



# *TrainTools*

## Server and Client PC Requirements

### TTCR 15.2

This document specifies the computer system requirements to install and run CCC TrainTools® Software on server and client PCs for the current TrainTools Standard System Release. These computer system requirements also apply for CCC's Emulator utilities. [Table 1](#) provides CCC's TrainTools server and client PC requirements. [Antivirus Software Protection](#), [Windows Firewall Configuration](#), and [Hard Drive Size Considerations for TrainTools Servers](#) are all discussed on the following pages.

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**Note:** CCC can provide a fully-tested TrainTools server or client PC to meet any project-specific requirements.

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**Note:** It is common practice for CCC to configure and test all TrainTools PCs to work properly with specific customer projects and CCC's TTCR software. End users are responsible for PCs not configured and tested by CCC.

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**TrainTools server PCs** are connected directly to CCC Controllers and communicate with them using OPC servers. Server PCs are an integral part of the CCC control system and must be maintained as engineered by CCC with no hardware or software modifications (except for anti-virus protection software installed and maintained by the user). Any connection to user a LAN or the Internet must be through a separate subnet (NIC) from that connected to the CCC Controllers. Most TrainTools server PCs require a higher-speed processor, additional hard drive space, and additional memory to handle large archive data files. Consequently, it is highly recommended to use a new PC meeting the requirements listed below at a minimum.

**TrainTools client PCs** are connected to TrainTools server PCs. They are not connected directly to CCC Controllers. Client PCs are normally end-user responsibility. They can be modified, and connected to a user LAN through a separate subnet (NIC) from that connected to the TrainTools server PC. TrainTools Client PCs are also an integral part of the CCC control system and must be maintained with no hardware or software modifications (except for anti-virus protection software installed and maintained by the user).

*Table 1 TrainTools Server and Client PC Requirements*

Component	TrainTools Server and Client PC Requirements (noted where different)
Windows 10 Professional (64-bit) English only	Prodigy, Series 5 Vanguard, Series 5M, Series 3 <sup>++</sup> , Controller Emulator Software
Windows 10 IoT Enterprise 2019 LTSC (64-bit) English only	Prodigy, Series 5 Vanguard, Series 5M, Series 3 <sup>++</sup> , Controller Emulator Software
Windows Server 2016 Standard English only	Prodigy, Series 5 Vanguard, Series 5M, Series 3 <sup>++</sup> , Controller Emulator Software
Windows Server 2019 Standard English only	Prodigy, Series 5 Vanguard, Series 5M, Series 3 <sup>++</sup> , Controller Emulator Software
Virtualization Technology	VMWare Workstation Pro (v15 or higher), VMWare vSphere Hypervisor ESXi (v6.7 or higher)
Internet Information Services	Internet Information Services (IIS) is required for TT Web Services
Hard Drive File System	NTFS
Processor	Intel® Core™ i7 or better Intel® Xeon® E3 or better (Intel® Celeron® J1900 or better for the TT-ARC - server only)
Internet Explorer	System default Web-browser is required for Web TrainView (see <a href="#">Configuring Internet Explorer (IE) on the TVWeb Client PC</a> in UM5509)
RAM	- 8 GB or higher for Windows 10 64-bit systems for TT-ARC - server only - 16 GB or higher for Windows 10 64-bit systems - 64 GB or higher for Windows Server systems
Hard Drive Space	1 TB or higher (RAID is recommended) (see <a href="#">Hard Drive Size Considerations for TrainTools Servers</a> below) (64 GB (disk C:) and 128 GB (disk D:) for the TT-ARC - server only)
Optical Drives	Optional: - DVD-RW recommended for Data Archive Transfer ( <a href="#">Servers</a> ) - DVD-R required for Installation ( <a href="#">Clients</a> )
Video Adapter/ Monitor	For new HMI projects: - Aspect ratio 5:4 (1280 x 1024 resolution) - Aspect ratio 4:3 (1600 x 1200 resolution) - Aspect ratio 16:9 (1920 x 1080 and 1600 x 900 resolution) - Aspect ratio 16:10 (1680 x 1050 resolution) For old HMI projects: - Aspect ratio 5:4 (1280 x 1024 resolution) - Aspect ratio 4:3 (1024 x 768 resolution)

Ethernet	Ethernet Network cards for Control networking should support standards: - IEEE 802.3, 10/100BASE-T for Series 3++ - IEEE 802.3, 802.3u, 10BASE-T, 100BASE-TX for Vanguard and Prodigy - IEEE 802.3, 802.3u, 10BASE-T for Series 5M
Serial Ports	Serial Communication cards for control networking should support communication standards: four-wire RS-422/485.
RS-422/485 Communication Card Option	Advantech PCI/PCIE -1622 (8 ports) with isolation and surge protection

**Hard Drive Size Considerations for TrainTools Servers**

The size of the hard drive should be selected with regard to the size of the project and the desired duration of high-density data in the archiving system. Duration is configured in the ADaM property of the project. The default duration for high-density data is **one month**. HD data will be automatically averaged beyond the configured duration. Longer term storage of high-density data requires a significantly larger hard drive and discipline on the part of the end user pertaining to periodical exporting of archived trends during the duration of HD data storage. For example, a one month duration implies a need to export trends on a monthly basis to preserve the archived HD data for future reviews. See [Database Space Requirements](#) in UM5500.

**Antivirus Software Protection**

CCC installs a stand-alone version of McAfee Endpoint Security (ENS) software on all CCC-supplied PCs, including 5 years of support. A CCC-specific McAfee ENS configuration is applied at the time of installation.

End users are responsible for maintaining their own antivirus system. If an end user chooses to use a different antivirus protection software program, all TrainTools programs should be removed from the scan.

**Windows Firewall Configuration**

The Windows firewall will be configured and enabled on all CCC-provided TrainTools PCs. Refer to [Verifying the Windows Firewall Settings for TTWS, TTWG, and also for TTWS-Service](#) in UM5509.

**Additional Notes**

Optionally, Security Update Management subscription service enables customers to download the latest CCC-qualified McAfee V3 DAT files on a monthly-basis along with Windows Security Updates. Please contact CCC Customer Support Manager for available service contract options for your TrainTools servers.

Additional notifications related to TrainTools Server and client PCs are listed below.

**Note:**

CCC tests TrainTools PCs with the Windows operating system and updates that are installed at the moment of shipment. We do not expect that there will be any issues resulting from Windows updates, and CCC will not be liable if our installed software stops functionality correctly after Windows (or any other) updates have been installed. However, we will do our best to provide a quick resolution.

**Note:** CCC is no longer able to install Microsoft Office Software onto TrainTools PCs. This is due to distribution changes by Microsoft Corporation. If Microsoft Office is needed on a TrainTools PC, end users can purchase and installed it directly from Microsoft.

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**Note:** Starting with TTCR Release 15.2, TrainTools server and client PCs no longer support Windows 7, Windows Server 2008, or Windows Server 2012 operating systems. Any pre-15.2 Release project upgrade to Release 15.2 (or later) on a Windows 7, Windows Server 2008, or Windows Server 2012 PC requires a PC upgrade to Windows 10 or Windows Server 2016.

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**Note:** Adobe Reader version “DC” is required and must be installed on all TrainTools PCs. Select the option not to download or install updates automatically.

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