InetSupervisor-

InetSup_UsersGuide

Revised - April 13, 2008

1.0 InetSupervisor Application Fundamentals

1.1 Hardware requirements

1. A PC with a Pentium IV processor, 512K RAM (1G recommended), an LNS network interface card and/or Ethernet NIC installed.
2. Microsoft Windows 2000 Pro, 2000 Server, XP Pro, 2003 Server, or later.
3. An LNS network with at least one LonWorks device installed and commissioned into a LNS version (not LonMaker version) 3.2 or later database on the PC.
4. Access to the internet to download the software (free up to 20 database points).

1.2 Concepts

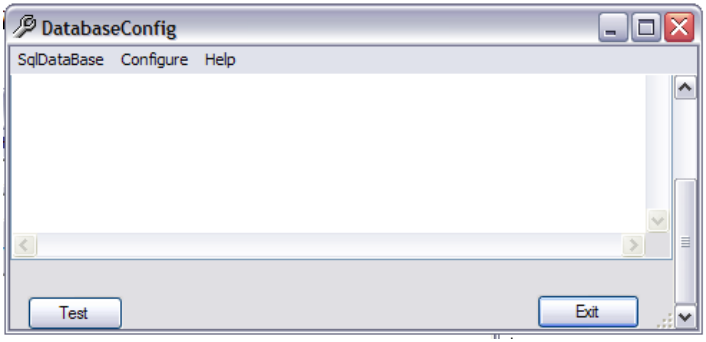
Concentrator and Database Config are now ‘dot net’ applications that require the Microsoft .Net framework version 2.0. All data and configuration information is stored in the SQL Server (Database Server), and web pages are served by the Internet Information Services (IIS Web Server). Access to the back-end (SQL Server) is documented in the DataBase Config Manual. The front-end graphic screens are programmed in Active Server Pages (.asp/.aspx text files). This makes InetSupervisor an Open Front End for Open Systems.

Concentrator, DatabaseConfig and LNSDriver applications install to the C:\LonWorks\Apps\Qci\ directory. The C:\LonWorks\Apps\Qci\MsSql\DATA directory holds the SQL Server catalogs (data files) and the C:\LonWorks\Apps\Qci\MsSql\Backup directory holds any backups of the database you make.

Web Page files install into the c:\InetPub\wwwRoot\HMI\ directory. Do not change this default file location. All Flash Components should be used from within c:\InetPub\wwwRoot\HMI\FX\ directory. You can read more information about the flash in the Flash Users Guide.

2.0 DatabaseConfig - general

Any InetSupervisor database table can be manipulated via the DBConfig utility. Under the SQL-Database drop-down menu you will find all the tables that the SQL database contains. You can open any table and click LoadRefresh to display the table's content. Any record can be deleted or modified. The Update button will submit the changes to the database and make them permanent. To delete a record, click in the area to the left of the PointID then click Delete on the keyboard, then click Update in the table window. Multiple rows can be selected by holding the Shift key (to select multiple contiguous rows) or Ctrl key (to select multiple non-contiguous rows) down while clicking with the mouse. To open the Database Config utility click Start, All Programs, HMI, DBConfig. A Login utility will start. Input your username and password (default is q and q) then click Login.



2.1 SqlDatabase

Alarms Table

This table shows all the information for Alarms such as ID, PointTimeStamp, Description and PointValue.

DailyLog Table

InetSupervisor records all changes and updates to the SQL Server the information is stored in the Daily Log. This table shows all the information for the Daily Log such as ID, EventTime, Message and UserID.

Config Table

This table is used to configure InetSupervisor.

1. InetSupervisorEnable - 1 enable InetSupervisor, 0 disable InetSupervisor
2. AllPointsUpdateInterval - Time, in seconds, that InetSupervisor will update all enabled points
3. ScanRate - Time, in seconds, that InetSupervisor will scan point's set for an update
4. SetVisible - Obsolete feature
5. AlarmEmailEnable - 1 enables alarm e-mailing, 0 disables alarm e-mailing
6. ReportEmailEnable - Depreciated feature
7. ReportScanInterval - Depreciated feature
8. SchedulesEnable - 1 enables schedule feature of InetSupervisor, 0 disables feature
9. SchedulesScanInterval - Time, in seconds, that InetSupervisor will send schedule over-rides
10. LNSNetworkName - Name of LNS network database InetSupervisor is to connect to
11. LNSNetworkInterfaceName- Name of LNS network interface InetSupervisor is to use
12. DoNotModify1 - Internal InetSupervisor information **Do Not Modify**
13. DoNotModify2 - Internal InetSupervisor information **Do Not Modify**
14. AlarmScanInterval - Time, in seconds, InetSupervisor will update alarm point values
15. DistechReadDelay - Obsolete feature

16. EnableEnflexGateways - 1 enables cross referencing when using enflex protocol gateways 0 disables feature
17. EnableLonWorks - 1 enables InetSupervisor to communicate with LNS networks, 0 disables feature
18. LocalIPAddress - Servers local IP address
19. Overrides_SelectedPoints - Depreciated feature
20. Trend0Interval - Time, in minutes, that InetSupervisor will scan for trendable points
21. Trend0ArchiveDuration - Time, in minutes, InetSupervisor saves level 0 trend data
22. Trend1Interval - Time, in minutes, that InetSupervisor will use to filter data when transferring from Trend0Database to Trend1Database
23. Trend1ArchiveDuration - Time, in minutes, InetSupervisor saves level 1 trend data
24. Trend2Interval - Time, in minutes, that InetSupervisor will use to filter data when transferring from Trend1Database to Trend2Database
25. Trend2ArchiveDuration - Time, in minutes, InetSupervisor saves level 2 trend data
26. Trend3Interval - Time, in minutes, that InetSupervisor will use to filter data when transferring from Trend2Database to Trend3Database
27. Trend3ArchiveDuration - Time, in minutes, InetSupervisor saves level 3 trend data
28. Trend4Interval - Time, in minutes, that InetSupervisor will use to filter data when transferring from Trend3Database to Trend4Database
29. Trend4ArchiveDuration - Time, in minutes, InetSupervisor saves level4 trend data
30. EnableSequencer - Future Use
31. EnableRemoteInterface - 1 enables the use of remote network interfaces, 0 disables feature
32. EnableOverridesAtLevels - Comma delimited string of user levels allowed by the communicator to override points
33. AlarmMessageVerbose - 1, e-mail alarms messages to have descriptions for each section, 0 means the alarm e-mail will not have descriptor's to save space for small screens i.e. palm pilots
34. SMTPServerIPAddess - IP Address of the SMTP server inetsupervisor should use to send email notifications
35. AlarmEnable - 1 enables the alarming functions of Inetsupervisor 0 disables the feature
36. SiteName - Logical name of the installation instance
37. AlarmFromEmailAddess - The email address that inetsupervisor will put in the from section of an alarm email notification

38. AlarmEmailSubject - The text that inetsupervisor will put in the subject line of an alarm email notification

39. DdnsServerIp - The IP address of a remote DDNS server

It is recommended to disable all non used features

Nodes Table

This table is for future use

Overrides Table

This table shows all the information for Schedule Overrides such as ***ID***, ***UserID***, ***StartTime*** and ***EndTime.***

Points Table

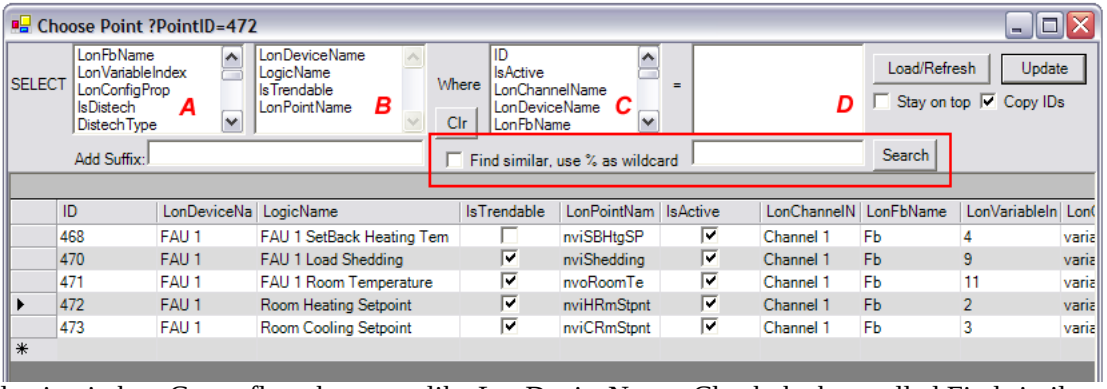
Most points need to be configured to some degree after they have been imported. This configuration will tell the associated programs how and when to react with the point. There are 2 ways to manipulate the data. The Points Table shown here and also the web based Point Editor.

The Points Table, has some powerful search and display functions related to working with the Building Automation System Point Variables. Display the table by opening the DatabaseConfig Utility 'DBConfig' and then clicking SqlServer/Points_Table. Click Load/Refresh to populate the table. The Save button is used to save any table changes to the database (a must for effecting changes). The box in the upper left (A) shows all the table columns (point attributes). Box B, just to the right, shows which columns will be displayed first (from left to right). These are user-selected by clicking column names in box A.

The points displayed can be narrowed-down (searched) by selecting a column name (attribute) in the Where box (***C***) and a specific value of the attribute in the "=" box (***D***).

By way of example, we are interested in displaying certain attributes of certain system points. We want to display points that have the LogicName "occupancy", and the configuration attributes we're most interested in viewing are IsActive, LonIsDigital, LogicName, PointValue, LonDigOn, LonDigOff, and PointIsAlarm. So in box A we select these seven point attributes and as we click them they appear in box B. We want to display only the points where the attribute LogicName has the value "occupancy". So in box ***C*** we click LogicName and when we do, all assigned logic names will appear in box D. We click the one we're inter-

ested in, namely “occupancy”. In a few seconds, the table refreshes, displaying all relevant points and attributes.In addition if we wanted only the points for a specific group units, we can change the



selection in box C to reflect the group like LonDeviceName. Check the box called Find similar, then type in the group you wish to see then click search, the table refreshes, displaying all relevant points. For example if you wish to see all equipment associated with AHU 2 type %AHU 2% and any name in LonDeviceName with AHU 2 in it will be displayed. The % symbol is used to as a wild card for the search engine. If you place a % before the search string than the engine will display any points with the search string at the end. The opposite is true if you use it at the end of the search string. If % is placed on both sides then it will look for the search string anywhere in the point. If you do not use the symbol then only point that match exactly as the search string will be displayed.

Note: If you’re having trouble getting the table to load, make sure of the following:

1. LNS Network Name and Network Interface are configured correctly in the Config Table (DatabaseConfig/SqlDataBase/Config Table/LoadRefresh).
2. LonWorks network is configured correctly (in LonMaker network setup, “Network Attached”, interface name verified, and “Onnet”).
3. Points have been imported (LNSConfig/Configure/Import LonWorks Points/select Current Channel/Load Variables/Import Selected). If the Current Channel window is blank, you’re not properly configured.
4. Exit and restart DatabaseConfig.

5. Make sure your PC knows the IP Address and Port of the Network Interface.

ReportConfig Table

This table shows the information for all reports in the system

ReportConfig Table

Depreciated

ReportData Table

Depreciated

Schedule Table

This table shows all the schedule information

Trends Table

This table shows all the data recorded for the trends

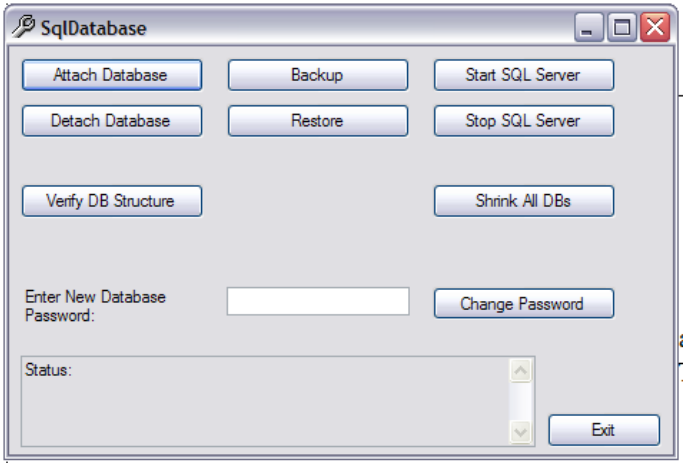
WebUsers Table

This table show all the current users defined in InetSupervisor

2.2 Configure

SQL Database

With this utility a user can manipulate the SQL Server. The options available are to Attach or Detach to the SQL Database, Backup, Restore, Start and Stop SQL Server, Verify DB Structure, and change SQL Password**.**



1. Attach and Detach Database - used to attach or detach the SQL database's from the SQL server
2. Backup and Restore - If you want to backup the InetSupervisor database you need then click Backup. Please note that the backup operation may fail if there are other applications (including web pages) using the database at the time of backup. To restore a backed-up database, click the Restore button. Click Yes to accept the warning, then select the backup file to be restored. This may take a moment depending on the database size.

Point Trends

Used to delete old trends

Point Report

Depreciated

Registration

Used to register InetSupervisor maximum point count

2.3 Help

About

Displays InetSupervisor information

3.0 Alarming

3.1 Alarming Engine Overview

The following assumes that you have imported points into the Points_Table. See the Points Import section for details.

The Inetsupervisor alarming engine will create an alarm based on the value of any point that is checked as alarmable, following this sequence.

1. If the value of that AlarmEnable row in the Config table is 1
2. On every point update the value of the point if analog is processed according to the equations set into the algorithm editor (if any are used), if the point is digital the value is passed straight into the alarm engine.
3. Once in the alarm engine the value will be compared to the values given in the high value alarm/warning and low value alarm/warning if it is an analog value or the values in the alarm digital ON and alarm digital OFF if digital.
4. If the value is found to be out of range if analog or equal to the alarm digital ON if digital then the alarm engine will check to see if point interlock conditions exist.

5. If point interlock conditions are present then starting with point interlock 1, the database will check to see if the conditions are meet for each interlock. If the conditions are meet then the engine will move to interlock number 2 and then interlock 3 if they exist. If the conditions are present but not meet then the alarm will be disposed of here and the value will be updated with no further action. If no alarm interlocks are present then the alarm engine will skip this process and move directly to the next.
6. If the interlock conditions all meet then the alarm engine will check to see if an alarm has already been created for this point and is still active. If the alarm already exist then the engine will check to see if the alarm is scheduled to re-generate after a time period set in the point editor. If the alarm is set to re-generate and the time period has expired or there is no active alarm for this point then a new alarm is created and placed into the alarms database. If an active alarm exist and it is not scheduled to re-generate then no further action is taken.

The alarm engine will also de-activate and alarm if the point has an active alarm and the value has returned to a normal state. The alarm will not be removed or cleared but only changed to a "value normal" state. If the point has not been updated and therefore not been checked by the alarm engine in the amount of time listed in the AlarmScanInterval column of the Config Table then Inet-supervisor will automatically call to update the alarm point.

3.2 Alarm Notification Via E-mail

When a new alarm is placed into the alarms database the alarm engine will check to see if the alarm has been configured a "notifiable" alarm (see the alarm section of the point editor in this manual). If the alarm is marked "notifiable" then the alarm engine will send a notification via e-mail to all users that comply with 4 requirements:

1. The AlarmEmailEnable column in the config table is set to 1
2. The user is configured to receive alarms
3. The new alarm is in the user's configured alarm level range
4. The alarm has been generated within the user's defined time frame to receive alarms
5. The user has an valid e-mail or text messaging number defined

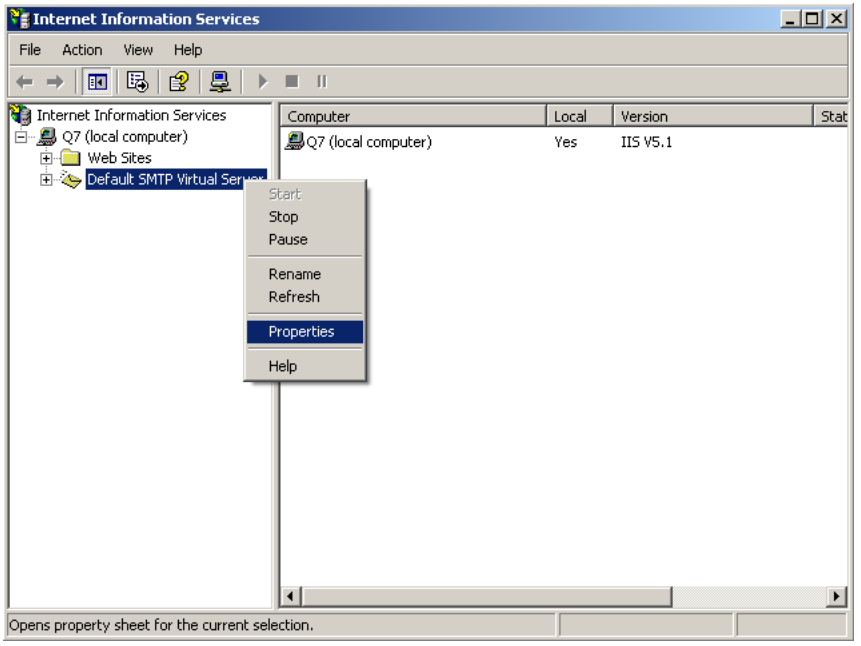
If the above requirements have been full-filled then the alarm engine will form and send a message from the mail server listed in the SMTPServerIPAddress column of the Config table with the e-mail address listed in the AlarmFromEmailAddress column in the Config table and the subject

filled from the AlarmEmailSubject column in the Config table. The body of the message will be filled with the alarm information. This message will be sent to all users that qualify from the above requirements. To adjust the users information please refer to the User Editor section of this manual.

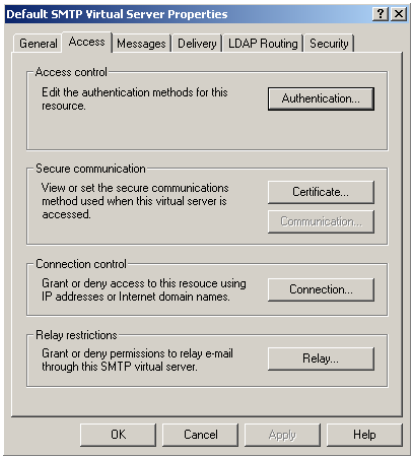
3.3 Setting up the SMTP relay

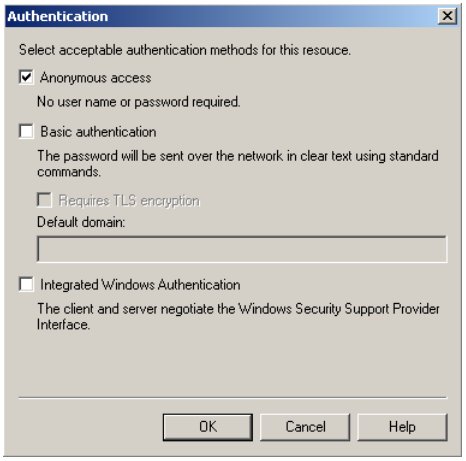
The SMTP relay is required for sending e-mails. The Concentrator uses the SMTP as an e-mail server for all outgoing messages. Follow the steps below to install SMTP.

1. Click on the Start button, then Control Panel. In the Control Panel menu double click on Administrative Tools. Then double click the Information Services Manager. If this option is not available you need to install Internet Information Services IIS (Web Server) first. To install the IIS follow the instructions in the Setup Manual.

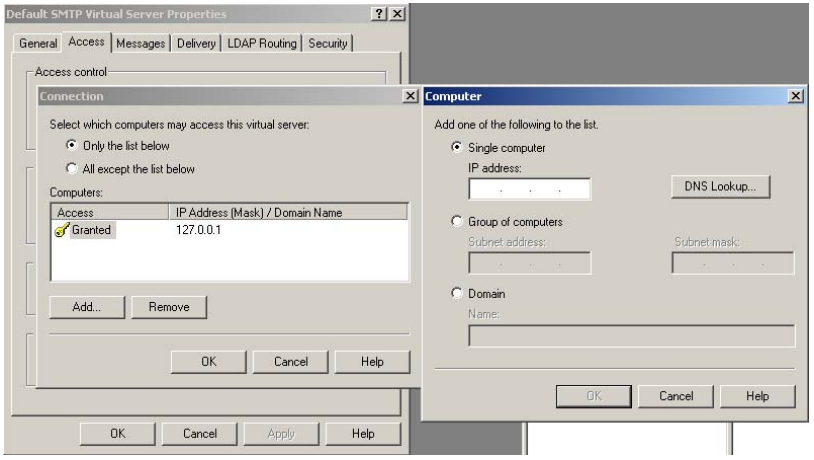


2. Right Click the SMTP and go to Properties. Then click on the Access tab then Authentication. Make sure that the only selected option is the Anonymous Access.

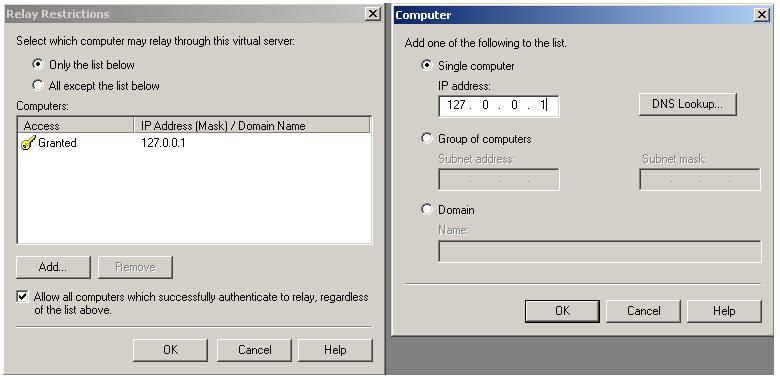




3. Next click on Connection and Add the IP Address (127.0.0.1) to the Authorized Computers. The IP Address of 127.0.0.1 stands for “this PC” only. At this point we want to eliminate all other computers from the ability to connect to your PC to send e-mails. Spammers use unprotected computers to mass mail.



4. Click on Relay and Add the IP Address of (127.0.0.1) to the authorized computers.



3.4 Alarm Viewing

1. Open Internet Explorer and navigate to: http://localhost/hmi
2. Login and click on the Alarms button. Here you can view, acknowledge, and clear the alarms. For more details on the alarm viewer please see the Alarm Viewer part in the Web-Based Tools section of this manual.

4.0 Trending

4.1 Trending Engine Overview

The following assumes that you have imported points into the Points_Table. See the Points Import section for details.

The Inetsupervisor trend engine will record user selected point values. For analog points this will be after modification by the equations defined by the algorithm editor (configured in the

Point Editor) and for digital points this will be the value of 1 if the digital point has an “ON” value or 0 if the digital point has an “OFF” value.The engine will record the values on a user defined time interval and place the values into a storage database that can be used by other applications to data-mine information about your system or just to be viewed by the users for troubleshooting or general knowledge. The Inetsupervisor trend engine runs on an interval defined by the value of the Trend0Interval in the Config Table. This time-span, in minutes, defines how often the trend engine goes and retrieves the value for all points that are defined as “Trendable” (configured in the Point Editor). These values will stay in the storage database for the time-span, in minutes, defined in the row Trend0ArchiveDuration in the Config Table. After the time-span has expired then the value will be removed from the storage database.

To set the trend sample interval:

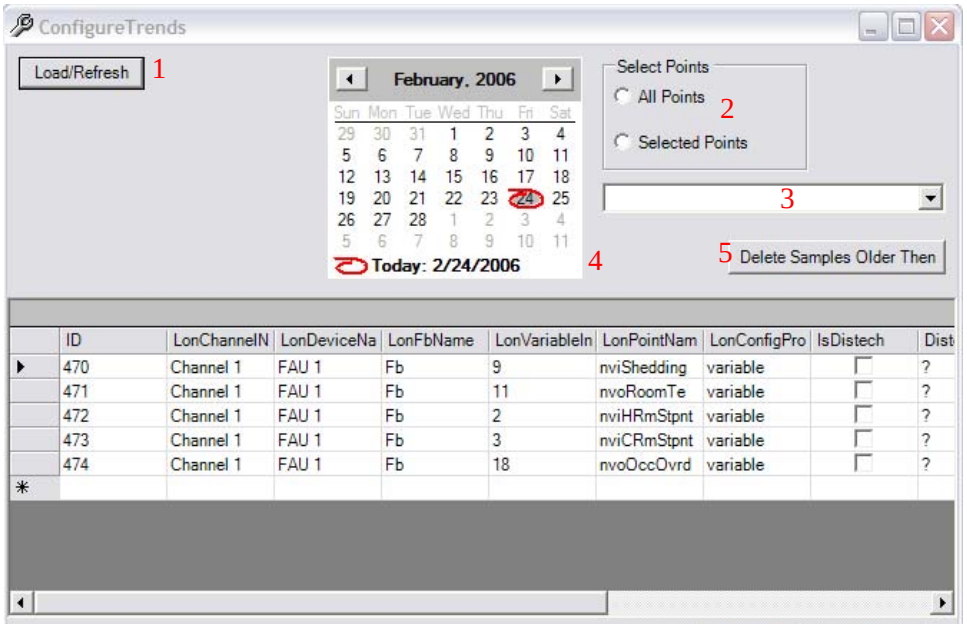
1. Launch the DatabaseConfig application. Click Start, Programs, HMI, DB Config.
2. Click SqlDataBase, Config_Table.
3. Click Load/Refresh.
4. Find the Property Name called Trend0Interval. Enter the interval in minutes in which Concentrator will sample all points that are configured to be trended.
5. Find the Property Name called Trend0ArchiveDuration. Enter the interval in minutes that is the duration for which the trend samples are kept in the InetTrends0 database.

23	SNMPManager2IPAddress	10.11.16.30	1
24	Trend0Interval	5	1
25	Trend0ArchiveDuration	1440	1
26	Trend1Interval	30	1
27	Trend1ArchiveDuration	10080	1
28	Trend2Interval	120	1
29	Trend2ArchiveDuration	43200	1
30	Trend3Interval	720	1
31	Trend3ArchiveDuration	129600	1
32	Trend4Interval	1440	1
33	Trend4ArchiveDuration	259200	1
34	EnableSequencer	0	1
35	EnableRemoteInterface	1	1
36	EnableOverrideAtLevels	8,9,10	1

6. Click Update for the changes to take effect. All DatabaseConfig application tables must be updated for changes to take effect. Exit Config_Table.

4.2 Removing Trend Records

1. On the DatabaseConfig application, click Configure, Point Trends. The ConfigureTrends table will pop up
2. Click Load/Refresh button(1). All available points will be displayed.



3. Choose either All Points or Selected Points(2) from the radio button options**.** If the Selected Points has been chosen then you will need to choose which point you wish to have the records removed from the drop down box (3)
4. Choose a date to start the removing from the calender(4)
5. Click the Delete Samples Older Then button(5)

4.3 Trend Viewing

1. Open Internet Explorer and navigate to: http://127.0.0.1/hmi

2. Login and click on the Trends button. Here you can view the trend data as well as download a CSV file of the data. For more details on the trend viewer please see the Trend Viewer part in the Web-Based Tools section of this manual.

5.0 Scheduling

5.1 Schedule Engine Information

The schedule engine runs on a timed loop based on the value (in seconds) entered in the SchedulesScanInterval properly in the config table. The schedule engine determines the occupancy state based on a 3 tiered hierarchy of daily schedules, holiday schedules, and one-time exceptions. Only digital points can be used to schedule equipment. Make sure that all points enabled for scheduling have been setup as digital points with the LonDigOn value set for occupied and the LonDigOff set for unoccupied.

Daily Schedules

Daily Schedules are the 1st tier of the hierarcy and are intended for the day to day building occupancy needs. The schedule engine reads the time between the selected start and end time's on the selected days of the week during the entered start and end date's as occupied (turn on equipment) and send's the value in LonDigOn. All other times are considered unoccupied (turn off equipment) and send the value in LonDigOff. There is a limit of 15 daily schedules that can be applied to each point.

Holiday Schedules

Holiday Schedules are the 2nd tier in the hierarcy and are used to assign single or multi-day unoccupied (turn off equipment) periods to one or more points. These schedules will override any daily schedules that occur during there time periods. Any holiday schedules made with the daily schedules editor can have specific time frames and be applied to individual points, but holidays made

with the holiday editor will be applied for the entire single or multi-day period considered to be global and applied to all points. There are no limits on the amount of global holidays, but any made with the daily schedules editor and attached to a point will use up one of the 15 available schedule spots. Global holidays work well for state and federal holidays like New Year's day and Veteran's day. Single point holiday's can be used for repetitive small interruptions in the daily schedule like lunch hours or 1/2 day's on Fridays.

One-Time Exceptions

One-time Exceptions are the 3rd tier in the hierarcy intended to schedule an occupied period (turn on equipment) for a short period of time. Exception's will override any holiday or daily schedules applied to a point. The exceptions are convenient for conference room scheduling, etc.

5.2 Schedule Programming

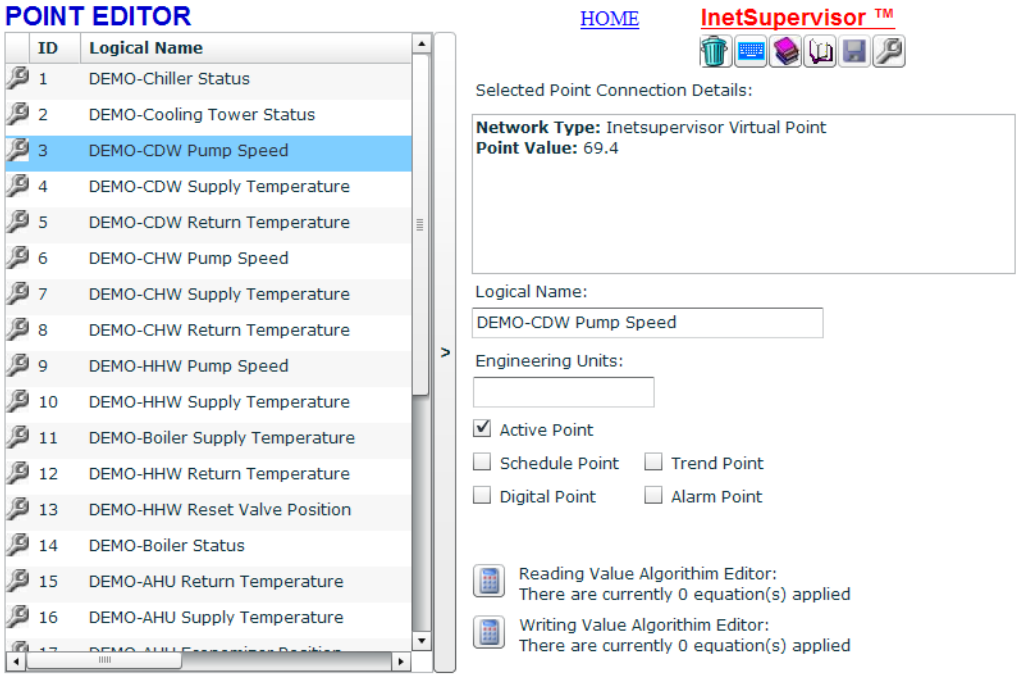
1. Open Internet Explorer and navigate to: http://127.0.0.1/hmi
2. Login and click on the Schedule Editor button. Here you can view, create, and modify schedules, holidays, and overrides. For more details on the Schedule Editor please see the Schedule Editor part in the Web-Based Tools section of this manual.

6.0 Point Editor

As mentioned earlier most points need configuration after importing to accomplish specific tasks like Scheduling, Trending, or Alarming. Unlike the Points Table in the Database Config utility the Point Editor cannot modify all attributes associated with a point in the database. This is a lighter weight option to the Points Table that can modify only the more common attributes of a point from the Inetsupervisor website.

6.1 Point Editor Overview

The Point Editor may be started by browsing to your Inetsupervisor website (http://127.0.0.1/hmi/) logging in (q username and q password are the default) and clicking on the Point Editor link under tools in the navigation tree or by taking focus on a QCI supplied flash movie and tapping the TAB + C buttons at the same time. As you can see in the figure below all the database points are listed on the left with the configuration options on the right.

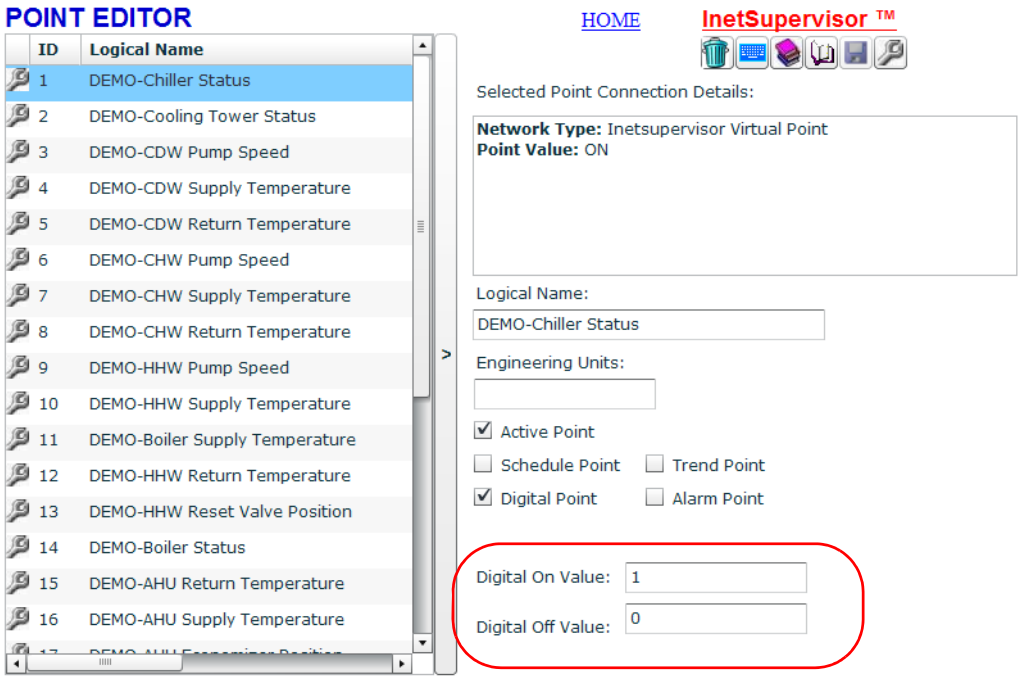


- Selected Point Connection Details - This box gives the user connection information like Network type, Channel connection, Device attributes and Point Value on the selected point (read only).
- Logical Name - This is the logical name assigned by the user for this point (read and write).
- Engineering Units - A symbol or phrase to help user's understand the value of the point (read and write).
- Active Point - Enables or disables the point from use by the system (read and write).

- Schedulable Point - Enables or disables the point for use by the schedule engine (read and write).
- Trend Point - Enables or disables the point for trending (read and write).
- Digital Point - Configures the point to be digital (checked) or analog (not checked) (read and write).
- Alarm Point - Enables or disables the point for alarming (read and write).

6.2 Digital Points

A point can be declared digital or analog by toggling the Digital Point check box. If a point is

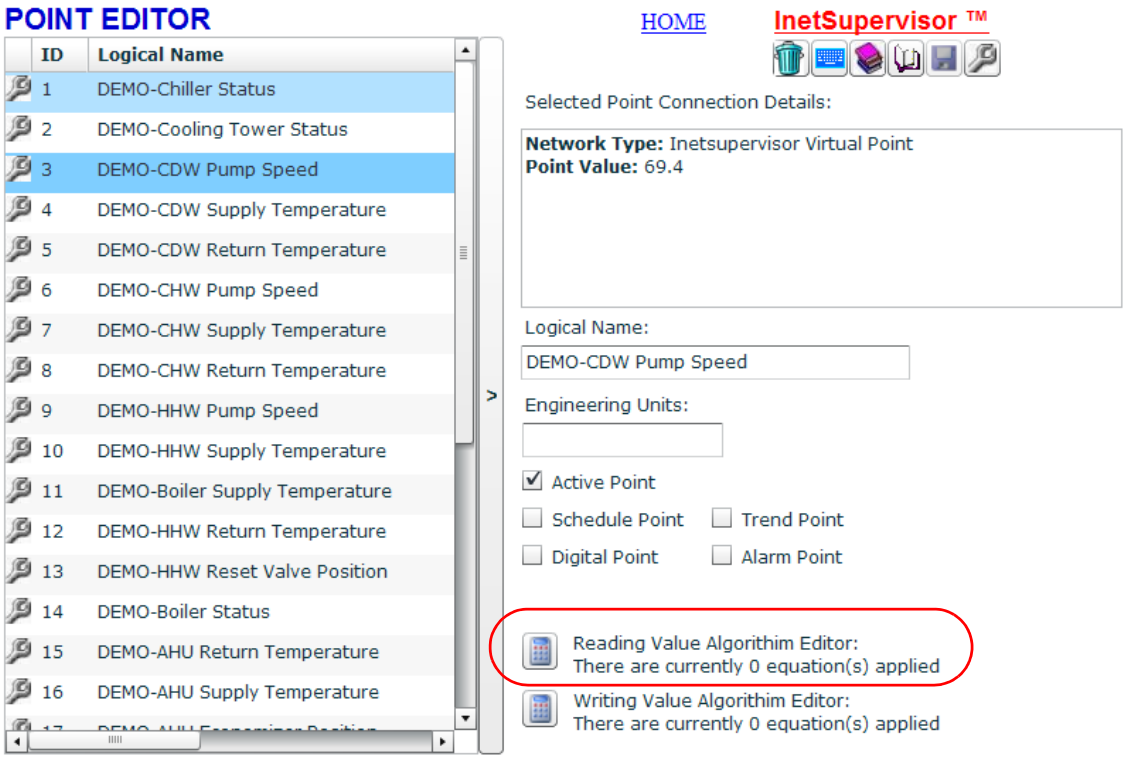


configured as digital then the Digital Point On Value and the Digital Point Off Value must be entered filled out. These values are to let InetSupervisor know when a value comes in, if it is true or false also these value are used for sending the appropriate values when sending overrides. The Digital Point On Value and the Digital Point Off Value must be entered exactly as

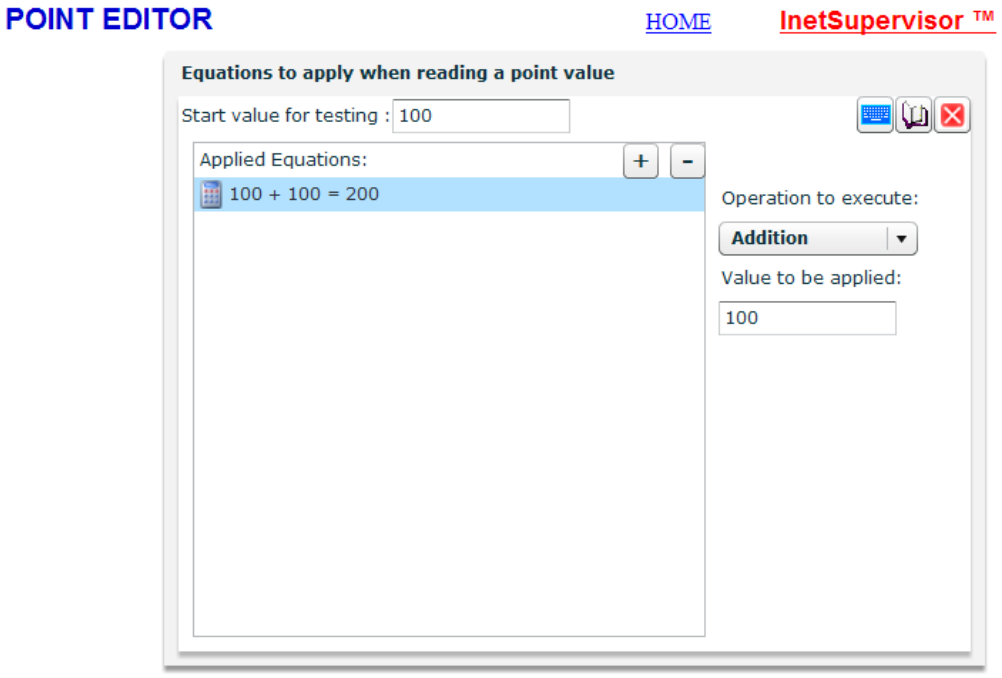
the input value would be, this is a case and white space sensitive area. When finished click the save button.

6.3 Algorithm Editor

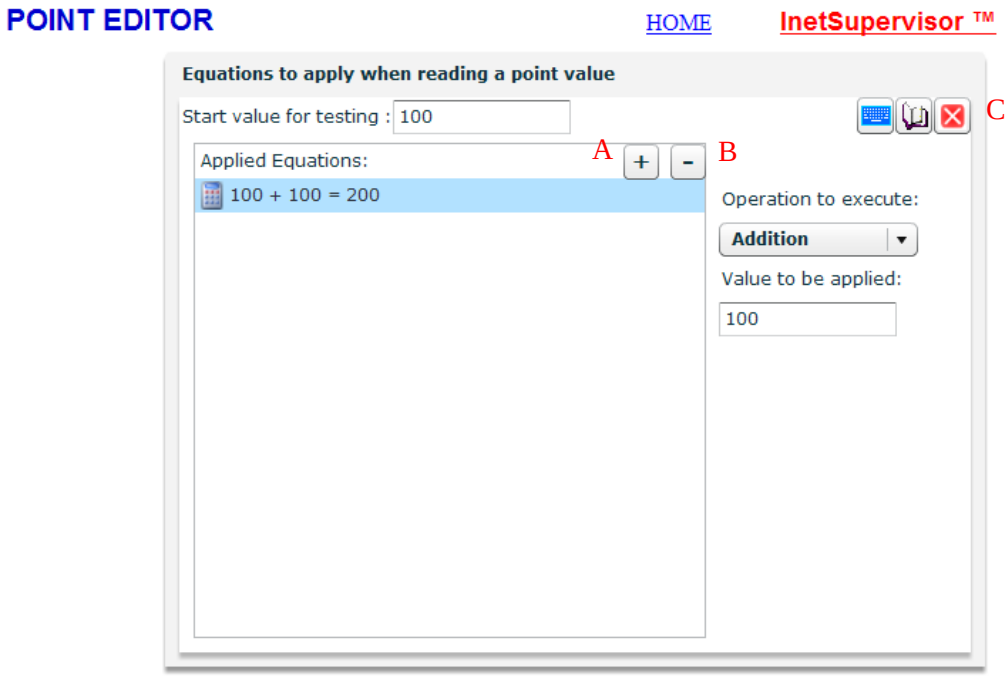
Sometimes the incoming value of an analog point may not be formatted properly and it may be necessary to adjust this value. If the point is numeric and not digital the Algorithm Editor can add equations to the point value before it is displayed, trended, and checked for alarms.



To start ***Algorithm Editor*** click on the calculator to the left of the Reading Value Algorithm Editor.



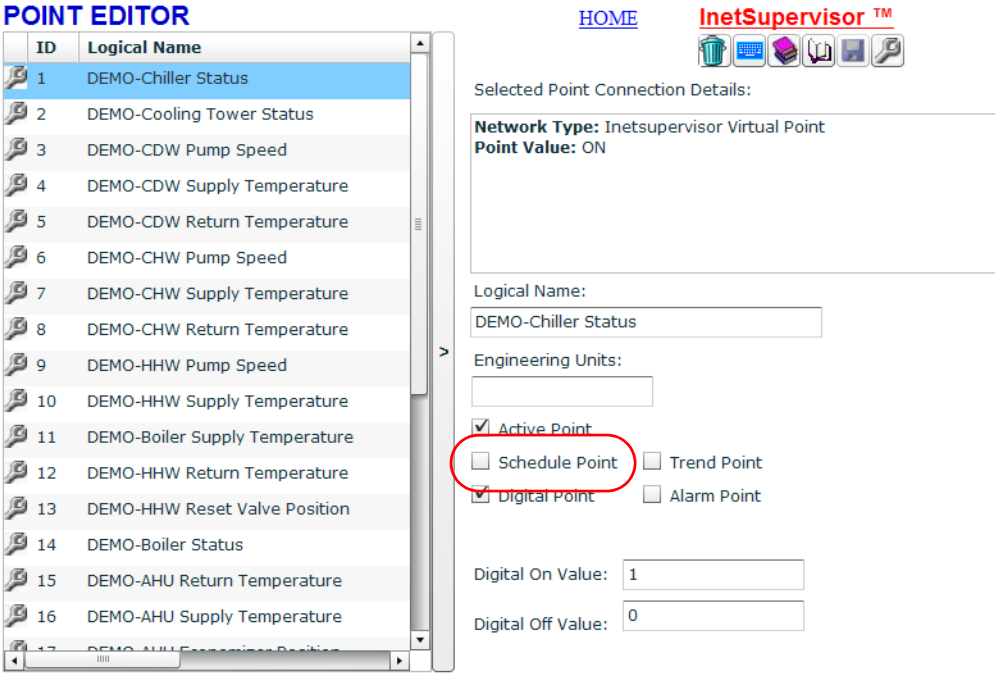
To add a new equation enter a value into the Argument box, choose an Operation from the drop-down box and click the “+” button (A). The list will show the starting value, the equation being



applied and the resulting value. Multiple equations can be applied to each point, the equations will be applied in the order specified. You may highlight one of the equations and click the “-” button (B) this will remove the selected equations. It is also possible to modify an existing equation by highlighting it, modify the values. The starting value can be changed at any time to test your algorithm under different possible scenarios. When you are satisfied with your algorithm click the close button (C) on the top right to submit the algorithm and close the editor. When finished click the save button

6.4 Schedule Points

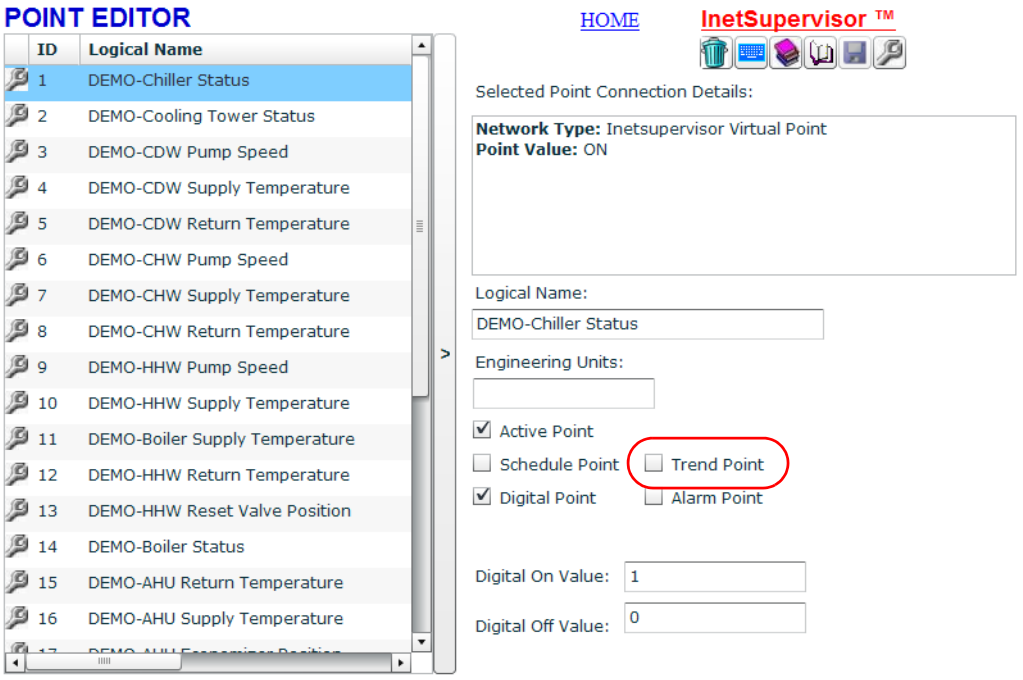
If a point is to be used as a scheduled point you may check the “Schedule Point” checkbox. Once the box has been checked, the user may go to the Schedule Editor to add or remove schedules to be associated with this point. At this time only digital points may be used for scheduling. When done click the save button.



For a more in-depth look into scheduling please refer to the Scheduling section in this manual.

6.5 Trend Points

If the user wants to record the value of a point on a time schedule then you may check the “Trend Point” checkbox. Once the box has been checked the value of the point will be recorded on the interval defined in the config database. When done click the save button.

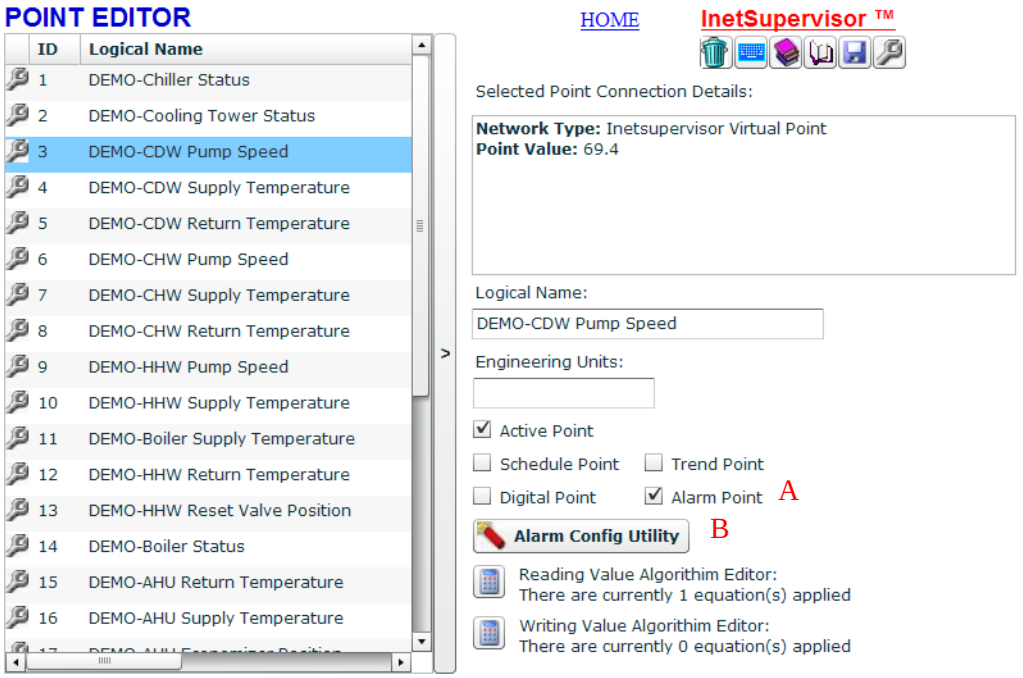


For a more in-depth look into trending please refer to the Trending section in this manual.

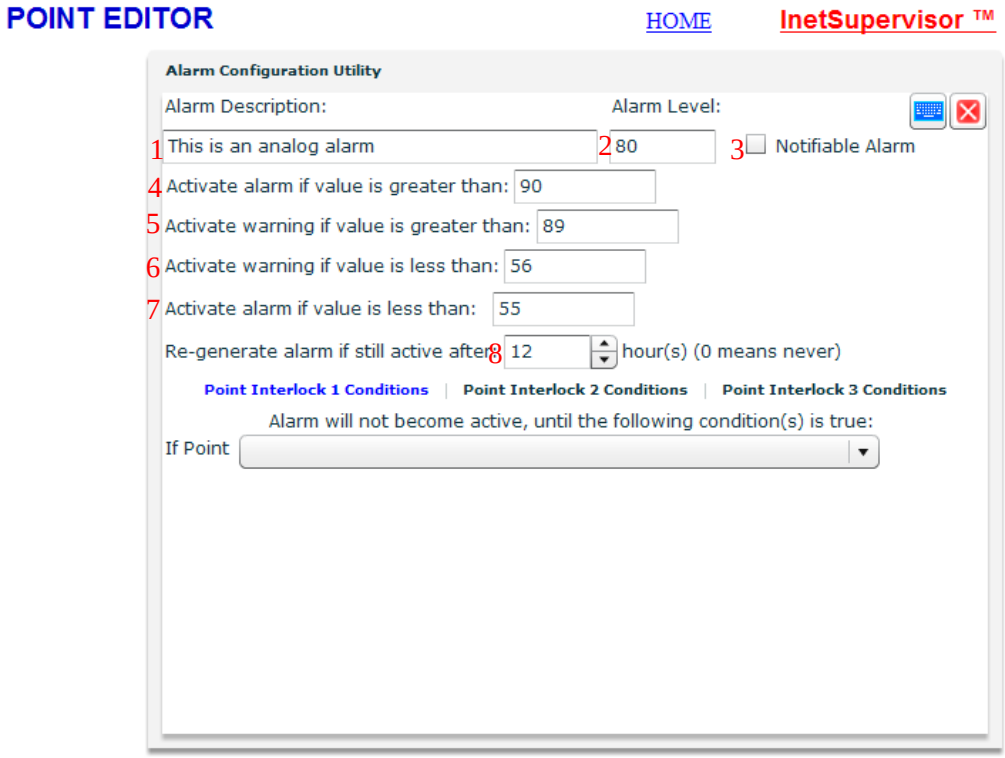
6.6 Alarm Points

Points may be set to as alarmable. By doing this Inetsupervisor will monitor the value and compare it to parameters set in the alarm configuration, if the value meets any of the user defined parameters or communications is lost to the point then an alarm will be sent into the alarm database. To

enable a point for alarming you must check the “Alarm Point” (A) check box and to adjust the properties for the alarm click the “Alarm Config Utility” button (B).



For analog points high and low values for the alarm and warning columns as well as the alarm description, level, and notification should be filled out.

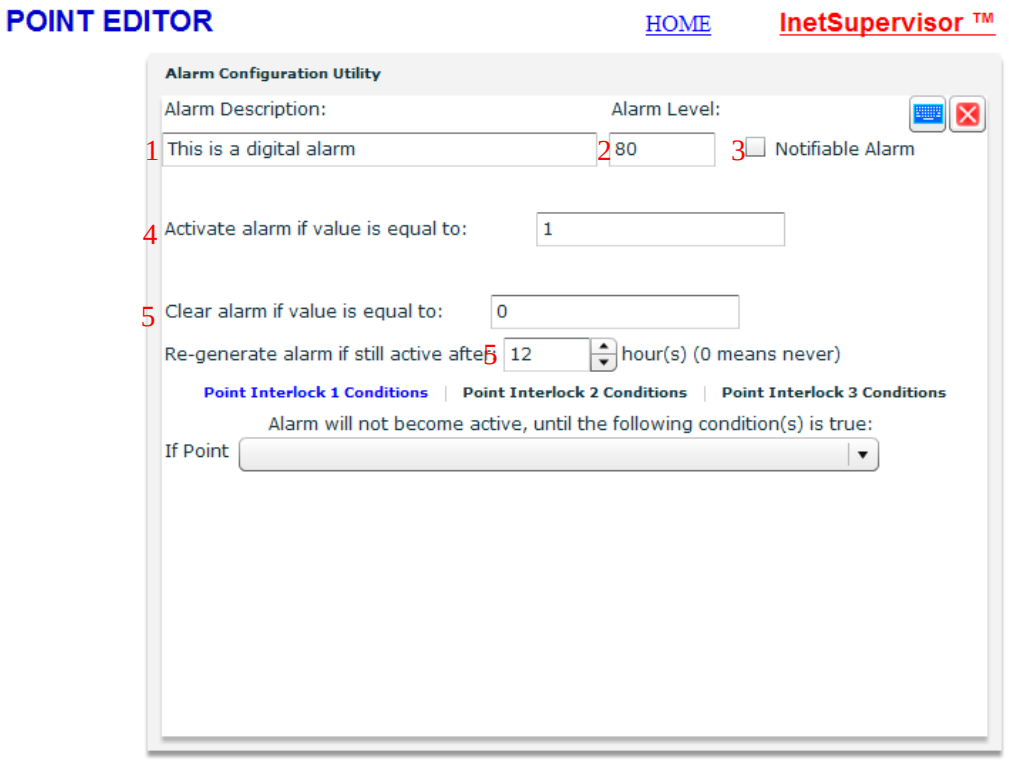


1. Alarm Description - Logical description of the alarm
2. Alarm Level - The alarm level is used to group alarms with users
3. Alarm Notify - If checked then the alarm will be sent to users in it's level range, via the users e-mail address
4. High Alarm Value - The setpoint that if exceeded by the point value (after modification from the algorithm editor if used) will cause an active high value alarm to be sent to the alarm database
5. High Warning Value - The setpoint that if exceeded by the point value (after modification from the algorithm editor if used) will cause an active high value warning to be sent to the alarm database

6. Low Warning Value - The setpoint that if the point value (after modification from the algorithm editor if used) falls below will cause an active low value warning to be sent to the alarm database
7. Low Alarm Value - The setpoint that if the point value (after modification from the algorithm editor if used) falls below will cause an active low value alarm to be sent to the alarm database
8. Alarm Re-generation - The amount of time, in hours, that will cause Inetsupervisor to re-generate and re-send the alarm to the alarm database. This is subject to the point value still being in the alarm condition after the time-span has expired

If the values of the high alarm and warning are the same then only the alarm will be sent. If the values of the low alarm and warning are the same then only the alarm will be sent.

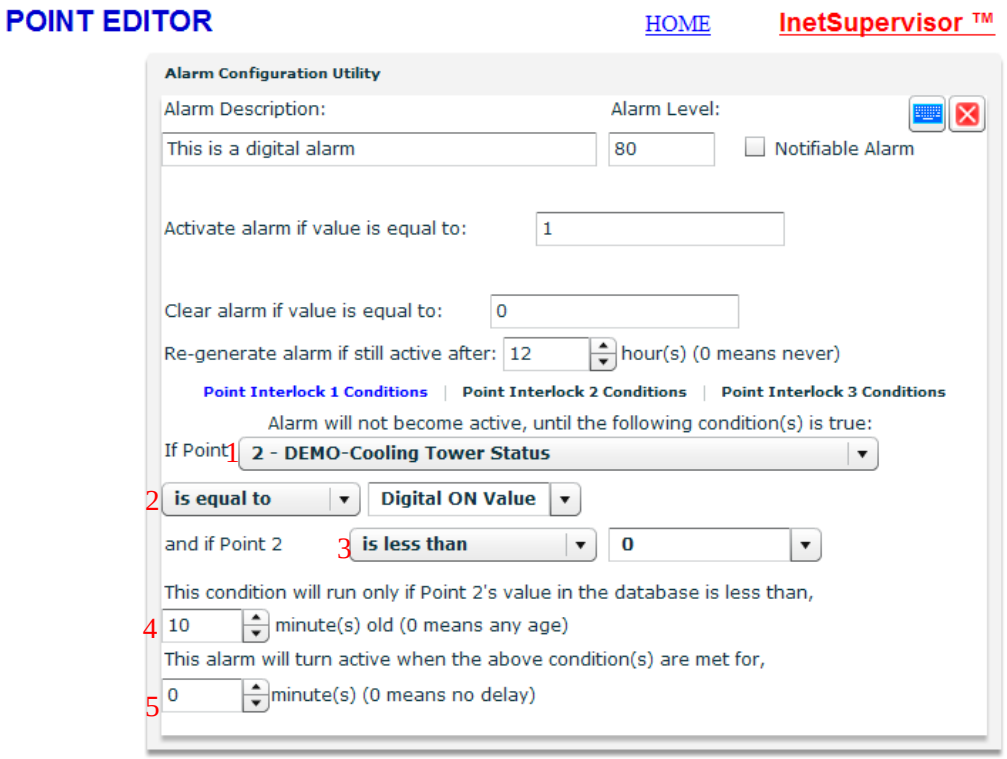
Digital Point have the digital alarm on and off values as well as the alarm descriptions, level, and notification should be filled out.



1. Alarm Description - Logical description of the alarm
2. Alarm Level - The alarm level is used to group alarms with users
3. Alarm Notify - If checked then the alarm will be sent to users in it's level range, via the users e-mail address
4. Alarm ON Value - The value setpoint to be compared to the point value for Inetsupervisor to compare if an active alarm is to be sent to the alarm database
5. Alarm OFF Value - The value setpoint to be compared to the point value for Inetsupervisor to compare if an alarm is to be cleared from the alarm database
6. Alarm Re-generation - The amount of time, in hours, that will cause Inetsupervisor alarm engine is to re-generate and re-send the alarm to the alarm database. This is subject to the point value still being in the alarm condition after the time-span has expired

Point Interlock Conditions can be used to dis-allow an alarm from becoming active unless certain user defined interlock conditions are meet. The interlock conditions may be used for both analog

and digital points. The alarm may be interlock with up-to 3 differant points and their associated conditions.



1. Interlocked Point - The point that is to be used for the comparison of the conditions below it. All 3 interlock could use the same point for interlocking differant comparison's
2. Condition 1 - The first condition that is to be meet for this interlock to allow an alarm to be generated. This consists of 2 parts the first is the argument, this may be 1 of 3 values greater than, less than, or equal to. The equal to is strict equality meaning the interlock point must be to the exact value listed in the values area of this argument. The next is the value area, this is the value to be compared to the interlock points value. The value may be Digital ON Value or Digital OFF Value if the interlock point is digital or a user defined numeric value if it is an analog point
3. Condition 2 - The second condition that is to be meet for this interlock to allow an alarm to be generated. If the interlock point only requires 1 condition then you may choose "no second condition" and no second condition will be used. This consists of 2 parts the first is the

argument, this may be 1 of 3 values greater than, less than, or equal to. The equal to is strict equality meaning the interlock point must be to the exact value listed in the values area of this argument. The next is the value area, this is the value to be compared to the interlock points value. The value may be Digital ON Value or Digital OFF Value if the interlock point is digital or a user defined numeric value if it is an analog point

4. Interlock Point Age - The is the amount of time, in minutes, that the Inetsupervisor alarm engine is to consider the interlocked point value as a “new” value. If the interlock point value is older then this amount of time, Inetsupervisor will call for an update of this point and wait until the interlock value is with-in the allowed time frame to run the interlock comparison
5. Interlock Delay - The is the amount of time, in minutes, that the Inetsupervisor alarm engine is to hold the interlock condition from being considered true unless it has held true for this time frame. If the conditions are not meet for this amount of time, the Inetsupervisor engine will not allow the alarm to be generated

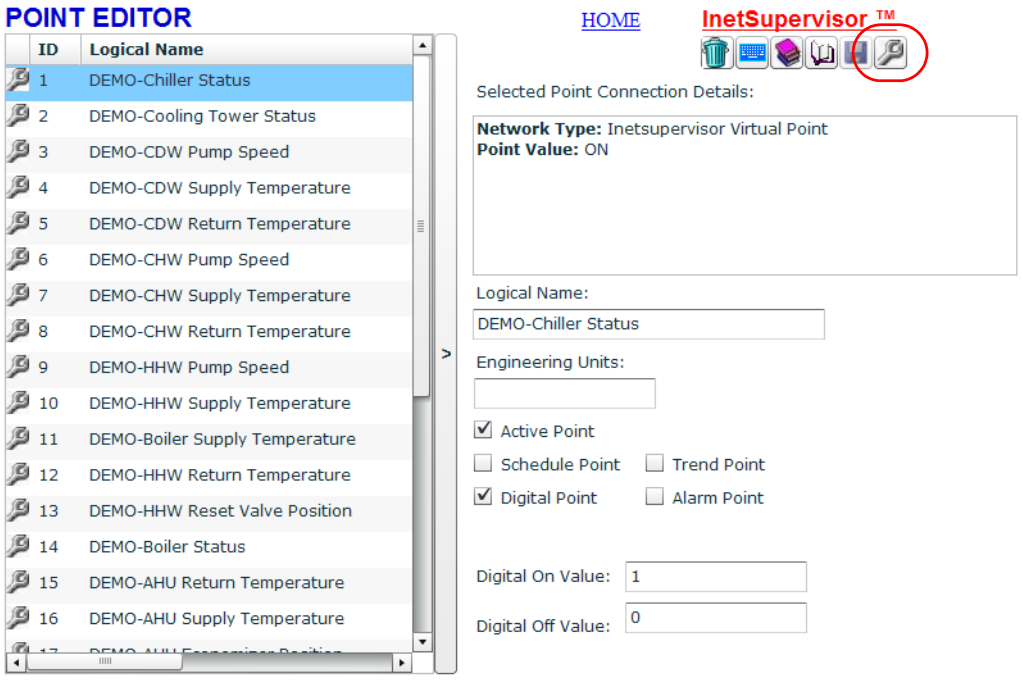
Up to 3 points may be interlocked to an alarm and all 3 may have up to 2 conditions. To configure the other interlock’s click on the appropriate interlock number on the menu and follow the same instructions detailed here. When done click the save button.

For a more in-depth look into the alarm parameters please refer to the Alarming section in this manual.

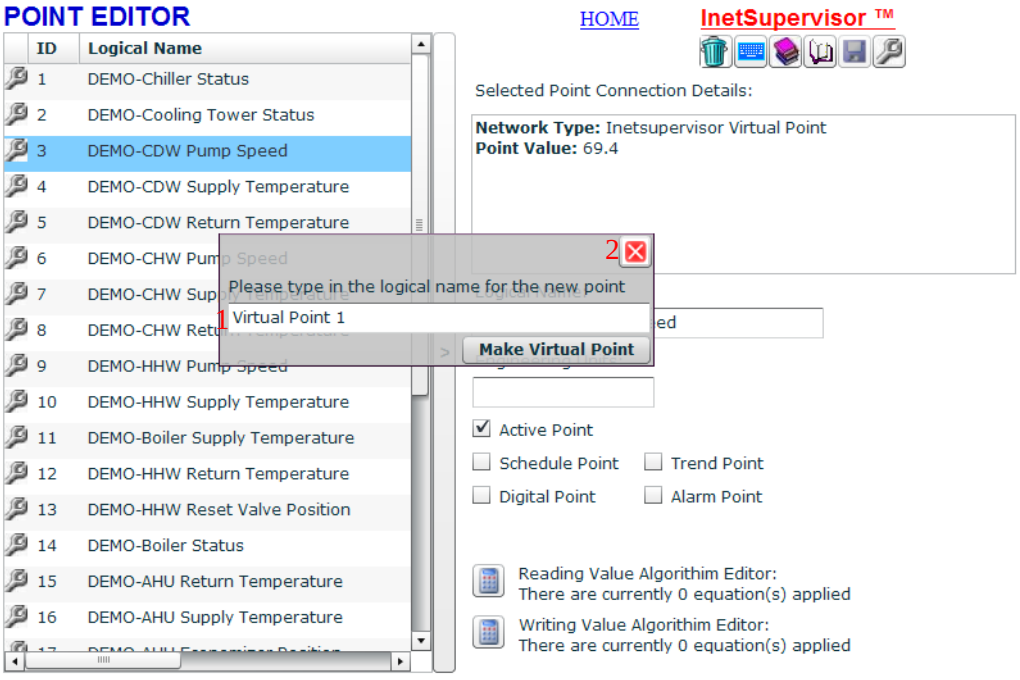
6.7 Inetsupervisor Virtual Points

A ”virtual” point is a point in the Inetsupervisor database that is not connected to any control system or control device. These points can be set just like any other Inetsupervisor points and will be

acted on just like other points i.e. trending, scheduling, alarming ... To make a “VP” click the “Inet Virtual Points” button with the wrench icon on the top right of the editor.



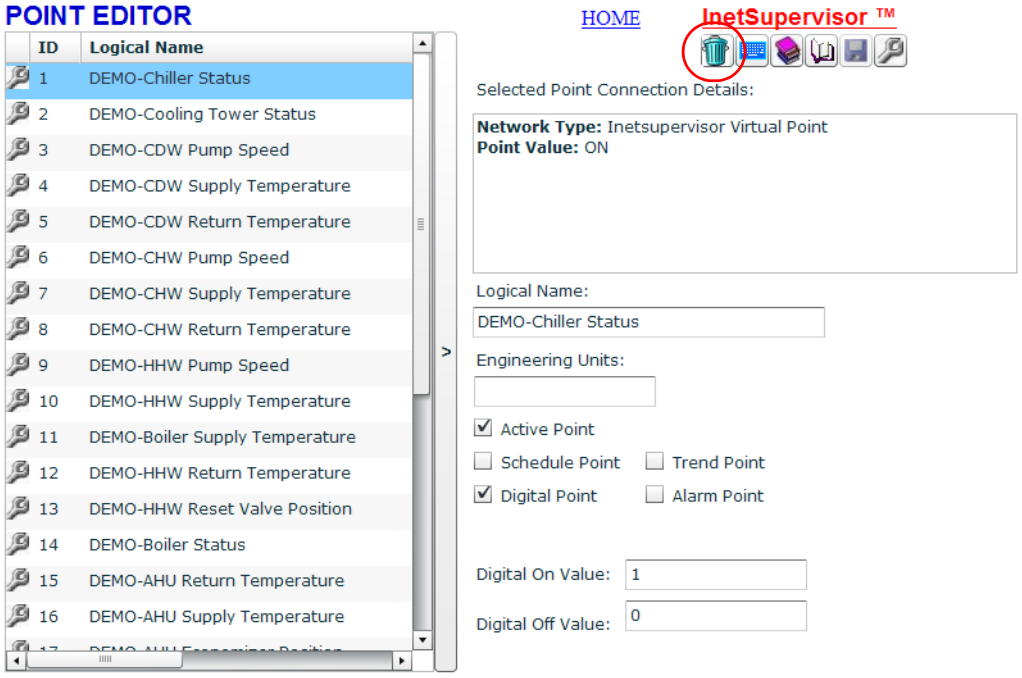
When the “VP” maker opens enter the logical name of the point (1) and click the “Make Virtual Point” button (2). The editor will then create the “VP” and add it to the list of points on the Point Editor to be configured by the user.



Inetsupervisor Virtual Points do not require any point credits and so are considered “free”.

6.8 Deleting Points

If a point is no longer needed it may be removed from the database by highlighting it on the list of points and clicking the “delete” button with the trash can icon on the top right of the Point Editor.



7.0 Creating Project-Specific Web Pages:

7.1 DreamWeaver configuration

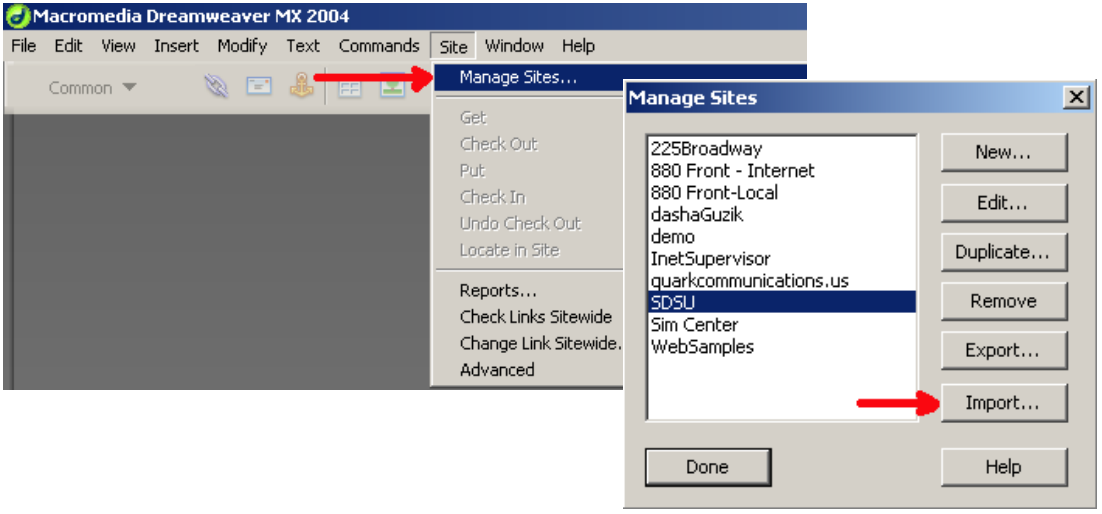
Our choice of web editing software is Macromedia's Dreamweaver, although you can use many web editing applications. Dreamweaver provides an intuitive interface, a powerful library of server behaviors, and Flash integration. It is not the intention of this manual to provide in-depth documentation of Dreamweaver. Please refer to Dreamweaver's Help for detailed information, lessons, and tutorials.

There are two ways to configure Dreamweaver's communication with the LONSERVER. The first is to install Dreamweaver directly at the LONSERVER. With the second, Dreamweaver is running in a remote computer and accesses the LONSERVER across the network. Follow the Setup Manual to configure Dreamweaver to access the LONSERVER.

Note: *Dreamweaver* comes with a great set of manuals and lessons. You can access these from the Help menu.

1. Install and Configure DreamWeaver. If you plan to install a full version of the DreamWeaver software, do so now. Alternately, you may install a trial version available at http://www.macromedia.com

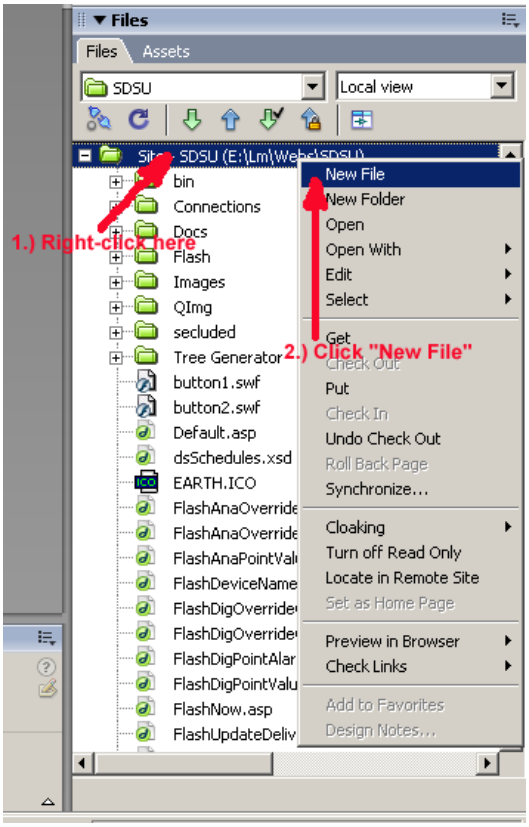
2. Accept all default options during installation.

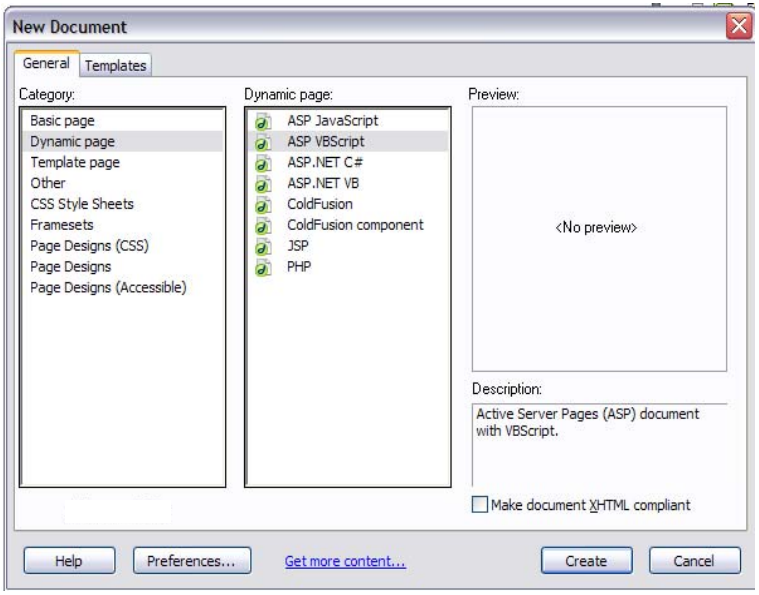


3. Click Site/Manage Sites, then Import from the Site Menu. This may differ for some versions of DreamWeaver, i.e. Site/Edit Site/Import. Point to HMI.ste file located is C:\LonWorks\apps\QCI\Others directory. This will automatically configure the DreamWeaver to work with the installed web site framework.

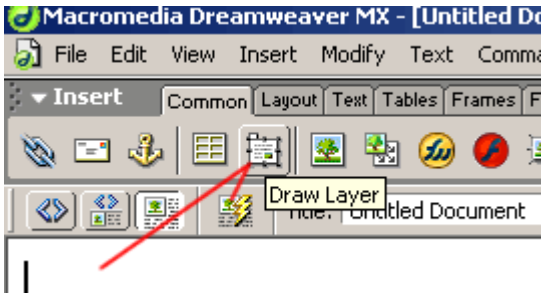
7.2 Create web pages with dynamic information from the LNS Network:

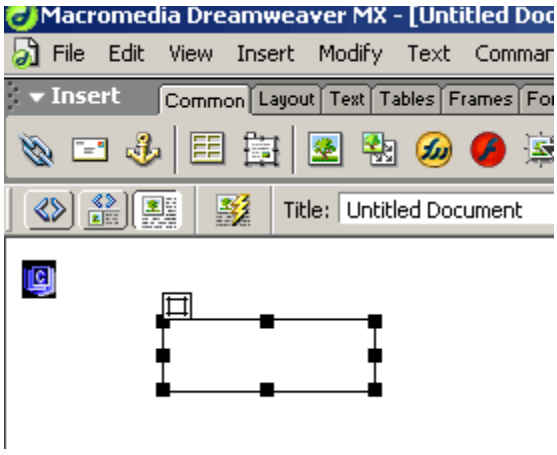
1. Make a new .asp page in DreamWeaver. Go to File/New, when the new document wizard appears choose Dynamic Page in the Category pane and ASPX VBScript in the Dynamic Page pane, click create. This can also be done on the Local Folder pane, right-click in the root directory, then select New File. Make sure the new file gets created in the web's root directory.
1. Give the new file the name test with an .asp extension.
1. Double click the file to open it in the Designer (main work area).



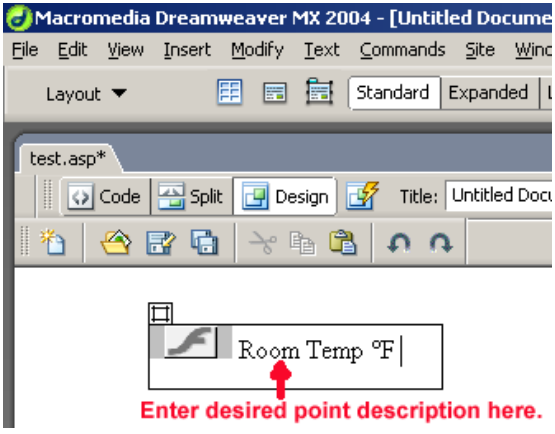

New Document
General
Templates
Category:
Basic page
Dynamic page
Template page
Other
CSS Style Sheets
Framesets
Page Designs (CSS)
Page Designs
Page Designs (Accessible)
Dynamic page:
ASP JavaScript
ASP VBScript
ASP.NET C#
ASP.NET VB
ColdFusion
ColdFusion component
JSP
PHP
Preview:
<No preview>
Description:
Active Server Pages (ASP) document with VBScript.
Make document XHTML compliant
Help
Preferences...
Get more content...
Create
Cancel

2. At the top of the DreamWeaver window, click Insert, then Layer. Or alternately, click the Layer icon and drag and drop it into the Designer window.
3. Press the F11 key if the Assets window is not open. Select Flash Assets. The graphical components used to build a page will be displayed to the right of the Designer. Open the folders to display the files.





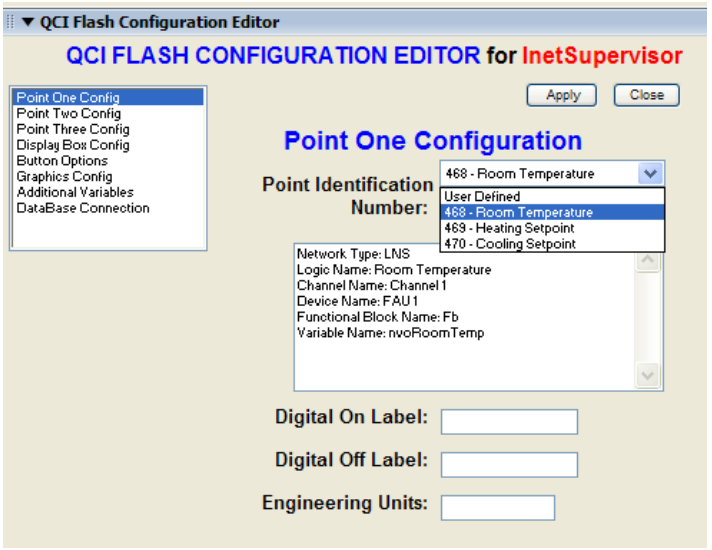
4. As a simple example of generating a system graphic. In Files on the right side of DreamWeaver, in the folder Site-hmi/FX/001/F, find the Flash component named Fx-PtVal-20x50.swf. Click/hold on it and drag and drop it onto your layer. A desired description of the information displayed by the flash component can be entered as text by clicking adjacent to the flash component within the layer. You can use other Flash components, starting with "Fx-", to:
   - provide override capability for points - "Fx-Override-PtVal.swf"



- display the point value for points - “Fx-PtVal-20x50.swf”
- provide 3-D animated graphics - using components prefixed with “Fx-3d”

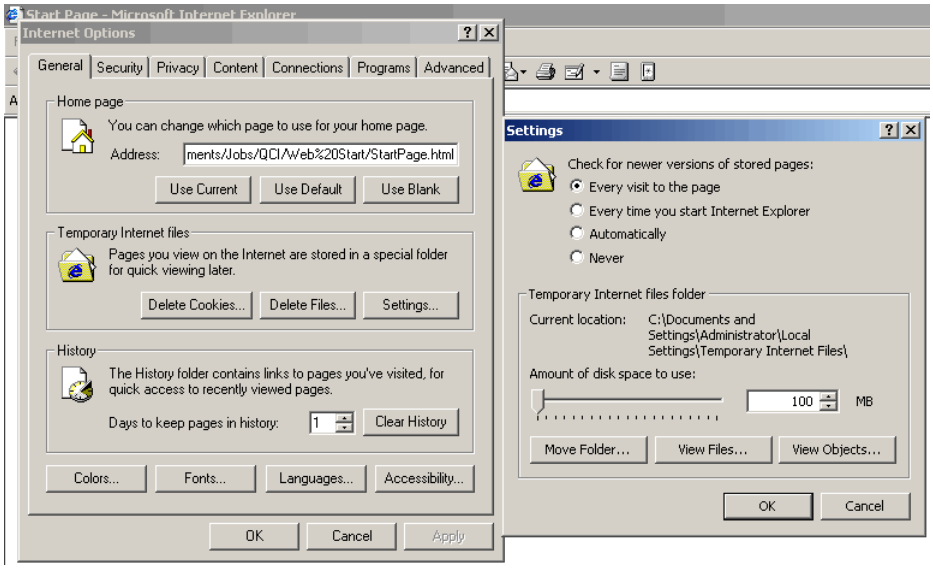
refer to the Flash Users Guide for full description of each flash component and their functionality.

5. Before you can use components for digital points you must configure these points as digital. Refer to the Point Editor section.
6. Graphical components must have system points assigned to them (not Fx-Communicator.swf). The procedure for linking points and components is as follows. Open the QCI Flash Configuration Editor window (refer to Quark Flash Configuration Utility Guide). Click on the Flash component you dropped in the layer assign the desired point by either the drop down box or by typing the ID in the text box and click the “Apply” button.



7. As you build them, you can view your web page graphics as they will appear on the web by pressing key F12 to launch Internet Explorer. At the web-browser page, click Refresh. Often the browser, in creating a cache of all pages viewed, will cause the old page to not

refresh. To enable automatic refreshing, click Tools, Internet Options, Temporary Internet Files, Settings, Check for newer version of stored pages, Every visit to the page.



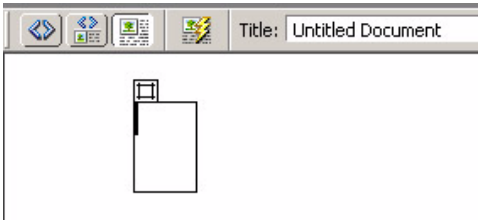
7.3 Example: Building a Graphics Webpage

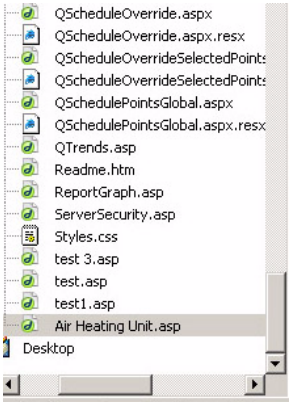
Build a page

In the following example, we'll build a graphics webpage for an Air Heating Unit. It will consist of a straight duct, an air filter, a vane-type flow controller, a fan, an air heater, and a temperature sensor. The procedure is as follows:

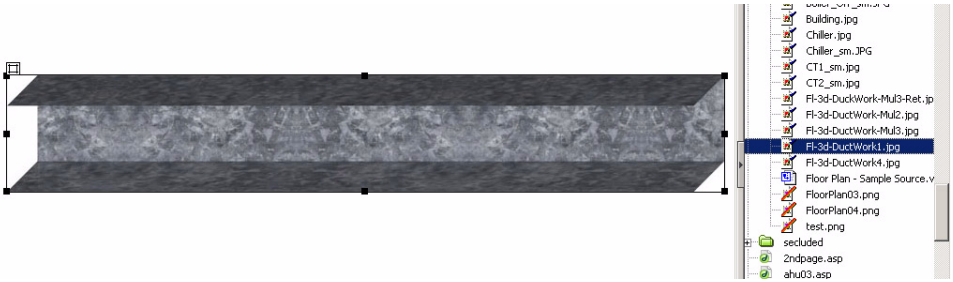
1. Open Dreamweaver. In the Files area to the right appear the graphics components we'll use to build the webpage. But first we'll need to create a new file. Right-click in the Files window. A menu will open. Click New File. Untitled will appear at the end of the files list. Rename the file to Air Heating Unit.asp. Double click the file. It will open in the Designer area.
2. We'll use a new drawing layer for each graphic component. Make the layer icons invisible by clicking (top of the DreamWeaver window) Edit/Preferences/Invisible Elements, then uncheck anchor points for layer and click OK.

3. Towards the top of the window, click the Layer icon (Figure 33). In the Designer click and hold the mouse button while moving the mouse down and to the right. Release the button to size the layer at about one-half inch square. Keep it small so that when the graphic is added, the layer expands to just the size of the graphic. To delete a layer, click on the tab to select it, then right-click and select Cut from the drop-down box. Alternately, select the layer and press Delete on the keyboard.

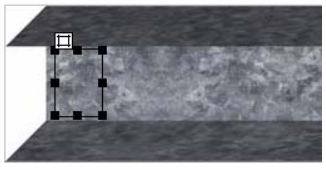


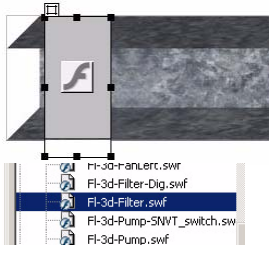


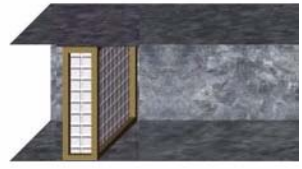
4. We'll put the straight air duct in the first layer. In the hmi/FX/002/I folder click/hold Fl-3d-DuctWork1.jpg. If you are using a background image like this the Z-Index of the layer must be a lesser value than any other layers on top of it to insure that the image is in the back and not hiding the flash movies. To check or adjust the Z-Index click on the layer and value will be displayed in the Properties window. Drag and drop this file (click/hold/drag/release) into the layer just created. The 3-d duct will open up in the designer window (Figure 35). To delete a graphical component, click on the graphic (in the layer) to select it and then press Delete on the keyboard.



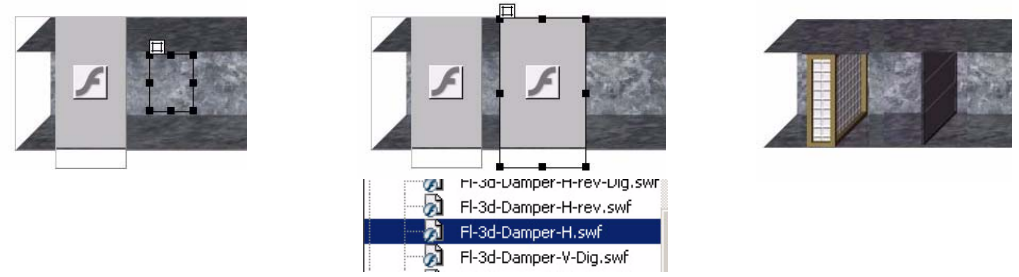
5. We'll put the air filter graphic into the duct next. First we add a new layer (Figure 36), then drag and drop Fx-3d-Filter.swf from hmi/FX/002/F folder into it (Figure 37). Position the layer on the duct as shown (move it with the tab at the upper left - click/hold/drag/release). Fine adjustments to the position of a selected layer can be done using the arrow keys on the keyboard. You can see how the page will display by clicking the File Management icon (double arrows) just above the designer window, then Put, then Yes (to save), then clicking Preview in Browser (the globe just to the right of the arrows). The browser will open and display the current state of the page.



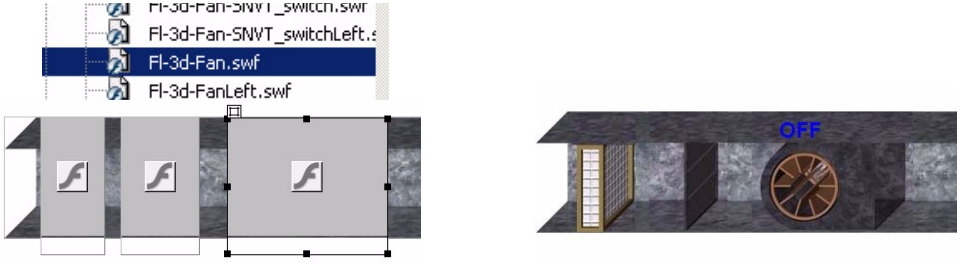




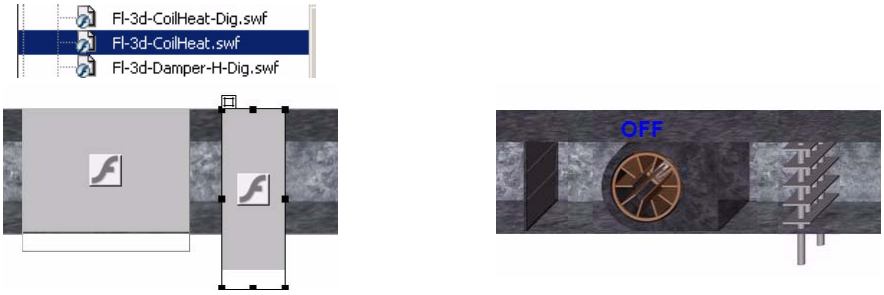
6. The air flow controller (damper) is placed next. Add a new layer. Drag and drop Fx-3d-Damper-H.swf from the same folder as Fx-3d-Filter.swf into it. Position the layer as shown. Display the page to verify positioning.



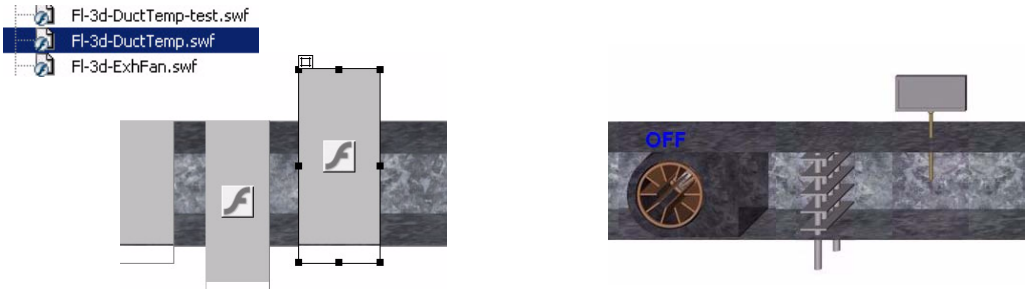
7. We'll put in the fan. Add a new layer and drag and drop Fx-3d-Fan.swf from the same folder as above into it. Position the layer as shown. Display the page to verify positioning.



8. The heater is next. Add a new layer and drag and drop Fx-3d-CoilHeat.swf again from the hmi/FX/002/F folder into it. Position the layer as shown. Display the page to verify positioning.



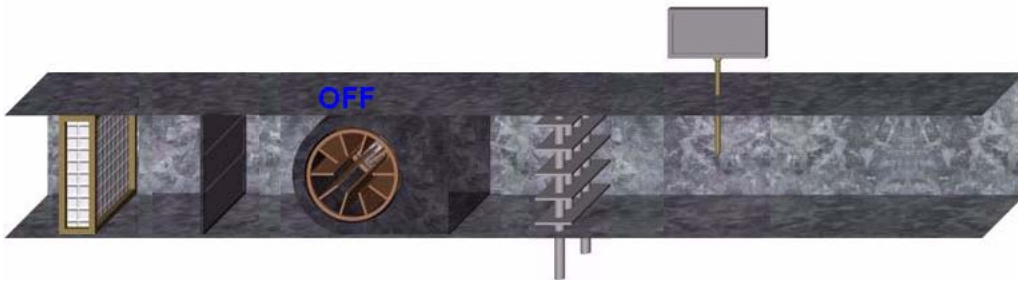
9. Lastly, we'll add a duct temperature sensor. Add a new layer and drag and drop ***Fx-3d-Duct-Temp.swf*** into it. Position the layer as shown. Display the page to verify positioning.

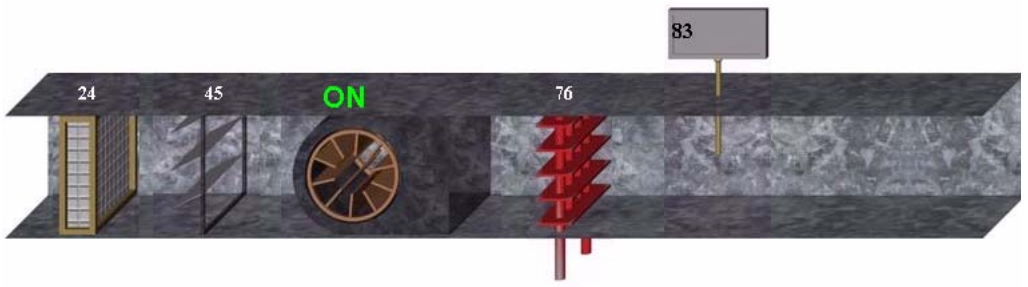


10. Now we have the five elements in the duct. The last thing to do is assign system variables (Point IDs) to the five elements. We'll use the method specified above that uses the QCI Flash Configuration Editor.

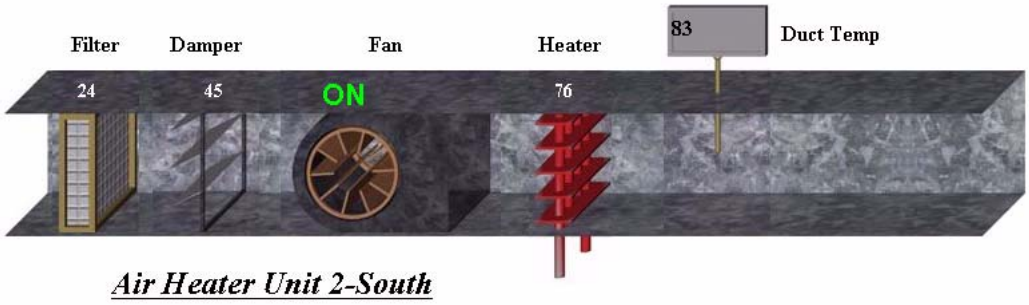
- Open QCI Flash Configuration Editor. Click on the Database Connection enter the database IP address and port information then click on Load Points. System points are displayed.
- In Dreamweaver, select the Filter graphical component by clicking in its layer - the outline of the layer and its tab should become visible. Find the Point ID in Point One Config that represents the value for the Filter. Apply the value. The Filter graphic is now linked to the system variable.
- Repeat this procedure for the point that represents the Damper angle. Click on the Damper Movie and select the appropriate Point ID in the Point One Config drop-down box and click "Apply". The Damper graphic is now linked to the system variable.

- Likewise, link the Fan, Heater, and Duct Temperature graphics to their respective system points.
- At this time we must add the communicator to enable the flash to transfer information with LNSDriver. On the previous page it was not necessary to add this because it is pre-loaded in the left frame of QFrameset.asp under the navigation tree. To do this just draw a layer any place on the page and drag and drop Fx-Communicator.swf from the hmi/ Flash/ folder.
- In DreamWeaver, do the Put/Save operation on the webpage.
- Go to Internet Explorer and view the web page in the browser. Make sure automatic page refreshing is enabled. In a few seconds you will see the graphics displaying the current point values: in this case, 24%, 45 deg, Fan On, Heater at 76%, Duct Temp 83 deg F. As InetSupervisor runs and point values change, the graphic will reflect it.



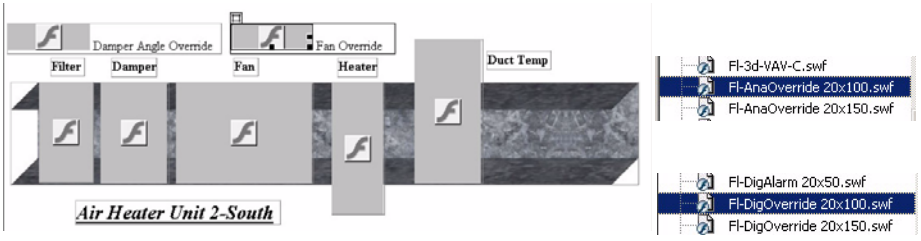


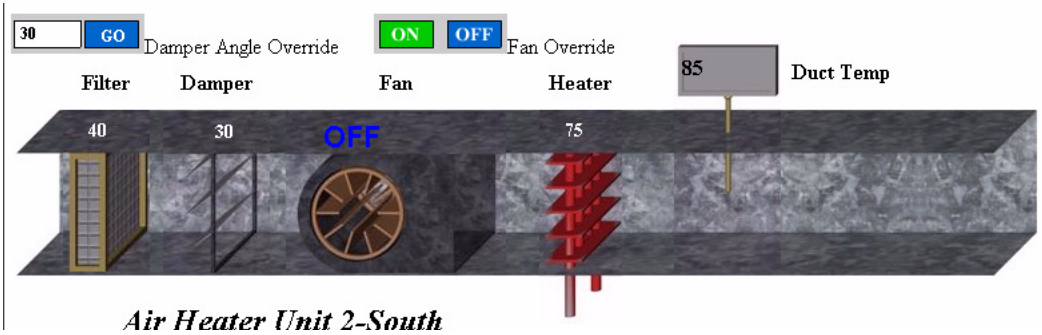
11. It may be desirable to add textual identifiers for the graphics and/or the page. This is simply done in DreamWeaver by adding a layer, clicking in it, typing in the desired text, sizing it (selecting the layer by clicking on the tab and dragging the corners as desired), and moving it into the desired position (dragging on the tab). Six layers were added to Air Heating Unit.asp to give the labels shown in Figure 51. Use the drop down menu at Text (at the top of the window), in DreamWeaver, to select text parameters if desired.



7.4 Overrides Page

To do overrides, use the Flash graphics components that have override capability (i.e. of the form Override). Refer to the section “Example: Building a Graphics Webpage”. Extending the example, we’ll add an analog override for the damper angle and a digital override for the fan on/off . A layer is added for each and a flash component is dragged and dropped into each (Fx-Override.swf and Fx-Override-on-off.swf). The layer is extended lengthwise and text is added to identify the override. The proper system point ID is linked to each graphic.

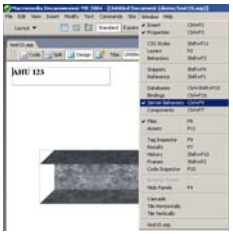




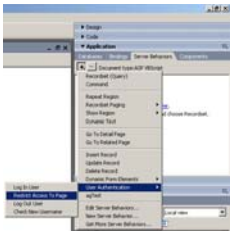
7.5 Protecting Web Pages with User Authentication

User authentication is a feature of Dreamweaver. For a more in depth look at this function please open Dreamweaver click on Help, then Using DreamWeaver. When the help file loads use the Search function with the key word Restrict User. The web page Qlogin.aspx has been created for you to interface with InetSupervisor's Web User database, this is the page you should use for user log-ins, login.asp is not to be used for log-ins, this page is for communications with the SQL databases. The supplied log in web pages have been made using Dreamweaver MX 2004 if your version is differant you must reload the login.asp and QAccessGranted.aspx with your Dreamweaver version. To do this double-click the web pages to open theme, then click to open Server Behavior, then save and close the web pages.

1. In DreamWeaver click on Windows, Server Behaviors.



2. From the Server Behaviors menu on the right, add Restrict Access to Page.



3. In the dialog box, select the access levels that will grant access to this page. These must be added in assending order (i.e. 6,7,8...) Enter the name of a page where all users that failed to authenticate will be redirected. This page could be Qlogin.aspx where users can log in again or the QAccessDenied.asp page.

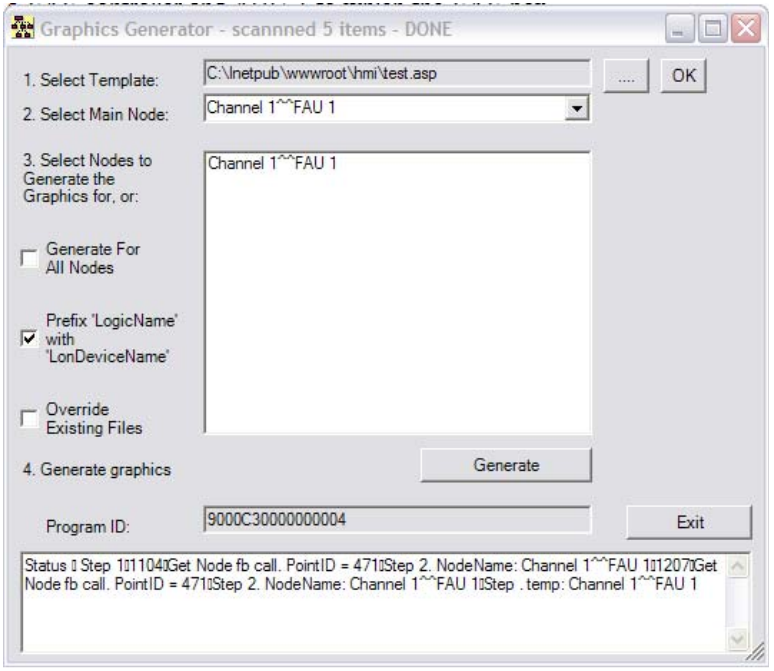
You may also refer to the Flash Configuration Utility Users Guide to apply user authentication with the flash configuration tool.

7.6 Example - Duplicating a Template with the Graphics Generator

Suppose we've created the graphics (Template) for a Variable Air Volume (VAV) box, that is, we've created an .asp page graphical interface in Dreamweaver as described in the Creating Graphics section. There are 99 VAV's on our project and they are fed by 3 Air Handling Units (AHU). Our .asp Template page will include points specific to a VAV controller and AHU-1 to which the VAV box belongs. Once the Template Graphics are complete, debugged, and properly mapped to points in the database, we can use the Graphics Generator to automatically import points and create graphics for all of the VAV's. It is critical that all points used in the Template are fully defined, including alarm configuration, trending, logic names, alarm notification, and digital point configuration. The Graphics Generator will import points for all nodes based on these points used in the Template. In this process, the Graphics Generator will search the LNS Database for nodes with the same Program ID and create graphics based on the Template Graphic you initially created. The steps are as follows:

1. Create Template Graphic (*.aspx page)

2. Launch the LNSConfig application. Click on Graphics,GenerateGraphics. The GraphicGenerator window will pop up.



3. Click Browse..., Select the Template .asp page you will use to generate graphics. then click OK.
4. Select the Main Node from the drop down box. This node will be used as a template to find other nodes. This will find other nodes with identical Program IDs. All nodes with identical Program IDs will be displayed in the large text box.
5. Hold down the Ctrl key and click on nodes for which you want to generate graphics, or alternately, select the Generate For All Nodes checkbox to generate graphics for all listed nodes. All graphics will be generated and stored in the directory where the .asp Template is located. Graphic names will consist of the .asp Template name, channel name, and device name.
6. Run the ConfigureWeb utility as shown in the 6.3 Example: Building a Graphics Webpage

8.0 InetSupervisor's Web-Based Tools

8.1 Navigating Internet Explorer

Much of InetSupervisor's functionality is accessed through its preprogrammed active server pages. In the address bar of Internet Explorer (at the LonServer or any other computer attached to the network), type http://127.0.0.1/hmi/. You may have to substitute 127.0.0.1 with the name of the web-server computer or its IP address. The login window will open. The default Username is q and the Password is q.

When logged in, the front page of the Sample Site will appear (Home). At the left, several files under the Tools folder are used to open various configuration or data tools:

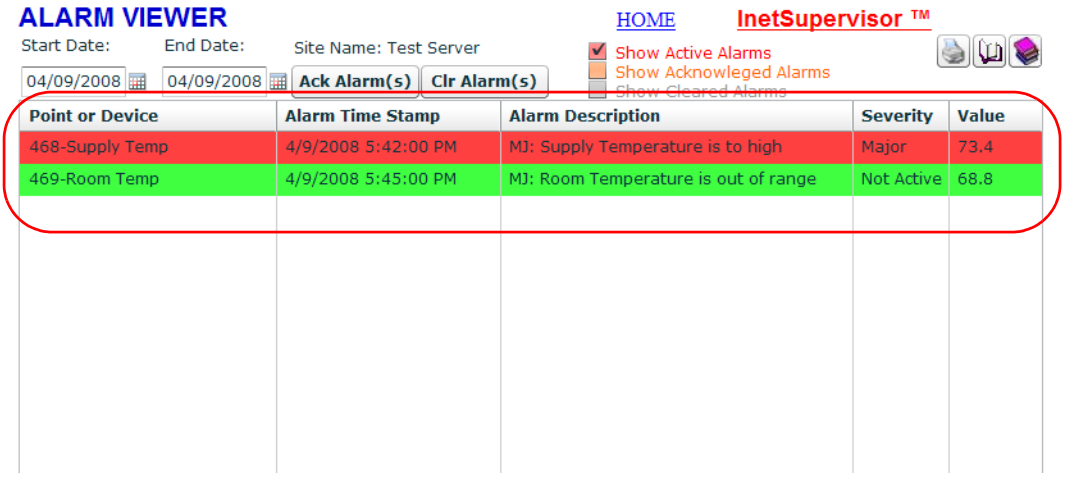
1. ***Alarms*** **-** Shows active alarms, acknowledged and clear by alarm ID
2. ***Events - Daily Log*** **-** Shows recorded utility and web page activity.
3. ***Help*** **-** Links to help files and user guides
4. ***Point Editor*** **-** Provides a web based interface to adjust point parameters.
5. ***Schedule Editor*** **-** Schedules "on" times for equipment and links schedules to selected points
6. ***Trends*** **-** Shows trend data for trend-enabled points
7. ***Trend Other*** **-** Shows trend data for digital or non-numeric data.
8. ***Tree Editor*** **-** Provides a web based configuration tool to modify the navigation tree.
9. ***LNS LonWorks*** **-** Houses the InetSupervisor web based LNS browser and the AutoGenerated tree builder for LonWorks
10. ***WebUsers*** **-** Provides a web based tool to add, remove, and modify users
11. ***Admin Tool*** **-** Links most of the web tools in 1 loader.

8.2 Alarms Viewer Page

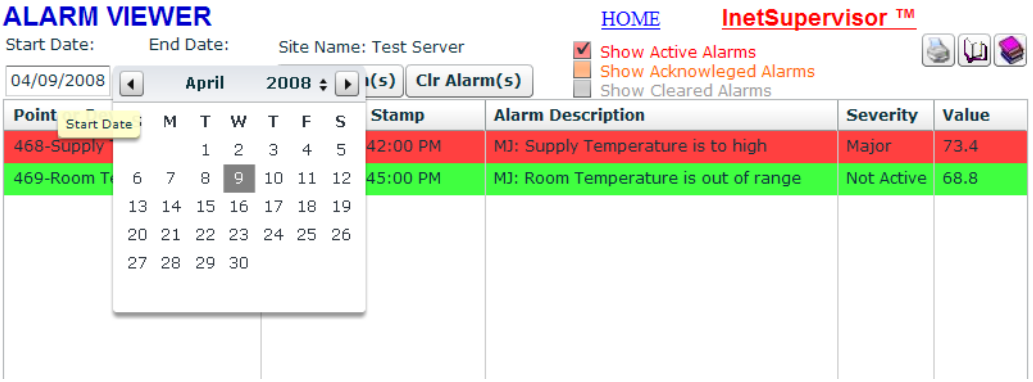
The Alarm Viewer Page will display a grid containing any alarms that have been captured.

If the logged in user is allowed to view alarms then the viewer will load with a list of any alarms that have been recorded on the current day. To use the Alarm Viewer:

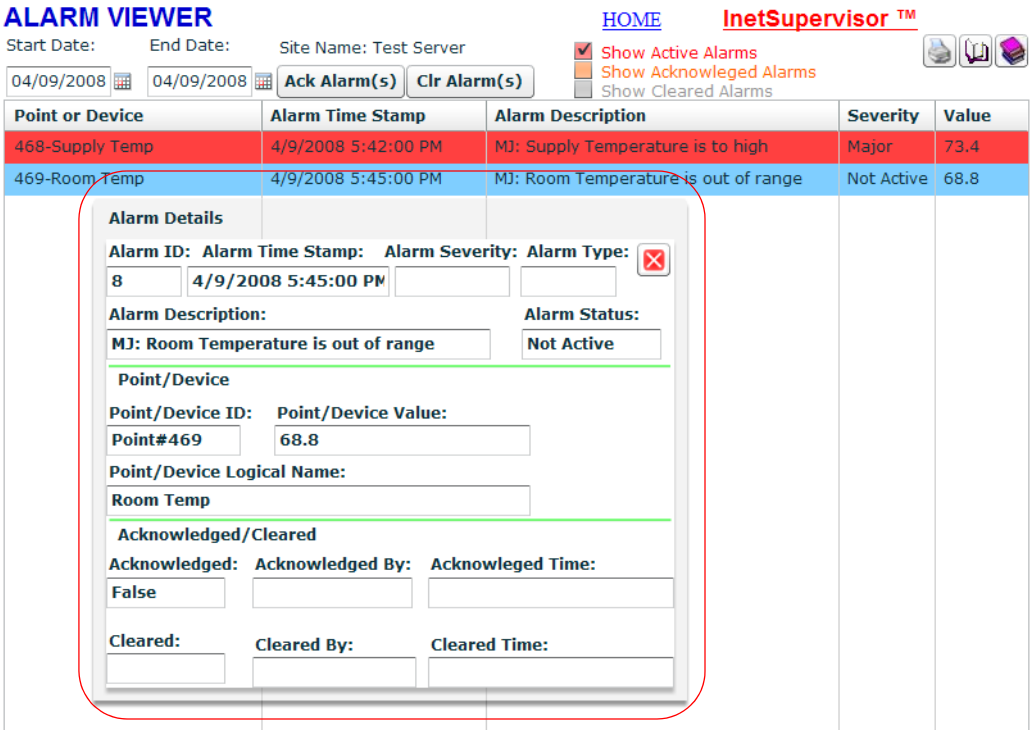
1. Alarms will show with the point ID and Logical Name, the Time Stamp of the alarm, the alarm description filled out by the Point Editor, the severity of the alarm this may be Major, Minor, or Not Active, and the value when the point was found to be in alarm. Alarms that are currently active will show with a red background. If the point value has returned to a normal level and the no longer active the alarm will show with a green background.



2. If the user wants to view alarms from other dates the range can be adjusted by changing the Start and End dates by using the calendars located on the upper left corner of the viewer.



3. Other detail's on the alarm may be seen by double clicking the alarm row. The other detail's include all the standard information as well as if the alarm has been acknowledged/cleared and if so by whom and what date and time. If the details page is no longer desired the user may



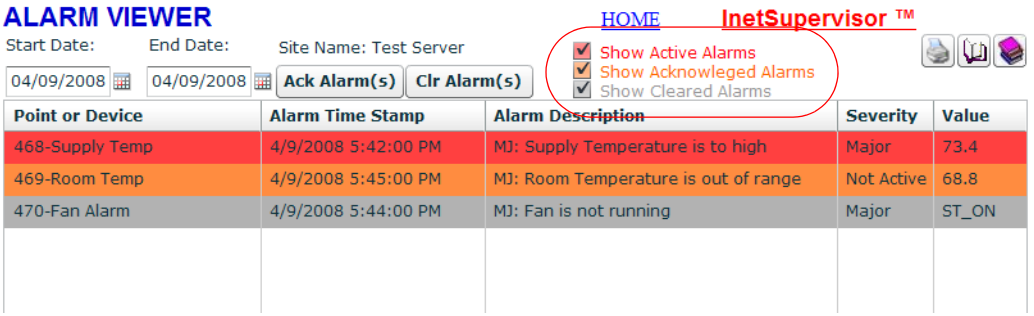
close it by clicking the close button on the top right.

4. Alarms, either active or not can be acknowledged and/or cleared from the viewer by selecting the alarm(s). Then clicking the Ack Alarm(s) button to acknowledge the alarm(s) or Clr Alarm(s) to clear the alarm(s). Multiple alarms may be selected by holding the Ctrl key while selecting for a non-contiguous selection or the Shift key for a contiguous group of alarms.

When the alarm(s) have been acknowledged or cleared, a completion prompt will apear.

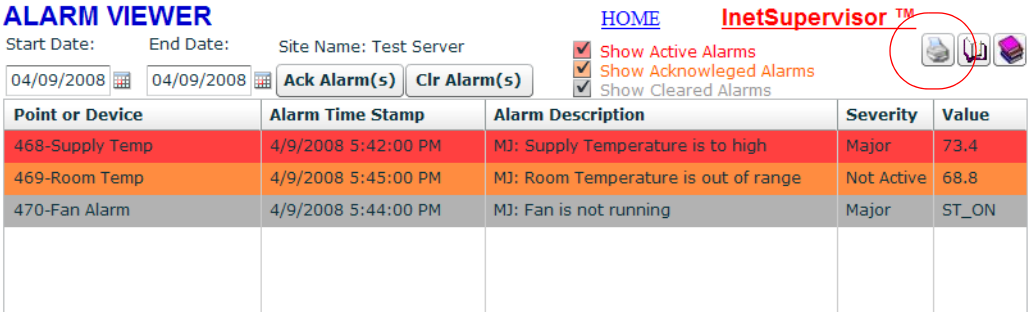
Click OK to continue.

5. The user may use the show filters to list particular types of alarms such. Check the Show Active Alarms box to display active alarms (this includes all alarms that have not been acknowledged or cleared) within the selected date range, check the Show Acknowledged Alarms box to display alarms that have been acknowledged but not yet cleared within the selected date range, check the Show Cleared Alarms box to display alarms that have been cleared within the selected date range. Any combination of the boxes may be selected.

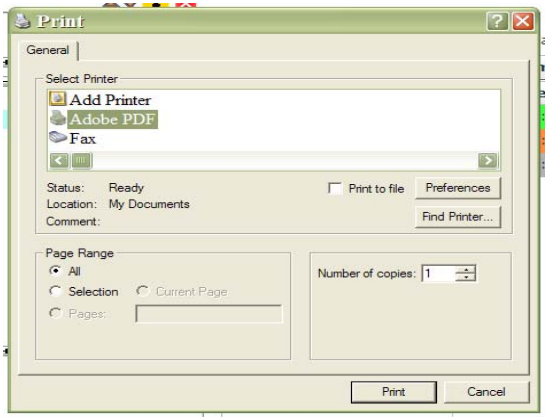


Acknowledged alarms will have an orange background, cleared alarms will have a grey background color to help identify their status.

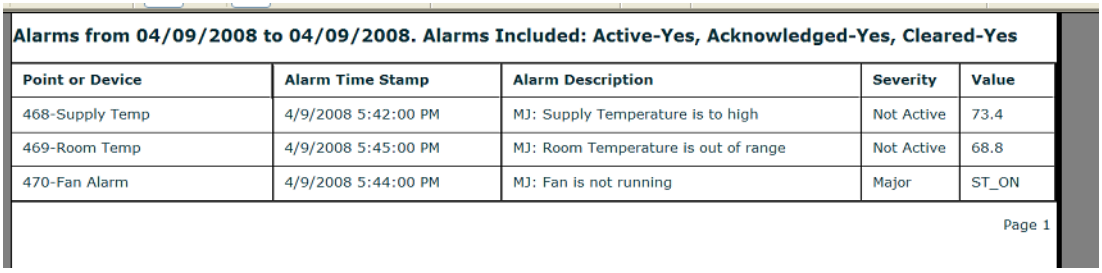
6. After the desired list of alarms has been produced by selecting the date range, and filtered by active, acknowledged, cleared a printing function can be used to print the list of alarms. To do so first click the print button on the top right of the viewer. Your printing dialog box will open.



Select the desired printer and printer configurations. Click the print button and the listed alarms

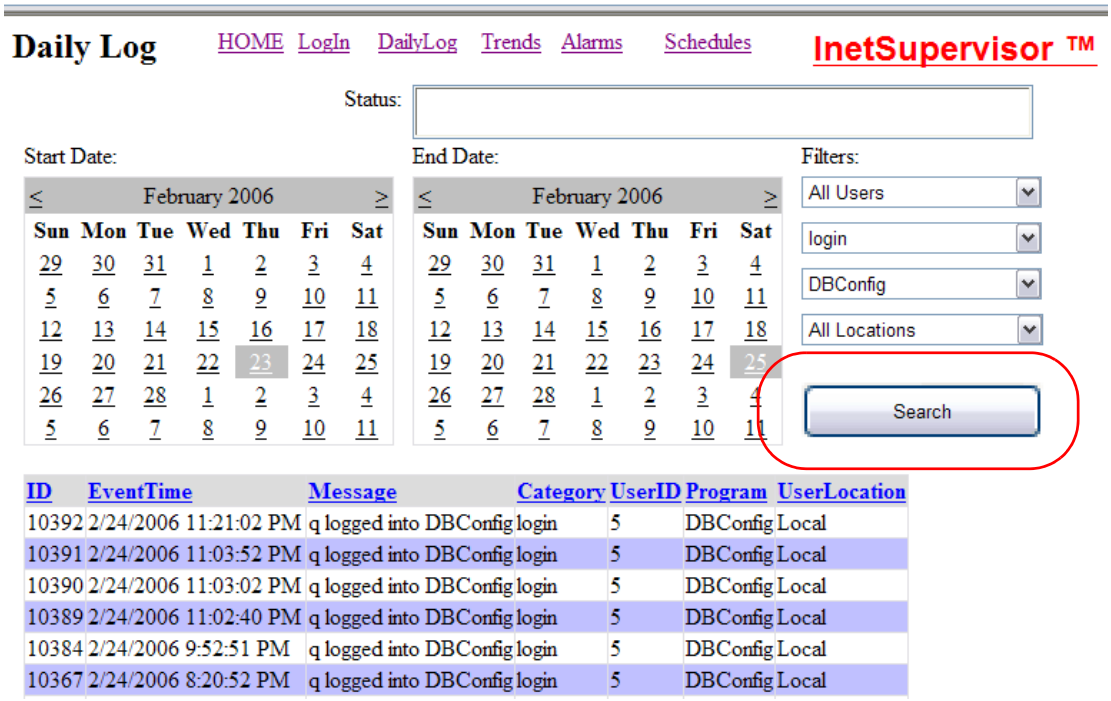


will be sent to the selected printer.



8.3 Events Page

This page can be used to show events that have happened in all of the InetSupervisor utility and web pages. To see information, choose the ***Start Date*** and ***End Date*** from the calenders, adjust any parameters from the ***Filers*** drop down box's, click ***Search.***



The qualifying events will show in a table below. The table can then be selected, copied, and pasted into a text program, such as microsoft excel, to be manipulated as desired.

8.4 Help Page

This page has many guides to help with a successful operation of InetSupervisor and InetTEAM.

8.5 Point Editor Page

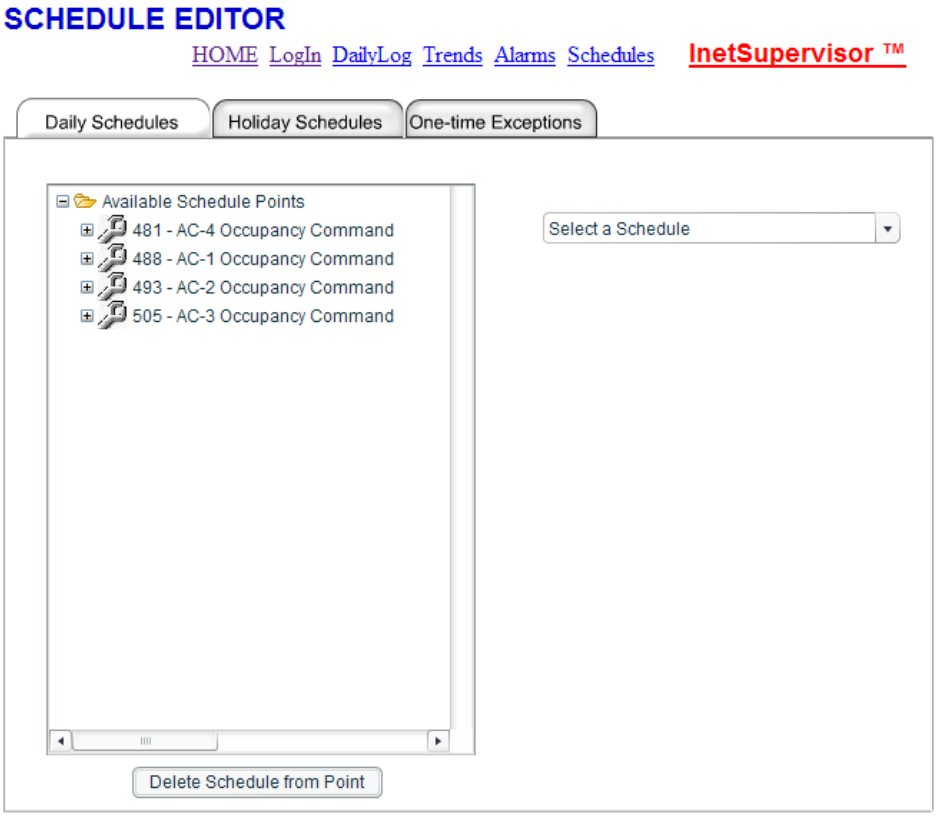
This page houses the Point Editor described else where in this manual (see Point Editor).

8.6 Schedule Editor Page

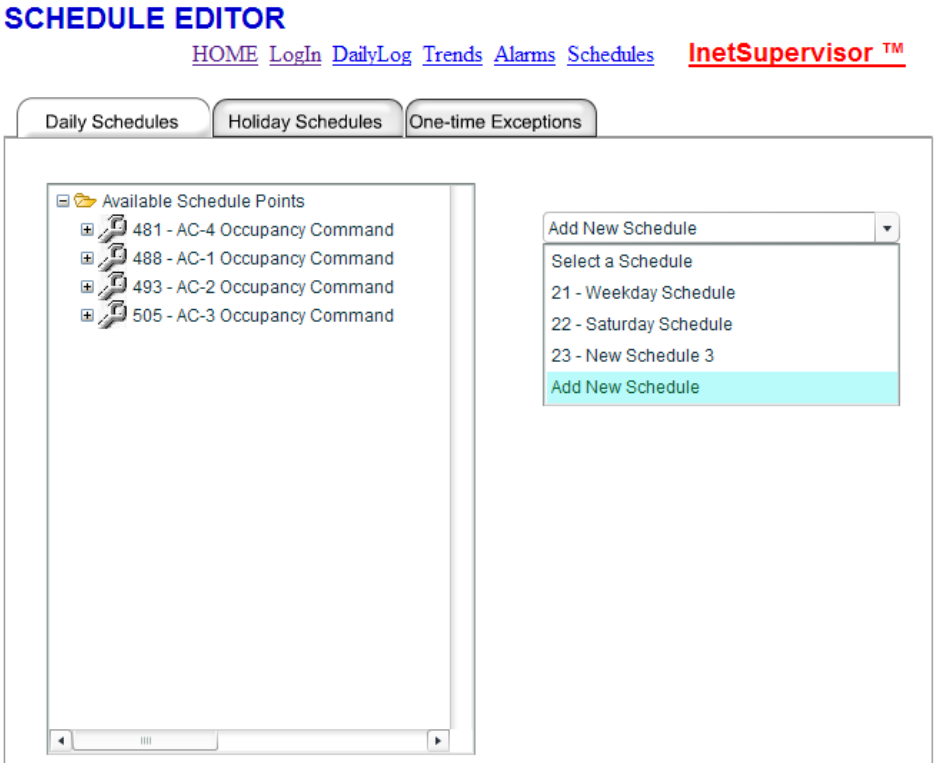
The HMI Scheduler separates schedules from devices. Schedules reside in the Schedules_Table in the SQL Database. Do not use the DBConfig utility to generate or manipulate schedules. Use the web page interface. Goto the Schedule Editor by clicking the Schedule Editor under Tools in the navigation tree.

Daily Schedules

1. You will see a the viewer with a list of schedule points on the left and a drop down box with the available schedules.

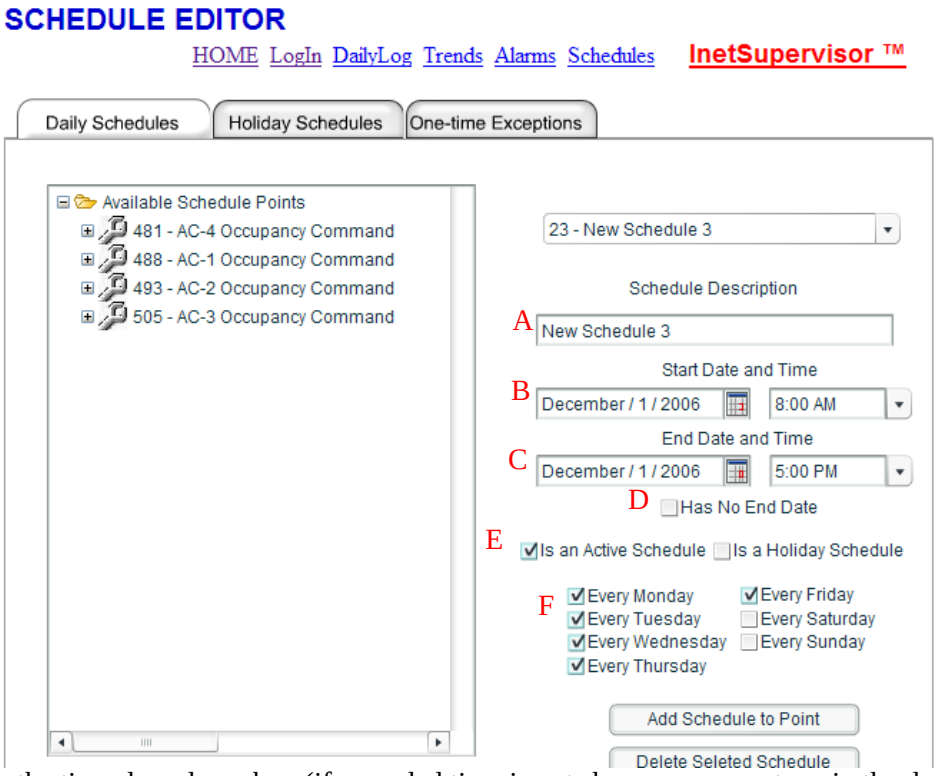


2. To add a schedule, select the Add New Schedule from the drop down box.



3. The new schedule details will show below the drop down box. At this point you may modify any parameters for this schedule from this location. (A)Here you may type in a description for

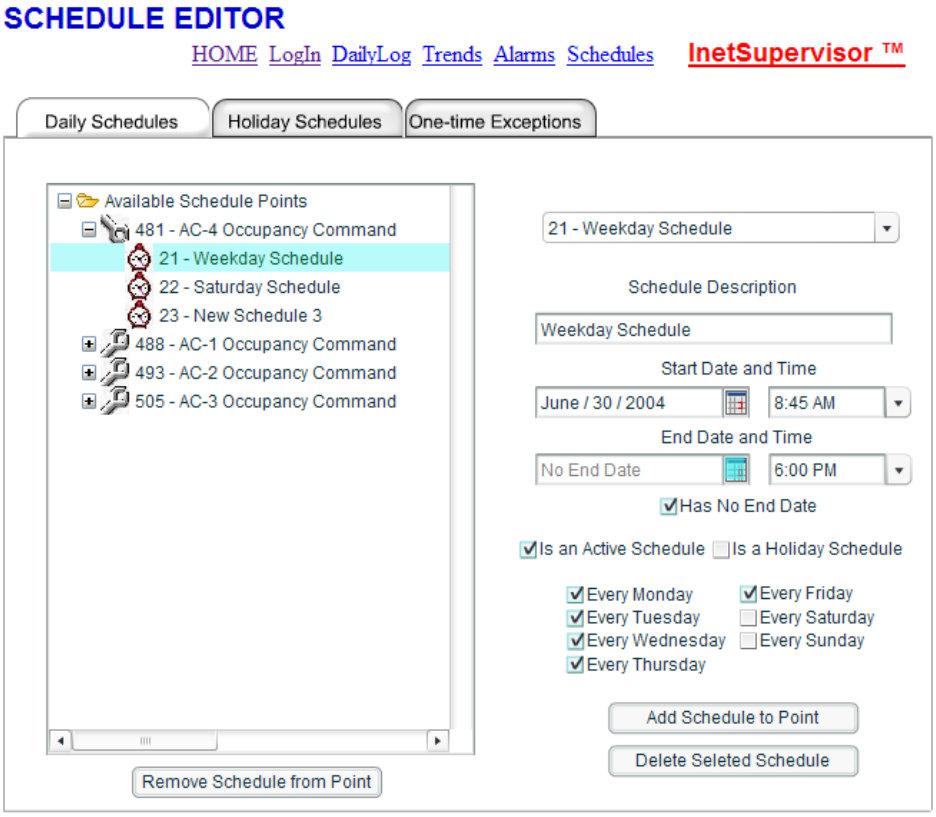
the schedule. (B)Here you may choose a date from the start date calendar and a start time



from the time drop down box (if a needed time is not shown you may type in the desired time in the box, please use the shown format of hour : minutes AM/PM). (C)Here you may choose an end date from end date calendar and an end time from the time drop down box (if a needed time is not shown you may type in the desired time in the box, please use the shown format of hour : minutes AM/PM). (D)If Has No End Date is checked the schedule will continue as programmed with no stop date. (E)If Is an Active Schedule is checked the schedule engine will update points with this schedule, if not the schedule engine will ignore the schedule. If Is a Holiday Schedule is checked the schedule engine will consider the time in-between start time and end time to be an unoccupied period and output the appropriate value. (F)The schedule will run on every day check marked.

4. Repeat these steps for every schedule to create.
5. To attach a schedule to a point, highlight the point or points(you can use the Cntrl and Shift keys to highlight multiple points) you wish to have the schedule attached to and click the Add Schedule to Point button.

6. To see the schedules attached to a point , expand the point by clicking on the plus symbol. You may click on a schedule from this list to modify the schedule.

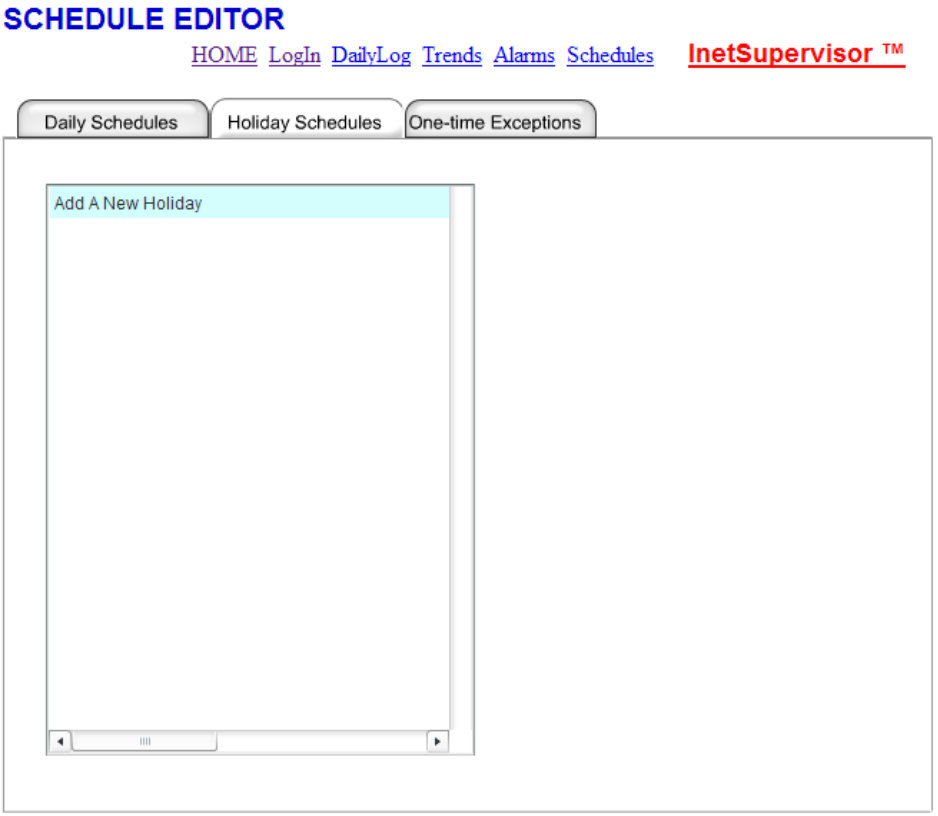


7. To remove a schedule from a point. Expand the point, highlight the schedule to remove and click the Remove Schedule from Point button. This will not delete the schedule.
8. To delete a schedule choose the schedule to be deleted from the dropdown box or from the expanded points list and click on the Delete Selected Schedule button. If a schedule is deleted it will be removed from all associated points.

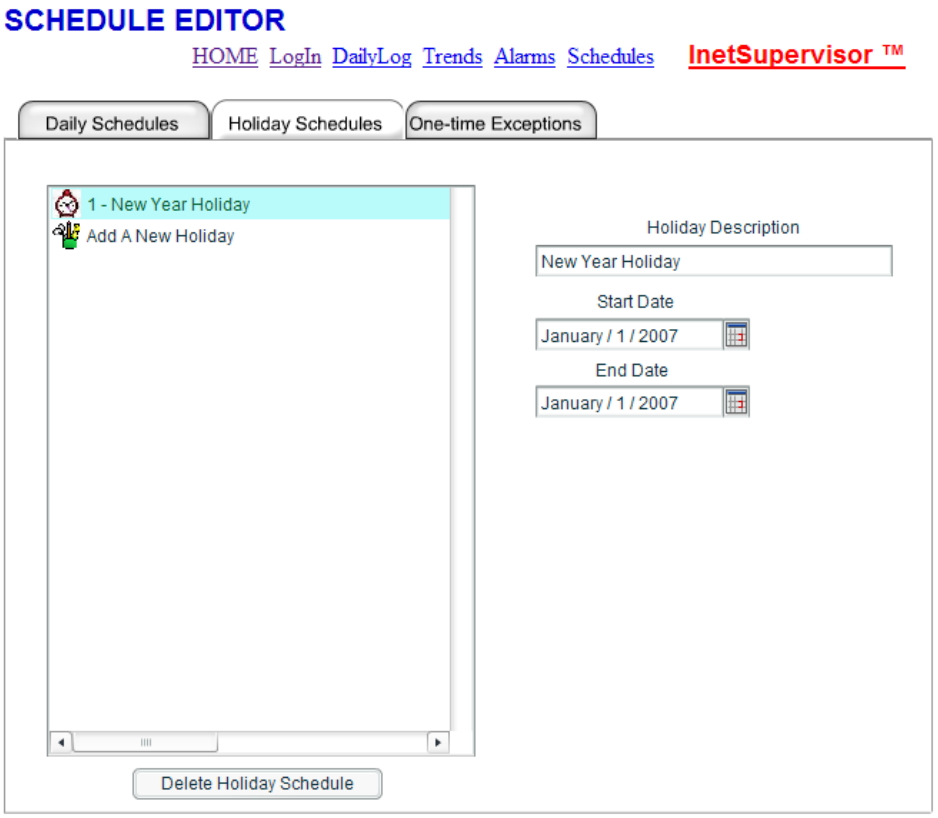
Holiday Schedules

1. Goto the Schedule Editor by double clicking the Schedule Editor under Tools in the navigation tree.

2. You will see a flash movie with a list of schedule points on the left and a drop down box with the available schedules.
3. Any holidays created with this editor will be considered global and applied to all points. All single-day holidays made with this editor will run for the entire 24 hour period. All multi-day holidays made with this editor will run consecutive for the entire entered period.
4. Click the Holiday Schedules tab on the top. You will se an editor with a list of holidays (if any have been made).



5. To create a new holiday click the Add A New Holiday option on the list. (A) Here you may put

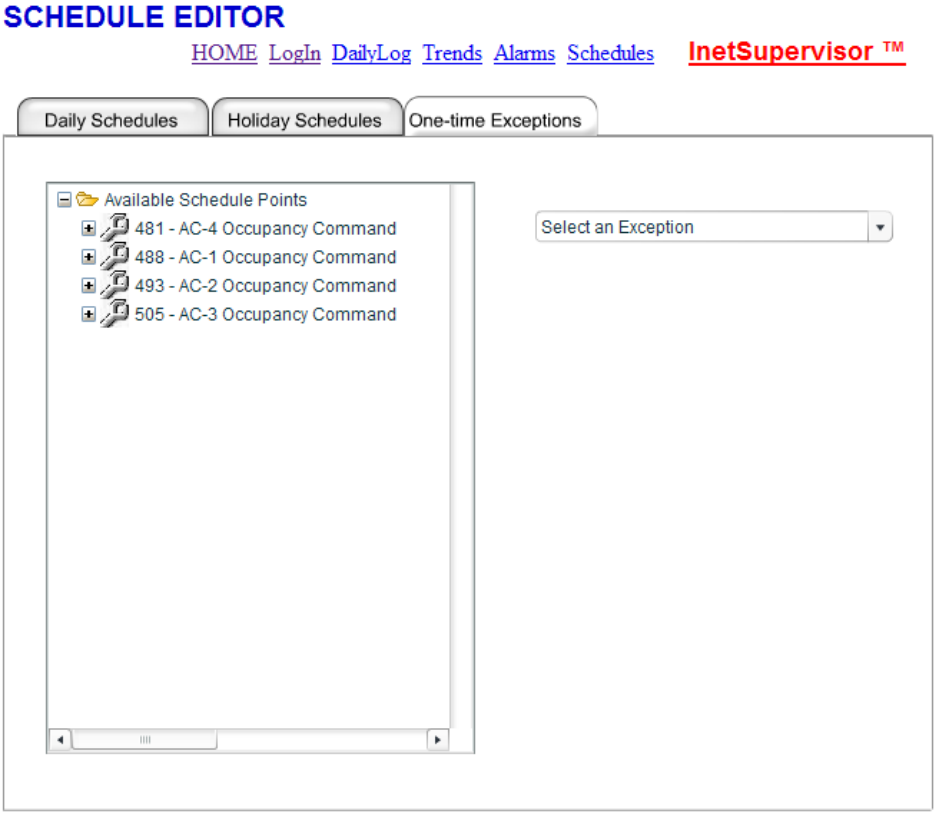


in a description for the schedule. (B) Choose the start date of the holiday. (C) Choose the end date of the holiday.

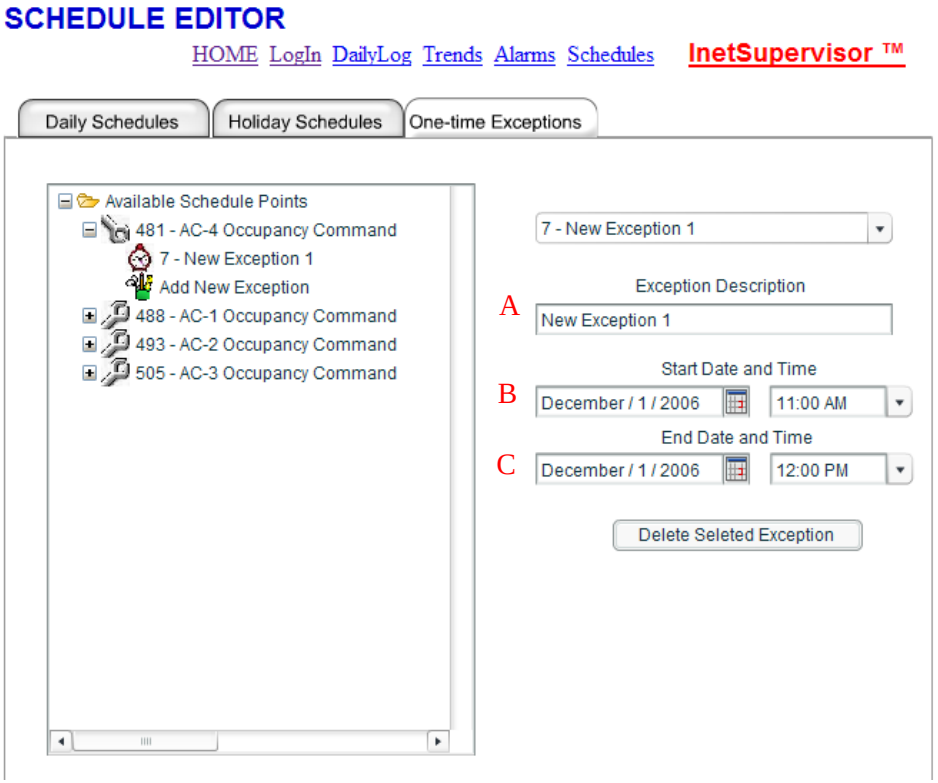
6. Repeat this for a holiday's to be created.
7. To modify a holiday click on the holiday from the list and adjust as necessary.
8. To delete a holiday highlight the holiday to be deleted and click the Delete Holiday Schedule button.

One-time Exceptions

1. Goto the Schedule Editor by double clicking the Schedule Editor under Tools in the navigation tree.
2. You will see a flash movie with a list of schedule points on the left and a drop down box with the available schedules.
3. Click the One-time Exceptions tab on the top. You will see an editor with a list of schedule points on the left and a drop down box with any schedule overrides.



4. To create an exception, expand the point you wish the exception to be added to and click on the Add New Exception option. (A)Here you may type in a description for the exception. (B)Here



you may choose a date from the start date calendar and a start time from the time drop down box (if a needed time is not shown you may type in the desired time in the box, please use the shown format of *hour : minutes AM/PM)*. (C)Here you may choose an end date from end date calendar and an end time from the time drop down box (if a needed time is not shown you may type in the desired time in the box, please use the shown format of *hour : minutes AM/PM)*.

5. Repeat these steps for and exception needed to be made.
6. To see the exceptions attached to a point, expand the point by clicking on the plus symbol. You may click on an exception from this list to modify the exception.
7. To delete an exception choose the exception to be deleted from the dropdown box or from the expanded points list and click on the Delete Selected Exception button. If an exception is deleted it will be removed from all associated points.

All exceptions will be automatically deleted after there scheduled time has expired.

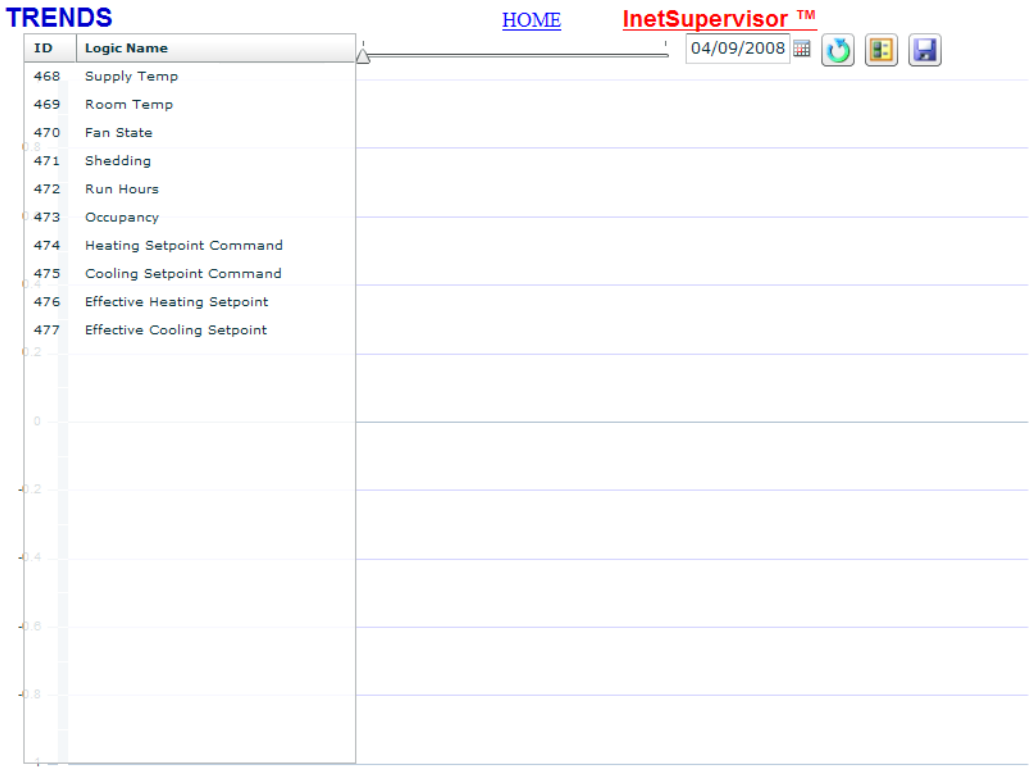
8.7 Trend Viewer Page

Configure the system points that you wish trend data to be collected for, as specified in the Point Editor section. Run InetSupervisor to collect trend data. The Trends Viewer Page will display a graph or grid containing the data sampled for the trended points. The viewer will automatically adjust the data normalization by the amount of time selected in the date range or zoom slider. If the date range is 12 days or larger then the data will be normalized by days, anything less then 12 days but greater then 5 hours will be normalized by the hour and less then 5 hours will display raw data with no moralization done. The grouping may be changed in the configuration area.

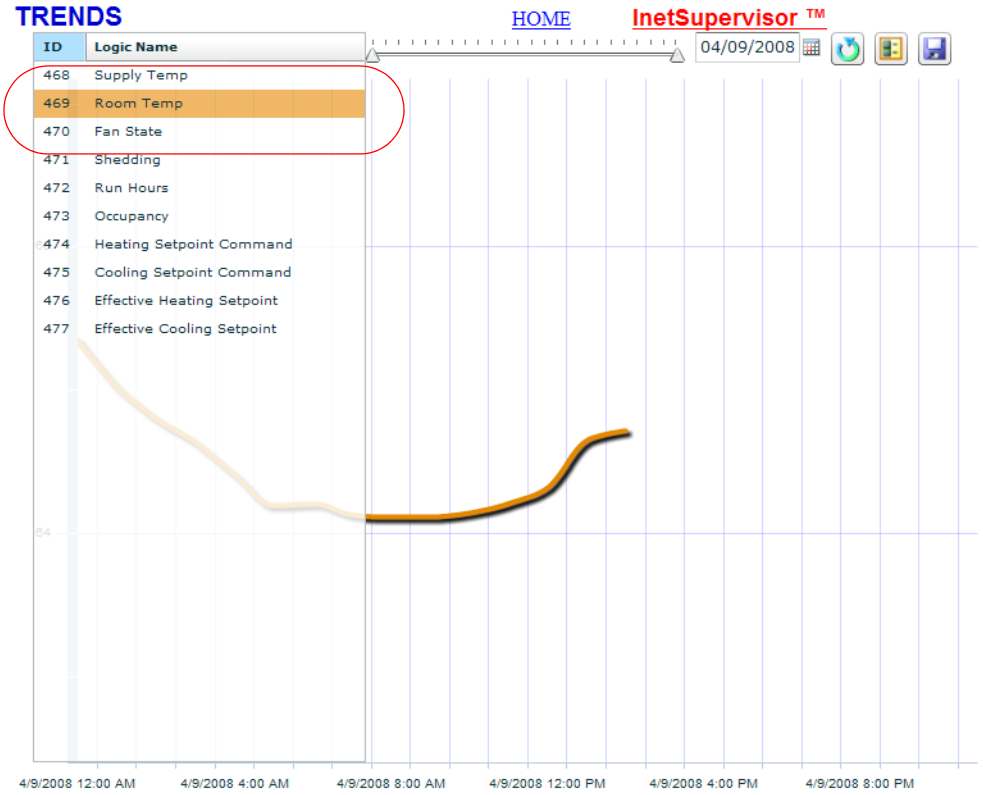
If the logged in user is allowed to view trend data then the viewer will load with a list of points that have records in the storage database. To use the Trend Viewer:

Trend Viewer

1. Select the point(s) to be viewed by clicking the name on the list. Only 10 points can be viewed at any one time. The point list may be ordered by ID or Logical Name by clicking on the header to order by.

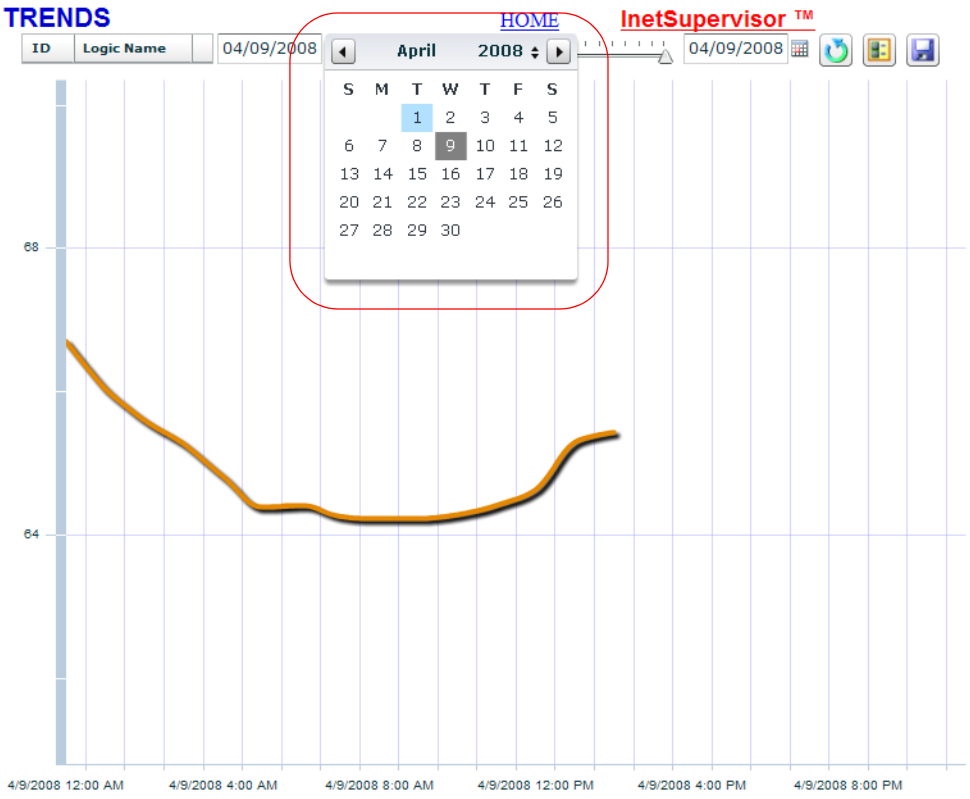


2. When selected the a graph line will appear with the data collected for the displayed date range. The background color of the selected point will change to match the graph line.

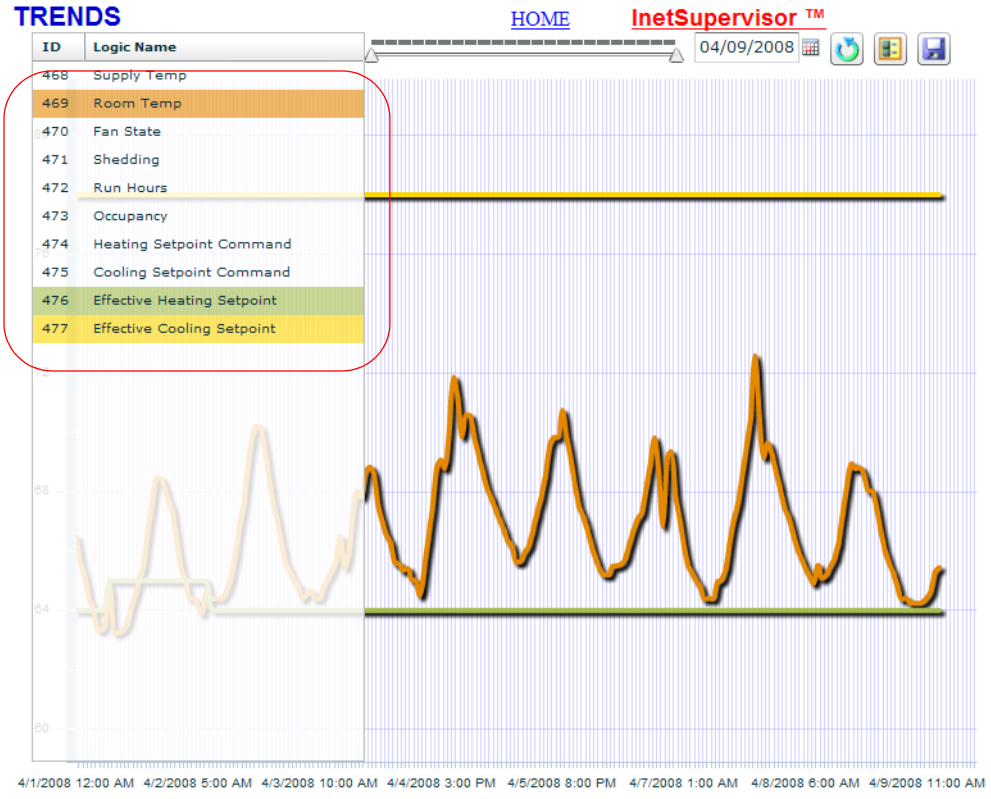


3. The view loads with the current date selected. If a differant date range is required it may be adjusted by clicking the start date displayed on the top, left of the slider and choosing the

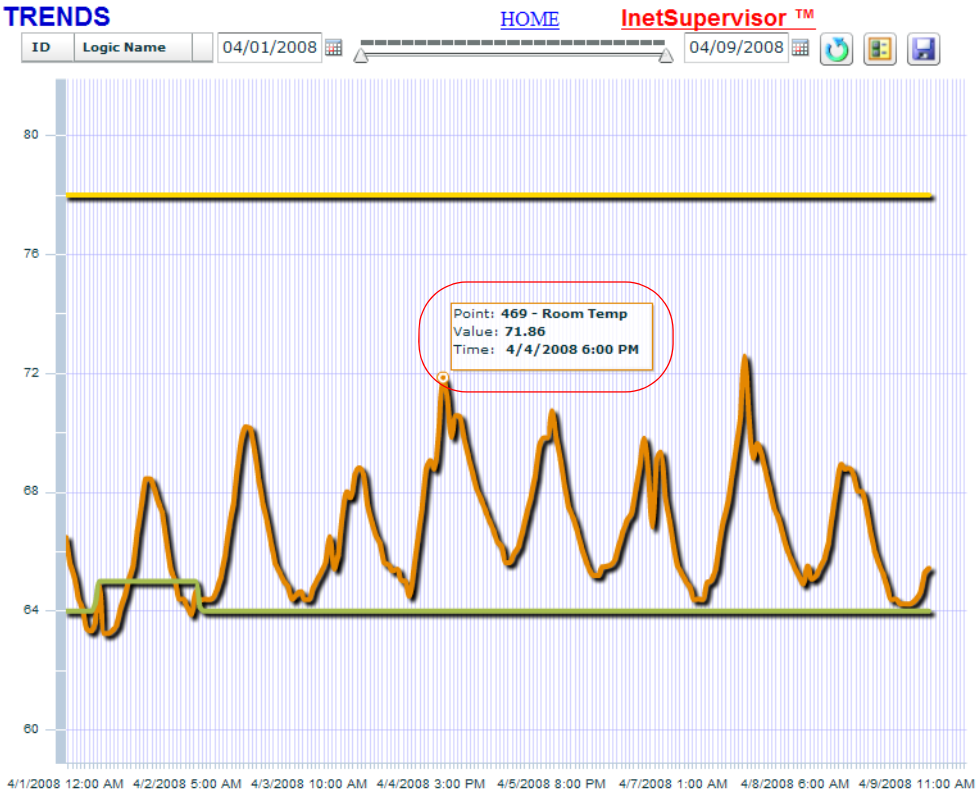
new date. The same process works for the end date which is located on the top, right of the slider.



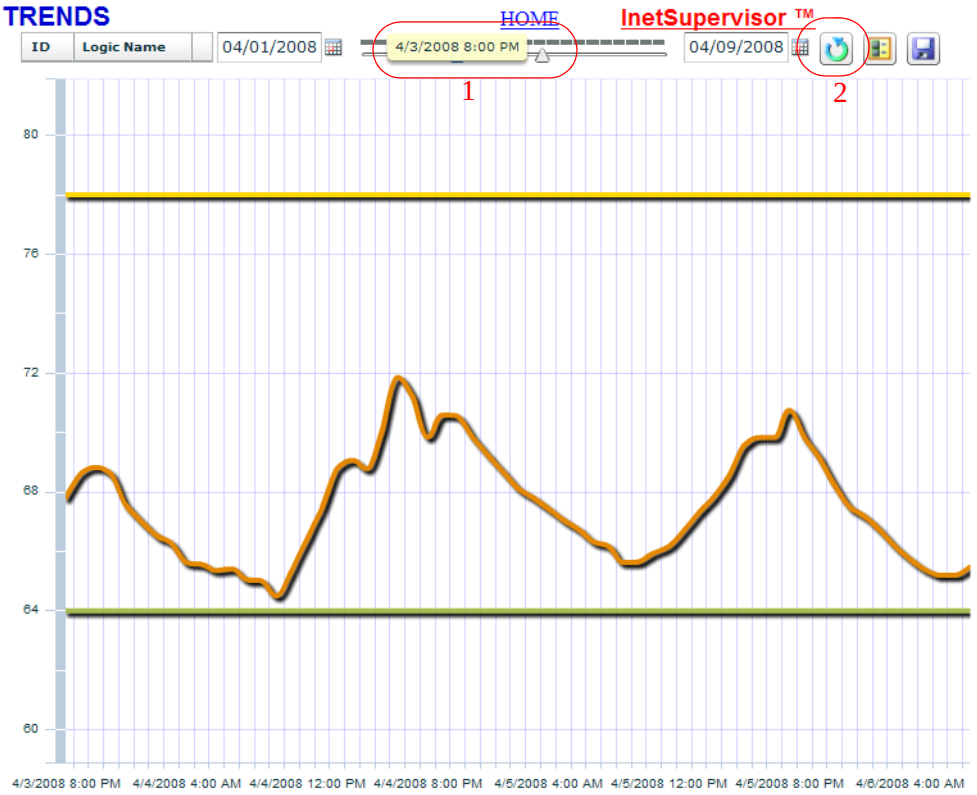
4. To add more points mouse over the point list to expand it and click the required points. Clicking any point that is currently selected will remove the data series from the graph.



5. The user may view the exact value by placing the mouse over the data point.

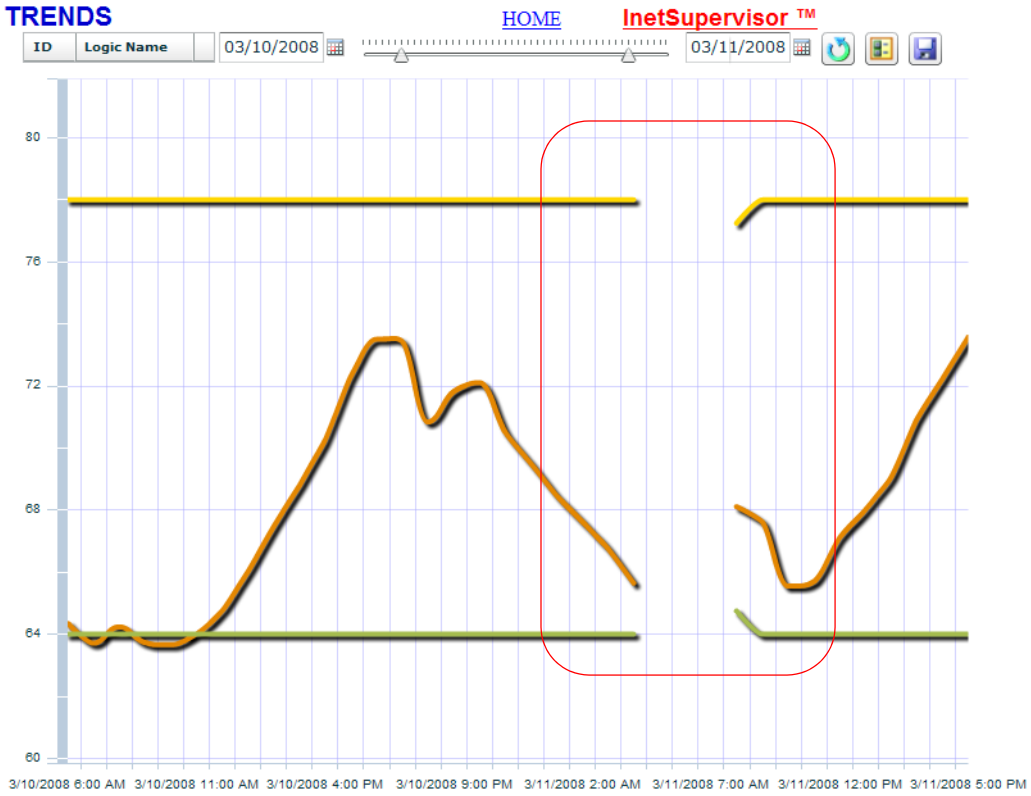


6. The user may also zoom into a portion of the graph by adjusting the start and end tabs on the zoom slider(1). Clicking and hold a tab on the slider and you will zoom the graph. The



user may return to the original date range at any time by clicking the refresh button located to the right of the end date calendar(2).

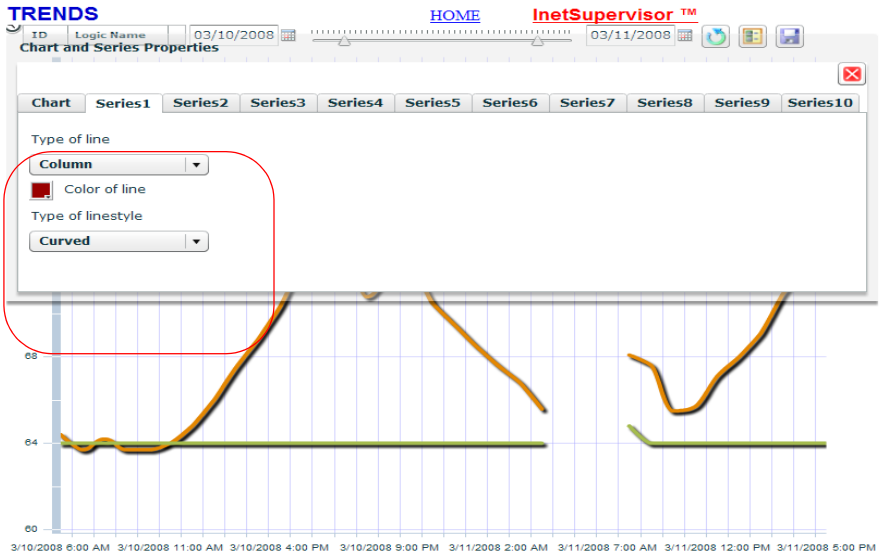
7. If there is a gap in logical span of data (missing records) then the graph will display this as a gap in the data series (this will not happen in raw data).

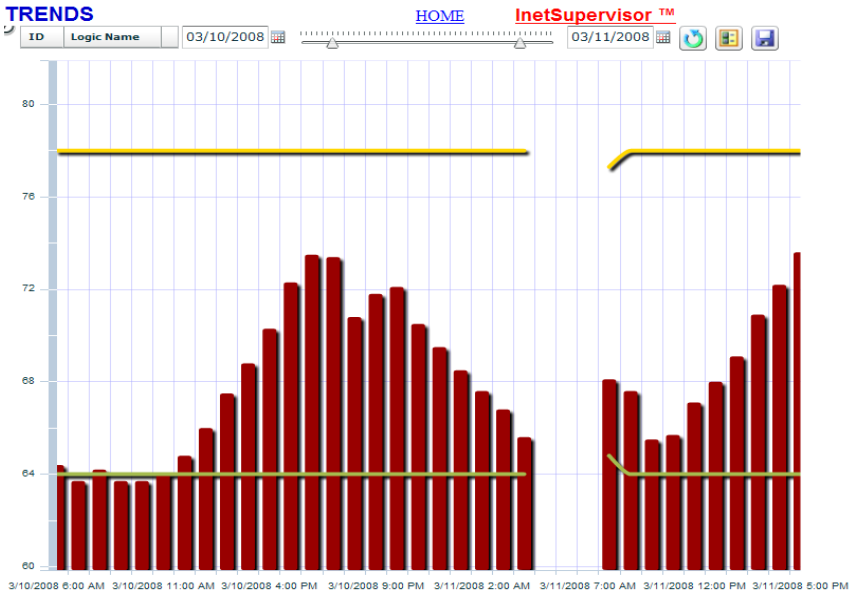


8. Differant properties of the graph may be adjusted by double clicking the background of the graph. Data Precision will adjust the value precision of the incoming data. The value axis may be set by adjusting the minimum and maximum values, this may be cleared by clicking the Use auto Y axis values button. The data grouping may be specified or changed back to the auto detection. To have the mouse tracker displayed check the Show Mouse Tracker box. All of the

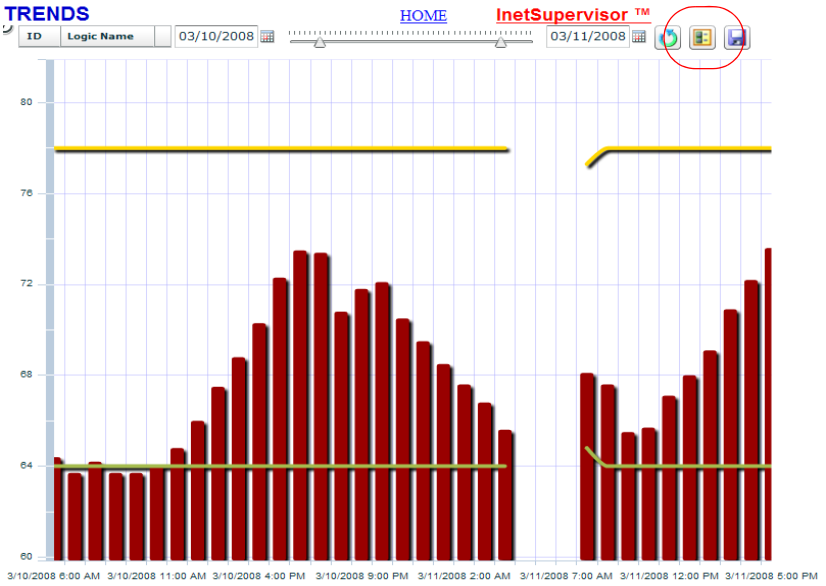
trend records are time stamped with UTC time, if the user is in a differant time zone then the server they can adjust the time location offset with the Time offset number adjuster.

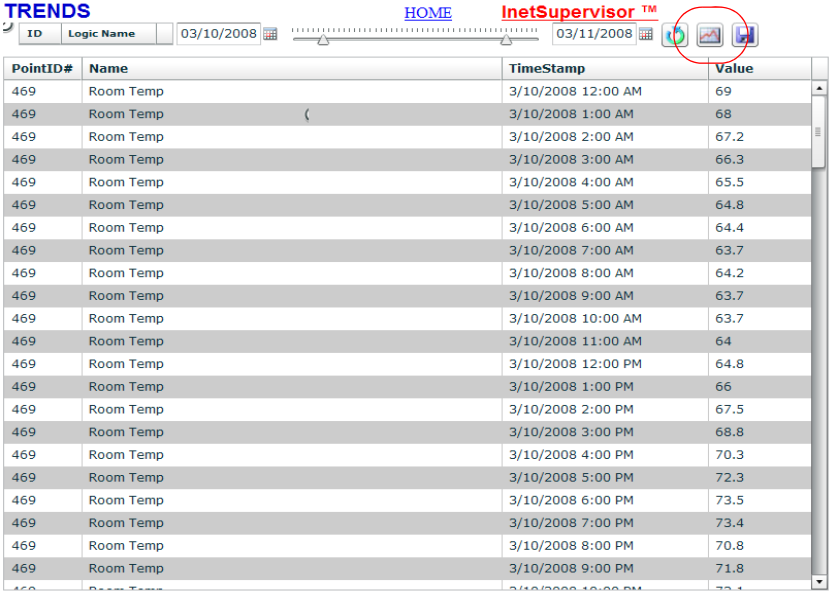
9. The data series may also be adjusted with the same tool by clicking the tab of the appropriate series. The type of line displayed as well as the style and color may be changed.





10. The data may also be viewed in a grid format. The user can change by toggling the Graph/ Grid View button located on the top right of the viewer. The grid may be ordered by ID,

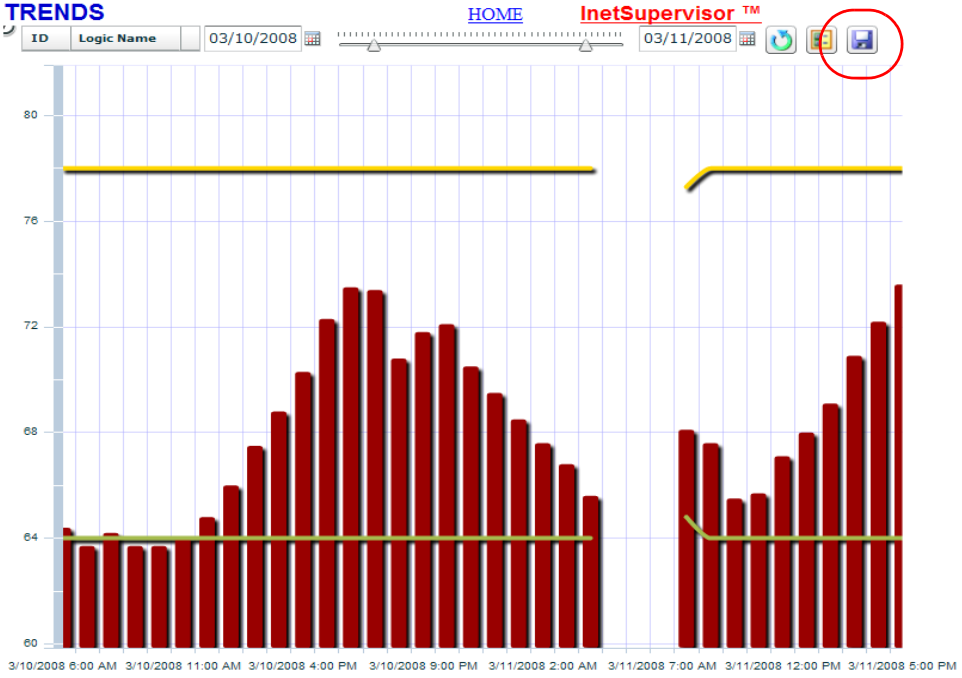




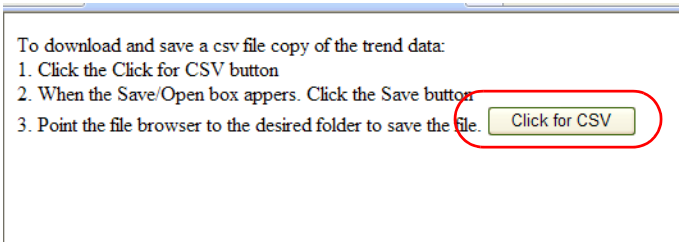
PointID#	Name	TimeStamp	Value
469	Room Temp	3/10/2008 12:00 AM	69
469	Room Temp	3/10/2008 1:00 AM	68
469	Room Temp	3/10/2008 2:00 AM	67.2
469	Room Temp	3/10/2008 3:00 AM	66.3
469	Room Temp	3/10/2008 4:00 AM	65.5
469	Room Temp	3/10/2008 5:00 AM	64.8
469	Room Temp	3/10/2008 6:00 AM	64.4
469	Room Temp	3/10/2008 7:00 AM	63.7
469	Room Temp	3/10/2008 8:00 AM	64.2
469	Room Temp	3/10/2008 9:00 AM	63.7
469	Room Temp	3/10/2008 10:00 AM	63.7
469	Room Temp	3/10/2008 11:00 AM	64
469	Room Temp	3/10/2008 12:00 PM	64.8
469	Room Temp	3/10/2008 1:00 PM	66
469	Room Temp	3/10/2008 2:00 PM	67.5
469	Room Temp	3/10/2008 3:00 PM	68.8
469	Room Temp	3/10/2008 4:00 PM	70.3
469	Room Temp	3/10/2008 5:00 PM	72.3
469	Room Temp	3/10/2008 6:00 PM	73.5
469	Room Temp	3/10/2008 7:00 PM	73.4
469	Room Temp	3/10/2008 8:00 PM	70.8
469	Room Temp	3/10/2008 9:00 PM	71.8

Logical Name, Time Stamp, or Value. To change the order, click the column header of the column to order by.

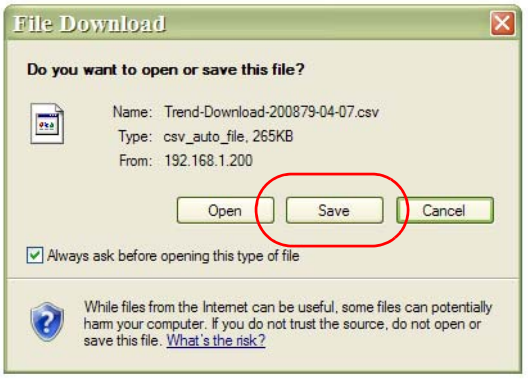
11. If the user wishes to save the trend data to their computer they may do so by clicking the save button.



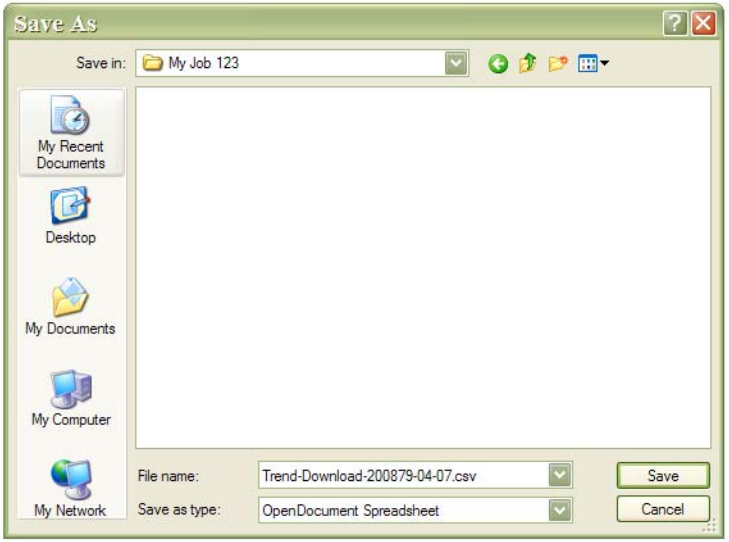
This will open a web page, click the Save as CSV button.



When the file has been created a Save or Open box will appear.



Click the save button. The file manager dialog box will appear, choose the folder location and file name then click save. The server will upload a Comma Separated File to that location, that



can be viewed by any spreadsheet application like Microsoft excel.

Using Trends By Id

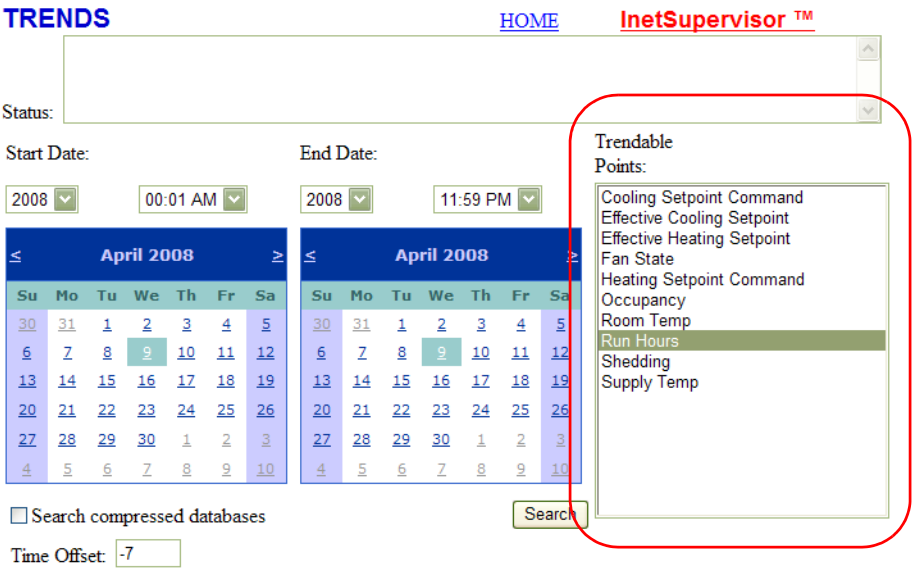
The QTrendsByID.aspx web page has all the same functionality as the standard Trends page, but it can be used to view preloaded Point ID's. This can be accomplished by creating links or buttons and pointing the URL to QTrendsByID.aspx with ?ids=471,472,473 added to the end of the URL. This will cause the QTrendsByID.aspx page to load with the comma delimited Point ID's pre-loaded and showing that day's recorded trends. For example if you are trending room temperature-PointID=973, CFM-PointID=1006 and CFM setpoint-PointID=1007 for a VAV and you wish to put a shortcut to QTrendsByID.aspx with these points preloaded the link would look like this - QTrendsByID.aspx?ids=973,1006,1007.

8.8 Trends Other Viewer

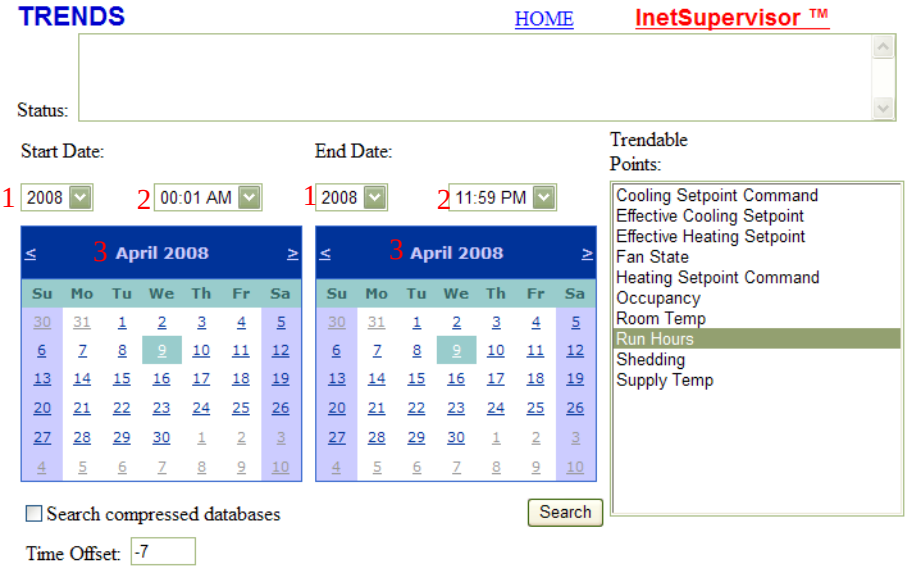
If a point is being trended that contains values that are not numeric or if there is a connection problem with a standard numeric point, the values are stored in a separate database. The Trends Other Viewer can retrieve these values and display them in a grid.

If the logged in user is allowed to view trend data then the viewer will load with a list of points that have records in the storage database. To use the Trend Other Viewer:

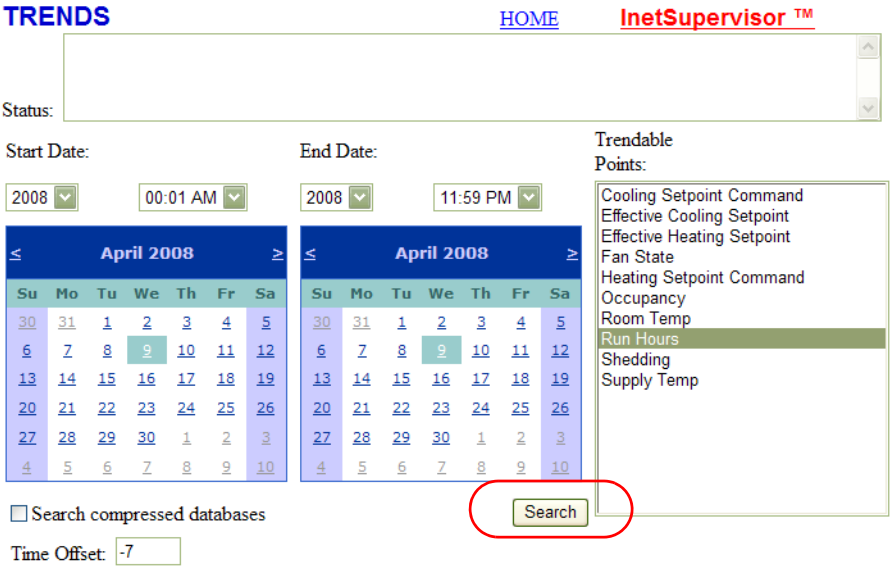
1. Select the point(s) to be viewed by clicking the name on the list.



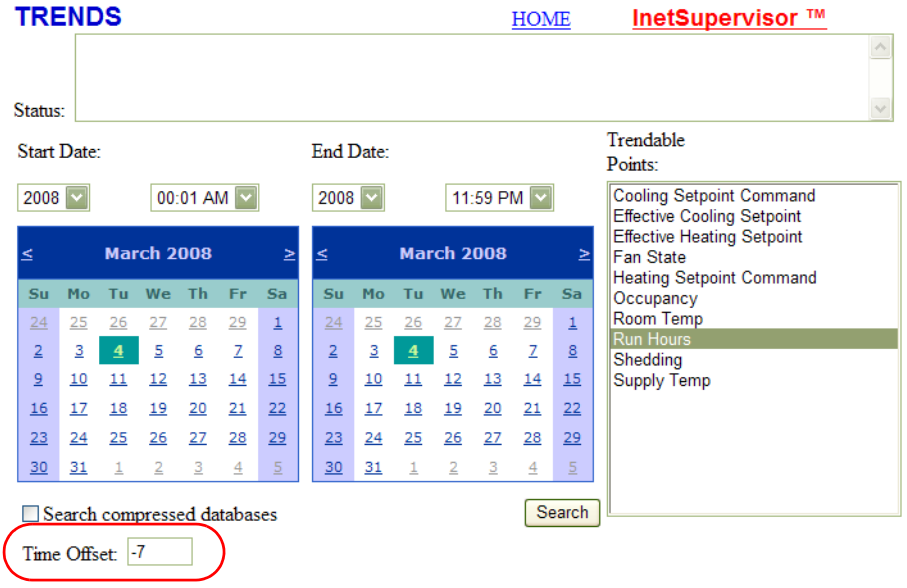
2. Select the date and time range to be viewed by adjusting the Start Date and End Date year(1), time(2), and calendar date(3).



3. Click the search button.



4. All of the trend records are time stamped with UTC time, if the user is in a differant time zone then the server they can adjust the time location offset with the Time offset number adjuster.



PointID	LogicName	PointValue	TimeStamp	SiteID	ID
472	Run Hours	???	3/4/2008 12:32:00 PM	1	19140
472	Run Hours	???	3/4/2008 12:40:00 PM	1	19150
472	Run Hours	???	3/4/2008 12:50:00 PM	1	19160
472	Run Hours	???	3/4/2008 1:00:00 PM	1	19170
472	Run Hours	???	3/4/2008 1:10:00 PM	1	19180
472	Run Hours	???	3/4/2008 1:20:00 PM	1	19190
472	Run Hours	???	3/4/2008 4:14:00 PM	1	19252
472	Run Hours	???	3/4/2008 4:16:00 PM	1	19257

8.9 Tree Editor

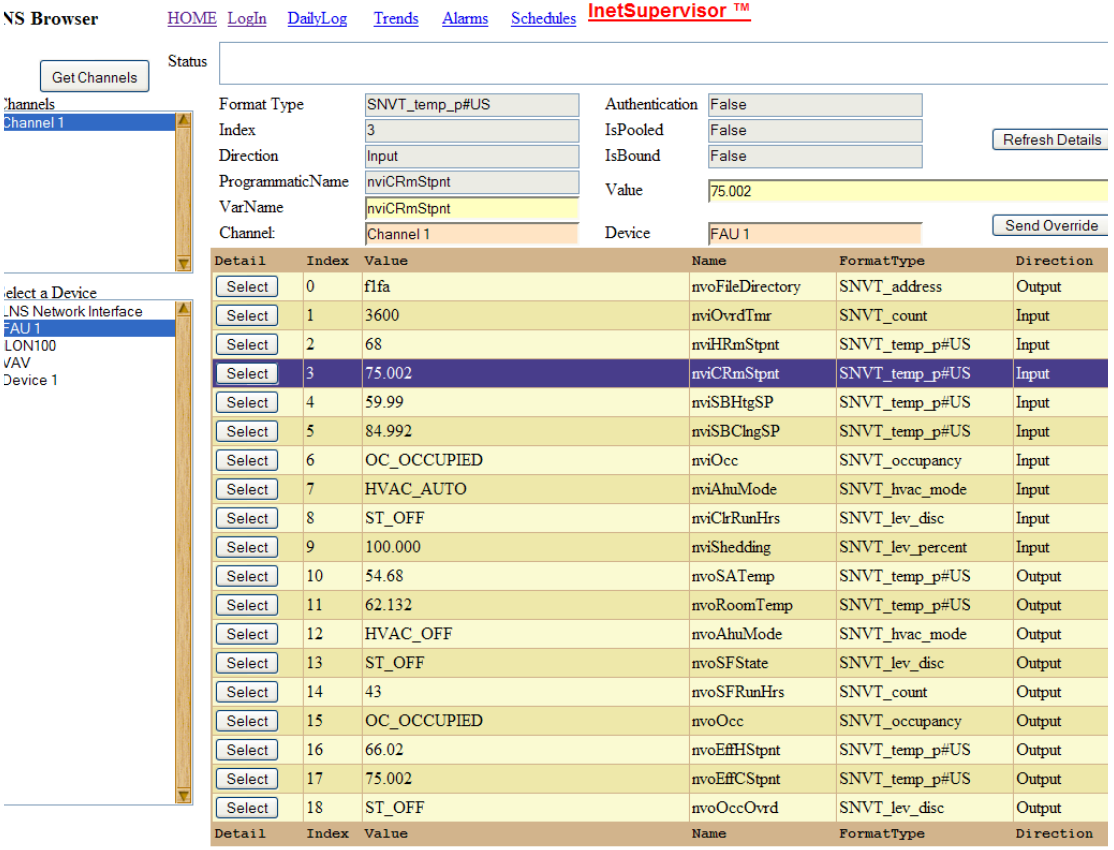
This page has the web-based Tree Editor as described in this guide. Please see the Navigation Tree section for detailed usage.

8.10 LNS LonWorks

There are two tools available under this folder the LNS Browser and the Auto-Generated tree.

LNS Browser

The web base LNS Browser works in the same way as the browser plug-in for LonMaker.



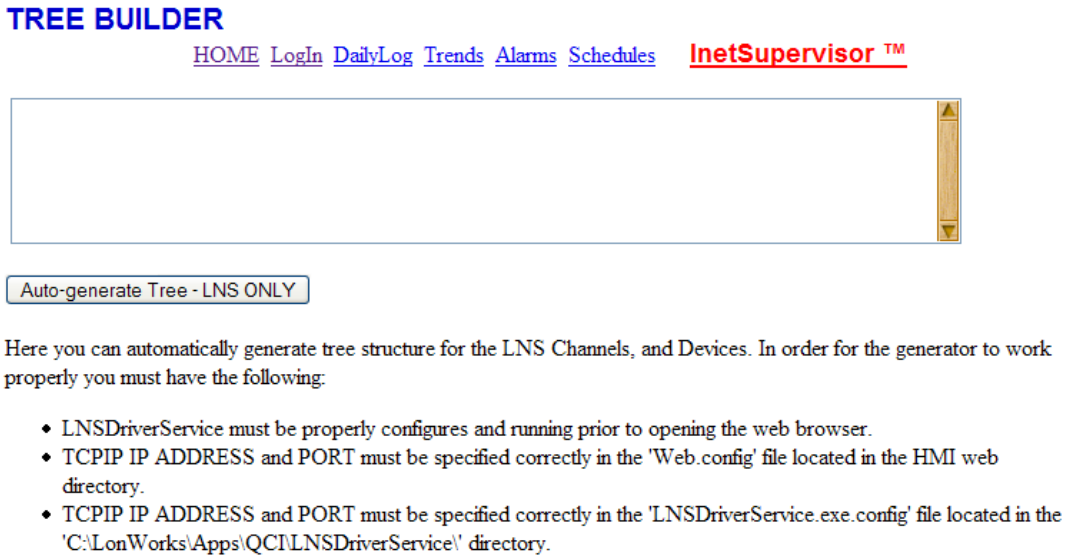
To view point information:

1. Choose a channel from the top left list
2. Choose a device from the left list

A static list of values will be shown in the center frame. To send an override click the “Select” button for the point to be written. Type the new value in the “Value:” field and click the “Send Override” button.

Auto Generated LNS Tree

The Auto Generated LNS Tree is a tool that when the button is clicked InetSupervisor will modify the navigation tree automatically to add all the devices in the LNS network. the devices will be

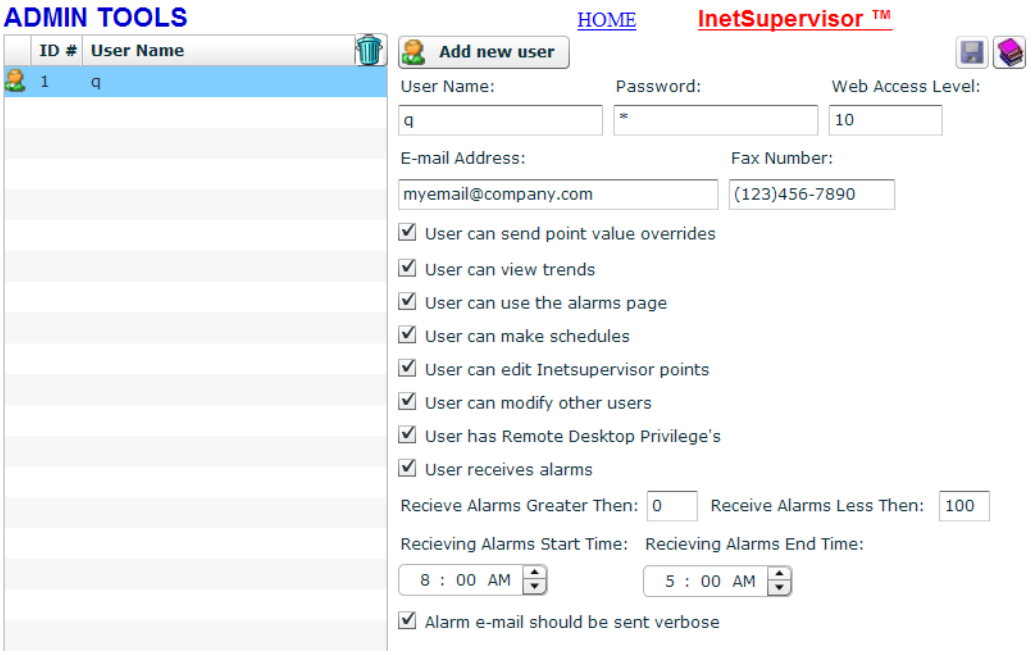


inserted under the AutoGenerated file. The structure is that all channels are the folders and each devices attached are the files. When the devices are clicked the LNS Browser will be displayed with that point already chosen.

8.11 WebUser Editor

The Web Users Editor is used to add, remove and modify all Inetsupervisor users. The Web Users Editor can be located from the Admin Tools page

If the logged in user is allowed to modify other users then the editor will load with the list of current users. To use the Web User Editor:

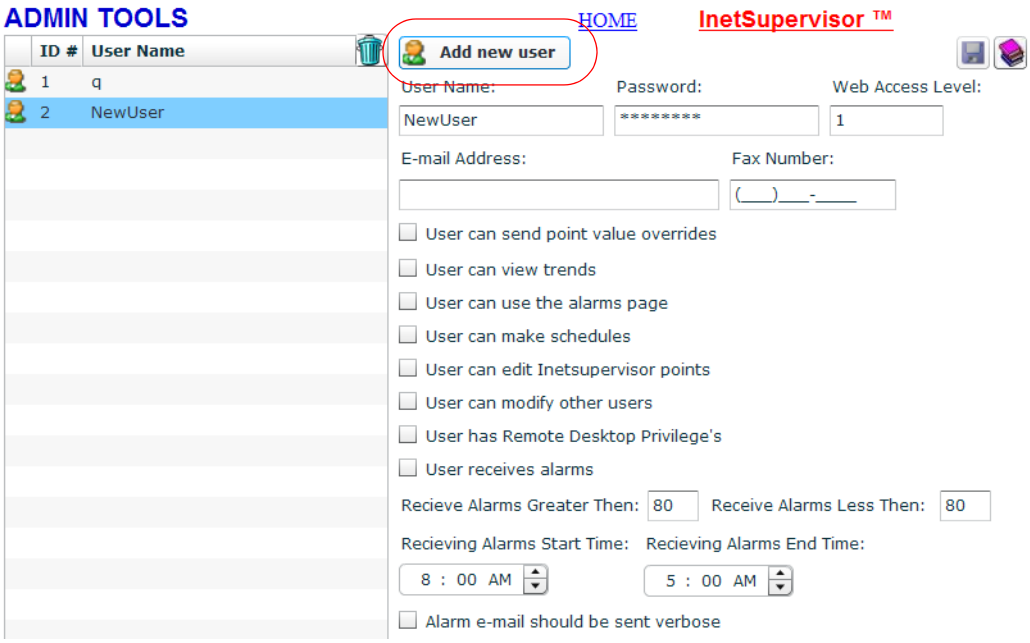


1. Select a user from the list on the left.
2. The profile of the user will detail on the right. User Name is the name of the user used to login and record usage. Password is used to login, this must have a length of 4 or more and needs to be unique. Web Access Level is used to restrict the user from viewing web pages. E-mail is the email address of the user used to send notifiable alarms, this can be a alpha numeric pager or phone that accepts text. Fax Number this is the fax number of the user. The check boxes are used to modify what web based editors or viewers the user is allowed to access.
   - User can send point value overrides - Check to allow the user to send point overrides
   - User can view trends - Check to allow the user to use the Trend Viewer
   - User can use the alarm page - Check to allow the user to use the Alarm Viewer
   - User can make schedules - Check to allow the user to use the Schedule Editor
   - User can edit Inetsupervisor points - Check to allow the user to use the Point Editor
   - User can modify other users - Check to allow the user to use this editor

- User has Remote Desktop Privilege's - Check the allow the user to access to the web based VNC connection (if used by the server)
- User receives alarms - Lets Inetsupervisor send alarms to the user
- Alarm e-mail should be sent verbose - If checked, Inetsupervisor will send the alarm text in full. If not check, Inetsupervisor will send the alarm text abridged.

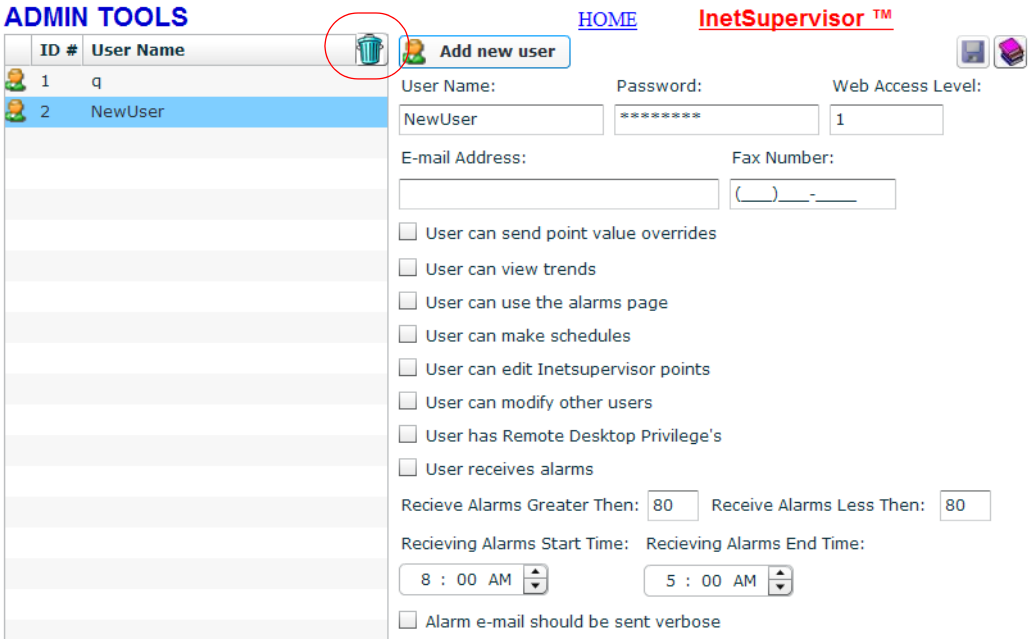
If the user is to receive alarms the you need to setup what and when alarms are going to be sent to the user. You can set a range of alarm levels for the user to receive by setting the greater then and less then levels. You can also set the time range that the user will receive alarms. When done click the save button.

3. To add a new user click the add new user button on the top of the editor. The editor will add a



new user and select that new user. You may then modify the user as address above. When done click the save button.

4. To delete a user select the user to be deleted and click the delete button on the top of the list



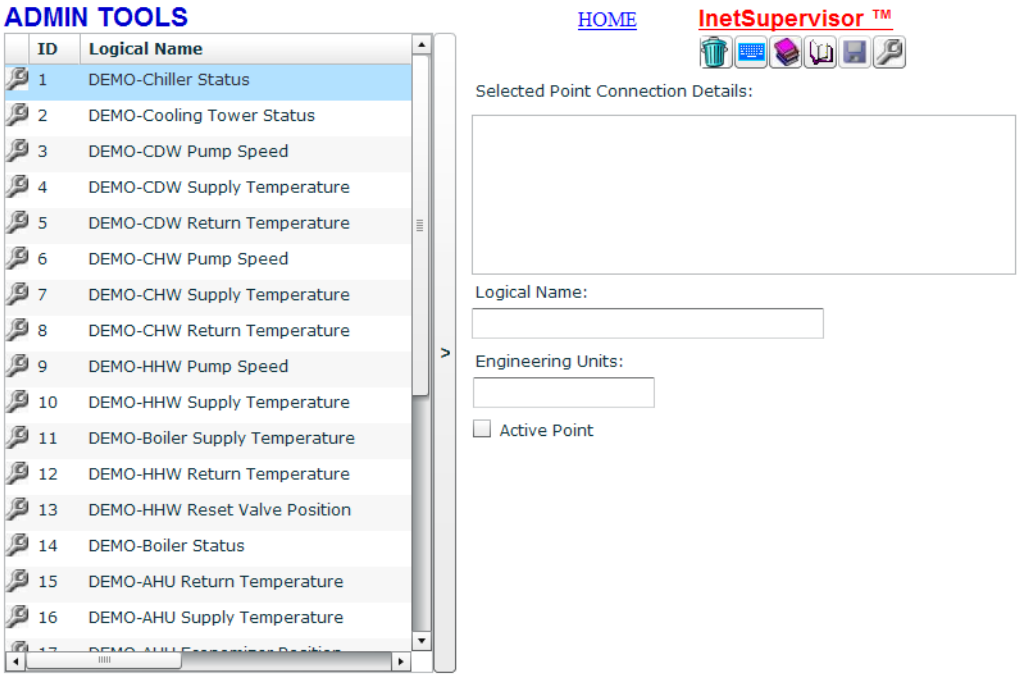
8.12 Admin Tools

The Admin Tools is a portal used to load most of the web-based tools described here from one web-page. There is no authentication to access the page but each viewer or editor has it's own internal security.

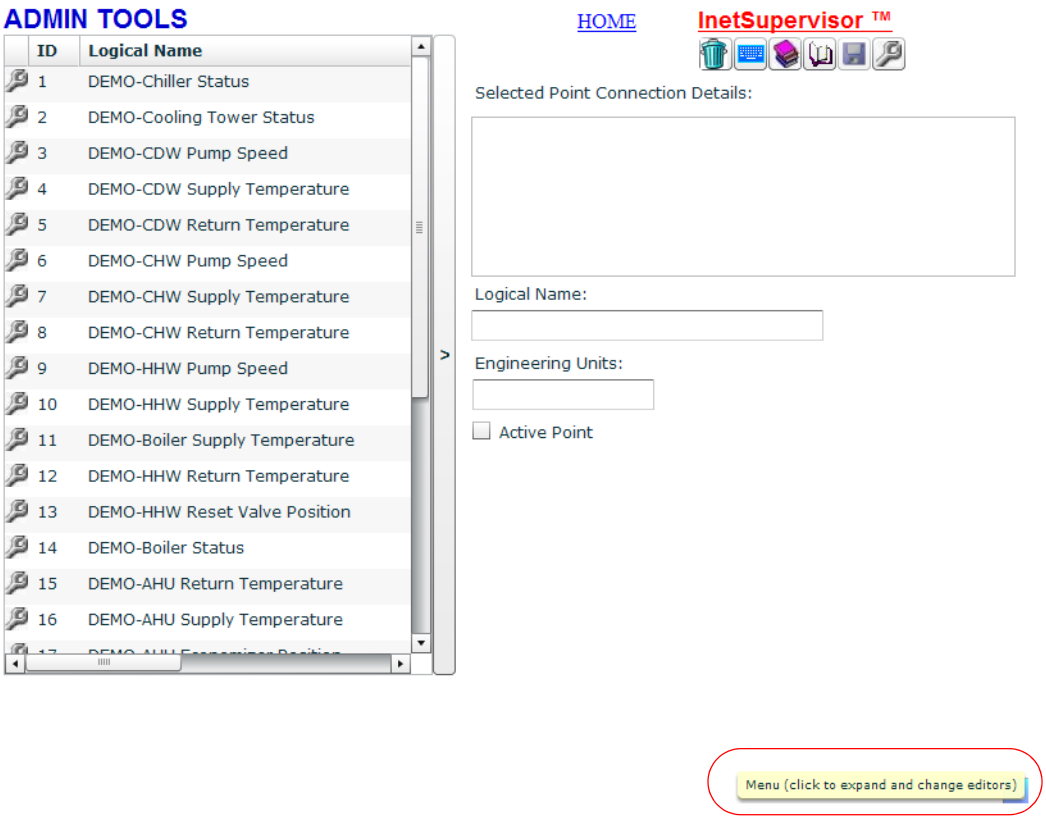
To use the Admin Tools page

1. The page has a header on the top with a menu to choose which editor or viewer to use. Click Configuration Editors to see the menu.

2. Click on the tools to have it load. When the desired tool has been chosen the tools will load and the menu will minimize to a small square on the bottom right of the tool.



3. If you wish to change tools, click the minimized menu and it will return. and you can choose a new tool from the menu.



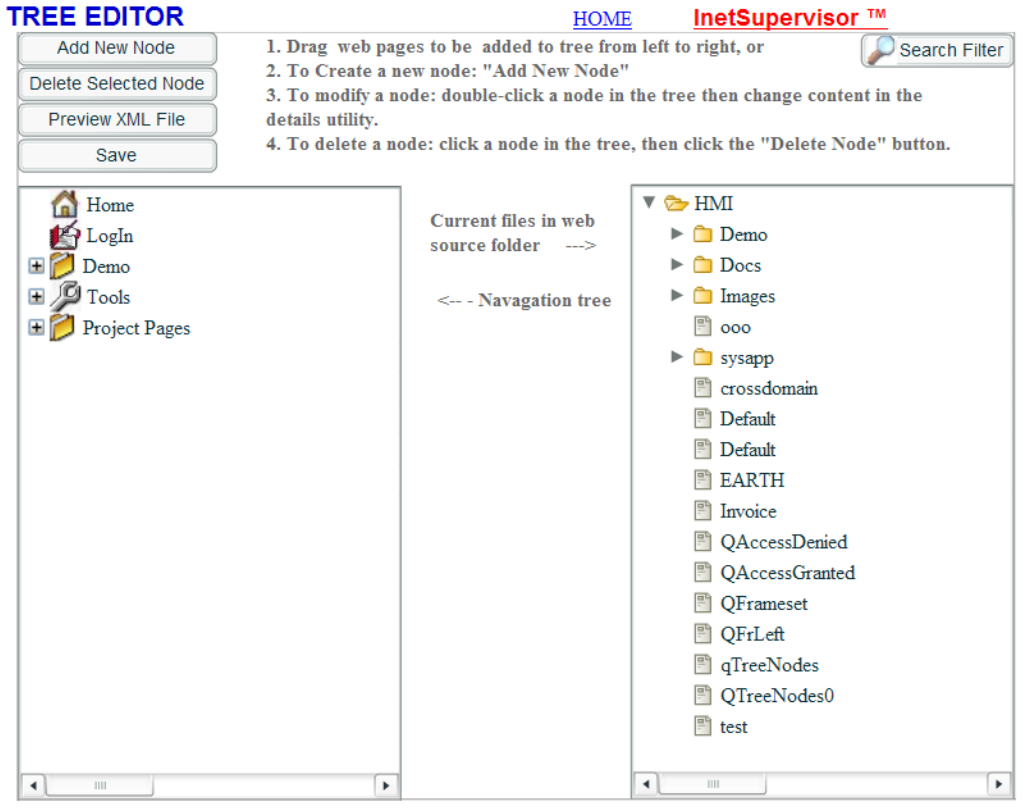
9.0 Navigation Tree

This section will explain how to add, delete or change the file's and structure of the flash navigation tree supplied with InetSupervisor. The flash tree receives it's structure from an xml file named QTreeNodes0.xml. XMLNotepad is the preferred xml editor to maintain a well formed xml file. This editor is available at www.InetSupervisor.com, click Download, other utilities, XML Notepad xpsetup.exe. The navigation tree can be modified by a pre-loaded configuration utility located under Tools. This interactive utility will build the xml file based on your modifications and upload the updated file to QTreeNodes0.xml. Both tools can be used to make changes to the navigation tree and are explained below.

9.1 Flash Tree Editor Utility

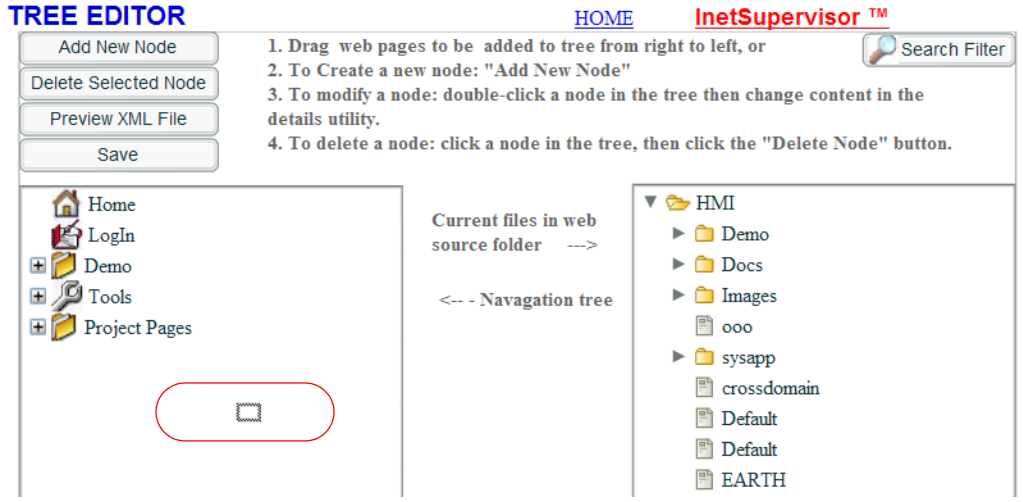
In the address bar of Internet Explorer (at the LonServer or any other computer attached to the network), type http://127.0.0.1/hmi/. You may have to substitute 127.0.0.1 with the name of the webserver computer or its IP address. The login window will open. The user level must be 9 or greater. You can edit Login information via the WebUsers Editor. To use the Navigation Tree Editor:

1. Click Tree Editor under Tools. When the editor opens you will see 2 trees. The tree on the

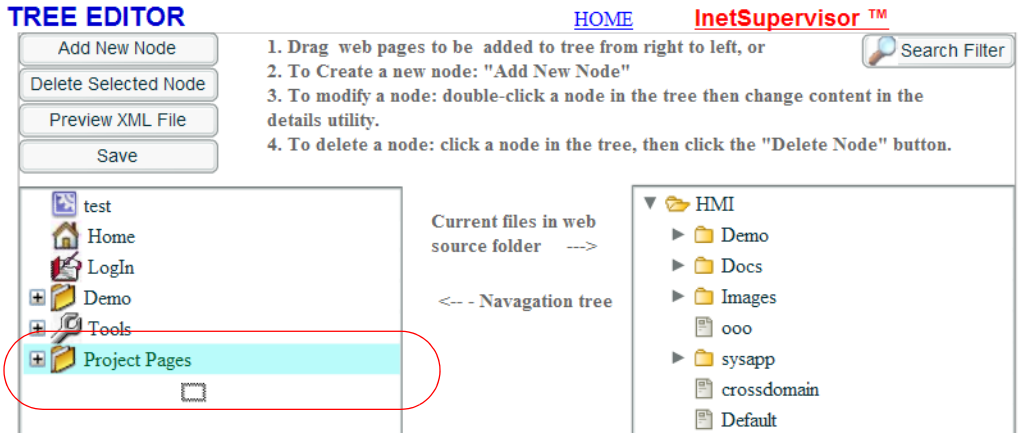


left is the current Navigation Tree setup. The right side is a copy of the current web directory.

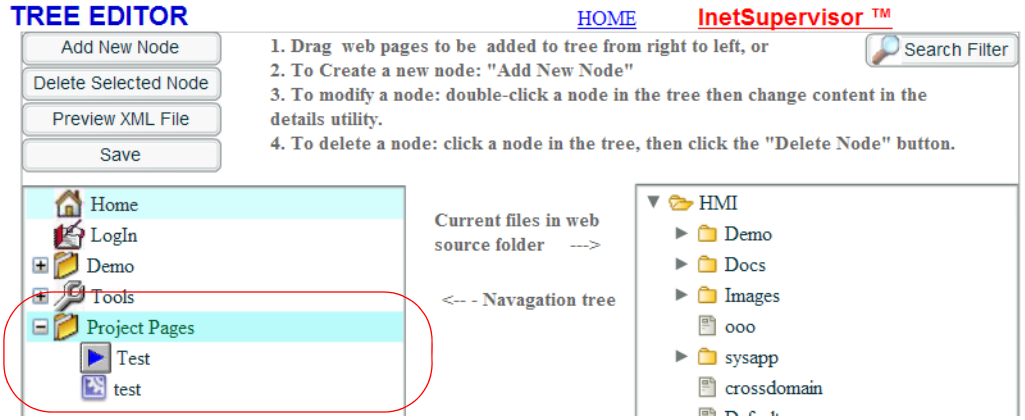
2. To add web pages to the nav tree from the web directory. Drag the folders or files to be added from the right side tree and drop them into the left side tree



3. The new page will automatically placed on the top of the tree. To modify the location of the new page each node may be “dragged” to it’s new location. Left click, hold and drag the new page down until the desired folder is highlighted with no red lines under or over the highlight.

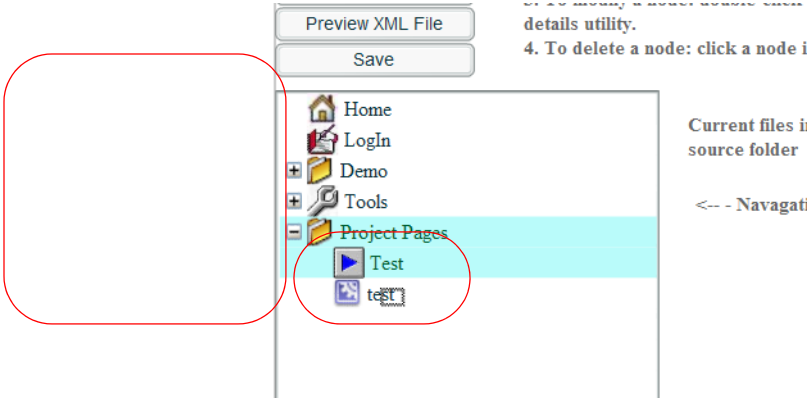


When you “drop” the new page it will no longer show at the top of the tree. If you expand the folder you will find the new page as a child file of that folder.

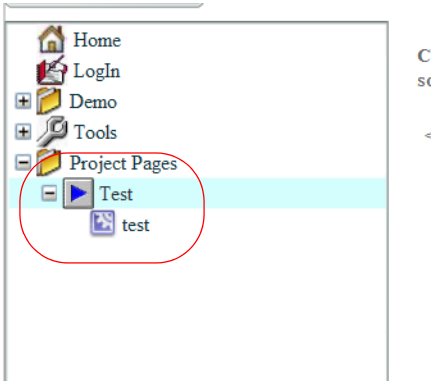


4. The same process can be used to make a file into a folder by adding child files to an existing file. Click, hold and “drag” the new page over another page until it is highlighted and

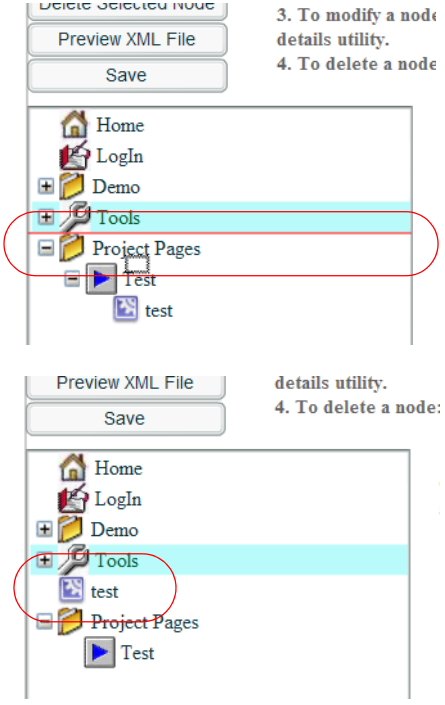
there are no red lines under or over the other page. When you “drop” the new page it will relo-



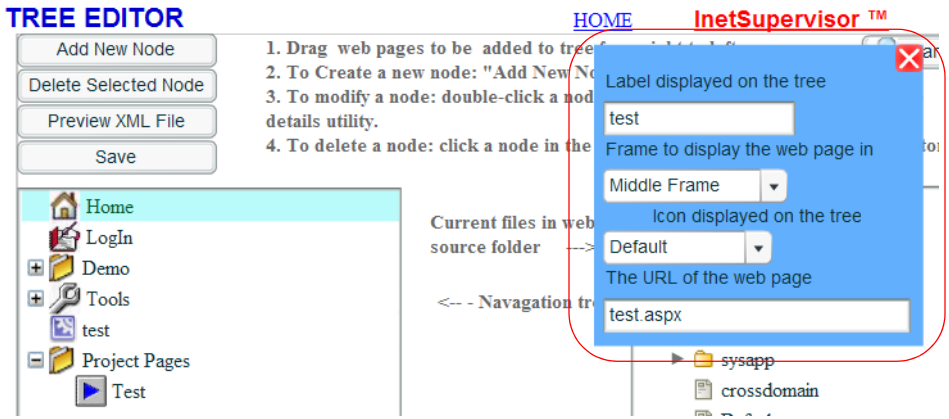
cate as a child file of other page.



5. Any page may be moved to a new location in between other pages or folders by “dragging” the page to be moved until a red line is shown between the two nodes at the “drop” location.

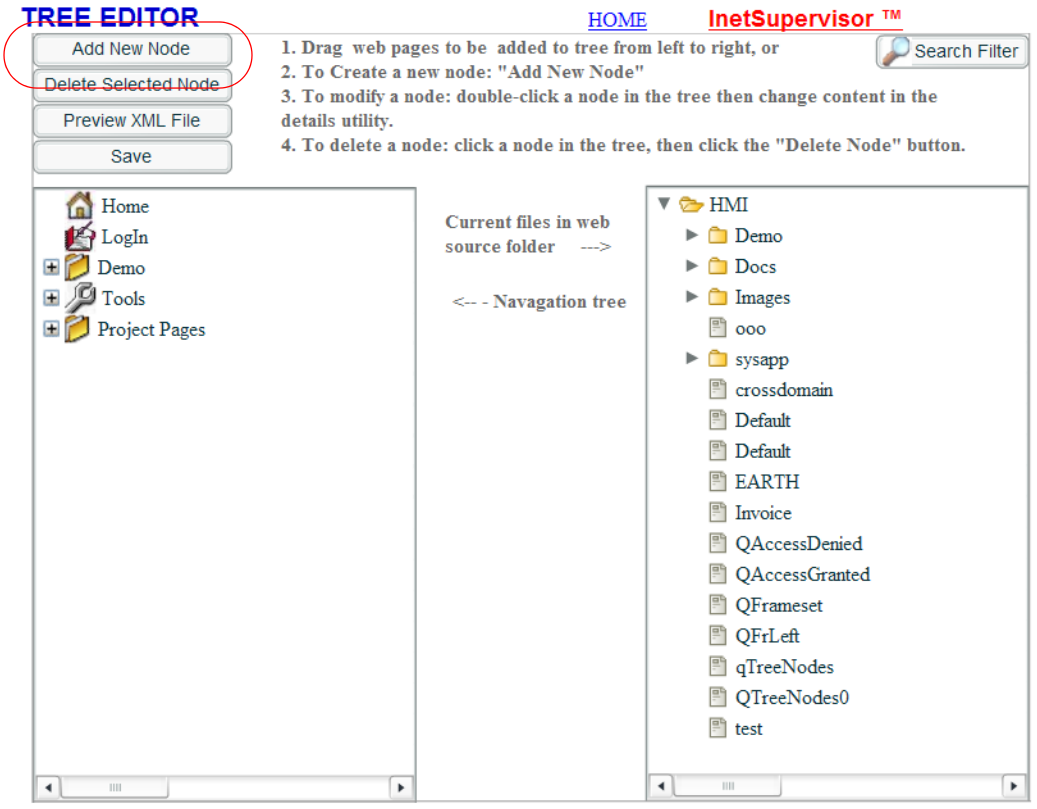


6. To modify a page double click the page to be modified. A properties editor will show on the right side. You can then fill out the information in the Label, URL, Icon, and Open In fields.

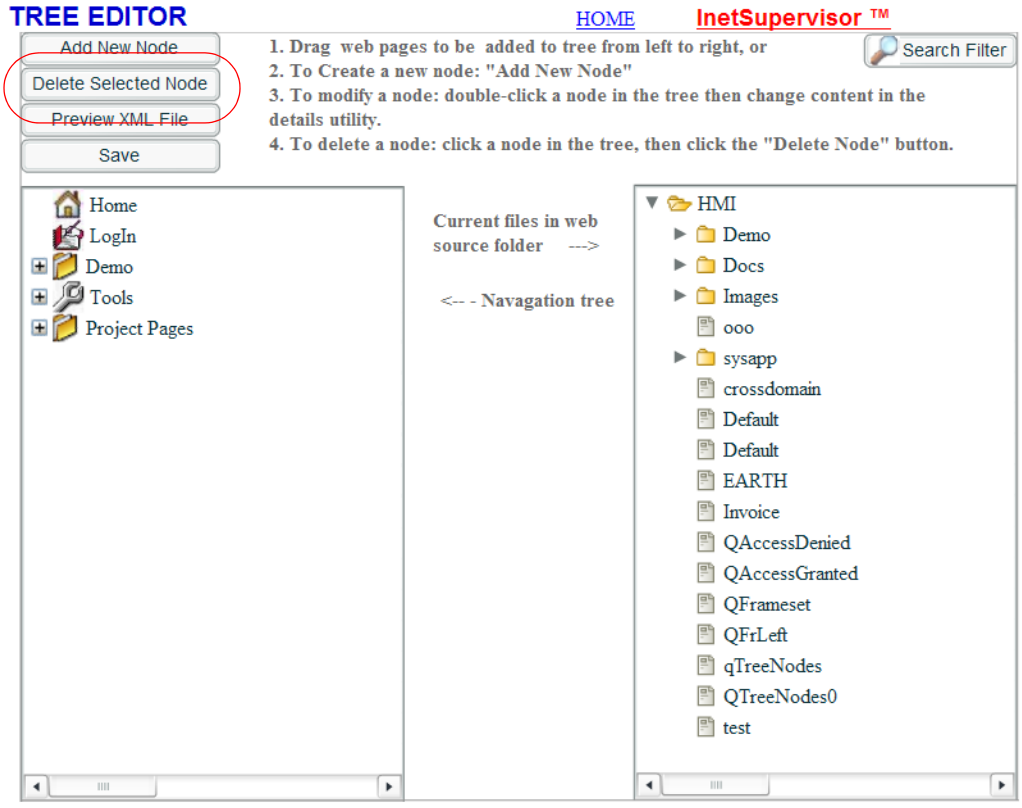


The Label is the displayed name on the tree. The URL is the web page that will be jumped to when the Label is double clicked, this property is relative to the web site root folder HMI when using pages from the website and when linking a separate web site the URL must have the http:// prefix such as a link to your company web situate would be http://www.mycompany.com. This should be left blank if the node is not going to hyperlink to a web page or site. Icon is the icon to be displayed next to the Label, Default will display node001 if it is a node and folder001 if it becomes a folder. If the chosen icon is anything other than Default then the displayed icon will not transform when changed from a file to a folder or folder to file, for a list of available icons see the flash user guide. Open In is the frame the URL defined page will open into. The available options for the Open In attribute are Middle Frame to open in the standard frame on the right of the tree, No Link disable the linking of the page, New Page to open a new web page, and New Browser to open a new browsing window, and Left Frame to display in the left side frame that houses the nav tree and communicator . No Link should be chosen when the node will not be used for hyperlinking to a new web page or site.

7. To add a new page that is not part of the current web site, click the Add New Node button. A new page will show on the top of the tree and can be modified in the same way as above.

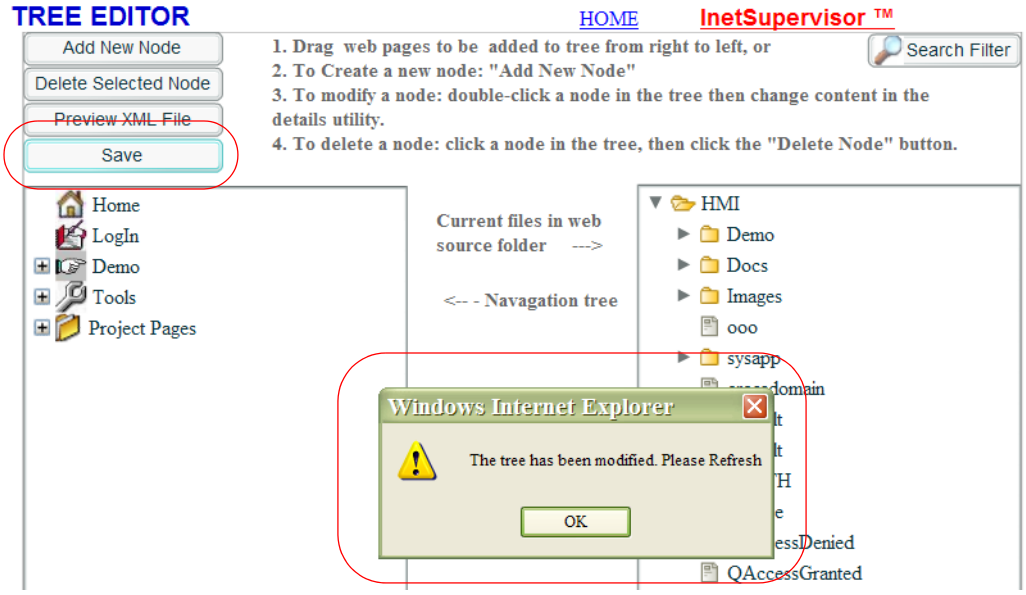


8. To delete a page click to highlight the page to be deleted and click the Delete Node button. If a folder is deleted then all of the child files under it get deleted also.



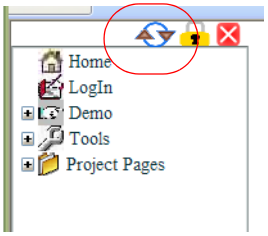
9. The Preview XML File button can be used to view the modified xml file before it is updated.

10. When finished modifying the tree, the Save button will update the tree xml file to the modified version. When the xml file has been successfully updated a pop up box will display with a suc-



cess message.

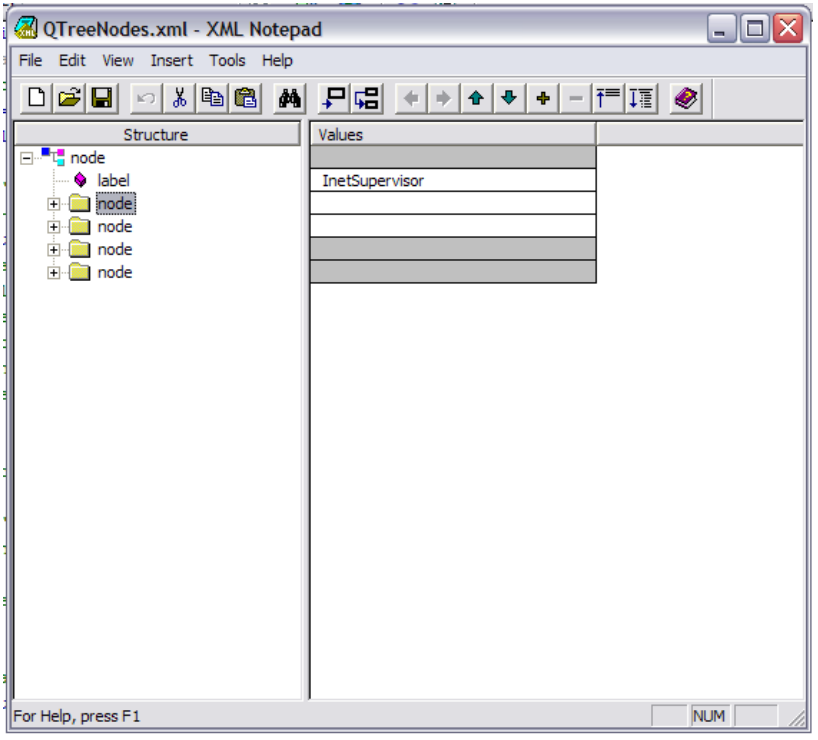
11. To test the updated tree refresh the browser(F5) or click the refresh button on the nav tree to view modifications take effect.



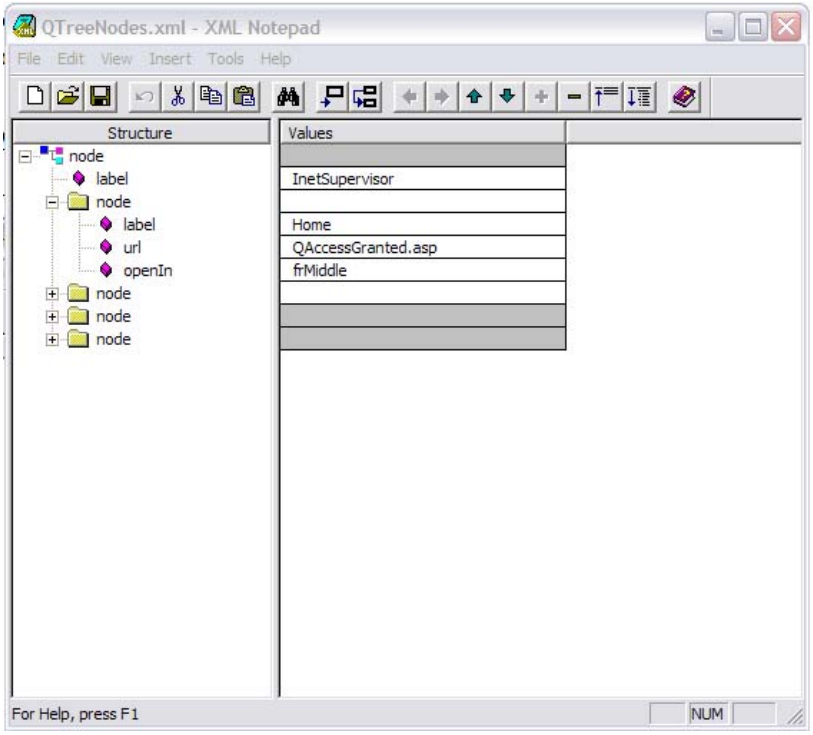
Notes: If you wish to make a node the first node you must “drag” it to the second position, then “drag” the current first node under the node you wish to be the first. If you wish to make a node the last node you must “drag” it to the second to last position, then “drag” the current last node above the node you wish to be the last.

9.2 XML Notepad

1. Open file named QTreeNodes.xml located in the C://wwwroot/hmi/ folder with XMLNotepad editor

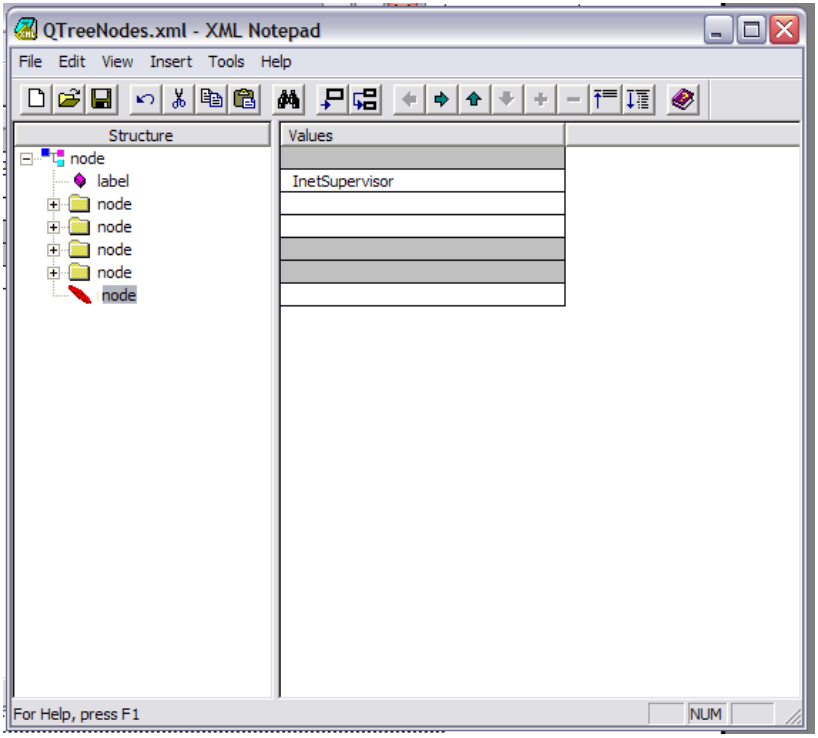


2. Expand the first node folder. Notice data is listed in the values box to the right of the nodes attributes.



3. Do NOT modify the first node or it's label InetSupervisor. This node does not show and is necessary for the tree structure.
4. The attribute label defines the display on the tree, url is the webpage a double click will link to, when linking a separate web site the URL must have the http:// prefix. openIn is the frame the url defined page will open into. The available options for the openIn attribute are frMiddle to open in the standard frame on the right of the tree, frLeft for the frame the tree is in, _top to open a new web page, and _blank to open a new browsing window.
5. To move a node hierarcy up or down you may click and drag the node to a higher or lower location.
6. To delete a node click it's left side icon and press delete or right click and cut.

7. To add a new node right click the last node and mouse to Insert, Element. Type in node.



8. You may now right click the new node and mouse to Insert, Attribute and add the attribute's. Type the information in the Values box, use the row directly to the right of the attribute**.**

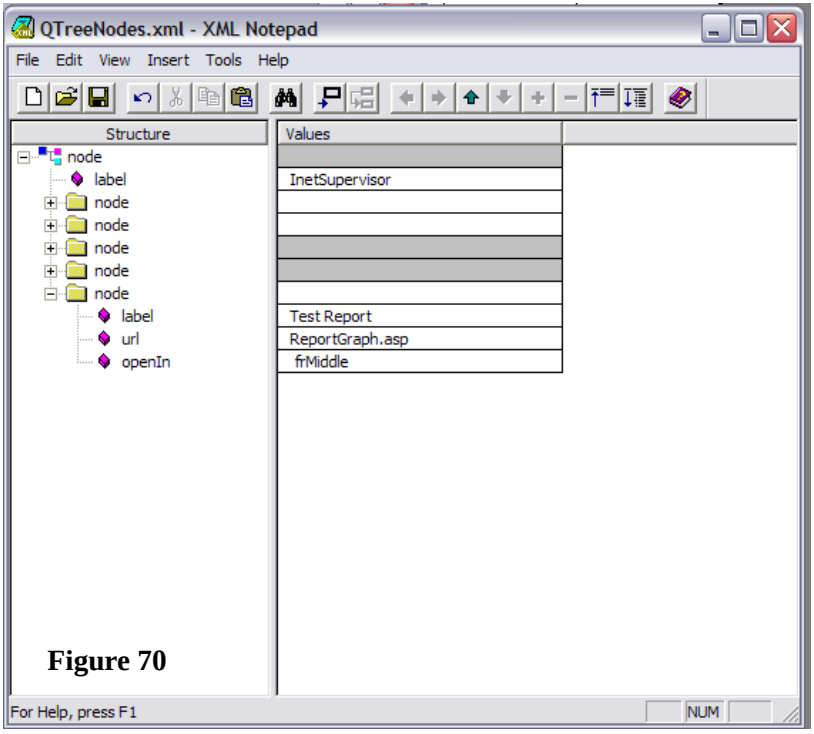
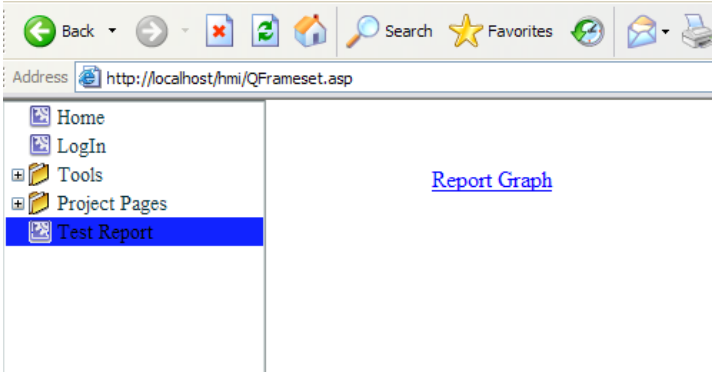


Figure 70

9. Save the xml document in the same location and test new tree.



Important consideration are all attribute and element names are case sensitive. All element's must be named node. If the element is not to have a web page associated with the double click you do not need to assign the url and openIn attributes. You may right click a node and mouse to Duplicate to speed up the tree making process. The attribute ICON may be added to assign a custom right side icon to the file or folder. If the attribute icon is used then the displayed icon will be the chosen icon and not transform when changed from a file to a folder or folder to file, for a list of available icons see the flash user guide.

10.0 Customized Database Query's

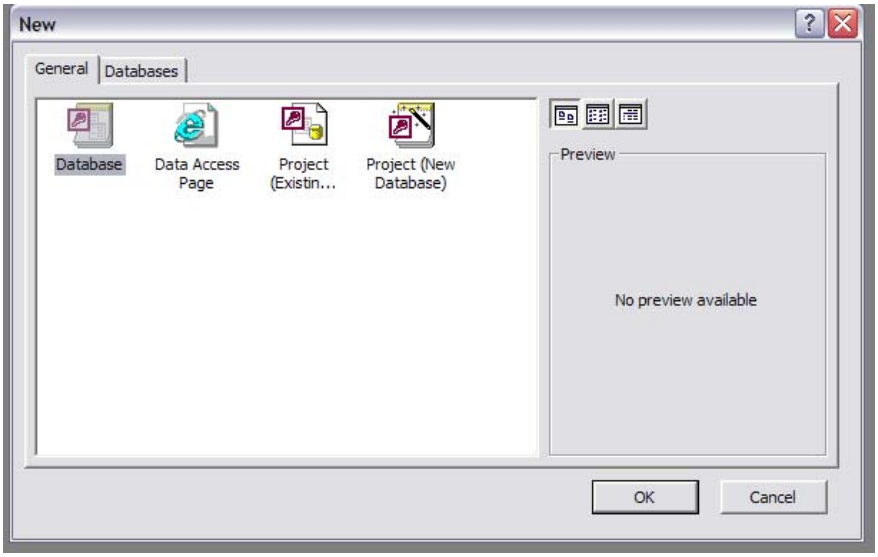
InetSupervisor stores all of the information it collects in SQL Server databases. Since the database's are open the database tables can be manipulated via 3rd party software programs such as *Microsoft's Access* or *Excel*. Using these or other programs you can set up customized functions (i.e. plant efficiency calculations, malfunctioning equipment, ...).

10.1 Access

To connect with *Microsoft's Access*

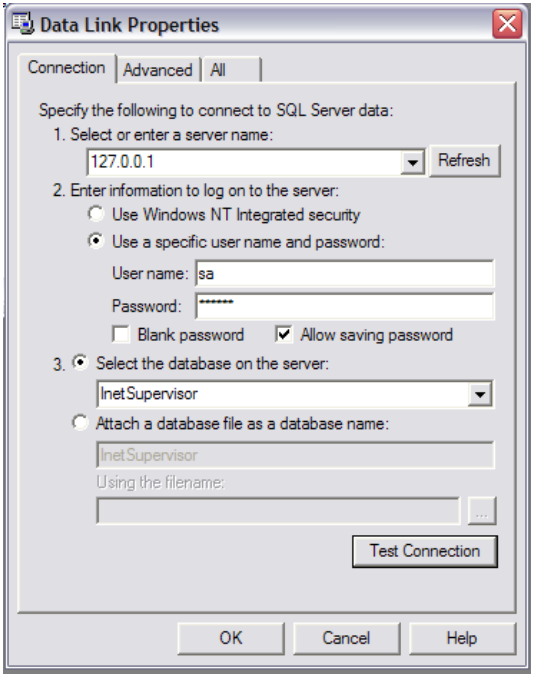
1. Start *Microsoft's Access*

2. Click File, then New. When the project wizard shows click Project(New Database)



3. This will prompt to save a **.**adp file. This may be saved in any location with any name you wish to give.

4. The database wizard will ask for the SQL Server to use, type the address of the sever computer. Type in the SQL LoginID and Password this is sa for login and the default password is quark~. From the drop down box choose the database you wish to receive data from.



11.0 Wireless Air Balance

There are a number of Pocket PC devices that have EIA 802.11B networking available or wireless service via the cellular network. Our favorite device is the iPAQ Pocket PC from Compaq/HP (on the web at www.hp.com). The iPAQ Pocket PC supports PC cards as well as CF. There are a number of cellular carriers that can enable an iPAQ Pocket PC to access the internet via a built-in Internet Explorer.

To use a Pocket PC for air balance one needs to create an asp web page with read and write capability that is formatted for a 320 x 200 pixels screen. Sample pages are installed by the HMI Web setup application. These pages are prefixed with "ce-" in the file name. The LONSERVER PC (a notebook computer or a workstation) will be attached to the LonWorks network and to a wireless EIA 802.11B router (i.e.LINKSYS BEFW11S4). The LONSERVER will host asp pages and serve the Pocket PC via a wireless service (cellular service or 802.11b local wireless network). To override network variables and configuration properties you can use the QOverrides.asp page or use Flash components with override capabilities.

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