

# SofTrack®

Enterprise Software Audit and Control Platform



## SofTrack Local Workstation Agent for Windows® Performance and Operation Theory

**INTEGRITY**  
*Software*

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## Overview

This guide is designed to show performance of the SofTrack Local Workstation Agent (LWA) with regard to network, workstation processor and memory load.

### *Theory of Operation*

When installed, the LWA will automatically configure itself to the environment it exists within. There are *two different sets* of LWA files, one for Windows 95/98/Me workstations and one for Windows NT/2000/2003/XP workstations and servers.

The LWA for Windows 95/98/Me will properly operate on any workstation without limitations. The LWA for Windows NT/2000/2003/XP will properly operate on computers with up to 32 processors. If the environment includes Terminal Services, the LWA, per terminal server, will automatically configure its internal processes to allow metering and tracking for up to 4,000 terminal service sessions. Additionally, SofTrack offers a local agent for Macintosh workstations.

The SofTrack LWA works by monitoring every 16- and 32-bit Windows application's usage. Please note that MS-DOS applications are not metered by the LWA. Each time an application is launched, the LWA will request a license from the SofTrack Server Agent (SSA). The LWA is merely a conduit in which the application is launched.

The LWA itself does not contain knowledge of the applications to be monitored; the SSA maintains that data. If the SSA indicates that the application launch is to be denied (i.e., because there are no more licenses, the license is blocked, a time restriction has occurred, and so on), the LWA will gracefully deny access and present the user with a message from the SSA indicating the nature of the denial. The traffic generated between the workstation and the server is very minimal. Fewer than 1,500 bytes are exchanged for each application launch, this includes the request and response packets. If the SSA is not active or if the network connection is broken, the LWA will gracefully *timeout* and allow the application to be used. The LWA will *not* later notify the SSA of the application that was allowed to be used; therefore, the use will not be accounted for. Once the SSA becomes active or the network connection resumes, the LWA will resume its normal interactions with the SSA.

The LWA does not poll the NetWare-based SSA for messages. All messages are sent from the SSA via Novell's popup message mechanism. Messages concerning timekeeping and idle detection are self-generated within the LWA.

If an application is opened multiple times, the LWA will track each specific use as a *single use*. The exception to this is when using the timekeeping option, which will track each individual application use. When all uses of the application have been closed, the LWA reports to the SSA that the application has been exited, so an appropriate entry in the METER.LOG file can be made. If, when the application is exited, the LWA is unable to communicate with the SSA, the actual time of metering activity completion will not be recorded. Instead, the metering activity will be recorded, but instead of being recorded as a normal use, it will be recorded as a purged use. The SSA will record the purged use when it eventually detects that the LWA has either been restarted or has been inactive for more than hour. The SSA will also record a purge event if the workstation crashes or is turned off before exiting the application. If the SSA itself is stopped or the host it is running on crashes, then any metering activity it was tracking, even non-LWA

metering activity, will also be recorded as a *purged use*. The purge record will be recorded the next time the SSA is started.

### Workstation overhead

The amount of CPU utilization, overall CPU time, and Current and Peak memory usage for the LWA on the client workstation is very small, and generally goes unnoticed by the user, as shown as shown on a Windows 2000 Professional workstation in figure 1.1 below.

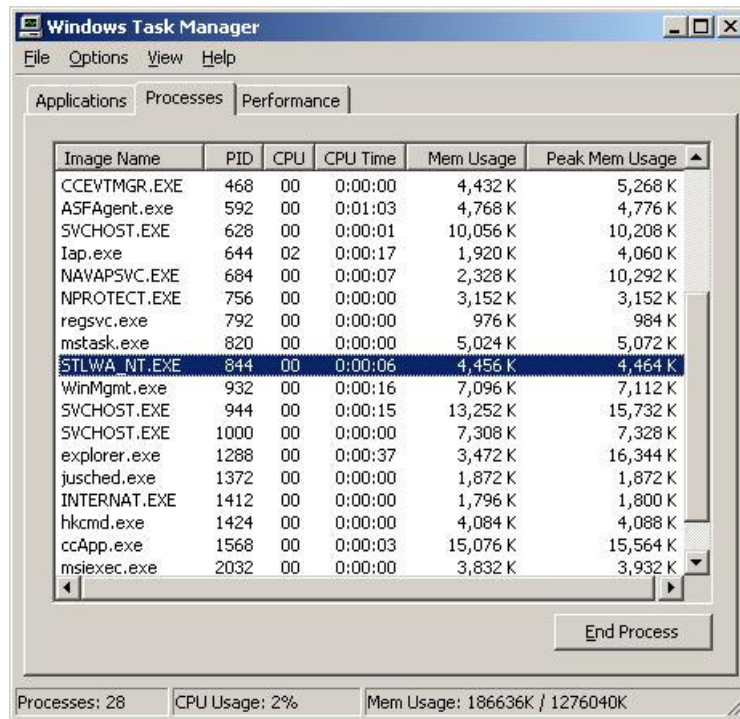


Figure 1.1

As shown in the following performance graph, the LWA produces a negligible load on the workstation. Figure 1.2 below shows an example of the load on the processor of a Windows 2000 Professional workstation when an application was being executed.

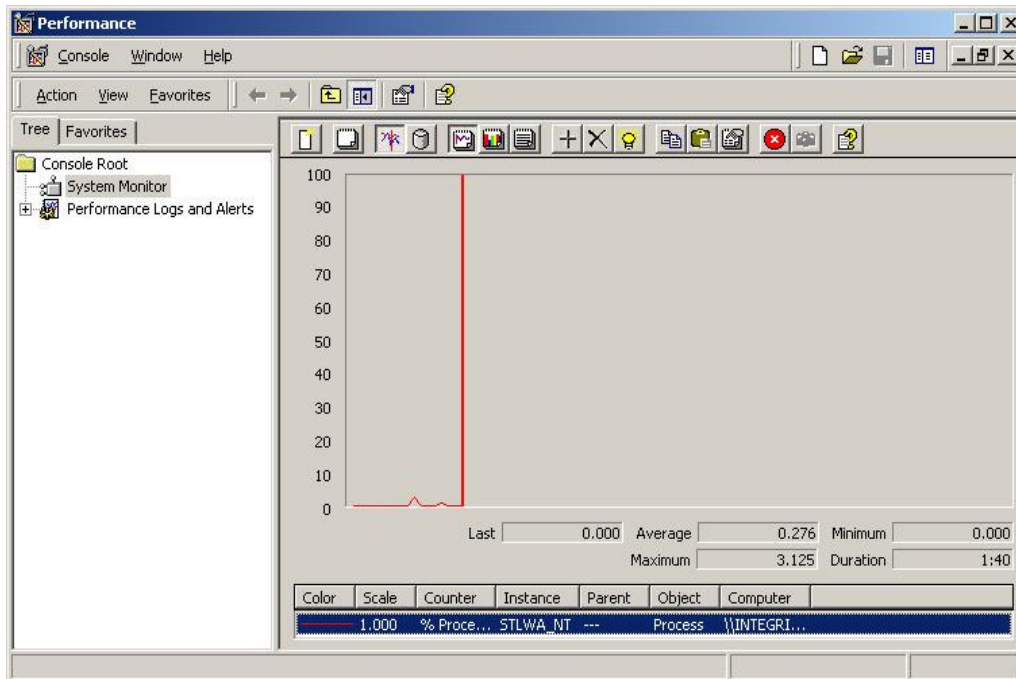


Figure 1.2

### ***Workstation performance while Auditing File Open/Create and Internet Explorer Traffic***

When the LWA has been configured audit (record) file open/create and/or Internet Explorer traffic the workstation user will likely not experience any noticeable delay. As audited data is collected by the LWA it is transmitted once a minute to the SSA. This transmission occurs in the background and does not affect the user's experience. The only possible delay occurs when the user is performing file intensive chores such as a developer compiling an application. To offset any performance delays introduced by auditing such actions, we offer the ability to exclude selected file events from being audited.

### ***Server performance while Auditing File Open/Create and Internet Explorer Traffic***

When auditing File Open and Create activity and optionally Internet Explorer Traffic, the SofTrack Server Agent (SSA), implemented as a NLM, receives audit data from workstations. The workstations transmit their data once a minute. It is conceivable that given a sufficient number of workstations reporting to a single server there could be enough traffic to overwhelm the network adapters at the server. Our testing has revealed this threshold to be between 300 and 400 workstations reporting to the server. Please note that this threshold is *per server network adapter port*, i.e., RJ45 connector. Since many available server network adapters include multiple network adapter ports it is possible for a single server to host 1000s of workstations. The workstation count specified is a conservative number and will vary depending on the amount of file open and create activity being generated per workstation. We have seen the threshold being as high as 1500 workstations per server network adapter port.

When auditing *Internet Explorer Traffic only*, the SofTrack Server Agent (SSA), receives audit data from workstations. The workstations transmit their data once a minute. It is conceivable that given a sufficient number of workstations reporting to a single server there could be enough traffic to overwhelm the network adapters at the server. Our testing has revealed this threshold to be between 2500 and 5000 workstations reporting to the server. Please note that this threshold is *per server network adapter port*, i.e., RJ45 connector. Since many available server network adapters include multiple network adapter ports it is possible for a single server to host 1000s of workstations.

As a final note, SofTrack's Server Agent for NetWare supports up to 8000 Windows workstations and terminal server sessions and 4000 Macintosh workstations per server.

## Contacting Technical Support

If you have any questions regarding this documentation, please contact our Senior Support Engineers via e-mail or telephone.

Email: [support@softwaremetering.com](mailto:support@softwaremetering.com)

Phone: (512) 372-8991 x611

Technical Support is provided 7:30 A.M. through 5:30 P.M., U.S. Central Time.