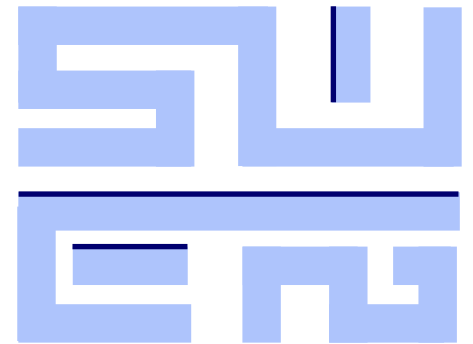




Migrating a Large System

Mauricio Seeberger

www.sw-eng.ch



Contents

Introducing IGE

J2EE

My Job

Social Barriers

The new Picture

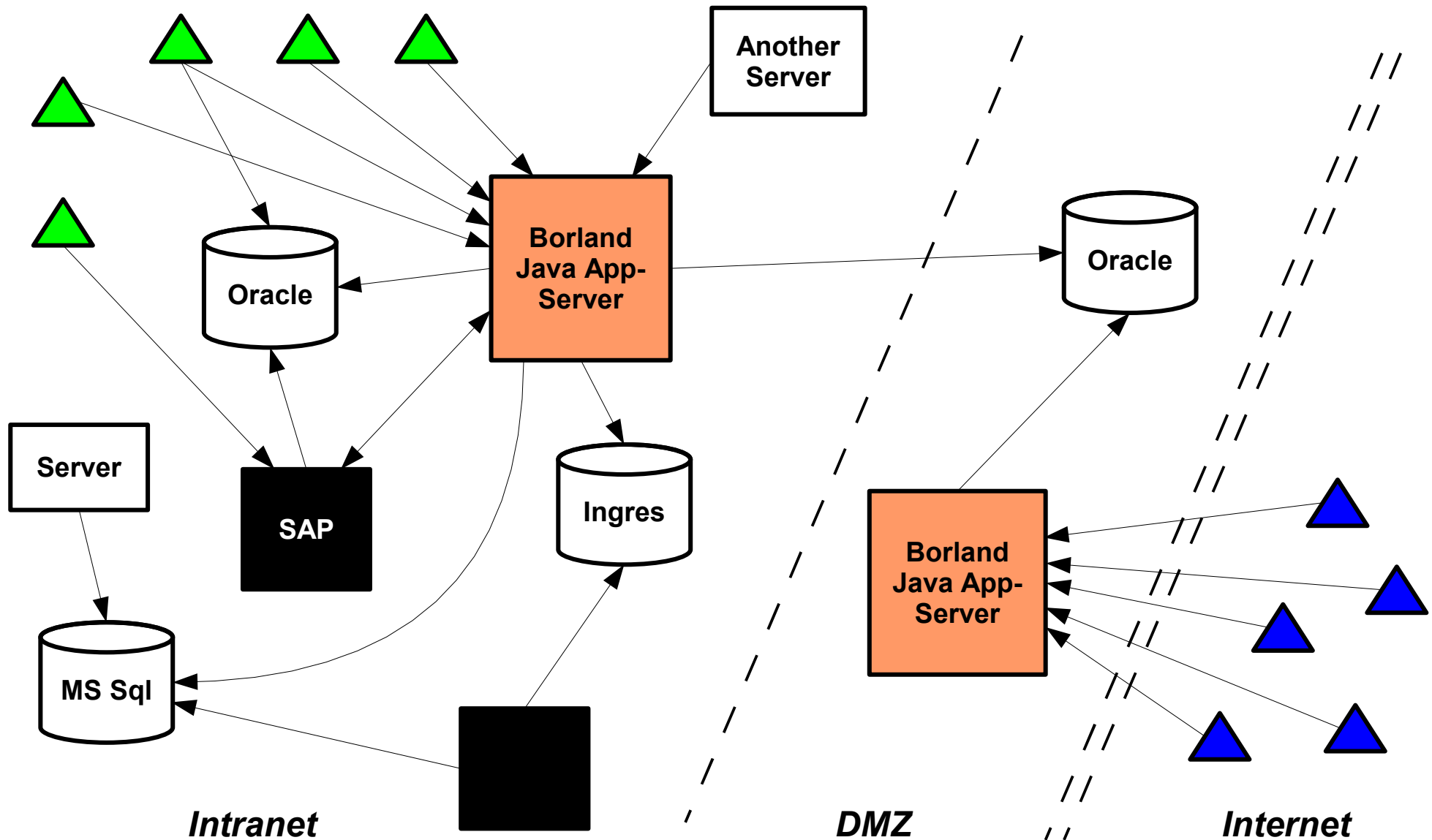
About Testing

Lessons learned



What Is my job?

IGE Architecture Overview



Software Size

~100 different projects

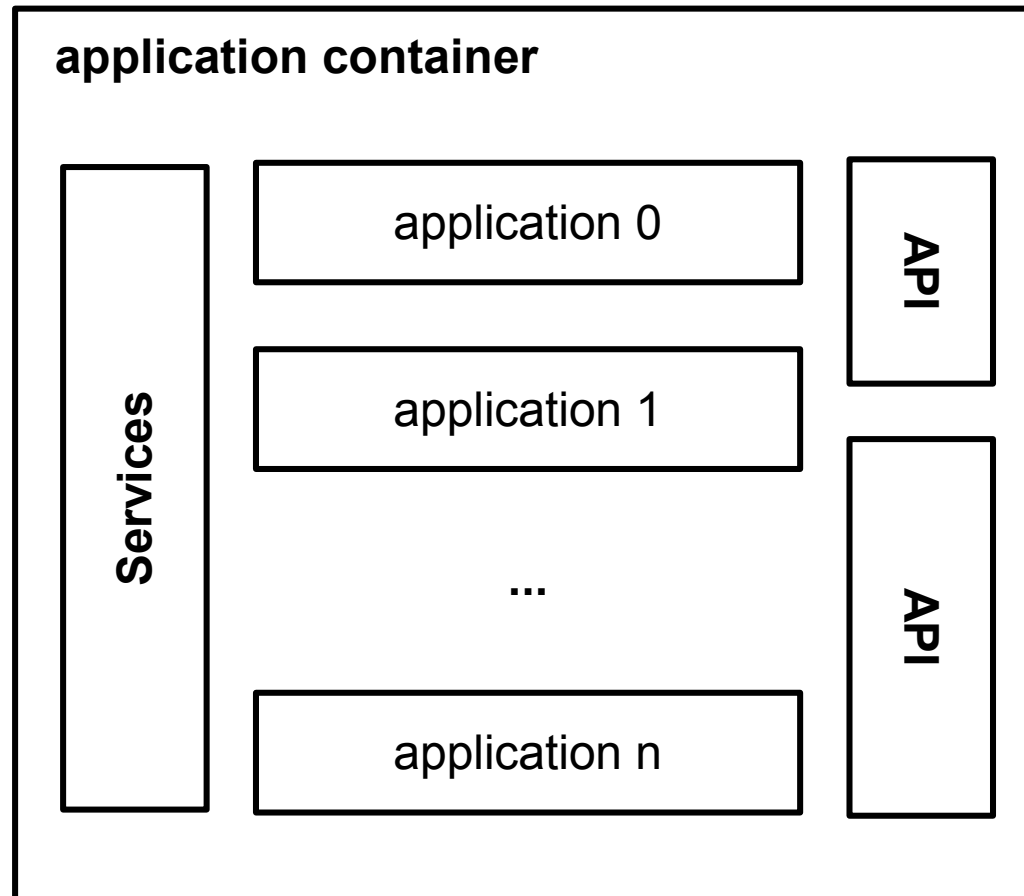
~6000 classes

760'000 lines of code

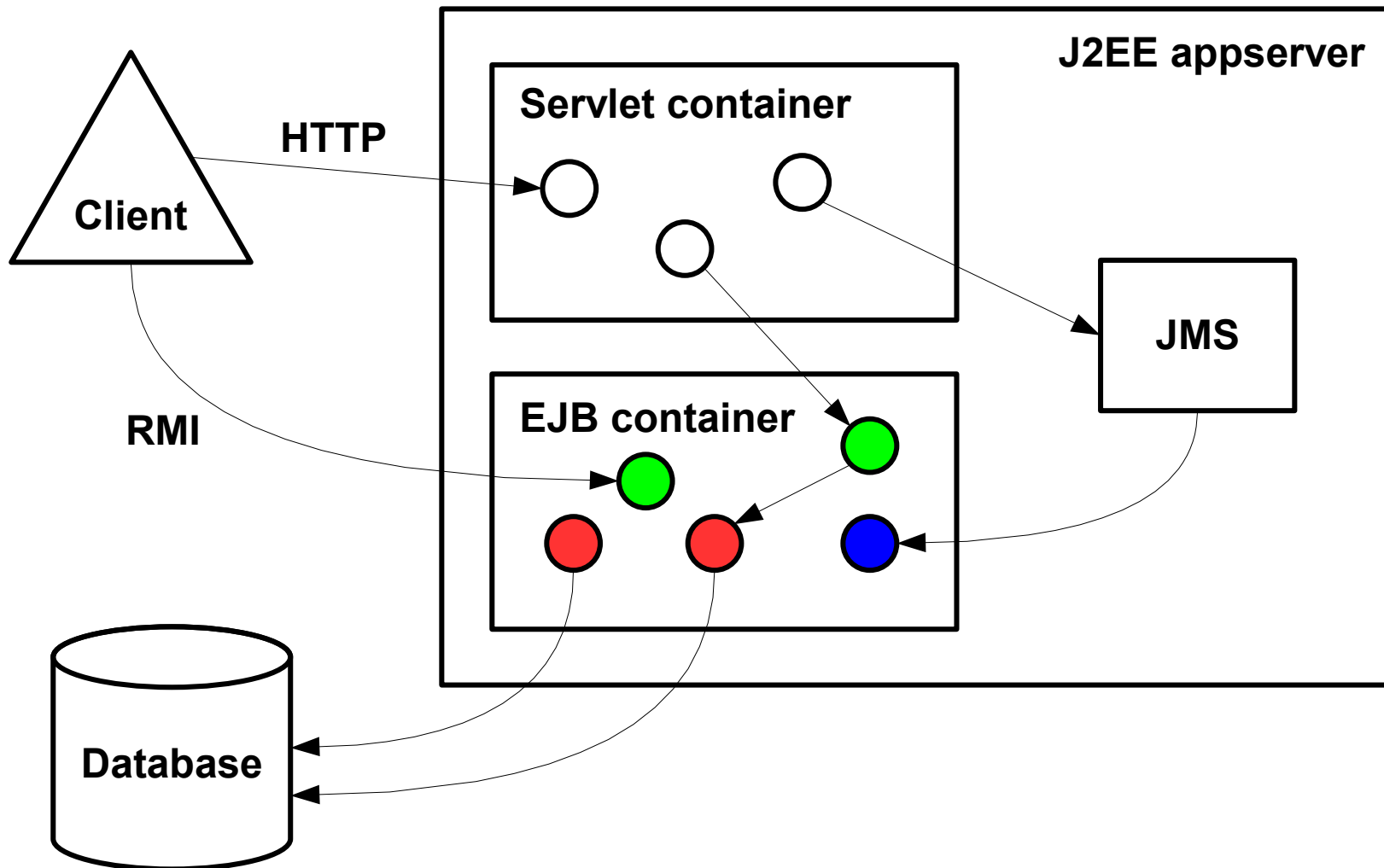
full build takes ~1 hour

~15 permanent developers

What is an Application Server?



Common J2EE Components



Simple Example J2EE Descriptor

```
<?xml version="1.0" encoding="UTF-8"?>
<ejb-jar version="2.1">
  <description>Example of a session bean</description>
  <display-name>TimeBeanExample</display-name>
  <enterprise-beans>
    <session id="Session_TimeBean">
      <description>An EJB named TimeBean</description>
      <display-name>TimeBeanName</display-name>
      <ejb-name>TimeBean</ejb-name>
      <local-home>ch.unibe.iam.TimeLocalHome</local-home>
      <local>ch.unibe.iam.TimeLocal</local>
      <ejb-class>ch.unibe.iam.TimeBean</ejb-class>
      <session-type>Stateless</session-type>
      <transaction-type>Container</transaction-type>
    </session>
  </enterprise-beans>
</ejb-jar>
```

Summary of what J2EE is

A collection of existing technologies

A standard

Tells you how to code your application

Defines how the server should execute your application

My job is to migrate to a new application server product.

What is the problem?

Old Appserver Version

Unknown future of Borland Enterprise Server

Unsatisfying support

Lack of product documentation

Complex and Legacy Software System

Job Description

Evaluate the new target appserver product from a given list of 9 candidates

Install new appservers running on Linux

Assist developers during the migration

Write documentation for the system operators

Do not change the code directly

First Contact

Where to start?

Evaluation Phase Roadmap

Shrink the amount of candidates quickly to 3
(what resulted in JBoss, Weblogic, Geronimo)

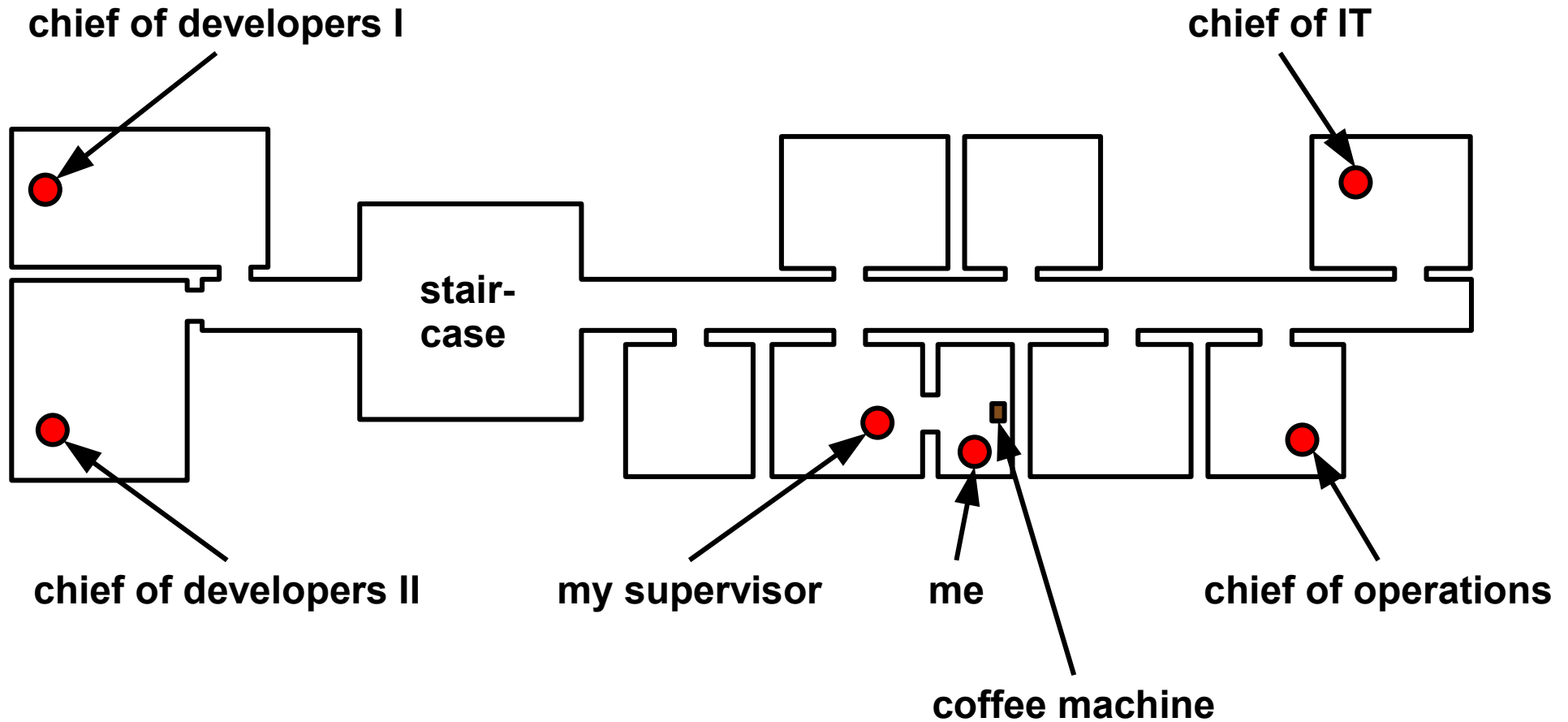
Prototype migration of a simple "HelloWorld"
application tackling all involved technologies

Write scripts that migrate all their applications

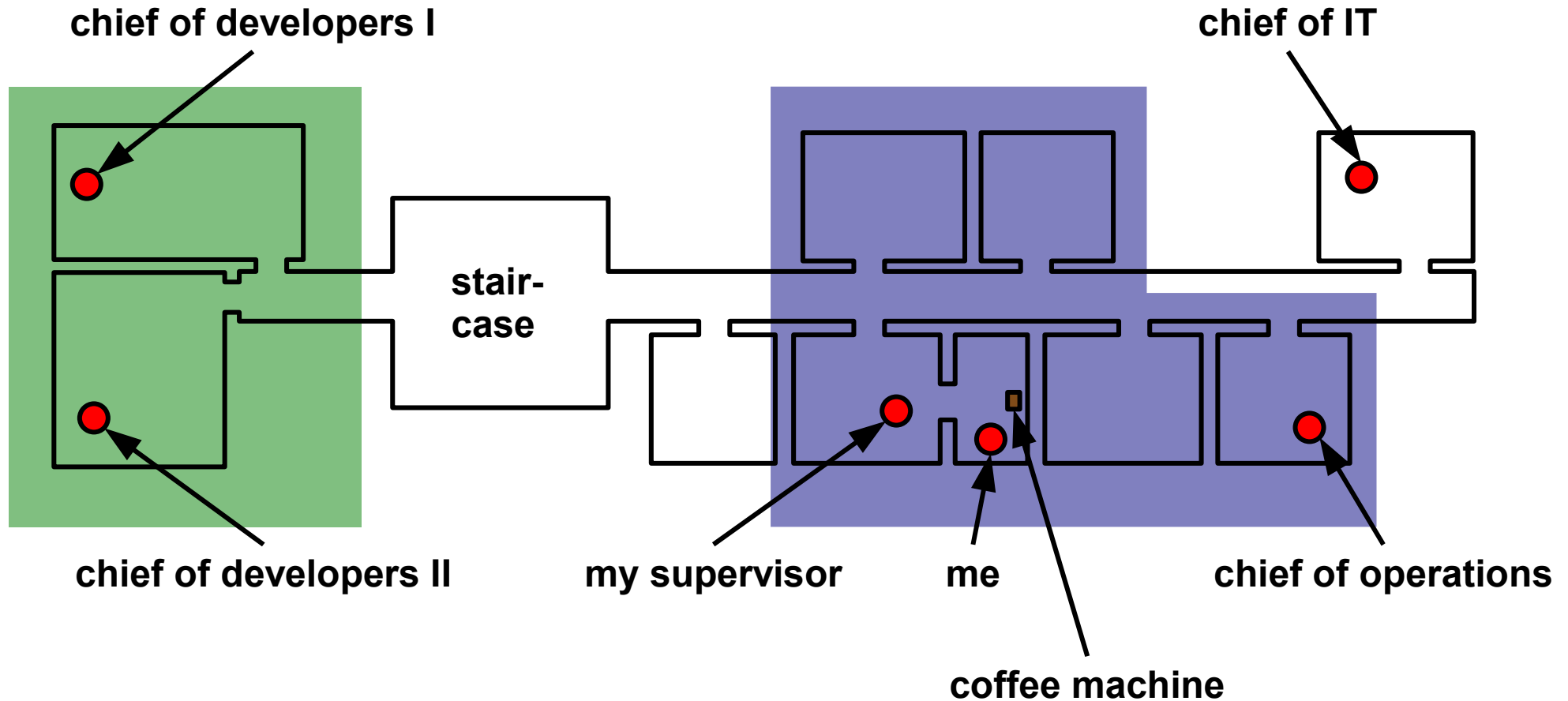
Present the work and let them decide which
candidate to use

Social Barriers

The Plan



The two Teams



Me and the two Teams

Operations Team

- No access to any machine

- They hate Linux

- Communication only through the hierarchy

Developers Team

- Developer chiefs do not talk directly to me

- Developers ignore me

- I am not supposed to change code

How to Ease the Situation

Communicate

Listen to their problems

Build confidence

Find out the reasons for their behaviour

Buy a coffee machine

Show them what you can

Establish friendship

The new Picture

Unofficial Reasons to Migrate

Not enough knowledge of product & system available

Lack of software documentation

Hidden software dependencies

Conflicting software versions

Appserver is unstable

Too many different technologies involved

→ Old, big, hot and underdocumented System

If J2EE is a standard, why all the trouble?

Problems migrating J2EE Systems

Academic standard with holes, e.g.:

- Resource definition

- Client access

- Classloaders

Use of proprietary features

Behaviour of same technology changes with different J2EE versions and appservers

Not everything running on the appserver is J2EE

Additional Implications

Automated build migration

Platform change

Hardware architecture change

Developers change IDE

J2EE version migration

EJB migration to Xdoclet

Change encoding of source code to UTF-8

The new Roadmap

Shrink the amount of candidates → 3 left

Migrate the automated build

Prototype migration of a simple "HelloWorld"

Write scripts that migrate their **core** applications

Present the work **focusing the problems** and let them choose a product

Extend the scripts and migrate as much you can

Migrate the rest manually

About Testing...

Lessons Learned

Communicate

The dark force: politics

People do not know what they want

Verify important facts yourself

Status of the Project

Internal migration complete

Installing the staging environment

Solving meta problems

Starting in production mid of March



Questions?

