Zabbix Inventory and CMDB integration

12/09/13

ZABBIX 2013 Conference

ICTRA
HOLDING

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

RailTime
Uw info rechtstreeks van het spoor

Train info in real time

Management computer hardware
NMBS Group

ICT network

Fleet management system

GSM for Rail

Integrated security solutions

Monitoring of trains

Our zabbix installation

- **Used by different teams**
  - Linux team → use of automation (Puppet)
  - Solaris team → heave 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**

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

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

```
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...

MS-Access → Zabbix Inventory

```
# 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?