

Cloud Networking and Service Provisioning – ENCS 691K

Fall 2016

Standard project: Auction System in the Cloud

1. Introduction

The project consists of designing and implementing an auction system (AS) which offers its services as SaaS to end-users who can offer items for auction and bid for items. The high level description of the system to implement is given in Section 2 while the requirements are stated in Section 3.

2. Auction System Protocol Description

The Auction System (AS) resides in the cloud for scalability and elasticity purpose. The AS allows for the end-users to register. Only registered end-users are allowed to offer items for auction and bid. A registered end-user can advertise many items for sale at a time. Auctions for an item are open during 5 minutes after its advertising and the broadcasting of the information to all registered end-users. An item is sold to the highest bid at the end of the period of 5 minutes. For every item, the AS keeps informing the end-users about the current highest bid. An end-user can bid as many times as she/he wishes for an item on auction.

2.1. Registering with the AS

An end-user has a unique Name. The AS has to keep this information. An end-user can always try to leave the Auction System. However, she/he can be denied deregistration if she/he is currently offering an item for auction or active in bidding for at least one item (currently leading with the highest bid for at least one item)

2.2. Offering items for auction

Every registered end-user can offer items for sale.

2.3 Bidding for items

An end-user can bid on any item being currently offered and can submit as many items as she/he wishes. To keep the end-users informed on every item, any change in the current highest bid is sent to all the registered end-users. When the bidding period of 5 minutes is over, the AS informs the winning users. If there is more than one end-user with the highest bid, the first bid to reach the AS wins. The AS also informs the end-user who is selling the item about the winner. When an item has not attracted a single valid bid, the AS restarts the bidding process for another period of 5 minutes. This can be repeated until an end-user makes a winning bid.

3. Requirements

- Projects should be done individually (no team).
- Each student should select and motivate the cloud technologies (e.g. PaaS, IaaS) she/he uses in the project.
- The expected output consists of:
 - A technical report (max: 10 pages).
 - A powerpoint presentation (5 minutes) to introduce your demo
 - A live demo