

Martin F. Kraft

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Enterprise Architect & IT Consultant – Cloud & Security

AWS Certified Solutions Architect – Professional who designs, migrates, and secures business-critical enterprise systems for global shipping, utilities, and banking.

With NYK Group companies since 2005, enterprise architect since 2014: sets cloud and security direction as a member of the IT Governance Team and serves on the Global Security Operations Center (GSOC) and Incident Response Team (CSIRT). Led the AWS migration that cut infrastructure costs to one tenth. Previously application architect and team lead for OSCAR, at the time the largest GemStone/Smalltalk installation worldwide (around seven billion objects, 30+ developers at peak), and designer of its message bridge to Oracle handling about 150,000 booking and shipment events per hour. Earlier increased the throughput of a UBS back-office workflow engine about 50-fold. Hands-on in AWS, Azure, Java, C/C++, and Smalltalk (GemStone/S, VisualWorks). International experience in the USA, Switzerland, and Germany; based in Bochum.

Skill Matrix

Cloud & Infrastructure	AWS (VPC peering, Direct Connect, VPN gateways, Elastic Beanstalk, S3, EFS, EKS/Kubernetes), Microsoft Azure (VNet, VMs, multiple subscriptions, VPN, Data Factory), Google Cloud Platform, SD-WAN, data center migration
Security	Global Security Operations Center (GSOC), incident response (CSIRT), intrusion tracking and blocking, Check Point CloudGuard, Wiz, Trend Micro Deep Security, endpoint protection, application and network security; ISO 27001, CIS AWS and Azure Foundations Benchmarks (v2–v4)
Architecture & Governance	Enterprise and application architecture, IT governance, cloud migration, outsourcing contracts and SLAs, SDLC, Sarbanes-Oxley compliance
Programming	Java, Smalltalk (VisualWorks, GemStone/S), C, C++, XML/XSLT
Databases	GemStone/S, Oracle, ObjectStore, Versant, Microsoft SQL Server
Integration & Middleware	IBM MQ, Web APIs and web services, EDI, UiPath (RPA), Xalan/Xerces, IBM CICS Transaction Gateway, WebSphere, WebLogic, JBoss
Platforms	Linux (Ubuntu), IBM AIX, HP-UX, Solaris
Leadership	Team lead and coordinator for 30+ developers, architecture committees, mentoring, cross-functional collaboration
Industries	Container shipping and logistics, energy utilities, banking, insurance
Languages	German (native), English (fluent)

Career Experience

Managing Director & IT Consultant, IT Beratung Kraft GmbH, Bochum, Germany

2022 – Present

Independent IT consulting for enterprise and cloud architecture engagements with a focus on cyber security. Engaged through the company as external Enterprise Application Architect for NYK Group companies in the USA.

Enterprise Application Architect, NYK Business Systems Americas (NBSA), Secaucus, NJ, USA (employee through 2021, external consultant since 2022)

2005 – Present

Enterprise Application Architect – Cloud (AWS, Azure) @ NYK

2014 – Present

Support NYK Group companies with a focus on cloud computing in AWS and Azure as a member of the IT Governance Team, setting strategic direction for architecture, design, implementation, and software and network security. As a member of the Global Security Operations Center (GSOC) and Incident Response Team (CSIRT), track and block intrusion attempts on networks and applications and assess cloud security posture with Check Point CloudGuard and Wiz against ISO 27001 and the CIS AWS and Azure Foundations Benchmarks (v2–v4).

- Migrated infrastructure to AWS Cloud and AIX servers to Linux, cutting infrastructure costs to one tenth while improving availability and security.
- Served on the Architect Committee for Ocean Network Express (ONE) migrating the enterprise application OPUS to Google Cloud Platform (GCP).
- Built the AWS landing zone as part of the cloud setup team: AWS VPCs, VPC peering, VPN customer gateways, Direct Connect with Verizon SD-WAN, Amazon EKS (Kubernetes), Trend Micro Deep Security, endpoint protection, and native VPN to Microsoft Azure.
- Built out Microsoft Azure across multiple subscriptions (VNETs, VPN): deployed virtual machines as workstations, UiPath robotic process automation (RPA) servers, Azure Data Factory, and Microsoft SQL Server.
- Architected several web applications in AWS (Elastic Beanstalk, EFS), including a content management system for millions of historical PDF documents (storage on S3, document relationships in Microsoft SQL Server).
- Designed the bridge between the regional car-carrier (PCC/RoRo) booking systems in Asia and Europe (PRESTO, RECAP2) and the Web API for Allocation and Space Control (OpsMaster), achieving real-time booking and bill of lading updates in both systems.
- Supported the migration of service contract modules from OSCAR (USA) to OPUS, its Java-based successor running in South Korea.

Application Architect & Team Lead – OSCAR @ NYK

2005 – 2016

OSCAR, at the time the largest GemStone/Smalltalk installation worldwide, became NYK Line's global enterprise system for logistics, documentation, accounting, and automation of container shipping, built in GemStone/S and VisualWorks Smalltalk with downstream reporting in JBoss, Actuate, and WebLogic. Its transactional object database (initially an HP-UX Stone with seven Solaris Gem servers, later an AIX in-memory solution) held around seven billion objects in a one-terabyte extent. Started as GemStone/VisualWorks specialist, became Team Lead and coordinator for 30+ developers at peak times, and finally application architect for all development teams.

- Designed and implemented an XML-based, multi-threaded message bridge from GemStone/S into Oracle for all booking and shipment-related updates and events (~150,000 events per hour).
- Oversaw the architecture of Java-based customs filings (EU, China, Japan, US 24-hour rule, and others).
- Developed an XSLT framework in C User Action Libraries (Xalan, Xerces) and Smalltalk for incoming messages into GemStone/S.
- Built a printing framework using parallel IBM MQ messages, C User Action Libraries, and Microsoft Host Integration Server, replacing the single-threaded Falcon-MQ/MSMQ print process.
- Delivered web service frameworks from nykline.com into GemStone/S: online vessel schedules, rail billing, web-based Shipping Instructions (VisualWorks 7.4, SRP framework), and mobile devices connecting to GemStone/S listeners.
- Migrated GemStone/S from HP-UX/Solaris to IBM AIX as part of the data center move from Seattle to Columbus; implemented the 32- to 64-bit migration on AIX with customized GBS compatibility changes for VW5i and ENVY, and supported GemStone Systems in moving GemStone/S 64-bit 2.4 completely into memory.
- Implemented major OSCAR modules on multiple GemStone/S servers for higher performance; led the framework team reviewing Java web applications, GemStone/S, C++, and Smalltalk modules.

Software Architect, Technology Specialist, Florida Power & Light (NextEra), Miami, FL **1999 – 2005**

Joined FPL as software specialist for GemStone/S and VisualWorks, took over the Procurement and Accounting project enhancements and their replacement by SAP, then supported the architecture of the remaining Smalltalk and Java projects for the operational division in Miami.

- Mentored Smalltalk and Java developers; led design sessions, SDLC improvements, and Sarbanes-Oxley compliance.
- Enhanced and supported meter reading, commercial billing, and customer call center applications in VisualWorks/GemStone and Java; PowerBilling's "Frame System" with historical slots greatly reduced the complexity of new rate structures and what-if rate calculations.
- Replaced the proprietary mainframe interface "Enablers" in VisualWorks with an XML interface in GemStone/S and WebSphere using IBM's CICS Transaction Gateway in Java.
- Developed a web-based Rate Analysis Program in WebSphere (XML Web API to the commercial billing system), a Java Servlet-based Automated Meter Reading (AMR) statistics prototype with real-time hourly usage data for the DCSI AMR pilot, and the Meter Reader Performance Indicator (MRI) on WebSphere/Oracle.
- Tuned and upgraded GemStone/S and VisualWorks for the procurement (PARIS), accounts payable, and barcode inventory systems, with 3270 screen scraping and EAI/eWay integration modules in XML and C++.

Consulting Engineer, Daedalos Consulting, Witten, Germany **1996 – 1999**

Consulting and training for software vendors and their customers: ParcPlace, GemStone Systems, IBM, Object Design, and Versant. 1997 – 1999 on-site consultant at UBS in Zurich, Switzerland, for DBO (Distributed Business Operations), a back-office workflow engine processing banking transactions from front-office request through final settlement, implemented mainly in VisualWorks and later partially converted to GemStone.

- Increased DBO throughput ~50-fold by applying Petri-net workflow design patterns and implementing a working prototype; assisted in the final implementation (documented internally by Akmal Chaudhri).

- Improved CMS (confirmation matching system) and other back-office tasks by splitting logical processes into physically parallel GemStone/S processes for UBS London and Zurich.
- Designed and implemented distributed, user-profile-based real-time feed displays and mainframe RDB connections with real-time caches in GemStone/S.
- Integrated external interfaces via TPOS/Indigo, DCE (pre-CORBA), Gtask, and ISI/ATI (CORBA 2) in C, GemConnect, and VisualWorks DLL&C Connect; migrated DBO from ObjectStore to GemStone/S.
- For Object Design in Wiesbaden, rewrote ObjectStore/C++ for Smalltalk into version 2 (OSST2) with the Daedalus team and supported customer installations and migrations of ObjectStore and OSST2.
- Consulted on GemStone/S at Siemens and supported Versant Smalltalk.

Software Developer, CFS, Witten, Germany

1989 – 1996

Rate and insurance software for hand-held devices and workstations for the insurers Stuttgarter, Ideal, Neckura, R+V and brokers such as Gerling; the team grew from two to seven developers. Applied an actuarial, object-oriented approach to reduce the complexity of rate and probability calculations.

- Developed graphical display and printer interfaces for DOS, Windows 3.x, Windows NT 3.5x, and OS/2 2.x/3.x in Turbo Pascal and C++ (GRIT+ with Borland C++ and IBM VisualAge C++).
- Implemented actuarial calculation modules for DOS, Windows, OS/2, and host/mainframe computers in C, C++, and Object Pascal, optimized through object-oriented modeling and actuarial formula reduction techniques.

Earlier Work (part-time), Bochum and Witten, Germany

1983 – 1992

Accounting, salary, and direct-deposit program in Pascal for Rudolf Steiner Schule Bochum (1987 – 1989, in production until 2001); public-domain fractal generators FRX and FRX32 in C and Assembler (1983 – 1991); computer science articles for Vogel Verlag (1988 – 1992, see Articles).

Credentials

Vordiplom (intermediate diploma) in Mathematics, Ruhr-Universität Bochum, Germany, 1994

AWS Certified Solutions Architect – Professional, since March 2019, valid through 2028, validation number gYNZoKWK3E1E1RSG (aws.amazon.com/verification)

Articles

ODBMS.ORG articles with Roberto Zicari: [User Report No. 25/08 \(2008\)](#), [On NoSQL Technologies – Part III \(2010\)](#)

Vogel Verlag, six software articles (1988 – 1992) in DOS, DOS International, DOS Extra, Programming Practice in C, and CHIP-SPECIAL: compiler implementation, low-level disk access, graphics and vector printing
Referenced as a source for graphics routines in “Borland Pascal 7.0” by Michael Starke (1993)