Alteon Application Switch (AAS) Optimizing the Delivery of Blackboard Learn™ 9.1 servers
Contents

INTRODUCTION ........................................................................................................................................... 3

BLACKBOARD LEARN.................................................................................................................................. 4
  STUDENT-CENTERED LMS ......................................................................................................................... 4
  EFFICIENT TEACHING TASKS ...................................................................................................................... 4

ALTEON NEXT GENERATION (NG) ADC ........................................................................................................ 5
  ALTEON NG: COMPLETE APPLICATION SLA ASSURANCE ................................................................ 5
  ARCHITECTURALLY DESIGNED TO ENSURE APPLICATION SLA ......................................................... 5
  FULL APPLICATION SLA VISIBILITY WITH RADWARE’S APPLICATION PERFORMANCE
  MONITORING (APM) .................................................................................................................................. 6
  FASTView™ WEB PERFORMANCE OPTIMIZATION (WPO) ................................................................. 6
  UNIQUE ATTACK MITIGATION ARCHITECTURE ....................................................................................... 6
  COMPLETE LAYER 4 TO 7 FEATURE SET .................................................................................................... 6

ALTEON NG AND BLACKBOARD LEARN ARCHITECTURE ...................................................................... 8

  IMPORTANT IMPLEMENTATION NOTES .................................................................................................... 9
  SOFTWARE AND HARDWARE ..................................................................................................................... 9

CONFIGURATION ........................................................................................................................................ 10
  ALTEON ACTIVE CONFIGURATION ............................................................................................................. 10
    Network Configuration ................................................................................................................................ 10
    Sync Configuration .................................................................................................................................... 10
    Compression Configuration ....................................................................................................................... 10
    SSL Configuration .................................................................................................................................... 11
    Health Monitoring Configuration .............................................................................................................. 11
    PIP Configuration ..................................................................................................................................... 11
    Real Servers Configuration ...................................................................................................................... 11
    Server Groups Configuration .................................................................................................................... 11
    Alteon process directions ............................................................................................................................ 11
    Virtual Servers and Services Configuration ............................................................................................... 12
    VRRP Configuration ................................................................................................................................ 12

  ALTEON BACKUP CONFIGURATION ....................................................................................................... 13
    Network Configuration ................................................................................................................................ 13
    Sync Configuration .................................................................................................................................... 13
    PIP Configuration ..................................................................................................................................... 13
    VRRP Configuration ................................................................................................................................ 14

APPENDIX A ................................................................................................................................................. 15

  ALTEON ACTIVE CONFIGURATION SCRIPT ........................................................................................... 15
  ALTEON BACKUP CONFIGURATION SCRIPT ............................................................................................ 18

TECHNICAL SUPPORT ................................................................................................................................... 23
Introduction

Blackboard Learn is a powerful learning and knowledge transfer environment, enabling educational innovations everywhere by connecting people and technology. Millions of people use Blackboard every day at academic institutions around the globe, including colleges, universities, K-12 schools, and other education providers, as well as textbook publishers and student-focused merchants that serve education providers and their students. Additionally, the Blackboard Learn System makes online learning environments easier to manage and administer.

This document contains best practice information about the set-up, configuration, and customization of a Blackboard Learn system integrated with an Alteon Next Generation (NG) ADC platform.
Blackboard Learn

A learning management system (LMS) should make teaching and learning easier, not more complicated. Blackboard Learn is your foundation for a rich education experience, delivering the technology, services, and support you expect in an LMS.

Student-Centered LMS

Blackboard Learn is designed with the student in mind. It delivers the tools you need, the way you want:

- **Global navigation** puts your grades and assignments at your fingertips.
- **Updates and notifications** keep you informed of due dates and events.
- **Collaborative spaces** keep you in touch with your academic community.
- **Mobile capabilities** let you learn on your terms—anywhere, anytime.

Efficient Teaching Tasks

Blackboard Learn enhances basic teaching tasks such as grading and creating assessments. And with an intuitive design, this is one LMS that will save you time in and out of the classroom:

- **Give real-time feedback** with student-preferred communication such as texts and posts.
- **Share, create, and manage engaging content**—no coding skills required.
- **Easily create and grade assessments**—and evaluate their effectiveness.
- **Analyze data** and turn it into actionable information.
Alteon Next Generation (NG) ADC

Alteon NG is Radware’s next generation application delivery controller (ADC) and the only load balancer that guarantees application SLA. It provides advanced, end-to-end local and global load balancing capabilities for all Web, cloud, and mobile based applications. The Alteon NG load balancer combines best-of-breed application delivery plus advanced services to companies with key application infrastructure challenges, affecting Web applications such as heavier, more complex Web content; mobility and BYOD; and migration to the cloud.

Alteon NG: Complete Application SLA Assurance

The Alteon NG ADC solution is the industry’s only ADC built from the ground up, to ensure application SLA at all times. It innovatively leverages several next-generation services that are not available in any other ADCs in the market:

- Alteon NG is architecturally designed to ensure application SLA by delivering full resource isolation between different applications, while avoiding resources from being maxed-out.
- Alteon NG incorporates application performance monitoring (APM) capabilities that provide full visibility for an application’s SLA, breaking it down by application, transaction, or location.
- Alteon NG integrates FastView (the industry’s most advanced Qeb performance optimization [WPO] technology), which accelerates application responses for higher conversion rates, revenues, and productivity.
- Alteon NG is part of unique attack mitigation architecture, allowing accurate detection and mitigation of the most advanced cyber-attacks.

Architecturally Designed to Ensure Application SLA

Alteon NG enables companies to flexibly allocate a separate virtual ADC (vADC) instance per application, service, or department. Each vADC instance is fully isolated from neighboring instances and has independent CPU cores, memory, network stack, management control and operating system versions. As a result, the Alteon ADC ensures complete fault isolation and a predictable application SLA for all delivered Web applications at all times. In addition, next-generation services can be quickly and safely enabled without impacting the performance of other service applications.

Alteon NG is designed to dynamically scale when necessary. It can scale up on-demand, such as adding more throughput, services, and vADCs with no hardware modifications. It can also scale out-of-the-box on demand by leveraging external, extensible resource pools (such as server infrastructure) for computational intensive NG services. As a result, Alteon NG allows for cost-effective consolidation, eliminating the purchase of additional ADC units. It provides easy, fast provisioning of additional vADC instances with no service interruption at a fraction of the cost of buying a physical ADC.
Full Application SLA Visibility with Radware’s Application Performance Monitoring (APM)

Radware’s Application Performance Monitoring (APM) module provides real-time tracking of application SLA by measuring real-user transactions, including real errors. Embedded in Alteon NG, APM is an out-of-the-box solution that does not require synthetic transaction scripting or additional installation, reducing deployment time and costs. APM intuitively tracks SLA by location, user, and application and transaction type to expedite root cause analysis. In addition, it provides historical reports based on user-defined SLAs that feature granular analysis, allowing for the measurement of delay per transaction phase, including data center time, network latency, and browser rendering time.

FastView™ Web Performance Optimization (WPO)

Radware’s FastView technology, part of Alteon NG, is the most advanced application acceleration technology in the industry. By adding Web Performance Optimization (WPO) capabilities on top of the standard application acceleration features, it accelerates application response time up to 40%. FastView acceleration treatments are optimized according to each user, end-user device, and browser with specific optimization for mobile devices. As a result, FastView increases conversion rates and revenues and also improves productivity and customer loyalty.

In addition, FastView automatically optimizes new applications, new application versions, and new application modules, reducing manual code optimization while letting you focus on core business competence.

Unique Attack Mitigation Architecture

A key component of Radware’s Attack Mitigation Network (AMN), Alteon NG delivers the best Web application security coverage. It leverages a unique Defense Messaging mechanism that efficiently mitigates attacks by signaling attack information to Radware’s DefensePipe cloud service and DefensePro, a data center attack mitigator located at the network perimeter.

The integration of advanced Web Application Firewall (WAF) capabilities, such as a unique out-of-path WAF deployment mode and auto-policy generation features, enables risk free implementation. In addition, full instance isolation and resource reservation ensures ADC resources. Even when WAF policies are updated, there is no impact on application availability and performance. This results in a secured Web application with guaranteed SLA. Finally, Alteon NG features a built-in authentication gateway, which provides single sign-on (SSO) capabilities by supporting RADIUS, Active Directory, LDAP, and RSA SecurID, and simplifies the user experience without compromising application security.

Complete Layer 4 to 7 Feature Set

Alteon NG delivers a complete set of Layer 4 to 7 services to ensure the availability, performance and security of mission-critical applications in local and cloud data centers. These extend to traffic redirection, content modification, persistency, redundancy, advanced health monitoring, and global server load balancing (GSLB).
In addition, Alteon NG integrates advanced modules such as bandwidth management and link load balancing, reducing data center footprint and simplifying deployment.
Figure 1: Tested Alteon NG Network Architecture

Alteon NG and Blackboard Learn Architecture
Important Implementation Notes

1. Blackboard Learn requires session timeout for 5 hours. Ensure that the aging time on the Alteon is set to 300 minutes.

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

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

3. HTTP VIP is used for redirect traffic to HTTPS.

4. Persistency is used by the Alteon insert cookie mechanism.

5. Health monitoring is performed by checking port 8085 (the default HTTP port for BB servers is 8080; the tested network uses port 8085), and checking the `/webapps/portal/healthCheck` path.

6. HTTP modification must be used because the Blackboard servers in the return traffic header and body links are marked as HTTP:// instead of HTTPS://.

7. Compression must be used not only for performance but for informing the Blackboard server not to use compression on the payload. If the traffic is compressed, Alteon cannot perform the HTTP modification.

8. X-Forwarded-For is used for the Blackboard server’s statistics.

Software and Hardware

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

- Windows 2008R2 x64
- Radware’s Alteon VA, version 30.3 (2 VMs)
- Blackboard Learn v.9.1
Configuration

Alteon Active Configuration

Network Configuration

```
/c/port 1
   pvid 101
/c/12/vlan 1
   learn ena
   def 0
/c/12/vlan 101
   ena
   name "servers.net"
   learn ena
   def 1
/c/12/stg 1/clear
/c/12/stg 1/add 1 2 101
/c/sys/access/sshd/ena
/c/sys/access/sshd/sshv1 dis
/c/sys/access/sshd/on
/c/13/if 1
   ena
   ipver v4
   addr 192.168.10.2
   vlan 101
/c/13/gw 1
   ena
   ipver v4
   addr 192.168.10.254
```

Sync Configuration

```
/c/slb/sync/passphrs
   c40193f98009051a7e2dab472a32092c3a666dc9c96dee38a7a5fb3f197d4cb

/c/slb/sync
   prios d
   certs e
/c/slb/sync/peer 1
   ena
   addr 192.168.10.3
```

Compression Configuration

```
/c/slb/accel/compress
   on
/c/slb/accel/compress/comppol 1
   name "comp1"
   minsize 1
   ena
```
SSL Configuration

```
/c/slb/ssl/certs/srvrcert 1
  name "bb.bradware.com"
/c/slb/ssl/certs/import srvrcert "1" text
/c/slb/ssl on
/c/slb/ssl/sslpol 1
  name "Blackboard"
  ena
```

Health Monitoring Configuration

```
/c/slb/advhc/health Blackboard_HM HTTP
  name "HM Blackboard"
  dport 8085
  inter 15
/c/slb/advhc/health Blackboard_HM HTTP/http
  path "/webapps/portal/healthCheck"
```

PIP Configuration

```
/c/slb/pip/type vlan
/c/slb/pip/type port
/c/slb/pip/add 192.168.10.201 1
```

Real Servers Configuration

```
/c/slb/real 1
  ena
  ipver v4
  rip 192.168.10.21
  name "Blackboard.server.1"
/c/slb/real 2
  ena
  ipver v4
  rip 192.168.10.22
  name "Blackboard.server.2"
```

Server Groups Configuration

```
/c/slb/group 1
  ipver v4
  metric roundrobin
  health Blackboard_HM
  add 1
  add 2
  name "Blackboard.group"
```

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 192.168.10.200
  vname "Blackboard.vip"
/c/slb/virt 1/service 443 https
  name "SSL Offloading"
  group 1
  rport 8085
  dbind forceproxy
  ptmout 300
/c/slb/virt 1/service 443 https/http
  compol 1
  xforward ena
  httpmod 2
/c/slb/virt 1/service 443 https/ssl
  srvcert cert 1
  sslpol 1
/c/slb/virt 1/service 80 http
  action redirect
  group 1
  rport 0
  redirect "https://$HOST/$PATH/"
  dbind ena
/c/slb/layer7/slb
/c/slb/virt 1/service 443 https/pbind cookie insert "sessionid"
  300:0:0
/c/slb/virt 1/service 443 https/rcount 1
/c/slb/layer7/httpmod 2
  ena
  name "http to https"
/c/slb/layer7/httpmod 2/rule 1 text
  ena
  name "http to https"
  directn resp
  body include
  action replace "FROMTEXT=http://" "TOTEXT=https://"
```

VRRP Configuration

```
/c/l3/vrrp/on
/c/l3/vrrp/vr 11
  ena
  ipver v4
  vrid 11
  if 1
  prio 250
  addr 192.168.10.1
/c/l3/vrrp/vr 12
  ena
  ipver v4
  vrid 12
  if 1
  prio 250
  addr 192.168.10.200
```
Alteon Backup Configuration

**Network Configuration**

```
/c/port 1
  pvid 101
/c/l2/vlan 1
  learn ena
def 0
/c/l2/vlan 101
  ena
  name "servers.net"
  learn ena
def 1
/c/l2/stg 1/clear
/c/l2/stg 1/add 1 2 101
/c/sys/access/sshd/ena
/c/sys/access/sshd/sshv1 dis
/c/sys/access/sshd/on
/c/l3/if 1
  ena
  ipver v4
  addr 192.168.10.3
  vlan 101
/c/l3/gw 1
  ena
  ipver v4
  addr 192.168.10.254
```

**Sync Configuration**

```
/c/slb/sync/passphrs
a7a3ba41a2a2b241e6e2b2be500102822fe33bad001cf4987b6c68aa7ebdc95d
```

```
/c/slb/sync
  prios d
certs e
/c/slb/sync/peer 1
  ena
  addr 192.168.10.2
```

**PIP Configuration**

```
/c/slb/pip/type vlan
/c/slb/pip/type port
/c/slb/pip/add 192.168.10.202 1
```
VRRP Configuration

```
/c/l3/vrrp/on
/c/l3/vrrp/on
/c/l3/vrrp/vr 11
  ena
  ipver v4
  vrid 11
  if 1
  prio 101
  addr 192.168.10.1
/c/l3/vrrp/vr 12
  ena
  ipver v4
  vrid 12
  if 1
  prio 101
  addr 192.168.10.200
```
Appendix A

Alteon Active Configuration Script

```plaintext
script start "Alteon Application Switch VA" 4  /**** DO NOT EDIT THIS LINE!
/* Configuration dump taken 08:14:22 Thu Jan 29, 2015
/* Configuration last applied at 08:08:26 Thu Jan 29, 2015
/* Configuration last save at 08:08:39 Thu Jan 29, 2015
/* Version 30.0.3.0, Mgmt MAC address 00:50:56:90:7d:1b
/* To restore SSL Offloading configuration and management HTTPS access,
/* it is recommended to include the private keys in the dump.
/c/sys/mmgmt
tftp mgmt
/c/sys
   idle 10080
/c/sys/access
   tnet ena
/c/port 1
   pvid 101
/c/l2/vlan 1
   learn ena
   def 0
/c/l2/vlan 101
   ena
   name "servers.net"
   learn ena
   def 1
/c/l2/stg 1/clear
/c/l2/stg 1/add 1 2 101
/c/sys/access/sshd/ena
/c/sys/access/sshd/sshv1 dis
/c/sys/access/sshd/on
/c/l3/if 1
   ena
   ipver v4
   addr 192.168.10.2
   vlan 101
/c/l3/gw 1
   ena
   ipver v4
   addr 192.168.10.254
/c/l3/vrrp/on
/c/l3/vrrp/vr 11
   ena
   ipver v4
   vrid 11
   if 1
   prio 250
   addr 192.168.10.1
/c/l3/vrrp/vr 12
   ena
   ipver v4
   vrid 12
   if 1
   prio 250
   addr 192.168.10.200
/c/slb/accel/compress
```

on

/c/slb/accl/compress/comppol 1
name "compl"
minsize 1
ena

/c/slb/certs/key 1
name "bb.bbradware.com"

/c/slb/certs/import "1" text
------BEGIN CERTIFICATE REQUEST------
MIIBWjCBxAIBADADBMrkwFwVDQKVQDDB2BiYi51YnJh2HdcmUuY29tMIGfMA0GCSqG
SIb3QEQBAQUAAGNADCBiQKBgDrKuRvgBr70FeEQKNyU8cQb/KYPFVwM2XdxCa7rJd
v47a81KjFaS2U6MZ1G/x97To+2/cYGsvgHQ1vkGJxO8/KFZ+DE1OCFqgud31ouq
8iR76UIrgjmpHxcknMkJrRumxVHzJiNAbE9onod01Mfah1cLq6PHVTTm8s2uF

/c/slb/certs/key 2
name "bb.bbradware.com"}

/c/slb/ssl/certs/key 1
name "bb.bbradware.com"

/c/slb/ssl/certs/key 2
name "bb.bbradware.com"

/c/slb/ssl/certs/key 3
name "bb.bbradware.com"

/c/slb/ssl/certs/key WebManagementCert

/c/slb/ssl/certs/import request "1" text
-----BEGIN CERTIFICATE REQUEST-----
MIIBWjCCAhugAwIBAgIEVMi+njANBgkqkhikiG9w0BAQQUFADAABMrkwFwYDVQQDBBBi
Y15iYnhJzhHdhcmUuY29tM4BtDIE1EMDExOgVzay1q5cXMjAy1cXDTI1EMDExMjAy1c
GZEMzbcGAIUEAwQMiuUyMwYRY3XJJt6NnTCBnzANBqkgkhikiG9w0BAQQUFADAABMr

/c/slb/ssl/certs/srvrcert 1
name "bb.bbradware.com"

/c/slb/ssl/certs/srvrcert WebManagementCert

/c/slb/ssl/certs/import srvrcert "WebManagementCert" text
------END CERTIFICATE REQUEST------

/c/slb/ssl/certs/srvrcert "1" text
------BEGIN CERTIFICATE REQUEST------
MIICzCAeaigAwIBAgIEMi+njANBgkqkhikiG9w0BAQQUFADAABMrkwFwYDVQQDBBBi
Y15iYnhJzhHdhcmUuY29tM4BtDIE1EMDExOgVzay1q5cXMjAy1cXDTI1EMDExMjAy1c
GZEMzbcGAIUEAwQMiuUyMwYRY3XJJt6NnTCBnzANBqkgkhikiG9w0BAQQUFADAABMr

/c/slb/ssl/certs/srvrcert "1" text
------BEGIN CERTIFICATE------
MIICfzCCAeigAwIBAgIEVMi+njANBgkqkhikiG9w0BAQQUFADAABMrkwFwYDVQQDBBBi
Y15iYnhJzhHdhcmUuY29tM4BtDIE1EMDExOgVzay1q5cXMjAy1cXDTI1EMDExMjAy1c
GZEMzbcGAIUEAwQMiuUyMwYRY3XJJt6NnTCBnzANBqkgkhikiG9w0BAQQUFADAABMr

/c/slb/ssl/certs/srvrcert "1" text
------BEGIN CERTIFICATE-----
MIICfzCCAeigAwIBAgIEVMi+njANBgkqkhikiG9w0BAQQUFADAABMrkwFwYDVQQDBBBi
Y15iYnhJzhHdhcmUuY29tM4BtDIE1EMDExOgVzay1q5cXMjAy1cXDTI1EMDExMjAy1c
GZEMzbcGAIUEAwQMiuUyMwYRY3XJJt6NnTCBnzANBqkgkhikiG9w0BAQQUFADAABMr

/c/slb/ssl/certs/srvrcert "1" text
------BEGIN CERTIFICATE-----
MIICfzCCAeigAwIBAgIEVMi+njANBgkqkhikiG9w0BAQQUFADAABMrkwFwYDVQQDBBBi
Y15iYnhJzhHdhcmUuY29tM4BtDIE1EMDExOgVzay1q5cXMjAy1cXDTI1EMDExMjAy1c
GZEMzbcGAIUEAwQMiuUyMwYRY3XJJt6NnTCBnzANBqkgkhikiG9w0BAQQUFADAABMr

Alteon Application Switch (AAS) Optimizing the Delivery of Blackboard Learn 9.1 servers

January 28, 2015

```
/c/slb/pip/add 192.168.10.201 1
/c/slb/port "1"
    client ena
    server ena
    proxy ena
/c/slb/port "2"
    client ena
    server ena
    proxy ena
/c/slb/virt 1
    ena
    ipver v4
    vip 192.168.10.200
    vname "Blackboard.vip"
/c/slb/virt 1/service 443 https
    name "SSL Offloading"
    group 1
    rport 8085
    dbind forceproxy
    ptmout 300
/c/slb/virt 1/service 443 https/http
    comppol 1
    xforward ena
    httpmod 2
/c/slb/virt 1/service 443 https/ssl
    srvrcert cert 1
    sslpol 1
/c/slb/virt 1/service 80 http
    action redirect
    group 1
    rport 0
    redirect "https://$HOST/$PATH/"
    dbind ena
/c/slb/layer7/slb
/c/slb/virt 1/service 443 https/pbind cookie insert "sessionid"
    300:0:0
/c/slb/virt 1/service 443 https/http/rcount 1
/c/slb/layer7/httpmod 2
    ena
    name "http to https"
/c/slb/layer7/httpmod 2/rule 1 text
    ena
    name "http to https"
    directn resp
    body include
    action replace "FROMTEXT=http://" "TOTEXT=https://"
/c/slb/gslb
    off
    hostlk ena
/c/sys/access/https/cert WebManagementCert
/c/sys/access/https/cert e
```

**Alteon Backup Configuration Script**

script start "Alteon Application Switch VA" 4  /**** DO NOT EDIT THIS LINE!
/* Configuration dump taken 08:27:08 Thu Jan 29, 2015
/* Configuration last applied at 08:08:35 Thu Jan 29, 2015
/* Configuration last save at 08:08:35 Thu Jan 29, 2015
/* Version 30.0.3.0, Mgmt MAC address 00:50:56:90:7d:1f
/* To restore SSL Offloading configuration and management HTTPS access,
/* it is recommended to include the private keys in the dump.
/c/sys/mmgmt
tftp mgmt
/c/sys
idle 10080
/c/sys/access
tnet ena
/c/port 1
pvid 101
/c/12/vlan 1
learn ena
def 0
/c/12/vlan 101
ena
name "servers.net"
learn ena
def 1
/c/12/stg 1/clear
/c/12/stg 1/add 1 2 101
/c/sys/access/sshd/ena
/c/sys/access/sshd/sshv1 dis
/c/sys/access/sshd/on
/c/13/if 1
ena
ipver v4
addr 192.168.10.3
vlan 101
/c/13/gw 1
ena
ipver v4
addr 192.168.10.254
/c/13/vrrp/on
/c/13/vrrp/vr 11
ena
ipver v4
vrid 11
if 1
prio 101
addr 192.168.10.1
/c/13/vrrp/vr 12
ena
ipver v4
vrid 12
if 1
prio 101
addr 192.168.10.200
/c/slb/accel/compress
on
/c/slb/accel/compress/comppol 1
name "comp1"
minsize 1
ena
/c/slb/ssl/certs/key 1
name "bb.bradware.com"
/c/slb/ssl/certs/key WebManagementCert
/c/slb/ssl/certs/request 1
Alteon Application Switch (AAS) Optimizing the Delivery of Blackboard Learn 9.1 servers

January 28, 2015

---BEGIN CERTIFICATE REQUEST-----
MIIBwqCBAADBAmBMRkwFwVDQQDBBiY15iYnJh2HdhcmUuY29tMIGfMA0GCSqG
SiBD3QEBAAQUA4GNADCBiQK9q9DKuRvgsBt40FegKNYUq8cQb/kYFwUmZXdxCa7rd
v47a81kFjaSUZ6MZ1G/x97Oe2+syzgsfvoH0tvkGJX08/FKZ/DE1occFgud3louq
8iR76U1RjgmHTcxkmmMxJ2mmVvIzhJinAbE9onod01Mfahc16PGVTm8u2Fv
cmA2W1DAQAOAwADQYJKoRlHvcNQAEPFBQADgYEAKw8r8inQ9ghacDkwLaBwJ
siuqgrYV0qj1Mcgbem1z+D1pQfT/nv40inp5u04x5spxfWJB6p6b+K4ymxB
vCiVlpm1Rttp2y+2ir+EAYoa99XoNi4NAyqQkLfuvb+5Mqywg8Zg9XnvhVVK6UWPa
/V8AYSW+vsqrmKQyzn=

---END CERTIFICATE REQUEST-----

---BEGIN CERTIFICATE REQUEST-----
MIIBazCB1QIBADAsMSwOKAYDVQQDCEZWSzdWx0X0dlbmvVYXR1ZGFbHRl2b25f
QKJX01ncWq28WYQYJ02iHvcNQAEQBQA0gY0AMIGJAoGBAEKytN49egHdqA
2GU0CLcp0Jea3NdVu1R+Amx+9QhJ40y/W/YaPgWhmbmTQe9pYr9gE6nW1Xahmr1UHb
jxMNnHb+UruGPyxk0e6phz9h9hBAALL1LrcrmgK0F0e12antbABENOUHlpE5K1
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---END CERTIFICATE REQUEST-----

---BEGIN CERTIFICATE REQUEST-----
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GyL6fMasGAI1udwQEQwIC5DANBngkhhk1G9w0BAQFMAAOBGQAHQRPspMgm6HwpG5
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---END CERTIFICATE REQUEST-----

---BEGIN CERTIFICATE REQUEST-----
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gkIoVbbktcGkKax22swe/0i0A==

---END CERTIFICATE REQUEST-----
Alteon Application Switch (AAS) Optimizing the Delivery of Blackboard Learn 9.1 servers

January 28, 2015

```plaintext
+/zm6Mn8xG647G67SICUwjsIFvKpWN0kbt5JOeKjtenkGKWkCZ+8R8i/3DWhpo0FW4
S+2reauuNUpAPGjYjNYT455B1b+XGBm9pqyoKNQCFE2G8zLqYbY58BxK/qXH1kAj
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------END CERTIFICATE------

/c/slb/sync/passphrs
a7a3ba41a2a2b241e6e2b2be500102822fe33bad001cf4987b6c68a7ebdc95d
/c/slb/ssl
  on
  /c/slb/ssl/sslpol 1
    name "Blackboard"
    ena
/c/slb/accel/caching
  on
/c/slb/accel/fastview/fvrevision 5
/c/slb/advhc/health Blackboard_HM HTTP
  name "HM Blackboard"
  dport 8085
  inter 15
/c/slb/advhc/health Blackboard_HM HTTP/http
  path "/webapps/portal/healthCheck"
/c/slb
  on
/c/slb/adv
  direct ena
  vstat ena
  submac "ena"
/c/slb/sync
  prios d
certs e
/c/slb/sync/peer 1
  ena
  addr 192.168.10.2
/c/slb/real 1
  ena
  ipver v4
  rip 192.168.10.21
  name "Blackboard.server.1"
/c/slb/real 2
  ena
  ipver v4
  rip 192.168.10.22
  name "Blackboard.server.2"
/c/slb/group 1
  ipver v4
  metric roundrobin
  health Blackboard_HM
  add 1
  add 2
  name "Blackboard.group"
/c/slb/pip/type vlan
/c/slb/pip/type port
/c/slb/pip/add 192.168.10.202 1
/c/slb/port "1"
  client ena
  server ena
  proxy ena
/c/slb/port "2"
  client ena
  server ena
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/c/slb/virt 1
  ena
  ipver v4
  vip 192.168.10.200
  vname "Blackboard.vip"
/c/slb/virt 1/service 443 https
  name "SSL Offloading"
  group 1
  rport 8085
  dbind forceproxy
  ptmout 300
/c/slb/virt 1/service 443 https/http
  comppol 1
  xforward ena
  httpmod 2
/c/slb/virt 1/service 443 https/ssl
  srvrcert cert 1
  sslpol 1
/c/slb/virt 1/service 80 http
  action redirect
  group 1
  rport 0
  redirect "https://$HOST/$PATH/"
  dbind ena
/c/slb/virt 1/service 443 https/pbind cookie insert "sessionid"
  300:0:0
/c/slb/virt 1/service 443 https/http/rcount 1
/c/slb/layer7/httpmod 2
  ena
  name "http to https"
/c/slb/layer7/httpmod 2/rule 1 text
  ena
  name "http to https"
  directn resp
  body include
  action replace "FROMTEXT=http://" "TOTEXT=https://"
/c/slb/gsl
  off
  hostlk ena
/c/sys/access/https/cert WebManagementCert
/c/sys/access/https e
/script end  **** DO NOT EDIT THIS LINE!
Technical Support


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