

# N P A

NETWORK PROFESSIONAL ASSOCIATION

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## INSIDE

### ENVISION THE FUTURE

Your NPA Board of Directors is concerned about the future direction of your association. Over the past many months the Board has evaluated the progress of the association, performed a SWAT analysis, initiated new programs, retired others and now asks that we the NPA members participate in creating a new future for our association.

Let me share the viewpoint as presented by Stephen Ibaraki. Stephen is a huge contributor to the NPA website publications and a highly recognized member of the NPA Board of Directors as well as an NPA Distinguished Fellow (DF/NPA), Microsoft Most Valuable Professional (MVP), and Certified (ISP) and Fellow Canadian Information Processing Society (F/CIPS).

*There is a fundamental shift occurring worldwide. There is a move towards "Professionalism in IT." I am seeing this in meetings with industry, academic leaders, advisory boards, government, and ICT associations/societies. What prompted this change? IT professionals are looking for a base, and stability in the profession that comes from professionalism. Moreover, the industry is ready to move to the next stage.*

*What does Professionalism mean? It speaks to adhering to standards, a code of ethics, and having a foundation core of knowledge. All of this is encompassed within a professional vendor-neutral certification administered by a professional organization. It also means demonstrated professional practice and ongoing validated professional development. This provides assurances that work conducted meets or exceeds standards of practice. The result is "professional" work that is respected and valued by industry, government, business, employers, users, and customers.*

*So what compels an IT professional to become part of the NPA: The NPA is the advocate and international voice for the IT practitioner. The NPA is community driven, non-profit, and about you, the volunteer.*

*The CNP is the only international professional network designation that specifically targets professionalism and a professional designation along the lines of other professions.*

*The NPA fosters CNP holders to a requirement of on-going demonstrated learning which is valued by professional peers, employers, business, industry, academia, government, and media.*

*The NPA holds CNP professionals to a code of ethics, a hallmark of professionalism and found in the other major professions.*

*The NPA is at the foundation of a universal IT professional designation and encourages your support to build the industry in this direction-you are an important part of this movement towards professionalism.*

*The NPA supports your recognition and professional development through professionalism and the CNP and this creates new opportunities and career growth.*

*The future is about a new multi-specialist or Gartner's versatilists and volunteerism is a key to this path supporting the non-profit NPA -you receive tremendous value and payback as part of an international community contributing to the industry, and your profession.*

*Play an important role in this new direction for the industry spearheaded by the NPA!*

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In 2006, the Network Professional Association® is taking aggressive steps to provide for the future. Success lies in the strength of our volunteers, members, and partners; in our chapters and the effective marketing of the NPA product, the Certified Network Professional designation. All of this to bring about the:

**NPA Vision**

"The international voice of the network computing professional for work, environment and conscience providing the seal of recognition for competence and excellence.

The NPA is restructuring how it works to meet its vision. The key elements in the plan are the realignment of:

- The NPA Product
- The Management of NPA
- Targeted Goals

**Realignment of the NPA Product has three components**

**Association Focus is on the Professional**

CNP – Professionalism is the core product of and unique to the NPA. All association activities are to accentuate the sale and growth the CNP product.

Career growth, certification, education, ethics and NPA membership are all steps towards achieving *The Professional Credential*. The CNP in its various forms will be the consummate membership category of the NPA.

The Association recognizes peripheral activities, products and benefits are part of the professional environment of the NPA member. The Association will focus efforts on the CNP – Professionalism.

Developing the Certified Network Professional program may well be THE key to NPA 's success. Progressive steps will be needed to develop the associate and future masters, to get government and industry to recognize the CNP as the premier indicator

**Chapters focus is on the Member**

Chapters serve a unique role in our professional association. It is here that personal networking and growth occurs. The organization of the chapter provides a bed of resources not available elsewhere. The enthusiasm and productivity of chapter volunteers are vital in obtaining benefits and opportunities for the whole membership.

Chapters may be general in topic or specialize in areas of interest. Chapters may team with other organizations in the community. Chapters are composed of a leadership of current NPA members and a body of NPA members, network computing professionals, and reliant commercial and career interests.

The chapter is the vehicle for networking and group activities for the member. Discounts, event access, software etc will be procured by the chapters and where possible in sufficient quantities to provide supply for all chapters. For members to receive these items they attend a chapter (or form a new chapter).

**Member focus is on Participation**

A member of the NPA is part of the professional association focused on the CNP designation and the professional status of network professionals - advocacy. Members receive recognition of their participation in the advocacy: certificate of membership, quarterly Newsletter/Journal publications, web based resources, benefits derived through chapters, opportunities to volunteer, publish and develop.

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**Certification Magazine**

The September, 2006 issue (page 28) of Certification Magazine, highlights the value of NPA and Culminis (NPA is a founding member of Culminis). The article is entitled, *IT Career Navigation: Chart your way to success.*

**Digital edition:**

<http://www.nxtbook.com/nxtbooks/mediate/c/cm0906/index.php>

The article starts on page 26.

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## The Realignment of the Management of NPA

In order to preserve the financial stability of the Association the NPA business office has moved to San Diego, CA where it is currently being operated by NPA volunteers. The directive for the business office is to "Run the Engine" then to increase revenues through the marketing of the NPA product.

## Targeted Goals

### *The CNP is the NPA's defining product.*

The unique product of the NPA is the CNP – professionalism. The prospect is a professional designation recognized as a standard of achievement cutting across platforms, markets, business practices and IT channels, recognized as by industry and government as a standard of employment to meet. The Certified Network Professional designation is the elite NPA member and industry achievement.

The CNP is the right step in the quest of a true professional designation.

### *Chapter Growth (Make it happen.)*

Chapters are valuable to NPA and are encouraged. The incentive is in the extra benefits brought to the participating members. Vendors and professionals take of the multifaceted experience to network and learn. Individuals and groups to be identified then mentored to establish new chapters. Many freebies and benefits will be available only through chapter distributions.

### *Awards for Professionalism*

As the most visible outward sign of the NPA presence in the market, the Awards for Professionalism will be tuned more to the goals of the CNP and partners sought to assist in promotion of the Awards and the CNP.

### *NPJ Journal (Reinstate)*

Continue with the production of the NPA newsletter publication. Plan to reintroduce the NPA Journal as an industry publication; written and produced by NPA members.

The NPA newsletter will continue to provide a significant tangible benefit for members and be an avenue to educating the readership of the NPA quest on behalf of the network professional.

### *Members Publish*

Prior to the inception of the NPA newsletter in 2005, an editors' board was created. This was a first step to assisting members with one of the most rewarding public aspects of a career – being published. NPA will continue to grow this project to publish member works and promote them to industry.

### *"Professional Champions"*

Develop a program to create Champions of professionalism and the goals of the CNP. A select group of NPA members present the NPA perspective on the CNP, professionalism, independence and our goal to have the CNP recognized as the CPA of network computing to "the influencers" - people influence the direction of network computing and opinions.

### *NPA Partners*

The NPA seeks partners to assist growing the NPA. These efforts may include management and marketing resource exchange or other structuring to insure the NPA's future.

The **NPA VISION** is dependent on sufficient resources, marketing, efficient management and delivery systems and a significant body of members. As an organization of volunteers the NPA will continue to succeed only with sufficient revenues, significant new membership or certifications, and / or the support of partners with resources available to the NPA to produce and manage programs for growth and marketing.

It is only through the support and dedication of our members that the Network Professional Association grows. I ask that you volunteer, support the vision and help your Professional Association - the Advocate for the international network computing professional. - grow and promote you in your career.

James Belasco, CNE, CNP  
NPA Board of Directors  
chair@npa.org

## RATE BASED INTRUSION PREVENTION SYSTEMS (RBIPS)

Provided courtesy of Raghu Nath, Intruguard Devices, Inc. 2006

### Overview of Network Attacks and RBIPS

Computer network security is a challenge as old as the Internet itself. The sophistication and infamy of network-based system attacks has kept pace with the security technology and hackers only feel more challenged by the latest heuristics designed to foil their efforts. Some attackers exploit system weaknesses for political purposes, disgruntled about the state of software or hardware in the market today. Others target specific systems out of spite or a grudge against a specific company. Yet others are simply in search of the infamy of bringing a high-traffic site to its knees with a denial of service (DoS) attack. In such an attack, the hacker attempts to consume all the resources of a networked system so that no other users can be served. The implications for victims range from a nuisance to millions of dollars in lost revenue. This paper will review rate based Intrusion Prevention Systems (RBIPS) and how these next generation IPS solutions can protect against DoS/DDoS and other forms of malicious network attacks.

**Consequences of Attacks** Any computer can be infected and the consequences can range from a nuisance pop-up ad to thousands of dollars in costs for replacement or repair. For this reason, Anti-Virus (AV) software for all PCs should be a mandatory element of any network security strategy. But whether you measure cost in terms of lost revenue, lost productivity, or actual repair/ restore expenses, the cost of losing a server to an attack is far more severe than losing a laptop or desktop. Servers that host hundreds or thousands of internal users, partners, and revenue-bearing services are usually the targets of hackers, because this is where the pain is felt most. Protecting these valuable assets appropriately is paramount. In early 2000, the industry saw a new kind of 'worm' attack, in which hundreds or thousands of (sometimes unsuspecting) systems were employed to simultaneously bombard a target host, paralyzing its productivity. Several high traffic sites such as Amazon.com, Buy.com, CNN, Yahoo, and eBay were affected by these Distributed Denial of Service (DDoS) attacks. Because each attacking system looks innocent, advanced techniques are required to separate the 'bad' traffic from the 'good' traffic.

**Distributed Denial of Service Attacks** In Distributed Denial of Service (DDoS) attacks, hackers write a program that will covertly send itself to dozens, hundreds, or even thousands of other computers. These computers are known as 'agents' or 'zombies', because they will act on behalf of the hackers to launch an attack against target systems. A network of such computers is called a BotNet. To circumvent detection, attackers are increasingly mimicking the behavior of a large number of clients. The resulting attacks are hard to defend against, using standard techniques, as the malicious requests differ from the legitimate ones in intent but not in content. At a predetermined time, the worm will cause all of these zombies to attempt repeated connections to a target site. If the attack is successful, it will deplete all system or network resources, thereby denying service to legitimate users or customers. E-commerce sites, domain name servers, web servers, and E-mail servers are all vulnerable to these types of attacks. IT managers must take steps to protect their systems - and their businesses- from irreparable damage.

**Strategies for Protection** The best security strategies encompass people, operations, and technology. The first two typically fall within an autonomous domain, e.g. within a company or IT department that can enforce procedures among employees, contractors or partners. But since the Internet is a public resource, such policies cannot be applied to all potential users of a public web site or Email server. Thankfully, technology offers a range of security products to address the various vulnerabilities.

**Firewalls** Firewalls can go a long way to solving some problems by restricting access to authorized users and blocking unwanted protocols. As such, they are a valuable part of a security strategy. But public web sites and e-commerce servers cannot know in advance who will be accessing them and cannot 'prescreen' users via an access list. Certain protocols can be blocked by firewalls, but most DoS attacks utilize authorized ports (e.g TCP port 80 for a web server) that cannot be blocked by a firewall without effectively blocking all legitimate HTTP traffic to the site, thereby completing the hacker's task. Firewalls offer some security against a single user DoS attack by denying access to the offending connection (once it is known), but most DoS attacks today are distributed among hundreds or thousands of zombies, each of which could be sending legal packets that would pass firewall scrutiny. Firewalls perform a valuable service in an integrated security strategy, but firewalls alone are not enough.

**Router Access Control Lists** Likewise, access lists in the router can be used to block certain addresses, if such addresses can be known a priori. But web sites open to the public are, by nature, open to connections from individual computers, which are exactly the agents hackers use to initiate attacks. In a Distributed DoS (DDoS) Attack, thousands of innocent looking connections are used in parallel. Although router access lists can be used to eliminate offending packets once they are identified, routers lack the processing power and profiling heuristics to make such identifications on their own. In addition, complex access lists can cause processing bottlenecks in routers, whose main function is to route IP packets. Performing packet inspections at layers 2, 3, and 4 tax the resources of the router and can limit network throughput.

**Bandwidth Management Solutions** Bandwidth management solutions can be used to prevent bandwidth attacks. However, most bandwidth management solutions are extremely limited in their capability for preventing DoS/DDoS attacks. Their granularity is very limited. They can monitor attacks, restrict the bandwidth used by violating hosts, and limit the rate to or from one host. However manual administrator intervention is required to identify the violating hosts. Often only ICMP floods are detected with these systems but they are just one of the many exploited protocols. These features are not enough to prevent a full fledged DoS/DDoS attack which can happen in many dimensions of network protocols and services.

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**Anti-Virus Software** End systems cannot be considered secure without anti-virus software. Such software will scan all inputs to the system for known viruses and worms, which can cause damage to the end system and any others they may infect. Even after a virus is known and characterized, instances of it are still circulating on the Internet, through E-mail, on CDs and floppy disks. A good anti-virus subscription that is frequently updated for the latest protection is invaluable to any corporate or individual computer user. But even anti-virus software is not enough to catch certain attacks that have been cleverly disguised. Once a system is infected with a new strain, the damage can be done before the virus or worm is detected and the system is disinfected.

**Application Protection** Such packages include software that watches for E-mail anomalies, database access queries, or other behavior that may exploit vulnerability in the application. Because it must be very specific - and very close - to the application it is protecting, application protection is typically implemented as software on the host. Dedicated servers would benefit from well designed application security software that will maintain the integrity of the code and detect anomalous behavior that could indicate an attack. Certain malicious code can attempt to overwrite registers on the end system and thereby hijack the hardware for destructive purposes.

**Intrusion Detection Systems** Intrusion Detection Systems (IDS) are designed to 'listen' to traffic and behavior and set an alarm if certain conditions are met. Some IDS implementations live in the host, while others are deployed in the network. The IDS sensor monitors traffic, looking for protocol violations, traffic rate changes or matches to known attack 'signatures'. When a threat is detected, an alarm is sent to notify a (human) network administrator to intervene. All IDSs use software, but some run on general purpose computers, while others make use of purpose-built hardware.

**Host Based Intrusion Detection and Prevention Systems** Some intrusion detection systems are designed as software running on general purpose computing platforms. Not to be confused with application security software (mentioned above), which runs on the end system and focuses primarily on layer 5-7, software host based intrusion systems must also focus on layers 2-4 of the protocol stack. These packages rely on the CPU power of the host system to analyze traffic as it comes into the server. General purpose computers often lack the performance required to monitor real-time network traffic and perform their primary functions. Creating a bottleneck in the network or on the server actually helps the hacker accomplish his goal by restricting access to valuable resources. End-systems provide the best environment for signature recognition because packets are fully reassembled and any necessary decrypting has been performed. However, signature based intrusion detection has its limitations, as described below.

**Content Based Intrusion Prevention Systems** The next step in the evolution of Intrusion security leads to Intrusion Prevention Systems (IPS). Unlike Intrusion Detection Systems, which require manual intervention from an administrator to stop an attack, an IPS will automatically take action to prevent an attack once it is recognized. This can cut down response time to near zero, which is the ultimate goal of intrusion security. Intrusion Prevention must be intelligent, however, or the remedy may actually accomplish the hacker's goal of denying resource to legitimate users. Prevention mechanisms can also be harmful if detection is subject to false positives, or incorrect identification of intrusion. If the prevention action is to disable a port, protocol, or address, a false positive could result in denial of service to one or more legitimate users.

**Rate Based Intrusion Prevention Systems (RBIPS)** An alternative to signature recognition is rate-based analysis. Rate-based systems must provide detailed analysis and/or control of traffic flow. A baseline of traffic patterns is established, usually during a learning mode in which the device only 'listens' without acting on any alarm conditions. A good system will have default parameters set to reasonable levels, but the 'listening' period is required to learn the traffic behavior on various systems. The listening period should be 'typical,' in the sense that no attacks or unusual traffic patterns should be present. For example, Saturday and Sunday are probably not good days to build a baseline for a corporate server that is much busier during the workweek. Periods of unusually low or high traffic also make bad listening intervals, such as Christmas vacation week, or unusually high traffic due to external events such as press releases, sales promotions, Super-Bowl halftime shows, etc.

Once a baseline is established, rate-based systems watch for deviations from the known traffic patterns to detect anomalies. Good systems will allow an administrator to override the baseline parameters if events causing traffic surges are foreseen, for example, a server backup scheduled overnight. While signature-based systems are scrutinized for false-negatives, or failing to identify an attack, rate-based systems should be scrutinized for false positives, or misidentifying legitimate changes in traffic patterns as attacks. Whether setting alarms or taking preventative action, rate-based systems must be well-designed to avoid unnecessary overhead. As with actual attacks, if false positives occur, the connection is blocked for a configured time frame with the period as short as a few seconds. The source IP address is noted but not blocked indefinitely. Botnet based attacks will typically move on to the next target whereas legitimate users will retry the connection and thus prevent lost business. For extended botnet based attacks, the connection will be blocked for progressively longer periods and ultimately blacklisted out. Hence, false positives although rare do not lead to lost business. Equally important for rate-based systems are their analysis tools. Administrators should be able to view their traffic patterns on a variety of levels, and use this information to tune their network resources.

**Characteristics to look for in an RBIPS** Security is unquestionably a concern for anyone whose business depends on their ability to access or provide digital information. A layered security approach involving people, operations, and technology is the best way to protect networked systems. Intrusion Prevention Systems are emerging as a key element of this technology category. Here are some characteristics to look for when choosing a RBIPS:

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**Throughput vs. Goodput** Much debate surrounds the topic of performance in an RBIPS. Since the RBIPS is supposed to block traffic, one could argue that performance is measured by the number of packets dropped. But an RBIPS that only catches 90% of the packets it should have caught can hardly be called 'good enough'. A more intuitive definition of throughput for an RBIPS is the rate at which legitimate traffic is passed through while the detection/prevention mechanism is fully functional. If this is less than the throughput without an RBIPS, then the RBIPS is introducing a performance bottleneck into the network. The consequences of this limitation could be severe since many attacks are designed to flood the network with traffic and overwhelm attached devices and servers. An RBIPS that will choke during a DDoS attack is not worth its price. The device must operate at full line rates and maintain full protection during extended high rates of packet attacks.

**Granularity** The more granularities of configuration an RBIPS offers, the more detailed detection and prevention can be done. A good RBIPS will offer the flexibility to block entire protocols as well as rate limit individual ports. The RBIPS should also be able to detect protocol violations such as identical source/destination address, illegal TCP state transitions, sequence number errors, and port scanning.

**Dynamic Prevention** An RBIPS should be able to implement prevention features without requiring human intervention. But simply closing down protocol or port access may not be acceptable for an e-commerce or web server. Offending ports or users should be managed with as much granularity as possible to avoid blocking legitimate users. Source Tracking, or the ability to identify the source of an attack or abuse, is an excellent feature for prevention and analysis. Further, the ability to dynamically and continuously estimate future traffic patterns based on learned traffic history is a valuable feature of a Rate-Based IPS. Most server traffic patterns vary throughout the day or week, showing signs of 'seasonality' that reflect the ebb and flow of load times. Hard-coded rate-limits can often limit legitimate increases in traffic such as caused by file transfers, heavy web site traffic in response to new content or promotion, or end-of-quarter access to a financial database. A rate-based IPS that can provide dynamic assignment of thresholds can adapt to this type of seasonality which will keep critical networked systems and services available when they are needed. One Click Administrator overrides can modify selectable thresholds all at once for the rare but anticipated environmental traffic changes. Once the event has passed the thresholds can be set to automatically return to normal levels within a stated period of time in a time stepped fashion. No extended configuration is necessary.

**Traffic Analysis Tools** Because the RBIPS sees all the traffic passing through it, a good set of analysis tools should be available to show peak utilization, seasonality in traffic patterns (throughout the day, week, month, or year), and attack profiles. Granularity should be available from minutes to months.

**Affordability** Security is important, but budgets are a very real limiting factor in how security is implemented. Fortunately, new advances in RBIPS technology have made good security very affordable. The price should allow protection of critical services without being prohibitive.

**Source Tracking** Conventional stateful firewalls drop packets or stateful connections. But they cannot correlate packets to a source. Conversely, a feature to look for in a RBIPS is source tracking. This allows it to promptly correlate attacks and verify if they are initiated by a single host if they are coming from nonspoofed sources.

**Purpose-Built for Low Latency and Rapid Response** General purpose microprocessor based hardware solutions cannot solve DoS and DDoS attacks efficiently and rapidly. Look for low latency and rapid response solutions that do not expect you to respond quickly based on a notification.

**Continuous Learning** An RBIPS system should be able to evaluate traffic patterns to and from the protected system(s). After the initial learning period, you should be able to put the system into prevention mode, where it actually starts preventing attacks. It should understand the traffic average, trend and seasonality.

**'Zero Minute' Attack Prevention** An RBIPS should provide protection against attacks the hackers haven't even thought up yet. No administrative intervention should be required, and the solution should be on guard 24/7, automatically protecting your network systems and bandwidth.

**Configurable Event Monitoring, Event Notification and Intuitive Reports/Analysis Tools** RBIPS should allow you to monitor flood and other events in a configured way. There should be a way to view dropped packets statistics. The administrator should receive a specify event notification via E-mail addresses, PDAs or pagers. The administrator should be able to define which events should be notified and at what threshold levels.

**Centralized Event Monitoring using SNMP** An RBIPS should allow you to monitor flood and other events in a configurable way on a centralized SNMP monitor.

**Virtualization** To make an RBIPS cost-effective, it must support virtualization of counters and thresholds. Thus a single appliance should be able to protect a number of servers or networks. Each of these virtual protection zones must operate independent of each other in terms of continuous learning, adaptive threshold estimation and threat level. Virtualization based on MAC addresses, IP address/masks, or VLAN tags is a common trend. Each of these virtual protection zones should be managed by independent administrators making it useful in environment such as service providers.

**Staged Deployment** Staged deployment helps build confidence in any system. An RBIPS should offer the following three operating modes: • Parallel Detection Mode • Serial Detection Mode • Serial Prevention Mode Initially the RBIPS is installed and configured by the administrator; the placement is in either parallel or serial detection mode to learn the normal traffic flows. Once the device learns expected traffic and sets suggested thresholds and the administrator makes any needed modifications, the device can be set to serial prevention mode and left alone to automatically secure network traffic.

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**Anomaly Prevention** Besides providing rate-based attack prevention, an RBIPS should be able to prevent many network anomalies that are used to disrupt network traffic. The following types of network anomalies are very common: • Header Anomalies • State Anomalies

**Header Anomalies** represent anomalies present in a single packet and violate standards of protocols. Besides simply dropping anomalous layer 2 frames, like most network equipment, an RBIPS can prevent anomalies in layer 3 and layer 4 headers. The following are examples of header anomalies that can be prevented easily: **1 Layer 3 Header Anomalies** • Version other than 4 or 6 • Header length less than 5 words • Incorrect header checksum • Source or Destination address equal to Local Host (loopback address spoofing) • Source address is equal to Destination (Land attack) • End of packet (EOP) before 20 bytes of IPv4 Data • Total length less than 20 bytes • EOP comes before the length specified by Total length • End of Header before the data offset (while parsing options) • Length field in LSRR/SSRR option is other than  $(3+(n*4))$  where n takes an integer value greater than or equal to 1 • Pointer in LSRR/SSRR is other than  $(n*4)$  where n takes an integer value greater than or equal to 1 • For IP Options length less than 3 **2 Layer 4 Header Anomalies** • Invalid TCP/UDP/ICMP checksum • Invalid TCP flag combination • Urgent flag is set but the urgent pointer is zero • SYN or FIN or RST is set for fragmented packets • Data offset is less than 5 for a TCP • End of packet is detected before the 20 bytes of TCP header • EOP before the data offset indicated data offset • Length field in Window scale option other than 3 in a TCP packet • TCP Option length less than 2 • Missing UDP payload • Missing ICMP payload

**TCP State Anomalies** represent anomalies that are found across packets within a single TCP connection. A stateful RBIPS should prevent the following state anomalies: • Outside TCP/UDP window These are packets which are outside the receiver's TCP window. • Foreign packets These are packets which do not belong to a known TCP connection. • State transition anomalies These are packets that violate accepted TCP state transition rules.

**Network Scan Prevention** Network scans are usually seen as a precursor to real attacks. Network scans occur when an attacker uses a tool to determine which hosts are responding in a network. This is accomplished by trying each and every address on a network. The attacker uses this information to subsequently attack the hosts. A network scan is not really an attack. It is, however, a good indicator of an imminent attack because it means that someone is trying to find out which hosts are available on a network. If you have knowledge of a network scan, you can watch for and anticipate a following attack, which is why detecting network scans is as important as detecting the attack itself. An RBIPS should continuously learn the normal rates of network scanning during non-attack period and use these to estimate rate-thresholds which can then be used to detect and prevent subsequent attacks.

**Port Scan Prevention** Port scans occur when an attacker uses a tool to determine which ports or services are responding from a host. This is accomplished by trying each and every port on a host. The attacker uses this information to subsequently attack the host. Similar to network scan, a port scan is not really an attack. It is, however, a good indicator of an imminent attack because it means that someone is trying to find out what is running on the system. If you have knowledge of a port scan, you can watch for and anticipate a following attack, which is why detecting port scans is as important as detecting the attack itself. An RBIPS should continuously learn the normal rates of port scanning during non-attack period and use these to estimate rate-thresholds which can then be used to detect and prevent subsequent attacks.

**Dark Address Scan Prevention** There are many IP addresses that should not appear as either a source address or destination address in an IP packet. A bogon is an informal name for an IP packet on the public Internet that claims to be from an area of the IP address space reserved, but not yet allocated or delegated by the Internet Assigned Numbers Authority (IANA) or a delegated Internet registry. The areas of unallocated address space are called "bogon space". The term "bogon" stems from hacker jargon, where it is defined as the quantum of "bogosity", or the property of being bogus. A bogon packet is frequently bogus both in the conventional sense of being forged for illegitimate purposes, and in the hackish sense of being incorrect, absurd, and useless. In a private network, this could mean undefined private addresses should not be expected as source or destination. E.g. if an enterprise only uses 192.168.3.x range within its private domain, then any other private addresses such as 192.168.1.x, 192.168.2.x and 192.168.4.x-192.168.254.x are illegal. Use of these addresses means stealth activity – mostly by worms – most often. In a public network, this would mean all bogon-prefixes should not appear as source or destination. A bogon prefix is a route that should never appear in the Internet routing table. A packet routed over the public Internet (not including over VPN or other tunnels) should never have a source address in a bogon range. These are commonly found as the source addresses of DDoS attacks. Bogon prevention is a component of anti-spoofing. By providing dark-address scanning mechanisms with certain thresholds, an RBIPS can determine rogue hosts which are trying to reach others and spread worms etc. and block them from further activity.

**ACLs to Block Known Attacks** An RBIPS can provide ACLs (Access Control Lists) to prevent known attacks. Look for the granularity to which these ACLs are available.

## Conclusion

An RBIPS must provide granularity and multidimensional analysis on a hardware platform to be able to differentiate between legitimate traffic and DoS and DDoS attacks. Look for split second response capability to prevent unknown attacks without manual intervention. Low latency and full line rate performance are another key attribute of an RBIPS. If you want to avoid provisioning headaches later, look for systems that support continuous learning and adaptive thresholds. A usable system must have intuitive reporting and centralized monitoring to help you identify attacks easily and prepare yourself against the culprits. A simple deployment using a bump-in-the-wire approach without the complexity of redeploying your network further make a good RBIPS more valuable in long run from others.

### Rate Based Intrusion Prevention Systems

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## CERTIFIED NETWORK PROFESSIONAL (CNP)



### INTERNATIONAL PROFESSIONAL DESIGNATION OF THE INFORMATION TECHNOLOGY NETWORKING COMMUNITY

CNP is a professional certification program of the [Network Professional Association](#)®. The NPA is a self-regulating, non-profit organization dedicated to advancing the network computing profession.

### WHAT IS THE CNP DESIGNATION?

The Certified Network Professional or CNP is the professional international network designation for Network Information Technology (IT) professionals in the world. The Network Professional Association (NPA), the international association of networking IT professionals, introduced the CNP designation in 1996 providing a demonstrated history of professionalism.

The CNP designation requires demonstrated mastery of a body of IT and networking knowledge and the demonstrated ability to apply that knowledge in a professional setting. CNP holders are required to re-certify every year to show that they maintain up-to-date networking IT skills and best practices.

Like other professional designations – professional engineers and certified public accountants – the CNP demonstrates that its holders possess the education and experience to practice to the highest standards in their field.

### WHY DOES THE CNP DESIGNATION MATTER?

#### To the IT Practitioner:

The CNP designation boosts your:

- Sustained career development and growth;
- Collaboration opportunities;
- Speaking, writing, leadership progression;
- Profile, respect, credibility; and
- Demonstrated professional image.

#### To the IT Profession:

The CNP designation establishes and maintains the highest standards of:

- Sustained and validated professional development;
- Demonstrated and proven professional practice and high competency;
- Trusted ethics and conduct; and
- Protection of public safety through established complaint and disciplinary procedures.

#### To Employers and Clients:

They know they can count on the CNP holder's:

- Sustained excellence and adherence to professionalism and professional standards;
- Ongoing professional development producing increasing value;
- Prerequisite education and experience;
- Proof of knowledge of the latest standards and best practices;
- Diversity of skills;
- Commitment to proven competence, integrity, ethical conduct and trustworthiness; and
- Highest-quality work and productivity that will bolster the bottom line with increased savings and profits.

The Certified Network Professional program was established in 1996 then re-defined in 2005 with the intent to bring the networking information technology profession up to date with a true and proven international professional designation geared towards a lifelong career and demonstrated career development.

An independent and trusted industry designation, the CNP embodies the ideals of the professional – education, experience, reputability, and stability – providing the professionally significant credentials in a growing industry.

### WHAT DOES IT MEAN?

The CNP designation represents honour, excellence, accomplishment, success, experience, education, and the ability to strive in a life long career in the information technology networking industry. A life of accomplishments is publicly recognized. Employers and peers look for individuals representing and furthering the best professional attributes represented in the CNP designation. The CNP encompasses vendor and product certifications, advanced education degrees and training, bona fide network experience, and continual professional development into a single designation. Diplomas, certificates, resumes are enhanced and supported by background verification for experience, ethics and financial stability.

### WHO IS QUALIFIED?

Career driven Networking Information Technology Professionals experienced in the broad category of computer networking and closely related fields seek the professional validation stemming from a CNP. Networking IT Professionals want a professional designation with demonstrable work experience supported by education, good business ethics and reputation, and stability. IT professionals, Educators and Leaders in the network computing profession are qualified to receive the special distinction of the CNP.

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## EDUCATION OR EXPERIENCE?

Choose how to demonstrate your proficiency – the CNP provides two options of credentialing: Experience or Education with Experience

**Experience:** Years of experience and industry peer recognition of expertise and standing are strong traits of a true professional. The CNP recognizes mentorship and stature of the sage network professional.

**Education with Experience:** Youth, invention and ingenuity are driving forces in our vibrant industry. The CNP promotes the advancement of network professionals by recognizing a combine of education, training and work experience.

*The CNP designation pleases not only the eye of the veteran professional, but is the gateway to being a recognized network professional in the 21<sup>st</sup> Century*

## WHY SHOULD I?

The CNP is more than certification but a standard to be measured by – the professional credential. The CNP is the standard for the IT Industry defined by a Code of Ethics and a one-stop reference source for employers and clients to verify and validate ALL of the hard fought accumulated elite skills, years of experience, and proven knowledge. The CNP fulfills the desire for the verification that you are a professional; proclaim it with the CNP designation. The CNP designation proves a lifetime of work, education and experience in your career and validates your role in the profession plus your ongoing commitment to measured, demonstrated, and proven professional development.

Add "CNP" to your signature; the culminating mark of your professional life.

Employers want to know your achievement; better to see it at a glance.

The "CNP" encapsulates your certifications, education, experience, standards into a single identifying mark.

Education is the foundation of excellence. The annual education requirement motivates your continued education but is flexible allowing you to learn new technologies and solutions as well as maintain other certificate programs.

The Certified Network Professional program guidelines, application, and requirements are easily accessible on the CNP website – [www.CNP.org](http://www.CNP.org)

Information about the Network Professional Association, current activities and benefits may be found by visiting the NPA website – [www.NPA.org](http://www.NPA.org).

Do you have questions regarding the program? Would you like more information regarding the program? Contact the NPA Business Office at (888) NPA-NPA0 or [CNPinfo@npa.org](mailto:CNPinfo@npa.org).

The CNP program has an Advisory Board that will answer questions or concerns.

## DRIVERS TO BUSINESS AND CAREER SUCCESS: NPA AND THE CNP!

The keys to business success are integrating the IT Roadmap of the 8 major technologies with qualified, validated, certified professionals who commit to working ethically through a code of ethics, adhere to the industries best practices, have proven multiple credentials across several technologies, and demonstrate continuing professional development. Where do you find these professionals? They are Certified Network Professionals (CNP), the industries only leading professional designation and from the vendor-neutral internationally recognized Network Professional Association (NPA).

The keys to professional career success with IT networking pros lie with the CNP. Look to receiving your proven certification today at [www.CNP.org](http://www.CNP.org) or [www.NPA.org](http://www.NPA.org).

Look to what leading professionals have to say:



*"I work with leading technology and the CNP has been a driving factor in my ongoing success."*

Steve Delahunty  
Senior Associate, Booz Allen Hamilton ([www.boozallen.com](http://www.boozallen.com))

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*"The NPA and my CNP has been a catalyst for every major career high-point."*

Barry Sellers  
 Technical Architect, Capital One ([www.capitalone.com](http://www.capitalone.com))

*"It's the best thing I have done over my long career, contributing to the NPA and receiving my CNP. It is the best seal of approval for our profession and I am proud to carry it."*

James Belasco  
 IT Director, Earl Walls Associates ([www.ewalab.com](http://www.ewalab.com))



**THE VALUE OF A CNP**

In our extensive market research and long, exhaustive discussions, we have found a "strong" trend towards Professionalism in IT. What does this mean?

There is a strong demand and need for professionalism as embodied in the NPA CNP. The CNP reflects a broadening of the focus of certifications including even within previously proprietary vendor certifications (Microsoft and even Novell are moving in this direction). This broadening is a movement towards the industry professional designation, the CNP, which is vendor neutral and akin to the professional designations found in medicine, law, accounting, engineering, general information technology, and now in networking.

This is the mandate of the NPA, to meet the present and the future towards professionalism and a professional standard through the CNP professional designation.

The key elements include:

1. an international professional body of like-minded practitioners found in the NPA
2. an opportunity for contribution and recognition on an international level through awards, authorship, speaking, writing, leadership, community involvement, participation on boards/councils
3. career recognition, development, and advancement
4. mentorship and networking for growth
5. a universal code of ethics
6. a maintainable set of "standards of practice"
7. a creation of a networking body of knowledge
8. strategic recognition with other professional bodies
9. recognition at the state and federal level
10. tie-in into education and future accreditation of educational programs
11. ensuring accountability and liability
12. ensuring levels of service
13. maintenance and monitoring of demonstrable high-end professional development
14. working within the new regulatory environment of Sarbanes Oxley and general audit trends
15. ensuring a mature profession with a regulated international standard and a self-regulating profession with standards
16. ensuring transportability across professional, governmental, and international boundaries
17. processes to help manage business risk
18. mechanisms and processes for public relations
19. education programs, marketing programs and materials to educate about professionalism and professional designations

This diversity of need and key elements are reflected in current and past board directors and membership. The common element is that an association with technology, career development, professionalism, core knowledge, best practices, and ethics defines a networking professional today and into the future. The NPA CNP reflects this diversity which is the universal standard for the future.

There are rapid global movements towards more universal standards as networking and IT transcends into a recognized profession. The NPA has encapsulated this trend in the CNP. There is only one professional designation for the industry and this is the CNP – and this certification leads this movement. The CNP embodies into the future, core IT competencies expressed in a variety and diverse spectrum of ways. The NPA Professionalism program and CNP professional designation meet this acid test for today and into the future. As within any modern organization or association, this subject is undergoing continuing development to meet the ongoing needs of networking professionals.

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## SEAN O'DRISCOLL: SENIOR DIRECTOR FOR CSS COMMUNITY AND MVP WORLDWIDE, MICROSOFT CORPORATION

This week, Stephen Ibaraki, DF/NPA, CNP, MVP, FCIPS, I.S.P. has an exclusive interview with noted Senior Director, Sean O'Driscoll.



Sean O'Driscoll is the Global Senior Director for the MVP Award Program at Microsoft Corporation. The Microsoft Most Valuable Professional award recognizes exceptional technical community leaders who foster the free and objective exchange of knowledge by actively sharing their real world expertise with users and Microsoft. The MVP award is the way that Microsoft formally honors the accomplishments of these individuals for their contributions to community. As the Global Director, Sean is responsible for the worldwide team that identifies, awards, and engages over 3500 MVPs spanning over 90 Microsoft technologies and in over 90 countries.

O'Driscoll began his career at Microsoft in 1992 as a customer service and sales professional responsible for business development and client relationships. Most recently, he was responsible for Premier and Professional Services sales and delivery to Independent Software Vendors in the US. Prior to that, Sean served as a business development manager working with ISVs on joint development, co-marketing and channel development with Microsoft.

Before joining Microsoft, O'Driscoll graduated from Pacific University in Forest Grove, OR (1992) with degrees in Business and Philosophy. He and his wife Kari, have two daughters, Erin and Lauren.

The latest blogs on the interview can be found in the Canadian IT Managers (CIM) forum where you can provide your comments in an interactive dialogue.

<http://blogs.technet.com/cdnitmanagers/>

See [interview](#) with Sean O'Driscoll in informIT.com

### Discussion:

**Opening Comment:** Sean, with your many significant contributions to the industry and ICT professionals over a sustained and successful career, we thank you for taking the time to share your deep insights, experiences, and wisdom with our audience.

**A:** It's my pleasure. I'm really not sure how significant any of my contributions are (beyond my daughters), but I certainly appreciate having this opportunity to talk to the community through this forum.

#### Q1: Can you describe your current role?

**A:** I think I have the best job at Microsoft, if not in the industry. My title is Global Director for the MVP Award Program. But let me describe the role a little differently.

Every day, we all do a lot of things - we buy services, we buy consumer devices, computers, software, game consoles, we eat at restaurants, we attend events and shows, we choose schools - it's an infinite list. Ignoring computing for a moment, how do we choose amongst all the diversity of choice available to us? We do what most of us have always done; we ask our friends, family members, neighbors, colleagues, etc - our personal network. We trust our personal networks - they are a different kind of expert - peer experts. But, there is a challenge with most personal networks - they are finite in size, expertise and experiences. What if no one in my network has experience with what I'm interested in? Then what?

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 Certified Network Professional (CNP)

The foundations of the major professional designations are the same values we hold to. After much consideration, we provided this link between the other professional designations and the NPA CNP -- recognition of what the CNP represents today and into the future. But also recognition of what it means to be a networking professional -- a broader definition with roots in traditional networking but now encompassing much more.

A professional designation then requires added support: to foster acceptance at the state level, to build a body of knowledge and standards of practice, to maintain the code of ethics for accountability and protection against liability, to monitor continual demonstrated high-end professional development, to form alliances with other national and international professional bodies, to perform due diligence on all of certification processes but at a professional designation level; to build an education program for media, government, industry, and education to foster a professional designation standard and build greater acceptance-all of these and more require funding. This is the mandate of the NPA, the advocate for professionalism and for the networking professional.

Continued from page 11 (SEAN O'DRISCOLL: Senior Director for CSS Community and MVP Worldwide, Microsoft Corporation)

Well, if you are reading this, you already know the answer – communities. I like the analogy of buying a camera as most of us have or can relate to the process historically. It used to be that the biggest influencer of what I bought was the retailer, the expert trained behind the counter at my local camera shop. But today, I bet many of your readers (if they enter a physical store at all) know as much, if not more than the salesperson, before they enter. Let's face it; our networks have exploded in breadth of topics, ease of access, and value of information. On nearly any topic, I can find an online community of other users. I'm no longer bound by my personal network, but only by what I can search and find online.

One thing is true of every community, what makes it powerful and valuable to all of us are its experts; the gurus who answer the questions and share their knowledge and expertise with those of us asking the questions. Without them, the community really can't thrive. They are the recognized, exceptional and accessible community leaders. And it's the independent, real world experiences they have that make them such a trusted source of information.

I'm often asked to define communities and I think it's common to want to describe their scope in specific ways, (i.e. communities are Newsgroup discussions, or Forums, or Blogs or some combination of the above). Many people have quite strong views according to their personal preferences. I have sort of the opposite opinion and in fact rigorously avoid defining communities in terms of the venues or technologies employed to host them. To me, community is anywhere users go to interact and learn with other users and fortunately, in my role, I get to be (in fact I have to be), venue agnostic.

So, my job is actually pretty simple and pretty gratifying. My team has responsibility for looking across the worldwide Microsoft Technical communities (Blogs, Forums, User Groups, Newsgroups, etc) in order to identify their most outstanding technical contributors to those communities and quite simply say Thank you.

We call these exceptional individuals Microsoft Most Valuable Professionals. This year, we have awarded just over 3500 elite community leaders in over 90 countries spanning over 90 Microsoft technologies.

**Q2: What leadership lessons can you share that would be of value to business and IT decision makers?**

**A:** This is a great question and monumental in terms of topics – there's probably a wall of books written on this topic. That said, I think I can keep my answer very simple – it's about getting the absolute best people. Smart people, creative people, diverse people, experienced people, new people – but universally motivated and passionate people who believe in what they are doing and want to interact personally with those affected by what they do – the users. It's also about great business and management fundamentals. Great leaders need to hire great managers and great managers need to find great leaders. I once heard someone say that managers are outstanding at answering the questions of what, when, where, who, etc. and it's the leaders' job to answer the questions of why. That really stuck with me and made me think about the chemistry of high performance teams and organizations. I love the topic and I guess that is the lesson – you need to spend as much time thinking about your people as you do every other part of your business.

**Q3: You have valuable expertise about the power of communities. What are the kinds of communities that exist and their purpose? What are the trends? Why should businesses care?**

**A:** I think today there is a community for nearly everything. No matter what you're an enthusiast for (photography, cooking, travel, music, etc), you will find corresponding communities. I think a good starting point on this question is to examine the motivation for utilizing communities. One myth I often deal with is that it is just about support... technical support. Sure, people often go to communities for help/support assistance, but it is hardly the only motivation. I like to summarize with the following motivational map :

1. Learning – My favorite example of this is about home networking. For anyone interested in setting up a media center to digitize their home, communities are a must-use resource. Read what experts have to say. Hear what other users encountered and discover scenarios you may not have thought of.
2. Social &/or business networking – Let's face it, the biggest and fastest growing communities on the net are social networks. Beyond that, communities are a great equalizer. People love finding like minded peers anywhere in the world on any topic with whom they can share and explore ideas (social or business). I've seen this countless times.
3. Helping others – At its core, this is what an MVP is: those who quite simply enjoy sharing and helping others altruistically. The ROI for them? Satisfaction in a reply back that says: thanks, you really helped me.
4. Support – A great source. Now, personally, if something isn't functioning, I will tend to pick up the phone and call for support, but there are countless scenarios for how to or why does it or has anyone ever seen type questions. Communities are 24x7, 365 days a year and are in countless languages around the world – incredible.
5. Validation – Input from others who have gone there first. I call this the case study example. Virtually no one is ever doing something for the first time – the challenge is finding others who have walked that same ground. I find online communities are great for this.
6. Information – Like learning above, but for more, more general purpose. Unlimited consumer reports if you will.

The next layer of this is to think about the actual characteristics of the participants in the communities. In any community you have a diverse set of participants who can be characterized in a lot of different ways. I like to think of the following populations:

1. Lurkers – Only read what others contribute
2. Questioners – Primarily ask questions and read others' contributions
3. Question/answerers – Ask questions and occasionally answer questions
4. Answer/questioners – Answer questions and occasionally ask questions
5. Answerers – Almost exclusively answer questions

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**Continued from page 12 (SEAN O'DRISCOLL: Senior Director for CSS Community and MVP Worldwide, Microsoft Corporation)**

Some will read this and think this is too simplistic and they are right, but for those just learning and thinking about communities, I think it's a good place to start. Much has been written on this topic and by more creative people than me. For example, another population/segment written about are called flame warriors – you'll know them when you see them. The sole purpose of the flame warrior seems to be to create chaos in the community, change course on conversations, add controversy and generally speaking, create havoc. What to do about them? My advice, ignore them. Don't engage, (no matter how tempted you may be); that is their objective. Ignored, they tend to go away.

Each of the 5 segments above could then be examined against the characteristics of the participant. For example, some participants are just plain economical – they are takers. They possess the skills, experience, and knowledge to answer, but lack the interest, time, or energy to do so. So, take questioners as a starting point on this. Some questioners are inexperienced and are in the community to learn while others just come when they need something. This is not a criticism, it's just reality. Often times, a person (I fall into this camp) is a questioner in one community, an answerer in another, and a lurker in another. It's in this area that there are some clear differences between what I would call pure social networks and technical communities. What I think you would see is the population distribution (% lurkers/questioners/answers) changes as communities become more social. This isn't inherently good or bad, just a by-product of what is motivating participation.

There are also different community venues – Newsgroups, online forums, Blogs, Wikis, etc. and an endless list of emerging features like RSS, podcasting, reputation systems and tagging. I won't go into those here (at least not this time around), but most people do develop venue preferences and over time want to subscribe to certain experts and/or content sources that they find repeated value in or trust. This can be a very important issue to help you become more efficient in how you utilize the community according to your unique interest is.

The last part of this question was why should business care? In the end, communities are a virtually limitless source of knowledge, expertise, experience and content in addition to providing a very powerful method for peer interaction – I think businesses have to care. Businesses, and more importantly the people that run them, succeed based on the quality of the decisions they make. To me, communities are a breakthrough in terms of broadening and deepening that source of inputs for decision making. Beyond that, communities are more than a fad; they are changing how people make decisions and who influences those decisions. No matter what business you are in, there is or will be a community of users – you have three options and only one real choice: Resist it, ignore it or embrace it.

**Q4: How can ICT professionals get involved in communities and how can they make contributions?**

**A:** I'd actually give two simple suggestions here. First of all, give a visit to [www.microsoft.com/communities](http://www.microsoft.com/communities). You might even want to bookmark it! This is the central page on Microsoft.com which leads the user to technical communities about Microsoft products – blogs, chats, webcasts, user groups, forums, newsgroups, etc. You can read a description in more detail about these communities at: [http://www.microsoft.com/communities/bkst\\_column\\_43.msp](http://www.microsoft.com/communities/bkst_column_43.msp).

Let's say you were interested in Microsoft Exchange Server. A click into the page above will take you to the Exchange community portal at <http://www.microsoft.com/exchange/community/default.msp> where you can find Exchange blogs authored by Microsoft employees and external experts, information about Exchange user groups, meet Exchange Server MVPs and/or connect directly into community discussions about the product.

My second suggestion is to tap into <http://search.msn.com> and search for <insert your hobby> community. You could use that other search engine too, but I like this one. You might check out <http://groups.msn.com> which is a destination that has organized social communities hosted on MSN. To really understand the power of communities, I think it is really useful to go explore a community on a topic you are personally passionate about – and who knows, you just might find something really cool and interesting. Oddly enough, what really got me into communities wasn't technology, but cooking – specifically BBQing, around which I have found many great communities I regularly participate in.

**Q5: What are the rewards for ICT professionals for community involvement?**

**A:** The rewards simply go back to the motivations. It could be economical for you – the reward is the answers. It could be risk mitigation on decision making, or personal satisfaction from helping others, or it could just be a quick answer to a practical question you are working on right now. With most things, you get out of it what you put in - with communities that might not be true – a fairly small investment of time can get you exponential value back. It just so happens that most community experts start as lurkers and questioners and over time and in other communities begin to transform into answerers. I hope some of your readers become answers in some community, but in the end, the first step is to go tap in.

I'm also sometimes asked, how can I become an MVP? I wouldn't recommend getting involved in Communities for the purpose of becoming an MVP. In my mind, awards aren't things to be manufactured in terms of status. It happens as a by-product of a predominant trait coming to the surface – a sincere desire for helping others. It should be fairly natural. I don't have a great formula to propose on this, but I think this is the right starting point – sharing your knowledge, skills and experiences with others.

**Q6: You talked earlier about the MVP award program. As its director, can you expand on what the program means to ICT professionals and to communities?**

**A:** As I said earlier, what makes communities valuable are the experts within them that so willingly share their knowledge, experience and insights. Communities (and their experts) would exist without the MVP award – but the award certainly makes it easier to identify many of the outstanding technical leaders in the industry. Your readers can have a look at <http://mvp.support.microsoft.com/> to see a directory of MVPs. There's also a great site managed by the MVPs themselves at <http://www.mvps.org/> with links to 3rd party web sites and blogs maintained by MVPs.

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Answer to Q6 continued from page 13....

I hope that after reading this interview, your readers might take more notes when they see the MVP logo and recognize that the person on the other end has been recognized by Microsoft for their outstanding technical contributions to the communities.

**Q7: What traits do MVPs generally have in common?**

**A:** I think I can boil this down to three things.

1. They are independent experts in one or more Microsoft technologies.
2. They have a passion for actively sharing that knowledge and expertise with others in communities.
3. The community participation motivation for them is the process of learning, sharing and helping others.

**Q8: What do you hope to accomplish with the program in the future?**

**A:** It starts with continuing to run a great program that is true to its roots and history. There are some core principals for the Award that are part of this.

1. Preserve the independent voice of the MVPs in the community.
2. Preserve the fundamental principals of an award program – awarded for past contributions for actively sharing technical expertise in online and offline communities.
3. Ensure we are identifying and awarding the most deserving global contributors to protect the quality of the brand and its awardees.
4. Continue to globalize the program and broaden its award competencies to ensure its awardees represent the diversity of Microsoft technology and the worldwide presence and impact of communities.
5. Enhance opportunities for MVPs to network with one another and people throughout Microsoft in the areas they are recognized.
6. And most critically, to preserve the award's fundamental purpose of saying Thank You to these amazing individuals.
7. Continue exploring and learning new community spaces to award outstanding contributors

**Q9: Which are your top recommended resources?**

**A:** #1 is Communities.. communities.. and communities. Seriously, I use an online community for some purpose literally every day. I hope your readers will start with some of the links I included earlier to start their exploring.

Additionally, I'd recommend:

Technet: <http://technet.microsoft.com/en-us/default.aspx>

MSDN: <http://msdn2.microsoft.com/en-us/default.aspx>

**Q10: Provide your predictions of future trends and their implications/opportunities?**

**A: Trend 1: Communities**

Implication/opportunities:

In some ways, the implications are the other 3 trends below. As I said before, I think the first key concept to accept is that this is not a fad – it is not going to disappear. The web didn't create the concept of communities or the need for them, but it has accelerated them dramatically and made them infinitely more discoverable and accessible. This topic of accessibility is interesting. The relative anonymity of communities enables people to participate in ways they wouldn't within physical communities. On the whole, I think this is good. There is a problem side of this too ( trolls and flame warriors ), but on the whole I think the more even playing field for thought leadership is good for everyone. These communities will become ever more global in scope and for companies that are successful in tuning their listening systems to these communities, they will realize significant efficiencies. Ultimately, the opportunity here is in the listening. Your users are going to talk about you, your products, your policies, your decisions and your licensing, etc., with or without you. You really don't get to decide this. More importantly, you don't get to control it – in fact I think there would be an inverse relationship between your level of control and the effort you put in trying to control communities. To be successful, (as a manufacturer or service provider or whatever your business), you have to become a participant in your own communities – not a controller. This is counter intuitive for many organizations, but in my mind a clear requirement.

**Trend 2: Social Networking blends online/offline**

Implication/opportunities:

This is already happening and happening faster every day. What will be fascinating to see is what sticks and which have successful business models. There are those who historically thought of community in very traditional sociological ways – ways that had some physical/offline construct. Over the past decade, this notion has been challenged by the emergence of online communities and the ability for people to develop very personal relationships online. I'm not talking about dating services here, but about real person to person, many to many connections about issues and topics that are very personal to people. The anonymity contributed to this and without question there are some dangers in this area we must be extremely vigilant about. The arrival of mobile devices, location based services and omnipresent broadband/wireless really change the game for how people interact with each other. Howard Rheingold has done some great work in this area I think are worth reading for those interested: *SmartMobs* and *The Virtual Community*. Online communities can quickly transcend to offline connections through these devices and services that enable people to find and connect very quickly with others they know or who have been tagged by people they know

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Answer to Q10 continued from page 14....

Trend 3: Corporate transparency

Implication/opportunities:

The implications are huge, but again, the trend is pretty clear. This is another really tough area. I'm sure many employers are nervous about employee blogging. At Microsoft, we've really embraced blogging... hundreds (if not thousands) of Microsoft employees are blogging. They are talking about their work, about the company, about the technology, etc. Employers will be nervous about this openness. They will worry about legal, liability, privacy, intellectual property, competitor intelligence, etc. But in the end, I think a choice has to be made and I'd like to see the choice made from the statement: Why not be more transparent? vs. Why be transparent? Again, the fundamental truth is that users will talk about you no matter what you do, so go engage – join the discussion. Along these lines, one of the most interesting things we've done is Channel9 (<http://channel9.msdn.com/>). Check out the readme.txt on channel 9 at <http://channel9.msdn.com/about.aspx> and I think your readers will get an idea of what I mean about this corporate transparency. The other element of this that I really like is the opportunity to humanize your company. What most people know about you is learned from formal communication (web site, documentation, PR, etc, etc). This isn't bad, it's just a very singular and structured way to communicate that embodies certain norms. Transparency gives a company a new avenue to personalize and transmit something different about its people. Again, take Microsoft as an example. Think about the kind of communication you expect from Microsoft, and then go read the Channel9 readme.txt. I'd love to hear initial reactions.

Trend 4: Consumer empowerment

Implication/opportunities:

We will continue to see a proliferation and democratization of information and access to peer expertise - across every topic, language, culture, product, service and opinion. In the end, I think this is the critical change when it comes to businesses today. The consumer will have more knowledge as part of their decision process than ever before. They will be in the driver's seat. This is a very different supply chain than the traditional one most of us are used to, and it has big implications for how companies organize and go to market. Personally, I think this will impact almost every industry in dramatic ways and it's an exciting time to be part of that evolution.

These trends will also put a lot more noise into the system and we will ebb and flow in and out of information overload, but I am more of an economist than a technologist, and the economist in me believes the overall value equation will go up dramatically and the noise, while always present, will get managed to the fringes.

**Q11: Sean, how can we further connect with you and your ideas?**

A: That's a great question... how would you like me to? I'm happy to participate here in your community if your readers are interested. Perhaps a podcast or chat? You're also welcome to share my contact info with your readers – it would be fun to read their thoughts on this interview. I know I learn more about communities every day, so I certainly welcome any new insights.

**Closing Comment:** Sean, we thank you for sharing your time with us and we wish you continued success for the future.

A: My pleasure, I love to talk to people about this topic and I'm particularly interested in the social dynamics and behaviors of communities, so perhaps this was a little different take on the topic than usual.

## CALENDAR OF EVENTS

### Orange County Chapter

Join the Orange County chapter for their October Lunch and Learn on October 18, 2006. We have Joseph T. Clark, from Moss-Adams LLP here to discuss SOX 404 Risk Assessments and IT Controls. This meeting is a joint presentation with StorageNetworking.org.

Future events can be found on <http://www.ocnpa.org>.

### NPA in your neighborhood

The Orange County chapter was given the opportunity to have a table at two TechNet events. First one was in Simi Valley on August 31, 2006, and the second was in Garden Grove on September 19, 2006. Richard Allan Kelley was there representing the NPA at both locations. Bob Shetland was able to join him at the Garden Grove event. We made many contacts with people interested in what we have to offer. Some just took the brochures and others signed up for the e-mail list. Richard was able to make contacts at the Simi Valley event for building the Los Angeles chapter, and was even asked about a Ventura area chapter.

### Building Chapters

There is news about some people wanting to build more chapters in the Southern California area. This is not a rumor or wild dreams. The planning meetings are being setup by your fellow members to build chapters in the Los Angeles, and Inland Empire area. Richard Allan Kelley is leading the call for the Los Angeles area, and Tyler Wang is leading it for the Inland Empire area. If you know anyone who might be interested in helping developing these chapters, send them to either Richard Allan Kelley, or Tyler Wang.

###

**Rick Maule: CEO, President, Chairman of the Board, NetEffect**



Rick Maule is an experienced and proven leader as evidenced by the successful transition by NetEffect from InfiniBand to iWARP Ethernet technology. With more than 25 years experience in major corporations, start-ups and turnarounds in the computer and communications industry, Rick has served in various roles including general management, marketing and engineering.

Before joining NetEffect, Rick was vice president and general manager of the Mobile Communications Division of 3Com with responsibility for a wide range of communications products, including all mobile and wireless client products.

Rick received his B.S. and an M.S. in Electrical Engineering from the University of Arkansas. He also completed the Graduate Program in Business, an industry-focused MBA program developed jointly by Harris Corporation and the University of Florida. He is a regular speaker and panelist at many industry forums.

Discussion:

**Q: What critical corporate lessons can you share from your more than 25 years experience in major corporations, start-ups and turnarounds in the computer and communications industry?**

**A:** A few concepts come to mind:

Innovation is unstoppable: Every time I have heard that we have reached a technology limit, shortly thereafter, someone announces that the limit has been surpassed. I am sure there are real limits out there, but they are fewer than people think and I don't expect to see many of them in my lifetime.

Finding the solution: A lot of life in technology bears similarity to the game of Jeopardy – many times to get the right answer, we need to ask the right question.

Building a winning team: My experience is that if a good team understands clearly what constitutes success, they will give their very best to succeed. The danger comes when the criteria for success is not well understood, is confusing, or is perceived differently by different members of the team. When that happens, management has made it hard for the team to win.

**Q: What career tips can you provide from your strong history of successes?**

**A:** Some key things that come to mind are:

Have a clear vision – what are you trying to do and why.

Understand the problem – the real problem, not someone's interpretation of the problem to fit their solution.

Foster a strong, diverse team – if we all think alike and approach the problem the same way, we won't find the best answer.

Stay flexible and be open to new opportunities and alternatives – there will almost always be some open to you, if you are open to them.

**Q: What specific major challenges will corporations face and how will they be addressed?**

**A:** We are still in the information age. We use information for running our companies, understanding our customers, and creating competitive advantage. The challenge is the amount of data that we have created and are creating, as well as getting access to that data and using it effectively - without the sheer volume overwhelming our infrastructure, our budgets, and us. We need the ability to scale to meet our information technology needs simply and cost effectively. The good news is that innovation continues to provide us with ways to get there.

Continued on page 17

**SYSTEM ADMINISTRATOR APPRECIATION DAY (SAAD)**

By Richard Allan Kelley  
Orange County Chapter Officer

Happy belated SAAD. I want to thank you all for the hard work and time on keeping our phone system and network going without any noticeable problems. No matter how early or late I call you to help me with my Excel spreadsheets and PowerPoint presentations, I appreciate you! I am sorry this is late. I just got back from a long vacation. What's this? You have not heard of SAAD?

I remember a few years ago, while browsing the Internet, or maybe driving in to work learning about SAAD. It is System Administrator Appreciation Day. On one of my recent adventurous days on the net, I remembered about SAAD again and searched Google under different keywords, and found it! Friday, July 28, 2006 was the seventh annual System Administrator Appreciation Day.

According to the official website, [www.SysAdminDay.com](http://www.SysAdminDay.com), System Administrator Appreciation Day is the one day to acknowledge the worthiness and to appreciate the person who occupies the role of system administrator. This includes people who are computer administrators, network administrators, Internet administrators, telephone administrators, voice-mail administrators, database administrators, and e-mail system administrators.

This day falls on the last Friday of July. It is an unofficial holiday and is celebrated internationally. Ted Kekatos created the day on July 28, 2000 and was inspired by an Hewlett-Packard ad, where people presented gifts to the system administrator after installing new printers.

The official website gives gift ideas, links to various humor sites about the day, and things to avoid as gifts. The site has pictures from previous year's celebrations, and press mentions. There is even a System Administrator Day Song!

So mark your calendar to celebrate the system administrator.

Continued from page 16 (RICK MAULE INTERVIEW)

**Q: Which technologies will have the greatest future impact and why?**

A: For the data center:

Clustering of commodity servers – more computing power for less cost;

Blades – more computing power in a lot less space;

Virtualization – making the most of the resources you buy;

iWARP Ethernet – a single networking fabric to make the most of clustering, blades, and virtualization – meeting the needs of networking, storage, and clustering.

The combination of these technologies will simplify our efforts, increase our flexibility to address change, and reduce our costs.

**Q: Describe the evolution, challenges, and promise of multi-gigabit technology?**

A: The information in your data center is a critical resource of your corporation. The growth in demand for this information is not slowing down – currently it is more than doubling year on year – so the infrastructure has to handle more.

This leads to the need for multi-gigabit technology and beyond. To complicate matters, each application type has its own additional unique demands – high bandwidth for networking, high throughput for storage, and low latency for clustering. This disparity in demands has led to a fragmentation of data center communications – unique networking fabrics for each problem. But this path leads to increased complexity and cost. The promise of the new iWARP extensions to Ethernet is a simpler world – one networking fabric that can do it all – without disrupting existing infrastructure and yet continuing the traditional cost benefits of Ethernet.

**Q: What are the pros/cons of the major competing technologies?**

A: For each networking challenge, our innovative industry has produced a solution (such as Fibre Channel for storage and InfiniBand for clustering). But solving the problems one at a time has one main drawback – scale. Solving each problem one at a time guarantees no significant economy of scale because they are not interoperable with each other. So each solution is constrained to volume needed to solve each specific problem ... except for Ethernet. As Ethernet has done in the past, it is doing again – it is embracing change to meet the new challenges while remaining fully compatible with past generations of Ethernet. The iWARP extensions to Ethernet not only solve each of the problems but also leverage Ethernet's unique economy of scale.

**Q: Where do you want to take iWARP? Where do you see it heading in five years?**

A: The iWARP extensions to Ethernet are the next step in the evolution of Ethernet. Near term, they will be used to address areas of the greatest pain in data communications – latency and overhead on servers for the most demanding applications of networking, storage, and clustering.

And many of these applications will reap the benefit transparently – the applications will just run faster with lower use of the CPU. And Ethernet is still Ethernet. The economies of scale will lead to this fully compatible set of extensions finding their usefulness in a wider and wider range of applications, which will in turn drive increased volumes and lower costs. And once again the question for Ethernet will move from why to why not. At the right price point, iWARP extended Ethernet will be the only Ethernet ... and the cycle will begin again. In five years, we won't be asking about iWARP – that will be taken for granted; we will be challenging ourselves for what's next.

**Q: What is the value proposition offered by iWARP?**

A: A single solution that meets the needs of the data center – technical, ecosystem, and economic.

Simply put, we need speed without pain. iWARP increases the performance of Ethernet to multi-gigabit speeds while actually and dramatically reducing the resulting load on the server. In doing so, it also gives Ethernet the necessary characteristics for proper support of storage and clustering.

Unlike competitive networking fabrics, it not only solves the technical problem, but also addresses the ecosystem and economics issues. iWARP was designed to extend Ethernet without introducing disruption into the ecosystem of the data center. It is fully compatible with anything you already have. And an IT manager can address his performance and bottleneck problems incrementally – solve the pain where it hurts the most, spending as little as needed.

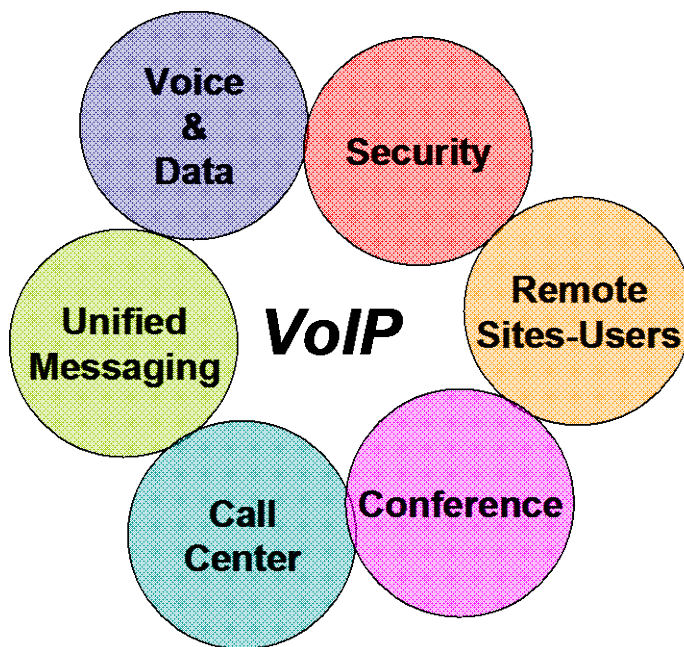
## KILLER VOIP APPS

Steve Delahunty NPA Board, and a Senior Associate with Booz Allen Hamilton.

The first killer app was V isical and the reigning killer app in the 1990s was electronic mail. Will capabilities centered around VoIP take the crown as the killer app of the first part of this century?

To a great extent many organizations now either have their networks ready, checked and/or upgraded to effectively deploy VoIP or can efficiently approach the project to ensure their infrastructure is prepped for implementations. As the infrastructure is prepared and quality of service is ensured in many target client locations a focus is on the relevant applications that are implemented to take VoIP to the next level. And with more-and-more organizations deploying VoIP along with the existing number of VoIP installs growing there are applications that organizations are demanding. According to the a recent Network Computing Magazine annual reader survey, VoIP was the top technology initiative that had the most positive impact on reader companies within the past year.

The list of pseudo killer-apps for VoIP include applications such as Unified Voicemail & Email, Call Centers, Voice Conferencing, Presence Features, and Remote Worker/Office Support to name the usually noted options. Opportunities exist for IT to drive the acceptance and implementation of VoIP apps as well as the handling of typical VoIP install issues such as architecture, infrastructure, and security.

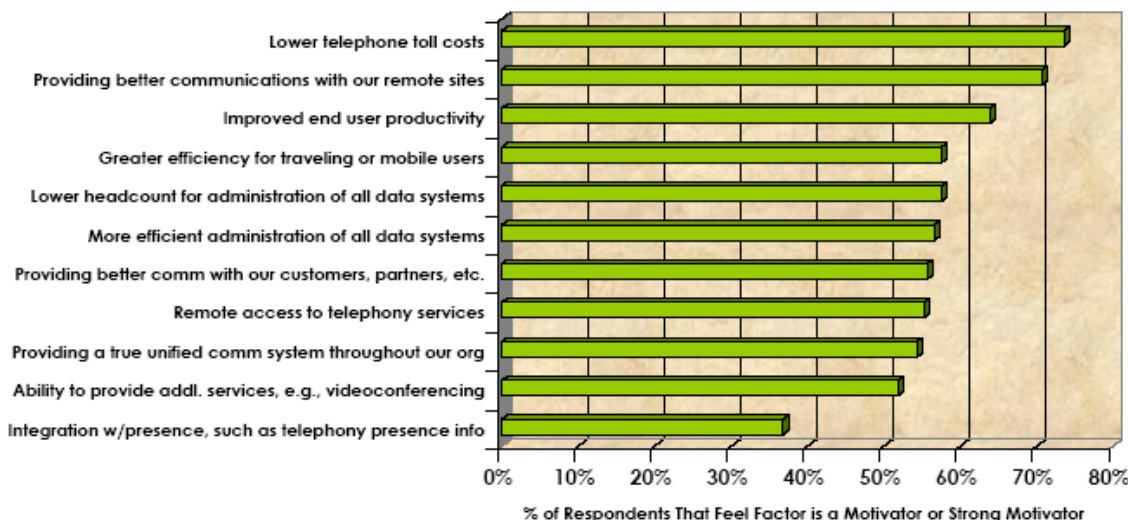


### System Installs

As firms approach end-of-life on their older PBX phone systems the previously common VoIP system justification of cost savings is not always enough to ensure corporate buyer approvals. A complementary addition to a VoIP system return on investment (ROI) pitch is to include benefits linked to employee productivity. Productivity can be hard to quantify, but touting gains in employee output is often oriented on the use of VoIP apps. Osterman Research conducted a recent survey of IT decision makers and offered a long term motivating factor for continued VoIP deployments as the productivity gains and other advantages that VoIP offers in the context of email and presence-based communication systems.

Continued from page 18 (KILLER VOIP APPS)

**Motivating Factors for Migrating to VoIP**



SOURCE: Osterman Research

**Call Centers**

The topic of call centers also includes the use of Interactive Voice Response (IVR) units as well. VoIP has been alive and well in call centers in force for quite some time. Many VoIP phone systems come with some form of basic call center capability but true call center functionality includes more robust management, reporting, and integration options. Some firms such as Aspect have made a name for themselves as the leaders in IP-based call center implementations.

Jake Star, Vice President of Technology, Merritt Hospitality notes that call center design is really right now and this is a skill that is often not native to data folks and requires a greater ability to understand the business. Jake explained how Call Center work brings in other technologies, IVR implementation is in big demand and I am also finding that the VoIP skills are a lead-in to the rest of the architecture.

**Unified Messaging**

Unified Messaging minimally includes the ability to receive voicemail as email attachments. Other options include the ability to listen to email as audio through the phone system. Another option includes the ability to retrieve voicemail through a web interface remotely. Less common options can include the ability to create an audio message and have the audio of the message delivered as voicemail to a destination, all done remotely with a phone only. Close integration with current messaging systems is desirable. Jake Star described that unified messaging integrates with email and so you can also handle email implementation and migration issues. As noted by Osterman Research, one of the most critical attributed for VoIP as sought by organizational customers is the ability for VoIP systems to interoperate with enterprise messaging systems.

**Voice Conferencing**

Conference bridges were typically external hardware added on to the traditional phone system. Many current VoIP phone systems have some level of conferencing built in. Higher-end conferencing including web-based features are often offered as additions to the system.

**Presence Features**

Messaging systems can include functions such as instant messaging but more recent presence features have moved to include find me, follow me capabilities. This is where the individual can program a list of numbers where their phone should ring: office, mobile, home. And these numbers can be changed via a user interface. Such capability can be very useful for small offices or other specific situations.

**Remote Worker/Office Support**

Network Computing Magazine notes prime VoIP candidates are companies with many, geographically dispersed offices. The promise of easier site-to-site integration is key to many VoIP installs using existing corporate wide area network connectivity or site-to-site VPN connectivity via the Internet for system connectivity, converged voice/data on the same network. As VoIP call compression has improved so has the ability to realize this promise. For remote workers such staff can securely access the VoIP system using hardware or software. Soft phones, using a software application with a headset instead of a traditional desk phone, is an option often used for remote staff. Or remote staff can use an actual handset connected to their network.

Continued on page 20

Continued from page 19 (KILLER VOIP APPS)

## Case in Point

An argument could be made that many of these applications are either sought on system install or included with systems versus being implemented as add-ons. Take for instance an entry-level system offered by Avaya for small businesses. Avaya has the IP Office product which is an all-in-one solution for 2 to 360 extensions. Add-ons possible include a call center module, IVR, and several soft phone application options as well as web-based enabled conferencing and integrated messaging. It should be noted that some basic call center capability is provided out-of-box along with a voicemail graphical interface for users. This entry-level system comes with some robust features including auto attendant, voicemail, broadband access, wireless access point, and VPN tunneling. Even this system has support for multi-site installations connected via a data network. Telephone Applications Programming Interface (TAPI) provides for the system to interface with Microsoft Outlook and other desktop telephony.

The role of IT and perhaps vendor assistance in such a system install would include the basic planning, ensuring the network is ready, basic installation, configuration, and related issues such as security, training, and support. IT would then implement chosen options such as true unified messaging and conferencing along with support from the vendor. Setup for remote offices and users would also be accomplished by IT in coordination with vendor guidance.

## Standards

A favorite expression is the beautiful thing about standards is that everyone has one. The VoIP market has seen the emergence and increasing acceptance of the SIP (Session Initiation Protocol) and H.323 standards. This is key for third-party applications and even hardware integration. As noted in the Osterman Research study, More than 80% of organizations view standards as either important or extremely important, while only 4% of organizations view standards as relatively unimportant.

## Resellers

Value Added Resellers (VARs) may have an important role in implementing VoIP applications. Of interest to VARs and clients is the Osterman Research survey outcome showing that almost 60% of the respondents felt that system integrators were important VoIP information sources and about 40% of the respondents felt that local consulting firms or individual consultants were important information sources. Also of interest was the 48% figure for survey respondents noting they would be very likely to purchase VoIP solutions from a VAR. VARs have a role to provide for clients as they did in situations where they supported traditional phone systems. The VAR is a trusted consultant that assists with product choice, evaluation, implementation, and provides an ongoing trusted support relationship.

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The following sources provided approval for use of their information in this article:

- *Osterman Research, Inc. provides market research, cost modeling, benchmarking and related services to vendors of technology-based products and services. See [www.ostermanresearch.com](http://www.ostermanresearch.com) for more info.*
- *Network Computing Magazine, see [www.networkcomputing.com](http://www.networkcomputing.com) for more info.*
- *Merritt Hospitality is the fastest growing hotel management company in the United States. Merritt is an independent hotel management company currently operating 29 hotels in 12 states under well-known brand names such as Westin, Marriott, Sheraton and Hilton.*

Steve Delahunty is a member of the board of the Network Professional Association and a Senior Associate with Booz Allen Hamilton.

## Interview:

### NESTOR PORTILLO

**Americas Regional Manager of the CSS Communities and MVP Program at Microsoft Corporation**

Interview by Stephen Ibaraki, MVP, DF/NPA, CNP, FCIPS, I.S.P.

Nestor Portillo is the Americas Regional Manager of the CSS Communities and MVP Program at Microsoft Corporation discusses the evolution of the MVP program.

The CSS Communities and MVP Program is primarily responsible for the relationship management of key community influencers in Canada, US and Latin America awarded Most Valuable Professionals (MVPs) by Microsoft.

More of the interview can be found at: [http://www.npanet.org/public/interviews/careers\\_interview\\_241.cfm](http://www.npanet.org/public/interviews/careers_interview_241.cfm)



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