



**Testing and Integration Group**

**Alteon VA installed on VMware using  
Cisco UCS Servers Solution Guide**

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## Introduction

By combining the ADC virtualization Radware solutions using Alteon VA and VMware's server virtualization solutions, customers can extract even more benefits from their virtualized IT infrastructure: higher server consolidation ratios, automated management, faster application performance, and tighter security. Radware enables VMware vSphere™ users to extract the full benefits of virtualization while reducing CAPEX and OPEX.

VMware vSphere is a cloud operating system, which leverages the power of virtualization to transform data centers into dramatically simplified cloud computing infrastructures, and enables IT organizations to deliver flexible and reliable IT services using internal and external resources, securely and with low risk. VMware vSphere dramatically reduces capital and operating costs, and increases control over delivery of IT services while preserving the flexibility to choose between any type of OS, application, or hardware, hosted in-house or using external resources.

The Cisco Unified Computing System (UCS) is a next-generation data center platform that unites compute, network, storage access, and virtualization into a cohesive system designed to reduce total cost of ownership (TCO) and increase business agility. The system integrates a low-latency, lossless 10 Gigabit Ethernet unified network fabric with enterprise-class, x86-architecture servers. The system is an integrated, scalable, multi-chassis platform in which all resources participate in a unified management domain

This document contains best practice information regarding the set-up, configuration, and customization of Alteon VA on VMware ESXi 5.5 on Cisco UCS platforms.

## Radware's Alteon VA

Radware's Alteon Virtual Appliance (VA™) is a high performance next generation ADC solution packaged as a virtual appliance running on leading virtual server and cloud infrastructures. Due to the portability and advanced integrations of Alteon VA, enterprises can leverage virtual server and cloud infrastructures to optimize resource utilization, application availability, application QoE, and application rollout times.

Alteon VA provides identical functionality to physical Alteon ADC devices, including local and global server load balancing, Layer 7 capabilities, and next generation ADC services such as integrated application performance monitoring (APM) and Web Performance Optimization (WPO).

## Advanced Enterprise Functionality

Alteon VA supports the complex functionality requirements of enterprise applications which go beyond basic availability and quality of experience features. These include:

- **Layer 7 Rewrite** – When application changes are needed on-the-fly, and reprogramming the application is not possible, ADCs are the preferred choice as they offer the least risky option to resolve this problem without interrupting the availability of the application servers.
- **Application Level Traffic Steering** – When traffic needs to be directed to a specific server based on its functionality, Alteon VA can inspect application level request data (Layer 7), classify the traffic, and perform forwarding decisions accordingly.
- **Caching** – By storing objects that are frequently requested by clients in memory, Alteon VA significantly speeds up page load times and relieves Web and application servers from performing recurring operations. Alteon leverages static caching on the ADC and dynamic caching, by intelligently manipulating HTTP headers so that browsers will cache objects.
- **SSL Offloading** – Alteon VA enables a more efficient operation of applications by offloading resource-intensive SSL operations onto a dedicated virtual container. Additionally, by offloading SSL, applications can leverage Layer 7 application based traffic, steering capabilities of their ADC.
- **Full Web Performance Visibility with Integrated APM** – Radware's Application Performance Monitoring (APM) module enables the measurement and visualization of quality of experience of actual users, including real data and real errors. It provides historical reports with a drill-down, granular analysis based on user-defined SLA, while allowing the measurement of delays per each transaction phase, including data center time, network latency, and browser rendering time. Radware's APM works out-of-the-box and unlike other solutions, it does not require manual synthetic transaction scripting nor deployment of monitoring probes on servers – reducing deployment time and costs.
- **Alteon VA for Server Virtualization Environments** – Enterprises migrating applications to server virtualization platforms will find Alteon VA is a perfect fit for their environment regardless of which server virtualization technology they are using. Alteon VA is available on all leading hypervisors, including VMware ESXi, Microsoft Hyper-V, KVM, or Open Xen. It simplifies the application life cycle management from start to end by enabling instant provisioning of a new ADC instance in the development environment. That same ADC instance can be easily migrated to the staging and production environment, packaged as part of the application blueprint, regardless of the form factor used there. Because of the full compatibility across all Alteon form factors, it does not matter if there are physical ADCs or vADCs on Radware's ADC-VX platforms. Alteon VA also offers exceptional performance and capacity with up to 6Gbps per CPU core, enabling it to optimally support many enterprise applications from development to production.

- **Alteon VA in Public Clouds** – Alteon VA is also available as a virtual appliance on leading public cloud platforms best suited to supplement the enterprise application lifecycle as a PAYG compute infrastructure and currently compatible with Amazon eC2 and IBM Smart Cloud enterprise services. Functioning as a standard Alteon ADC virtual machine, it delivers all advanced enterprise ADC functionalities as well as next generation services, such as APM in a cloud environment. With an elastic footprint, Alteon VA only utilizes the exact amount of compute resources it needs per deployment requirement, making it a cost-optimized ADC solution for cloud environments.

## VMware vSphere

VMware vSphere, the industry-leading virtualization platform, empowers users to virtualize any application with confidence, redefines availability, and simplifies the virtual data center. The result is a highly available, resilient, on-demand infrastructure that is the ideal foundation of any cloud environment. This can drive down data center cost, increase system and application uptime, and drastically simplify the way IT runs the data center. vSphere is purpose-built for the next generation of applications and serves as the core foundational building block for the Software-Defined Data Center

VMware vSphere main capabilities include:

- **Virtualize Applications with Confidence** – Deliver enhanced scale, performance and availability that enables users to virtualize scale-up and scale-out applications with confidence.
- **Simplify Management of the Virtual Data Center**– Manage the creation, sharing, deployment, and migration of virtual machines with powerful yet simple and intuitive tools.
- **Data Center Migration and Maintenance**– Perform live workload migrations and data center maintenance with zero application downtime.
- **Transform Storage for Virtual Machines**– Enable your external storage arrays to operate in a more VM-centric manner that increases performance and efficiency for your virtual machine operations.
- **Enable Choice in How to Build and Operate Cloud Environments** – Build and operate cloud environments that fit your needs using vSphere and the VMware stack or open-source frameworks such as OpenStack and the VMware Integrated OpenStack add-on.

## Cisco UCS Servers

The Cisco Unified Computing System is a next-generation data center platform that unites compute, network, storage access, and virtualization into a cohesive system designed to reduce total cost of ownership (TCO) and increase business agility. The system integrates a low-latency, lossless 10 Gigabit Ethernet unified network fabric with enterprise-class, x86-



architecture servers. The system is an integrated, scalable, multi-chassis platform in which all resources participate in a unified management domain.

The main system components include:

- **Compute** — The system is based on an entirely new class of computing systems that incorporate blade servers based on Intel Xeon 5500 Series processors. The blade servers offer patented Cisco Extended Memory Technology to support applications with large data sets and allow more virtual machines per server.
- **Network** — The system is integrated onto a low-latency, lossless, 10-Gbps unified network fabric. This network foundation consolidates what today are three separate networks: LANs, SANs, and high-performance computing networks. The unified fabric lowers costs by reducing the number of network adapters, switches, and cables, and by decreasing power and cooling requirements.
- **Virtualization** — The system unleashes the full potential of virtualization by enhancing the scalability, performance, and operational control of virtual environments. Cisco security, policy enforcement, and diagnostic features are now extended into virtualized environments to better support changing business and IT requirements.
- **Storage Access** — The system provides consolidated access to both SAN storage and network attached storage (NAS) over the unified fabric. Unifying storage access means that the Cisco Unified Computing System can access storage over Ethernet, Fibre Channel, Fibre Channel over Ethernet (FCoE) and iSCSI, providing customers with choice and investment protection. In addition, administrators can pre-assign storage-access policies for system connectivity to storage resources, simplifying storage connectivity and management while helping increase productivity.
- **Management** — The system uniquely integrates all the system components, enabling the entire solution to be managed as a single entity through Cisco UCS Manager software. Cisco UCS Manager provides an intuitive graphical user interface (GUI), a command line interface (CLI), and a robust application-programming interface (API) to manage all system configuration and operations. Cisco UCS Manager helps increase IT staff productivity, enabling storage, network, and server administrators to collaborate on defining service profiles for applications. Service profiles are logical representations of desired physical configurations and infrastructure policies. They help automate provisioning and increase business agility, allowing data center managers to provision resources in minutes instead of days.

Working as a single, cohesive system, these components unify technology in the data center. They represent a radical simplification in comparison to traditional systems, helping simplify data center operations while reducing power and cooling requirements. The system amplifies IT agility for improved business outcomes. The Cisco Unified Computing System components includes fabric interconnects, blade server chassis, blade servers, fabric extenders, and network adapters.

## Software and Hardware

The following is a list of the hardware and software tested to verify the interoperability of the presented solution:

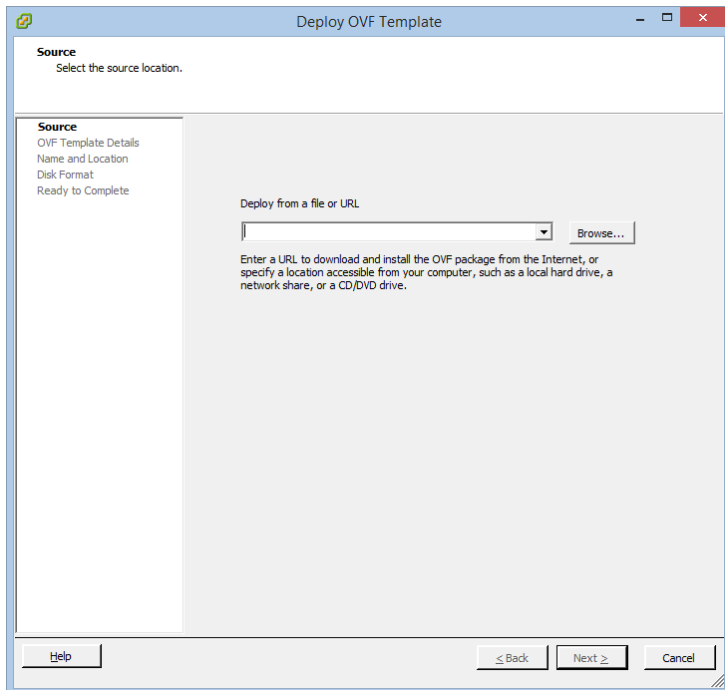
- Cisco UCS C240 M3S with 128GB RAM and dual Xeon E5-2690 v2 (20 cores or 40 Hyper threaded cores)
- Radware's Alteon VA for VMware, version 30.1
- Hypervisor – VMware ESXi v5.5.0

## Installation and Configuration

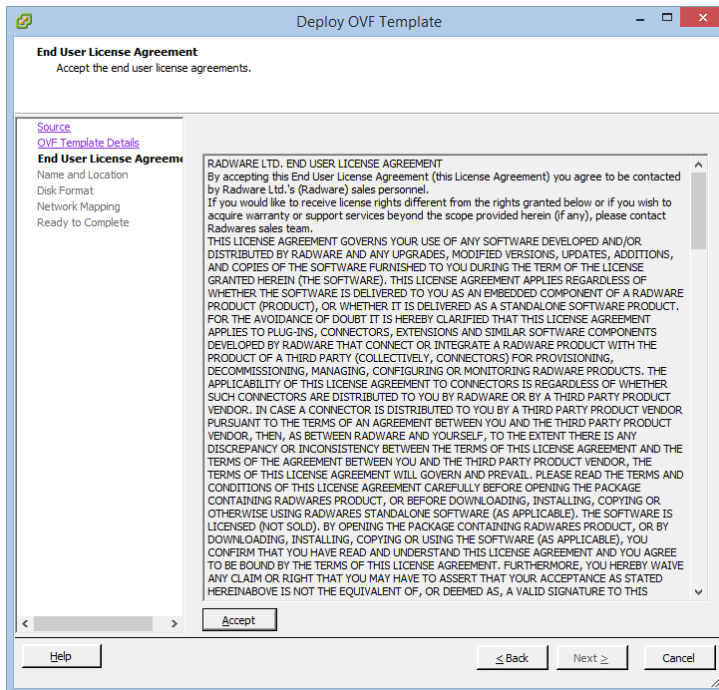
This section describes how to install and configure the solution.

### Alteon VA installation

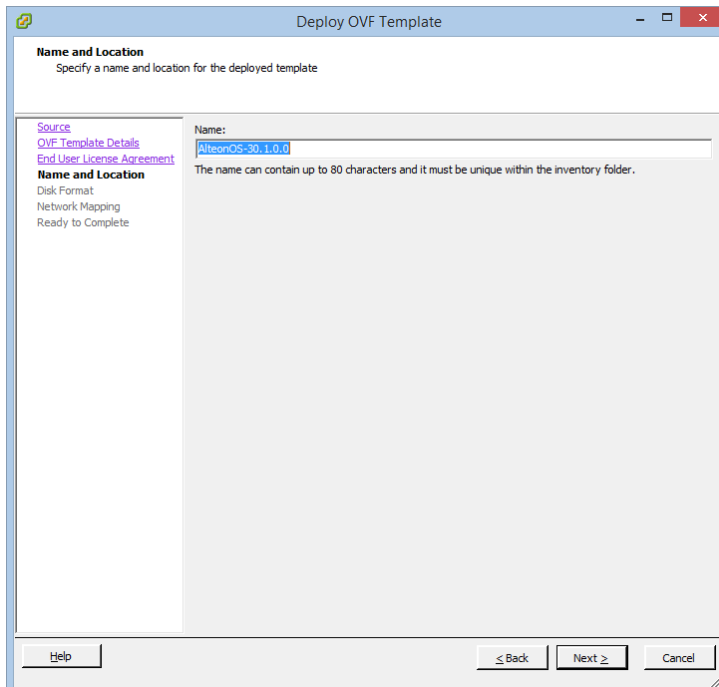
1. Download the latest Alteon VA software to VMware.
2. Run the vSphere client.
3. Go to **File > Deploy OVF Template**.
4. Click **Browse** and select the Alteon VA OVF file and client, and then click **Next**:



5. Click **Accept** to accept the license agreement, and then click **Next**:

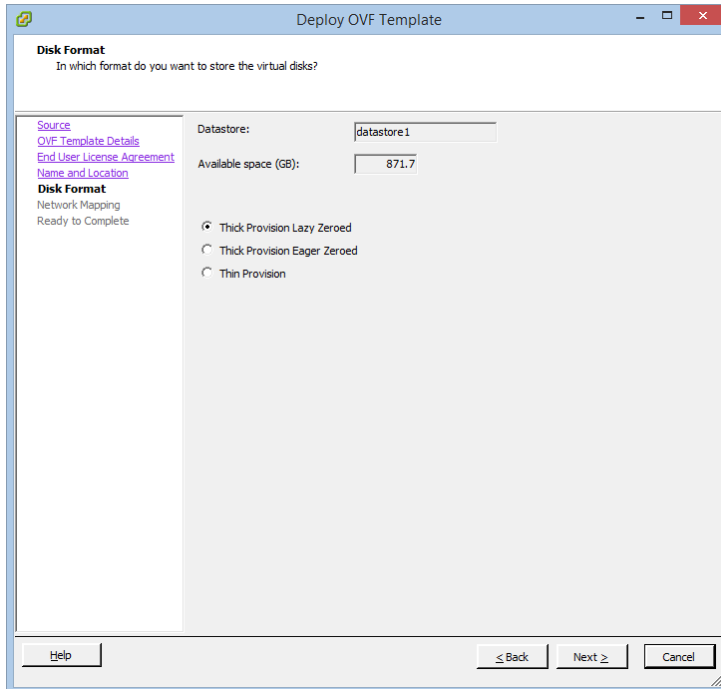


6. Change or modify the Name, as required, and then click **Next**:

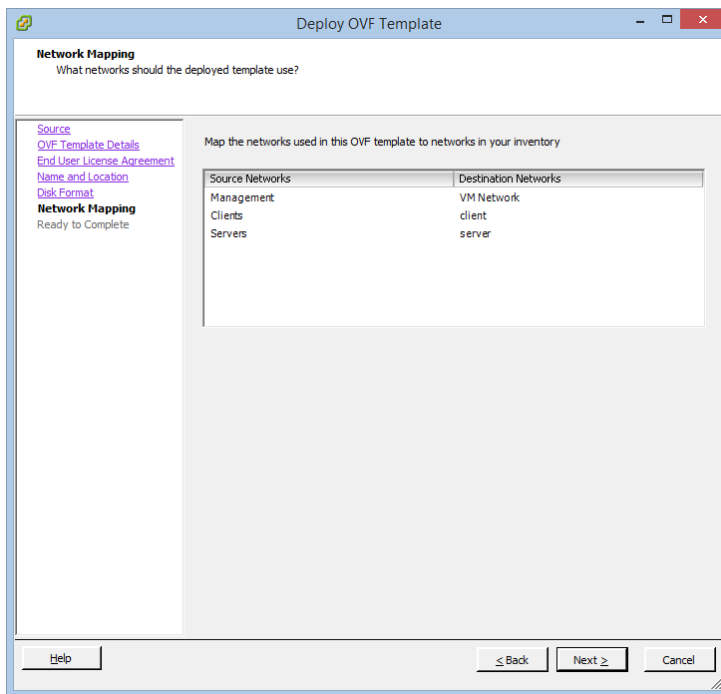




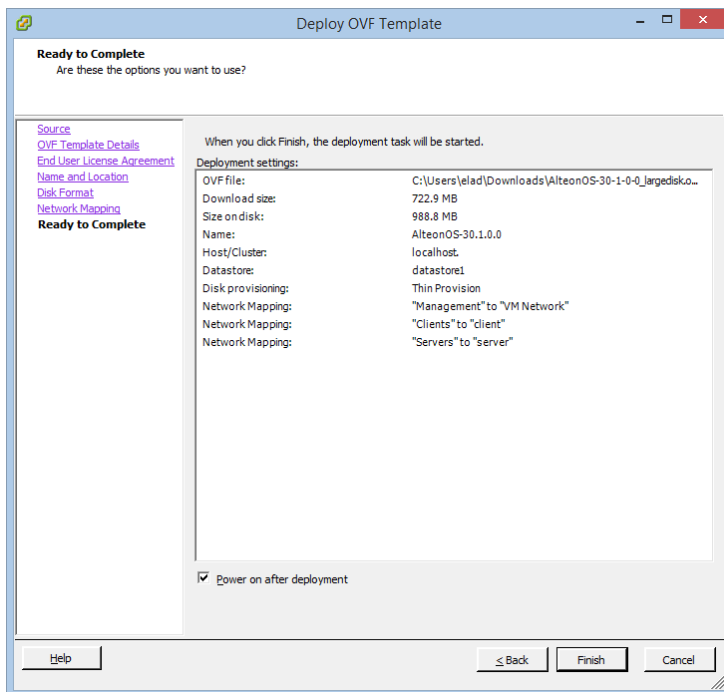
7. Select the disk format that your VMware administrator advised you to use, and then click **Next**:



8. In the **Destination Networks** column, select the required pre-defined networks, and then click **Next**:



9. Select **Power on after deployment**, and then click **Finish**.



## Initial Configuration of the Management Interface

1. Using the vSphere *Console* tab, connect to the Radware Alteon Virtual Appliance.
2. Use the `/cfg/sys/mgmt` menu to set the management IP address as **10.0.107.10**, the subnet mask as **255.255.255.0**, and the default gateway as **10.0.107.1**:

```
/c/sys/mgmt
    dhcp disabled
    addr 10.0.107.10
    mask 255.255.255.0
    broad 10.0.107.255
    gw 10.0.107.1
    ena
```

3. Enable access to the Radware Alteon VA for Telnet, SSH, and HTTP:

```
/cfg/sys/access/http/ena
/cfg/sys/access/telnet/ena
/cfg/sys/access/sshd/on/ena
apply
save
```



## Connecting to the Alteon VA

You can perform the initial switch configuration and management in a number of ways. An Application Switch offers a console connection, Telnet session, SSH, and Web Browser connection for initial configuration.

## Logging into the Alteon VA

The default user and password is **admin/admin**.



## Technical Support

Radware offers technical support for all of its products through the Radware Certainty Support Program. Refer to your Certainty Support contract, or the Radware *Certainty Support Guide*, available at: <http://www.radware.com/content/support/supportprogram/default.asp>.

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