



**NBX VOICE OVER IP  
TECHNOLOGY FOR  
BOOSTING PRODUCTIVITY  
AND REDUCING COSTS:  
THE EVOLUTION  
OF A REVOLUTION**

**3Com® NBX® IP Telephony  
Communications Solutions**

## CHANGING THE RULES OF THE GAME

Internet Protocol (IP) telephony is a radical departure from the closed, proprietary PBXs and key telephone systems that for more than three decades defined voice communications. Today, organizations of all sizes can enjoy open standards-based, network-centric solutions that move beyond voice-only communications to multimedia—voice, video, data, presence and collaboration—tools to bring employees, peers, vendors, suppliers and customers together in exciting new and profitable ways.

Since 1998 when 3Com introduced the first commercially available IP PBX, the 3Com® NBX® 100 Communications System, the company has been leading the way through each step in the evolution of voice communications. NBX solutions help organizations bridge the gap between remote workers and their office counterparts, affordably delivering productivity-enhancing multimedia applications over a wide area network (WAN) while ensuring a complete enterprise IP telephony system with exemplary voice quality. 3Com's open approach to secure converged networks facilitates smooth transitions from existing systems and fast, painless IP telephony upgrades.



**The 3Com NBX V3000 Analog Platform and 3Com IP Phones.** The V3000 platform appears above with the broad range of 3Com desktop, cordless and wireless phones and attendant console. The variety of the 3Com NBX portfolio allows organizations to select the feature-set and cost that matches their individual requirements.

## THE VALUE OF CUSTOMER-FOCUSED ARCHITECTURE

### A Platform to Meet Any Need

In over 50 countries and in 12 different languages, NBX solutions are demonstrating the value of their customer-sensitive designs. Based on years of experience in meeting the needs of a broad range of IP telephony customers, 3Com Voice over IP (VoIP) solutions optimize communications for small- to medium-sized businesses. Three NBX platforms each deliver a full suite of embedded applications, a comprehensive variety of 3Com and third-party software applications and use the same proven operating system (OS). Further, they offer organizations distinct alternatives that include integrated gateway options to reduce costs and integration time, as well as a selection of power and storage redundancy offerings to effectively address component failure vulnerabilities.



### 3COM NBX V3000 ANALOG IP TELEPHONY PLATFORM

The V3000 Analog platform is designed to provide small- and medium-sized organizations with full-featured IP telephony services. Its built-in analog gateway interface can connect up to four analog loop-start central office (CO) lines directly to the Public Switched Telephone Network (PSTN) to reduce configuration time and related expenses. For further cost savings, analog lines from an existing key system can be transitioned automatically to the new IP telephony system, and the platform includes 15 free phone licenses that support any 3Com phone.



### 3COM NBX V3001R IP TELEPHONY PLATFORM

The “R” in the platform’s name represents “redundancy” and highlights an architecture built to maximize operational uptime. With dual standard power supplies, the NBX V3001R solution assures service continuity in the event of a power component failure. The system supports an optional redundant configuration of hard drives (RAID Level 1) so that information can be automatically written to an alternative hard disk. In addition, dual 10/100 uplink ports provide the flexibility to operate on different network segments.



### 3COM NBX V3000 BRI-ST IP TELEPHONY PLATFORM

For sale in regions where BRI-ST connectivity is offered by a service provider, the V3000 BRI-ST platform offers a built-in BRI gateway interface to decrease configuration time and implementation expense. It allows direct connection to the PSTN of up to four lines (eight channels) of BRI-ST CO trunking and includes dual 10/100 Ethernet uplinks, enabling traffic routing on different network segments via multiple network paths. Like the V3000 Analog platform, this solution also includes 15 free telephone licenses that support any 3Com phone.

### 3COM NBX PLATFORM SPECIFICATIONS AT A GLANCE

**System Capacity:** Platforms scale up to 1,500 devices (including up to 720 PSTN lines) and 250 devices supported out of the box by default

**Built-in Voice Messaging:** 400 hours of storage time and four voicemail ports are included, with the option of expanding up to 72 ports

**Voice Network Connectivity:** Line/station cards housed in the NBX Expansion Chassis provide connection to traditional voice networks via Loop Start analog lines with caller ID capability, T1, T1/PRI, E1/PRI, ISDN BRI-ST and Q.SIG/PRI

**Traditional Telephones and Fax Machine Support:** Analog Terminal Cards provide connection for multiple traditional (2500) phones or G3 fax machines; LegacyLink Gateways enable reuse of existing Nortel handsets (Meridian and Norstar)

**3Com IP Phones:** 3Com offers a full array of budget-matching phone options—from desktop to wireless devices

### Scalability Beyond Compare

**Upgradeable Software.** Traditional PBX products often require customers to pay for capacity they may never need or for capabilities designed originally for large systems. 3Com NBX IP telephony solutions offer “pay-as-you-grow” flexibility. As an organization’s requirements inevitably change, systems can be expanded with software upgrades. New functionality, new applications, even documentation and phone software, can be available in minutes and automatically distributed to every device and user. When additional capabilities are needed, they can be added fast and affordably with key-code activated software licenses.

**Multisite Deployments.** Whether an organization has a single location or multiple offices with remote and “road warrior” employees, 3Com NBX IP telephony solutions can deliver state-of-the-art support. Multisite management capabilities, network management features, dial plan editors and easy configuration tools streamline deployment and maintenance of advanced 3Com VoIP communication systems.

### Sophistication Minus Complexity

3Com understands that most telephony systems seem like a mystery to everyday users, and often to the staff assigned to administer them. The result can be lost time as employees learn the new functionality they need to perform their jobs. 3Com NBX solutions deliver sophisticated capabilities without the installation and administration complexity of traditional, as well as many IP phone, systems. They provide a complete turnkey solution, ready to initiate dial tone right out of the box. And, they are designed to minimize disruption of ongoing business activities as new features and applications are implemented, helping budget-conscious organizations lower their capital and operations expenses.

System managers and users can point and click their way through easy administration screens and wizards. Even the most complex operations, such as setting up a dial plan or linking two offices together, can be performed quickly using NBX NetSet™ software, hosted on a 3Com NBX platform and conveniently accessed using a web browser from any computer on the network. Administrators can view and make active changes to the system in real time without a reboot. Even endusers can quickly and effortlessly customize individual phone button mappings, ring patterns and call forwarding options through the NBX NetSet user portal. 3Com IP phones, regardless of the sophistication of a particular model, can be plugged into any network port without loss of personalized configurations. They operate dynamically as self-locating Layer 2 (Ethernet) or Layer 3 (IP) devices.



### 3Com NBX Netset Administration.

Intuitive drop-down menus and browser screen access help even non-technical administrators easily implement phone system changes.

### Proactive Single or Multisite IP Telephony System Management

The NBX NetSet administration utility makes the process of managing a 3Com IP telephony system easy and convenient for both administrators and users. Beyond basic browser-based feature configuration, deployment and maintenance, NBX platforms also provide the tools for the on-going governance of a single or multisite IP telephony network. Since the platforms operate like any network device, they can be managed from a Network Operations Center, and, with their support of SNMP V3, they can generate a standards-based Management Information Base (MIB) to allow performance data collecting and reporting. Alarms and traps can be set if threshold levels are exceeded, so that network managers can proactively address performance issues.

## ECONOMY AND CONVENIENCE OF BUILT-IN APPLICATIONS

### Voice Messaging

Important communications won't get missed with the powerful 3Com voice messaging system integrated into all 3Com NBX platforms. Setup is intuitive. Each user is automatically assigned a voicemail box, and configuration is easily accomplished through self-guided prompts when a telephone is first used. Users can listen to voice messages in the traditional fashion through their phone set, or they can enjoy the multimedia convenience of retrieving messages through a web browser interface—using NBX NetSet as the user portal—or through an IMAP4-compatible email system that delivers voice mail as .wav attachments in an email message that can be stored, forwarded and archived just as any other email attachment.

### Automated Attendant (AA) Services

Multiple, multilevel AA services provide callers with information and messaging directions when phones are unattended, allowing them to dial by name, number or department. The automated attendant can support up to 20 menu layers, giving organizations exceptional flexibility to route calls based on customer needs.

### System Capacities

Base 3Com NBX configurations support four voicemail (VM) or AA ports, 400 hours of storage, and can be scaled to provide up to 1,500 station voicemail boxes and 1,000 phantom mailboxes. Software-based expansion, activated via keycode, can add up to 72 additional ports for simultaneous access to VM and AA.

### Call Center Functionality

Organizations can improve customer interactions and generate revenue with the software-only 3Com NBX Automatic Call Distribution (ACD) application. Whether used by inside sales staff, a customer support group or a front-desk receptionist, the application enables sound decision-making and promotes efficient communications throughout an organization. It queues calls for waiting agents and generates real-time and historical reporting data. Administered via an NBX NetSet web portal, the application provides up to five customizable routing algorithms (Linear, Circular, Most Idle Agent, Calling Group and Least Call Count) to ensure that all calls are routed according to the most effective business rules. Additionally, in-call announcements let customers know their place in queue. And for administrators, a call center manager with supervisory monitoring capabilities monitors agent activity. Each 3Com NBX platform includes two free agent licenses. Additional licenses can be keycode activated.

The screenshot displays the 'NBX ACD Desktop Statistics X4.0.4' window. It features two main data tables. The top table, titled 'ACD Desk List', shows call statistics for a 'Technical' station. The bottom table, titled 'Agent List For', shows agent activity for three agents: 'Bing', 'Diana', and 'Clark'. The data is organized into columns for various call metrics and time intervals.

ACDName	Station	Last Reset Time	Agents Logged	Agents Ready	Agents In Progress	Calls Waiting	Calls Abandoned	Calls Est. (Per Day)	Calls Est. (Per Hour)	Calls Est. (Per Shift)	Agents Wait. (Per Day)	Agents Wait. (Per Hour)	Agents Wait. (Per Shift)	Total Incoming Calls
Technical	Open		1	1	0	0	0	00:00	0	0	0	0	0	0

AgentName	State	Time in Station (s)	Per Day	Per Hour	Per Shift	Times on Call (s)	Per Day	Per Hour	Per Shift	Per Day	Per Hour	Per Shift	Call Not Answered
Bing	Ready	72.00	1	0	0	15.10	00:00	00:00	0	0	0	0	0
Diana	Wait_Lip	00:09	14	1	1	12.40	00:06	00:06	0	0	0	0	0
Clark	Ringng	47.34	0	0	0	00:00	00:00	00:00	0	0	0	0	0

### NBX ACD Desktop Statistics.

Real-time data lets supervisors fine-tune call center activity by taking actions such as adding agents to address peak call volume.

### Call Detail Reporting

3Com NBX IP telephony solutions include a powerful Call Detail Reporting (CDR) package to monitor business operations. Reports are available in both graphical and tabular format for use in activities such as accurately charging clients for phone consultations based on phone usage tracked by internal account numbers.

## OPTIONAL APPLICATIONS ENABLED BY OPEN STANDARDS

### The Application-Boosting Power of SIP

Session Initiation Protocol (SIP), the de facto business standard for interoperable business communications, provides a common control protocol that allows solutions from different vendors to operate in a single, unified network. Organizations are freed from the constraints of a single-vendor infrastructure when using SIP-compliant software, endpoints, custom applications and hardware. SIP solutions deliver decision and deployment flexibility, as well as network investment protection that helps users keep pace with evolving technology and business needs.

Market leadership requires continuing innovation and attention to customer needs. To further demonstrate 3Com's networking industry leadership and customer focus, NBX R6.0 solutions provide not only proven high-value, but also support for the Session Initiation Protocol. Recognizing the importance of protecting infrastructure investments and ensuring cost-effective scalability, NBX platforms deliver the full range of benefits enabled by standards-based network architecture. Starting with R6.0 systems, they can optionally run SIP to support 3Com or third-party next generation applications that deliver wireless local area network (WLAN) connectivity, cutting-edge multimedia IP messaging and IP conferencing applications and advanced network solutions, including gateways, softphones (PC-based software phones) and desktop IP phones.

### Unified Communications with 3Com IP Messaging

3Com IP messaging software integrates voice messaging with email, supports mobility with find me/follow me capabilities and enables users to control the identity and/or location of their phones (e.g., working from home today, route all calls to my home office). In addition to productivity-enhancing capabilities, the application also enables multiple 3Com NBX platforms to share a single voice messaging server and avoid the expense of purchasing and maintaining additional servers.

### In-House Collaboration Tools with 3Com IP Conferencing

Organizations can avoid the expense of using third-party audio conferencing services and streamline the administration of conference calls by using the 3Com IP Conferencing Module. With its intuitive browser-based interface, users can set up and manage a variety of conferences, including meet-me, ad-hoc and emergency audio conferences. Sophisticated capabilities provide announcement prompts (voice or chime), various in-call options—such as mute conference participants—and announcements of remaining call time.

**3Com® IP Conferencing Module**

3COM

Profile **Conferences** Presence Help

Conference List

- Create Scheduled Conference
- Conference
- Create Meet-me Conference
- Create Instant Conference

### Create Scheduled Conference

**Description:**

Enter numeric conference name (in the range 2000-2999, do not include @domain) or leave it blank for automatically generated numeric conference name.

2100

Subject: Weekly Sales Call

Max. number of participants: 15

Media Type:  Audio  Video  Desktop Sharing

**Conference Schedule:**

Start Date and Time (EST): 13-Apr-2007 11:30 AM

Duration in minutes (15 - 120): 60

Recurrence:  Non-Recuring  Recuring

**Access Control:**

Conference Type: Restricted

**NBX IP Messaging and IP Conferencing Interfaces.** 3Com designs user and management interfaces that ensure easy control of messaging and conferencing activities to encourage collaboration and maximize productivity.

### Wireless Networking

NBX SIP interoperability allows compliant devices to connect to the IP-based phone system as users roam from access point to access point, allowing employees to stay connected to critical networked services. Point of Sale (POS) devices, waiting room Internet access for customers and now wireless phones are extending the boundaries of network-based interactions. The 3Com 3108 Wireless Phone lets busy, on-the-go employees access their company IP phone services from any network location.

**3Com 3108 Wireless Phone.** With a full complement of features and SIP-compliant IEEE 802.11 wireless connectivity, the 3108 phone lets users seamlessly roam throughout a work site or campus environment.



### Telephony Application Programming Interface (TAPI)-based Tools

In addition to Session Initiation Protocol, 3Com also supports the TAPI standard. Users can dial numbers and manage active calls from their computer monitors when running the underlying system software. NBX R6.0 with either an NBX- or SIP-based operating system, can deliver the following TAPI-based applications:

**3Com ExecutiveAssistant Software.** This optional application adds a feature set to 3Com NBX solutions that includes call recording, speech recognition auto-attendant, find me/follow me and more than 100 additional customizable applications. Using their computer, users can record calls for quality assurance, security or training purposes. They can also set preferences for work locations so that calls are routed based on their availability.

**3Com eXchange Call Center.** For more advanced capabilities than those offered by built-in 3Com ACD applications, the 3Com eXchange Call Center solution includes real-time call queue viewing by agents. The software enables them to answer and route calls directly from the agent workstation for more efficient customer service.

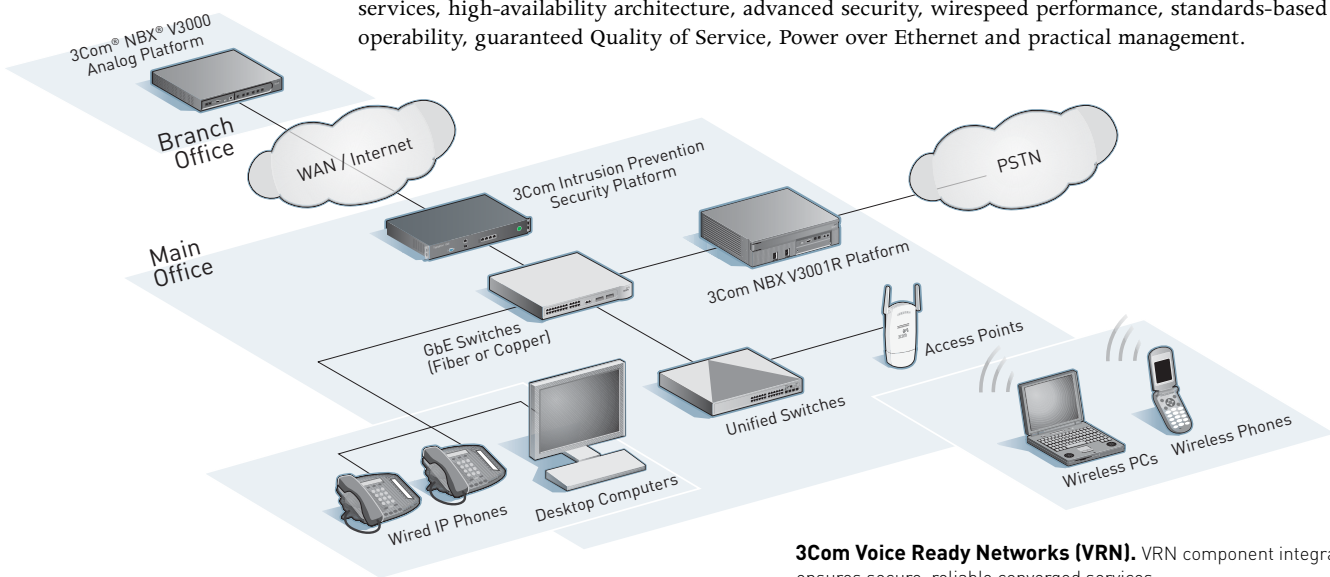
**3Com pcXset™ Softphone.** Using their computer and a connected headset, users can be anywhere in the world and access their office voice communications system and the full feature-set of their desktop phone.



**3Com ExecutiveAssistant Software.** The customizable feature-set includes more than 100 easily accessed advanced capabilities to increase productivity and improve communications.

## THE CHALLENGES OF A CONVERGED FUTURE

Every day and in thousands of installations worldwide, VoIP communications are enhancing collaboration, increasing productivity and lowering costs. This is why for most organizations, it's less a matter of if and when, and more a matter of how to embrace IP telephony communications. Backed by expertise in integrating a broad range of technologies and by years of experience in deploying integrated, award-winning networks, 3Com is helping IT managers proactively ensure fast, cost-effective and successful converged network implementations. Because organizations must protect existing capital investments and minimize operating expenses by avoiding implementation mis-steps—whether as part of a new network installation or a transition from a legacy PBX to an IP telephony solution—3Com Voice Ready Networks (VRN) deliver all the ingredients needed for an efficient and effective IP telephony deployment: assessment and design services, high-availability architecture, advanced security, wirespeed performance, standards-based interoperability, guaranteed Quality of Service, Power over Ethernet and practical management.



**3Com Voice Ready Networks (VRN).** VRN component integration ensures secure, reliable converged services.

### Now Is the Time to Act

Since 2005, when the balance tipped and more IP telephony systems were shipped than traditional Time-Division Multiplexing (TDM) phone systems, Voice over IP has become the technology of the present and the future. Designed to minimize implementation and usage complexities, NBX IP communications solutions continue the decades-old 3Com tradition of practical innovation and high value.

### CONTACT AND ADDITIONAL INFORMATION

Website: [www.3com.com/voip](http://www.3com.com/voip) [www.3com.com/telephone\\_systems](http://www.3com.com/telephone_systems)

Phone: 1-800-NET-3Com (1-800-638-3266)



3Com Corporation, Corporate Headquarters, 350 Campus Drive, Marlborough, MA 01752-3064  
3Com is publicly traded on NASDAQ under the symbol COMS.

Copyright © 2007 3Com Corporation. All rights reserved. 3Com, the 3Com logo and NBX are registered trademarks and NBX NetSet and pcXset are trademarks of 3Com Corporation. All other company and product names may be trademarks of their respective companies. While every effort is made to ensure the information given is accurate, 3Com does not accept liability for any errors or mistakes which may arise. All specifications are subject to change without notice.

600546-001 03/07