Zabbix Inventory and CMDB integration
About me

- **Me**
  - Linux System Architect @ ICTRA
  - from Belgium (...)
  - IT : Linux & SysAdmin work, Security,

- **ICTRA**
  - ICT for Rail
    - for Transport – Mobility – Security
  - 1800 IT Professionals – engineers - technicians
  - Facts :
    - 5.500 KM fibre optic
    - 3 main datacenters, a lot of 'technical' locations
    - 2.600 camera's in 51 major railway stations
    - ...
ICTRA, ICT for Rail

- Ticketing solutions
- Information systems
- Train info in real time
- Management computer hardware
- NMBS Group
- Fleet management system
- Integrated security solutions
- Monitoring of trains
- GSM for Rail
Our zabbix installation

- Used by different teams
  - Linux team → use of automation (Puppet)
  - Solaris team → heavy use of scripts and API
  - Train announcement system team
- 1 master server in active-slave (Pacemaker)
- proxies
- MySQL master-slave cluster (different story...) with MasterHA

<table>
<thead>
<tr>
<th>Number of hosts (monitored/not monitored/templates)</th>
<th>1665</th>
<th>1441 / 125 / 99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of items (monitored/disabled/not supported)</td>
<td>195174</td>
<td>167027 / 22943 / 5204</td>
</tr>
<tr>
<td>Number of triggers (enabled/disabled)[problem/unknown/ok]</td>
<td>131430</td>
<td>131222 / 208 [496 / 0 / 130726]</td>
</tr>
<tr>
<td>Number of users (online)</td>
<td>106</td>
<td>8</td>
</tr>
<tr>
<td>Required server performance, new values per second</td>
<td>962.69</td>
<td>-</td>
</tr>
</tbody>
</table>
Situation

- In the beginning of 2013 we had...
  - An excel sheet with all our Linux servers and related fields (+ cost model)
  - An old – custom - asset management system
  - A 'database' (MS-Access...) maintained by datacenter team
  - Sharepoint
  - a wiki
- We also have
  - Zabbix
  - Puppet
Goal

- In 2013, a new product is used to maintain assets
  - “AssetCenter.net”
  - a frontend for HP Asset Management tools.
  - They did an import of the **OLD** asset management tool ...
    --> DATA far from complete

- A good moment to catch on!
  - We use Zabbix Inventory and config management
    --> use our up-to-date data to maintain the “company” asset tool
First step: import from Excel

- Tip: use Python or a scripting language you like :-)  
- Use an Excel library  
- Or export to CSV, then use a CSV library  
- Code example

```python
for line in reader:
    print line['hostname']
    hostid = zapi.host.get({"filter":{"name" : line['hostname']}})[0]["hostid"]
    t = zapi.host.update(
    {
        "hostid": hostid,
        "inventory":{
            "asset_tag": line["Asset No."],
            "date_hw_install": line["INSERV"],
            "contact": "APP: " + line["responsible APP"],
            ...
```
Import from database...

- MS-Access....
- Used by datacenter people
- Well maintained!
  - outlet data,
  - cable's connected,
  - network ports ...
- Only works from Windows – ODBC connection
- Match using hostname → faults found!
- Code...
# Connect using ODBC to DB
conn = pyodbc.connect('DRIVER={Microsoft Access Driver (*.mdb, *.accdb)};DBQ='+DBfile) #connect to the DB

# Simple query
query="SELECT Asset, RackNaam, Unitnaam FROM Tblunits order by Asset"

# Update hosts
x = zapi.host.update({
  "hostid": hostid,  #host id is unique key
  "inventory":{
    "site_rack": newRack,
    "asset_tag": newAssetTag,}
Import from Puppet

- 2 methods
  - Foreman provisioning tool REST interface
    - Write a small application or tool that queries Foreman's REST interface
    - And updates Zabbix using JSON-RPC
  - Or KISS
    - UserParameter in zabbix
    - using facter on each host
    - item updates the field in Zabbix
    - fact.type == type server ex. “Rack Mount Chassis”
Solaris team: import via XML

- Solaris: a lot of clusters
  - Resource groups
  - Disks, …
- Host configuration is created with a script
- Includes also some inventory data
- XML is then imported using the API (ZBXNEXT-1048)
What we still need to do

- Add additional meta-data useful for configuration management, change management or asset mgmt
- Create YAML files for Puppet
  - The more meta-data, the better!
- ...
Q&A

- Questions?