Lucent Technologies
Bell Labs Innovations



Frequently Asked Questions
TAOS 9.0 for MultiVoice™

1. *What is the True Access Operating System (TAOS)?*

The True Access™ Operating System (TAOS) from Lucent Technologies is the multiservice, real-time operating system software embedded in the APX 8000™, Stinger™, MAX TNT®, MAX™, SuperPipe, and Pipeline® family of access platforms. TAOS provides the widest range of solutions for WAN access environments and represents the brand name for the leading WAN access feature set for service providers and corporate enterprises. TAOS underlines the Lucent heritage in WAN access solutions and its commitment to research and development to ensure continued leadership in the market.

2. *What edge access platforms does TAOS 9.0 for MultiVoice support?*

TAOS 9.0 for MultiVoice™ supports the following industry-leading access platforms:

APX 8000, MAX TNT, and MAX 6000. Lucent plans to support the MAX 3000 and SuperPipe Plus in the second quarter of 2001 in TAOS version 9.1.

3. *What are the major features within TAOS 9.0 for MultiVoice?*

TAOS 9.0 for MultiVoice is a major release that enables "Universal Port" capabilities on the APX 8000 and MAX TNT platforms. Universal Port supports multiple applications including simultaneous analog and digital modems for remote access, voice- and fax-over-IP, and virtual private networks (VPNs) using any available port processor resources on the 96- or 48-port MultiDSP modules.

Specific MultiVoice features include application support for residential 1+ long distance (LD) and 1010 dial-around services, and call routing programmability in and out of the voice-over-IP (VoIP) network based on dialed number identification service (DNIS) or trunk group. In 2-stage dialing scenarios (calling card), you can implement programmability for authentication and routing based on Automatic Number Identification (ANI), DNIS, trunk group, and/or password. Other features include custom branding (announcements), arbitrary break-in announcements, sequential dialing, and support for operator assistance/calling card balance recharge. **Please note that 1+ LD and 1010 dial-around services require Feature Group D support that is available only in North America and other select regions.**

4. *What is "Universal Port"?*

"Universal Port" functionality enables the MAX TNT and APX 8000 platforms to configure the digital signal processor (DSP) automatically for the type of incoming call—dial-up (V.90 modem or ISDN), VoIP, fax-over-IP, and virtual private network (VPN)— accommodate it on any available port, and process it for transport over a packet-based IP network. **Please note that "Universal Port" is not supported on the MAX 6000 or MAX 3000 at this time.**

5. *Which slot cards support "Universal Port" with the MAX TNT and APX 8000 platforms?*

The 48-port MultiDSP slot card(s), and the 96-port MultiDSP card(s) are needed to support the "Universal Port" feature. Part numbers are as follows:

- 48-port MultiDSP cards (TNTV-SL-ADI-C)
- 96-port MultiDSP cards (APX8-SL-96DSP)

6. Can the same chassis house the 48-port MultiDSP and 96-port MultiDSP slot cards?

As of TAOS 9.0, you may mix the 48- and 96-port MultiDSP cards in a single chassis for data applications only—that is, you can mix them for V.90, ISDN, VPN, etc., but not when running a VoIP service at this time.

7. Are there any limitations of the 96-port MultiDSP vs. the 48-port MultiDSP?

Yes, the 96-port MultiDSP card can be used as a modem or a voice coder. This card supports G.711 and G.729 (a) only. In addition, every port can support fax-over-IP, either as transparent fax transport (carried as G.711 PCM with no echo cancellation) or fax relay (T.38 based). The 48-port MultiDSP card supports analog and digital modems, fax-over-IP, and all supported MultiVoice codecs including G.711, G.729a, G.723.1, G.728, and RT-24.

8. How do I upgrade TAOS on an existing MAX TNT or APX 8000 platform with MultiVoice hash code? Is there a charge to obtain the software?

The software is free to existing MultiVoice customers. To obtain the software and release information, go to the following URLs:

MAX TNT: ftp://ftp.ascend.com/pub/Software-Releases/MaxTNT/
APX 8000: ftp://ftp.ascend.com/pub/Software-Releases/APX/

7. Can I upgrade my existing remote access concentrator for the MAX TNT and APX 8000 platforms to support MultiVoice TAOS 9.0 with "Universal Port?" and is there a cost?

Yes, you need the following components to create and contribute to the programmability of the MultiVoice with the "Universal Port" solution:

- MultiVoice Hash Code
- MultiVoice Access Manager 3.1 (MVAM 3.1) or Lucent Softswitch 3.0
- Lucent Worldwide Services for MultiVoice Networks
- Add-on applications from Lucent or a MultiVoice approved third-party vendor (see http://www.lucent.com/ins/map) *(Optional)*
- MultiVoice Settlement Engine 1.0 *(Optional)*
- Either 48- or 96-port MultiDSP cards to support VoIP, fax-over-IP, and all data applications.

You are also required to install the Feature Group D hash code option on each gateway that will support interexchange carrier (IXC) traffic in a MultiVoice network using the MultiVoice Access Manager 3.1 as the gatekeeper.

The Lucent sales force and technical support teams are available to answer questions and assist you with information and pricing regarding your existing network and business needs. For additional support, you may also contact certified Lucent distributors and system integrators directly or go to the Lucent Web site at (http://www.lucent.com/ins/products/multivoice) for more information on the MultiVoice for the MAX product.

10. If I decide not to upgrade to TAOS 9.0, will Lucent still support the older versions of TAOS?

Yes, but you should consider upgrading to version 9.0 for its enhanced features, performance and functionality—and it is FREE!

11. What are the benefits of TAOS 9.0 for MultiVoice?

The "Universal Port" feature uses the same DSP for voice or data on a call-by-call basis, which allows you to use the APX 8000 and MAX TNT products as multiservice platforms. Lucent is the first to offer Universal Port capability on platforms with multiple DS3 capacity. Multiservice networks provide the key to reduced costs, and are targeted to provide network service providers with a common platform that they can use for transparent integration of voice, fax, and modem services in an existing or new carrier infrastructure.

Other benefits include the ability to sell multiservice capability on a single platform into lucrative calling card, dial-around, and long distance markets. MultiVoice can now be deployed— where, until now, a Class 4 tandem switch was required—to trunk long-distance (LD) calls in intra-LATA or interLATA switching environments. Supported applications include residential 1+ LD and 1010 dial-around services. This new MultiVoice functionality enables any Internet service provider (ISP) to offer telephony services in the $87 billion North American market for long-distance services.

12. When will TAOS 9.0 be available?

TAOS 9.0 is available now. You can download the software from the following URLs:

MAX TNT: ftp://ftp.ascend.com/pub/Software-Releases/MaxTNT/
APX 8000: ftp://ftp.ascend.com/pub/Software-Releases/APX/

13. Does TAOS 9.0 for MultiVoice operate with Lucent Softswitch and what type of applications does it support?

Yes, TAOS 9.0 does interoperate with Lucent Softswitch 2.x, 3.0, and above.

The initial application of Lucent Softswitch 3.0 is to replace the toll/tandem (class-4) switches and to offer VoIP connectivity. Lucent Softswitch controls trunking gateways like the MAX-TNT and APX-8000, which convert circuit trunks to VoIP packets. Lucent Softswitch receives the SS7 signaling from the PSTN by an embedded SS7-Gateway and performs call control functions. This solution allows operators to replace existing toll/tandem exchanges with a Lucent Softswitch + gateway combination distributed in a network. Being a flexible signaling infrastructure, Lucent Softswitch offers voice over packet connectivity with a variety of technologies.

Another application includes Internet Call Diversion (ICD) which diverts Internet dial-up data traffic directly to the data packet network to alleviate congestion on the circuit based PSTN. This application has been the driving force behind the evolution of gateways we know today and has accelerated the clarification of the Lucent Softswitch architecture by separating payload and call-control. For further information on Lucent's Softswitch product go to

http://www.lucent-ssg.com/ons/softswitch/

Does NavisAccess™ v5.0 support TAOS 9.0 for MultiVoice?

Yes, with Navis™ 5.0 and MultiVoice, you can use the VoIP gateway Management Information Base and call logging to manage the VoIP network and application. You can map VoIP calls based on DNIS and Trunk Group and monitor VoIP services in real-time using NAVIS AccessWatch. You can also monitor physical resources including DSPs, slot cards, and modems and base fault, performance and event monitoring on VoIP statistics—jitter, delay/latency, and call rates. You can purchase the NavisAccess management platform separately.

14. How can I purchase the TAOS 9.0 and where can I get additional information?

You may purchase the MultiVoice TAOS 9.0 for the APX 8000 and MAX TNT platforms via the standard MAX distribution channels including the following:

- Distributors
- Value-added reseller (VAR) channels
- Direct from Lucent

For more information, please call Lucent in the U.S. at 1.800.621.9578 or visit our Web site at http://www.lucent.com/ins/products/multivoice.