Contents of network category

What is network and systemadministration?, Applying technology in an environment, The human role in systems

Ethical issues, Is systemadministration a discipline? ,The challenges of systemadministration,Common practice and good practice, Bugs and emergent phenomena,Themeta principles of systemadministration,Knowledge is a jigsaw puzzle,To the student ,

Some road-maps ,System components ,What is 'the system'? , Handling hardware ,Operating systems ,Filesystems ,Processes and job control ,

Networks ,IPv4 networks, Address space in IPv4,IPv6 networks, Networked communities,Communities and enterprises,

Policy blueprints, Systemuniformity, User behavior: socioanthropology, Clients, servers and delegation,

, Host identities and name services, Common network sharingmodels, Local network orientation and analysis, Host management , Global view, local action, Physical considerations of server room, Computer startup and shutdown , Configuring and personalizingworkstations , Installing a Unix disk, Installation of the operating system , Software installation

Kernel customization ,User management Issues , User registration , Account policy , Login environment, User support services,

Models of network and system administration, Informationmodels and directory services, Systeminfrastructure organization, Network administrationmodels, Networkmanagement technologies, Creating infrastructure.

Systemmaintenancemodels

- 6.7 Competition, immunity and convergence .
- 6.8 Policy and configuration automation .

- 6.9 IntegratingmultipleOSs
- 6.10 Amodel checklist
- 7 Configuration and maintenance
- 7.1 Systemconfiguration policy
- 7.2 Methods: controlling causes and symptoms .
- 7.3 Changemanagement
- 7.4 Declarative languages
- 7.5 Policy configuration and its ethical usage
- 7.6 Common assumptions: clock synchronization
- 7.7 Human—computer job scheduling .
- 7.8 Automation of host configuration .
- 7.9 Preventative host maintenance

CONTENTS vii

- 7.10 SNMP tools
- 7.11 Cfengine
- 7.12 Database configurationmanagement
- 8 Diagnostics, fault and change management
- 8.1 Fault tolerance and propagation
- 8.2 Networks and small worlds .
- 8.3 Causality and dependency .
- 8.4 Defining the system .
- 8.5 Faults .
- 8.6 Cause trees
- 8.7 Probabilistic fault trees .
- 8.8 Changemanagement revisited .
- 8.9 Game-theoretical strategy selection
- 8.10 Monitoring
- 8.11 Systemperformance tuning
- 8.12 Principles of quality assurance 324
- 9 Application-level services 331
- 9.1 Application-level services
- 9.2 Proxies and agents
- 9.3 Installing a new service .
- 9.4 Summoning daemons
- 9.5 Setting up the DNS nameservice .
- 9.6 Setting up aWWWserver
- 9.7 E-mail configuration .

- 9.8 OpenLDAP directory service
- 9.9 MountingNFS disks .
- 9.10 Samba .
- 9.11 The printer service
- 9.12 Java web and enterprise services .
- 10 Network-level services 391
- 10.1 The Internet .
- 10.2 A recap of networking concepts
- 10.3 Getting traffic to its destination
- 10.4 Alternative network transport technologies .
- 10.5 Alternative network connection technologies
- 10.6 IP routing and forwarding .
- 10.7 Multi-Protocol Label Switching (MPLS)
- 10.8 Quality of Service
- 10.9 Competition or cooperation for service? .
- 10.10 Service Level Agreements
- 11 Principles of security
- 11.1 Four independent issues
- 11.2 Physical security .
- viii CONTENTS
- 11.3 Trust relationships .
- 11.4 Security policy and definition of security .
- 11.5 RFC 2196 and BS/ISO 17799 .
- 11.6 Systemfailuremodes
- 11.7 Preventing and minimizing failure modes
- 11.8 Somewell-known attacks
- 12 Security implementation 453
- 12.1 Systemdesign and normalization .
- 12.2 The recovery plan
- 12.3 Data integrity and protection
- 12.4 Authenticationmethods
- 12.5 Analyzing network security .
- 12.6 VPNs: secure shell and FreeS/WAN
- 12.7 Role-based security and capabilities .
- 12.8 WWW security
- 12.9 IPSec secure IP .
- 12.10 Ordered access control and policy conflicts .

- 12.11 IP filtering for firewalls .
- 12.12 Firewalls .
- 12.13 Intrusion detection and forensics .
- 12.14 Compromisedmachines
- 13 Analytical system administration
- 13.1 Science vs technology
- 13.2 Studying complex systems .
- 13.3 The purpose of observation .
- 13.4 Evaluationmethods and problems
- 13.5 Evaluating a hierarchical system .
- 13.6 Deterministic and stochastic behavior
- 13.7 Observational errors .
- 13.8 Strategic analyses
- 13.9 Summary .
- 14 Summary and outlook
- 14.1 Informationmanagement in the future
- 14.2 Collaborationwith software engineering .
- 14.3 Pervasive computing .
- 14.4 The future of systemadministration .
- A Some useful Unix commands
- B Programming and compiling
- B.1 Make
- B.2 Perl ., WWW and CGI programming