TECHNISCHE UNIVERSITÄT DRESDEN

Department of Computer Science Institute for System Architecture, Chair for Computer Networks

Application Development for Mobile and Ubiquitous Computing

Seminar Task
Second Presentation

GroupNo. 2 – VM Resource Monitor
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Content

Roadmap

- What we have done:
  - Server implementation using Django.
  - Server communication using REST API.
  - Client user interface.

- What is missing:
  - Server integration to the VMs using Ansible.
  - Refine server user interface.
  - Client communication with server via REST API.
  - Websocket connection between server and client to fetch stream data.

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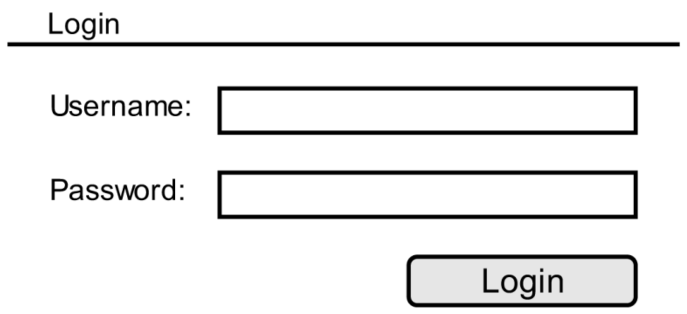
Application Scenario

- Add and run a script in your monitor to make an operating system update, install any desired application or to get the realtime information about a vm.

- Server side
  - Login at the user interface
  - Add vm instance
  - Browse and upload your custom script or use a predifined one.
- Client side
  - Add monitor
  - Run script

Application Scenario

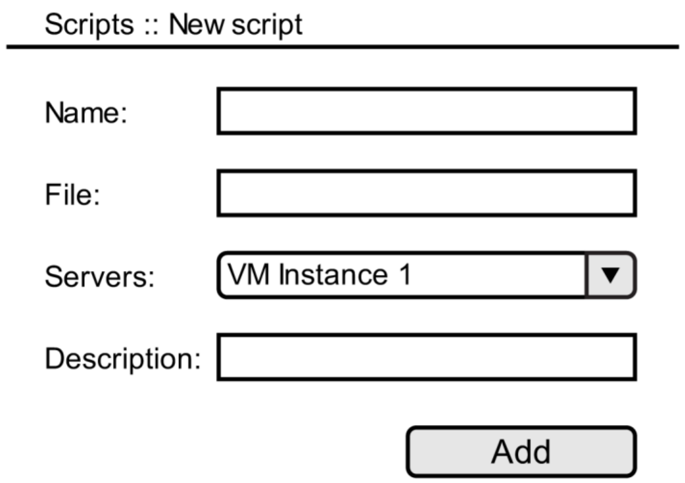
- Server side (Python):


Login

Username:

Password:

Login


Scripts :: New script

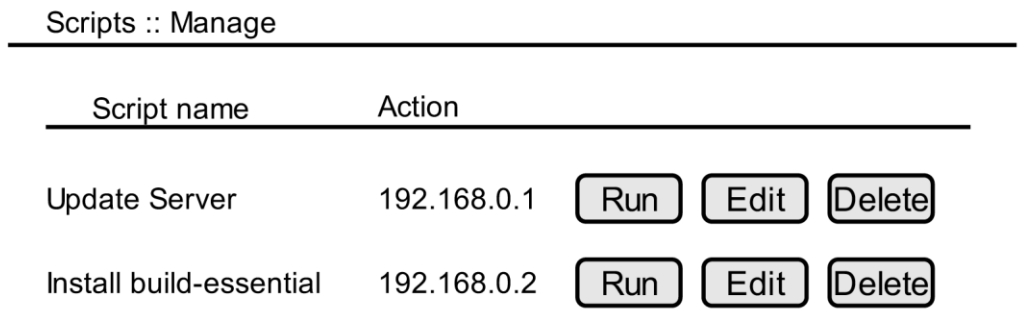
Name:

File:

Servers: VM Instance 1 ▼

Description:

Add


Scripts :: Manage

Script name	Action			
Update Server	192.168.0.1	Run	Edit	Delete
Install build-essential	192.168.0.2	Run	Edit	Delete

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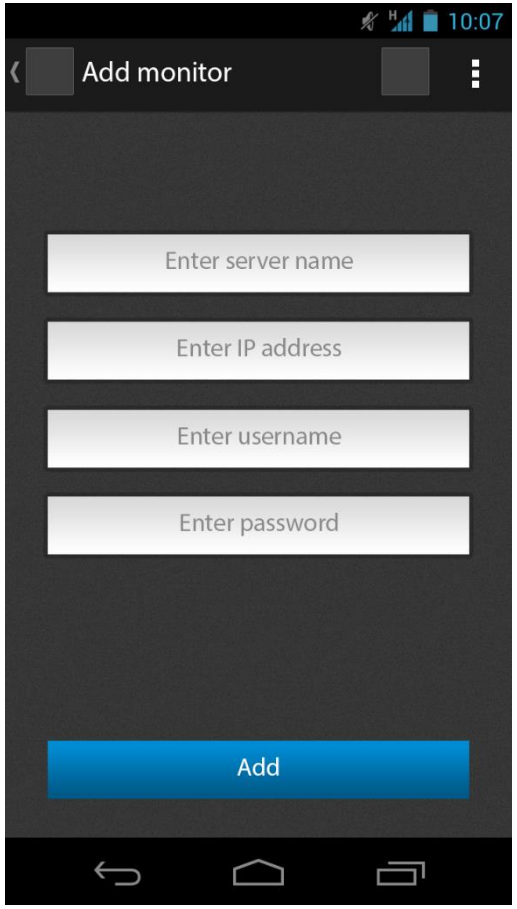
Application Scenario

- Client side (Android):


10:07

Add monitor

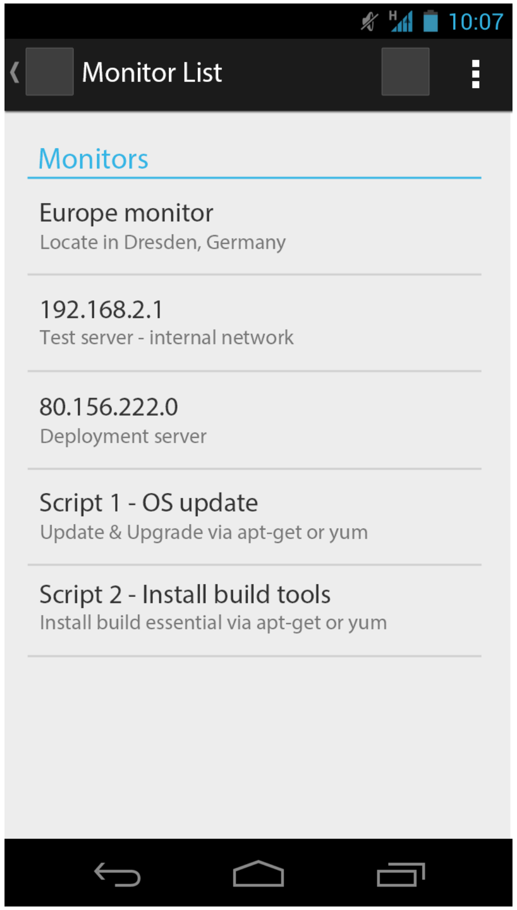
Enter server name

Enter IP address

Enter username

Enter password

Add


10:07

Monitor List

Monitors

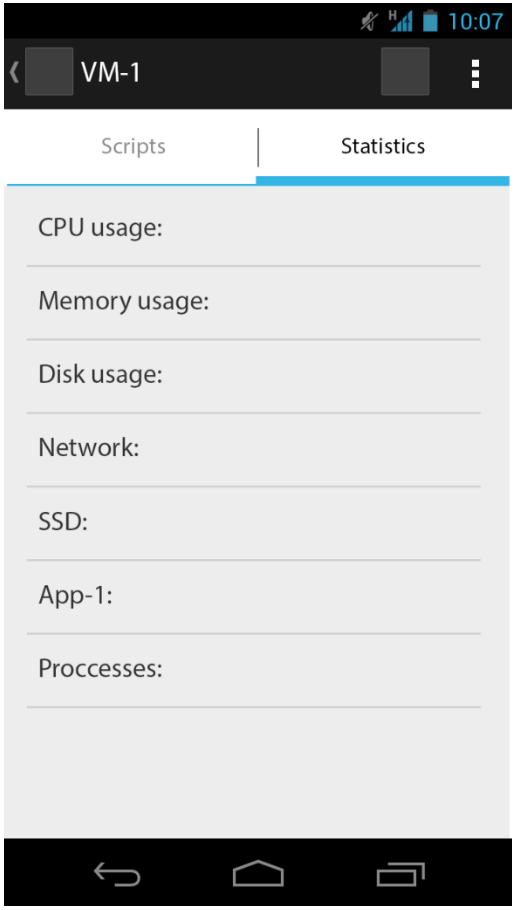
Europe monitor
Locate in Dresden, Germany

192.168.2.1
Test server - internal network

80.156.222.0
Deployment server

Script 1 - OS update
Update & Upgrade via apt-get or yum

Script 2 - Install build tools
Install build essential via apt-get or yum


10:07

VM-1

Scripts | Statistics

CPU usage:

Memory usage:

Disk usage:

Network:

SSD:

App-1:

Proccesses:

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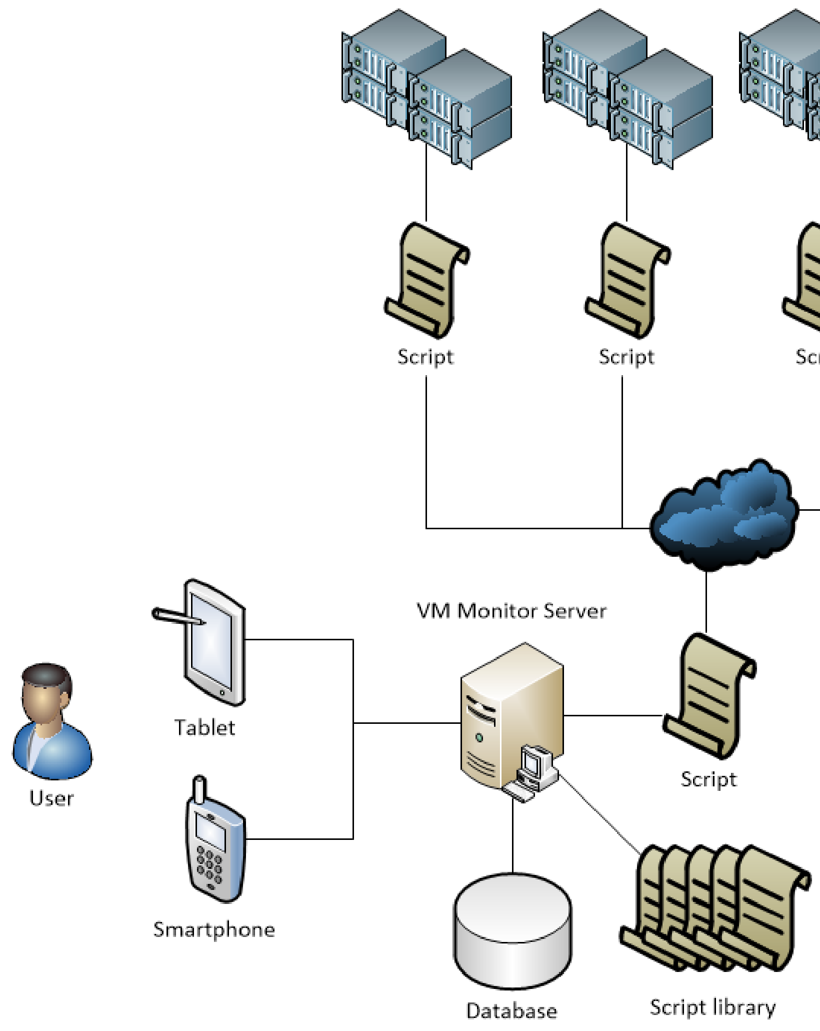
Architecture and Technologies



Architecture and Technologies

- Python
- Django web framework
- MySQL Database
- Tastypie webservice API Framework.
- Ansible

- Android

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Challenges

- We don‘t have any hard challenge to deal with.
- The application uses just a REST api to fetch the data from the server and run our scripts.
    - Our server is in charge to comunicate with the vm instances. When android fire a script, it is not executed by android but executed by server.
- The websocket connection is used just for fetching statistics information. If we have some comunication problem we can get the last information via api.

Work plan

- What we have done:
  - Server implementation using Django.
  - Server communication using REST API.
  - Client user interface.

- What is missing:
  - Server integration to the VMs using Ansible.
  - Refine server user interface.
  - Client communication with server via REST API.
  - Websocket connection between server and client to fetch stream data.
  - Build VM machine for integration.
  - Testing.
  - Done!