

# **Client Application Manager for Application Hosting**

**How ASPs and Other Service Providers Can  
Manage the Desktop Side of Hosted Applications**



## Introduction

Nortel Networks Client Application Manager is an innovative software platform that allows Application Service Providers (ASPs) and other service providers to deliver and manage applications as services over the Internet.

Applications and desktop software components can be targeted at distributed PCs, deployed, installed, updated, “self-healed” and removed, all from the service provider’s central operations center or a VAR’s office.

Service providers and their partners can increase revenues and improve “Application Quality of Service” (AQoS) by using Client Application Manager to roll out and manage software packages quickly and easily.

Client Application Manager will also help service providers and their partners reduce support costs and cost-effectively manage thousands of client/server and “fat client” applications.

PC users get reliability, high application performance and the ability to work off-line.

Today ASPs are faced with the task of putting together a technical infrastructure that can support and strengthen their business. This document discusses:

- The challenges facing the “Next Generation ASP”
- Key Features and functions of Client Application Manager
- The product’s architecture and components
- Capabilities designed especially for service providers
- Benefits to the service provider, its partners and its customers

## Challenges for the “Next Generation ASP”

### Industry Evolution: Raising the Bar

Most observers today are aware of the tremendous potential of the application hosting marketplace. The value proposition is compelling for small and medium-sized businesses who will be able to utilize better technologies, reduce operating costs, overcome the chronic shortage of computer personnel, and allow management to focus on business instead of technology. Analysts project an explosion in the market size, with estimates for 2004 ranging from \$7.8 billion (IDC) to \$25.3 billion (Dataquest/Gartner Group).

However, service providers face significant challenges to reach the breadth of offerings and high levels of efficiency required to succeed in this marketplace.

In 1999 and 2000, most Application Service Providers were providing a handful of applications to a limited community of end users, using inefficient manual deployment and support methods, with only vague assurances to their customers about service levels.

In 2001 the industry is evolving rapidly to favor the “Next Generation ASP” who can:

- Host a wide variety of applications and outsource the customer’s complete information technology infrastructure
- Serve the customer’s entire user population
- Keep prices low by using automated tools to deploy and manage applications
- Meet competitive service level agreements (SLAs)

Today few ASPs have the infrastructure in place to fully address these demands.

## Reaching to the Desktop: “Thin Client” is Not Enough

When people are first introduced to application hosting, many think of applications executing entirely on centralized servers, with only a browser on the end user desktop. But experience is demonstrating that a pure “thin client” model does not reflect the realities of technology or of customer need:

- Even predominantly “thin client” applications utilize not only browsers but also desktop components such as messaging clients, networking modules and plug-ins. These must be deployed, updated and fixed when they break.
- The vast majority of applications in use today are “thick client” applications executing on desktops. Many PC users will never accept slower performance from “thin client” approaches caused by bottlenecks on the network.
- “Thin client” implementations require large investments in servers and network bandwidth, which can price a hosted offering out of the market
- Laptop users and mobile workers need to work disconnected from the network. To serve these key customers an ASP needs to place and manage applications on their PCs.

## Integrating Partners Into the Management Process

Most service providers are finding that they can best address customer needs by working with partners who provide complementary skills. Partnerships might include one party with data center capabilities, a second party with application-specific knowledge, and a third party with systems-integration and customer support skills.

In this scenario, part of the challenge for the ASP is to take overall responsibility for the customer experience, yet allow partners to manage portions of the application delivery and support system. Many traditional infrastructure tools do not have the flexibility to support this business model.

## Client Application Manager: Addressing the Challenges

Nortel Networks Client Application Manager allows service providers to meet the challenges facing the “Next Generation ASP” by giving them a platform to deploy, install, update, “self-heal” and remove applications and application components on distributed desktops over the Internet.

- For the service provider who supports “thin client” environments, Client Application Manager can help meet service level agreements by ensuring that browsers, messaging and networking clients, plug-ins and Java applets are available, up-to-date and working on user PCs.
- For the service provider who wants to increase revenue by hosting all of its customers’ applications, Client Application Manager provides a platform to managing thousands of popular client/server and “fat client” software packages, while giving individual PC users the performance and reliability they expect today.
- For the service provider who wants to support laptop and mobile user, Client Application Manager offers a means to maintain control of software that executes on a remote and sometimes disconnected PC.
- For the service provider who wants to keep prices low, Client Application Manager provides a cost-efficient approach to rolling out, updating and supporting everything from browsers to office suites, without a large investment in server “farms.”
- For the service provider who wants to work efficiently with partners, Client Application Manager provides capabilities to share management responsibilities and perform administrative tasks from either the operations center or the partner’s office.

## Client Application Manager: Key Features and Functions

### Works With All Windows® Applications

Nortel Networks Client Application Manager can deploy and manage any type of software that runs on Windows® desktops, over the Internet, based on policies maintained on a central server.

For “thin client” environments, Client Application Manager can improve application quality of service by making sure that browsers, messaging and networking clients, plug-ins and Java applets are available and working on user PCs.

For client/server and “fat client” applications, Client Application Manager provides a unique platform for centrally hosting and managing software that executes on desktops. Service providers can cost-effectively host thousands of popular applications, running exactly as they do today.

### Policy-Based Targeting and Scheduling

With Client Application Manager, applications and application components can be targeted at groups of users or PCs based on instructions entered through a user interface, or on policies for each customer extracted from a directory.

Deployments can be scheduled for any time of the day, or for the next time a user logs on to the network.

PC users can be authorized to “pull” applications from a web page in “self-service” mode. This capability is valuable when the service provider can not determine in advance which users need which applications, and can also stimulate the evaluation or purchase of new applications.

## Flexible Deployment

Client Application Manager provides a very high degree of flexibility in deciding how software will be deployed. Applications can be “pushed” by the service provider or “pulled” by PC users.

Alternatively, software packages can be “advertised” by placing an icon on the desktop and start menu and by creating a file association. In this case the application files are not downloaded until if and when the PC user actually needs the package.

Applications can be downloaded in full or in a bandwidth-friendly “Fit Client™” mode. Packages deployed in “Fit Client” mode are launched after only a fraction of the application has been downloaded (typically 20%). The remaining portions can be “streamed” down in the background while the user works, or downloaded only if and when needed (“on demand”). These options can substantially reduce the load on the network when an application needs to be deployed to many users in a short time window.

## Personalized Installations

Application installations can be customized to provide a personalized desktop for each customer or customer department. This can include delivering and installing selected modules from a suite, configuring a menu bar, and displaying different short-cuts on the desktop.

Installations can be made completely “hands-free,” with no user input required, by retrieving from a database and pre-loading parameters like the location to place files, the paths to system resources and user IDs.

Further, target PCs can be tested the amount of available disk space or the presence of other software packages or drivers. This increases deployment reliability across different types of PCs.

## Automatic Version Control and Updates

The service provider can ensure that PC users are kept on the latest release. Client Application Manager determines when a bug fix or a new version of an application is available on the server, then either performs the update behind the scenes or asks the PC user for permission to upgrade.

## “Self-Healing”

Over the long term, the cost of customer support can make or break a service provider’s business model. One key technology that helps control support costs is application “self-healing” or repair.

If a PC user deletes an application file, or installs another application that overwrites a shared file or a system setting, Client Application Manager can detect and “self-heal” the problem before the PC user even knows it has occurred.

## Monitoring and Removal

For PCs attached to a network, application usage can be monitored and reported from the server. When a license or hosting contract expires, the service provider can cause the application on the desktop to be disabled or removed.

## Architecture and Components

Client Application Manager has three standard components:

- The Packager
- The Server
- The Agent

The Client Application Manager environment can be configured with an optional fourth element—“package directories” that store application files and can be used to deploy the files to local PCs at high speed.

## The Packager

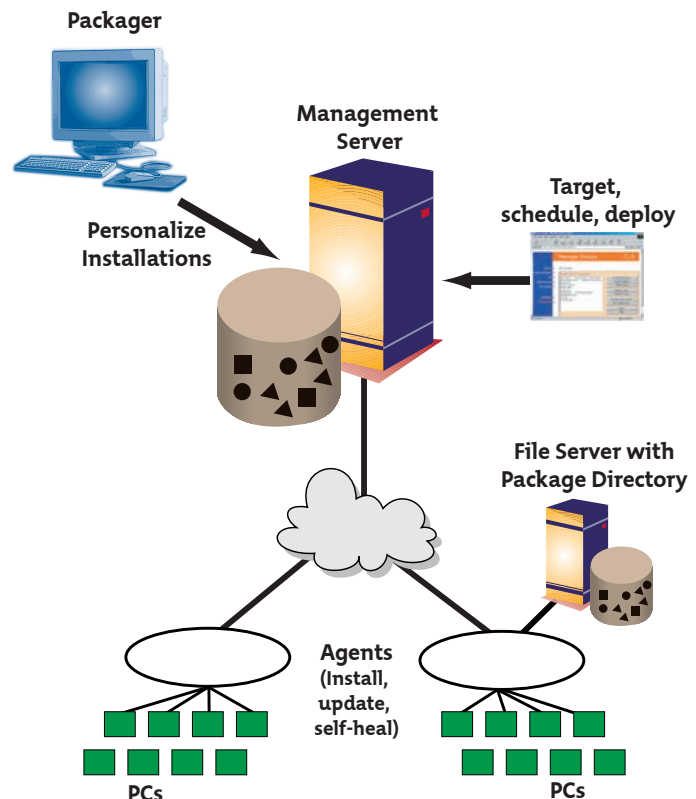
The Packager is a PC-based utility that allows Nortel Networks, the service provider or its partners to customize application installations.

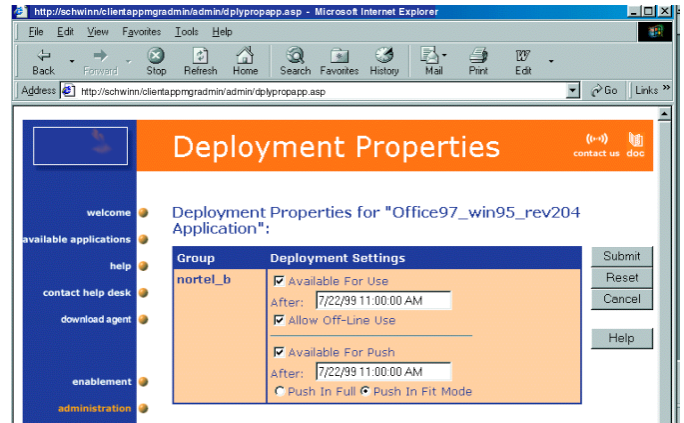
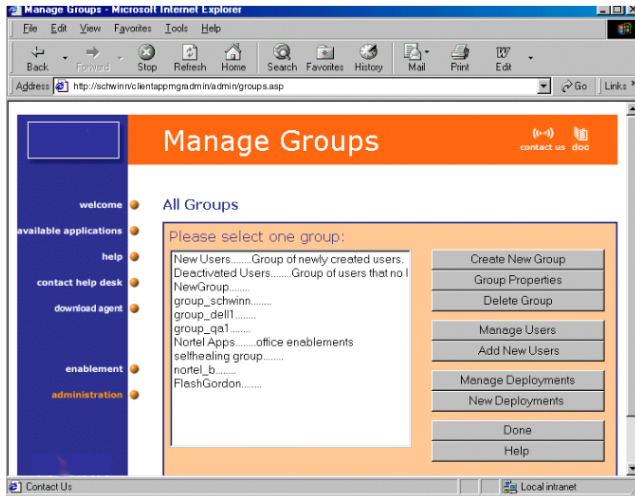
With the Packager, the service provider can control every aspect of the desktop installation, including directories and files, registry settings, .ini and system files, icons and desktop shortcuts.

Unique “Dynamic Capture” technology lets the service provider observe all of the options and conditional logic in the application’s native

installation process, then create customized variations. This provides tailored configurations for different customers and ensures reliable installation on diverse systems.

The service provider can even pre-load answers to questions usually asked of the PC user, to create a completely “hands-free” installation process with no user input required. For complex applications this eliminates the need to rely on users or “roll trucks” to remote locations.





## The Management Server

The Management Server is a server-based software module that controls the targeting, scheduling, deployment, authentication and monitoring of applications and users.

The user interface is browser-based, so administrative tasks can be performed by the service provider at the operations center, or by a VAR or other partner from the partner's office.

The service provider can create and manage groups of users and machines, if necessary utilizing user and policy data from network directories. Deployment properties can be selected such as whether the application will be pushed or pulled, whether it can be used off-line or only when connected to the network, and whether the entire application or only a "Fit Client" version will be downloaded.

Deployments can be scheduled in batches for set times, or applications can be made available on a web page and "pulled" in self-service mode.

As applications are placed in service, the Management Server continues to authenticate users and can be set to monitor application usage on connected PCs.

## The Agent

The Agent is a lightweight software module that is downloaded automatically to user PCs and manages the installation, update, healing and removal of applications on each PC.

The Agent communicates with the Management Server to authenticate users and to check for new, updated or expired applications. The Agent manages the installation process and can also update, disable or remove applications—even if the applications were originally installed from a CD-ROM.

The Agent also performs application "self-healing" by checking to make sure that all files are present in the right version and all environmental settings are correct. If it finds a problem it immediately re-deploys files or fixes settings as required to keep the application operational.

## Local Package Directories

An environment can optionally include the use of "package directories" on local servers that contain master copies of the application files. This allows application files to be delivered to the target PCs at LAN speeds and reduces the load on the network link to the central operations center. It also allows file transfers to continue even if the link to the service provider's operations center is broken.

The package directories can be placed on existing LAN or web servers, including existing Windows NT, Novell and Unix servers with NFS. Alternately, the service provider can place a low-cost "Internet appliance" in the customer's wiring closet and control that device from the central operations center.

## Built For Service Providers

### Designed for the Internet

Client Application Manager was designed for the Internet. All functionality can be performed using the standard HTTP protocol through firewalls and proxy servers.

Digital signature and SSL technology provide high levels of security.

Check-point restart ensures that if a network connection drops, a file download will pick up at the point it left off instead of going back to the beginning.

Client Application Manager also works over intranets, extranets, LANs, WANs and VPNs.

## Transparent to End Users

Maximum simplicity for end users is a key to customer satisfaction for service providers.

With Client Application Manager, installations, updates and self-healing are carried out behind the scenes, automatically, without requiring any knowledge or effort from the PC user. This can dramatically reduce application deployment and support costs.

## Portals and Self-Service

Client Application Manager can also be used to provide an application portal or self-service facility.

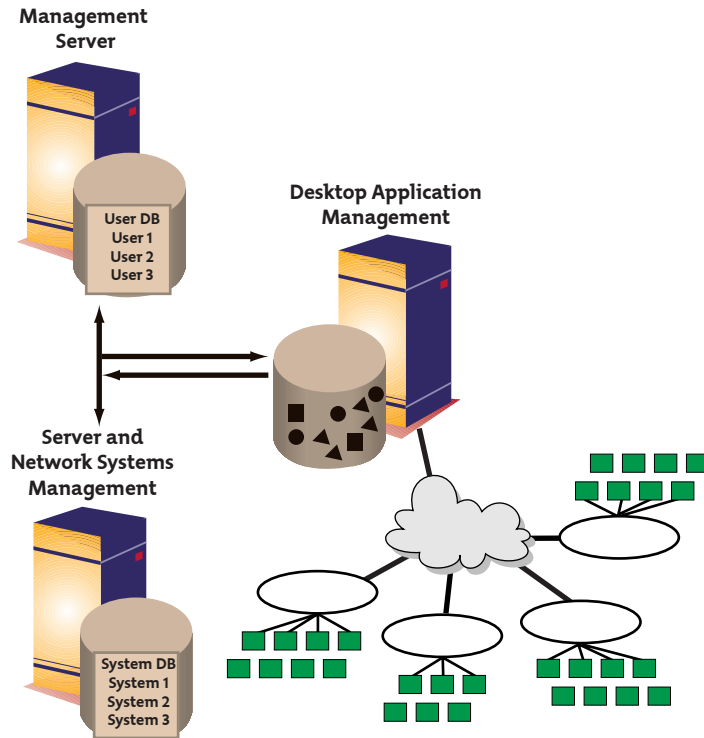
The service provider can post a menu of applications on a web page. Authorized customers simply click on a link to “pull” applications.

An application portal can simplify access to software that is used by some, but not all, PC users at a customer. It can also facilitate the trial of applications and enable short-term software rental.



## Browser-Based Administration for Partners

As noted earlier, administrative tasks can be performed remotely from a browser. This allows the service provider to share responsibilities with its partners. For example, the service provider might manage the overall hosting infrastructure, while a VAR or systems integrator adds and removes applications on a day-to-day basis for specific customers.



## Integration with Hosting Infrastructure Platforms

Nortel Networks is working with many of the leaders in the ASP infrastructure industry to integrate Client Application Manager with billing, customer care, systems management and other hosting platforms for service providers.

This will offer service providers simplified administration and comprehensive, “best-of-breed” application hosting infrastructure solutions.

## Benefits

### For Service Providers:

- Meeting Service Level Agreements and providing improved “Application Quality of Service” (AQoS), because applications can be deployed, updated and “self-healed” quickly and easily
- Expanding hosting offerings beyond browser-based applications to include thousands of popular packages, running exactly as they do today.
- Reduced management and support costs
- Reduced investment in server “farms”
- Increased competitiveness and differentiation

### For Partners:

- An opportunity to share in the exploding market for hosted application services
- An easy path to bring existing customers and skills into the application hosting model
- An ability to share management responsibilities with the service provider

### For Customers:

- Faster roll-outs and updates of hosted applications
- A simple PC user experience
- Wide choice of software packages
- Improved uptime and the assurance that the correct version of applications, browsers and application components are always on the PCs

To learn more or to discuss how Client Application Manager can help you deliver internet-managed application services, please visit [www.nortelnetworks.com/clientappmanager](http://www.nortelnetworks.com/clientappmanager) or call 1-800-4-NORTEL.



<http://www.nortelnetworks.com>

For more information contact your authorized Nortel Networks account representative or call 1 800 4 NORTEL (1 800 466 7835)

**Regional Offices**

<b>In the USA</b> Nortel Networks 4000 Veterans Memorial Hwy. Bohemia, NY 11716 USA Telephone: 1 800 4 NORTEL	<b>Or:</b> Nortel Networks 2560 Orchard Parkway San Jose, CA 95131 USA Telephone: 1 800 4 NORTEL	<b>In Canada:</b> Nortel Networks 8200 Dixie Road, Suite 100 Brampton, ON L6T 5P6 Canada Telephone: 1 800 4 NORTEL	<b>In the Caribbean and Latin America</b> Nortel Networks 1500 Concord Terrace Sunrise, FL 33323 USA Telephone: 1 954 851 8000	<b>In Europe:</b> Nortel Networks European Information Centre Oakleigh Road South New Southgate, London England NW1 1HB Telephone: +00 800 8008 9009	<b>In Asia/Pacific:</b> Nortel Networks 12 Waterloo Road North Ryde NSW 2113 Australia Telephone: +61 2 8870 8000
--	---	---	---	--	--

\*Nortel Networks, the Nortel Networks logo, the Globemark, Return on Relationship, and IVR are trademarks of Nortel Networks. All other trademarks are the property of their respective owners. Nortel Networks reserves the right to make changes, without notice, in equipment design as engineering or manufacturing methods may warrant. Product capabilities and availability dates described in this document pertain solely to Nortel Networks marketing activities in the United States and Canada.

EPiCON, Inc. ("EPiCON"), a Nortel Networks company. All Rights Reserved.

EPiCON and/or Nortel Networks, prepared the information contained in this document for use by EPiCON or Nortel Networks personnel, customers, and prospects.

EPiCON, Inc. reserves the right to change the information in this document without prior notice. The contents herein should not be construed as a representation or a warranty by either EPiCON or Nortel Networks. Further, the contents herein are provided "as is", and neither EPiCON nor Nortel Networks assumes any responsibility for any errors that may appear in this document.

Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraphs (c) (1) (ii) of SFARS 252.277-7013, or in FAR 52.227-19 (or any succeeding legislation), as applicable.

Hardware and software products mentioned herein are used for identification purposes only and may be trademarks of their respective companies.

EPiCON is a registered trademark of EPiCON, Inc. Nortel Networks Client Application Manager is a trademark of Nortel Networks.

©2001 Nortel Networks. All Rights Reserved. Published by Nortel Networks. Printed in the U.S.A.

