

IXCHARIOT® SERVER AND DESKTOP EDITIONS

IMPROVE APPLICATION PERFORMANCE WITH NETWORK ASSESSMENT AND DIAGNOSTICS

Organizations add new business services to their networks all the time. Voice over IP (VoIP), unified communications, streaming video—they are all services that can provide a competitive edge. But whether a company's network is capable of supporting a new service is a question too often left to chance. To avoid blunders, an organization needs to qualify the network, assess its performance, and predict the quality of experience (QoE) of a newly deployed service.

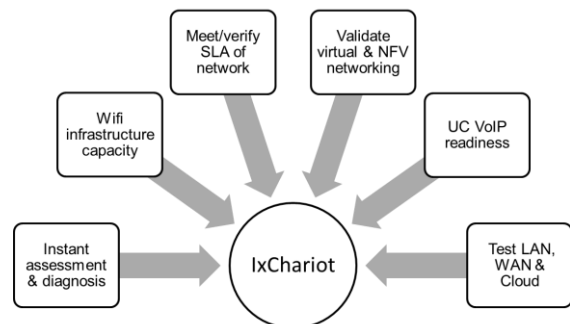
APPLICATION PERFORMANCE ASSESSMENTS FROM PRE- TO POST- DEPLOYMENT

IxChariot instantly assesses and troubleshoots networks and applications before and after deployment. This powerful assessment tool uses software agents—Performance Endpoints—to simulate application traffic and deliver key performance metrics to a central console for easy management. The result is a fully instrumented system for confidently assessing the performance and reliability of applications running on a wide variety of networks, including wired, wireless, and virtual data centers. Pre-deployment, IT can run what-if scenarios to predict an application's impact on the network. After deployment, they can carry out on-demand network diagnostics in an instant.

IxChariot simulates real-world applications to predict device, system, and network performance under realistic load conditions. The solution consists of an IxChariot Console and Performance Endpoints that are distributed throughout multiple sites and data centers, end-user PCs, and mobile devices. Using IxChariot Server, assessments can be conducted entirely from a standard web browser while IxChariot Desktop allows assessments using a Windows application.

HIGHLIGHTS

- Serves industry leaders and experts, including Wi-Fi Alliance
- Instantly assesses network performance, including wireless performance and geo-location
- Performance Endpoints run on mobile, PC, Mac or in any hypervisor or cloud provider
- Allows for central management of any platform via Performance Endpoints
- Delivers full application emulation and key performance metrics, including throughput, packet loss, jitter, delay, MOS, and application latency
- Trusted tool for both private virtual and public cloud infrastructure



IXCHARIOT SERVER AND DESKTOP EDITIONS

IxChariot console is available in 2 editions. The IxChariot Server Edition is hosted on a Linux server and is accessed through a web interface. The IxChariot Desktop Edition is installed as a heavy client on Windows PCs or servers. Both editions share the same licensing and are compatible with the same endpoints so users can select the best option for their use case.

| | IXCHARIOT SERVER EDITION | IXCHARIOT DESKTOP EDITION |
|---------------------------------|--|--|
| Console Operating System | Linux Centos, installed as an open virtual appliance, access via Web browser | Windows application |
| Licensing | IxChariot floating license bundles | IxChariot floating license bundles |
| Key Features | <ul style="list-style-type: none"> • Multi-user access • IxChariot anywhere or manual endpoints configuration • Application library | <ul style="list-style-type: none"> • Desktop application – single-user ownership • Manual endpoint configuration • Advanced traffic pattern editing |
| Use Cases | <ul style="list-style-type: none"> • Deployment in complex topologies • Realistic traffic pattern • NFV/virtual | <ul style="list-style-type: none"> • Advanced test script editing • Bring console “on the go” • Wi-Fi Alliance certified tests |

IXCHARIOT PERFORMANCE ENDPOINTS

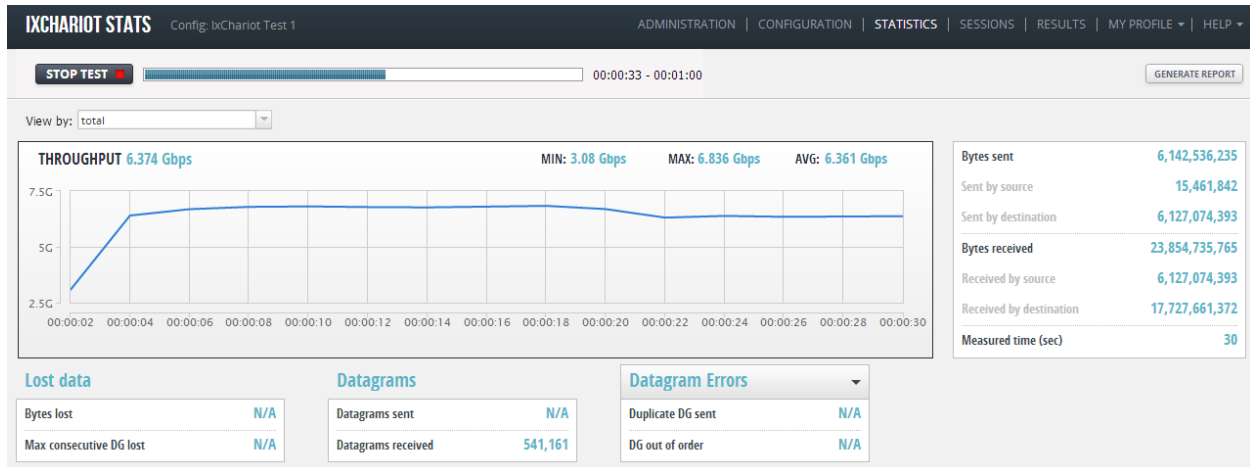
PERFORMANCE ENDPOINTS RUN ON “EVERYTHING”

- Endpoints are traffic generators – compatible with both IxChariot Server and Desktop editions
- Endpoints can be installed on any Windows or Linux PC/server
- Endpoints are available on Android and iPhone, installed from Google Play and Apple Store
- Endpoints are ready to run several off the shelf small-board PCs
- Support for Raspberry Pi B+, BeagleBone Black, and others
- Runs on virtual servers and physical (Windows, Mac, Linux)
- Ixia hardware endpoints available: XRPi2 and XR2000



INTERACTIVE REAL-TIME STATISTICS

- Use IxChariot console (Server or Desktop) to control endpoints and define test scenarios
- Inject real traffic into the network to measure the impact of new applications
- View test results in real-time; measure all critical network metrics including up/down bitrate, loss, jitter, delay, Voice MOS, Video MDI, etc.



IXCHARIOT SERVER EDITION

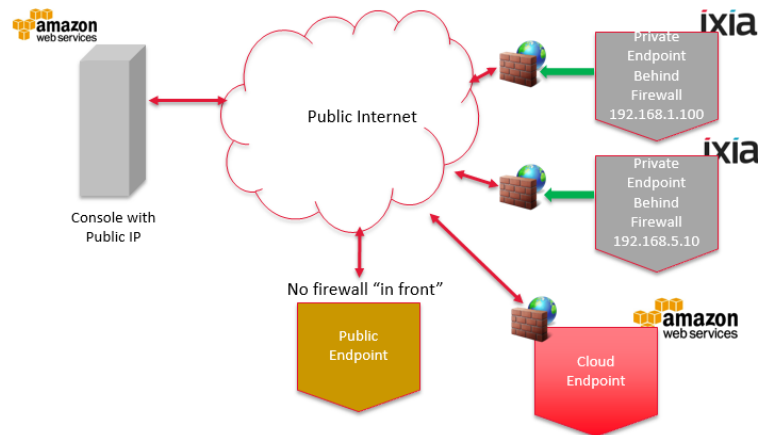
SERVER EDITION: “IXCHARIOT ANYWHERE”

Server Edition adds the ability to run IxChariot from the cloud with the main console hosted from one site or data center and exposed publicly for easy access by multiple teams. Patented Ixia technology allows endpoints to traverse company firewalls to deliver a seamless and elegant solution for assessing network performance between private and cloud networks—without compromising security.

KEY FEATURES

- **Cloud capable console** – Runs on EC2 and private cloud
- **New HTML5-based web interface** – zero client installation; browser-based
- **Multi-user system** – create and run tests simultaneously
- **Test from behind firewalls** – no configuration required
- **100% software endpoints** – runs on “everything”
- **Setup your own public points** – endpoints on any VPS/cloud
- **Centrally manage endpoints** – verify connectivity before use
- **Measures throughput, jitter, packet loss, end-to-end delay** – per-user metrics
- **Create sophisticated traffic patterns** – AppMix, TCP, UDP, and RTP over IPv4 and IPv6

- **Manage test resources** – built-in resource manager to re-use test scripts
- **Download IxChariot Server** – available as an open virtual appliance (OVA)
- **Available on Amazon EC2** – bring-your-own-license (BYOL)
- **Full REST API** – control and integrate with anything



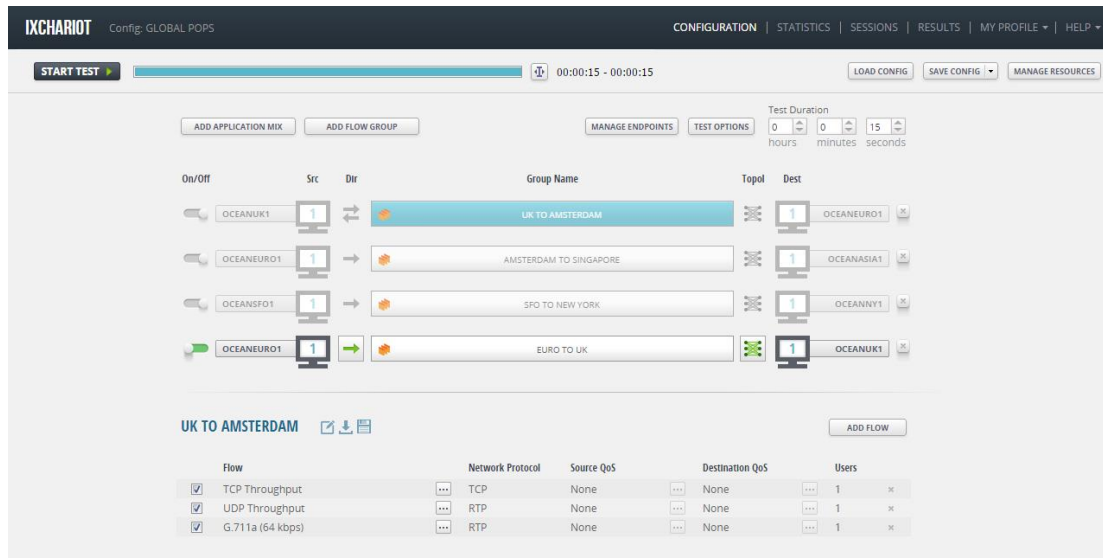
SERVER EDITION KEY BENEFITS

- Designed for IT teams – Leading pre-deployment assessment tool; access and run tests; multi-user out of box
- Console can be hosted in the cloud – Provides a fast, cost-effective tool to wide range of users
- Verify SLA for networks – Instant end-to-end assessment
- Pre-assess LAN to cloud migration of servers and applications and compare quality of experience (QoE)
- Measure device performance over Wi-Fi and understand performance of access points under load
- Validate various NFV/SDN topologies – 100% software endpoints can be deployed anywhere

SERVER EDITION - QUICK FEATURE OVERVIEW

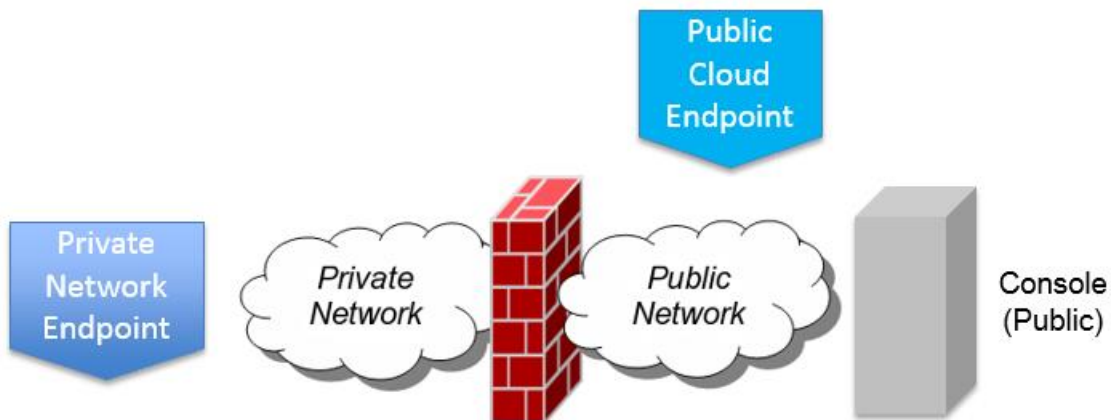
Securely Host and Run Tests from Any Browser

- Web-based platform, uses HTML5 for access from any modern browser; multi-user access
- Deploy web console on your LAN or private cloud
- Run on Amazon EC2 with bring-your-own-license (BYOL)






Run Endpoints Anywhere – LAN, Cloud, Public

- Supports private endpoints running on devices/servers behind enterprise firewalls
- Public points of presence running on any Cloud provider (AWS EC2, Rackspace, Azure)
- Endpoints auto-register and maintain heartbeat to the console/registration service



Application Emulation

- Configure mixes of applications based on number of users or based on generated throughput
- Ready to run popular applications (~100) – see Supported Applications Library (Server Edition) Table

AppMix 1    ADD APPLICATION

Distribute Percentage: ☒ Throughput ☐ No. of Users Total No. of Users:

| Application | % Distribution | Lock | Users |
|--------------------|----------------|------|-------|
| Facebook | 20 | | 10 |
| Gnutella | 13.4 | | 10 |
| Google Search | 13.4 | | 10 |
| Bandwidth HTTP | 13.3 | | 10 |
| Google Mail | 13.3 | | 10 |
| M5-SQL Server | 13.3 | | 10 |
| Outlook Web Access | 13.3 | | 10 |

Centrally Manage Endpoints

- Endpoints automatically register to the console
- Supports endpoints that are private “behind a firewall” or publicly deployed
- Quickly check which endpoints are available for use

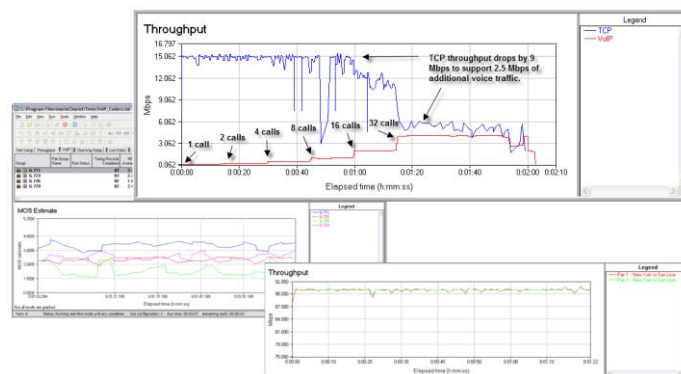
| ENDPOINTS MANAGER | | | | | | | | | |
|--|--------|-----------|------------------|------------------|----------------------|----------------------|--------------------|------------------|-------------|
| Search Endpoints | | | | | | | | | |
| <input type="text"/> | | | | | | | | | |
| <input type="checkbox"/> | Status | Type | Name | Management IP | Test IPs | Network Location | Operating System | Version | Description |
| <input type="checkbox"/> | | Automatic | ip-10-191-175-92 | ip-10-191-175-92 | <input type="text"/> | Public / Cloud | Linux x64 (64-bit) | 9.0 EA build 314 | |
| <input type="checkbox"/> | | Automatic | doceantrout1 | doceantrout1 | <input type="text"/> | Public / Cloud | Linux x64 (64-bit) | 9.0 EA build 314 | |
| <input type="checkbox"/> | | Automatic | raspi1-calabasas | raspi1-calabasas | <input type="text"/> | Private / Enterprise | Linux ARM | 9.0 EA build 312 | |
| <input type="checkbox"/> | | Automatic | OCEANNY1-ts | OCEANNY1 | <input type="text"/> | Public / Cloud | Linux x64 (64-bit) | 9.0 EA build 314 | |
| <input type="checkbox"/> | | Automatic | OCEANEURO1 | OCEANEURO1 | <input type="text"/> | Public / Cloud | Linux x64 (64-bit) | 9.0 EA build 314 | |
| <input type="checkbox"/> | | Automatic | OCEANASIA1 | OCEANASIA1 | <input type="text"/> | Public / Cloud | Linux x64 (64-bit) | 9.0 EA build 314 | |
| <input type="checkbox"/> | | Automatic | OCEANUK1 | OCEANUK1 | <input type="text"/> | Public / Cloud | Linux x64 (64-bit) | 9.0 EA build 314 | |
| <input type="checkbox"/> | | Automatic | OCEANSFO1 | OCEANSFO1 | <input type="text"/> | Public / Cloud | Linux x64 (64-bit) | 9.0 EA build 314 | |
| <input type="checkbox"/> | | Automatic | piLAXuverse1 | piLAXuverse1 | <input type="text"/> | Private / Enterprise | Linux ARM | 9.0 EA build 312 | |
| ADD ENDPOINT REFRESH DELETE | | | | | | | | | |
| CLOSE | | | | | | | | | |

IXCHARIOT DESKTOP EDITION

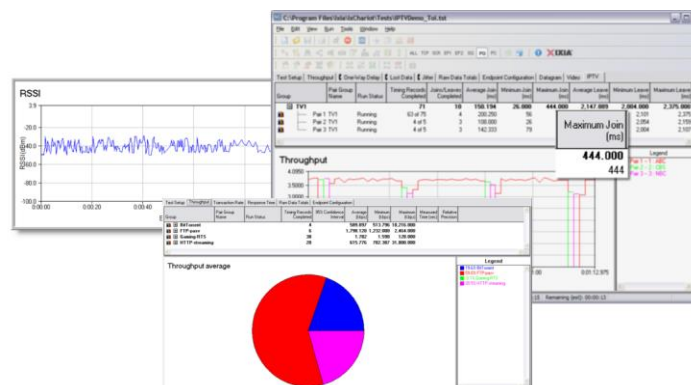
Desktop is Ixia's original version of IxChariot and offers a very mature interface as a Windows application. It offers many advanced features for creating complex application simulations with advanced configuration tools for building your test scenarios. It also has the advantage of being a transportable application: install it on a windows laptop and bring it with you for ad hoc assessments on remote sites!

DESKTOP EDITION KEY FEATURES

- Install as a Windows application – 1 user per server
- Use 150+ application scripts to simulate enterprise, triple-play, and Internet traffic
- Generate real-world application behavior at the transport layer (Layer 4)
- Simulate separate control-plane and data-plane activity using Application Groups
- Create sophisticated traffic patterns with and without QoS for IPv4 and IPv6
- Measure throughput, jitter, packet loss, end-to-end delay, MOS and MDI
- Seamlessly correlate IP stats with 802.11 client statistics such as RSSI
- Embed custom payloads to test specific data content across the network
- Measure IPTV channel ‘zap’ times
- Reliable Wi-Fi alliance certified test tool
- TCP and C advanced API



IxChariot Desktop GUI



IxChariot Desktop Statistics

DETAILED PRODUCT SPECIFICATIONS

| | SERVER EDITION | DESKTOP EDITION |
|---|---|--|
| Scalability | Supports up to 100,000 connections (endpoint pairs) representing hundreds of thousands of end-users | |
| Protocols | TCP, UDP, RTP, IPv4, IPv6, IP Multicast, VoIP (G.711, G.723, G.726, G.729) | |
| Management | <ul style="list-style-type: none"> Supported on IPv4 and IPv6 networks Handles test failures in error-prone networks, including Wi-Fi for management Supports in-band and out-of-band management and traffic paths IxChariot Anywhere: endpoints communicate to console and automatic detection of NAT/FW | <ul style="list-style-type: none"> Supported on IPv4 and IPv6 networks Handles test failures in error prone networks, including Wi-Fi for management Supports in-band and out-of-band mgmt. and traffic paths |
| API Support | <ul style="list-style-type: none"> REST API Python | <ul style="list-style-type: none"> TCL C |
| System Requirements (Server) | <ul style="list-style-type: none"> OVA deployment: VMware ESXi 5.x or newer, VMWare Player 6.x or newer Minimal VM provisioning: 1GB RAM, 1 VCPU Support for multiple simultaneous tests and user sessions | <ul style="list-style-type: none"> Microsoft Windows Vista, XP, Windows 7, Windows 2000 Server, 2003 Server, 2008 Server, 2012 Server Minimum hardware: Pentium III, 512MB RAM, 500MB disk space |
| Performance Endpoints | <ul style="list-style-type: none"> Microsoft Windows: 2008 R2, 2012, 7, 8 Linux (x86, x86_64) Several others, look for “Endpoint Library” on Ixia support site | |
| Mobile Device Endpoints | <ul style="list-style-type: none"> Android – on Google Play Store IOS – on Apple Store Search for “endpoint” in appstores | |
| XR2000 and XRPi2 Hardware Endpoint | <ul style="list-style-type: none"> Supported, turnkey hardware endpoints Look on Ixia Website for full specifications | |
| Supported Test Types | <ul style="list-style-type: none"> Throughput TCP and UDP VoIP, video, streaming traffic | |

SUPPORTED APPLICATIONS LIBRARY (SERVER EDITION)

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> • AOL Instant Messenger • AOL Webmail • Bandwidth HTTP • Bandwidth Raw • BitTorrent Cisco EMIX • BitTorrent Enterprise • BitTorrent File Download • BitTorrent RMIX 5M • BitTorrent Service Provider • Facebook • Facebook Android • Facebook Android Chat Session • HTTPS Simulated Financial • IMAPv4-Advanced Financial • POP3-Advanced Financial • SMB Client File Download Financial • SMBv2 Auth Session Financial • SMBv2 File Download Financial • SMTP Email Financial • Flash Enterprise • FTP Small download • FTP Active mode • FTP Cisco EMIX • FTP Enterprise • Gnutella • Google Mail | <ul style="list-style-type: none"> • HTTP Flash Video • HTTP Flash Video Service Provider • HTTP GET - Android42 to Apache Server • HTTP GET - BlackBerry10 to Apache Server • HTTP GET - Chrome25 (Windows 7) to Apache Server • HTTP GET - Firefox19 (Windows 7) to Apache Server • HTTP GET - IE9 (Windows 7) to Apache Server • HTTP GET - Opera11 (Linux) to Apache Server • HTTP GET - Opera12 (OS X) to Apache Server • HTTP GET - Safari6 (OS X) to Apache Server • HTTP LTE Mix • HTTP Mobile Europe • HTTP Mobile North America • HTTP RMIX 30K • HTTP RMIX 130K • HTTP RMIX 25K • HTTP Service Provider • HTTP Text • HTTP Video | <ul style="list-style-type: none"> • IMAP RMIX 16K • IMAP RMIX 90K • iTunes Desktop App Store • Jabber Chat • MS-SQL Server • MySQL Database Update • Netflix Service Provider • Oracle Database • Oracle Enterprise • Outlook Web Access • Pandora LTE Mix • Pandora • POP3 LTE Mix • POP3 RMIX 4K • POP3 RMIX 16K • POP3 RMIX 90K • PostgreSQL • Raw Enterprise • Raw LTE mix • Raw Service Provider • Raw Wireless • RTMP • SMB Client File Download • SMB Enterprise • SMTP Cisco EMIX • SMTP Email • SMTP Enterprise • SMTP RMIX 4K • SMTP RMIX 16K • SMTP RMIX 90K |
|---|--|--|

SUPPORTED APPLICATIONS LIBRARY (SERVER EDITION)

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> • Google Play LTE Mix • Google Play Search View and Download • Google Search • Google GTalk Chat • HTTP Audio • HTTP Cisco EMIX • HTTP Compressed • HTTP Enterprise | <ul style="list-style-type: none"> • HTTP Video Enterprise • HTTPS LTE Mix • HTTPS Simulated • HTTPS Simulated Enterprise • HTTPS Simulated Service Provider • ICQ • IMAP Cisco EMIX • IMAP LTE Mix • IMAP RMIX 4K | <ul style="list-style-type: none"> • SSH • Twitter Json • Webex • Windows Live (MSN) Messenger v15 • Yahoo IM Chat v10 • Yahoo Mail • YouTube Enterprise • YouTube LTE Mix • YouTube Service Provider |
|--|---|--|

SUPPORTED SIMULATED APPLICATION LIBRARY (DESKTOP EDITION)

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> • Active Directory • Baan • CCMail • Citrix • Lotus Notes • LDAP • Microsoft Exchange • Microsoft RDP/Terminal Services • Microsoft SQL Server • Oracle • SAP • Online gaming – FPS and RTS • DNS • NNTP • POP3 | <ul style="list-style-type: none"> • HTTP/HTTPS • FTP (active/passive) • SMTP • Telnet • AIM • Yahoo IM • MSN Messenger • ICQ • BitTorrent • eDonkey2000 • Kazaa • NetMeeting • Realmedia • SIP • H.323 | <ul style="list-style-type: none"> • Active Directory • Baan • CCMail • Citrix • Lotus Notes • LDAP • Microsoft Exchange • Microsoft RDP/Terminal Services • Microsoft SQL Server • Oracle • SAP • Online gaming – FPS and RTS • DNS • NNTP • POP3 |
|---|--|---|

PRODUCT ORDERING INFORMATION¹

LICENSE BUNDLES

920-0055

IxChariot Software, Floating Bundle 10; includes Floating License Server for 10 pairs/virtual users and single user console seat license

920-0056

IxChariot Software, Floating Bundle 50; includes Floating License Server for 50 pairs/virtual users and single user console seat license

920-0057

IxChariot Software, Floating Bundle 200; includes Floating License Server for 200 pairs/virtual users and single user console seat license

920-0058

IxChariot Software, Floating Bundle 500; includes Floating License Server for 500 pairs/virtual users and single user console seat license

920-0059

IxChariot Software, Floating Bundle 1250; includes Floating License Server for 1250 pairs/virtual users and single user console seat license

920-0060

IxChariot Software, Floating Bundle 2500; includes Floating License Server for 2500 pairs/virtual users and single user console seat license

920-0061

IxChariot Software, Floating Bundle 5000; includes Floating License Server for 5000 pairs/virtual users and single user console seat license

920-0021

IxChariot Console Seat for License Server, five concurrent users

¹ Most popular options shown – see current price list for more information

**IXIA WORLDWIDE
HEADQUARTERS**

26601 AGOURA RD.
CALABASAS, CA 91302

(TOLL FREE NORTH AMERICA)

1.877.367.4942

(OUTSIDE NORTH AMERICA)

+1.818.871.1800

(FAX) 818.871.1805

www.ixiacom.com

**IXIA EUROPEAN
HEADQUARTERS**

IXIA TECHNOLOGIES EUROPE LTD
CLARION HOUSE, NORREYS DRIVE
MAIDENHEAD SL6 4FL
UNITED KINGDOM

SALES +44.1628.408750

(FAX) +44.1628.639916

**IXIA ASIA PACIFIC
HEADQUARTERS**

101 THOMSON ROAD,
#29-04/05 UNITED SQUARE,
SINGAPORE 307591

SALES +65.6332.0125

(FAX) +65.6332.0127