User Guide

Tracer® TU Service Tool Standard Edition

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

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Introduction

This Getting Started Guide presents an overview of the Tracer TU features and capabilities that support your work. The early sections include:

- A summary of the product capabilities
- An explanation of the various device connection options
- Guidance for the first time user on how to start a Tracer TU session
- A description of the main user interface features

The remaining sections provide a quick tour through the product.

This guide is intended to complement the *Tracer TU Help for Programmable Controllers*.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE	Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury.

All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠ WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

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Revision History

- Updated the Special Installation Requirement: .NET Framework 4.7 section in the Installing Tracer TU chapter.
- Updated the Programmable Controllers section in the Device Connections chapter.
- Added latest screenshots to the Tracer TU for Programmable Controllers, Data Graphing Utility, and Equipment Utility chapters.
- Added Symbio 500 Controller Settings Screen section to the Tracer TU for Programmable Controllers chapter.
- Added Modbus Client Settings section to the Equipment Utility chapter.

Table of Contents

Tracer® TU Service Tool Overview

This guide introduces you to the Tracer® TU service tool, which is designed to streamline the work performed by controls technicians. Think of Tracer TU as a toolbox. Tracer TU is really a set of individual tools or utilities you can use in any order to accomplish a variety of tasks:

- Viewing and accessing devices on wired or wireless networks (links)
- Transferring configurations to controllers
- Modifying controller settings and configurations
- Modifying and overriding points
- Backing up controllers and entire facilities (sites)
- Configuring alarms for points
- Setting up data logs to track and graph specific points
- Installing and discovering expansion modules
- Updating or changing controller firmware
- Performing air and water balancing procedures

Main Utilities

Tracer® TU has the following main utilities, which are described in this guide.

- The Status Utility

  Use the Status Utility to assess equipment operating status and condition. The status screens are generated in accordance with the specific equipment to which Tracer TU is connected. Device information is presented on the various screens under logical headings.

  The Status includes the following tab screens

  Unit Summary — Provides an "at-a-glance" summary of device operation.

  Analog, Binary, Multistate — Use these screens to create, edit, copy, or delete input, output, and value points. Changes can be saved to the controller or to your hard disk. Use the right-click menu options to configure, override, or view details of individual points.

  Alarms — Displays active and inactive (historical) alarms.

  Controller Status — Provides information about each program residing in the controller, the amount of controller resources currently being used by the executing programs, the status of each expansion module, and standard information about controller hardware and firmware.

  Controller Settings — Use the Controller Settings Utility to enter or change basic controller configuration settings including Date/Time units, Device-ID, baud rate, expansion modules, units of measure, and notification classes.

- The Data Graphing Utility

  Use the Data Graphing Utility to capture and view the data points generated by a controller. You can view the data logs in a graph or tabular format. (See “Graphing Data from Archived Log Files” in the *Tracer TU Help for Programmable Controllers* (included in the software) for more information.)

  The Data Graphing Utility includes the following screens:

  View Graphs — Provides controls used to set up and view graphs (line charts) presenting individual data points.

  Data Log Setup — Allows configuration of data logs stored in the controller. Each log records information for a single point.

- The Equipment Utility

Use the Equipment Utility to view and edit equipment setpoints and setup parameters and to perform commissioning tasks. The Equipment Utility queries the equipment for its properties, retrieves the information, and then dynamically builds the Setpoints, Setup Parameters, Commissioning, and Configuration screens.

Setpoints — Use this screen to view and modify equipment setpoints arranged in logical groups.

Setup Parameters — Use this screen to change settings that control equipment functions or features.

Commissioning — Use this screen to start equipment commissioning routines, such as calibration, auto commissioning, and air balancing.

Configuration — Use this screen to define the equipment features and capabilities included in a factory configuration.

- The Facility View

The Facility View — Use the Facility View tab or icon to display the Facility View where you can override air valves and water valves for an entire communication link or for devices selected from the Device Navigation Tree. View and override standard sets of points for all devices.

Supporting Functions and Related Applications

Tracer TU for Programmable Controllers also includes supporting functions and related applications launched by the following screen icons, which are located in the upper left corner of the Tracer TU window.

Connect/Disconnect — Use the Connect/Disconnect function to establish the communication between Tracer TU and a device after you have connected your PC to the controller's USB port, or to disconnect Tracer TU from a device when your work is finished.

File Transfer Utility — Use the File Transfer Utility to download firmware, any Controller Configurations included with Tracer TU, or complete backup files to one or more devices.

Backup Utility — Use the Backup Utility to create a backup file containing program and configuration files from a unit controller and then store it on a network drive or your local hard drive. You can back up multiple controllers in one operation. (Perform backups regularly, especially before and after significant changes are made to a unit controller.) (See “Backup Utility,” p. 52 and “Backing Up Controllers” in the “Tracer TU Help for Programmable Controllers”.)

Concierge Controller — You can launch Tracer Concierge, the browser based user interface to the Concierge Controller, from the Device Navigation Tree on the left side of the screen in Tracer TU. (See “The Device Navigation Tree,” p. 42.) You can also launch Tracer Concierge directly when you connect to the Concierge Controller with a USB cable. The Tracer Concierge icon (labeled as Trane Controller Via USB) is placed on your desktop during Tracer TU installation.

Laptop Requirements

Your laptop must meet the following hardware and software requirements:

- 4 GB RAM.
- 1024 x 768 screen resolution.
- Ethernet 10/100 LAN card.
- An available USB 2.0 port.
- Windows 10 Anniversary Edition operating system (32–bit or 64–bit).
- Microsoft .NET Framework 4.8 or later (auto-installed if not present).
- Microsoft Visual C++ Redistributable for Visual Studio 2015, 2017, and 2019 (v142) (auto-installed as required for TGP2 and the legacy Trane USB driver).

Notes:

- *Tracer® TU is designed and validated for this minimum laptop configuration. Any variation from this configuration may have different results. Therefore, support for Tracer® TU is limited to only those laptops with at least the configuration previously specified.*
- *In addition, for optimal Tracer® TU performance the following features are recommended:*
  - *8 GB RAM.*
  - *A 7200 RPM hard disk drive or a solid state drive.*
- *To view the Tracer® TU Getting Started Guide (pdf format), download the Adobe Acrobat Reader DC from https://get.adobe.com/reader/.*

Information for Tracer® Concierge™ System Contractors

This Getting Started Guide is designed to introduce you to the Tracer TU Service Tool. Read through the early sections to learn about the main features and structure of this software product. This guide, along with the *Tracer TU Help for Programmable Controllers* (Online Help), provide information to supplement the preliminary training you have received from Trane.

Note: *A version of this section with links to relevant topics is included in the Tracer TU Help for Programmable Controllers.*

The following topics may be especially relevant to the tasks you need to perform to successfully complete a Concierge installation. Refer to the following sections in this guide and the corresponding information in the Online Help. The following table will help you locate relevant information you need to complete Tracer Concierge System installation.

Getting Started Guide	**"Tracer Concierge System Concepts and Procedures" section of the *Tracer TU Help for Programmable Controllers***
Product Installation: See "Installation Procedure," p. 13. (This information can also be found in the *Tracer TU V9.3 Release Notes* included on the product flash drive.)	———
Product Licensing See "Licensing and Registering Tracer TU," p. 16. (This information can also be found in the *Tracer TU V9.3 Release Notes* included on the product flash drive.)	———
Viewing Devices on a Network (Link) See " Single Link Access," p. 43.	See topics under "Accessing Devices on a Single Link".
Creating and Maintaining Wireless Networks See "Access to Devices on Wireless Networks," p. 45.	See "Accessing Wireless Devices and Maintaining Networks". Also see "Viewing Network Health (Network Summary Report)" to learn how to generate a report on the condition of the wireless network and how to generate a graphical diagram of the network.
Configuring and Commissioning VAV Boxes	See the following topics under "Configuring and Commissioning VAV Boxes": • "Modifying an Existing Configuration (Online)" • "Changes to Factory Equipment Controller Configurations" • "Specifying Setpoint and Setup Parameter Values"
Transferring (Downloading) Configuration Files to Controllers See "File Transfer Utility," p. 51.	See the following topics under "File Transfer and Backup": • "An Overview of the Mass Download Capability" • "Loading a Factory Bypass Damper Configuration on a UC210" • "Loading a Factory 2H/2C Configuration on a UC400" • "Transferring a Controller Configuration to a Connected Device"

Getting Started Guide	**"Tracer Concierge System Concepts and Procedures" section of the *Tracer TU Help for Programmable Controllers***
Backing Up Controller Configurations See "Backup Utility," p. 52.	See "Backing Up Controllers" under "File Transfer and Backup".
Performing Simultaneous Overrides on a Group of Devices See "Facility View," p. 49.	See topics under "Working with Device Groups on the Facility View" . ***Note:*** *This is a TOC Book section that is separate from the Tracer Concierge System Concepts and Procedures TOC book. It is located lower down in the Online Help Table of Contents.*
Modifying Analog, Binary, and Multistate Points See "Binary Tab Screen," p. 28 (Status Utility) for a description of the point screens.	See topics under "Configuring and Managing Points" in the Table of Contents. ***Note:*** *This is a TOC Book section that is separate from the Tracer Concierge System Concepts and Procedures TOC book. It is located lower down in the Online Help Table of Contents.* ***Important:*** *Adding, editing, or deleting points should only be done if absolutely necessary, and only if you are knowledgeable about how the changes will affect equipment operation. You are responsible for the proper operation of the equipment if any changes are made to factory configurations.*

Configuration Files Included with Tracer TU V10.0 Standard Edition

On most jobs, you will work with factory-configured controllers. However, should a job require a bypass damper, 2H/2C, or lighting control, the following Controller Configuration files and Backup file are included with Tracer TU Standard Edition:

- Bypass Damper Control_v5.7.UC210Config
- 2H2C + HP T-stat Replacement No OA Damper_v3.2.UC400Config
- Concierge Panel UC400_V2.zip

After you have installed Tracer TU, you can access these files, which are located in the \My Documents \Tracer TU \Tracer Concierge folder.

All Tracer TU Status Utility and Equipment Utility screens support these equipment configurations. Use the File Transfer Utility to load a file onto a controller. See the topics under Table of Contents folders "Tracer Concierge System Concepts and Procedures" > "File Transfer and Backup" in the *Tracer TU for Programmable Controllers Help* for links to procedural information.

Controller Configurations

A Controller Configuration is a complete factory configuration that includes everything that is required to operate the controller and run the equipment in one package: the points, programs, data logs, alarms, a graphic, and internal template information. You can install and use a Controller Configuration “as is” or modify it, if necessary.

Important: *Editing a factory configuration should only be done if absolutely necessary, and only if you are knowledgeable about how the changes will affect equipment operation. You are responsible for the proper operation of the equipment if any changes are made to factory configurations.*

Backup Files

A Backup file is similar to a Controller Configuration, but it can load faster than a Controller Configuration. However, a transferred Backup file will overwrite the Device Name, Device ID, Unit Tag, Unit Model Number, Unit Serial Number, Unit Sales Order Number, and Notification Classes that currently exist on the target device. To avoid this situation, select the **Retain device communication settings and unit tag information** check box described in the topic “Transferring a Backup File to a Network Device”, which is located under the Table of Contents folders "Tracer Concierge System Concepts and Procedures" > "File Transfer and Backup" in the *Tracer TU Help for Programmable Controllers*.

Installing Tracer® TU

This section explains how to obtain the Tracer® TU installation file and install your licensed version of the software on your PC.

Contact your local Trane sales office to order Tracer® TU.

Special Installation Requirement: .NET Framework 4.7

An Internet connection is required during Tracer® TU V10.0 installation to enable installation of Microsoft .NET Framework 4.7. The installation procedure you encounter depends on the level of the Windows operating system on your PC.

Windows 10

The Windows 10 Anniversary Update or higher is required for this upgrade. If you are running a lower version of Windows 10, first install the Anniversary Update. See \https://www.microsoft.com/en-us/download/details.aspx?id=55170.

Installation Procedure

When you have obtained the Tracer® TU installation USB flash drive, complete the following steps to install the software.

Notes:

- *The USB flash drive should only be used to install Tracer® TU.*
- *Installing Tracer® TU requires Administrator account privileges. Before you attempt to install the software, you should verify that the installing user-id has these privileges. See your software administrator for assistance.*
- *The installing user-id is the only user-id that can access and operate Tracer TU, unless you complete an additional procedure. (See "Establishing Access to Tracer TU for Alternate Users," p. 16).*

1. Place the installation flash drive in a USB port.

   The installation should start automatically. If the installation does not start automatically, perform the following steps:

   a. Click **Start** in the bottom left corner of your screen.

   b. Click **Run**.

   c. Browse to the location of the installation file **(Tracer TU Setup.exe)** and click **Open**.

   d. Click **OK** on the Run dialog box.

   A Welcome dialog box appears.

2. Click **Next**.
3. Click **I accept . . .** to accept the License Agreement after reviewing it.
4. Click **Next** to accept the default installation location (C:\Program Files\Trane\Tracer® TU).

   (You can click **Change** to specify an alternate location before clicking Next.).
5. Select **Anyone who uses this computer** or **Only for me** on the User Profile dialog box.
6. Discontinue any connection between your PC and a Trane controller before starting the installation.
7. Click **Install** on the Ready to Install Tracer® TU dialog box.
8. Click **OK** if you see a message box indicating that the Microsoft .NET run-time files are out of date. This software is required to run Tracer® TU.

   Note: *Extra steps may be required if you are installing Tracer® TU on a Windows 7 or higher machine and Microsoft .NET 4.7 must also be installed as part of the installation. When .NET 4.7 is finished installing, you are prompted to restart your machine. After the restart, you must start the installation once again (by clicking the Tracer® TU Setup.exe file) to resume and complete product installation. You may then be prompted to install an additional Redistributable file as well.*

9. Click **Continue Anyway** if the dialog box warning you that the software has not passed Windows Logo testing appears.
10. Click **Finish** to complete the installation process.

Special Situation: Stopping the Tracer® TU Service

In rare circumstances, when you are upgrading Tracer TU from an earlier release, you may see the following message:

Service Tracer TU Service could not be stopped.

The message box includes the Retry and Cancel options.

If you encounter this message, perform the following steps:

1. Open the Windows Task Manager by pressing **Ctrl-Alt-Delete** and then clicking the **Task Manager** button.
2. Go to the **Process** tab.
3. Find and select **EvoUSB.exe**.
4. Click **End Process**.
5. Return to the message dialog box and click **Retry**.

The Tracer TU upgrade installation will continue.

Results of the Installation

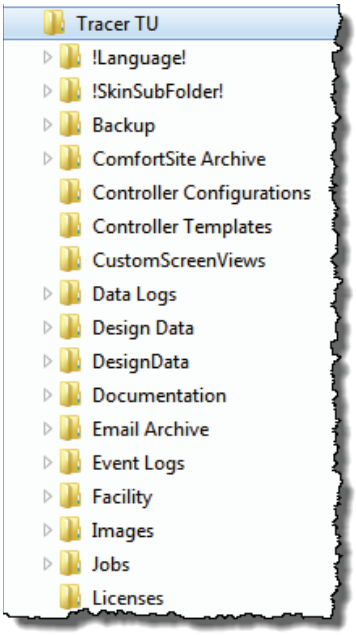
The installation routine places all system files in different locations depending on whether a 32–bit system or a 64-bit system is installed.

- For Windows 10 64-bit systems, the Tracer® TU system files are placed under the Program Files (x86) folder (C:\Program Files (x86)\Trane\Tracer® TU).
- For Windows 10 32-bit systems, the Tracer TU system files are placed under the Program Files folder (C:\ProgramFiles\Trane\Tracer® TU).

The installation also places three icons on your desktop (Tracer® TU, Tracer® SC via USB, and Trane Controller Via USB). A Tracer® TU program item is also added to the Programs list on the Start Menu.

In addition, the installation creates several folders under \My Documents\Tracer® TU. Generated data log files, reports, and backup files are saved to these folders by default. The typical folder structure is shown in the following figure.

Figure 1. Typical subfolders installed with Tracer® TU



You can create additional folders under these standard folders to store data for each job as needed.

Licensing and Registering Tracer TU

Tracer® TU is a licensed product. You must obtain a license for each PC on which Tracer TU is installed. In addition, your Tracer TU license will be valid for a set period. As the expiration date approaches, you will be notified each time you start Tracer TU. When your license expires, Tracer TU will no longer be operable. You can only launch the Tracer TU Balancing Tool at that time. If you have not used Tracer TU during the time when the expiration warnings would have been displayed, you are given a two-week grace period during which you can update your license.

Complete the following procedure on each PC to obtain a product license and to register your software:

1. Click the **Tracer TU** icon on your desktop to start Tracer TU.
2. Click **Activate** on the Startup Task Panel.

   The License Tracer TU Balancing Tool dialog box appears.

   Note: *The Tracer TU Balancing Tool is the default application loaded when you initially start Tracer TU before applying the license file. If you have purchased Tracer TU for Programmable Controllers, Tracer TU for Chillers, or Tracer TU Complete, the correct application will appear when your license file is applied.*
3. Enter the **Software Serial Number** that is displayed on a sticker on the software box and on the License Agreement and click the **Generate PC ID** button.

   The resulting PC ID number is displayed at the bottom of the dialog box.
4. Click **Copy PC ID** and paste the number in a Microsoft Word or Notepad file to store it for later use.
5. Click **Exit**.
6. With both the Software Serial Number and PC ID in hand, call your local Trane representative to obtain a software license.

   A license file will be sent to you by e-mail.
7. Save the license file to your desktop when you receive the e-mail.
8. Start Tracer TU. and then click **Register**on the Startup Task Panel once again.
9. Click **Register** on the Tracer TU License dialog box.

   The Select License File dialog box appears.
10. Navigate to the location where the license file was stored (for example, the desktop).
11. Click **Register**.

    The Startup Task Panel dialog box appears. You can now connect to a controller and start a Tracer TU session.

Establishing Access to Tracer TU for Alternate Users

You may want to enable access to Tracer TU on a specific PC for other users in your office. You can do so by completing the following steps.

1. Log on to Windows using an alternate user-id.
2. Perform steps 6, through 11 in the previous procedure.

   The Connect dialog box appears. The alternate user can now connect to a controller and start a Tracer TU session.

Device Connections

When you have installed Tracer TU, you can start a Tracer TU session by connecting your PC to the controller and then clicking the **Tracer TU icon** on your desktop or clicking the **Trane>Tracer TU** item on the Start menu's All Programs list.

A USB connection (using a Type A/B USB cable) provides the best performance.

Programmable Controllers

Programmable controllers have additional connection options. (See "Starting a Tracer® TU for Programmable Controllers Session," p. 19.

System Controller

UC210

UC400

Tracer SC+

Symbio® 800 Programmable

Symbio® 400–B

Symbio® 210/210E

Symbio® 500

Symbio® 700

Driver Installation

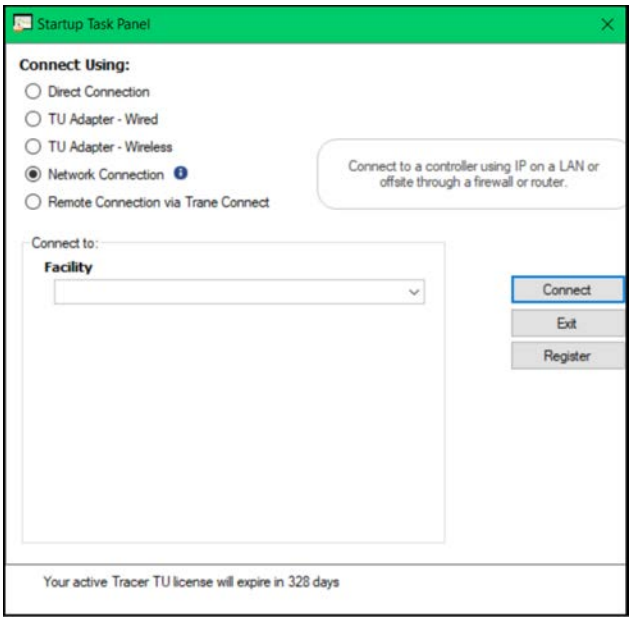
The first time you connect to a controller, the appropriate driver is installed automatically. A small message box that indicates the installation is taking place appears at the bottom of your screen near the system tray. This message is followed by a successful installation message.

Note: *If you encounter an error condition or message during this installation process or during the subsequent connection steps, see "Tracer® TU Installation and Connection Error Conditions," p. B–1 for corrective actions.*

The Startup Task Panel

When you click the **Tracer TU** desktop icon or the **Trane>Tracer TU** program item on the Start menu, the Startup Task Panel dialog box appears.

Figure 2. Startup task panel



Tracer® TU pre-selects the radio button that corresponds to the connection method you are using, so you can either first select a facility or click the **Connect** button immediately. If you connect to a controller directly with a USB cable, you can select a Discovery Option as shown in the previous figure.

When you connect to a controller, the Unit Summary screen appears as shown in "Unit Summary Screen (UC210, UC400, and Symbio Controllers)," p. 27.

Note: *If you first connect through a System Controller, a security dialog box appears on which you must enter a user name and password. You can then select the device you want to work with on the Device Navigation Tree (see "The Device Navigation Tree," p. 42 and "Using a LAN Connection," p. 19).*

Connecting to a UC400, UC210, Symbio Controllers, System Controllers, or Concierge Controller with a USB Cable

Connecting to a controller directly with a USB cable is recommended whenever possible, because a USB connection provides the best performance.

Perform the following steps to connect to a UC400, UC210, symbio controllers, system controllers, or concierge controller:

1. Connect your Type A/B USB cable directly from your laptop to a UC400, UC210, symbio controllers, system controllers, or concierge controller.
2. Click either the **Tracer TU** desktop icon or the **Tracer TU** item on the Start menu.

   Note: *Observe existing USB standards for cable length (for more information go to relevant Web sites resulting from search terms, such as USB standard cable length).*

Starting a Tracer® TU for Programmable Controllers Session

You can connect to programmable controllers in the following ways:

- Direct physical connection using a USB cable .
- Direct physical connection to a Concierge Controller using an Ethernet cable (See “Additional Options on the Drop-down List,” p. 22).
- Network connection using an IP address over the local area network (LAN) on which the Concierge Controller resides, or an Internet connection from a remote location through a firewall or router to access a Concierge Controller, and the controllers on its wired and wireless links. (See “Using a LAN Connection,” p. 19, which follows in this section.) Use BACnet® Discovery for access to all devices on a BACnet®/IP network. (See “BACnet® Discovery,” p. 44).
- Connection through a zone sensor using the Tracer® TU Communication Adapter. See the *Tracer® TU Communication Adapter User Instructions* (X39641115-01*x*), which is included with the product.
- Indirect connection from one device to another using the Single Link Access feature. (See “ Single Link Access,” p. 43).
- Wireless connection to a network device in an established wireless network. (See “Access to Devices on Wireless Networks,” p. 45).

When you click the **Tracer TU** desktop icon or the **Trane >Tracer TU** program item on the Start menu, the the Startup Task Panel appears. (See “The Startup Task Panel,” p. 18)

Using a LAN Connection

To use a LAN connection, you create a link to a facility in Tracer® TU.

Note: *The term facility corresponds to an individual Concierge Controller that acts as a central point of control for all devices on its links, including Tracer® SC/SC+ (base) controllers. (The main Concierge Controller is referred to as an Tracer® SC/SC+ (app) controller).*

To create a link to a facility, you need to know the IP or DNS address assigned to the Concierge Controller you want to access. You can create a link to the facility on the Startup Task Panel in two ways:

- Use the Add New Facility Connection option to create a persisting link, which you can access from the Startup Task Panel. (See “Adding a Facility,” p. 19).
- Manually enter an IP address or DNS name on the Startup Task Panel to link to a Concierge Controller on a one-time basis. (See “Using the Manual Entry Option,” p. 20).

Adding a Facility

1. Click either the **Tracer TU** desktop icon or the **Tracer TU** program item in the Tracer® TU group on the Start menu.

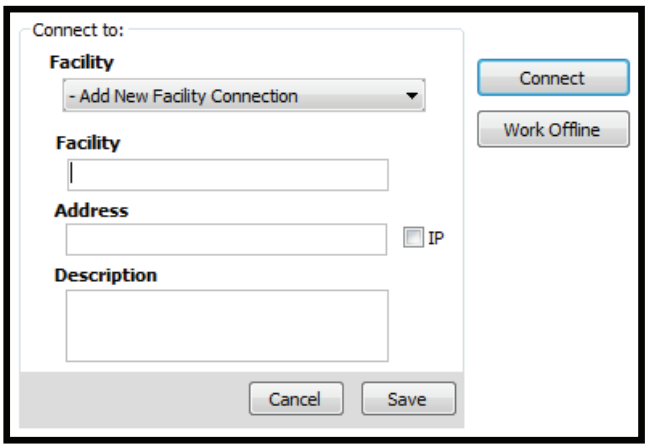
   The Tracer® TU splash screen appears briefly followed by the Startup Task Panel dialog box.
2. Select the **Network Connection** radio button.

   The Facility drop-down selection box appears.

3. Select **Add New Facility Connection**.

   A set of entry boxes appear in which you can specify the name of the Facility, its address (URL or IP), and a brief description.

Figure 3. Add new facility connection box on the startup task panel



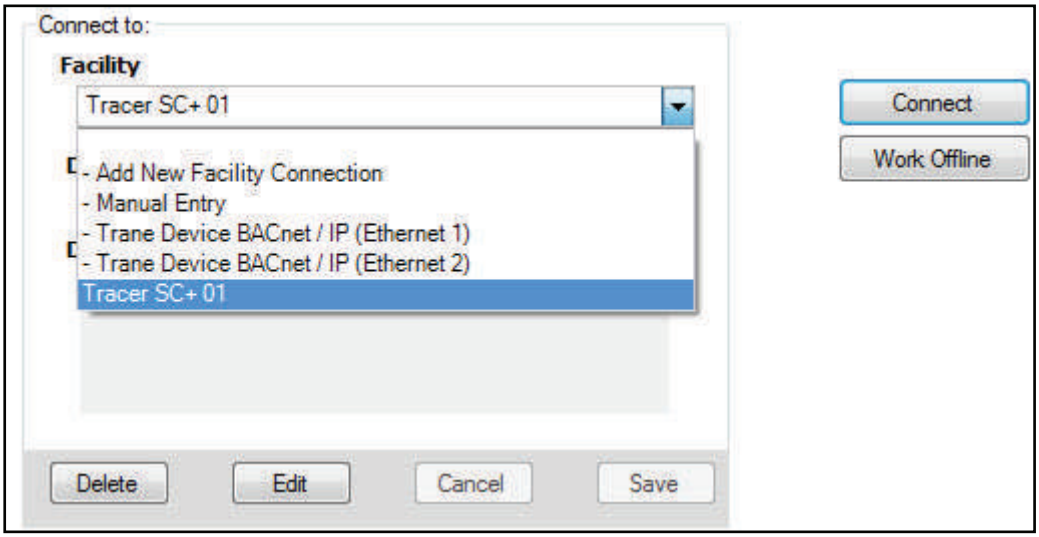
4. Enter the name of the Concierge Controller you want to access.
5. Enter a DNS address or an IP address.
6. Specify a port if your site uses a specific port other than the default 80.

   Note: *You can specify a secure connection (HTTPS) by selecting the IP check box and specifying port 443. However, be aware that using a secure connection slows Tracer® TU performance.*

7. Click **Save**.

   Each facility you create is saved and can then be selected from the Facility drop-down list.

Figure 4. Selecting a system controller or concierge controller from the facility drop-down list

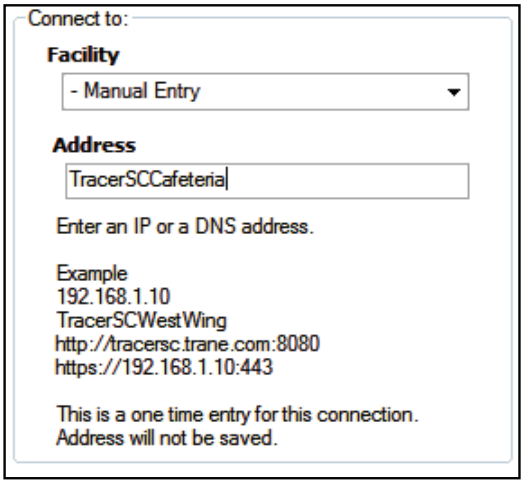


Using the Manual Entry Option

You can specify a facility on a one-time basis without creating a facility entry on the Startup Task Panel.

1. Select **Manual Entry** on the Facility drop-down list.
2. Enter an IP or DNS address in the entry box as shown in the following figure.

Figure 5. Using the manual entry option on the startup task panel



3. Continue with the steps described in “Connecting to a System Controller or Concierge Controller and Its Devices,” p. 21.

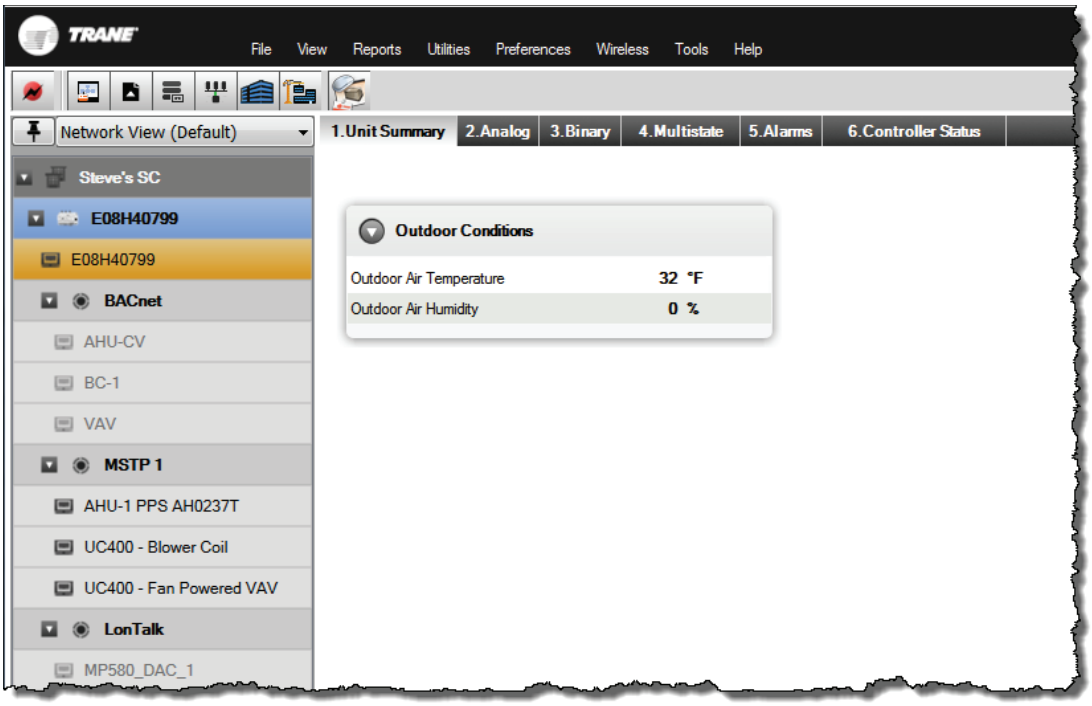
Connecting to a System Controller or Concierge Controller and Its Devices

1. Select the facility you have just created or any existing facility on the drop-down list.
2. Click **Connect**.

   A security dialog box appears that prompts you for a user name and password. When Tracer® TU is connected, you can now see the Device Navigation Tree pane on the left side of the Tracer® TU window. All the devices on the Concierge Controller’s links are listed in the Device Navigation Tree. (See "The Device Navigation Tree Pane" section in the*Tracer® TU Help for Programmable Controllers* for additional information about complex networks that use a primary Concierge Controller (Tracer® SC/SC+ (app) controller) with Concierge Controllers that act as routers (Tracer® SC/SC+ (base) controllers).

   The System Controller version of the Unit Summary screen appears as shown in the following figure.

Figure 6. Unit summary screen (concierge controller version)



All the devices on the System Controller's links are listed in the Device Navigation Tree to the left of the screen. You can connect to any device on the BACnet® (wired or wireless), Modbus®, and LON links by right-clicking the device entry on the tree and selecting **Connect to Device**. (See "Tracer TU for Programmable Controllers," p. 26 for a description of this screen and for continued coverage of Tracer® TU for Programmable Controllers features.).

Additional Options on the Drop-down List

Additional options on the Facility drop-down list are:

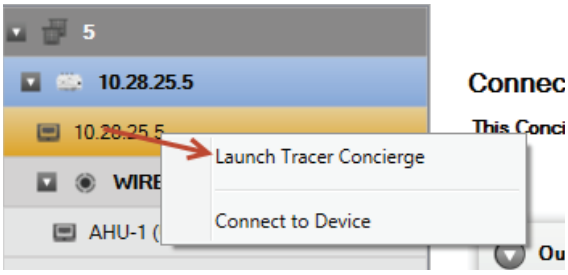
- **Manual Entry** — Enter a IP or DNS address on a one time basis.
- **Trane Device BACnet/ IP (Ethernet 1) (Ethernet 2)** — These addresses allow direct connection to one of the Ethernet ports. After connecting your Ethernet cable directly to a Ethernet port, select the corresponding address and click Connect.
- Facilities you have previously created are listed as additional options.

Launching Tracer Concierge

You can launch Tracer Concierge, a web based application that is used to configure the Concierge Controller.

1. Right-click the **Concierge Controller** icon (orange area) at the top of the Device Navigation Tree.
2. Click **Launch Tracer Concierge** to start the application as shown in Figure 7, p. 22.

Figure 7. Launching tracer concierge from the device tree



If you connect directly to a Concierge Controller with a USB cable, you can click the **Trane Controller Via USB** icon installed on your desktop. (See “Tracer Concierge,” p. A–1 for details.)

Trane Controller Via USB icon
Click to launch Tracer Concierge

Check for Units of Measure

When you connect to a controller directly with a USB cable or indirectly by Concierge Controller pass-through or Single Link Access (see “ Single Link Access,” p. 43), Tracer TU determines whether units have been specified for the controller. If no units have been specified, you are immediately transferred to the Controller Settings tab screen where you can specify the units. This check for units ensures that units are defined before you proceed with configuration tasks.

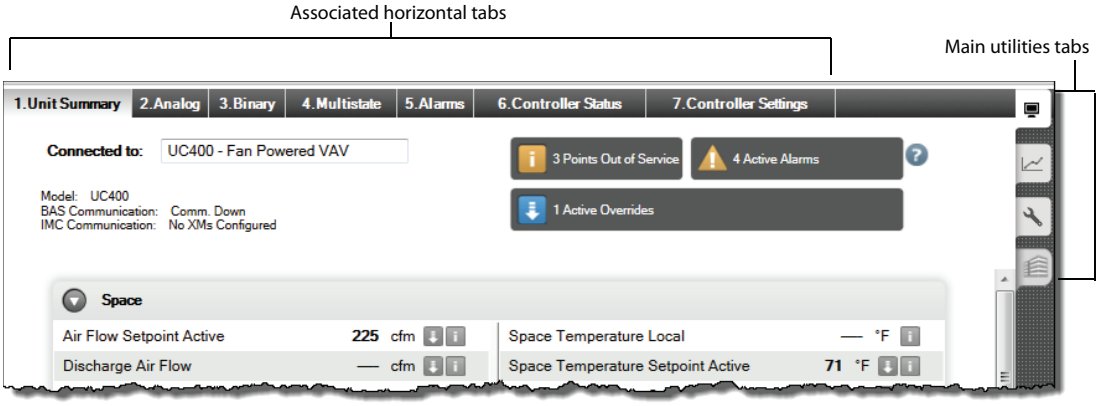
Tracer TU Interface Navigation and Controls

The best way to explore Tracer TU is to examine its main utilities, which you can access though the vertical tabs on the right side of the Tracer TU window or by using the Utilities menu at the top of the screen. Click through these vertical tabs and examine the horizontal tabs associated with each of them. Later in this guide, you will be directed to the tutorial topics in the Tracer TU Help file for more detailed descriptions.

The Location of the Utilities Tabs

The main utilities tabs are located on the right side of the Tracer TU screen as shown in the following figure.

Figure 8. The main utilities tabs



Associated Horizontal Tabs

Each main tab has it own group of associated horizontal tabs. For example, when you click the Equipment Utility tab (the wrench icon shown above), the following horizontal tabs appear at the top of the viewing area.

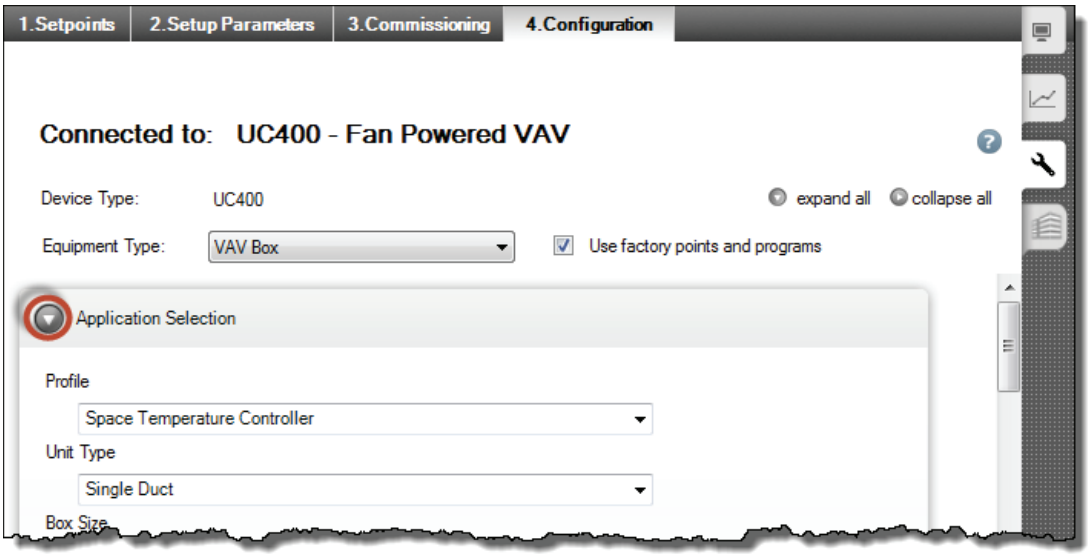
Figure 9. The horizontal tabs associated with the Equipment Utility tab

Click any one of these tabs to select it and display the corresponding screen. The selected tab turns white as shown in the previous figure. (Note that the Setpoints tab is selected by default.)

Expanding Boxes

If you click the Equipment Utility Configuration tab, you see the expanding box labels on the Configuration tab screen.

Figure 10. Expanded Application Selection box on the Configuration tab screen

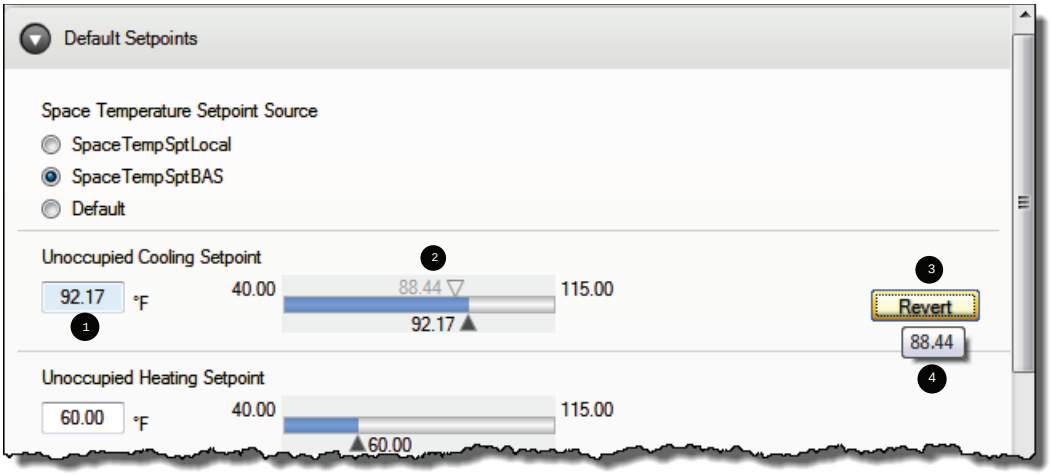


Notice that the heading bar has an arrow icon on the left. The arrow points down when the expanding box is open (see the Application Selection box) and to the right when the box is collapsed. Use the arrow icon on each heading bar to expand and display its contents. Click the icon again to collapse the box and hide its contents.

Settings Controls

Several settings can have up to four types of controls. (See Figure 4 that follows.) You can enter a new value in the ❶ entry box on the left, or you can use the ❷ slider to the right. On the Setpoints screen, a Default button appears when you change the setpoint to a value other than the default. Click Default to change the value back to the factory default value. In all Tracer TU versions, the ❸ Revert button appears when you make a change to the current value. Click Revert to return to the last saved value, which is displayed in ❹ "ToolTip" or "hover" text that appears when your cursor moves over the button.

Figure 11. Selection controls on the Setpoints screen



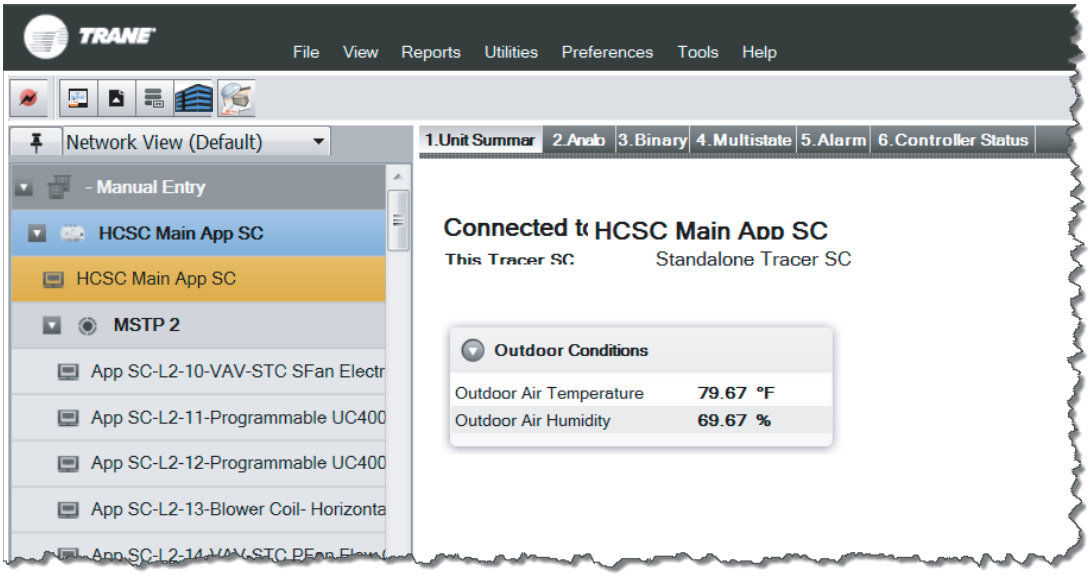
Tracer TU for Programmable Controllers

Tracer TU for Programmable Controllers presents the Unit Summary screen at startup. The contents of the Unit Summary screen vary depending on the controller to which you are connected. If you connect to a Concierge Controller, you will first see the Concierge Controller Unit Summary screen. You can then connect to any communicating controllers on the Concierge Controller's links.

Unit Summary Screen (Tracer Concierge Controller)

The Unit Summary screen is displayed when you are connected to a Concierge Controller.

Figure 12. Status utility — unit summary screen (concierge controller version)



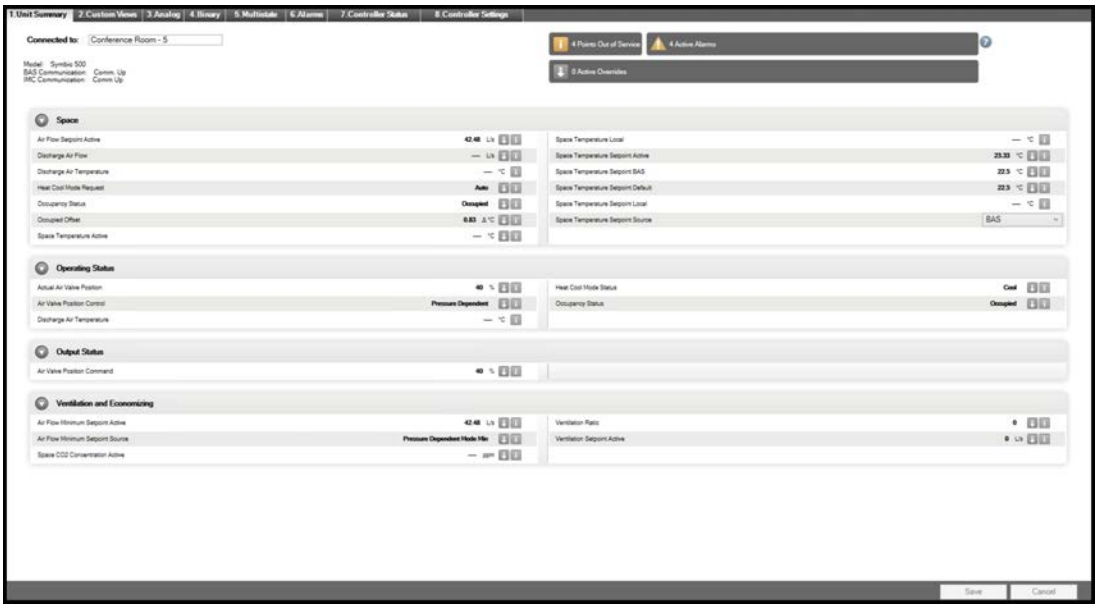
You can now perform either of the following actions:

- Right-click the **Concierge Controller** icon (orange area) at the top of the Device Navigation Tree and then click **Launch Tracer Synchrony** or **Launch Tracer SC** (depending on the device to which you are connected) to start Tracer Concierge. (See "Tracer Concierge," p. A–1.)
- Connect to one of the devices displayed in the device hierarchy on the Device Navigation Tree pane on the left side of the Tracer TU window by right-clicking it and selecting **Connect to Device**. You can then perform tasks using the available Tracer TU utilities and applications.

Unit Summary Screen (UC210, UC400, and Symbio Controllers)

If you are connected to a UC210, UC400, or Symbio Controllers when you start Tracer TU, or if you connect to a device through a Concierge Controller, you first see the Unit Summary screen, which is associated with the Status Utility tab at the right. It is one screen in a group of Status Utility screens. It contains “at-a-glance” status information about the device to which you are connected. The following figure shows the Symbio™ 500 version of the Unit Summary screen.

Figure 13. Status utility — the unit summary screen (Symbio 500 version)



The gray alert boxes at the top right provide vital information about the points that are out of service, any active alarms, and the presence of active overrides. Clicking the **Active Alarms** alert takes you to the Alarms screen. (The **Points Out of Service** and **Active Overrides** alerts are for display only.)

Note: *Most Tracer TU for Programmable Controllers screens are similar to the Symbio 500 screens shown in this section.*

The Status Utility

The Status Utility has a set of horizontal tabs providing access to its screens. Use the Status Utility screens to monitor performance and to create, edit, delete, override, and compare points using the Action drop-down list and the right-click menus on the **Analog**, **Binary**, and **Multistate** screens. In addition, the **Alarms** screen displays active alarms and the **Controller Status** screen provides information about the status of the controller, its installed programs, and expansion modules. Finally, the **Controller Settings** screen is where you can configure expansion modules, wireless sensors, notification classes, communication settings, the controller date and time, and controller units.

Binary Tab Screen

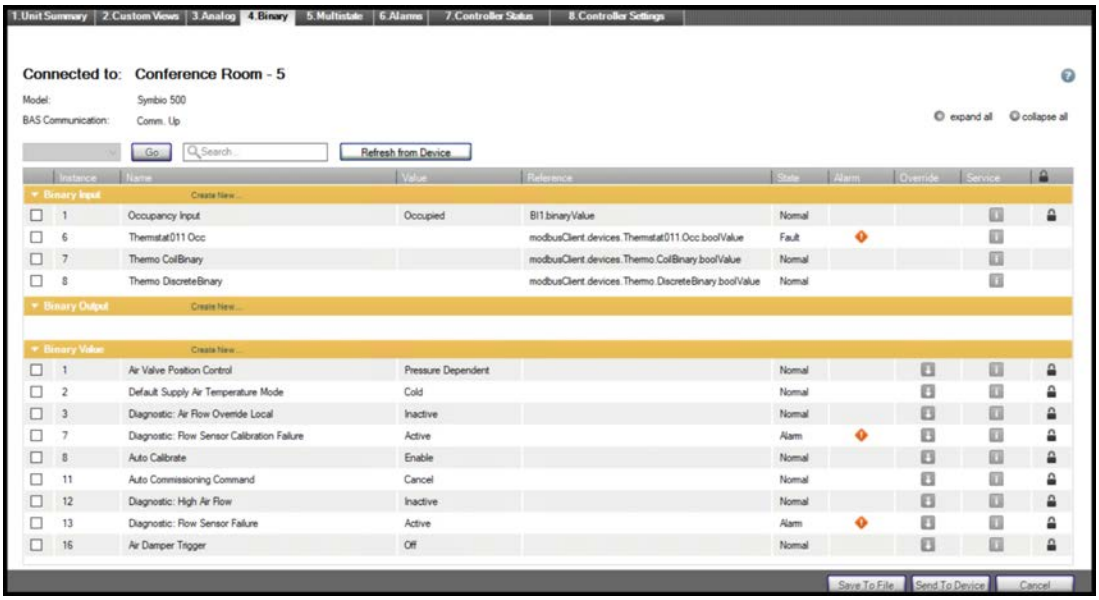
The following figure shows the Binary tab screen, which lists the binary inputs, outputs, and values that reside on the controller and are used by the installed programs. (The Analog and Multistate screens have a similar format.) You can create, edit, copy, and delete points from these screens and then send the changes to the device or an offline Controller Configuration.

Note: *A Refresh from Device button and Search box is now shown on all points pages.*

Refer to the “Configuring and Managing Points” section in the *Tracer TU Help for Programmable Controllers*.

Note: *The padlock icons in the Lock column on the right, signify that the points are Factory supplied and are, therefore, not editable. The lock applies to most equipment with some exceptions. You can edit some points in Trane factory blower coil, fan coil, and unit ventilator configurations. See “Trane Factory Blower Coils, Fan Coils, and Unit Vents” in the Tracer TU Help for Programmable Controllers and “Factory Equipment Configurations You Can Modify (UC210, UC400, Symbio™ 210 and Symbio 400-B/Symbio 500),” p. 47 of this guide for more information.*

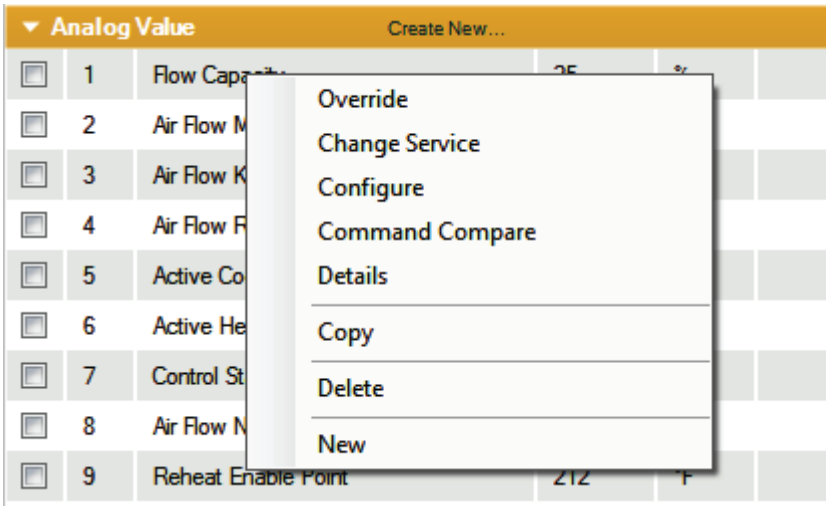
Figure 14. Status utility — binary tab screen



You can click the Override icon (down arrow icon) in the grid to bring up either an Override Request dialog box (used for output or value points) or a Change Service Request dialog box (used for input points).

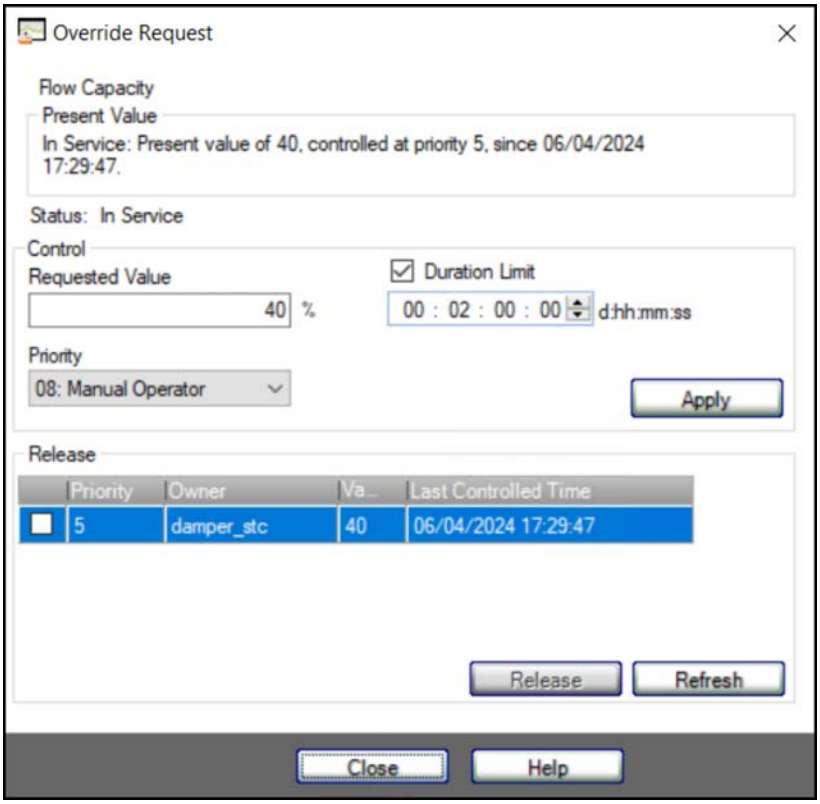
Alternatively you can right-click within the row of any point and select either the Override or Change Service options on the right-click menu, which is shown in the next figure, to display the same dialog boxes. Select Details on the right-click menu to view specific information about a point.

Figure 15. Right-click menu on the status utility analog, binary, and multistate screens



The next figure shows the Override Request dialog box. The selected point name is displayed at the top of the dialog box. You can use the Override Request dialog box to either override a point or take it out of service.

Figure 16. Override request dialog box



- Override the point using a different value and priority level. When you specify an override on this dialog box, a blue Override icon appears in the Control column of the Status Utility tab screen indicating that the override is in effect. You can also set the amount of time (Duration Limit) that the override will be in effect. If you set a Duration Limit, the Override icon includes a clock image. If you place your cursor over the icon, a text box appears indicating the amount of override time remaining.


- Taking a point out of service cuts off the connection with the point's reference. By disconnecting the point from its reference, you can substitute a temporary value for testing purposes or port a program and its points to another device before transitioning the equipment to the new program.

Refer to the "Overriding Points" section in the *Tracer TU Help for Programmable Controllers* for procedures explaining how to specify and release an override. (For more information about Help see "Accessing the Tracer TU Help for Programmable Controllers," p. 41.)

Note: *You can also override the same point on multiple devices using the group override capability. See "Facility View," p. 49 for information about this capability.*

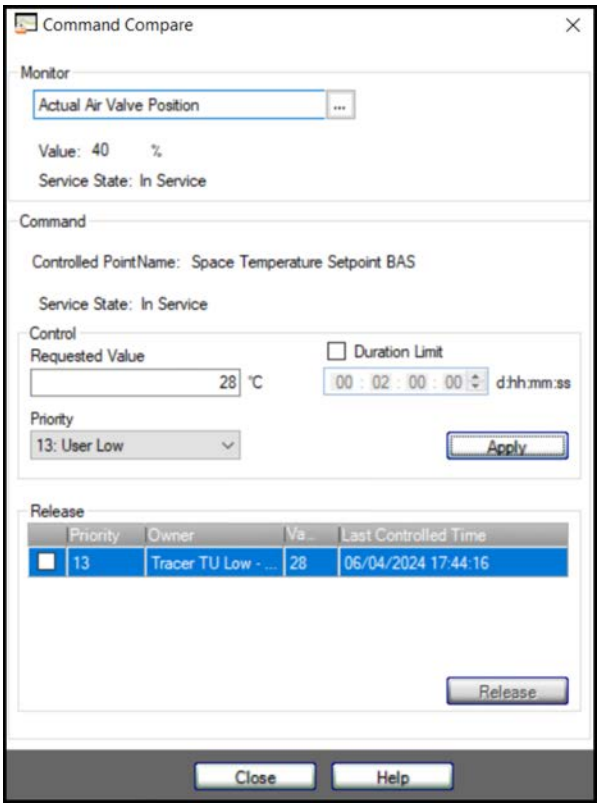
Using Command Compare

Use the Command Compare dialog box to determine if a selected point is performing as intended by monitoring its effect on a related point. For example, you can monitor the effect on a fan state or a setpoint by changing the occupancy state, or you can change the fan speed to observe the effect on duct air pressure (using caution to avoid a high pressure situation).

You can select Command Compare either from an input point you want to monitor while changing a related point, or from a value or output point you will control while monitoring a related point. Your selection determines the version of the Command Compare dialog box that is displayed.

The Command Compare dialog box shown in the following figure displays an initially selected input point (**Space Temperature Local**), which is the monitored point. When the value of the controlled point (**Supply Fan Speed**) is changed, you can observe the effect on the Space Temperature Local value to ensure that it reacts as expected.

Figure 17. Monitored input point on command compare dialog box



If you select Command Compare from a value or output point, the dialog box appears with the value or output displayed in the Controlled Point box. You then select the monitored point for that control point.

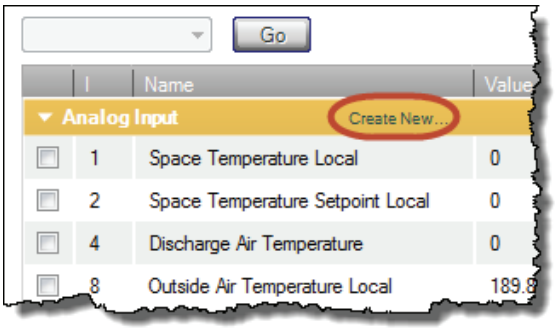
Notes:

- *When you change a point's value you are performing an actual override of the point. Be sure to release the override when you are finished.*
- *If the controlled point is locked, your override request is ignored.*

Creating and Editing Points

Use the Point Configuration Properties dialog boxes to create or edit points. Access the Point Configuration Properties dialog boxes using the Create New link or the drop-down list and Go button on the Analog, Binary, and Multistate point screens.

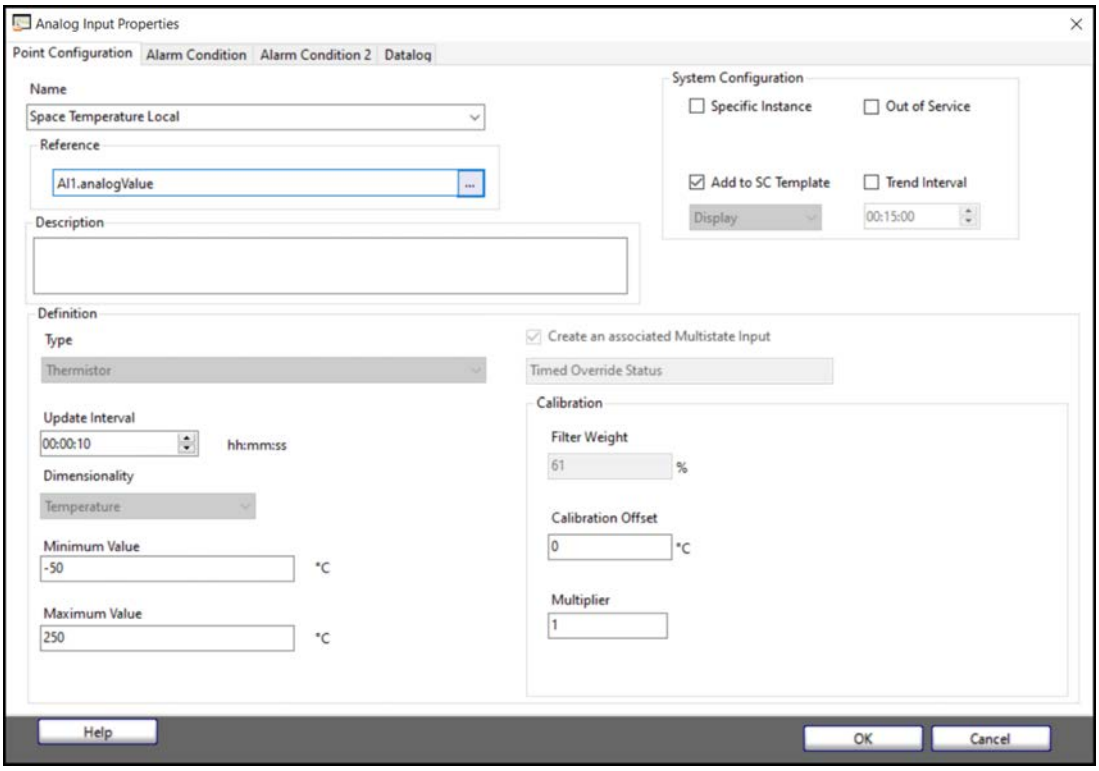
Figure 18. Create new link



The following figure shows the Analog Input Properties dialog box. You can create an alarm and specify primary alarm conditions and a notification class on the Alarm Condition tab. If you want to specify secondary set of alarm conditions for the point, you can configuration those separate conditions on the Alarm Condition 2 tab. See the *Tracer TU Help for Programmable Controllers* (Configuring and Managing Points > Configuring Alarms) for more information. Use the Datalog tab to set up a data log to track point values over time.

Note: *Tracer TU User Preferences allows the user choose how to display the points. Points can be sorted and displayed by Name or Instance number.*

Figure 19. Analog input properties dialog box accessed from the analog tab screen



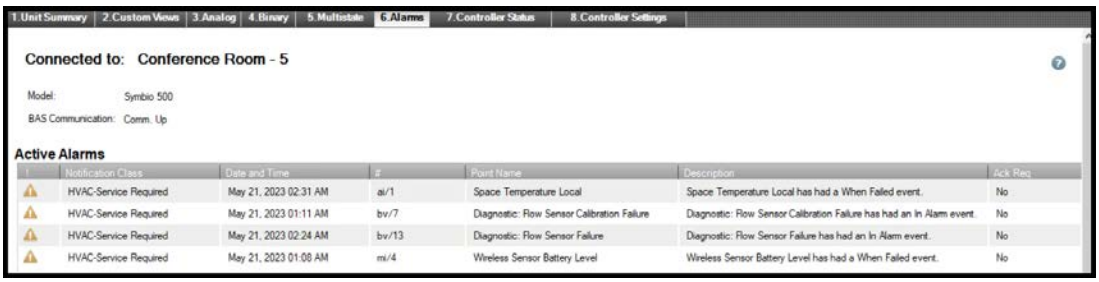
If you want to add the selected standard point or a custom point to the System Controller template, you can select the **Add to SC Template** check box in the System Configuration group box. You can also specify a trend interval for the point by selecting the Trend Interval check box. Finally, you can optionally enter a meaningful description of the point and its function in the Description entry box.

Important: *Modifying the points of a factory configuration should only be done if absolutely necessary, and only if you are knowledgeable about the effects of the proposed changes. You are responsible for the proper operation of the equipment if any changes are made to factory configurations.*

Alarms Screen

The Alarms tab screen displays all active alarms.

Figure 20. Alarms screen



Alarms are displayed in date and time order and then in order of severity. However, all columns are sortable. For example, if you prefer to view alarms by Point Name, you can click that column heading to arrange the entries in ascending or descending alpha order.

The alarm icons displayed on the left side of the screen indicate the level of severity.

Red indicates an alarm requiring immediate attention.

Orange indicates a low priority alarm.

Blue indicates a normal condition.

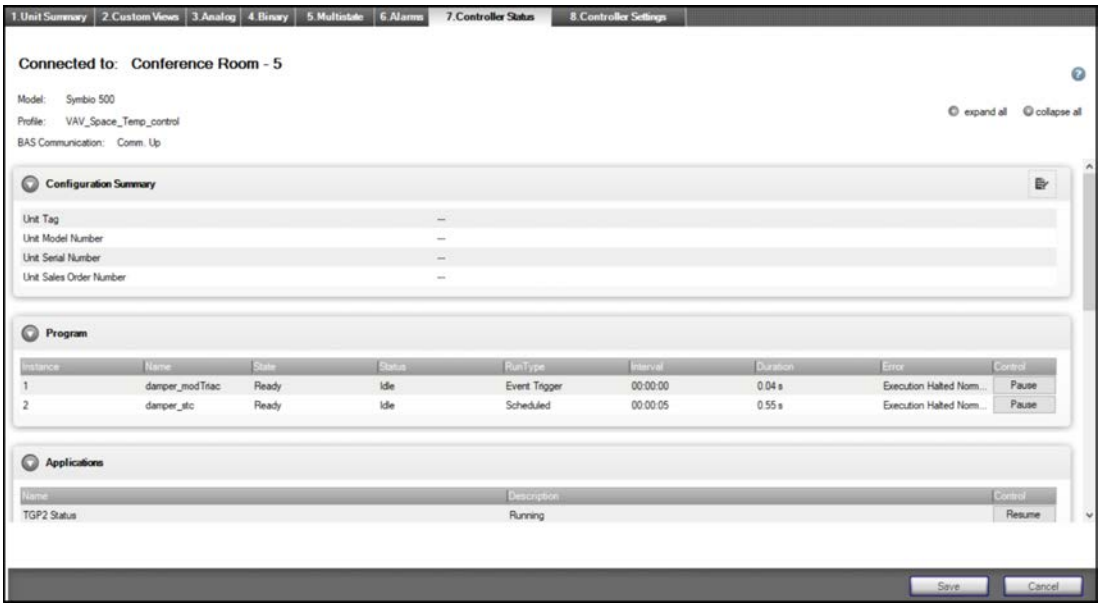
Yellow indicates a warning alarm.

The Acknowledgement column value indicates whether or not the alarm has to be acknowledged at the parent Concierge Controller level.

Controller Status Screen

The Controller Status tab screen lists basic information about the controller, the installed programs, and any expansion modules used with the controller.

Figure 21. Controller status screen



Configuration Summary

Displays a quick summary of basic controller and configuration information. In addition, you can edit the Unit Tag, Unit Model Number, Unit Serial Number, and the Unit Sales Order Number by clicking the icon on the right side of the title bar.

Program

Lists all installed programs. The grid includes information about current program status (Running or Idle) and specifies whether a program is scheduled to run at a specific interval, or if it runs when triggered by an event. The Duration column indicates the length of time it takes a program to run from start to completion (one program cycle).

Applications

Displays the operational state of the TGP2 program engine in which all programs execute including the amount of volatile memory used for TGP2 control in the connected device and the percentage of non-volatile memory used to store TGP2 programs and the configuration in a the connected device.

Expansion Module Status

The Expansion Modules Status box appears if the controller is communicating with any expansion modules, such as the XM30 or XM70 modules. The grid columns include module type, address, and communication status.

Controller

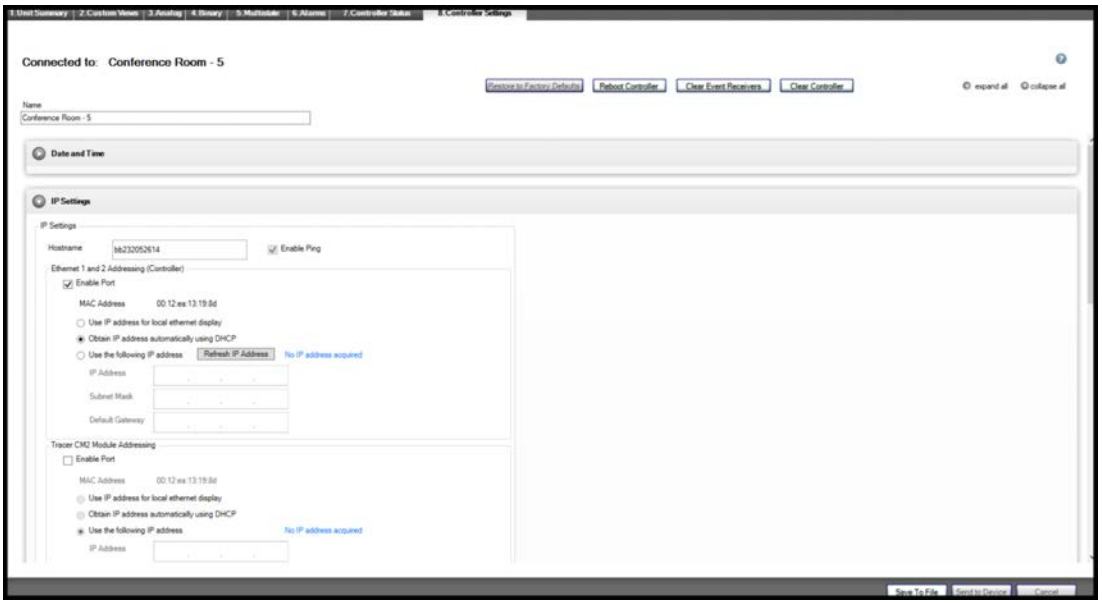
The Controller box provides identifying information about the controller.

Symbio™ 500 Controller Settings Screen

- Select the date, time, and units used by the controller.
  - **Date and Time**: It differs depending on the controller.
  - **Manual**: Select to manually set the date and time by using the date-picker and arrow controls.
  - **Synchronized Date and Time from a Network Server**: Tracer SC+ can be synchronized using a network time protocol (NTP) server. You can also select to synchronized installed BACnet unit controllers by selecting the associated check box.

    In addition, Tracer SC+ provides time synchronization for downstream unit controllers. Time synchronization occurs automatically upon initial installation, during a power cycle, and daily at 3:00 a.m.
- Adjust the baud rate and set or remove a Software Device ID.
- Specify BACnet/IP settings and the communication protocol on a UC600, Symbio 210e, Symbio 400-B (with Symbio CM2 module), Symbio 500, Symbio 700, or Symbio 800.
- Expansion Modules/ Module Setup
- Wireless Sensor Configuration
- Controller Units
- Configure notification classes
- Support Files Library
  Files such as word documents or spreadsheets can be stored on the controller. Some examples of files that could be stored on the controller are a sequence of operation or a punch list. There is no limit to the number of files, however there is a limitation on the amount of file memory space used.
- TIS Settings
  - Allows the technician to set up the controller for remote connection via Trane Connect. Controllers supporting remote connection are Symbio 500, Symbio 700, and Symbio 800.
  - Enables the controller to be accessed remotely via Trane Connect. Enables the controller for data collection.
  - Tests the connection between controller and Trane Connect.
  - Chooses between Ethernet/Wi-Fi or a cell modem.
  - Allows connecting to an SC or SC+ controller via Trane Connect Remote Access for the purposes of Offsite Programming.
- Schedule backups
  Daily, weekly, or monthly backups can be scheduled. The backup will be stored on the controller. Only one backup will exist on the controller. Each backup will overwrite the previous backup.

Figure 22. Symbio 500 controller setting screen



See the “Modifying Controller Settings” section in the Tracer TU Help for Programmable Controllers.

Data Graphing Utility

Use the Data Graphing Utility to set up and perform the following tasks:

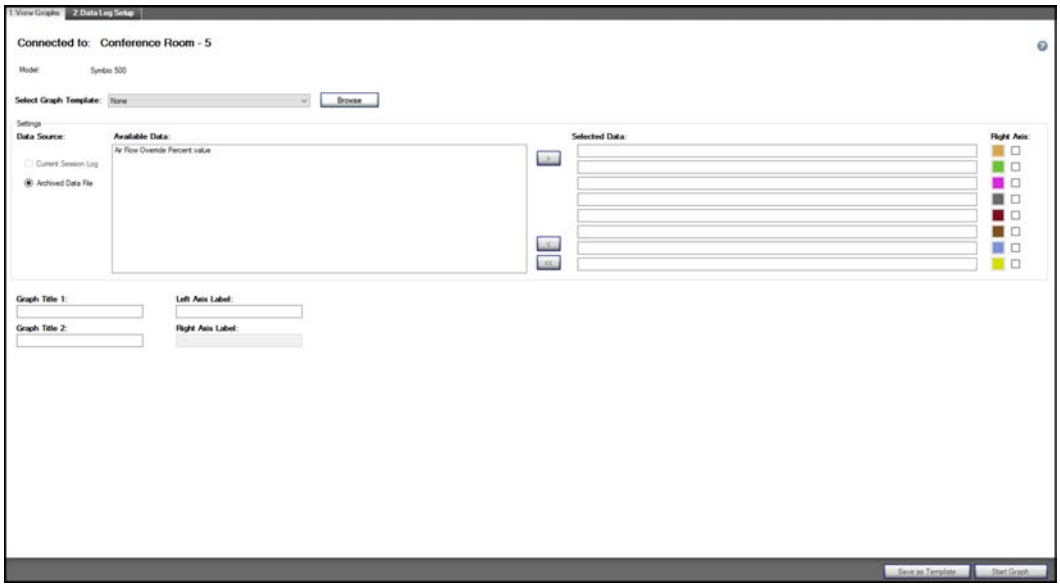
- Configuring data logs.

  Configure data logs on the companion Data Log Setup screen, which provides the most detailed data log configuration. You can also use the quick data log configuration controls on the Datalog tab of each Point Configuration dialog box (see “Creating and Editing Points,” p. 31). Each data log records data for a single point.

- Generating line graphs

  At a time of your choosing, retrieve and view point data recorded over a time span and stored in the controller’s data logs. Set up and generate line graphs (trends) on the View Graphs tab screen. Each graph displays data for a single point (one data log file) you retrieved from the controller using the Retrieve Data Logs option on the Tools menu.

Figure 23. Data graphing utility — view graphs tab screen



You can save and print the graphing image or graph data. You can also save log file data to other file formats for viewing and analysis.

Refer to the “Configuring and Graphing Data Logs“ section in the *Tracer TU Help for Programmable Controllers* for procedures explaining how to use the Data Graphing Utility screens. More specifically, see the topic “Graphing Data From Archived Log Files” for information about viewing UC210, UC400, Symbio™ 210/210e, Symbio 400–B, Symbio 500 data logs.

Equipment Utility

Use the Equipment Utility tab screens to modify controller configurations and commission equipment.

Configuration and Setup Screens

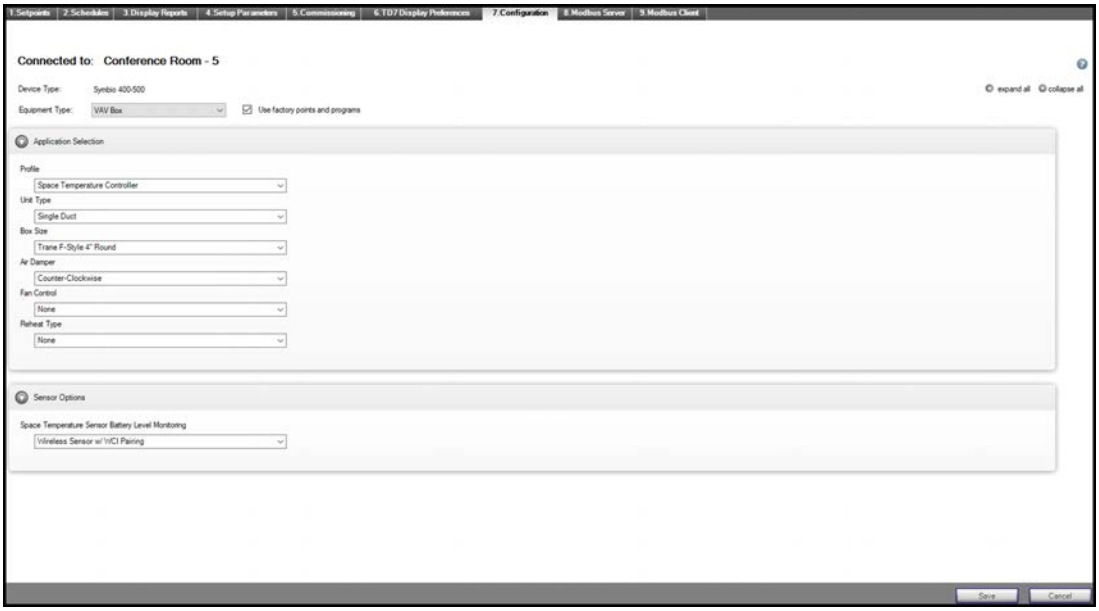
The following figure shows the Configuration tab screen where you can create or modify points and adjust specific equipment parameters.

Important: *Modifying a factory configuration should only be done if absolutely necessary, and only if you are knowledgeable about the effects of the proposed changes. You are responsible for the proper operation of the equipment if any changes are made to factory configurations.*

Note: *If you replace an existing configuration with a factory configuration, any uniquely named custom (user-created) data logs and custom points are preserved. If a conflict exists between custom points and factory points, Tracer TU issues a message stating that the conflict must be resolved before you can load the factory equivalent configuration. You must delete or reassign the custom point causing the conflict.*

(See the “Configuring and Commissioning Equipment” section in the *Tracer TU Help for Programmable Controllers*.)

Figure 24. Equipment utility — configuration tab screen



The Setpoints and Setup Parameters tabs to the left of the Configuration tab display screens that have sets of entry boxes and sliders you can use to specify the values of various equipment setpoints and parameters.

Modbus Client Settings

Modbus RTU is a client/server protocol, where the client requests information from one or more servers. With Modbus RTU, there can be only one client for each network. The server devices reply only when communication is initiated by the client and otherwise remain passive/silent.

The Modbus Client settings of the CM2 module must match the settings of all connected Modbus RTU server devices. These settings include the baud rate, parity bit setting, and stop bits. For all connected devices to communicate, these settings must be identical for all devices.

Because the CM2 module is a Modbus Client, it does NOT need a Modbus address. However, each Modbus RTU server must have a unique Modbus address. It is recommended to start addressing with address 1 and increase by 1 for each additional Modbus server device.

Configure Modbus Client Settings

1. Use Tracer TU to connect to the Symbio™ controller.
2. With the controller connected, select the **Equipment Utility** wrench on the right side of the page.
3. Select the **Modbus Client** tab at the top of the page.

Figure 25. Modbus client actions

Important: *If the Modbus Client tab does not display in Tracer TU, confirm that:*

- *The CM2 module is communicating with the Symbio controller.*
- *The firmware version of the Symbio controller supports the CM2 module.*

4. Select **Actions** > **Configure Settings** to view/edit the Modbus communication settings of the CM2 module.

Note: *Confirm the settings prior to defining the first Modbus server, as the definition process is streamlined when the device is connected and communicating. See Symbio™ Communication Module (CM2) Installation, Operation, and Maintenance (BAS-SVX094*-EN).*

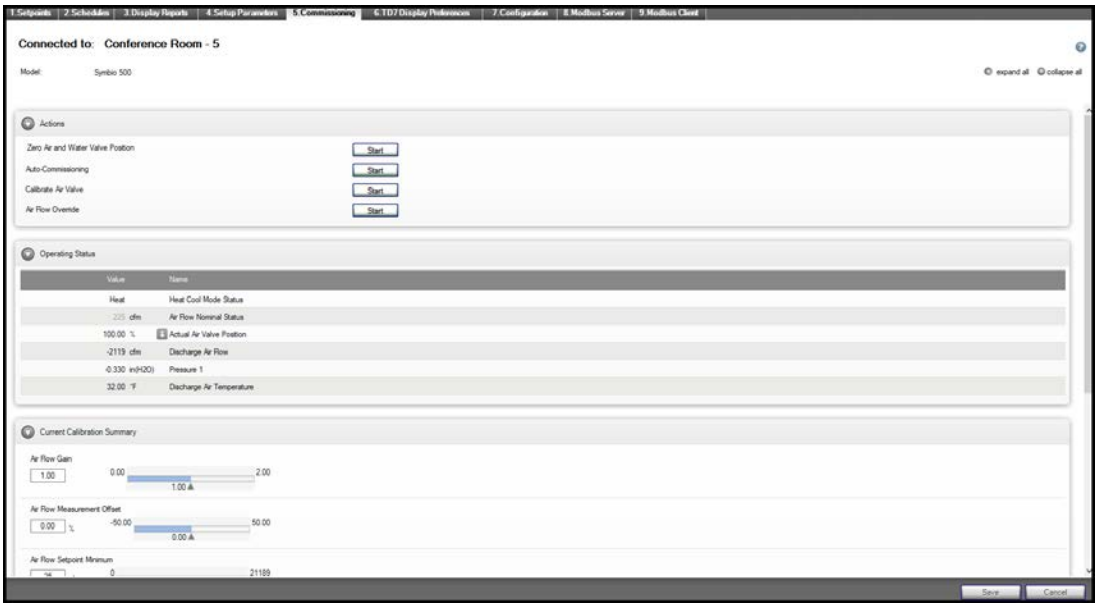
Commissioning Screen

As its name suggests, the Commissioning tab screen is where you run Air and Water Balancing and Auto-Commissioning routines and update setpoints specific to those processes.

Note: *The Commissioning and Air/Water Balancing functions are also available on the Facility View where you can perform them for groups of devices.*

The Commissioning tab screen displays specific parameters related to air flow, fan, and water flow. It has the following expanding boxes: Actions, Operating Status, ECM Fan Setup (if an ECM fan exists), Current Calibration Summary (for VAV boxes), and Discharge Air Reset Limits (for VAV boxes).

Figure 26. Commissioning screen



The Actions box includes screen objects you can use to launch the following tasks on an individual VAV box:

- Zero Air and Water Valve Position.

  Launches the Auto-Calibration routine to completely close the air or water valve and resets the Actual Air Valve Position point value to 0 (zero).

- Calibrate Air Valve.

  Displays the Calibrate Air Valve dialog box, which you can use to perform a two-point air valve calibration for an individual VAV box.

- Calibrate Hot Deck Air Valve.

  Displays the Hot Deck Air Valve Balancing Steps dialog box, which you can use to perform a two-point air flow calibration for an individual dual duct VAV box.

- Air Flow Override.

  Displays the Air Flow Override dialog box, which you can use to safely drive the air valve to Full Open position (or, alternatively, to Full Closed, Maximum Flow, or Minimum Flow position) without the risk of recalculating calibration values.

- Water Valve Related Overrides.

  Displays one of the water valve related override dialog boxes. (The Hot Water Valve Override Start button is shown on the previous image.) You can override the Economizer Valve, Isolation Valve, Hot Water Valve, and Chilled Water Valve to the open position for a limited duration as part of a system water balancing operation. When the time duration expires the water valve is released back to its normal setting.

- Fan Related Overrides.

  The Fan Override, Fan Override ECM, and Fan Override PSC options display the fan related overrides dialog boxes, which you can use when balancing air flow for the supported types of equipment.

- Ventilation Damper Override.

  Use this override dialog box to open the ventilation damper on all BC, FC, and UV units configured with modulating outside air dampers. The damper can be opened to an adjustable percent.

Operating Status

This box includes current settings related to air and water balancing. The gray override icons indicate that air, fan, and water valve settings can be overridden. Blue icons indicate that the settings are currently overridden. (See “Binary Tab Screen,” p. 28).

ECM Fan Setup

(Visible if an ECM fan is configured.) This box includes flow setpoint, maximum and minimum flow settings, and a correction factor setting.

Current Calibration Summary

Presents the current values of the Air Flow Gain and Air Flow Measurement Offset along with the Minimum and Maximum Air Flow Setpoints for a VAV box. . The following setpoints have been added to this list:

- Standby Minimum Air Flow.
- Air Flow Setpoint Minimum Standby Heat.
- Air Flow Setpoint Minimum Heat.
- Air Flow Setpoint Maximum Heat.
- Air Flow Setpoint Minimum Local Heat.

Discharge Air Reset Limits

This box contains settings that are used for Dual Max VAV boxes. When the VAV’s heating valve is open, the box flow will modulate between the flow settings to control to the Discharge Air Temp Design Setpoint. It includes the following adjustable setpoints:

- Air Flow Setpoint Reset Min Local Heat.
- Air Flow Setpoint Reset Max Local Heat.
- Discharge Air Temp Reset Max.
- Discharge Air Temp Design Setpoint.

Accessing the Tracer TU Help for Programmable Controllers

As you work withTracer TU, you can refer to the Tracer TU Help for Programmable Controllers for screen descriptions and relevant procedures.

Access Methods

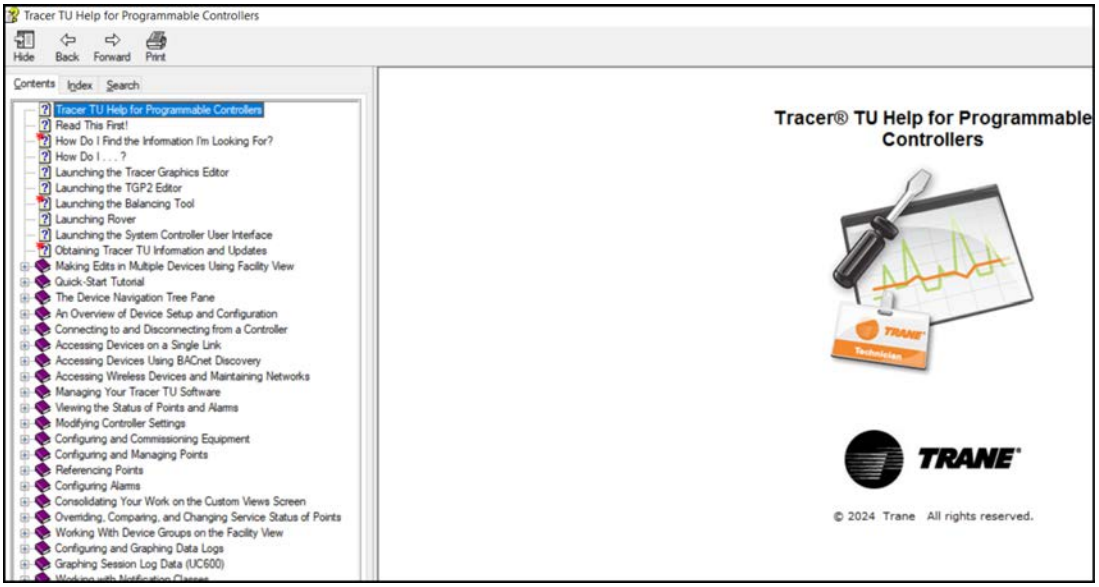
You can access Help in several ways:

- Clicking the Help icon (the question mark in a blue circle shown above), which is located in the upper right portion of the screen
- Clicking the Help button on many dialog boxes.
- Clicking the Help menu at the top of the application window and selecting the Help option.
- Moving your cursor over various tabs and buttons to view “tool tip” text.

Quick Start Tutorial

The Quick-Start Tutorial topics provide more detail on the Tracer TU interface features. (The Quick-Start Tutorial book is highlighted in the following figure).

Figure 27. Tracer TU help for programmable controllers table of contents



Additional Tracer TU for Programmable Controllers Features

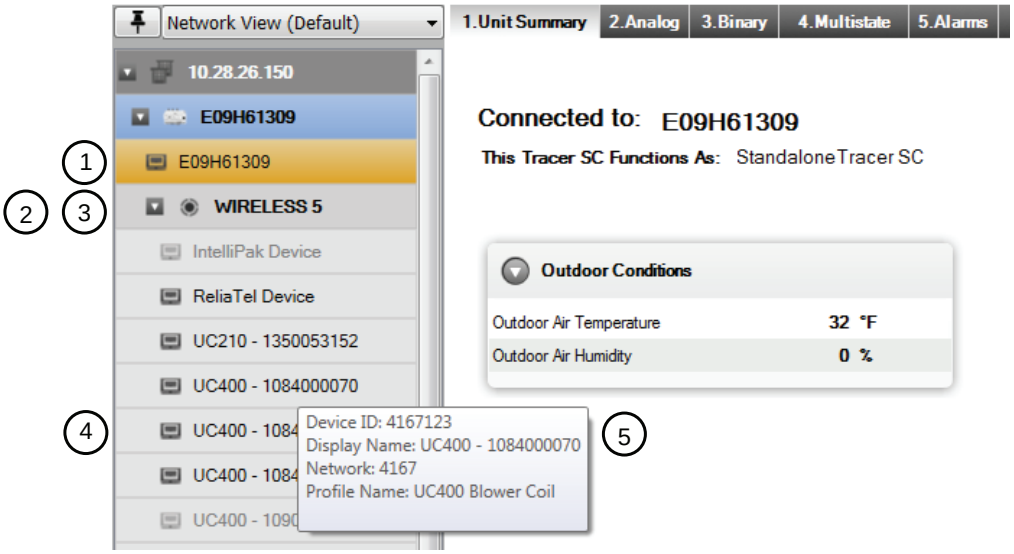
Tracer TU supports the following additional features on the UC210 and UC400.

The Device Navigation Tree

Tracer TU for Programmable Controllers includes the Device Navigation Tree, which provides a view of all linked devices. You can access a Concierge Controller with all its network devices on its two MS/TP links and up to eight wireless networks. (For detailed information, see The “Device Navigation Tree Pane” section of the *Tracer TU Help for Programmable Controllers*).

Use the Device Navigation Tree to locate, and verify the status of a device. You can select a device, such as a UC210, UC400, Symbio 210, Symbio 400-B/500 to make modifications to its settings or to troubleshoot it.

Figure 28. The device network tree pane



1 System Controller / Concierge Controller node and icon

2 System Controller / Concierge Controller expanding and collapsing link node (This is Wireless Link 5. Wireless links are labeled as "Wireless". MS/TP links are labelled as “MS/TP 1” or ”MS/TP 2”.)

3 Link icon

4 Device icon (These devices are members of Wireless 5.)

5 "Hover" text displaying device information

The Device Navigation Tree displays the following information for each device:

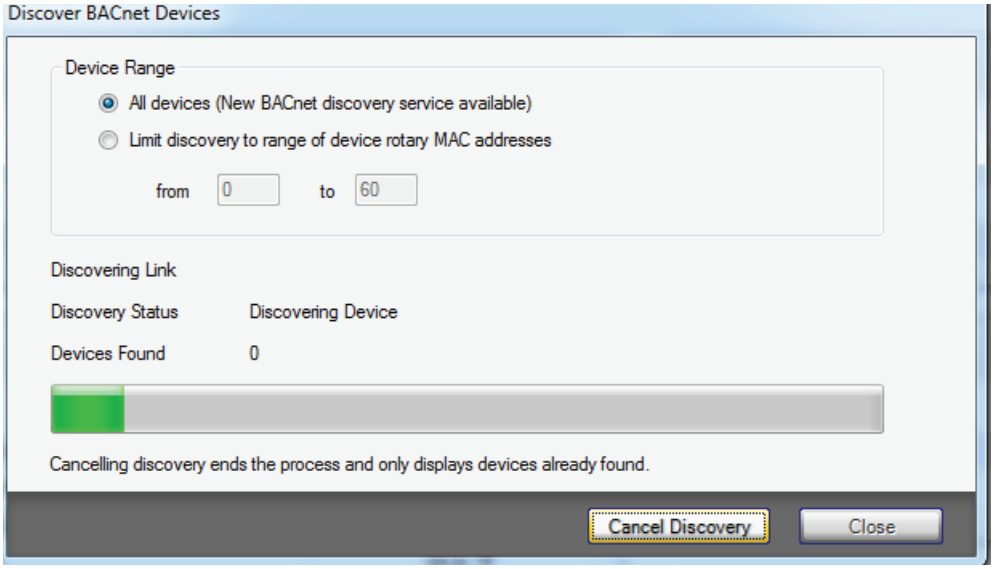
- Place in the network hierarchy under the network type and number
- Tool tip (“hover”) text identifying the device. The text items displayed depend on the protocol and connection type.

Single Link Access

You can connect to a Trane BACnet® device on a single MS/TP link and then from that connection point, discover, access, and perform service on other Trane BACnet® devices on that same link. The BACnet® device accessed from the connection point is termed the target device.

When you direct connect to a network devices UC210, UC400, Symbio 210, Symbio 400-B, and Symbio 500 with a USB cable, select the **Discover other devices on the same link** option on the Startup Task Panel to start device discovery. (See “The Startup Task Panel,” p. 18). Each discovered device is displayed on the Device Navigation Tree. Click the controller name to connect to the device.

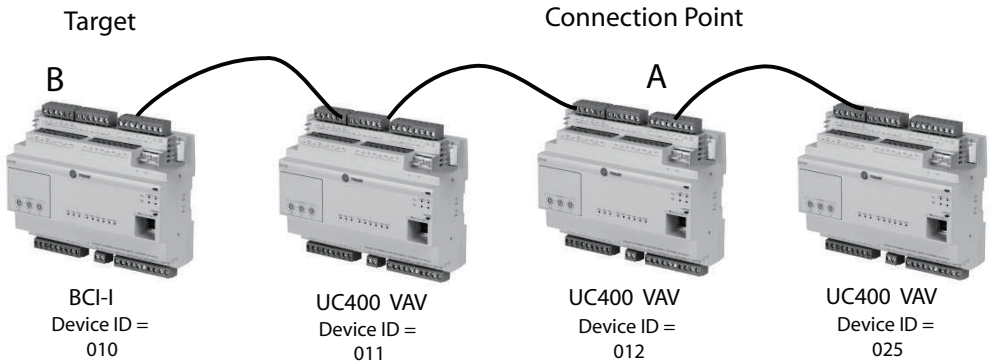
Figure 29. The discover BACnet® devices dialog box



Example

For example, you can connect to a UC400 on a link (A) shown in the following figure, discover the other devices on the link, and then access a BCI-I on that link (B). The UC400 is the connection point and the BCI-I is the target.

Figure 30. Single link access connection point and target



Considerations

Here are a few facts about Single Link Access to keep in mind:

- If you connect to a UC400 , Symbio 500, or BCI within a link controlled by a System Controller/ Concierge Controller and discover the other devices on that link, the Concierge Controller is also discovered and appears in the Device Navigation Tree. However the Concierge Controller is not accessible for reasons of security. To access the Concierge Controller, you must log into it directly.
- Third-party BACnet® controllers in the network are not discovered and are not displayed in the Device Navigation Tree.
- Viewing Trane BACnet® devices with the existing Concierge Controller pass-through feature remains available and unchanged. No new discovery capability has been added to the Concierge Controller.
- While it is possible to use a zone sensor as a connection point, performance may be quite slow. It is best to use a UC400 or Symbio 500, or BCI for this purpose.

See the “Accessing Devices on a Single Link” section of the *Tracer® TU Help for Programmable Controllers* for detailed examples.

BACnet® Discovery

BACnet® discovery is a rapid device discovery method supported on UC210s, UC400s, Symbio 210, Symbio 500 and System controller/Concierge Controllers. Device discovery occurs in a much shorter time compared with the existing Single Link Access feature.

Start BACnet® Discovery by clicking the **Tools** menu and selecting the **BACnet Network/Device Discovery** option.

Features

BACnet® discovery includes the following unique features:

- Automatic discovery of all devices on a link when Tracer® TU is connected to a unit controller on that same BACnet® link.
- Ability to specify which BACnet® links (networks) you want to discover on the BACnet® Discovery dialog box.
- Display of uninstalled devices under a separate heading in the Device Navigation Tree.

  Note: *If a device is later installed on a Concierge Controller, it is displayed under the proper node and network.*
- Discovery of uninstalled BACnet®/IP devices

The Discovery Process

As devices on the networks are discovered, they appear in the Device Navigation Tree with their rotary numbers and device IDs displayed. A progress indicator displays the approximate completion rate of discovery processing. When all devices have been discovered, Tracer® TU performs a final update of all device information.

Access to Devices on Wireless Networks

Trane® wireless networking provides a wireless communication solution for Tracer® building automation systems that saves planning, installation time, and the expense associated with fully wired systems. The Trane® Air-Fi® Wireless Communications Interface (WCI) enables wireless communication between system controls, unit controls, and wireless sensors. The WCI replaces the need for communication wire in all system applications.

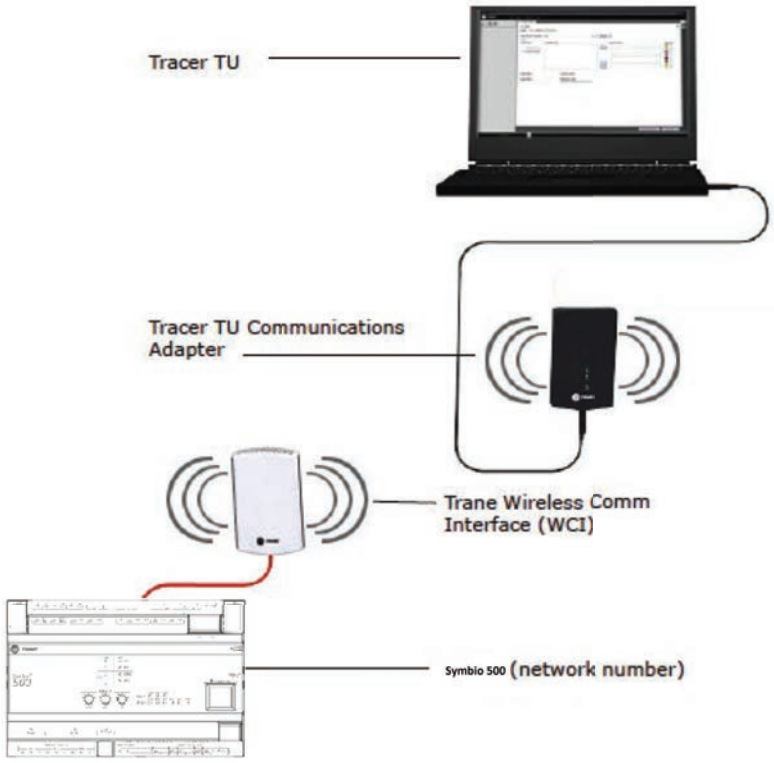
You can use Tracer® TU to access the following devices that are members of a Trane® wireless network:

- The Tracer® SC+ System Controller and the Tracer® SC system controller.
- Tracer® UC210 programmable controller.
- Tracer® UC400 programmable controller.
- Symbio™ 500 Programmable Controller
- Symbio™ 210 Programmable Controller
- BCI-I or BCI2-I: BACnet® Communications Interface for IntelliPak™ systems.
- BCI2-R: BACnet® Communications Interface for ReliaTel™ systems.

Connection Components

From a servicing and maintenance standpoint, wireless networking allows you to use the Tracer® TU service tool with the Tracer® TU Adapter (Wired/Wireless) to communicate wirelessly from any controller to any other controller in a network. Using the Tracer® TU Communication Adapter (Wired/Wireless) in wireless mode, you can connect to any wireless device in a network and then discover, access, and service that device or another member device in the network. This capability provides the flexibility and convenience you need to finish jobs in less time.

Figure 31. Wireless access through the Tracer® TU communication adapter



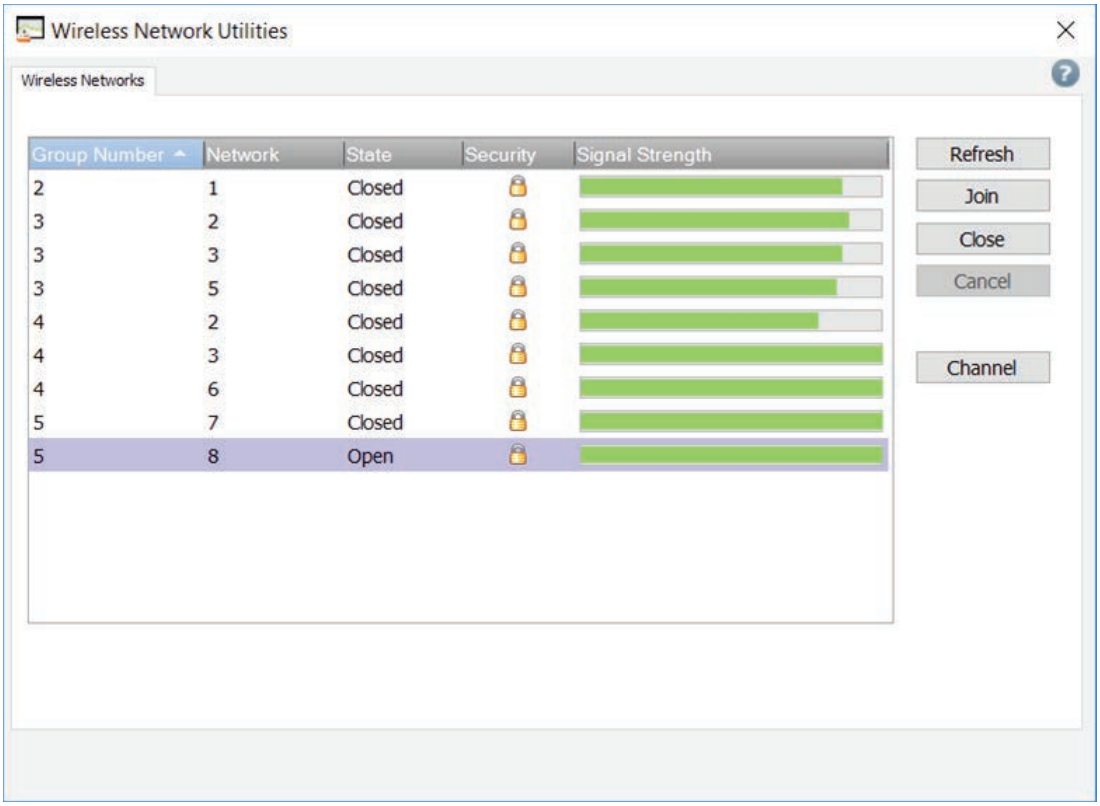
Accessing Wireless Networks

Perform the following steps to access devices on a wireless network:

1. Connect the Tracer® TU Adapter (Wired/Wireless) to your PC with a USB cable.
2. Start Tracer® TU and select the **TU Adapter -Wireless** option on the Startup Task Panel.
3. Click **Connect**.

   Tracer® TU displays the Wireless Networks dialog box shown in the following figure.

Figure 32. Wireless Network Utilities



You can then join one of the displayed networks. An open padlock indicates a network that has no Concierge Controller and does not require log-in credentials. A closed padlock indicates a secure network coordinated by a WCI attached to a Concierge Controller.

Tracer TU Wireless Networking Capabilities

You can use Tracer TU to perform many wireless network tasks:

- Creating a network
- Listing network devices
- Opening a network for joining
- Closing a network when joining is complete
- Viewing the Wireless Network Summary Report and a graphical map of the network to assess network health, connection strength, the number of hops between the coordinator and each member device, and to view sensor information on the graphical map including IDs, signal strength, and last reception time
- Viewing network details and advanced information
- Viewing sensor health status
- Removing a device from the network

- Disbanding the network

For detailed information see the following documents:

- The "Accessing Wireless Devices and Maintaining Networks" section of the *Tracer TU Help for Programmable Controllers*.)
- *Air-Fi® Wireless System Installation, Operation, and Maintenance* (BAS-SVX40*-EN)
- *Air-Fi® Network Design Installation, Operation, and Maintenance* (BAS-SVX55*-EN)

Controller Configurations

A Controller Configuration is a complete device definition that includes everything in one package that is required to operate the controller and run the equipment: the points, programs , data logs, alarms, a graphic, and internal template information.

Tracer TU includes the following Controller Configuration files:

- .UC210Config (Bypass Damper)
- UC400Config (2H/2C)
- S400-500Config (2H/2C)
- S210config (Bypass Damper)

You can use the File Transfer Utility to load the Bypass Damper Controller Configuration onto a UC210 or Symbio 210 or the 2H/2C Controller Configuration onto a UC400 or Symbio 500.

You can transfer the Controller Configuration to one or more similar devices. The Controller Configuration does not overwrite identifying information on the target devices.

Note: *If you want to download a Controller Configuration to several similar devices, it is more efficient to first download the Controller Configuration to a single device , back up that device, and then download the backup file to the remaining devices. (See "Backup Utility," p. 52 for more information.*

Factory Equipment Configurations You Can Modify (UC210, UC400, Symbio™ 210 and Symbio 400-B/Symbio 500)

Trane factory blower coils, fan coils, and unit ventilators initially use standard configurations created on the Tracer TU Configuration screen. However, these equipment types allow certain modifications to the factory configurations.

Important: *Modifying a factory configuration should be done only if absolutely necessary, and only if you are knowledgeable about the effects of the proposed changes. You are responsible for the proper operation of the equipment if any changes are made to factory configurations.*

Editable Points

Tracer TU allows you some freedom to open and edit the factory points to suit job requirements. For example, you may need to make common modifications to a blower coil or fan coil configuration, such as adding valves to a blower coil.

When you make changes to factory points, you must first explicitly acknowledge that you are modifying them. The points are then transitioned to a "Factory-Field Modified" state, which enables the editing capability.

Default Data Logs

A set of default data logs is included with unit configurations shipped from the factory or as part of the standard configurations selected on the Tracer TU Equipment Utility Configuration screen. The set of data logs created for the blower coil, fan coil, or unit ventilator depend on the configuration selections. However, if the configuration is edited or if it is loaded on a UC210 or UC400 containing existing user-defined data logs, the results are as follows:

- The existing configuration is cleaned and the default data logs are deleted and replaced.
- During cleaning, if any uniquely named, user-created data logs exist, those data logs are not deleted.

After updating or replacing a configuration, if you create a new custom data log for the same point referenced by an existing data log, and they have the same name, Tracer TU issues a conflict message. You must then resolve the conflict.

BCI-R Support

Tracer TU support for BCI-R includes the following components:

- BCI-R Related Unit Summary and Equipment Utility Screens

  Key BCI-R related points are displayed on the Unit Summary screen. BCI-R setpoints and parameters are displayed on the Setpoints and Setup Parameters screens.

- Point Configuration – Alarms and Data Logs

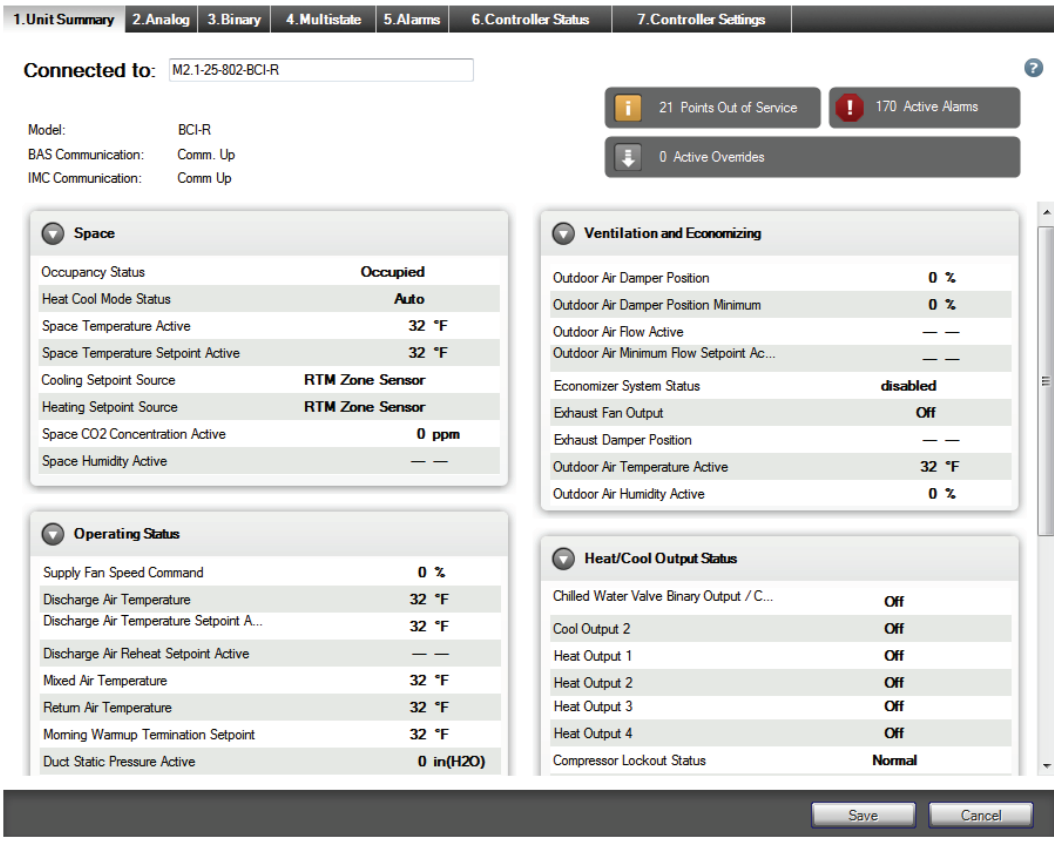
  You can configure alarm information and create a datalog for any of the nine point types: Analog Input, Analog Output, Analog Value, Binary Input, Binary Output, Binary Value, Multistate Input, Multistate Output and Multistate Value.

- Controller Status

  The Controller Status tab screen provides you with a summary of BCI-R equipment type and module status information. The information is displayed in Configuration Summary and Module Status Summary boxes.

- Step Test

  You can run the step test on equipment connected to a BCI-R ReliaTel™ controller from the Equipment Utility Commissioning tab screen. You can run the equipment test in an incremental fashion one test at a time. The summary of tests that are being performed is displayed in a dialog box. The tests can be terminated whenever you choose to do so. See “Running the BCI-R Step Test (Service Test)” in the “Configuring and Commissioning Equipment” section of the *Tracer TU Help for Programmable Controllers* for the correct procedure.



Facility View

You are working at a job that includes 50 VAV boxes on a single BACnet® MS/TP link. All VAVs have been installed correctly and are fully commissioned. The Concierge Controller has not yet been installed on the single water loop serving all 50 VAV boxes. You need to override all the water valves to the open position until the central water pump balancing task is complete. Access the Facility View by clicking the icon (shown at the upper left) to apply the override to all the VAVs you have selected on the Device Navigation Tree simultaneously in one operation. Applying overrides to groups saves time over a one-device-at-a-time approach.

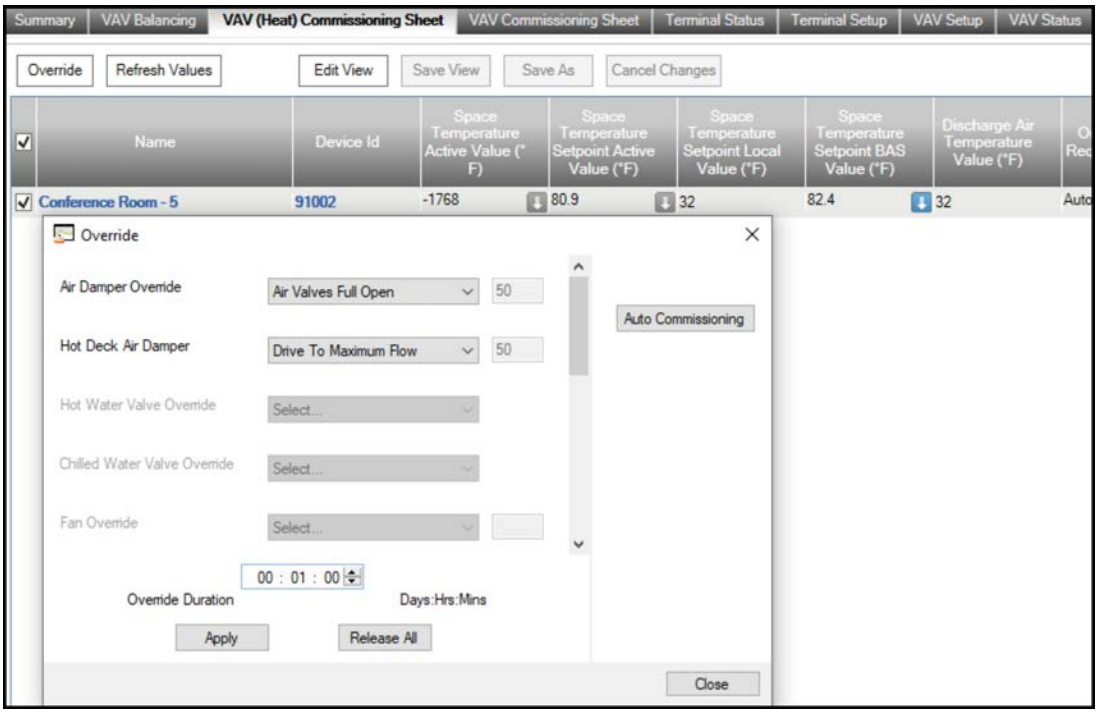
You can also use the Facility View to override air dampers, fans, and water valves on multiple instances of a single equipment type including BCs, FCs, UVs, and WSHPs.

The Facility View operates using all types of communication: wired or wireless via Single Link Access, Concierge Controller pass-through, and BACnet®/IP. While the presence of a Concierge Controller improves performance, the Facility View grouping feature can also function independently of a Concierge Controller.

The Override Dialog Box

Use the Override dialog box accessed with the Override button on the Facility View to drive air valves and water valves over the entire communication link to specific positions. Once you activate an override for a group of similar devices, you can then check the status of all selected devices to be sure they are acting in the expected manner. You are then free to turn to other tasks while the override is in effect for the specified duration (seven days maximum).

Figure 33. Override dialog box launched from the facility view



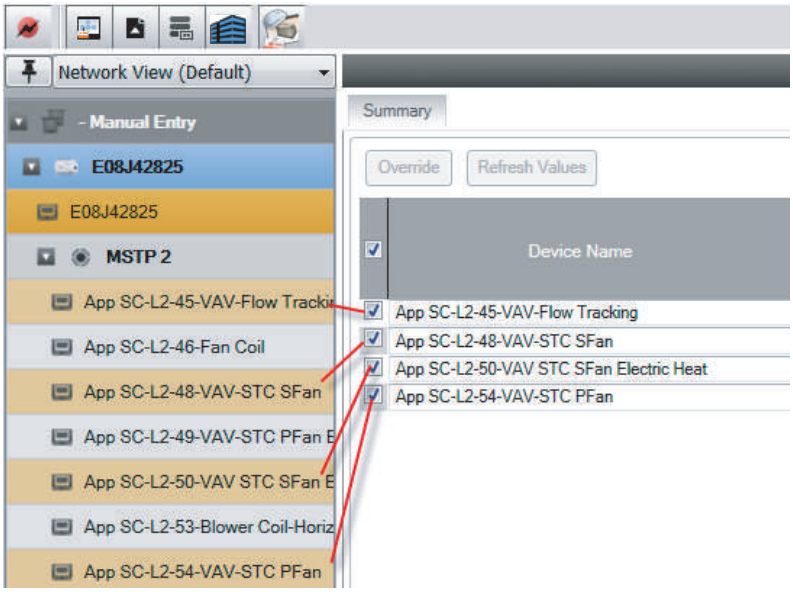
Note: *Trane® standard programs are required to perform group operations.*

Select or Add Devices and Objects

More specifically, you can use the Facility View to perform the following tasks:

- Select the devices to be included in the override operation on the Device Navigation Tree and transfer them to the Facility View. (See “Specifying a Device Group on the Navigation Tree” and “Overriding Multiple Air or Water Valves” in the *Tracer TU Help for Programmable Controllers*.)

Figure 34. Group selection and transfer to the facility view



- Use the check boxes on the Facility View to deselect or reselect items to control which devices are included in an action.
- Connect/navigate to a specific controller from the Facility View by clicking the device name on the view grid.
- View specific product views for VAVs, fan coils, blower coils, unit ventilators, and water source heat pumps on the Facility View.

Perform Overrides

- Override hot and chilled water valves, economizer valves, or isolation valves to Full Open or Full Closed.

  Note: *This water valve override applies only to equipment with reheat coils, such as VAVs, fan coils, and blower coils. It excludes air handling units.*

- Override air valves to any of the following positions: Full Open, Full Closed, Maximum Flow, Minimum Flow, or a user-defined position.

  Example: Enter a percentage open value that the air valve will drive to, such as 50% open.

  Note: *This air valve override applies only to VAV equipment types.*

- Override fans in the following ways:
  - To On or Off
  - To a selected speed as a percentage (ECM fans)
  - To a seleced stage (Auto, Low, Medium, or High) (fans with PSC motors)
- Override, change service, or change the value of some individual points.
- Override the ventilation damper on blower coils, fan coils, and unit ventilators configured with modulating Outside Air Dampers. The damper can be opened to an adjustable percent.

Notes:

- *When viewing and working with dual duct VAV units in the Facility View, be aware that Air Flow Setpoint Active cannot be overridden due to a priority conflict.*
- *These point and property selections and overrides apply to the following controllers (UC210, UC400, Symbio 210, Symbio 400-B/Symbio 500, BCI-I, and BCI-R).*
- *Overrides have the owner 'TU Grouping', a priority of '4', a default duration of 1 hour, a minimum duration of 1 minute, and a maximum duration of 7 days.*
- *You cannot override locked points.*

Calibrate and Auto Commission VAVs

- Calibrate the air valves of all selected VAV boxes using the Balancing View.
- Auto commission all selected VAV boxes with the Auto-Commissioning tool accessed on the Override dialog box in the Facility View. You can perform other tasks while auto-commissioning is in process, and then return to the Auto-Commissioning Status dialog box to view the status of all VAVs.
- Generate and view an Auto Commissioning Report covering all devices in the group.

Other Operations

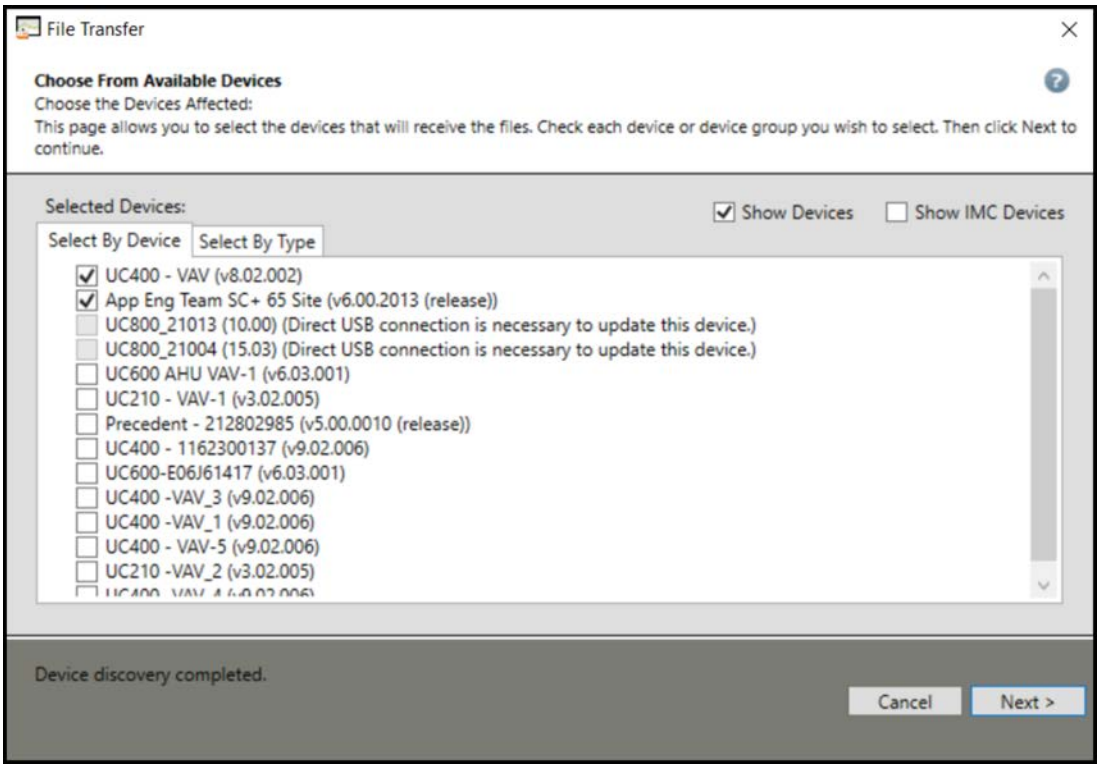
In addition, the Facility View performs the following operations:

- Releases overrides to automatic control for all override cases.
- Displays information pertaining to all members of a group on a status page.
- Saves the Facility View layout so each time Facility View is opened the existing views are displayed.

File Transfer Utility

You can use the File Transfer Utility to download firmware, Controller Configurations, or configuration backup files to one or more controllers in a network. In addition, the mass download capability enables transfer of files to multiple networks and updates to Air-Fi® Wireless Communications Interface and Wireless Communications Sensor firmware on multiple networks. File Transfer takes you through a simple series of steps to accomplish the transfer operation. If the transfer operation is successful, Tracer TU issues a success message. If the transfer fails for any or all devices, Tracer TU issues an error message report. Using Select By Type, this tab select a set of devices of one particular type. You can then download one backup file or one configuration file to all selected devices of the same type.

Figure 35. File transfer utility — choose from available devices dialog box



Notes:

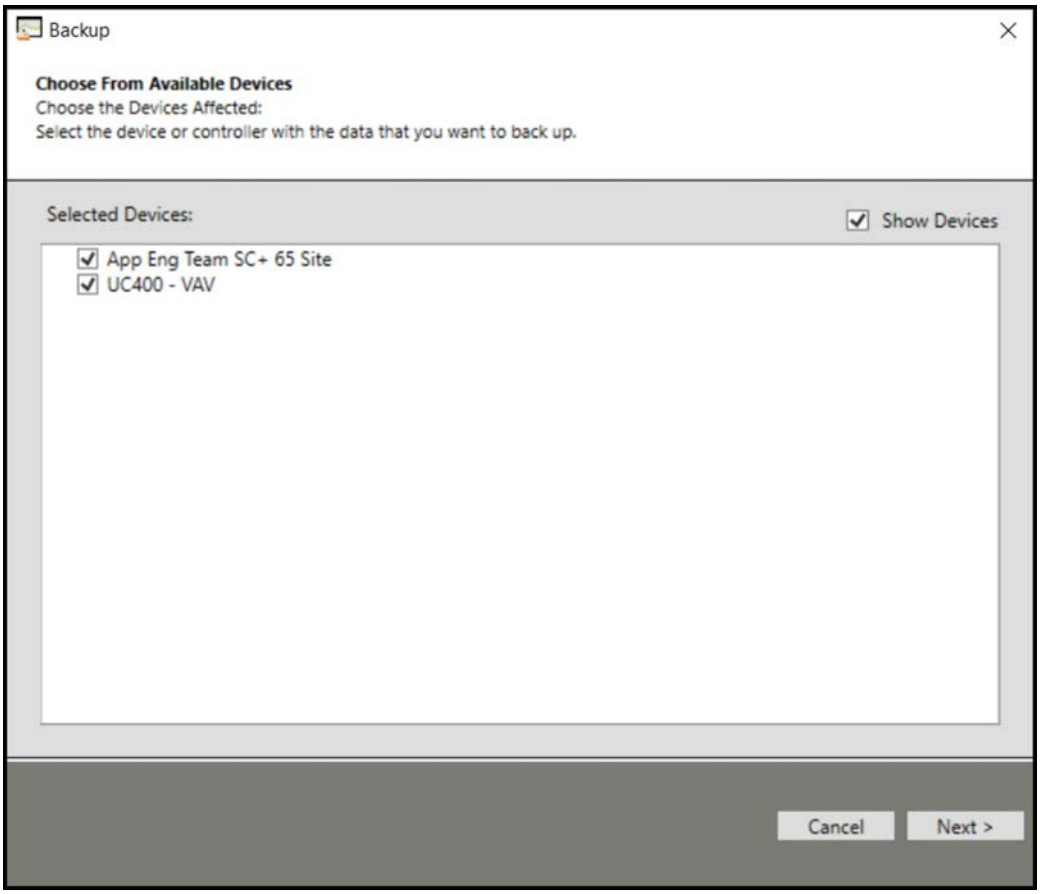
- *Device identification parameters are overwritten when a backup file is downloaded to a device. However, you can preserve the Device Name, Device ID, Unit Tag, Unit Model Number, Unit Serial Number, and the Unit Sales Order Number that currently exist on the device to which you are transferring files if your backup file contains different values by selecting the "Retain device communication settings and unit tag information" check box on the File Transfer Utility dialog box. (See "Transferring Files From Tracer TU to One or More Devices" in the Tracer TU Help for Programmable Controllers.*
- *For Symbio 700, you can apply the license file for upgrading the controller from basic to advanced version, by using the File transfer utility when connect in direct USB connection.*

Backup Utility

The Backup Utility zips all files on a controller, such as configuration information, setpoints, programs, and points, into a single zip file and stores it at a specified location on your hard drive. You can also back up files on multiple controllers in one backup session. If the backup operation is successful, Tracer TU issues a success message. If the backup fails for any or all devices, Tracer TU issues an error message report.

Creating a backup file of the initial configuration settings when you commission equipment is strongly recommended. You can then recover the original settings at a later time, if necessary. (You can also make periodic backups as changes and adjustments are made to the equipment configuration, setpoints, or programs.)

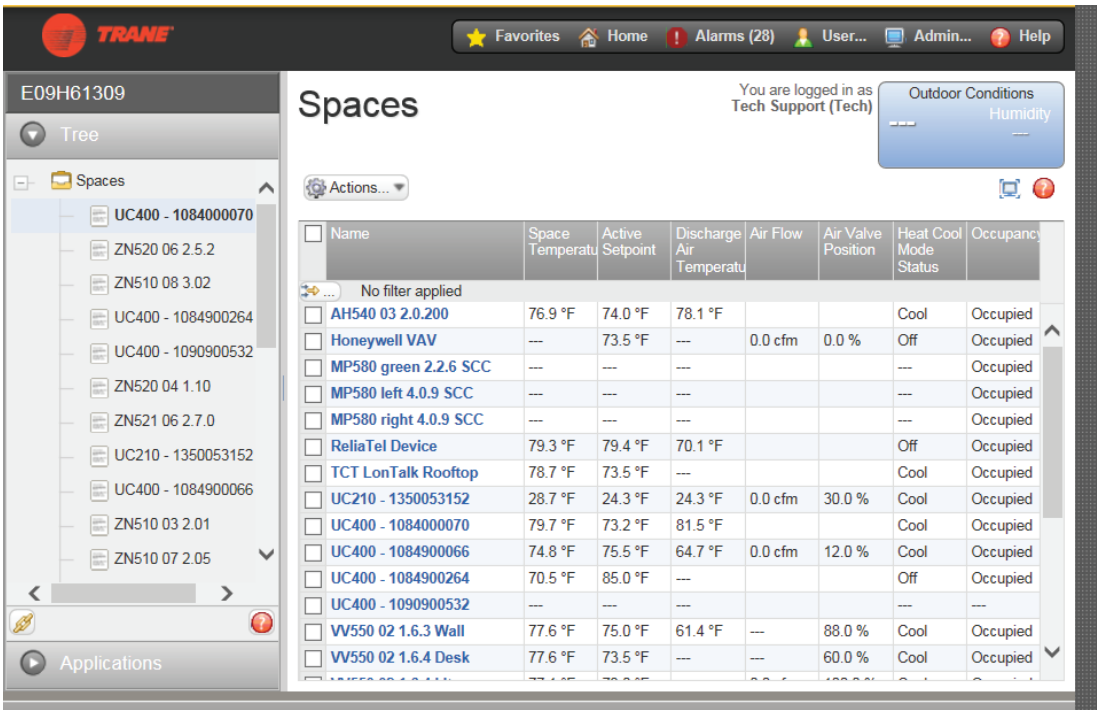
Figure 36. Backup utility — choose from available devices dialog boxes



Appendix A. Tracer Concierge

Tracer Concierge is a Web application you can use to configure, install, and manage all the devices on the Concierge Controller MS/TP links (networks), one or more LON links, and any wireless links coordinated by a Concierge Controller. (The Concierge Controller and all of its various networks are referred to as a "facility".)

Figure 37. Tracer concierge spaces page



See "Launching Tracer Concierge," p. 22 to learn how to launch Tracer Concierge from within Tracer TU.

Appendix B. Tracer® TU Installation and Connection Error Conditions

During installation or initial connection to a controller, you may encounter an error message or error condition. The messages with corrective actions are listed in the following table.

Table 1. Tracer® TU installation and connection error conditions

Error Message/Condition	Corrective Action
Does not recognize USB hardware.	Respond as follows: • Install correct USB drivers by reinstalling Tracer® TU using Tracer® TU Setup.exe. • If you get this message and have the correct USB drivers installed, make sure to wait for the controller to completely boot before attaching the USB cable.
Tracer® TU does not respond, or the screen is blank.	The phrase “Connected Local USB” should appear in the lower left hand corner of the Tracer® TU screen. If it does not, the connection has been lost. Restart Tracer® TU by clicking the Connection icon (lightning bolt) in the upper left of the application window.
Found New Hardware popup message	If the popup message does not appear, run the Tracer® TU installation file: **Tracer TU Setup_*x.x.xxx*.exe**.

Trane - by Trane Technologies (NYSE: TT), a global innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.

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Supersedes BAS-SVU048B-EN (March 2020)