



Case Study

Migration to Open Source Application Server

Global Clients: ABN Amro Bank | Barclays | Capita | Citigroup | DBS Bank | GE Consumer Finance | HBOS | HDFC Bank | TransUnion | True Credit | UOB Bank | Vodafone | Wausau Financial Systems

Background

The client is one of India's leading consumer finance companies, with one of the widest retail distribution networks covering over 5000 outlets across India. They offer a wide range of products including car finance, consumer durable finance and personal loan finance with specific loans for education, travel and healthcare.

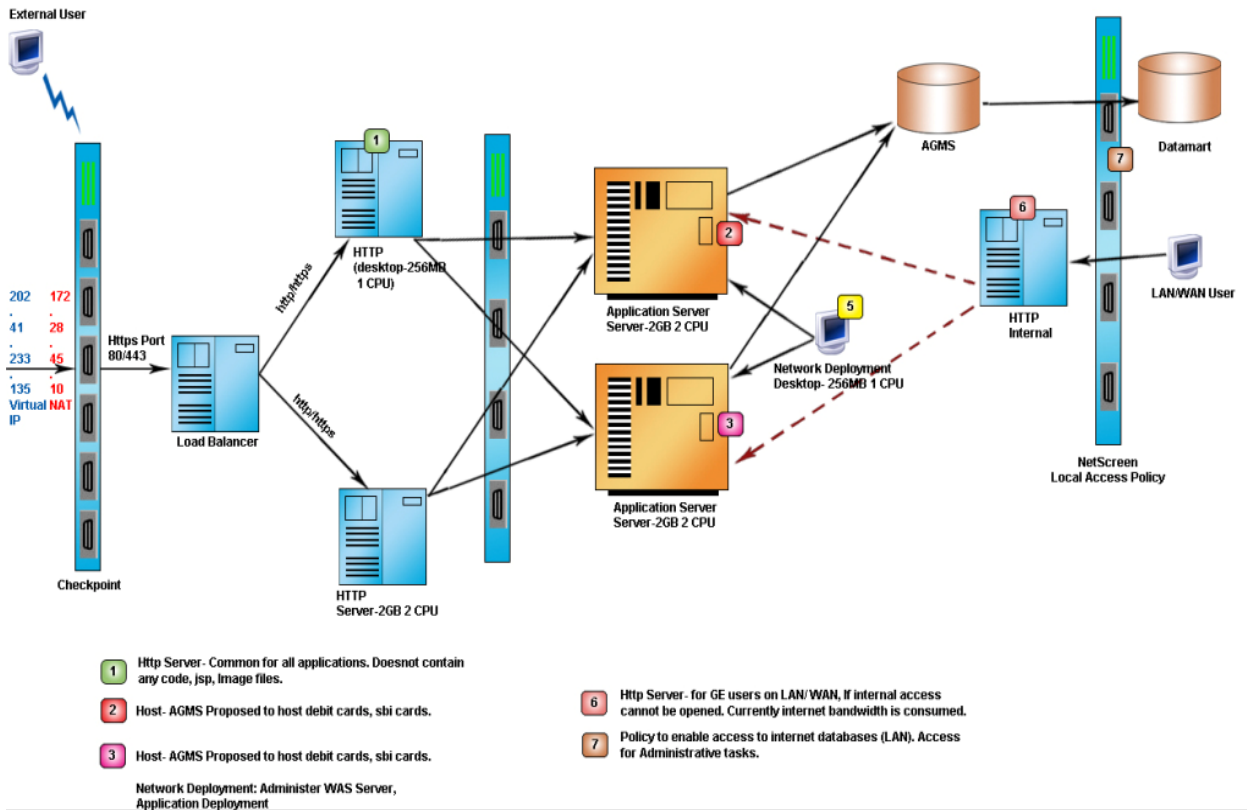
They have around 200 applications for its Credit Card and Loans systems which are running on the IBM platform (IBM Edge server, HTTP Server, WAS 5.x and IBM LDAP integrated to DB2) and use Oracle 9i as backend. The current hosting setup in production comprised of 7 hardware servers with support for hardware failover for application server. An external load balancer hardware device is also used in current stack. There was no support mechanism for process failover on individual servers.

Problem Statement

The systems are completely dependent on IBM products due to which there is **high maintenance/enhancement cost, dependency on IBM support** and restriction of integrating to any other product/open source tool. Moreover there was no support mechanism for process failover in the current scenario.



The following is the schematic representation of the existing hosting architecture in production.



Requirement

The Present scope of work involved migration of 15 identified applications from IBM WebSphere to GlassFish v2 which is an open source application server. The purpose behind this activity was to migrate their current technology stack from IBM based environment to Open Source and hence move from IBM Edge server. The broad level scope of work involved was as below:

- Initial feasibility study for 15 applications and their dependencies.
- Setting up the UAT Lab environment.



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- ✚ Making the 15 applications Glass Fish compatible.
- ✚ Integration testing for all 15 applications in the proposed architecture.
- ✚ Deploying the applications on UAT environment as per project plan.
- ✚ Integration testing and Load testing on UAT environment.
- ✚ Setting up the Production environment and deploying all 15 applications.
- ✚ Implement Open LDAP for LDAP authentication wherever applicable.
- ✚ Production support for the 15 applications

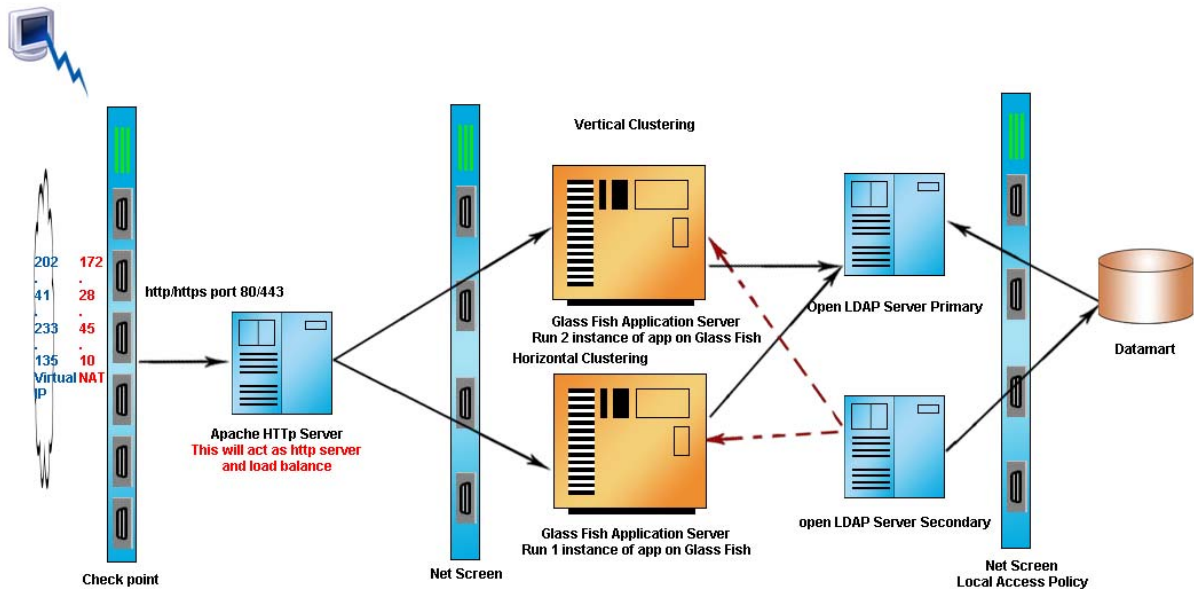
The Solution

- Saksoft's proposed Open Source technology used one **Apache HTTP Server** in front of two **Glassfish** Application Servers. The GlassFish Servers were setup in a Horizontal and Vertical clustering environment which provided for hardware as well as software failure support.
- Apache HTTP server will also act a load balancer; hence the hardware load balancing is not required in the proposed setup.
- **Open LDAP** was implemented for LDAP authentication removing the dependency on IBM Tivoli LDAP Server .
- The proposed architecture offered the below advantages:
 1. Provided hardware failover support through horizontal clustering
 2. Increased efficiency with multiple Java(TM) Virtual Machines
 3. Provides load balancing through workload management.
 4. Process failover support was achieved through vertical clustering.



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The following is the schematic representation of the proposed architecture:



Open Source Technology Used

The migration was done on **Glass Fish v2** application server from SUN Microsystems on **Red Hat Linux Enterprise version 5** platform. **Apache Web Server** was used as the HTTP server with **Open LDAP** for authentication purpose.

The Result

Some of the key benefits of this migration are as below:

- ✚ No dependency on IBM products
- ✚ Application maintenance costs is reduced
- ✚ Hardware size is reduced from 7 to 5 servers.
- ✚ Increased efficiency with multiple Java(TM) Virtual Machines

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