IXJET™

streaming media product series

3CX
STREAMING MEDIA SOLUTIONS

High Quality Multimedia Information Exchange

3CX™

STREAMING MEDIA SOLUTIONS

3CX offers Leading-Edge Solutions in:
- Streaming Media
- Distance Education/Training

Streaming Media

3CX enables the delivery of high-quality MPEG-1, MPEG-2 Video On-Demand, and Live MPEG broadcasting. Lectures, meetings, event briefings, and surveillance, can be streamed at configurable rates to the desktop. 3CX provides Streaming Media Solutions to satisfy all of your multimedia information exchange requirements. Our focus is on high quality streaming and 3CX 's streaming solutions enable the delivery of the highest quality AUDIO and VIDEO possible.

Distance Education and Training

3CX provides high-quality video asset management tools, including secure, synchronized, web-based, video with PowerPoint presentations and video indexing. In addition, 3CX provides secure web-based video search engines.

IXJET™ STREAMING

The high quality solution for On-Demand Streaming. Watching high-quality video clips of instructor lectures, company training materials, movies, or even MTV right from your desktop becomes a reality.

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IXJET™ LIVE!

The high powered solution for streaming Live Media. IXJET Live brings up-to-the-minute financial market updates, world news, corporate briefings, lectures, seminars, and public programming to any PC on the globe reachable by the internet, corporate intranet, wireless, or satellites.

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IXJET™ EXPLORER

The ultimate web-based on-demand learning tool designed for online high quality video viewing, course lecturing, and web-based multimedia browsing. Corporate training and distance learning are easier than ever over the Internet and the corporate Intranet.
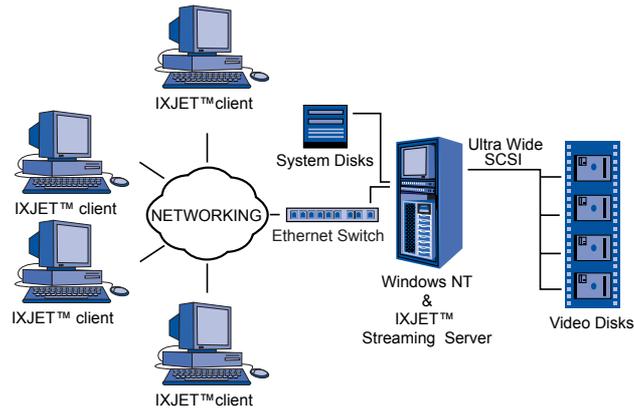
6

IXJET™ PRESENTER

The universal web-based media authoring and presentation tool synchronizes media authoring and presentation in the web-based network environment. Using advanced component technology, IXJET™ Presenter delivers high quality MPEG video/audio from an IXJET Streaming Server. Video annotation and slide presentation are now an integral part of the streaming media solution. It is ideal for on-demand learning and remote presentations, as well as, point-of-sale or kiosk applications.

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IXJET™ STREAMING ADVANTAGE

IXJET Streaming is a server management tool that provides video content management based on the client/server architecture. IXJET Streaming monitors stream playback status and reports any unusual situations via its event logging window. Included with IXJET Streaming is video streaming embedded within Web browsers. The figure to the right illustrates the overall architecture of IXJET Streaming. The architecture of IXJET Streaming consists of five major components:
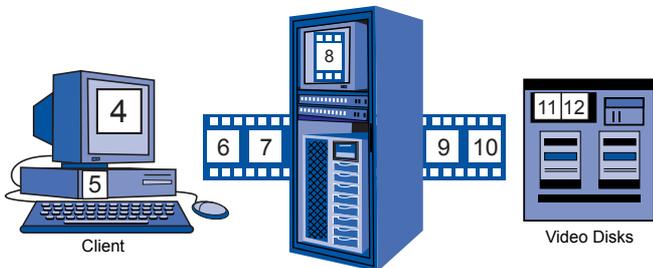
- Server
- Storage subsystem
- Network Interface
- Networking Infrastructure
- Client Playback Station

IXJET™ Streaming Architecture

ADVANCED CONTROLLED STREAMING

IXJET Streaming delivers high-quality multimedia content to hundreds of networked clients. Clients can view multimedia content stored on servers at anytime. With controlled streaming, clients begin viewing media as soon as a small piece of data is available in the clients space. Unlike downloading or simple streaming, controlled streaming technology dynamically adjusts the systems behavior to accommodate unexpected network traffic to maintain guaranteed quality of service. For media servers, the ability to provide guaranteed playback quality and deliver with minimal startup delay is critical for interactive applications such as shopping on demand, video/karaoke on demand, kiosk, and many others. IXJET Streaming's controlled streaming technology meets all of the critical demands that these applications require.

IXJET™ STREAMING Server

3CX Advanced Controlled Streaming

VIDEO FILE SYSTEM

3CX Streaming Media Solutions are implemented through a high-performance real-time video file system. In order to retrieve data from secondary storage devices, it requires the help of a video file system. Due to the tremendous overhead created by handling continuous media, it is not feasible to use a traditional file system. To obtain greater overall system performance, it is necessary to have a dedicated Real - Time video file system. IXJET Streaming Server implements its own video file system to provide guaranteed quality of service to each access.

3CX delivers high-quality Streaming Media Solutions

3CX™
STREAMING MEDIA SOLUTIONS

3CX is committed to delivering LEADING-EDGE Multimedia Communication Solutions that integrate Computing, Communications, and Consumer electronic Technologies to enable the realistic eXchange of Multimedia Information over the Internet, Intranet and Digital T.V. Networks

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IXJET™ STREAMING

FEATURES

- High-performance Video File System

- Advanced Controlled Streaming Technology

- 24x7 service - Video Management without interruption to the streaming service

- Remote and Local server management

- Video Configuration Wizard

- ODBC-compliant database records event and stream connection status

- Up to 100 streams from a single Windows NT server

- Supports MPEG-1, MPEG-2, QuickTime, and ASF file formats

- ActiveX control runs on Netscape Communicator and Internet Explorer

- Concurrent full screen multiple stream playback at 30 fps

- Uses the TCP/UDP protocol suite for high-bit rate streaming service
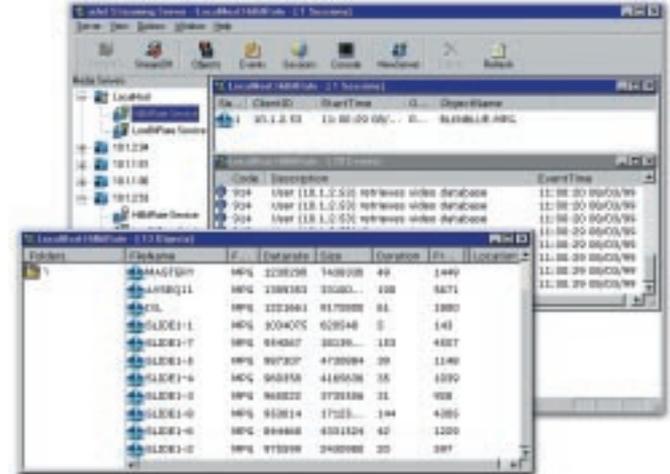
- Microsoft NetShow Service compatible

IXJET™ Streaming, the high quality solution for on-demand streaming provides exceptionally high quality video delivery for applications ranging from internet delivery to broadcast quality on-demand video. Lectures, training materials, movies, or any type of recorded audio and video programming can be streamed to the desktop with this exciting new technology. The IXJET™ Streaming Server solution provides the ability to configure the delivery of your streamed video to broadcast high-quality MPEG videos over LAN-based networks or Internet quality videos over slow-speed modem connections.

IXJET™ Streaming is implemented on the Windows NT platform. It can deliver up to 100 concurrent on-demand MPEG streams per server. IXJET™ Streaming can be easily scaled to broadcast up to an incredible 800 streams per server using an FC-AL (Fibre Channel) storage solution. With our advanced controlled streaming technology and high-performance video file system you are ensured consistently smooth playback of all video streams.

IXJET™ Streaming Server Manager

off , as well as manage video clips, create new video clips and remove outdated video clips on distant IXJET™ Streaming Servers.

IXJET™ Streaming provides an ActiveX Control and a Java Applet to easily embed videos into web pages. IXJET™ Streaming delivers videos over standard TCP/UDP protocol suites, and works seamlessly on Internet-enabled network infrastructures such as switched Ethernet and ATM.

IXJET™ Streaming provides a very affordable high quality solution for video service applications such as Distance Learning, Corporate Training, Health Care Services, Entertainment on Demand (Karaoke and Movies on Demand), Video Archival, and Kiosks . You can rest assured that in selecting IXJET™ Streaming, you have chosen the highest quality video server.

IXJET™ Streaming Client Viewer

With the new Remote Server Management capability, an administrator can monitor, turn the streaming service on or

(For IXJET™ Streaming requirements please see back)

IXJET™ STREAMING

LIVE SERVER
CLIENT SOFTWARE

IXJET™ Live, the high powered solution for streaming live media brings up-to-the-minute financial market updates, world news, corporate briefings, lectures, seminars, and public programming to any PC on the globe reachable by the Internet, corporate intranets, wireless, or satellite. In addition to live broadcasting, IXJET Live enables broadcasters to encode and store live video/audio source and re-broadcast it at a later time. It also provides a powerful programming guide available through the popular World-Wide-Web (WWW). Viewers can watch multiple live broadcasts as well as prerecorded videos from the same Windows NT server instantaneously.

IXJET™ Live Server Manager

IXJET Live takes into account heterogeneous networking environments. By conforming to industry MPEG standards, IXJET Live delivers various streaming bit rates

ranging from Internet quality, 96 Kbs, up to 3Mbs for high-quality presentations over data networks. With built-in point to multi-point IP multicast support, IXJET Live can broadcast programs to any viewer over heterogeneous types of networks including those without multicast support.

IXJET™ Live ActiveX Client Viewer

IXJET Live is capable of delivering both live and stored video through seamless integration with an IXJET Streaming server. IXJET Live supports multiple channels of Live MPEG-1 encoding and broadcasting with a single Windows NT server. Viewers can watch both live broadcasts from any analog video source, as well as on-demand videos from an IXJET Streaming server through any web browser. It can deliver as many broadcasting programs as needed to an unlimited number of viewers in order to cope with the diverse demands of large organizations. IXJET Live runs under Microsoft Windows 95/98 and Windows NT 4.0/5.0.

FEATURES

- High-definition Live and On-Demand Video Streaming Solution
- Multiple live MPEG streams from a single NT server
- Customizable streaming bit rate from 96kb/s to 3Mb/s
- IP multicasting and virtual point-to-multipoint unicast
- Easy to use live server management tools
- ActiveX control API
- Generic client interface supports both Live channels and On-Demand video
- Hardware assisted MPEG encoding
- MPEG-1/MPEG-2 On-Demand Video Broadcasting
- Accepts NTSC or PAL, Cable/TV/VCR input signal
- Encoded video resolution options of SIF or QSIF file format
- Web-based remote program management
- Client viewer with Recording and snapshot capture

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IXJET™ EXPLORER
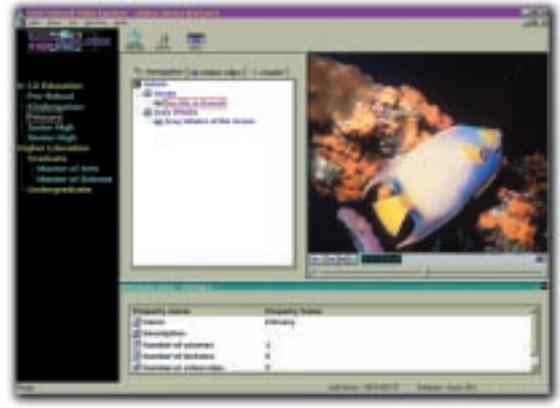
WEB-BASED LEARNING TOOL

FEATURES

- Web-based hypermedia browsing with integrated digital video/audio

- A complete solution for the encoding, storing, streaming, and browsing of digital video/audio

- Video database editing capability offered by the Administrator edition

- One touch course listing by selected attributes such as course title and/or video name

- Integrated search and find capabilities via a customized video database

- Playback of standard digital video and audio encoding formats, including MPEG-I,MPEG-II

- Built-in direct access to web-based learning content

IXJET™ Explorer, the ultimate web-based on-demand learning tool provides an easy way of organizing, browsing, and playing back knowledge resources in both MPEG-1 and MPEG-2 formats. An on-line learning tool designed primarily for Corporate Training and Distance Learning, IXJET Explorer is based on the IXJET Streaming technology for online high quality video viewing, course lecturing, and web-based multimedia browsing. With no local storage requirements, end-users gain access to online resources quickly and easily with a simple point-and-click.

With IXJET Presenter implementing corporate training and distance learning materials is easier than ever over the Internet and the corporate Intranet. The open architecture of IXJET Explorer enables users to configure and personalize the look and feel of the interface for their custom applications.

IXJET™ Explorer Client Viewer

IXJET Explorer creates a boundary-free virtual learning environment while conforming to current and upcoming instructional and web standards. It can be easily scaled

- **Ultimate On-Demand Learning Tool for Education and Corporate Training**

- **High Quality Networked Video and Audio Streaming**

- **Web-enabled Hypermedia Browsing with Integrated Digital Video and Audio**

- **End-User Configuration and Composition for Customized Applications**

to deliver up to 800 concurrent streams provided by an IXJET™ Streaming server. IXJET Explorer comes packaged with both an Administrator and Browser Editions. Both operate under Microsoft Windows 95/98 and Windows NT 4.0/5.0. The possible applications cover a broad range of business sectors including corporate training, distance learning, kiosk, karaoke on demand, etc.

(For IXJET™ Explorer requirements please see back)

IXJET™ EXPLORER

WEB-BASED MEDIA AUTHORING & PRESENTATION TOOL

IXJET™ PRESENTER

IXJET™ Presenter, the universal web-based media authoring and presentation tool revolutionizes synchronized media authoring and presentation in the web-based network environment. Using advanced component technology, IXJET Presenter delivers high quality MPEG video/audio from an IXJET Streaming Server, in addition to supporting streaming media formats such as Microsoft's NetShow™ Active Streaming Format (ASF) and RealMedia™ (RM) from RealNetworks' RealServer™. Institution or corporate users can define their streaming media requirements and target the authoring/viewing capability of their audience.

Video annotation and slide presentation are now an integral part of the streaming media solution. Text annotation and slide presentations can be easily incorporated into video/audio narratives. IXJET Presenter features a timeline-based authoring environment. A step-by-step publishing utility gives content creators a helping hand in pub-
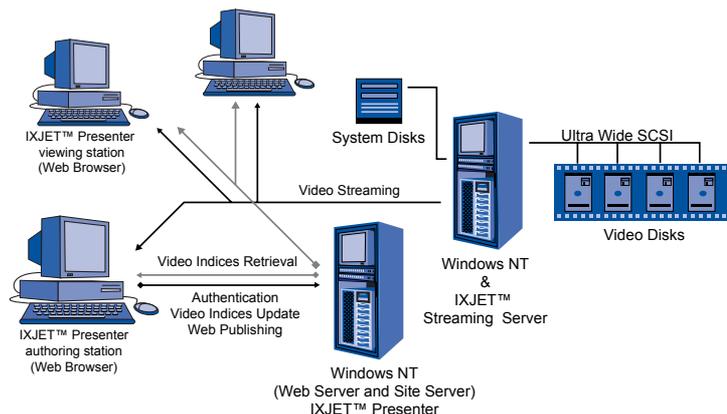

IXJET™ Presenter Client Viewer

lishing synchronized media presentations to a web server. Non-linear visual control enables the user to easily navigate for repetitive or detailed viewing.

IXJET Presenter comes complete with a web-enabled administration utility, which enforces role-based security for controlled access in the Windows NT domain. Secure Socket Layer (SSL) compliant implementation further enhances the data integrity over the public network environment. IXJET™ Presenter is ideal for on-demand learning and remote presentation, as well as for point-of-sale or kiosk type of applications.

(For IXJET™ Presenter requirements please see back)

IXJET™ Presenter viewing station (Web Browser)

System Disks

Video Streaming

Ultra Wide SCSI

Video Disks

Video Indices Retrieval

Authentication
Video Indices Update
Web Publishing

IXJET™ Presenter authoring station (Web Browser)

Windows NT & IXJET™ Streaming Server

Windows NT (Web Server and Site Server) IXJET™ Presenter

IXJET™ Presenter Configuration

FEATURES

- Web-based synchronized media authoring and presentation

- Universal player works with various streaming solutions such as NetShow and RealServer

- Playback of standard digital video/audio encoding formats, including MPEG, ASF, and RM

- Full feature presentation support, including searchable text indices, and PowerPoint slides

- Role-based security model using NTLM Domain for Secure-Socket Layer (SSL) compliant encryption for data transport service

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streaming media product series

IXJET™ STREAMING

STREAMING SERVER
- Windows NT Server 4.0 or later and Microsoft NetShow Service3.0 (or later) for streaming both high and low bit-rate video
- Windows NT Workstation/Server 4.0 or later(high bit-rate only)
- 64MB RAM
- Ultra Wide SCSI, FC-AL, or EIDE (Ultra DMA) disks for video contents
- Ultra Wide SCSI adapter for SCSI disks
- Ethernet and/or ATM NIC cards.

STREAMING CLIENT
- Windows 95/98/NT: Pentium 166MHz MMX or DirectShow or Java Media Framework MPEG-1 playback, Pentium 90MHz for hardware playback
- Decoder Card (optional): Sigma Designs NetStream or Wired's Mason MPEG-2 decoder card
- Browser: Netscape Navigator 3.0/Communicator 4.0 and later. Internet Explorer 3.0 and later with ActiveX control support.
- Macintosh: PowerPC 200Mhz, 32MB, OS 7.5 and later
- QuickTime 2.5 or later (with MPEG extension)
- Ethernet and/or ATM NIC cards

IXJET™ LIVE

LIVE SERVER
- Windows 95/98 or Windows NT
- Array Microsystem's VF100/200 MPEG-1 encoder

LIVE CLIENT
- Windows 95/98 or Windows NT
- Microsoft Internet Explorer or Netscape Communicator
- DirectShow 5.1 or later for software MPEG-1 decoding
- Optional hardware MPEG decoders to improve the playback quality

IXJET™ EXPLORER

STREAMING SERVER
- At least 233 MHz Pentium
- Windows NT 4.0/2000
- IXJET™ Streaming
- 64MB RAM or more
- 100Base-TX Fast Ethernet adapter or 155 Mbps ATM adapter
- Network cabling

EXPLORER CLIENT
- 166 MHz Pentium with MMX for software MPEG playback
- Windows 95/98; Windows NT
- Jet database engine 3.5
- Internet Explorer 4.0 or later
- 16MB RAM
- SVGA monitor or better
- Mouse or touch screen mask (optional)
- Sigma Design's NetStream MPEG decoder (optional)
- 10Base-T Ethernet adapter or 25.6 Mbps ATM adapter
- Network and A/V cabling

IXJET™ PRESENTER

STREAMING SERVER
Software
- IXJET™ Streaming
- Windows NT 4.0/2000
Hardware
- 233 MHz Pentium MMX
- 64 MB RAM or more
- MPEG encoder to convert analog source to digital media (optional)
- 100Base-TX Fast Ethernet adapter or 155 Mbps ATM adapter
- Network cabling

PRESENTER SERVER
Software
- ixJet Presenter server components
- Windows NT 4.0/2000
- Microsoft Jet database engine 3.5 with ODBC support
- Microsoft Internet Information Server 3.0 or later co-hosted with IXJET™ Streaming or stand alone)
- Microsoft Site Server 3.0 (optional)
Hardware
- Similar basic hardware configura tions as IXJET Streaming

AUTHORING /VIEWING STATION
Software
- ixJet Presenter web-downloadable components
- ixJet Streaming ActiveX control for MPEG-1 playback
- Microsoft NetShow Media Player ActiveX control for ASF playback
- RealNetworks RealPlayer ActiveX control for RM playback
- Microsoft Windows 95/98; Windows NT 4.0/2000
- Microsoft Jet database engine 3.5 with ODBC support
- Microsoft Internet Explorer 4.0 or later (alternatively, Netscape Navigator with ActiveX plugin installed)
- Microsoft PowerPoint 2000
Hardware
- At least 166 MHz Pentium with MMX for software MPEG playback
- 16 MB RAM or more
- SVGA monitor or better
- MPEG hardware decoder for smooth playback of media content (optional)
- Mouse, or touch screen mask (optional)
- 10 Base-T Ethernet adapter or 25.6 Mbps ATM adapter
- Network cabling

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