SYSTEMS ASSOCIATES, INC.

Energy Management Systems

CONTROL IQ™

User Guide

ENERGY MANAGEMENT SYSTEMS

CONTROLIQ User Guide

500 Lehman Ave.
Bowling Green, OH 43402
Phone 800-433-9855 • Fax 419-352-3299

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Chapter

1

Chapter 1 Introduction

This chapter provides an overview of the **CONTROLIQ** *User Guide.*

Welcome to **CONTROLIQ** User Guide. This guide gives users the information needed to take full advantage of the tools provided in **CONTROLIQ**, an intuitive and easy-to-use energy management application. This chapter introduces the rest of the guide and serves as a jumping-off point to learning the ins and outs of the **CONTROLIQ** interface.

CONTROLIQ Energy Management Systems provide synergy in multi-faceted system architecture while permitting the freedom to utilize the best possible technology for the application regardless of brand. **CONTROLIQ** is a web-based solution that offers extreme flexibility, portability and scalability with customizable screens and user-access based control presentation. **CONTROLIQ** offers the owner the technology necessary to address the complex nature of today's HVAC and lighting systems, while presenting the user with simple navigation and a comfortable interface.

About This User Guide

This guide is a resource and manual for the operation of the **CONTROLIQ** interface. Users can review the various functions and features of the application as well as its proper usage. It is not the intent of this guide to be read from beginning to end, but rather is designed as a targeted reference tool. The Table of Contents and Index provide quick and easy access to information that supplies direct, systematic instructions. However, many chapters in this guide do build upon one another. In those instances, references provided allow users to study the relevant information at their convenience.

Who Should Read This User Guide?

The **CONTROLIQ** User Guide is for all users of the application. Because the interface provides user-specific access to the application, not all areas of this guide will hold relevance for every user. For this reason, the guide's organization centers on the functional layout of the interface. System Administrators will find information regarding the setup and maintenance of the application while typical users will be able to access how-to information on common tasks. Users should review this introductory chapter to determine which chapters hold the most pertinent information.

How This User Guide Is Organized

This section provides a brief overview of the organizational structure of this guide.

Chapter 1: Introduction
This introduction provides users with a jumping-off point for learning the **CONTROLIQ** interface. Chapter organization as well as commonly used icons gives users the tools needed to access information contained within to maximum effect.

Chapter 2: Getting Started
Chapter 2 offers a general overview to **CONTROLIQ** by examining interrelations between components, hardware controllers and programming logic of the Energy Management System. This chapter paints the big picture of how to utilize **CONTROLIQ** by presenting features, minimum platform requirements, installation and configuration as well as outlining the various levels of program support.

Chapter 3: Program Layout
Chapter 3 tours the application interface supplying users with a map for navigation and utilization. This chapter instructs users on the basics of interacting with the application and provides subsequent chapters for reviewing details on specific topics.

Chapter 4: System Setup
Chapter 4 assists the System Administrator responsible for implementing and maintaining their Energy Management Systems. It allows System Administrators to define their Energy Management System as well as add, maintain and remove User access rights.

Chapter 5: Activities
Chapter 5 delves into working with Setpoints, Overrides and Alarms.

Chapter 6: Tabular Points
Chapter 6 covers the various ways of displaying Tabular Points within the **CONTROLIQ** application, using predefined filters, such as Groups or Setpoints, as well as a means of creating custom, user specific views known as Favorites.

Chapter 7: Views
Chapter 7 explores the many graphical views provided by **CONTROLIQ**. These views can be system default or custom created for the application.

Chapter 8: Reports
Chapter 8 presents the available reports within **CONTROLIQ**. Reports come in three categories – Historical, Live Trend and Administrative – and are available for export in several formats.

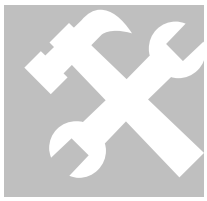
Chapter 9: Schedules
Chapter 9 outlines working with schedules. Schedules grant a high level of control and automation over the entire Energy Management System. Schedules can be of the Standard, Exception or Holiday variety.

Icons Used In This User Guide

The icons listed below and used throughout this guide alert the reader to important notes. The meaning of each icon is presented here for easy identification.

Important Information

This icon marks important text related to the current topic. User should pay close attention to these sections.



How-To

This icon signifies a systematic walkthrough of the steps necessary to complete a specific task.

Warning

Information presented with this icon deals with matters that affect the operation of **CONTROLIQ** and the entire Energy Management System.

Further Reading

This icon signifies additional information regarding a specific topic that, while not critical to the operation of **CONTROLIQ**, may be helpful.

Where To Go From Here?

This introductory chapter gives readers a starting point in their journey toward mastering **CONTROLIQ**. Most users can now proceed to the chapter covering the specific topic of their research. Systems Administrators may be more interested in studying the big picture presented in **Chapter 2 Getting Started** before proceeding to the setup and maintenance of the system and its users in **Chapter 4 System Setup**. Users new to **CONTROLIQ** should first familiarize themselves with the program interface in **Chapter 3 Program Layout** before proceeding on to other chapters.

Chapter

2

Chapter 2 Getting Started

This chapter introduces users to the basic form, functions and features of **CONTROLIQ**.

This chapter will give users an overview of the structure of **CONTROLIQ**. Beginning with the big picture of **CONTROLIQ**'s role in the complete Energy Management System, users will explore application features, minimum software requirements, installation, system setup, user privileges and program support.

The Big Picture

CONTROLIQ is only one part of a larger Energy Management System. The entire system encompasses a variety of software and hardware elements that may expand beyond a facility's boundaries. Each element plays a specific role in the larger process of energy management. These elements fall into three categories: Input/Output (I/O) Hardware, **CONTROLIQ** Processor and **CONTROLIQ** Interface.

I/O Hardware

I/O Hardware incorporates various Controllers and numerous hardware Components. I/O Hardware may be pre-existing or part of a new installation. Installed at various locations throughout a facility, Controllers and Components are often associated with specific locations, such as a meeting room or lobby area.

Controllers contain the pre-set rules that read information from and/or control one or more Components. Controllers come in many brands. Some of the more common follow:

- ABB
- ASIC/1 & ASIC/2
- MODBUS
- Opto-22
- Photon Lighting Boards
- Scientific Controls (Scientific Atlanta)

Components are individual devices that make up the majority of an Energy Management System. Each Component has a task linked to a specific Controller that determines its actions. Common Components include:

- Air Flow Monitor
- Damper Actuator
- Low Limit Switch
- Relay
- Temperature Sensor
- Valve Actuator
- Variable Frequency Drive
- VAV

The installation, setup and maintenance of Controllers, and their Components, is beyond the scope of this guide. Please contact your Controller provider for more information.

CONTROLIQ Processor

The **CONTROLIQ** Processor contains two elements: a data storage system, or Database, and a software central processor, or 'brain', also known as CIQProc. The Database contains all the records and logs that represent data from Components and Controllers in addition to many other elements. CIQProc is a software application that processes all the information in the Database and interacts with the numerous Controllers to ensure smooth operation of the entire Energy Management System. CIQProc continuously communicates with Database and Controllers.

CIQProc is proprietary software developed by SAI. CIQProc is a standalone application that runs on a server located at the facility to allow communication with each of the Controllers and Components. A separate manual details CIQProc installation, setup and maintenance.

CONTROLIQ Interface

The **CONTROLIQ** Interface, simply called **CONTROLIQ**, is a browser-based application that allows users to interact with CIQProc and therefore relay information to and from the Database, Controllers and Components. **CONTROLIQ** is an intuitive and easy-to-use application, acting as the main portal through which users may change Setpoints, acknowledge Alarms and perform many other activities. **CONTROLIQ** displays in a web browser, like Microsoft Internet Explorer®.

Features

The following topics introduce users to the basic features of **CONTROLIQ**.

System Setup

SAI personnel manage the initial setup and deployment of **CONTROLIQ** and its subordinate systems at the time of installation. System Administrators use **CONTROLIQ** to add, delete and maintain EMS Points and Users. For more information, see **Chapter 4 System Setup**.

User Privileges

CONTROLIQ allows System Administrators to grant varying levels of access to each User. The level of access determines functional features based on User login. This security feature prevents users from accidentally altering settings in areas beyond their responsibility. For this reason, the **CONTROLIQ** User Guide focuses on functional operations. It allows users to locate the information most relevant to their daily duties, regardless of access level.

Users should be aware that information presented within this guide might be on topics beyond the scope of their access level. For more information, see **Chapter 4 System Setup**.

Managing Points

CONTROLIQ lets users maintain Setpoints, acknowledge Alarms and apply Overrides for any Point in the system. Points viewed in tabular listings are easily searchable and filterable. Custom filters, called Favorites, give users instant access to needed information. For more information, see **Chapter 5 Activities** and **Chapter 6 Tabular Points**.

Graphical Views

CONTROLIQ presents real-time data superimposed on representational images. This format allows images to display the relevant data from Components of a device, such as AHU, chiller, boiler or tower. **CONTROLIQ** is also capable of displaying facility floor plans with live temperature readings. **CONTROLIQ** includes several default graphical displays in addition to custom images designed by SAI. For more information, see **Chapter 7 Graphics**.

Reporting

Data collected from Components is stored in the Database. Database Historical information displays in line graphs for review. In addition, **CONTROLIQ** presents real-time data in Live Trend graphs. System Administrators have custom reports on system usage and trends. Users can export all reports in several formats. For more information, see **Chapter 8 Reports**.

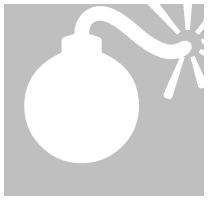
Scheduling

Scheduling grants control over turning subsystems on or off automatically. Scheduling is at the heart of building automation. Users create and maintain Standard, Exception and Holiday Schedules. For more information, see **Chapter 9 Schedules**.

Minimum Requirements

The following are the minimum requirements for running **CONTROLIQ** on a standard Personal Computer (PC):

- Internet Explorer 6 Service Pack 1
- VGA monitor capable of displaying 1024 X 768 resolution
- Standard keyboard and mouse
- Speakers capable of playing audio output
- High-speed internet or local intranet connection



Browser Settings

Disable internet pop-up blockers on PCs planning to run CONTROLIQ. CONTROLIQ application windows may fail to load properly if pop-up blockers are not disabled. Also, always install the latest security releases for Internet Explorer. Further, if internet security settings are set to High, CONTROLIQ application windows may fail to load properly.

Installation

As a web-based application, there is no installation required on a standard PC other than the elements listed under Minimum Requirements. Typically, SAI personnel manage the initial setup and deployment of the web server responsible for delivering **CONTROLIQ**. SAI provides a URL or IP address that launches the **CONTROLIQ** application. Because of this, there is little or no installation involved before **CONTROLIQ** can run on a PC.

Application Support

CONTROLIQ has several avenues for application support.

User Guide

This User Guide is the best place to start when looking for information regarding **CONTROLIQ**. The Table of Contents and Index allow for quick and easy navigation. The guide presents subject matter in clear and concise language addressing all the features of this application. Upon installation of the complete **CONTROLIQ** Energy Management System, SAI provides a digital copy of this guide. SAI grants permission to print this guide for personal reference. As SAI makes product updates available, an updated version of this document will reflect those changes. The Document Revision Date is located on page ii of this guide. Users can find the most up-to-date version of this document at www.controliq.com.

On-Line Support

CONTROLIQ contains built in Help features accessible from the main navigation page. This Help feature provides quick access to key information without the need to exit the application. Users can also find more information at the **CONTROLIQ** website: www.controliq.com.

Technical Support

Telephone technical support and on-site visits require active service agreements. To check the current state of a service agreement, please contact SAI at 800-433-9855.

What is Next?

This chapter provided the big picture regarding **CONTROLIQ**. Most users can now proceed to the chapter covering the specific topic of their research. System Administrators may proceed to the setup and maintenance of the system and its users in **Chapter 4 System Setup**. Users new to **CONTROLIQ** should first familiarize themselves with the program interface in **Chapter 3 Program Layout** before proceeding on to other chapters.

Chapter

3

Chapter 3 Program Layout

This chapter gives users a tour of the **CONTROLIQ** *Login Window and Main Application Panel.*

The **CONTROLIQ** interface is an easy to navigate tool for accessing information regarding the Energy Management System (EMS). All areas are accessible from a single Control Panel located on the Main Application Portal (MAP). The MAP provides a centralized graphical display of the EMS status. Explore each of the elements located on the MAP in this chapter following a summary of the login process for **CONTROLIQ**.

Login Window

CONTROLIQ enforces security through the login process. Each user must first type a unique user name and password in the Login panel before **CONTROLIQ** grants access. This process ensures that users may only access appropriate functions within the application. **CONTROLIQ** tracks activities performed by users in the Database, allowing System Administrators to generate reports for productivity and accountability purposes.

Launching the Login Window requires the URL or IP Address of the web server delivering **CONTROLIQ**. This address is determined during installation of the EMS and provided by SAI. The typical method of accessing the Login Window requires users to type the designated address in the Address Bar of Internet Explorer.

Desktop Shortcut

Users wishing to use a Desktop Shortcut to launch **CONTROLIQ**, in a manner similar to other applications, can do so as well. To create the Shortcut, drag the web page symbol, located at the left end of the Internet Explorer Address Bar, to the PC's Desktop. Launch **CONTROLIQ** by simply double-clicking the new Shortcut.

Login Panel

The Login Panel, the left side of the Login window, contains the login fields and system status display. The first two elements in the Login Panel are the User Name and Password fields. Users login by typing the appropriate information into each field and then clicking the Log In button or pressing the Enter key on their keyboard. **CONTROLIQ** does not display the password when typing, for security reasons. Below the Log In button are four bars displaying specific status information.

The first status bar displays whether or not CIQProc is properly running and alerts users if there is a problem with CIQProc or its server. A green status bar with a checkmark indicates CIQProc is running properly while a red bar with a flashing caution symbol indicates it is down. If CIQProc is not functioning, an audible alarm will also sound. CIQProc is required to be running properly for **CONTROLIQ** to be fully functional. A separate manual details the functions of CIQProc. For more information on CIQProc's role in the EMS, see **Chapter 2 Getting Started**.

The second bar displays Alarm Status. The Alarm Status indicates if any EMS Points are in Alarm and whether or not any are acknowledged. A green status bar with a checkmark indicates no Points in Alarm. A red status bar with a flashing caution symbol indicates there are one or more Points in Alarm. If any Points are in Alarm, an audible alarm will also sound. Finally, an orange status bar with caution symbol indicates that all Points in Alarm have been acknowledged. Only users with proper access rights may log in and acknowledge Alarms.

The third status bar displays the system time of CIQProc in 24-hour formatting. If CIQProc is not functioning, this status bar instead displays the time CIQProc became unavailable. The last status bar displays the information from the main EMS Point. By default, this point is Outside Air Temperature, which determines the behavior of most other Points.

Main Application Portal (MAP)

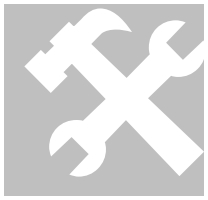
The Main Application Portal (MAP) comprises the main viewing area of **CONTROLIQ**. From this portal, users may access all areas of the application. Each of the following sections will introduce users to a specific feature of this interface. Functions unique to this interface follow below while features explored in their own chapters will reference the appropriate chapter number.

Application Header

The Application Header is located at the top of the MAP and contains several important links in addition to the property name. The first link is located at the left end of the Header and displays the logged in User Name. Clicking the User Name displays the Preferences window. This window provides a means to change the current user's Password or Default View.

CHANGE CURRENT USER'S PASSWORD

1. Click the underlined user name (left side of **Application Header**)
2. The **Preferences** window opens
3. Type the current password in the **Current Password** field of the **Preferences** window
4. Type the new password in the **New Password** field
5. Re-type the new password (same as #4 above) in the **Confirm Password** field
6. Click the **OK** button



CHANGE CURRENT USER'S DEFAULT VIEW

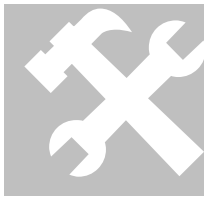
1. Click the underlined user name (left side of **Application Header**)
2. The **Preferences** window opens
3. Click the dropdown arrow to open the **New Default View** list in the **Preferences** window
4. Click on the item to become the **New Default View**
5. Click the **OK** button

The Property Name follows the current User Name link. To the right of the Property name is the Help link. Click this link to display the on-line Help Menu. The last link to the right is the Log Out link. Click this link to log out of the application and display the Login Window.

System Status Tab

The System Status Tab is located below the Application Header, near the top of the MAP. This Tab displays various colors that indicate the status of Points and CIQProc. A green Tab indicates all Points are normal and CIQProc is running properly. A red Tab indicates one or more points are in Alarm with the actual number of Points in Alarm displayed above the Tab. A red Tab with the words **SYSTEM IS DOWN** indicates CIQProc is not functioning properly. An audible alarm sounds whenever the System Status Tab is red. An orange Tab indicates all Alarm Points are acknowledged with the actual number of acknowledged Alarms displayed above the Tab.

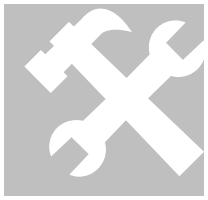
Users can manage Points in Alarm with the System Status Tab.



DISPLAY/HIDE ALARM POINTS

1. Click the **System Status Tab** when red or orange to display Alarm points
2. Click the **System Status Tab** again to hide Alarm points

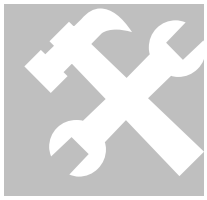
For more information on acknowledging Alarms, see **Chapter 5 Activities**.



SHOW ALARM DATA

1. Right-click the **System Status Tab**
2. Click **Show Alarm Data** on the pop-up menu

For more information on working with Tabular Points, see **Chapter 6 Data**.



SILENCE AUDIBLE ALARM

1. Right-click the **System Status Tab**
2. Click **Silence Alarm** on the pop-up menu

The audible Alarm will silence on the user's PC for ten minutes after which it will begin again.

Main View Area

The Main View Area comprises the graphical display in the center of the MAP. This area displays an image, such as an air handler, boiler, chiller, tower, etc, with live data for associated Points. For example, an air handler could display the Outside Air Temperature, Return Air Temperature, Mixed Air Temperature and Discharge Air Temperature. Users, with proper rights, access these Points directly from the image. For more information, see **Chapter 7 Views**.

View Tab

The View Tab is located on the bottom edge of the MAP. The Tab displays the name of the current View. Use this menu to navigate between the available graphical Views displayed in the MAP. For more information, see **Chapter 7 Views**.

Control Panel

The Control Panel, located on the left side of the MAP, is the main navigation tool for **CONTROLIQ**. The Control Panel is context sensitive based on the logged in user's rights. It will only display those items a user may access. For this reason, the Control Panel may look different depending on the user logged in. In all, there are five areas in the Control Panel, each area containing links to different activities and reports. While the list below contains all five areas, users should be aware they might not have access to some areas.

- **Activities –** Management of EMS Points, contains the following links covered in **Chapter 5**
  - Setpoints
  - Overrides
  - Alarms
  - Setup
- **Tabular Points –** Working with Tabular Points of **CONTROLIQ**, contains the following links covered in **Chapter 6**

  - All (W/ Filters)
  - Groups
  - Favorites

- **Graphics –** Allows navigation of Graphic View, contains the following link covered in **Chapter 7**
  - Views

- **Reports –** Generating EMS and Administrative Reports, contains the following links covered in **Chapter 8**
  - Historical
  - Live Trend
  - Administrative

- **Schedules –** Maintaining Building Automation Schedules, contains the following links covered in **Chapter 9**
  - Standard
  - Exception
  - Holiday

NAVIGATING WITH THE CONTROL PANEL

1. Click the Control Panel Tab
2. Click the desired link to open that activity

The Control Panel automatically closes after selecting the desired link. To close the Control Panel without clicking a link, click the Control Panel Tab again or click anywhere outside the Control Panel.

Chapter

4

Chapter 4 System Setup

This chapter delves into the process for defining, modifying and maintaining the underlying EMS through **CONTROLIQ**.

The **CONTROLIQ** Energy Management System (EMS) is defined by a collection of software and hardware elements and those users with access to those elements. System Setup allows System Administrators the ability to define Points and Users for **CONTROLIQ**.

Points

As discussed earlier, **CONTROLIQ** interacts with the hardware Components and Controllers to manage the system. **CONTROLIQ** defines this collection of elements as a series of Points. There are ten types of Points within **CONTROLIQ**. There is currently no limit to the number of individual Points allowed within **CONTROLIQ**.

The first five types of Points are always associated with a real-world Component.

Analog Input

An Analog Input (AI) is a measurement provided by a Component and read by **CONTROLIQ**. Typical AIs measure temperature, static pressure or water level. AIs are often useful in the programming of Logic and PID Points.

Analog Output

Analog Outputs (AO) represent the commands produced by **CONTROLIQ** for certain Components. Damper and valve actuators as well as variable speed drives often contain AOs.

Digital Input

A Digital Input (DI) reads the state of a Component. DIs possess one of two states: on or off. **CONTROLIQ** read DIs from photocells, pumps and fans.

Digital Output

Digital Outputs (DO) represent the commands produced by **CONTROLIQ** to change the current state of a Component. Lights, pumps and fans often contain DOs.

Meter

A Meter is a Point that counts the number of cycles of a specific DI. It can count, for example, the number of pulses from an electric meter.

The next five types of Points are specialized types of Points that may not relate to a real-world Component. These Points often represent control logic for determining Component and Controller behavior.

ASIC1

The ASIC1 Point communicates with the ASI Controller of the same name.

Logic

A Logic Point contains an equation of up to 20 variables. Logic Points often determine the behavior of Components using AO or DO.

Lookup

A Lookup Point translates a numeric input into a text message. In this way, an AI displays as SYSTEM NORMAL or other text message.

PID

A PID is a specialized form of Logic Point. This type of Point often controls dampers and valves.

Timer

The Timer Point provides a delay between operations. For example, use of a Timer delays the start of a fan to allow the dampers to open.

Users

The definition of a User, for the purposes of this Guide, is as an individual with the ability to log into **CONTROLIQ**. Users gain specific access rights within **CONTROLIQ** to determine those elements they may utilize. Each individual may receive different rights from those of other co-workers. There is currently no limit to the number of Users defined in **CONTROLIQ**.

Setup

SAI personnel manage the initial setup and deployment of **CONTROLIQ** and its subordinate systems at the time of installation. Future versions of **CONTROLIQ** will allow program administrators the ability to add, delete and maintain system points and users. Please contact SAI Technical Support for more information on this subject.

Chapter

5

Chapter 5 Activities

This chapter investigates the Activities program group where users will most often interact with the underlying EMS.

The Activities area of the Control Panel acts as a shortcut to some of the most commonly used features in **CONTROLIQ**. Because most of the following functions are also accessible from the Tabular Points area of the Control Panel, this chapter will serve as an introduction to the topics of Setpoints, Overrides and Alarms. The User Guide covers these three topics in full in **Chapter 6 Tabular Points**. System Setup is covered in **Chapter 4** and is listed here as a reference point.

Setpoints

Setpoints are one parameter of EMS Points. Setpoints are the target value for a specific EMS Point and control the behavior of Components as part of the programming that manages the **CONTROLIQ** EMS. Not all EMS Points have Setpoints. Some Points, like Outside Air Temperature, have no Setpoints.

The value of Setpoints depends on the type of EMS Point. Setpoints are most often AO, except when used by Logic or PID Points in which case they are AI. EMS Points have both Enabled and Disabled Setpoints. In the case of a room temperature, for example, the Enable value is the temperature desired for an occupied room. The Disabled Value represents the target temperature for an unoccupied room.

Setpoints are permanent settings stored in the Database. Changes made to Setpoints are still part of the programming controlling the **CONTROLIQ** EMS and remain in effect until changed.

The Setpoints link in the Activities area of the Control Panel opens the **CONTROLIQ** Tabular Points window and filters the list to display only those EMS Points that have Setpoints. Users must have proper access rights to edit Setpoints.

Overrides

Overrides are another way of changing EMS Point parameters. The difference between Setpoints and Overrides is one of time and programming. Overrides are most often a temporary change to a parameter or state of a Point. This allows Users to turn on a fan for a crowded room for the duration of a meeting. Once

the duration passes, the state returns to its previous setting automatically. Overriding is also often helpful when testing dependant EMS Points for properly applied programming. Overrides can be set never to expire, i.e. Override duration is forever. This setting should be used with caution as dependent sub-systems may not function properly, possibly causing damage to Components.

Overrides do not adhere to pre-programmed conditions. Once overridden, a Point remains in that state until the duration has passed or the Override removed, regardless of any preplanned scheduling or programming.

The Overrides link in the Activities area of the Control Panel opens the **CONTROLIQ** Tabular Points window and filters the list to display only those EMS Points in Override. Users must have proper access rights to apply Overrides.

Alarms

Alarms exist in **CONTROLIQ** to notify Users when the current state of a Point is outside normal operating parameters. These parameters are device specific and set up during EMS installation. Users may modify these Alarm settings using **CONTROLIQ** System Setup. **CONTROLIQ** logs in the Database when the Alarm begins, is acknowledged and ends. Acknowledging an Alarm is the User action of accepting **CONTROLIQ**'s Alarm notification.

In **CONTROLIQ**, an Alarm appears in several places and accompanies an audible siren. The Alarm Status is visible in both the Login window and the System Status Tab of the MAP. If the Status appears in green all is normal. If the Status appears in red, then one or more points is in Alarm. Finally, if the Status appears in orange, all Alarms are acknowledged.

The Alarms link in the Activities area of the Control Panel opens the **CONTROLIQ** Tabular Points window and filters the list to display only those EMS Points in Alarm. Users must have proper access rights to acknowledge Alarms.

Setup

SAI personnel manage the initial setup and deployment of **CONTROLIQ** and its subordinate systems at the time of installation. For more information, see **Chapter 4 System Setup**.

Up Next...

This chapter introduced the concepts of Setpoints, Overrides and Alarms. Proceed on to the next chapter to get systematic instruction on working with these features as well as other Tabular Points.

Chapter

6

Chapter 6 Tabular Points

This chapter explores how **CONTROLIQ** *displays Tabular Points from the underlying EMS.*

As mentioned in **Chapter 4 System Setup**, real-world Components and Controllers are represented in **CONTROLIQ** as Points. Each EMS Point contains various parameters that control Component behavior. The current state of the Point is available to Users from the Tabular Points links on the Control Panel. Each of these three links, as well as three more links in the Activities area of the Control Panel, provides access to Points information. Each is a different way of viewing the same information. Some links look at a small subset of Points, while others display a custom list of Points. Each of the links is discussed briefly before delving into the workings of the Tabular Points window used to display **CONTROLIQ** Points.

- **All Data –** This link opens the Tabular Points window displaying all active EMS Points within CONTROLIQ.

- **Groups –** Groups categorize and organize EMS Points into logical and meaningful collections. Groups are user defined and specific to individual installations of CONTROLIQ. Placing the mouse over the Groups link in the Control Panel displays a list of available Groups. Clicking one of these menu items will display the Tabular Points window with a Points list filtered to show the selected Group.

- **Favorites –** Favorites are User defined filters for viewing EMS Points. CONTROLIQ has three default favorites: Alarms, Override, Setpoints. Chapter 5 Activities discusses these default Favorites. Users can create custom filters and save each for repeated viewing. Favorites store the filters as well as the displayed columns. Placing the mouse over the Favorites link in the Control Panel displays a list of User specific Favorites. Clicking one of these menu items will display the Tabular Points window with a Points list filtered for the preset view.

Tabular Points Window

By default, the Tabular Points window displays the **Name**, **Group**, **Value** and **Status** columns. **Selection** and **Edit** columns are visible to Users with sufficient access rights. The following sections describe each column and all of the window elements.

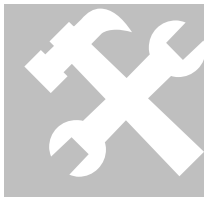
Filter

The Filter control, upper left corner of the Tabular Points window, consists of two linked dropdown lists. First, select the left dropdown, which contains the master filter list. Some items on this list are sensitive to security access and may not be visible to all Users. Once an item is selected from this list the second dropdown list, right of the equal sign (=), populates with related choices. Selecting an item from the second dropdown list applies the Filter to the Tabular Points list. Only active Points matching the Filter display below these controls.

- **All –** Displays all active Points within **CONTROLIQ**. Once selected, the second dropdown list contains the following options:
    - **All –** Displays all active Points within **CONTROLIQ**
    - **Setpoints –** Displays only active Points with Setpoints
    - **Non-setpoints –** Displays only active Points without Setpoints
- **Group –** Allows filtering active Points list by pre-defined Groups. Selecting Groups populates the second dropdown list with available Groups. Selecting an item from the second dropdown list will filter the Points list to only active Points matching the selected Group. Groups are property specific and determined at the time of installation or with System Setup. For more information regarding defining Groups, refer to **Chapter 4 System Setup**.
- **Status –** Allows filtering active Points list by Alarm status. Once selected, the second dropdown list contains the following options:
    - **All –** Displays only active Points in Alarm or Acknowledged status
    - **Alarm –** Displays only active Points in Alarm status
    - **Acknowledged –** Displays only active Points in Acknowledged status
- **Override –** Allows filtering active Points list by Override status. Once selected, the second dropdown list contains the following options:
    - **All –** Displays all active Points within **CONTROLIQ**
    - **True –** Displays only active Points that have been placed in Override
    - **False –** Displays only active Points that have not been placed in Override
- **Subsystem –** Allows filtering active Points list by pre-defined Subsystems. Selecting Subsystem populates the second dropdown list with available Subsystems. Selecting an item from the second dropdown list will filter the Points list to only active Points matching the selected Subsystem. Subsystems are property specific and determined at the time of installation or with System Setup. For more information regarding defining Subsystems, refer to **Chapter 4 System Setup**.

- **Address –** Allows filtering active Points list by pre-defined Addresses. Selecting Address populates the second dropdown list with available Addresses. Selecting an item from the second dropdown list will filter the Points list to only the active Point matching the selected Address. Addresses are property specific and determined at the time of installation or with System Setup. For more information regarding defining Subsystems, refer to **Chapter 4 System Setup**.

- **Point Type–** Allows filtering active Points list by Point Type. Selecting Point Type populates the second dropdown list with available Point Types. Selecting an item from the second dropdown list will filter the Points list to only active Points matching the selected Point Type. Point Types used are property specific and determined at the time of installation or with System Setup. For more information regarding defining Point Types, refer to **Chapter 4 System Setup**.



APPLY FILTER TO TABULAR POINTS LIST

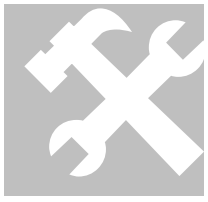
1. Click on the first dropdown Filter (left of equal sign (=)) to display choices
2. Click on the desired selection
3. Click on the second dropdown Filter (right of equal sign (=)) to display choices
4. Click on the desired selection
5. The Tabular Points list is now filtered for the desired selection

REMOVE FILTER FROM TABULAR POINTS LIST

1. Click on the first dropdown Filter (left of equal sign (=)) to display choices
2. Click on **All**
3. The Tabular Points list is no longer filtered for the previous selection

Search

A Search field and Search button, left of the Filter controls, comprise **CONTROLIQ**'s Search control. The Search button easily allows Users to display specific Points in the Tabular Points list. **CONTROLIQ** compares text entered into the Search field with the **Alias** and **Name** of all active Points. For example, entering the text **ahu** would return the Points containing the letters 'ahu' in either the Name or Alias, regardless of capitalization.

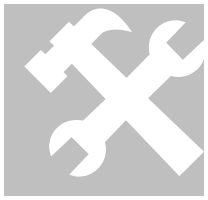


APPLY SEARCH FILTER TO TABULAR POINTS LIST

1. Click in the Search field (right of the Filter controls)
2. Type the desired text

3. Click the **Search** button
4. The Tabular Points list is now filtered for the desired selection

Filters applied because of Search are in addition to any filters applied by the Filter controls. Use the All Filter option to ensure accurate listing of text-matched results. Searches applied in addition to Filters are an excellent way of shortening the Tabular Points list to target specific Points.



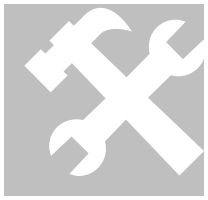
REMOVE SEARCH FILTER FROM TABULAR POINTS LIST

1. Click in the Search field (left of the Filter controls)
2. Delete the text within Search field
3. Click the **Search** button
4. The Tabular Points list is no longer filtered for the previous selection

Previously set Filters still apply to the Tabular Points list after removing a Search filter. To ensure all filters are removed follow the How-to procedure **Remove Filter from Tabular Points List**.

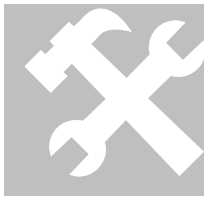
Favorites

The Favorites dropdown list, near the upper right corner, left of the **Manage Favorites** button, provides a fast and simple way to customize the Tabular Points list. Saved views appear on the dropdown list below three **CONTROLIQ** Favorites. The first three items listed – **Alarms**, **Overrides** and **Setpoints** – are system defaults available to all Users with access to Tabular Points. Items appearing below the separator line of the Favorites dropdown list are unique to the currently logged in User and available to no one else.



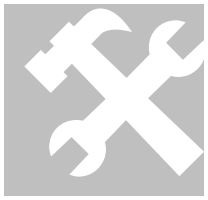
APPLY FAVORITE VIEW TO TABULAR POINTS LIST

1. Click on the Favorites dropdown list (near the upper-right corner, left of the **Manage Favorites** button)
2. Click on the desired selection
3. The Tabular Points list is now filtered for the desired selection



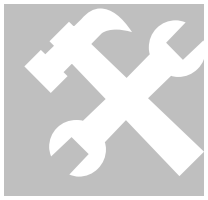
REMOVE FAVORITE VIEW TO TABULAR POINTS LIST

1. Click on the Favorites dropdown list (near the upper-right corner, left of the **Manage Favorites** button)
2. Click on **All**
3. The Tabular Points list is no longer filtered for the previous selection



ADD NEW VIEW TO FAVORITES

1. Arrange the view to desired specifications by applying **Filters**, text **Search**, adding and sorting **Columns**
2. Click the **Manage Favorites** button
3. The **Favorites Manager** window opens
4. Type a name for the view (as it will appear on Favorites dropdown list) in the blank text field of the **Favorites Manager** window
5. Click the **Add** button
6. The view is now saved as a Favorite



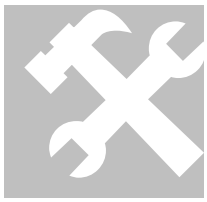
DELETE VIEW FROM FAVORITES

1. Click the **Manage Favorites** button
2. The **Favorites Manager** window opens
3. Click on the Favorites dropdown list in the **Manage Favorites** window
4. Click on the desired selection
5. Click the **Delete** button
6. The selected view is now deleted from Favorites

The system Favorite **Alarm**, **Override** and **Setpoints** display the same data as the Activities links of the same name. It is not possible to delete a system Favorite.

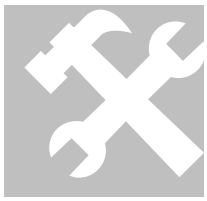
Selection

The Selection column appears as the first column at the left of the Tabular Points list. Each row in this column contains a checkbox. Use this checkbox to specify selected Points. For example, working with a Trend graph requires Users select one or more Points for the graph. Users may select up to ten (10) Points at one time. This limit applies across multiple pages of the Tabular Points list. Once ten Points have been selected, the remaining checkboxes become inactive.



SELECT A POINT IN THE TABULAR POINTS LIST

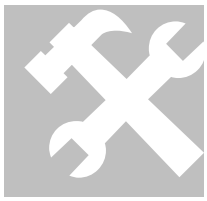
1. Click in the empty checkbox in the **Selection** column of the desired Point, a check mark will appear
2. Click in the empty checkbox of up to nine (9) more Points



CLEAR A SELECTED POINT IN THE TABULAR POINTS LIST

1. Click the check mark in the **Selection** column of the desired Point, the check mark will clear
2. Click the check mark of any remaining selected Points

The current number of selected points appears above the Selection column.

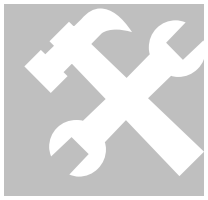


CLEAR ALL SELECTED POINTS IN THE TABULAR POINTS LIST

1. Click the **Clear Selection** button (lower left corner of Tabular Points list)
2. All the selected Points are now cleared

Edit

The Edit column appears as the second column on the left of the Tabular Points list. Each row in this column contains an icon of paper and pencil. The Edit column only displays for those Users with sufficient access rights. Clicking the **Edit** icon for a Point opens either the **Setpoint Editor** or the **Set Override** window, depending on the type of the Point.



EDIT SETPOINT IN TABULAR POINTS LIST

1. Click the **Edit** icon in the **Edit** column of the desired Point
2. The **Setpoint Editor** window opens
3. Edit the **Enabled Value** as needed
4. Edit the **Disabled Value** as needed
5. Click the **Apply** button

If **Disabled Value** is blank (no value), **CONTROLIQ** uses the **Enabled Value** at all times.

SET ANALOG OVERRIDE IN TABULAR POINTS LIST

1. Click the **Edit** icon in the **Edit** column of the desired Point
2. The **Set Override** window opens
3. Click the **Override** radio button
4. Edit the **Value** as needed
5. Enter the **Duration** or click the **Forever** checkbox (see related notes below)
6. Click the **Apply** button

SET DIGITAL OVERRIDE IN TABULAR POINTS LIST

1. Click the **Edit** icon in the **Edit** column of the desired Point
2. The **Set Override** window opens
3. Click the **Override** radio button
4. Click on the **Value** dropdown list
5. Click on the desired state for the Point
6. Enter the **Duration** or click the **Forever** checkbox (see related notes below)

7. Click the **Apply** button

CLEAR OVERRIDE IN TABULAR POINTS LIST

1. Click the **Edit** icon in the **Edit** column of the desired Point
2. The **Set Override** window opens
3. Click the **Auto** radio button
4. Click the **Apply** button

There are several methods for editing the Duration of an Override. The first method uses spin arrows, upward and downward pointing arrows to the right of the Duration field. Each arrow increases (upward arrow) or decreases (downward arrow) the Duration value by 30 minutes. The second method allows Users to enter the Duration in minutes, i.e., entering '120' for two-hour Duration. The final method involves entering the Duration in standard hours and minutes format, i.e., '1:25' for one hour and 25 minutes. Use of the spin arrows is also possible with the second and third methods, increasing or decreasing the entered Duration by 30 minutes.

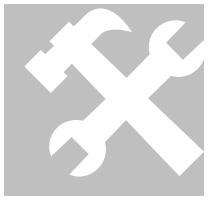
Use the **Forever** setting for Override duration with caution as dependent sub-systems may not function properly, possibly causing damage to Components.

Columns

EMS Point information displays within various columns of the Tabular Points list. Each column contains one piece of data for each Point. By default, the Tabular Points window only displays the Selection, Name, Group, Value and Status columns when first opened. These default columns may never be hidden. Alias, Subsystem, Point Type, Override, Address, Setpoint Value and Disabled Position columns are also available for display. Users with proper security gain access to the Edit column. Aside from the Selection and Edit columns, each column can also be sorted in ascending order.

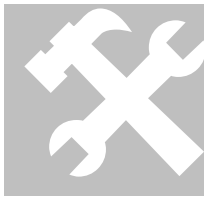
SORT A COLUMN IN TABULAR POINTS LIST

1. Click the underlined name in the Column header, i.e., click **Value**
2. The Column is now sorted in ascending order



SHOW HIDDEN COLUMNS IN TABULAR POINTS LIST

1. Click the **Columns** button (lower right corner of Tabular Points list)
2. The **Column View** panel displays
3. Click in the empty checkbox of the desired Column in the Column View panel, a check mark will appear
4. The Column is now displayed in Tabular Points list
5. Click any remaining empty checkboxes to display hidden Columns
6. Click the **Close** button in **Column View** panel

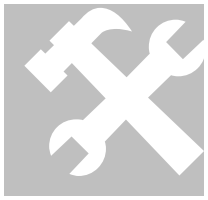


HIDE COLUMNS IN TABULAR POINTS LIST

1. Click the **Columns** button (lower right corner of Tabular Points list)
2. The **Column View** panel displays
3. Click the check mark of the desired Column in the Column View panel, the check mark will clear
4. The Column is no longer displayed in Tabular Points list
5. Click any remaining check marks to hide Columns
6. Click the **Close** button in **Column View** panel

Alarms

CONTROLIQ provides a visual display of Points in Alarm. These Points exhibit red labels if the Point is in Alarm and orange labels for acknowledged status. The labels appear in the Value column of the Tabular Points list. Users with sufficient access rights can acknowledge Points in Alarm from within the Tabular Points list.



ACKNOWLEDGE ALARM IN TABULAR POINTS LIST

1. Click in the empty checkbox in the **Selection** column of the Point in Alarm (red labeled Value), a check mark will appear
2. Click the **Acknowledge** button (lower left corner of Tabular Points list)
3. The red label will change to orange once the window refreshes to show the Alarm as acknowledged

Trend

Trends are a form of Report that graphs Point behavior over time. Trends can be Live, updating at regular intervals, or Historical, displaying data collected over the past few days, weeks, months or even years. Historical Trends can go back as far as historical data exists. Users can graph up to ten (10) Points. For more information on Trends, see **Chapter 8 Reports**.

SELECT POINTS TO TREND IN TABULAR POINTS LIST

1. Click in the empty checkbox in the **Selection** column of the desired Point, a check mark will appear
2. Click in the empty checkbox of up to nine (9) more Points
3. Click the **Trend** button (lower left corner of Tabular Points list)

Row Count

Users control how many rows of Points display in the Tabular Points list. The **Row Count** dropdown list, lower right corner of the Tabular Points list, left of the **Columns** button, provides a range of choices for the number of displayed rows. Users may move through the list by using the Page control, upper right corner of the Tabular Points list, below the **Manage Favorites** button.

CHANGE NUMBER OF ROWS DISPLAYED IN TABULAR POINTS LIST

1. Click the Row Count dropdown list (lower right corner of Tabular Points list)
2. Click on the desired number of rows to display
3. The Tabular Points list now displays the desired number of rows per page

NAVIGATE TO DIFFERENT PAGE OF TABULAR POINTS LIST

1. Click the underlined number of the page desired, i.e., click **3** to go to page three (3)
2. The desired page is now displayed

If more than five (5) pages of Points exists, the Page control displays '…' to signify the previous (left of page numbers) or next (right of page numbers) group of five pages.

Chapter

7

Chapter 7 Views

This chapter examines user interaction with graphical Views of the **CONTROLIQ** *MAP.*

The Main View Area of the **CONTROLIQ** Main Application Portal (MAP) is a highly customizable display. The display presents representational images, such as air handlers, boilers and chillers, with real-time data from associated Points. These Views also allow instant access to key information for Points within **CONTROLIQ**.

It is easy to navigate the customized Views using the Views link of the **Control Panel** or the **View Tab** of the MAP. Views displayed depend on User access rights, so Users may not see the same Views.

Main View Area

The Main View Area comprises the graphical display in the center of the MAP. The displayed images present live data for associated Points. For example, an air handler could display the Outside Air Temperature, Return Air Temperature, Mixed Air Temperature and Discharge Air Temperature. Users, with proper rights, access these Points directly from the image.

Below is a list of images and commonly associated Points, followed by instructions for displaying Point information in Tabular Points. This list is not comprehensive. The Views presented are only some of those possible. SAI provides custom views to suit a property's needs. Please contact SAI for more information regarding the development of custom views.

- **Air Handler –** Outside air temperature, return air temperature, mixed air temperature, static air pressure, fan state, fan speed, discharge air temperature, damper state
- **Boiler –** Boiler status, entering hot water temperature, leaving hot water temperature, outlet setpoint
- **Chiller –** Chiller amps, entering condenser water temperature, leaving condenser water temperature, entering chilled water temperature, leaving chilled water temperature

- **Cooling Tower –** Inlet temperature, outlet temperature, outlet setpoint, variable frequency drive speed
- **Floor Plan –** Room temperature

DISPLAY POINT DATA

1. Right-click the **Point Value**
2. Click **Show in Tabular Points** on the pop-up menu

Navigating Views

Two tools exist for navigating Views within **CONTROLIQ**. The first, the Control Panel, is the default method for selecting and displaying a View. The View Tab provides a similar interface while adding an easy method for cycling through Views in quick succession.

Control Panel

The Control Panel provides a pop-up list of Views for easy navigation. This list, as well as the View Tab, are sensitive to the logged in User and only display appropriate choices.

NAVIGATING WITH THE CONTROL PANEL

1. Click the Control Panel Tab
2. Place mouse over **Views** link to display available Views
3. Click the name of the desired View to display

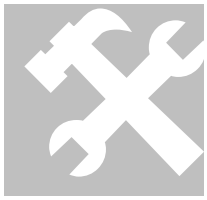
View Tab

The View Tab is located on the bottom edge of the MAP. The Tab displays the name of the current View. Use this menu to navigate between the available graphical Views displayed in the MAP. This list, as well as the Views area of the Control Panel, are sensitive to the logged in User and only display appropriate choices.

CHANGE CURRENT VIEW

1. Click the center of the **View Tab** to open the list of available Views
2. Click the name of the desired View to display

The triangles on the left and right of the View Tab allow navigation through the available Views.



NAVIGATE AVAILABLE VIEWS

1. Click the left triangle on the **View Tab** to see the preceding View from the list
2. Click the right triangle on the **View Tab** to see the following View from the list

Chapter

8

Chapter 8 Reports

This chapter surveys the many reporting options available within **CONTROLIQ**.

Data collected by **CONTROLIQ** is stored in the Database. Reports present this data in a variety of formats. The most commonly used feature is Trend Reports. Trends are line graphs that plot EMS Point information over time. Other reports fall under the Administrative Reports heading. Each Administrative Report has a specific scope. This chapter explores both styles of reports in depth.

Trend Reports

Trend Reports display data collected from EMS Components as line graphs. These graphs chart Point behavior over time. Live Trends are charts displaying real-time data as it is collected. Trends that display graphs of data collected during an earlier time are Historical Trends. Up to ten (10) Points can be simultaneously graphed. Both Live and Historical Trends are generated in the same manner using the T**rend Setup** panel of the **Trend Graph** window.

Live Trend

Live Trend graphs give Users the current picture of how their EMS Points are performing. Data collected dynamically displays for the selected Points on a real-time basis. The interval between data collection can be as short as one (1) second or as long as the User wishes.

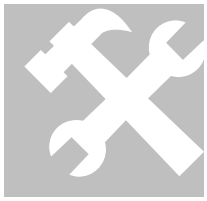
GENERATE A LIVE TREND GRAPH

1. Click the Control Panel Tab
2. Click on **Live Trend** in the Reports area of the Control Panel
3. The **Trend Graph** window opens displaying the **Trend Setup** panel
4. Select the **Update Interval** on the **Trend Setup** panel
5. Select the interval period (**Seconds, Minutes** or **Hours**) from the dropdown list
6. Enter the **Point Aliases** or **Select Points** to Trend

7. Click the **OK** button
8. The **Live Trend Graph** displays

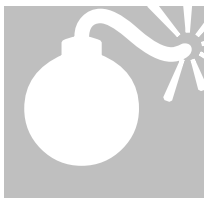
Historical Trends

Historical Trend graphs are identical to Live Trends except they represent static data that can be from any period. Historical Trend reports allow Users to select a period from any point in time for which they have data. Historical Trends can cover a day, week, month or longer period. Users are still limited to plotting ten (10) simultaneous Points.



GENERATE A HISTORICAL TREND GRAPH

1. Click the Control Panel Tab
2. Click on **Historical** in the Reports area of the Control Panel
3. The **Trend Graph** window opens displaying the **Trend Setup** panel
4. Select the **Starting Date** and **Time** on the **Trend Setup** panel
5. Select the **Ending Date** and **Time**
6. Enter the **Point Aliases** or **Select Points** to Trend
7. Click the **OK** button
8. The **Historical Trend Graph** displays



Historical Trend periods greater than three (3) months will take longer to generate and use more server resources.

Trend Setup

The Trend Setup panel, located on the Trend Graph window, allows Users to generate both Live and Historical Trend Reports. This panel first displays when one of these report styles is selected. It can also be displayed after a graph has been generated to allow Users to select different Points or modify the parameters of the graph in some other fashion. The elements of the Trend Setup panel are explored below.

- **Historical** – The Historical radio button signifies that the graph contains previously collected data. When selected, the Historical radio button activates the following controls:

- **Starting Date** – The beginning date for the graph. The calendar icon to the right of the Date field opens a calendar window for easy date selection. Click the desired date in the calendar window to enter it automatically into the corresponding Date field.

- **Starting Time** – The beginning time for the graph. Enter the desired time in the Time field.

- **Ending Date** – The ending date for the graph. The calendar icon to the right of the Date field opens a calendar window for easy date selection. Click the desired date in the calendar window to enter it automatically into the corresponding Date field.

- **Ending Time** – The beginning time for the graph. Enter the desired time in the Time field.

- **Live** – The Live radio button signifies that the graph displays real-time data as it is collected. When selected, the Live radio button activates the following control:

  - **Update Interval** – Update Interval contains two controls: the numeric interval and the period unit. Enter a numeric value into the Interval field then select the period from the dropdown list – **Seconds**, **Minutes** or **Hours**.

- **Auto Scale** – This checkbox will turn on (checked, by default) or turn off (cleared) the Auto Scale feature for the current Trend graph. With Auto Scale turned on, **CONTROLIQ** presents the entire range of Y values returned. The Y values, or vertical axis, represent the data reported by a Component, such as temperature or static pressure. When Auto Scale is turned off, Users can 'zoom in' an area of the graph by selecting the minimum and maximum values for the Y-axis using the following controls:

  - **Y Min** – The minimum value for the Y-axis of the Trend graph. Enter the desired numeric value in the Y Min field. Only values above the desired value display on the graph.

  - **Y Max** – The maximum value for the Y-axis of the Trend graph. Enter the desired numeric value in the Y Max field. Only values below the desired value display on the graph.

- **Enter/Select Points** – Up to ten (10) Aliases are plotted in a Trend graph. Users may type the Aliases into the provided fields or click the **Select Points** button to pick Aliases from the **Tabular Points** list.

- **Favorite Selection** – This dropdown list provides saved Trend Setup information. Information saved using the **Manage Favorites** button allows for fast Trend graphing setup.

- **OK** – The **OK** button begins the Trend graphing process. Once all Trend Setup information is input, clicking **OK** will plot the graph.

- **Cancel** – The **Cancel** button closes the Trend Setup panel without generating a Trend graph.

- **Reset** – The **Reset** button clears all Trend Setup information.

SELECT POINTS IN TREND SETUP

1. Click the **Select Points** button
2. The **Tabular Points** list displays
3. Click in the empty checkbox in the **Selection** column of the desired Point, a check mark will appear
4. Click in the empty checkbox of up to nine (9) more Points
5. Click the **Trend** button
6. Click the **OK** button to graph Trend

ADD TREND SETUP AS FAVORITE SELECTION

1. Arrange **Trend Setup** to the desired specifications
2. Click the **Manage Favorites** button
3. The **Favorites Manager** window opens
4. Type a name for Trend Setup (as it will appear on Favorites dropdown list) in blank text field of the Favorites Manager window
5. Click the **Add** button
6. Trend Setup is now saved as a Favorite

DELETE TREND SETUP FROM FAVORITE SELECTIONS

1. Click the **Manage Favorites** button
2. The **Favorites Manager** window opens
3. Click on the **Favorites** dropdown list in the Manage Favorites window
4. Click on the desired selection
5. Click the **Delete** button
6. The selected Trend Setup is now deleted from Favorites

Trend Graph

The **Trend Graph** is one of two tabbed displays of the **Trend Graph** window. The tab is located near the upper left corner of the window. This tab is not active during Trend Setup. Once setup is complete, the graph automatically loads in this display. Clicking this tab while viewing Tabular Data will redisplay the current graph. Two buttons, **Setup** and **Export**, are located below the graph. Setup displays the **Trend Setup** window while Export opens the **Export** window.

The graph is plotted over two (2) axes. The Y-axis (vertical) if for Component measurement, such as temperature or static pressure, while the X-axis (horizontal) measures time.

Tabular Data

The **Tabular Data** is one of two tabbed displays of the **Trend Graph** window. The tab is located near the upper left corner of the window. This tab is not active during Trend Setup. Clicking this tab while viewing the Trend Graph will display the tabular data used to populate the graph. Two buttons, **Setup** and **Export**, are located below the graph. Setup displays the **Trend Setup** window while Export opens the **Export** window.

The Tabular Data is made up of three (3) columns. The first is the **Alias** name followed by the **Value**, such as temperature or static pressure. The last column is the **Date** and time the value was recorded.

Exporting and Printing Trends

CONTROLIQ exports Trend data in three (3) formats: email, Comma Separated Value (CSV) file or web page (HTML) file. Trend graphs can also be printed from the Trend Graph window.

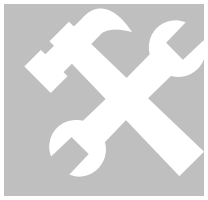
PRINT TREND GRAPH

1. Right-click the Trend Graph image
2. Select **Print Picture…** from pop-up menu
3. The **Print** window opens
4. Select the desired **Printer**
5. Configure the printer **Options** as needed
6. Click the **Print** button

EXPORT TO EMAIL

1. Click the **Export** button
2. The **Export** window opens

3. The **Export to Email** radio button is selected automatically
4. Enter the **Email Address** of recipient
5. Enter the email **Subject**
6. Click the **Export** button

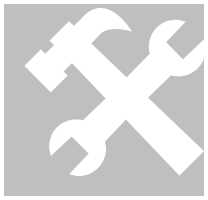


EXPORT TO FILE

1. Click the **Export** button on Trend Graph window
2. The **Export** window opens
3. Click the **Export to CSV File** or the **Export to HTML File** radio button
4. Click the **Export** button in Export window
5. The **File Download** window opens
6. Click the **Save** button in **File Download** window
7. The **Save As** window opens
8. Enter the **File Name**
9. Select the location to save file
10. Click the **Save** button in **Save As** window

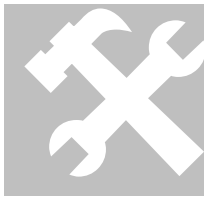
Administrative Reports

Administrative reports provide information on a variety of subjects. These reports are provided to help System Administrator's get the most out of **CONTROLIQ**. The following sections list each of the reports. The Administrative reports share a common display window. The **Report Type** dropdown list, near the upper left corner of the window, selects the style of Administrative report displayed. By default, the **Activities** report displays when first opened.



DISPLAY ADMINISTRATIVE REPORTS WINDOW

1. Click the **Control Panel** Tab
2. Click on **Administrative** in the Reports area of the Control Panel
3. The **Administrative Reports** window opens displaying the **Activities** Report Type



CHANGE ADMINISTRATIVE REPORT DISPLAYED

1. In the **Administrative Reports** window, click the **Report Type** dropdown list
2. Select the desired report
3. The **Administrative Reports** window now displays the desired report

Activities

The Activities report allows Administrators to display all User related activity. **CONTROLIQ** records each transaction and stores the information in the Database. Report filters include Date and Time, User and Activity. Administrators can also control which columns display. Activities reports can be Exported in one of three (3) file formats.

- **Start Date** – Starting date for report filter. Default display current date. The calendar icon to the right of the Date field opens a calendar window for easy date selection. Click the desired date in the calendar window to enter it automatically into the corresponding Date field.
- **Start Time** – Starting time for report filter in 24-hour format. Default display beginning of day (00:00).
- **End Date** – Ending date for report filter. Default display current date. The calendar icon to the right of the Date field opens a calendar window for easy date selection. Click the desired date in the calendar window to enter it automatically into the corresponding Date field.
- **End Time** – Starting time for report filter in 24-hour format. Default display end of day (23:59).
- **User** – Dropdown list of authorized Users for report filter.
- **Activities** – Dropdown list of User **Activities** for report filter:
    - **All** – Displays all Activities performed by Users within the starting and ending date/time filters
    - **Alarms Acknowledged** – Displays only Acknowledged Alarms performed by Users within the starting and ending date/time filters
    - **Logins/Logouts** – Displays only Logins/Logouts performed by Users within the starting and ending date/time filters
    - **Override** – Displays only Overrides performed by Users within the starting and ending date/time filters
    - **Schedule Modifications** – Displays only Schedule Modifications performed by Users within the starting and ending date/time filters

- **Setpoint Modifications** – Displays only Setpoint Modifications performed by Users within the starting and ending date/time filters

- **Apply** – The **Apply** button displays the Activities report with selected filters. Once all Activities filter information is input, clicking **Apply** will list the transactions.

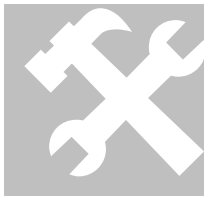
- **Columns** – The activities report display five (5) columns of information. Administrators can use the **Columns** button to choose which columns display for the report.

  - **User** – Name of User performing the Activity
  - **IP Address** – The IP Address from which the User performed the Activity
  - **Alias** – The name of the modified item, such as the Schedule Name or Setpoint
  - **Log Date** – The data and time the Activity was performed by the User
  - **Log Message** – What was modified by the User

- **Export** – Displays the **Export** window

ADD COLUMNS IN ACTIVITIES REPORT

1. In the **Administrative Report - Activities** window, click the **Columns** button
2. The **Column View** panel displays
3. Click in the empty checkbox of the desired Column, a check mark will appear
4. The Column displays in the Activities report
5. Click any remaining empty checkboxes to display hidden Columns
6. Click the **Close** button in the **Column View** panel



HIDE COLUMNS IN ACTIVITIES REPORT

1. In the **Administrative Report - Activities** window, click the **Columns** button
2. The **Column View** panel displays
3. Click the checkmark of the desired Column in the Column View panel, the check mark will clear
4. The Column is hidden in the Activities report
5. Click any remaining checkmarks to hide Columns

6. Click the **Close** button in the **Column View** panel

GENERATE ACTIVITIES REPORT

1. In the **Administrative Report** window, select **Activities** from the **Report Type** dropdown list
2. Select the **Starting Date** and **Time**
3. Select the **Ending Date** and **Time**
4. Select **User** or **Activities**
5. Select the **Columns** displayed
6. Click the **Apply** button
7. The Activities report displays

Degree Day

The Degree Day report displays historical information regarding the unit used in estimating fuel requirements for heating or cooling a building. By definition, a Degree Day is one degree of departure, on a single day, of the daily mean temperature from a given standard temperature. 65 degrees Fahrenheit is the standard temperature. Values present represent the Degree Days above (cooling days) or below (heating days) this standard temperature.

- **Start Date** – Displays the starting date for the Degree Day date range. This field is not editable.
- **End Date** – Displays the ending date for the Degree Day date range. This field is not editable.
- **Pick Range** – Dropdown list provides various date ranges for Degree Day report:
  - **Today** – Displays Degree Day information for current date
  - **Yesterday** – Displays Degree Day information for previous day
  - **Month to Date** – Displays Degree Day information from beginning for current month through current date
  - **Month** – Displays Degree Day information for month selected. **CONTROLIQ** Displays information for selected month of current year or previous year. For example, if it is currently November and September is selected as the date range, data displays from current year. However if current month is November and December is selected, **CONTROLIQ** displays information from the previous year.

- **Apply** – The **Apply** button displays the Degree Day report with selected date range. Once the Degree Day date range is selected, clicking **Apply** will list the values.
- **Export** – Displays the **Export** window
- **Columns** – The Degree Day report displays three (3) columns:
    - **Date** – The date within the selected date range
    - **Cool** – The number of Cooling Degree Days for the Date in question
    - **Heat** – The number of Heating Degree Days for the Date in question
- **Cumulative Total** – The total number of Heating and Cooling Degree Days for the selected date range

GENERATE DEGREE DAY REPORT

1. In the **Administrative Report** window, select **Degree Day** from the **Report Type** dropdown list
2. Click the **Pick Range** dropdown list
3. Select the desired date range
4. Click the **Apply** button
5. The Degree Day report displays

Meters

The Meters report displays the accumulate readings from all Meter type EMS Points. The Meter report has the following elements:

- **Start Date** – Displays the starting date for the Degree Day date range. This field is not editable.
- **End Date** – Displays the ending date for the Degree Day date range. This field is not editable.
- **Pick Range** – Dropdown list provides various date ranges for Meters report:
    - **Today** – Displays Meters information for current date
    - **Yesterday** – Displays Meters information for previous day
    - **Month to Date** – Displays Meters information from beginning for current month through current date

  - **Month** – Displays Meters information for month selected. **CONTROLIQ** Displays information for selected month of current year or previous year. For example, if it is currently November and September is selected as the date range, data displays from current year. However if current month is November and December is selected, **CONTROLIQ** displays information from the previous year.

- **Apply** – The **Apply** button displays the Meters report with selected date range. Once the Meters date range is selected, clicking Apply will list the values.

- **Alias** – The name of the Meter type EMS Point (located to the far left)

- **Period** – The date range of the report

- **Consumption** – The total utility consumption during the date range of the report

- **Highest Demand** – The highest demand of energy during the date range of the report

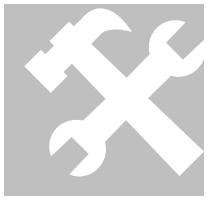
- **Columns** – The columns of the Meter report are hidden until the plus sign (+) to the left of the Alias are clicked. The Meter report displays three (3) columns:

  - **When** – The date/time of the Meter reading. The detail records of this report are hourly increments for report range of one day and daily increments for report range of one month.

  - **Demand** – The highest demand for the record period (hour/day)

  - **Consumption** – The total consumption for the record period (hour/day)

- **Export** – Displays the **Export** window



GENERATE METERS REPORT

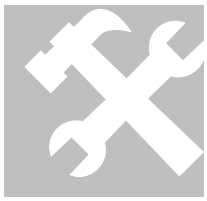
1. In the **Administrative Report** window, select **Meters** from the **Report Type** dropdown list
2. Click the **Pick Range** dropdown list
3. Select the desired date range
4. Click the **Apply** button
5. The Meters report displays

Point Finder

The Point Finder report allows System Administrators the ability to search the Database for references to specific Points. Administrators enter the Alias as a Search parameter and the report displays all matching

records in the Database. This is an advanced technique used to verify and troubleshoot EMS Points. The Point Finder report is made up of the following elements:

- **Alias** – The text search field. Enter search criteria in this field.
- **Search** – **CONTROLIQ** begins seeking matching records in the Database once the Search button is clicked. Text entered into the Alias field will be matched exactly.
- **Export** – Displays the **Export** window
- **Columns** – The Point Finder report displays three (3) columns:
    - **Table** – The table in which the matching record is located
    - **Alias** – The Alias, or name, of the matching record
    - **Field** – The field of the Database in which the match was found



GENERATE POINT FINDER REPORT

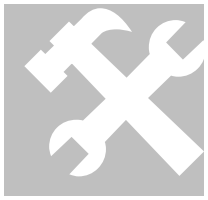
1. In the **Administrative Report** window, select **Point Finder** from the Rep**ort Type** dropdown list
2. Type the search criteria into the **Alias** field
3. Click the **Search** button
4. The Point Finder report displays the matching records

Point Snapshot

The Point Snapshot displays all the active Points in **CONTROLIQ**. This snap shot provides a way to export Point information from **CONTROLIQ**. The report displays eight (8) columns of information as well as the **Export** button:

- **Alias** – The EMS Point Alias
- **Name** – The EMS Point Name
- **Group** – The Group to which the Point belongs (if any)
- **Value** – The current Value of the Point (only valid at the time the report is generated)
- **Status** – Current Status of Point
- **Subsystem** – The Subsystem to which the Point belongs (if any)

- **Type** – The Point Type
- **Address** – Address of the Point
- **Export** – Displays the **Export** window

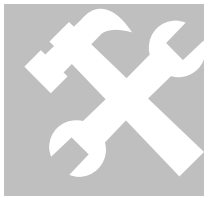


GENERATE POINT SNAPSHOT REPORT

1. In the **Administrative Report** window, select **Point Snapshot** from the **Report Type** dropdown list
2. The Point Snapshot report displays

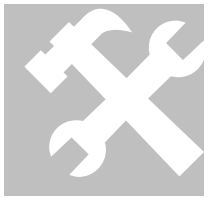
Exporting and Printing Administrative Reports

CONTROLIQ exports Administrative reports in three (3) formats: email, Comma Separated Value (CSV) file or web page (HTML) file. Administrative reports can also be printed from the Administrative Reports window.



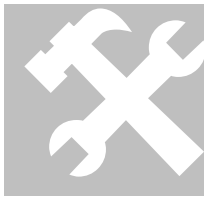
PRINT ADMINISTRATIVE REPORTS

1. Right-click the Administrative report
2. Select **Print** from pop-up menu
3. The **Print** window opens
4. Select the printer
5. Configure the printer **Options** as needed
6. Click the **Print** button



EXPORT TO EMAIL

1. Click the **Export** button in the **Administrative Reports** window
2. The **Export** window opens
3. The **Export to Email** radio button is selected automatically
4. Enter the **Email Address** of recipient
5. Enter the email **Subject**
6. Click the **Export** button



EXPORT TO FILE

1. Click the **Export** button in the **Administrative Reports** window
2. The **Export** window opens
3. Click the **Export to CSV File** or the **Export to HTML File** radio button
4. Click the **Export** button in the Export window
5. The **File Download** window opens
6. Click the **Save** button in the File Download window
7. The **Save As** window opens
8. Enter the **File Name**
9. Select the location to save file
10. Click the **Save** button in the Save As window

Chapter

9

Chapter 9 Schedules

This chapter focuses on the creation and maintenance of the Schedules that lie at the heart of **CONTROLIQ**.

Schedules grant a high level of control and automation over the entire Energy Management System. Schedules can be of the Standard, Exception or Holiday variety. Scheduling is an easy-to-use interface for editing The start and stop of EMS Components. This process is the crux of money-saving energy management.

OPEN SCHEDULE WINDOW

1. Click the **Control Panel** Tab
2. Click on **Standard**, **Exception** or **Holiday** in the Schedules area of the Control Panel
3. The **Schedule** window opens

Standard Schedules

Standard Schedules form the foundation of building automation within **CONTROLIQ**. Standard Schedules bring together related Components and programming logic with a timer. The timer element of the Schedule determines the occupied and unoccupied states of a location. Generally, the Schedule's **OnTime** begins on or before a location's expected occupancy while the **OffTime** represents the end of an occupied state.

Standard Schedules represent the default settings for a building. During 'normal' operations, the Standard Schedules hold sway. Any deviation to these times is handled through Exception and Holiday Schedules. The naming and Point selection of Standard Schedules is covered in **Chapter 4 Setup**.

Standard Schedules Window

The Standard Schedules window provides the primary interface for adding and editing Standard Schedules. There is no limit to the number of Schedules that can be created. The Standard Schedules window is made up of the following elements:

- **Filter** – The Filter dropdown list provides a list of Standard Schedules. Changing the filtered Schedule displays related Standard records below the dropdown list.

- **Columns** – The Standard Schedules window contains the following columns:

    - **Edit** – The far left column displays a paper-and-pencil icon. Clicking this icon changes the current row to Edit mode. Once in Edit mode, the icon is replaced with Save (green checkmark) and Cancel (red 'No' symbol) icons.

    - **OnTime** – The time the Schedule is to begin (24-hour format). In Edit mode, spin arrows appear to the right of the field. Clicking these arrows add (up arrow) or remove (down arrow) 30 minutes to the displayed time.

    - **OffTime** – The time the Schedule is to end (24-hour format). In Edit mode, spin arrows appear to the right of the field. Clicking these arrows add (up arrow) or remove (down arrow) 30 minutes to the displayed time.

    - **Weekday** – Eight (8) columns represent the seven (7) days of the week plus the Holiday option. Each column contains a checkbox. Checkmarks indicate the days to which the Schedule will be applied.

    - **Delete** – The far right column contains a Delete (X) icon. Clicking this icon deletes the selected record from the current Schedule.

- **Add** – The Add button creates a new record for the current Schedule

- **OK** – The OK button saves the current Schedule and closes the Standard Schedules window

SELECT STANDARD SCHEDULE

1. Click the **Filter** dropdown list in the **Standard Schedule** window
2. Select the desired Schedule
3. Records related to the selected Schedule display

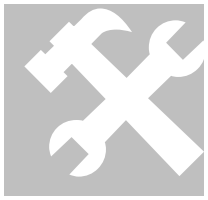
EDIT RECORD IN STANDARD SCHEDULE WINDOW

1. Click the **Edit** icon (pencil-and-paper) of the desired record in the **Standard Schedule** window
2. The row is now editable
3. Edit the **OnTime** and **OffTime** as needed (24 hour format)
4. Check/clear days to which the Schedule applies

5. Click the **Save** icon (green checkmark) or the **Cancel** icon (red 'No' symbol) to complete the transaction
6. If Save is selected, the **Save** confirmation window opens
7. Click the **OK** button on the confirmation window to complete the Save operation

DELETE RECORD IN STANDARD SCHEDULE WINDOW

1. Click the **Delete** icon of the desired record in the **Standard Schedule** window
2. The **Delete** confirmation window opens
3. Click the **OK** button on the confirmation window to complete the Delete operation



ADD RECORD TO STANDARD SCHEDULE WINDOW

1. Click the **Add** button in the **Standard Schedule** window
2. A new editable row is displayed
3. Enter the **OnTime** and **OffTime** (24 hour format)
4. Check days to which the Schedule applies
5. Click the **Save** icon (green checkmark) or the **Cancel** icon (red 'No' symbol) to complete transaction
6. If Save is selected, the **Save** confirmation window opens
7. Click the **OK** button on the confirmation window to complete the Save operation

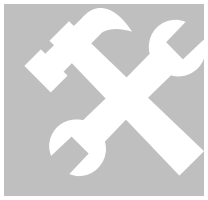
Exception Schedules

Exception Schedules override the normal operation of Standard Schedules. These Schedules run for a finite period to signify occupancy when normally the area is unoccupied. This is most often used for meeting rooms, which are normally unoccupied and, therefore, do not run lights and heating/cooling to conserve energy. The Exception Schedules provide a simple interface for turning on Components automatically.

Exception Schedules Window

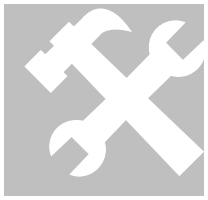
The Exception Schedules window provides the primary interface for adding and editing Exception Schedules. There is no limit to the number of Schedules that can be created. The Exception Schedules window is made up of the following elements:

- **Filter** – The Filter dropdown list provides a list of Schedules. Changing the filtered Schedules displays related Exception records below the dropdown list.
- **Columns** – The Exception Schedules window contains the following columns:
  - **Edit** – The far left column displays a paper-and-pencil icon. Clicking this icon changes the current row to Edit mode. Once in Edit mode, the icon is replaced with Save (green checkmark) and Cancel (red 'No' symbol) icons.
  - **Start Date** – The date the Exception Schedule is to begin. In Edit Mode, a calendar icon appears to the left of the date field. Clicking this icon opens a calendar window for easy date entry.
  - **Days** – The number of days the Exception Schedule will run
  - **OnTime** – The time the Schedule is to begin (24-hour format). In Edit mode, spin arrows appear to the left of the field. Clicking these arrows add (up arrow) or remove (down arrow) 30 minutes to the displayed time.
  - **OffTime** – The time the Schedule is to end (24-hour format). In Edit mode, spin arrows appear to the left of the field. Clicking these arrows add (up arrow) or remove (down arrow) 30 minutes to the displayed time.
  - **Weekday** – Eight (8) columns represent the seven (7) days of the week and the Holiday option. Each column contains a checkbox. Checkmarks indicate the days to which the Schedule will be applied.
  - **Delete** – The far right column contains a Delete (X) icon. Clicking this icon deletes the selected record from the current Schedule.
- **Add** – The Add button creates a new record for the current Schedule
- **OK** – The OK button saves the current Schedule and closes the Exception Schedules window



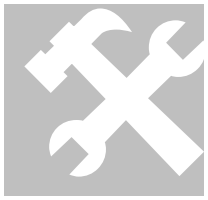
SELECT EXCEPTION SCHEDULE

1. Click the **Filter** dropdown list in the **Exception Schedule** window
2. Select the desired Schedule
3. Records related to the selected Schedule display



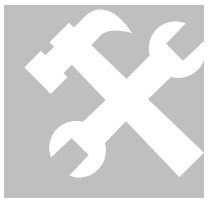
EDIT RECORD IN EXCEPTION SCHEDULE WINDOW

1. Click the **Edit** icon (pencil-and-paper) of the desired record in the **Exception Schedule** window
2. The row is now editable
3. Edit the **OnTime** and **OffTime** as needed (24 hour format)
4. Check/clear days to which the Schedule applies
5. Click the **Save** icon (green checkmark) or the **Cancel** icon (red 'No' symbol) to complete the transaction
6. If Save is selected, the **Save** confirmation window opens
7. Click the **OK** button on the confirmation window to complete the Save operation



DELETE RECORD IN EXCEPTION SCHEDULE WINDOW

1. Click the **Delete** icon of the desired record in the **Exception Schedule** window
2. The **Delete** confirmation window opens
3. Click the **OK** button on the confirmation window to complete the Delete operation



ADD RECORD TO EXCEPTION SCHEDULE WINDOW

1. Click the **Add** button in the **Exception Schedule** window
2. A new editable row is displayed
3. Enter the **OnTime** and **OffTime** (24 hour format)
4. Check days to which the Schedule applies
5. Click the **Save** icon (green checkmark) or the **Cancel** icon (red 'No' symbol) to complete the transaction
6. If Save is selected, the **Save** confirmation window opens
7. Click the **OK** button on the confirmation window to complete the Save operation

Holiday Schedules

As it has been shown, both Standard and Exception Schedules contain a Holiday 'weekday' for operation. The Holiday Schedules determine which Dates constitute a Holiday in **CONTROLIQ**. Holidays act as an override to the normal operation of Standard Schedules. Each Holiday contains a date and duration. If the current day should fall within one of these Holidays, any Holiday scheduling is enforced rather than that of the actual day-of-the-week. Typically what this means is that normal operation is not applied during a holiday. For example, normal operation is Monday through Friday 8 AM to 6 PM. If Monday happens to be a Holiday, then normal schedules do not apply for that date.

Holidays Window

The Holidays window provides the primary interface for adding and editing Holidays. There is no limit to the number of Holidays that can be created. The Holidays window is made up of the following elements:

- **Columns** – The Holiday window contains the following columns:
    - **Edit** – The far left column displays a paper-and-pencil icon. Clicking this icon changes the current row to Edit mode. Once in Edit mode, the icon is replaced with a Save (green checkmark) and Cancel (red 'No' symbol) icons.
    - **Holiday** – The name of the Holiday
    - **Start Date** – The date the Holiday is to begin. In Edit Mode, a calendar icon appears below the date field. Clicking this icon opens a calendar window for easy date entry.
    - **Duration** – The number of days the Holiday will run
    - **Delete** – The far right column contains a Delete (X) icon. Clicking this icon deletes the selected record from the current Schedule.
- **Add** – The Add button creates a new Holiday record
- **OK** – The OK button saves the current Holidays and closes the Holidays window

EDIT RECORD IN HOLIDAY WINDOW

1. Click the **Edit** icon (pencil-and-paper) of desired record in the **Holiday** window
2. The row is now editable
3. Edit the **Holiday** name, **Start Date** and **Duration** as needed
4. Click the **Save** icon (green checkmark) or the **Cancel** icon (red 'No' symbol) to complete the transaction
5. If Save is selected, the **Save** confirmation window opens

6. Click the **OK** button on the confirmation window to complete the Save operation

DELETE RECORD IN HOLIDAY WINDOW

1. Click the **Delete** icon of the desired record in the **Holiday** window
2. The **Delete** confirmation window opens
3. Click the **OK** button on the confirmation window to complete the Delete operation

ADD RECORD TO HOLIDAY WINDOW

1. Click the **Add** button in the **Holiday** window
2. A new editable row is displayed
3. Enter the **Holiday** name, **Start Date** and **Duration**
4. Click the **Save** icon (green checkmark) or the **Cancel** icon (red 'No' symbol) to complete the transaction
5. If Save is selected, the **Save** confirmation window opens
6. Click the **OK** button on the confirmation window to complete the Save operation

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