

ALTEON VA FOR AWS GETTING STARTED GUIDE

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@author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>

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IN NO EVENT SHALL RADWARE LTD. OR ANY OF ITS AFFILIATED ENTITIES BE LIABLE FOR ANY DAMAGES INCURRED BY THE USE OF THE PRODUCTS (INCLUDING BOTH HARDWARE AND SOFTWARE) DESCRIBED IN THIS USER GUIDE, OR BY ANY DEFECT OR INACCURACY IN THIS USER GUIDE ITSELF. THIS INCLUDES BUT IS NOT LIMITED TO ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION). THE ABOVE LIMITATIONS WILL APPLY EVEN IF RADWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF IMPLIED WARRANTIES OR LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Limitations de la Garantie et Responsabilité

RADWARE LTD. OU SES ENTITIES AFFILIES NE POURRONT EN AUCUN CAS ETRE TENUES RESPONSABLES DES DOMMAGES SUBIS DU FAIT DE L'UTILISATION DES PRODUITS (EN CE COMPRIS LES MATERIELS ET LES LOGICIELS) DECRITS DANS CE MANUEL D'UTILISATION, OU DU FAIT DE DEFAUT OU D'IMPRECISIONS DANS CE MANUEL D'UTILISATION, EN CE COMPRIS, SANS TOUTEFOIS QUE CETTE ENUMERATION SOIT CONSIDEREE COMME LIMITATIVE, TOUS DOMMAGES DIRECTS, INDIRECTS, ACCIDENTELS, SPECIAUX, EXEMPLAIRES, OU ACCESSOIRES (INCLUANT, MAIS SANS S'Y RESTREINDRE, LA FOURNITURE DE PRODUITS OU DE SERVICES DE REMPLACEMENT; LA PERTE D'UTILISATION, DE DONNEES OU DE PROFITS; OU L'INTERRUPTION DES AFFAIRES). LES LIMITATIONS CI-DESSUS S'APPLIQUERONT QUAND BIEN MEME RADWARE A ETE INFORMEE DE LA POSSIBLE EXISTENCE DE CES DOMMAGES. CERTAINES JURIDICTIONS N'ADMETTANT PAS LES EXCLUSIONS OU LIMITATIONS DE GARANTIES IMPLICITES OU DE RESPONSABILITE EN CAS DE DOMMAGES ACCESSOIRES OU INDIRECTS, LESDITES LIMITATIONS OU EXCLUSIONS POURRAIENT NE PAS ETRE APPLICABLE DANS VOTRE CAS.

Haftungs- und Gewährleistungsausschluss

IN KEINEM FALL IST RADWARE LTD. ODER EIN IHR VERBUNDENES UNTERNEHMEN HAFTBAR FÜR SCHÄDEN, WELCHE BEIM GEBRAUCH DES PRODUKTES (HARDWARE UND SOFTWARE) WIE IM BENUTZERHANDBUCH BESCHRIEBEN, ODER AUFGRUND EINES FEHLERS ODER EINER UNGENAUIGKEIT IN DIESEM BENUTZERHANDBUCH SELBST ENTSTANDEN SIND. DAZU GEHÖREN UNTER ANDEREM (OHNE DARAUF BEGRENZT ZU SEIN) JEDLICHE DIREKTEN; IDIREKTEN; NEBEN; SPEZIELLEN, BELEGTEN ODER FOLGESCHÄDEN (EINSCHLIESSLICH ABER NICHT BEGRENZT AUF BESCHAFFUNG ODER ERSATZ VON WAREN ODER DIENSTEN, NUTZUNGSAusFALL, DATEN- ODER GEWINNVERLUST ODER BETRIEBSUNTERBRECHUNGEN). DIE OBEN GENANNTEN BEGRENZUNGEN GREIFEN AUCH, SOFERN RADWARE AUF DIE MÖGLICHKEIT EINES SOLCHEN SCHADENS HINGEWIESEN WORDEN SEIN SOLLTE. EINIGE RECHTSORDNUNGEN LASSEN EINEN AUSSCHLUSS ODER EINE BEGRENZUNG STILLSCHWEIGENDER GARANTIEN ODER HAFTUNGEN BEZÜGLICH NEBEN- ODER FOLGESCHÄDEN NICHT ZU, SO DASS DIE OBEN DARGESTELLTE BEGRENZUNG ODER DER AUSSCHLUSS SIE UNTER UMSTÄNDEN NICHT BETREFFEN WIRD.

Safety Instructions

The following safety instructions are presented in English, French, and German.

Safety Instructions

CAUTION

A readily accessible disconnect device shall be incorporated in the building installation wiring.

Due to the risks of electrical shock, and energy, mechanical, and fire hazards, any procedures that involve opening panels or changing components must be performed by qualified service personnel only.

To reduce the risk of fire and electrical shock, disconnect the device from the power line before removing cover or panels.

The following figure shows the caution label that is attached to Radware platforms with dual power supplies.

Figure 1: Electrical Shock Hazard Label

CAUTION	ATTENTION
<p>This unit has more than one power supply. Disconnect all power supplies before maintenance to avoid electric shock.</p>	<p>Cette unité a plus d'une source d'alimentation électrique. Débranchez toutes les sources d'alimentations électriques avant toute maintenance pour éviter les chocs électriques.</p>

DUAL-POWER-SUPPLY-SYSTEM SAFETY WARNING IN CHINESE

The following figure is the warning for Radware platforms with dual power supplies.

Figure 2: Dual-Power-Supply-System Safety Warning in Chinese

**本设备有两个电源供电，未避免电击危险，操作时需要加倍小心。
只有当这两个电源完全断开时才可以安全操作**

Translation of [Dual-Power-Supply-System Safety Warning in Chinese](#):

This unit has more than one power supply. Disconnect all power supplies before maintenance to avoid electric shock.

SERVICING

Do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. There are no serviceable parts inside the unit.

HIGH VOLTAGE

Any adjustment, maintenance, and repair of the opened instrument under voltage must be avoided as much as possible and, when inevitable, must be carried out only by a skilled person who is aware of the hazard involved.

Capacitors inside the instrument may still be charged even if the instrument has been disconnected from its source of supply.

GROUNDING

Before connecting this device to the power line, the protective earth terminal screws of this device must be connected to the protective earth in the building installation.

LASER

This equipment is a Class 1 Laser Product in accordance with IEC60825 - 1: 1993 + A1:1997 + A2: 2001 Standard.

FUSES

Make sure that only fuses with the required rated current and of the specified type are used for replacement. The use of repaired fuses and the short-circuiting of fuse holders must be avoided. Whenever it is likely that the protection offered by fuses has been impaired, the instrument must be made inoperative and be secured against any unintended operation.

LINE VOLTAGE

Before connecting this instrument to the power line, make sure the voltage of the power source matches the requirements of the instrument. Refer to the Specifications for information about the correct power rating for the device.

48V DC-powered platforms have an input tolerance of 36-72V DC.

SPECIFICATION CHANGES

Specifications are subject to change without notice.



Note: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15B of the FCC Rules and EN55022 Class A, EN 55024; EN 61000-3-2; EN 61000-3-3; IEC 61000 4-2 to 4-6, IEC 61000 4-8 and IEC 61000-4-11 For CE MARK Compliance. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user is required to correct the interference at his own expense.

VCCI ELECTROMAGNETIC-INTERFERENCE STATEMENTS

Figure 3: Statement for Class A VCCI-certified Equipment

この装置は、クラス A 機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 **VCCI-A**

Translation of [Statement for Class A VCCI-certified Equipment](#):

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective action.

Figure 4: Statement for Class B VCCI-certified Equipment

この装置は、クラス B 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。 **VCCI-B**

Translation of [Statement for Class B VCCI-certified Equipment](#):

This is a Class B product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference.
Install and use the equipment according to the instruction manual.

KCC KOREA

Figure 5: KCC—Korea Communications Commission Certificate of Broadcasting and Communication Equipment



Figure 6: Statement For Class A KCC-certified Equipment in Korean

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Added "Statement For Class A KCC-certified Equipment in Korean" per instruction from Yaniv Ben Dor 26 Jan. 2012, in SG_Changed KCC Guide.pdf. Note that copying the Korean text from the PDF into this FM doc was fine and distilled using print-to-file and distillation, but the built-in *File>Print As PDF* did not work. Here is the text in Korean from the PDF:

이 기기는 업무용 (A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Translation of [Statement For Class A KCC-certified Equipment in Korean](#):

This equipment is Industrial (Class A) electromagnetic wave suitability equipment and seller or user should take notice of it, and this equipment is to be used in the places except for home.

SPECIAL NOTICE FOR NORTH AMERICAN USERS

For North American power connection, select a power supply cord that is UL Listed and CSA Certified 3 - conductor, [18 AWG], terminated in a molded on plug cap rated 125 V, [10 A changedMar12], with a minimum length of 1.5m [six feet] but no longer than 4.5m...For European connection, select a power supply cord that is internationally harmonized and marked "<HAR>", 3 - conductor, 0,75 mm2 minimum mm2 wire, rated 300 V, with a PVC insulated jacket. The cord must have a molded on plug cap rated 250 V, 3 A.

RESTRICT AREA ACCESS

The DC powered equipment should only be installed in a Restricted Access Area.

INSTALLATION CODES

This device must be installed according to country national electrical codes. For North America, equipment must be installed in accordance with the US National Electrical Code, Articles 110 - 16, 110 -17, and 110 -18 and the Canadian Electrical Code, Section 12.

INTERCONNECTION OF UNITS

Cables for connecting to the unit RS232 and Ethernet Interfaces must be UL certified type DP-1 or DP-2. (Note- when residing in non LPS circuit)

OVERCURRENT PROTECTION

A readily accessible listed branch-circuit over current protective device rated 15 A must be incorporated in the building wiring for each power input.

REPLACEABLE BATTERIES

If equipment is provided with a replaceable battery, and is replaced by an incorrect battery type, then an explosion may occur. This is the case for some Lithium batteries and the following is applicable:

- If the battery is placed in an **Operator Access Area**, there is a marking close to the battery or a statement in both the operating and service instructions.
- If the battery is placed elsewhere in the equipment, there is a marking close to the battery or a statement in the service instructions.

This marking or statement includes the following text warning:

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT BATTERY TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Caution – To Reduce the Risk of Electrical Shock and Fire

1. This equipment is designed to permit connection between the earthed conductor of the DC supply circuit and the earthing conductor equipment. See Installation Instructions.
2. All servicing must be undertaken only by qualified service personnel. There are not user serviceable parts inside the unit.
3. DO NOT plug in, turn on or attempt to operate an obviously damaged unit.
4. Ensure that the chassis ventilation openings in the unit are NOT BLOCKED.
5. Replace a blown fuse ONLY with the same type and rating as is marked on the safety label adjacent to the power inlet, housing the fuse.
6. Do not operate the device in a location where the maximum ambient temperature exceeds 40°C/104°F.
7. Be sure to unplug the power supply cord from the wall socket BEFORE attempting to remove and/or check the main power fuse.
CLASS 1 LASER PRODUCT AND REFERENCE TO THE MOST RECENT LASER STANDARDS IEC 60825-1:1993 + A1:1997 + A2:2001 AND EN 60825-1:1994+A1:1996+ A2:2001

AC units for Denmark, Finland, Norway, Sweden (marked on product):

- Denmark - "Unit is class I - unit to be used with an AC cord set suitable with Denmark deviations. The cord includes an earthing conductor. The Unit is to be plugged into a wall socket outlet which is connected to a protective earth. Socket outlets which are not connected to earth are not to be used!"
- Finland - (Marking label and in manual) - "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"
- Norway (Marking label and in manual) - "Apparatet må tilkoples jordet stikkontakt"
- Unit is intended for connection to IT power systems for Norway only.
- Sweden (Marking label and in manual) - "Apparaten skall anslutas till jordat uttag."

To connect the power connection:

1. Connect the power cable to the main socket, located on the rear panel of the device.
2. Connect the power cable to the grounded AC outlet.

CAUTION

Risk of electric shock and energy hazard. Disconnecting one power supply disconnects only one power supply module. To isolate the unit completely, disconnect all power supplies.

Instructions de sécurité

AVERTISSEMENT

Un dispositif de déconnexion facilement accessible sera incorporé au câblage du bâtiment.

En raison des risques de chocs électriques et des dangers énergétiques, mécaniques et d'incendie, chaque procédure impliquant l'ouverture des panneaux ou le remplacement de composants sera exécutée par du personnel qualifié.

Pour réduire les risques d'incendie et de chocs électriques, déconnectez le dispositif du bloc d'alimentation avant de retirer le couvercle ou les panneaux.

La figure suivante montre l'étiquette d'avertissement apposée sur les plateformes Radware dotées de plus d'une source d'alimentation électrique.

Figure 7: Étiquette d'avertissement de danger de chocs électriques

CAUTION	ATTENTION
This unit has more than one power supply. Disconnect all power supplies before maintenance to avoid electric shock.	Cette unité a plus d'une source d'alimentation électrique. Débranchez toutes les sources d'alimentations électriques avant toute maintenance pour éviter les chocs électriques.

AVERTISSEMENT DE SÉCURITÉ POUR LES SYSTÈMES DOTÉS DE DEUX SOURCES D'ALIMENTATION ÉLECTRIQUE (EN CHINOIS)

La figure suivante représente l'étiquette d'avertissement pour les plateformes Radware dotées de deux sources d'alimentation électrique.

Figure 8: Avertissement de sécurité pour les systèmes dotés de deux sources d'alimentation électrique (en chinois)

本设备有两个电源供电，未避免电击危险，操作时需要加倍小心。
只有当这两个电源完全断开时才可以安全操作

Traduction de la [Avertissement de sécurité pour les systèmes dotés de deux sources d'alimentation électrique \(en chinois\)](#):

Cette unité est dotée de plus d'une source d'alimentation électrique. Déconnectez toutes les sources d'alimentation électrique avant d'entretenir l'appareil ceci pour éviter tout choc électrique.

ENTRETIEN

N'effectuez aucun entretien autre que ceux répertoriés dans le manuel d'instructions, à moins d'être qualifié en la matière. Aucune pièce à l'intérieur de l'unité ne peut être remplacée ou réparée.

HAUTE TENSION

Tout réglage, opération d'entretien et réparation de l'instrument ouvert sous tension doit être évité. Si cela s'avère indispensable, confiez cette opération à une personne qualifiée et consciente des dangers impliqués.

Les condensateurs au sein de l'unité risquent d'être chargés même si l'unité a été déconnectée de la source d'alimentation électrique.

MISE A LA TERRE

Avant de connecter ce dispositif à la ligne électrique, les vis de protection de la borne de terre de cette unité doivent être reliées au système de mise à la terre du bâtiment.

LASER

Cet équipement est un produit laser de classe 1, conforme à la norme IEC60825 - 1: 1993 + A1: 1997 + A2: 2001.

FUSIBLES

Assurez-vous que, seuls les fusibles à courant nominal requis et de type spécifié sont utilisés en remplacement. L'usage de fusibles réparés et le court-circuitage des porte-fusibles doivent être évités. Lorsqu'il est pratiquement certain que la protection offerte par les fusibles a été détériorée, l'instrument doit être désactivé et sécurisé contre toute opération involontaire.

TENSION DE LIGNE

Avant de connecter cet instrument à la ligne électrique, vérifiez que la tension de la source d'alimentation correspond aux exigences de l'instrument. Consultez les spécifications propres à l'alimentation nominale correcte du dispositif.

Les plateformes alimentées en 48 CC ont une tolérance d'entrée comprise entre 36 et 72 V CC.

MODIFICATIONS DES SPÉCIFICATIONS

Les spécifications sont sujettes à changement sans notice préalable.

Remarque: Cet équipement a été testé et déclaré conforme aux limites définies pour un appareil numérique de classe A, conformément au paragraphe 15B de la réglementation FCC et EN55022 Classe A, EN 55024, EN 61000-3-2; EN 61000-3-3; IEC 61000 4-2 to 4-6, IEC 61000 4-8, et IEC 61000-4-11, pour la marque de conformité de la CE. Ces limites sont fixées pour fournir une protection raisonnable contre les interférences nuisibles, lorsque l'équipement est utilisé dans un environnement commercial. Cet équipement génère, utilise et peut émettre des fréquences radio et, s'il n'est pas installé et utilisé conformément au manuel d'instructions, peut entraîner des interférences nuisibles aux communications radio. Le fonctionnement de cet équipement dans une zone résidentielle est susceptible de provoquer des interférences nuisibles, auquel cas l'utilisateur devra corriger le problème à ses propres frais.

DÉCLARATIONS SUR LES INTERFÉRENCES ÉLECTROMAGNÉTIQUES VCCI

Figure 9: Déclaration pour l'équipement de classe A certifié VCCI

この装置は、クラス A 機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 **VCCI-A**

Traduction de la [Déclaration pour l'équipement de classe A certifié VCCI](#):

Il s'agit d'un produit de classe A, basé sur la norme du Voluntary Control Council for Interference by Information Technology Equipment (VCCI). Si cet équipement est utilisé dans un environnement domestique, des perturbations radioélectriques sont susceptibles d'apparaître. Si tel est le cas, l'utilisateur sera tenu de prendre des mesures correctives.

Figure 10: Déclaration pour l'équipement de classe B certifié VCCI

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。 **VCCI-B**

Traduction de la [Déclaration pour l'équipement de classe B certifié VCCI](#):

Il s'agit d'un produit de classe B, basé sur la norme du Voluntary Control Council for Interference by Information Technology Equipment (VCCI). S'il est utilisé à proximité d'un poste de radio ou d'une télévision dans un environnement domestique, il peut entraîner des interférences radio.

Installez et utilisez l'équipement selon le manuel d'instructions.

KCC Corée

Figure 11: KCC—Certificat de la commission des communications de Corée pour les équipements de radiodiffusion et communication.



Figure 12: Déclaration pour l'équipement de classe A certifié KCC en langue coréenne

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Translation de la [Déclaration pour l'équipement de classe A certifié KCC en langue coréenne](#):

Cet équipement est un matériel (classe A) en adéquation aux ondes électromagnétiques et le vendeur ou l'utilisateur doit prendre cela en compte. Ce matériel est donc fait pour être utilisé ailleurs qu' à la maison.

NOTICE SPÉCIALE POUR LES UTILISATEURS NORD-AMÉRICAINS

Pour un raccordement électrique en Amérique du Nord, sélectionnez un cordon d'alimentation homologué UL et certifié CSA 3 - conducteur, [18 AWG], muni d'une prise moulée à son extrémité, de 125 V, [10 A changedMar12], d'une longueur minimale de 1,5 m [six pieds] et maximale de 4,5m...Pour la connexion européenne, choisissez un cordon d'alimentation mondialement homologué et marqué "<HAR>", 3 - conducteur, câble de 0,75 mm² minimum, de 300 V, avec une gaine en PVC isolée. La prise à l'extrémité du cordon, sera dotée d'un sceau moulé indiquant: 250 V, 3 A.

ZONE A ACCÈS RESTREINT

L'équipement alimenté en CC ne pourra être installé que dans une zone à accès restreint. CODES D'INSTALLATION

Ce dispositif doit être installé en conformité avec les codes électriques nationaux. En Amérique du Nord, l'équipement sera installé en conformité avec le code électrique national américain, articles 110-16, 110 -17, et 110 -18 et le code électrique canadien, Section 12. INTERCONNEXION DES UNÎTES.

Les câbles de connexion à l'unité RS232 et aux interfaces Ethernet seront certifiés UL, type DP-1 ou DP-2. (Remarque- s'ils ne résident pas dans un circuit LPS) PROTECTION CONTRE LES SURCHARGES.

Un circuit de dérivation, facilement accessible, sur le dispositif de protection du courant de 15 A doit être intégré au câblage du bâtiment pour chaque puissance consommée.

BATTERIES REMPLAÇABLES

Si l'équipement est fourni avec une batterie, et qu'elle est remplacée par un type de batterie incorrect, elle est susceptible d'exploser. C'est le cas pour certaines batteries au lithium, les éléments suivants sont donc applicables:

- Si la batterie est placée dans une zone d'accès opérateur, une marque est indiquée sur la batterie ou une remarque est insérée, aussi bien dans les instructions d'exploitation que d'entretien.
- Si la batterie est placée ailleurs dans l'équipement, une marque est indiquée sur la batterie ou une remarque est insérée dans les instructions d'entretien.

Cette marque ou remarque inclut l'avertissement textuel suivant:

AVERTISSEMENT

RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UN MODÈLE INCORRECT. METTRE AU REBUT LES BATTERIES CONFORMÉMENT AUX INSTRUCTIONS.

Attention - Pour réduire les risques de chocs électriques et d'incendie

1. Cet équipement est conçu pour permettre la connexion entre le conducteur de mise à la terre du circuit électrique CC et l'équipement de mise à la terre. Voir les instructions d'installation.
2. Tout entretien sera entrepris par du personnel qualifié. Aucune pièce à l'intérieur de l'unité ne peut être remplacée ou réparée.
3. NE branchez pas, n'allumez pas ou n'essayez pas d'utiliser une unité manifestement endommagée.
4. Vérifiez que l'orifice de ventilation du châssis dans l'unité n'est PAS OBSTRUE.
5. Remplacez le fusible endommagé par un modèle similaire de même puissance, tel qu'indiqué sur l'étiquette de sécurité adjacente à l'arrivée électrique hébergeant le fusible.
6. Ne faites pas fonctionner l'appareil dans un endroit, où la température ambiante dépasse la valeur maximale autorisée. 40°C/104°F.
7. Débranchez le cordon électrique de la prise murale AVANT d'essayer de retirer et/ou de vérifier le fusible d'alimentation principal.

PRODUIT LASER DE CLASSE 1 ET RÉFÉRENCE AUX NORMES LASER LES PLUS RÉCENTES: IEC 60 825-1: 1993 + A1: 1997 + A2: 2001 ET EN 60825-1: 1994+A1: 1996+ A2: 2001

Unités à CA pour le Danemark, la Finlande, la Norvège, la Suède (indiqué sur le produit):

- Danemark - Unité de classe 1 - qui doit être utilisée avec un cordon CA compatible avec les déviations du Danemark. Le cordon inclut un conducteur de mise à la terre. L'unité sera branchée à une prise murale, mise à la terre. Les prises non-mises à la terre ne seront pas utilisées!
- Finlande (Étiquette et inscription dans le manuel) - Laitte on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan
- Norvège (Étiquette et inscription dans le manuel) - Apparatet må tilkoples jordet stikkontakt
- L'unité peut être connectée à un système électrique IT (en Norvège uniquement).
- Suède (Étiquette et inscription dans le manuel) - Apparaten skall anslutas till jordat uttag.

Pour brancher à l'alimentation électrique:

1. Branchez le câble d'alimentation à la prise principale, située sur le panneau arrière de l'unité.
2. Connectez le câble d'alimentation à la prise CA mise à la terre.

AVERTISSEMENT

Risque de choc électrique et danger énergétique. La déconnexion d'une source d'alimentation électrique ne débranche qu'un seul module électrique. Pour isoler complètement l'unité, débranchez toutes les sources d'alimentation électrique.

ATTENTION

Risque de choc et de danger électriques. Le débranchement d'une seule alimentation stabilisée ne débranche qu'un module "Alimentation Stabilisée". Pour Isoler complètement le module en cause, il faut débrancher toutes les alimentations stabilisées.

Attention: Pour Réduire Les Risques d'Électrocution et d'Incendie

1. Toutes les opérations d'entretien seront effectuées **UNIQUEMENT** par du personnel d'entretien qualifié. Aucun composant ne peut être entretenu ou remplacée par l'utilisateur.
2. **NE PAS** connecter, mettre sous tension ou essayer d'utiliser une unité visiblement défectueuse.
3. Assurez-vous que les ouvertures de ventilation du châssis **NE SONT PAS OBSTRUÉES**.
4. Remplacez un fusible qui a sauté **SEULEMENT** par un fusible du même type et de même capacité, comme indiqué sur l'étiquette de sécurité proche de l'entrée de l'alimentation qui contient le fusible.
5. **NE PAS UTILISER** l'équipement dans des locaux dont la température maximale dépasse 40 degrés Centigrades.
6. Assurez vous que le cordon d'alimentation a été déconnecté **AVANT** d'essayer de l'enlever et/ou vérifier le fusible de l'alimentation générale.

Sicherheitsanweisungen**VORSICHT**

Die Elektroinstallation des Gebäudes muss ein unverzüglich zugängliches Stromunterbrechungsgerät integrieren.

Aufgrund des Stromschlagrisikos und der Energie-, mechanische und Feuergefahr dürfen Vorgänge, in deren Verlauf Abdeckungen entfernt oder Elemente ausgetauscht werden, ausschließlich von qualifiziertem Servicepersonal durchgeführt werden.

Zur Reduzierung der Feuer- und Stromschlaggefahr muss das Gerät vor der Entfernung der Abdeckung oder der Paneele von der Stromversorgung getrennt werden.

Folgende Abbildung zeigt das VORSICHT-Etikett, das auf die Radware-Plattformen mit Doppelspeisung angebracht ist.

Figure 13: Warnetikett Stromschlaggefahr

CAUTION	ATTENTION
This unit has more than one power supply. Disconnect all power supplies before maintenance to avoid electric shock.	Cette unité a plus d'une source d'alimentation électrique. Débranchez toutes les sources d'alimentations électriques avant toute maintenance pour éviter les chocs électriques.

SICHERHEITSHINWEIS IN CHINESISCHER SPRACHE FÜR SYSTEME MIT DOPPELSPEISUNG

Die folgende Abbildung ist die Warnung für Radware-Plattformen mit Doppelspeisung.

Figure 14: Sicherheitshinweis in chinesischer Sprache für Systeme mit Doppelspeisung

本设备有两个电源供电，未避免电击危险，操作时需要加倍小心。
只有当这两个电源完全断开时才可以安全操作

Übersetzung von [Sicherheitshinweis in chinesischer Sprache für Systeme mit Doppelspeisung](#):

Die Einheit verfügt über mehr als eine Stromversorgungsquelle. Ziehen Sie zur Verhinderung von Stromschlag vor Wartungsarbeiten sämtliche Stromversorgungsleitungen ab.

WARTUNG

Führen Sie keinerlei Wartungsarbeiten aus, die nicht in der Betriebsanleitung angeführt sind, es sei denn, Sie sind dafür qualifiziert. Es gibt innerhalb des Gerätes keine wartungsfähigen Teile.

HOCHSPANNUNG

Jegliche Einstellungs-, Instandhaltungs- und Reparaturarbeiten am geöffneten Gerät unter Spannung müssen so weit wie möglich vermieden werden. Sind sie nicht vermeidbar, dürfen sie ausschließlich von qualifizierten Personen ausgeführt werden, die sich der Gefahr bewusst sind.

Innerhalb des Gerätes befindliche Kondensatoren können auch dann noch Ladung enthalten, wenn das Gerät von der Stromversorgung abgeschnitten wurde.

ERDUNG

Bevor das Gerät an die Stromversorgung angeschlossen wird, müssen die Schrauben der Erdungsleitung des Gerätes an die Erdung der Gebäudeverkabelung angeschlossen werden.

LASER

Dieses Gerät ist ein Laser-Produkt der Klasse 1 in Übereinstimmung mit IEC60825 - 1: 1993 + A1:1997 + A2:2001 Standard.

SICHERUNGEN

Vergewissern Sie sich, dass nur Sicherungen mit der erforderlichen Stromstärke und der angeführten Art verwendet werden. Die Verwendung reparierter Sicherungen sowie die Kurzschließung von Sicherungsfassungen muss vermieden werden. In Fällen, in denen wahrscheinlich ist, dass der von den Sicherungen gebotene Schutz beeinträchtigt ist, muss das Gerät abgeschaltet und gegen unbeabsichtigten Betrieb gesichert werden.

LEITUNGSSPANNUNG

Vor Anschluss dieses Gerätes an die Stromversorgung ist zu gewährleisten, dass die Spannung der Stromquelle den Anforderungen des Gerätes entspricht. Beachten Sie die technischen Angaben bezüglich der korrekten elektrischen Werte des Gerätes.

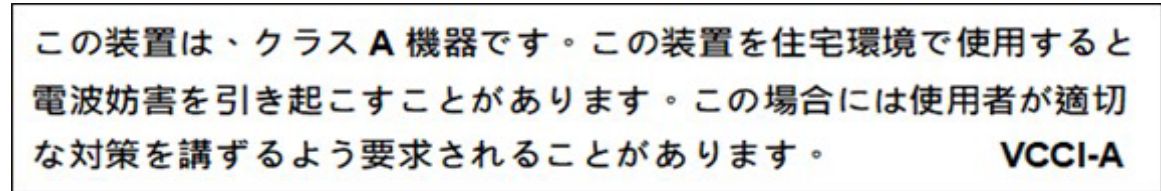
Plattformen mit 48 V DC verfügen über eine Eingangstoleranz von 36-72 V DC. **ÄNDERUNGEN DER TECHNISCHEN ANGABEN**

Änderungen der technischen Spezifikationen bleiben vorbehalten.

Hinweis: Dieses Gerät wurde geprüft und entspricht den Beschränkungen von digitalen Geräten der Klasse 1 gemäß Teil 15B FCC-Vorschriften und EN55022 Klasse A, EN55024; EN 61000-3-2; EN; IEC 61000 4-2 to 4-6, IEC 61000 4-8 und IEC 61000-4- 11 für Konformität mit der CE-Bezeichnung. Diese Beschränkungen dienen dem angemessenen Schutz vor schädlichen Interferenzen bei Betrieb des Gerätes in kommerziellem Umfeld. Dieses Gerät erzeugt, verwendet und strahlt elektromagnetische Hochfrequenzstrahlung aus. Wird es nicht entsprechend den Anweisungen im Handbuch montiert und benutzt, könnte es mit dem Funkverkehr interferieren und ihn beeinträchtigen. Der Betrieb dieses Gerätes in Wohnbereichen wird höchstwahrscheinlich zu schädlichen Interferenzen führen. In einem solchen Fall wäre der Benutzer verpflichtet, diese Interferenzen auf eigene Kosten zu korrigieren.

ERKLÄRUNG DER VCCI ZU ELEKTROMAGNETISCHER INTERFERENZ

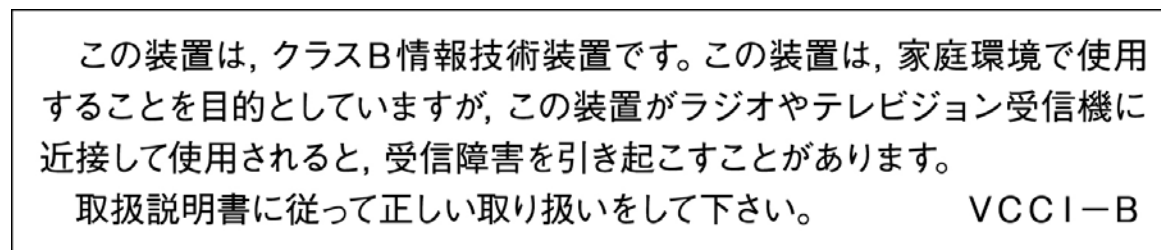
Figure 15: Erklärung zu VCCI-zertifizierten Geräten der Klasse A



Übersetzung von [Erklärung zu VCCI-zertifizierten Geräten der Klasse A:](#)

Dies ist ein Produkt der Klasse A gemäß den Normen des Voluntary Control Council for Interference by Information Technology Equipment (VCCI). Wird dieses Gerät in einem Wohnbereich benutzt, können elektromagnetische Störungen auftreten. In einem solchen Fall wäre der Benutzer verpflichtet, korrigierend einzugreifen.

Figure 16: Erklärung zu VCCI-zertifizierten Geräten der Klasse B



Übersetzung von [Erklärung zu VCCI-zertifizierten Geräten der Klasse B:](#)

Dies ist ein Produkt der Klasse B gemäß den Normen des Voluntary Control Council for Interference by Information Technology Equipment (VCCI). Wird dieses Gerät in einem Wohnbereich benutzt, können elektromagnetische Störungen auftreten.

Montieren und benutzen Sie das Gerät laut Anweisungen im Benutzerhandbuch.

KCC KOREA

Figure 17: KCC—Korea Communications Commission Zertifikat für Rundfunk-und Nachrichtentechnik



Figure 18: Erklärung zu KCC-zertifizierten Geräten der Klasse A

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Übersetzung von [Erklärung zu KCC-zertifizierten Geräten der Klasse A:](#)

Verkäufer oder Nutzer sollten davon Kenntnis nehmen, daß dieses Gerät der Klasse A für industriell elektromagnetische Wellen geeignete Geräten angehört und dass diese Geräte nicht für den heimischen Gebrauch bestimmt sind.

BESONDERER HINWEIS FÜR BENUTZER IN NORDAMERIKA

Wählen Sie für den Netzstromanschluss in Nordamerika ein Stromkabel, das in der UL aufgeführt und CSA-zertifiziert ist 3 Leiter, [18 AWG], endend in einem gegossenen Stecker, für 125 V, [10 A changedMar12], mit einer Mindestlänge von 1,5 m [sechs Fuß], doch nicht länger als 4,5 m. Für europäische Anschlüsse verwenden Sie ein international harmonisiertes, mit "<HAR>" markiertes Stromkabel, mit 3 Leitern von mindestens 0,75 mm², für 300 V, mit PVC-Umkleidung. Das Kabel muss in einem gegossenen Stecker für 250 V, 3 A enden.

BEREICH MIT EINGESCHRÄNKTEM ZUGANG

Das mit Gleichstrom betriebene Gerät darf nur in einem Bereich mit eingeschränktem Zugang montiert werden.

INSTALLATIONSCODES

Dieses Gerät muss gemäß der landesspezifischen elektrischen Codes montiert werden. In Nordamerika müssen Geräte entsprechend dem US National Electrical Code, Artikel 110 - 16, 110 - 17 und 110 - 18, sowie dem Canadian Electrical Code, Abschnitt 12, montiert werden.

VERKOPPLUNG VON GERÄTEN Kabel für die Verbindung des Gerätes mit RS232- und Ethernetmüssen UL-zertifiziert und vom Typ DP-1 oder DP-2 sein. (Anmerkung: bei Aufenthalt in einem nicht-LPS-Stromkreis)

ÜBERSTROMSCHUTZ

Ein gut zugänglicher aufgeführter Überstromschutz mit Abzweigstromkreis und 15 A Stärke muss für jede Stromeingabe in der Gebäudeverkabelung integriert sein.

AUSTAUSCHBARE BATTERIEN

Wird ein Gerät mit einer austauschbaren Batterie geliefert und für diese Batterie durch einen falschen Batterietyp ersetzt, könnte dies zu einer Explosion führen. Dies trifft zu für manche Arten von Lithiumbatterien zu, und das folgende gilt es zu beachten:

- Wird die Batterie in einem Bereich für Bediener eingesetzt, findet sich in der Nähe der Batterie eine Markierung oder Erklärung sowohl im Betriebshandbuch als auch in der Wartungsanleitung.
- Ist die Batterie an einer anderen Stelle im Gerät eingesetzt, findet sich in der Nähe der Batterie eine Markierung oder einer Erklärung in der Wartungsanleitung.

Diese Markierung oder Erklärung enthält den folgenden Warntext: VORSICHT

EXPLOSIONSGEFAHR, FALLS BATTERIE DURCH EINEN FALSCHEN BATTERIETYP ERSETZT WIRD. GEBRAUCHTE BATTERIEN DEN ANWEISUNGEN ENTSPRECHEND ENTSORGEN.

- Denmark - "Unit is class I - mit Wechselstromkabel benutzen, dass für die Abweichungen in Dänemark eingestellt ist. Das Kabel ist mit einem Erdungsdraht versehen. Das Kabel wird in eine geerdete Wandsteckdose angeschlossen. Keine Steckdosen ohne Erdungsleitung verwenden!"
- Finland - (Markierungsetikett und im Handbuch) - Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan
- Norway - (Markierungsetikett und im Handbuch) - Apparatet må tilkoples jordet stikkontakt Ausschließlich für Anschluss an IT-Netzstromsysteme in Norwegen vorgesehen
- Sweden - (Markierungsetikett und im Handbuch) - Apparatet skall anslutas till jordat uttag.

Anschluss des Stromkabels:

1. Schließen Sie das Stromkabel an den Hauptanschluss auf der Rückseite des Gerätes an.
2. Schließen Sie das Stromkabel an den geerdeten Wechselstromanschluss an.

VORSICHT

Stromschlag- und Energiegefahr Die Trennung einer Stromquelle trennt nur ein Stromversorgungsmodul von der Stromversorgung. Um das Gerät komplett zu isolieren, muss es von der gesamten Stromversorgung getrennt werden.

Vorsicht - Zur Reduzierung der Stromschlag- und Feuergefahr

1. Dieses Gerät ist dazu ausgelegt, die Verbindung zwischen der geerdeten Leitung des Gleichstromkreises und dem Erdungsleiter des Gerätes zu ermöglichen. Siehe Montageanleitung.
2. Wartungsarbeiten jeglicher Art dürfen nur von qualifiziertem Servicepersonal ausgeführt werden. Es gibt innerhalb des Gerätes keine vom Benutzer zu wartenden Teile.
3. Versuchen Sie nicht, ein offensichtlich beschädigtes Gerät an den Stromkreis anzuschließen, einzuschalten oder zu betreiben.
4. Vergewissern Sie sich, dass die Lüftungsöffnungen im Gehäuse des Gerätes NICHT BLOCKIERT SIND.
5. Ersetzen Sie eine durchgebrannte Sicherung ausschließlich mit dem selben Typ und von der selben Stärke, die auf dem Sicherheitsetikett angeführt sind, das sich neben dem Stromkabelanschluss, am Sicherungsgehäuse.
6. Betreiben Sie das Gerät nicht an einem Standort, an dem die Höchsttemperatur der Umgebung 40°C überschreitet.
7. Vergewissern Sie sich, das Stromkabel aus dem Wandstecker zu ziehen, BEVOR Sie die Hauptsicherung entfernen und/oder prüfen.

Altitude and Climate Warning



Note: This warning only applies to The People's Republic of China.

对于在非热带气候条件下运行的设备而言，T_{ma}：为制造商规范允许的最大环境温度，或者为 25°C，采用两者中的较大者。

关于在海拔不超过 2000m 或者在非热带气候地区使用的设备，附加警告要求如下：

关于在海拔不超过 2000m 的地区使用的设备，必须在随时可见的位置处粘贴包含如下内容或者类似用语的警告标记、或者附件 DD 中的符号。

“只可在海拔不超过 2000m 的位置使用。”



关于在非热带气候地区使用的设备，必须在随时可见的位置处粘贴包含如下内容的警告标记：

“只可在非热带气候地区使用。”



附件 DD：有关新安全警告标记的说明。

DD.1 海拔警告标记



标记含义：设备的评估仅基于 2000m 以下的海拔高度，因此设备只适用于该运行条件。如果在海拔超过 2000m 的位置使用设备，可能会存在某些安全隐患。

DD.2 气候警告标记



标记含义：设备的评估仅基于温带气候条件，因此设备只适用于该运行条件。如果在热带气候地区使用设备，可能会存在某些安全隐患。

Document Conventions

The following describes the conventions and symbols that this guide uses:








Item	Description	Description (French)	Beschreibung (German)
 Example	An example scenario	Un scénario d'exemple	Ein Beispielszenarium
 Caution:	Possible damage to equipment, software, or data	Endommagement possible de l'équipement, des données ou du logiciel	Mögliche Schäden an Gerät, Software oder Daten
 Note:	Additional information	Informations complémentaires	Zusätzliche Informationen
 To	A statement and instructions	Références et instructions	Eine Erklärung und Anweisungen
 Tip:	A suggestion or workaround	Une suggestion ou solution	Ein Vorschlag oder eine Umgehung
 Warning:	Possible physical harm to the operator	Blessure possible de l'opérateur	Verletzungsgefahr des Bedieners
 IPv6 Ready	Can use IPv6 (128-bit addresses) as well as IPv4 (32-bit addresses)	Peut utiliser IPv6 (adresses 128-bit,) ainsi que IPv4 (adresses 32-bit)	Kann sowohl IPv6 (128-Bit Adressen) als auch IPv4 (32-Bit Adressen) verwenden

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CHAPTER 1 – PREFACE

This guide describes the getting-started process of the Alteon Application Switch Virtual Appliance (VA) platform for Amazon Web Services (AWS) Virtual Private Cloud (VPC).

Amazon Elastic Compute Cloud (EC2) is a Web-services cloud that provides self-service and dynamic computing capacity. Amazon EC2 eliminates the need to invest up front in hardware and enables organizations to develop and deploy applications faster. Organizations use the AWS cloud to launch virtual machine instances as needed, configure security and networking, and manage storage. Amazon VPC allows organizations to provision a logically isolated section of the AWS cloud that allocates AWS resources in a custom virtual network.

For detailed information regarding AWS EC2, refer to the document *Amazon Elastic Compute Cloud: User Guide* available from the Amazon Web Services website.

Who Should Use This Book

This guide is intended for network administrators administrating and maintaining applications in Amazon VPC. It assumes familiarity with Amazon VPC and Amazon EC2 services, as well as general inter-networking technologies and concepts.

Related Documentation

Alteon Application Switches have the following related documentation, which is required to regularly manage the Amazon Alteon VA, beyond the specifics pertaining to Alteon's integration into the Amazon VPC:

- *Alteon Application Switch Installation Guide*
- *Alteon Application Switch Operating System Command Reference*
- *Alteon Application Switch Operating System Application Guide*
- *Alteon Application Switch Troubleshooting Guide*
- *Alteon Application Switch Release Notes*

Prerequisites

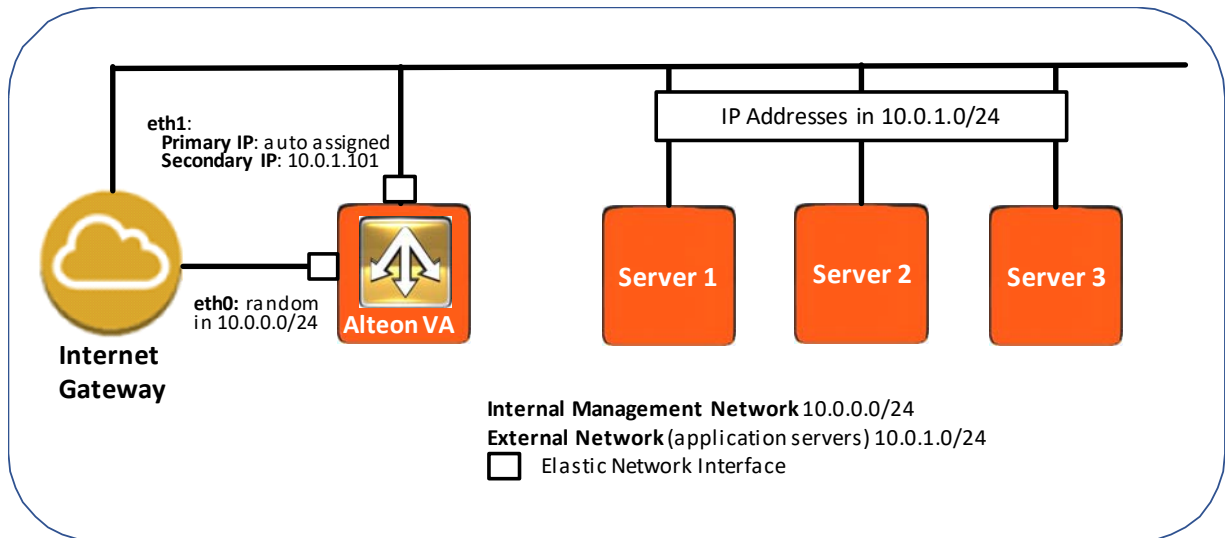
- Knowledge of Amazon EC2 Web service in general and Amazon VPC services in particular.
- Knowledge of Alteon Application Switch operating system.
- An existing Amazon AWS account.



Note: Parameters that are not explicitly addressed in this guide should be configured according to your organization's Amazon VPC infrastructure standards and procedures.

The Alteon VA Platform on Amazon Web Services VPC

Alteon VA for Amazon Web Services (AWS) VPC allows running your enterprise applications while tapping into AWS computing resources and providing a common application delivery platform in your private data center as well as your AWS VPC. Leveraging the common Alteon operating system across the Amazon cloud and the enterprise datacenter, enables faster application development cycles (develop on the cloud and migrate to the private data center) and improved economies for disaster recovery and seasonal application capacity scalability requirements. The figure below shows a reference Alteon VA deployment on an AWS VPC in a multiple IP address (multiple network interfaces) environment.



This network illustration shows that the Alteon VA running inside your VPC operates using two Network Interface Cards (NIC). One NIC is dedicated as a management interface to access the Alteon VA for routing operations. The other NIC is used for data traffic to and from application servers, front-ended by the Alteon VA. Alteon VA supports up-to 17 data interfaces.

Alteon VA Running in a Single IP Address Mode

Starting with Alteon version 32.4, the option to run Alteon VA in a single IP mode is available on Alteon VA running on AWS. Single IP mode is automatically selected when an Alteon VA has a single NIC (ENI) attached to it (eth0).

Configuring an Alteon VA running in single IP mode is very straightforward, as VIPs, PIPs, and interface configuration are done automatically behind the scenes.

When running in a single IP mode, both the management and the data (traffic) run through the same interface. Therefore, and in order to be able to load-balance HTTPS traffic (port 443), access to the WebUI should be done through port 8443.

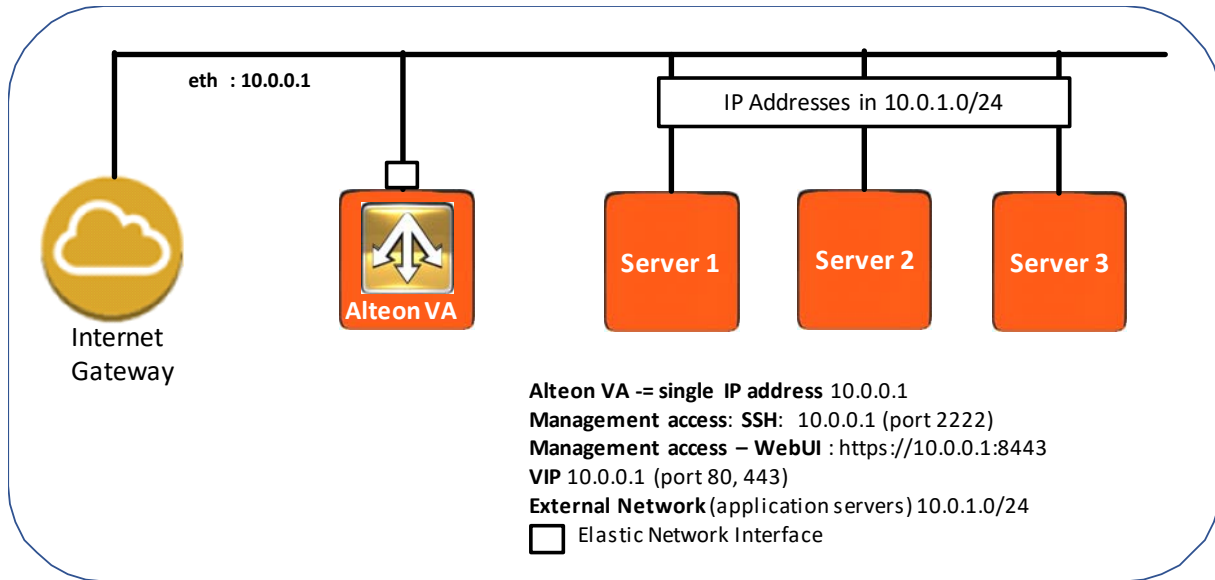
For example, if the eth0 IP address is 10.0.0.1, then in order to access the Alteon WebUI, enter the following in the browser address bar: `https:// 10.0.0.1:8443`

The network illustration below shows that the Alteon VA running inside your VPC operates using a single Elastic Network Interface (ENI).

Note: Both ports 443 and 8443 are enabled in the Alteon VA default security group.



Note: The Alteon GEL license is currently not supported on Alteon VA when running a single IP address mode.



CHAPTER 2 – GETTING STARTED

This chapter describes the getting started process for the Alteon Application Switch VA platform on Amazon Web Services. It is comprised of the following steps:

- [Minimum Requirements, page 33](#)
- [High Performing System Requirements, page 34](#)
- [Single/Multiple Address Mode, page 34](#)
- [Launching the Instance, page 35](#)
- [Initial Access to the Alteon VA Instance, page 45](#)
- [Defining Instance With Multiple ENIs, page 47](#)
- [Obtaining and Installing a License, page 65](#)
- [Configure Alteon VA on AWS, page 66](#)
- [Enabling HA Mode in the AWS Cloud, page 74](#)

Minimum Requirements

The following table details the minimum hardware requirements for the various Alteon configurations:

Configuration	vCPU	GB RAM	GB Disk Space	Notes
Small Footprint (L4 SLB)	1	2	10	With this minimum footprint, Alteon VA can be deployed in AWS on small footprint instances, such as A1V2. This footprint can be used for workloads requiring only basic Level 4 load balancing. This supports reduced configuration capacity (1024 real servers, 4096 run-time health checks, 75 filters, and 128k L4 session entries).
Default	1	2.5	14	This is the default footprint of the Alteon VA image. It is recommended to increase the number of vCPUs to 2, especially in DPDK mode.
Recommended	2	4	14	This is the recommended minimal footprint for a full-featured Alteon ADC without integrated WAF. One vCPU is allocated for the management processor (MP) and one for the traffic processor (SP). With this footprint Alteon can be used for advanced Layer 7 processing as well as for capabilities that require DPDK, such as jumbo frames, and IPv6 BGP.

Configuration	vCPU	GB RAM	GB Disk Space	Notes
Alteon with integrated WAF (AppWall)	3	8	14	This is the recommended minimal footprint for a full featured Alteon ADC with integrated WAF. 1 vCPU and 4GB RAM can be allocated to AppWall, the rest to Alteon (1 MP + 1 SP).
Multiple SP Alteon	-	2 per SP	14	When configuring more than 1 vCPU, one is allocated for the MP and the rest for the SPs.



Notes

- Additional factors that impact minimum RAM and disk:
 - If the allocated RAM is lower than 4 GB RAM the maximum number of virtual interfaces supported is 3. The first interface is used for management access and the rest are used for data.
 - If the allocated RAM is 4GB or higher, the maximum number of virtual interfaces supported is 8 for AWS environment.
 - To enable EAAF/IP reputation feature, you should add 1 GB to the RAM size and 4 GB to the disk size.
- In order to minimize the latency while writing to the hard disk, it is recommended to use the Alteon VA local disk VM, and not a remote drive.
- DPDK is automatically enabled for RAM size of 3GB or higher. It can be disabled manually, however, there are several capabilities, such as multiple SP support, jumbo frames, that are only available when DPDK is enabled.

High Performing System Requirements

You can achieve higher performance with Alteon VA by using NICs that support SRIOV and allocating multiple traffic processors (SPs).

Multiple SP capability is supported on AWS - when running on instances with accelerated network.

For further details refer to <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/enhanced-networking.html>

The maximum number of SPs that can be used depends on the number of DPDK queues available. In case of SRIOV this number is 2.

To overcome this limitation, you can define Traffic Distribution vCPUs (TDs). These TDs distribute the traffic to the SPs according to the number of cores allocated for Alteon processing, extending the CPU power for SSL offloading and Layer 7 processing.

When provisioning an Alteon VA with two vCPUs or more on a server with accelerated network, TD is enabled by default.

Single/Multiple Address Mode

Alteon VA when running on AWS cloud can be configured either in a single IP address mode or in a multiple IP addresses mode (the common mode of work of an ordinary Alteon device). If you are using Alteon VA to manage a single service (single VIP) it is recommend to run in a single IP address mode.

When working in a single IP address mode, the system automatically configures itself to direct the management traffic to the management process. Virtual services and PIPs will also be automatically assigned the virtual machine IP address, with no further need to configure it. However, it is also possible to configure additional VIPs for more services.

Alteon VA can also operate in a Single IP mode with separate management network (NIC), when an additional NIC is added to the VA. In this case the public IP on the data network is used for Interface address, VIP address and PIP address.

When running in the AWS cloud, the Alteon VA is configured by default to run in basic single IP address mode.

In order for an Alteon VA to run in multiple IP mode, in addition to adding more NICs to the VA, you also need to configure Alteon to work in multiple IP address mode. For details see [Defining Additional ENIs](#).



Note: When the Alteon VA is not configured to work in a Single IP address mode but just a single network interface is attached to the VM running the Alteon VA, on every login to the system you will receive a notification message in the Web UI and will be prompted on the CLI to switch to Single IP address mode.

Launching the Instance



To launch the instance from the marketplace

1. Search for **Radware Alteon VA** in the AWS marketplace.

The screenshot shows the AWS Marketplace search results for 'radware'. The search bar at the top contains 'radware' and shows 10 results. The results are sorted by relevance. The first result is 'Radware Alteon VA - Application Delivery Controller (BYOL)' by Radware, version 33.0.3.0. The description states: 'Radware Alteon virtual appliance (VA) is a market leading application delivery controller that ensures your mission critical applications are always available, fast responding, secured and protected. It provides advanced layer 4 to 7 load balancing, enhanced application and network security and...'. The second result is 'Radware Cloud WAF' by Radware, with 1 external review. The description states: 'Radware Cloud WAF is a fully managed Application Protection as Service providing the industry's most comprehensive web application security solution. The service integrates Radware's Cloud WAF, API Protection, Bot management, and application layer DDoS protection in a single portal that provides...'. The third result is 'Radware Bot Manager' by Radware.

2. Click on the appropriate product type (either the BYOL or a paid Amazon Machine Image (AMI) and you will land on the product page.
3. In the product page, click **Continue to subscribe**.

aws marketplace

radware

Radware Alteon VA - Application Delivery Controller (BYOL)

By: [Radware](#) Latest Version: 33.0.3.0

Alteon VA supports the complex functionality requirements of Enterprise applications which go beyond basic availability and quality of experience features. These include: Layer 7

Linux/Unix
BYOL

Typical Total Price
\$0.10/hr
Total pricing per instance for services hosted on c4.large in US East (N. Virginia). [View Details](#)

Continue to Subscribe
Save to List

Overview Pricing Usage Support Reviews

Product Overview

Radware Alteon virtual appliance (VA) is a market leading application delivery controller that ensures your mission critical applications are always available, fast responding, secured and protected. It provides advanced layer 4 to 7 load balancing, enhanced application and network security and unmatched application performance acceleration. Its flexible on demand service architecture coupled with its flexible licenses pricing allows customers to pay for the exact package and usage they need eliminating any downtime or upfront investment. Its identical functionality to the Alteon D-Line physical appliances, allows seamless migration of ADC services from your local devices to the AWS and back. When coupled with Radware automation tools (i.e. vDirect, Vision) as well with

Highlights

- Built-in, intuitive, application performance monitoring for any web application providing visibility on how long requests are processed in the datacenter, in transit or in the web browser.
- Built-in, global server, load balancing solution allowing to optimally distribute application traffic between sites and availability zones based on granular policies and

4. Click on **Accept Terms** to proceed.

aws marketplace

radware

Radware Alteon VA - Application Delivery Controller (BYOL)

Continue to Configuration
You must first review and accept terms.

< Product Detail [Subscribe](#)

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 Radware Alteon VA - Application Delivery Controller (BYOL) [Continue to Configuration](#)

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Once enabled, click on **Continue to Configuration**

 Radware Alteon VA - Application Delivery Controller (BYOL) [Continue to Configuration](#)

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Product	Effective date	Expiration date	Action
Radware Alteon VA - Application Delivery Controller (BYOL)	4/18/2023	N/A	Show Details

Select appropriate Fulfillment option, Software Version and Region. Then click on **Continue to Launch**.



Radware Alteon VA - Application Delivery Controller (BYOL)

[Continue to Launch](#)

[< Product Detail](#) [Subscribe](#) [Configure](#)

Configure this software

Choose a fulfillment option and software version to launch this software.

Fulfillment option
64-bit (x86) Amazon Machine Image (AMI) ▼

Software version
33.0.3.0 (Jan 09, 2022) ▼

Region
US East (N. Virginia) ▼

Use of Local Zones or WaveLength infrastructure deployment may alter your final pricing.

Ami Id: ami-0bd275b85b99cd315

Product Code: bk8zsl62zq94gk739kspd36nr

[Release notes \(updated January 9, 2022\)](#)

Pricing information

This is an estimate of typical software and infrastructure costs based on your configuration. Your actual charges for each statement period may differ from this estimate.

Software Pricing

Radware Alteon VA - Application Delivery Controller (BYOL)	\$0/hr
--	--------

BYOL
running on c4.large

Infrastructure Pricing

EC2:	1 * c4.large
Monthly Estimate:	\$72.00/month

Select the **Choose Action** drop down as **Launch through EC2**. Then click on **Launch**.



Radware Alteon VA - Application Delivery Controller (BYOL)

[< Product Detail](#) [Subscribe](#) [Configure](#) [Launch](#)

Launch this software

Review the launch configuration details and follow the instructions to launch this software.

Configuration details

Fulfillment option	64-bit (x86) Amazon Machine Image (AMI) Radware Alteon VA - Application Delivery Controller (BYOL) <i>running on c4.large</i>
Software version	33.0.3.0
Region	US East (N. Virginia)

[Usage instructions](#)

Choose Action

Launch through EC2

Choose this action to launch your configuration through the Amazon EC2 console.

Launch



To launch the instance

1. Fill in appropriate **Name** and tags.

EC2 > Instances > Launch an instance

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Name

 [Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Q Search our full catalog including 1000s of application and OS images

[AMI from catalog](#) [Quick Start](#)

Amazon Machine Image (AMI)

AlteonOS-U16-33.0.3.0-161-NDEBUG-c34defd8-351b-46fa-829e-58a812d13577 Verified provider [Browse more AMIs](#)

ami-0bd275b85b99cd315

Including AMIs from AWS, Marketplace and the Community

Catalog	Published	Architecture	Virtualization	Root device type	ENA Enabled
AWS	2022-01-	x86_64	hvm		Yes

▼ Summary

Number of instances Info

Software Image (AMI)

AlteonOS-U16-33.0.3.0-161-NDEB...[read more](#)
ami-0bd275b85b99cd315

Virtual server type (instance type)

c4.large

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 12 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

[Cancel](#) [Launch instance](#) [Review commands](#)

2. In the *Instance Type* tab, choose an instance size that is compliant with the minimum requirements and your needs.

For example, assuming we want an Alteon VA instance with AppWall (Secure package) with 100 Mbps throughput, from throughput perspective a t2.small or m3.medium instance is sufficient. On the other hand, in order to support the AppWall we need at least 3 vCPUs and 8 GB RAM, which is beyond the resources of t2.small

In order to achieve extended SSL or L7 performance, it is recommended you run the Alteon VA in a multiple SP environment.

You can configure the Alteon VA to run with multiple SPs on AWS instances supporting SRIOV (part of the AWS enhanced networking), such as M4 instances.

Amazon Machine Image (AMI)

AlteonOS-U16-33.0.3.0-161-NDEBUG-
c34defd8-351b-46fa-829e-58a812d13577
ami-0bd275b85b99cd315

Verified provider

[Browse more AMIs](#)
Including AMIs from AWS, Marketplace and the Community

Catalog	Published	Architecture	Virtualization	Root device type	ENA Enabled
AWS Marketplace AMIs	2022-01-09T16:06:35.00Z	x86_64	hvm	ebs	Yes

If you have an existing license entitlement to use this software, then you can launch this software without creating a new subscription. If you do not have an existing entitlement, then by launching this software, you will be subscribed to this software and agree that your use of this software is subject to the pricing terms and the seller's [End User License Agreement](#)

▼ **Instance type** [Info](#)

Instance type All generations

c4.large
Family: c4 2 vCPU 3.75 GiB Memory Current generation: true

[Compare instance types](#)

The AMI vendor recommends using a c4.large instance (or larger) for the best experience with this product.

- Choose your existing key pair or create a new key pair to use when accessing your instance. In order to create a new key pair, refer to the AWS reference materials using the following URL: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/generating-a-keypair.html>

▼ **Key pair (login)** [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

aws_login [Create new key pair](#)

- The Network settings are pre-configured with defaults. Edit the settings for required modification for VPC, subnets, security groups, etc.

▼ **Network settings** [Info](#) Edit

Network [Info](#)
vpc-0aee786d5c50e4c1e

Subnet [Info](#)
No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)
Enable

Firewall (security groups) [Info](#)
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

- a. Click **Edit** to edit the **Network Settings**.
- b. Choose your **EC2-VPC** where your application server resides.

▼ **Network settings** [Info](#)

VPC - *required* [Info](#)

vpc-0aee786d5c50e4c1e (default) ▼ ↻

172.31.0.0/16

c. Create subnets if you want to attach more NICs to the VM later.

Subnet [Info](#)

No preference ▼ ↻ [Create new subnet](#) ↗

d. Enable auto assign public IP to the primary network interface of the instance for accessing it from external networks.

Auto-assign public IP [Info](#)

Enable ▼

- e. Select an existing **security group**, or build a new security group for the Alteon VA instance such that only allowed traffic reaches your Alteon VA instance. Make sure the security group allows access to the instance over port 2222, which is used by the management port for SSH access, and port 443 (HTTPS) which is used to access the Web interface of the Alteon, as well as the ports that will be needed for accessing the applications to be used.

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group
 Select existing security group

Security group name - *required*

Radware Alteon VA - Application Delivery Controller (BYOL)-33.0.3.0-AutogenByAWSM

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-:/()#,@[]+=&:{}!\$*

Description - *required* [Info](#)

This security group was generated by AWS Marketplace and is based on recommended



Notes

- When operating in Single IP address mode, make sure to enable port 8443 (HTTPS) which is used to access the Alteon Web interfaces.
 - If you use the Alteon VA default security group, ports 22 and 443 are enabled by default.
 - If you are configuring the Alteon VA to work in High Availability (HA) mode you should enable the high availability advertisement ports for UDP, port 2090 as inbound and port 2091 as outbound.
 - If you are using the Local License Server (LLS) within your VPC, you should set the security group rules for the ports that it communicates with the Alteon.
If you use the system defaults, port 7070 is used for the communication with the LLS and it is enabled by default in the Alteon VA security group.
 - When operating in single IP mode and GSLB is configured, port 4480 is used for the DSSP instead of port 80. If your Alteon VA is operating in such an environment, you should enable port 4480 in the Alteon VA security group.
5. Configure Storage:
- a. Verify the storage meets the disk requirements of your deployment.

▼ **Configure storage** [Info](#) Advanced

1x GiB Root volume (Not encrypted)

i Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage ✕

0 x File systems Edit

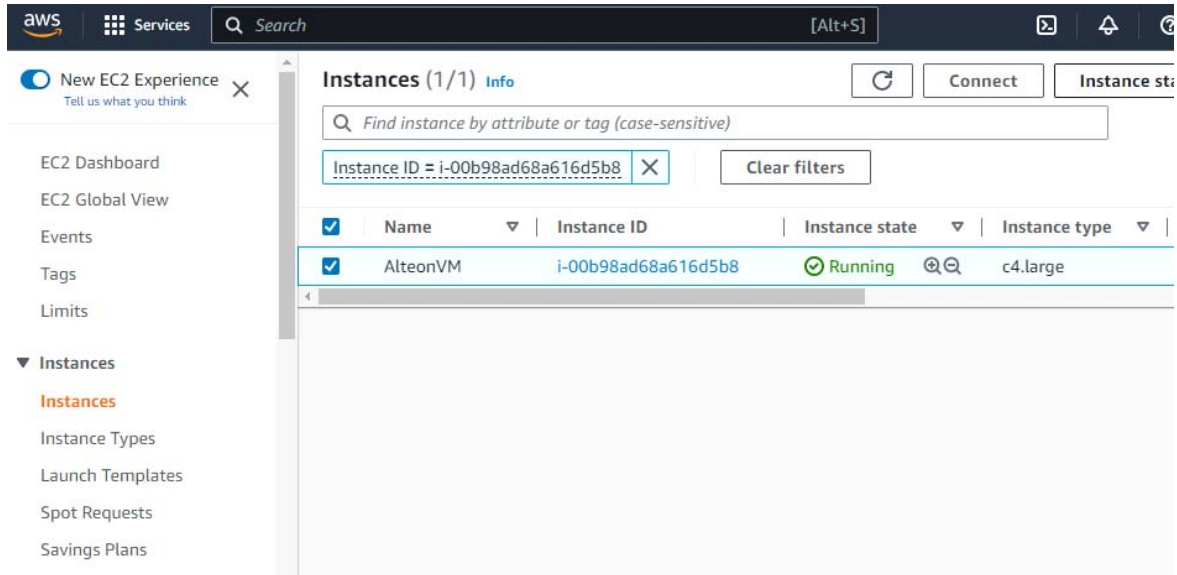
6. In the *summary* tab, set the **Number of instances** as 1.

The screenshot shows the 'Summary' section of the AWS console. It includes a dropdown menu for the number of instances set to '1'. Below this, the instance type is 'c4.large'. The 'Firewall (security group)' is set to 'New security group'. The 'Storage (volumes)' section shows '1 volume(s) - 12 GiB'. A notification box at the bottom of the summary section states: 'Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the...'. At the bottom of the console, there are three buttons: 'Cancel', 'Launch instance' (highlighted in orange), and 'Review commands'.

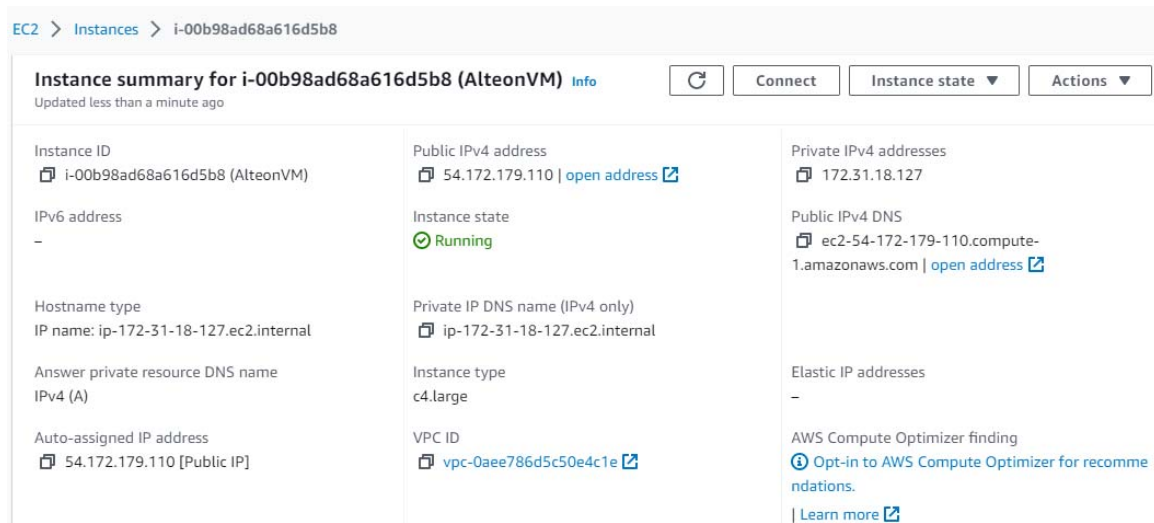
7. Then click **Launch Instance**.
8. The instance details (instance ID) will be available once successfully launched the instance.

The screenshot shows the AWS console breadcrumb navigation: 'EC2 > Instances > Launch an instance'. Below the navigation, a green success message box is displayed. It contains a green checkmark icon, the word 'Success', and the text 'Successfully initiated launch of instance (i-00b98ad68a616d5b8)'. Below the message, there is a 'Launch log' link with a right-pointing triangle icon.

9. Click on the instance ID which is given in parathesis for the success message. It will open the instance tab in EC2.



10. Click on the instance-id of the new VM to see the details of the instance. Note down the instance-id, Public/Private IPv4 DNS name and Public/Private IPv4 address to access the Alteon VA instance.



Initial Access to the Alteon VA Instance

You are now ready to configure your Alteon VA to load-balance between servers. There are two methods to manage the Alteon VA - through its Web interface or through its CLI.



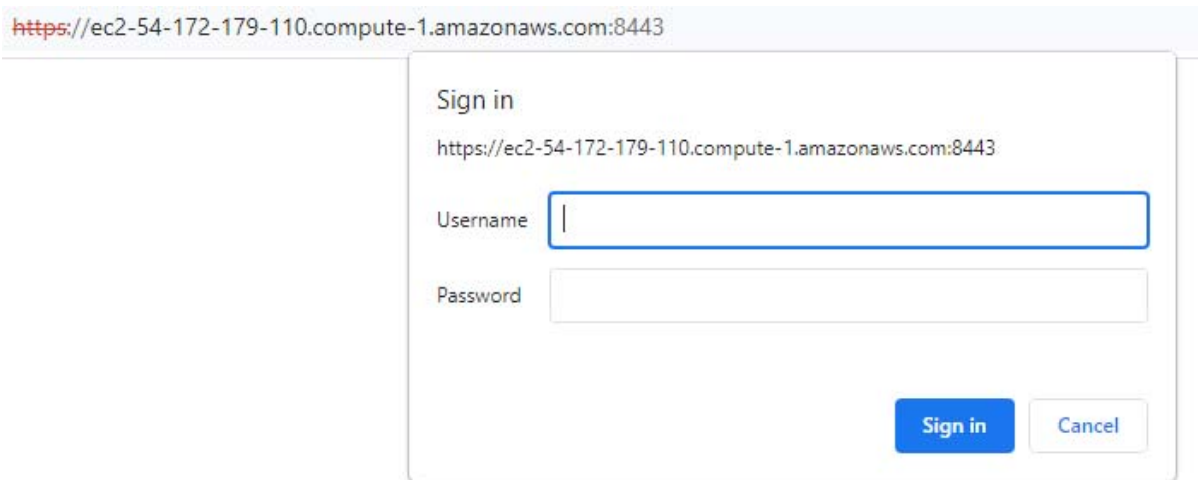
To connect to the Alteon VA via the Web interface

- > In your Web browser address bar enter **https://<management IP address>** where the management IP address is the Public IP address in case of no VPN. You can also use the DNS name of the public IP address. If using VPN, the management IP address is the private IP address (or DNS name for private IP address).

Since the Alteon is running in a single IP address mode (running with single NIC), add the 8443 port number to access the WebUI, enter: **https://<management IP address>:8443**

The default username is **admin**.

The default *admin* password is the instance ID of the virtual machine running the Alteon VA.



Note: For security, you are forced to change the initial password when you first log in through the CLI (ssh). To change the password when accessing through the Web Interface, go to **Configuration > System > Users > Local Users**.



To connect to the Alteon VA via the CLI

- > Using an SSH client application, connect to the Alteon VA Cloud instance using the following parameters:
 - Use the IP address of the management interface as the Target IP (Public IP in case of no VPN, or Internal in case of VPN-based access).
 - TCP port enabling access to the Alteon CLI is 2222
 - The default username is admin.
 - The default admin password is the instance ID of the virtual machine running the Alteon VA.



Note: Refer to the *Alteon Application Switch Operating System Application Guide* and the *Alteon Application Switch Operating System Command Reference* for details regarding operating the Alteon platform.

Defining Instance With Multiple ENIs

An instance with multiple ENIs is required when you want Alteon VA to operate in one of the following modes:

1. Single IP mode with separate management port
2. Multiple IP mode

In order to define more than one ENI:

- The instance type selected must be able to support more than one ENI.
- Make sure the VPC where your Alteon VA is launched has the required set of network subnets defined for attaching to the new elastic network interfaces.

When multiple ENIs are defined for an instance, the primary ENI is used for management traffic and the additional interfaces for data traffic.

The following steps are required for instance with multiple ENIs, after initial instance launch:

- Add the additional ENIs to the instance - see [Defining Additional ENIs, page 47](#).
- Defining and Associating Elastic IP Address to the Management Interface - see [Defining and Associating Elastic IP Address to the Management Interface, page 54](#).
- Add to the client-side data ENI IP secondary IP addresses, as internal IP address for the VIPs - see [Adding Secondary IP Addresses to ENIs, page 57](#).
- Define external IP addresses for the VIPs to allow external access - see [Defining and Associating Multiple External IP Addresses for Multiple VIPs, page 64](#).

The secondary IP address on data interface will later serve as Virtual Server IP (VIP)s in your Alteon configuration.

Defining Additional ENIs

The following procedure is required if you want to configure more than one ENI (Elastic Network Interface)s in your Alteon VA AWS cloud.



To define an additional ENI

1. From the Network interfaces, click **Create Network interface**.

Name	Network interface ID	Subnet ID	VPC ID	Availability Zone
-	eni-05ac342176a6d6437	subnet-0c2a05cc27b032b5a	vpc-0aee786d5c50e4c1e	us-east-1c

2. Define the Network Interface parameters and click **Create Network interface**.

EC2 > Network interfaces > Create network interface

Create network interface

An elastic network interface is a logical networking component in a VPC that represents a virtual network card.

Details [Info](#)

Description - *optional*

A descriptive name for the network interface.

Subnet

The subnet in which to create the network interface.



Private IPv4 address

The private IPv4 address to assign to the network interface.

Auto-assign

Custom

Elastic Fabric Adapter

Enable

▼ Advanced settings

You can optionally set the IP prefix delegation

IPv4 prefix delegation
The IPv4 prefixes to assign to the network interface.

Do not assign
 Auto-assign
 Custom

Security groups (1/2) [Info](#)

Find security groups

<input type="checkbox"/>	Group ID	Group name	Description
<input checked="" type="checkbox"/>	sg-0ff551c4bdee0c4d5	Radware Alteon VA - Applicati...	This security group was gener...
<input type="checkbox"/>	sg-0079a28f5c93280ca	default	default VPC security group

Tags - optional
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

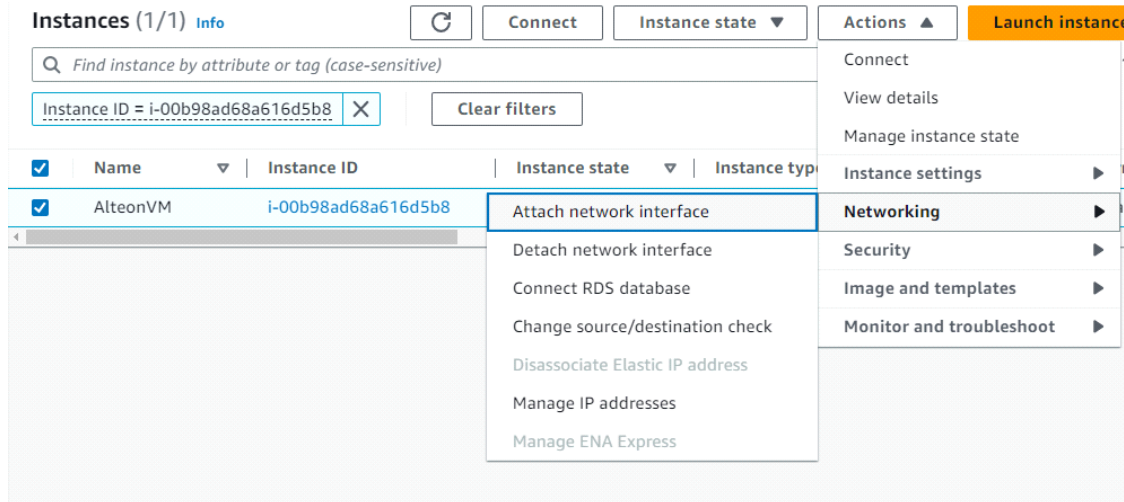
[Add new tag](#)
You can add 50 more tags.

[Cancel](#) [Create network interface](#)

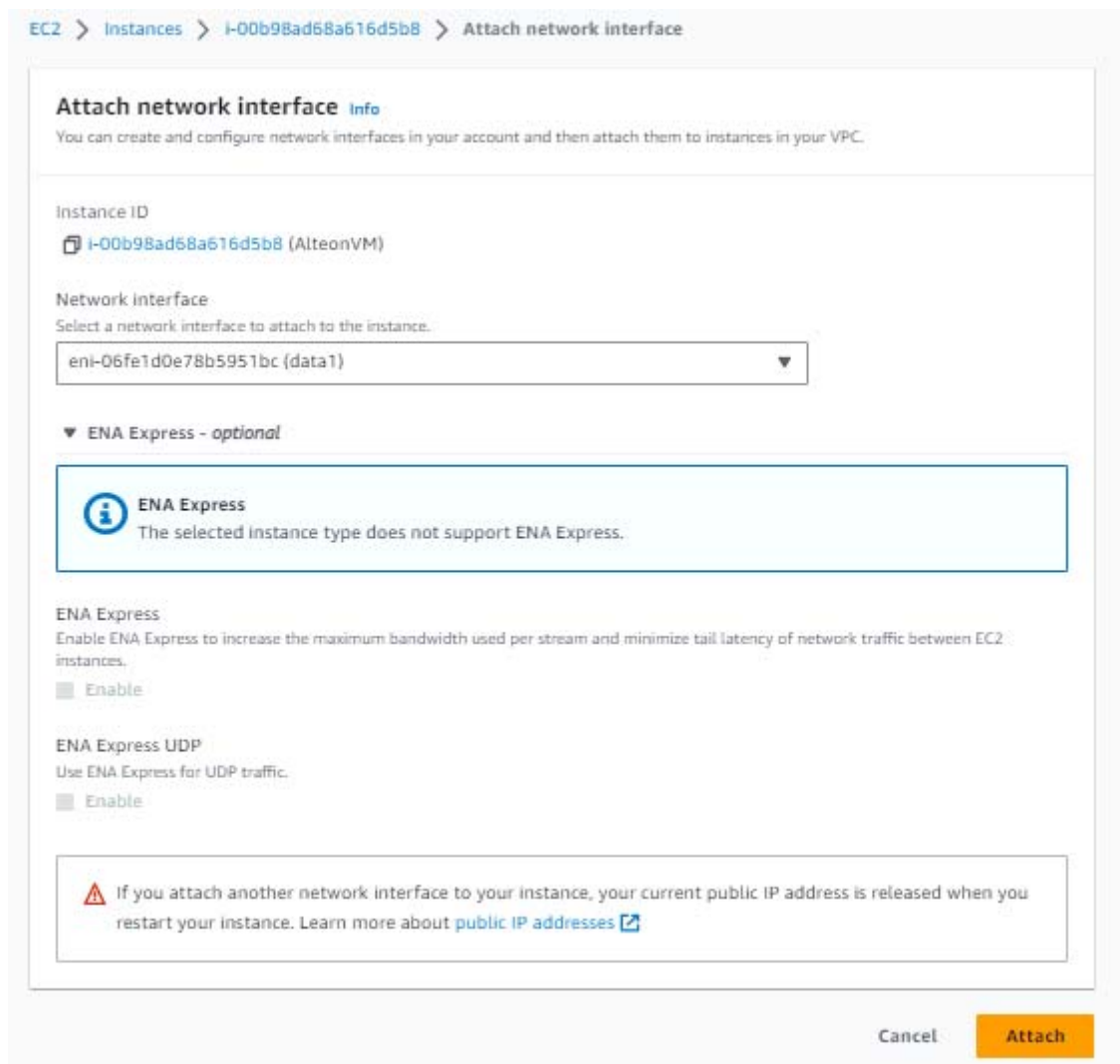
3. Please note down the network interface ID (eni ID) of this newly created network interface. This id is needed later while attaching the network interface to the instance.
4. Attach the network interface to your instance.
 - From EC2 instances, select the instance for attaching the ENI

The screenshot shows the AWS Management Console interface for the 'Instances' page. The instance 'AlteonVM' is selected, and the 'Attach network interface' option is highlighted in the 'Actions' menu. The instance details show it is in a 'Running' state and has a 'c4.large' instance type.

- Click **Actions->Networking->Attach network interface**.



- Select the Network interface to attach and click **Attach**.

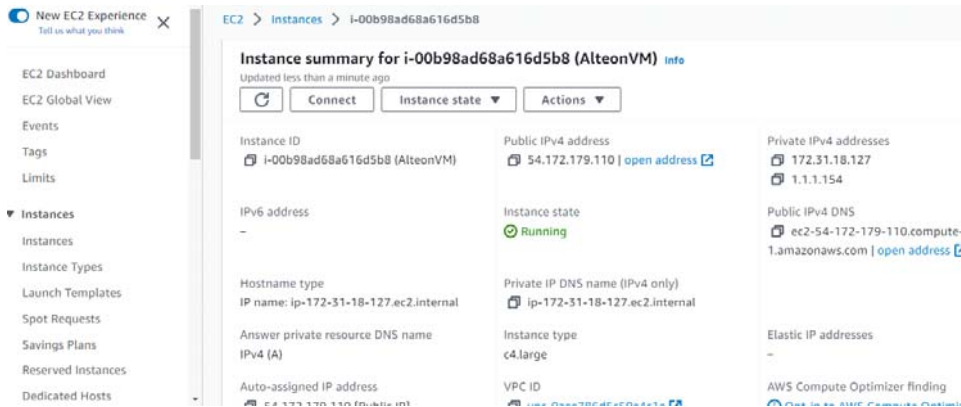


- If the VA is running in Single IP Address mode with the public IP auto-assigned during deployment, the below warning appears in AWS portal while attaching additional NIC.

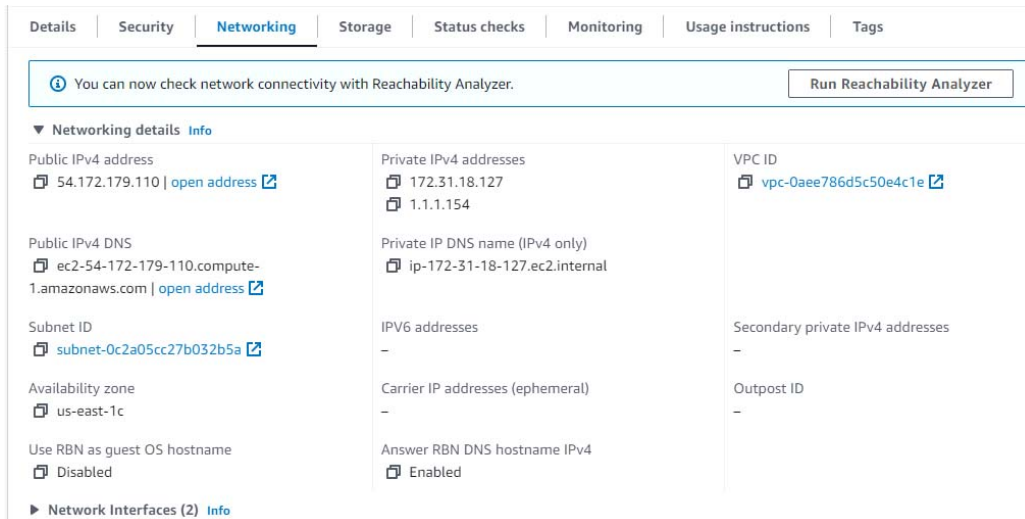
"If you attach another network interface to your instance, your current public IP address is released when you restart your instance"

This means that the public IP attached to the primary NIC is released during hard reboot. So, in order to access the VA again, you must create and attach Elastic IP address to the primary NIC. For details on how to attach Elastic IP address, please refer to Defining and Associating Elastic IP Address to the Management Interface, mentioned below.

- Verify that the NIC is attached to the instance correctly.
- a. Click on the instance ID to see the instance details.





- b. In the instance details page, click on the *Networking* tab to list the networking details.



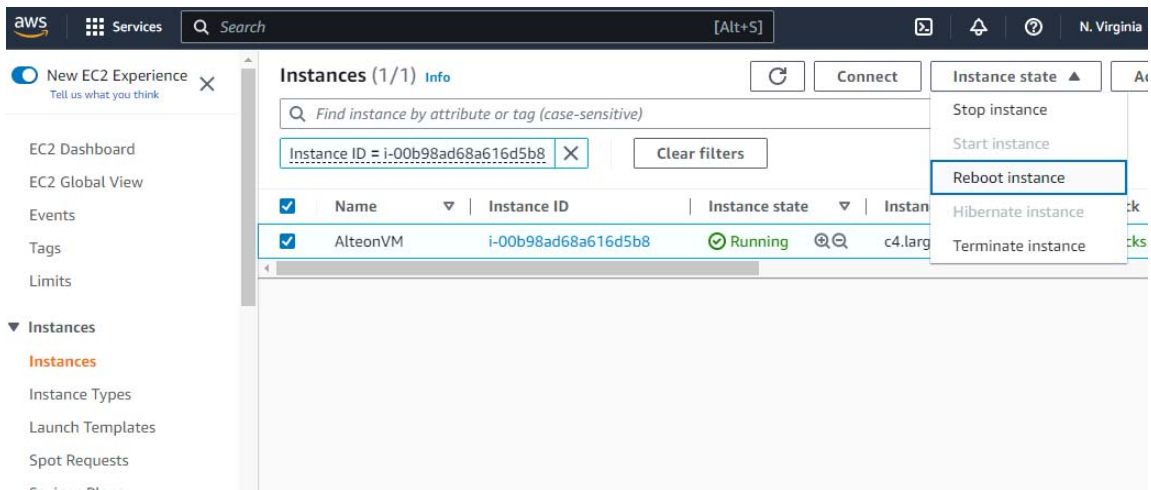
- c. Expand the **Network Interfaces** to list the NICs attached to the instance and verify that the newly added NIC is listed.

▼ Network Interfaces (2) Info

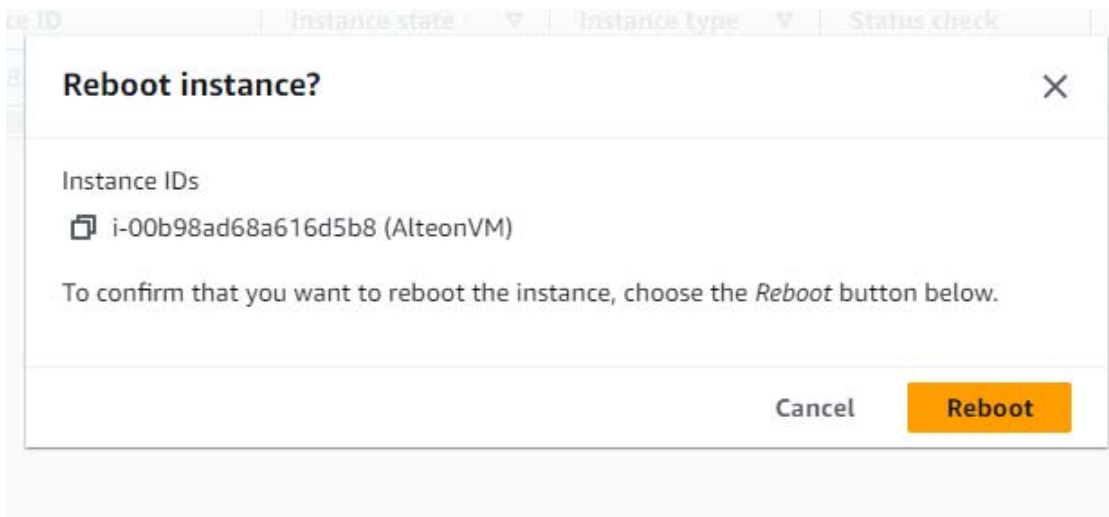
Interface ID	Description	IPv4 Prefixes	IPv6 Prefixes	Public IPv4
 eni-05ac342176a6d6...	-	-	-	54.172.179.
 eni-06fe1d0e78b595...	data1	-	-	-

▼ Elastic IP addresses (0) Info

5. Create and attach the required number of NICs as mentioned above.
6. Reboot the Instance to boot the Alteon VA with multiple NICs.
 - Select **Instance -> Instance state -> Reboot Instance**.



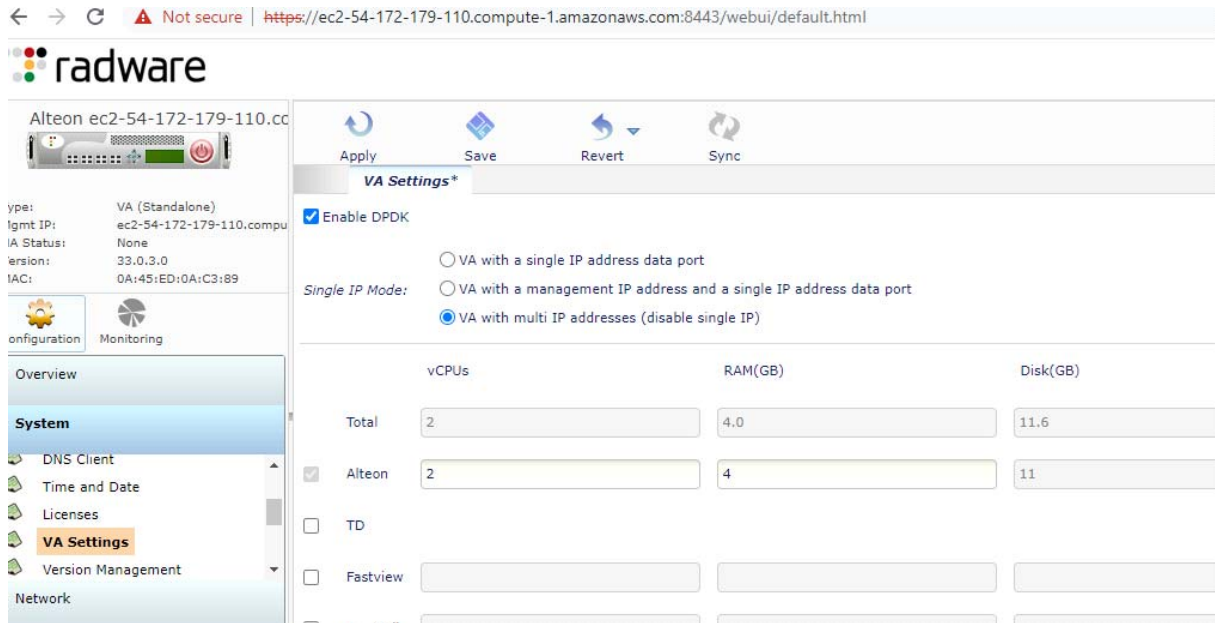
- Click **Reboot** in the pop-up window.



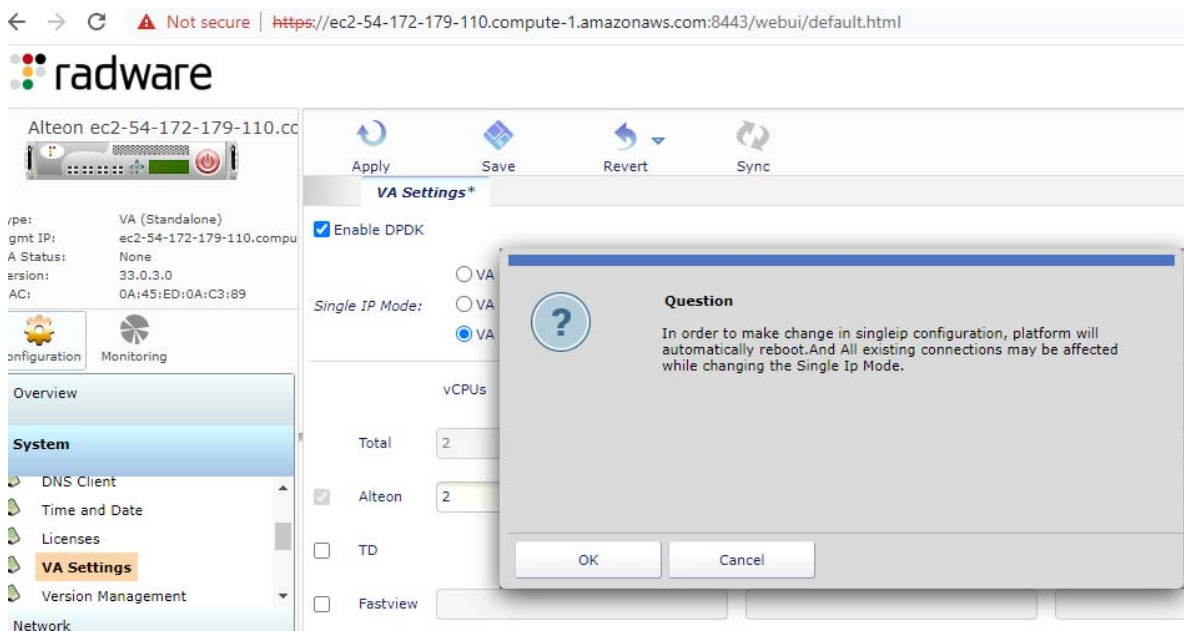
"

- If the VA is running in Single IP Address mode, you must disable single IP address mode to reboot the VA with multiple NICs in Multiple IP address mode.

Disable single IP from Alteon VA WebUI at Configuration -> System -> VA Settings and select the option "VA with multi IP addresses (disable single IP)".



Note that the Alteon VA will go for automatic reboot when submitting the changes to disable single IP. A popup warning message also displayed for indicating the automatic reboot.



- Alteon VA will reboot and come up with Multiple IP address mode.

Defining and Associating Elastic IP Address to the Management Interface

This section describes how to assign an Internet- accessible IP address to the management network interface of your Alteon VA running in the AWS cloud. If your management network is accessible over a VPN connection, this step is unnecessary.



To define and associate Elastic IP address to the management interface

1. Before associating the Elastic IP address, you must note down the interface ID of the management interface (primary interface) to which the EIP is associated. The interface ID can be obtained from the **Networking** tab in instance details (click on the instance ID to get instance details). Also note down the private IP address of the management interface, which is needed for associating the EIP in the following steps.

▼ Network Interfaces (3) Info

Interface ID	Description	IPv4 Prefixes	IPv6 Prefixes	Public IPv4 address	Private IPv4 address
eni-05ac342176a6d6437	-	-	-	-	172.31.18.127
eni-05563744df3452ad2	data2	-	-	-	2.2.2.78
eni-06fe1d0e78b5951bc	data1	-	-	-	1.1.1.154

2. On the left side of the dashboard, select **Network & Security > Elastic IPs**.

Elastic IP addresses (1/1)

<input checked="" type="checkbox"/>	Name	Allocated IPv4 address	Type	Allocation ID	Reverse DNS
<input checked="" type="checkbox"/>	-	18.235.122.68	Public IP	eipalloc-06f4e543a8cee877b	-

18.235.122.68

Summary

Allocated IPv4 address	Type	Allocation ID	Reverse DNS record
18.235.122.68	Public IP	eipalloc-06f4e543a8cee877b	-

You can either select one of the free Elastic IP (EIP) addresses you have or allocate a new EIP.

3. To allocate a new EIP, click **Allocate Elastic IP Address**.

EC2 > Elastic IP addresses > Allocate Elastic IP address

Allocate Elastic IP address [Info](#)

Elastic IP address settings [Info](#)

Network Border Group [Info](#)

Q us-east-1 X

Public IPv4 address pool

- Amazon's pool of IPv4 addresses
- Public IPv4 address that you bring to your AWS account (option disabled because no pools found) [Learn more](#)
- Customer owned pool of IPv4 addresses (option disabled because no customer owned pools found) [Learn more](#)

Global static IP addresses

AWS Global Accelerator can provide global static IP addresses that are announced worldwide using anycast from AWS edge locations. This can help improve the availability and latency for your user traffic by using the Amazon global network. [Learn more](#)

Create accelerator [↗](#)

Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add new tag

You can add up to 50 more tag

Cancel

Allocate

- Fill in the **Network Border Group** details and click **Allocate**.
- Click on the newly created EIP address (or a free EIP) to view the details and click **Associate Address**.

EC2 > Elastic IP addresses > 34.234.126.178

34.234.126.178 Actions Associate Elastic IP address

Summary			
Allocated IPv4 address 34.234.126.178	Type Public IP	Allocation ID eipalloc-0ba8297882f60a120	Reverse DNS record -
Association ID -	Scope VPC	Associated instance ID -	Private IP address -
Network interface ID -	Network interface owner account ID -	Public DNS -	NAT Gateway ID -
Address pool Amazon	Network Border Group us-east-1		

- Choose the resource type as Network Interface. In the Network Interface option, select the management interface (ENI) that you previously noted down, and select the Private IP Address of management interface on your instance. If you will need this address for another instance in the future, check **Allow this Elastic IP Address to be reassociated**.

Then click on **Associate**.

Associate Elastic IP address

Choose the instance or network interface to associate to this Elastic IP address (34.234.126.178)

Elastic IP address: 34.234.126.178

Resource type
Choose the type of resource with which to associate the Elastic IP address.

Instance

Network interface

⚠ If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Network interface

eni-05ac342176a6d6437 ✕ ↻

Private IP address
The private IP address with which to associate the Elastic IP address.

172.31.18.127 ✕

Reassociation
Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource.

Allow this Elastic IP address to be reassociated

Cancel Associate

- After successful association of EIP, the instance id , ENI id , public DNS and private IP can be verified in the summary page displayed for EIP.

Elastic IP address associated successfully.
Elastic IP address 34.234.126.178 has been associated with network interface eni-05ac342176a6d6437

EC2 > Elastic IP addresses > 34.234.126.178

34.234.126.178 Actions ▼

Summary			
Allocated IPv4 address 34.234.126.178	Type Public IP	Allocation ID eipalloc-0ba8297882f60a120	Reverse DNS record -
Association ID eipassoc-046e583d638428262	Scope VPC	Associated instance ID i-00b98ad68a616d5b8	Private IP address 172.31.18.127
Network interface ID eni-05ac342176a6d6437	Network interface owner account ID 546430496112	Public DNS ec2-34-234-126-178.compute-1.amazonaws.com	NAT Gateway ID -
Address pool Amazon	Network Border Group us-east-1		

- In order to verify connectivity, ping the management IP address (newly attached EIP) from any command prompt or try to connect using SSH to the instance with new EIP attached to the management interface.



Note: The Amazon EC2 instance type on which the Alteon VA software is running impacts the total number of IP addresses that can be configured on the Alteon VA instance. For more information on the capacity and limitations of Amazon EC2 instance types, refer to: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/instance-types.html#AvailableIpPerENI>

Adding Secondary IP Addresses to ENIs

Note: In order to configure application VIP/s on Alteon in multiple IP mode, you are required to add secondary IP addresses on the instance data network interface (eth1).



To add secondary IP addresses to ENI

1. In AWS EC2 console, go to the Network interfaces page under **Network & Security** menu.

Name	Network interface ID	Subnet ID	VPC ID
-	eni-05ac342176a6d6437	subnet-0c2a05cc27b032b5a	vpc-0aee786d5c50e4c1e
-	eni-01f5cd79adcb99e50	subnet-0c2a05cc27b032b5a	vpc-0aee786d5c50e4c1e
-	eni-06fe1d0e78b5951bc	subnet-0dbcead1b884ccb3	vpc-0aee786d5c50e4c1e
-	eni-032030b7bd7cb347f	subnet-0dbcead1b884ccb3	vpc-0aee786d5c50e4c1e
-	eni-05563744df3452ad2	subnet-012b50d1350fa91a4	vpc-0aee786d5c50e4c1e

2. Select the data network interface using the network interface ID (eniID) which you already noted down while adding data NIC to the instance.
3. Click **Actions** -> **Manage IP Addresses**.

Name	Network interface ID	Subnet ID	VPC ID	Availability Zone	Security group n...	Security
-	eni-05ac342176a6d6437	subnet-0c2a05cc27b032b5a	vpc-0aee786d5c50e4c1e	us-east-1c	Radware Alteon VA ...	sg-0ff55
-	eni-01f5cd79adcb99e50	subnet-0c2a05cc27b032b5a	vpc-0aee786d5c50e4c1e	us-east-1c	Radware Alteon VA ...	sg-0ff55
-	eni-06fe1d0e78b5951bc	subnet-0dbcead1b884ccb3	vpc-0aee786d5c50e4c1e	us-east-1c	Radware Alteon VA ...	sg-0ff55
-	eni-032030b7bd7cb347f	subnet-0dbcead1b884ccb3	vpc-0aee786d5c50e4c1e	us-east-1c	Radware Alteon VA ...	sg-0ff55
-	eni-05563744df3452ad2	subnet-012b50d1350fa91a4	vpc-0aee786d5c50e4c1e	us-east-1c	Radware Alteon VA ...	sg-0ff55

4. Click on the network ID to expand it with IP addresses configuration. Click on **Assign new IP address**.

Manage IP addresses [Info](#)

Assign or unassign IPv4 and IPv6 addresses to or from a network interface.

IP addresses

ⓘ To assign additional public IPv4 addresses to this network interface, you must [allocate](#) Elastic IP addresses and associate them with this network interfaces.

▼ eth1: eni-06fe1d0e78b5951bc - data1 - 1.1.1.0/24

IPv4 addresses

Private IP address	Public IP address	
<input type="text" value="1.1.1.154"/>	<input type="text"/>	<input type="button" value="Unassign"/>
<input type="button" value="Assign new IP address"/>		

Allow secondary private IPv4 addresses to be reassigned
Allows you to reassign a private IPv4 address that is assigned to this network interface to another instance or network interface.

Allow

5. You can leave the secondary IP address as auto-assign to get the address from a DHCP server or configure one statically.

Manage IP addresses Info

Assign or unassign IPv4 and IPv6 addresses to or from a network interface.

IP addresses

i To assign additional public IPv4 addresses to this network interface, you must [allocate](#) Elastic IP addresses and associate them with this network interfaces.

▼ eth1: eni-06fe1d0e78b5951bc - data1 - 1.1.1.0/24

IPv4 addresses

Private IP address	Public IP address	
<input type="text" value="1.1.1.154"/>	<input type="text"/>	<input type="button" value="Unassign"/>
<input type="button" value="Auto-assign"/>	<input type="text"/>	<input type="button" value="Undo"/>
<input type="button" value="Assign new IP address"/>		

Allow secondary private IPv4 addresses to be reassigned
Allows you to reassign a private IPv4 address that is assigned to this network interface to another instance or network interface.

Allow

6. Click **Allow** to allow secondary private IPv4 addresses to be reassigned and click **Save** to add secondary IP address.
7. You can add a number of secondary private addresses to the network interface.

Defining and Associating Elastic IP Address to the Data Interface

This section is relevant when more than one ENI is attached to the Alteon VA instance.



To define and associate Elastic IP address to the data interface

1. In order to externalize the secondary IP (the VIP address) to the Internet, you need to associate an Elastic IP address to the data interface. Make sure this address is an allowed address in your security group.
2. On the left side of the dashboard, select **Network & Security > Elastic IPs**.

Elastic IP addresses (1/1)

Filter Elastic IP addresses

<input checked="" type="checkbox"/>	Name	Allocated IPv4 address	Type	Allocation ID	Reverse DNS
<input checked="" type="checkbox"/>	-	18.235.122.68	Public IP	eipalloc-06f4e543a8cee877b	-

18.235.122.68

Summary | Tags

Allocated IPv4 address	Type	Allocation ID	Reverse DNS record
18.235.122.68	Public IP	eipalloc-06f4e543a8cee877b	-

3. To allocate a new EIP, click **Allocate Elastic IP Address**.



Note: If you have an available EIP address, skip to step 5 and use the available EIP address.

EC2 > Elastic IP addresses > Allocate Elastic IP address

Allocate Elastic IP address [Info](#)

Elastic IP address settings [Info](#)

Network Border Group [Info](#)

us-east-1

Public IPv4 address pool

- Amazon's pool of IPv4 addresses
- Public IPv4 address that you bring to your AWS account (option disabled because no pools found) [Learn more](#)
- Customer owned pool of IPv4 addresses (option disabled because no customer owned pools found) [Learn more](#)

Global static IP addresses

AWS Global Accelerator can provide global static IP addresses that are announced worldwide using anycast from AWS edge locations. This can help improve the availability and latency for your user traffic by using the Amazon global network. [Learn more](#)

[Create accelerator](#)

Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

[Add new tag](#)

You can add up to 50 more tag

CancelAllocate

4. Fill in the **Network Boarder Group** details and click **Allocate**.
5. Click on the newly created EIP address (or a free EIP) to view the details and click **Associate Address**.

EC2 > Elastic IP addresses > 44.215.45.87

44.215.45.87 Actions ▾ Associate Elastic IP address

Summary			
Allocated IPv4 address 44.215.45.87	Type Public IP	Allocation ID eipalloc-07190a68a7dd46e64	Reverse DNS record -
Association ID -	Scope VPC	Associated Instance ID -	Private IP address -
Network interface ID -	Network interface owner account ID -	Public DNS -	NAT Gateway ID -
Address pool Amazon	Network Border Group us-east-1		

6. Choose the resource type as Network Interface. In the Network Interface option, select the data network interface (ENI) that you previously noted down, and select the secondary private IP Address (VIP) on your instance. check **Allow this Elastic IP Address to be reassociated**. Then click **Associate**

Associate Elastic IP address


Choose the instance or network interface to associate to this Elastic IP address (44.215.45.87)

Elastic IP address: 44.215.45.87

Resource type
Choose the type of resource with which to associate the Elastic IP address.

Instance

Network interface

 If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Network interface

eni-06fe1d0e78b5951bc

Private IP address
The private IP address with which to associate the Elastic IP address.

1.1.1.46

Reassociation
Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource.

Allow this Elastic IP address to be reassociated

7. Verify EIP allocation to secondary IP (VIP) from EC2 -> **Network Interfaces** -> <eniid> -> **Manage IP addresses**.

EC2 > Network Interfaces > eni-06fe1d0e78b5951bc > Manage IP addresses

Manage IP addresses [Info](#)

Assign or unassign IPv4 and IPv6 addresses to or from a network interface.

IP addresses

ⓘ To assign additional public IPv4 addresses to this network interface, you must [allocate](#) Elastic IP addresses and associate them with this network interfaces.

▼ eth1: eni-06fe1d0e78b5951bc - data1 - 1.1.1.0/24

IPv4 addresses

Private IP address	Public IP address	
<input type="text" value="1.1.1.154"/>	<input type="text"/>	<input type="button" value="Unassign"/>
<input type="text" value="1.1.1.46"/>	<input type="text" value="44.215.45.87"/>	<input type="button" value="Unassign"/>

Allow secondary private IPv4 addresses to be reassigned
Allows you to reassign a private IPv4 address that is assigned to this network interface to another instance or network interface.

Allow

Defining and Associating Multiple External IP Addresses for Multiple VIPs

This section is necessary if you want to configure more than one VIP in your Alteon VA AWS cloud. The number of IP addresses available depends on your instance size.



To define and associate multiple external IP address for multiple VIPs

1. Refer to [Adding secondary IP addresses to ENIs](#) for adding more number of secondary IP addresses to the data network interface. The secondary IP addresses are configured as VIPs in Alteon VA.
2. Refer to [Defining and Associating Elastic IP Address to the Data Interface](#) to associate EIP to the VIP. In step 6 of the above topic , please make sure to select correct secondary private IP (VIP) to which the EIP is to be attached.
3. Repeat steps 1 and 2 to define and associate multiple EIPs for multiple VIPs.
4. Configure your Alteon VA to use the private IPs you chose

Obtaining and Installing a License

By default, a newly spined-up BYOL Alteon VA instance has Deliver capabilities license and 1 Mbps throughput license.

There are two options to acquire and install appropriate capabilities and capacity licenses:

- GEL (Global Elastic License) entitlement.
The Alteon Global Elastic License (GEL) provides an ADC purchasing model that cuts costs eliminates planning risks, ensures complete agility in deploying ADC services wherever and whenever you need them, and with any number of ADC instances you need, limited only by the total ADC capacity you purchased for your entire organization. For instructions on GEL license installation on Alteon see Alteon VA Installation Guide.
- Purchase individual permanent Alteon VA license/s. Combined with the three capabilities packages (Deliver, Perform, Secure), a wide range of throughput license options are available for Alteon VA, starting from 200 Mbps.



Note: Since the Alteon VA license is generated based on the VM MAC or IP addresses, generating the license based on the VM IP address and having the IP address being static, prevents the license from becoming outdated.



To obtain and install a permanent license

To obtain a permanent license, the device management IP address or MAC address is required. Once the Alteon instance is up and the necessary information is available, follow these steps:

1. Log in to Radware Customer portal and select **Tools > VA License Generator**.
2. Search in your VA inventory for the **Serial Number** you want to use for this instance.
3. Click **Generate License**.
4. In the pop-up window enter the MAC address or IP address of the VA instance and click **Generate License**. The list of license strings for this serial number appears.
5. To install the license via Web UI:
 - Login to the Alteon VA instance via HTTPS.
 - Select **System > Licenses**.
 - Enter the first license string from the list and click **Set License**.
 - Repeat for each license string in the list.
6. To install the license via CLI:
 - Login to the Alteon VA instance via SSH or Telnet.
 - Enter the CLI command `/oper/swkey license_string`, where *license_string* is the first license string from the list.
 - Repeat for each license string in the list.



Notes

- When deploying a VM from a snapshot, the MAC address of the virtual machine changes and the license becomes invalid. For the VA to operate properly, you must either get a new VA license with the new MAC address or manually set the old MAC address on the new VM.
- If the VA license expires, the SLB traffic will be limited to the default throughput of 1 Mbps, even if there is a separate throughput license with higher limit installed.

Configure Alteon VA on AWS

This section describes the basic steps to configure your Alteon VA on AWS to perform load balancing between servers.

You need to perform the following steps:

1. [Configuring the Interface IP, page 67](#)
2. [Configuring the Gateway, page 68](#)
3. [Setting the Proxy IP, page 69](#)
4. [Configuring the Real Servers, page 70](#)
5. [Defining the Real Server Group, page 71](#)
6. [Define the Virtual Server, page 72](#)

Your Alteon VA will then be ready to perform load balancing for your application.

The following sections will guide you step by step to perform this configuration.



Note: If you are running in a Single IP address mode, the IP interface, Proxy IP and the Gateway configurations are set automatically. You should therefore skip to **Configuring the Real Servers**.

For more enhanced capabilities refer to the *Alteon OS Application Guide*.

Configuring the Interface IP



To configure the interface IP

1. Go to \Configuration\Network\Layer 3\IP Interfaces.

The screenshot shows the configuration page for an IP interface on an Alteon VA device. The device's IP is 54.229.67.19. The configuration page is titled 'Edit IP Interface' and includes the following fields:

- Enable IP Interface
- Interface ID: 1
- IP Version: ipv4
- IP Address: 15.0.2.181
- Mask: 255.255.255.0
- VLAN: 1
- Peer IP: 0.0.0.0
- Advanced section:
 - BOOTP Relay: Enable

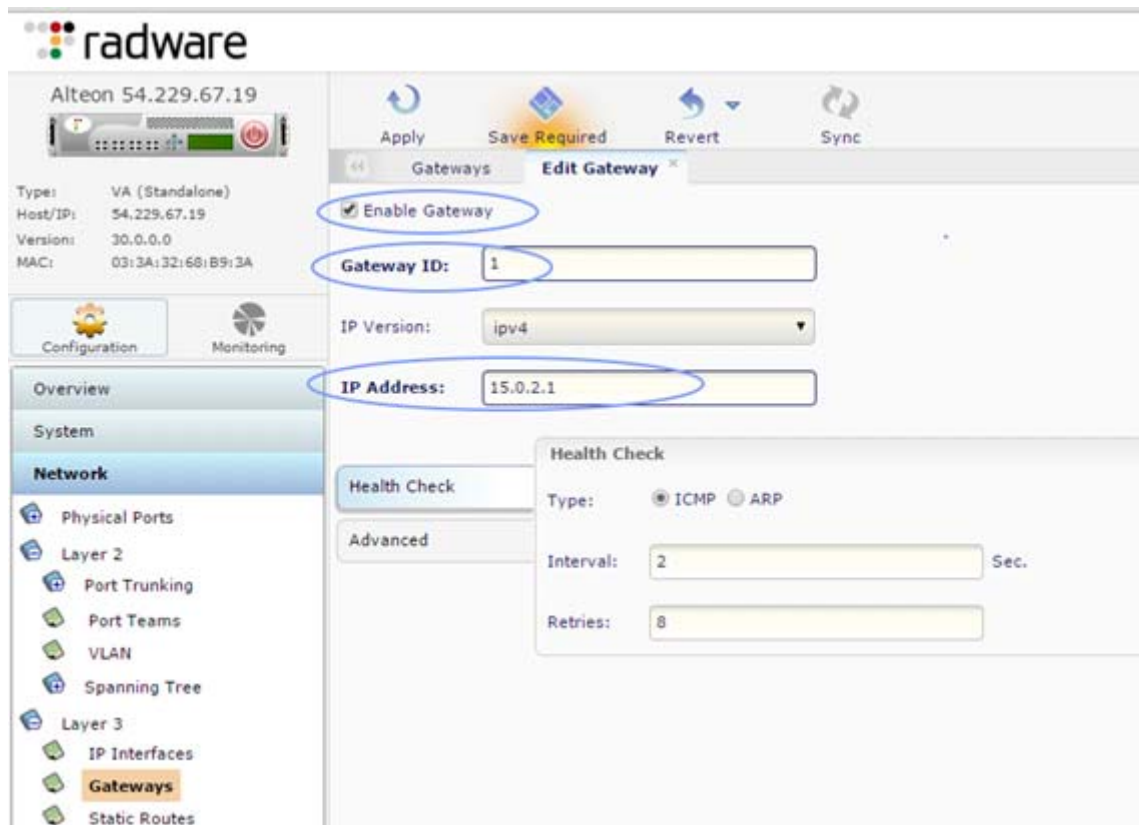
2. Click on the + icon to create a new interface.
3. Select **Enable IP Interface**.
4. Enter the IP interface parameters:
 - Interface ID
 - IP Address (the primary IP address of data interface 1)
 - Mask
 - VLAN
5. Press **Submit**.

Configuring the Gateway



To configure the gateway

1. Go to \Configuration\Network\Layer 3\Gateways.



2. Click on the + icon to create a new gateway.
3. Select **Enable Gateway**.
4. Enter the Gateway ID.
5. Enter the Gateway IP Address (usually it will be your subnet with extension 1).
6. Press **Submit**.

Setting the Proxy IP




To configure the proxy IP



Note: This procedure is not required when running in Single IP address mode.

1. Go to \Configuration\Network\Proxy IP.

The screenshot shows the Radware management interface for an Alteon 54.229.67.19. The left sidebar shows the navigation menu with 'Proxy IP' selected under the 'Network' section. The main content area is titled 'Proxy IP' and includes an 'Add Proxy IP*' button. The 'IP Address' field is highlighted with a blue circle and contains the value '15.0.2.182'. Below this, the 'Port Range' section has two columns: 'Available' and 'Selected'. The 'Available' column is empty with 'Total Rows: 0'. The 'Selected' column contains 'Port ID 1' with 'Total Rows: 1'. A right arrow button is circled between the two columns.

2. Click on the + icon to add a new proxy IP.
3. Enter the proxy **IP Address**. It is the same as the VIP IP address (the secondary IP address of data interface 1).
4. Select the relevant port from the **Available** port list and click  to move it to the **Selected** list.
5. Press **Submit**.

Configuring the Real Servers



Note: To configuring real servers that are part of an *AWS Auto Scaling Group*, refer to [Server Scaling Support, page 79](#).



To configure the real servers

1. Go to \Configuration\Application Delivery\Virtual Services\Real Servers.

The screenshot shows the 'Edit Real Server' configuration window. On the left, a navigation pane lists 'Application Delivery' > 'Virtual Services' > 'Real Servers'. The main area displays the following fields:

- Enable Real Server
- Real Server ID: 1
- Description: Application Server 1
- IP Version: IPv4
- Server IP Address: 15.0.2.221

Below these fields is a 'Service Port' section with a search bar and the message 'There is no data to display.' The bottom of the window shows 'Page 1 of 1'.

2. Click on the + icon to create a new real server.
3. Select **Enable Real Server**.
4. Enter the Real Server ID.
5. Enter the Real Server IP Address.
6. If required, define the service ports and their parameters.
7. Press **Submit**.

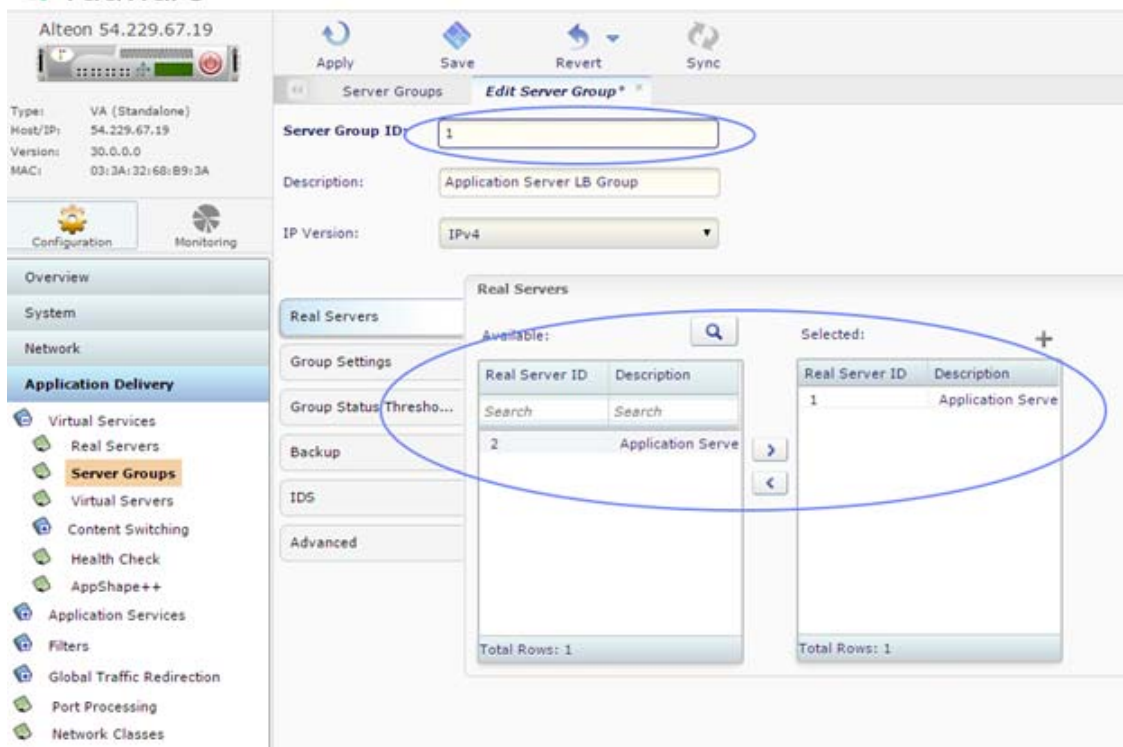
Repeat the procedure for all your real servers.


Defining the Real Server Group



To configure the real server group

1. Go to \Configuration\Application Delivery\Virtual Services\Server Groups.



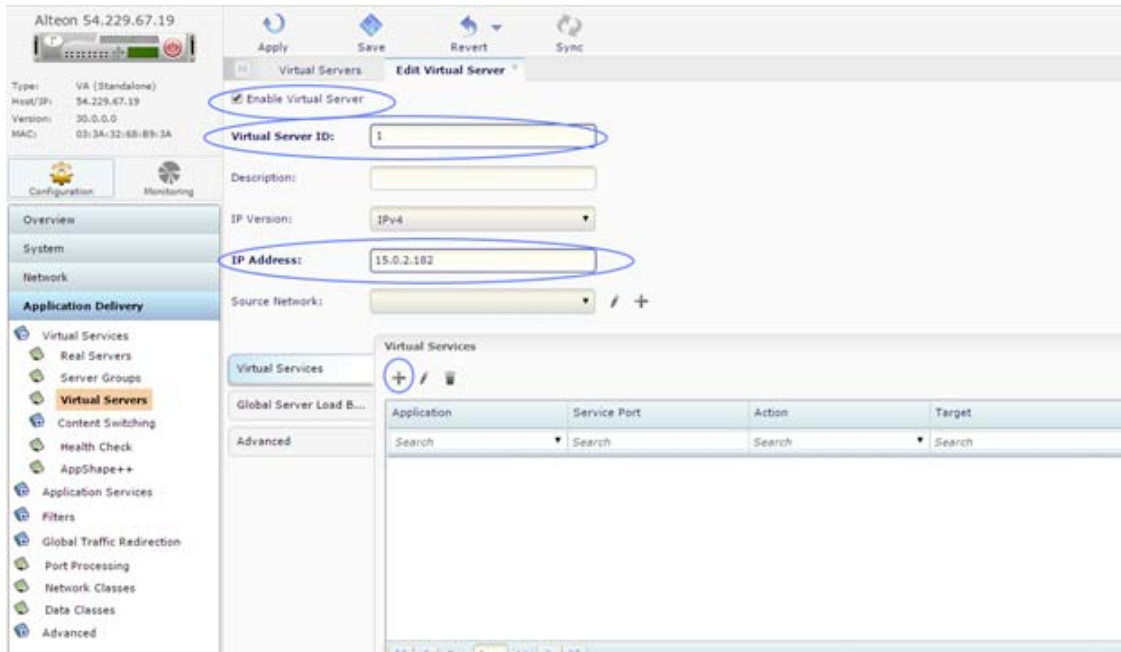
2. Click on the + icon to create a new server group.
3. Enter the Server Group ID.
4. Enter a server group Description.
5. Select the relevant real servers from the **Available** Real Servers list and click  to move it to the **Selected** list.
6. If required, change the system defaults and modify any parameters.
7. Press **Submit**.

Define the Virtual Server



To configure the virtual servers

1. Go to \Configuration\Application Delivery\Virtual Services



2. Click on the + icon to create a new virtual server.



Note: If you are running in a single IP address mode, double click on the already-configured virtual server and skip to step 6 to the *Virtual Service* tab.

3. Select **Enable Virtual Server**.
4. Enter the Virtual Server ID.
5. Enter the Virtual Server IP Address. (It is the secondary IP address on the AWS instance data network interface card 1 (eth1) you previously created.)



Note: If you are operating in a GSLB environment, make sure to configure the EIP of the VIP as the NAT, by updating the **NAT Address** in the *Global Server Load balancing* tab.

Global Server Load Balancing

Virtual Services

Global Server Load B...*

Advanced

Domain Name: service1.radware.com

Weight: 1

Priority for Availability Metric: 1

Availability Persistence: Disable

NAT Address: 176.188.145.110

Site Selection Rules:

Available: [Search Icon] Selected:

6. In the *Virtual Services* tab, click the + icon to add the real servers group to the virtual server.

Alteon 54.229.67.19

Type: VA (Standalone)
Host/IP: 54.229.67.19
Version: 30.0.0.0
MAC: 03:3A:32:68:B9:3A

Configuration Monitoring

Overview System Network Application Delivery

Virtual Services
Real Servers
Server Groups
Virtual Servers
Content Switching
Health Check
AppShape++
Application Services
Filters
Global Traffic Redirection
Port Processing
Network Classes
Data Classes
Advanced

Apply Save Revert Sync

Virtual Servers Edit Virtual Server Add Virtual Service*

Server Index: 1

Application: HTTP

Service Port: 80

Protocol: TCP

Action: Group Redirect Discard

Group ID: 1

Properties

Description: [Text Field]

Persistency

Real Server Port: [Text Field]

Client NAT (PIP)

Hostname: [Text Field]

Content Based Rules

Delayed Binding: Enable Disable Force Proxy

HTTP

SSL

HTTP Content Modific...

HTTP Server Selection

AppShape++

Submit Cancel

7. Enter the Service Port.
8. Select the Real Servers Group from the Group ID drop down list.
9. If required, change the system defaults and modify any parameters.
10. Press **Submit**.

Enabling HA Mode in the AWS Cloud

Alteon in the AWS cloud can be configured to work in High Availability mode with a pair of master and backup VA platforms. Both can run on the same availability, or each in a different availability zone of the same region. With one configured as master and the second as backup, they both have a private IP address for internal access. Should the master Alteon VA fail, the backup takes over, replacing the failed platform and becoming the master.

The Alteon pairs should be configured with an elastic IP address for its virtual IP addresses (VIPs) enabling access from clients that are outside the AWS cloud, or for accessing the Alteon for management purposes from outside the AWS cloud network.

The elastic IP addresses configured to be attached to the VIPs on the master VA of the Alteon VA HA pair and will act as the floating IP address.

When there is a failure in the master, and a failover to the backup occurs, the elastic IP addresses are removed from the master and attached to the addresses of the backup (now the new master) platform to support the failover.

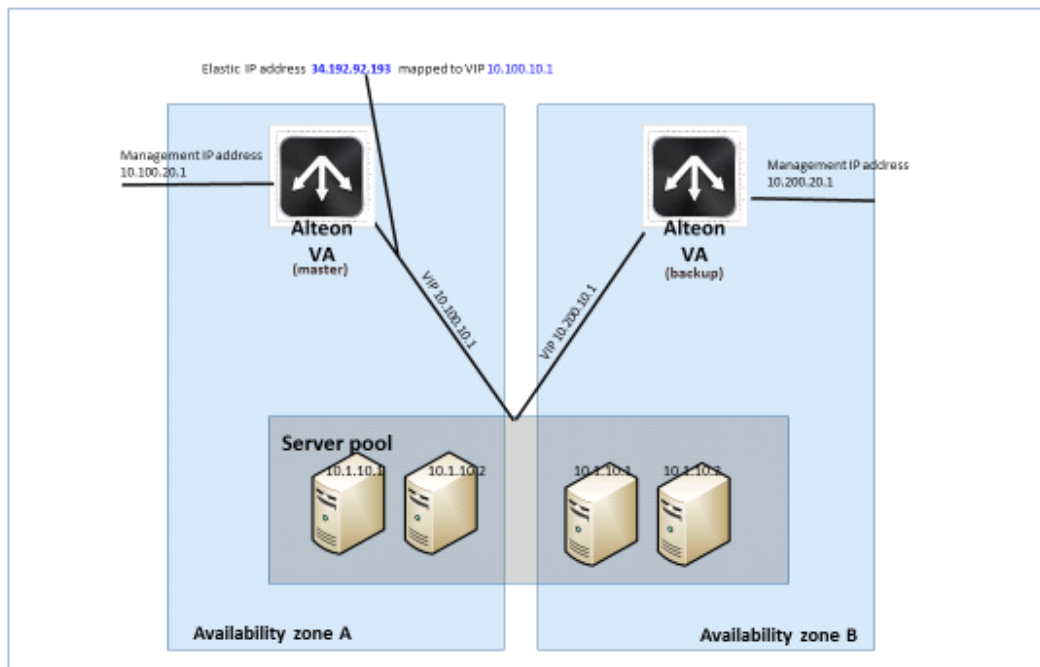


Note: This mechanism is not available in AWS for IPv6 addresses, hence HA mode cannot be achieved for IPv6.

If you are configuring the Alteon VA to work in High Availability (HA) mode you should enable the high availability advertisement ports for UDP, port 2090 as inbound and port 2091 as outbound.

The Initial Configuration is shown below.

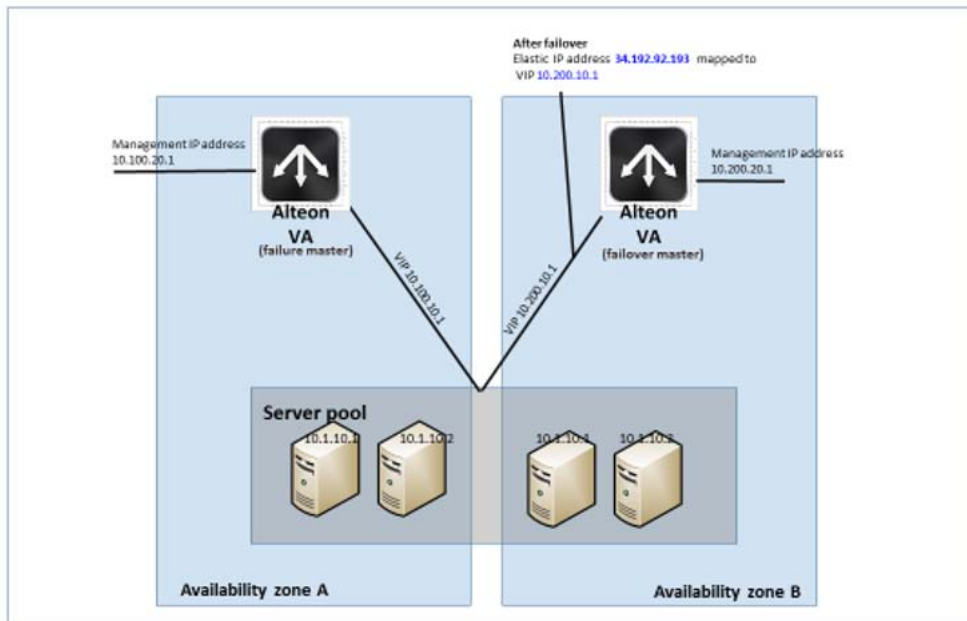
Figure 19: High Availability Initial Setup



Alteon VA on availability Zone A acts as the master, and the elastic IP address is mapped to its VIP (10.100.10.1).

In case of a failure on the master, a failover occurs and the backup Alteon VA becomes active and acts as the master. The Elastic IP address is detached from the Alteon VIP on availability Zone A (10.100.10.1) and being attached to VIP 10.200.10.1 on availability Zone B, as shown in Figure 2.

Figure 20: Configuration After Failover



Alteon VA supports HA mode in the Amazon Web Server (AWS) cloud.

Configuring the HA consists of defining the elastic (floating) IP address that enables moving from the IP of your Alteon to the IP of the peer to provide for high availability functioning.

Since the AWS cloud does not have the provision to support floating IP addresses, which is essential in HA environment, you cannot have two instances with the same IP address, where just one of them will be actually active. Alteon must therefore transfer the public IP addresses among the VMs.

When Alteon VA operates in HA mode on AWS, upon failover the backup Alteon VA takes ownership on the Master Alteon Elastic IP address that is exposed to the outside world. (This elastic IP address will act as a floating IP address.)

In order to enable to transfer the master public IP address to the backup, Alteon should have access to the AWS account running the Alteon VA virtual machines.

For this purpose you must enter the AWS credentials to the AWS portal as well as additional information of the IP addresses of the VMs running the Alteon, to both Alteon Master and backup platforms.

After defining the AWS credentials, you should define the association between the IP addresses on the Master Alteon VA, the backup Alteon VA and the elastic IP address.

If a failover occurs, the backup Alteon associates the elastic IP addresses with the relevant IP addresses on the backup Alteon in order to take control.

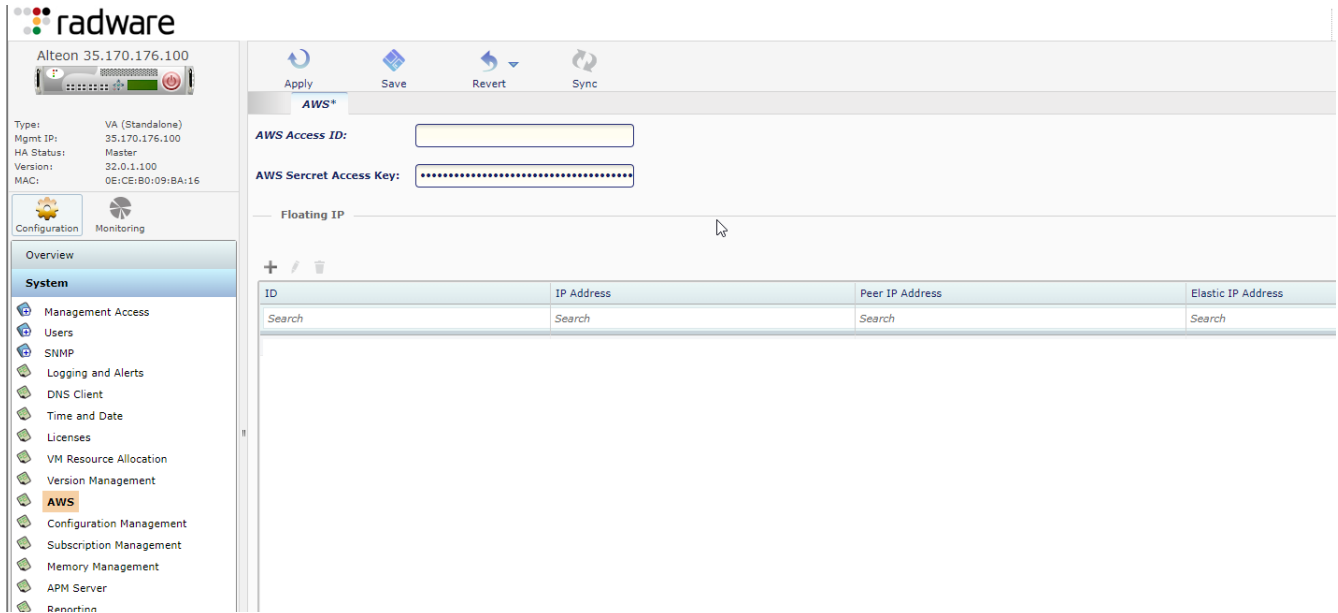


To configure AWS HA (using the WebUI)

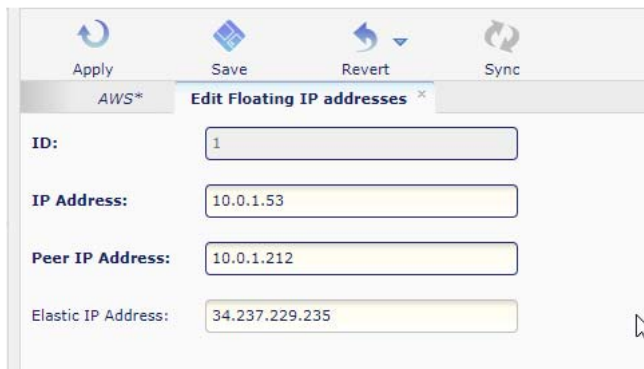
Configuring the HA consists of defining the elastic (floating) IP address that enables moving from the IP of your Alteon to the IP of the peer to provide for high availability functioning.

1. Go to **Configuration > System > AWS**.
2. Enter the **AWS Access ID** (the ID of the Access keys) and the **AWS Secret Access Key** to access the AWS features.

If you do not know the AWS access and key, contact your AWS administrator.



3. Select the  Enter icon.



4. Enter the ID (alphanumeric field) of your Alteon platform.
5. Enter the local IP Address of your Alteon platform.
6. Enter the IP Address of the peer (for HA) platform.
7. Enter the Elastic (floating) IP Address that enables moving from the IP of your Alteon to the IP of the peer to provide for high availability functioning.

In case the master and backup are configured on different availability zones on the same region, you should also create an Internet gateway through the VPC dashboard, and attach it to your VPC. Refer to the *Alteon Application Guide* to configure the Alteon VA to work in HA mode.



Note: Configuration sync does not synchronize the virts because the same IP address cannot be configured on both instances. It needs to be added to the secondary NIC.



To configure AWS HA (using the CLI)

Enter the CLI command **info/sys/aws** to displays the AWS VM public IP information.

If HA is configured, the elastic IP address, the NIC resource name, the peer IP address name are presented.

In order the Alteon VA to work in HA mode, configure the following:

1. Access the AWS floating IP menu, enter: **cfg/sys/aws/fip**
2. Enter ID (alphanumerical field) of your Alteon platform.
3. Enter the local IP address of your Alteon platform, enter: **cfg/sys/aws/fip/addr**
4. Enter the IP Address of the peer (for HA) platform, enter: **cfg/sys/aws/fip/peerip**
5. Enter the Elastic (floating) IP Address that enables moving from the IP of your Alteon to the IP of the peer to provide for high availability functioning, enter: **cfg/sys/aws/fip/elasip**

CHAPTER 3 – SERVER SCALING SUPPORT

Background

In traditional deployments, to ensure that an application with varying loads is available at all times, an adequate amount of application servers, capable of supporting the peak load, are provisioned, resulting in a significant amount of computer resources that are most of the time unused. As part of the application configuration, the user is also required to define the real servers serving the application within the ADC.

As applications are migrating to the cloud, this method of resources reservations becomes more expensive and irrelevant. Cloud servers scaling capabilities (for example AWS Auto Scaling) provide a cost-effective solution for coping with varying loads. It enables starting with a given server capacity, sufficient at the time to deal with the application load, having the agility to automatically add servers when the load on the application increases, and to remove servers when the need for the additional computing power diminishes.

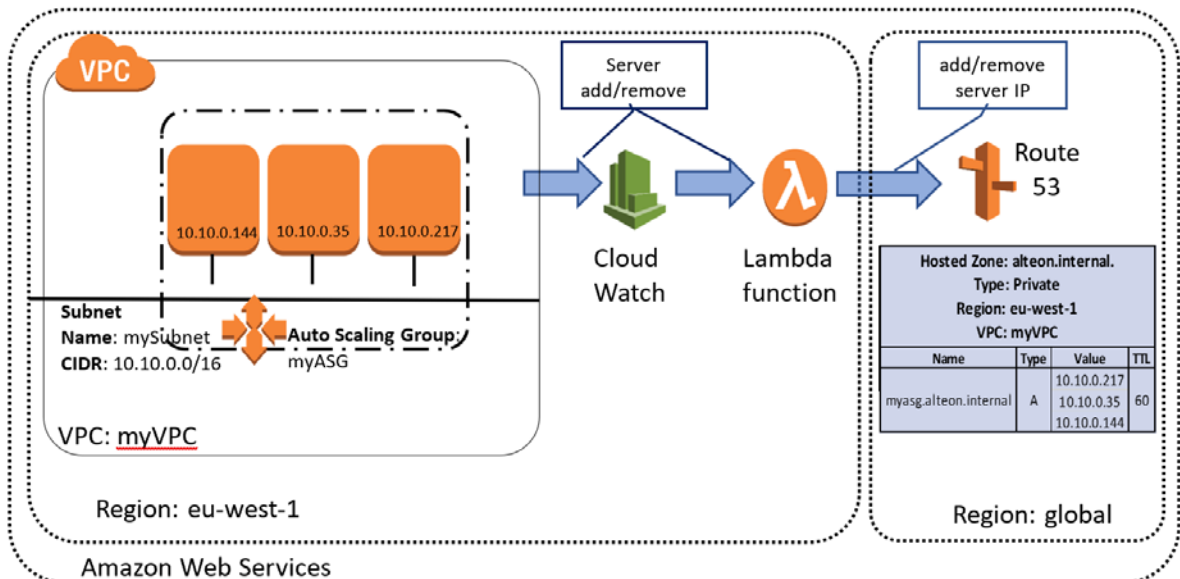
When the application is configured as part of an AWS Scaling Group (ASG), the application configuration on the ADC becomes more challenging, as servers are dynamically added and removed, causing a static configuration to be irrelevant.

This section details how to configure the Alteon VA to serve an application where its servers are part of an AWS Auto Scaling Group.

Solution Architecture

Alteon support of real servers auto-scaling group takes advantage of the AWS services interoperability with the Alteon VA deployed on AWS.

Following, is a high-level architecture diagram of the solution, followed by a description of the solution and its components.



AWS ASG

The AWS auto-scaling group (ASG) hosts and monitors the application servers and upon change of the application load, adds or removes servers according to configured scaling metrics.

AWS Cloud Watch

Upon the creation of the ASG, and when a server is added to the ASG or removed from it, the AWS cloud watch triggers an event to Radware's *aws_lambda_autoscale_ddns* lambda function. Such an event is also triggered upon the deletion of the ASG.

AWS *Cloud Watch* should be configured to send events from ASGs of applications processed by the Alteon.

Route 53

Route53, the AWS Domain Name System, hosts the ASG domain name and the IP address of its members (application servers)

Radware's "aws_lambda_autoscale_ddns" Function

As result of changes of the application ASG members, Cloud Watch events are received by Radware's *aws_lambda_autoscale_ddns* function.

Once an event is received, the function checks whether a domain name entry for that ASG exists in Route53. If no such entry exists, it creates it with entries as an internal domain with the IP address of each of the ASG members (real servers). If an entry already exists, it updates it with the updated IP addresses of the ASG members.

The domain name entry is in the format of <ASG name>.<region>.<domain name suffix > where the suffix can be configured in the lambda function. (alteon.intenral is the default domain name suffix.)

Radware's *aws_lambda_autoscale_ddns* function can be found at https://github.com/Radware/aws_lambda_autoscale_ddns

Alteon FQDN Feature

The Alteon FQDN feature allows real servers to be defined by a domain name instead of by a static IP address. Traffic can be forwarded to a server when its IP address changes, or even when additional servers are added, without any change in the Alteon configuration. Once an FQDN server is created, and every time it is reconfigured, Alteon contacts the DNS servers to resolve the IP addresses of the FQDN server.

In our case, AWS Route53 is configured in the Alteon as the DNS server. Alteon updates the real servers according to the DNS records, which is periodically updated by the lambda function according to the changes in the ASG. This assures that Alteon is updated with changes on the ASG.

Configuration

In order for Alteon to support applications using the AWS Auto Scaling Group (ASG), the AWS services as well as the Alteon VA must be configured.

A demonstration of the configuration process can be found at: <https://www.youtube.com/watch?v=Zagk5VADxd8>

Real Server Auto Scaling Group

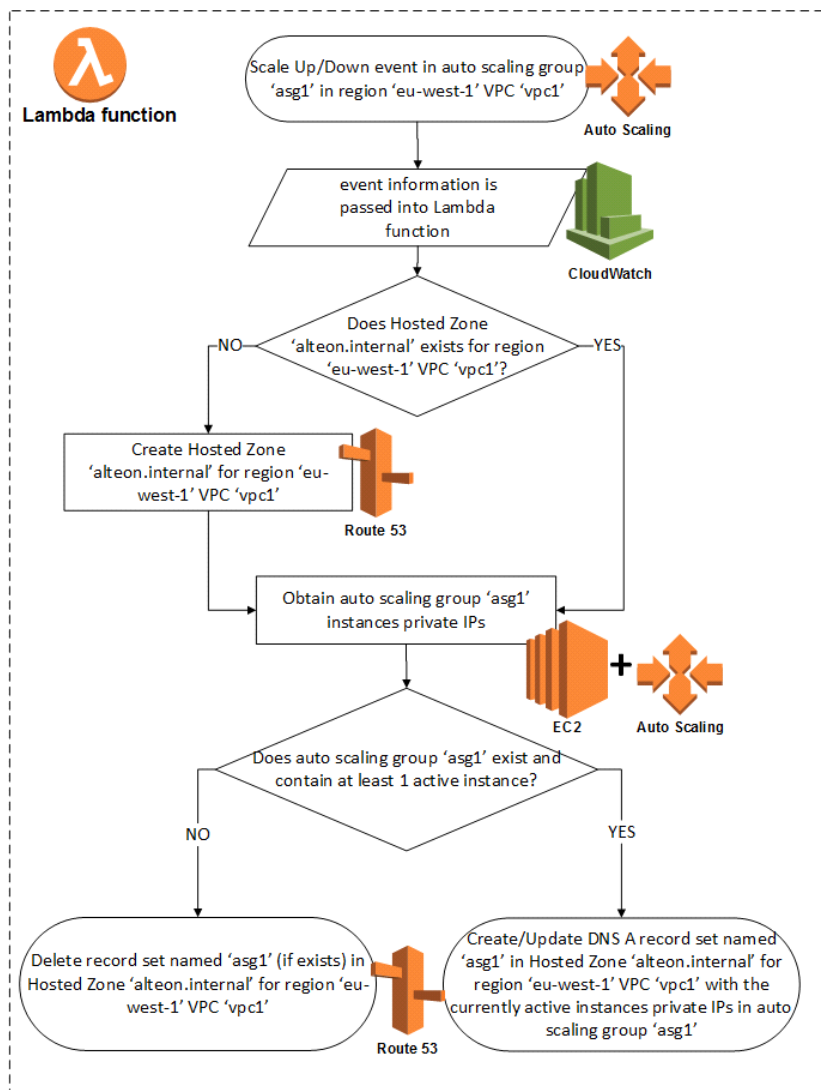
In order to benefit from the AWS scaling capabilities, configure your application servers to run in Auto Scaling Group. AWS Auto Scaling monitors your applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost.

Details on AWS auto scaling capabilities and how to configure it can be found at: <https://aws.amazon.com/autoscaling/>

Lambda Function

As described above, there is a need to create the *Lambda* function that gets notification from the Cloud Watch on changes in the ASG and updates Route53.

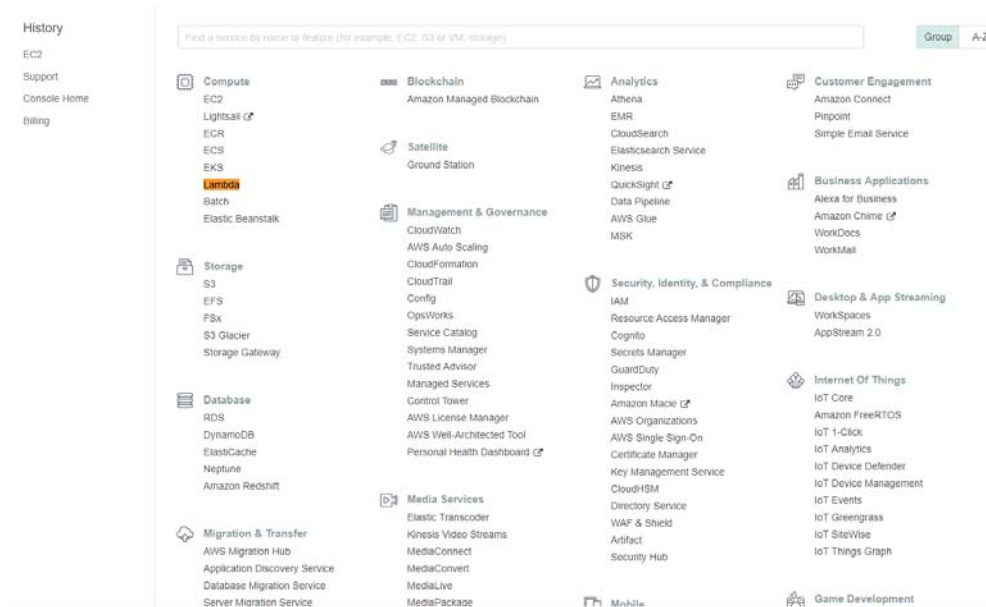
The following diagram shows a flowchart of the Lambda function followed by the configuration procedure.



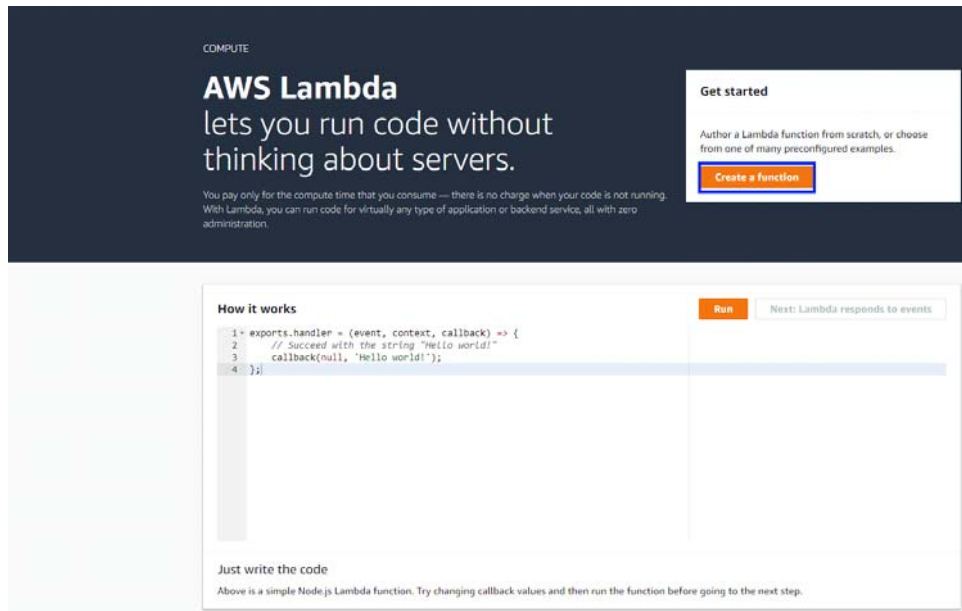


To create the Lambda function

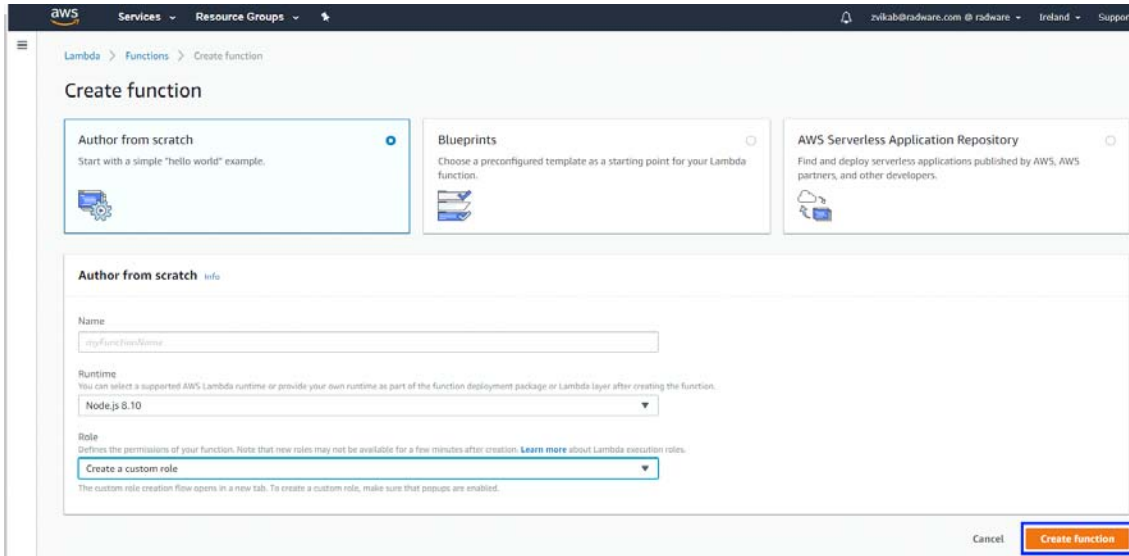
1. Go the EC2 console.



2. In the **Compute** group, click on the **Lambda** service.
You will be prompted with the *AWS Lambda* landing page.



3. Click **Create Function**.
You will be prompted with the *Create function* window.



4. Enter the name of the function (for example, *radware_autoscale-lambda*).
5. Select the runtime as **Python 2.7**.
6. In order to set the permissions for the function, select **Create a custom role**.
The IAM console window opens in a new tab. (Pop-up windows should be enabled.)
7. In the IAM Role field, select **Create a new IAM Role** option.
8. In the Role Name, enter the name to give this role (for example, *radware_autoscale_lambda_basic_execution*).
9. Click the **View Policy document** link.
10. Click **Edit**.
11. Replace the existing policy with the policy in the *execution_role.json* file. This file can be found at https://github.com/Radware/aws_lambda_autoscale_ddns.

AWS Lambda requires access to your resources

AWS Lambda uses an IAM role that grants your custom code permissions to access AWS resources it needs.

▼ Hide Details

Role Summary ?

Role Description Lambda execution role permissions

IAM Role Create a new IAM Role

Role Name my_lambda_basic_execution

▼ Hide Policy Document

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "VisualEditor0",
      "Effect": "Allow",
      "Action": [
        "autoscaling:DescribeAutoScalingGroups",
        "ec2:DescribeInstances",
        "ec2:DescribeSubnets",

```

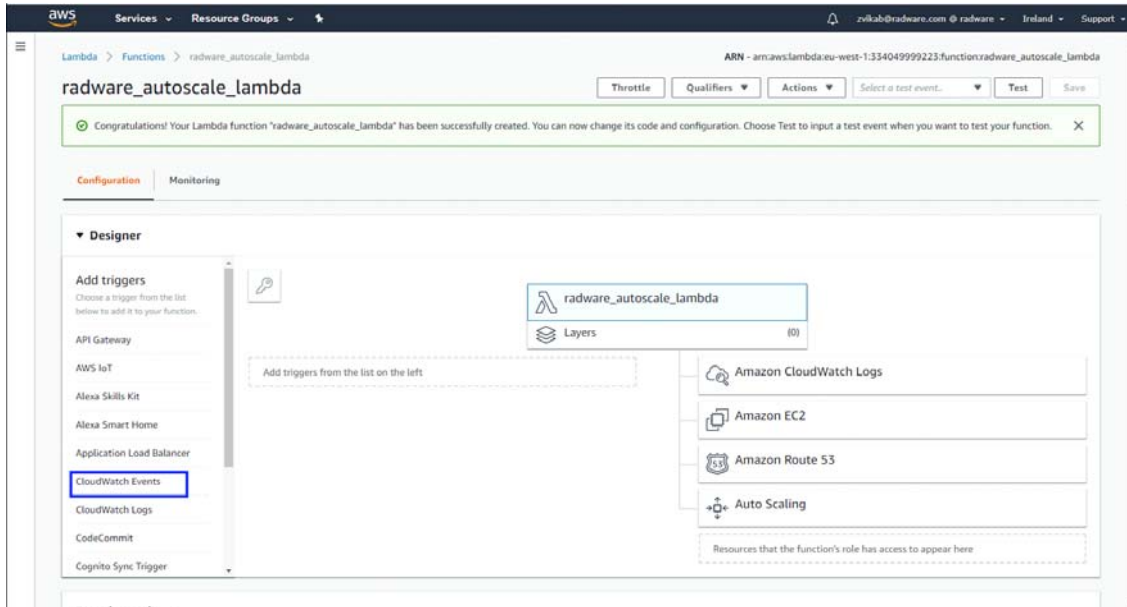
Edit

Policy from the execution.role.json

Cancel

Allow

- 12. Click **Allow**, and return to the *Create function* screen.
- 13. Click **Create Function**, and the Lambda function is created.
- 14. From the *Lambda management* console you can associate triggers with the function.

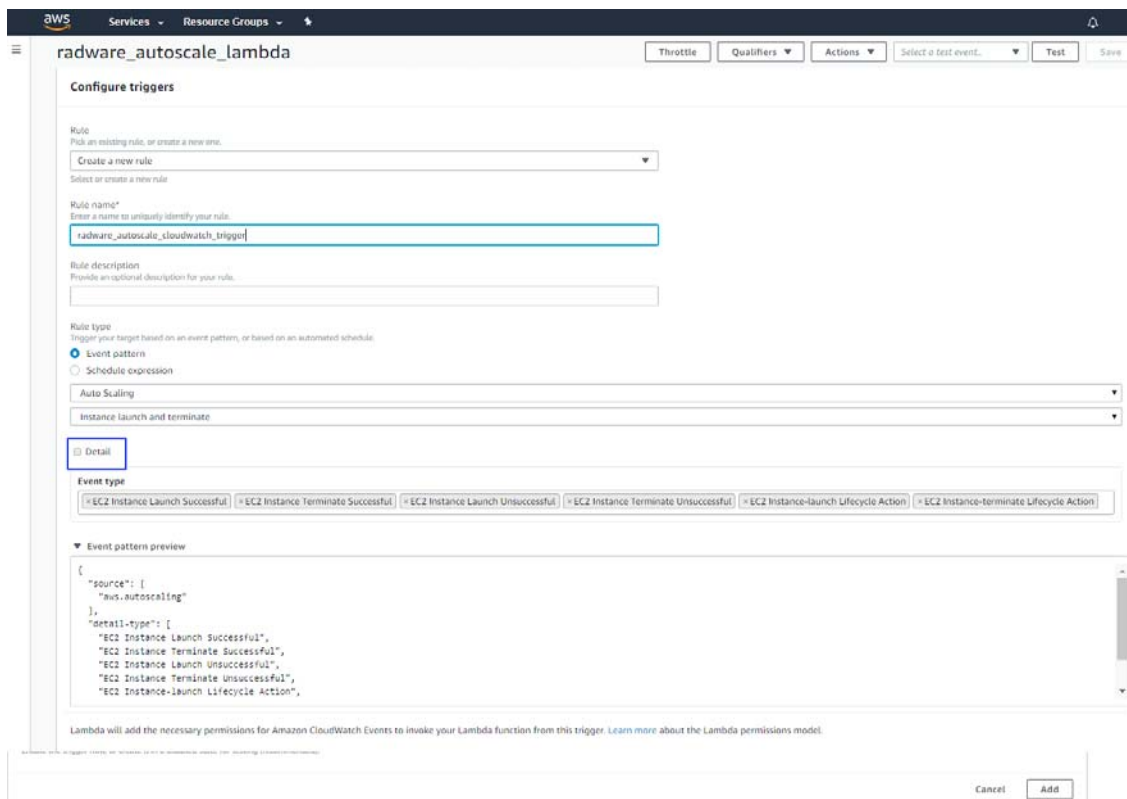


Now you configure the function to be triggered as results of auto scaling events.

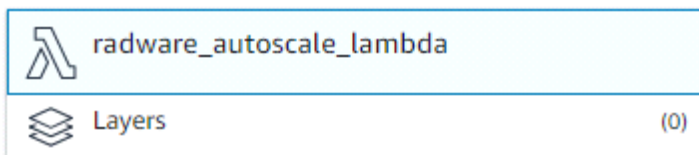
- 15. Click the **CloudWatch Events** trigger.

The trigger configuration dialog expands.

16. Select **Create a new rule** option.
17. Enter the trigger name (for example, *radware_autoscale_cloudwatch_trigger*).
18. Enter a description of this rule.
19. Select the rule type to be **Even pattern**.
20. Set the events to be **Auto Scaling** and **Instance launch and terminate**.
21. Select all the available events type.
22. if you want the lambda function to deal with specific autoscaling groups (recommended) click the **Detail** check box and enter the name of the autoscaling groups you want to trigger the lambda function.



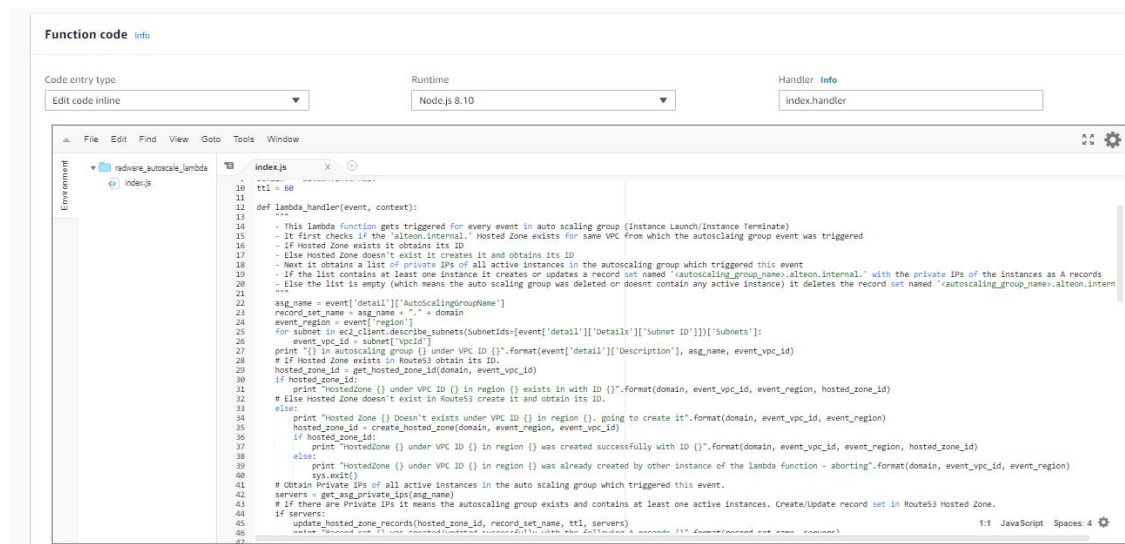
23. Click **Add**.
24. On the *Lambda management* console, click **Created function**.



The function code window expands.

25. Copy the function code from the *aws_lambda_autoscale_ddns.py* file (that is found at https://github.com/Radware/aws_lambda_autoscale_ddns).
26. At the beginning of the script is the *default parameters, domain name, and ttl*. You can modify as desired.

27. On the upper left side of the *Lambda management* console, click **Save**.



The Auto Scaling Lambda function is now ready to run.

Whenever instances are added or removed from the autoscaling groups, the Cloudwatch triggers the function which updates the Route53 on the changes.

Alteon VA Configuration

After the lambda function is created and configured to update Route53 on any changes on the members of the autoscaling group, you must configure the Alteon VA to communicate with Route53 and update the real servers group with the instances of the autoscaling groups.

The solution takes advantage of the Alteon FQDN servers support.

First, you need to spin up an Alteon VA (or a pair of Alteon VAs for redundancy purposes) in the same VPC of the application autoscaling group. Then, configure the Alteon VA to use Route53 DNS records updated by the Lambda function, and to configure the FQDN servers in order to update the real server group with the application servers members of the ASG.

DNS Server Configuration

Every VPC in AWS comes with a local DNS server. (Its IP is the base CIDR of the VPC plus two). For Example, if the VPC subnet is CIDR: 10.10.0.0/16, its DNS server IP address will be 10.10.0.2.



To configure the DNS server

1. In the Alteon WebUI go to **System > DNS Client**.
2. Enter the DNS server IP address (10.10.0.2).
3. Click **Submit** and **Save**.



Alteon 52.73.159.221

Type: VA (Standalone)
Mgmt IP: 52.73.159.221
HA Status: None
Version: 32.2.0.0
MAC: 0A:BA:FA:06:62:00

Configuration Monitoring

Overview

System

- Management Access
- Users
- SNMP
- Logging and Alerts
- DNS Client**
- Time and Date

Apply Save Revert Sync

DNS Client *

Primary IP Version: IPv4 IPv6

Primary IP Address:

Secondary IP Version: IPv4 IPv6

Secondary IP Address:

Default Domain Name:

FQDN Server Configuration



To configure the FQDN server

1. Go to **Configuration > Application Delivery > FQDN Servers**.
2. Click the + button to add a new FQDN server entry in the Alteon.
3. Set the FQDN server ID. It is recommended to give it the same name of the AWS autoscaling group name.
4. In the *Fully Qualified Domain Name* field enter the *Route53 domain name*, which is a concatenation of the ASG name, the region and the extension defined in the function. The default extension is **alton.internal**.
5. It is recommended to change the TTL from its default value (5 minutes) to **1 minute** in order that scaling changes be populated to the Alteon faster.
6. Add a new real server group by clicking the + button. It is recommended to name the group with the *ASG name*.
7. select the checkbox to **Enable the FQDN server**.
8. **Apply** and **Save** your changes.

The screenshot shows the configuration page for FQDN Servers in the Alteon VA interface. The left sidebar contains a navigation menu with categories: Overview, System, Network, and Application Delivery. Under Application Delivery, there are sub-items: Quick Service Setup, Virtual Services, Filters, Server Resources, Real Servers, Server Groups, Health Check, and FQDN Servers (highlighted). The main content area has a top bar with 'Apply Required', 'Save Required', 'Revert', and 'Sync' buttons. Below this is a sub-header 'FQDN Servers' and a tab 'Add New FQDN Servers*'. A checkbox 'Enable FQDN Server' is present. The configuration fields include: ID (text input: asg1), Fully Qualified Domain Name (text input: asg1.us-east.alteon.internal), IP Version (dropdown: IPv4), Minimal TTL (text input: 1, with 'Min.' label), Group ID (dropdown: asg1-grp, with edit and add icons), and Template Real Server ID (dropdown, with edit and add icons).

Type: VA (Standalone)
Mgmt IP: 10.171.20.130
HA Status: None
Version: 32.1.1.0
MAC: 00:0C:29:8E:4B:ED

Configuration Monitoring

Overview
System
Network
Application Delivery

- Quick Service Setup
- Virtual Services
- Filters
- Server Resources
 - Real Servers
 - Server Groups
 - Health Check
 - FQDN Servers**

Apply Required Save Required Revert Sync

FQDN Servers **Add New FQDN Servers***

Enable FQDN Server

ID: asg1

Fully Qualified Domain Name: asg1.us-east.alteon.internal

IP Version: IPv4

Minimal TTL: 1 Min.

Group ID: asg1-grp

Template Real Server ID:

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