Steven Qualls

1835 West Wayside Drive

Glendale (Milwaukee), WI 53209

(414) 353-8311 – Home

(414) 745-1115 – Mobile (preferred)

[squalls@wi.rr.com](mailto:squalls@wi.rr.com)

Professional EXPERIENCE

**Matthews Int’l/SGK SAN Architect/Engineer** 11/2016 – Chicago, IL

**Mastech Digital**

* Integrate environment of acquisition SGK into Matthews Intl
* Global Storage environment US, EMEA, APAC, Australia
* Server compute environment is VMWare, Windows, and Linux.
* Storage environment is Cisco switch fabric, IBM XIV, DS-Midrange, and 7Mode/CDOT NetApp.
* Active Directory and Commvault.
* Cherwell Service Management Problem Ticket and Incident resolution
* NetApp Migrations

**Brocade Communications Systems remote: SAN Architect/Fabric** 09/2016 – Plymouth, MN

**Brocade Resident Consultant/Simone & Associates**

* Resident Consultant to Wells Fargo North America environment
* Assist Brocade clients with the implementation of Brocade SAN Fabrics
* Provide configuration templates and configuration guides for implementation of new directors as well as upgrade of existing directors.
* Subject Matter Expert Brocade Network Advisor
* Subject Matter Expert Brocade Fabric Vision.
* Subject Matter Expert MAPSDB and FLOW Vision
* Assist clients in performing regular SAN Health Checks
* Assist clients with end-to-end fabric monitoring
* Travel to client sites to assist EMC with initial install and configuration of new directors.
* Perform pre-install testing and runbooks for fabric implementation and upgrades.

**CTM (Currency Technics + Metrics) remote: SAN Architect/Admin** 08/2016 –11/2016 Wilmington, DE

**IBM/PeopleNTech/Infinite Software Systems**

* Install/configure one (1) new IBM Storwize v5000.
* Install/configure two (2) new SAN24B-4 (Brocade 300E) SAN Switches.
* Configure zoning on two (2) new SAN24B-4 SAN (Brocade 300E) Switches to match server/storage environment (SVC to be de-commissioned no longer used).
* Connect existing DS4700 storage into new SAN Switches.
* Configure existing DS4700 storage behind the v5000 as virtualized LUNs.
* Configure connectivity/LUN access of existing BladeCenter through new SAN Switches.
* Migrate 6.5 TB of data (6-8 LUNs) from DS4700 to Integrated SVC/v5000 using the v5000 Migration Tool.
* Validate all servers (1 System P, and up to 3 blades) can access their v5000 LUNs via new SAN Switches.
* Design and configure one (1) new IBM Power8 PowerVM (Dual VIO serving NPIV & 802.1 VLANs).
* Install & configure one (1) new AIX V7.1 NIM server.
* Map SAN Storage to 33 AIX instances.
* Assist in migrating three (3) AIX instances, exclusively using the IBM Storwize V5000 storage, to the new Power8 server.

**NBSA NYK (Nippon Yusen Kaisha) remote:** **SAN Architect/Administrator** 09/2014 – 09/2016 New York, NY

**IBM/Artech**

* SAN Admin for steady state support of NBSA account
* Subject Matter Expert for environment
* Problem and Incident resolution using Service Now
* IBM DS8800, XIV, SVC, and N-Series NAS 6240 (7-Mode), Brocade FOS and Brocade Network Advisor, Brocade Fabric Watch, Fabric Vision, and MAPs
* Brocade DCX SAN Directors
* Data OnTap, CDOT, IBM Copy Services (FlashCopy), IBM AIX, and Oracle Solaris 8,9, and 10 Global Zones
* CLI on all SAN devices
* IBM TPC for SAN, Disk, and Backup as well as HealthCheck
* IBM SSD Multi-Pathing
* Windows and VMWare native MPIO LPM (LPAR Mobility)
* Perform micro-code and FOS upgrades on Brocade 8510 Directors, SVC Clusters, and NAS Filers.

**Health Care Services Corp/BCBSIL: Sr Storage Solutions Architect** 05/2016 – 08/2016 Waukegan, IL

**Hitachi Data Systems/VortalSoft**

* Update DCNM Prime and firmware on Cisco Directors for HCSC environment.
* IBM SAN Volume Controller update and consolidation.
* Environment is EMC VNX, EMC Isilon, IBM DS8870, IBM SVC, and HDS VSP/HUS-150/HUS-VM.
* PROD environment located in Waukegan. DR environment located in Fort Worth, TX
* Replication technologies IBM TPC, TPC-R, Global Mirror and EMC Isilon SyncIQ.

**QBE Insurance Co: Sr Storage Solutions Architect** 03/2016 – 11/2016 Sun Prairie, WI

**TEKsystems**

* Confirm documentation of DR plan for pre- test and actual testing.
* Confirm replication is in place and that mapping of source to target devices is correct.
* Confirm replication of Isilon NAS shares.
* Troubleshoot PowerPath issues on target DR server. Source server located in Atlanta, GA
* Upgrade PowerPath from v5.5 to v6.0
* Server is Solaris 10 zones.
* Replication technologies are Isilon SyncIQ and VPLEX/RecoverPoint.
* Storage for block is EMC VMAX and NAS is Isilon X-Blade.
* Executed successful DR exercise.

**American Family Insurance Co: Sr Storage Solutions Architect** 12/2015 – 02/2016 Madison, WI

**AE Business Solutions**

* Design and document DR plan for testing.
* Determine which replication technologies will be relevant and document failover procedure for each.
* Determine which hosts will need to be activated at DR site, create zones and configure active zoneset on SAN switches.
* Replication technologies include Pure Storage Flash Replication, VPLEX/RecoverPoint, Celerra Replication, Isilon SyncIQ, and Centera Replication.
* Environment is Linux, Windows, Oracle, SQL Server, HP Blade Centers, UCS Blade Centers, SRM, Pure Storage, EMC VMAX, EMC NS Series, EMC Isilon, and Cisco MDS Director Class Fibre Channel switches. Active/Passive some HA hosts are live.

**Harley Davidson Motor Co: Large Systems Enterprise Solutions Architect** 02/2014 – 12/2015 Milwaukee, WI

**Lochbridge/The Judge Group**

* Datacenter migration, datacenter build. Migrate current primary site to secondary site, build new DR/secondary site.
* Perform baseline measurements before and afterwards.
* Perform full system backups prior to datacenter relocation.
* Re IP iSeries frames and test connectivity prior to move.
* Use LPAR Mobility (LPM) to virtually migrate LPARs live.
* Minimize the downtime.
* Capacity planning to facilitate data migrations.
* AIX and Wintel IBM H Blade Centers.
* IBM SVC, EMC and associated SAN infrastructure N-NAS, DS4800, DS5300, DS8300, XIV and UCS/EMC vBLOCK/VMAX. XtremIO, and Cisco MDS 9513 Fabric directors.
* IBM TSM for backup including large 3584 tape libraries.
* IBM P Series PowerHA, P570, Power6 570, P595, Power6 595, and P795 .
* IBM AS400 legacy iSeries i520 and i570.
* Migrate large Windows and VMWare ESX environment from IBM storage to EMC VBLOCK/VMAX.
* Upgrade AIX from 5.3 and 6.1 to 7.x
* P2V conversions VMware to reduce footprint in datacenter.
* Fiber channel to FCOE conversions.
* IBM SSD Multi-pathing
* EMC PowerPath
* Documented migration strategy and environment Visio, Excel, and Word.
* Design and architect New Greenfield Environment to be implemented
* Cisco MDS 9710 Directors at both datacenters
* (2) IBM Power 880 at Primary datacenter, update P795 for Power VM environment
* (2) IBM GEN IV XIV, (2) IBM v7000 – SAP and dedicated TSM disk pool at Primary datacenter
* New SVC Clusters
* Flashcopy, Metromirror
* EMC vBLOCK, XtremI/O, DataDomain RecoverPoint, Isilon, and Avamar added to Primary site to implement vPLEX
* IBM Power 870 Power VM at DR site
* IBM GEN IV XIV, IBM v7000 dedicated TSM disk pool at DR site
* New SVC Clusters
* Flashcopy, Metromirror
* EMC vBLOCK, XtremI/O, DataDomain, RecoverPoint, Isilon, and Avamar added to DR site to implement vPLEX

**BlueCross BlueShield MN: Solutions Architect** 06/2012 – 12/2013 Minneapolis, MN

**Forsythe/Insight-Professionals**

* Thick to thin LUN migration on PROD and DR VMAX.
* Upgrade Veritas Storage Foundation Suite from 4.x to 5.1 on Sun Solaris v9 and v10 Oracle DB servers to facilitate migration.
* Implement FAST-VP. Upgrade OnTap to facilitate NDMP backups.
* Phaseout of legacy Novell and Sun Solaris environments. Move to Active Directory and new Sun hardware or AIX/Linux.
* Evaluate and make design recommendations for consolidation of NAS and mid-tier CX SAN environments (recommendation is to be moved to VMAX and VNX VG8 Gateway).
* VMAX and VNX VG8 Gateway solution is being implemented.
* Evaluate current backup solution and make recommendations for enhancements or new backup and archive solution.
* Design migration from TSM and Data Domain environment to Commvault and Isilon.
* Refresh aging network infrastructure to high speed convergered.
* SAN environment consist two (2) VMAX 20K, two (2) EMC CX4-960, EMC RecoverPoint, two (2) EMC VTL-MF DLM, two (2) NetApp FAS 3040, two (2) Data Domain 880, two (2), IBM TS3584 Tape Libraries, four (4) Cisco MDS 9513 FC Switches, four (4) Cisco 9222i FC Switches.
* Upgraded environment from Cisco MDS9500 GENII series switches to GENIII series switches. Configured FCIP Tunneling for Open Systems and Mainframe SRDF replication.
* EMC SMAS, DPA, EMC SYMCLI, EMC SRDF and TimeFinder, NetApp OPS Manager, NetApp OnTap (C-MODE), NetApp SnapVol and SnapMirror, Cisco Fabric Manager Data Center Edition.
* Microsoft SQL Server, Oracle 11g, IBM DB2, IBM AIX, Sun Solaris, RHEL5, WIN 2k3/2K8, VMware ESX v4, VMware VDI, Novell, IBM TSM, TKLM, IBM VIO, NIM, and HMC, Veritas Storage Foundation 4x/5x, PowerPath, Veritas DMP, and MPIO.
* IBM Pseries-5, HP DL-380/DL-580.
* Design Implementation of new IBM Pseries-7.
* Design Implementation of new Oracle/Sun T-5000 series servers, Solaris Zones, and Oracle Solaris environment migration.
* Provide Knowledge Transfer and Runbook to Blue Cross Storage Team.

**Hitachi Data Systems: Solutions Architect** 10/2013 – 11/2013 Atlanta, GA

**Headwaters Group**

* Install/configure Oracle VM Manager for Oracle Linux on Sun x3 servers.
* Install/configure Oracle VM Server for Oracle Linux on Sun x3 servers.
* Create VM’s OS Oracle Linux.
* Configure SSO (Single Sign On) on Oracle Linux
* Configure HAP (Hardware Assisted Paging) on Oracle Linux.
* Configure Connection Manager on Oracle Linux.
* Configure network to use NIC bonding and VLAN Tagging (802.1p).

**Liberty Mutual Int’l: Solutions Architect** 10/2011 – 05/2012 Kansas City, MO/

**Pricewaterhouse Cooper/Harvey Nash** Singapore/Redmond, WA

* Design Data Center Buildout for DR replication and testing.
* Design and build environment for replication testing of DB2 and MSSQL databases as well as VMware VDI on NetApp.
* SAN environment consist two (1) VMAX-1 (2) EMC VMAX SE, one (1) Data Domain 890, two (2) Data Domain 690, IBM TS3500, two (2) EMC 5100B FC Switches, two (2) EMC DCX-B, Cisco Nexus 5000, Cisco Nexus 7000, EMC MP 7800B and two (2) NetApp FAS 3270.
* EMC SMAS, DPA, NetApp OPS Manager, EMC Connetrix Manager Data Center Edition, Brocade Webtools, IBM VIOS/HMC.
* Microsoft SQL Server, IBM DB2, IBM AIX, WIN 2K3/2K8, ESX v4/5, IBM TSM, TKLM, IBM VIO and HMC.
* HP Proliant DL380 G7, IBM P740.
* Did switch design and configuration and configured MP-7800’s FCIP tunnel for replication from K.C. to Portsmouth.
* Did switch design and configuration and all zoning for all hosts and Data Domain on 5100B’s and EMC DCX-B/Brocade 8510.
* Installed and configured Connectrix Manager DE, ECC, Solutions Enabler, SMAS(SMC), and SPA for PROD and DR VMAX management.
* Install and configuration of PowerPath on hosts. Also ODM filesets on AIX/VIO servers.
* Provisioned storage to AIX, MSSQL, and TSM hosts on VMAX.
* Designed, configured, and implemented SRDF/A for MSSQL and AIX/DB2 on VMAX SE’s and VMAX-1.
* Designed, configured, and implemented FAST VP.

**IBM (Remote): Solutions Architect** 08/2011 – 04/2012 Boulder, CO

Artech Information Systems

* Working with International Services Account Team as Storage SME for EMC, IBM**,** and Hitachi storage.
* IBM TPC, EMC SMC, Unisphere, ECC. All software tools for each vendors arrays.
* WIN 2K8/2K3, IBM AIX, RHEL4/5, VMware ESX v4.
* IBM DS4000, DS8000, V7000, and XIV.
* EMC VMAX, DMX, VNX, CLARiiON, and Celerra
* Hitachi USP-V, VSP, XP, AMS
* Brocade and Cisco SAN switches.
* Work on largest accounts in U.S. for International clients, as well U.S. clients.

**Nasscomm (EMC Partner) - Senior Professional Services Consultant:** 04/09 – 08/11 Atlanta, GA

Worked as Independent contractor to EMC for all projects listed with employment time frame.

**St Petersburg College (EMC): Solutions Architect**  St Petersburg, FL

* Create Design Workbook to implement VNX5500 for block.
* Create Storage Pools, Storage Groups and provision storage.
* Zone host environment to Brocade DS300B SAN.
* MS SQL Cluster and ESX.

**PODs (EMC): Solutions Architect**  Clearwater, FL

* Implement VNX VG2 NAS Gateway with CLARiiON CX-4 as storage.
* Configure Control Stations for standby failover.
* Configure Data Movers for standby failover.
* Zone Control stations and Gateway to Brocade DS300B SAN.
* Configure Raid Group for expansion of existing CIFS share.
* Configure four (4) new NFS exports for ESX environment.

**Echostar/Dish (EMC): Solutions Architect**  Englewood, CO

* Host remediation and validation for dev/test and production environments to facilitate 5875 code upgrade on VMAX.
* Migration from DMX and CX to DEV/TEST and PROD VMAX(s).
* EMC Grab collection and HEAT Report generation.
* Consult on integration of legacy IBM environment related to Block Buster acquisition.
* EMC VMAX, CX, Data Domain, NetApp,Sun Solaris 10, HP-UX 11i, and Windows 2003 Enterprise environment
* Oracle, VMware, HP VPAR, Sun Solaris Zones.

**National Vision (EMC): Solutions Architect**  Atlanta, GA

* Design and implement EMC VNX 5500 Unified array using best practice methods from EMC and Microsoft.
* Application environemnt is Microsoft SQL Server 2008, Microsoft Terminal Services 2008, and VMware ESX 4.1 .
* Hardware environment is IBM Blade Center HS22, Brocade 5100 FC Switches, and EMC VNX5500.
* EMC Unisphere and Brocade Webtools.
* Provide Knowledge Transfer and Runbook to client.

**Diebold (Agilysys): Solutions Architect** Akron, OH

* Performed advanced storage administration for UNIX and Intel x86 platforms, applications and services in support of Diebold systems around the world.
* Participated in process improvement initiatives using advanced knowledge of industry best practices.
* Monitored system availability, performance and capacity. Testing, installing and configuring new and existing hardware and software for servers and small systems
* Maintain Enterprise Storage and SAN infrastructure for business and critical systems such as Oracle 11g RAC, e-Business Suite, Data Warehouse, Business Intelligence, Middleware (SOA, WebMethods), Baan/Informix, HP Project and Portfolio Manager (PPM), Service Manager.
* Generate SAN reports using Unisphere Analyzer and other diagnostic tools. Unisphere and Brocade Webtools.
* EMC Clariion, Data Domain, RecoverPoint and Brocade. VNXe and VNX-5300 configuration/implemention, initial configuration and carving out LUNs on new Clarion / Celera. NS-960, VNXe, VNX-5300, Data Domain, RecoverPoint, and Brocade.
* Implemented UCS VNX 5300 VBLOCK environment.

**AT&T Labs/R&D Gov’t (EMC): Solutions Architect**  Middletown, NJ

* Facilitate migration of VMware ESX 4.1 environment. Migrating from FC direct attached Pillar to FC and iSCSI attached EMC.
* Implement new Storage environment on EMC NS-120 integrated unified system Celerra NS-120/CLARiiON CX-4. Unisphere, Unisphere Analyzer, PowerPath, FAST2 VP.
* SAN environment is Brocade DS5300, Brocade Webtools, QLogic HBA, Sun Soalris 10 with LDOMS and ZFS , ESX4.1 and 3.5 with Vcenter and Vsphere/Vmotion, Dell PowerEdge R805, Sun T5140 and M4000 servers.
* Upgraded Celerra NS-120 and CLARiiON CX-4 to the most current code levels.
* Provide Knowledge Transfer and runbook to AT&T Storage Team.

**University of Chicago (EMC): Storage Engineer**  Chicago, IL

* Facilitate migration of UOC from legacy IBM (SVC) DS4700, Shark, and EMC (CX) storage to new EMC environment (220TB). Client also has NetApp FAS6000.
* Storage is EMC VMAX FAST2 VP, NS-480 integrated NAS, VNX-5700, and ESRS Gateway.
* SAN environment is dual Cisco MDS 9148, Brocade DCX directors with Device Manager, Cisco Fabric Manager, Webtools, Brocade DCFM, QLogic HBA, PowerPath, and Sanwatch. Dell Blade servers and IBM P6.

Nexus 5000 & 7000. RHEL5, SLES9, Sun Solaris 10, IBM-AIX 5.x – 6.x, VMware ESX4.0 and Windows servers.

* EMC Unisphere Element Manager, Symmetrix Management Console, Replication Manager, Open Replicator, Unisphere Analyzer, and SPA.
* Configure and implement SRDF/A and FAST.
* Implementing VNX, NetWorker, EMC Data Domain/Avamar Isilon, EMC Data Protection Advisor (DPA) backup environment.
* IBM TSM 6 is current backup strategy.
* Provide Knowledge Transfer to UOC Storage Team.

**NYC Dept of Information Technology & Telecommunications (EMC):**  New York, NY

**Solutions Architect**

* Maintain Oracle 11g (8) node RAC on RHEL 5 with Oracle ASM on Sun x4270 servers, 30TB.
* Backend storage is EMC VMAX with FAST2 VP, SPA, EMC ESRS gateway, and Policy Manager.
* Install EMC Ionix Control Center and Symmetrix Management Console in Production and Test environments.
* SAN environment is dual Cisco MDS 9513 directors with Device Manager and Fabric Manager.
* Implementing Celerra NS-960 fully integrated NAS gateway, EMC Unishpere element Manager.
* Implementing EMC Data Domain/Avamar backup environment.
* Implementing Unified/VDI Cisco UCS VBLOCK environment on VMAX SE for staging. Production will be intrgrated into 650TB NY CityServ initiative to migrate and consolidate all NYC Agencies into new infrastructure.
* Environment also includes NetApp FAS series as well HDS 9990, 9980, USP-V, HCS v7, Brocade 48K, Nexus 7000 series, and DCX directors. DCFM, Webtools, QLogic HBA, PowerPath, and Sanwatch.
* VMware ESX 4 environment.
* NetBackup is current backup strategy.
* Provide Knowledge Transfer and runbook to DOITT Storage Team.

**Hub Group (Agilysys/EMC):** Downers Grove, IL

* Migrate from Oracle 10g in a Windows environment to Oracle Enterprise Linux 11g.
* Backend database is IBM DB2 on EMC CLARiiON.
* Installed Oracle Virtual Enetrprise Linux and created virtual machines for DEV, QA, and Production.
* Installed WebLogic Server and WebTier to manage environment.
* Installed (ADF) Application Developer Framework Runtime environment and UNIX ODBC drivers.

**Orlando Utilities Commission Senior SAN Architect (EMC):**  Orlando, FL

* Data Migration, SAN integration, DR implementation at OUC facilities.
* Migrate OUC critical applications from EMC DX800 and CX700, to EMC DMX4-VMAX. SAN environment is Brocade 4100, 4424 switches, and QLOGIC HBA. Applications, MS Exchange on ESX, and Oracle database. Manage Xiotech array.
* OUC has second DMX4-VMAX at DR site. SRDF/S will be used to replicate production environment.
* OUC’s backup environment consists of Barebon NetVault as backup application using STK L700e Tape Library with six (6) LTO-3 at each site. Backup of Exchange and Oracle.
* Webtools, ControlCenter, Symmetrix Management Console, Open Replicator, PPME, Timefinder Clone, SPA, and Solutions Enabler SYMCLI.
* HP-UX, MC Service Guard Cluster, Oracle, ESX 4 Vsphere\Vmotion, and Windows.

**Miami Valley Hospital / Premier Health Care Senior SAN Architect (EMC):**  Dayton, OH

* Data Migration, SAN integration, DR implementation at MVH facilities.
* Migrate MVH critical applications from legacy IBM storage, ESS-2105-800, to EMC DMX4. Application is Epic Clinical Suite and Cache database.
* Merge MVH’s two (2) SAN islands, one consisting of Brocade 48000 directors with IBM storage, EMC Clariion, IBM SVC nodes, direct connected IBM 7060 Mainframe, and IBM P5 servers the other consisting of Brocade 5100 switches, EMC DMX-4 storage, and IBM P6 servers. Timefinder Clone. IBM-AIX, ESX 4.0, and Windows servers.
* MVH has second DMX-4 at Good Samaritan Hospital that is to be DR site. SRDF/A will be used to replicate production environment.
* MVH’s backup environment consists of IBM TSM as backup application using an IBM 3584 with 8 LTO-2 dirves and Data Domain Virtual Tape Library. Mainframe is direct connected to 3494 Library.
* Re-installed and Integrated an inactive EMC ControlCenter 6.1 installation into current environment. Upgraded Symmetrix Management Console, SPA, and Solutions Enabler SYMCLI.

**United Natural Foods Inc – Senior Unix/SAN Engineer (EMC):**  Providence, RI / Dayville, CT

* Migrate production environment from Rocklin, CA facility to Dayville, CT facility. Business application is Redhat Linux LAMP (Apache Python) stack and custom complied environment using Liant PL1, also Gentran and MSI.
* Daily Unix/Linux system administration RHEL 3, 4 and 5, HP-UX, and Sun Solaris in a clustered environment. Active Directory, SSH, and OpenLDAP Symantec NetBackup 6.5 is backup solution. Environment is EMC DMX4, DMX3, Clariion, and Celerra NS-80. Upgraded EMC Control Center from 5.x to 6.x, DPA, Brocade DS5300 fibre channel core switches, DS5000 edge switches, and QLogic HBA. Cisco Catalyst 6500 and Cisco 3500 network switches. VMware ESX server, MSSQL, MYSQL, and Brocade Webtools, EMC SRDF/A, Celerra Replication Manager, Open Replicator, and SnapView Solutions Enabler SYMCLI.
* Migrated Linux production environment from IBM blade servers to Vmware ESX 4.0 Vsphere/Vmotion environment using Open Replicator/Open Migrator. Migrated from EqualLogic, EMC NAS, iSCSI, and DMX-3 to DMX-4 V doing ESX cold pulls. Also did some host based migrations using Rsynch.
* Implementing Manhatten Associates Warehouse Management Systems. Environment is IBM JS23 and JS43 Blades, P570, AIX 6, Oracle 11g databases, Websphere and PERL. VIO, HMC, NIM, and LPAR creation. Future production environment will be IBM P750.

**Maysteel Corp – Senior SAN Engineer:** 11/09 **–**  04/10 Menomonee Falls, WI

* Implemented Oracle RedHat Linux on Oracle Virtual Machine environment.
* Upgrading from Oracle 10g in a Windows 2003 environment to Oracle 11g in an Oracle Redhat Linux (5.4) environment.
* Single instance database in a 2 layer environment, db server and WebLogics, and Fusion Middleware app server. Moving to Oracle VM, both layers running on VM host.
* Migrating DB files and app components to new environment after installation.

**Knights of Columbus – Senior SAN Engineer:** 07/09 **–** 10/09 New Haven, CT

* Implemented production environment moving from IBM FastT 4500 and Brocade Silkworm Fibre switches to IBM DS8100 and Cisco 9509 switches.
* Implemented IBM TotalStorage Productivity Center 4.1 (TPC). Integrated SAN and Tape environment into TPC for central management. Configured Device Manager and Fabric Manager for 9509’s. Configured 9509’s, and TPC accounts for Active Directory LDAP authentication. Deployed agents to all devices integrated into TPC. Scheduled data collections on DS8100 and servers to facilitate reporting. IBM AIX and Windows environment.

**Iowa Clinic :** 07/09 **–** 08/09 Des Moines, IA

* Troublshoot and perform root cause analysis of controller failover on IBM DS4700 connected to Brocade Silkworm fabric fabric and QLogic Sanbox routers.
* Configured SVC, Mirrorview, and copy services for replication to Clinics DR location.

**Warner Chilcott Pharmacuetical - Senior SAN Engineer :** 03/09 - 04/09 Rockaway, NJ

* Installed and configured hardware and software to facilitate (6) IBM HS21 Blade Center to boot from EMC SAN. Used EMC Navisphere and SnapView Clones to install WIN2k3 32 and 64 bit OS image environment is also RHEL (Redhat Linux) 4. EMC Clariion CX3-80, Cisco MDS9000 series switches, and QLogic HBA. Implemented EMC Clariion CX4 for future capacity growth.
* Used EMC NetWorker 7 as backup solution. Backup environment is EMC Virtual Library and ADIC i500. Used ESX Server, EMC SnapView, EMC Clone and Oracle RMAN.

**T. D. Williamson - Senior Technical Consultant (Forsythe/EMC)** 09/08 - 12/08 Tulsa, OK/Salt Lke City, UT

* Contractor for Forsythe Solutions Group. Onsite to install and configure hardware and software to facilitate archive of application data and email message stores.
* Environment is Windows and Redhat Linux. NAS consisting of NS-20 and NS-40 with CLARIiiON storage.
* Two (2) EMC Centera CAS storage units are to be installed and configured for archive and replication of data between Tulsa and Salt Lake City datacenters.
* Two (2) EMC Rainfinity Appliances will be installed and configured with each Centera. These appliances will facilitate the archiving of the NAS file systems to the Centeras’.
* Centera’s will replicate data to each datacenter. This will allow both datacenters to be the others disaster recovery site.
* Documented environment included creation of Visio drawings.

**Trans Union – Senior San/Backup Engineer :** 06/08 – 08/08 Chicago, IL

* Contractor on Mainline Consulting project. Responsibilities are SAN Administration and backup and disaster recovery in a Windows and IBM-AIX environment.
* SAN infrastructure consists of Cisco 9513 and 9509 director’s core to edge. IBM DS8300 (2) Hitachi HDS 9980V (2) 9990 USP-V.
* Used TPC, DSCLI, Cisco Fabric Manager and Device Manager for zoning and storage provisioning.
* Backup environment is IBM TSM with IBM TS3500 (2), IBM 3494 Tape Libraries, and STK 9310 Silo.
* Documentation and Visio drawings of environment.
* Used PPRC and also SVC for replication and Disaster Recovery

**Southwest Power Pool – Senior Backup Specialist (EMC) :** 05/08 – 07/08 Little Rock, AR

* Contractor on EMC Project for SPP is migrating their backup and DR solution from Symantec NetBackup 6.5 to EMC NetWorker 7.4.
* Environment is Linux RHEL 4 and Windows 2003.
* SAN infrastructure is Cisco MDS 9506 directors, Symmetrix DM4, Clariion CX3-80, Centera, and NetApp NAS filiers, QLogic HBA. NetApp soon to be replaced by EMC Cellerra.
* Used SYMCLI, Cisco SanOS, Fabric Manager and Device Manager for zoning and storage provisioning.
* EMC DL4106 EDL will be used as Virtual Tape Library. There will be two, one at each of SPP’s datacenters. The EDL’s will replicate between sites to provide DR capabilities.
* EMC NetWorker Modules for ExChange, SQL Server, and Oracle as well as RMAN will be utilized to facilitate faster SAN based backups.
* EMC AlphaStor will be used to facilitate media management and media format conversion from NetBackup to NetWorker. AlphaStor will also be vaulting solution for NetWorker to allow for offsite tape storage.
* Documentation and Visio drawings.

**Acco Brands Inc - Senior UNIX/SAN/Backup Administrator :** 02/08 – 04/08 Lincolnshire, IL

* Did SAN Linux, and HP-UX UNIX administration for Acco Brands production, test, and development environments.
* SAN environment consisted of EMC DMX-2000, CLARiiON CX3-40, and two (2) Cisco MDS9500 series directors. Used EMC Control Center, SYMCLI, and Navisphere to interface and administer DMX and CLARiiON for storage provisioning. Used SAN-OS, Fabric Manager and Device Manager to interface with MDS9506’s for zoning.
* Did upgrade of EMC Control Center from version 5. 2 to version 6. This allowed Acco to have support for VMware and Linux from within Control Center.
* Used CommVault Galaxy to backup mission critical production, test, and development Oracle databases using EMC Timefinder BCV clones and Oracle RMAN .
* Upgraded EMC Control Center from v5.2 to v6.0 to which would give Acco the ability to manage VMware and Linux servers from within Control Center, DPA.
* Environment is HP-UX 11i, Windows, Redhat and SUSE Linux.
* Documentation and Visio drawings.

**Health IT Services SAN/Network/Backup DR/Architect (EMC/Delll):** 01/08 – 02/08 Danville, VA

* Implemented a storage area network and production environment consisting of a Dell/EMC CX3-10c storage array (2.1 TB raw capacity) connected to two (2) McData 4400 switches with sixteen (16) active ports each.
* Production environment consists of two (2) Dell Smart UPS battery units, one Dell PowerVault 4400 Tape Library, two F5 Network Load Balancers. a three (3) Node MS SQL Cluster and a two (2) node File server cluster running on Dell 2950 Power Edge servers will be connected to the SAN via Qlogic host bus adapters in a redundant configuration. There will also be three (3) web servers (Power Edge 2950) in this environment not connected to SAN.
* Configured MS SQL database Mirroring to DR (Disaster Recovery) site in Brentwood, TN.
* Configured EMC RepliStor for replication of file systems to Health IT’s mirror DR site.
* Installed and configured MS SQL Server. Used EFCM manager for zoning SAN environment, EMC Power Path for SAN multipathing and failover, Symantec BackupExec for backup environment Configured MS Active Directory creating domain for the environment.

**Marana Unified School District – Senior Network Engineer (EMC\Dell):** 02/08 – 2/08 Marana, AZ

* Project to replace all Cisco network switches with Dell
* Used Dell PC6200 and PC3500P series switches.
* Switches were pre-configured before installation to avoid having to modify any DNS, IP routing, or Active Directory tables.
* Used Dell Power Connect stacking to manage multiple switches as one virtual one within same rack.
* Implemented Dell Open Manage software suite to manage new environment.

**CUNA Mutual Group-Professional Services SAN/Backup – DR/Architect (IBS/EMC):** 10/07 -12/07 Madison, WI

* Large TSM environment. StorageTek Tape Silo ACSLS.
* Use Storage navigator for management of HDS arrays.
* Use EFCM Manager for zoning and management of McData SAN switches.
* Use IBM’s SVC (SAN Volume Controller) for storage virtualization and provisioning.
* Assisted in implementation of EMC DMX – 4 4400 Greenfield Storage environment ~400TB of capacity.
* Migrated data from legacy Hitachi AMS and USP as well as EMC Clariion and DM1000.
* Assisted in implementation of Cisco SAN environment MDS9513 directors and installation of patch panels.
* Upgraded ECC (EMC Control Center) from v5.2 to v6.0.
* Currently involved in migration of applications from current SAN infrastructure to the new environment.

Used Open Migrator and IBM SVC for migrations.

* Environment is Open Systems, Windows and UNIX, mainframe, and large VMWARE farm.
* Knowledge Tranfer, Documentation, and Visio drawings.

**State of Washington Department of Health - Senior Professional Services Consultant :** 8/07 – 9/07 Olympia, WA

* Implemented EMC Archive edition EmailXtender.
* Over 2000 users on two (2) ExChange servers.
* Backend storage is HP MSA1000 disk array.
* Shortcutting was only objective.

**Crescent Solutions - Senior Professional Services Consultant/Architect :** 7/07 - 8/07

**Cigna Insurance (Sun)** Windsor, CT

* Assess Cigna’s current environment to make recommendations on migrating data from Sun SE9960 to Sun SE9990

USP-V.

* SE9990 has virtualized storage from IBM DS6000 and DS8300.
* Used TPC, DSCLI for IBM storage management.
* Used Storage Navigator for provisioning storage.
* Review analyze vxstat I/O data.
* Review current volume layout on the 9960.
* Make recommendations on optimal volume layout on 9990.
* Review VERITAS volume manager kernel parameters.
* Make recommendations for optimal performance.
* Implement Hitachi hicommand to centrally manage SE9990 storage array and for statics collection and analysis.
* HORCM RAID Manager Shadow Image for backup and data recovery

**Los Angeles Department of Water and Power (Sun) / SAN Architect** 07/07 -08/07Los Angles, CA

* Implemented Cisco SAN (Storage Area Network).
* SAN consisted of two (2) Cisco 9513 directors and Sun SE9990 USP-V storage array.
* NetApp NAS network.
* Migrated from IBM ESS series and legacy Hitachi AMS.
* Integrated LADWP’s current SAN into Cisco SAN. Current environment consisted of Brocade Silkworm 3800 fabric switches and IBM 3584 Tape Library.
* Implemented VERITAS Enterprise NetBackup 6.5 to facilitate IP based and SAN based backups.
* SAN based backups were configured using Hitachi Shadow Copy and Oracle RMAN.

**Techmate Inc (EMC Partner) - Senior Professional Services Technical Consultant/Architect :** 10/06 – 7/07

Assist Techmate customers in several areas SAN, NAS, Backup, Disaster and Recovery. I do implementation as well as daily administration. Application support including EMC EmailXtender, DiskXtender, Backup Advisor, and RepliStor.

**Kraft Foods (EMC)**  Scranton, PA

* Facilitate data migration for Kraft from datacenter in Scranton to datacenters in Oklahoma City, OK and Plano, TX
* Facilitate migration from IBM storage arrays to EMC storage arrays.
* Storage hosts environment consists of UNIX (AIX) and Windows. HACMP for UNIX and Windows clustering.
* SAN infrastructure consists of McData fabric switches IBM storage arrays DS8000 and EMC storage arrays DMX series.

NetApp NAS network.

* Used SRDF, Timefinder Clone, EMC ECC, EFCM Manager and EMC Connectrrix, TPC, and DSCLI software for zoning

and storage provisioning. Documentation and Visio drawings

**Ohio Department of Public Service (EMC)**  Columbus, OH

* Implemented EMC Legato NetWorker 7.4 backup environment to migrate from EMC EDM environment.
* Storage management software used EMC Control Center, SRDF, Timefinder, Navisphere, Connetrix Manager and Power Path for zoning and storage provisioning.
* Storage hardware is EMC DMX-2000 and CX-700
* Design and architect of Virtual Tape Library environment and infrastructure. Hardware was EMC DL710 CDL.
* Implemented NDMP and NetWorker Dedicated Storage Node backups of critical apps and databases on Windows, Netware and Linux.
* Installed and configured NetWorker Modules for Oracle and MSSQL databases on client servers.
* Configured backup of Oracle and MSSQL clusters on Windows 2003 32 and 64 bit platforms. Used Oracle RMAN
* Designed and implemented site-to-site CDL replication of virtual tapes.
* Designed and implemented duplication from virtual tape to physical tape.
* Knowledge Transfer, Documentation, and Visio drawings.

**Super Valu** **(EMC)** Eden Prarie, MN

* Implemented Cisco SAN environment to migrate from McData environment did design and architect. Also SAN Administration.

- Cisco MDS 9513

- Connectrix ED 140 (McData 6140)

* Storage management software used EMC Control Center, EMC Connetrix Manager, EMC Power Path, Cisco Fabric Manager and Device Manager for zoning and storage provisioning. TSM and NetBackup 6.
* Implemented EMC DMX-3 2500, EMC Celerra NS-80, EMC CX-3 80 Clariion, EMC DL4200 CDL Virtual Tape Library.
* Upgrade of EMC Centera, CUA configuration and replication.
* Migration of 300 UNIX and Windows servers.
* EMC DMX 1000, 2000, Clariion CX700 Celerra NS502
* Documentation and Visio drawings.
* Centera replication, Clariion replication, Timefinder, and SRDF.

**Jones Day Law Firm (EMC)** Cleveland, OH

* Implemented NDMP backups in a VERITAS NetBackup 5.x, Windows, and UNIX environment for purpose of tape silvering for a NAS migration. Jones Day was migrating from an HP NAS environment to an EMC NAS environment.
* Configured three (3) way NDMP backups of replicated data from NS-502 through as NS702 NAS gateway.
* Back end storage for Celerra was EMC Clariion
* Documentation and Visio drawings.

**Watts Regulator (EMC)**  Andover, MA

* Implemented EMC DiskXtender in an AIX Oracle environment.
* Front end storage was EMC Clariion, backend archive storage was EMC Centera.

**ABT Associates (EMC)**  Boston, MA

* Implemented EMC EmailXtender in an AIX Lotus Notes environment clustered at two facilities.
* Implemented EMC RepliStor to replicate message stores from ABT’s Boston, MA facility to their Bethesda, MD

Facility. Storage infrastructure was EMC Clariion.

* Documentation and Visio drawings.

**Grede Foundries - SAN Administrator/Backup Specialist/Architect :** 08/06 – 10/06 Wauwatosa, WI

* Corrected and maintained VERITAS NetBackup 6 Application. Company was having problems after migrating from TSM. Used Virtual tape as well as physical, with daily duplication. Used Oracle RMAN.
* Also supported PeopleSoft and Oracle in an IBM-AIX, Linux SUSE ESX and Windows VMWARE environment.
* Storage was direct attached IBM Shark (ESS 2105 F20 series). IBM LTO III Tape Library.
* Used TPC and ESSCLI.

**Assurant Health (Unisys/EMC) - SAN Administrator/Backup Specialist :** 04/06 – 08/06 Milwaukee, WI

* Responsibilities were SAN and NAS implementation and Administration including zoning and provisioning, formatting of storage subsystems, assigning storage to host, providing host connectivity to SAN using FCP. Also Enterprise NetBackup 5 Administrator. Over 2000 jobs per night. Tape Library is ADIC Scalar i2000. Also CDL (Virtual Tape Library) Upgraded NetBackup from 5.x to 6.
* Backed up Oracle and MS SQL databases. Used Oracle RMAN.
* Configure Emulex HBA's
* Responsible for SAN infrastructure, which is patch panel topology consisting of Cisco 9000 SAN Fabric Devices Storage array’s are EMC Clariion, DMX, Centera.
* Storage management software used Cisco Fabric Manager, Device Manager, EMC Navisphere and Control Center zoning and storage provisioning.
* Use Legato Email and DiskXtender in NAS environment on Centera with Windows server clustering. Environment is AIX and Windows. Korn and Perl scripting.
* Documentation and Visio drawings.
* SRDF, Timefinder, Clariion replication, and Centera replcation

**Veolia Environmental Services – SAN Unix Administrator/Backup :** 03/06 – 06/06 Greenfield, WI

* Supported Veolia’s HP-UX Intel and Itanium server environments.
* Also supported PeopleSoft, Oracle, and Weblogics application environment.
* Storage was HP EVA and EMC Clariion. HP Tape Library.

**GE Healthcare - SAN Administrator :** 06/05 - 03/06 Brookfield, WI

* Responsibilities were SAN implementation and Administration including zoning and provisioning, formatting of storage subsystems, assigning storage to host, providing host connectivity to SAN using FCP
* Configure Emulex and QLogic HBA's, zoning and storage provisioning.
* Responsible for SAN infrastructure, which is patch panel topology consisting of McData directors (6140 and i10k) at core, McData switches (4500) and Nishon router on the edge for inter-facility connectivity. Storage array’s are HDS (Hitachi Disk Systems) branded by HP (XP1024) and Sun Microsystems (9980, 9990) also NetApp NAS network.
* Used Horcm Raid Manager, TrueCopy and Shadow Image in creation of BVC’s for backups and Disaster Recovery.
* Storage management software used HP HAFM, Command View, Hitachi High Command, Sun Storage Navigator, and McData EFC Manager. Also use VCS (VERITAS Cluster Server) and Oracle RAC.
* Environment is Sun Solaris (8,9 and 10) and Windows. VERITAS Volume Manager and File system. Used awk, sed, Korn and Perl scripting.
* Documentation and Visio drawings.

**Caterpillar Inc - SAN Implementer / Administrator :** 07/04 - 04/05 Peoria, IL

* Responsibilities were SAN implementation and Administration including provisioning, formatting of storage subsystems, assigning storage to host, providing host connectivity to SAN using FC, FICON, ESCON, and iSCSI connections.
* Configure Emulex and QLogic HBA's, zoning and storage provisioning.
* Helped to architect Core to Edge SAN topology. Storage subsystems are IBM Shark (2105, DS6000, DS8000) and FastT (DS4000), also EMC Symmetrix ( 8000 Series), Clariion (CX 600), Celerra NS-40, DMX (1000), and Hitachi Thunder.
* Storage management software used EMC Control Center, SRDF, Timefinder, and McData EFC Manager.
* Use IBM Total Storage Expert software to monitor performance and volume data on IBM storage subsystems, upgraded to TPC. Also to compile metrics. Use DB2 UDB, Websphere and implemented SVC (SAN Volume Controller) .
* Environment is AIX, Solaris, HP-UX, and Windows.
* Used VMWARE in Unix and Windows environment
* Developed SQL queries for DB2 as well as UNIX shell and Perl scripts
* SAN Fabrics are:
  + - * Brocade Switches – IBM Tape storage.
      * McData Switches - EMC and IBM Disk Storage.
* Capacity planning, Storage growth forecasting.
* Documentation and Visio drawings.

Education

**University of Wisconsin - Milwaukee**

**Major:** Electrical Engineering

**Minor:** Computer Science

Professional Certifications:

VERITAS Foundation Suite 4.0