

## Stephan Austermühle

IT Architect  
Unix/Storage Senior Consultant &  
Senior System Administrator

CV/Profile (English)

Last updated: April 15, 2018



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## Personal Information

### Personal Data

First name and surname .....Stephan Austermühle  
Year of Birth ..... 1975  
Citizenship .....German  
Mother tongue .....German  
Foreign languages .....English

### Contact Details

Postal address .....Rheinsberger Weg 4  
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### Current Position

Status .....Freelancer  
Subject focus.....IT Architect/Solutions Architect,  
Consultant for Unix and Storage Systems,  
Senior System Administrator (according to SAGE),  
System Programmer  
Jobs .....Consulting, conceptual design, support, administra-  
tion, automation and system programming in a  
Unix/Linux environment, storage systems, high availa-  
bility, business-critical infrastructures;  
system programming in C and scripting languages;  
Project management, organization, coordination  
Professional data processing experience since ..... 1992  
Project work since ..... 1997

### Availability and Terms of Contract

Available from\* .....July 1, 2018  
At ..... 100 % capacity  
On-site work possible at ..... 100 %  
Work location .....Worldwide  
Terms of contract .....Dependent on project and location, please get in  
touch for further details

\* Subject to contract extensions of ongoing projects. Please inquire about my availability for short-term and short project work and support (up to a few days).

## References

**Note:** Omissions (marked with [...]) have been made for reasons of keeping references anonymous and do not change the contents of these references. All references have been translated from German.

2015

Reference given by Engagement Manager, international hosting and cloud provider (Frankfurt, January 2016, translation will be provided later):

“ Herr Austermühle war von Anfang Januar bis Oktober 2015 als Technischer Architekt für uns tätig. Sein Hauptaufgabengebiet umfasste das Design und die technische Umsetzung eines anspruchsvollen Virtualisierungsprojektes für einen namhaften Automobilhersteller mit folgenden Rahmenparametern:

- Design und Umsetzung der physischen und virtuellen Umgebung in einem internationalen Team mit mehr als 80 Mitarbeitern unter Berücksichtigung der geforderten Sicherheitsaspekte
- Vertretung des Designs und der Umsetzung gegenüber dem Endkunden und allen Projektmitarbeitern
- Unterstützung der Automatisierungsanforderungen hinsichtlich der finalen Lösung

Herr Austermühle fügte sich nahtlos in das Projektteam ein und wurde binnen kürzester Zeit der von allen Projektmitgliedern geschätzte technische Hauptansprechpartner, sein Engagement und seine sowohl technischen als auch kommunikativen Fähigkeiten sind herausragend.

Insbesondere fiel seine Fähigkeit auf, sich in ein sehr komplexes, laufendes Projekt binnen kurzer Zeit einzuarbeiten.

Im Projektverlauf hat Herr Austermühle zusätzlich an der Angebotsausarbeitung für einen weiteren Kunden mitgewirkt.

Ich würde mich freuen, in Zukunft wieder mit Herrn Austermühle zusammenzuarbeiten.

Feedback from a customer workshop (Wolfsburg, February 2015, translation will be provided later):

“ Besonders positiv ist die technische Lösungskompetenz von Stephan Austermühle [...] aufgefallen.

2014

Reference given by Senior IT Architect, IBM Deutschland GmbH (Munich, December 2014):

“ The Consultant supported us as an IT architect in a challenging international datacenter consolidation program over the past seven months. He familiarized himself on his own, and very quickly, with the problems at hand and subsequently took over the technical responsibility for a sub-project. In this role, he prepared the concept documents, which were not only technically sound but also delivered within the set time frame. In addition, he supported us and all colleagues as a Subject Matter Expert for Unix/Linux, Cluster and SAN/Storage.

*Due to his flexibility and willingness to take over any work required, the Consultant substantially contributed to the progress of the project. This included his on-site support for a project team in Madrid where he helped with his know-how in implementing the concepts previously drawn up. In Madrid, he was a highly regarded expert, above all as far as difficult problems were concerned. Without his work the deadline could not have been met.*

*The Consultant always kept deadlines and worked very well with the project team, colleagues and customer representatives, and his commitment and target-oriented approach were very highly regarded by them. The Consultant always delivered very high quality work at a very high level of professional expertise.*

Reference given by a corporate team leader with 1,600 staff (Munich, April 2014):

*“ The Consultant started working with us during a project for the introduction of our new SAN and storage infrastructure. In this project he took over the responsibility for the conceptual design of the landscape and subsequent productive implementation. The way he worked was very methodical and extremely well-structured and highly professional, at all times. Due to his high level of professional competence and commitment the Consultant earned the appreciation and high esteem by internal colleagues and specialist departments, within a short time.*

*Following successful implementation of the project the Consultant took over the system management of the landscape and improved the solution by achieving a high degree of automation of administrative tasks as well as technical implementation of current requirements to fundamental charge-back.*

*Since the Consultant was able to familiarize himself with new customer-specific issues at very short notice we were able to also use his services in all Unix-based project– over and above the areas of work originally planned for. The Consultant’s work results always stood out due to their high quality and a diligent, methodical approach.*

2010

Letter of reference by a Senior Architect (responsible for the structure of a data center), a Frankfurt-based consulting house with international presence (October 2010):

*“ Within a short period of time our customer praised the consultant’s high level of subject competence and his great commitment thus making this sub project a success which set out from a difficult starting point. The customer feedback makes clear that the know-how transfer measures which he carried out were very well received. As part of his system support activities he carried out continuous improvements to the system architecture on his own, with the result that no system failures occurred during his period of work on the project, and availability of the entire system was sustainably improved. In his subject area, he was more than level with the hardware manufacturer’s experts, which resulted in the discovery and troubleshooting of weak points. The concepts for which he was responsible were of very high quality.*

2009

Reference by a Service Manager, Fujitsu Technology Solutions GmbH (April 2009):

*“ Stephan Austermühle worked for us as an administrator in a SAN, EMC environment of a Managed Storage Project for the past two years. In his job, he was instrumental in designing the concept and developing our complex tool landscape for automation of administration as well as accounting. He always structured his work well with realistic setting of deadlines and a solution-oriented approach.*

*The consultant showed an above-average level of commitment, a high degree of flexibility and motivation during and outside normal working hours.*

*Due to his quick grasp of new topics he familiarized himself rapidly with new areas. His high level of qualification in the subject, his highly competent and responsible way of working helped him implement his tasks on the high level of quality and care required in this complex, business-critical environment.*

2007

Reference by a sub project lead of an insurance provider with 1,000 staff (Cologne, November 2007):

*“ The consultant supported the team of system administrators in implementing complex tasks in a Unix and SAN environment. We were impressed by his comprehensive knowledge of the subject and his target-oriented manner of working. He contributed significantly to the stability of the supported systems with his high level of commitment including evenings and nighttimes as well as during weekends.*

Reference by the team lead of a globally active hosting service provider in an SAP environment with 800 staff (Walldorf, November 2007):

*“ The consultant has always done exemplary work. He set doable deadlines, which were always met. We were favorably impressed by his analytical and structured approach. His comprehensive subject knowledge, encompassing a broad range of matters, was invaluable for our company. Even complex projects were brought to successful completion. The consultant*



“Global Service & Support Award” by SAP AG for “Excellent Project Performance Worldwide”, issued by Gerhard Oswald, who as a board member of SAP AG is responsible for “Global Service and Support” (May 2007)

*showed extraordinary commitment and did not shy away from work during weekends and at nighttime.*

2005

Reference by the head of a data center of a media company with 4,600 staff (Cologne, July 2005):

*“ The consultant was working for us on a variety of individual projects, over the past three years. He completed tasks at the highest technical and conceptional level. We were very impressed by his high qualifications in the subject, his skill level and his quick grasp. His approach to work was task and problem-oriented and the quality of his work was always excellent. The consultant showed above-average commitment, was highly-flexible and motivated. In working with various subject teams he proved to be an excellent team worker with outstanding interpersonal skills. His relationship with us as customers, colleagues and our suppliers and clients was always impeccable.*

2002

Extract from a letter of reference by a head of department of a globally operating trading company (Düsseldorf, February 2002):

*“ The consultant has successfully carried out several projects [...] to completion for us. In his work, he displayed great subject and interpersonal skills. He closely and reliably cooperated with our staff, customers and suppliers. Even when dealing with unusual jobs [...] we were always able to rely on the consultant's flexibility, goal-orientation and commitment. His outstanding and broad-range expert knowledge, as well as his analytical approach, enabled him to complete jobs quickly and in a goal-oriented way. [...]*

2001

Extract from a letter of reference by the head of organization/IT of a trading company (Cologne, April 2001):

*“ [...] Your commitment was instrumental for the exemplary process and excellent achievements in migrating the data center [...] and you have therefore saved our [...] company from all and any conceivable negative consequences. [...]*

2000

Extract from a letter of reference by the project manager of an insurance company (Wiesbaden, March 2000):

*“ The consultant has completed the jobs he was tasked with with great subject expertise [...]. He has made a major contribution to the security*

*of our systems with his broad range of subject expertise in the area of security issues.*

## Projects

### Continuous consulting and support of various customers

Roles/Positions: Unix/Storage Specialist, IT Consultant

*Permanent (short time and short notice projects)*

- Ongoing consulting and support of various customers from various industries for SAN/Storage (Brocade, EMC, NetApp) and Unix (primarily HP-UX, Linux, Solaris)
- Defect analysis
- Performance analysis and optimizations
- Technical support

<b>Project:</b>	<b>Implementation of new eCommerce platform</b>
Customer:	Home Shopping Europe GmbH, Ismaning (Germany)
Industry:	Retail/Broadcasting
Roles/Positions:	IT Infrastructure Architect, Linux specialist, System administrator
Time:	Since November 2015

**Note:** This preliminary list will be completed by the end of the project.

- Implementation and continuous development of an IT infrastructure for a new, internally developed and international eCommerce platform
  - Support, troubleshooting, analysis, and optimizations of eCommerce IT operations
  - Consulting and support for agile development teams (Scrum) regarding IT infrastructure and operations
  - Modernization of eCommerce base IT infrastructure (automation with Ansible and Perl, containerization, virtualization, storage, backup, Active Directory)
  - Evaluation and implementation of the container technology
  - Containerization for internally developed (traditional and microservices) and 3<sup>rd</sup> party applications (e.g., Jenkins, Confluence, JIRA)
  - Container operations with Docker and Kubernetes
  - Integration of Linux systems and applications into Active Directory and implementation of Single Sign-On
- Key technologies and products:
- Container, Docker, Kubernetes, Prometheus
  - Ansible, Ansible Tower, Jenkins CI
  - Linux (Red Hat Enterprise Linux 7, CentOS 7)
  - Oracle Weblogic, Apache Tomcat
  - VMware, Xen
  - Microsoft Active Directory, LDAP, Kerberos
  - Citrix NetScaler

<b>Project:</b>	<b>Setup of a Hybrid Cloud based zero-downtime backend infrastructure for Connected Car Services</b>
Customer:	Hosting and Cloud Provider for car manufacturer, Munich/Ingolstadt (Germany)
Industry:	Automotive
Roles/Positions:	Solutions Architect, IT Architect
Time:	January 2015 – October 2015

- Lead IT Architect for design and implementation of a cloud-based technical infrastructure for a connected car application
- Coordination between customer requirements and subject matter expert teams in Europe
- Technical design and implementation of Identity Management (based on LDAP, connects Linux, Load Balancers, Firewalls, and application components)
- Design and implementation of highly available, scalable, secure, and well performing core services (DNS, LDAP, NFS)
- Design and implementation of a central logging service

- Design and implementation of a standard and CentOS based template
- Support for design and implementation of an automatically scaling application (automation and orchestration)
- Involvement in pre-sales activities (design of highly available and cloud-based outsourcing solution)

Important products and technologies:

- NTT Enterprise Cloud (VMware vCloud Director)
- Linux (CentOS)
- OpenLDAP, BIND
- Oracle
- Docker

**Project: Virtualization of legacy HP-UX 10.20 system**

Customer: Industrial enterprise, Nordenham (Germany)

Industry: Manufacturing

Roles/Positions: Unix Specialist, IT Consultant

Time: May 2014 – October 2015

- Virtualization of a physical HP-UX 10.20 legacy system (PA-RISC) on recent hardware (IA64)
- Consulting and support for deployment and Proof of Concept
- Design and implementation of data backup concept (Disk-to-Disk)
- Essential products and technologies: HP Integrity, HP-UX 11.31, HP SRP, HP9000 Containers, HP ARIES

**Project: Pan-European Data Centre consolidation**

Customer: IT Company for Telco, Munich (Germany) and Madrid (Spain)

Industry: Telecom

Roles/Positions: IT Architect, Unix/Storage/Automation Specialist

Time: April 2014 – November 2014

- Design and implementation of system migrations within the scope of a multinational data center consolidation project
- Creation of architectural documents
- Technical planning of transfer of operations
- Defect analysis and technical support (HP-UX, HP Serviceguard, ARIES/HP9000 Containers, Solaris, Linux, Storage)
- Design and implementation of an automation solution

**Project: Technology refresh and implementation of recent best practices**

Customer: Financial Services Provider, Munich (Germany)

Industry: Finance, Healthcare

Roles/Positions: Unix/Storage Specialist, Storage/Unix Administrator

Time: November 2010 – March 2014

- Storage technology refresh
- Replacement of Symmetrix DMX by Symmetrix VMAX
- Installation of a new Brocade-based SAN
- Introduction of EMC Clariion CX4 storage system
- Online migration of approx. 80 server systems (Solaris, Linux, Windows, VMware)
- Implementation of the latest Best Practices
- Project management
- Performance analysis and optimizations
- Storage operational concept
- Storage chargeback
- Solaris and Linux System Administration (RedHat Enterprise Linux, Oracle Enterprise Linux, Oracle Solaris 10, Solaris 11)

**Project: Implementation of SAP, setup of data center operations (team)**

Customer: Systems House for a Government Agency, Düsseldorf (Germany)

Industry: Public Administration

Roles/Positions: IT Architect, Unix/Storage Specialist

Time: October 2009 – September 2010

- New structuring of a data center (server, storage, infrastructure) in an SAP environment
- Building an operations team, with transfer of know-how as a central task
- Drawing up and contributing to concepts and documentation (cluster/ high availability, data backup, patch strategy, operating manual, ...)
- Active system administration of Unix (HP-UX 11.31), Cluster (HP Serviceguard), Windows

Server, SAN (Fibre Channel, Brocade), storage systems (HP EVA 4400 and 6400), LAN (Ethernet switches, HP Procurve), Load Balancer (Cisco ACE 4710)

**Project:** Performance and systems analysis  
**Customer:** Insurance Company, Heidelberg (Germany)  
**Industry:** Insurance  
**Roles/Positions:** Unix/Storage Specialist  
**Time:** June 2009 – September 2009

- Comprehensive performance analysis and optimizing (server, SAN, storage)
- Infrastructure design and planning (server, SAN, storage, backup) for feedback of core applications (in-sourcing)
- Environment: HP-UX 11.23, HP Superdome, HDS storage, IBM DB2-databases

**Project:** Technology refresh and virtualization of storage infrastructure  
**Customer:** Systems house for a media company, Essen, Germany  
**Industry:** Media  
**Roles/Positions:** Unix/Storage Specialist  
**Time:** April 2009 – August 2009

- Storage system virtualization (FalconStor IP-Stor) in a high-availability Unix environment (Sun Solaris, Sun N1AA Deployment Engine, Veritas Volume Manager)
- Migration of storage system (HDS to EMC Clariion)

**Project:** Storage/SAN administration and automation  
**Customer:** IT company, Mannheim for a software company, Walldorf (Germany)  
**Industry:** Software  
**Roles/Positions:** Unix/Storage System Administrator  
**Time:** Oktober 2006 – March 2009

- Fluent transition from the previous project
- Administration of storage systems in a large storage-on-demand environment (EMC<sup>2</sup> Clariion, EMC<sup>2</sup> Symmetrix DMX, NetApp-Filer)
- SAN administration (various Brocade switch and director models)
- Unix administration (HP-UX, Solaris and others)
- Performance analysis and tuning
- Technical support for customer escalation issues (e.g. due to performance problems)
- Programming and further development of high-performance tools and management tools (Perl, MySQL 5, Unix) for administration (such as provisioning, billing, reporting) of one of the largest SANs worldwide and a storage-on-demand landscape in an SAP environment
- Migration of a MySQL database to Microsoft SQL Server 2005 in the context of proprietary storage life cycle and administration tools

**Project:** Linux, Unix, Storage, and SAN administration and automation  
**Customer:** Hosting Service Provider of a software company, Walldorf (Germany)  
**Industry:** Software  
**Roles/Positions:** Unix/Storage System Administrator  
**Time:** August 2005 – January 2007

- System administration of HP-UX, Linux and other Unix systems in an SAP R/3 environment on various hardware platforms (several thousand servers)
- Administration of storage systems (EMC<sup>2</sup> Clarion, EMC<sup>2</sup> Symmetrix DMX), with EMC<sup>2</sup> Control Center and other tools
- SAN administration (various Brocade switches and directors)
- Sub project management (project: migration of a high-availability application complex to HP-UX

11.23, 6 TByte/System, IBM DB2, Legato Auto-start, EMC<sup>2</sup> Symmetrix DMX-3, implementation of an HA solution, implementation of a disk-based cloning solution)

- Server consolidation and virtualization
- Performance analysis and tuning
- Development and programming of automated storage provisioning tools for a storage-on-demand environment (Shell-Script, Perl)
- Trouble shooting and support

**Project:** Unix and storage administration  
**Customer:** Radio and TV Broadcasting Station, Cologne (Germany)  
**Industry:** Media  
**Roles/Positions:** Unix/Storage System Administrator  
**Time:** Juli 2002 – August 2005

- Consulting, planning, support in the environment of a high-availability data center, which operates more than 50 SAP R/3 instances and other applications
- Consulting, planning, support with reorganization, expansion and operations of a high-availability data center
- System administration of (HP-UX, Linux) and Cluster administration (HP Serviceguard with Metrocluster), trouble shooting, system programming
- System environment: HP-UX 11.00, 11.11 (11i V1.0), 11.23 and 11.22 (11i V1.5) on HP-Unix servers with PA-RISC and Itanium processor architecture (D-/K-/L-/T-/V- class, rp2470, rp3440, rp4440, rp5470, rp7410, rx4640)
- Script programming (ksh, sh, bash), programming of tools in C
- Implementation and administration of a load-balancer clusters (Nortel Alteon application switches 2424)
- Administration of LAN components (HP ProCurve switches), planning of network infrastructure
- SAN administration (HP/Brocade Silkworm 2900, EMC/Brocade Silkworm 12000, EMC<sup>2</sup> VolumeLogix, HP CommandView SDM)
- Storage administration: EMC<sup>2</sup> Symmetrix and Symmetrix DMX 1000, EMC<sup>2</sup> Control Center (ECC), HP StorageWorks VA7410
- Administration and support with data backup (HP OpenView Omniback 3.5, 4.1 und 5.1, HP/Compaq ESL9595 LTO tape libraries)
- Performance analyses and optimizing
- Security analyses and optimizing
- Design and implementation of a high-availability directory service (LDAP) based on Netscape/iPlanet Directory Server 6.x

**Project:** Deployment of High Availability Cluster  
**Customer:** Medical Technology Company, Hamburg (Germany)  
**Industry:** Healthcare  
**Roles/Positions:** Unix/Storage Specialist  
**Time:** April 2004

- Setting up an HP ServiceGuard high-availability cluster on HP Proliant servers with SuSE Linux Enterprise Server 8 and HP/ Compaq StorageWorks MSA500 storage system

**Project:** Deployment of data backupsolution  
**Customer:** Research Organization, Freiburg (Germany)  
**Industry:** Research  
**Roles/Positions:** Unix/Storage Specialist  
**Time:** December 2002

- Setting up an HP rp2470 (A class) with HP-UX 11i
- Setting up an HP OpenView Storage Data Protector (Omniback) 5 Cell Server, integration of an HP SureStore 10/180 LTO-Library and backup of EMC2 Celerra systems
- Preparation for NDMP backup

<b>Project:</b>	<b>System inventory</b>
Customer:	Telecommunication Company, Hannover (Germany)
Industry:	Telecom
Roles/Positions:	Unix/Storage Specialist
Time:	May 2002

Server audit as preparation for a SAN implementation. Environment: HP-UX, Solaris, Tru64 Unix

**Project:** Unix system administration  
**Customer:** Aerospace Company, Bremen (Germany)  
**Industry:** Aviation  
**Roles/Positions:** Unix System Administrator  
**Time:** April 2002 – May 2002

- Design of an LDAP implementation concept for an environment of 200 HP-UX workstations and 15 HP-UX servers
- Netscape Directory Server 4.16 on HP-UX 11.00
- HP LDAP-UX Integration, HP YP LDAP-Gateway
- OpenLDAP on HP-UX 11.00

**Project:** Migration to HP-UX, data center move  
**Customer:** IT service provider of a trading company, Cologne and Düsseldorf (Germany)  
**Industry:** Telecom  
**Roles/Positions:** Unix/Storage System Administrator  
**Time:** May 2000 – February 2002

- Consulting and support with migration from SNI to HP
- Sizing
- System administration of and system programming in high-availability HP environment
- System environment: HP-UX 11.0 on various HP L3000 (L-Class)/rp5470, HP N4000 (N-Class)/rp7400, HP V2500 (V-Class), EMC2 Symmetrix
- Connecting an IBM 3494 tape library with IBM Magstar 3590E tape drives to HP-UX server, integration of HP Omniback, conceptual design of interface, programming and certification
- Cluster administration (HP MC/ServiceGuard with Metrocluster)
- Printer spooler administration (HPDPS, lp)
- Data backup (HP Omniback)
- 2nd level support for users and application developers
- Troubleshooting, problem analysis
- Performance analysis and optimizing
- Storage management for EMC2 Symmetrix
- Script programming (ksh, sh, bash) and programming of tools in C
- Realization and introduction of a “Task Management System”
- Documentation, drawing up of several manuals
- Training courses
- Moving of a high-availability data center
- SAN plannings

**Project:** Unix system administration  
**Customer:** Insurance Company, Wiesbaden (Germany)  
**Industry:** Insurance  
**Roles/Positions:** Unix System Administrator  
**Time:** December 1999 – February 2000

- Operations in an IBM SP/SP2 environment (70 nodes)
- System administration of AIX 4.2.1, 4.3.2, 4.3.3
- 2<sup>nd</sup> level support
- Script programming (ksh)
- Setting up and implementing a security concept (SSH introduction)
- External security auditing
- Software packet assembly and distribution

**Project:** Design and implementation of a Disaster Recovery solution  
**Customer:** Bank, Frankfurt (Germany)  
**Industry:** Bank  
**Roles/Positions:** Unix/Storage Specialist  
**Time:** May 1999 – November 1999

- Planning and coordination of acceptance tests in the context of the implementation of a disaster recovery solution
- Parametrization
- Coordination of a User’s Manual
- Administration of Change Requests
- Design of an EMC<sup>2</sup> SRDF implementation concept
- System administration of SUN Solaris 2.6

**Project:** Implementation of a Web application  
**Customer:** Software Company for banking software, Leipzig (Germany)  
**Industry:** Software  
**Roles/Positions:** Unix System Administrator  
**Time:** April 1999

- Programming of Shell scripts (bash)
- Programming of PHP scripts on Solaris and Linux

**Project:** Training and coaching for HP-UX  
**Customer:** Life Insurance Company, Wiesbaden (Germany)  
**Industry:** Insurance  
**Roles/Positions:** Unix Specialist  
**Time:** October 1998 – December 1998

- Unix (HP-UX-) training courses, training and coaching of data center staff

**Project:** Migration from HP-UX 9 to HP-UX 10.20  
**Customer:** Energy Provider, Kassel (Germany)  
**Industry:** Electric utility  
**Roles/Positions:** Unix Specialist and System Administrator  
**Time:** October 1997 – June 1998

- Planning and implementation of a migration of 60 workstations from HP-UX 9 to HP-UX 10.20 (distributed to a larger area in terms of geography)
- Conversion of stand-alone workstations to client/server environments
- Administration of HP workstations on HP-UX 9.x/10.20
- Administration of RS/6000 servers and an SP2 on AIX
- Installation and support for a X-terminals, network computers (NC), network printers and of backup servers (IBM ADSM)
- Programming of Shell scripts (bash)
- Programming of PHP scripts on Solaris and Linux

**Project:** Setup of Internet Service Provider  
**Customer:** Internet Service Provider, Eitorf (Germany)  
**Industry:** Telecom  
**Roles/Positions:** Unix System Administrator, IT Architect  
**Time:** April 1997 – September 1997

- Setting up, administration, maintenance, and expansion of existing infrastructure (primarily Linux-based), including converting individual components to Cisco routers, setting up a Sat-link newsfeed
- Setting up, expansion and maintenance of customer-specific network, Unix and Windows NT installations
- Programming of a billing solutions in C and script languages on Linux, data storage with ADABAS D
- Programming of Intranet solutions with PHP on Apache/Linux
- User support with Unix and Windows NT

**Project:** Implementation of a Linux server  
**Customer:** Marketing Company, Köln (Germany)  
**Industry:** Media  
**Roles/Positions:** Linux/Unix Specialist  
**Time:** April 1997

- Setting up a Linux-based Internet/Intranet server, integration of 80 Windows 95 and Apple Macintosh computers into the TCP/IP network

**Project:** Implementation of a Linux server  
**Customer:** Marketing Company, Wiesbaden (Germany)  
**Industry:** Media  
**Roles/Positions:** Linux/Unix Specialist  
**Time:** March 1997

- Setting up a Linux-based Internet/Intranet server
- Introduction of TCP/IP
- Integration of Windows PCs

**Project:** System administration  
**Customer:** Marketing Chair, Siegen University (Germany)  
**Industry:** Research  
**Roles/Positions:** System Administrator  
**Time:** July 1996 – March 1999

- Administration of a Linux file, print and mail server
- Maintenance of a Windows 95 network (hardware and software) including administration of multimedia hardware (FAST Video Machine, MPEG Encoder, Authoring)
- User support (Windows 95, MS Office, Corel Draw!, Photoshop, Eudora, Pegasus Mail, Netscape Navigator, and Communicator)

**Project:** Setup of Internet Service Provider  
**Customer:** Internet Club, Waldbröl (Germany)  
**Industry:** Telecom  
**Roles/Positions:** System Administrator  
**Time:** February 1996 – January 1997

- Setting up a network infrastructure for an Internet service provider
- Setting up standard Internet and Intranet services
- Setting up network protection against unauthorized access (Firewall)
- Maintenance, administration of infrastructure
- Support for business customers

**Project:** Setup of Internet Service Provider  
**Customer:** PC Retailer/Internet Service Provider, Eitorf (Germany)  
**Industry:** Telecom  
**Roles/Positions:** Linux/Unix Specialist  
**Time:** December 1995 – December 1996

- Setting up a network infrastructure for an Internet service provider
- Setting up standard Internet and Intranet services
- Setting up network protection against unauthorized access (Firewall)
- Maintenance, administration of infrastructure
- Support for business customers

**Project:** Setup of Internet Service Provider  
**Customer:** Internet Service Provider, Cologne (Germany)  
**Industry:** Telecom  
**Roles/Positions:** Linux Specialist  
**Time:** February 1995 – May 1995

- Planning and setting up of an Internet service provider
- Installation and configuration of net work infrastructure
- Setting up standard Internet and Intranet services (DNS, SMTP, POP3, NNTP (News), HTTP, Proxy-Cache, etc.)

**Project:** Software programming  
**Customer:** Industrial Manufacturer, Waldbröl (Germany)  
**Industry:** Industry  
**Roles/Positions:** Programmer  
**Time:** June 1994 – December 1994

- Development of software tailored to the customer's needs for evaluating electronic drivers' logs
- Development of several smaller customer-specific applications (MS DOS-based)

#### Previously...

- Programming of customer-specific solutions
- Maintenance of computers and networks of small companies (1-5 PCs)

## Skills

Where appropriate, subject expertise is marked as follows:

- ★★★ Excellent knowledge, many years of hands-on experience
- ★★ Good knowledge
- ★ Basic knowledge and user knowledge
- ⌚ Historical

## Education and Continuous Professional Education

- University studies in technical IT
- Continuous further professional training on-the-job
- Training courses:
  - EMC<sup>2</sup> Solutions Enabler (EMC, 2001)
  - EMC<sup>2</sup> Symmetrix DMX and EMC<sup>2</sup> Control Center (EMC, 2005)
  - EMC<sup>2</sup> Performance Workshop (EMC, 2006)
  - Migration to HP OpenView Data Protector 5.1 (HP, 2003)
  - HP-UX Performance (HP, 2004/2005)
  - NetApp Basics and Administration (Ultra Consulting, 2004)

## Industries

- Automotive
- Banking (Own Trading)
- Energy providers
- Trade
- Hosting (ASP/SaaS)
- Internet Service Provider (ISP)/Network
- Aviation
- Media
- Healthcare, medical technology
- Public sector
- Software development
- Insurances

## Virtualization

- Oracle Solaris Zones ★★★
- VMware ★★★
- HP Containers (SRP)/HP9000 Containers/ARIES ★★★
- HP Integrity Virtual Machines (IVM) ★★
- HP vPar ★★
- Xen ★★★

## Operating Systems

- HP-UX ★★★
- Linux ★★★
- Solaris ★★
- Windows Server ★
- Digital Unix ⌚
- Flex/MultiFLEX ⌚
- OSF/1 ⌚
- Ultrix ⌚

### Desktop

- Windows 10, 8, 7, Vista, XP ★★
- MS-DOS ⌚
- Windows NT4 ⌚
- Windows 2000 ⌚

## Databases

- |                             |     |            |   |
|-----------------------------|-----|------------|---|
| ▪ MariaDB/MySQL/InnoDB      | ★★★ | ▪ Oracle   | ★ |
| ▪ SQL Server 2005/2008/2012 | ★★  | ▪ ADABAS-D | 🌀 |

## Data Communication

### Interfaces

- |                      |     |              |    |
|----------------------|-----|--------------|----|
| ▪ Ethernet           | ★★★ | ▪ ISDN       | ★★ |
| ▪ RS232              | ★★★ | ▪ FDDI       | 🌀  |
| ▪ Fibre Channel (FC) | ★★★ | ▪ Centronics | 🌀  |

### Protocols

- |          |     |                   |    |
|----------|-----|-------------------|----|
| ▪ TCP/IP | ★★★ | ▪ RADIUS          | ★★ |
| ▪ DNS    | ★★★ | ▪ SNMP            | ★★ |
| ▪ LDAP   | ★★★ | ▪ NTP             | ★★ |
| ▪ SSH    | ★★★ | ▪ SSL             | ★★ |
| ▪ SMTP   | ★★★ | ▪ NetBEUI/NetBIOS | ★★ |
| ▪ POP3   | ★★★ | ▪ UUCP            | 🌀  |
| ▪ NNTP   | ★★★ | ▪ X.25            | 🌀  |
| ▪ HTTP   | ★★★ | ▪ X.400           | 🌀  |
| ▪ IMAP4  | ★★  | ▪ X.75            | 🌀  |
| ▪ PPP    | ★★  |                   |    |

### Applications

- |              |     |                 |    |
|--------------|-----|-----------------|----|
| ▪ Proxies    | ★★★ | ▪ Packet Filter | ★★ |
| ▪ Web-Server | ★★★ | ▪ Firewall      | ★  |
| ▪ Router     | ★★  | ▪ Access Server | 🌀  |
| ▪ Switches   | ★★  |                 |    |

### Products

- |  |     |                      |     |
|--|-----|----------------------|-----|
| ▪ Apache Webserver                     | ★★★ | ▪ Samba              | ★★★ |
| ▪ ISC BIND                             | ★★★ | ▪ Sendmail           | ★★★ |
| ▪ Netscape/iPlanet<br>Directory Server | ★★★ | ▪ Squid              | ★★★ |
| ▪ OpenLDAP                             | ★★★ | ▪ LCOS (LANCOM)      | ★★  |
| ▪ OpenSSH                              | ★★★ | ▪ Cisco Router (IOS) | ★   |

## Hardware

### HP

- |  |  |  |  |
|--|--|--|--|
| ▪ HP 9000 series (workstations and servers including the A, D, K, L, N, T families, V class, rp24xx, rp54xx, rp74xx) |  | ▪ Integrity series (rx2xxx, rx4xxx, rx7xxx, rx8xxx), Superdome |  |
|--|--|--|--|

### Fujitsu Siemens Computers

- Various different SPARC servers

### Sun

- Various different SPARC servers

## IBM

- various

## Mass Storage Systems

- |  |      |                          |      |
|--|------|--------------------------|------|
| ▪ EMC <sup>2</sup> Clariion/VNX        | ★★★★ | ▪ EMC Centera            | ★★   |
| ▪ EMC <sup>2</sup> Symmetrix           | ★★★★ | ▪ HP StorageWorks VA7410 | ★★★★ |
| ▪ EMC <sup>2</sup> Symmetrix DMX, VMAX | ★★★★ | ▪ HP StorageWorks EVA    | ★★★★ |
| ▪ EMC Celerra                          | ★★★★ | ▪ NetApp Data ONTAP      | ★★   |

## SAN

- |                               |      |                     |      |
|-------------------------------|------|---------------------|------|
| ▪ Brocade Silksworm Switches  | ★★★★ | ▪ Brocade Fabric OS | ★★★★ |
| ▪ Brocade Silksworm Directors | ★★★★ |                     |      |

## Backup

- |  |      |                     |      |
|--|------|---------------------|------|
| ▪ DAT/DDS  | ★★★★ | ▪ HP/Compaq ESL9595 | ★★★★ |
| ▪ DLT  | ★★★★ | ▪ IBM Magstar 3590e | ★★★★ |
| ▪ LTO  | ★★★★ | ▪ IBM 3494          | ★★★★ |
| ▪ HP SureStore Autoloader and HP SureStore Tape Libraries (1/8, 1/9, 2/20, 10/180, 10/588) | ★★★★ |                     |      |

## Miscellaneous

- ASCII- und X-Terminals
- Modem
- LAN- und WAN-Technik
- PC-Technik

## Programming and Scripting Languages

- |                              |      |                                |      |
|------------------------------|------|--------------------------------|------|
| ▪ Shell (bash, ksh, sh, awk) | ★★★★ | ▪ Pascal                       | ★★★★ |
| ▪ Perl                       | ★★★★ | ▪ Modula-2                     | ★★★★ |
| ▪ C, ANSI-C                  | ★★★★ | ▪ Basic                        | ★★★★ |
| ▪ C++                        | ★★   | ▪ ESQ/C                        | ★★★★ |
| ▪ PHP                        | ★★   | ▪ Assembler (6502, 6802, 6809) | ★★★★ |
| ▪ SQL                        | ★★   | ▪ Comal                        | ★★★★ |
| ▪ Java                       | ★    | ▪ Scheme                       | ★★★★ |

## Products

### HP

- |                                   |      |            |      |
|-----------------------------------|------|------------|------|
| ▪ AutoPort Aggregation (APA)      | ★★★★ | ▪ PerfView | ★★★★ |
| ▪ ServiceGuard and Metrocluster   | ★★★★ | ▪ LVM      | ★★★★ |
| ▪ Omniback/Storage Data Protector | ★★★★ |            |      |

### Oracle (Sun)

- |   |      |
|---|------|
| ▪ Solstice DiskSuite/<br>Solaris Volume Manager | ★★★★ |
| ▪ ZFS   | ★★★★ |

## EMC<sup>2</sup>

- |   |     |   |     |
|---|-----|---|-----|
| ▪ EMC <sup>2</sup> Control Center (ECC) | ★★  | ▪ Solutions Enabler (SymCLI)            | ★★★ |
| ▪ Navisphere/Unisphere                  | ★★★ | ▪ Symmetrix Disk Relocator (SDR)        | ★★★ |
| ▪ Powerpath                             | ★★★ | ▪ Symmetrix Remote Data Facility (SRDF) | ★★★ |
| ▪ Symmetrix Access Control Lists (ACL)  | ★★★ | ▪ Volume Logix                          | ★★★ |
| ▪ Symmetrix Access Logix                | ★★★ |   |     |

## IBM

- ADSM 

## Symantec/Veritas

- Veritas Filesystem (VxFS) ★★★
- Veritas Volume Manager (VxVM) ★★

## NTT Communications

- NTT Enterprise Cloud ★★★