

SUSECON 23

Reimagine. Innovate. Secure

# TUT-1117

Integrating SUSE Manager with Ansible



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# whoami



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# Agenda

1. Recap: SUSE Manager automation possibilities  
What is offered out of the box?
2. Automating SUSE Manager installations  
Find out how to automate your installations
3. The Uyuni Ansible collection  
Control SUMA/Uyuni via Ansible
4. Demo: AWX workflow  
Full automated Ansible-based patch management







# Recap

SUSE Manager automation  
capabilities

# SUSE Manager Automation possibilities

## XML-RPC API

good ol' default API

Introduced in Spacewalk (2008), hard to use, requires special client libraries

## HTTP API

New JSON over HTTP API, easier to consume than XML-RPC API

Introduced in Uyuni 2022.05, supported in SUSE Manager 4.3

## Salt

Mighty IaC solution for comprehensive configuration management

## spacecmd

Command-line interface to API

Many commands support wildcards, offers shell mode





# Automating SUSE Manager installations

In under 10 minutes



# Installing SUSE Manager

---

```
- name: Install SUSE Manager
  hosts: suma.giertz.loc
  become: true
  roles:
    - role: stdevel.uyuni.server
      uyuni_scc_reg_code: DERP1337LULZ
      uyuni_scc_mail: simone@gier.tz
```

Installing the most recent supported version  
of SUSE Manager



# Installing Uyuni and some 3<sup>rd</sup> party repositories

```
---  
- name: Install Uyuni  
  hosts: uyuni.giertz.loc  
  become: true  
  roles:  
    - role: stdev.el.uyuni.server  
      uyuni_release: '2023.06'  
      uyuni_channels:  
        - name: opensuse_leap15_4  
          arch: x86_64  
      uyuni_enable_monitoring: true  
      uyuni_install_monitoring_formulas: true
```

Installing a **specific** Uyuni version and configuration 3<sup>rd</sup> party repositories using spacewalk-common-channels.

Also enables **monitoring** support.





# Registering clients

---

```
- name: Register clients
  hosts: clients
  become: true
  roles:
    - role: stdevel.uyuni.client
```

Downloads and executes a bootstrap.sh script.

By default, it searches for the file `bootstrap-$distro$version.sh` – e.g. `bootstrap-almalinux9.sh`.

See also SUSE Manager documentation.



# The Uyuni Ansible collection

Plug & automate



# The Uyuni Ansible collection

- Collection of various **roles**
  - storage (server preparation)
  - server (SUMA/Uyuni installation)
  - client (bootstrapping)
- Also contains various **plugins**
  - Managing patches, upgrade
  - Running OpenSCAP checks
  - Dynamic inventory

This is a **work in progress** project.

Available on GitHub and Ansible Galaxy:

<https://github.com/stdevel/ansible-collection-uyuni>

<https://galaxy.ansible.com/stdevel/uyuni>

**Contributions / feedback welcome!**



# Installing patches

```
---  
- name: Installing patches  
  stdevl.uyuni.install_patches:  
    uyuni_host: 192.168.1.1  
    uyuni_user: admin  
    uyuni_password: admin  
    name: myserver.localdomain.loc  
    exclude_patches:  
      - openSUSE-2022-10013  
      - openSUSE-SLE-15.3-2022-2118
```

Modules specify SUMA / Uyuni connection details and managed host.

Can also be used with the dynamic inventory and delegating the task to the management node (`delegate_to`).





# Checking OpenSCAP compliance

---

```
- name: Check compliance
  stdevl.uyuni.openscap_run:
    uyuni_host: 192.168.1.1
    uyuni_user: admin
    uyuni_password: admin
    name: myserver.localdomain.loc
    document: /opt/scap-yast2sec-xccdf.xml
    arguments: --profile Default
```

XCCDF catalog (document) and oscap parameters (arguments) can be defined using parameters.



# Dynamic inventory: configuration

```
---  
plugin: stdev.el.yuni.inventory  
host: 192.168.1.1  
user: admin  
password: admin  
show_custom_values: true  
# ipv6_only: true  
verify_ssl: false  
# groups:  
#   - Test  
# pending_reboot_only: true
```

Inventory file needs to end with `.yuni.yml`.

Configuration file specifies:

- Connection details
- Hostgroup / custom value / IPv6 filter
- Filter for pending reboots



# Dynamic inventory: usage

```
$ ansible-inventory homelab.uyuni.yml --list
{
  "Test": {
    "hosts": [
      "uyuni-client-opensuse-leap15"
    ],
    "_meta": {
      "hostvars": {
        "uyuni-client-opensuse-leap15": {
          "ansible_host": "192.168.1.2",
          "susecon23_system": "1"
        }
      }
    }
  }
  ...
}
```

The Ansible inventory includes **hostgroups** and **custom system information** specified in the SUSE Manager interface.

Those information can be used in Ansible roles and playbooks.



# Demo time!

AWX-based patch management  
workflow

(vSphere, check\_mk, Uyuni)





# What you're about to see

- Automated patch cycle in the lab
  - vSphere hypervisor for VMs
  - Uyuni
  - check\_mk for monitoring
- AWX uses various Ansible collections
  - `community.vmware`
  - `stdevl.uyuni`
  - `tribe29.checkmk`

The AWX workflow will prepare maintenance by:

- Scheduling downtime
- Creating VM snapshots

Afterwards it will install patches.





|   |  |
|---|--|
| Name  | Ansible Maintenance                            |
| Beschreibung  | Snapshot before maintenance created by Ansible |
| Zeitstempel   | 02.06.23, 16:19                                |
| Größe   | 1,61 GB  |
| Snapshot des Arbeitsspeichers der virtuellen Maschine erstellen | Nein   |
| Gast-Dateisystem stilllegen                                     | Nein   |



Commands

Host

Add to

Export

Display

Help



Remove comments

Filter

Show checkboxes

Services of Host

1 row

| Author     | Comment text   |  | Time  | Expires | E.Type |
|------------|--|--|-------|---------|--------|
| automation | This host has been scheduled for fixed downtime from 2023-01-01 00:00:00 to 2023-01-01 01:00:00. The host will not be monitored during that time period. |  | 192 s | -       |        |

Downtime was scheduled

Overview ^

|          |              |
|----------|--------------|
| Hosts    | Unhandled p. |
| 1        | 0            |
| Services | Unhandled p. |
| 3        | 0            |
| Events   | Unhandled p. |
| 0        | 0            |

Bookmarks ^

Add Bookmark

Edit

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Uyuni release 2023.01

systems selected

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Demo

uyuni-client.labwi.sva.de

Details

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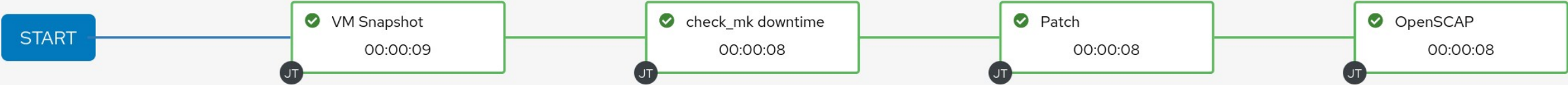
System History

The following history events have been noted for this system.  
Please note that this system has no pending events. Events marked with a star (\*) happened within a different organization: migrate the system back to the original organization to access event details.

1 - 25 of 63

25 items per page

| Type | Status | Summary   | Time                     |
|------|--------|---|--------------------------|
|      |        | OpenSCAP xccdf scanning scheduled by admin  | 2023-06-02 16:22:38 CEST |
|      |        | Combined Patch Update: openSUSE-SLE-15.4-2023-743 - Recommended update for gnutils (and 0 more patches) scheduled by (none) | 2023-06-02 16:22:16 CEST |
|      |        | Package List Refresh scheduled by admin   | 2023-06-02 16:02:20 CEST |
|      |        | Package List Refresh scheduled by admin   | 2023-06-02 15:53:36 CEST |
|      |        | Remote Command on uyuni-client.labwi.sva.de. scheduled by admin   | 2023-06-02 15:52:28 CEST |
|      |        | OpenSCAP xccdf scanning scheduled by admin  | 2023-06-02 15:37:41 CEST |
|      |        | Combined Patch Update: openSUSE-SLE-15.4-2023-743 - Recommended update for gnutils (and 0 more patches) scheduled by (none) | 2023-06-01 15:41:28 CEST |
|      |        | Package List Refresh scheduled by admin   | 2023-06-01 15:38:28 CEST |
|      |        | Remote Command on uyuni-client.labwi.sva.de. scheduled by admin   | 2023-06-01 15:38:19 CEST |
|      |        | Remote Command on uyuni-client.labwi.sva.de. scheduled by admin   | 2023-06-01 15:35:28 CEST |
|      |        | Package List Refresh scheduled by admin   | 2023-06-01 15:35:22 CEST |
|      |        | Package List Refresh scheduled by (none)  | 2023-06-01 15:28:02 CEST |
|      |        | Patch Update: Combined update for the software update stack (284 patches) scheduled by (none)                               | 2023-06-01 15:27:55 CEST |
|      |        | OpenSCAP xccdf scanning scheduled by admin  | 2023-06-01 15:09:58 CEST |
|      |        | OpenSCAP xccdf scanning scheduled by admin  | 2023-06-01 14:55:32 CEST |
|      |        | OpenSCAP xccdf scanning scheduled by admin  | 2023-06-01 14:46:40 CEST |
|      |        | Package List Refresh scheduled by (none)  | 2023-06-01 14:45:33 CEST |



# Roadmap

0.1. (December 2022)

Initial release

1.0 (later 2023)

- proxy role
- SSL certificate support
- JSON over HTTP API in external Python library (pyuyuni)

0.1.1 (April 2023)

- Added client role

Some next version

Your ideas?



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# Thank you

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