

# HDX

POWERED BY  
**TRANSip**

## The Fast Lane to VoIP

### An Integrated Class 4/5 Softswitch & Gateway

- ✓ VoIP call management, media gateway & TDM all in one platform
- ✓ IMS interoperability via industry-standard SIP-based architecture
- ✓ Up to 96,000 IP subscribers
- ✓ Interoperable with multiple access solutions including SIP, MGCP/NCS, GR-303 & V5.2
- ✓ VoIP security: TLS/SRTP/SSL

# → a carrier class 4/5 softswitch & gateway

REDCOM's HDX is an integrated softswitch and media gateway platform that delivers interoperable communications to service providers, ILECs/CLECs and private networks. Built on an industry-standard SIP-based architecture, HDX preserves all the functionality and investment in legacy assets, while offering safe passage to modern VoIP technology.



## a low-risk transition to IP networks



HDX provides a high assurance migration solution that enables carriers to schedule a phased approach to VoIP implementation, risks, and financial exposure. Traffic, subscribers, and services are cut-over when it makes sense for your business, eliminating a high risk wholesale replacement. HDX facilitates a cost effective way to add packet voice (IP) to an existing TDM switching network, while allowing service providers to retain legacy equipment investments.

## improve network efficiency



Designed for geographic distribution throughout the Cloud, HDX enables carriers to keep the intelligent resources closer to the end user, and to share service resources for cost control and network resilience. Compatible with both legacy networks and the IMS network architecture, HDX drops into existing networks while providing a leap into the future, allowing carriers to select the most efficient and cost effective transport routes. In fact, HDX makes the old centralized exchange model obsolete, replacing it with a truly distributed Cloud voice services architecture.

## remote/access solutions



Sharpen your competitive edge with remote subscriber access via SIP, MGCP/NCS, GR-303, V5.2, or direct wired lines. Supporting both legacy TDM remotes and SIP-enabled Access Nodes with DSL, the HDX enables carriers to modernize the access network on a responsible schedule. REDCOM's Intelligent Remote model preserves local communications during catastrophic network failures. Key services (e.g., fire, police, government) front-ended with the HDX can continue to operate even if the network core or significant transmission assets are compromised.

## the lowest total cost of ownership



Don't burn your OpEx budget with the recurring costs of multi-year maintenance contracts. HDX users enjoy NO scheduled maintenance, NO annual service contracts, and NO forced upgrades. Carriers realize a substantial reduction in OpEx when replacing legacy exchanges. Considering that recurring maintenance and service contracts typically double the price of most softswitches within four or five years, it's comforting to know that lifetime costs for the HDX won't be much more than the initial purchase.

## increase revenue with Centrex



The HDX allows you to compete by adding new revenue streams through Centrex services for both analog and VoIP users. The Centrex solution is deployed on your network as a price-oriented alternative to traditional PABXs. Centrex enables carriers to expand their service offerings to businesses, eliminating costly PABXs.

## application development API



“Killer Apps” may be a vestigial term, but the business is still alive. Create custom softswitch and media gateway applications with REDCOM’s Application Programming Interface (API). The HDX is the perfect platform for carrier-class prototyping and developing applications to drive new revenue sources.

## secure & encrypted communications



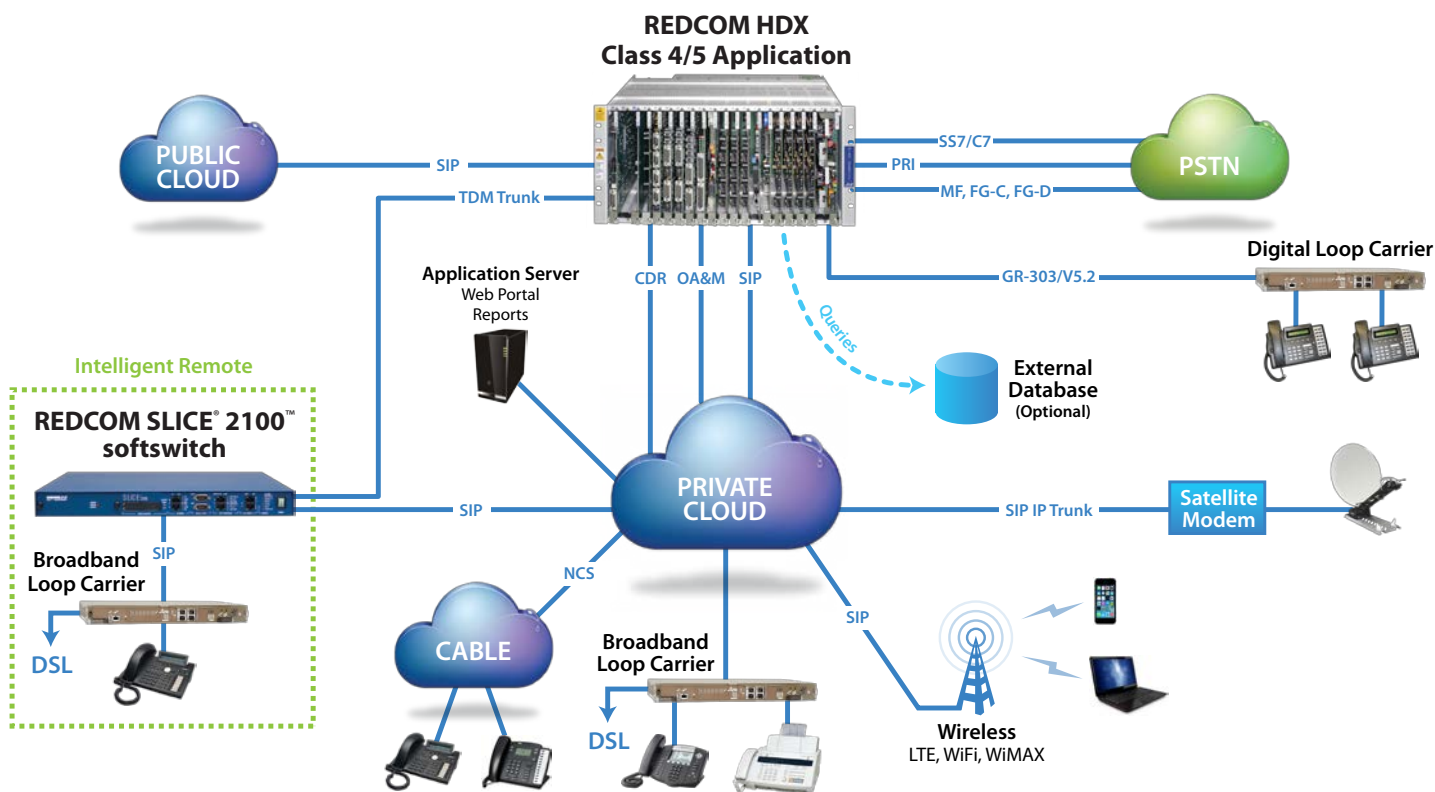
TRANSip, REDCOM’s VoIP technology suite, offers an additional layer of security for VoIP traffic with the ability to encrypt calls. Secure Real-Time Transport Protocol (SRTP) and Transport Layer Security (TLS) are available to encrypt the SIP call signaling and client authentication to ensure confidential communications.

## SIP trunking made easy



SIP trunking is a cost-effective way for service providers to leverage their IP network to reduce costs. SIP trunks deliver a significant return on investment and TRANSip-equipped HDX softswitches have extensive SIP trunking capabilities to ensure that your switching resources fit your business model for current and future growth.

# HDX next generation network



# distributed architecture



# engineered and built in America



The HDX system architecture minimizes the risk of single point failures as it distributes resources system-wide and network-wide, using multiple points of direct access. Individual HDX systems can be distributed geographically throughout the Cloud, which increases network resilience and allows carriers to share resources and lower costs.

At REDCOM, we're proud of the fact that all of our engineering, manufacturing and customer support is conducted right here in the United States. REDCOM lives up to the traditions of American quality and service by building products that last a lifetime, and we provide ongoing support for everything we've ever sold. You don't have to look far to find the reliable communications technology and world class service you need. It's made right here in the United States, at REDCOM.

## specifications

### PHYSICAL SPECIFICATIONS

- 19 in rack mount / 48 cm
- Power:
  - ◆ -48 VDC
  - ◆ 100/120/240 VAC, 50-60 Hz
- Environment:
  - ◆ Operating temperatures: 32-122 °F / 0-50 °C ambient
  - ◆ Operating humidity: 5%-95% (non-condensing)
  - ◆ Operating elevation: Tested at 10,000 ft (3048 m)

### SYSTEM ARCHITECTURE

- Distributed Control
- Redundant Processor
- Hot-Swappable Interfaces and Processor Boards
- 4,096 Ports non-blocking
- Carrier-Class Reliability: 99.999% ("five nines")

### SYSTEM FEATURES

- Administrative Package
- Call Records SMDR/CDR/LAMA
  - ◆ Bellcore AMA Format (BAF)
- Emergency Services (911)
- Local Number Portability (LNP)
- Multiple Home Exchanges
- Percentage Trunking
- REDCOM ClusterNet™: host/remote for integrated network operation
- SNMP
- Three PIC Equal Access
- Time-of-Day Database Changes (Least Cost Routing)

- Voice Mail System Interface
- Web Portal for Subscribers, Centrex and Administration
- Zone Paging

### CLASS™ & BILLABLE FEATURES

- CLASS Features
- Automatic Call Distributor (ACD)
- Automated Call Processing (ACP)
- Caller ID (Name and Number Delivery)
- Centrex (IP and TDM)
- Conferences
- Hotlines
- Single Number Services (Find Me)

### ACCESS SOLUTIONS

- Broadband Loop Carrier (BLC)
- Direct wire 2-wire subscribers
- FXO/FXS
- GR-303
- ISDN BRI
- MSAN
- Radio
- SIP
- V5.2

### SIGNALING & PROTOCOLS

- A-Law/ $\mu$ -255 Law PCM Conversion
- C5/SS5
- DTMF & RFC 2833
- E&M
- FXO/FXS
- GR-303
- GSRD/LSRD

- ISDN PRI (4ESS, 5ESS, NI1, DMS100, & Euro)
- ISDN BRI (5ESS, NI1 & Euro)
- MF/R1, FG-C&D
- MFC R2
- Radio Interface
- SIP RFC 3261
- SS7
  - ◆ 800 dips via TCAP
  - ◆ ANSI SS7 & ITU C7
  - ◆ LNP via TCAP
  - ◆ TCAP CNAME
- T1/E1
- V5.2

### REDCOM TRANSIP® IP TECHNOLOGY SUITE

- Up to 3,000 registered IP subscribers per unit
- SIP Call Controller/Call Manager
- SIP Trunking
- DHCP client
- DNS client
- Dual Stack IP (IPv4, IPv6)
- Audio Streaming RTP (RFCs 3550, 3551, 3389)
- Comfort Noise Generation
- Echo Cancellation: G.165, G.168 (up to 128ms)
- Fax over IP (T.38) and Modem over IP (V.150.1)
- IMS Compatible
- IP Bandwidth Management
- Legacy Interface Support
- Media Gateway
- MGCP/NCS Line Support (Packetcable 1.5)

- Network Time Protocol (NTP)
- QoS: IP Differentiated Services (DiffServ) marking
- RFC 3261, 3326, 4028
- SDP Manipulation
- Silence Suppression
- SIP support for CLASS lineside features
- System CRON Timers
- Telephony Tones: RFC 4733
- VLAN Tagging
- VoIP (SIP standards-based)

### CODECS

- G.711A& $\mu$  (64kbps PCM)
- G.722.1 & G.722.2 (HD Voice)
- G.723.1H&L
- G.726 (16, 24, 32, 40kbps ADPCM)
- G.729A&B (8kbps CS-ACELP)
- iLBC
- RFC4040 (64 kbps)
- Fax over IP: T.38, Media Gateway Conversion (MGC) & Auto
- Modem over IP: V.150.1

### SECURITY

- Distributed Control
- Lawful Intercept (CALEA): US J-STD-025A & US J-STD-025B
- PIN Number Authorization
- Priority Override
- RADIUS Authentication
- SRTP
- TLS
- User Level Security

Note: Some features are optional. Please contact REDCOM for a more detailed description of product features and capabilities.

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