

PacketGears

EHANGCOM

Ehangcom
iSX Universal Application
Platform Overview

Agenda

- Snapshot of Ehangcom
- iSX Universal Application Platform Overview
- Application Development Environment
- Applications & Deployment References
- Roadmap

Snapshot of Ehangcom

- Founded in 2002 by ex-Lucent telecom veterans
- Growing Regional Presence
 - HQ in Guangzhou
 - Offices in Shenzhen, Beijing, Shanghai, Chengdu, Hong Kong
 - Support in New Delhi, India
 - 500,000 ports deployed in China, Hong Kong & Singapore
- Offer carrier-grade voice/video/VoIP platforms
- Committed to continuous innovation & development
- Strict QC policy with international standards
- Low footprint form factor
 - saving rack space in data centers

Technology and Quality Accreditations



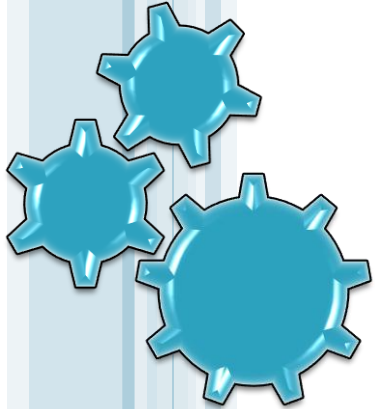
Patent Certificate



China Homologation Certificate



ISO Certificate



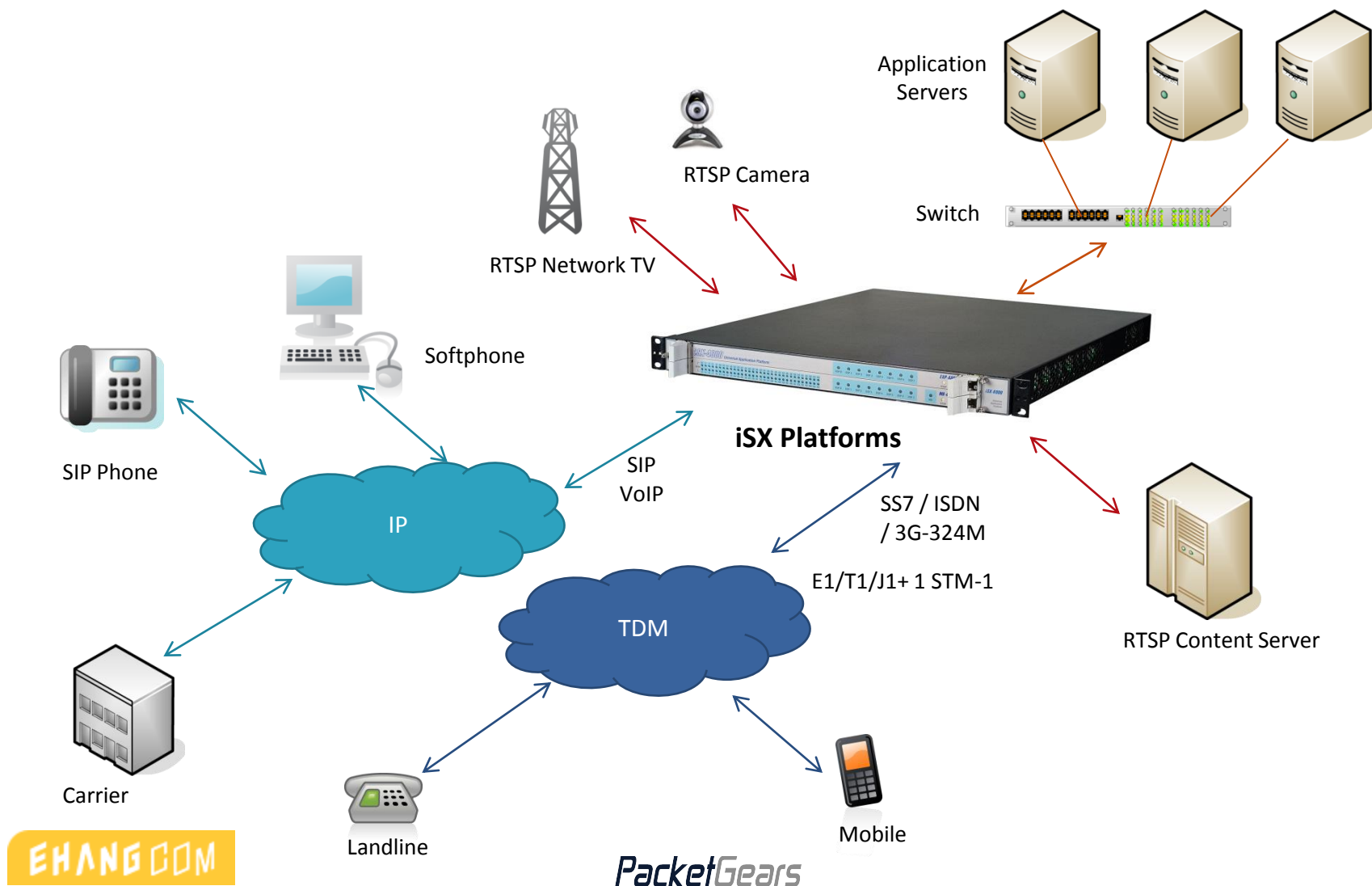
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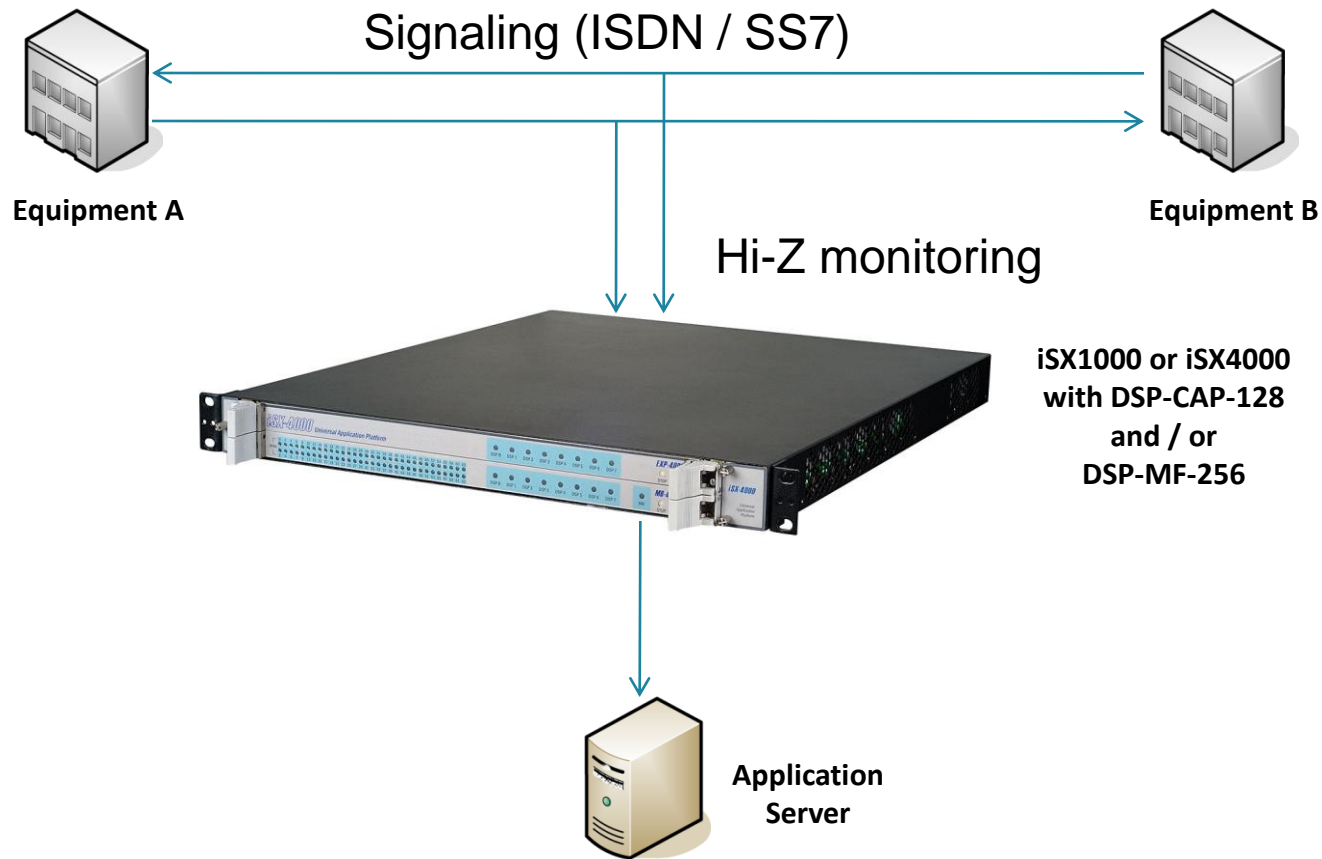
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iSX Universal Application Platforms

iSX Platforms for Voice & 3G Video VAS



iSX Platforms for Monitoring Applications & Non-Intrusive Call Logging



iSX Universal Application Platforms



2U iSX1000
(Enterprise scale)



1U/2U iSX4000
(Carrier grade, high-density)

iSX Platform Features

- Modular, field-upgradeable design
 - Modules for trunk, signaling and media resources
- Comprehensive interface & signaling support
 - T1/E1, STM-1, FXO & FXS
 - SS7, ISDN PRI, SIP, loop start
- Multi-service media resources
 - Independent, predictable DSP resources instead of competing for the same resource pool in host
 - Best-in-class technologies instead of a single technology
 - IVR, conferencing, ASR, TTS, call logging
 - 3G-324M video
 - VoIP codes
 - Signaling capture
 - Call logging

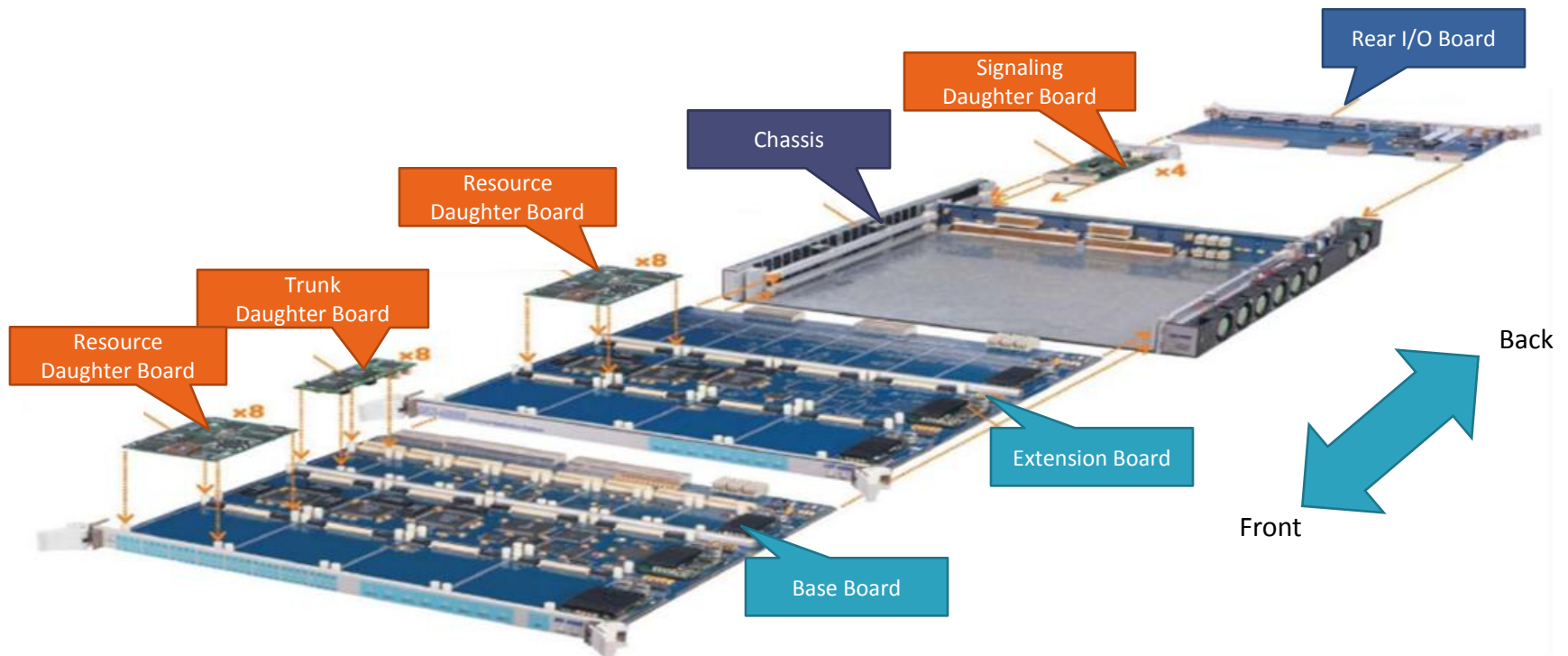
Modular Design - iSX1000

- Built-in signaling
 - ISUP, TUP, ISDN, SIP, loop start
- Optional daughter boards
 - Trunk daughter board x 1
 - FXO or FXS x 30
 - Media Resource daughter board x 3
 - Internal application host x 1

Modular Design - iSX4000

- Base board
 - Trunk daughter board x 8
 - Media Resource daughter board x 8
- Extension board
 - Media Resource daughter board x 8
- Signaling board
 - Signaling daughter board x 4
- Rear I/O slot
 - STM-1 daughter board x 1

Modular Design – iSX4000 Architecture



Trunk & Signaling Daughter Boards

- iSX1000 daughter boards
 - 8 T1/E1 trunks
 - FXO, FXS (4 port / module)
- iSX4000 daughter boards
 - 8 T1/E1 trunks
 - STM-1
 - ISDN (64 D-channels)
 - SS7 (64 SS7 links, MTP, ISUP, TUP)
 - SIP (2000 VoIP channels)

Media Resource - DSP-MF-256

- IVR, playback & recording
- Conferencing
- ASR & TTS integration
- 128ms echo cancellation & VQE (voice quality enhancement) to deliver superior voice quality
 - Enhance conferencing quality
 - Improve ASR accuracy significantly
- Non-intrusive monitoring applications
 - Call logging
 - Lawful interception

Media Resource – Conferencing Features

- 256 resources per DSP module
 - Up to 256 parties in one conference
 - Up to 256 conferences in one DSP module
 - Up to 16 DSP modules can be cascaded
 - 128ms echo cancellation & voice quality enhancement (VQE) on all channels
 - Conferencing, DTMF detection, recording, broadcasting, DTMF clamping, listeners, per channel gain control
- Conference host speaker
 - Have loudest volume among all participants
- Private discussion rooms

Media Resource - 3G-VIDEO-64

- DSP based technology
 - more predictable performance than host-based technologies
- 3G-324M with Fast Call Setup support: SRP, NSRP, WNSRP
- Comprehensive codec support
 - Voice codecs: G.711, G.723.1, G.729ab, AMR, AAC, etc.
 - Video codes: H.263, MPEG-4, H.264
- Transcoding (H.263, MPEG4, H.264)
- Transrating (CIF/QCIF/SQCIF/4CIF/VGA/D1)
- Video editing
 - Image overlay, text overlay
- Video conferencing



Media Resource - VOIP-128

- Comprehensive codec support
- Wireline codes
 - G.711 (404), G.723 (128), G.729ab (168), iLBC
- Wireless codes
 - AMR, EVRC
- 128ms echo cancellation for ALL channels

Media Resource - DSP-CAP-128

- Capture signaling messages
 - Processing capacity: 140,000 MSU/s
 - Supported signaling types: X.25, Frame Relay, ISDN, SS7 Raw, SS7 MTP2/MTP3
- Typical applications
 - Welcome SMS for inbound roamers
 - Location base, roaming applications
 - Legal interception
 - Inter-operator settlement reconciliation

Media Resource – Call Logging

- Non-intrusive call logging
 - Ideal for large-scale call centre applications
 - Up to 1,000 channels per iSX4000 of combined conversation
 - Compressed to 4.8k AMR file format for disk space saving
 - IP architecture to support multiple PRD servers easily

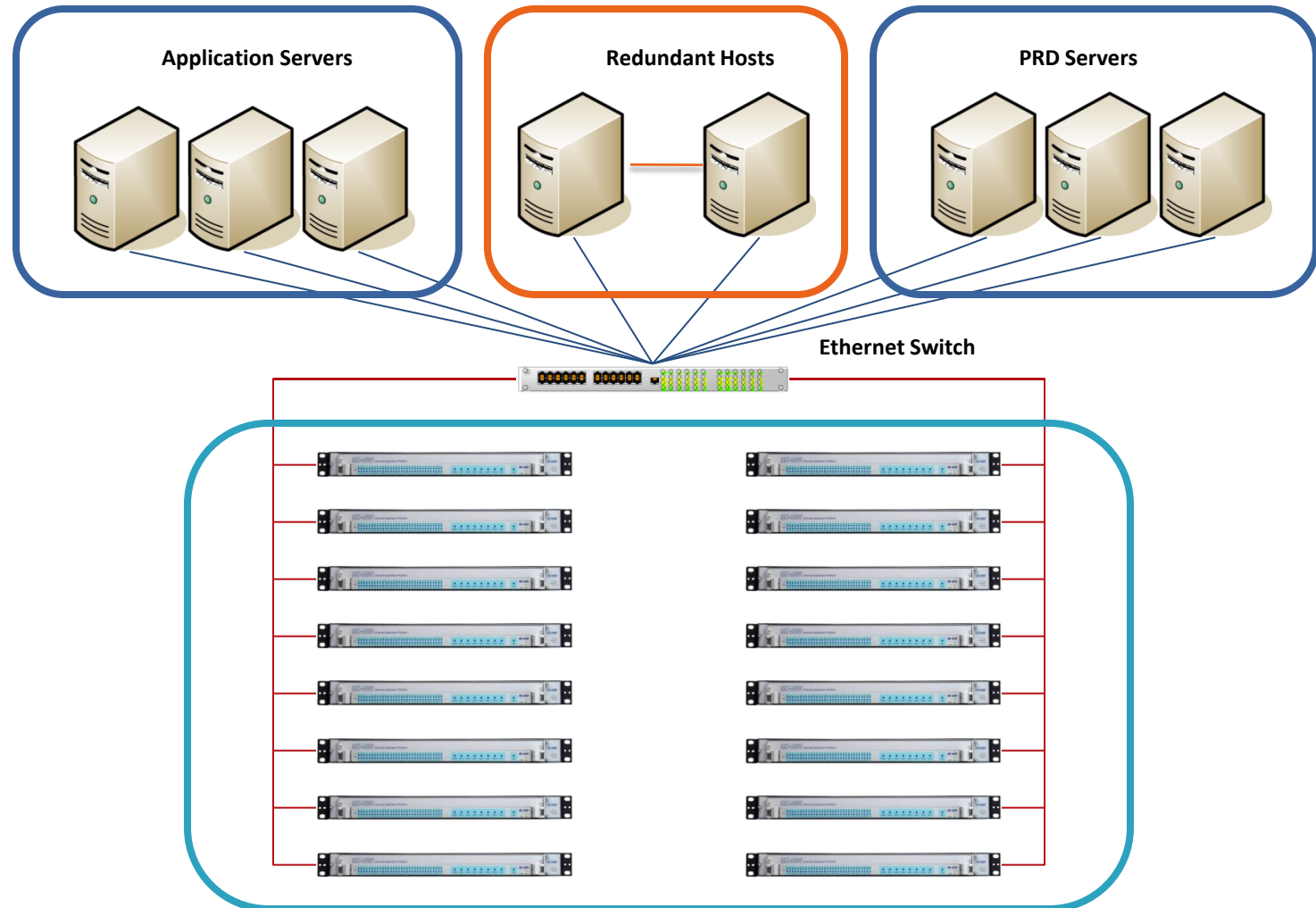
Modular Design – Summary

	iSX1000	iSX4000
Signaling (SS7, ISDN, SIP)	All built-in	4 slots
Trunk (8 T1/E1)	1	8
FXO, FXS (4 ports)	30	NIL
STM-1	NIL	1
Media resources (IVR, 3G-324M, VoIP, signaling capture, call logging)	3	16
Internal application host	1	NIL
Power supply	AC, DC	redundant DC, converter for AC

System Capacity

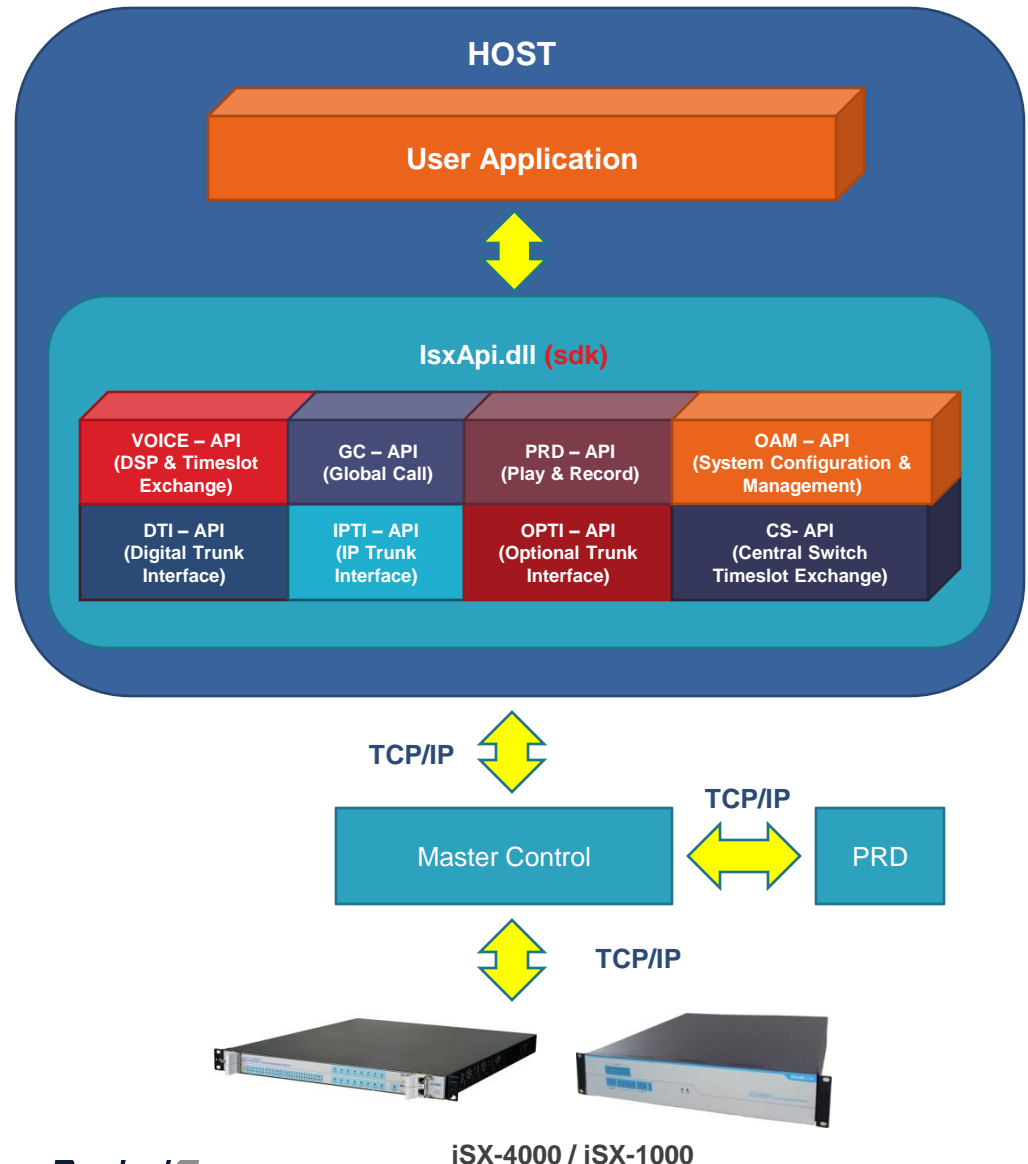
	iSX1000	iSX4000
Signaling	Built-in	256 SS7 links, 64 D-channels, SIP
T1/E1	8	64
STM-1	NIL	1
FXO, FXS	120	NIL
IVR, conferencing, ASR	768	4096
3G-324M video	192	1024
VoIP codecs (G.711/G.723.1/G.729)	384	2048
Signaling capture	384	2048
Call logging	192	1024

Control & Scalable Architecture



Development SDK

- Support SUN Solaris, UNIX, Linux & Windows
- Simplified and consistent C++ APIs to facilitate application development and shorten time to market
- Sample applications



OAM Software

- User-friendly GUI interface
- Real-time configurations, activation, deactivation of trunk and signaling without system restart
- Signaling tracing, analysis & debugging
- Support SNMP traps
- Call generator sample application

Ease of Migration Using C++ API

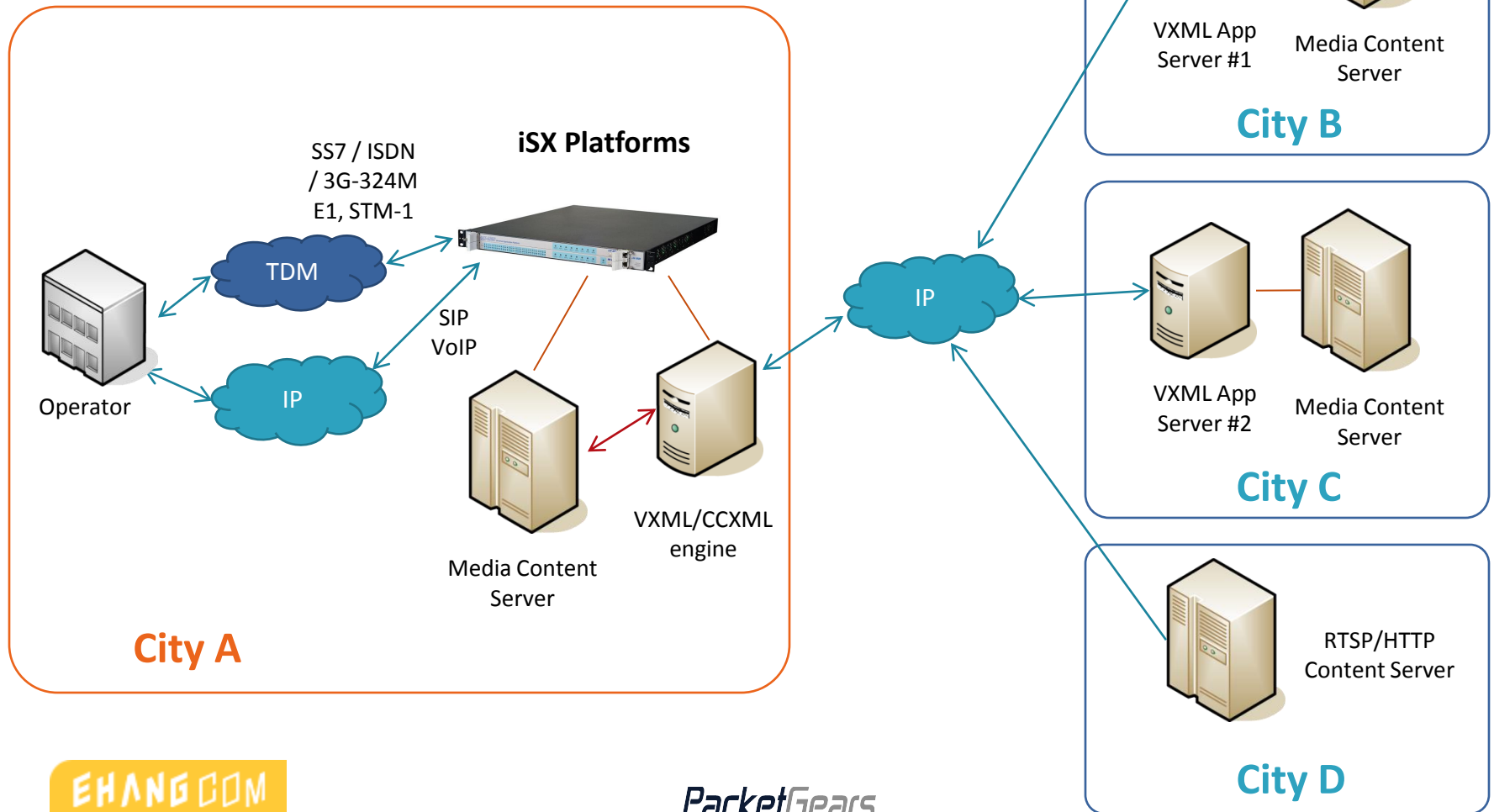
- Similar API and programming approach as Dialogic
- GUI OAM configuration software comes with SDK
- Remote software development and testing facility
- Typical migration cycle for Dialogic users:

Application	Migration cycle
IVR, RBT	2 weeks
Switching	2 weeks
IVVR	3 weeks
Signaling monitoring	2 weeks

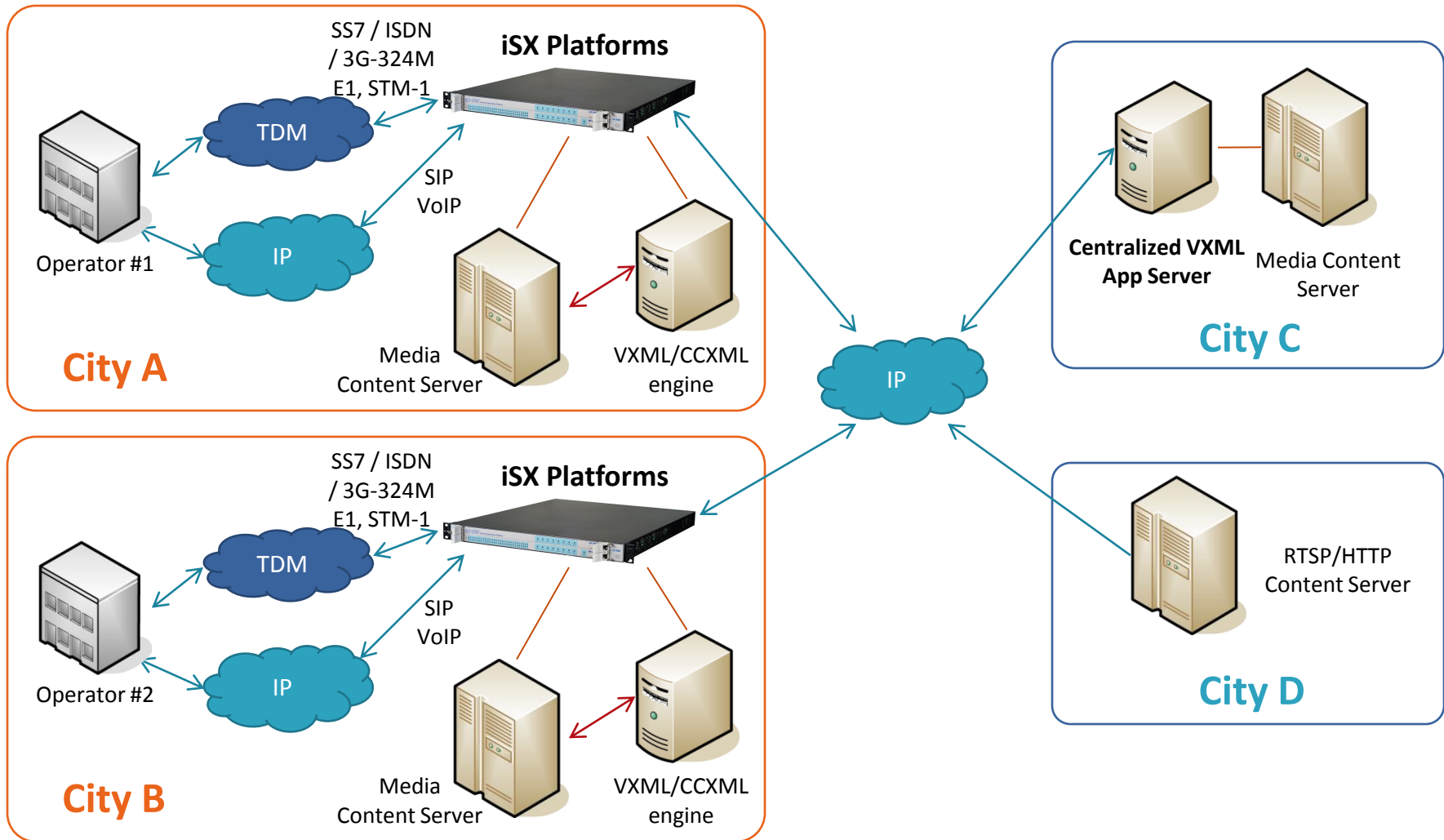
VXML / CCXML Service Delivery Platform

- W3C CCXML 1.0, VXML 2.1 compliant interpreters
 - Various call control: Inbound, outbound, bridge, transfer
 - IVR, conferencing, switching
 - IVVR, video portal, video mail
 - Support RTSP & HTTP GET
- GUI based Service Creation Environment (SCE)
- High performance: 150 cps, 2000 channels / server
- Network domains: TDM, 3G-324M and NGN
- Work with common web technologies
 - JSP, ASP, .NET, PHP, CGI, Python, Perl,...etc
- Short migration cycle from other VXML middleware

VXML / CCXML SDP Deployment with Multiple & Distributed Applications



VXML / CCXML SDP Deployment with Distributed Platforms at Multiple Operators



Applications Enabled by iSX Platform

- Call Center
- IVR
- Outbound Dialer
- Caller Ringback Tone
- Missed Call Alert
- Conferencing
- Voice SMS
- Unified Messaging
- Media Gateway
- Signaling Monitoring / Non-intrusive Recording
- Lawful Interception
- Video Mail
- Video Ringback Tone
- Video Avatar Messaging
- Interactive Video & Voice Response (IVVR)
- Mobile TV
- Video on Demand
- Video Chatting
- Video Contact Centers
- Live video streaming
- Mobile Video Conference
- Video Travel & Infotainment

Deployment References

- IVR, call centers and outbound dialers
 - More than 100 deployments including in governments, telecom operators, banks and various industries
 - More than 20,000 call centre recording
- IVVR, video call center, video gateway
 - Deployed in 6 provinces for China Mobile & China Unicom
- Wholesale & calling card
 - Multiple tier-2 operators in HK & Singapore
- Signaling monitoring / Non-intrusive recording
- Lawful interception
- VXML/CCXML Service Delivery Platform
 - IVR & Fax for PCCW & Wharf T&T
 - IVVR for China Mobile & China Unicom

References for Largest Single Systems

Application	Customer	Scale
IVR, train ticketing	Shanghai Railway	384E1
IVVR, video call centre	China Unicom (3 provinces)	8E1 each
CRBT	Shangdong Unicom	228E1
Conferencing	Ximen & Jiangxi Unicom	32E1
Signaling Capture	Fujian Unicom	80E1
VoIP media server	Jiangsu Telecom	1440 channels

Roadmap

○ Q2 2011

- CCXML/VXML enhancements
 - NGN applications
- iSX1000 1U form factor with internal application host
- Dual STM-1 full duplex PCI board for monitoring

○ Q3 2011

- feature enhancement on 3G-324M
 - MONA, additional codec support
- Sigtran

Thank You

Please feel free to contact us at
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