Going Global with LoadMaster

Reference Architecture

VERSION: 1.0

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1 Introduction

While Microsoft's Azure cloud might be thought of as a single entity, it is actually implemented in multiple regions across the globe. This opens up many possibilities to build a business at global scale while ensuring service availability and compliance with country-specific regulations.

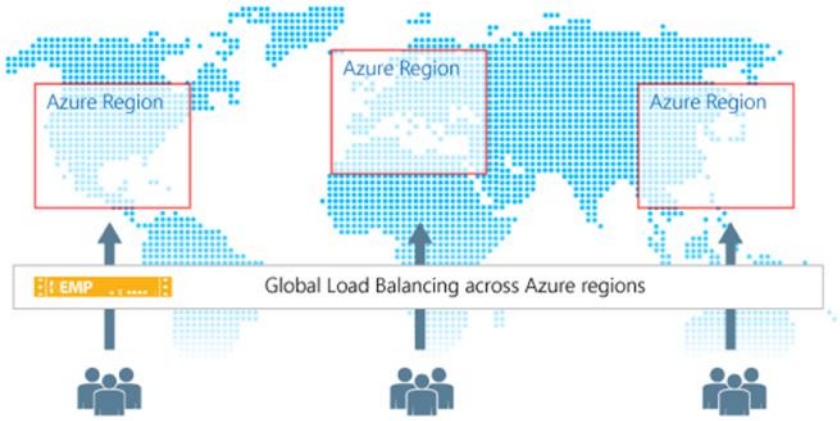

Fig. 1

The ability to balance utilization on a global basis allows for optimal allocation of resources, which can help control costs, while also ensuring availability pf services.

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1.1 Document Purpose

This document discusses how LoadMaster can ensure worldwide, uninterrupted access to application in a global business environment.

1.2 Intended Audience

This document applies to:

- Cloud and Network Architects
- System and Security Administrators.
- Line-of-Business Management

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2 LoadMaster GEO capabilities

Virtual LoadMaster for Azure includes KEMP's "GEO" Global Server Load Balancing feature. This can interoperate with GEO running on premises to extend GSLB capabilities across multiple cloud services in multiple regions. This seamless operation opens the way to many operational benefits.

Perhaps the simplest example is to provide high availability for services in the event a site should become unavailable. This could form the basis of a Disaster Recovery (DR) strategy as shown in the diagram below:

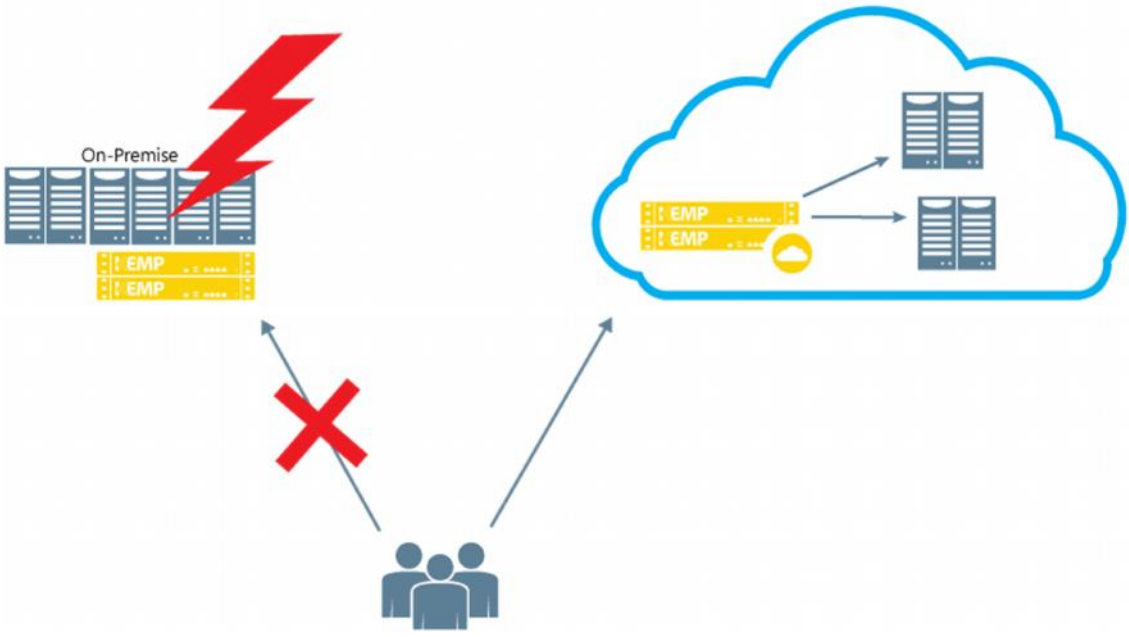

Fig. 2

In this example, an unexpected outage at the primary data center causes failover to the cloud.

Failover can occur at a site level or a per-application level depending on selected policy. By using appropriate policy settings and causing a manual failover, a new application – or even a new site – could be put in place for testing, with a fallback path should the new site not operate as expected. This technique would work well in the bringup and test of a new site during a migration to the cloud.

GEO can also ensure the best and most responsive user experience when apps are deployed across multiple regions. Server health and load can be monitored along with overall site response such that users are connected to the set of resources that will provide the best experience.

Scalability and optimal use of resources are also a concern when deploying complex global environments. With GEO, LoadMaster extends the traditional single site capabilities of load balancing to the cloud, enabling "bursting" by allowing extra resources to be provisioned where

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they can be used most effectively. This behaviour can reduce risk to the business by keeping those services on line while dynamically extending them as needed. In turn this can help minimize overprovisioning of any particular site, server or service and ensure smooth, cost-effective operation at global scale.

When it comes to balancing across multiple sites, a choice of algorithms is available including round robin, weighted round robin, fixed weighting, real server load, location based and proximity. “Round Robin” load balancing can be used for all active data center and this includes support for weights and a chained failover option for disaster recovery.

As the name implies, GEO policies can be set using knowledge of a site or user’s whereabouts. Location Based load balancing allows GEO to direct a client to a data center based on the client's country, continent or IP address range as defined by the created policies. If there is more than one site with the same country code, requests will be distributed in a round robin fashion to each of the sites.

Proximity takes Location Based one step further and allows for longitude and latitude granularity for definition of proximity. GEO securely and seamlessly integrates with core LoadMaster functionality and is managed through the same simple to use interface, reducing the complexity of deploying across multiple environments.

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References

Additional supporting documents can be found at http://kemptechnologies.com/loadmaster-documentation. The following items in the GEO section address the example above and also provide additional configuration information.

- LoadMaster GEO Release Notes
- LoadMaster GEO Product Overview
- Sticky DNS
- Feature Description
- GEO IP Database

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Document History

Date	Change	Reason for Change	Version	Resp.
Mar 2016	Initial release	First version	1.0	CB

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