








Torsten Blum

DETAILED SKILL MATRIX







Network Equipment (Layer 2&3)

Cisco (CSR, 12xxx, 7xxx, 6xxx, etc.)	
Juniper (T, MX, M Series)	
Foundry	
Alcatel (7750)	
Force10 (E-Series)	
Huawei	
Extreme	

Network Technologies

IPv4	
IPv6	
MPLS	
Multicast	
NMS	
IPsec	
VoIP	



High Level Skills

Network Engineering & Design	
Network Troubleshooting	
Network Migration & Optimization	
Network Operations	
Project Management	
Presentations	

Routing Protocols

BGP	
OSPF	
IS-IS	
PIM	

Transmission Technologies

SONET / SDH	
Ethernet (Optical & Copper)	
xWDM	
ATM	

Various Networking Protocols

DNS	
DHCP	
SNMP	
IGMP	
LDAP	

Radius	
Tacacs+	
HTTP	
FTP	
XMPP	
SMTP	

Operating Systems

Windows	
Linux	
BSD	
Solaris	
OS X	

Programming & Scripting

C	
C++	
Objective C	
Perl	
Unix Shell	
PL/SQL	

Office, Publishing, Markup

Word	
Excel	
Powerpoint	
Keynote	
Numbers	
Pages	
TeX	
HTML & CSS	

DETAILED WORK EXPERIENCE

Period August 2008 to present
Position Architecture Specialist Global WAN
Department Department MIT-NG2 / DC FW Ops 2
Company MAN IT Services GmbH / T-Systems International GmbH

- Refine the existing global WAN architectural strategy
- Creation of WAN architectural documentation
- Improving network management systems
- Managing network related subprojects

Period March 2004 to November 2007
Position Senior Network Engineer
Department Internet Engineering Group
Company Cable&Wireless Telecommunication Services GmbH

- Major rework and upgrade of Cable&Wireless' global internet backbone, AS1273, to capacities of ≥ 40 GBit/s
 - Proposed and initiated this project together with the Director of the Internet Engineering Group
 - Researched technology and commercial feasibility
 - Analyzed overall reliability of competing architectural approaches; included fibre paths, equipment as well as protocols on layers 2 & 3
 - Defined new architectural principles for the reworked network, publishing results as internal Whitepaper's
 - Presented the proposed new innovative network architecture to stakeholders
 - Created high level designs and documented approaches on deployment and transition
 - Evaluated new leading edge equipment, including: Force10 E600 and E1200, Juniper MX960 and T320/640, Cisco CRS/16 and CRS/8, Cisco 7613 and Alcatel 7750
 - Supplied technical requirements for the RFI and RFP process
 - Participated in scoring and analyzed technical RFI/RFP responses from vendors
 - Participated in Lab testing; personally tested Force10 E600/1200 and Juniper MX960
 - Created the detailed designs together with the Internet Engineering Group, including documentation preparing the roll-out
- New strategic services
 - Analyzed Cable&Wireless' existing network(s), the market and technology and providing feedback and suggestions on potential new strategic services and their service architecture
- GiS Framework to support network analysis and planning
 - Devised a Geo-information system allowing the combination of information on physical and logical network layout in order to provide a better understanding of the AS1273 network and improve the ability to make informed decisions
 - Created a proof of concept implementation using PostGIS (PostgreSQL with spatial extensions), Perl and PHP; supporting existing commercial and consumer GiS tools such as ArcGIS, Grass, Google Earth as well as the creation of PDF vector maps
 - Completed the first step of data gathering on physical land and seabed based fibre paths and node locations
- Expansion of AS1273 into Asia
 - Represented the AS1273 Internet Engineering Group in the Asia Expansion virtual project team, working together with colleagues in Asia and the UK
 - Provided technical guidance and network design based on commercial requirements in Asia

- Miscellaneous
 - Managed the Internet Engineering's Test Lab
 - Evaluated router and switch hardware as well as its software
 - Extended the existing AS1273 backbone capacity pending the completion of the a major network upgrade project
 - Participated in design reviews as a member of the AS1273 design authority
 - Cooperated closely with the OSS/BSS group to improve network monitoring
 - Provided last-line support to 2nd/3rd Level Operation teams, including advanced trouble shooting and direct contact with high profile customers
 - Initiated projects that improved intra- and inter-team technical work-group infrastructure (internal infrastructure, collaboration tools, documentation systems e.t.c.)

Period January 2001 - February 2004
Position Senior Network Engineer
Department Global Internet Engineering Group
Company Cable&Wireless Deutschland GmbH

- Expansion of AS3561 in Europe
 - Participated in design activities, including new node designs throughout Europe
 - Integrated numerous small networks acquired by Cable&Wireless throughout Europe into AS3561 and AS1273
- Introduction of native inter-domain IP Multicast at Cable&Wireless' Tier 1 global backbone AS3561
 - Initiated and led the project
 - Created high and low level designs, including technical design documentation and management presentations
 - Held design reviews with engineering and operations groups located in Reston/Virginia US, Cary/North Carolina US, Tokyo/Japan, London/United Kingdom and Munich/Germany
 - Developed documentation specifically for the operations and provisioning teams
 - Organized Multicast training sessions for all groups involved
 - Coordinated peers and big customers to activate Multicast towards them
 - Steered and participated in the deployment of actual router configurations to all AS3561 routers in US, Europe and Asia/Pacific together with the 2nd and 3rd level operation teams in Cary/NC and Reston/VA
- Prepared deployment of native IPv6 in Cable&Wireless' Tier 1 backbone AS3561
 - Evangelized IPv6 inside Cable&Wireless
 - Created high and low level designs, addressing plans, address management rules
 - Created a testbed as a overlay network in order to create experience within engineering and operations as well as supporting the early adopters amongst the customer base
 - Provided IPv6 connectivity to the 53rd IETF Meeting in Minneapolis hosted by Cable&Wireless in 2002
- Devised a high level concept for a global IP address management system
 - Created the initial concept for a IP address management based on a modified "whois" database system as the back end and proposed front end tools, permitting direct interfacing with regional internet registries (RIPE, APNIC e.t.c.)

The system was implemented by a external consultant:
<http://nethead.de/media/ipat/modrdb-presentation.pdf>
- Customer interface to AS3561 traffic engineering
 - Evangelized & designed traffic engineering interface based on BGP communities, enabling customers to control their route announcements on AS3561 boundaries to peers and within regions

- Miscellaneous
 - Established Lab facilities for the European Internet Engineering Group in order to improve hardware and software evaluation and testing
 - Participated in design reviews as a member of the AS3561 and AS1273 design authority
 - Closely cooperated with the OSS/BSS group to improve network monitoring and service
 - Last-line support to 3rd Level operations teams, including advanced trouble shooting and direct contact with most important customers

Period July 1999 - December 2000
Position Senior Network Engineer
Department Network Operation Services (NOS)
Company Cable&Wireless ECRC GmbH

- Participated in AS1273 Upgrade/Expansion working group
 - Created network and node designs
 - Pre-configured network equipment before deployment
 - Coordinated on-site work for new installations, upgrades and moves
 - Integrated new sites into the live network
 - Performed upgrades on backbone circuits and peering as well as upstream connections
- Introduced native IP Multicast
 - Replaced old legacy mrouterd/MBone DVMRP tunnel infrastructure with native IP Multicast using PIM
 - Established Multicast connectivity to upstream and peering partners
 - Delivered support directly to Multicast customers
- Early stage IPv6 lab testing
 - Established the IPv6 lab
 - Explored IPv6 capabilities and opportunities
 - Followed the development of the IPv6 protocol suite
 - Participated in Cisco IPv6 beta program
- Introduced new network services and management capabilities

Includes concept, tools development in Perl as well as documentation

 - Established automatically generated route filters for BGP customers based on data from internet routing registries as one of the first carriers in Europe
 - Introduced an automatic system following configuration changes on routers and switches using a revision control system, permitting the tracking and tracing of all changes over a period of hours or even years
- Operated and expanded the INXS internet exchange

<http://www.inxs.de/>

 - Migrated the INXS and it's members to a new Cable&Wireless location in Munich
 - Upgraded the INXS switch capacities during the move
 - Introduced a Website for the INXS, including system installation, configuration as well as developing management tools on the website, both internal and external
- Miscellaneous
 - Provided network operations and customer support by participation in the day-time "NOC of the day" as well as 24/7 on-call "NOC of the week" rotation plans, responsible for the AS1273 internet backbone and the INXS internet exchange
 - Managed peering relationships (technical)
 - Participated in AS1273 Upgrade/Expansion working group

Period June 1999 - November 1995
Position Network and Unix Systems Specialist
Department Network Support
Company TLK Computer GmbH & Co KG

- Designed and optimized customer networks
- Analyzed and configured routers and complex OSPF and BGP4 setups
- Managed vendor relationships on the technical level: managing feature requests, cases and software testing
- Evaluated new products and prepared the inclusion into the companies product portfolio
- Developed IP accounting and load statistics software and various network management tools

A short CV/Resume is available at
<http://torstenb.vmunix.org/CV-English.pdf>

An up to date version of this document is always available at
<http://torstenb.vmunix.org/Profile-English.pdf>