

MICHAEL ANTHONY WORSHAM

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DEVOPS INTEGRATOR – CLOUD SOLUTIONS ARCHITECT – INFRASTRUCTURE ARCHITECT

Key Values: Technical expertise, infrastructure knowledge, business management, and teamwork skills

Highlight of Qualifications: Over twenty years of experience in multiple career-based categories from system engineering, core infrastructure design, on-site, hybrid, and cloud virtualization strategies, web architecture and integration, project management, on-premise, and cloud infrastructure enterprise design. Creative problem solver with the ability to work either individually or through multiple teams' partners for accomplishing goals.

Core Strengths

- **Diversified Background** – System administration, engineering, and integration including operating systems such as HP-UX, Red Hat Enterprise Linux (RHEL) and CentOS Linux Apache/LAMP integration; Windows Server up to 2016, Active Directory, Exchange administration; COTS and GOTS application integration; Amazon AWS, Terremark, VMware ESX/ESXi/Server/vSphere virtualization infrastructure strategies; iSCSI/NFS SAN solutions; UNIX shell scripting, Nagios, Oracle OEM and DataDog for proactive monitoring and tuning; architecture design with Visio.
- **Management** – Acted as a project manager and team lead on numerous occasions. Utilized Agile and Microsoft Project for keeping track of milestones, project budgeting, and overall goals.
- **Infrastructure Support** – Managed 5,000+ physical and virtual servers in hybrid cloud environments. Played key roles in being the enterprise/infrastructure architect, senior system engineer, and master system administrator for data center consolidation and deployment.

Technical Skills

- **Operating Systems:** HP-UX (C2 Trusted and Non-Trusted) 10.10, 10.20, 11i, 11iv1, 11iv2, CentOS/RHEL 4 through 7, Microsoft Windows Server NT to present offerings, Oracle Enterprise Linux (OEL) v5, v6
- **Middleware Integration:** SSH/SFTP, FTP, MQ Series, Connect:Direct, Microsoft BizTalk, SOAP, iSCSI, NFS, WebDAV, COTS/GOTS Applications, HAProxy
- **Architecture Design:** Microsoft Visio Professional, Microsoft Project, SOA
- **Infrastructure Security:** Active Directory (AD), GPO, LDAP, Nessus, Snort, IPTables, Untangle
- **Business Applications:** Microsoft Office, Oracle EBS R12, Oracle Fusion
- **Virtualization:** VMware vCenter, ESX/ESXi, Red Hat Xen Server, Oracle OVM, Amazon AWS EC2 / S3 / RDS, Verizon/Terremark Hybrid Cloud
- **Programming Languages:** UNIX Shell scripting (sh, ksh, bash), PowerShell
- **Information Assurance/Auditing:** Retina, SPAWAR SCAP, AIDE, Nessus, Snort
- **Configuration Management:** Puppet, PXE, Chef, Jenkins, Git, Scalr
- **System Application Monitoring:** Oracle Enterprise Manager, Datadog, Nagios, Cacti, Splunk
- **DevOps Automation:** GitHub, GitLab, Jenkins, Chef Automate, Chef Infra Server, Chef Habitat

Education/Clearances

Camden Military Academy, Camden, South Carolina
High School Diploma. Graduated as 1st Lt. S-3 Operations and Logistics Officer, Army JROTC

Valdosta State University, Valdosta, Georgia
3-Years Completed, Senior Status: Computer Science & Business Management.

Department of Defense – Inactive Secret Security Clearance (expired 2/21/2016)

Professional Experience

Wabtec US Rail Inc. (formally GE Transportation)
January 2017 – Present
Staff Infrastructure Architect (Cloud Solutions Architect)

Cloud Solutions Architect on the Enterprise Cloud Infrastructure Team (ECT), focused on the adaption of on-premise, hybrid, and cloud-based DevOps architecture and application migration, consultation, and guidance for both former General Electric (GE) Transportation and new Wabtec hybrid cloud infrastructure/application environments. Part of the original DevOps engineering team, responsible for Amazon AWS cloud performance support, automation, deployment, and overall infrastructure design. Focused on helping with the internal cost-out initiative to help with overall costs and finding new solutions when COTS applications need to take on a more 'unique' style of application programming need.

- Completed "Architecting in AWS" class with Amazon services, utilizing AWS services for lab and actual business application concept needs for GE business units.
- Utilized several automation and deployment applications such as Scalr, Scalr IaCP, Chef, Git, GitLab, and Jenkins for Continuous Integration and deployment (CI/CD) needs.
- Took over duties as acting Automation Architect to help migrate, maintain and support Chef Automate, Chef Infra Server, and Chef Habitat environment for both Windows and Linux platforms and multiple Chef organizations. Also handled the migration of Chef cookbook from the older GE GitHub repository over to the Wabtec GitLab repository. Designed a GitLab runner platform to allow for streamlined updates from GitLab over to the cloud-based Chef Habitat server environment.
- Working actively with Amazon AWS for legacy GE Transportation and current Wabtec business units utilizing AWS services including VPC, CloudWatch, ELB, EC2, S3, and RDS.
- Worked as a system support coordinator and infrastructure liaison for the AppFactory program, working with our cloud team for cloud and infrastructure architecture design for automation along with Wipro on and off-shore contracting teams. Helped migrate nearly 400 applications from GE datacenters over to Wabtec AWS using "lift and shift" to full re-architecture needs. Migration focus based on "automate everything" approach.
- Designed solutions for Wabtec Cyber/Security team for the deployment of Carbon Black and Nessus applications which will be streamlined into Chef build process for Windows and Linux.
- Developed/implemented a streaming SQL Proxy-Broker solution for allowing Amazon SQL RDS instances to be able to do "Linked Servers" with On-Premise SQL hosts.
- Maintained our AMI Packer environment, building monthly gold images for Scalr / app team needs. Developed two new AMIs for utilizing RHEL8 and Amazon Linux 2 optimized images, integrated with our Chef Habitat for base tools deployment and support needs.
- Designed and implemented 3rd party Datadog application on cloud instances, using Chef cookbook for DD agent deployment for metric gathering. Working on enhancements for Linux and Windows log aggregation and application-team platform documentation.
- Working as acting Operations Lead for Enterprise Cloud Team for integration of the Data Operations Center (DOC) three-team members to help act as the intermediary support team for handling cloud/application-related support before enterprise cloud team is engaged. Worked with a team of assigned interns for six months to help migrate and update cloud-related SOPs from GE Legacy over to the new Wabtec AWS environment.
- Manage all SOX compliance requirements for the cloud environment. In charge of getting documentation and developing processes for the team to use and follow. Handling remediation plans and implementing process changes as necessary. Working with Wabtec IA and the Cyber security team for any additional duties.

Keywords: Windows Server, Linux, CentOS, AMI, DevOps, Infrastructure, Amazon AWS, VPC, CloudWatch, SSM, ELB, RDS, S3, EC2, Apache, Nginx, HAProxy, Nagios, Datadog, RDS, ServiceNow, Git, GitLab, Scalr, Jenkins, Chef, Automation, SQL, SOX, VMware, Datadog, Spacewalk, Packer, Habitat

Cincinnati Bell Technology Solutions

August 2014 – November 2016

Senior Virtualization Engineer / Cloud Operations Engineer / Case Manager

Specializing in DevOps architecture, consultation, support, and guidance for General Electric (GE) internal application environments. Responsible for Commercial Cloud and day-to-day customer-interaction and acting as a buffer for operations needs with GE customer facing & platform services applications within multiple cloud-based environments including Amazon AWS cloud and Verizon/Terremark hybrid cloud.

- Ran the Day2Ops team consisting of four team engineers. Lead service delivery processes & reporting including SLAs, availability management & finances.
- Providing OS/VM level support for CentOS, RHEL and OEL Linux, and Windows 2K8 and 2K12 OS. Utilizing DevOps instructions for VMs using HP Server Automation and Dynamic Ops environments with customized scripts. Deploying Splunk clients as needed.
- Supporting GE Cloud data centers upon multiple tiered / floors using customized scripts for VMware ESXi, vCenter, vMotion, HA, DRS, and Cloud Suite.
- Worked with team members on determining the issue with the vCenter Windows platform when it started becoming unavailable for several periods at a time and working on rebuilding and upgrading said vCenter environment as well.
- Provide relationship management and troubleshooting for applications, infrastructure, and projects
- Manage the ongoing relationship management (rhythm of review, SLAs, troubleshooting)

Keywords: Linux, RHEL, CentOS, OEL, Windows Server, HP Opsware, VMware, ESXi, vCenter, vMotion, HA, DRS, Cloud, Risk Management, Splunk, Dynamic Ops, DevOps, provisioning, patch management, Amazon AWS, VPC, CloudWatch, ELB, S3, EC2, ServiceNow, automation.

Advanced Disposal Services

February 2014 – August 2014

Linux Administrator / Infrastructure Architect

Took over the duties as the Linux Administrator for corporate IT Enterprise Systems. Brought on to add additional value to the Core Infrastructure Management team using prior experience as an Infrastructure and Solutions Architect. Have been assigned to help align core infrastructure including disaster recovery strategies, Linux virtualization implementation needs, and project management for lifecycle planning efforts.

- Supporting a hybrid design of physical and virtualized Oracle Virtual Machine (OVM) environment comprised of HP Proliant GL580 Gen 7 and 8 servers, running Oracle Enterprise Linux (OEL) v5.x. Utilizing Oracle's Ksplice and the Spacewalk open-source platform for patch and errata management for the Linux infrastructure.
- In charge of the Oracle Enterprise Manager (OEM) 12c platform. Architecting scripts and integration of monitoring aspects of the Oracle RAC, Oracle OVM, Windows Server, and VMware ESXi cluster platform and for monitoring disk allocation on Oracle ZFS and NetApp SAN.
- Working as the acting IT security engineer on the integration of Trend Micro's OfficeScan v11 platform into the corporate backbone for monitoring desktops and laptops. Utilizing endpoint protection with device control to prevent unauthorized file access to USB and external drives.
- Designed and integrating a new Proof of Concept Test Lab environment within the corporate office location to allow the applications, infrastructure, and networking teams a place to research and develop new enhancements and strategies to the current data center infrastructure without being intrusive on the actual data center mentality.

Keywords: Infrastructure, Linux, Data Center, HP Proliant, Oracle, OEM, OVM, VMware, vMotion, DRS, HA, ESXi, Trend Micro, Netbackup, Active Directory, provisioning, spacewalk, patch management.

Scientific Research Corporation – Physical Site: Charleston, SC / Remote Site: Jacksonville, Florida
December 2009 – February 2014
Systems Analyst III / Infrastructure Architect

[DOD Secret Clearance]

Tasked as the SRC's Service-Oriented Architecture (SOA) Infrastructure Team Lead, providing a combined guidance and hands-on engineering role handling multiple government contract system/database administrators, network engineers within the infrastructure team. Assigned to multiple customer-facing, C4ISR projects associated with the Department of the Navy, SPAWAR, Marine Corps, Veteran's Affairs, and USSOCOM.

SRC Corporate

- Transitioned into the Integrated Systems and Solutions (ISS) Division's Infrastructure as team lead for the Service-Oriented Architecture (SOA) group supervising the day to day activities between SRC and external team members and handling roll-on or roll-off tasks for SRC members being added to or leaving the Infrastructure portion of the projects and/or company. Worked with senior program management teams on RFQs, RFIs, and RFPs as needed for current and future contracts.
- Implemented a cross-training system for teaching new and current system administrators and engineers how to implement, configure and support applications and the underlying operating system environment.

Global Combat Systems Support – Marine Corps Project

- Brought on as the Senior RHEL System Engineer, Infrastructure Architect, and Operations Technical Lead. Managed the system engineering and Oracle database team out of Ashburn, Virginia on transitioning the internal infrastructure, including networking, hardware, Oracle E-Business Suite, and its database environment into a newly designed private cloud environment at the Charleston, South Carolina SPAWAR data center. Part of the Infrastructure Review Board (IRB) for addressing Carpathia-related (C-SDE) infrastructure change requests and changes to the overall development environment.
- Appointed Solutions Architect and worked with SPAWAR's architecture team on the design of the new Charleston GCSS-MC data center and drafting BOM forms for purchasing equipment needed to transition the current Oracle Carpathia development environment into our own private, hybrid cloud environment consisting of Red Hat Enterprise Linux (RHEL) 4, 5 and 6 servers, VMware ESXi clusters and NetApp SAN storage array. Duplicated effort that was done for the data center consolidation into the new SPAWAR data center site using vSphere / vCenter 5.5, vMotion, HA, and DRS for dynamic load balancing needs. Developed solutions using Amazon AWS GovCloud and VMware vCloud architecture for a new data center environment.
- Deployment and configuration/tuning of Splunk for log aggregation and FISMA / DISA auditing needs. Transitioned from using Syslog-NG and rSyslog to Splunk, thus deploying the Splunk client to Windows and Linux-based server platforms. Also utilized Splunk Application for VMware to provide granular performance metrics, logs, tasks and events, and topology from hosts and virtual machines to accurately show the real-time picture of the health of the environment, proactively identifying performance and capacity bottlenecks.
- Updated in-house Puppet system for faster provisioning aspects. Designed new modules for STIG-related requirements. Utilized func for quicker script and day-to-day system administration needs for Oracle HWTeam for resetting passwords or for unlocking accounts that exceeded STIG thresholds.
- Architected a mRepo system and a Spacewalk / Satellite server to allow RHEL 4 and RHEL 5 systems for kickstart provisioning and security patch deployments.
- Deployed and managed a Spiceworks Network Management and Inventory system to seek out devices, creation of a network map for the SPAWAR network team, and acquire all serial numbers, applications running, and additional information within the C-SDE development environment. Using said system for capacity management as well.

Department of the Navy's, Data Center Consolidation Task Force

- Supported project as Virtualization SME / Infrastructure Architect on the Navy's Data Center Consolidation (DCC) initiative under SPAWAR.
- Worked with senior program management teams on RFQs, RFIs, and RFPs proposals for the consolidation of older data center locations and the design and implementation of the new data center that would reside in Charleston, South Carolina.
- Setup and configured data center site using vSphere / vCenter 5.5, vMotion, HA, and DRS for dynamic load balancing needs. Developed solutions using Amazon AWS GovCloud and VMware vCloud architecture for a new data center environment.

Veteran's Affairs Construction and Facility Management, Business Management System Project

- Brought on as Systems Architect and Integrator. Installed and configured Weblogic, Oracle Portal (Fusion Middleware), and Oracle 11g database along with a new portal infrastructure that would be housed within the VA's network infrastructure as the VA's new Business Management System platform.

Veteran's Affairs Post 9/11 Chapter 33 Long Term Solution Project

- Supported project as Infrastructure Team Lead and Systems Support Coordinator handling all critical system administration needs between the VA and SPAWAR including Terremark cloud infrastructure-related activities. Delegated tasks to the Oracle DBAs and Windows/Linux System Administrators (SAs) depending on what part of the application was affected. Prioritized issues concerning outages and application or infrastructure downtime within the Terremark Cloud Services environments.
- Became Master System Administrator and Subject Matter Expert (SME) for Infrastructure team by providing application performance solutions, including configuration and support of COTS and GOTS applications for nearly 300+ Red Hat Enterprise Linux (RHEL) 5.x utilizing a VMware vSphere ESXi 4 using the Verizon/Terremark Enterprise Cloud Services and Infinicenter platform. Created and deployed customized DISA/NIST STIG VM images in Federal and Private cloud environments for multiple operating environments.
- Provided Tier 3 support to investigate and troubleshoot issues for both COTS and custom-designed applications. Performed daily system monitoring, verifying availability of server resources. Monitored patch releases and develop patch installation strategies. Maintained and extended system monitoring frameworks. Provided periodic after-hours on-call support.
- Worked with VA AIDE team to implement LDAP solution in Federal and Private cloud environment to allow RHEL VMs to hook into Windows domain environment for across the board user and group associated login authentication needs.
- Utilizing skills as a Sustainment Engineer thus having the ability to identify an issue, determine root cause, recommend options for resolution and implement the corrective action in a timely manner. Running Retina and SPAWAR SCAP to check STIG compliance and remediation needs.
- Deployment and configuration/tuning of Splunk for log aggregation and FISMA / DISA auditing needs. Transitioned from using Syslog-NG and rSyslog to Splunk, thus deploying the Splunk client to Windows and Linux-based server platforms.
- Architected several Linux and Windows-based solutions for short and long-term needs, including a VMware HA/vMotion detection system, setup and deployed Splunk for DISA/FISMA log aggregation needs, designed an "on-the-fly" configuration management platform for quickly deploying and standing up RHEL virtual machines with Apache and Weblogic applications along with all required DISA/NIST STIG needs using kickstart, PXE and Puppet, and an internal patching repository environment for minimizing bandwidth utilization for RHEL operating systems.

Keywords: Infrastructure, Architecture, Data Center, Splunk, VMware, vSphere, Cluster, ESXi, High Availability, DRS, vMotion, STIG, RHEL, Linux, CentOS, DISA, SCAP, Terremark, Infinicenter, Oracle Portal, Oracle Fusion, AWS, Active Directory, LDAP, Satellite, Spacewalk, mRepo, kickstart, provisioning, Spiceworks, RFQ, RFI, RFP, HP Proliant, biometrics, patch management

Morris Communications LLC – Augusta, Georgia
March 2007 – December 2009
Senior System Engineer, IT Virtualization Architect

Serving as the team lead role of Senior System Engineer/System Administrator and acting as IT architect and subject matter expert for several HP-UX and Linux-based applications and environments.

- Building, racking, wiring, and Satellite kickstarting /provisioning/patching 50+ HP Proliant G3, G4, G5, and Blade server environments. Also handled application configuration needs under development, QA, and production tiers for Core and Development teams. Utilizing VMware, Xen, and PAE kernels for both RHEL and CentOS Linux server environments. Utilized HP iLO and Dell DRAC for remote console control needs for outages, virtual media, and configuration requirements.
- Utilizing VMware ESXi and Red Hat Xen Server platforms for virtual-based development and QA server environments for web development and MySQL database replication needs.
- Worked with CISO on setting up the Nessus server and other security-related applications to monitor the internal infrastructure for supporting the web tier. Utilized Untangle application platform at an off-site facility in London (UK) for managing user web and other application URL filtering needs.
- Architected and provided ongoing support and configuration needs for the Drupal-derived Morris Shared Management Systems (MSMS) platform which consists of a multi-tiered, network and operating system configuration and includes a pair of Squid front-end load balancers, a four-way LAMP web, and application clustered server environment running Multi-Instance Memcached, PHP's APC Opcode Caching module and RHEL Global File System (GFS).
- Actively engaged in Web 2.0 technology and Memcached architecture deployments. Assigned to help migrate legacy HTML websites from HP-UX servers to the recently designed LAMP infrastructure. Worked with team to widely deploy Red Hat Enterprise 5 (RHEL) cluster with global file system (GFS) technology for supporting Drupal and Joomla CMS application suites.
- Deployed and configured Nagios, NRPE agent, and Cacti for hardware and software/application monitoring and bandwidth utilization. Utilized MySQL database for storing Cacti metric data.
- Working with SAN Engineer for allocation and provisioning of logical volumes for Linux and HP-UX server environments upon EMC and HP SAN fiber channel arrays.
- Writing/updating UNIX shell scripts in bash/sh and Perl for handling proactive and day-to-day activities for checking server-side activity. Also tuned other shell scripts as needed for added performance gains using sed, awk, and expect.
- Provided Active Directory (AD), GPO, Exchange, DNS, DHCP and WINS support as needed for new and existing clients. Configuration and deployment of Microsoft Server 2003 with Terminal Services to allow remote location businesses to access local data and applications in a real-time fashion.
- Specializing in virtualization by converting hardware platforms from a physical to a virtual environment using VMware Converter and VMware ESXi and vSphere 4.
- Deployed and configured Nagios, NRPE agent, and Cacti for hardware and software/application monitoring and bandwidth utilization.

Keywords: VMware, vMotion, vSphere, High Availability, ESXi, RHEL, Xen, CentOS, iLO, DRAC, Nessus, MySQL, GFS, LAMP, Nagios, Cacti, Memcached, Active Directory, GPO, Exchange, DNS, DHCP, Microsoft Server, Terminal Server, kickstart, provisioning, Satellite, HP Proliant, Drupal Architecture.

Honors & Special Achievements

CIO Award, 2021. Wabtec, Multiple Locations. Forgoing above and beyond to make the Wabtec value of “Lead Through Innovation” a part of their DNA for their work for creating, adopting, and integrating a cloud strategy for the overall company as a whole. Highest award granted by the company for building the foundation of the company for allowing the application and migration teams to be successful.

Above & Beyond, 2017. GE Digital/GE Transportation, Multiple Locations. Since coming on board and through multiple cloud migration parties, I was able to help the team migrate nearly ten applications to AWS with an approximate annual cost-out savings of nearly \$1 million and cost avoidance of well over \$5 million-plus.

Support Stars, 2007. Morris DigitalWorks, Augusta, Georgia. Helped provide rapid response time to network and operational-related issues during and after work hours. Solved outstanding and critical issues the same day; explained and educated users on any questions they may have.

Ovation Program, 2004. MCI, Tampa, Florida. Helped designed and implemented the plan with the decommissioning of legacy Intermedia ServiceGate ASR/LSR Application. Result provided business a saving over \$900,000 annually in software and maintenance.

Intermedia Communications, 1999. Tampa, Florida. Developed a simplistic cross-training handbook platform to allow all team members to know about day-to-day support activities. The cross-training platform allows new team members to quickly grasp any support and/or administration needs in a reasonably short amount of time.