



ICE
Client Guidelines
January 4, 2012

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Introduction

WebICE is a java-based, distributed application that provides an online trading platform which is easy to implement and support. ICE leverages industry-accepted standards for implementation including: Java WebStart for deployment/application launch and HTTPS/HTTP for TCP/IP communications.

WebICE is designed to be simple to install and efficient for daily use for both the end user and their IT staff. WebICE installs and runs well on the majority of workstations found in the workplace today. Most firms will not be required to make any changes to their desktop PC and/or network to support the installation and operations of WebICE. Typically, users experience seamless execution that never requires a call to the ICE Helpdesk.

Scope

There are some variables that can affect the execution and performance of WebICE. Here we will discuss the most common issues clients face with installation and implementation of WebICE. Suggestions for standard configurations are reviewed and basic troubleshooting techniques are presented from past experience with customers.

We will initially discuss issues with workstation configuration including hardware, software and operating system settings. Second will be an explanation of components of the LAN including network cards, cabling, switches, proxy servers, and firewalls. The third section deals with WAN issues including service providers, routing, and dedicated point-to-point connections.

We will focus on issues most likely to be encountered by our new clients. Not all situations will be covered in the client guidelines but can be overcome with coordination from your IT group and our support staff. For further assistance in troubleshooting issues with the ICE platform, please contact the ICE helpdesk at 770-738-2101 or icehelpdesk@theice.com.

I. Workstation Considerations

A. Minimum System Requirements

https://www.theice.com/publicdocs/technology/WebICE_System_Specifications_Guide.pdf

B. Operating System

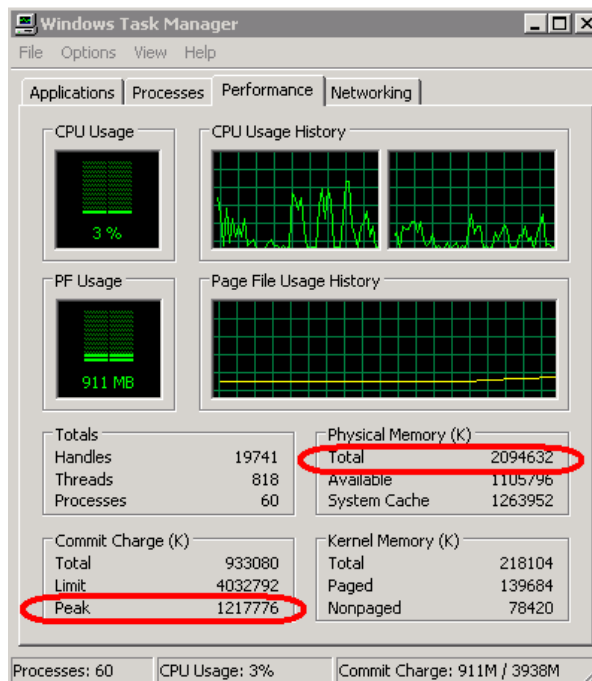
Reboot the PC regularly.

As is known throughout the IT world, bizarre computer behavior many times is resolved by simply rebooting the workstation. ICE recommends IT departments schedule a regular weekend power cycle for all production workstations. This scheduled maintenance will ensure that phantom errors are minimized. If a workstation has been running for weeks the user may experience erratic behavior of all applications on the PC including WebICE.

C. Memory (RAM) vs. Page File

Avoid use of the page file

Workstations must have enough physical RAM to avoid use of the page file. To check the page file usage pull up the performance tab of Task Manager and look at the Peak statistic under Commit Charge. If the peak commit charge is greater than the total physical memory of the workstation, the page file is being actively used. Data that has to be cached to the page file takes approximately 1,000 times longer to access than data in RAM.



D. Video/Display Adapters and Settings

Install the latest certified drivers.

Make sure that you have the latest certified drivers for your display adapter(s). Frequently, the drivers that ship with the hardware or get bundled with OEM builds are out of date. Outdated drivers can cause a host of problems from screen lockups to JAVA errors trying to paint the screen. Of equal concern are “bleeding edge” drivers that have not been certified by the OS developer. Always check the manufacturer’s website for the latest certified driver for your hardware and OS.

Use the same settings on all monitors.

The display settings on multi-monitor systems must be consistent across all displays. Different screen resolutions or color depth can cause problems with WebICE. Different refresh rates have not been demonstrated to be an issue but we recommend they be consistent.

Run ICE on the primary monitor.

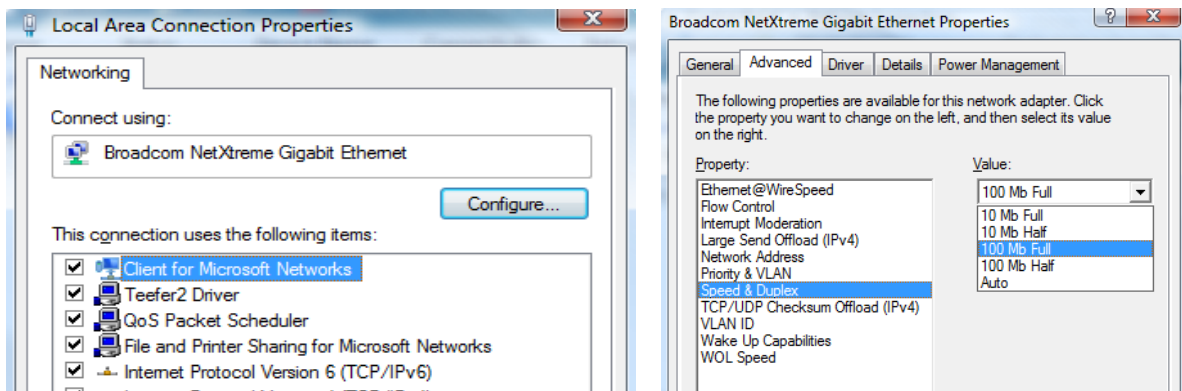
Many multi-monitor display adapters are more efficient at managing display memory and performance on the primary monitor than on secondary monitors. In some rare cases, screen lockups or latency can be resolved by running WebICE on the primary monitor.

E. Network Card (NIC)

Set Specific Speed and Duplexity on all network connections, avoiding “Auto-Detect”, “Hardware Default” and “Auto-Negotiate”. Note that when a Gigabit Ethernet card is used “Auto-Negotiate” is the preferred setting. Specific options may vary, however, for most systems you may follow the steps below. Note: Coordinate with your network team to ensure that the switch port is set identically to that of the PC.

First, launch the control “Control Panel”

- 1) Open “Network Connections”
- 2) Right-click on “Local Area Connection” and choose “Properties”
- 3) Click “Configure”
- 4) Now choose the “Advanced” tab and check “Speed & Duplex”. It should be set to “Full Duplex”--not “Auto-detect” or “Hardware Default” unless a Gigabit card is in use.



II. Networking and Infrastructure

A. *Local Area Network (LAN) Considerations*

The devices and infrastructure between the workstation and the Wide Area Network (WAN) connection are critically important to the proper functionality of WebICE. This is comprised of the Network Interface Cards (NICs), switches, routers, proxy servers, firewalls and the cabling that connects them.

Throughout your LAN it is important to specify speed at both ends of the connection. This is accomplished by setting the workstation NIC and the port at the switch/hub/router to a speed of 100Mbps and Full-Duplex. Lower speeds are acceptable as long as they are consistent between two interconnected devices.

B. *Firewalls*

As long as ports 80/443 and 10000-10999 are open for outbound traffic on the firewall, WebICE will be able to function. In general we recommend that if your network configuration includes both a proxy server and a firewall, that WebICE traffic be allowed to bypass the proxy and go directly to the firewall. To bypass proxy traffic, make sure that all WebICE PCs route to and are permitted to reach the ICE IP addresses.

ICE maintains details regarding destination IP addresses and ports here:

https://www.theice.com/publicdocs/technology/ICE_Firewall_Proxy_Requirements.pdf

C. *Proxy Servers*

ICE recommends against the use of proxy servers for WebICE due to the fact that they typically are not well-suited for streaming data applications and slow the speed of market data delivery. If it is not possible to bypass the proxy, WebICE will work with most proxy servers that utilize basic authentication as long as it can retrieve the proxy server settings (host name and port) in one of the following ways:

The proxy settings are configured in the browser. WebICE will retrieve the settings directly from the browser

If the browser is configured with an auto-proxy script, the current version of WebICE requires that the settings be configured via the Java control panel.

WebICE provides integrated support for authenticating proxies such as Microsoft ISA Proxy configured to use NT Challenger/Response (NTLM). WebICE will prompt the user for the authentication credentials to the proxy, and WebICE will use these values to authenticate against the proxy. The user will only be prompted for these credentials upon the first WebICE login. After that, the credentials are encrypted and securely stored in the WebICE local data directory.

ICE maintains details regarding destination IP addresses and ports here:

https://www.theice.com/publicdocs/technology/ICE_Firewall_Proxy_Requirements.pdf

III. Wide Area Network (WAN)

A. *Connectivity Options*

ICE has a wide variety of connectivity options. For further information about these options or to determine which option best fits your company, please contact the ICE helpdesk at 770-738-2101 or email network@theice.com or visit our website: https://www.theice.com/publicdocs/technology/ICE_Connectivity_Models.pdf

B. *Bandwidth*

Please visit the following link for bandwidth details for our various TCP feeds: https://www.theice.com/publicdocs/technology/ICE_Bandwidth_Guide.pdf