TT Trading Systems – Hardware and Software Requirements

The TT Systems Integration team continually evaluates and tests new software and hardware as it is released to the market to ensure that TT software performance benchmarks are met or exceeded. The software and hardware requirements below are a result of these tests and are the same standards that TT uses in its own network, development environments, and test labs. Although TT software may run on operating systems and hardware that do not meet the listed standards, using systems that do not meet or exceed TT’s recommendations may degrade TT Software performance and reliability.

**Note:** Refer to the Hardware / Software Optimizations and Recommendations Reference Guide for more specifics on TT optimizations.

**Server-Class Machines**

Server-class machine requirements pertain to the following TT products:

- TT Gateway
- FMDS
- Autospreader® SE
- Historical Fill Server (HFS)
- TT Simulation (TTSIM)
- TT Trainer™
- TT WAN Router
- FIX Adapter
- Price Proxy
- Synthetic SE
- X_TRADER® Remote Host
- SQL Databases
- Algo SE

**Hardware**

**Requirement**

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<td>Note:</td>
<td>The following products also support Windows Server 2008 R2, Service Pack 1, beginning with the version listed: Autospreader SE 7.2.1, Algo SE 7.2.2, FIX Adapter 7.7.1, FMDS 7.5.2, Synthetic SE 7.1.4, Xetra Gateway 7.7.0, Montreal, CBOE, and FIX Gateways 7.13, all other TT Gateways 7.14, TT Chron 7.7.0, TT WAN Router (TTM 4.2.3), and TT User Setup 7.4.1.</td>
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| Memory | 4 GB |
| Processor | Four cores (eight cores or more is preferred) |

**Network Card**

- Two or more NICs with one pointed to the internal network and one or more pointed to the exchange
- Match the speed and duplex settings of the switch port and NIC to maximize speed and avoid duplex mismatches.

**Note:** Due to driver and firmware limitations, TT does not recommend using certain Ethernet cards in a production environment. Refer to the NIC Configuration section of the Hardware / Software Optimizations and Recommendations Reference Guide for specific chipset and version recommendations.

| Hard Drive | 30 GB or more of available space to accommodate TT software and log files |

**Additional server-class machine recommendations or exceptions:**

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<tr>
<th>Server or Product</th>
<th>Recommendation or Exception</th>
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<tr>
<td>Algo SE</td>
<td>Requires at least Windows Server 2003, Server Pack 2, 64-bit</td>
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<tr>
<td>Autospreader SE / Synthetic SE / Algo SE</td>
<td>Requires at least an eight core machine, e.g., Dual Quad-Core, or better</td>
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<tr>
<td>FIX Adapter</td>
<td>60 GB or more of available space, per FIX Adapter instance</td>
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<td></td>
<td>.Net Framework 2.0 or higher</td>
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<tr>
<td>FMDS</td>
<td>300 GB or larger hard drive</td>
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<tr>
<td>TT User Setup Server</td>
<td>Requires at least two instances of the TT User Setup Server per trading environment</td>
</tr>
<tr>
<td>TTM</td>
<td>When TTM is deployed as a Remote Host, TT recommends Windows Server 2008 R2, SP1 64-bit for optimum performance and scalability</td>
</tr>
</tbody>
</table>
Client-Class Machines

Client-class workstation requirements pertain to the following TT products:

- **X_TRADER®** • **X_TRADER® API** • **TT API** • **X_TRADER® Pro** • **X_STUDY®**
- **TT User Setup** • **X_RISK®** • **Back Office Bridge™** • **TT SIM™** • **X_FILE**

<table>
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<tr>
<th>Component</th>
<th>Minimum Requirement</th>
<th>Preferred Requirement (and for use with ADMIN logins)</th>
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</table>
| Operating System (OS)      | • **X_TRADER Desktop**: Windows XP Professional or Windows 7 (Home Premium, Professional, and Ultimate).  
  **Note**: Service Pack 1 or higher is required on Windows XP and Windows 7.  
  • **X_TRADER Tablet PC**: Windows XP Tablet PC Edition 2005  
  **Note**: Japanese **X_TRADER Desktop**:  
  - Japanese or Non-Japanese versions of Windows XP Professional or Windows 7 (Home Premium, Professional, and Ultimate).  
  - Non-Japanese Windows must run an East Asian Language Pack set to the Japanese language.  
  **Note**: Japanese X_TRADER is not supported on Tablet PCs.  
  **Note**: Service Pack 1 or higher is required on Windows XP and Windows 7. |
| Add'l OS Reqs              | .Net Framework 4.0                                                                   | .Net Framework 4.0                                                                   |
| Memory                     | 2 GB  **Note**: Tablet PCs – 1 GB                                                    | 4 GB or more  **Note**: Tablet PCs – 2 GB                                              |
| Processor                  | Four cores  **Note**: Tablet PCs – Two cores running at 1.2 GHz                      | Eight cores or more  **Note**: Tablet PCs – Two cores running at 2.16 GHz              |
| Network Card               | Integrated Gigabit NIC. Match the speed and duplex settings of the switch port and NIC to maximize speed and avoid duplex mismatches.  
  **Note**: Due to driver and firmware limitations, TT does not recommend using certain Ethernet cards in a production environment. Refer to the NIC Configuration section of the Hardware / Software Optimizations and Recommendations Reference Guide for specific chipset and version recommendations. |
| Hard Drive                 | 10 GB of available free space to accommodate TT software and log files              | • SATA or Parallel ATA drive with a minimum rotation speed of 7200 rpm  
  • 30 GB or more of available free space to accommodate TT software and log files |
| Motherboard                | Should have one PCI-Express 16x slot for graphics card  
  **Note**: Should have a PCI-X 133 slot for NIC; one or more PCI-Express 16x slots for graphics card |
| Graphics Card              | • PCI-Express based graphics card with 128 MB of memory  
  • Graphics card with two DVI ports to support a dual-monitor setup  
  • Multiple two-port cards to support more than two monitors  
  **Note**: One or more graphics cards with two DVI ports to support a dual-monitor setup  
  **Note**: Multiple two-port cards to support more than two monitors |
| Mouse                      | Standard mouse (not wireless)                                                       | 3-button mouse to support middle-button click trading                                  |
| Remote Connection          | High-bandwidth Internet connection; do not use Satellite Broadband or proxy servers due to significant latency problems.  
  **Note**: Dedicated direct line |

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