PacNOG

Hilton Hôtel, TAHITI

TRACK SESSIONS – DETAILS: 16-20 June 2009: refer PacNOG Program Chart for schedules: Mon-Sat

TRACK 1	NETWORK SYSTEMS & MANAGEMENT; Tue-Thu	
INSTRUCTORS	HERVEY ALLEN + PHIL REGNAULD; NETWORK STARTUP RESOURCE CENTER [NSRC]	
TUESDAY	SESSION I * Welcome * Introduction to Ubuntu and Linux/Unix - Some history - Kernel, shell, processes - File System, Directory Hierarchy, files - Some differences between flavors of Unix and Linux. - Pipes, sockets, devices (character/block), symbolic links (hard/soft) * Lab: Install Ubuntu * Privileges - User, Group, Other - Process permissions - 'root' user - Octal/Numeric vs. Symbolic mode - Some special cases (setuid/setgid/sticky bits) - Inherited privileges * Lab: Practice these concepts SESSION II * Editing - Using vi (ways to open files, regex in vi, why vi) - Other editor options (ee, joe, pico, emacs, xemacs) - Piping tricks to edit (tail, head, less, more, cat) * Lab: Practice using vi * Commands - Virtual terminals (consoles) - Mouse daemon buffer - Console access in GUI - OOB and Console - Command completion * Lab: Practice with consoles, vi and command completion	Afternoon SESSION III * TCP/IP Networking - Review the OSI layers - IP Allocation Golden Rules - Netmask calculations - Gateway, network - Default vs static routes (understanding routing/aggregation is key) - Interface(s) configuration - Route configuration * Lab: Configure network interface and default route SESSION IV * Presentation: What is Network Monitoring and Management? * Network Performance Metrics / Definitions - Definitions of terms, such as channel capacity, channel utilization, 95th percentile, etc. - Delay - Transmission - Packet loss - Jitter - Flow Control * Host Network Tools - ping, traceroute, mtr, netstat, nmap, lsof, iperf, netperf, bing, trafshow, etc. * Lab: Look for jitter between two points with ping, Use traceroute and mtr for more information, Use netstat and lsof to see what's running on your machine
WEDNESDAY	* Local and End-to-End Analysis * Lab: Use iperf to measure network performance between two points. * Presentation: Overview of SNMP - Exercises: SNMP * Presentation: Configuration and Change Management - Demo: using Rancid - Exercises: install Concurrent Versioning System (CVS)	Afternoon * Presentation: Logging - Exercises: Install Syslog-ng, receive messages from a router * RRDTool and MRTG - Exercise: setup MRTG * Presentation: Smokeping and Cacti - Demo Smokeping in use - Demo Cacti in use - Exercises: Install and configure Smokeping and/or Cacti
THURSDAY	* Presentation: Nagios Overview and Configuring Details - Exercises: Install Nagios, configure and add a second host/router * Presentation: Documentation and Ticketing - Demo RT and Trac in action - Exercises: Install Redmine and Trac * Summary	

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TRACK 2	ROUTING & IPV6; Tue-Thu
INSTRUCTORS	DR PHILIP SMITH; CISCO SYSTEMS
TUESDAY	Presentations: Routing Basics, Intro to OSPF, Deploying OSPF, Intro to BGP Labs: Setting up network with OSPF and BGP
WEDNESDAY	Presentations: Introduction to IPv6, IPv6 Routing Protocols, BGP Attributes & Policy Labs: Adding IPv6 to Tuesday's Lab, eBGP Lab (using IPv4 and IPv6)
THURSDAY	Presentations BGP Scaling, BGP Best Practices Labs: Filtering and BGP Policies (using IPv4 or IPv6 or both)

TRACK 3	SECURITY WORKSHOP; Fri-Sat
INSTRUCTORS	MERIKE KAEO; DOUBLE SHOT SECURITY + PHIL REGNAULD; NSRC
FRIDAY	SESSION I * Introduction to Security Fundamentals • General Overview of Network and Host Security Principles • Introduction to Security Technologies and Where They Apply * Practical Infrastructure Security • Securing The Device • Controlled Device Access using Filters and Encrypted Logins • Protecting Integrity of System Images and Configuration Files LAB I * Securing Device Access • create secure user logins • enable SSH access on routers • compare Telnet vs SSH using network sniffers • create filters to only allow trusted host SSH access • disable unneeded services • create accurate timestamps for system logs SESSION II * Practical Infrastructure Security (cont) • Securing The Data Path ○ Firewalls and their applicability ○ uRPF • Securing The Routing Infrastructure Techniques and Best Practices

CONT'D TRACK 3 – SECURITY WORKSHOP: FRIDAY; SESSION II	
	LAB II * Securing The Data Path • create filters to protect against sending and/or receiving bad traffic • configure uRPF • Securing The Routing Infrastructure • configure route filters for BGP • configure MD5 keys on eBGP/iBGP peers SESSION III * IPv6 and Infrastructure Security • Review of IPv6 Addressing and General Protocol Nuances • Practical Infrastructure Security for IPv6 Networks • Differences from IPv4 in certain areas • Current standards work updates LAB III * IPv6 Infrastructure Security • Securing the Device, Data Path and Routing Infrastructure in an IPv6 environment
SATURDAY [half day]	SESSION IV * Logging/Auditing • Common pitfalls in logging and how to avoid them • Tools used to make tracking potential issues easier LAB IV * Logging via Syslog and using Netflow tools

TRACK 4	VoIP WORKSHOP; Fri-Sat	
INSTRUCTORS	JONNY MARTIN; PACKET CLEARING HOUSE, + ANDY LINTON; VICTORIA UNIVERSITY OF WELLINGTON	
FRIDAY	Session 1. - Introduction to Voice, VoIP, and SIP _ Introduction to Asterisk (common open-source PABX) Session 2. - LAB - Asterisk install and basic configuration Session 3. - Very quick introduction to advanced asterisk techniques - LAB very quick introduction to advanced asterisk techniques	Session 4. - LAB Basic TrixBox configuration (ready to go PABX with GUI) Session 5. - Introduction to Cisco Gateways - LAB Basic Cisco voice gateway configuration Session 6. - LAB Advanced Cisco voice gateway configuration - Introduction to VoIP security
SATURDAY	Session 7. - LAB VoIP QOS Session 8. - ENUM - LAB Asterisk ENUM configuration	