

MARKET ANALYSIS

Worldwide IP Address Management 2007–2011 Forecast and Analysis

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IDC OPINION

In 2006, worldwide end-user spending on IP address management (IPAM) solutions, which IDC defines as the combination of IPAM, domain name server (DNS), and Dynamic Host Configuration Protocol (DHCP) solutions, grew by 44.1% over 2005 levels to reach \$224 million. This marks a major growth period in the IPAM market, a market that IDC has been tracking for over 10 years. This key event and other activity in 2006–2007 indicate the following:

- ☒ Enterprises are making new investments in critical infrastructure technologies such as IPAM, DNS, and DHCP as they require greater network reliability.
 - ☒ End users are acknowledging the critical importance of IPAM, DNS, and DHCP technologies by investing in commercial products with a road map and corporate backing but still need convincing of the value of replacing spreadsheets.
 - ☒ Vendors are working harder to serve end-user requirements with multiple solution packaging options as well as a variety of direct and indirect approaches to the selling process.
 - ☒ Technology adoption cycles for VoIP and mobile network services are just beginning to drive demand for IPAM, DNS, and DHCP solutions.
 - ☒ IPAM, DNS, and DHCP solutions are already playing and will continue to play a major role in the converged communications infrastructures of enterprises and telecommunications companies alike, particularly for critical services such as unified communications and mobility.
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IN THIS STUDY

This IDC study sizes and forecasts the market for IPAM, DNS, and DHCP solutions — collectively known as IPAM solutions. It provides worldwide 2005 and 2006 market shares and a forecast from 2007–2011 by region, distribution channel, and target market.

Methodology

This document updates the previously published market forecasts for the IPAM market based on 2005 and 2006 actual vendor revenue. The market share and competitive analysis are discussed in detail. It discusses the dynamics in the 2007–2011 market, including changes in enterprise spending trends. Also addressed are strategic shifts in user requirements for secured networks, network equipment trends, and key industries such as telecommunications and government. Additional foundations for this forecast are derived from ongoing IT manager interviews and studies. *Worldwide Network Configuration Management 2005–2009* (IDC #33762, August 2005) is the previous published forecast.

The dollar values presented in this study represent revenue generated from sales of software licenses, management appliances, and hybrid software/hardware solutions to enterprises. The market sizing and forecast figures exclude embedded DNS and DHCP functionality such as that in network equipment and operating system products.

From a functional perspective, the forecasts cover the IP address management, DNS, and DHCP systems that IDC classifies within the larger network configuration market. These products manage the IT environments in which data, including VoIP, networks are planned, implemented, operated, and maintained. This includes the data, voice, and content services delivered over wired and mobile (wireless) infrastructures but looks at the use of network management technologies in all enterprises. A full taxonomy is available in *IDC's Worldwide Network and Service Management Taxonomy, 2006* (IDC #204370, November 2006).

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

SITUATION OVERVIEW

Introduction

Any institution with an IP network needs both IP addresses for the network nodes and addressing lookup systems to ensure that the network traffic is directed to the appropriate path and destination. IPAM products provide a structured way for IT staff to manage the allocation of the numbers as well as the ongoing maintenance issues concerning the numbering. IT managers might use IP address management to identify unauthorized addresses entering their network as part of a network admission control (NAC) strategy.

The administrative address management servers (DNS servers) deliver the association between host names and IP addresses that keeps HTTP Web traffic and network traffic flowing. DHCP provides a dynamic address assignment capability for nodes logging on to the network. DHCP has particular applicability to mobile networks as users join and leave, but it also tightly links with meeting security challenges when malicious visitors join a network. DNS servers may be internal or external to the corporate network (e.g., behind or in front of the firewall). While DNS or DHCP servers may be embedded within other infrastructure gear, this study looks at the standalone systems. All of these systems — IPAM, DNS, and DHCP — focus on the broad scope of management of IP addresses, including assignment, connections, and administration and monitoring. As we have discussed in the past and will revisit in this study, the predominant product of the group is the IPAM system. While DNS and DHCP are high-visibility functions, IT views them as less strategic investments or as subsidiary to the address management purchase; however, with the rise of a security-driven IPAM strategy, that may be changing. Together, the market for IP address management products, DNS products, and DHCP products is referred to as IPAM.

Typical Enterprise Use

The enterprise requirement for IPAM, DNS, and DHCP is concentrated among the largest enterprises. Top purchase criteria such as the need for a system to track changes and centralize record keeping remain a top reason to invest in IPAM solutions. IDC believes that the median population for purchasing commercial IPAM and related systems is 40,000–50,000 IP addresses. The challenge of measuring IPAM needs and solutions is that the full potential use of an assigned block of IP addresses may not be fully realized because they are assigned as a range. At the high end of the IPAM market are telecommunications service providers and government organizations that require as many as 50 million to 100 million IP addresses to be managed and administered. On the low end of the market are many corporations with 10,000 IP addresses or less. Enterprises with 1,000 or 5,000 IP addresses do sometimes choose to invest in IPAM systems, but these customers have greater network and infrastructure sophistication, typically due to their primary business focus or core competencies around technology. The classic problem of choosing a system that fits the staffing capabilities of the corporation remains the principle issue. Please note that IDC's definition of the small and medium-sized business (SMB) on a worldwide basis stretches up to small businesses of 100 employees and medium-sized businesses of 500 employees, although the definition of a medium-sized business for the U.S. market reaches up to (but not including) 1,000 employees.

DNS

In the Internet backbone and telecommunications environments, the DNS function takes on added importance. The role of a DNS server as the lookup for IP traffic that resolves a domain name to an IP address has become a linchpin of the infrastructure.

In today's enterprise and public networks alike, the amount of DNS traffic is relatively low. This is in part due to the tree structure of the DNS. In the tree structure, a local DNS server such as the corporate DNS server already stores the addressing information of a popular destination such as **www.idc.com**, thereby eliminating the

need to travel out to the next DNS server in the hierarchy, such as the DNS server at the ISP or other telecommunications infrastructure provider(s). Frequently, with a top-level domain server, such as those responsible for the .com, .gov, or .biz domains, lookup is required. If an address is not found nearby or in the top-level domain server, the ultimate lookup is the DNS root server, of which there are 13 globally. DNS root servers remain specific high-end systems for the global network infrastructure. Organizations such as ICANN ("L" server), U.S. Department of Defense ("G" server), VeriSign ("A" and "J" servers), ISC ("F" server), and Cogent ("C" server) host the root servers (labeled "A" through "M"). The low-traffic, high-volume DNS traffic is also kept to a minimal impact because the DNS packet, which uses the stateless UDP protocol, is very small. Consequently, a high-volume DNS server typically handles 100MB of traffic, but the average corporate implementations handle less.

As we look at the adoption of wireless LANs, WiFi, and even 4G technologies such as WiMAX, the issue of roaming becomes notable because it will prompt more frequent lookups. More important, VoIP address resolution is a growing requirement. Together, these factors suggest that DNS will have a greater role in telecommunications infrastructures as well as enterprise infrastructures. One recent move reflecting early preparations for such changes in DNS use was VeriSign's announcement of its Project Titan, an initiative to expand its infrastructure by 10 times by 2010.

VoIP

VoIP installations have caused many IT departments to increase, and potentially double, the number of IP addresses. The simple addition of another network node for most or all end-user desktops has been tantamount to a duplicate PC deployment for many IT shops. The key difference in the infrastructure support has been the expectation for voice network quality and reliability.

The technology and service implications of VoIP infrastructure include enhanced 911 (E911) and DHCP relay agent (option 82). Ensuring that the circuit ID of a device, or which switch port it is connected to, can be identified remotely (via DHCP option 82) is critical to supporting emergency calls as well as supporting the mobility of individual phones during corporate moves. DHCP option 82 is the key mechanism for nodes in switched Ethernet networks to be identified. Enterprises operating VoIP networks rely on this aspect of DHCP to meet emergency response requirements, which can be required by law.

Mobility, particularly WLAN implementations, has had a similarly noticeable impact on IPAM volumes and complexity but has not been as widely deployed to date. Also, mobility has not been subject to the same demands of compliance, speed, and reliability.

Network Access Control

Users cite the need to develop a strategy for NAC as a top but still new priority related to IPAM solutions. Improving the reliability and security of the infrastructure, which leads to network integrity, increasingly requires a discussion of NAC. However, for IPAM customers, a DHCP implementation can be a simpler alternative to creating a costly security strategy for user admission and permissions by tracking the DHCP lease as it is initiated. While DHCP management is included in products from network

equipment vendors such as Cisco (IOS), the administration and control of an IPAM product increases the IT department's ability to control the process and be alerted to exceptions, particularly users requesting a static address in place of a dynamic address. Going forward, IDC believes that the security-aware IPAM vendors will seek to exploit this overlap by offering NAC modules or functionality for their products, especially the appliance offerings that appeal as a drop-in solution.

Applications and the "Black Hole" of DNS

The increasing complexity of today's corporate networks and applications continues to create challenges for IT and network management staff. One continuing problem remains the phantom outages inside the corporation that are not clearly linked to network gear or application software. As the IT management skill set and product investments have become robust in their knowledge of datacenter consolidation, network optimization, and application process management, certain pieces of the infrastructure have gone overlooked. The DNS and DHCP servers, along with the administration of IP address space, are key technology infrastructure components that tend to be afterthoughts and, often, points of underinvestment. Because a free BIND package and an Excel spreadsheet will function adequately, the IT department as a whole tends to undervalue this component of the network infrastructure. At the same time, the ability of a DNS administrator at a large enterprise to control the IP network is one of the few remaining bastions of the archetypal power-hungry IT technologist. With the increasing CFO and/or CIO focus on security weaknesses such as NAC and on strategic investments such as VoIP or WLAN, the role of the DNS/DHCP server and IP address management systems is becoming more critical. The need for flexibility in the reallocation of existing IP infrastructure — due to VoIP, mobility, and security — is suggesting that DNS, DHCP, and IPAM systems should be adopted and operated in line with accountability practices and ITIL process-driven approaches. While users have identified improved manageability of the infrastructure as a key benefit of IPAM, the systems have not always been identified as key players in best practices in process improvements and legislated compliance.

Security of DNS Outside the Firewall

While this study focuses on the market for commercial solutions, the recent high-profile attacks on DNS root servers are having an influence on how DNS requirements are perceived in the market. Most notably, IT managers and senior management alike are forced to consider the potential implications of losing Internet connectivity.

The February 6, 2007, attack that affected 3 of the 13 root DNS servers coincided with the RSA security tradeshow and got the attention of many IT managers and senior management. The reported target of the attack was the root servers mentioned and servers operated by NeuStar-UltraDNS for top-level domain names, including .org. The root DNS servers affected in the February 2007 incident are hosted by ICANN ("L" server) and the U.S. Department of Defense ("G" server). In comparison, the October 2002 incident affected 9 of the 13 root DNS servers. Examples of other locations of the root DNS servers include VeriSign, ISC, and Cogent.

Partly based on awareness of these issues, the prevailing user sentiment toward DNS servers is slowly starting to shift from a passive approach to an active approach. The common use of DNS servers in the external (outside the firewall) implementation has been gradually supplemented by more enterprises adopting internal DNS (inside the firewall). Users interviewed for this study cited the malicious nature of Internet traffic — where everything unprotected is probed — as well as the need for uptime of Internet connectivity as reasons to seek out hardened DNS systems, typically appliance products for external DNS. However, today's IT departments continue to need justifications to make virtually any investment of time or money in DNS systems. In comparison, IP address management systems remain internally focused and are more easily justified to senior management due to IT Infrastructure Library (ITIL) compliance efforts or management of moves/adds/changes.

Enterprise IT departments are being offered external DNS servers as a service by their telecommunications providers as well as solutions and services vendors. Examples of vendors offering external DNS as a hosted offering include NeuStar and VeriSign. More recently, vendors have increased their marketing of similar hosted offerings for internal DNS requirements. Based on a review of the 2006 results of these offerings, IDC estimates that this class of DNS solutions generated approximately \$150 million in revenue.

Market Group Overview

The market for IPAM, DNS, and DHCP includes software and appliance products. Alcatel-Lucent's VitalQIP product remained the market leader at \$37.1 million in revenues and 25.8% share. In 2006, appliance products showed strong growth for vendors, propelling Infoblox to \$26.5 million in revenue and an 18.5% share. Similarly, BlueCat Networks reached a 7.0% market share in 2006 on revenue of \$10.0 million. All major vendors increased their IPAM revenue in 2006 over their 2005 levels. For high-end and software-based vendors, the proportion of maintenance revenue remains a relatively higher portion of revenues. For example, if maintenance revenues are included, the total Alcatel-Lucent 2006 result would show \$55 million and the InfoBlox 2006 result would show \$40 million. The intensified marketing efforts of vendors along with growing user interest and awareness combined to drive 42.0% growth in vendor revenue, which totaled \$143.5 million in 2006 (over 2005 revenue of \$101.1 million).

Competition is alive and well in the market, with much finger pointing by one camp at the other camp, such as appliance vendors highlighting the weaknesses of a software-based product or vice versa. In many cases, users require varying degrees of control over the DNS or IPAM systems, which shapes a more sophisticated view of the product offerings.

Assess Current Situation

Market shares for 2005 and 2006 are presented in Table 1. The 2006 vendor revenue of \$143.5 million underrepresents the total spending of enterprises and service providers on IPAM, DNS, and DHCP products. In 2006, the distributors, resellers, and systems integrators that focus on the IPAM, DNS and DHCP markets generated an

additional \$80.3 million in revenue. In total, 2006 end-user spending on IPAM, DNS, and DHCP was \$223.9 million.

IDC sees over 15 product vendors competing actively in the IPAM market — from the IP address management perspective, the DNS perspective or, most commonly, both. A few players also focus on DHCP as a key product line. Additional vendors that OEM solutions from the vendors shown in Table 1 include F5 Networks, Nokia Networks, Comptel, and other network equipment vendors. The core revenue at the source of the IPAM technology is accounted for under the original vendor (e.g., Nixu). Additional revenue is included within the "other" category. The "other" category includes vendors such as Appliansys, Efficient IP, F5 Networks, Incognito, InfoWeapons, Men & Mice, MetalInfo, n3k, Nixu Software, and Nortel. Vendors that leverage IPAM information but do not compete and are not included in this study include eTelemetry and SolarWinds. Examples of freely available products that are not accounted for in this sizing include BIND, DHCPD, and many other GPL and open source software systems.

TABLE 1

Worldwide IP Address Management Revenue by Vendor, 2005 and 2006

	2005		2006		2005–2006 Growth (%)
	Revenue (\$M)	Share (%)	Revenue (\$M)	Share (%)	
Alcatel-Lucent	28.1	27.8	37.1	25.8	32.0
Infoblox	18.9	18.7	26.5	18.5	40.2
Nominum	9.0	8.9	18.0	12.5	100.0
INS	5.5	5.4	13.5	9.4	145.5
BlueCat Networks	6.0	5.9	10.0	7.0	66.7
Cisco	5.0	4.9	5.5	3.8	10.0
Other	28.6	28.3	32.9	22.9	15.0
Total	101.1	100.0	143.5	100.0	42.0

Note: The "other" category includes Appliansys, Efficient IP, F5 Networks, Incognito, InfoWeapons, Men & Mice, MetalInfo, n3k, Nixu Software, and Nortel, among others. No company listed in the "other" category produced IPAM revenue over \$5 million in 2006.

Source: IDC, 2007

User Perspectives

In interviews conducted for this study, as well as ongoing research, the user community continues to cite the ease of administration that IPAM and DNS systems bring. Whether it is the ease of datacenter migrations, the ability to delegate work efficiently, or the ability to track problems, the chief day-to-day value continues to be structuring information and processes within a reliable system. In environments where investments in management tools are relatively young and/or complexity is high, such perceived value is not unusual.

However, IT managers cite the need to frequently make edits and changes to the IPAM systems as a key operational cost. For many, the simplification of the commercial products represents such an achievement over previous spreadsheet- or open source-based systems that most commercial systems prove worthwhile. For others, typically medium-sized or small businesses that are communications dependent, appliances provide the required payback. Other users cite the security requirements of external DNS as sufficiently burdensome to require a closed appliance needing little administration.

Large corporations and medium-sized corporations demonstrate slightly different preferences for IPAM solutions. Large enterprises typically prefer a single software product that handles the full mix of internal DNS, DHCP, and IP address management requirements. Medium-sized enterprises, generally facing resource constraints, prefer solutions that are less time intensive to install and operate. User preferences for types of products and solutions are shown in Table 2.

Going forward, the majority of users cite security as a current or next step for their IPAM investment. NAC was a popular topic, as was the reliability of Internet connectivity. Some users suggested that vendors should come together to work out agreements to help upgrade the broad Internet DNS infrastructure to improve its security. It is notably clear that security is a top-of-mind issue for the user community at all levels of the enterprise market.

TABLE 2

User Purchasing Preferences for IP Address Management Requirements by Company Size

	Medium-Sized Enterprise	Large Enterprise
DNS (internal)	Appliance	Software
DNS (external)	Appliance or service	Service
DHCP	Appliance	Software
IP address management	Software or appliance	Software

Source: IDC, 2007

FUTURE OUTLOOK

The market for IPAM solutions will grow at a 2006–2011 compound annual growth rate (CAGR) of 13.7% from end-user spending levels of \$223.9 million in 2006 to \$424.5 million in 2011. Vendor revenue will grow from \$143.5 million in 2006 to \$310.0 million in 2011 at a five-year CAGR of 16.6%.

Forecast and Assumptions

The market forecast presented is based on the assumptions in Table 3.

TABLE 3

Key Forecast Assumptions for the Worldwide IP Address Management Market, 2007–2011

Market Force	IDC Assumption	Impact	Accelerator/ Inhibitor/ Neutral	Certainty of Assumption
Technology/service developments				
Service provider managed services	Service providers will continue to add revenue streams through hosted and managed services, including IPAM.	Moderate. Managed IP address services will have a stabilizing influence on an otherwise difficult customer segment.	↔	★★★★☆
IP data services usage	Adoption of broadband and mobile IP-based services will grow steadily, with acceleration in 2010–2011 as IP-based mobile handsets become available.	High. Growth in IP-based services will increase demand for and complexity of IP address management.	↑	★★★★☆
Mobile data	IP-based mobile services will fuel demand for IPv6 and improved IPAM and DNS infrastructures.	High. Demand from wireless providers will propel growth in North America, Western Europe, and Asia/Pacific.	↑	★★★★☆
IPv6	IPv6 deployment will accelerate in wireless and government environments through the forecast period.	Low. IPv6 support is a feature, not a discrete opportunity.	↔	★★★★☆

TABLE 3

Key Forecast Assumptions for the Worldwide IP Address Management Market, 2007–2011

Market Force	IDC Assumption	Impact	Accelerator/ Inhibitor/ Neutral	Certainty of Assumption
Capitalization				
Access to capital	Suppliers of venture and equity capital will seek to build the network integrity market.	Moderate. IPAM will see market entrants from adjacent network infrastructure domains.	↑	★★☆☆☆
IT budgets	Enterprise IT budgets for network integrity solutions will slowly increase in response to compliance issues as well as education about IPAM and DNS/DHCP.	Moderate. Network infrastructure investments will continue to prioritize foundational network gear such as switches and security over IPAM.	↔	★★★★☆
Market characteristics				
Supplier concentration	Appliances and software vendors will vie for user spending.	High. The market's established vendors will continue to be under attack but remain key suppliers.	↓	★★★★☆
DNS security	DNS will continue to fall prey to high-profile attacks.	Moderate. Security concerns will continue to be an enterprise selling point to those vendors with advantages in authentication and integration with intrusion detection tools.	↑	★★★★★
Product packaging	Hardware-based appliances will inhibit the largest software-based vendors' ability to sell downmarket.	Moderate. The top 3 software vendors own the high end of the market, but appliance vendors are selling into new, midmarket customer bases.	↔	★★★★★
Market ecosystem				
Links to VoIP investments	VoIP deployments and operations require improvements to IPAM and DNS capabilities.	Moderate. Adoption of VoIP, already underway, will create greater demand for IP address management.	↑	★★★★★
Network equipment provider (NEP) involvement	NEPs will back off from internally built and supported IPAM and DNS/DHCP products as start-ups offer cheaper options.	Moderate. Smaller vendors will include NEPs as distribution channel partners or OEMs.	↔	★★★★☆

TABLE 3

Key Forecast Assumptions for the Worldwide IP Address Management Market, 2007–2011

Market Force	IDC Assumption	Impact	Accelerator/ Inhibitor/ Neutral	Certainty of Assumption
IPAM and DNS/DHCP appliances	Low-cost DNS/DHCP appliances will be hit by price-based competition from 2008 to 2010.	High. There will be growth in revenue for vendors, but channel margins will decline from 2008 to 2011.	↓	★★★★☆☆
Consumption				
Replacement nature of market	Vendors will continue to replace or upgrade existing IPAM and DNS/DHCP commercial product installations due to age of the systems.	Moderate. The segment's dependence on replacement revenue will constrain growth throughout the forecast.	↓	★★★★☆☆
New customers for IPAM and DNS/DHCP	Large and medium-sized enterprises will continue to seek out commercial products to replace spreadsheets due to regulatory and security compliance pressures.	High. New large-scale customers will be a growth engine for the industry.	↑	★★★★☆☆
Low end of the market	Appliance vendors will develop the midmarket enterprises and remote branch offices that would not otherwise invest.	Moderate. Lower price points will mitigate the overall positive growth impact of new midmarket business.	↔	★★★★★★
Service provider customers	Service providers will require more robust subscriber management infrastructure as services and IP infrastructures become more complex due to content, personalization, FMC, and IMS initiatives.	High. Investments in IPAM and DNS/DHCP will grow during 2007–2011 as the next-generation IP network infrastructure is built out by SPs.	↑	★★★★☆☆
Enterprise IT practices	CXOs are making ongoing efforts to drive better IT processes and increase the level of automation.	Moderate. In the mid to late years of the market forecast (2009–2011), this may result in the shift of some installed base away from a software model and toward an appliance approach.	↑	★★★★☆☆

TABLE 3

Key Forecast Assumptions for the Worldwide IP Address Management Market, 2007–2011

Market Force	IDC Assumption	Impact	Accelerator/ Inhibitor/ Neutral	Certainty of Assumption
Geography				
North America	The North American market will remain the top region due to DNS security concerns and the importance of supported applications such as email.	Moderate. Showing the value of IPAM will remain important.	↔	★★★★☆
Western Europe	Western Europe has lagged North America and Asia/Pacific in adoption of IPAM.	High. Vendors' efforts at geographic expansion will revitalize the Western European market during the forecast.	↑	★★★★☆☆
Asia/Pacific	Wireless data and IPv6 will cause Asia/Pacific to generate more than 20% of the market's revenue.	High. From 2007 to 2011, Asia/Pacific will remain the most forward-looking region in terms of technology.	↑	★★★★☆☆
Rest of world (ROW)	VoIP and wireless data adoption will drive growth in Eastern Europe, Latin America, the Middle East, and Africa.	Moderate. The ROW markets will continue to view IPAM as a lower priority, with the exception of service providers.	↔	★★★★☆☆

Legend: ★☆☆☆☆ very low, ★★☆☆☆☆ low, ★★★☆☆ moderate, ★★★★☆☆ high, ★★★★★ very high

Source: IDC, 2007

In 2006, the market rebounded from slightly slower spending levels in 2005. Customers took note of the changes in available products and improved pricing and brought out their pocketbooks to drive growth of 44.1% over 2005 levels. At the same time, the adoption of VoIP by enterprises and forays into IPv6 by forward-thinking organizations spurred expansions of existing licenses for corporations with investments in IPAM products.

Table 4 shows that distributors and resellers will play an important role in the growth of the IPAM market. This growth is directly linked to increased sales of appliances as well as sales to medium-sized and some small enterprises. The ongoing work of resellers and distributors with software-based solutions will continue to drive a portion of distribution channel revenue. In 2006–2007, the channel continues to enjoy very healthy margins for IPAM appliances. With higher-capacity software products commanding initial deal sizes of \$100,000–200,000 and appliance deals priced in the \$10,000–50,000 range, the variability in deal sizes continues. However, price-based competition is on the horizon to drive the relatively high margins of appliance products

down toward the norm for network appliances. In the near term, the distribution channel will remain aligned with enterprise security requirements. Over the 2007–2009 period, these same resellers will capitalize on the user requirements for NAC strategies by selling IPAM solutions as complementary or alternative solutions. Vendors and architectural changes will drive market growth in the 2009–2011 period as mobility and VoIP support become increasingly important to enterprise IT departments.

As discussed in related sections of this document, the appliance model has had and will continue to have a significant effect on the market. Primarily, appliances are expanding the total potential market and bringing in a volume-friendly product offering. To a lesser extent, the appliances are shortening and easing the purchasing cycle for buyers. These factors support the relatively high growth in the early years of the forecast (2007–2008), as shown in Table 5.

TABLE 4

Worldwide IP Address Management End-User Spending by Channel, 2005–2011 (\$M)

	2005	2006	2007	2008	2009	2010	2011	2006–2011 CAGR (%)
Vendor	101	144	188	224	252	280	310	16.6
Growth (%)	NA	42.0	31.0	19.1	12.5	11.1	10.7	
Distribution channel	54	80	95	104	110	113	115	7.3
Growth (%)	NA	48.1	18.3	9.5	5.8	2.3	1.8	
Total	155	224	283	328	362	393	425	13.7
Growth (%)	NA	44.1	26.4	15.9	10.4	8.4	8.2	

Note: See Table 3 for key forecast assumptions.

Source: IDC, 2007

TABLE 5

Worldwide IP Address Management End-User Spending by Form Factor,
2005–2011 (\$M)

	2005	2006	2007	2008	2009	2010	2011	2006–2011 CAGR (%)
Software	112	160	201	228	247	263	280	11.8
Growth (%)	NA	42.8	25.5	13.4	8.3	6.5	6.5	
Appliance	43	64	82	100	115	130	145	17.8
Growth (%)	NA	47.6	28.7	22.0	15.0	12.6	11.6	
Total	155	224	283	328	362	393	425	13.7
Growth (%)	NA	44.1	26.4	15.9	10.4	8.4	8.2	

Note: See Table 3 for key forecast assumptions.

Source: IDC, 2007

Software-based products continue to deliver scalability, as well as controls and customization that are required by top global corporations. The software-based products are the high end of today's market in terms of both scale and flexibility for the user. Significantly, the typical purchasers of software-based products will continue to be large, global corporations, which drive relatively high profitability per sale. With the lengthy sales cycles and often long-term commitment of the software-based products comes ongoing revenue streams for license expansions and version upgrades, which will drive a relatively stable forecast (11.8% CAGR) over the forecast period. However, the 2007 and 2008 introductions of high-end, carrier-grade appliances will have a negative impact on the software product revenue growth. By 2009, we believe that the software products will have caught up in features as well as performance and sustain that margin of advantage through 2011.

End-user spending on IPAM solutions will remain concentrated in the North American market. While Western Europe and Asia/Pacific are important regional markets, the strength of the North American market means that it will remain the largest market throughout the forecast period. As shown in Table 6, the Western European and Asia/Pacific markets are key opportunities for additional revenue in the IPAM market.

Over the forecast period, growth in service provider spending, at a 14.1% 2006–2011 CAGR, will outpace that of enterprise spending, at a 13.4% CAGR, but only by a slight margin (see Table 7). Representing approximately 64% of the market, enterprises remain bigger spenders on IPAM than service providers (representing 36% of the market) because service providers often rely on highly customized versions of options like BIND as well as proprietary approaches.

TABLE 6

Worldwide IP Address Management End-User Spending by Region,
2005–2011 (\$M)

	2005	2006	2007	2008	2009	2010	2011	2006–2011 CAGR (%)
North America	71	104	132	153	168	182	198	13.6
Growth (%)	NA	47.5	26.1	16.0	10.2	8.4	8.4	
Western Europe	44	63	80	94	104	113	123	14.5
Growth (%)	NA	43.3	28.2	16.9	10.5	8.8	9.1	
Asia/Pacific	33	45	57	66	74	80	86	13.8
Growth (%)	NA	38.6	26.2	16.5	11.1	8.3	7.7	
ROW	8	12	14	15	16	17	17	8.4
Growth (%)	NA	41.4	19.5	6.4	7.9	7.7	1.5	
Total	155	224	283	328	362	393	425	13.7
Growth (%)	NA	44.1	26.4	15.9	10.4	8.4	8.2	

Note: See Table 3 for key forecast assumptions.

Source: IDC, 2007

TABLE 7

Worldwide IP Address Management End-User Spending by Customer Type,
2005–2011 (\$M)

	2005	2006	2007	2008	2009	2010	2011	2006–2011 CAGR (%)
Enterprise	101	143	180	209	231	249	269	13.4
Growth (%)	NA	41.4	25.7	15.9	10.3	8.0	8.1	
Service provider	54	80	103	119	131	143	155	14.1
Growth (%)	NA	49.2	27.7	15.8	10.5	9.1	8.3	
Total	155	224	283	328	362	393	425	13.7
Growth (%)	NA	44.1	26.4	15.9	10.4	8.4	8.2	

Note: See Table 3 for key forecast assumptions.

Source: IDC, 2007

Role of Appliances

Appliance-based DNS/DHCP and IPAM expanded the total market size in 2005–2006 and is poised to continue such growth in 2007. IDC's research into the market indicates that the appliance class of products is taking hold among a specific portion of the market. Specifically, medium-sized and large enterprises are increasing their commitment to appliance-based DNS/DHCP and, to a lesser extent, IPAM. Among the largest enterprises, such as the Fortune 500, major government organizations, and top global telecommunications providers, the software products continue to have a strong hold. Above all, the varying experiences and interests of enterprise IT departments remain the single most important influence upon the form factor decision.

Going forward, IDC believes that appliance products will continue to win new and replacement business among medium-sized businesses, branch offices, and small businesses where network integrity is exceptionally critical to business operations. The key alternative for this midmarket group continues to be the managed service model for DNS/DHCP and IPAM. However, the most influential large IT departments and large corporations will remain committed to software-based DNS/DHCP and IPAM products. Because the major multinational financial, governmental, and telecommunications businesses require complex decision making from their IT administrators as well as the ability to customize integral systems, software products for DNS/DHCP and IPAM will remain the preferred solution.

In the mid to late years of the market forecast, 2009–2011, the ongoing efforts of CXOs to drive better IT processes and increase the level of automation may result in the shift of some large organizations away from a software model and toward an appliance approach. However, such a move would be driven by issues of smaller IT budgets (and staff), continued need to invest in other areas (applications, new network technologies), and pressure to leave technology-driven philosophies behind in favor of purely business decisions. This assumption is included with the key forecast assumptions (refer back to Table 3).

On the whole, the appliance products fit well in divisional and remote branch office locations, while the larger, complex software-based products typically suit the datacenter requirements of global corporate headquarters and service providers. IDC believes that enterprise vendors such as network equipment companies, enterprise management software players, and professional services vendors need to offer a portfolio of options to their customers. This requires building partnerships with multiple IPAM and DNS/DHCP vendors.

Market Context

A five-year forecast (2005–2009) was last published for the IP address management market in *Worldwide Network Configuration Management 2005–2009 Forecast and Analysis* (IDC #33762, August 2005). Table 8 and Figure 1 compare the top-line and segment forecasts published in that document with the current forecast in terms of worldwide revenue and annual growth rates.

TABLE 8

Worldwide IP Address Management Revenue, 2004–2011: Comparison of August 2005 and March 2007 Forecasts (\$M)

	2005	2006	2007	2008	2009	2010	2011	Five-Year CAGR (%)
March 2007 forecast	155	224	283	328	362	393	425	13.7
Growth (%)	NA	44.1	26.4	15.9	10.4	8.4	8.2	
August 2005 forecast	124	135	148	159	174	NA	NA	11.0
Growth (%)	8.8	9.4	9.2	7.7	9.1	NA	NA	

Notes:

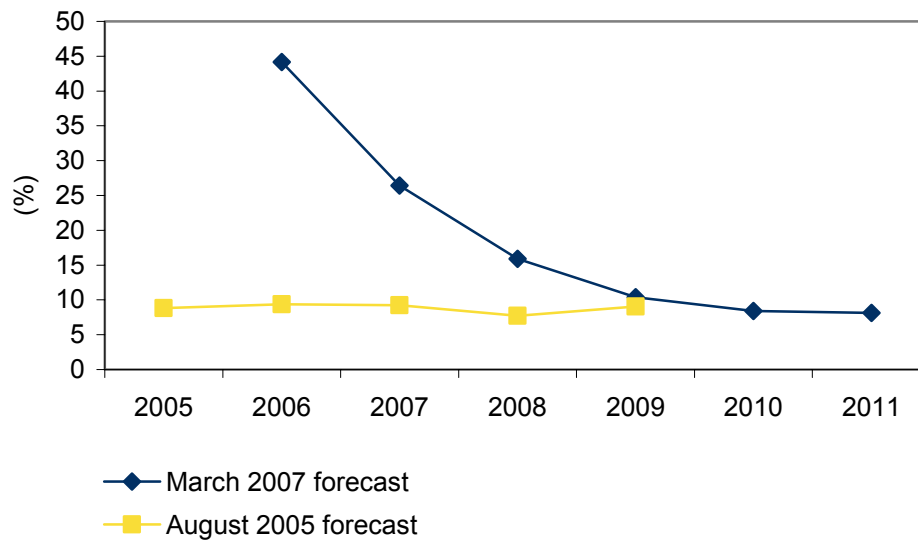
The CAGR for the December 2006 forecast is for 2006–2011; the CAGR for the August 2005 forecast is for 2004–2009.

See *Worldwide Network Configuration Management 2005–2009 Forecast and Analysis* (IDC #33762, August 2005) for the previous forecast.

Source: IDC, 2007

FIGURE 1

Worldwide IP Address Management End-User Spending Growth, 2005–2011: Comparison of August 2005 and March 2007 Forecasts



Source: IDC, 2007

The forecast for 2007 has been raised from the 2005 forecast. This happened because the actual results for both 2005 and 2006 exceeded expectations. (For 2005, actual revenue totaled \$155 million compared with the estimated \$124 million and, for 2006, actual revenue totaled \$224 million compared with the estimated \$135 million). The solid revenue and activity levels in 2006 were derived from VoIP and mobile network buildouts and reinforced by network integrity initiatives, compliance, and the diversity of available IPAM solution offerings.

The growth forecast for the 2008–2011 period has been increased as a result of the continuation of these trends, the anticipated expansion of enterprise mobility and IP-based services, the increasing commitment to solving enterprise network configuration challenges, and the competitive dynamics. The boost in spending anticipated for the 2008–2011 period ties strongly to shifts in address integrity problems at the logical layer and software layers of all IP networks — including mobile — by enterprises as well as service providers. Also, the linkage of this market to security initiatives will have a net positive effect throughout the forecast period.

A further factor constraining the revenue for the full market forecast is the relatively small size of the vendors and divisions of large vendors that are addressing the market. Regional and niche competition has driven growth to date but does not necessarily strengthen the market competition as a whole.

Market Strategies

Vendors are working hard to make their products more affordable. In IDC's past research on IPAM, DNS, and DHCP, the products were large solutions for the largest enterprises. In recent years, the appliance dynamic has contributed to the adoption of IPAM by medium-sized enterprises. In 2006, the market saw price cuts by players such as Alcatel-Lucent and INS. Now, in 2007, IDC expects this trend to accelerate further as vendors work to make expanded implementations and remote office support both easier and cheaper for their customers. The appliance segment of the market is becoming increasingly driven by channel sales to reach a wider audience at a lower cost. IDC also anticipates that the low end of the appliance segment will stretch to accommodate the needs of highly distributed organizations such as retail, healthcare, and civil service enterprises for whom remote offices with 50, 100, or 300 IP addresses are not uncommon.

Large Vendors Versus Small Vendors

The results of 2005–2006 show that there has been a sea change among the vendor leadership in the market. For 2007 and beyond, this trend will continue. While large network equipment manufacturers invested in DHCP and DNS companies during the 1997–2000 period, this is not likely to be repeated in the 2007–2011 period based on current views of the product segment.

Instead, network equipment vendors have become second-class players in this market, again raising the question of whether network equipment vendors should be involved in network management product markets (as discussed in *Do NEPs Belong in the OSS Business? C-COR Backs Off*, IDC #203128, August 2006). The

embedded DHCP servers that exist in network equipment will remain important to traffic flows but are becoming less visible outside of a specific set of network nodes.

Smaller vendors have become creative and have remained largely innovative in their approaches to the market. Both the business decisions and technology choices of the small and medium-sized vendors show a commitment to making sales and retaining customers, rather than simply adding a line on a purchase order. A further advantage among the less-established vendors is their ability to accommodate the latest IT technologies such as server hardware improvements and open source software efficiencies.

Are DNS and IPAM Separate Markets?

In the course of this study, IDC interviewed users, vendors, and resellers about DNS, DHCP, and IPAM. While it is clear that the decision to invest in IPAM, DNS, or DHCP products tends to fit with largely distinct priorities and administrative teams, it was widely agreed that IPAM operating in isolation from DNS or vice versa offers significantly lower value than if the solutions are interlinked. In many cases, users can build a business case for the IPAM investment more easily and/or more quickly than such a justification for a less visible DNS investment. Based on this 2007 survey in combination with IDC's work on this area stretching back to 1996, IDC believes that DNS and IPAM will remain closely interlinked markets for the duration of the forecast period. While we do see that today and in the future DNS decisions and IPAM purchase decisions will have different trigger points, IDC believes that a growing awareness of the logical infrastructure and application underpinnings will drive enterprises to invest in DNS and IPAM as a part of a larger strategy aimed at networked infrastructure integrity. For service providers, the complex of DNS and IPAM stretches in many directions, including subscriber management, network timing, and roaming and interoperability agreements.

Vendor Profiles

Alcatel-Lucent

Alcatel-Lucent of Paris, France, is a multinational company whose Enterprise Solutions division offers the VitalQIP DNS/DHCP IP Management Software to enterprises, service providers, and governments. As part of a company with €18.3 billion in revenue, the VitalQIP offering benefits from significant corporate reach across geographies and markets. While customers choose and maintain VitalQIP because it is a software-based product suited to their needs, appliance options tailored to the VitalQIP environment are available from partners. Sales are also made directly and indirectly through partners. As one of the most recognizable names in IPAM, Alcatel-Lucent states that the VitalQIP product is deployed in over 800 companies worldwide, including service providers such as KT and TeliaSonera as well as enterprises such as Ahold, Conoco-Philips, Kodak, Sovereign Bank, Wacker Chemicals, and others.

Alcatel-Lucent's typical VitalQIP customer uses the software to assure integrity as well as manageability. Alcatel-Lucent also counts managed services vendors that offer IPAM as a service to their clients among its customers. Most VitalQIP customers

have a long-term investment in the product, which contributes to notable follow-on license sales volume. VitalQIP is one of the most recognizable IPAM solutions in the market today, particularly for its appeal to large and demanding customers, but it has expanded into the lower end of the market with growth in medium-sized organizations such as educational institutions. Collectively, VitalQIP manages well over 100 million IP addresses worldwide.

Appliansys

Appliansys of London is an appliance server vendor whose product portfolio includes DNS/DHCP appliances. The venture-funded company was started in 2000 and has received three rounds of funding from 2003 to 2007 from two private angel investors: The Capital Fund and London Technology Fund. Appliansys primarily sells product to the U.K. and Western European markets but also sells through resellers to reach the U.S. market. Resellers include Boston NetSource, Cable & Wireless, Three A IT, and Espresso. The 12-person company builds its appliances using open source software, including the Nixu NameSurfer Suite for DNS/DHCP. However, recent funding will be used to improve the company's internal software resources. The DNSbox 300 and DNSbox 100 are designed to be Linux-based hardened appliances.

Customers include 8el, Boots, BT, Financial Times, Panasonic, Scottish Re Group, and Telehouse Europe. The typical Appliansys DNSbox customer is an enterprise IT administrator using the product for lights-out management of the DNS infrastructure. The average customer deployment covers approximately 15,000 IP addresses with a few systems made up of a combination of master and slave DNSboxes.

BlueCat Networks

BlueCat Networks of Toronto, Canada, is focused on IPAM, DNS, DDNS, DHCP, NAC, and identity management. It is an 85-employee, self-funded company focused on the North American market now building a distributor-led presence in other regions. The company counts over 1,800 companies as its customers, and they have collectively purchased over 4,000 appliances since 2001. In 2006, BlueCat's revenue grew 50% over 2005 levels, representing 1,336% growth since its first year of operations in 2001. The flagship product has been the Adonis DNS/DHCP series, with the Proteus IPAM appliance first shipped in early 2006. The Adonis product line includes the Adonis 250 for Caching, the Adonis 500 for DHCP, and the Adonis 1000 and 1750 for DNS/DHCP. The Proteus 5000 will be joined by an IPAM appliance in May 2007. BlueCat is a technology-focused organization with a strong interest in working closely with its customers.

BlueCat Networks' typical customer is a North American large enterprise IT administrator that uses Adonis to administer approximately 50,000+ IP addresses and has frequently been a purchaser of DNS/DHCP or IPAM products in the past. BlueCat customers include divisions of large global corporations and government and educational institutions. Marquee accounts include ADP, AC Nielson, the U.S. military, the U.S. Air Force, the U.S. FAA, CapRock Communications, and Sprint.

Cisco

Cisco of San Jose, California, is a multinational company whose Network Management division offers the CNS Network Registrar to enterprise and service providers. As part of a company with \$28.5 billion in revenue, the Network Registrar product fits within a product portfolio that is sold into many geographies and markets. Sales are made directly as well as through partners. Cisco CNS Network Registrar includes standards-compliant DHCP and DNS servers that have been deployed in both service provider and enterprise networks. The CNS DNS server offers a very advanced feature set, including support for incremental zone transfers, dynamic updates, and notify. The Cisco CNS Network Registrar DHCP server supports DHCP Safe Failover (redundant DHCP servers), dynamic DNS updates, DOCSIS cable modems, and integration with directory services using LDAPv3. The Cisco Network Registrar supports a Java interface for integration with other systems.

The typical CNS Network Registrar customer is a Cisco customer who is using the product to manage DHCP in combination with other Cisco network management and infrastructure products. Enterprises and service providers are current customers of CNS Network Registrar. The product has been optimized for use in cable networks and is tightly integrated with the Cisco provisioning system known as Cisco Broadband Access Center (BAC), which enables a complete configuration management solution for DOCSIS and PacketCable devices (data and voice). For DSL, BAC provides a TR-069 auto-configuration server defined by the DSL Forum.

EfficientIP

EfficientIP of St. Denis (Paris), France, was founded in 1997 as a consulting and audit group that has grown and today sells products to the French, Western European, and U.S. markets. The 10-person-strong company is in growth mode for 2007, with both new products and market expansion efforts, including additional staff. In Europe and the United States. The company works with resellers to reach its customers. Telindus Arche, InterData, and Infradata are partners for the Western European market. Perficent is a partner for the U.S. market. Today's customer base of less than 100 customers includes enterprises in the financial, government, and telecommunications industries. The IPmanager, currently version 2.5, was launched in 2005. It includes four modules: IP registry, DNS manager, DHCP manager, and Authority manager. The SPX module is also available for service providers. In early 2007, the company will launch IPLocator (IP addresses tracking) and SOLIDserver DNS/DHCP Appliance products. All of the offerings are software products that are based on open source technology. The average EfficientIP customer uses the IPManager product to administer approximately 50,000 IP addresses and can scale up the system to administer more than 100 DNS/DHCP servers.

Infoblox

Infoblox of Santa Clara, California, is a 220-employee company that has shipped over 10,000 appliances to 1,500 customers since its inception in 1999. Both the sales approach and marketing efforts of the company position Infoblox as an enterprise-class solution vendor in the DNS, DHCP, and IPAM market. The appliance-based products are targeted at medium-sized and large enterprises, though the early 2007 launch of the Infoblox-2000 extends into some service provider environments. In early

2005, the venture-backed company aligned its sales approach to be purely focused on resellers and distributors.

The hardened appliance products leverage interoperability work from technology and product partnerships with companies such as Microsoft, Alcatel-Lucent, Juniper, and Cisco, among others. The standard Infoblox appliance solution includes DNS, DHCP, IPAM, RADIUS proxy, TFTP, and NTP. In December 2006, Infoblox launched distributed RADIUS for 802.1X for wired and wireless, and the company also has authenticated DHCP-, NAC-, and VoIP-specific solution sets.

InfoWeapons

InfoWeapons of Duluth, Georgia, is a vendor of secure Internet infrastructure products. InfoWeapons entered the market in 2006. Its first product, SolidDNS, is a secured DNS server with support for IPv4 and IPv6. Full DHCPv6 functionality will be added shortly. The company has approximately 110 employees, including development teams in Asia and in Eastern Europe. It touts its Asian heritage due to higher levels of IPv6 activity in the region. Early customer focus has been on working with service providers and government organizations. InfoWeapons reports that it has closed a major deal with SMART/PLDT, the leading telco in the Philippines, to help it migrate its customers to IPv6 and move forward on convergence (e.g., VoIP with QoS, IPTV). Other products with strong security and full support for IPv6 are under development now (e.g., firewall, router, VPN).

INS

INS of Santa Clara, California, is a global company with 28 North American offices and 7 internationally. In 2003, INS acquired Diamond IP Technologies, which became the INS Diamond IP Division. The division's headquarters are in Exton, Pennsylvania, in the neighborhood of the former Quadritek, and the team has been involved with the IPAM space for over 10 years. The division's experiences are historically aligned with the software approach to IPAM, but in mid-2005 INS Diamond IP introduced the Sapphire appliances for IPAM. Today's product line is led by the IPControl Software, IPControl Sapphire Appliances, and NetControl Software. The division also offers its Image Control Software product for management of set-top boxes in the cable operator infrastructure, which gives it a foothold in the digital home and service provider markets.

The typical Diamond IP customer is an enterprise IT administrator who uses a mix of IPControl software and appliance product offerings in a distributed architecture to manage from 50,000 to 1 million IP addresses. INS counts DNS administrators among its customer base as well, but the predominant users are concerned with managing IP addresses along with DNS and DHCP. A marquee IPAM account announced in early 2006 is Verizon Wireless. With 59.1 million wireless subscribers, 65,000 employees, and over 170 switching centers, the Verizon Wireless infrastructure suggests the scalability of the INS Diamond IP products.

The announcement in February 1, 2007, that British Telecom (BT) would purchase INS suggests that the Diamond IPControl product line will grow its footprint among the managed services customers of BT. The deal was closed on March 7, 2007, when the Diamond IP division became BT Diamond IP.

Men & Mice

Men & Mice of Reykjavik, Iceland, is a 30-person company that cites over 10,000 customers worldwide for its DNS and IP address management products. Since it was founded in 1990, Men & Mice has focused on research of DNS, particularly BIND and the Microsoft DNS server. The company's four product modules include DNS management, DHCP management, IP address management, and DNS expert, each of which can be deployed independently. Version 5.5 of Men & Mice Suite was launched in 2006. The company offers DNS Healthcheck as a free service to companies. As professional services, Men & Mice works on projects relating to DNS security and integration of BIND and Windows environments, DNS audits, and DNS and Active Directory training and consulting. The products are sold directly and through partners. The typical Men & Mice customer is an IT administrator in a global corporation that has invested heavily in both BIND and the Microsoft server operating systems.

n3k Informatik

n3k of Basingstoke, the United Kingdom, is a reseller and vendor of DNS, DHCP, and IP address management solutions. The company started as a VAR based in the United Kingdom and Germany and has grown to cover the U.S. market as well as the European, Asian, and Latin American markets. n3k resells Alcatel-Lucent VitalQIP as well as Infoblox and, through engagements with VitalQIP customers, has moved to offer its own runIP Managed appliance, which is specific to the VitalQIP system. The runIP Appliance was introduced in March 2004 and is currently deployed by approximately 80 customers in over 50 countries globally. Reference accounts include Ahold, Arup, DTO, Netherlands Defense Department, and TNT.

NeuStar

NeuStar of Sterling, Virginia, has a diversified business as a provider of directory services for the telecommunications infrastructure and related products. In April 2006, NeuStar acquired UltraDNS for \$61.8 million in cash. The NeuStar Ultra Services provide managed external and internal DNS services as well as custom infrastructure solutions built upon the company's Directory Services Platform and proprietary, patented technologies. In 2006, the NeuStar Ultra Services team grew its revenue by 118% over 2005 levels, with much of the growth in the postacquisition period from April to December and easily surpassing a goal of over 40% growth.

The typical NeuStar Ultra Services customer is a medium-sized to large enterprise IT administrator responsible for DNS and/or IP address space management. NeuStar counts DNS administrators as well as IP network architects among its customer base, but the predominant group in the customer base has DNS responsibilities. A key reference NeuStar Ultra Services account announced in 2006 is Forbes.com.

In early 2007, NeuStar Ultra Services acquired MetalInfo of Seattle, Washington. MetalInfo, now part of NeuStar Ultra Services, offers the SAFE DHCP and Meta IP products as appliances or software. Currently on version 5.7, the MetalIP products have been purchased by over 2,000 customers worldwide.

Nixu Software

Nixu Software is a subsidiary of Nixu, a services company, both of which are based in Helsinki, Finland. Nixu Software is active in the open source community and operates its business from the open source perspective, with comparatively low prices for products and services. The Nixu NameSurfer Suite and Nixu Secure NameSurfer Suite are targeted at the requirement for secure, manageable DNS, DHCP, and IP address management implementations. Nixu Software cites an installed base for the DNS products of roughly 3,000 installations worldwide. As a source for other network infrastructure vendors, Nixu Software customers include 2.5G and 3G mobile operators globally as well as Fortune 500 companies.

Nominum

Nominum of Redwood Shores, California, counts approximately 80 large-scale telecommunications, government, and enterprise companies as its customers in many countries around the world. The 75-employee venture-backed company leverages key partnerships with players such as Sun, NeuStar, and Juniper. The company is focused on the DNS, DHCP, and ENUM network-naming and addressing requirements of service providers, governments, and large corporations. The Nominum DNS and DHCP products build on its founders' expertise as the inventors and innovators of DNS, ISC-DHCP, and BIND version 9. Product offerings include Authoritative Name Server (ANS), Caching Name Server (CNS), and Dynamic Configuration Server (DCS), as well as the Navitas ENUM-based routing directory, which was launched in March 2006. Nominum also offers DNSPerf, ResPerf, and DHCPPerf as free diagnostic tools for service provider planning efforts.

The typical Nominum customer is a large telecommunications operator that has deployed or is deploying a large IP data or converged network. These operators typically start out by providing their DNS/DHCP/ENUM services either with open source that they download and install on their own hardware or with solutions provided by NEPs. Operators then upgrade with one or several products such as the Nominum Caching Name Server solutions as the core routing directory underpinning MMS, VoIP peering, network registries, and/or IMS applications and infrastructures. Convergent network strategies for a common IP network as well as broadband services initiatives also drive service providers to purchase Nominum products. A marquee account such as Bell Canada uses Nominum on Sun Fire x64 servers running Sun Solaris 10 infrastructure to serve its IP services customers.

Nortel

Nortel of Toronto, Ontario, Canada, is a US\$10.5 billion company whose network management products include the IP Address Domain Manager product (also recognized as NetID). The IP Address Domain Manager is a software product that is designed to be agnostic and independent of Nortel infrastructure gear. The product is sold directly as well as with partners in all regions of the world, benefiting from the reach of Nortel as a global network infrastructure vendor. As a long-term player in IPAM, the IP Address Domain Manager product has been in use by hundreds of corporations, and "NetID" remains a widely recognized name in the market.

A typical Nortel IPAM customer is an IT manager who uses the product to manage an average of 80,000 IP addresses in a large enterprise environment. The Nortel enterprise customers are actively involved with VoIP and/or mobility requirements that drive the need for IPAM.

Secure64

Secure64 of Greenwood Village, Colorado, is a new start-up in the DNS market. The 23-employee company has been operating since 2002 and cites three patents pending as well as relationships with Intel and HP. The privately funded company took an additional \$2.7 million in funding from investors in the fall 2005. The company's value proposition rests on the need for a secured OS, namely its SourceT micro OS and associated I/O stack, rather than a hardened DNS platform. Existing beta test sites are large institutions with a discrete DNS requirement. General availability of the product is scheduled for March 2007.

E-Tech (Vaticor)

E-Tech Solutions partners with IPAM vendors and offers consultative and product services to its customers. The team has a long history in the IPAM market and works with the majority of the vendors discussed in this study to serve over 200 customers. With partners as diverse as Lucent VitalQIP, Cisco Network Registrar, Microsoft, Infoblox DNSone, EfficientIP, and others, the E-Tech value proposition lies in its ability to assess the IPAM, DNS, and DHCP requirements of customers. As a value-added offering, E-Tech aims to help customers leverage their IPAM investment with improved visibility and administrative oversight of their systems through the Vigil-IP offering.

Partnership Alliances

The partnerships and alliances of IPAM vendors revolve primarily around the network equipment vendor community. For an IPAM vendor to be successful, its go-to-market messages must dovetail with key trends in network equipment and network infrastructure.

However, the top network equipment vendors, primarily Alcatel-Lucent, Cisco, and Nortel, have IPAM product offerings already within their portfolio. The role of the IPAM offerings is largely to augment new and existing customer installations with a sticky network management system. IPAM solutions, particularly the DHCP component, can also have the added benefit of helping to organize the embedded addressing schema of the network gear. Because IPAM products fit at an architectural level, the network equipment vendor gains entrée into the much sought-after network strategy discussions within the enterprise customer organization.

A key point of synergy in the 2007–2009 market is and will be security. Both on an informal basis — with the former staff of network security companies joining IPAM vendors — and on a formal basis — through shared reseller channels — the security community is a source of technology and marketing partnerships alike.

ESSENTIAL GUIDANCE

The most significant dimension of the IPAM market performance in 2006 is that IT departments are finding budget to invest in this often overlooked product category. The essentially new spending on IPAM solutions is expanding this specific market. IT departments are indeed maturing their understanding of the kinds of infrastructure in which to invest and showing that through spending.

As discussed previously, the role of the DNS is increasingly important. However, the discrete market opportunity remains murky and reliant on the continued efforts of today's resellers and vendors as well as users to educate one another. Despite past years of industry players calling DNS/DHCP and IPAM technologies "features" and not "products," this market segment is expanding its revenue and growing end-user commitments. As enterprises move to implement VoIP and mobility services on their infrastructures, new levels of reliability and flexibility are being required. Similarly, as virtualization, service oriented architectures (SOAs), and other application-related technologies demand a dynamic infrastructure, the manageability and control of the network is becoming more strategic. Taken together, today's network services (voice, data, video, mobility) plus application services (dynamic IT) require that certain components of the infrastructure, such as IPAM, DNS, and DHCP, be shored up.

Key facts about this marketplace that the market should take away from this study:

- ☒ For enterprises experienced in running applications and services over an IP network, DNS and IPAM are not options, they are critical.
- ☒ Network functions perceived to be a feature will not always remain so, primarily due to increased demands on the infrastructure.
- ☒ Spending on this class of product is increasing from competitive wins as well as new customer wins.

Actions to Consider

Advice for Buyers

- ☒ **Invest in network integrity.** DNS, DHCP, and IPAM are just the tip of the iceberg for building network integrity. Key foundational pieces for enterprise networks include RADIUS strategies, network timing, and WiFi roaming strategies.
- ☒ **Prepare for mobility.** Going forward, leading-edge global corporations should look to address true mobility for data and voice networks, particularly as service providers like BT offer WiFi roaming for mobile phone services and as VoIP handsets become available.
- ☒ **Place VoIP in context.** With the need to make the network more robust for voice quality reliability, infrastructure projects need to be prioritized. IPAM should be at the top of the list as the linchpin in making the connection between the desk phone and the IP/PSTN infrastructure.

Advice for Vendors

- ☒ **Continue building the market.** Many components of the growth engine in the market are operating at nearly peak efficiency: vendor product packaging, channel distribution, and evangelism. However the accelerated spending and market growth is new, making it essential to persist in evangelizing and understanding user requirements.
- ☒ **Deal with security challenges.** The DNS experts in the IPAM community should work collectively to improve the far-reaching public DNS infrastructure. Such proof of expertise as well as commitment will help customers to persuade senior management to invest strategically in IPAM.

LEARN MORE

Related Research

- ☒ *Worldwide Enterprise Networking 2007 Top 10 Predictions* (IDC #205710, February 2007)
 - ☒ *Worldwide Client and Server Operating Environments 2007–2010 Forecast and Analysis: Don't Count Anybody Out Yet* (IDC #205411, February 2007)
 - ☒ *IDC's Worldwide Network and Service Management Taxonomy, 2006* (IDC #204370, November 2006)
 - ☒ *The Business Case for IP Address Management* (IDC #34276, October 2005)
 - ☒ *Worldwide Network Configuration Management 2005–2009 Forecast and Analysis* (IDC #33762, August 2005)
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Definitions

- ☒ **IP address management (IPAM) market.** IPAM, DNS, and DHCP all focus on the management of IP addresses, including the assignment, the connections, and the administration and monitoring. Together, the market for IP address management products, DNS products, and DHCP products is referred to as IPAM.
- ☒ **IP address management products.** IP address management products provide a structured way for IT staff to manage the allocation of the numbers as well as the ongoing maintenance issues concerning the numbering. For example, IT managers might use IP address management to identify unauthorized addresses entering their network. Important related systems are the DNS and DHCP servers.
- ☒ **Dynamic Host Configuration Protocol (DHCP).** DHCP provides a dynamic address assignment capability for nodes logging on to the network. DHCP has particular applicability to mobile networks as users join and leave, but it also has a tight link with security challenges whereby malicious visitors join a network.

- ☒ **Domain name server (DNS).** DNS delivers the association between host names and IP addresses that keeps HTTP Web traffic as well as network traffic flowing. A DNS server resolves a domain name (e.g., **www.idc.com**) to an IP address. DNS servers may be internal or external to the corporate network (e.g., behind or in front of the firewall).

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