FORUMSYSTEMS™
THE LEADER IN API SECURITY & ZERO TRUST

Forum Sentry™ 656x
Hardware Installation Guide

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INTRODUCTION

Audience

The *Forum Sentry™ Hardware Installation Guide* is for IT or Network Administrators who will install the product.

Conventions Used

A red asterisk (*) aligned with a field term means that this field is required.

In this and other documentation, the Forum Systems Web Administration Interface is referred to as the WebAdmin and the Forum XML Security Appliance™ is referred to as the 'device', 'product' or 'system'.

In this document, all commands and parameters that must be entered are displayed in italicized boldface.

Instructions for the CLI user are displayed in italicized boldface text inside brackets. Press the *<enter>* key or ↵ after each command.

Example:

```
login as: admin1 ↵
[Enter your User Name, then press <enter>.]
```

Overview

Forum Systems develops and markets security products that actively guard data as it moves between and within enterprises by protecting specific content within XML and non-XML Documents – at the origin, during transmission and after it reaches its destination.

Features of the product include:

- Fast, non-intrusive installation.
- Rack mounted, installs in minutes, works with content servers, firewalls, load balancers, SSL accelerators and Virtual Private Networks.
- Flexible network configuration.
- Dual port flexibility – the product operates either in In-line or 1-port physical network configuration modes.
  - In In-line mode, the product uses the WAN and LAN network interfaces with one shared or two distinct IPs.
  - In 1-port mode, the product operates in a standard proxy server network configuration using the WAN interface.

Product Versions

This document covers installation of the Forum Systems 656x models. All instructions also pertain to HSM-enabled and non-HSM systems.

UNPACK AND INSTALL THE SYSTEM

Unpacking the Product

Follow these steps in the sequence given to unpack the product. Inspect the shipping container that the product arrived in, and note if any damage had occurred. If the product shows damage, file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold the product. It should be installed in a clean, dust-free environment that is well ventilated. Avoid areas where heat, electrical noise and electro-magnetic fields are generated. Place the product near a grounded power outlet. Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches). Additionally, leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In a single rack installation, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure rack is stable before extending a component from rack.
- Extend only one component at a time; extending two or more simultaneously may cause the rack to become unstable.

Server Precautions

- Review the electrical safety precautions in the System Safety section.
- Determine placement of each component in rack before you install server.
- Install heaviest server components on the bottom of the rack first, and then work up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

Installing the Product into a Rack

Follow these steps to install the product into a rack unit. Additionally, review the installation instructions that came with the rack unit you are using. It is recommended that two people be involved in lifting the product onto the mounting rails to assure the safety of both the product and the involved personnel.

The **656x** product uses rack mounting rails to attach the system to standard server racks or telco racks. The front product rail is already attached to the chassis. The rear product rail is included in the product accessories box. And should be attached behind the front product rail with the locking tab facing the same way. The rear product rail section should be slid under the locking tabs and then screwed into place using the small flat screws (2 for each rack rail section).

Standard racks
When installing on standard racks, you need to connect the rear rack rail sections (medium length L-shaped sections) to the rear of the front rack tail. This is accomplished by placing the lugs at the rear of the front rack rail section into the slots in the rear rack rail section and sliding them until they are correctly sized to be on the outside of the front and rear of the standard rack attachment points. Once the sizing is correct, lock the rear rack rail section in place using 2 small round screws (2 for each rack rail section). Attach the rack rails to your standard rack. Once the main rack rails are in place, slide the product into the rails using the product rails and make sure all screws are tightened before releasing it. The telco rack mounting brackets (small L-shaped sections that attach to the front rack rail) are not needed for this type of installation and should be set aside and saved in case of the product being moved at a later time to a different rack type.

Telco racks
When installing on telco racks, you will need to use two L-shaped brackets on either side of the telco rack (4 in total). These brackets will attach to the main rack rails at the raised locations. Two small round screws should be inserted through each L-shaped bracket into the main rack rail to hold the brackets to the tail with enough space between the two brackets to accommodate the telco rack. Make any adjustments needed to balance the weight of the product evenly on the telco rack and install the two main rails to the telco rack using the L-shaped brackets. Once the main rack rails are in place, slide the product into the rails using the product rails and make sure all screws are tightened before releasing it. The rear rack rail assemblies (medium length sized L-shaped sections that attach to the front rack rail) are not needed for this type of installation and should be set aside and saved in case of the product being moved at a later time to a different rack type.

Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect installers from harm and the product from damage. Follow these rules to ensure electrical safety:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- When disconnecting power, you should first power down the system with the operating system first and then unplug the power cords of all the power supply units in the system.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease static electrical discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cords must include a grounding plug and must be plugged into grounded electrical outlets.

PLAN FOR PHYSICAL INSTALLATION

System Startup and Shutdown Procedures

The following sequences are required for powering on/off and restarting the system:

Power On

1. Connect the two provided product power cords to the rear of the product and a wall outlet.
2. Press product main power switch ON at the front of the product.

Power Off

You can power off the device from either the WebAdmin Interface or the CLI

From the CLI, enter enable mode and type the <shutdown> command (output truncated):

```
ForumOS# shutdown ↵
```

From the WebAdmin, go to the System->Control menu and on the Control Settings screen, press the Shutdown button

> **Note:** Be sure you run the shutdown command from the CLI or the WebAdmin rather than powering off the system directly as this will ensure a clean shutdown process to complete.

Restart

You can restart the device from either the WebAdmin Interface or the CLI

From the CLI, type the *<reboot>* command (output truncated):

```
ForumOS# reboot ↵
```

From the WebAdmin, go to the System->Control menu and on the Control Settings screen, press the Reboot button

Installation Overview

The following is an overview of installation steps, presented in sequence, to install the product:

1. Decide on in-line or 1-port physical network configuration for the product.
2. Setup the serial port console cable connections to the product.
3. Initialize Command Line Interface (CLI) (start terminal emulation software, e.g. Hyper Terminal™, and connect to product).
4. The Forum Systems Installation Wizard* appears and prompts you to configure Network Interfaces for the product, default gateway, DNS, and default Administration user.*
5. Test WebAdmin accessibility.

* Refer to the *Forum Sentry™ HSM Quick Start Guide* for more information on this portion of installation.

Decide Among In-Line Two IPs or One Port Network Configuration Modes

Network configuration options for your product include:

- **One port mode** (single interface)
- **In-line 2 IP address mode** (bridged interfaces)

1-port Mode

The following figure displays network configuration mode for 1-port:
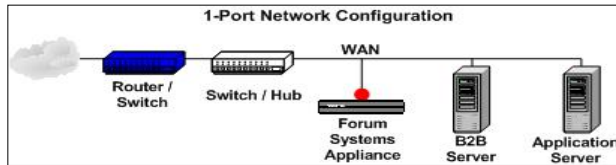
Figure 1: 1-Port Network Configuration Schematic.

In the 1-port mode configuration, the product operates using only the WAN interface connected to the network and accepts client requests directed to the configured device IP(s) of the WAN port.

In-line Mode (2 IP Addresses)

The following figure displays network configuration mode for in-line (2 IP addresses):
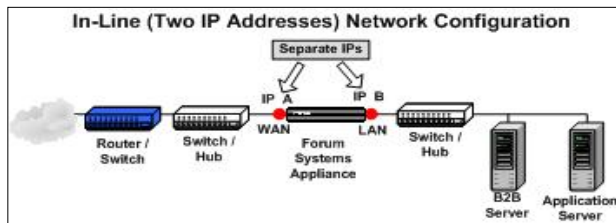
Figure 2: In-Line Configuration Schematic for Two IP Addresses.

With in-line configuration with two IP addresses, the product uses the "Local Area Network" interface and the "Wide Area Network" interface for bi-directional network traffic. This is a bridge mode configuration which means the product provides physical network segmentation between the clients and servers.

Physical Interfaces for the Forum 656x Series

When physically installing the product, consider the following:

| INTERFACE	DESCRIPTION
WAN Port:	The WAN port, the left most of the two upper NIC ports next to each other on the right half of the rear of the appliance, is used in both in-line and 1-port modes for data traffic. With in-line mode, the WAN port should be the external-facing (Internet) port, connected to whichever upstream device (router, firewall, etc.) is applicable. In 1-port mode, only the WAN port is used for data traffic. Note that regardless of whether the product is in-line or 1-port mode, traffic is directed to based on the routing table according to standard linux-based routing rules.
LAN Port:	The LAN port, the right most of the two upper NIC ports next to each other on the right half of the rear of the appliance, is only used in in-line mode. This is the internal-facing port, connected to the internal network or a network device that provides connectivity to the internal network.
MGMT Port:	Forum Systems products can be managed out-of-band using the lower left most NIC port on the rear of the appliance. This means that management connectivity and associated network traffic are provided from an interface that is separate from the LAN and WAN interface(s) used for runtime traffic. Access to the Command Line Interface (CLI) and the WebAdmin is provided on this interface. The MGMT interface can be moved to the LAN or WAN port after initial setup via the CLI or from the WebAdmin System->Settings->Network screen. There is a single IP address on the device that applies to the Management Ethernet interface only. The IP address used for the MGMT port is completely independent of whether the device is configured to run in in-line or 1-port mode. The MGMT port must have an IP associated, even if you intend to manage the product via the WAN or LAN interface. If you do not have or do not want a physical network connection to the MGMT interface, set the MGMT IP to the non-routable IP, 169.254.0.1 (per RFC 3330).
SERIAL Port:	The DB9 (serial) port at the middle of the appliance to the right of the MGMT interface is used for connecting a console for direct CLI (Command-Line Interface) access.
Smart Card Reader Serial Connector	The smart card reader (for HSM products only) is the small round connector on the top right hand side of the appliance which is used for HSM configuration.

System Schematics

The following diagram displays the Forum Systems system:
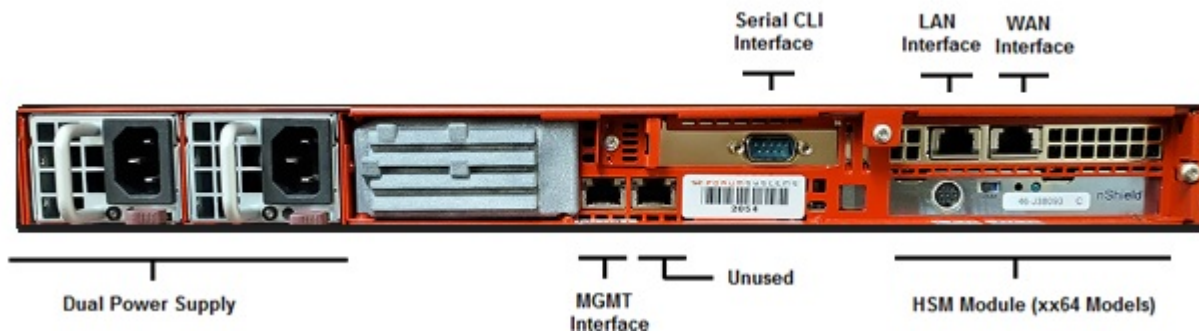
Figure 3: Product Schematic for HSM-enabled System.

CONNECT THE NETWORK

Configure the Network for One-Port Mode

1. Connect the WAN port to your data network
2. Connect the MGMT port to your private management network (the network that your organization uses for management)

Configure the Network for In-line Mode

1. Connect the WAN port to your data network
2. Connect the LAN port the other side of your data network
3. Connect the MGMT port to your private management network (the network that your organization uses for management)

CONNECT THE CLI

Connect the CONSOLE serial port at the rear of the product to a laptop / PC serial port in order to access the Command Line Interface (CLI). The CLI can also be accessed via SSH on port 22 to the management IP address once it is initialized and configured on the network.

The following two sections describe the configuration of two different terminal emulation tools (HyperTerminal and KiTTy) that can be used on a PC to connect to the Forum Sentry CLI interface via the serial port.

CONFIGURE HYPERTERMINAL

Note that this section discusses how to connect to the serial interface using hyperterminal.   Other serial emulators such as putty, etc can also be used to connect to the serial interface using the connection settings below.

1.   Launch HyperTerminal
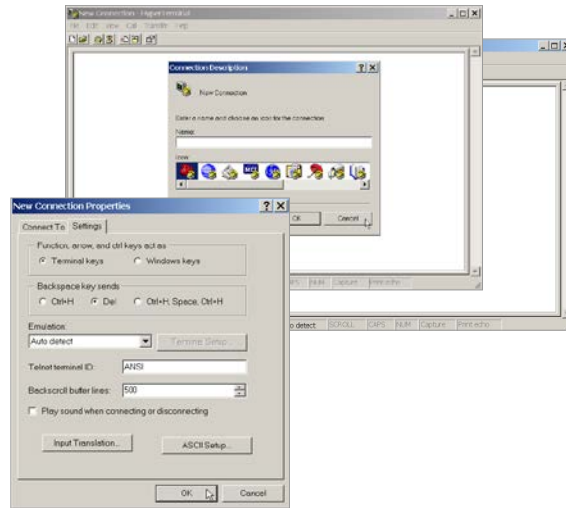
2.   The Connection Description screen appears. Click **Cancel** to close.
3.   From the menu bar, select **File**, **Properties**. The New Connection Properties screen appears. Click the **Settings** tab.
4.   In the Backspace key sends area, check the **Del** radio button. Click **OK** to close the screen.

HyperTerminal Settings

Please refer to the following settings for configuring HyperTerminal:

- Connect using = COM1
- Bits per second = 9600
- Data bits = 8
- Parity = None
- Stop bits = 1
- Flow control = Hardware

Configure Terminal Emulation for the Serial Console Port

The New Connection screen for HyperTerminal appears.
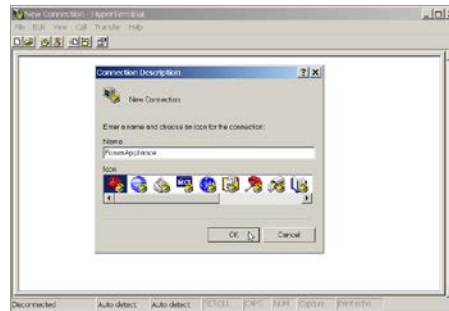
1. From the menu bar, select **File**, **New Connection**. The New Connection – HyperTerminal screen appears.
2. In the Connection Description screen, enter a **Connection Name** in the Name field, click **OK**. The Connect To screen appears.
3. From the Connect using drop down list, click the **com** port that your console is connected to; probably **COM1**, click **OK**. The COM1 Properties screen appears.

4. From the Bits per second drop down list, click 9600.
5. From the Data bits drop down list, click 8.
6. From the Parity drop down list, click None.
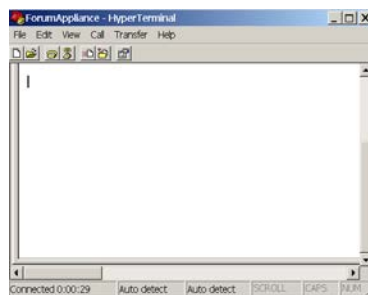
7. From the Stop bits drop down list, click **1**.
8. From the Flow control drop down list, click **Hardware**, then click **OK**. The HyperTerminal screen opens with a blinking cursor.

POWER ON

Powering On the System

Physical installation is now complete. Review the System Startup and Shutdown Procedures section for the required sequence used while powering on the system.

CONFIGURE THE SYSTEM
Remaining Software Installation Tasks

If you are running with HSM, you must first initialize the Hardware Security Module (HSM) on the CLI for the first time. Refer to the *HSM Quick Start Guide* for more information.

Note: When this task is complete, the Installation Wizard will continue with the remaining sections of the Installation Wizard.

If you are running without HSM, continue with the Initialize the System on the CLI section.

When finished, continue with the Initialize the System on the CLI section of this document until installation is complete.

Initialize the System on the CLI
The Forum Systems Installation Wizard allows you to cycle through a one-time wizard and prompts you to enter critical data in the proper sequence, including the default Administrator user name and password. If you skip prompts or exit the wizard before configuration is complete, the product will refresh, and re-display the wizard until all required data has been entered.

The Forum Systems Installation Wizard displays the following start-up screen and sequenced prompts:

```
---------------------------------------------------------
            Forum OS - Command Shell
---------------------------------------------------------
    Forum Systems Model:
           Serial Number: 0000
            Licensed to: Unknown
     License Expiration: 12/31/99 12:00 AM
       Firmware Version: X.X
        Product Version: X.X
            System Name: Value not set
Server Start Date/Time: Wed, 30 January 2022 02:13:00 AM EST
        Server Up-Time: 0 years, 0 months, 4 days, 22 h,
                        43 min, 33 s, 590ms
      Security World ID: N/A
--------------------------------------------------------
Type ? for help
*******************************************************
*   Welcome to the Forum Systems Installation Wizard  *
*                                                     *
* Before using the command line interface, some      *
* basic information will be needed to configure       *
* the management network interface.  Type exit at     *
* the command prompt if you would like to defer       *
* this wizard until later.                            *
*                                                     *
* Once this information is collected you will be      *
* able to use the command line interface or the       *
* web admin gui.                                      *
*                                                     *
*******************************************************
# Please enter: Data entry method
# Manually enter data or import an existing bootstrap file
  1 to manually enter data
  2 to import a bootstrap (fsb) file

> 1 ↵
[Type (1) or (2), and then press <enter]
```

Configure Network Interfaces for the Product

```
*******************************************************
*   Management Interface Settings for the System      *
*                                                     *
* This includes the ip address and netmask that will  *
* be used for managing the device.                     *
*******************************************************

#Please enter: Management Address
#The IP Address for management
<default> 10.5.3.92

[Press <enter> to accept default or enter the Management IP Address, and then press <enter>]
```

```
#Please enter: Management Netmask
#The management netmask for the system
<default> 255.255.255.0
```

[Press <enter> to accept default or enter the Management Netmask, and then press <enter>]

```
*********************************************************
*              Physical Network Topology          *
*                                                 *
* These are global settings for the device that   *
* restrict all device communication policies to   *
* either a one-port configuration, or inline with *
* separate IP addresses on the WAN and LAN        *
* interfaces.                                      *
*********************************************************

# Please enter: Topology Mode
# The network topology for the system
  1 for One-Port mode
  2 for Inline (Dual IP address) mode
```

> 1
[Enter (1) or (2) and then press <enter>]

```
*********************************************************
*     Device Interface Settings for the System    *
*                                                 *
* This includes the ip address and netmask that will *
* be used for all system traffic.  In a proxy     *
* configuration this will be the address that clients *
* connect to.                                      *
*********************************************************

# Please enter: Device IP Address
# The default IP Address for the system

> 10.5.6.92
```
[Press <enter> to accept default or enter the System IP Address, and then press <enter>]

```
# Please enter: Device Netmask
# The default device netmask for the system

> 255.255.255.0
```

[Press <enter> to accept default or enter the System Netmask Address, and then press <enter>]

Overview of Default Device Gateway Settings

This section describes typical network configurations and how they would relate to your default gateway setting. After reviewing this topic, continue with the Forum Systems Installation Wizard.

Note: The default gateway in the Installation Wizard is used for managing traffic through the system that is going to or coming from the subnets not connected to the system.

Default Gateway Rules

- Only one default gateway is allowed per product.
- The default gateway setting can only apply to one interface.
- The default gateway setting is applied globally to your entire system.
- The default gateway setting is optional, except in one case. This exception is when clients, the product, your back end servers and your WebAdmin console are all on the same local area network.

In-line Mode Configuration

If you have selected In-line mode (2 IPs), the default gateway setting could apply to the System Default, or WAN, or LAN, or the MANAGEMENT interface.

1-port Mode Configuration

If you have selected 1-port mode, the default gateway setting could apply to the System Default, WAN or MANAGEMENT interface.

At this point, continue with the Forum Systems Installation Wizard.

```
*********************************************************
*               Default Gateway Setting                *
*                                                       *
* This is an optional default gateway for the           *
* system that applies to either the device setting      *
* or the management interface.                          *
*********************************************************

# Please enter: Device Gateway
# The default gateway for the system
  Enter blank value for none

> 10.5.3.1 ↵
[Enter Device Gateway, and then press <enter>]

# Please enter: Gateway Interface
# Interface directed to the gateway
  1 Let the System Choose for you
  2 for WAN
  3 for Management

> 1 ↵
[Enter the gateway interface.  Press 1 to let the system choose for you, or 2 for WAN, or 3 for
Management, and then press <enter>]

*********************************************************
*        DNS Name Server Configuration Settings         *
*                                                       *
* These are optional DNS settings that can be applied   *
* to the device.                                        *
*********************************************************
# Please enter: Primary DNS
# The address of the primary DNS

> 10.5.2.11 ↵
[Enter Primary DNS, and then press <enter>]

# Please enter: Secondary DNS
# The address of a secondary DNS

> 10.5.2.12 ↵
[Enter Secondary DNS, and then press <enter>]
```

Establish Enable Mode Password

Note: When leaving Command mode, evident by the cursor ForumOS>, you enter Enable mode, evident by the cursor ForumOS#.

```
*********************************************************
*                 Enable Password                      *
*                                                       *
* Enable mode is a privileged mode of operation in      *
* CLI that allows you to modify System settings.        *
* These settings allow you to enter an enable mode      *
* password that will allow an administrator to enter    *
* enable mode.                                          *
*********************************************************
```

Note: The Enable mode password must be unique, is case sensitive, and may be from 6 to 32 alphanumeric characters.

```
#Please enter: New Password
#The new enable mode password

> <enter a password for enable mode > ↵

#Please enter: Confirm Password
#Confirm the new enable mode password

> <re-enter the password for enable mode > ↵
```

Add the Default Administrator User Name and Password

```
*********************************************************
*                  Management User Policy                *
*                                                        *
* The following settings allow you to enter a user      *
* policy that can be used to gain access to other       *
* user interfaces such as the Web Administration UI.    *
*********************************************************
```

> **Note:** User names must be unique, are case sensitive, and may be from 1 to 80 alphanumeric characters. The '@' character, underscores, dashes and spaces are allowed; however, no leading or trailing spaces are allowed.   User passwords must be unique, are case sensitive, may be from 6 to 255 alphanumeric characters, and may be any keyboard characters.

```
#Please enter: User name
#A unique user name

> admin1 ↵

#Please enter: New Password
#The new user password

> ****** ↵

#Please enter: Confirm password
#confirm the new user password

> ****** ↵

Installation Wizard is now complete!

Type ? for a list of commands
ForumOS>
```

Record this new password for your convenience. At this point, you are connected to the product in Command mode and have completed the Installation Wizard.

Troubleshoot the Management Device Interface Filter

The management device interface filter is used to prevent allow management traffic between the data network and management network for security purposes.

If the MANAGEMENT interface and WAN interface are configured to be on same subnet, you must turn this filter off. From the CLI, enter the **network config mgmt-filter** command. Enter **N** to turn the filter off.

Troubleshoot Routing Information for the Product

The system supports both Interface routes as well as Gateway routes. When there is no default gateway configured on the product and you want to set up your routes, enter the **route network add** command from the CLI. For example, for the MANAGEMENT interface to see the 10.5.2.0 network, use the following CLI command (shown with defined syntactical elements):

<Network IP Address> <Netmask> <Route Type> <Gateway Address>
                             1=Gateway
                             2=Interface>

        route network add 10.5.2.0 255.255.255.0 1 10.5.3.1

> **Note:** For more information on the **route network add** command, refer to the *Forum Sentry™ Command Line Interface Reference.*

The CLI has displayed its start-up screen in the HyperTerminal window and the Forum Systems Installation Wizard has appears. Follow the Installation Wizard's prompts.

The Forum Systems Installation Wizard allows you to cycle through a one-time wizard and prompts you to enter critical data in the proper sequence, including the default Administrator user name and password. If you skip prompts or exit the wizard before configuration is complete, the product will refresh, and re-display the wizard until all required data has been entered.

The Forum Systems Installation Wizard displays the following start-up screen and sequenced prompts:

```
--------------------------------------------------------
                Forum OS - Command Shell
--------------------------------------------------------
     Forum Systems Model:
            Serial Number: 0000
             Licensed to: Unknown
      License Expiration: 12/31/99 12:00 AM
        Firmware Version: X.X
         Product Version: X.X
             System Name: Value not set
 Server Start Date/Time: Wed, 30 January 2022 02:13:00 AM EST
          Server Up-Time: 0 years, 0 months, 4 days, 22 h,
                          43 min, 33 s, 590ms
       Security World ID: N/A


----------------------------------------------------------------------------

Type ? for help

*********************************************************
*  Welcome to the Forum Systems  Installation Wizard  *
*                                                     *
* Before using the command line interface, some      *
* basic information will be needed to configure       *
* the management network interface.  Type exit at     *
* the command prompt if you would like to defer       *
* this wizard until later.                            *
*                                                     *
* Once this information is collected you will be      *
* able to use the command line interface or the       *
* web admin gui.                                      *
*                                                     *
*********************************************************
# Please enter: Data entry method
# Manually enter data or import an existing bootstrap file
  1 to manually enter data
  2 to import a bootstrap (fsb) file

> 1 ↵
[Type (1) or (2), and then press <enter>]
```

ACCESS THE WEB ADMINISTRATION INTERFACE

The WebAdmin is a browser-based client that comes SSL-enabled. To access the WebAdmin, please have the following ready:

- username.
- password.
- a browser from which to access the WebAdmin.

The default port for the WebAdmin is 5050. If the default port number for the WebAdmin has changed, provide this new port number to your Administrators so that they can access the WebAdmin UI.

APPENDIX
Appendix A – Specifications
Power Supply

SPECIFICATION	DESCRIPTION
Type	▪ 2 x 700W / 750W
AC Input Rating	▪ 700W: 100 - 140V, 8.0 - 6.0A (w/ ± 10% tolerance - auto-switching capable). ▪ 750W: 200 - 240V, 4.5 – 3.8A (w/ ± 10% tolerance - auto-switching capable). ▪ 50-60Hz
DC Input Rating	▪ 750W: 200 - 240V, 4.5 – 3.8A (w/ ± 10% tolerance - auto-switching capable).
DC Output	▪ 700W: +12V/58A, +5Vsb/3A ▪ 750W: +12V/62A, +5Vsb/3A
Fans	▪ 4 x 4-cm fans
Regulations and Compliance	▪ FCC Class A ▪ RoHS ▪ REACH ▪ 80 PLUS Platinum

System Operating Environment

SPECIFICATION	DESCRIPTION
Operating Temperature Range	▪ 10 - 35 degrees C / 50 - 95 degrees F
Operating Humidity Range	▪ 20 - 95% (non-condensing)

Cooling Fans

SPECIFICATION	DESCRIPTION
System	▪ 6 4-cm heavy-duty counter-rotating fans

System

SPECIFICATION	DESCRIPTION
Dimensions	▪ 17 x 1.7 x 25.6 in. (W x H x D)
Weight	▪ Gross Full System: ~44 lbs.
Regulations	▪ FCC Class A, CSA, EN, IEC, UL, CE

Model 656x Hardware Performance Specs

OS	⇒ ForumOS™ 64-BIT
Document Processing	⇒ 2 GB Document Body Processing ⇒ 50 GB SwA Attachment Processing
AV Scanning	⇒ Up to 50GB Document Size
Concurrent Active Connections	⇒ 16384
Policy Configuration	⇒ In-Memory Compression
CPU	⇒ (2) Intel Xeon Silver 4214R, 12 CORES, 24 Threads, 2 GHz, 16.5MB Cache
RAM	⇒ 96GB DDR-4 ⇒ 2400 MHz
MOTHERBOARD	⇒ WIO
HARD DRIVE	⇒ 4 TB ⇒ 6 Gbps
NICS	⇒ 3 Dual-Port 10G/1G RJ45 Ethernet
POWER SUPPLY	⇒ Dual 750 Watt

Appendix B – Regulatory Information

This section provides the FCC compliance statement for Class A devices and describes how to keep the Forum Systems XML Security System CE compliant.

FCC COMPLIANCE STATEMENT FOR CLASS A DEVICES
The System(s) described in this user guide has been tested and found to comply with the limits for a Class A digital device, pursuant to

Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: The assembler of a personal computer system may be required to test the System and/or make necessary modifications if an System is found to cause harmful interference or to be non-compliant with the appropriate standards for its intended use.

CE CERTIFICATION
The System(s) described in this user guide complies with all applicable European Union (CE) directives. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques. The customer must ensure that these products are installed with proper shielding to maintain CE compliance. Forum Systems does not offer engineering services for designing cabling systems. In addition, Forum Systems will not retest or re-certify Systems that have been reconfigured by customers.

Appendix C – FORUM APPLIANCE - LIMITED HARDWARE WARRANTY

General Terms
This limited hardware warranty (Warranty) applies only to original purchasers using Forum Systems Appliances. The term "Hardware" means the hardware portion of a Forum Systems Appliance. The term "Hardware" does not include any software programs, whether pre-loaded with the Hardware, installed subsequently or otherwise.
Nothing in this Warranty affects any statutory rights of consumers that cannot be waived or limited by contract.

Limited Hardware Warranty
Forum Systems (Forum) warrants that the Hardware ("Hardware") shall be free from material defects in design, materials, and workmanship and will function, under normal use and circumstances, materially in accordance with the documentation provided with the Hardware for a period of 90 days from receipt.
Customer's sole and exclusive remedy, and Forum System's sole and exclusive liability for defective Hardware shall be, subject to the terms and conditions contained herein, and solely upon confirmation of a defect or failure of Hardware to perform as warranted, to replace the nonconforming Hardware. All replacement Hardware furnished to Customer under this Warranty shall be new or reconditioned to be functionally equivalent to new. Replacement Hardware is warranted to be free of defects in material or workmanship for the remainder of the limited hardware warranty period of the original Hardware. All defective Hardware, which has been replaced, shall become the property of Forum Systems. All replacement Hardware shall remain Customer's property.

Warranty Claims
By submitting a warranty claim, Customer accepts and agrees to be bound by all the terms and conditions contained herein.
To request warranty service, contact Forum Systems Customer Support within the warranty period. If warranty service is required, Forum will issue a Return Merchandise Authorization ("RMA"). Upon receiving an RMA number, Customer must package the Hardware in its original or equivalent packaging with the RMA number clearly marked on the outside of the package. In no event will Forum Systems accept any returned Hardware without a valid RMA number. The package must then be mailed or otherwise shipped to Forum Systems or its designated representative with all costs of mailing/shipping/insurance prepaid. Forum Systems does not accept liability for loss or damage to the Hardware during shipment and requires that the return be insured for its full value. Forum Systems will ship the replacement Hardware to Customer freight prepaid upon receiving proof of such shipment. If Forum Systems does not receive the defective Hardware within 90 days of receiving the proof of shipment, Forum Systems will invoice Customer for the full price of the new Hardware and freight charges.

Warranty Restrictions and Disclaimer
The foregoing warranties and remedies shall be void due to any of the following: (1) if the Hardware has been opened, modified, altered, or repaired, except by Forum Systems or its authorized agents, (2) if the Hardware has not been installed or maintained or used in accordance with instructions provided by Forum Systems, (3) misuse, abuse, accident, thermal or electrical irregularity, theft, vandalism, fire, water or other peril, (4) damage caused by containment and/or operation outside the environmental specifications for the Hardware, (5) connection of the Hardware to other systems, equipment or devices or use with other software (other than those specifically approved by Forum Systems) without the prior approval of Forum Systems, or (6) removal or alteration of identification labels on the Hardware or its parts (7) failure to comply with all warranty return terms and conditions as set forth herein. Forum Systems shall not be responsible for any software, information, or memory data of Customer contained in, stored on, or integrated with any Hardware returned to Forum Systems for replacement whether under warranty or not. Customer is responsible for backing up its programs and data to protect against loss or corruption.

The Hardware is not designed, manufactured or intended for use in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, weapons systems, direct life-support machines, or any other application in which the failure of the Hardware could lead directly to death, personal injury, or severe physical or property damage or environmental damage (collectively, "High Risk Activities"). Forum Systems expressly disclaims any express or implied warranty of fitness for such High Risk Activities.

EXCEPT FOR THE LIMITED WARRANTIES SET FORTH IN THIS SECTION, THE HARDWARE IS PROVIDED ON AN "AS IS" BASIS WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED. FORUM SYSTEMS DOES NOT WARRANT THAT THE HARDWARE WILL MEET THE CUSTOMER'S REQUIREMENTS OR THAT ITS OPERATION WILL BE UNINTERRUPTED OR ERROR FREE. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, FORUM SYSTEMS DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. Some jurisdictions do not allow the exclusion of implied warranties or limitations on how long an implied warranty may last, so the above limitations may not apply to Customer.
Limitation of Liability

IN NO EVENT WILL FORUM SYSTEMS OR ITS AFFILIATES OR SUPPLIERS BE LIABLE FOR ANY LOSS OF USE, INTERRUPTION OF BUSINESS, LOST PROFITS, OR LOST DATA, COST OF PROCUREMENT OF SUBSTITUTE GOODS OR TECHNOLOGY OR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OF ANY KIND REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, EVEN IF FORUM SYSTEMS OR ITS AFFILIATES OR SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE, AND WHETHER OR NOT ANY REMEDY PROVIDED SHOULD FAIL OF ITS ESSENTIAL PURPOSE. THE TOTAL CUMULATIVE LIABILITY TO CUSTOMER, FROM ALL CAUSES OF ACTION AND ALL THEORIES OF LIABILITY WILL BE LIMITED TO AND WILL NOT EXCEED THE PURCHASE PRICE OF THE FORUM SYSTEMS APPLIANCE PAID BY CUSTOMER. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to Customer.

Appendix D – Constraints of CLI and Users

ELEMENT	CONSTRAINT	CHAR COUNT
Enable Mode Password	Must be unique, is case sensitive, and may be from 8 to 32 alphanumeric characters. No spaces allowed.	6-32
User Name	Unique and case sensitive. The '@' character, underscores, dashes and spaces are allowed; however, no leading and trailing spaces are allowed.	1-80
User Password	Case sensitive, may be any keyboard character.	6-255
User Password for users assigned to SNMP Groups	Case sensitive, may be from 8 to 255 alphanumeric characters, and accepts the '@' character, underscores and dashes.	8 to 255

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