



City of Redlands

vSphere 4 Advanced or Enterprise with P2V Migrations
Jumpstart

Statement of Work

Version 7.0
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Submitted By

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This statement of work ("SOW") is made and entered into this ^{November 16,} ~~October 19,~~ 2010 (the "SOW Effective Date") by and between the undersigned, CDW Government LLC ("Seller" and "we"), and City of Redlands ("Customer" and "you").

PROJECT DESCRIPTION

PROJECT SUMMARY

Seller will conduct a vSphere 4 Jumpstart engagement with Customer at their location. This engagement will include lecture-based training and installation services and will take up to 4 consecutive days.

As part of this engagement, Seller will:

- Explain the capabilities of VMware Infrastructure including ESX/ESXi Server 4 and vCenter 4
- Implement VMware Infrastructure 4 Enterprise Edition on up to two servers
- Implement VMware vCenter Management Server on a single server
- Create and test deployment of up to two (2) Windows server templates on vCenter
- Convert up to (2) Physical to Virtual (P2V) non-production Windows servers

Note: A separate instructor-led class, which includes step-by-step labs as well as courseware, is required in order to take the VMware Certified Professional (VCP) Exam. For more information please refer to the Education section on www.vmware.com.

TARGET AUDIENCE

- System engineers and administrators new to VMware Infrastructure
- Existing VMware Infrastructure Server architects and administrators who have experience with previous versions of VMware ESX Server

AGENDA

- Pre-Engagement conference call
 - Introduce key participants
 - Verify hardware specifications
 - Review agenda
 - Review logistics
- Technical architecture overview
 - VMware infrastructure architecture
 - Virtual machine architecture
 - Management and administration
- VMware Infrastructure deployment

- vCenter authentication (Users, Groups, Roles)
 - Creating and deploying virtual machines
 - Template creation and deployment
 - VMware Enterprise Converter conversions
 - vCenter clusters
 - VMware Distributed Resource Scheduler (DRS)
 - VMware High Availability (HA)
 - VMware Fault Tolerance (FT)
 - Thin Provisioning
 - Storage vMotion
 - VMware Data Recovery
 - vCenter alerts and monitoring basics
 - Systems management
- Systems maintenance and troubleshooting tips
 - ESX Server maintenance
 - vCenter maintenance
 - VMFS maintenance
 - VM maintenance
- Configuration documentation

RESPONSIBILITIES

As part of this engagement, Customer is responsible for providing the following:

1. Server hardware certified and tested for ESX/ESXi Server 4 and vCenter 4. This equipment should have a 24-72 hour burn-in period with Windows 2008 server or equivalent to ensure proper hardware functionality
2. Storage hardware certified & tested for ESX Server 4 and vCenter 4
3. Network hardware certified & tested for ESX Server 4 and vCenter 4
4. Current software licensing for VMware Infrastructure, Microsoft Windows Server and SQL Server or Oracle Server
5. Server hardware and software meeting the following requirements:
 - a. Compatible with VMware. See <http://www.vmware.com/resources/compatibility/search.php?action=base&deviceCategory=server> for a list of compatible systems.
 - b. Suitable for installation of VMware vCenter 4. Windows Server 2003 or Server 2008 will be required for this system. Supported databases include SQL Server 2005 or 2008, Oracle 10g or Oracle 11g. SQL 2005 Express is acceptable for environments with fewer than 5 ESX hosts and no more than 50 VMs. Server should be installed and configured by Customer
 - c. Each ESX/ESXi Server must include two fibre channel HBAs that are on the current vSphere 4 Compatibility List. See <http://www.vmware.com/resources/compatibility/search.php?action=base&deviceCategory=server>



- ry=server for specific models. **Note:** Fibre channel HBAs can be substituted with two gigabit Ethernet ports in an iSCSI or NFS storage deployment
- d. Each ESX/ESXi Server must include at least eight (8) gigabit Ethernet ports that are on the current vSphere 4 Compatibility List. See <http://www.vmware.com/resources/compatibility/search.php?action=base&deviceCategory=server> for specific models. **Note:** Two additional gigabit Ethernet ports are required in an iSCSI or NFS storage deployment. Configurations with fewer than the recommended number of NICs are possible in certain circumstances
 - e. All hardware must be assembled and installed in racks with all appropriate power and network runs completed. This includes at least eight (8) gigabit Ethernet runs per ESX Server to a redundant network core. Ideally, two interfaces from each ESX host would be connected to a dedicated management VLAN. Additional VLAN requirements will be discussed while the engineer is on-site. In addition, there should be redundant connectivity on the vCenter Management Server. Additional Ethernet runs for out-of-band management adapters may also need to be run depending on the environment
 - f. Each server must include a minimum of 73GB local storage. RAID 1 (mirrored) storage is preferred
6. Storage configuration meeting the following requirements:
- a. In a SAN environment, all hosts must be zoned so that all of the ESX hosts can see the same storage LUNs
 - b. In an iSCSI or NFS environment, all hosts must have connectivity to the storage arrays
 - c. We recommend a 250GB LUN with all HBAs zoned correctly to the ESX Servers prior to Seller coming onsite. We also recommend creating a single 100GB LUN to store Virtual Machine Templates and any ISO images required. Additional LUN requirements will be discussed on-site with the engineer
 - d. Dedicated gigabit connectivity for VMotion traffic is required
 - e. Dedicated gigabit connectivity for FT traffic is required. 10 gigabit is preferred
 - f. If Customer will be using iSCSI software or hardware initiators under ESX Server, the iSCSI network must be setup per best practices by the storage vendor (vLANs, QOS, gigabit Ethernet etc.)
7. Network configuration meeting the following requirements:
- a. DNS is required to be functional and operating prior to implementation
 - b. Two static IP addresses will need to be available for each ESX Server
 - c. We highly recommend that appropriate Hostname records be setup in DNS prior to the commencement of this engagement
 - d. We recommend that the vCenter Server's NICs be teamed together to provide redundancy
 - e. We recommend that every ESX Server has at least eight (8) network ports to provide redundancy for the management, vmkernel, FT and the virtual machine networks
8. An existing, functional SQL Server 2005 or 2008, Oracle 10g or Oracle 11g or SQL Server 2005 SP1 database server with sufficient capacity database to host the vCenter and Update Manager database instances
9. Media and license keys for all guest operating systems (virtual machines) during this engagement

10. Anti-virus and anti-spam software is neither required nor supported in the ESX Server console and should not be installed
11. A conference room with projector and network access

As part of this engagement, Seller is responsible for the following:

1. Manage any support issues which may arise throughout the duration of the jumpstart

ASSUMPTIONS

1. Customer has a current VMware license. If Customer does not have a license for these products, Seller will work with VMware to generate a 30 day trial key
2. Customer has reviewed each vendor's policy for operating system and application virtualization and is responsible for license compliance
3. Customer must provide valid licenses for all operating systems and applications installed in Virtual Machines and Templates created by Seller
4. Customer understands that OEM (Original Equipment Manufacturer) licenses purchased with desktop or server hardware cannot be moved. Seller's engineers will not perform moves, or any kind of migration of these OEM licenses as this violates the OEM license agreement

OUT OF SCOPE

Services not specified in this SOW are considered out-of-scope and will be addressed with a separate SOW or Change Order. Tasks outside the statement of work include, but are not limited to:

- ESX Server Configurations will not be backed up, as we do not recommend running any backup agents in the ESX Service Console. Under normal circumstances, re-installation takes less than 30 minutes.
- Third-party backup products are out-of-scope of this engagement.

ITEM(S) PROVIDED BY SELLER

The following will be provided to Customer by the completion of this project:

Table 1 – Items Provided by Seller

Item	Description	Format
Documentation	Best practices documentation	PDF
Documentation	Knowledge transfer documentation	PDF
Handouts	Handouts from all sessions	PDF

PROJECT SCHEDULING

Customer and Seller, who will jointly manage this project, together will develop timelines for an anticipated schedule (“Anticipated Schedule”) based on Seller’s Project Management Methodology. Any dates, deadlines, timelines or schedules contained in the Anticipated Schedule, in this SOW or otherwise are estimates only, and the Parties will not rely on them for purposes other than initial planning.

The services for this project will be performed within a single calendar week (Monday – Friday).

PROFESSIONAL SERVICES FEES

CONSULTANT FEES

Customer will be billed on a Time and Materials basis, and invoice(s) will reflect the total of all fees due and payable under this SOW (“**Total Fees**”). The Total Fees include both fees for Seller personnel’s time (“**Consultant Fees**”) and other related costs and fees, if any (“**Seller Expenses**”). Unless otherwise specified herein, taxes will be invoiced but are not included in any numbers or calculations provided in this SOW.

The invoice amount of Consultant Fees will equal the hours actually worked (“**Consultant Hours**”) times the rate applicable for the consultant (“**Hourly Rate**”) (see Table 2 below).

The Total Estimated Consultant Fees of \$8,000 is merely an *estimate* and does not represent a *fixed fee*. Neither the Estimated Consultant Hours of 40 nor the Estimated Consultant Fees are intended to limit the bounds of what may be requested or required for performance of the Services.

Table 2 – Project Fees

Consultant	Function	Hourly Rate
Senior Engineer	VMware	\$200

The rates presented in Table 2 apply to *scheduled* Services that are performed during Standard Business Hours (meaning 8:00 a.m. to 5:00 p.m. local time, Monday through Friday, excluding holidays). For scheduled Services that are *not* performed during Standard Business Hours, Consultant Fees will be calculated at 150% of the Hourly Rates. For any *unscheduled* (i.e., emergency) Services performed at any time of the day, Consultant Fees will be calculated at 200% of the Hourly Rates.

When Services are performed at any Customer-Designated Location(s) (as defined below), Consultant Hours will be measured in one (1) hour increments with a minimum of four (4) hours billed for each day. When Seller personnel must travel more than two (2) hours a day to work at any Customer-Designated Location(s), there will be a minimum of eight (8) hours billed for each day (less travel time that is invoiced pursuant to the “Seller Expenses” section below).

When Services are performed remotely, time will be calculated in one (1) hour increments with a minimum of one (1) hour each day.

Upon notice to Customer, Seller may adjust the rates above, provided that the rates will remain fixed for at least six (6) months after the SOW Effective Date and then again for at least six (6) months after any subsequent adjustment.

The rates above only apply to Services specified in this SOW as it may be amended by one or more Change Order(s).

SELLER EXPENSES

When Seller's personnel are located more than 50 miles from the Customer-Designated location, travel charges will apply. Seller will invoice Customer for the time Seller's personnel spend traveling to and/or from the Customer-Designated Location(s) (or otherwise, as necessary) at a rate of \$85/hour. Seller will make efforts to schedule appropriate personnel from Seller's offices located nearest to the Customer-Designated Location(s) in order to minimize such expenses. Seller's ability to do so may depend on various factors (e.g., specialized project skills needed, personnel availability, and changes to, or challenges inherent in, the Anticipated Schedule).

Seller will invoice Customer for Seller's reasonable, direct costs incurred in performance of the Services. Seller Expenses include, but may not be limited to: airfare, lodging, mileage, meals, shipping, lift rentals, photo copies, tolls and parking. Seller will charge actual costs for these expenses. Any projected expenses set forth in this SOW are estimates only.

CUSTOMER-DESIGNATED LOCATIONS

Seller will provide Services benefiting the following locations ("Customer-Designated Sites"):

Table 3 – Customer-Designated Sites

Location Name	Physical Address	Type(s) of Service(s)
Redlands Police Dept.	1270 W. Park Ave., Bldg. A, Redlands, CA 92373	Implementation

PROJECT-SPECIFIC TERMS

1. Customer is responsible for providing all physical and communications access, privileges, environmental conditions, properly functioning hardware and software, qualified personnel, project details, material information, decisions/directions, and personnel and stakeholder interviews that are reasonably necessary to assist and accommodate Seller's performance of the Services ("**Customer Components**").



2. Seller is not responsible for delays in performance directly caused by the unavailability of the Customer Components and will have the right to invoice Customer for any time Seller's thereby idled or reassigned personnel would have spent on the project (calculated according to the rates specified under Professional Services Fees).
3. Seller may invoice Customer for any additional or different services prompted by Customer's inability to timely provide the Customer Components.
4. Customer will provide in advance and in writing, and Seller will follow, all applicable Customer safety and security rules and procedures.
5. Customer will secure and maintain the confidentiality of all Seller personnel information.
6. When Services are performed at a Customer-Designated Location, the site will be secure; Seller is not responsible for lost or stolen equipment.
7. Seller has the right to terminate this SOW upon notice to Customer.



MISCELLANEOUS AND SIGNATURES

This SOW shall be governed by Seller's "Terms and Conditions of Product Sales and Service Projects", accessed via the "Terms & Conditions" link at www.cdwg.com (the "**Agreement**"). If there is a conflict between this SOW and the Agreement, then the Agreement will control, except as expressly amended in this SOW by specific reference to the Agreement. References in the Agreement to a SOW or a Work Order apply to this SOW. This SOW and any Change Order may be signed in separate counterparts, each of which shall be deemed an original and all of which together will be deemed to be one original. Electronic signatures on this SOW or on any change Order (or copies of signatures sent via electronic means) are the equivalent of handwritten signatures. This SOW is the proprietary and confidential information of Seller.

In acknowledgement that the parties below have read and understood this SOW and agree to be bound by it, each party has caused this SOW to be signed and transferred by its respective authorized representative.

CDW Government LLC

By: 
signature
Name: Kevin P. Adams
Title: V. P. Program Management
Phone: 703-621-8255
E-mail: Kadams@cdwg.com
Date: Nov. 9, 2010

Mailing Address:

230 N. Milwaukee Ave.
Vernon Hills, IL 60061

☒ A purchase order for payment under this SOW is attached.
☐ A purchase order is not required for payment under this SOW.
Seller Services Manager _____
1.7.000209 Standard

City of Redlands

By: <u></u> signature	<u></u> Sam Irwin
Name: <u>Pat Gilbreath</u>	City Clerk
Title: <u>Mayor</u>	
Phone: <u>909/798-7533</u>	
E-mail: <u>pgilbreath@cityofredlands.org</u>	
Date: <u>11/16/2010</u>	

Mailing Address:

Street: P.O. Box 3005
City/ST/ZIP: Redlands, CA 92373

Billing Contact: Brenda Boon (bboon@redlandspolice.org)
Street: P.O. Box 3005
City/ST/ZIP: Redlands, CA 92373

Project Contact:

Ian Stewart
istewart@redlandspolice.org



SOW TERMS AND CONDITIONS

CONTACT PERSON(S)

Each Party will appoint a person to act as that Party's point of contact ("**Contact Person**") as the time for performance nears, and will communicate that person's name and information to the other Party's Contact Person. The Customer Contact Person is authorized to approve materials and Services provided by Seller, and Seller may rely on the decisions and approvals made by the Customer Contact Person (except that Seller understands that Customer may require a different person to sign any Change Orders amending this SOW). The Customer Contact Person will manage all communications with Seller, and when Services are performed at a Customer-Designated Location, the Customer Contact Person will be present or available.

The Parties' Contact Persons shall be authorized to approve changes in personnel and associated rates for Services under this SOW.

PAYMENT TERMS

Except as otherwise agreed by the Parties, customer will pay invoices containing amounts authorized by this SOW within thirty (30) days of receipt. Any objections to an invoice must be made to the Seller Contact Person within fifteen (15) days after the invoice date.

EXPIRATION AND TERMINATION

This SOW expires and will be of no force or effect unless it is signed by Customer, transferred in its entirety to Seller so that it is received within thirty (30) days from the date written on its cover page, and then signed by Seller, except as otherwise agreed by Seller. This SOW can be terminated by Seller without cause upon at least fourteen (14) days' advance written notice.

CHANGE ORDERS

This SOW may be modified or amended only in a writing drafted by Seller, generally in the form provided by Seller and signed by both Customer and Seller ("**Change Order**"). Each Change Order will be of no force or effect until signed by Customer, transferred in its entirety to Seller so that it is received within thirty (30) days from the date on its cover page and then signed by Seller, except as otherwise agreed by Seller.

In the event of a conflict between the terms and conditions set forth in a fully-executed Change Order and those set forth in this SOW or a prior fully-executed Change Order, the terms and conditions of the most recent fully-executed Change Order shall prevail.



EXHIBIT A. MATRIX OF SERVICES

CDW Jumpstart engagements are designed to quickly get an environment up and running. A typical engagement is performed in a matter of days, including mentoring and implementation services. The key benefit of a Jumpstart is the knowledge transfer of best practices.

CDW Plan & Design engagements are designed to provide an in-depth implementation design and documentation. A typical engagement can last for 3-4 weeks, including lecture-based training and implementation services and software components.

	Jumpstart	Plan & Design		Jumpstart	Plan & Design
Kick-off Meeting			Design		
Introduce key parties	X	X	ESX Server Host Specifications		X
Review agenda	X	X	vCenter Server Specifications		X
Review logistics	X	X	VI Client Specifications		X
Training			Networking Configuration		X
VMware infrastructure	X	X	Storage Specifications		X
Virtual Machine architecture	X	X	vCenter Datacenter Architecture		X
Management and Administration	X	X	VI Capacity Management		X
PDF of Training	X	X	Virtual Machine Availability		X
Deployment			VI Backup Architecture		X
vCenter Installation	X	X	VI Monitoring Architecture		X
Authentication	X	X	VI Patch/Version Management		X
Create and Deploy VMs	X	X	Converting Legacy Infrastructure		X
Template building	X	X	Expected Workload Assumptions		X
vCenter Clusters	X	X	Special Architecture Considerations		X
VMware DRS	X	X	Assembly and Configuration Guide		
VMware High Availability	X	X	Pre-Install checklist	X	X
vCenter alerts and monitoring basics	X	X	vCenter Server Install/Configuration	X	X
Sample P2V conversions	X	X	ESX Server Host Install/Configuration	X	X
Systems management	X	X	VMware Converter Installation	X	X
Administration			Backup and Restore Configuration	X	X
Common tasks and tips	X	X	VI Monitoring Configuration	X	X
Best Practices	X	X	Scripted Installation	X	X
Business Continuity Workshop			VI Test Plan		
Overview		X	VI Configuration Validation		X
Planning for routine failure		X	Standard Procedures Validation		X
Backup and Recovery of VMs		X	VI Rollout Plan		
Testing VM Backup/Recovery		X	VI Rollout Plan Steps		X
Disaster Planning		X	VI Rollout Operational Readiness		X