the Alarm Status window they appear in the order of the 1 to 6 priority, or in order by the time they occurred if sorted this way.

Each alarm level may be designated by a specific color. For the color code key refer to the upper part of the Alarm Status window. Alarm colors and beeping are defined in the System Profile application. Each Insight workstation can have its own alarm colors.

Enhanced alarming is also available for points. If you are using enhanced alarming, ask your instructor to explain this feature in more detail.

When a point goes into alarm, the field panel sends the alarm to your computer. The Alarm Display icon may flash and beep, or play a sound wave file, depending on whether or not these actions are enabled.

Alarms should be acknowledged when you are willing to take responsibility for the alarm. By acknowledging alarms you tell the system that you are aware the alarm exists. Acknowledging an alarm does not fix the alarm or make it go away. You must still investigate what caused the alarm. When you acknowledge an alarm, your operator initials display next to it on the window along with the time. If points in alarm display in a Panel Point Log, the log also displays which alarms have been acknowledged.

BACnet Alarm Status

In the Insight BACnet option, objects or points keep a record of acknowledgements for the following three characteristic states:

- To-OffNormal
- To-Fault
- To-Normal

Each transition can require a separate acknowledgement. If you acknowledge an item in the Alarm window from an Insight workstation, the BACnet option sends up to three acknowledgements to the BACnet device. The Insight software does not provide a way to acknowledge a single transition state.

When you acknowledge a point alarm from a BACnet device, your initials display in the Alarm Status window. When a foreign system acknowledges an alarm, **BAC** displays. **SYS** displays for alarms that are not required to be acknowledged.

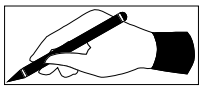
To Acknowledge an Alarm

Open the Alarm Status application.

Highlight the alarm you want to acknowledge by clicking on it.

Click the  button, or from the Alarm menu, click **Acknowledge Selected**.

When you acknowledge an alarm, the system places the date and time in the ACK column, and your operator initials in the “ACK By” field on the window.



Practice

Your instructor has put some points into alarm.

Acknowledge one alarm.

Acknowledge several alarms at one time.

Printing Alarms

You can print all alarms or selected alarms. You may also print BLN messages in the same manner.

To print alarms:

1. Select anywhere inside the section you want to print.
2. Select the alarms or messages you want to print. If you want to print all of them, you do not need to select anything.
3. From the task bar, click the **Printer** icon. The Print dialog box is displayed.
4. Set the necessary print options, and click **OK**.

"Popup" Alarm Messages

When a new alarm that requires acknowledgement is received and the alarm message associated with it begins with POPUP, a dialog box containing the message will be created. The title of the dialog box will contain the name of the point and the alarm count. If a popup dialog box has already been displayed for a point, the box is updated with the new alarm information (in the case of an enhanced alarm the message will reflect the current alarm level).

The dialog box is resizable, and any new popup dialog boxes use the size of the previous one that was resized.

Alarm Erasure

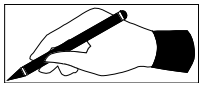
You may be able to erase an alarm after it has been acknowledged. When you erase an alarm, it is deleted from the alarm list, but a record of the alarm remains in the alarm history file and at the System Activity Log.

To erase an acknowledged alarm:

1. Select the acknowledged alarm you want to erase.
2. From the task bar, click the  button, or from the Alarm menu, click **Erase Selected Point Alarm**.

To erase all acknowledged alarms:

With the cursor anywhere within the Point Alarm section, select the Alarm menu and click **Erase All Ack'd Point Alarms**.



Practice

Using the alarms your instructor has entered into the system:

Acknowledge all alarms.

Erase one alarm.

Erase all remaining alarms at one time.

Point Messages

About Point Messages

Three types of point messages can give you more information about points in your system:

- Point Memo
- Informational Text
- Alarm Message

These messages can be attached to points to be displayed at different times.

Point Memo

This feature allows you to write a message about a point as it is displayed in the Alarm Status or Commander applications. The memo can contain additional information about the specific point or a specific situation—that a replacement sensor is on order, for example. You can view and print the message.

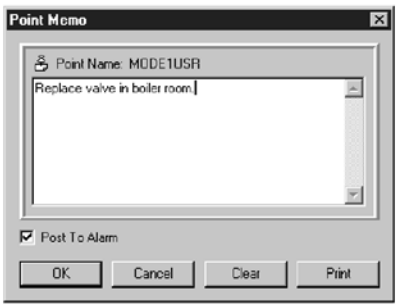
When you add a point memo, you can choose to add a marker  to indicate that a memo is attached to the point. Doing so will display the marker in the Alarm Status window, and by double-clicking on the marker, you can read the memo.

The Point Memo field in the Commander application is shared with the Point Memo field in the Alarm Status application. Any text you enter in the Point Memo field from either application will display in both places.

To add a point memo in the Alarm Status application:

In the Point Alarm section, select the alarm to which you want to add a memo.

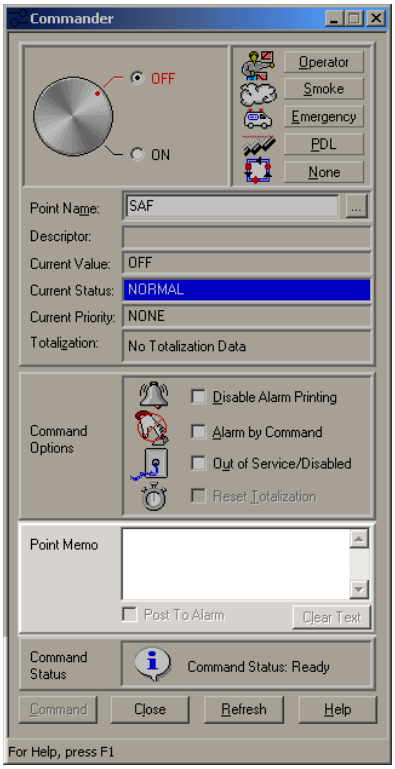
1. Click the memo icon  .



2. Type the message you want.
3. Check the **Post to Alarm** check box to display the memo marker in Point Alarms.
4. Click **OK**.

To add a point memo in the Commander application:

Type the message you want in the Point Memo field. Check the **Post to Alarm** check box to display the memo marker in Point Alarms.



Informational Text

This is another message which contains general information about a point. You also view this text when the point goes into alarm and can designate a graphic to display. Informational text can contain information about the location of a sensor which is hard to find, etc.

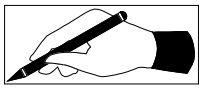
Informational text does not print with the alarm at the event printer.

This message is created and attached to the point in the Point Editor.

Alarm Message

An alarm message typically gives instructions on what to do when the point goes into alarm. Alarm messages can be part of either standard alarming or enhanced alarming. Standard alarm messages are created in the Point Editor. Enhanced alarm messages are created in System Profile and assigned in the Point Editor.

These messages will print with the alarm.



Practice

With your instructor, discuss the types of point messages used at your facility.

Do you use Point Memos? ____ When? _____

Do you use informational text? ____ When? _____

Do you use alarm messages:

For standard alarms? _____ When? _____

With enhanced alarms? _____ When? _____

System Activity

System Activity Log

The System Activity Log allows you to monitor the operation of your system. This application keeps a record of the events that take place in your system, such as operator actions, alarm history, and network activities. Activities that are logged include alarm acknowledgment, object changes, data uploads and downloads, and log on and log off activity.

The events are grouped into three types of logs: Alarm, System, and User.

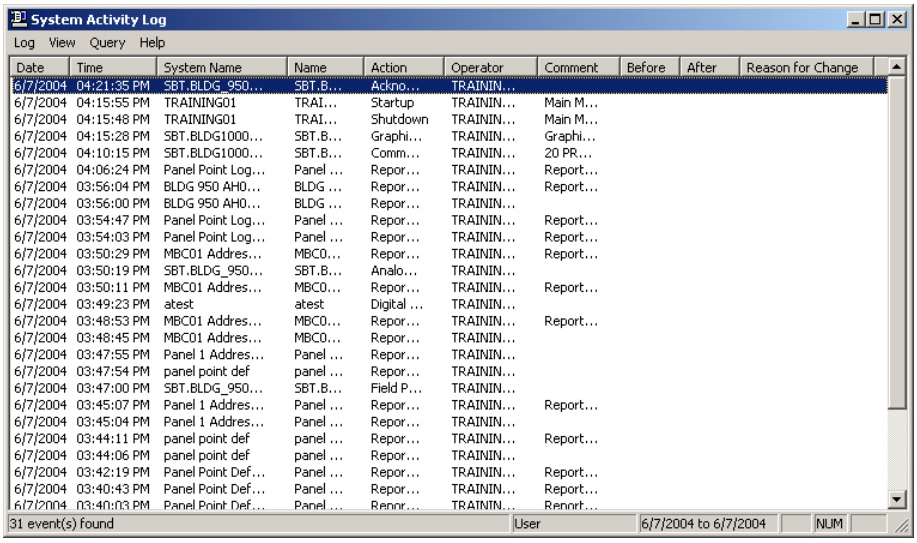
Alarm - Includes an entry for when the alarm was received and an entry for when the alarm was acknowledged. You can use the alarm log to help identify and troubleshoot points that are frequently in alarm.

System – Displays system events that occurred at the network, field panel, or the Insight workstation.

User - Displays the activities of users on the system. You can see what user commanded a point, edited a point definition, or created an event.

Displaying the System Activity Log

To display the System Activity Log, click on the icon in the Insight Main Menu. The log is displayed:



From this window, you can select a number of other ways to print or display information.

Sorting Events

You may have a large number of events in your activity log, so it will often be convenient to sort the events for easier viewing. Options for sorting events include:

- Newest or oldest time
- Ascending or descending system name
- Ascending or descending name

To sort events:

1. From the **View** menu, select **Sort By**.
2. Select one of the sorting options. The event list is sorted and redisplayed according to the option you selected.

Also, you can sort by any column quickly by clicking on the column headers. For example, to quickly sort events by date, click on the “Date” column header in the window. The events are sorted by date.

Searching in the Log

The Query menu in the System Activity Log allows you to search for specific object names, for example, or for events associated with a specific user. You can also use the Date Range item in the Query menu to display events within specific dates.

Using the Object Selector, you can select multiple points and query on specific alarm levels, and alarm statuses.

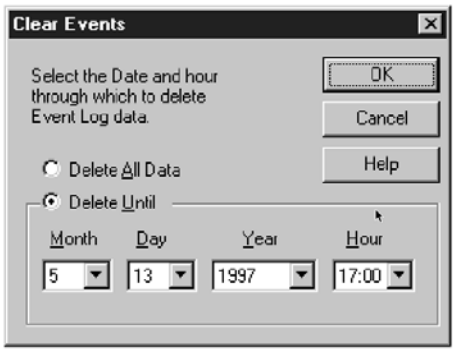
When you open the System Activity Log application, a query automatically runs to show the current user for the current day. This default query option can be disabled so that the application opens without any information displayed.

Clearing the System Activity Log

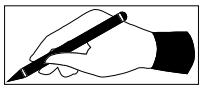
This feature allows you to remove all entries or remove the log entries up to a selected date and time. Before you remove entries, be sure that you have archived the information or have approval to delete information.

1. From the Log menu, select **Clear Events**.

   The Clear Events dialog box is displayed.



2. Select **Delete All Data** to remove all entries, or select **Delete Until** and fill the date and time through which you want to remove log entries.
3. Click **OK**.



Practice

1. Display the System Activity Log for all activity.
2. Sort the log using two different user accounts.
3. Select system events for one user by a specific set of dates.

Scheduling

About Scheduling

Scheduling at the Insight workstation allows you to create operating schedules for the various areas of your facility. Using the Scheduler and Event Builder applications, you can:

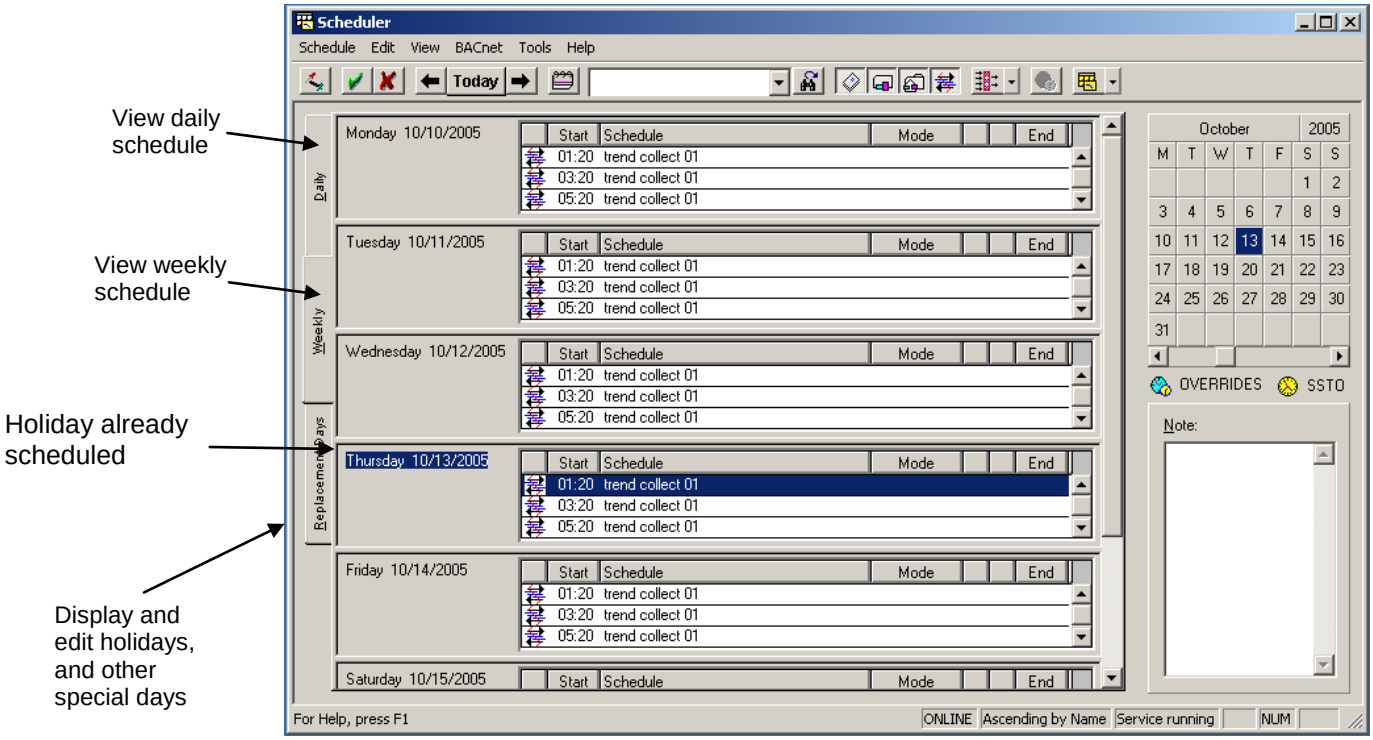
- Establish schedules for day-to-day equipment operation
- Override the routine operating schedules for temporary changes
- Set up schedules for holidays and other special situations
- Schedule building operations years in advance
- Schedule the automatic printing of reports
- Schedule automatic trend collection
- Edit schedules and calendars for Siemens BACnet field panels (online or offline) and third-party BACnet field panels and devices (online only)
- Interact with field panel programs to change program operating modes
- Use Start/Stop Time Optimization (SSTO) to adjust equipment

This training module will introduce many of these capabilities. We will not discuss the last two items, because they are more advanced tasks that should be covered in further training.

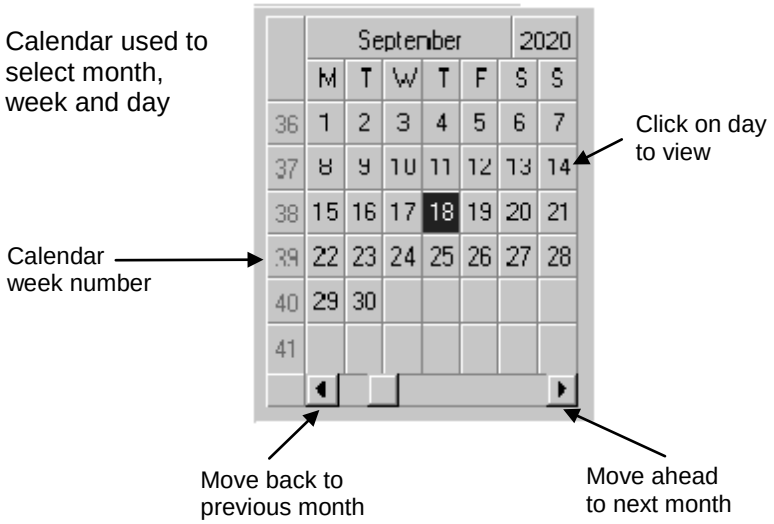
Note: The scheduling function for Siemens BACnet Field Panels and third-party BACnet field panels and devices differs from scheduling non-BACnet objects. For more information, see the section on *BACnet Scheduling*.

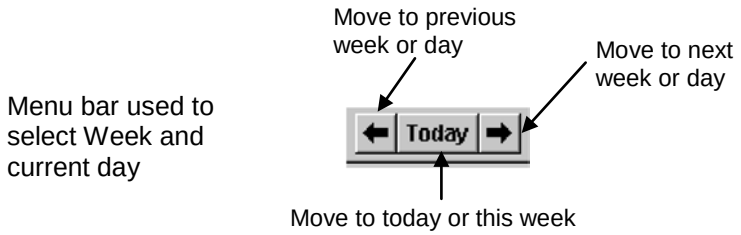
The figure on the following page shows a completed schedule and some of its typical contents. A similar window for your site can be displayed by opening the Scheduler application.

If you have the BACnet Option enabled, a BACnet menu bar displays.



Scheduler Window





There are two Insight applications which you use to schedule equipment operations:

- The Event Builder

- The Scheduler

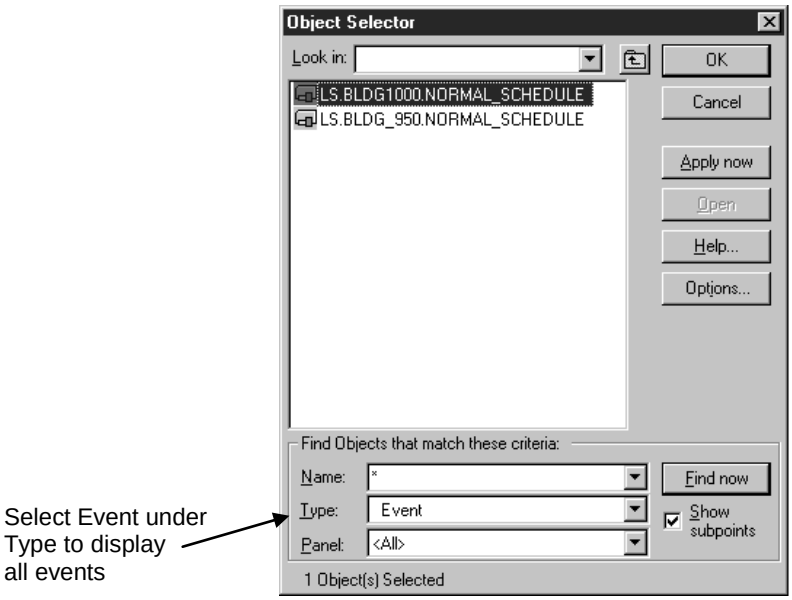
In the Event Builder you create Events and Zones. An Event is an activity, or a way of organizing your facility's operations into logical groupings with convenient names. Events are scheduled activities that use equipment in your facility in specific ways. Event names refer to typical activities at your site: Regular Schedule, Teacher's Day, Basketball Game, Soccer Game, Meeting Schedule, etc.

Events consist of zones and their operating modes. Zones are objects which represent an area of your facility: a building, a floor, or room, or pieces of equipment such as fans or lights.

For example, the event Basketball game might contain zones that control the air handler for the gym, the lights, and the locker room hot water.

These concepts are described in more detail in the following pages.

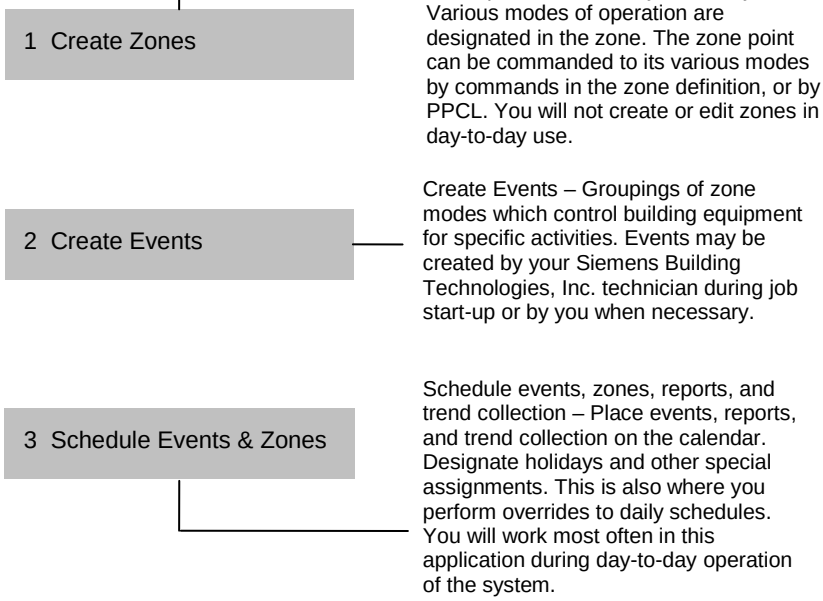
The following figure shows the object selector with a few sample events displayed. You can display events in your system by selecting **Event** as the object type in the object selector, and clicking **Find Now**.



In the Scheduler application you place events and zones, as well as reports and trend collection, on the calendar. In this application you can also perform overriding and special scheduling functions.

Sequence of Designing Equipment Scheduling

Your facility may already have equipment scheduling up and running, or you and your Siemens Building Technologies, Inc. representatives may be implementing it now, or planning future implementation. The figure on this page shows the sequence of how to implement equipment scheduling.



Placing Objects in the Scheduler

Your day-to-day activities will revolve around looking at the Scheduler, making changes to the calendar in Scheduler, and occasionally adding objects to the Scheduler.

You can place four types of objects on the calendar in the Scheduler:

- Trend Collection times
- Events
- Zones
- Reports

Let's look in more detail at how objects are placed onto the Calendar and how they are created.

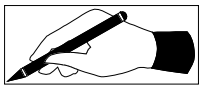
You can display the schedule for events only, zones only, reports only, or trend collection times only in the calendar. To do so, click on the appropriate icon in the menu along the top of the calendar:

To display event schedules, click on  .

To display report schedules, click on  .

To display trend collection schedules, click on  .

To display zones, click on  .



Practice

Open the Scheduler application.

Click on an individual day, not today's date, in the calendar in the right corner, to display the daily schedule for that day.

Click on today's date to display the schedule for today.

Display the weekly schedule for this week by selecting the Weekly tab on the left-hand margin.

Select Replacement days. Are there any defined? _____

Have your instructor discuss the Replacement days that are already scheduled, or if none are scheduled, then what Replacement days might be scheduled. Display events only by clicking on the events icon in the menu bar.

List three events or zones in your system:

_____

_____

_____

Discuss with your instructor how the events relate to your facility's mechanical equipment.

Are there holidays noted? _____

What holidays? _____

Select the Reports icon in the menu bar to display any reports which have already been scheduled. Are any reports already placed on the Schedule? _____

Which ones? _____

Click on the trend collection icon in the menu bar.

Is trend collection scheduled? _____

When? _____

What points are automatically collected? _____

List three points on a trend collection schedule if there is one:

_____

Is the information also printed?_____

Scheduling a Report

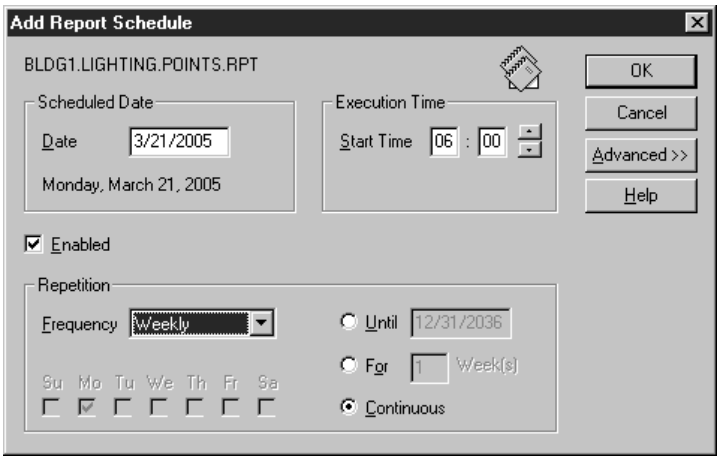
When a report is “built” and saved in the Report Builder application, it becomes an object, which is displayed in the Object Selector. You can then place the report on the calendar to be printed or displayed at the times you desire. In addition, you can e-mail reports as file attachments.

To schedule a report:

1. Select a day from the calendar in the right corner of the Scheduler window.
2. From the **Schedule** menu, select **New**, and then click **Report**.

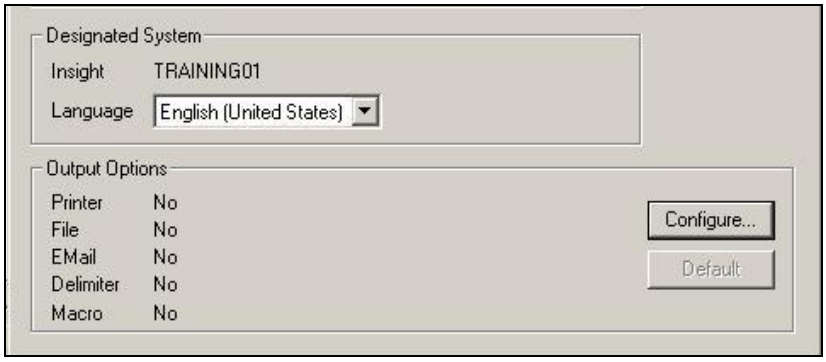
   The Object Selector is displayed with existing reports.
3. Select the report you want to schedule, and click **OK**. You can also drag and drop the report you want to the calendar.

   The Add Report Schedule dialog box is displayed.



4. Complete the fields in the dialog box. You determine the date for the report, the start time, and the frequency of producing the report.
5. Click **OK** when complete. The report is added to the calendar.

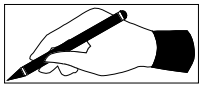
Clicking the **Advanced** button displays additional features of the Add Report section.



Advanced Add Report Section

Clicking the **Configure** button allows you to set the following report output settings:

- Printer – Select printer to which report file is sent.
- File – Name and save report file to a specific location.
- E-Mail – Send report as an attachment to an e-mail address.
- Delimited Text – Select a delimiter for the data being sent to a file.
- Macro – Define a macro to open a spreadsheet and start processing data.



Practice

1. Open the Scheduler application.
2. Discuss with your instructor what report would be a good one to schedule temporarily or permanently.
3. Place one of the reports in the schedule. Make sure it appears in the calendar when you are finished. (You may remove the report if it is one that does not need to be placed permanently on the calendar.)
4. Determine if any of the advanced file output options would be appropriate and then configure the report for the printer, file, e-mail, delimited text, or macro as needed.

Scheduling Trend Collection

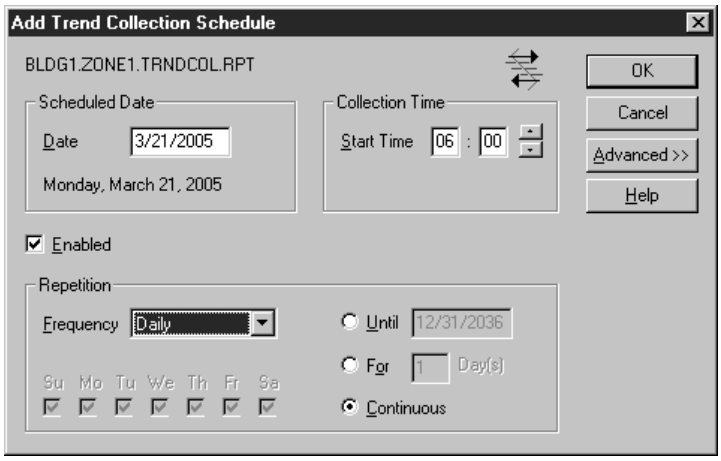
Scheduling trend collection is a matter of scheduling the trend collection report. Data for the points specified in the report will be uploaded. You must create the report in the Report Builder if it does not already exist.

To schedule trend collection:

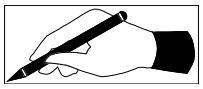
1. Select a starting day on the calendar in the right corner of the Scheduler window.
2. From the **Schedule** menu, select **New**, and then click **Trend Collection**.

   The Object Selector is displayed.
3. From the list, select the trend collection report you want to schedule, and click **OK**, or drag and drop the report you want to schedule.

   The Add Trend Collection Schedule dialog box is displayed.



4. You have choices that are similar to the previous report. When completed, click **OK**. The trend collection schedule is added to the calendar.



Practice

From the Scheduler window, click the trend collection icon to display any collections which are already scheduled.

Discuss with your instructor the reports which are scheduled. If there are no reports scheduled, discuss the reasons why not.

Scheduling an Event or Zone

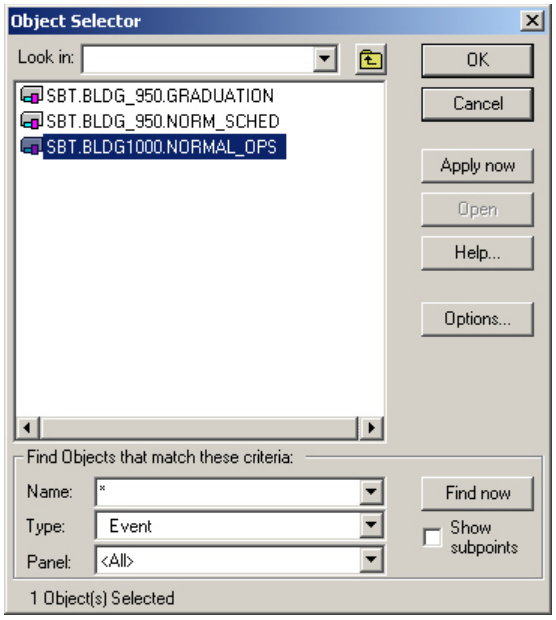
To schedule an event or zone, you fill out a dialog box similar to the ones we have just seen for scheduling a report or trend collection. Our example below and on the following page deal with an event.

To schedule an event or event:

1. Select the starting day for the event from the calendar in the corner of the window, or from the **Schedule** menu, select **New**, and then click **Event**.

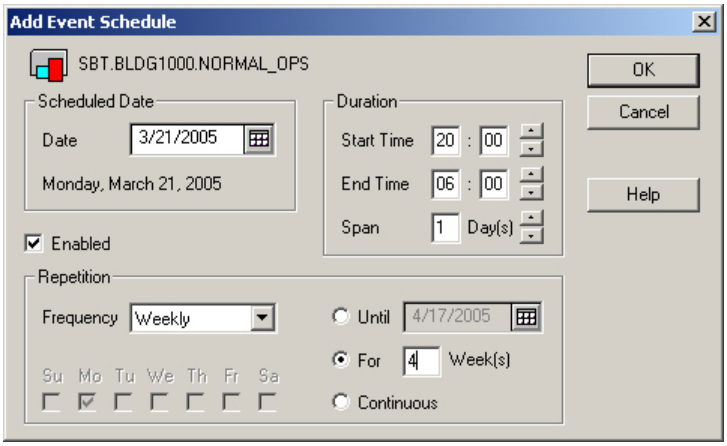
   The Object Selector window is displayed.

2. You can select **Events** and click **Find Now** at the bottom of the window to display all of the events that currently exist in your system.



3. Select the event you want to schedule and click **OK**.

   The Add Event Schedule dialog box is displayed.

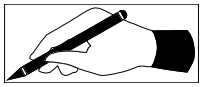


4. Select the start and stop times and the days of the week that your event will be active. Span is used to extend events across a midnight barrier. If you chose a span of 1, then the event would turn to Day mode on March 21, 2005 at 8 P.M. and would turn to Night mode on March 21, 2005 at 6 A.M.

   In the Repetition section, the **Frequency** selection allows you to determine how often the event will occur. You can also customize by selecting specific days of the week. Selecting **Until** allows you to enter a date for the end of the event schedule. Selecting **For** allows you to enter the number of weeks, from the start of the event schedule, that the schedule will last.

   In the example above, the event SBT.BLDG1000.NORMAL_OPS will be active from 8 P.M. to 6 A.M. on the next four Mondays starting on March 21, 2005.

5. When finished, click **OK** to add the event to the schedule.



Practice

Discuss with your instructor the plan at your facility for creating and scheduling events.

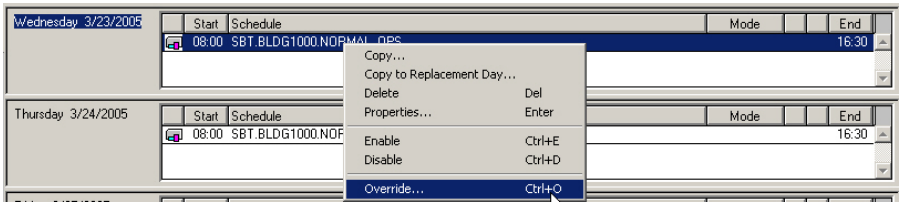
How much is done by the Siemens Building Technologies, Inc. field office, and how much is done by users at your site?

Overriding a Scheduled Event

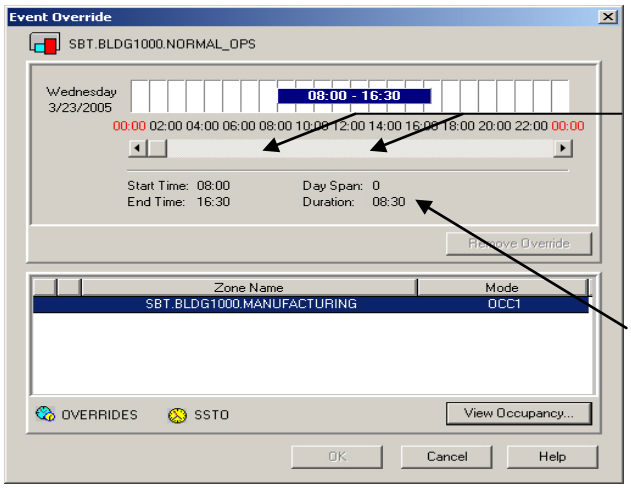
Making overrides to an existing event schedule is a task that you may perform often. You may not create zones or events in your day-to-day scheduling at your facility, but you will probably have to override events that are already in the Scheduler.

To override an event or zone:

1. With the schedule displayed on the screen, move the cursor to the event or zone you want to override and click the right mouse button. A menu is displayed.



2. Select **Override**. The Event Override window is displayed.

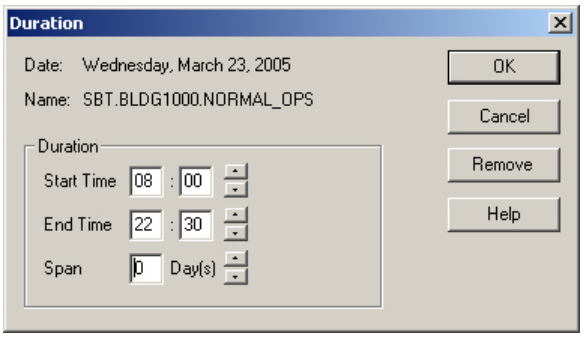


Point here and hold down the right mouse button. Drag the bar to override time you desire.

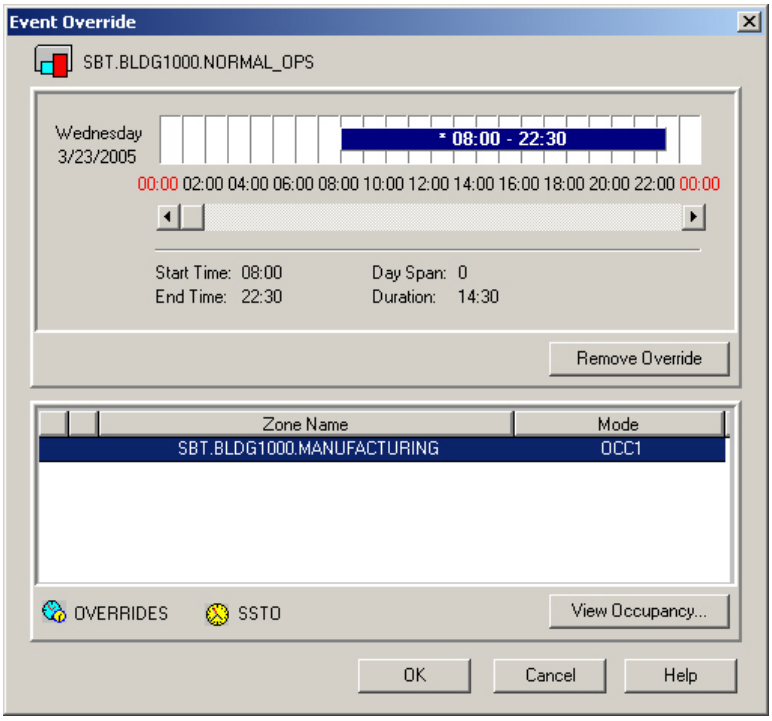
or

Point here and double-click the left mouse button for a setup window.

You can adjust the times in the black time bar by pointing to the bar and dragging the bar in either direction. If you double-click on the bar, you can do the same thing by filling in the Duration dialog box that is displayed. You can change the start and stop times and change the day span if the event crosses a midnight barrier.

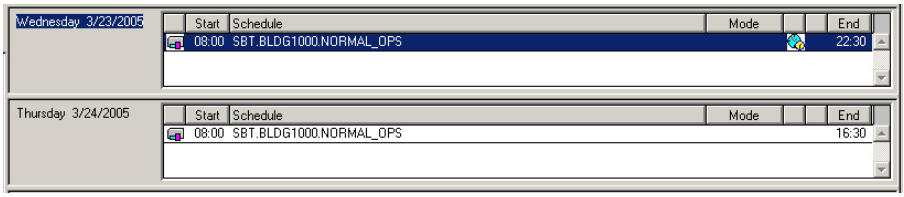


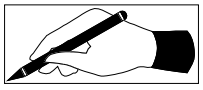
3. After filling in this dialog box and clicking **OK**, the Event Override window is displayed. The event duration bar has an asterisk in it, showing that the time has been overridden.



4. When you click **OK** in this dialog box, you return to the schedule.

   The override is denoted on the schedule by the  symbol.





Practice

Override the time of an existing event in your schedule. Your instructor will tell you what time to change. After you have made the change and have seen it on the calendar, delete the override to return the event to its normal time.

Holidays and Other Special Assignments: Replacement Days

One of the conveniences of the Scheduler application is that you not only have great flexibility in placing your equipment into regular schedules, but you also have the ability to handle holidays, one-time events, and unplanned events. These situations are accommodated using the Replacement Days tab, one of the three major tabs along the left-hand side of the Scheduler window.

A Replacement Day is used for a holiday or other special situation such as an unplanned evening meeting. There are seven replacement days to which you can add replacement schedules for these situations.

You build the replacement day schedule, creating it from scratch or perhaps by simply adjusting a regular schedule, renaming it, and then placing it onto the regular schedule.

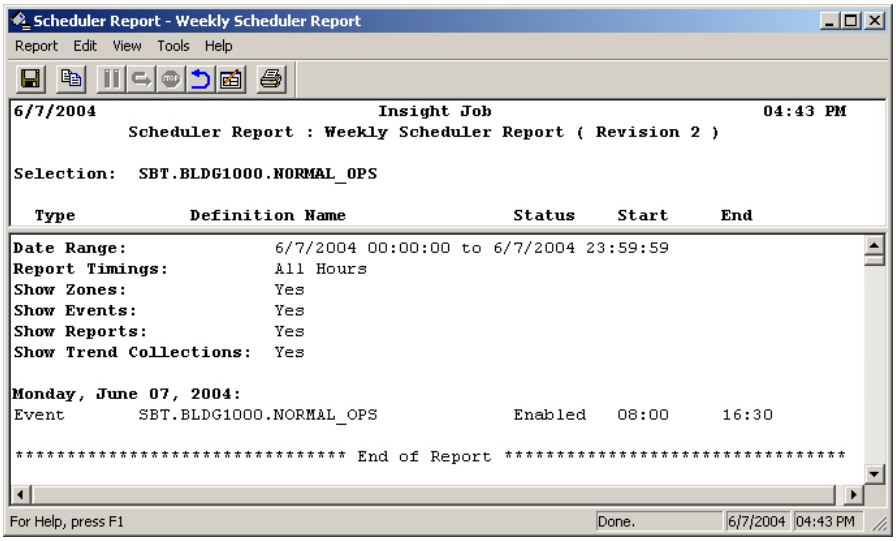
The Scheduler Report

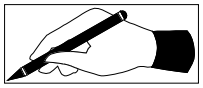
This report displays the scheduled reports and events for a selected period of time.

If you are receiving complaints, such as the zones are not warm enough in the morning or the lights go off too early in the evening, you can use this report to determine when HVAC and lighting are set to turn on and off.

Based on the schedules in the report, you can make adjustments that meet the needs of the occupants, as well as maintenance.

You can also use the Scheduler Report to identify the reports that are scheduled to run.





Practice

Run the Scheduler report for the current week.

How many different events are used in the week? _____

Are there any replacement days? _____

List them: _____

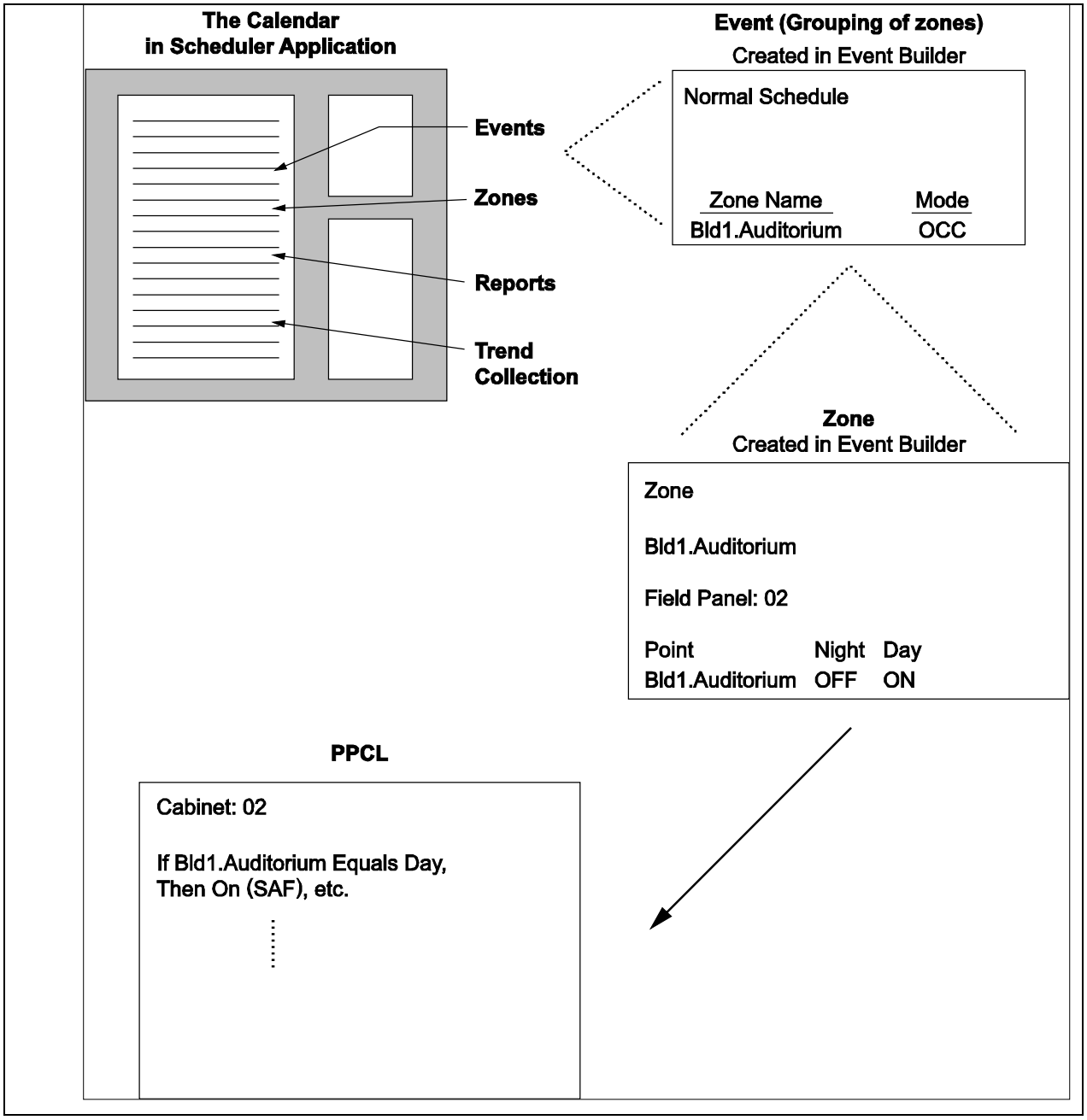
Are there any reports scheduled? _____

Is any trend collection scheduled? _____

Any zones scheduled? _____

Summary of Equipment Scheduler

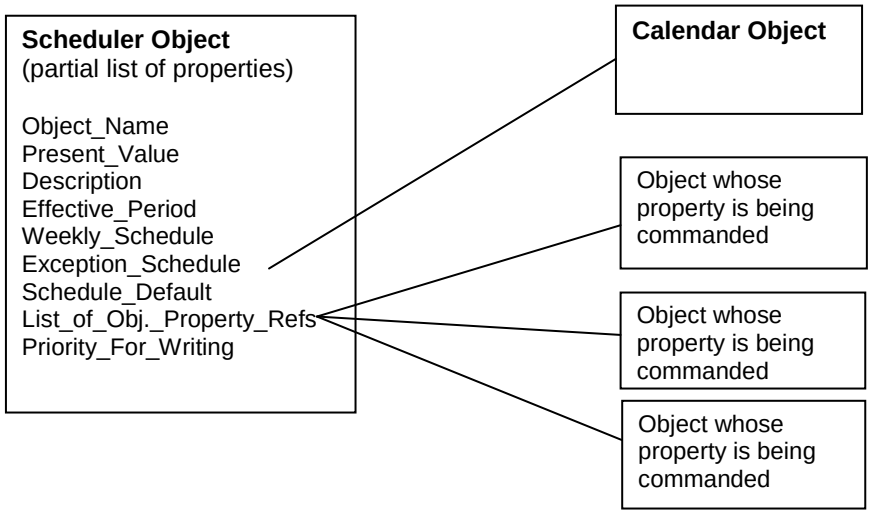
The following figure shows the major components used in equipment scheduling and how they relate to one another to carry out control of your equipment.



BACnet Scheduling

BACnet schedules are used to automatically command points at prescribed time intervals. BACnet Scheduling involves the interaction of the Scheduler object, the Calendar object and the objects whose properties are being commanded by the Scheduler object.

The following diagram shows a simplification of this relationship. The BACnet Scheduler Object shows a partial list of its properties. The Schedule Object issues commands to the properties of objects in its List_of_Object_Property_References according to its Weekly_Schedule property. The Weekly Schedule can be over-written by the Exception_Schedule property, which can be a fixed schedule or can be determined by the Calendar Object.



BACnet Scheduling Features

Each BACnet device holds its own calendar and schedule objects. A device can store and run multiple calendars and schedules at the same time.

- **Schedules** are used to automatically command points at prescribed time intervals.
- **Calendars** are evaluated each day as either True or False.

The containing device executes the schedule. The Insight workstation merely accesses the calendars and schedules stored in BACnet devices in order to edit them. If defined as the Mass Storage Device, the Insight workstation will store a copy of the calendars and schedule.

Creating a Schedule

The Scheduler application is used to create Schedules for BACnet objects, including adding, modifying and deleting these objects in both native Siemens BACnet panels and third-party BACnet devices.

Note: The BACnet menu and functionality is only visible if the Insight BACnet Option is installed.

In the Scheduler, from the BACnet menu, there are four menu options available:

New – Adds a new Calendar or Schedule to a BACnet device.

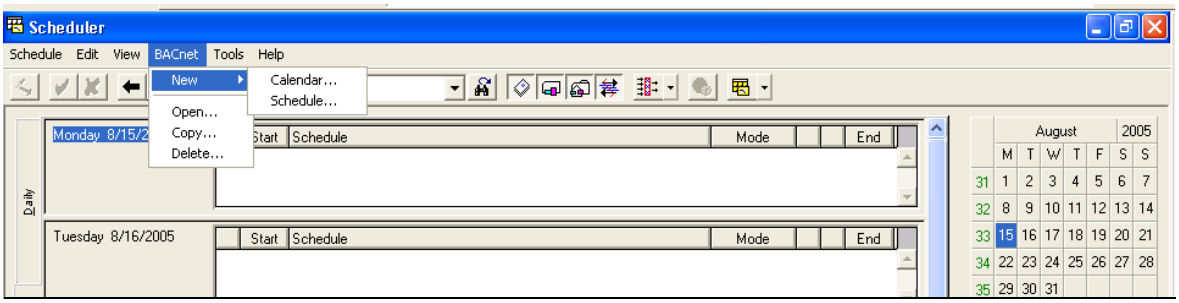
Open – Opens an existing schedule or calendar using the Object Selector

Copy – Copies an existing schedule or calendar for faster creation of a new one.

Delete – Deletes one or more schedules or calendars from a BACnet device and/or database, in the case of objects in Siemens BACnet panels.

To create a schedule:

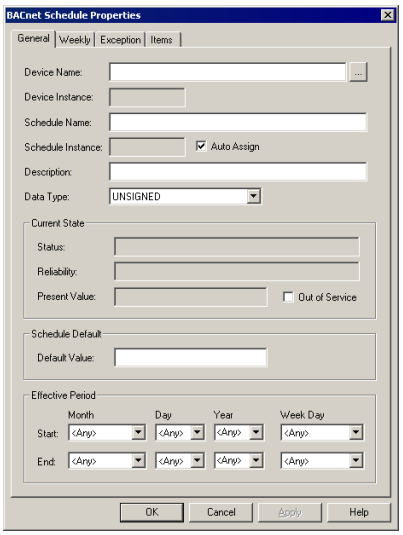
1. From the **BACnet** menu, select **New** and then, **Schedule**.



The BACnet Schedule Properties dialog box displays.

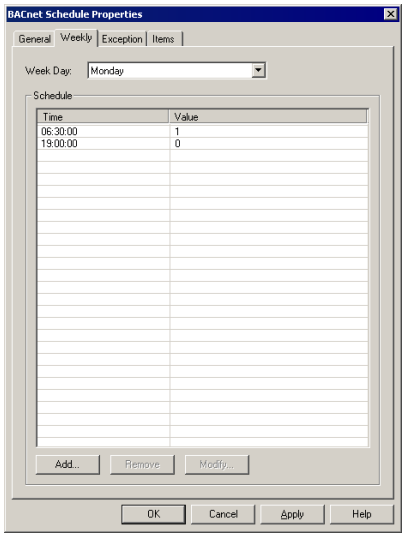
The BACnet Schedule Properties dialog box is used to edit the properties of the BACnet schedule object for new and existing schedules. There are four tabs as follows:

General Tab - Displays general information about the Schedule.



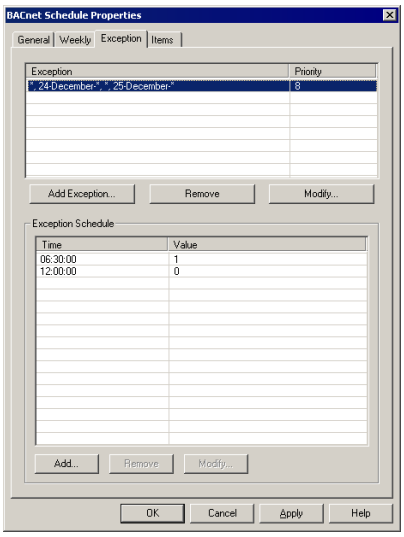
Weekly Tab – A list of time/value relationships for each day of a week within the Effective Period. This represents the “normal” or “regular” schedule for each day.

Weekly schedule time/value entries can be added, removed or modified.



Exception Tab - A list of *BACnet Special Events* that take precedence over the normal weekly schedule.

A BACnet Special Event entry is defined by the calendar date(s) on which it occurs and its priority. These Special Events are listed in the Exception box at the top of the page and are sorted in order of priority.

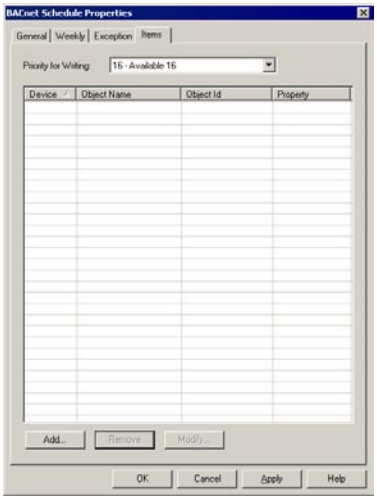


Items Tab – Contains two options:

Priority for Writing - Designates the command priority level at which the point will be commanded.

Points List - Shows the points and the values to which they will be commanded when the date and time schedules are effective.

Here you can add, remove, or modify points. All points listed must match the data type entered in the General tab.



BACnet Calendars

Each time the BACnet device's date changes, all internal calendars are evaluated and given the value of True or False.

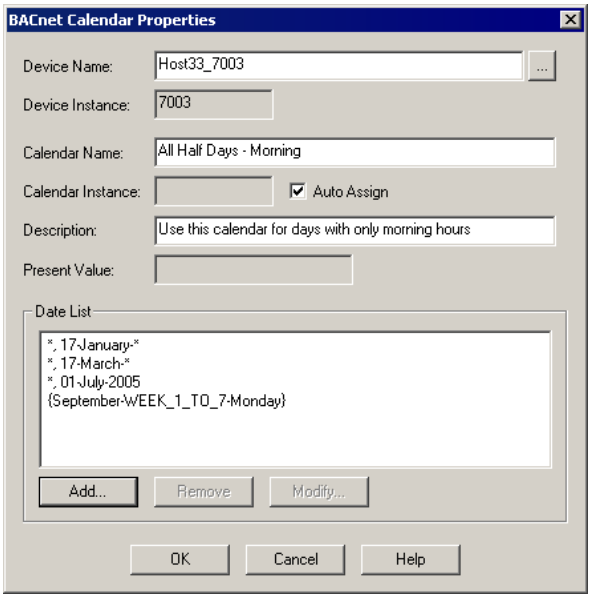
- If the current date is included in the calendar's list of effective dates, the calendar is evaluated as "true."
- Calendars themselves do not command objects.

Setting up a calendar for BACnet Objects

BACnet calendars can be set up and used in the same way as Insight Scheduling Exception Days. If you enter a BACnet calendar as an exception, the exception schedule will occur when the calendar is evaluated as true.

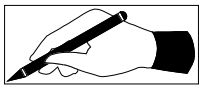
To set up a calendar for BACnet Objects:

1. Open the Scheduler. From the **BACnet** menu, select **New** and then **Calendar**. The BACnet Calendar Properties dialog box displays.



2. Complete the fields giving the calendar a unique name.
3. When finished, click **OK.**

Practice



If you have a BACnet panel, perform the following exercise. As you go, review each dialog box and the fields in the dialog box with your instructor:

1. In the Scheduler application, create a calendar for your BACnet field panels.

2. Next, create a schedule, using that calendar.

3. Add an exception to the calendar.

BACnet Object Browser

About the BACnet Object Browser

This feature allows you to browse both Siemens BACnet devices and objects and third-party BACnet devices and objects for diagnostic purposes.

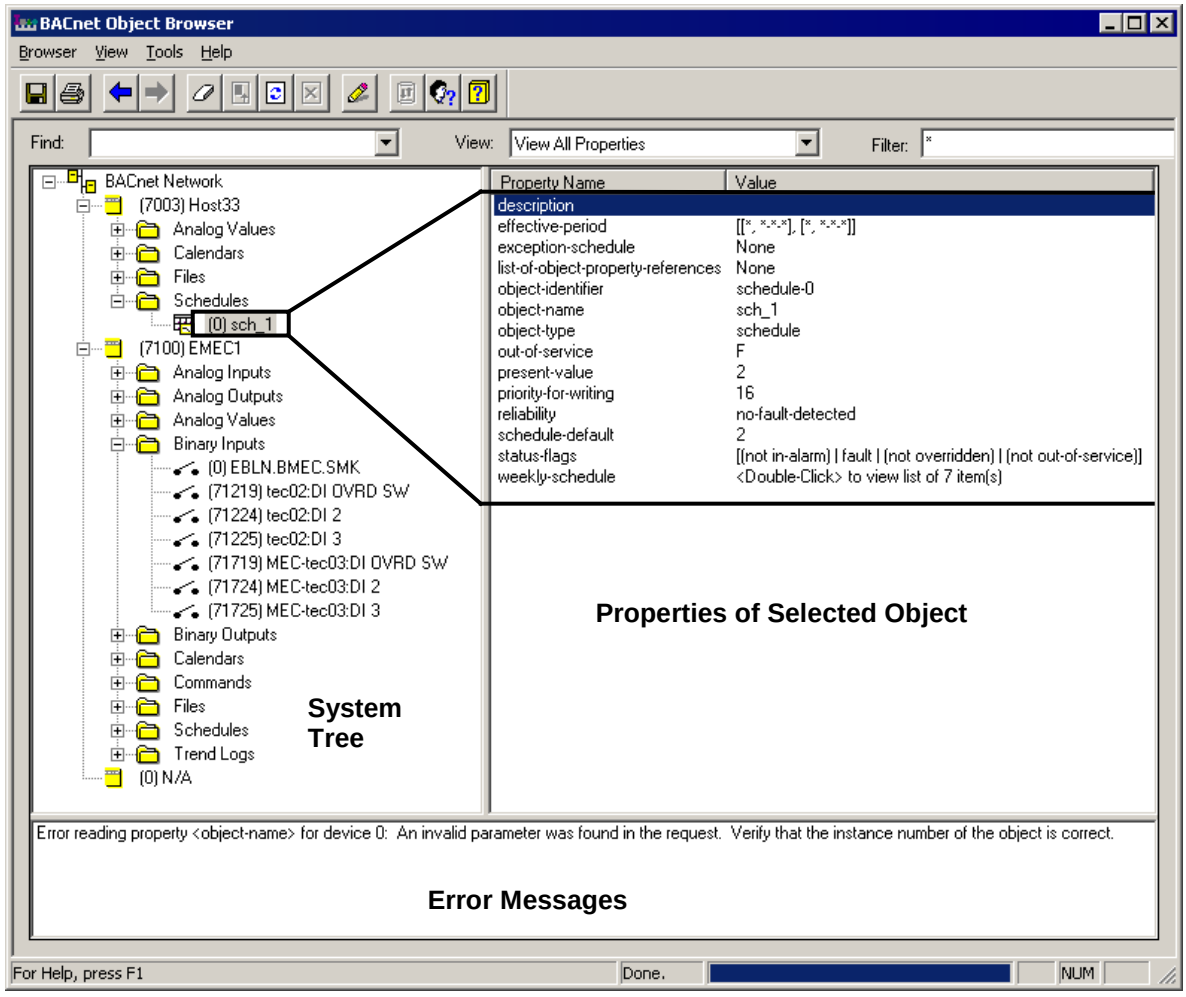
Read-level access allows you to view and browse to any available devices and objects. Configure-level access allows you to write properties, import points, reinitialize devices, or use device communication controls as needed. You can only edit existing objects in the BACnet Object Browser. You cannot create new objects or delete objects.

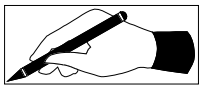
To launch BACnet Object Browser:

1. In the system tree, click a BACnet BLN or BACnet field panel.
2. From the **Tools** menu, click **BACnet Object Browser**.

   The BACnet Object Browser window displays, containing the hierarchy of the BACnet network and information about its devices. The window is divided into three panes, containing the following information:

   - System tree, showing the hierarchy of the BACnet network
   - Properties and property values of the object selected in the system tree
   - Error messages





Practice

If you have a BACnet panel, perform the following:

1. Open the BACnet Object Browser application.
2. Browse the toolbar to become familiar with the main window and the toolbar icons.

Discuss with your instructor how this application is useful and under what circumstances.

The BACnet Object Browser is useful for "getting your bearings" on the organization of the network for both Siemens and third-party devices and objects, and the properties of the selected object. It is also useful for troubleshooting, as error messages are displayed at the bottom of the screen.

Use this table to become familiar with the toolbar icons.

Button	Command	Description
	**Save**	Allows you to save and export the control list contents and listed devices as a comma separated value (.CSV) file.
	**Print**	Allows you to print the active list contents. For example (9000) BACDev_9000 listed in the left pane of the BACnet Object Browser window.
	**Previous**	Allows you to navigate back through the previously viewed selections.
	**Next**	Allows you to navigate forward through the previously viewed selections.
	**Clear Errors**	Clears the bottom pane of the BACnet Object Browser window of all error messages.
	**Re-read Object List**	Re-reads the object list for the selected device and then refreshes the tree.
	**Refresh**	Scans for any device updates and then refreshes the tree.
	**Write Property**	Allows you to view the current value and change the value and priority information, if necessary.
	**Import Points**	Allows you to selectively upload objects (points) into the Insight database.
	**Send Who-Is**	Allows you to broadcast a Who-Is request and listen for I-Am responses on the BACnet network.
	**Send Who-Has**	Allows you to broadcast a Who-Has to view, which devices have the object name you are searching for. This is an optional service and it may not be supported on all devices.

License Manager

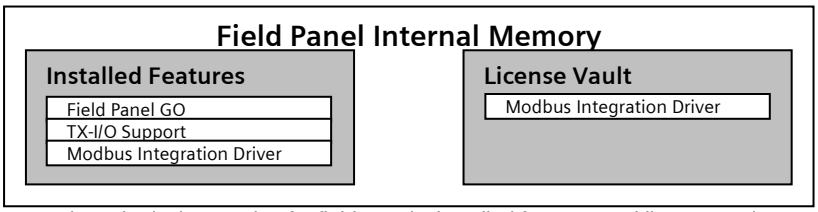
About License Manager

License Manager allows the licensing of installed features and the management of the license files. All field panels come from the factory with standard functionality and features installed. In order to enhance the functionality of a field panel, additional features can be installed in the field panel and licensed.

Example:
In order for an APOGEE field panel to support integration with other languages and/or vendors, an integration driver must be installed. After the Siemens technician installs the new driver, they must load the license to activate the new driver. Only with the feature and the license will the field panel support the functionality. Licenses are specific to individual field panels.

How Does License Manager Work?

When a field panel boots up, it reviews the list of features currently installed. It also reviews the list of valid licenses stored in the "License Vault." Every feature accompanied by a valid "license is activated. Only when both items are present will the feature function.



A hypothetical example of a field panel's installed features and license vault.

Wrap-Up Exercise

Note: Answers left blank are specific to the student's site.

1. Log on to the Insight workstation.
2. Run a panel point log for the _____ point.

   What is the point condition? _____

   What is the point address? _____

   What is the point priority? _____
3. Run a panel point log for a group of points using a wildcard.
4. Run a panel point log for a group of points that is long enough for you to pause scrolling on the screen. Then continue the scrolling of the log.
5. Run a panel point log for all points in alarm.
6. Run a panel point log for all points in operator priority.
7. List three examples or ways to organize your points in the Point Group Editor.

   By location *By function* *By equipment*
8. Call up Online Documentation.
9. Command the _____ point. Your instructor will tell you what action to take on the point.
10. Return the commanded point to system control.
11. When would you trend a point by interval?

    When you want to see the changes of point data over a time interval.
12. When would you trend a point by COV?

    When you want to see the precise time the point changed its value.
13. What equipment in your building would be good to trend by time?

    Temperatures, Pressures

14. What equipment in your building would be good to trend by COV?

    Fans (on/off points), Detectors

15. List three points at your facility which are being trended by each method:

    _____ _____

    _____

16. Display the _____ graphic.
17. What is the difference between a background and a dynamic graphic?

    The background graphic is the basic system drawing. The dynamic graphic contains the system point information.

18. Command the _____ point from the graphic. Your instructor will tell you what action to take on the point.
19. Check your alarms. How many points are in alarm?

    _____

20. How many BLN messages are there? _____
21. View a message for a point in alarm, if possible.
22. View the point alarm history for a point in alarm.
23. Print the point alarm history.
24. With your instructor's approval, erase acknowledged alarms.
25. Check alarms using the Alarm Bar. How will you relate the Alarm Status application and the Alarm Bar at your site?

    _____

    _____

26. How many reports are already defined at your facility?

    _____

27. Display a report from the Report Viewer. Display the same report from the Report Builder.
28. Display alarms. If there are any points with point memos attached, display the memo for two points.
29. Display the System Activity Log. Use the Query menu to search for events related to your user account. Display events within a specific time period.

    In the System Activity Log, use the Object Selector to query using alarm levels or by alarm status.

30. Open the Scheduler application:

    Display the weekly schedule for last week.

    Return to the weekly schedule for this week.

    List one replacement day which is defined:

    _____

    List two events that are scheduled:

    _____

    _____

    List a report that is scheduled:

    _____

    Is trend collection scheduled?

    _____

    Name two points being collected: _____

    _____

31. What are access groups?

    Objects from the database (such as points, graphics, reports, etc) that are placed in a group so the Administrator can limit what an operator is able to access.

32. What are four privilege levels a user may have for an access group?

    The available access levels are:

    - *No access - Prevents access of any kind.*
    - *Read Only - Allows you to look at and print information.*
    - *Command - Gives you the ability to command points in the access group.*
    - *Configure/Edit - Provides full editing capabilities for the access group.*

If your system has the BACnet Option, continue by answering the following questions:

33. List the BACnet Options that you will use most frequently:

_____

_____

34. How is BACnet scheduling different from scheduling in Insight?

Each BACnet device holds its own calendar and schedule objects. A device can store and run multiple calendars and schedules at the same time.

Schedules are used to automatically command points at prescribed time intervals.

Calendars are evaluated each day as either True or False.

The containing device executes the schedule. Insight merely accesses the calendars and schedules stored in BACnet devices in order to edit them. If defined as the Mass Storage Device, Insight will store a copy of the calendars and schedule.

35. What is an exception?

An exception is when the regularly schedule should be ignored.

36. Describe how the Commander is different for BACnet points?

There are more priority levels and different options for BACnet points than for Insight points.

BACnet specifies 16 command priority levels, while Insight specifies 5 priorities.

BACnet Commands are set up in the Command Priority Array. The current value is regulated by the highest priority command in the array.

37. Why is the BACnet Object Browser useful?

The BACnet Object Browser is useful for "getting your bearings" on the organization of the network for both Siemens and third-party devices and objects, and the properties of the selected object. It is also useful for troubleshooting, as error messages are displayed at the bottom of the screen.

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