White paper

Improving IT service levels for remote offices

How to automate remote systems management with ManageSoft® for cost-effective management of software and hardware in geographically dispersed offices.

www.managesoft.com
Table of contents

The IT challenges of increasing business reach ................................................................. 3

An effective model for remote systems management ...................................................... 5

An ideal architecture for managing remote systems: self-managing devices .............. 7
   Bandwidth-friendly deployment to remote sites ...................................................... 7
   Client-side intelligence for increased reliability at remote sites .......................... 10

The benefits of self-managing devices for remote systems management .............. 12
   A unique end-to-end remote systems management solution .............................. 14
   Find out more ....................................................................................................... 14
The IT challenges of increasing business reach

As trade barriers fall and new product and geographical markets open, business today has become a 24/7 proposition. More than ever before, the enterprise lives and thrives around the world, in multiple locations, time zones, countries, and continents. But those remote offices in geographically dispersed territories don’t typically have all the comforts of headquarters — particularly when it comes to full-service, on-site IT support.

These "outside-the-firewall" locations — perhaps sales offices, retail outlets, warehouses, or other locations — are critical contributors to the success of your business. The common thread they share: just like their central-office counterparts, these remote users have an unwavering requirement for reliable software that improves their productivity. Unfortunately, the challenge of ensuring application reliability for these sites is exacerbated by their distance from direct IT assistance, their intermittent and unpredictable connections, and the bandwidth limitations of modems and wide area networks.

Over the years, many enterprises have purchased all types of commercial software for their computers in a largely chaotic, ad hoc manner. What’s more, many enterprise face frequent updates of sales software, planning models, point-of-sale systems, price lists, and other business data that is critical to the operation of remote sites. Some of the software at remote sites is often either intentionally or unintentionally unlicensed. Users run different versions of the same applications — sometimes with conflicting data formats. Anti-virus definition files lie dormant and out of date; vendor updates and security patches are absent, creating significant security risks. Outdated drivers and DLLs create unnecessary support problems. And the myriad combinations of programs, drivers, and files have created a thicket of incompatibility and reliability issues that dramatically hinder productivity.

When a software application on a remote desktop, laptop, or server fails, it is time-consuming and expensive to send a technician to troubleshoot it, and shipping the computer back to the company’s central IT department for even a simple a repair can waste days. That’s particularly costly, since remote sites can be critical contributors to business success.

With potentially tens of thousands of computers of all kinds and configurations in hundreds or thousands of locations, supporting these remote locations is a daunting proposition for even the most sophisticated IT department. Consider just some of the challenges IT faces:

- **Bandwidth constraints** — For geographically dispersed organizations, intermittent and unpredictable connections — usually slow and expensive — make remote systems management all the more difficult. For example, financial services organizations must ensure that their branches’ production transactions are not impacted in any way during business hours. These non-negotiable constraints on bandwidth consumption mandate that updates and patches are transmitted in zero-impact fashion during peak hours while consuming unused bandwidth during off-peak hours.

- **Escalating expenses** — The hard-dollar costs of addressing remote-office computing support are significant. Hiring and deploying a full-time on-site technician is often unrealistic for all but the largest remote sites. But if problems arise, it’s expensive — and time-consuming — to send a technician to troubleshoot or repair the problem. Sending a computer back to central IT for repairing or updating is somewhat less expensive — but results in a significant loss of productivity for that PC’s owner. Manual CD distributions and updates can drive up administrative costs — and carry no assurances that they’re installed correctly.

- **Business continuity risks** — You need to ensure that remote sites have the tools and software they need to work as productively as possible. That requires prompt, efficient, reliable, and well-structured software deployments.
Without up-to-the-minute information on remote software and hardware configurations, many central IT organizations struggle to diagnose problems on remote computers.

- **Asset tracking** — Away from the scrutiny of central IT, remote assets such as desktop computers, servers, and mobile computers in remote offices are difficult to locate and track. This can create unnecessary costs and headaches during computer-lease renewals, software license-compliance audits, and asset inventory counts. Without an accurate IT inventory, efficient central IT planning is virtually impossible.

- **Security risks** — Remote office computers are notorious for lagging behind the latest security patches, virus-definition updates, and other updates. That creates unnecessary exposure to security breaches, virus attacks, and other vulnerabilities.

- **Remote help desk support** — Without up-to-the-minute information on remote software and hardware configurations, many central IT organizations struggle to diagnose problems on remote computers, and have even more difficulty delivering rapid problem resolution.

- **Hardware costs** — Many IT departments seek to manage remote systems by deploying dedicated servers at each site. For a company with 50 offices and an average cost of US$15,000 per server, that quickly becomes a US$750,000 line item.

- **Software costs** — Failing to properly reclaim unused licenses (an especially challenging problem with remote sites) can unnecessarily drive up procurement costs as you buy unneeded additional licenses for popular programs for remote users.

For IT administrators, it ultimately boils down to the impossible challenge of "managing the multis": multiple versions of multiple applications in multiple formats from multiple publishers, on multiple computers in multiple locations. As software titles and platforms proliferate, the difficulty increases exponentially.
An effective model for remote systems management

For enterprises with increasing numbers of computers residing in field offices, retail outlets, customer sites, and other facilities, ManageSoft brings a refined vision and comprehensive end-to-end solution for managing remote systems. With its unique smart-agent architecture, ManageSoft provides a single point of control for bandwidth-friendly, automated software deployment, IT asset tracking, license management, software usage metering, and Web-based reporting for remote Windows, Linux, and UNIX systems anywhere in the world.

By transforming remote desktops, laptops, and servers into self-managing devices, ManageSoft enables you to manage remote devices as easily and cost-effectively as desktops connected to your LAN.

With ManageSoft, you simply specify which users/computers should have what software, and when that policy should be applied (now or in the future). Smart agents on your remote computers worldwide automatically download and install any differences they need to achieve the desired state, without requiring human intervention. These client-side smart agents then provide ongoing automatic self-healing to ensure managed software installations are always kept up-to-date and never become corrupted. This set-and-forget policy-based approach provides far greater reliability for remote systems management than labor-intensive task-based systems.

The ManageSoft policy-based, client-centric architecture gives help desks and central IT managers up-to-the-minute access to Web-based status reporting, inventory tracking, software metering and usage tracking, and license management for computers worldwide. In addition, to ensure rapid help-desk problem diagnosis and resolution for remote computers, ManageSoft also provides powerful, integrated remote diagnostics and remote-control capabilities that enable your trained technicians to quickly identify and resolve problems — right from their central office.

Figure 1: Manage thousands of remote sites from a central location with ManageSoft
One of the largest commercial carpet manufacturers in the world uses ManageSoft for central-point management of software at remote offices in over 100 countries.

Figure 2: Set-and-forget policy-based management

- **Describe your organization**: Group users and computers logically within Active Directory.
  - Use a single directory service to manage Windows, Linux, and UNIX devices. Describe business units, job-roles and other groups using native Active Directory sites, domains, and organization units (SDOU), security groups, and Group Policy extensions.

- **Allocate software**: Define deployment policies for each group within Active Directory.
  - **Example: ‘mandatory software’**
    - **Who**: All sales laptops
    - **What**: Install/manage ‘catalog and price list’
    - **When**: Update/repair hourly when connected
    - **Implement**: Immediately
  - **Example: ‘optional software’**
    - **Who**: Marketing employees
    - **What**: Install/manage ‘graphics application X’
    - **When**: Update/repair 10pm daily (if user has selected this optional software)
    - **Implement**: From May 10 onwards

- **Deploy**: Apply policies automatically.
  - Apply to users and computers throughout the organization, even if Active Directory is not installed on end-user computers.

- **Manage**: Manage with web-based reporting.
  - Use up-to-the-minute graphical reporting, built on Active Directory, to monitor deployment progress, manage software licenses, and track hardware and software assets.

For more information about how policy-based management with ManageSoft transforms desktops, laptops, and servers into self-managing devices, see the ManageSoft white paper: "Automating software and hardware management."
An ideal architecture for managing remote systems: self-managing devices

The patented ManageSoft smart-agent architecture effectively removes any significant differences between managing ‘internal’ and ‘external’ users on either side of the corporate firewall — without adding additional infrastructure, and without adding additional administration overhead.

ManageSoft transforms remote desktops, servers, and mobile computers into self-managing devices that automatically adapt and self-heal to comply with centrally defined policies. With ManageSoft, all processing and analyses take place locally on managed devices — not on central servers. This sensibly distributes the processing load across existing IT infrastructure, reduces bandwidth consumption, and dramatically increases reliability and scalability.

Figure 3: Client-centric architecture transforms remote computers into self-managing devices

Bandwidth-friendly deployment to remote sites

To conserve bandwidth, ManageSoft automatically distributes software packages to distribution locations at remote sites, enabling self-managing desktops, laptops, and servers at remote sites to download software updates from a local distribution location rather than over the WAN. Automated distribution of software packages with ManageSoft is a distinct time-saver for geographically dispersed organizations that in the past have relied on CD couriers — or worse, computer exchanges — to distribute extremely large files to remote sites. The unique ManageSoft client-centric architecture makes automated distribution of large software packages fast and reliable, with a range of industry-leading deployment features enabling reliable, bandwidth-friendly distribution of packages to remote sites, even over highly unreliable networks. The key principles of the ManageSoft distribution architecture include:

- Secure distribution across any network — Geographically dispersed sites typically employ a range of network connections. ManageSoft provides secure deployment across any network, including LAN, WAN, VPN, dial-in, wireless, satellite, and Internet connections. Regardless of the firewall structure, ManageSoft uses standard facilities and infrastructure (e.g. servers, fileshares, network connections) that most corporations already have in place, without incremental cost or complexity, and without compromising existing
Two of the world’s leading banks use ManageSoft to securely deploy, update, and manage software on desktops and servers in thousands of remote bank branches and data centers

IT security. ManageSoft uses standard Web protocols for remote distribution, including TCP/IP, (with supported access protocols including SMB/CIFS for LAN file access), FTP, HTTP, and HTTPS. Access through firewalls is supported using standard SOCKS or HTTP proxies.

- **Use of existing infrastructure** — The ManageSoft smart-agent architecture uses existing, already-deployed servers, file shares, and Web servers for software distribution, providing the lowest implementation costs and ongoing ROI. There is no need for the significant expense of dedicated hardware, networks, file shares, or other components. ManageSoft uses the infrastructure you’ve already deployed. Larger organizations often deploy ManageSoft to manage thousands of remote sites without requiring any new hardware at those remote locations. Smaller sites can often use an end user’s desktop PC as a distribution location for other computers at that site.

- **Multi-tier fan-out distribution to remote sites** — ManageSoft fully supports cascaded “fan-out” distribution of software updates. Ideally, a distribution hierarchy makes optimal use of available network bandwidth. For example, a U.S. company with operations throughout Europe and Asia-Pacific might transmit a package once over a Boston-Sydney link and then distribute that package “cascade-style” to sites throughout Asia. That requires only one trans-Pacific transmission. Similarly, in Europe, a single distribution from Boston to Paris would set the stage for a fan-out to other European sites. This approach offers a scalable solution to conserve available bandwidth.

**Figure 4: n-tier, n-breadth, fan-out distribution to remote sites**

Distribution servers

- Use any existing desktop, PC, web server, file server, FTP server, file share, print server, network storage device for scalable n-tier, n-breadth distribution

Networks supported

- Extranet, Internet, LAN, WAN, VPN, Dial-in, Satellite links

Protocols supported

- HTTPS, HTTP, SMB/CIFS, FTP
Set-and-forget bandwidth management — Even with minimized data transfers, IT administrators often want to tune bandwidth consumption to restrict download rates and limit the network resources consumed during package distributions to remote sites. The amount of bandwidth consumed during software distribution can be configured for specific distribution servers and/or logical groups of distribution servers to provide maximum flexibility.

Distribution time windows — ManageSoft also enables IT administrators to define discrete time windows during which a specified percentage of bandwidth can be used on each of the links in a distribution hierarchy. For example, an IT administrator may specify that only 50 percent of available bandwidth is to be used for software package distribution to remote sites during the day, but that outside of business hours 100 percent of available bandwidth may be used for package distribution. Just as important, ManageSoft provides an excellent level of granularity: you can configure time windows for an individual connection from one site or for logical groups of sites (by division or time zone, for example).

Byte-level differencing for bandwidth-efficient distribution — For small application changes, it simply does not make sense to redistribute an entire application again if only a few files are affected by the update. ManageSoft provides intelligent byte-level differencing to only distribute new or changed portions of a package to remote distribution servers that already have an earlier version of the package. Using unique mathematical checksums, ManageSoft smart agents on active distribution servers determine the differences down to the byte level. The smart agent calculates the bytes required based on a manifest that describes the file and pulls down only the bytes required from the parent distribution server in a distribution hierarchy. Since only a few files change for most application updates, ManageSoft can reduce bandwidth consumption by up to 90 percent compared to an entire application update. This patented technology is a critical consideration for remote management solutions, which by definition tend to involve geographically dispersed distribution servers.

Distribution job prioritization — ManageSoft lets you prioritize distribution of software updates to remote distribution locations if/when bandwidth or other resources are constrained. High Priority is ideal for time-critical business data, security updates, and virus protection or security updates. Medium Priority is suitable for IT resources that, although important, may not be business-critical. Medium Priority downloads occur whenever there is no higher priority item waiting. Low Priority items are typically basic productivity tools that do not require urgent updates.

Distribution progress reporting — Distribution of packages, policies, and schedules from the central IT department to all remote distribution locations can be tracked through a customizable Web-based executive dashboard, with minute-by-minute graphical summary reporting and easy drill-down to information on specific distribution servers, and individual managed devices.

“We expect ManageSoft will save us more than $1 million in connectivity costs. ManageSoft enables us to avoid downloading redundant software and instead transmit only ‘the deltas’, the pieces that need updating.”

- Kelli Crane, Senior Vice President & Chief Technology Officer, Thomson Prometric

www.prometric.com
Client-side intelligence for increased reliability at remote sites

Once packages and policies have been distributed to distribution locations at remote sites (which may just be a passive fileshare on a desktop computer), they are available for download by managed desktops, servers, and mobile devices at each remote site. By transforming desktops, laptops, and servers into self-managing devices, ManageSoft provides unique advantages for this aspect of remote systems management:

- **Client-side intelligence: checking for relevant updates** — ManageSoft smart agents on each remote computer automatically compare the current state of the device with the desired state described in relevant centrally-defined policies. This unique client-side intelligence is a key aspect of the ManageSoft architecture and provides unique advantages over alternative server-centric products. ManageSoft smart agents on remote Windows, Linux, and UNIX computers automatically download relevant policies describing the desired state for the user and computer. If you’ve deployed Active Directory throughout the enterprise, remote Windows desktops, servers, and mobile devices access relevant policies through Active Directory. Alternatively, remote devices can simply download relevant policies from the nearest available distribution location in lightweight XML files. Either way, ManageSoft performs this policy checking silently with no impact on the remote system.

- **Automatic detection of nearest server** — Managed devices at remote sites automatically download updates from the closest location, rather than over the WAN. Any existing file server, desktop PC, file share, printer server or network share can be used as a distribution server.

- **Client-side intelligence for dynamic byte-level differential downloads** — Patented ManageSoft smart agent technology enables faster updates and minimizes network bandwidth consumption at remote sites because there is no need to transfer entire applications or files just to make minor repairs and updates.
Client-side bandwidth management — Smart agents on each remote computer use dynamic bandwidth throttling to apply centrally-defined bandwidth consumption rules based on detected network speed at the remote site. While this is less relevant for most desktop computers at remote sites, it is extremely valuable if a remote computer ever needs to failover to an alternative distribution location at a different site, potentially over the Internet.

Client-side byte-level auto-resume after interruption — The unique ManageSoft client-centric architecture provides maximum reliability for remote systems. If a network connection is interrupted for any reason during a software update, the ManageSoft agent on the remote system automatically resumes the download process at the next opportunity and continues the download from the point of interruption.

Client-side server auto-failover after interruption — If a distribution location at a remote site is inaccessible or ‘times out’ during a software update, smart agents on the remote device automatically and transparently failover to the next available distribution location and resume the download from the point of interruption. Failover can be to an alternative distribution location at the remote site (desktop PC, server etc), or even to alternative distribution locations at other sites.

Automatic self-healing — Self-managing devices with ManageSoft automatically ensure that software installations remain in the desired state, and automatically repair any unintentional (or intentional) software corruption.

Client-centric asset inventory — To help gain control of often-runaway costs of licensing, leasing, and purchases of hardware and software assets, it’s essential to know what you have. Self-managing devices with ManageSoft automatically upload software and hardware inventory information for central analysis and reporting. Using the same cascaded, multi-tiered distribution model, managed devices can upload client inventories in full, differential, or incremental reports (in compressed, bandwidth-friendly XML files). Up-to-the-minute web-based inventory reporting helps you structure lease arrangements, recapture unused licenses, ensure compliance, and save money.

Remote control and diagnostics — ManageSoft remote control and diagnostics streamline central IT support for remote computers located anywhere in the world. You can see the desktop of a remote computer and control it with your local mouse and keyboard. Click-through initiation of remote control from central diagnostic and inventory reports lets you rapidly identify and resolve problems — without costly site visits.

Security patch management — ManageSoft can also leverage its hierarchical distribution architecture to distribute security patches. The optional add-on of ManageSoft Security Patch Management transforms desktops, laptops, and servers into self-patching devices that automatically ensure security compliance.

For more information on automating security patch management for remote offices, see the ManageSoft white paper: “Automating Security Patch Management”.

“The ManageSoft solution has a self-healing feature that gives us added confidence of our systems running at their best. ManageSoft has also helped us reduce support costs by 50 per cent.”

- Rick Van Haeften, Manager – Systems and Desktop Services, The Australian National University

www.anu.edu
The benefits of self-managing devices for remote systems management

By transforming desktops, laptops, and servers into self-managing devices, ManageSoft brings new levels of speed, efficiency, intelligence, and accuracy to software management through a solution expressly designed to address the IT needs and requirements of remote locations. ManageSoft automates the management of enterprise software on remote devices by managing software delivery, coordinating approved installations, updating and self-healing installed software, collecting information on installed software (including software usage), collecting detailed information on installed hardware, and reporting and analyzing that data centrally for managed devices worldwide. This is proving to be a potent and compelling value proposition to overburdened IT organizations, offering:

- **Reduced end-user downtime** — By properly and centrally managing software on remote devices, enterprises can improve the reliability of their workers worldwide. That means fewer instances of users waiting for the right network connection or printer driver. It also means a lower likelihood of a non-standard environment causing difficult-to-diagnose conflicts.

- **Fewer help-desk calls** — Stable environments translate into fewer and faster calls to your support desk. That means remote users have fewer support requirements.

- **Faster help desk problem resolution** — In addition to lowering call volumes, self-managing devices with ManageSoft also reduces call complexity. Up-to-the-minute reporting on installed software and hardware for the remote device helps technicians rule out false avenues and pinpoint underlying causes faster. Remote diagnostics reports enable help desk professionals to instantly analyse relevant deployment policies and whether a remote device is in the desired state. What’s more, help desk professionals can click-through from those reports to initiate “remote control” sessions to quickly implement any necessary repairs or changes. For remote offices, it’s like having a technician on site.

- **Reduced on-site support visits, fewer couriers** — A structured, automated deployment and upgrade process means your IT professionals need to make fewer on-site visits to uncover, repair, or maintain software configurations for remote systems. You can virtually eliminate the common practice of sending computers back to the central office by courier for urgent updates and repairs.

- **Faster client updates** — Through controlled processes, ManageSoft enables companies to roll out upgrades and patches to all remote systems in a rapid, organized manner, ensuring 100-percent coverage regardless of time, bandwidth, or location.

- **Reduced impact of upgrades** — By knowing what software and hardware is on each device worldwide, IT administrators can ensure that upgrades do not inadvertently and negatively impact performance in the field.

- **Full compliance with virus protection and security patches** — ManageSoft Security Patch Management protects your geographically distributed IT infrastructure by transforming desktops, laptops, and servers into self-patching devices that automatically ensure security compliance.

- **Reduced Maverick Installations** — Impatient remote desktop and laptops users won’t wait for “sneaker-net” upgrades or Fed-Ex packages and will purchase (or, worse, “borrow”) and install their own copies if roll-outs take too long. Those maverick installs create substantial conflicts, licensing headaches, and hidden support costs. ManageSoft eliminates this problem by providing rapid and reliable automated software management for computers located anywhere in the world.

One of Europe’s leading automotive manufacturers uses ManageSoft to reliably deploy frequently changing technical documentation to 1000 remote sites worldwide over unreliable, low-bandwidth connections including the Internet.
> **Greater IT productivity** — By automating software management, the IT team can manage more users and computers with the same resources.

> **Clear visibility into hardware/software inventory** — Through its client-side smart agents, ManageSoft can track and report the status and location of hardware and software assets worldwide. That improves your acquisition management, streamlines hardware leasing, improves help-desk operations, and adds efficiency to license management as well.

> **Create and maintain standard operating environments** — With ManageSoft, IT professionals can identify and define precisely what should be used by different groups of remote users. By adhering to these standard operating environments, companies can streamline support processes and reduce costs.

> **Understand and control licensing** — The ManageSoft client-centric, policy-based architecture that is used for initial deployments also provides ongoing real-time license management, software metering and usage tracking. IT administrators can use ManageSoft to record software license details including license name, description, expiration date, pricing model, publisher, reseller, and associated software releases. Easy allocation, and reallocation, of existing licenses across multiple business units lets you efficiently use existing licenses and enables accurate charge-back of license costs to individual business units. Automatic license breach alerts also enable administrators to avoid potentially costly license breaches.

> **Improving IT decision-making with ManageSoft IT business intelligence** — The optional addition of ManageSoft IT Business Intelligence dramatically extends ManageSoft reporting capabilities and further improves remote-systems management. Online analytical processing (OLAP) enables you to slice and dice data from ManageSoft and other IT systems to gain business insight and improve IT decision-making. While the standard ManageSoft reporting module shows a “just in time” snapshot of deployment projects and of hardware and software assets, ManageSoft IT Business Intelligence presents visualizations of trends and highlights changes over time with powerful data aggregation, automated analysis, and easy flexible queries for ad hoc analysis.

---

*“With ManageSoft web-based reporting, we’re able to access real-time data on the deployment, status, and location of all our software. This enables us to stay on top of things and respond to any issues in a timely manner.”*

- Mark Ridge, Manager – IT Support Services, Edith Cowan University
  www.ecu.edu.au

---

![Figure 6: ManageSoft IT Business Intelligence improves decision-making for remote management](image-url)
A unique end-to-end remote systems management solution

The unique ManageSoft smart agent architecture delivers the breadth of functionality, scalability and reliability of a best-of-breed configuration management tool, while also providing the quick implementation times, low infrastructure costs, and low ongoing administration costs that have traditionally been associated with point solutions for remote systems management (that subsequently fall down in the areas of scalability and breadth of functionality). This integrated approach transforms desktops, laptops, and servers into self-managing devices by combining policy-based management with a unique client-centric architecture. It’s the fastest and most reliable way to automatically deploy, update, and manage software and hardware assets throughout a geographically-dispersed organization.

Figure 7: Integrated ManageSoft solutions for remote offices

Find out more

Find out more about how ManageSoft enables you to improve IT service levels and manage 1000s of remote sites from a central location, with cost-effective, automated management of software and hardware in geographically-dispersed offices.

› Telephone your nearest ManageSoft office to discuss your requirements or request a product demonstration

› Visit www.managesoft.com for additional resources or to register for a seminar

› Request an in-house proof-of-concept to see how ManageSoft can meet your particular requirements.