Utelogy Deployment Guide

Getting Started with the Utelogy Platform

utelogy
Software-Defined AV

Version 1.1

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INTRODUCTION

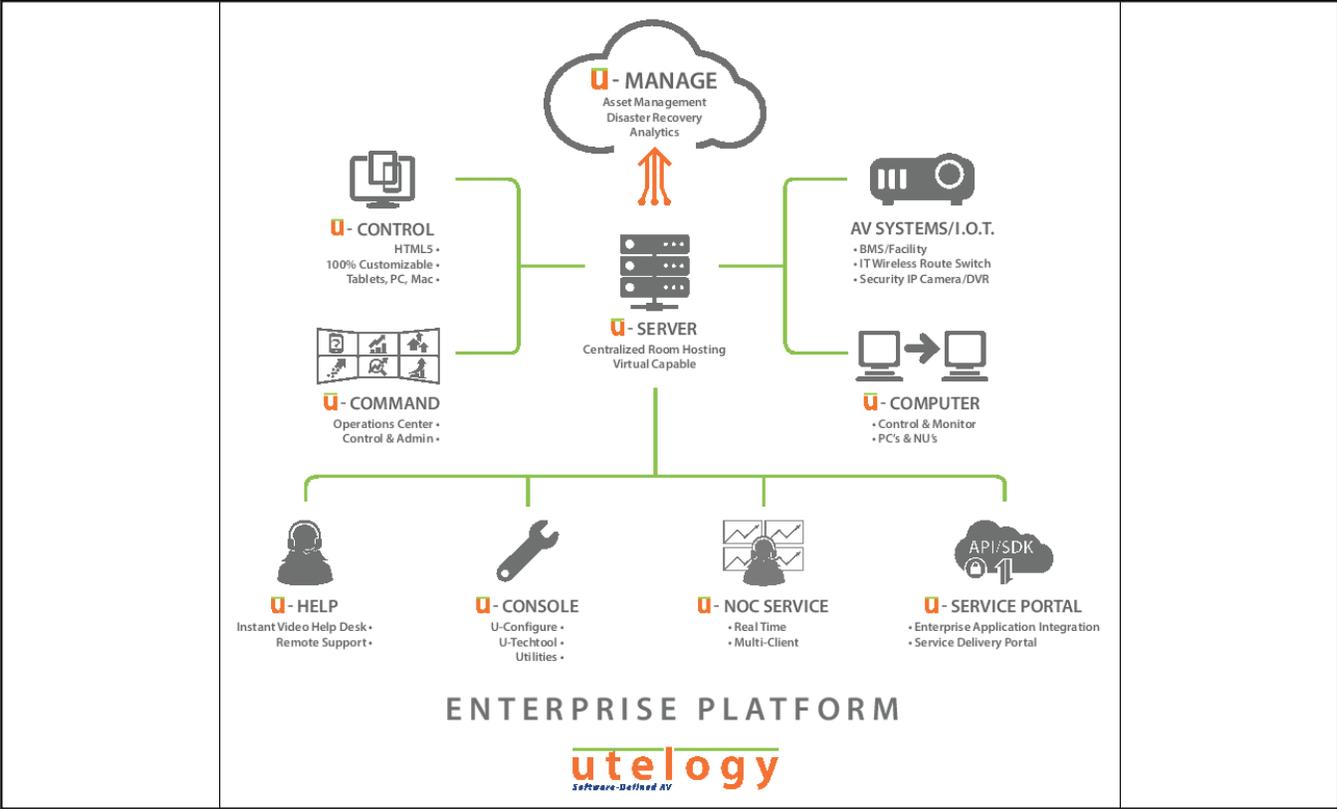Thank you for your interest in the Utelogy platform. The Utelogy platform is built upon open standards and leverages common IT technologies to operate. This Utelogy Deployment Guide provides a summary of our deployment process, and how we support your successful implementation of Utelogy.

The Utelogy platform consists of several components, all of which integrate with each other and in turn allow you to easily consolidate and coordinate AV and IT resources. These components are reviewed in further detail as part of the overall deployment process.

U - MANAGE
Asset Management
Disaster Recovery
Analytics

U - CONTROL
HTML5 •
100% Customizable •
Tablets, PC, Mac •

AV SYSTEMS/I.O.T.
• BMS/Facility
• IT Wireless Route Switch
• Security IP Camera/DVR

U - SERVER
Centralized Room Hosting
Virtual Capable

U - COMMAND
Operations Center •
Control & Admin •

U - COMPUTER
• Control & Monitor
• PC's & NU's

U - HELP
Instant Video Help Desk •
Remote Support •

U - CONSOLE
U-Configure •
U-Techtool •
Utilities •

U - NOC SERVICE
• Real Time
• Multi-Client

U - SERVICE PORTAL
• Enterprise Application Integration
• Service Delivery Portal

ENTERPRISE PLATFORM

The following diagram should be referenced to understand how Utelogy operates on the network:
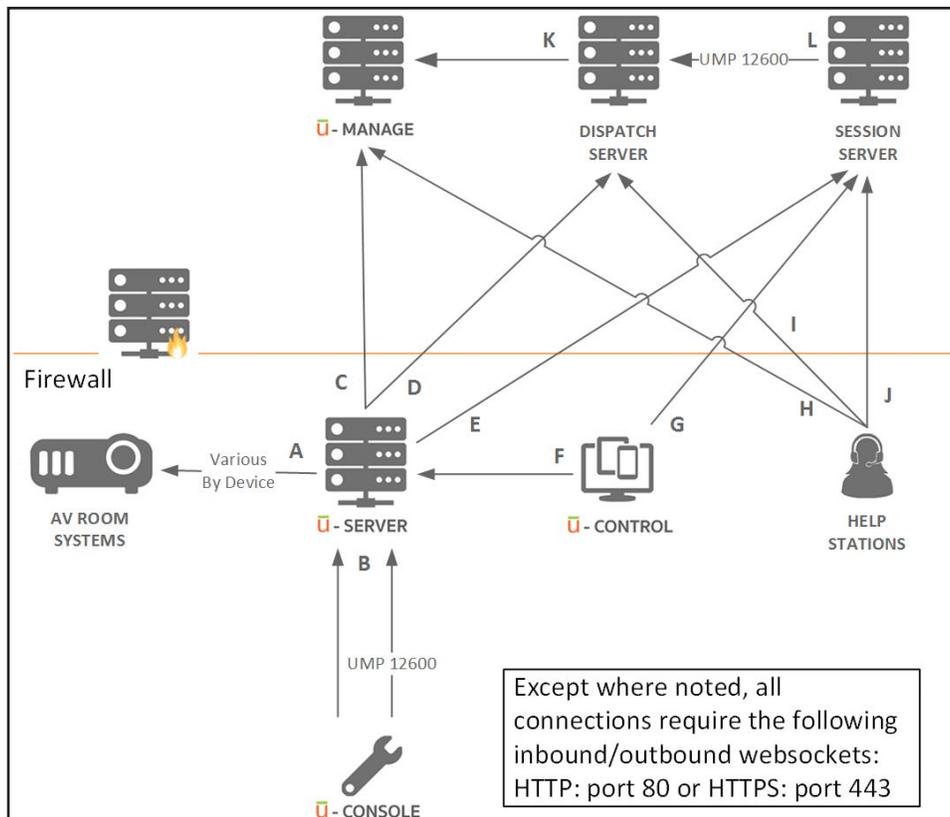
- **U-Server** establishes an outbound connection to the **AV Room Systems** it is controlling and managing.

- **U-Server** accepts incoming connection from **U-Console** to provide remote diagnostics of room systems.

- **U-Server** establishes outbound connection and **U-Manage** accepts inbound connection to allow reporting of room information.

- **U-Server** establishes outbound connection to the **Dispatch Server** to initiate a help call session (**U-Help**).

- **U-Server** establishes outbound connection to the **Session Server** to establish remote diagnostics and control to the room.

- **U-Server** accepts incoming connection from **U-Control** (user interface) to allow control of a room.

- **Session Server** accepts incoming connection from **U-Control** (user interface) to provide for video/voice and text chat communication to the user interface in a **U-Help** call.

- **U-Manage** accepts incoming connection from **U-Help** stations to dispatch help call requests.

- **Dispatch Server** accepts incoming connection from **U-Help** stations to initiate a help call session.

- **Session Server** accepts incoming connection from **U-Help** stations to provide for video/voice and text chat communication to the help station in a help call.

- **Dispatch Server** establishes an outbound connection to **U-Manage** to allow reporting of help call information.

- **Session Server** establishes an outbound connection to the **Dispatch Server**.

HARDWARE AND SOFTWARE REQUIREMENTS

U-Server

U-Server provides the hosting for multiple Control Logic Module (CLM) instances on a single server – this allows multiple rooms to be controlled through a single server. Typically, a single U-Server machine is required to manage and control all rooms utilizing the Utelogy platform; however, multiple U-Servers can be used in a geographically diverse enterprise if necessary.

Hardware

- 1.8 GHz (GHz) CPU or better (dual core preferred)
- 8GB RAM (16GB preferred)
- If you are controlling more than 100 rooms on the server, the minimum RAM is 16GB (32GB is preferred)
- 10GB available hard disk space

Software

- Windows Server 2012 R2 or later
- Microsoft .NET 4.5 feature installed

U-Control

U-Control provides the dashboard user interface in rooms. You have the option of running U-Control on Windows computers or through a browser on a mobile device. (U-Control is optional and is not required to use the Utelogy Platform.)

U-Control (Windows Desktop Application)

In cases where the U-Server CLM hosting server is not deployed, U-Control can be deployed with a stand-alone Control Logic Module (CLM).

Hardware

- 1.2 GHz CPU or better
- Minimum 1 gigabyte (GB) of RAM
- 10 MB of available disk space

For the desktop application user interface, the following additional requirements apply:

- 32 MB of graphics memory recommended
- DirectX 9-class graphics card for optimal performance

Software

- Minimum Windows version: Windows 10
- Microsoft .NET Framework 4.5

U-Control (Mobile Device)

For the HTML5 version of U-Control, most HTML5 browsers can be used on any device that supports that browser. This includes:

- Chrome on PC or Android (WebView version 57.0.2987.108/Android version 6 or higher)
- Safari (version 10 or higher) on Apple iOS, iPad, or Mac
- Microsoft Edge or Firefox

Microsoft Internet Explorer (IE) is not fully HTML5 compliant and therefore does not work with the Utelogy U-Control browser interface.

Virtual Machine/Virtualization Deployment

Utelogy software is 100% virtualization-ready.

Computer Access

If you are going to be installing the Utelogy software on computers in a conference room or classroom, make sure that you have administrator access to those computers in order to fully install the Utelogy software.

UTELOGY DEPLOYMENT TEAM

⮑ Available as part of Utelogy Professional Services (an optional service) – contact Utelogy Corporation for more information.

The Utelogy deployment process typically begins by identifying the members of the Utelogy staff who will serve as your Utelogy deployment team. The major roles for our team are:

- Utelogy Project Manager: Works with your internal deployment team and our staff to plan and deploy Utelogy. The Utelogy project manager provides the leadership, guidance, and communication necessary to move the project from start to rollout, and will be your major contact throughout the implementation process.
- Utelogy Engineer: The Utelogy engineer assists the Utelogy project manager in the planning and deployment of the Utelogy platform. The Utelogy engineer also provides training and technical support for your internal deployment team.

PLANNING PHASE

We recommend that you do the following in planning for your Utelogy deployment:

1. Form an internal deployment team.
2. Review the network and server design.
3. Review the AV System Design
4. Review the AV system design for compatibility with the Utelogy platform.
5. Perform a site survey.
6. Review the communication protocol requirements.
7. Review the network architecture considerations.
8. Review the bandwidth and traffic recommendations.

1. Form an Internal Deployment Team

It is recommended that you form an internal Utelogy deployment team to provide internal leadership and support for the Utelogy project. The members of your internal deployment team should have a background in IT and AV. At least one individual should have an understanding of virtual environments.

A thorough review session with both the Utelogy deployment team (if you are utilizing Utelogy Professional Services) and your internal deployment team should occur as early as possible so the implementation is understood by all. This review session also serves to flush out any nuances so that there are no surprises down the road.

The internal deployment team will continue to meet with the Utelogy deployment team at regular intervals during the planning and deployment phases to discuss the progress being made and ensure goals are being met. The internal deployment team should also meet regularly among themselves as well to discuss progress and goals.

2. Review the Network and Server Design

Because Utelogy is a platform that can utilize our IT infrastructure and network, it is important that your own network topology, policies, security, firewalls, etc. be considered so that the full functionality of Utelogy is maximized and operates optimally in your environment. See "Network Design" on page 2.

3. Review the AV System Design

As a best practice, we recommend that you have one-line diagrams for the system(s) you intend to deploy Utelogy on already prepared, and submit them to Utelogy for a general compatibility review and proper quoting. There are numerous ways to design systems, and although it is not Utelogy's responsibility to tell you how to design your AV systems, as Utelogy can work well in any system design, Utelogy's engineering staff prefers to review the systems so we can assure that your quotes are accurate and your system design will work optimally with Utelogy software. This also allows the Utelogy engineering staff the chance to

create and test any drivers that may be needed for your system if the drivers do not yet exist. Any drawings or designs shared with our engineering staff are considered confidential and shall not be divulged to other parties.

4. Perform the Site Survey

The purpose of the site survey is to gather all of the information that is necessary to configure and deploy Utelogy, including a list of the devices you will be utilizing with Utelogy, server data, a list of the rooms to be deployed, and line drawings. The majority of the information can be documented in the Utelogy Site Survey spreadsheet that will be provided to you separately.

Following is additional information regarding the site survey.

Room List/Identification

A vital step in the planning phase is to identify all the rooms that will be deployed as part of Utelogy (see the Device Configuration section in the Utelogy Site Survey spreadsheet). This includes the building name and its physical location, the room name and its physical location, and the room number – this will serve as an "enterprise" naming scheme to best organize your rooms within the Utelogy platform.

Ú It is important to provide the FINAL room names, not the names that the architect assigns to rooms early in the project origins.

This room list will also serve as the basis for project management so that progress, issues, and resolution items for each room can be tracked and reported.

Room Narratives/Scope of Work (SOW)

To ensure that Utelogy is capable of providing functionality in accordance with the needs of the customer, a detailed narrative of expected functionality for each individual room should be developed. This will establish the user's expectations for their spaces, and will communicate required functionality to whomever is configuring the Utelogy software.

For example, should the room support presentations, conferencing, collaboration, and sound? What are some tasks that users need to be able to do in the room (e.g. the ability to switch sources, control different volume components, record, playback, etc.)? Regarding the layout of the room, are there any limitations regarding power outlets, network drops, or cable runs that might be needed, etc.? What about windows and lighting conditions? Any other special, odd features that might impact either implementation of technology or the user experience of the room?

Device Inventory/Bill of Materials (BOM)

Prior to deployment, it is vital to take an inventory of all the devices/equipment that will be controlled to make sure that Utelogy has all the required device drivers to support the deployment. Early identification of required drivers, as well as APIs for enterprise applications, will assure that Utelogy has the necessary drivers available for you in time for your deployment.

The device inventory list should contain the manufacturer/model for all devices/equipment to be controlled by Utelogy, along with the location of the device.

Further, it should be articulated that any equipment serial number, MAC address, inventory ID, warranty, and vendor who provided the equipment shall be responsible for getting that information into the U-Manage portal and associated with specific rooms where applicable.

Line Drawing(s)

If Utelogy Professional Services are being utilized for your project, a representative line drawing of the system that shows how all the equipment in each room is connected should be provided to Utelogy so that room control scenario(s) can be reviewed, and Utelogy can provide recommendations for improved user experience and manageability. The line drawing does not need to show the details of each cable (pins, etc.) but should show the following:

- **Equipment.** Include the "active" equipment that comprises the entire system. This includes input source devices such as computers, document cameras, DVD players; video and audio routing components such as matrix, presentation, and network switchers, displays, projectors, video phone, audio components including mixers, DSP, amplifiers, and speakers. In addition, include any network-based equipment such as encoders/decoders, switches (e.g. LAN to Serial or IR), etc. The line drawing will also identify any "network adapters" that are needed to provide a network control interface to your equipment. Each piece of equipment should be identified by make and model.

- **Signals.** Signals between the equipment should be designated by a single line that represents the type of connection: video, audio, control, and network. For each connection, indicate the input or output on the piece of equipment where it is connected. If you are using active power management, you should designate lines for power.

- **Control Points.** A control point indicates which piece of equipment is controlled to activate a certain feature or function of the room. Typically, this is readily apparent by looking at the drawing equipment and signals. For example, a switcher with inputs and outputs indicates that it is the device that does the routing of these signals. In the case of audio control (volume), it may not be apparent where volume is controlled from...this is especially true if using a programmable audio DSP. In these cases where the control point is not clear, appropriate notations should be made describing these non-apparent control points.

Since Utelogy resides completely within the network and servers, there might be certain ways to improve the system design by applying some best practices which will optimize the performance of the system.

Following are some best practices to keep in mind when formulating system design(s) for Utelogy control and administration:

- Favor devices that have "always on" network interfaces. Devices that require RS-232, IR, or contact closures for control do not provide the connectivity and data that Utelogy's U-Manage server is optimized for or require third party interfaces which are reliable, but represent a barrier between your usage and administration data.

- Favor devices that are PoE powered. This efficient way of powering your AV devices is convenient, but it also allows for simple remote rebooting if U-Manage notices that a device has become unresponsive – a quick reboot of the device usually brings the device back online.

- If you are using high voltage (120/240V) to power your devices, include a networked way of stopping the power to your devices in your designs. If U-Manage notices that a device has become unresponsive, a quick reboot of the device usually brings the device back online. We recommend that this be done both in equipment racks and for all displays or projectors as a best practice.

- Some devices do not function well with Utelogy because U-Server requests the device status every 5-15 seconds. These repeated requests can cause some devices to shut down their network connection. In this case, certain device manufacturers suggest that you configure the device to run with U-Server on a subscription basis. We do not recommend this, as a subscription format only notifies U-Manage of an error if there is a change. If a device is completely locked up, U-Manage cannot be notified of a device failure, etc.

This is an important step so that the expected user experience and "controllability" of the design can be confirmed. For example, if you are expecting to have a soft unified communication application controlled, Utelogy's Professional Services can help you make sure the design and equipment supports your system(s) the way you expect them to operate.

In addition, the line drawing(s) will assist those involved with configuring Utelogy, as the drawings should demonstrate how the room should operate. Although an equipment list is helpful, it is also important to see how that equipment is connected.

Cabling

Based on your line drawing, the room layout, and existing infrastructure, identify all cabling pulls, network drops, etc. that are required and make sure that is completed. This also includes necessary cabling and hardware for adding new/additional equipment to the design. This will help prevent a room from not getting deployed on time because of a simple cable or another component.

Network Assignments

A list of network address/name assignments is needed prior to deployment. This list specifies the network address that will be assigned to each piece of network-based equipment. At a minimum, this can be a block of addresses, and the individual addresses can be allocated during deployment.

5. Review the Communication Protocol Requirements

Utelogy uses TCP/IPv4/v6 to communicate over your network. Utelogy utilizes its own robust transmission scheme, Utelogy Messaging Protocol (UMP), for sending and receiving messages and information over the network.

Utelogy Ports

Utelogy uses the following socket ports:

- 12600 – to communicate between the U-Console to U-Server
- 80 – HTTP/S web sockets for U-Manage browser access and U-Server browser access

Other Equipment Ports

Keep in mind that for network control of equipment, each manufacturer will require communication on certain ports. The equipment to be controlled and its port requirements should be factored into network planning. Examples are:

- GlobalCache: ports 4998 – 5000
- Extron IP Link: ports 2001 – 2006 for serial control
- LG: port 9760
- PJ Link: port 4352
- Epson: port 4352
- NEC Control: port 7142
- Telnet, port 23, and most video phones and other devices use a Telnet port/protocol.

Please consult the equipment manuals for further identification of unique network communication requirements.

6. Review the Network Architecture Considerations

V-LAN

Utelogy recommends the use of V-LANs to isolate and separate AV control and management traffic. Utelogy is network-friendly and can be run side-by-side with your regular network traffic; however, V-LANs provide a great way to organize your address scheme and a convenient way to manage any routing and/or firewall traversal needs your network architecture may require.

Class C Block Allocation

At a minimum, it is recommended that you allocate an entire block(s) to equipment address assignment. This is simply a best practice to help organize address assignments. Additionally, Utelogy provides tools that can scan a block of addresses to identify equipment.

DHCP

Utelogy fully supports network name resolution, allowing you to use DHCP to automatically assign network addresses.

Firewalls and Switching

In a Utelogy deployment, there are three main "zones" where equipment can be located. The relevance of this depends on if or how you isolate your server network zone from the room network zone from the staff network zone. Depending on your network, switching, and firewall configuration, this may or may not apply, but it is beneficial to be familiar with.

Server

U-Server
U-Manage

Room

Dashboard
Equipment

Staff/Support

U-Help Station
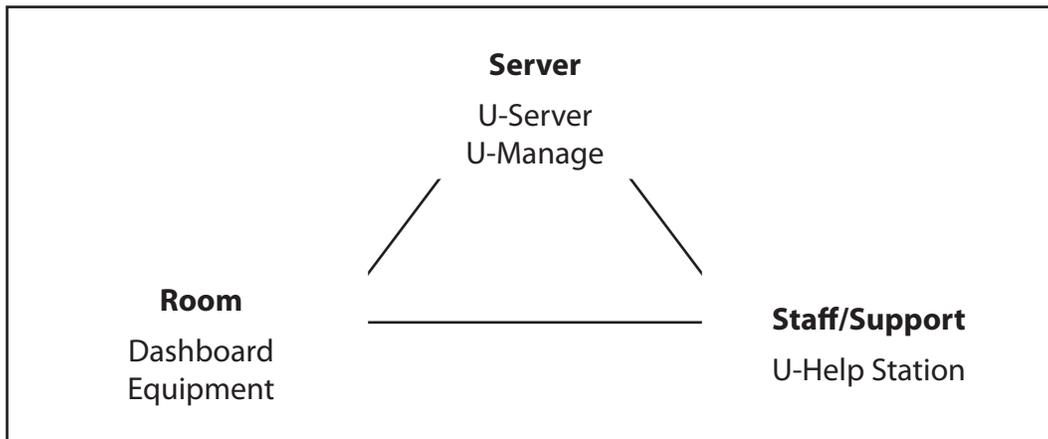
You will want to make sure that any firewalls and/or switching that occur between these zones are addressed in the network planning so that the communication between all the Utelogy components can occur.

7. Review the Bandwidth & Traffic Recommendations.

Utelogy traffic and bandwidth requirements are nominal. Most messages fit within a single network packet. Furthermore, the communication frequency with Utelogy is low – typically on the order of once per five seconds for polling of equipment. Otherwise, Utelogy uses a "notification" scheme where updates are sent when they occur, rather than having to continuously poll. We recommend using AV devices that are optimal in a constantly polled environment, and not subscription-based in order to maximize Utelogy's value.

The high-bandwidth component of Utelogy occurs during a help call as part of the transmission of video and audio information. Video and audio are compressed and designed to use minimum bandwidth.

Deployment Phase

Once the planning phase has been completed, you are ready to start deploying the Utelogy platform.

Server Provisioning

Based on the network/server design and prior to the installation of the Utelogy software, the servers need to be procured and provisioned. You are responsible for provisioning the server(s), and then coordinating with Utelogy for the installation and validation of software.

The servers need to be provisioned according to the following:

- VMs are installed and configured, if utilizing VM.
- Operating system is installed
- Network configuration with address or name.
- Create an administrator level account (can use "administrator") to allow software installation.
- Browser access to the internet is confirmed (this is for downloading software/drivers/updates, etc.

- .NET 4.5 is installed.

- Make sure port 12600 is available (U-Console requires port 12600 to be open to communicate with U-Server)

- Ensure inboard/outboard port 80 HTTP or port 443 HTTPS traffic is allowed (these ports must not be blocked by any firewall and must be routable if there are multiple networks in the enterprise).

- For maximum support from Utelogy, install TeamViewer (preferred) or other service on the server.

- VPN access or other (e.g. TeamViewer) setup, if remote Utelogy support is desired for installation.

Once the server(s) are provisioned, the Utelogy software is ready to be installed.

Software Installation

Once the servers have been provisioned, the Utelogy software is ready to be installed.

Install U-Server

To install U-Server, do the following:

1. Download the installation package named `Utelogy U-Enterprise 2.0.<version#>.zip`.
2. Locate the installation file (`.exe` extension).
3. Run the installation file.
4. Select the "Typical" installation option.
5. When the installation is complete, click **Finish**.

Before U-Server can be used, the product keys need to be entered:

1. Launch U-Console on the U-Server machine.
2. In the left navigation panel, click **U-Server Setup**. The **U-Server Setup** screen displays. Make sure the **Server** tab is visible.
3. In the **U-Server Product Key** field, enter the product key you were provided.

4. Click the **Installed Services** tab.
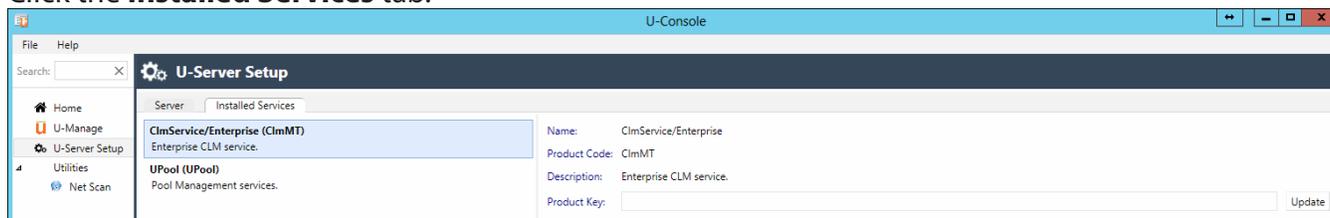
5. Click **ClmService/Enterprise (ClmMT)**.

6. In the **Product Key** field, enter the product key you were provided.

7. Save the configuration by clicking **File > Save** menu or by pressing **<Ctrl> + S**.

8. Click the **Server** tab.

9. Make sure the service is running by viewing the information in the **U-Server Engine** section. If the service is not running, start the service by clicking **Start**.

Install U-Control (Windows Desktop Application)

The U-Control Windows desktop application is used to present the user interface for controlling a room. U-Control can be installed on any computer within the enterprise that has access to the U-Server machine.

To install U-Control on a desktop computer, do the following:

1. Download the installation package named `Utelogy U-Enterprise 2.0.<version#>.zip`.

2. Locate the installation file (`.exe` extension).

3. Run the installation file.

4. Select the "Custom" installation option.

5. Make sure that "Utelogy Platform" and "U-Control" are the only two options selected.

6. When the installation is complete, click **Finish**.

Software Configuration

Configuring U-Console

For information on configuring the U-Console, see the Utelogy online help.

Configure U-Control

The first time that U-Control is run on each desktop computer, it needs to be configured by identifying the room to use.

To configure U-Control, do the following:

1. Launch the U-Control application located in `C:\Program Files\Utelogy`. (NOTE: If the current user does not have sufficient privileges to update the configuration file, U-Control must be launched by right-clicking the program, choosing **Run as administrator**, then entering the appropriate administrative credentials.)

2. Press **<Ctrl> + <Shift> + S** to open the **U-Control Setup** screen.

3. Specify the desired configuration settings. When you are finished, click **Save and Restart** in the upper-right corner of the screen.

Mode	Sets the operation mode:
	• Centered: Places the window in the center of the screen.
	• Maximized: U-Control takes up the entire window.
	• Kiosk1: Runs on the first display.
	• Kiosk2: Runs on the second display.
	• Kiosk3: Runs on the third display.
	• Shell: Runs as an operating system shell (no other applications can run).
	The kiosk modes run U-Control as a non-windowed application without the normal title bar. If a kiosk mode is selected, the options "Run U-Control at Startup" and "User cannot close U-Control" are also automatically selected.
Run U-Control at Startup	Automatically launches U-Control upon logging on to Windows.
User cannot close U-Control	The user will not be allowed to close U-Control.
Host	The host name or IP address of the U-Server.
CLM	The name of the CLM to connect to.

Site Acceptance Testing

➲ Available as part of Utelogy Professional Services (an optional service) – contact Utelogy Corporation for more information.

After the Utelogy software has been installed and configured, the site acceptance testing can begin. The goal of site acceptance testing is to verify that the system works as defined in the original scope of work. This includes making sure that:

- All local user accounts and permissions have been set up.
- All devices have been added.
- All device drivers have been installed and running the latest version.
- All routing is operating as intended.
- All presets are active and operational.
- System startup and shutdown events are working properly.

As part of the site acceptance testing, your Utelogy project manager will provide you with a Utelogy Site Acceptance Test Plan.

Training

➲ Available as part of Utelogy Professional Services (an optional service) – contact Utelogy Corporation for more information.

Utelogy offers training on the entire Utelogy platform for those designated as power users. For more information on training options, please contact your salesperson.

In addition, as part of the deployment process, documentation on how to use the Utelogy platform is provided.

U-COMPUTER

The U-Computer functionality allows a computer to act as a device within a CLM and in turn be controlled through Utelogy.

The following must be completed to utilize U-Computer:

- The Utelogy Computer device driver must be installed in a CLM in U-Configure. The "Host" property must be configured with the IP address of the computer that is running U-Computer.
- The computer acting as a device must have U-Computer installed on it.

To install U-Computer on a computer acting as a device, do the following:

1. Download the installation package named `Utelogy U-Enterprise 2.0.<version#>.zip`.
2. Locate the installation file (`.exe` extension).
3. Run the installation file.

4. Select the "Custom" installation option.

5. Make sure that "U-Computer" is the only option selected.

6. When the installation is complete, click **Finish**.

U-Computer runs in the system tray of the computer being controlled. To automatically launch U-Computer on Windows logon, a Windows shortcut to the executable file must be added to the Windows Startup folder.

➲ For U-Computer to function, a user must be logged on to the computer. The computer cannot be locked and cannot be displaying the user logon screen.