

# Dr. Alexander Clemm

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## PROFESSIONAL SUMMARY

I am a systems architect who loves to innovate! Strong expertise in network management and control, manageability, distributed systems, network softwarization, SDN, YANG/Netconf, OSS, network analytics, data modeling, networking technology. Successful track record of technical leadership for many leading-edge solutions from original conception to delivery to the customer. Superior technical analysis, reviewing, and writing skills. 50+ patents, 40+ publications, 6 books, numerous IEEE conference committees and IETF standardization activities.

## PROFESSIONAL EXPERIENCE

### **Futurewei Technologies, Santa Clara, California (2016 – current)**

Distinguished Engineer, Future Networks and Innovation (since 12/16)

- Leading the definition of Identity Services Framework for Identity Enabled Networks
- Technology incubation and guidance for various innovation projects involving next-generation networking technology
- Standards representation at IETF

### **Cisco Systems, San Jose, California (1998-2016)**

Common Software Group: Principal Engineer (10/09 – 9/16)

Senior Architect, Device Management Instrumentation (1/04-9/09)

Technology Architect for Embedded Management, Manageability, and Control, selected highlights:

- Led Distributed Network Analytics product effort from incubation, providing a fog solution for monitoring and service assurance of large networks using smart data acquisition and analytics automation
- Initiated and co-led development and mainstreaming of YANG-Push technology that provides telemetry streaming for YANG data and is on its way to becoming an industry standard
- Initiated and co-led an Innovation Project for federated YANG datastores (“Peer-Mount”) used as foundation in Open Daylight’s MD-SAL
- Championed model-driven manageability infrastructure based on YANG and model-driven tool-chains; authored numerous YANG data models
- Made various contributions to SDN controllers, e.g. Open Daylight topology and inventory models
- Initiated, incubated, guided development of Mediatrace, a network-embedded path-oriented management application to monitor end-to-end media sessions (winner of Cisco 2011 Pioneer Award)
- Defined architecture for next-gen management plane and tooling for a new router operating system to result in better manageability (consistent, powerful, intelligent), increased developer productivity
- Delivered specifications and proofs-of-concepts for SNMP development tool suite
- Drove critical improvements to syslog infrastructure, including reliability, filtering, improved consistency and semantical conciseness of syslog messages
- Made key contributions to various technological innovations and product improvements related to manageability, such as plug-and-play network bootstrapping and zero-touch deployment, network software licensing, CASE tools for data model design
- Co-led cross-Cisco architecture baseline for consistent manageability
- Contributed to several corporate initiatives, incl. cloud centric networking, software-defined networking, autonomic networking, next-generation management platform, policy-based networking, diagnostics
- Championed several research cooperations with Universities, directed several dozen interns and Master’s students over the years

- Delivered white papers, function specifications, proofs-of-concepts; provided guidance to marketing and engineering teams to translate these into product deliverables; led teams of software developers to translate concepts and architectures into design
- Member of Cisco Patent Committee

Network Management TG: Senior Manager, Systems Architecture (3/01 – 12/03)

Provided architectural leadership for systems and solutions for VoIP + Packet Telephony management:

- Defined turnkey integrated management solution architecture for major customer segments
- Evolved architecture of residential service provisioning application for packet voice
- Network manageability and embedded device management for service assurance

Managed a small but effective group of 4 system architects whose achievements include:

- Delivered function specifications and systems architecture documents
- Specified management interfaces, e.g. voice network model
- Developed convergence+technology reuse strategy for several management products, ex. dial plan+packet telephony; broadband access, CDN, mobile wireless.
- Built prototypes, conducted feasibility studies and product evaluations

Carrier Voice Gateway Business Unit: Senior Systems Architect (6/98 - 2/01),  
Senior Engineering Manager (9/00 - 2/01)

Chief architect for management of packet telephony

- Initiated and drove Cisco Packet Telephony Center (one of the industry's first systems for the management of packet telephony); developed function specifications and software architecture
- Defined MIBs for several major product releases, contributed to packet voice control protocols
- Developed function specifications for Cisco WAN Manager (CWM) voice gateway support

**Santa Clara University, Santa Clara, California (2008-2016)**

Adjunct Professor (2008-current)

Teaching graduate-level course on Network Management in Fall or Winter quarters

**Ericsson, Fiber Access Division, Menlo Park, California (1995-1998)**

Manager Systems Engineering and Test (5/97-5/98), Manager Systems Engineering (11/95-4/97),  
Senior Systems Engineer (1/95-10/95, in Munich, Germany)

Systems Engineering and System Test responsibility for Ericsson's management products for optical networks, incl. FITL and HFC delivering telephony+bandwidth services, managing a group of 10-20 engineers.

**IBM European Networking Center (ENC) and University of Munich (LMU), Germany (1990-1994)**

Member of scientific staff (9/91-8/94), freelance computer scientist (10/90-8/91)

Conducted network management research as part of a cooperation between IBM and LMU

**EDUCATION AND DEGREES**

6/94	Ph.D. in Computer Science, University of Munich, Germany
6/90	Master of Science in Computer Science, Stanford University, California
1985-1989	Undergraduate studies in Computer Science, T.U. Munich, Germany

US Citizen, native German speaker