

EnterpriseAlert® 9

HA Deployment Architecture



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1 ABSTRACT

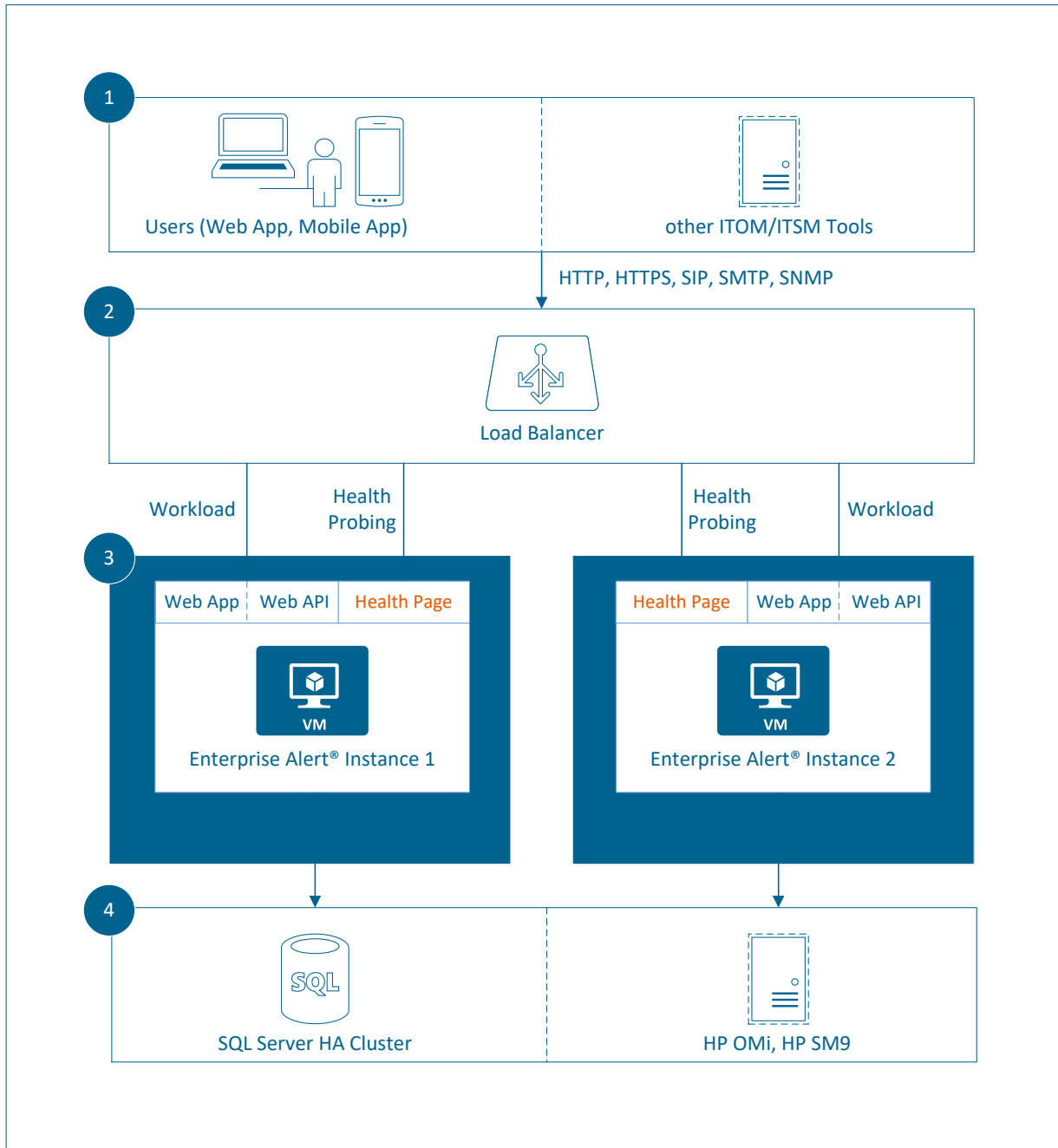
This document describes the high level reference architecture for deploying Derdack Enterprise Alert® highly available (HA).

2 HA REFERENCE ARCHITECTURE

The high availability deployment architecture involves two instances of Enterprise Alert® on two separate (virtual) machines. Both instances contain the presentation layer and the application layer of the product. The presentation layer is entirely web based and also includes web based APIs for either connecting ITOM or ITSM systems or for serving mobile app requests from end users.

Furthermore, the HA scenario involves one shared database which must also be highly available itself, e.g. implemented based on Microsoft SQL Server Availability Groups. The deployment of the high available database is not the subject of this document and is considered as a prerequisite for this scenario.

The drawing below displays the high level deployment architecture of Enterprise Alert® in the data center or private/hybrid cloud. Each of the layers is explained in further detail in the following sections.



2.1 Access Layer (1)

The access layer contains systems or devices that connect to a Web API of Enterprise Alert®. This can be a user with a web browser or the Enterprise Alert® Mobile App. These requests may originate from a public location into your data center network.

At the same time it can also be a 3rd party system which sends incidents to the Enterprise Alert® system. These 3rd party systems can submit incidents via SMTP, SNMP or a Web API. All traffic is routed to the Load

Balancer. The requests from these systems are typically originated in the local datacenter, i.e. the same internal network in which Enterprise Alert® is deployed.

2.2 Load Balancer (2)

The Load Balancer takes all incoming traffic and distributes it to the Enterprise Alert® VMs. It typically has health probing capabilities: the load balancer can request a web endpoint of each Enterprise Alert VM in a configurable interval.

If it gets an HTTP 200 back it considers the VM as still healthy and will continue to route traffic to it. Otherwise it will only send traffic to the remaining VM.

Enterprise Alert® ships with a special health probe web handler. This handler performs some internal application checks to determine if it should terminate with an HTTP 200 or if it should respond with an HTTP 5xx to the load balancers health probe request.

The following image displays a sample load balancer configuration for Microsoft Azure. The health probe handler can be requested under the following location of each Enterprise Alert installation: /eaportal/pages/healthmonitor.ashx.

EDIT ENDPOINT x

Configure the load-balanced set

Endpoints that are load-balanced across multiple virtual machines are added to a load-balanced set.

PROBE PATH

PROBE PORT

PROBE INTERVAL
 SECONDS

NUMBER OF PROBES ?

LOAD-BALANCED VIRTUAL MACHINES

1

← ✓

2.3 Enterprise Alert® Virtual Machine Instances (3)

The EA VMs are handling all the workload distributed from the LB.

2.3.1 Ports

Each Enterprise Alert® instance hosts its web APIs in IIS which is listening on TCP ports 80 and 443.

The Enterprise Alert® application layer is listening on TCP ports 25 for SMTP, 162 for SNMP traps and on UDP/TCP port 5060 for VoIP phone calls.

2.3.2 Database and IIS Session Sharing

Both Enterprise Alert instances are connected to the same database.

The IIS session state is shared between both VMs through the shared database. This way it is possible to distribute requests to the web portal of Enterprise Alert® to both instances. This behavior is completely transparent to the user who is browsing the web app. While one request is served by instance one, the following request is served by instance two.

2.3.3 Enterprise Alert® Configuration

The configuration of Enterprise Alert® itself (e.g. notification channels) is also shared between both instances which again is realized through the shared database.

2.3.4 High availability

High Availability is implemented by running both VMs on independent hardware and also in different update domains. Different update domains ensure that both VMs are not rebooted at the same time as part of OS level patching.

2.4 Enterprise Alert® Database and HP Systems (4)

The fourth layer contains the database as well as ITOM or ITSM tools. Access to this layer is being established from the 3rd layer, i.e. from the Enterprise Alert® application layer running on both VM instances.

The Enterprise Alert® database is hosted on Microsoft SQL Server. The DB must be highly available. The recommended HA approach for SQL Server is the implementation of a Availability Group. Other techniques include database mirroring.

The fourth layer includes ITOM and ITSM tools such as HP OMi or HP SM9. Connections to these tools are established FROM the Enterprise Alert® instances through a "pull" mechanism only. According connectors are requesting web based APIs from these tools in a configurable interval. That means that this traffic is not distributed or managed by any load balancer. Both instances simply poll in an Active/Active mode.

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4 DISCLAIMER

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