William A. (Andy) Adamson
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Education

<u>MS, Computer Science and Engineering</u>
May, 1991, The University of Michigan.

<u>Non-degree Course of Study</u>
1986 to 1989, The University of Michigan. Thirty-one credit
hours of undergraduate work in Computer Science and Mathematics.

<u>BS, Biology</u>
May 1975, The University of Michigan.

Professional Experience

Network Appliance
2008-2017 Software Engineer NFS, then Senior Sofrware Engineer

Center for Information Technology Integration (CITI), The University of Michigan.
August 1997 to 2008, Assistant Director.
August 1995 to August 1997, Senior Systems Research Programmer.
July 1991 to August, 1995, Systems Research Programmer III

School of Information, University of Michigan
Research Investigator (2005 to present)

Information Technology Campus Initiatives, University of Michigan
Research Investigator (1998 to 2005)

Projects

NFSv4 Projects

Technical Lead and either Principal Investigator (PI) or Co-Principal Investigetor (CO) for the NFSv4 projects listed below.

NFSv4 Extensions for Performance and Interoperability, EMC Corporation February 2007 – February 2008. (CO, Technical Lead)

NFSv4 for Cluster File Systems, IBM October 2006 – September 2007. (CO, Technical Lead)

SciDAC: Petascale Data Storage Institute (PDSI) , US Dept. of Energy, September 2006 – August 2011. (CO, Technical Lead)

Software Modification to the MIT Kerberos Software, US Dept. of Energy, April 2006 – November 2006. (PI)

NFSv4 Extensions for Performance and Interoperability, EMC, February 2006 - February 2007. (CO, Technical Lead)

NFSv4 and ASCI File Systems: Secure, Scalable, Standard, Extensible, US Dept. of Energy, June 2006 – September 2006 (CO, Technical Lead)

NFSv4 Security Assurance and Wide Area Optimization Investigation for the DOE/NNSA ICSI Environment, US Dept. of Energy, June 2006 - September 2006. (CO, Technical Lead)

NFSv4 for Cluster File Systems, IBM, July 2004 - June 2005. (CO, Technical Lead)

NFSv4 for Parallel File Systems, Polyserve Inc., July 2004 - December 2005. (CO, Technical Lead)

NMI Development GridNFS, National Science Foundation, September 2004 - August 2007. (CO, Technical Lead)

Network File System Version-4 (NFSv4) and Accelerated Strategic Computing Initiative (ASCI) File systems: Secure , Scalable, Standard, Extensible, US Dept. of Energy, April 2002 - July 2006. (CO, Technical Lead)

Open Source Implementation of RPCSEC_GSS for NFSv4, Network Appliance, January 2000 - March 2000.

NFSv4 Open Source Reference Implementation, Sun Microsystems, November 2003 - May 2004. (CO, Technical Lead)

NFSv4 Open Source Reference Implementation, Sun Microsystems, April 2003 - October 2003. (PI)

Network File System Version-4 (NFSv4) Open Source Reference Implementation, Sun Microsystems, September 2002 - March 2003. (PI)

NFSv4 Open Source Reference Implementation, Sun Microsystems, February 2002 - August 2002. (PI)

Network File System Version-4 (NFSv4) Open Source Reference Implementation, Sun Microsystems, September 2000 - January 2002. (PI)

NFSv4 Open Source Reference Implementation, Sun Microsystems, January 2001 - February 2002. (CO, Technical Lead)

NFSv4 Open Source Reference Implementation, Sun Microsystems, July 1999 - August 2000. (PI)

Internet2 QBone Project CITI and Merit, the University of Michigan
* PI
* One of 13 projects accepted to develop and test quality of service functionality for Internet2 networks.
* Instrumented the Secure Distributed Virtual Conferencing application for end to end quality of service measurements. Measured quality of service on Merit's GateD testbed, University of Michigan's campus ATM Backbone, and over Internet2's vBNS and Abilene networks.
* Presented results to the Internet2 QIC.

Secure Distributed Virtual Conferencing Project Partnership with UCAID.
* PI
* Continued the work of the Bellcore Secure Video Project.
* Added a key exchange protocol for members of the multicast group.
* Added full-motion MPEG1 encoding and decoding to VIC.
* Tested across the Internet2 vBNS backbone.
* Demonstrated at the September 1998 Internet2 Member Meeting.

Addressing and Naming Project ITCom, the University of Michigan
* Designed and coded a distributed network configuration tool to administer user, IP, machine, and audit information for ITCom. Deployed in September 1996, this system consists of a web interface for password based user assignment of IP addresses, a Java administration client, and an Oracle database. All communication is secured via a combination of Kerberos and SSL.
* Investigated and prototyped systems for authenticated network access.
* Hired and managed staff.

Bellcore Secure Video Project. Partnership with Bellcore.
* Managed the creation of a security test bed for new cryptographic and key exchange protocols.
* Augmented VIC to provide unicast software encrypted full-motion Internet delivered video that implements a smartcard based key exchange, and on the fly software encryption cipher choice.
* Created a snooper that can steal and display a non-encrypted VIC session.
* Demonstrated this work at the October 1997 Internet2 Member Meeting in Washington D.C.

Secure Web Project.
* Ported OSF DCE Research Institute's DCE Secure Local Proxy (SLP) to the Macintosh System 7 Power PC and 68000 platforms for OSF.
* Helped develop the Kerberos Local Proxy (KLP), a version of the SLP that uses Kerberos 4 instead of DCE. Ported the KLP to the Macintosh platforms.

Mac DCE Project. Partnership with Gradient Technologies.
Ported the DCE core components to Macintosh System 7 Power PC and 68000 platforms.

Novell NetWare Project.
*Joined NetWare 4.0 NDS security realm with the Kerberos 4 security realm used by AFS in a single login. This involved coding both the NetWare server (NLM) and the NetWare DOS client.
*Ported the Kerberos 4 libraries, AFS 3.2 transport (RX/LWP), and unauthenticated DCE RPC to the NetWare 4.0 server.

AIX/ESA Group. Partnership with IBM. AIX/ESA is IBM's OSF1 operating system for the ES9000 mainframe.
* Ported AFS3.2 servers and client. This involved writing nine new system calls. This port was deployed as part of the Institutional File System (IFS) at the University of Michigan.
* Ported the DCE core components to AIX/ESA. I was responsible for the DCE RPC portion of the port.
* Enabled AIX/ESA performance tracing via a system call interface to AIX/ESA's kernel tracing function.
* Co-taught both the "DCE Application Development" and the "DCE Internals" classes at CITI.

Clinical Information Systems Inc.
February 1991 to July 1991. Software Consultant.
> CIS produces a client server computing system for anesthesiologists. Working in Microsoft C in a DOS environment, I moved information storage from flat files to a dBase database format, added to the communications protocol, and improved overall performance and availability of the product.

Bell Northern Research
January 1989 to April 1989. Co-op.
> I improved the file transfer times between nodes on BNR's Meridian Data Network System, and improved Informix database search times.

Professional Groups and Service

Organizer
NFSv4 Interoperability Workshop, Ann Arbor, (August 2002, June 2003, June 2004, October 2004, June 2005)

Program Committee
FREENIX track USENIX Technical Conference, Anaheim (2005)

Internet2 Working Groups
January 1998 to 2000
Internet2 QoS working group, and QIC member.
Internet2 Bandwidth Broker working group

USENIX Association Member
Since 1992

Invited Talks

"Remote Name Mapping for Linux NFSv4", ASC NFSv4 Workshop, Lawrence Livermore National Lab, California, (May 2005)

"Public Key Based Security for NFSv4", Connectathon 2006, Sun Microsystems, California (February 2006)

"Round Table on Emerging Technologies", IEEE Mass Storage Systems and Technologies – MSST2006, College Park, Maryland, May 2006)

"Extending NFSv4 for Petascale Data Management", Workshop on Next-Generation Distributed Data Management, HPDC 15, Paris, France June 2006.

"NFSv4 and Petascale Data Management", Joint EGEE and OSG Workshop on Data Handling in Production Grids, HPDC 16, Monterey, California June 2007.

"Steps to the vBNS", Internet2 QIC, 1999

"Technical Challenges of Porting DCE to the Apple Macintosh", Decorum '96, 1996

"Joining Security Realms: A Single Login for NetWare and Kerberos", The Fifth USENIX Security Symposium, 1995

"Single Login. Issues and Experience in Joining Security Realms", Decorum '95, 1995

"DCE: What Is It, and What Can You Do With It", Cause 95, 1995

"A Tour Through the UNIX File System", Share 80, 1993

"A Tour Through the UNIX File System", Share 79, 1992

Publications

RFC 7861 Remote Proceedure Call (RPC) Security Version 3
A Adamson, N Williams
IETF Standards Track. Updates RFC 5403 (November 2016)

pNFS and Linux: Working towards a Heterogeneous Future (with P.Honeyman and D.Hildebrand),
8th LCI International Conference on High-Performance Clustered Computing, South Lake Tahoe (May 2007).

Extending NFSv4 for Petascale Data Management (with P. Honeyman, D. Hildebrand, S. McKee, J. Zang),

High Performance Distributed Computing Workshop on Next-Generation Distributed Data Management, Paris, France (June 2006)]

GridNFS: Global Storage for Global Collaborations, (with P. Honeyman, S. McKee),
International Symposium on Global Storage for Global Collaborations, Sardinia, Italy (June 2005)]

A Practical Distributed Authorization System for GARA, (with O. Kornievskaia),
INFRASEC2002, Bristol, England (October 2002).

End-to-End Provision of Policy Information for Network QoS, (with V.Sander, I. Foster, A. Roy),
Proc. of the Tenth IEEE Symposium on High Performance Distributed Computing (HPDC) (August, 2001).

Secure Distributed Virtual Conferencing: Multicast or Bust
William A. Adamson, Charles J. Antonelli, Kevin W. Coffman, Patrick D. McDaniel, Jim Rees,
CITI tech report tr-99-1. January 1999

Provably Secure Videoconferencing
Peter Honeyman, William A. Adamson, Kevin Coffman, Janani Janakiraman, Rob Jerdonek and Jim Rees,
Proceedings of the Seventh USENIX Security Symposium, January 1998.
CITI tech report tr-97-2.

Joining Security Realms: A Single Login for NetWare and Kerberos
William A. Adamson, Jim Rees, Dr. Peter Honeyman,
Proceedings of the Fifth USENIX Security Symposium, June 1995.
CITI tech report tr-95-1.

The University of Michigan Tech Report CSE-TR-79-91
William A. Adamson, Yoonho Park, Dr. Stuart Sechrest.