Vinz

SSH Public Key Management

Introduction

WebFilings is interested in creating an application to manage SSH public keys across an entire organization. SSH public/private key pairs are an excellent way to authenticate users to servers, but they are notoriously hard to manage.

Our objective is to remove the headache of managing SSH public keys for the WebFilings system administrators.

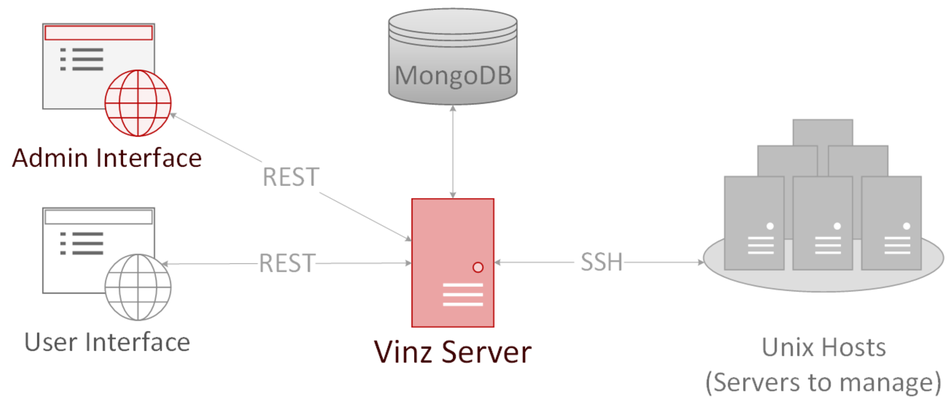
Design Approach

At the core of Vinz is a system for managing users, servers and SSH public keys. The core Vinz module exposes both REST and Python APIs.

The main interface for users and administrators is a web application that lets users manage their SSH public keys, as well as letting administrators manage users and servers in the organization. The web application consumes Vinz's REST API.

A Scanner module was created to scan servers on a set interval and verify that servers were in the state expected by Vinz. The Scanner handles accessing, verifying, and logging that all of the users in an organization have access to the servers they should. The Scanner consumes Vinz's Python API.

System Design



Technologies Used

Backend
- Python
- Flask
- Ansible
- MongoDB

Frontend
- AngularJS

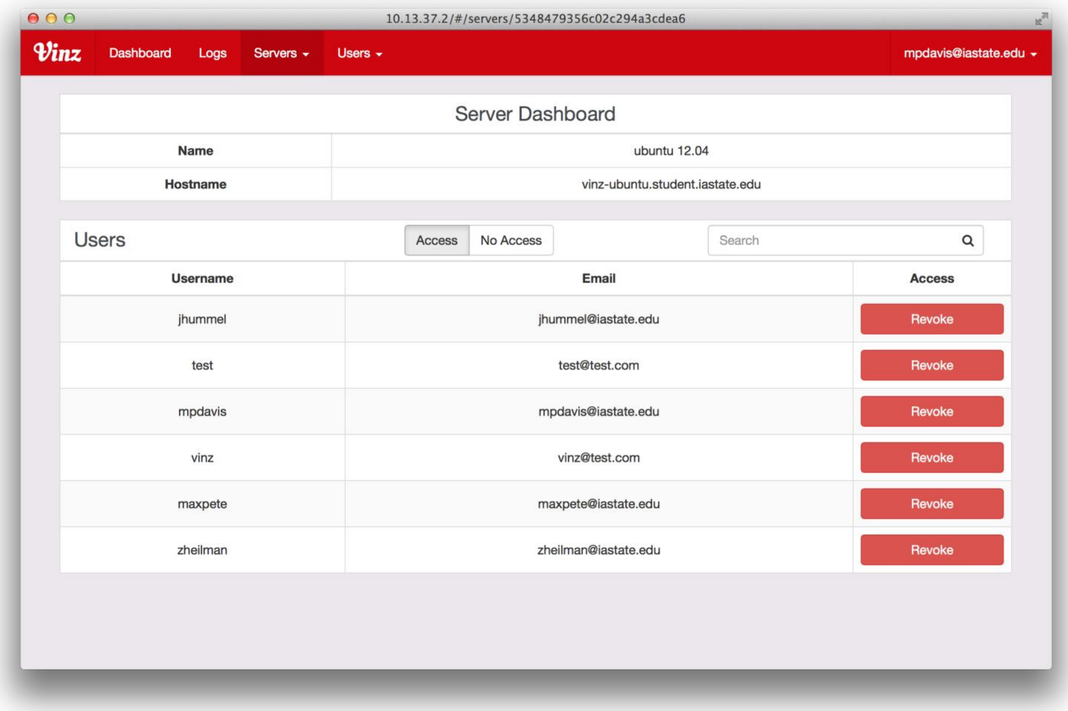
VCS
- Github

Requirements

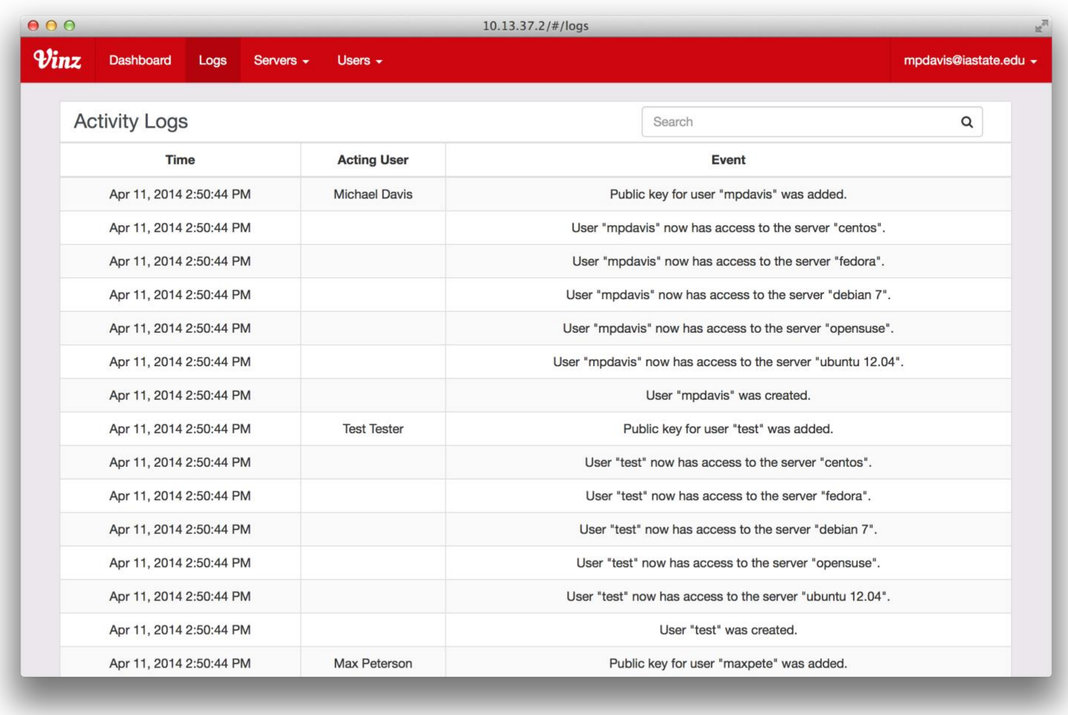
Users must be able to
- See which servers they have access to
- Upload SSH public keys
- Remove SSH public keys

Additionally, Administrators must be able to
- Create/Delete/Edit users
- Create/Delete/Edit servers
- Grant and revoke users' access to servers
- Add users and servers to logical groups
- View reports showing who has had access to servers
- View logs recording all actions taken by all users
- Manually start a scan of all servers

Screenshots



Server Dashboard



Vinz Logs

May 14-32

Michael Davis	SE
Maxwell Peterson	SE
Jacob Hummel	SE
Zach Heilman	CprE
Eric Feldmann	CprE
Ario Xiao Qin	CprE

Advisor: Dr. Simanta Mitra

Client: Dave Tucker, WebFilings

http://seniord.ece.iastate.edu/may1432/