

Enhancing Total Value of PC Ownership

A Strategic Whitepaper



Presented by:



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Executive Summary

No matter how much prices drop for a high performance system in today's competitive market, the costs to maintain and support PCs keep going up. Companies are spending more and more money to support their systems and users, at a compounded annual growth rate (CAGR) of 15%¹. The costs associated with owning and supporting a PC are commonly referred to as the total cost of ownership (TCO). And more recently, businesses have been focusing on a PC's total value of ownership (TVO). This paper will examine some of the many factors that contribute to rising TCO, and how value-added support tools such as imagine LAN's ConfigSafe® can help businesses resolve system problems faster, which decreases TCO and ultimately increases the total value of PC ownership.

Introduction

The cost to maintain a PC running Windows® 95 has an average annual cost of ownership of \$9,784². This estimate includes life-cycle capital costs of hardware and software, including upgrades; technical and administrative support costs; and the cost of users' time spent learning about, troubleshooting, and maintaining their PCs.

With such a huge price tag tied to the ownership of a single PC, one can only marvel at the costs associated with PC ownership in a company with thousands of PCs. Even for businesses with just a dozen PCs, the cost is proportionately astronomical. There are a variety of factors that continue to drive up the costs of PC ownership, ranging from system complexity to problems introduced by PC users.

Businesses have standardized on the PC as the primary vehicle that enables access to corporate information systems. As a result, corporate PC spending is on the rise. In fact, PC spending is expected to hit an all-time high of \$55.4 billion in 1999³. Much of this spending will be tied to the replacement of outdated desktop hardware. And when new systems are implemented, technical difficulties are almost certain to arise, both user- and system-related.

While standardization of the PC has certainly contributed to a simplified corporate information system, the hardware and software used to connect PCs

¹ Source: International Data Corporation

² Source: Gartner Group

³ Forrester Research

and the people who use them have grown more complex. More than 200 million PCs are installed worldwide, and many businesses have 20,000 or more systems connected to networks from dozens of vendors, with hundreds or even thousands of software images installed. As a result of this increasing complexity, a PC's ability to function reliably can be seriously impacted if mistakes are made when configuring a system. These factors make an IS technician's ability to pinpoint problems that arise extremely difficult and very time-consuming, all of which add to the cost of providing end-user support.

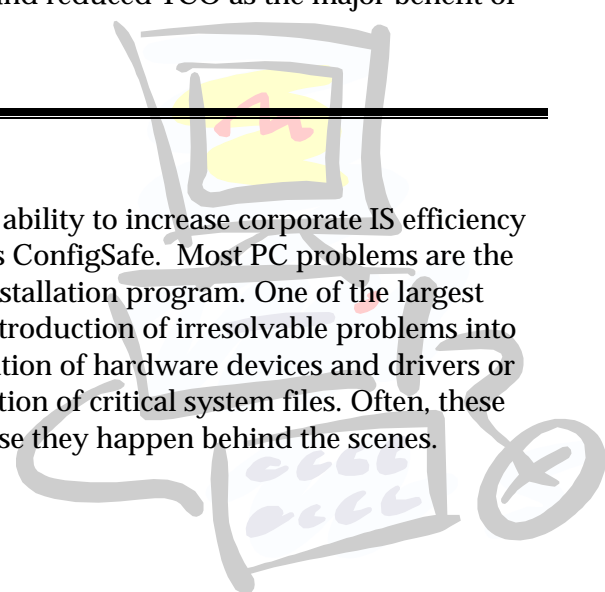
And as business users have not just accepted PCs, but rather embraced them, they have come to rely heavily on computers to perform their most important tasks. Without reliable, unfailing access to their computer, productivity drops dramatically, which directly impacts a company's bottom line. However, many users have recently been shifted from their standalone systems and software to client/server technology without proper training. And without training, these users have a high demand for support.

In addition, a little knowledge can be a dangerous thing. Many business users with a less than thorough knowledge of the inner workings of their system often "tweak" or "tinker" with them. Users inadvertently delete critical files, modify the Registry or change systems settings, and most commonly, users surf the Internet, download and install unapproved software that ultimately causes problems on their systems.

These factors are driving businesses to scrutinize their IS operations and internal company processes in order to reduce TCO and obtain a higher value of ownership. Many companies are placing a large emphasis on reducing TCO by purchasing specific tools that will help them attain this goal. This is demonstrated by the multitude of third-party systems management software available today, and by the fact that many of the major systems vendors are focusing their value propositions around reduced TCO as the major benefit of their systems solutions.

ConfigSafe Briefing

One valuable tool that has proven the ability to increase corporate IS efficiency while reducing computer downtime is ConfigSafe. Most PC problems are the result of changes made by a user or installation program. One of the largest problems PC users encounter is the introduction of irresolvable problems into their system through incorrect installation of hardware devices and drivers or the inadvertent modification and deletion of critical system files. Often, these changes go unnoticed by a user because they happen behind the scenes.



To help decrease the amount of time that IS professionals spend trying to resolve problems and recover users' systems, ConfigSafe software is unparalleled.

ConfigSafe is a comprehensive configuration tracking and recovery tool for systems running Windows (95/98/NT). ConfigSafe tracks changes made to critical system files, directories, system hardware and network settings, and allows a system to be reset to a previously working configuration *in a matter of seconds*. If a failure were to occur due to file or driver corruption, ConfigSafe will enable system and file restoration, thus saving significant time in data recovery and restoration. By monitoring system changes, ConfigSafe reports every change that occurred on a system, and if necessary, undoes the changes. Finding the cause of a system problem is easier and less expensive.

ConfigSafe can significantly lower the cost of end-user support by:

1. Reducing the number of calls to the help desk by providing users with a tool that enables them to resolve system problems on their own
2. Decreasing user downtime
3. Reducing the time it takes IS professionals to pinpoint and resolve configuration-related PC problems

ConfigSafe is the leading diagnostic tool used by leading corporations and PC OEMs, with millions of copies shipped on systems from IBM®, Compaq, Gateway™, NEC™, Hitachi, Data General and others. The product has exceeded these customers' expectations in terms of its ability to lower support costs, maximize system uptime and reduce total cost of ownership (TCO) for systems that have ConfigSafe installed.

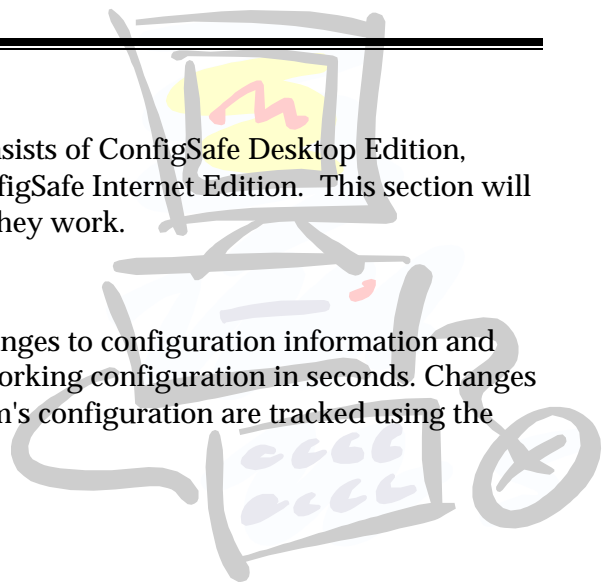
A Closer Look at ConfigSafe

The ConfigSafe family of products consists of ConfigSafe Desktop Edition, ConfigSafe Network Edition, and ConfigSafe Internet Edition. This section will examine these technologies and how they work.

ConfigSafe Desktop Edition

ConfigSafe Desktop Edition tracks changes to configuration information and can restore a system to a previously working configuration in seconds. Changes to critical information about the system's configuration are tracked using the following categories:

- ▶ File Information
- ▶ System Information
- ▶ Drive Information



- ▶ Directory Information
- ▶ Registry Information
- ▶ System Asset Information

ConfigSafe capabilities can be divided into two categories: Tracking Features and Recovery Features.

Tracking Features

ConfigSafe works by taking a “Snapshot” of the system configuration. This information is captured and saved for use in comparing changes over time, or to restore a system to a specific configuration that has been previously captured in a Snapshot. Snapshots can be taken on demand, or scheduled to be performed at periodic intervals, such as daily, weekly, monthly, etc. The exact information that is tracked can be customized using different profiles.

In addition, ConfigSafe provides extensive management and reporting capabilities. The reporting function enables a comparison report of the configurations captured in two different Snapshots, or between the system’s current configuration and any selected Snapshot. Reports can be viewed online or printed.

Management functions allow Snapshots to be imported and exported to other systems, which greatly enhances ConfigSafe’s usefulness in the diagnosis and resolution of system problems, particularly in a multi-system environment.

Recovery Features

In addition to the extensive tracking features, ConfigSafe enables several ways to recover a system.

The Restore feature returns the system to a previous configuration that has been selected from available system Snapshots. If the Snapshot that has been restored does not produce the desired results, the Undo feature enables the reversal of a Restore process, returning to the configuration in place just prior to using Restore. Undo provides a utility, UNDO.EXE that can even be run from MS-DOS mode in a Windows 95/98 environment.

Systems can also be restored from MS-DOS mode by running SOS.EXE (the SOS function is currently available in the Windows 95/98 environment). This feature is extremely useful if a system will not even boot into Windows.

ConfigSafe Network Edition

ConfigSafe Network Edition is a valuable product for businesses with networked PCs. ConfigSafe Network Edition is designed to take advantage of network resources, and provides central manageability and administration, which is ideal for corporate IS departments.

ConfigSafe Network Edition provides all of the capabilities of ConfigSafe Desktop Edition, plus:

- ▶ Shared program, snapshot and profile folders
- ▶ Asset tracking and recovery features are expanded to include local and network folder tracking and archiving. This is accomplished by specifying filters or wildcard searches. This feature can also be used to schedule automatic backups of critical files.
- ▶ Tracks licenses and users/systems
- ▶ Automatically adds/deletes users upon client installation/deletion of ConfigSafe.
- ▶ Compare of any two snapshots from different systems over a network. This eliminates the need to import/export snapshots from different systems.
- ▶ Provides central management functions, such as:
 - ▶ Delete clients
 - ▶ Manage profile, snapshot and scheduling from central administrator
 - ▶ Command line parameter functions enable further customization
 - ▶ One-step software updates for all ConfigSafe clients

ConfigSafe Internet Edition

ConfigSafe Internet Edition is a browser-based version of ConfigSafe. It provides full API access to ConfigSafe functions and enables output of information to the end-user interface in either text or XML format.

With access to the API, ConfigSafe functions can be easily integrated into other systems or network management software. In addition, as more and more large-scale corporations are creating support infrastructures via company intranets, the Internet Edition enables the powerful features of ConfigSafe to be used in conjunction with Web-based support services. Companies can more effectively deploy support to remote offices and mobile users via the corporate intranet, providing more efficient problem resolution. A few of the unlimited uses for ConfigSafe Internet Edition are as follows:

Integration into third-party systems management software. ConfigSafe Internet Edition enables businesses to integrate ConfigSafe capabilities into their current suite of management tools. This is extremely useful because ConfigSafe easily merges with existing solutions, allowing IS to continue to use one management tool to perform all of their maintenance and troubleshooting tasks. In addition, setup and training for IS technicians is simple because they are already familiar with their existing management software interface.

Return system to factory configuration. With the Import/Export feature, remote users can import/export snapshots from the support intranet for off-line restoration and diagnostics. For example, IS technicians can post default factory configuration snapshots that allow users to return to their original configuration.

Update software drivers. ConfigSafe Internet Edition can be used to download updated snapshots that contain the latest drivers. Remote users can then compare against their configuration to check for outdated drivers, and if necessary, update their systems.

ConfigSafe Benefits

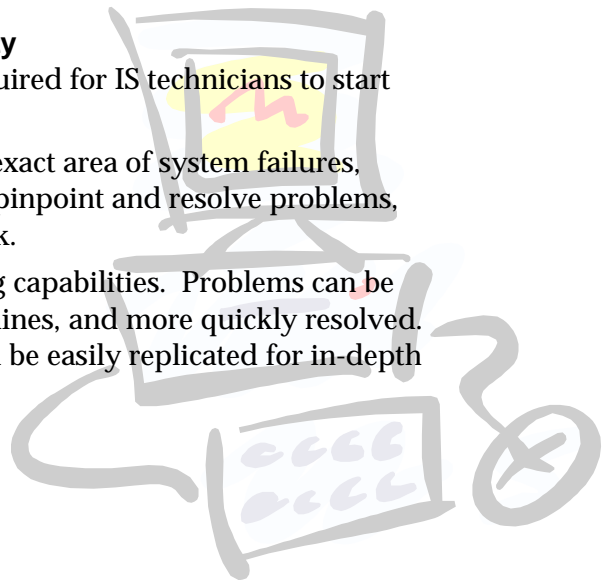
ConfigSafe provides immense benefits to businesses large and small, in terms of increasing user uptime and significantly reducing support costs.

Reduces Support Costs

- ▶ Decreases number of calls to the help desk by enabling users to resolve problems themselves.
- ▶ Decreases downtime. ConfigSafe can restore to a previous configuration in a matter of seconds.
- ▶ Decreases user frustration. Users don't need to spend a lot of time describing the symptoms of their problem, which often leads to miscommunication.
- ▶ Reduces need for on-site support for remote offices that are supported by the central headquarters.
- ▶ Leverages current investment in other support tools, such as remote control diagnostics and systems management software.

Increases Support Center Productivity

- ▶ Minimal set up and training is required for IS technicians to start using ConfigSafe.
- ▶ Allows rapid identification of the exact area of system failures, enabling IS technicians to quickly pinpoint and resolve problems, and then move on to their next task.
- ▶ Provides powerful troubleshooting capabilities. Problems can be replicated in the lab on other machines, and more quickly resolved. In addition, complex problems can be easily replicated for in-depth analysis.



ConfigSafe Implementation

How to Implement ConfigSafe into the Internal Support Organization

Proper implementation of ConfigSafe into the support organization is critical for obtaining the most effective results. There are several implementation stages that will facilitate setup and use of the product.

Install on All Systems

Create a custom profile to track configuration information pertinent to the system. Pre-load all systems with ConfigSafe and take an original configuration snapshot that includes all baseline data before providing to the user.

This snapshot provides the IS technician with assurance that the PC has been configured properly with a tested baseline configuration.

Support Call Prevention

Proper messaging about the benefits of ConfigSafe and how to use it empowers remote users to resolve many problems on their own. ConfigSafe can restore problem systems to the factory configuration or a previously working configuration. In many instances, the user can resolve the problem without initiating a call to the help desk.

Support Call Facilitation

IS technicians can walk remote users through ConfigSafe report generation, and can either discuss changes via phone, or have the user send a report via email. The technician quickly identifies configuration problems and can direct the user to a previous configuration.

Batch Support/Troubleshooting

As in Support Call Facilitation, the user provides a report via email. IS technicians can review ConfigSafe reports in batch mode, rather than spending time online with users. Problems can be resolved for multiple systems at one time, and corrected Snapshots imported into problem systems to be restored in seconds.

Enhanced Use with Remote Control Diagnostics and Systems Management Tools

When using remote control software within an organization, IS technicians can use remote control diagnostics in conjunction with ConfigSafe to quickly pinpoint and correct system problems. Technicians can more cost-effectively dial into a user's system via remote control, run ConfigSafe to generate a report of system changes, and then restore the system to a working configuration. In addition, ConfigSafe has been proven to enhance the effectiveness of third-party systems management tools.

Support Call Alternative/Enhanced Web Support Capabilities

Using ConfigSafe Internet Edition, ConfigSafe provides an alternative to a help desk call. Rather, the user's configuration can be compared against configurations posted on the company's intranet. This alternative is especially useful for identifying out of date software/driver versions, and enables the user to update without contacting the help desk.

Typical Problems Identified by ConfigSafe

The practical uses for ConfigSafe in a support environment are virtually unlimited. ConfigSafe has been effectively used in many large vendor and corporate environments for several years. During this time, many typical problems have been identified and resolved with ConfigSafe, such as...

- ▶ If a user or installation program alters sensitive configuration files.
- ▶ If a user or installation program makes dangerous changes to the registry
- ▶ If the user adds a new disk drive or CD-ROM to their system.
- ▶ If the user's network connections change.
- ▶ If the user adds memory to their system.
- ▶ If the user or installation program updates the DOS or Windows software.
- ▶ If the user adds a SUBST command.

Current Customer List

ConfigSafe is currently helping the following vendors improve their support center operations:

IBM

- ▶ Preloaded on all IBM commercial desktop, Aptiva® and ThinkPad® product lines.

Hitachi PC

- ▶ Included on all VisionBook™ Pro 6000 and 7000 series.

Data General

- ▶ Included on all desktop systems

Gateway

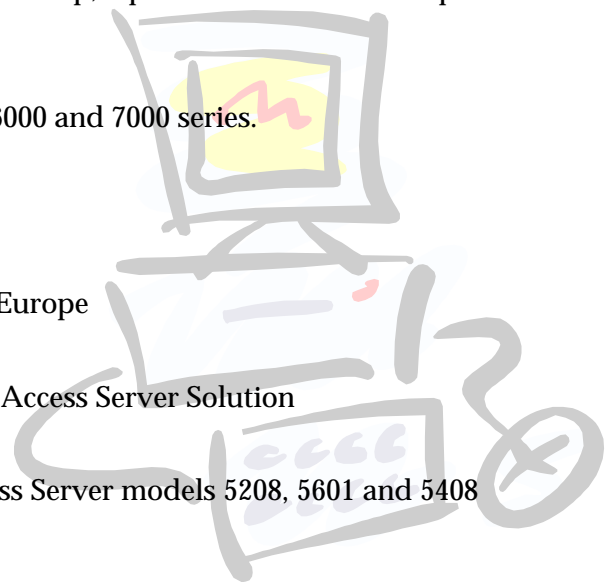
- ▶ Preloaded on Gateway systems in Europe

NEC

- ▶ Preloaded on Express5800 Remote Access Server Solution

Compaq

- ▶ Included on Compaq Remote Access Server models 5208, 5601 and 5408



The ConfigSafe Advantage

ConfigSafe provides businesses with a safe, effective support tool, much more extensive than any diagnostic capabilities provided within the Windows operating system. When considering the use of such a diagnostic tool, only ConfigSafe does all of the following:

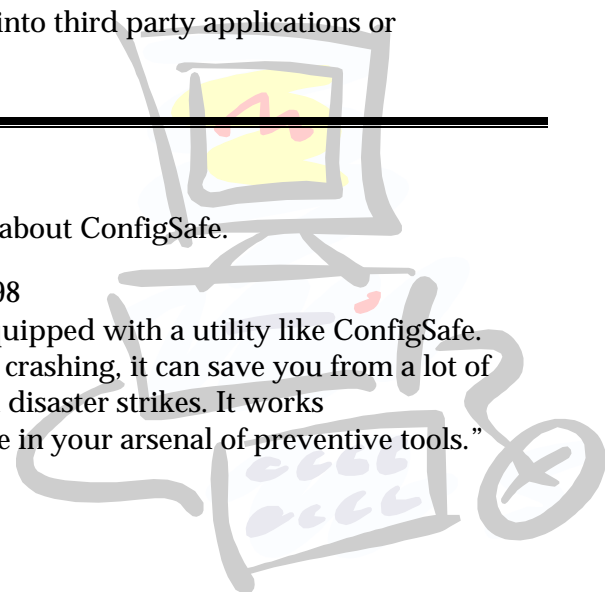
- ▶ Supports all Windows environments
- ▶ ConfigSafe's portable architecture enables:
 - ▶ Snapshots to be sent/retrieved for analysis and restoration
 - ▶ Snapshot comparisons between two systems over a LAN
- ▶ Details changes between any time period
- ▶ Can capture configurations on demand and without exiting Windows, or on every Windows Startup
- ▶ Restore to system's initial configuration
- ▶ Allows viewing of the full Registry
- ▶ Does not rely on a knowledge base, which requires time-consuming customization and frequent updates
- ▶ Does not recommend potentially dangerous and unnecessary changes to the system
- ▶ Requires minimal set up, training and support in order to implement and effectively use within a support organization
- ▶ Excellent companion/enhancement to existing diagnostic tools, such as remote control software or PC/network management software
- ▶ Network Edition takes advantage of network resources and central management functions
- ▶ Provides API for easy integration into third party applications or management software

ConfigSafe Press

Here's what is being said in the press about ConfigSafe.

Family PC Recommended, January 1998

"Every Windows system should be equipped with a utility like ConfigSafe. While it won't keep your system from crashing, it can save you from a lot of tedious reconstruction exercises when disaster strikes. It works with...Windows 95 and is a must-have in your arsenal of preventive tools."



Windows NT Magazine, January 1998

Lab Guys Favorite Administration Utility

“We were thrilled when we encountered ConfigSafe... (it) offers simple, painless protection.”

Computer Shopper, October 1997

“Unlike systems that simply restore backups of your last known good configuration, ConfigSafe gives you a fighting chance by tracking down the source of the problem. It just goes to show that no matter how updated your Windows OS might be, if you make frequent changes to your configuration, you should have ConfigSafe to feel secure about your data.”

PC Magazine, June 10, 1997

“Through and through, ConfigSafe is a class act. It displays changed values by showing the initial and final values next to each other, with an arrow between them pointing out the differences. It also lets you single out specific keys for quick comparison and restoration, although you do have to choose these keys in advance... ConfigSafe 95... is the fastest and most flexible of the three products we looked at.”

Conclusion

ConfigSafe has skillfully demonstrated its ability to enhance the technical support operations for many of the leading corporations and systems vendors. ConfigSafe helps support organizations quickly diagnose and resolve user problems. With more than 8 million installations of ConfigSafe and millions more shipping this year, ConfigSafe is the market leader in diagnostic utilities.

imagine LAN is committed to developing ConfigSafe products to meet the continually changing challenges of providing quality systems support at a reduced cost while dramatically increasing end-user satisfaction. imagine LAN can develop a tailored support program that meets the specific needs of businesses, ensuring that implementation of ConfigSafe will make any support organization a more effective, cost efficient operation.

Contact & Resource Information

For more information, contact imagine LAN:

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