Bulletin

IP Address Management Software: 1999 Year in Review and 2000 Outlook

Analysts: Rick Villars and Elisabeth Rainge

IDC Opinion

How strong was demand for IP address management software in 1999, and what is the outlook for the future?

The rapid expansion in scale and scope of intranets and the Internet continues to place increasing strain on network managers who need to control the assignment of IP addresses for internal devices as well as IP VPN users. The year 2000 will be the swan song year for standalone IP address management, with vendor revenue rising 60.0% to $192.2 million, but the writing is already on the wall for the current generation of IP address products.

Network managers need to manage a diversity of issues ranging from mobile users to advanced VPN services and personalization for ecommerce. To maintain a viable product offering, vendors of today's IP address management products must transform their software into directory-enabled identity management solutions that support the growing complexity of ebusiness needs. By 2001, this new class of identity management opportunity (including IP address management) will reach $883.9 million in revenue.

Trends and Market Evolution

The advent of the Internet and the migration of companies to TCP/IP-based intranets in the mid '90s triggered a ticking time bomb for network managers. Networks based on the IP standard require a unique network address for every node (desktop, server, router, etc.). In early networks that had tens, hundreds, and even thousands of nodes, network managers were able to allocate, assign, and manage static IP addresses using simple paper or spreadsheet-based recordkeeping systems.

By 1996, these simple mechanisms came under increasing strain from a number of forces including:

- A rapid expansion in the number of IP addresses in large businesses (tens of thousands) and Internet service providers (millions)
- The broad deployment of the DHCP protocol that enabled dynamic, on-the-fly assignment of IP addresses
- The initial rollout of remote access and IP VPN solutions that required dynamic IP address allocation

In response to this strain, a number of companies ranging from Cisco to start-ups such as Quadritek developed automated IP address management systems that leverage the DHCP infrastructure. These systems automate the task of assigning and deactivating IP addresses. The more advanced systems also provide integration and synchronization services with the Internet's domain name service (DNS) and other access control systems such as firewalls and RADIUS servers.

The maturation of IP networks is already resulting in new approaches to address management. A key example is access to a network via PPP links. In particular, the device transacting Layer 2 network functions can resolve IP addresses in a functional, yet minimally managed, process. A network manager may choose to store a pool of addresses at the device that terminates the PPP session. That pool of IP addresses can then be assigned to entering users on an as-needed basis. Of course it is also possible for the Layer 2 device to hand off the addressing task to a formalized DHCP/IP address management server, as well.

Quoting IDC Information and Data: *Internal Documents and Presentations*—Quoting individual sentences and paragraphs for use in your company's internal communications does not require permission from IDC. The use of large portions or the reproduction of any IDC document in its entirety does require prior written approval and may involve some financial consideration. *External Publication*—Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2000 International Data Corporation. **Reproduction is forbidden unless authorized.**
For additional copies please contact Cheryl Toffel, 508-935-4389.

Check us out on the World Wide Web! ***http://www.idc.com***
Printed on recycled materials.

Methodology

This bulletin provides a more detailed look at one of the earliest and still most significant segments of the directory-enabled management software market examined in the IDC bulletin *Directory Services Reshape Management Software Markets, 1999–2004 Forecast* (IDC #21204, December 1999). It provides information on 1999 vendor revenue from the sale of IP address management software as well as IDC's preliminary estimates of 1999 vendor market shares. This bulletin also presents IDC's forecast for 2000 and discusses the future directions of products in this market. Basic assumptions used for this forecast include the following:

- The years presented in this study are calendar years.
- Revenue represents revenue to the manufacturer for packaged software. It does not include additional payments to the channel (where applicable) by end-user organizations of money spent directly to develop their own solutions.
- Products that are included for no additional charge as part of a bundled solution, such as a network operating system or router hardware solution, are not included.
- Forecast revenue is expressed in current U.S. dollars.
- Customers of these products include both enterprises and service providers of all types.

Information for this analysis comes from a survey of leading IP address management, directory and directory-enabled management software vendors, as well as vendor press releases, annual reports, and other public information. The interviews focused on market share, performance, competition, trends, and strategies. The quantitative data from these inquiries were compiled and cross-checked with other IDC data. For further detail on IDC's Directory Management research and methodologies, please refer to *Directory Services Reshape Management Software Markets, 1999–2004 Forecast*.

Note: All numbers in this document may not be exact due to rounding.

Definitions

Directory management software includes products that IS and network managers employ to manage the setup and ongoing operation of directories themselves. These products can include tools that provide directory interconnect and directory monitoring products.

Directory-enabled management software includes products that employ a directory as the underlying data repository and infrastructure for managing the configuration of systems and networks as well as user profiles and resources. Products in this

segment fall into two broad and sometimes overlapping subsegments:

- **Directory-based configuration management software** includes products used to automate inventory and configuration processes for systems as well as network devices and services. IDC further divides this subsegment into:
  - **Desktop configuration management software** includes products such as Novell's ZENworks and Microsoft's Intellimirror that manage the configuration of desktops. BindView's directory-based asset management products are also included in this category.
  - **Network configuration management software** includes products such as element management, policy management, quality of service (QoS), and VPN configuration management software from companies such as Alcatel, Cisco, Hewlett-Packard, Lucent, Nortel, and Sun.
- **User/identity management software** includes products that manage the ongoing entry and removal of directory information on users, policies, and resources. Current products tend to focus on specific environments such as IP address management and NDS and Windows NT domain administration.

In the future, IDC expects products in these markets and current VPN and remote access management products to evolve into integrated user/identity management software products that support personalization and sign-on services for networks and applications. This bulletin discusses the impact of these markets on the IP address management software market.

1999 Market Highlights

In many ways, 1999 was the year that IP address management software in its current form hit its stride. By early 1999, all of the early start-ups that launched this market were subunits within network market leaders. Companies such as Cisco, Nortel, Lucent, and Checkpoint were able to leverage their sales organizations to push IP address management solutions into large enterprises and service providers.

Total vendor revenue from the sale of IP address management software in 1999 reached $120.1 million, an increase of 87.4% over 1998. Lucent's recently acquired Quadritek business unit (QIP) was the 1999 market leader accounting for 40.0% of this figure. Cisco held the second position with 23.0% market share (see Table 1).

It is important to understand that Cisco's share is an under-representation of its likely reach, as Cisco has more flexibility in bundling this software as part of a larger equipment sale. Other leading vendors that have less equipment presence infrequently have the ability to exercise this bundling option.

Table 1
Worldwide IP Address Management Software
Revenue Share by Vendor, 1999

Vendor	Share (%)
Lucent	40.0
Cisco	23.0
Nortel	15.3
Checkpoint	11.1
Other	10.6
Total	$120.1 million

Messages in the Data:

- Bundling of IP address management products into larger, equipment-centric deals can drive sales for leading vendors.
- Absorption of IP address management specialists into network equipment players in early 1999 meant competitive dynamics were fueled by the size of vendor rather than pure technology.

Source: IDC, 2000

Nortel's Net ID held the third position with a 15.3% share and Checkpoint's Meta IP product had a 11.1% share. Another important vendor that entered the market in 1999 was Process Software, which launched a product targeting its traditional Compaq-Digital customer base as well as NT-oriented companies. Process's product did not begin shipping until mid-year and did not significantly affect 1999 sales.

2000 and Beyond Outlook

The year 2000 will be the swan song year for standalone IP address management. Vendors will expand the solutions sold in 1999 and add additional large networks. Revenue in 2000 will rise 60.0% to $192.2 million (see Table 2), but the writing is already on the wall for the current generation of IP address products.

Microsoft's Active Directory (a bundled element of Windows 2000) includes basic IP address management services, as does Novell's NDS. These bundled services threaten to close off the small and medium-sized business markets.

More important, however, are the evolving needs of large enterprises and service providers for additional functions not addressed by the current generation of products. Today's IP address systems match IP addresses to specific physical devices, not users. This approach worked well in the world of fixed systems and intranets but falls short in the world of mobile users, extranets, and the Internet.

Table 2
Worldwide Vendor Revenue for IP Address Management Software Products and Related Markets, 1998–2004 ($M)

	1998	1999	2000	2001	2002	2003	2004	1999–2004 CAGR (%)
IP address management	64.1	120.1	192.2	–	–	–	–	NA
Growth (%)	NA	87.4	60.0	NA	NA	NA	NA	
User/identity management	101.5	253.9	477.9	883.9	1,416.4	1,717.3	1,923.3	49.9
Growth (%)	NA	150.1	88.2	85.0	60.2	21.2	12.0	

Key Assumptions:

- In 2000 and beyond, IP address management products will evolve to include greater functionality and become user/identity management products.
- Service providers and ebusiness companies will be the leading purchasers of high-end user/identity management solutions.
- IP address management is a subset of user/identity management and will be subsumed by 2001.

Messages in the Data:

- IP address management as a discrete market will not exist after 2000.
- The most successful user/identity management products will evolve from today's single-function–oriented solutions to more general-purpose policy-based administration tools targeting the needs of ebusiness managers.

Source: IDC, 2000

Network managers need to manage specific users as well as devices to support advanced VPN services and personalization for ecommerce. The result is the emergence of a new category of directory-based software solutions that address identity management. In *Directory Services Reshape Management Software Markets, 1999–2004 Forecast*, IDC stated that this identity management market (including the IP address component and the NT domain management component) would reach $883.9 million by 2001. All of the companies still participating in the IP address management market after 2001 will have transitioned their products to this new, broader market space.

Conclusion

IP address management remains a fundamental function within the network infrastructure; however, the productization of technology is evolving quickly in the 1999–2001 period. Consistent with the pace of change in the global Internet and intranets, user sophistication and business infrastructure requirements are quickly and dramatically reshaping the demand in this market to be one of identity management.

The expanded technology scope is just one dimension. Another factor is the go-to-market strategies for directory-enabled management applications. Checkpoint's decision to link it's IP address management technology to its core security and VPN products is a reflection of the marketing and positioning issues entering into the IP address management market.

Because the Internet has become so wildly successful in 1998 and 1999, both the infrastructure architecture and infrastructure products are inevitably affected. Ultimately, the continuing Internet population explosion ensures further evolution in the management of identities, personalities, and connections.

Document #: 21761
Publication Date: March 2000
Published Under Services: Network and Service Management; IP VPNs