Foxboro™ DCS

Model V95 Virtualization Server for Windows® Operating Systems

PSS 41H-4V95

Product Specification

October 2026



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Overview

NOTE: The information in this document now reflects specifications about Foxboro DCS Model V95 Virtualization Host Server (Style B) only. For specifications about Model V95 Virtualization Host Server (Style A), see Revisions E and earlier.

Virtualization is a technology that allows consolidation of multiple servers into a single physical server. This consolidation into a 2U rack-mounted package consumes fewer plant resources. The package is easier to install and maintain. It delivers the technological foundation for high available topologies enabling live migration from running VMs from one physical server instance to a redundant partner and centralized management (CVM) of two or more virtualization servers. The V95 Virtualization Server can host up to twenty Virtual Machines (VM).

The Model V95 Foxboro DCS virtualization server host is a 2U rack-mount server running the Microsoft Windows Server® 2022 operating system. In addition, a virtual machine running one of these operating systems can be used as a Domain Controller for the V95 Model host servers. Through the use of Microsoft Hyper-V virtualization technology, the V95 is capable of hosting virtual machines running these operating systems.

The virtual machines that are supported include:

- Foxboro DCS virtual machines running the Microsoft Windows Server® 2022 with Control Core Services v9.8 or later and Control Software v8.0 or later on the Foxboro DCS Control Network
- Virtual machines using the Schneider Electric-provided virtual machine operating system image on networks other than the Control Network

The V95 Server is available with a user-configurable model code.

The V95 Server comes with two Intel Xeon® processors. The 1.2 TB drives allow for a maximum hard drive capacity of 6.0 TB. Alternatively, Serial Attached SCSI (SAS) Hard Disks are preconfigured as a system disk, expansion disks, or RAID 1 or RAID 5 hard drive arrays. Client/server communications are performed using the TCP/IP networking protocol.

NOTE: The cover image represents a fully configured server and might show configuration options (for example, hard disks or PCI cards) that are not part of an actual product order.

Features

The Model V95 Host Server running Windows Server 2022 allows for these features:

- Replication - Replica VMs are automatically created and synchronized to a replica V95 host (requires 2 or more V95s configured as a replication solution)
- Live Migration - Ability to move an active VM from one host to another with no disruption to the operator
- Centralized Management - Ability to monitor and maintain one or more V95 Virtualization Servers from a remote location
- Switch Embedded Teaming (SET) - Provides redundancy at the Virtualization host for off-Auxiliary Communications Network
- VM Export without shutdown

NOTE: In order to take advantage of Replication, Live Migration, and Centralized Management, a user-supplied network, referred to as the Virtual Host Network, and a Windows Server 2022 Active Directory domain are required. An application is provided to help simplify the installation and configuration of this domain.

Other Model V95 Server features include:

- Two 28 core processors, up to 512 GB of memory, eight internal hard drives, redundant hot-swappable power supplies, and optional Redundant Array of Independent Disks (RAID) configurations
- The ability to host up to 20 virtual machines running Microsoft Windows Server 2022. One of the virtual machines can be configured to run as a Domain Controller for V95 host servers.
- Trellix® Endpoint Security helps provide security on the V95 server
- Security by Local Group Policies to provide additional layer of protection
- Virtual machines on a V95 can:
  - Be a control processor host and/or provide historization and Foxboro DCS monitoring functions as a Schneider Electric station
  - Serve as a Foxboro DCS workstation or Control Core Services application platform and a human interface station (can open the VM directly)
  - Function as Remote Desktop Services servers to support up to 30 Foxboro™ DCS FoxView per VM or up to 10 Foxboro™ DCS Control HMI remote clients per VM with a limit of 60 RDP sessions across all VMs on a V95 server
  - Support enterprise security Foxboro DCS software with optional Trellix software package. Trellix Endpoint Security provides additional security enhancement features to help complement the security features already built into our products. For stations operating in Local Edition mode, Trellix Endpoint Security (ENS) provides advanced Threat Prevention. For stations operating in Enterprise Edition mode, Trellix ePolicy Orchestrator (ePO) provides all the security of ENS plus Rogue System Detection, Application and Change Control (TACC), and Device Control for Data Loss Prevention (DLP). The license entitlement for the first five years after purchase for all of the listed options is included for the V95 server. After the five years, a renewal is required with the purchase of the Trellix five year license (J0202AS) for each V95 server using any Trellix products.

    NOTE: Trellix Endpoint Security is included with Model V95 when purchased as part of the model code. However, it is not pre-installed/configured on the system. For additional Trellix security protection options, see *EcoStruxure™ Foxboro™ DCS Trellix Security Products* (PSS 41S-4Trellix).
- Veritas System Recovery - The latest version of Veritas System Recovery software is included with each new Gen11 Server when purchased as part of the model code. This software is **not** available to be ordered as a standalone part and cannot be purchased separately from Schneider Electric.

NOTICE
POTENTIAL LACK OF RECOVERY SOFTWARE If you do not purchase a Gen11 server with Veritas System Recovery software included, you will be unable to purchase it later. **Failure to follow these instructions can result in lack of recovery software.**

NOTICE
POTENTIAL PERFORMANCE DEGRADATION On V95 VMs, you must manually uninstall the default Veritas System Recovery software (v23.0) and install the latest qualified version (for example, v23.3) provided with the installation kits. Continued use of VSR v23.0 can result in performance degradation, which might lead to the VMs becoming unavailable. **Failure to follow these instructions can result in performance degradation.**

V95 Physical Operating System Environment (POSE)

The Physical Operating System Environment (POSE) on the V95 server is the Windows Server 2022 operating system. This pre-installed Windows operating system image on the V95 provides the foundation necessary to support hosting of virtual machines. The image includes:

- Microsoft Hyper-V virtualization technology, which is required for creating, hosting, and managing virtual machines
- Veritas System Recovery Virtual Edition for backing up of an entire V95 server (including all of the hosted virtual machines). A backup can be done live, without rebooting the V95 or any of the individual virtual machines
- Operating system hardening:
  - Unnecessary services, software, and programs are removed
  - Unneeded software ports are disabled
  - Secure BIOS changes

Since the V95's POSE Windows operating system's entire purpose is to support Schneider Electric virtual machines, the only software to be installed on it is Schneider Electric-supplied software directly related to the health and support of virtual machines.

In addition, Foxboro DCS, Foxboro DCS Control Software, or third-party applications cannot be installed on the operating system image shipped with the V95 server virtualization host.

The V95 server supports these peripherals: a mouse, QWERTY keyboard, 24-inch flat panel LCD monitor (purchased separately), optional USB touchscreen (purchased separately with the monitor), and 1Gb copper/fiber network interface. The V95 server does not support the use of serial GCIO annunciator keyboards, Foxboro DCS USB annunciator keyboards, remote graphics units, GPS time sync cards, or local printers.

V95 Virtual Operating System Environment (VOSE)

The V95 server is shipped with a Schneider Electric-created virtual machine operating system image. By using this supplied virtual machine operating system image with the Microsoft Hyper-V technology, the V95's virtual operating system environments (VOSE) can be created. Each virtual machine created with the Schneider Electric-supplied image has its own self-contained virtual operating system environment (VOSE) which includes:

- 64-bit Windows Server 2022 operating system which is required for loading software applications onto the virtual machine
- Operating system hardening:
  - Unnecessary services, software, and programs are removed
  - Software ports not required are disabled

A virtual machine can:

- Be used on the Foxboro DCS Control Network
  - Windows Server 2022: Control Core Services v9.8 or later and Control Software v8.0 or later
- Provide a platform for Schneider Electric, third-party, and user-written applications
- Host Foxboro DCS control stations
- Serve as an application platform
- Run Remote Desktop Services (formally known as Terminal Services)

- Connect to a thin client over the Auxiliary Communications Network to provide human-machine interface (HMI) station functionality
- Use security enhancements provided by these Trellix software packages:
  - For stations operating in Local Edition mode, Trellix Endpoint Security (ENS) provides advanced Threat Prevention
  - For stations operating in Enterprise Edition mode, Trellix ePolicy Orchestrator (ePO) provides all the security of ENS plus Rogue System Detection, Application and Change Control (TACC), and Device Control for Data Loss Prevention (DLP)

NOTE: Virtual machines (VMs) can be ordered with or without Endpoint Protection (EPP). Ordering without EPP is only applicable for markets where local teams add an EPP solution to the VMs before delivering to client. When ordered with EPP selected, Trellix Endpoint Security licensing is included with each VM. However, it is not pre-installed/configured on the system.

NOTICE
POTENTIAL SYSTEM VULNERABILITIES Install and configure EPP on all virtual machines (VMs) to help protect against system vulnerabilities. **Failure to follow these instructions can result in system vulnerabilities.**

The virtual machines hosted by the V95 server connect to the network through internal virtual switches that map virtual machines to the V95's physical 1Gb copper / fiber Ethernet ports. The virtual switch network can be configured to map network connectivity to:

- The Control Network
- The Auxiliary Communications Network, a 1Gb network comprised of managed Ethernet switches
- Other auxiliary networks

A combination of these different network types can be used.

The virtual machine's network connectivity is configured independently from other virtual machines hosted by the same V95 server. Each network utilizes a dedicated physical 1Gb copper / fiber Ethernet port. The Control Network has two dedicated 1Gb Ethernet ports while the Auxiliary Communications Network has one or more dedicated 1Gb Ethernet ports optionally configured to use Switch Embedded Teaming (SET).

With the exception of the Ethernet network ports, virtual machines cannot access the V95 physical ports (serial, USB, etc.) Therefore, virtual machines only support peripherals that are connected through the network, such as thin clients and network printers. Remote graphics units, GPS time sync cards, and local printers are not supported on virtual machines. A virtual machine can access the USB annunciator keyboard through a thin client.

Virtual Machine Configurations

A V95 server can host virtual machines with these configurations:

- Single processor virtual machines

- Multi-processor virtual machines

  NOTE: Only supported for virtual machines:

  - with Control Core Services connected to the Control Network
  - using the Schneider Electric-provided virtual machine operating system image on networks other than the Control Network
- A mix of single processor virtual machines and multi-processor virtual machines

Sizing

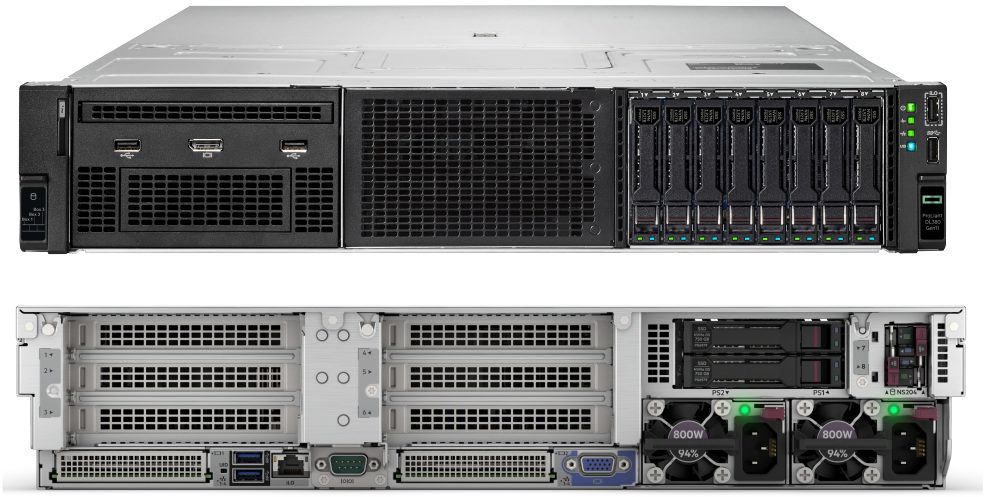
- A V95 server can support up to twenty virtual machines.
- The maximum number of RDP sessions depends on the number and types of applications being run in the remote sessions. This includes the number of process control points being updated, number of alarms being delivered, number of displays open, etc. If your application needs are high, you might find the actual number of client sessions to be lower. Experimental results indicate that for planning purposes, the number of RDP sessions per virtual machine cannot exceed 30 RDP sessions for FoxView VMs and 10 RDP sessions for Control HMI VMs.
- The total number of RDP sessions across all VMs on a V95 server cannot exceed 60.

Optional High Availability For Vital Applications

The Foxboro DCS has the option of running vital run-time applications such as the Control HMI, current Alarm Displays, and Historian (collectors and servers) in parallel on two separate machines. When this functionality is combined with virtualization to run on two physical V95 servers - separated geographically to keep a single condition from affecting both hosts – time, effort, and cost to restore system can be reduced.

V95 Server enhances the virtualization product offering by providing the ability to automate the creation of VM replicas from one V95 host to another using Microsoft Replication. It also reduces disruption of planned maintenance with the ability to move live VMs from one V95 host to another with no operator interruption using Live Migration.

V95 Minimum (Base) Configuration



NOTE: This image represents a fully configured server and might show configuration options (for example, hard disks or PCI cards) that are not part of an actual product order.

The V95 default configuration is the minimum recommended hardware for supporting four virtual machines. Options are available to increase the capacity of the V95 to support additional virtual machines or reduce RAID and security peripherals if they are not required.

The Model V95 server base configuration includes:

- Microsoft Hyper-V virtualization technology through the pre-configured and installed Windows Server 2022 physical operating system environment (POSE)

  NOTE: The Windows Server 2022 license does not include Client Access Licenses (CALs). These can be purchased separately.

- Five Trellix ENS licenses are provided to license the V95 host and first four VMs

  NOTE: Additional Trellix ENS licenses must be purchased with additional VMs using the model code configurator selections. If VMs are added later on, then additional Trellix ENS licenses (J0202AS) must be purchased from BuyAutomation.

- Virtualization hosting support for four virtual machines with Microsoft Windows Server 2022 Edition operating system, 64-bit package (virtual operating system environment (VOSE))
- Dual Intel Xeon Gold 5520+ Processor
- Quad head graphics card with four mini-DP ports, four adapters from mini-DP to standard display port are provided
- 256 GB DDR-5 Registered Memory
- Two 1.2 TB SAS hard drives in RAID 1 for operating system `C:\` drive and six 1.2 TB[(a)] SAS hard drives for `D:\` drive
- Four integrated 10/100/1000Base-TX Ethernet ports
- Internal SATA CD-RW/DVD drive
- Two rear USB 3.2 ports
- Two front USB 2.0 ports / One front USB 2 Gen1 port
- Keyboard (USB)
- Mouse (USB)
- Redundant hot-swap power supplies

- Redundant hot-swap fans

(a) Depending on your model code configuration.

V95 Options

The Model V95 server offers these options:

- Expandable virtualization hosting support for up to twenty Virtual Machines running Microsoft Windows Server 2022 operating system, 64 bit package

NOTICE
POTENTIAL PERFORMANCE DEGRADATION Do not install a total memory configuration of either 10 or 20 DIMMs in the V95 server. A memory imbalance will occur as these two configurations are not supported and will degrade the performance of the server. Supported memory configurations are listed in *EcoStruxure™ Foxboro™ DCS Model V95 (HPE DL380 Gen11) Virtualization Host Server for Windows Server 2022 User Guide* (B0700JF). **Failure to follow these instructions can result in performance degradation.**

- Trellix ENS licenses for the host and up to twenty Virtual Machines
- Dual Intel Xeon CPU processor
- Up to 512 GB registered memory
- Disk unavailability protection - Two 1.2 TB SAS hard drives in RAID 1 for operating system "C" drive and six 1.2 TB SAS hard drives in RAID5 "D" drive.
- Options provide up to 6.0 TB total available disk space for virtual machines
- Dual port fiber NICs
- Dual port copper NICs

Licensing

There are no Foxboro DCS licenses associated with the V95 host itself. However, each virtual machine must have the proper Foxboro DCS license. Virtual machine Foxboro DCS licenses are identical to physical machine licenses.

The virtualization host server and virtual machine operating systems need a valid Windows Server IoT 2022 Standard license.

The V95 Style B host server ships with multiple 24-core license keys and 4-core add-on licenses can be added depending on your configuration. Only one license is required to be activated per machine. The host requires one of the 24-core licenses (RH103HL) activated. Each license can be used to activate two virtual machines.

Windows Server Client Access License (CAL)

All CALs must be purchased separately from your server.

P/N	CAL Type	Amount
J0202DZ	Microsoft Windows Server 2022 Device	5
J0202EA	Microsoft Windows Server 2022 User	5
J0202ED	Microsoft Windows Server 2022 Device	1
J0202EE	Microsoft Windows Server 2022 User	1

Server CALs are a paper license only and do not require activation.

Mounting Options

NOTICE

POTENTIAL EQUIPMENT DAMAGE

Do not mount the V95 in a standard single depth rack enclosure. Enclosures must accommodate a depth of at least 39.4 in (1000 mm) to allow space for air flow at the front and back of the unit, plus cables at the back of the unit.

Failure to follow these instructions can result in equipment damage.

The V95 is a 2U high, rack mount server which offers:

- Rail mounting kit as standard equipment
- Optional 2U cable management arm for rail mounting kit

The V95 can be placed in commercially available enclosures that have provisions for adequate ventilation and cooling to maintain the ambient temperature inside the enclosure does not exceed 95°F (35°C). If the enclosure ambient temperature is higher than 95°F (35°C), additional fans are needed. See the Cooling section under Functional Specifications, page 11.

With dual monitor PCIe video cards, the V95s can be located up to 4.5 m (15 ft) from the monitor using direct connect and other human interface cables available from Schneider Electric.

As indicated by the CE logo, the V95 conforms to the applicable European Union Directives.

Functional Specifications

Processor Type	Intel Xeon
Memory	32 GB DDR4 Registered Memory
Devices Served	SAS Peripherals • Eight 1.2 TB internal system disk drives (HDD). Two drives configured in a RAID 1 configuration for the boot operating system. Six drives configured in a RAID 5 configuration for use with the VMs. The maximum capacity for this virtual machine drive is 6.0 TB. Controller Peripherals • One SATA CD-RW/DVD drive Video Displays (Up to 2) • 24-inch LCD Monitor • 27-inch LCD Monitor Interfaces to External Devices (USB) • Mouse • Alphanumeric Keyboard • Up to four optional touchscreen monitors • Audio Speakers
Internal Diagnostics	Self-checking performed at power-up
Video	Output Type • Quad mini-DP 1.4 port PCIe graphics card with adapters to standard display port, up to 4 1920x1080 (Full HD) pixel resolution Screen Presentation • Refresh Rate ◦ Up to 85 Hz • Colors ◦ 32 bit • Resolution ◦ Widescreen (16:9) (Supported by 23-inch and 24-inch LCD Monitors) ◦ Up to 1920x1080 pixels
Ethernet Interface Communications	PCIe Ethernet network interface cards providing connection to Ethernet data bus (10/100Base-TX or 100Base-FX) Four Integrated Ethernet ports (10/100/1000Base-T)
Power Supplies	Two redundant, hot swappable, 1000W auto-switching input power supplies, each with a separate power cord
Power Requirements	**Table 1 - Power Parameters**

HPE 1000W Power Supply Kit (P03178-B21)

Normal Input Voltage (V rms)	100	120	127	200	208	220	230	240
Normal Input Current (A rms)	11	9.0	8.5	5.3	5.1	4.8	4.6	4.4

	Input Power • 100-240 VAC, 50 to 60 Hz, auto ranging Inrush Current • 30 A power supply for 20 ms Heat Dissipation • 3741 BTU/hr (at 100 VAC) • 3596 BTU/hr (at 200 VAC) Consumption: • To determine the nominal power consumption for your configuration, visit the HPE Power Advisor website.
Cooling	Hot swappable, redundant I/O and processor fans. Each redundant power supply contains a fan.
Regulatory Compliance, Electromagnetic Compatibility (EMC)	*USA and Canada* • Complies with FCC Part 15, Class A • Complies with ICES-003 Class A *European Union* • Complies with the EU EMC Directive 2014/30/EU and the following Harmonized Standards: ◦ EN 55035:2017/A11:2020 ◦ EN 55032:2015/A11:2020 Class A ◦ EN 61000-3-2:2014 ◦ EN 61000-3-3:2013
Regulatory Compliance, Product Safety	*USA and Canada* • UL® and cUL Listed *European Union* • Complies with the Low Voltage Directive 2014/35/EU and the following Harmonized Standards: ◦ EN 62368-1:2014 ◦ EN 62479:2010 *International* • Complies with the following International Standards: ◦ IEC 62368-1:2018 ◦ GB 4943.1-2011 ◦ GB 17625.1-2012 ◦ GB/T 9254.1-2021 (Class A) ◦ AS/NZS 62368.1:2022 (Ed 3) ◦ IS 13252(Part 1):2010/IEC 60950-1:2005
RoHS Compliance	Complies with EU RoHS Directive 2011/65/EU under the following Harmonized Standard: EN IEC 63000:2018

Environmental Specifications

	Operating	Storage
Temperature	10° to 40°C (50° to 104°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3048 m (10,000 ft); no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit might be limited by the type and number of options installed. ***NOTICE*** **POTENTIAL SYSTEM PERFORMANCE DEGRADATION** Do not operate with a fan fault or above 30°C (86°F). **Failure to follow these instructions can result in system performance degradation.**	-30° to 60°C (-22° to 140°F) Maximum rate of change is 20°C/hr (36°F/hr)
Relative Humidity	8% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, noncondensing	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, noncondensing
Altitude	3050 m (10,000 ft). This value might be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min)	-16 to 9144 m (-50 ft to 30,000 ft) Maximum allowable altitude change rate is 457 m/min (1500 ft/min)
Contamination	Class G1 (Mild) as defined in ISA Standard S71.04	
Location	UL/UL-C listed as suitable for use in ordinary locations and meets ordinary safety standards for fire and shock hazards.	

Physical Specifications

	Keyboard	Chassis
Dimensions	Height • 35 mm (1.4 in) Width • 445 mm (17.5 in) Depth • 150 mm (5.9 in)	Maximum outside dimensions with bezel and feet Height • 87.5 mm (3.44 in) with bezel Width • 448 mm (17.64 in) Depth • 727 mm (28.62 in)
Weight	1.8 kg (4.0 lbs)	Rack • 33 kg (72.75 lbs) maximum configuration

Ordering Information

Part Number	Description
V95	Virtualization Server for Foxboro DCS Virtual Machines
K0204BY	Media kit required to use Centralized Virtualization Management (CVM) with MS Server 2022. One kit required per V95.
RH103HM	HP t755 Quad Video Thin Client with Dual NIC
K0204AZ	GPS Time Synchronization card
RH103HG	HPE ProLiant DL3XX Gen11 Easy Install Rail 3 Kit
RH103HC	HPE DL38X Gen10 Plus 2U Cable Management Arm for Rail Kit

Related Documents

Topic	Document
Model V95 (Gen11)	*EcoStruxure™ Foxboro™ DCS Model V95 (HPE DL380 Gen11) Virtualization Host Server for Windows Server 2022 User Guide* (B0700JF)
Hypervisor	*EcoStruxure™ Foxboro™ DCS Hypervisor Technology – Microsoft® Hyper-V™ Hypervisor* (PSS 41S-8HYPRVOV)
Virtualization	*EcoStruxure™ Foxboro™ DCS Centralized Virtualization Management for Windows Server 2022 User Guide* (B0700JH)
	EcoStruxure™ Foxboro™ DCS Virtualization for Windows Server 2022 User Guide (B0700WW)
Control Network	*EcoStruxure™ Foxboro™ DCS Switch Configurator Application Software (SCAS) for the Control Network User Guide* (B0700CA)
Thin Client	*EcoStruxure™ Foxboro™ DCS t755 Thin Client with Windows 10 User's Guide* (B0700JT)
	EcoStruxure™ Foxboro™ DCS Thin Client (PSS 41H-4THNCLNT)
Security Products	*EcoStruxure™ Foxboro™ DCS Trellix Security Products* (PSS 41S-4Trellix)
System Recovery	*EcoStruxure™ Foxboro™ DCS Veritas System Recovery 23 User Guide* (B0700WY)

Proposition 65

WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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