



TrainTools

Server and Client PC Requirements

TTCR 14.1

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.

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

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.

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 7 Professional (64-bit) English only	Prodigy, Series 5 Vanguard, Series 5M, Series 3 ⁺⁺ , Controller Emulator Software
Windows 7 Professional (32-bit) English only	Series 5 Vanguard, Series 5 Reliant, Series 5M, Series 3 ⁺⁺ , Controller Emulator Software
Windows 10 Professional (64-bit) English only	Prodigy, Series 5 Vanguard, Series 5M, Series 3 ⁺⁺ , Controller Emulator Software
Windows 10 Professional (32-bit) English only	Series 5 Vanguard, Series 5M, Series 3 ⁺⁺ , Controller Emulator Software
Windows Server 2008 R2 SP1 Standard 64-bit English only	Prodigy, Series 5 Vanguard, Series 5M, Series 3 ⁺⁺ , Controller Emulator Software
Windows Server 2012 R2 SP1 Standard English only	Prodigy, Series 5 Vanguard, Series 5M, Series ⁺⁺ , Controller Emulator Software
VM Ware Workstation 12 Pro	VM Ware Windows 10 Professional or Windows Server 2012 R2 Standard virtual machine on Windows Server 2012 R2 Standard host PC
Internet Information Services	Internet Information Services (IIS) is required for TT Web Services
Hard Drive File System	NTFS
Processor	Intel® Core™ i5 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 Configuring Internet Explorer (IE) on the TVWeb Client PC in UM5509)
RAM	- 4 GB or higher for Windows 7 32-bit or Windows 10 32-bit systems - 8 GB or higher for Windows 10 64-bit systems for TT-ARC - server only - 16 GB or higher for Windows 7 64-bit or Windows 10 64-bit systems - 32 GB or higher for Windows Server 2008 R2 SP1 Standard 64-bit or Windows Server 2012 R2 Standard systems
Hard Drive Space	1 TB or higher (RAID is recommended) (see Hard Drive Size Considerations for TrainTools Servers 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 (Servers) - DVD-R required for Installation (Clients)

Video Adapter/ Monitor	<p>For new HMI projects:</p> <ul style="list-style-type: none"> - 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) <p>For old HMI projects:</p> <ul style="list-style-type: none"> - Aspect ratio 5:4 (1280 x 1024 resolution) - Aspect ratio 4:3 (1024 x 768 resolution)
Ethernet	<p>Ethernet Network cards for Control networking should support Ethernet standards:</p> <ul style="list-style-type: none"> - IEEE 802.3, 10/100BASE-T for Series 3++ - IEEE 802.3, 802.3u, 10BASE-T, 100BASE-TX for Vanguard; - IEEE 802.3, 802.3u, 10BASE-T for Series 5M; - IEEE 802.3u, 10BASE-T for Prodigy.
Serial Ports	<p>Serial Communication cards for control networking should support communication standards: four-wire RS-422/485.</p>
RS-422/485 Communication Card Option	<p>Advantech PCI/PCIE -1622 (8 ports) with isolation and surge protection</p>

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 Webroot antivirus software on all CCC-provided PCs for 12 months of basic antivirus protection. Webroot requires an internet connection for automatic daily updates of virus definitions from the Webroot site. Webroot also works with CCC's Emulator utilities. 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 and TTWG](#) in UM5509.

Additional Notes 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.

Note: Starting with TTCR Release 10.1, TrainTools server and client PCs no longer support Windows XP operating systems. Any pre-10.1 Release project upgrade to Release 10.1 (or later) on a Windows XP PC requires a PC upgrade to Windows 7.

Note: Adobe Reader version 10.1.4 is required and must be installed on all TrainTools PCs. Later versions of Adobe Reader, including 11.0.2, are currently not supported by TrainTools software and needs to be removed and replaced with version 10.1.4.
