Conference management system

The online conference management system enables its customers to plan and manage conferences that are held at a physical location. The system will enable customers to:
• Manage the sale of different seat types for the conference.
• Create a conference and define characteristics of that conference.

Business customers will need to register with the system before they can create and manage their conferences.

Functional Requirements

Selling seats for a conference
The business customer defines the number of seats available for the conference and also specify events at a conference such as workshops, receptions, and premium sessions for which attendees must have a separate ticket.

The business customer also defines how many seats are available for these events. The system manages the sale of seats to ensure that the conference and sub-events are not oversubscribed. This part of the system will also operate wait-lists so that if other attendees cancel, their seats can be reallocated. The system will require that the names of the attendees be associated with the purchased seats so that an on-site system can print badges for the attendees when they arrive at the conference.

Creating a conference
A business customer can create new conferences and manage information about the conference such as its name, description, and dates. The business customer can also make a conference visible on the Conference Management System website by publishing it, or hide it by unpublishing it. Additionally, the business customer defines the seat types and available quantity of each seat type for the conference.

Conference Management
After a business customer creates a new conference, he can access the details of the conference by using his email address and conference locator access code. The system generates the access code when the business customer creates the conference.

Additionally, the business customer can control the visibility of the conference on the public website by either publishing or unpublishing the conference. The business customer can also use the conference management website to view a list of orders and attendees.

Orders and Registrations
When a person (the registrant) interacts with the system to purchase seats at a particular conference, the system creates an order to manage the reservations, payment, and registrations. An order contains one or more order items. When a registrant begins the ordering process to purchase a number of seats at a conference, the system creates reservations for that number of seats. A reservation is a temporary reservation of one or more seats at a conference. The registrant also assigns names of attendees to the reservation. Those seats are then unavailable for other registrants to reserve. The reservations are held for 15 minutes, during which time the registrant can complete the ordering process by making a payment for the seats. If the registrant does not pay for the tickets within 15 minutes, the system deletes the reservation and the seats become available for other registrants to reserve.

The conference management system forwards the necessary payment information to the external payment system and receives an acknowledgement that the payment was either accepted or rejected.

Conference Artifacts
An attendee can download videos, ppt, papers related to the conference from the portal. The material will be available for upto 30 days after the conference.

Domain definitions

Attendee. An attendee is someone who is entitled to attend a conference. An Attendee can interact with the system to perform tasks such as manage his agenda, print his badge, and provide feedback after the conference. An attendee could also be a person who doesn't pay to attend a conference such as a volunteer, speaker, or someone with a 100% discount. An attendee may have multiple associated attendee types (speaker, student, volunteer, track chair, and so on.)

Registrant.
A registrant is a person who interacts with the system to place orders and to make payments for those orders. A registrant also creates the registrations associated with an order. A registrant may also be an attendee

Order.
When a registrant interacts with the system, the system creates an order to manage the reservations, payment, and registrations. An order is confirmed when the registrant has successfully paid for the order items. An order contains one or more order items.

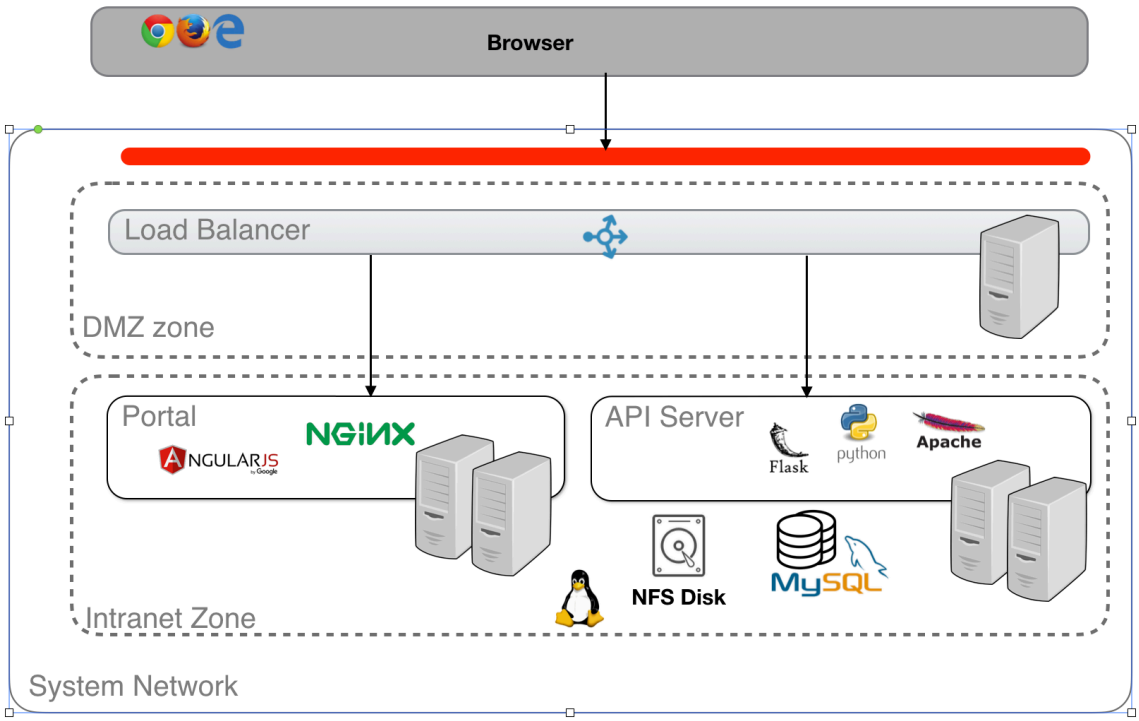
Order item.
An order item represents a seat type and quantity, and is associated with an order. An order item exists in one of three states: created, reserved, or rejected. An order item is initially in the created state. An order item is in the reserved state if the

system has reserved the quantity of seats of the seat type requested by the registrant. An order item is in the rejected state if the system cannot reserve the quantity of seats of the seat type requested by the registrant.

Seat.
A seat represents the right to be admitted to a conference or to access a specific session at the conference such as a cocktail party, a tutorial, or a workshop. The business customer may change the quota of seats for each conference. The business customer may also change the quota of seats for each session.

Reservation
A reservation is a temporary reservation of one or more seats. The ordering process creates reservations. When a registrant begins the ordering process, the system makes reservations for the number of seats requested by the registrant. These seats are then not available for other registrants to reserve. The reservations are held for n minutes during which the registrant can complete the ordering process by making a payment for those seats. If the registrant does not pay for the seats within n minutes, the system cancels the reservation and the seats become available to other registrants to reserve.

Current Architecture



• In the current architecture, most of the domain logic reside in the database in TSQL stored procedures and triggers. Some of the stored procedures are more than 6000 lines of code.

• The API Server maps restful calls to corresponding stored procedures.
• The system uses a custom user name, pwd based Authentication
• The system uses a custom Role based Authorization
• The API Server maintains state between screens in a session object.
• Logs are monitored using EFK stack
• The infrastructure is monitored using Nagios

Migration Objectives

The market that the Conference Management System operates in is very competitive, and very fast moving. In order to compete, The company must be able to quickly and cost effectively adapt the conference management system to changes in the market.

The company had maintained its own servers and network since inception, was feeling increasingly limited by its infrastructure. It was difficult to scale, and time-consuming and expensive to maintain.

The system should use the best tools possible to support the evolution needed to meet increasing customer demand. This requirement for flexibility breaks down into a number of related aspects:

• We must be able to evolve the system to meet new requirements and to respond to changes in the market.

• The system must be able to run multiple versions of its software simultaneously in order to support customers who are in the middle of a conference and who do not wish to upgrade to a new version immediately. Other customers may wish to migrate their existing conference data to a new version of the software as it becomes available.

• The software will last for at least five years. It must be able to accommodate significant changes over that period.

• The complexity of some parts of the system should not become a barrier to change.

• The Conference Management System will be a multi-tenant, cloud-hosted application.