Alteon

Optimizing the Delivery of Microsoft Exchange 2016 with Alteon Application Delivery Controller *Technical Integration Guide (TIG)*

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Introduction

The Radware Alteon application delivery controller (ADC) and Microsoft Exchange 2016 joint solution is designed to provide a highly scalable and highly available unified messaging and communication infrastructure with the fastest response time. By deploying these two best-of-breed sub-systems, end-users can benefit from a significantly improved quality of experience (QoE).

Using the advanced health monitoring of each of the client access servers, Alteon application delivery controllers can validate the servers' availability and response time, as well as deliver seamless load balancing, redundancy, and persistency features. Furthermore, Alteon provides service acceleration through compression, caching, and SSL termination to Microsoft Exchange users, offloading critical resources from the CAS servers and enabling smaller CAS arrays, resulting in lower CAPEX and OPEX for the organization.

Microsoft Exchange 2016 Overview

Microsoft Exchange Server 2016 brings a new rich set of technologies, features, and services to the Exchange Server product line. Its goal is to support people and organizations as their work habits evolve from a communication focus to a collaboration focus. At the same time, Exchange Server 2016 helps lower the total cost of ownership, whether you deploy Exchange 2016 (Preview) on-premises, or provision your mailboxes in the Cloud. New features and functionality in Exchange 2016 are designed to do the following:

- **Intelligent Experiences** ─ Exchange 2016 helps you get more done. With a faster, more refined, and complete search capability, and an improved inbox, you can quickly find what you need. Having these additional capabilities at your fingertips means that even as your mailbox expands, it stays clean and easy to manage. Exchange 2016 also provides collaboration tools that fit the way you work, plus a great experience on any device.

- **Modern datacenter** ─Exchange 2016 delivers a rock-solid, proven on-premises architecture. It provides the innovation and simplicity to run at scale, superior performance and reliability for a great user experience, simplified deployment, and cloud-readiness so you can connect when you want.

- **Keep your organization safe** ─ Data loss prevention, auditing, eDiscovery, and archiving capabilities in Exchange 2016 help you protect your business communications and sensitive information and meet internal and regulatory compliance requirements. ⓘ

Exchange Server Protocols Load Balanced by Radware ADC

The following table describes Exchange CAS Server protocols that can by load-balanced by Radware ADC, including:

Service Name	Protocol	Port
Outlook Anywhere ActiveSync Offline address book Outlook Web Access Auto Discover Control Panel	HTTPS	443
POP3	POP3, POP3s	110, 995
IMAP	IMAPs, IMAPs	143, 993

Alteon ADC

Alteon ADC provides breakthrough performance, advanced application acceleration capabilities, and on-demand scalability needed to effectively meet contemporary network and business needs. Specifically designed for the majority of enterprises and carriers that operate in dynamic, ever-changing environments and that face diverse requirements, Alteon ADC provides the extendable throughput these enterprises need from 0 to 80 Gbps for unparalleled scalability, business availability, and performance.

Integrated Application Acceleration Capabilities

Alteon ADC delivers a wide set of application acceleration capabilities, including SSL offloading, Web compression, caching, HTTP multiplexing, and TCP optimization. These capabilities are designed to offload servers, address server performance issues, enhance response-time for best QoE, and mitigate security risks. By offloading processor intensive operations from servers, Alteon frees the servers' CPUs to handle additional requests, eliminating the need to buy additional hardware to support application processing requirements and reducing CAPEX and OPEX.

Alteon ADC is validated and certified by leading application vendors such as Microsoft, Oracle, SAP, IBM, and others. When operating Alteon ADC with Microsoft SharePoint, for example, the response time of SharePoint servers is accelerated by 350% and the servers' CPU load is reduced by 40%. Similar benefits are achieved with other popular applications.

Application acceleration capabilities have greater importance in virtual data centers where applications suffer from increased latency caused by the virtualization infrastructure. Alteon reduces applications latency and improves QoE of virtual applications.

Intelligently Embedding Radware's 'Pay as-you-Grow' Infrastructure Approach

By embracing Radware's "Pay-as-you-Grow" approach, you only pay for the exact capacity currently required, preventing overspending on the initial solution. Throughput capacity, acceleration capabilities and application-aware services can be added on demand to meet new business requirements – with no forklift upgrade of the platform and without even restarting it.

The "Pay-as-you-Grow" approach lets you overcome capacity planning challenges and reduces the risk associated with data center growth for best investment protection. Thanks to platform standardization and simplicity, there are two platforms to cover all of your application needs resulting in fewer spare parts, and less training and operations, dramatically reducing OPEX.

Alteon ADC and Microsoft Exchange Architecture

The following is an illustration of the tested network described in this document:
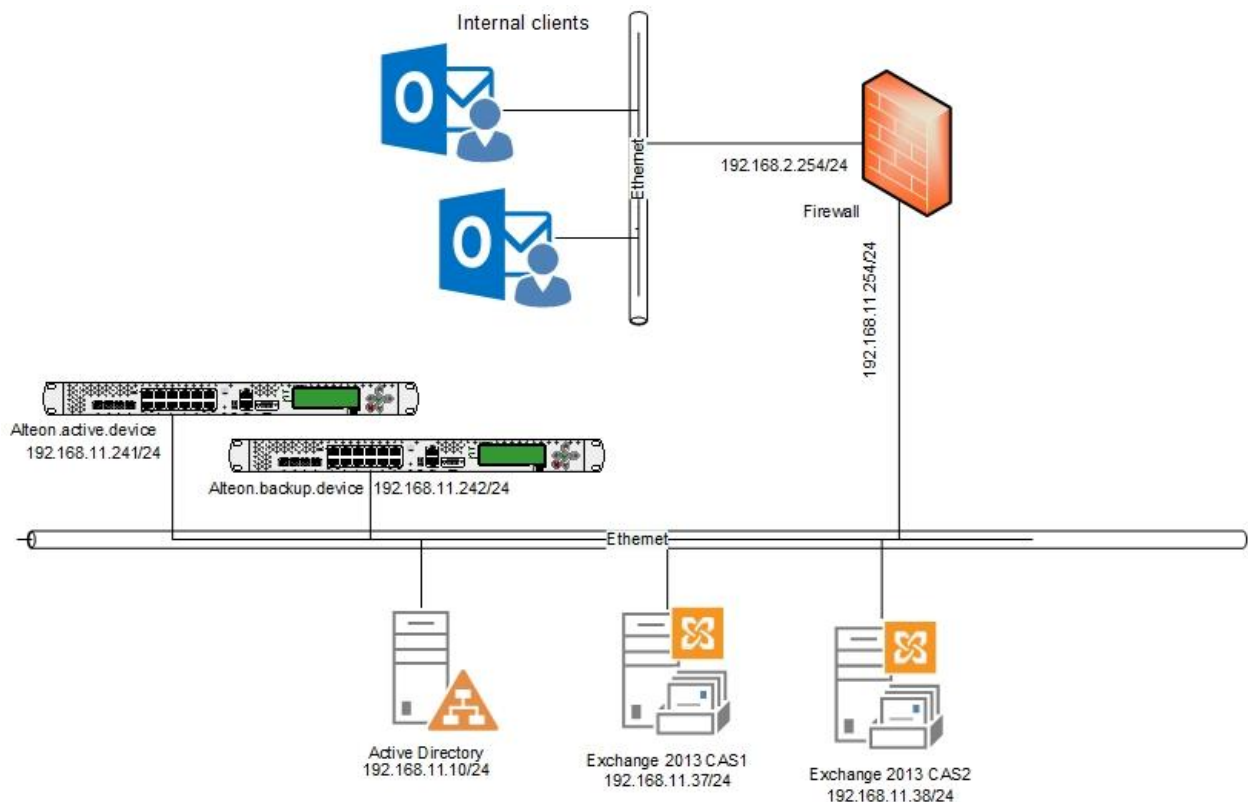
Important Implementation Notes

- DNS SRV records for the appropriate domain are used to locate the Exchange servers for client connectivity. DNS administration is required to bind an A record for the Exchange FQDN, where the FQDN resolves to the appropriate Alteon Virtual IP address (VIP). Alteon can become the Authoritative responder for this FQDN, normally used in Disaster Recovery designs. In this case, the DNS uses a name server record pointing to the Alteon platform for the authoritative response. Alteon bases the response on the availability, load, and proximity information it uses to drive intelligent load distribution.

- To sync the configuration after configuring the active Alteon, run the command `/oper/slb/sync` to copy the configuration.

  Note: You must configure Layer 2 and Layer 3 network configurations on the Alteon standby platform before applying the **sync** command.

Software and Hardware

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

- Microsoft Windows 2012 R2 Enterprise x64
- Alteon version 30.5 (two units)
- Microsoft Exchange 2016 Enterprise

Configuration

This section includes the configuration for implementing this solution, including:

- Alteon Active Configuration
- Alteon Standby Configuration

Alteon Active Configuration

Network Configuration

```
/c/l3/if 1
   ena
   ipver v4
   addr 192.168.11.241
   vlan 1704
   peer 192.168.11.247
   descr "Exchange.LAN.inteframe"
/c/l3/gw 1
```

```
   ena
   ipver v4
   addr 192.168.11.254
Sync Configuration
/c/slb/sync
   pips e
   certs e
   gw e
/c/slb/sync/peer 1
   ena
   addr 192.168.11.247
SSL Configuration
/c/slb/ssl
        on
/c/slb/ssl/sslpol 1
        name "secure.ssl"
        cipher "all"
        convert disabled
        bessl enabled
        ena
```

Compression Configuration

```
/c/slb/accel/compress
   on
/c/slb/accel/compress/comppol 1
   name "compression.policy"
   minsize 1
   ena
```

Health Monitoring Configuration

```
/c/slb/advhc/health _Exchange2016_AutoDiscover HTTP
   name "_Exchange2016_AutoDiscover"
   dport 443
   ssl enabled
/c/slb/advhc/health _Exchange2016_AutoDiscover HTTP/http
   host "mail.lyncradware.com"
   path "/EWS/healthcheck.htm"
```

```
/c/slb/advhc/health _Exchange2016_OWA HTTP
   name "_Exchange2016_OWA"
   dport 443
   ssl enabled
/c/slb/advhc/health _Exchange2016_OWA HTTP/http
   host "mail.lyncradware.com"
   path "/owa/healthcheck.htm"
/c/slb/advhc/health _Exchange2016_ActiveSync HTTP
   name "_Exchange2016_ActiveSync"
   dport 443
/c/slb/advhc/health _Exchange2016_ActiveSync HTTP/http
   host "mail.lyncradware.com"
   path "/Microsoft-Server-Activesync/healthcheck.htm"
/c/slb/advhc/health _Exchange2016_OutlookAnywhere HTTP
   name "_Exchange2016_OutlookAnywhere"
   dport 443
   ssl enabled
/c/slb/advhc/health _Exchange2016_OutlookAnywhere HTTP/http
   host "mail.lyncradware.com"
   path "/rpc/healthcheck.htm"
/c/slb/advhc/health _Exchange2016_MAPI HTTP
   name "_Exchange2016_MAPI"
   dport 443
   ssl enabled
/c/slb/advhc/health _Exchange2016_MAPI HTTP/http
   host "mail.lyncradware.com"
   path "/rpc/healthcheck.htm"
```

Real Servers Configuration

```
/c/slb/real 1
   ena
   ipver v4
   rip 192.168.11.37
   name "Exchange.1"
/c/slb/real 2
   ena
   ipver v4
```

```
   rip 192.168.11.38
   name "Exchange.2"
Server Groups Configuration
/c/slb/group ad
   ipver v4
   metric roundrobin
   health _Exchange2016_AutoDiscover
   add 1
   add 2
/c/slb/group as
   ipver v4
   metric roundrobin
   health _Exchange2016_AutoDiscover
   add 1
   add 2
/c/slb/group IMAP
   ipver v4
   metric roundrobin
   health imap
   add 1
   add 2
   name "IMAP"
/c/slb/group mapi
   ipver v4
   metric roundrobin
   health _Exchange2016_MAPI
   add 1
   add 2
/c/slb/group oa
   ipver v4
   metric roundrobin
   health _Exchange2016_OutlookAnywhere
   add 1
   add 2
/c/slb/group owa
   ipver v4
   metric roundrobin
```

```
health _Exchange2016_OWA
   add 1
   add 2
/c/slb/group POP3
   ipver v4
   metric roundrobin
   health pop3
   add 1
   add 2
   name "POP3"
```

Alteon Process Directions

```
/c/slb/port 1
   client ena
   server ena
   proxy ena
```

Virtual Servers and Services Configuration

```
/c/slb/virt 1
   ena
   ipver v4
   vip 192.168.11.238
   vname "Exchange.vip"
/c/slb/virt 1/service 443 https
   group owa
   rport 443
   pbind clientip norport
   dbind forceproxy
/c/slb/virt 1/service 443 https/http
   comppol 1
/c/slb/virt 1/service 443 https/ssl
   srvrcert cert 1
   sslpol 1
/c/slb/virt 1/service 443 https/appshape
   add 10 exchange2016
/c/slb/virt 1/service 443 https/pip
   mode address
```

```
   addr v4 192.168.11.231 255.255.255.255 persist disable
/c/slb/virt 1/service 25 smtp
   group 1
   rport 25
   pbind clientip norport
/c/slb/virt 1/service 110 pop3
   group POP3
   rport 110
   pbind clientip norport
/c/slb/virt 1/service 143 imap
   group IMAP
   rport 143
   pbind clientip norport
/c/slb/virt 1/service 993 basic-slb
   group POP3
   rport 993
   pbind clientip norport
/c/slb/virt 1/service 995 basic-slb
   group IMAP
   rport 995
   pbind clientip norport
```

AppShapes Configuration

```
/c/slb/appshape/script exchange2016
   ena
   import text
attach group as
attach group owa
attach group oa
attach group mapi
attach group ad
when INIT {
    set ::ptimeout 1800
}
when HTTP_REQUEST {
    switch -glob -- [string tolower [HTTP::path]] {
        "/microsoft-server-activesync*" {
```

```
    ## ActiveSync.
    group select as
    COMPRESS::disable
}
"/owa*" {
    ## Outlook Web Access
    group select owa
}
"/ecp*" {
    ## Exchange Control Panel.
    group select owa
}
"/ews*" {
    ## Exchange Web Services.
    group select oa
    COMPRESS::disable
}
"/oab*" {
    ## Offline Address Book.
    group select oa
}
"/rpc/rpcproxy.dll*" {
    ## Outlook Anywhere.
    group select oa
    COMPRESS::disable
}
"/mapi*" {
    ## mapi.
    group select mapi
    COMPRESS::disable
}
"/autodiscover*" {
    ## Autodiscover.
    group select ad
}
default {
    group select owa
```

```
        }
    }
    persist source_addr 255.255.255.255 any group $::ptimeout
    log "group selected [LB::server group], real selected  [LB::server
id]"
}
-----END
```

HA Configuration

```
/c/l3/hamode switch
/c/l3/ha/floatip 1
   ena
   ipver v4
   addr 192.168.11.240
   if 1
/c/l3/ha/switch
   def 1
/c/l3/ha/switch/trigger/ifs
   add 1
/c/slb/gslb
   off
   hostlk ena
```

Alteon Standby Configuration

Network Configuration

```
/c/l3/if 1
   ena
   ipver v4
   addr 192.168.11.247
   vlan 1704
   peer 192.168.11.241
   descr "Exchange.LAN.intefrace"
/c/l3/gw 1
   ena
   ipver v4
   addr 192.168.11.254
```

```
Sync Configuration
/c/slb/sync
   pips e
   certs e
   gw e
/c/slb/sync/peer 1
   ena
   addr 192.168.11.241
```

HA Configuration

```
/c/l3/hamode switch
/c/l3/ha/floatip 1
   ena
   ipver v4
   addr 192.168.11.240
   if 1
/c/l3/ha/switch
   def 1
/c/l3/ha/switch/trigger/ifs
   add 1
/c/slb/gslb
   off
   hostlk ena
```

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