

# VOIP Deployment Workshop

## Instructors:

Jonny Martin, Daniel Griggs

## Who should attend:

This is a technical workshop, made up of lectures and hands-on lab work. Open to technical staff who are now or soon will be deploying IPMulticast services on a IP based Internet Service Provider (ISP) network, Enterprise network, Campus network or Internet exchange Point (IXP), for one-to-many and/or many-to-many data/media/NGN distribution services and applications.

## Pre-requisites:

User level UNIX and basic system administration skills; basic understanding of VoIP; understanding of TCP/IP and some network design in a service provider environment.

## What you will learn:

- An introduction to telephony past and present, and how this has evolved into Voice over IP.
- VoIP fundamentals; techniques, codecs, protocols, plus network and quality considerations.
- Cisco voice router configuration
- How to install and configure Asterisk, one of the most popular and fully feature open source PBXs available.
- Advanced techniques with Asterisk including database integration, interactive voice response (IVR) applications, billing systems, queuing / helpdesk systems, and integration with external applications.
- Configuration of the open source SIP Express Router, and a look at other open source VoIP servers.
- VoIP platform architectures and management considerations
- Configuration and provisioning requirements for a variety of hardware, including Asterisk/Digium PSTN cards, Cisco voice gateways, and SIP handsets.
- Where and how to use ENUM, voice peering, and voice interconnection techniques.
- DNS and VoIP configuration
- A look at where VoIP technologies are heading, and current trends in VoIP deployments.

## Technologies covered:

Basic circuit switched telephony, Cisco voice routersm VoIP protocols, Asterisk the open source PBX, SIP Express Router, ENUM, ISP VoIP architectures.

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## Abstracts

### - Network Management and NOC Workshop

Hervey Allen (NSRC), Phil Regnauld (NSRC), Chris Evans (Delta-Risk)

### - VOIP Deployment Workshop

Jonny Martin (PCH), Vicky Shrestha (PCH), Daniel Griggs (FX Networks)

### - Network Security Workshop

Damien Holloway (Juniper Networks), Kunjal Trivedi I(Cisco), Merike Kaeo (Doubleshot Security)

### - ISP Routing Workshop using IPv4 and IPv6

Gaurab Raj Upadhaya(PCH), Amante Alvaran (APNIC), Shankar Vridhagiri

### - Advanced Routing - BGP Multihoming with IPv4 and IPv6

Philip Smith (Cisco), Mark Tinka (Global Transit)

### - Toward The Internet 2.0

Hiroshi Esaki, Ph.D.

### - Advancing the Philippines' Internet Infrastructure

William Torres, Ph.D.

- Integrating IP Wireless Sensor Networks

Patrick Grossetete, Archrock

- Lessons Learnt from the Beijing Olympic Games Website Measurement

Rocky K. C. Chang, The Hongkong Polytechnic University

- A technical demo and overview of .tel

Jim Reid (Telnic)

- BGP IN 2008 - what's changed

Geoff Huston (APNIC)

- IPv6 Traffic levels on Hurricane Electric's backbone

Martin Levy (Hurricane Electric)

- JANET's 40Gbps backbone

Rob Evans (JANET)

- From IPv4 only to v4/v6 Dual Stack

Shin Miyakawa (NTT)

- How to Keep CGNs from Breaking the Internet

Randy Bush (IJJ)

- IPv6 Deployment at IJJ

Yoshinobu Matsuzaki (IJJ)

- Session aware NAT

David Miles (Alcatel-Lucent)

- IANA and DNSSEC at the root

Richard Lamb (IANA)

- IPv6 at Google: lessons learned, state of the art, and the road to deployment

Lorenzo Colitti(Google)

- Euro-IX update

Serge Radovic (Euro-IX)

- IPv6 at Monash University

John Mann(Monash University)

- What can IXPs do for IPv4/IPv6 route exchange?

Takabayashi Takejiro (Japan Internet Exchange Co., Ltd.) and Mawatari Masataka (Co-author)

- What can IXPs do about IPv4 exhaustion?

MAWATARI Masataka (Japan Internet Exchange Co., Ltd.) and TAKABAYASHI Takejiro

- DNS-OARC's Open DNSSEC Validating Resolver

Duane Wessels(DNS-OARC)

- AMS-IX Update

Cara Mascini(AMS-IX)

- DNSSEC in 6 minutes

Joao Damas (ISC)

- NIXI - Internet Exchanges in India

Amitabh Singhal,NIXI

- IPv6 - IPv4 Co-Existence: IETF Report

Jari Arkko, Ericsson Research, IETF

- Rogue DNS servers - a case study

Feike Hacquebord, Trend Micro

- Building a very large scale compute system for organizing the worlds information and making it universally accessible

Vijay Gill

- Mobile Backhaul Architecture Options

Rishi Mehta , Redback Networks

- Membership Development

Tomas Marsalek, NIX.CZ

- Broadband Forum v6 Home Networks

David Miles, Alcatel-Lucent

- BGP Routing Scalability Considerations

Danny McPherson, Arbor Networks, Inc. Co-author: Shane Amante, Lixia Zhang

- 2008 Infrastructure Security Report

Danny McPherson, Arbor Networks, Inc.

- 32-bit ASNs

Chris Malayter, Switch&Data, Co-author: Greg Hankins , Force10 Networks

- The Internet Regulatory Environment in Saudi Arabia

Dr. Ibraheem S. Al-Furaih (CITC)

- Tutorial: Introduction to IPv6

Kurtis Lindqvist (NetNod)

- Tutorial: BGP Multihoming Techniques

Philip Smith (Cisco)

- Tutorial: BGP Techniques for Service Providers

Philip Smith (Cisco)

- Tutorial: Troubleshooting BGP

Philip Smith (Cisco)

- Tutorial: Network Core Infrastructure - Best Practices

Yusuf Bhajji (Cisco)

- Tutorial: Anatomy of a network attack, network forensics, network attack and defense

APNIC Training Team and Team Cymru

- Tutorial: Internet Routing Registry

APNIC Training Team

- Tutorial: MPLS Service, Applications & Deployment Best Practices

Santanu Dasgupta (Cisco Systems) and Kasu Venkat Reddy

- Tutorial: Layer 2 Attacks and Mitigation Techniques

Yusuf Bhajji (Cisco)

- Tutorial: Managing Voice Quality in Converged IP Networks

Faisal Chaudhry (Cisco Systems)

- Tutorial: Internet Resource Management Essentials (IRME)

APNIC Training Team

- Tutorial: DNSSEC Deployment

Phil Regnaud and Hervey Allen (Network Startup Resource Center)

- Tutorial: MPLS-based Metro Ethernet Services

Paresh Khatri (Alcatel-Lucent)

- Tutorial: IPv6 Deployment

Mark Tinka (Global Transit International)

- Tutorial: IS-IS Deployment (Dual-Stack)

Mark Tinka (Global Transit International)