

Active Client Management

White Paper

March 29, 2004

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Symantec Corporation
20330 Stevens Creek Blvd.
Cupertino, CA 95014
<http://www.symantec.com>

Altiris, Inc.
588 W. 400 S.
Lindon, UT 84042
<http://www.altiris.com>

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INTRODUCTION

“Organizations that do not develop a holistic approach to PC hardware lifecycle management planning will face constant disarray, lost opportunities and higher-than-required costs.”

—“Gaining Efficiencies with PC Lifecycle Management,” Gartner, Oct. 30, 2003

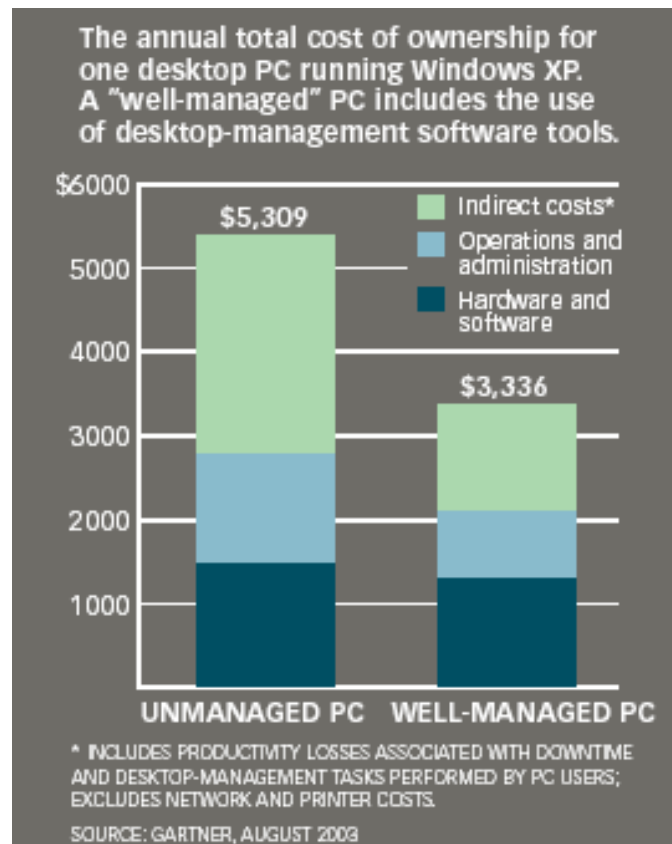
Figure 1

This bar chart shows Gartner estimates from an August 2003 study. Hardware and software costs comprise only about one-fourth of the total TCO value. Achieving a level of “well-managed PC” can deliver TCO reductions from about \$5,309 to \$3,336 per year for each PC.

IT groups looking to improve their infrastructure management are consolidating their previously disparate IT asset management efforts. Executive sponsors are approving packaged solutions to gain control of valuable IT asset portfolio performance.

This white paper outlines the benefits of Altiris® Client Management Suite™. The focus is on client management best practices for managing all desktops, notebooks and handheld devices via a common console, regardless of client or device OS.

Today, many technology professionals realize that purchase prices of hardware and software are merely a portion of the complete total cost of ownership (TCO) story.



Altiris Client Management Suite dramatically reduces costs by automating, simplifying, and integrating essential management functions, including configuration management, centralized patch management, software delivery, inventory, and more. The ability to perform automated, unattended management tasks reduces desk-side visits and employee interruptions, ultimately reducing the total cost of ownership of these devices. The opportunities for labor cost savings, productivity gains, user benefits, and IT staff morale improvements are far reaching.

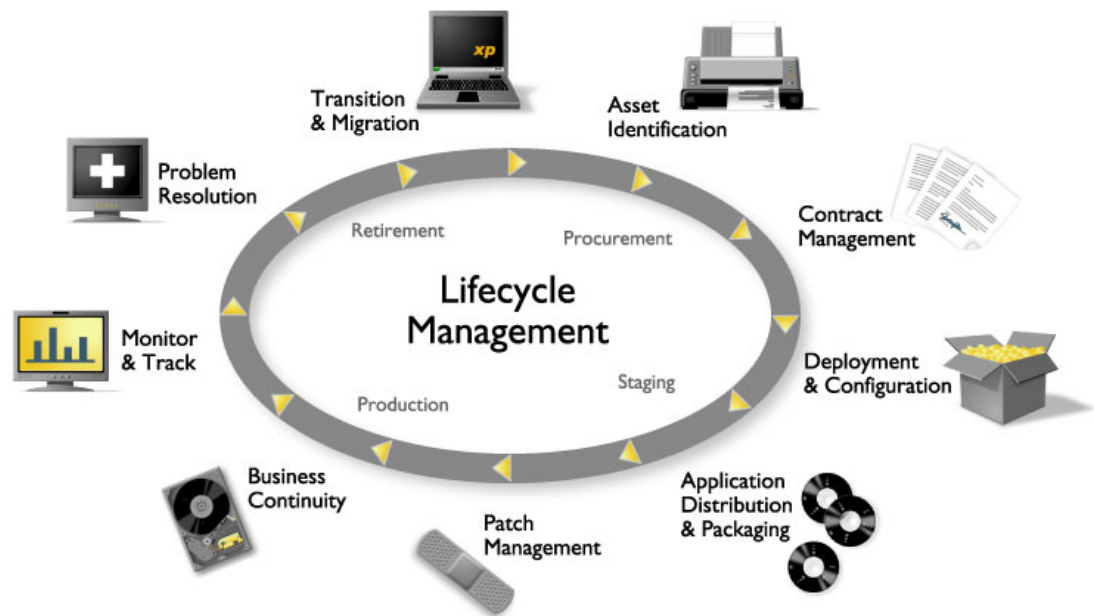
LIFECYCLE MANAGEMENT

The many attributes and details of IT assets need to be rigorously managed in order to coordinate users, usage, contracts, warranties, locations, costs, configurations, characteristics, and scalability. To accomplish these objectives, a highly integrated suite that demonstrates technology leadership and applies best practices is required to gain maximum cost reduction benefits. Here's how a comprehensive client management tool can help you take control of your computing environment:

- Reduce costs by minimizing desk-side visits associated with deployment of software, troubleshooting, and disaster recovery
- Reduce costs and increase productivity by improving efficiency of IT projects
- Minimize downtime and reduce help desk calls by minimizing exposure to security and virus attacks through automated patch management
- Reduce help desk costs by speeding remediation through comprehensive troubleshooting and incident tracking/routing
- Minimize downtime and increase productivity by improving response capabilities for disaster scenarios

Figure 2

Altiris' modular lifecycle management framework and architecture offers compelling benefits over point products that focus on only one or two aspects of IT management.



“As business computing is pushed to the fringe of the network, our clients are asking for an IT lifecycle management solution that accommodates the needs of an increasingly diverse and remote workforce. The new Altiris 6.0 agent provides extensive language localization, dynamic bandwidth management and added security features that our client base requires for advanced IT management.”

—Bill Uncapher
President
Pacific Blue Micro

Altiris offers a full line of Web-enabled solutions that empower organizations to easily manage desktops, notebooks, handhelds, and servers throughout the IT lifecycle. Altiris provides fully integrated, comprehensive systems management solutions for client and mobile, asset, and server management. The goal is to automate, simplify, and reduce the cost and complexity of IT lifecycle management.

To reduce TCO and maximize return on investment (ROI), a client management solution should seamlessly manage systems throughout the entire lifecycle. Altiris Client Management Suite provides a single-vendor solution to render and optimize “cradle to grave” comprehensive lifecycle management for all clients across an enterprise.

Altiris Client Management Suite is an easy-to-use systems management solution that helps reduce TCO for desktops, notebooks, and handheld devices. Developed for IT professionals who manage computing devices on a regular basis, the suite enables administrators to deploy, manage, and troubleshoot systems from virtually anywhere. Benefits include:

- Secure management with role and scope-based security
- Zero-touch OS deployment and migration
- Integrated hardware and software inventory with Web-based reporting
- Policy-based software management
- Automated patch management
- Software license compliance and harvesting
- Native integration with Microsoft* Active Directory
- Centralized management of mixed hardware and OS environments
- Intuitive management interface with real-time dashboards and distribution wizards

Extensible Management Architecture

Based on an organization’s readiness and priorities, a recommended approach is to establish an effective desktop management solution that can grow and evolve as your organization’s requirements increase. Altiris Client Management Suite allows for a maturity model implementation strategy. The suite is organized into multiple levels of systems management, allowing your company to employ additional functionality as requirements increase and additional systems management demands are placed on your organization.

With level 1, there is a starting point that provides the essential elements of an automated configuration management strategy within your

“As IS organizations rise to the challenge of delivering consistently high-quality support for the mission-critical and business-critical IT infrastructure, the complexity of that infrastructure continues to increase. Therefore, an enterprise needs a methodical, staged approach to implementing tools and processes.”

—Gartner

organization. A young, reactive IT organization can achieve dramatic results by leveraging these basic systems management capabilities to increase efficiency.

As companies mature to levels 2 and 3, they can realize additional cost savings through proactively managing their environment by offering value-add IT services. With solution modules that snap into a robust and active framework, the ability to grow the overall solution improves as the organization’s readiness increases. Altiris Client Management Suite can grow with your organization and provide the exact level of functionality required at all times to help IT become a driving force within your company.

A well-designed system architecture will provide a platform for performance, growth, and scalability. However, most systems management vendors focus on just one or two aspects of IT management. They address a specific pain point, but leave you to determine how to make it work with the other tools or systems you have in place. Not Altiris. Altiris’ Extensible Management Architecture™ (EMA™) provides a unified view of the enterprise and allows IT organizations to purchase only the solutions they need immediately, but still maintain the flexibility to snap in additional solutions as their needs change. This design also reduces implementation times and costs associated with adding new IT capabilities because integration with Altiris customers’ existing IT services is seamless.

Level 3

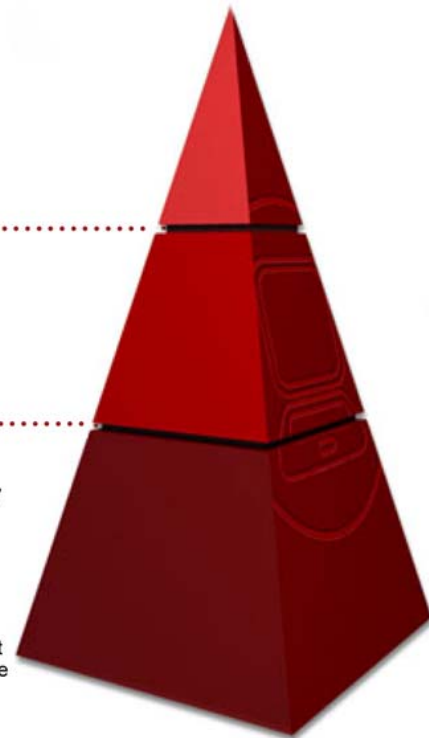
- > Network-wide backup and disaster recovery
- > Cross-hardware recovery

Level 2

- > Local system snapshot and rollback
- > Real-time diagnosis and remediation

Level 1

- > Comprehensive hardware and software inventory
- > OS imaging, deployment, and configuration
- > PC personality and OS migration
- > Vulnerability assessment and centralized patch management
- > Policy-based mobile software delivery
- > Application self-healing and repair
- > Conflict analysis and desired-state management
- > Application usage reporting and denial of service
- > Web-based remote control



Altiris Adaptive Display Technology™ (ADT™) dynamically modifies the console interface for each user according to language, granted access privileges, and end-user preferences. ADT is based upon end-user logon credentials and simplifies console navigation. End-user productivity is enhanced due to reduced clutter and display of only the pertinent tasks and resources. For example, help desk workers or outsourced partners could be limited to remote control and patch management tasks. Senior IT staff can be granted broader or advanced administration, management and reporting capabilities. With on-the-fly language display options, six console languages and 17 agent languages, Altiris provides truly international manageability.

REMOTE DEPLOYMENT AND MIGRATION

Some organizations continue to perform many client and mobile management tasks manually. Loading software and configuration settings onto computers can require several hours of effort from a qualified IT technician. Automated tools reduce total time considerably and strongly contribute to strategic agility. For organizations using hundreds or thousands of computers, the ability to deploy, manage, and recycle IT investments is an important strategic enabler for optimizing business value from intellectual property and the IT investment portfolio.

By using award-winning tools and practices, organizations gain control of the integrity and reliability of diverse IT assets as well as their characteristics and configurations. Organizations gain the ability to:

- Deploy and configure operating systems
 - Distribute standardized OS builds to maintain consistency
- Support Intel Wired for Management* (WfM) initiatives
 - Provide zero-touch management including Wake on LAN*
- Deploy approved and tested application packages
 - Distribute standardized application builds to improve supportability
 - Re-package line of business applications
- Automate conflict analysis and resolution
 - “Pre-flight” testing helps ensure application installation success prior to rollout
 - Leverage MSI for self-healing and rollback benefits
- Support remote/mobile systems
 - Checkpoint recovery, dynamic bandwidth throttling, roaming downloads
- Migrate to new operating systems or support in-place hardware refreshes
- Secure against unauthorized personnel based on role and scope to safeguard against broad permissions whereby a user’s ability to “touch one machine, means ability to touch them all.”
- Support for heterogeneous operating systems (for example, Windows*, Linux*, Pocket PC*, Palm*, and RIM*)

Altiris’ zero-touch design leverages Intel’s Wired for Management initiatives such as PXE* (Pre-Execution Environment*) to remotely boot systems, connect to the network, and execute programs that reside on a server to provide dramatic productivity gains.

“Altiris edged out rivals thanks to its host of unique features and 100 percent hands-off imaging capabilities.”

—“How Suite It Is,”
Network Computing, 2003
(where Altiris Client Management Suite was named “Editor’s Choice”)

“Altiris’ personality migration features allow workers to start work the next day with their machines looking exactly as they left them the night before.”

**—Tunde Ishola
IT Manager
Winchester and Eastleigh
Healthcare NHS Trust**

Personality Migration

Altiris Client Management Suite includes powerful deployment tools that can deploy/refresh systems and migrate computer personalities with the click of a mouse. Suppose a technician needs to deploy a new computer, upgrade an existing system to Windows XP, migrate an end user to a new system, or perform other deployment oriented tasks. Altiris software completes such tasks and preserves files as well as desktop, network, and application settings while minimizing impact and disruption to end users.

Migrating individual computer settings is an important step to maintaining user productivity and business continuity. The integrated functionality of Altiris migration technology allows customers to migrate more than just user data or profiles; it also gathers relevant and important OS and application user settings stored in the registry and individual application .INI files and settings. For example, transferring favorite URLs, printer drivers, desktop settings, and so forth enables workers and computers to adapt seamlessly and helps minimize user interruption or frustration.

In fact, Altiris PC Transplant® Solution recently earned the top leadership position in Gartner's Magic Quadrant for migration solutions. Distinctive aspects of Altiris PC Transplant Solution include the ability to:

- Rapidly reassign computers to new users with minimal interruption
- Remotely store and apply personalities for disconnected or mobile users. Ideal for restoring tailored configurations or standard builds based on role and scope of responsibilities
- Easily create standardized computer personalities for a department or an entire organization

PROACTIVE SOFTWARE MANAGEMENT

Across the computing environment, gaining control of client device lifecycles means executing a strategy for imaging and deployment, patch, application management, application metering, packaging, and recovery. The intellectual and strategic capital embodied by technology infrastructure has crucial implications for revenue generation, cost containment, and regulatory/legal compliance.

Managing vendor contracts and enterprise software agreements helps ensure the organization is not at the mercy of vendors during audit or true-up times. Reconciling proof of ownership with counts of installed versus used versus purchased metrics. By knowing usage, the tendency to overbuy can be avoided. Harvesting unused licenses or purchasing upgrades of an application rather than entire new licenses can substantially reduce costs. Furthermore, the effort is reduced in the collection, compilation, and analysis of these usage and installation metrics.

Assessment

Beginning with automated inventory, a configuration management database is established to account for IT assets and a reliable baseline inventory of IT discoverable and non-discoverable assets are established. Altiris' scalable architecture proves especially useful to growing organizations that are widely distributed, employ multiple independent LANS or domains, or decentralize IT staffs.

Relatively primitive point solutions that lack native integration with Microsoft* Active Directory can provide unsatisfactory results. Assets need to be properly associated with user assignments. Relying on pop-up windows soliciting user input is disruptive and lacks accuracy. Point solution inventory tools discover a portion of the environment, but their limited framework means "they don't know what they don't know" regarding hardware, software, and other resources. The ability to integrate with systems management, purchasing, accounting, or help desks systems offers powerful efficiencies. This is especially true where frequent organizational structure changes or acquisitions/divestitures occur.

When managing clients, Altiris solutions' recognition is not dependent on older software libraries, frequent (monthly or quarterly) pushes of updates from servers to clients, and lag times. Altiris solutions accomplish this by examining the digital header of every executable file for vendor recorded information, version resource block and other details. The result is comprehensive software recognition without library dependency. Administrators can also normalize data such as manufacturer/vendor information to provide consistent results and improve reporting accuracy. The capability also exists to recognize different editions of the same software (for example, professional,

“Software compliance is an ongoing process that needs to be closely coupled with the hardware it runs on. Further software efficiencies can be achieved if enterprises take advantage of software usage tools.”

—Patricia Adams
Gartner

“Organizations that use their software asset management activities to prepare for enterprise negotiations and supplier management will cost justify the asset management initiative within the first 12 months (0.7 probability).”

—Pat Cicala
Gartner
June 19, 2003

technical, and so on). Applications can also be grouped into suites, such as Microsoft Office.

Altiris offers a broad range of platform support, gathering software and hardware inventory from Windows (9x, NT, ME, 2000, XP, 2003, Mobile, Pocket PC, CE, Palm, RIM), UNIX (Solaris, AIX, HP-UX), Linux (Red Hat, SuSe, UnitedLinux, Mandrake), Palm (3.0+), Macintosh (8.6+) systems. In addition, Altiris can gather extensive inventory of network devices in your environment as well as SNMP-enabled NetWare servers.

Once an assessment is complete, IT organizations can implement standardization best practices to realize the following benefits:

- Effectively manage software distribution within your environment
- Ensure compliance with software license agreements
- Improve system supportability by reducing the complexity of the OS and application environment
- Ensure business continuity

Software License Compliance

Fact: The extent of compliance checking will continue to increase year after year. Therefore, it pays to be prepared with the facts and metrics when negotiating or refuting vendor assessments, invoices, or penalties. Altiris Client Management Suite gathers software information in a central repository and compares it against actual software usage to help administrators determine future licensing needs. Data normalization allows reconciling, sanitizing and de-duping. For example, you could find executables from Macromedia, Inc., Macro Media, and MM across your enterprise. Data normalization ensures that all appropriate applications are identifiable and accounted for properly as Macromedia.

The Business Software Alliance (BSA) recommends these software management guidelines:

- Establish a clear software management policy defining the procedure to acquire legal software
- Centralize purchases
- Obtain software through reputable suppliers.

Improving System Stability

IT organizations can realize significant TCO reduction by improving system stability and reliability, thereby reducing or eliminating common help desk calls related to software break/fix incidents. By leveraging hardware and software assessment data, administrators can scope the heterogeneity of their environment. Then, determine a strategy to

“Enterprises that do not dedicate resources to packaging applications will fail at software distributions through 2004 (0.8 probability).”

—“Aligning the Right Resources is Key to Software Distribution”

**Ronni Colville
Gartner
Oct. 21, 2002**

increase homogeneity by standardizing on OS and application versions through systematic change and control of their OS and application environments. Administrators will subsequently be able to generate clear service level requirements, reduce help desk calls, and increase system uptime.

- Altiris offers key technologies to help standardize the customer’s environment in these ways:
- Centrally control application versioning and packaging to better support corporate standardization policies and IT SLAs
- Ensure system compatibility prior to deployment using advanced conflict analysis and remediation tools
- Quickly and easily re-package and deliver the latest application and OS updates
- Streamlined delivery system to minimize impacts to IT productivity

Packaging

The advanced repackaging capabilities of Wise Package Studio® enable administrators to build more flexible, reliable packages, and increase the success rate of their software deployments.

Industry-leading conflict analysis and remediation tools such as Wise’s Preflight Deployment™ ensure that application updates will not break other productivity applications, improving system uptime, and minimizing impacts to end-user productivity. In addition, Altiris’ unique fingerprinting technology also helps determine which systems meet corporate packaging standards versus applications that may have been installed by unauthorized methods, such as a borrowed CD, minimizing the risk of break/fix issues due to non-standard applications versions/configurations.

Wise Package Studio’s version-less packaging technology better handles heterogeneous environments, making it easier to standardize application versions across the enterprise. Built-in workflow management capabilities ensure that packaging teams are instep, thereby increasing packaging efficiency and reducing project costs.

Distribution

Once an application has been repackaged and thoroughly tested, it needs to be deployed to the appropriate business units. Remote software distribution directly helps reduce the costs of configuring and managing computers by minimizing the need for desk-side visits to deploy applications, updates, and patches.

Altiris helps streamline the process of software distribution by seamlessly handing off packages from Wise Package Studio to the Altiris delivery system and automatically replicating them to appropriate distribution points. By leveraging detailed software and hardware inventory data in the Altiris repository, administrators can more effectively target application deliveries based on criteria such as Active Directory organizational units (OU) membership, OS, application version, or hardware configuration.

Support for Intel's Wake on LAN technology ensures that package deliveries can be scheduled to be performed at off-peak hours to minimize impact to end users. If an update must be performed during normal business hours, administrators can either choose to alert the end users and allow them to "snooze" the installation until a later time, which is particularly useful for installations that require a reboot. Moreover, an installation can be run completely hidden from the end user to avert any distraction.

ENSURING BUSINESS CONTINUITY

“Enterprises that forgo patch testing in favor of high-speed deployment are at serious risk.”

—Gartner
2003

“Gartner estimates it costs \$300,000 a year to manually deploy patches to 1,000 servers, whereas a Patch Management solution may cost no more than \$50,000. In other words, Patch Management is better at what it does, and does it much cheaper.”

—“Patch Management is a Fast Growing Market”
Gartner
2003

“Five of our machines had problems resulting from the worm and only because those machines are not under the good graces of the Altiris engine distribution, asset/inventory management, remote control and PC backup.”

—Paul Johnson
Chief Network Engineer
Barton Malow Company

Most unplanned downtime can be avoided with proper planning and precautions. To avoid downtime incidents, organizations should optimize processes to better manage changes in security and software and hardware configuration.

While software standardization and hardware refreshes are key to reducing breaks or fixing help desk incidents, sometimes issues arise that IT organizations cannot prevent. By having a comprehensive strategy for virus attacks, data loss, and property loss recovery, organizations can minimize the amount of downtime and lost productivity.

Patch Management

Managing system integrity against vulnerability threats is increasingly vital to reliability and is a critical success factor for many organizations. On occasion, Microsoft warns of a serious vulnerability in versions of Windows that could compromise computers and strives to release patches that customers will apply immediately.

The duration from when a new vulnerability occurs, to when it's exploited by intruders is increasingly short. The vulnerability needs to be identified quickly to minimize damage. Prescribed change management controls often conflict with the rush to apply patches, configuration adjustments, and updates. A deliberate discipline and systematic architecture is needed to effectively monitor, identify, and rectify vulnerabilities.

Some vendors offer products that merely distribute patches; however, without a comprehensive patch management solution it may be unclear which nodes on a network are actually vulnerable.

Leveraging Altiris client management solutions makes identification and remediation much more effective. Altiris Patch Management Solution™ extends Altiris' policy-based configuration management solutions to enable automated patch management for Windows operating systems and applications.

Consider the experience of an Altiris customer. The Barton Malow Company is a leading design and construction firm with 1,500 people and annual global revenues of more than \$1 billion. To ward off the LovSan/Blaster attack, Barton Malow used Altiris patch management solutions to protect more than 99 percent of their 1,300 computers spread across a wide area network of 55 locations and successfully manage the integrity of their IT investments and business environment.

“Altiris Patch Management Solution seamlessly integrates with the inventory and software distribution capabilities of Client Management Suite and now provides us with centralized identification of common security vulnerabilities. Altiris software allows us to reduce patch deployment time per machine by more than 90 percent.”

—Jim Harings

Global Admin. Analyst
Rockwell Automation

Unfortunately, sometimes a patch can do more harm than good. Altiris Patch Management Solution provides an easy way to undo the damage of a destructive patch by integrating with Altiris Recovery Solution™ to help minimize the need for extended patch test cycles. If you do need to remove a patch, Recovery Solution allows you to roll back system configurations to a known stable state.

Vulnerability Reporting

Altiris problem analysis and remediation capabilities help identify vulnerabilities, make corrections using patches, and generate reports to handle virus concerns. As *Network Computing* stated when selecting Altiris Client Management Suite as the 2003 Editor’s Choice, “Altiris does go the extra mile with its vulnerability reports. These reports blow the whistle on SQL and IIS vulnerabilities,” including:

- Exposed passwords
- Blank SQL passwords
- IIS lockdown tool not run
- Blank system passwords
- Bad file permissions
- Improper Internet Explorer settings
- Non-expiring passwords

Rollback and Recovery

Altiris offers several levels of rollback, repair, and recovery capabilities within its Altiris Client Management Suite product to reduce help desk calls and minimize impacts to end-user productivity. The level 1 offering is focused on application self-healing and rollback capability. Altiris’ application repair technologies complement the benefits of MSI technology. Administrators can proactively scan applications for unauthorized updates or corrupted files and repair them before the end user is impacted negatively. This scan can be performed on “key” files alone (similar to a standard Windows Installer MSI repair). Administrators can also perform a scan on ALL files in the installation, for more thorough analysis and repair capabilities.

This automated rollback and repair capability reduces common help desk calls related to application failure. Consider instances such as:

- Dropped or otherwise damaged notebooks
- Lost or stolen computers

- Hard disk failures
- Electronic or electrostatic surges

At the OS and data level, Altiris offers full backup and restore capabilities ranging from the restoration of a single file to the bare metal recovery of a system with a failed hard drive. Altiris' Altiris Recovery Solution automatically takes snapshots (data backups) of computers and stores records either locally in a hidden service partition or on a designated backup server. With patented technology such as Redundant File Elimination (RFE) and Redundant Block Elimination (RBE), data transfers are kept to a minimum by filtering out common files across the entire organization that already exist in the corporate database as well as blocks (or portions) of larger files transferred previously.

With Altiris Client Management Suite you can:

- Identify systems non-compliant to corporate standards
 - Pro-actively prevent problems from occurring due to known issues with applications/files
 - Identify non-standard application installations (fingerprinting)
- Enact proactive application self-healing
 - Repair MSI applications/updates on-the-fly
 - More robust than standard Windows Installer repairs
 - Applications and OS updates only (MSI)
- Rollback and recover
- Prepare systems for patch rollout
- Restore from bare metal

SPEEDING PROBLEM RESOLUTION

Altiris Client Management Suite reduces help desk inquiries and problem resolution incidents as a result of fewer system touches. Access to real-time information, alert and one-to-one management tools, as well as self-help remediation provide your organization with the control and problem resolution capabilities you need.

Get Accurate, Real-time Information

In most help desk environments, technicians must resolve problems based on data that can be several hours or even days old. However, many problems that require a call to the help desk are the result of a condition that has only recently materialized. Altiris Web Administrator™ for Windows allows your help desk workers to view the health and status of a remote computer in real time, giving them a powerful edge in today's ever-changing IT environment.

Alert Management

Every Altiris suite provides basic workflow and reporting capabilities that allow organizations to track issues associated with systems management tasks. The Web console displays alerts and escalated issues. The console can be set to proactively alert administrators of urgent issues by leveraging event handlers such as SNMP trap, e-mail, and command-line launch. Altiris Helpdesk Solution™ can be added to track and prioritize work items, correlate incident data with inventory, application usage, and other data.

One-to-One Management

Altiris Client Management Suite includes one-to-one management tools to help speed help desk diagnosis and remediation of end-user issues. The Altiris Resource Manager™ Web interface provides comprehensive analyses of system configuration and enables help desk staff to perform common management tasks without escalating to more advanced IT staff.

Bandwidth-sensitive remote control capabilities for remotely troubleshooting client systems, providing integrated security and optimized performance settings designed to support a wide range of connections, from LAN and WAN to dial-up. Altiris remote control technology includes voice and text chat, file transfer and synchronization, as well as synchronous and asynchronous display modes. Synchronous mode links to the client computer's video driver and matching of displays can occur while reducing choppiness.

Our remote administration interface for Windows provides real-time status and configuration data, and enables administrators to perform diagnostic and management tasks from any computer with a Web

browser. Travel and dispatching costs are reduced as well as incident time-to-resolution. User needs are better addressed and more effective support is provided. These are just some of the ways Altiris Web Administrator™ for Windows can help you save time and money:

- Use Windows security already in place
- Reduce help desk call duration and speeds problem resolution
- Straightforward, common user interface with other Altiris solutions

Self-Help Remediation

The Altiris Software Portal enables end users to install administrator-approved packages quickly and easily without calling the corporate help desk. Designed to facilitate self-service software distribution, the secure Web interface sorts packages by manufacturer for easy navigation by end users. Response is instant and requires no intervention from IT staff.

Administrators can also provide the option to request packages that require approval by an administrator due to licensing issues or other concerns. When a user selects “Approval Required” packages, an incident is automatically created in the Altiris Alert Manager or Helpdesk system with the user, computer, and software details. Once approved by an administrator, an application is then available for end-user download or delivery.

Customers who have chosen to implement Altiris Helpdesk technology can also provide end users with access to an additional secure Web console to submit and track work items for the corporate or IT help desk. Follow-up calls are minimized to help desk staff regarding problem resolution because the end user can quickly check the status of a request or issue from a convenient Web browser. Resolutions to common issues can also be published on the Altiris Knowledge Base to minimize help desk calls, reduce costs, and speed problem resolution.

MOBILE AND ROAMING WORKERS

“Mobile computing continues to be a business differentiator for enterprises; generally speaking, enterprises with less than 35 percent of the workforce using notebooks may not be receiving full capacity from their workers.”

—“**Notebook Deployments in the Enterprise**”
Gartner
October 2002

For the many organizations facing the challenges of a mobilized and synchronized workforce, discussions about client management usually incorporate mobile considerations. However, special factors apply. Managing costs to procure, install, manage, contract, support, secure, report and retire mobile computers requires significant lifecycle attention to attain efficiency, avoid rogue configuration, and protect intellectual property.

In a January 2003 study entitled “Untethered Computing: Feasible, Economic, and Desirable,”

IDC and Intel identified significant advantages of mobilized workers. IDC estimates the productivity gain for a mobile professional to be about \$500 per month per person. The study determined that mobile support challenges will lead to a higher TCO, ranging from 34 percent to 68 percent more than stationary conventional computers:

- Notebooks are sufficiently different from desktop computers and require targeted strategies that minimize total cost of ownership, improve vendor selection, and optimize deployment to mobile workers.
- Enterprises have learned, often the hard way, that notebooks are not just computers with handles. Notebooks can be used outside regular office hours and can travel to other geographical areas.
- The annual failure rate of notebooks is at least three times as high as that of desktop computers. Ruggedized or not, handhelds and tablets are deployed in a variety of situations, including construction, real estate, retailing, sales, and so forth.
- Notebook TCO is significantly higher than desktop TCO because of a higher purchase price, a shorter useful life, a higher failure rate, a higher system image development cost, and more costly remote support.

As more workers achieve the business benefits of mobility, mobile IT assets will grow in quantity and type. Therefore, requirements for deployment, migration, upgrades, and backup will continue to grow. Altiris bandwidth-sensitive technologies empower administrators to reach even the fringes of the network and manage a range of platforms and device types via a single management console and a range of preformatted interface and report choices.

Cache and Forward Design

For remote/mobile systems, inventory and usage information is collected locally on the device during off-peak hours. Any detected changes are automatically sent to the server when connectivity is established, which lowers costs and minimizes impacts to end users. Altiris also provides

exceptional data compression of as much as 90 percent between the Altiris agent and the management server. This compression greatly reduces over-the-wire network traffic, especially in the instance of mobile users using slower dial-up connections. For systems with no network connections at all, customers can take advantage of Altiris zero-footprint inventory, which can be run from and stored to a floppy disk.

Bandwidth-Sensitive Distribution

Distribution of software to remote and dial up workers can present unique challenges to IT administrators. By including bandwidth-friendly technologies such as throttling and checkpoint recovery within Altiris Client Management Suite, Altiris allows customers to "drizzle" packages to remote and mobile users regardless of connectivity. Altiris managed clients connect to a remote distribution point, or package server, and determine the available bandwidth. The client device then estimates the time and bandwidth usage based on the transfer rate of the package download. If a connection speed is lower than the threshold set by an administrator (the speed that triggers throttling), the client will switch to one of several alternate administrator defined bandwidth utilization values to minimize impacts to application using remote workers.

Additionally, when an Altiris Agent downloads files or packages from a package server, the extent of information transferred is monitored. If the link with the server is disrupted in the midst of transfer, checkpoint recovery allows the client to pick up and continue the package transfer where it was interrupted, even if the download is resumed from another part of the network. This eliminates the need to begin the transfer again, saving time and bandwidth.

Mobile Recovery

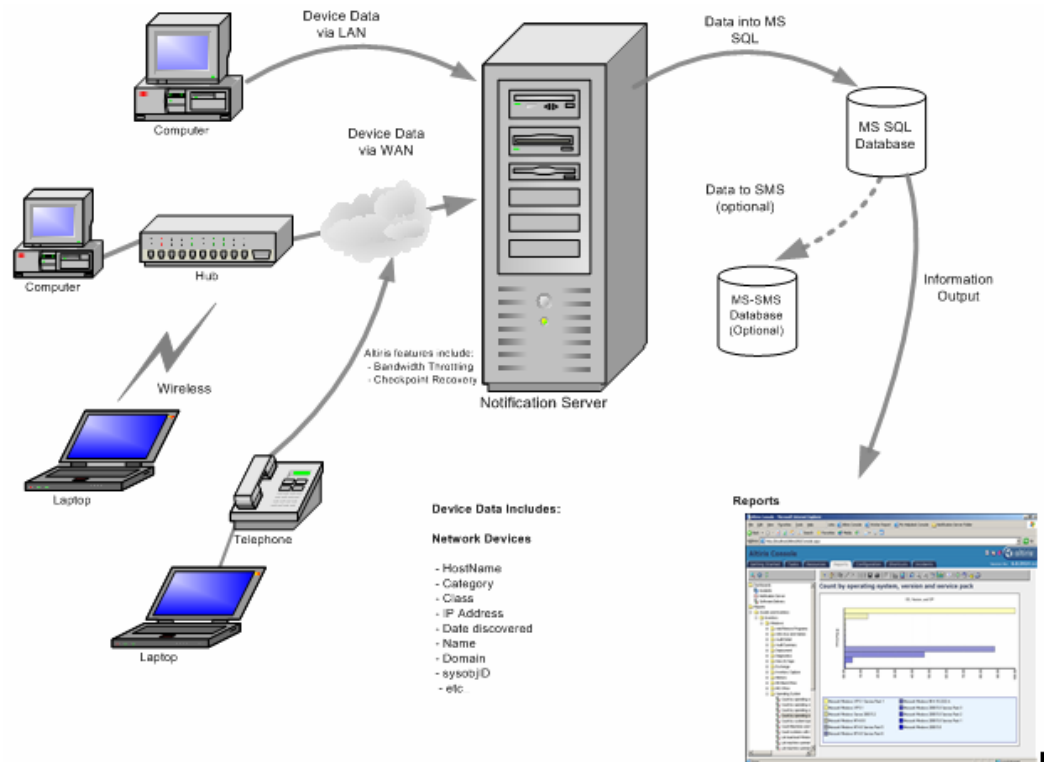
Altiris Recovery Solution provides options for both centralized, bandwidth-sensitive backup and recovery as well as local backup and recovery for those offline or intermittently-connected workers. This enables offline workers to continue to take advantage of Altiris' robust recovery and rollback technologies and minimizes the need to contact the corporate helpdesk or perform redundant effort to regain prior work.

WEB REPORTING

Altiris offers hundreds of pre-formatted Web Reports™ for comprehensive analysis and decision making. Web Reports analyze important business conditions and trends to better manage the lifecycle of the IT investment portfolio.

Figure 3

Hundreds of Altiris Web Reports are available in Client Management Suite. Some examples are listed in this white paper's appendix.



Altiris Client Management Suite's pre-built Web Reports are very powerful "out of the box," but they can also be customized to fit a customer's needs. Web Reports support multiple views for each report, including a table view, graph views, and Office 2000 pivot tables. Managers can customize the format and contents to meet specific needs. In addition, Web Reports can be multi-tiered, enabling administrators to begin with summary-level information and subsequently drill down into more specific details as needed. Altiris also supports run-time replaceable parameters that allow managers to filter reports based on their specific requirements. Policies can be created to automate report runs and e-mail the resulting Web Report to a manager or administrator.

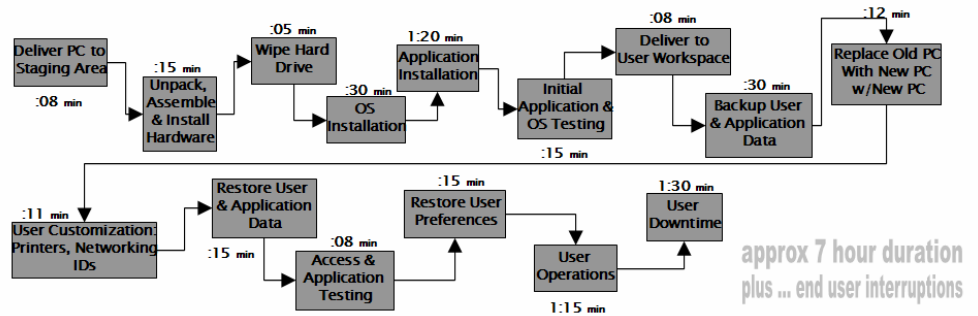
**CUSTOMER SCENARIO—
COST-SAVINGS METRICS**

“By taking advantage of these new deployment and migration tools and technologies, a typical enterprise can reduce its new PC setup and installation costs by as much as 55 percent per year.”

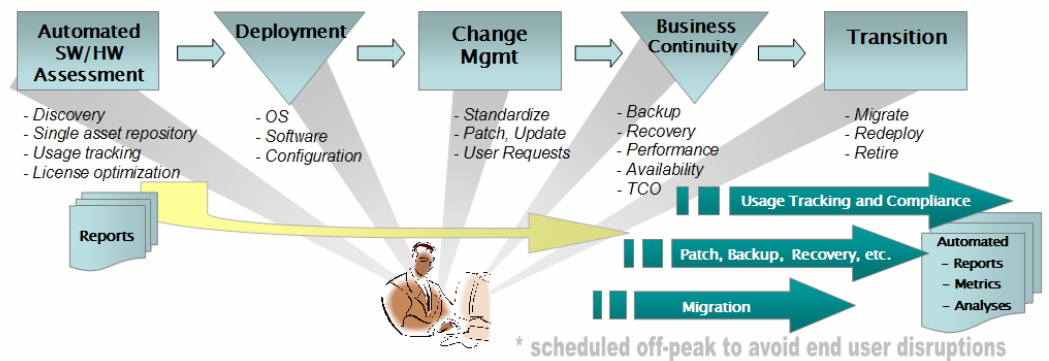
—“PC Installation and Setup: How to Save a Bundle”
Kevin Knox
Gartner

What does Active Client Management success look like? With software distributed electronically, desk-side visits and user interruptions fall dramatically. Productivity and effectiveness improve substantially. Time and labor expended per computer is reduced from hours down to minutes with respect to IT staff and managerial time.

Example without Altiris – Manual task flow is tedious and time-consuming for each PC:



Automated Lifecycle Management improvements include speed, scalability, scheduling and hands-free task automation:



Automating standard configurations, support, and healing greatly improves reliability, accuracy, and security. Consider backoffice or desk-side tasks such as software distribution or PC deployment. Assume 2,685 nodes for the scenario on the next page.

Scenario

- 2,500 Windows desktops, 150 notebooks, 35 handhelds
- Annual desktop growth rate: 10%
- Annual mobile growth rate: 25%
- Annual replacement rate: 15% per year
- Annual repurposing rate: 10%
- Annual sys. admin. labor rate: \$65K
- Annual end-user labor rate: \$55K

M A N U A L	Backoffice - Deployment of New/Updated PCs Without				
	System Installation Testing & Process Documentation	Times Performed (per Year x	Duration Minutes Effort	Salary x 1.3 Burden (hourly)	Total Cost
		12	30	\$42	\$252
	Deliver PC to Staging Area	968	10	\$42	\$6,776
	Unpack, Assemble, Install	968	30	\$42	\$20,328
	Wipe Hard Drive	968	5	\$42	\$3,388
	OS Installation	968	15	\$42	\$10,164
	Application Installation	968	30	\$42	\$20,328
	Initial OS/Application Testing	968	0	\$42	\$0
	Deliver PC to End User	968	20	\$42	\$13,552
Total		140 each		\$74,788	

Onsite - Deployment of New/Updated PCs Without Altiris				
Backup User Data and Application Data	Times Performed (per Year x	Duration Minutes Effort per Node	Salary x 1.3 Burden (hourly)	Total Cost
	968	5	\$42	\$3,388
Replace Old PC with New PC	968	30	\$42	\$20,328
User Customization: Printers, Networking, IDs, etc.	968	15	\$42	\$10,164
Restore User Data and Application Data	968	15	\$42	\$10,164
Basic Access and Application	968	15	\$42	\$10,164
Total		80 each		\$54,208

The ability to standardize and gain control of the myriad systems improves control, execution and integrity. Organizations can extricate themselves from the chaotic flurry of responses to establish a proactive and integrated discipline.

A U T O M A T E D	Deployment of New/Updated PCs With Altiris	Occurrences	Minutes per Task	Batch Duration (hours)	Salary x 1.3 Burden (hourly)	Total Cost
	1. Create System Image for New	Once	2,400	40.0	\$42	\$1,680
	2. System Image Testing	Once	2,400	40.0	\$42	\$1,680
	3. Extract User Data and Personality Settings Using PC Transplant Technology per node	968	1	16.1	\$42	\$676
	4. Remote Image Installation per	968	1	16.1	\$42	\$676
	5. Apply User Data and Personality Settings	968	1	16.1	\$42	\$676
	6. Deploy/Monitor/Report on Automated Deployment	Semi-annually	240	8.0	\$42	\$336
	Total					\$5,724
	Savings - Deployment of New/Updated PCs With Altiris		Cost before Altiris	Cost with Altiris*	Savings	
	Year 1 @ 10% growth		\$74,788 + \$54,208 =	\$5,724	\$123,272	
Year 2 @ 10% growth		\$82,266 + \$59,628 =	\$5,927	\$135,967		
Year 3 @ 10% growth		\$90,492 + \$65,590 =	\$6,150	\$149,932		
Total for 3 Years		\$426,972	\$17,801*	\$409,171		

Note that operating costs are scalable for nodes in steps 3–5 in the above simplified example. Hence, $968 = [(2500 \times .15) + (2500 \times .10) + (2500 \times .10)] + [(185 \times .15) + (185 \times .10) + (185 \times .25)]$. This simplified example reveals a savings of $(\$74,788 + 54,208) - \$5,724$ for Year 1 equal to \$123,272. For Years 1–3, the total savings is projected at \$409,171 in the above scenario for 2,685 nodes.

The above scenario assumes a frequency of only two deployments per year. In reality, magnitudes of savings are greater with larger computer fleets, more frequent occurrences, or higher growth rates. Including tasks previously requiring manual desk-side remediation such as patch or recovery will further demonstrate the payoff that a proactive automated Altiris solution yields.

Using an automated Altiris solution will provide an organization with labor cost reductions, productivity gains, and effectiveness improvements.

In a non-automated situation, a system administrator is faced with tedious and laborious tasks that occur throughout the year and affect systems management duties. However, data is often outdated. Deploying new applications, upgrades or patches are often postponed or error-prone. Many desk-side visits are performed by IT staff causing end-user interruption on a per-computer basis.

By using automated Altiris capabilities, tasks are performed electronically, as opposed to slowly and sequentially. Scheduled triggers can be set electronically to perform tasks during off-peak evenings.

“All three Altiris suites share a common .Net infrastructure and inventory repository that lets them work together seamlessly. Furthermore, a highly usable central console taps asset information and allows IT staff to remotely manage desktops, mobile devices and servers. . . This integration and reasonable per-client cost add up to a solid product with few peers.”

—Infoworld

Mike Heck

March 10, 2004

Typically, such tasks must be performed several times per year. The workload is substantially simplified, scalable, and schedulable with Altiris Client Management Suite. In many instances, computers can perform work unattended after setup and execution. Data collected and reports generated are timely, accurate, and cost efficient. Managing a fleet of desktop computers, servers, thin clients, and mobile devices requires not only the correct discipline and processes, but also the proper tools.

Functionality such as browser-based consoles, language localization, secure communications, small memory footprint, bandwidth management, and native Active Directory integration enable users of Altiris solutions to efficiently manage IT lifecycles in a highly scalable manner. Using best practices that are secure and backed up reduces the ultimate costs of client and mobile management. Efficiency, effectiveness, and coordination are also greatly improved.

CONCLUSION

In 2003, Altiris Client Management Suite won the *Network Computing* “Best Desktop Management Product” award in two independent studies that compared Altiris Client Management Suite with competing desktop management products. After stringent testing, Altiris Client Management Suite received the top grade, earning overall Editor’s Choice and was honored as the “most powerful and complete product” tested. This was due to Altiris’ complete IT lifecycle management offering, which offers more powerful features and significant cost savings over traditional systems management activities. Organizations that need to:

- Reduce costs by minimizing desk-side visits associated with deployment of software, troubleshooting, and disaster recovery
- Reduce costs and increase productivity by improving efficiency of IT projects
- Minimize downtime and reduce help desk calls by standardizing your hardware and software environment
- Minimize exposure to security and virus attacks through automated patch management
- Reduce help desk costs by speeding resolution through comprehensive troubleshooting, incident tracking/routing, and remediation tools
- Minimize downtime and increase productivity by improving response capabilities for “disaster” scenarios
- Implement secure, scalable, easy-to-use and internationally capable comprehensive IT management solutions

need Altiris solutions for the best framework and functionality. You are invited to contact your Altiris representative or partner for additional information. For more information, visit www.altiris.com.

GLOSSARY

Active—Real time, bi-directional, network aware, deployable per policies, notifications, collections

Adaptive display—Physical or digital property exhibiting value and a productive economic life

Advertisement—Carries delivery and deployment information about a software package

Asset—Physical or digital property exhibiting value and a productive economic life

BSA—Business Software Alliance (visit www.bsa.org for more information)

CERT—Center of computer expertise affiliated with Carnegie Mellon (visit www.cert.org for more information)

Client—End-user personal computer or computing device

CMDB—Configuration management database is a repository of detailed asset data

Collection—Groupings of computers with a defined common attribute(s). For example, computers “having less than 128K RAM.”

Encrypted transport—HTTPS support between server, console, and agent

Inventory—To detect and record software or hardware characteristics and configurations

ITIL—Information Technology Infrastructure Library

MSI—Microsoft installer

Over the wire compression—Over the wire data compression technology reduces network activity

Policy—Policies allow actions or triggers to occur when a set of conditions are met.

PXE—Pre-boot execution environment

ROI—Return on investment

Software portal—Allows end-user self-service application provisioning

SMART jobs—Sequential Management Architecture

TCO—Total cost of ownership

Wake on LAN—Remote ability to power on and boot up a client computer connected to network

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2. "Notebook Hardware: Client Issues for 2004," Gartner, L. Fiering, September 2003.
3. "Notebook Deployments in the Enterprise," Gartner, Patricia Adams, October 2002.
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APPENDIX

Altiris Client Management Report Examples

The following is a partial list to highlight a few samples of the hundreds of pre-formatted reports available for actively managing client and mobile computers with Altiris Client Management Suite.

Anti-Virus and Unauthorized Software Identified

- Anti-virus installation directories
- Count of audit policy settings
- Count of users with admin rights
- Games by domain (pivot)
- List machines with no auditing
- List of anti-virus software
- List virus signature file date
- Unprotected machines

Audit Detail

- List products and versions
- List products by machine

Audit Summary

- Audit software by domain (pivot)
- Count of products
- Count of products and versions
- Count of products by manufacturer
- Disk usage by file extension
- List products on N% of machines
- Top N machines by product count

Deployment

- Application upgrade cost analysis
- Calculate total inventory size and average size and software audit scan time
- Count audit software agent by version
- Count machines running audit software agent
- Distinct list of directories with missing manufacturer data
- Distinct list of files with missing manufacturer data

Generate audit config for software with missing manufacturer data

List inventory agents status and version

List machines not reporting audit software data in last N days

List machines not reporting inventory in last N days

List new machines discovered in last N days

Disk Usage

Machines where 'N' percentage of hard disk taken up by data files

Machines with greater than 'N' MB of .mp3, .mov, .avi, .mpg files

Machines with greater than 'N' MB's in temp files

Machines with Outlook files greater than 'N' MB

Top N machines disk usage by file extension

Exchange Users

Count of Exchange users by job description

Count of Exchange users by location

Count of Exchange users by organization

List computer OS, disk, and contact information

