

# Technology consulting for a leading telecom firm

*The client is a leading IT consulting and services firm that helps customers to optimize the return on their IT investments. The client offers services such as Microsoft SharePoint consulting and development, choosing appropriate SaaS vendors, reviewing single Sign-On initiative options, building business applications that improve operations and extending ERP applications. The client has other offerings such as consulting services, enterprise applications, iTV applications and staff augmentation.*

## The Vision

The client had a customer who is a leading global telecom company. The telecom company wanted to build a portal which will enable their agents to login and view their billing details using a single sign-on procedure. The company had various apps and wanted its agents to access all of them through a common login.

## Application Overview

The client wanted to propose new system architecture for the My Account Plus (MAPS) application with Microsoft ADFS environment. Since the telecom company had to contend with an ever increasing traffic load, they wanted to upgrade their existing system into a more dynamic, robust system. To enable the task, everything had to be done from scratch.

e-Zest was roped in because of its proven track record of working on high-traffic web systems. e-Zest had to ensure that the suggested solution does not disturb the user experience, while enabling optimal server resource utilization and efficient use of webserver processes/threads. The engineers at e-Zest studied and analyzed the existing system in order to propose a solution which was a robust one viz. fault tolerance and availability.

## Technologies and Tools

The following table illustrates the technologies used along with the versions in the existing architecture. Moreover, alternative upgrades to higher versions were also suggested to ensure a scalable, high-power end solution.

<b>Technology Stack</b>	<b>Versions</b>	<b>Alternatives</b>
ADFS	Version 2.0	Version 3.0
Application Server	IIS 7.5	IIS 8.0
Database Server	Active Directory	NA
Operating System	Windows 2008 R2	Windows 2012 R2

## Challenges and Solutions

Based on the review of the existing system, e-Zest found out that it had multiple points of failure. During the course of its analysis, e-Zest observed:

- The current system depended on a single machine. In case of a problem, the SSO application down time would have been high.
- No load balancing method was available for many concurrent requests.
- Data handling would have been difficult since Active directory and ADFS server were on the same machine. In case of a system crash, the data would be vulnerable.
- Application database clustering was also not available.

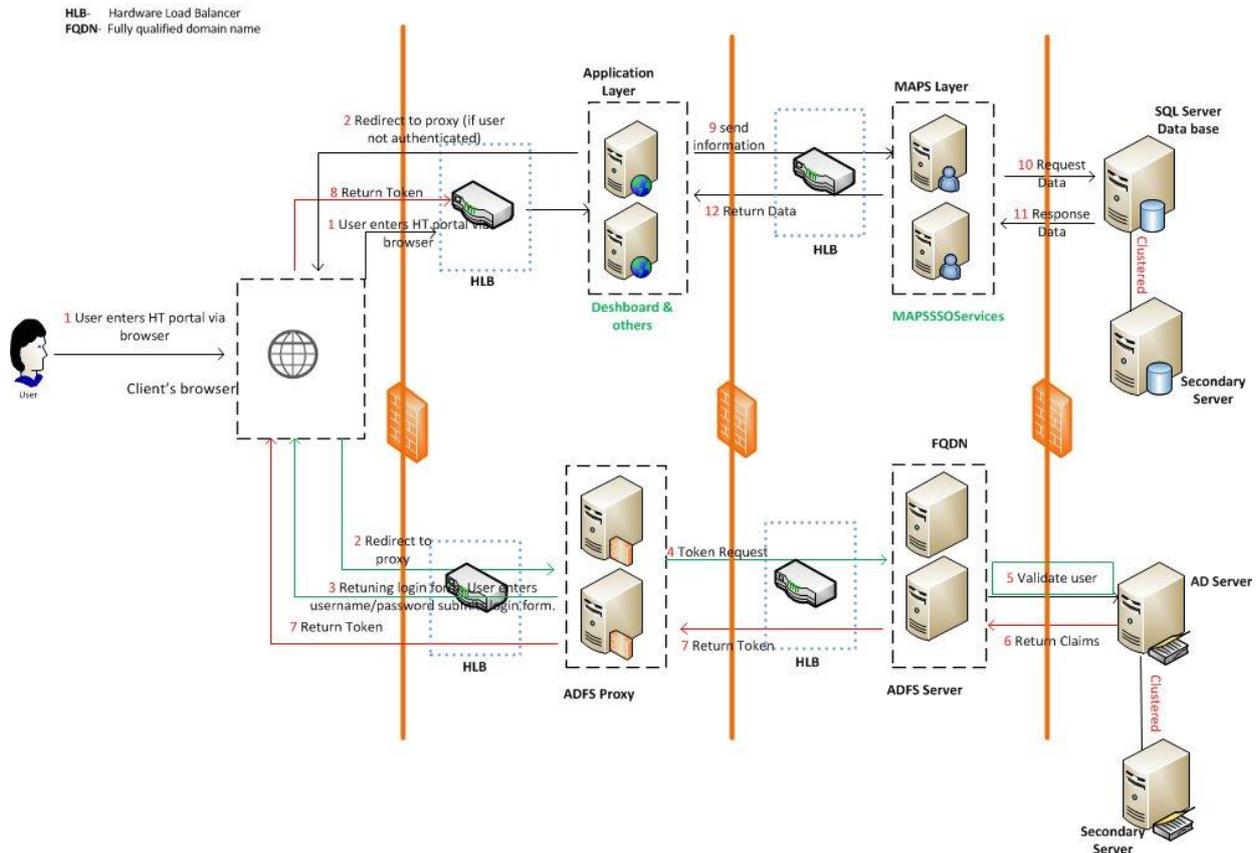
Keeping the client's requirements in mind, e-Zest suggested MAPS, the single sign-on solution based on Microsoft Active Directory Federation Services ver2.0. This technology enables to store and transmit encrypted user credentials across local and network boundaries. Using this single sign-on solution, user credentials can be securely stored and transmitted. End users do not have to remember different logins and passwords for different applications. Thus, users can securely access several web applications and navigate from one protected application to another through a single user account and authentication procedure.

## Solution Architecture

e-Zest decided that it needed to make the system fault tolerant. To tackle this, e-Zest proposed new deployment architecture of MAPS system. While not proposing any fundamental change in activity flow within the application, the combination of clustering, configurations and governance would ensure the desired objective. In the existing architecture, the client was using a single server for all its applications. In the proposed architecture, e-Zest suggested the use of a farm server instead.

It would enable the company to manage its ever increasing workload. The team also suggested a central monitoring tool to the client. To enable this, the project team installed the SCOM 2012 R2 in development environment for central monitoring of all servers, applications, network devices, database and active directory. In addition, e-Zest also went down to the tiniest detail and also suggested hardware specifications, network devices and SSL certification installation process on production environment.

The following new ADFS system was proposed by e-Zest:



## Technical Breakthroughs

It was not easy to change the server to farm server from the standalone server. However, e-Zest suggested an ingenious solution where a fresh ADFS would be installed as a farm server, and then subsequently multiple servers could be added. Thus, the entire system could then be easily migrated from standalone server to farm server.

## Business Benefits

The proposed solution by e-Zest benefitted the client greatly. The benefits are listed below:

- e-Zest's robust architecture and fault tolerant system meant that a highly flexible and scalable platform solution was delivered to the client. While currently, the client's user base is only about 2000 people, the new architecture would enable more than 200,000 end users easily. The system is designed for the future.
- The client was also very pleased with the central monitoring tool suggested by e-Zest. Using this, problems could be diagnosed easily with minimum downtime of system.
- User experience and concurrence would improve greatly after the existing standalone ADFS server environment would be replaced with ADFS Farm environment.

## *Bottom Line*

e-Zest's expertise truly came to the fore on this project. Keeping the client's requirement in mind, e-Zest did intensive research and proposed the most powerful system architecture. The system was cost-effective and could be deployed in a short time. The system was a big leap forward than its predecessor. In fact, the team at e-Zest went beyond their brief and installed the SCOM 2012 R2 server for central monitoring of the system. The project team also suggested upgrading ADFS version 2.0 to ADFS 3.0 and further improvements to the existing code.