SUSE® Manager Troubleshooting
and Technical Tips

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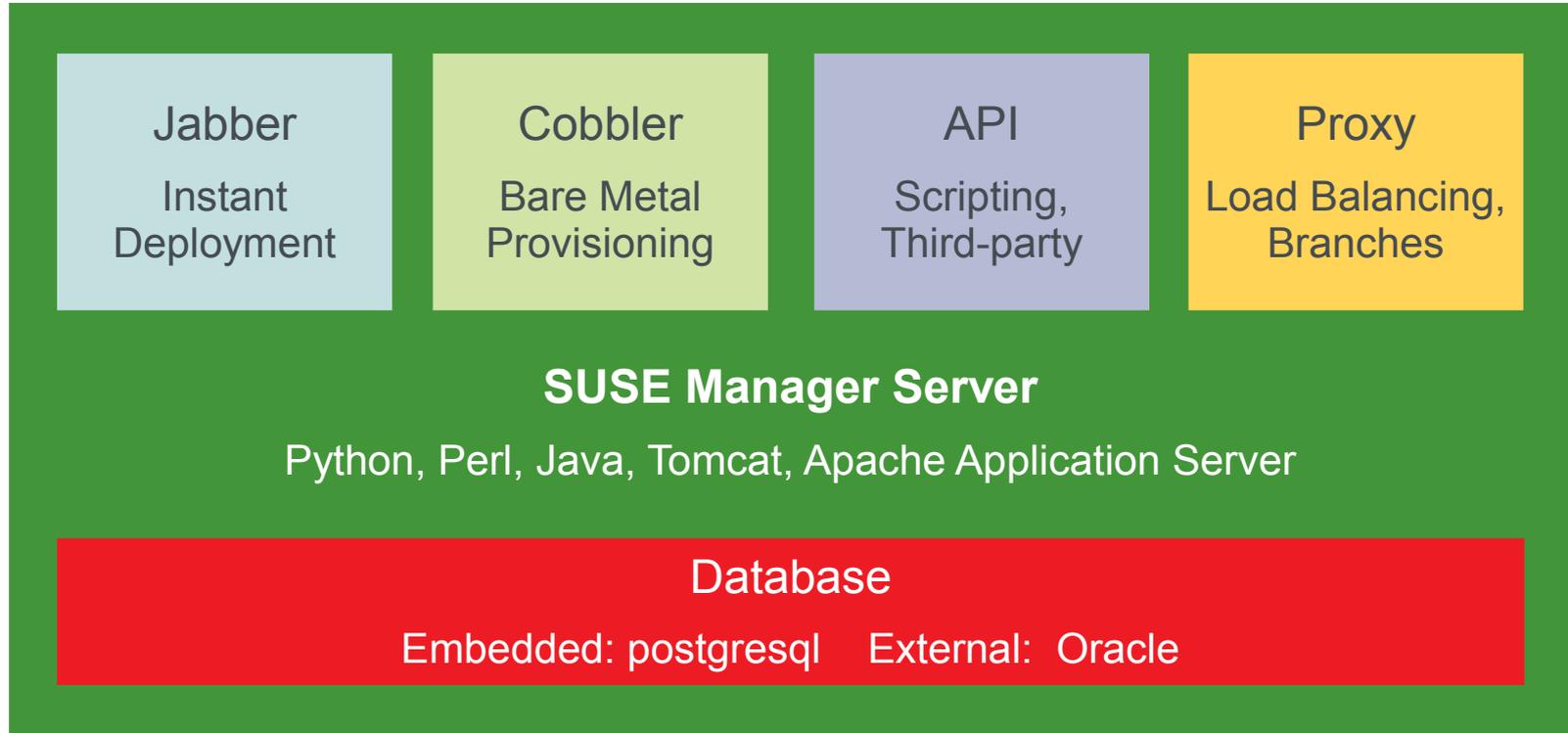**SUSE**
We adapt. You succeed.

Agenda

- SUSE Manager Architectural overview

- Troubleshooting common technical issues

  - Channel sync

  - Client registration/communication

- Optimizing your SUSE Manager

- Where to find help

SUSE Manager Architecture

SUSE® Manager
System Components

Jabber
Instant Deployment

Cobbler
Bare Metal Provisioning

API
Scripting, Third-party

Proxy
Load Balancing, Branches

SUSE Manager Server

Python, Perl, Java, Tomcat, Apache Application Server

Database
Embedded: postgresql   External: Oracle

SUSE Manager Services

`spacewalk-service`

- {start|stop|status|reload|restart|enable|disable}

- list

```
Listing spacewalk services...
jabberd                    0:off  1:off  2:off  3:on   4:on   5:on   6:off
tomcat6                    0:off  1:off  2:off  3:on   4:on   5:on   6:off
apache2                    0:off  1:off  2:off  3:on   4:on   5:on   6:off
osa-dispatcher             0:off  1:off  2:off  3:on   4:on   5:on   6:off
Monitoring                 0:off  1:off  2:off  3:on   4:on   5:on   6:off
MonitoringScout            0:off  1:off  2:off  3:on   4:on   5:on   6:off
rhn-search                 0:off  1:off  2:off  3:on   4:on   5:on   6:off
cobblerd                   0:off  1:off  2:off  3:on   4:on   5:on   6:off
taskomatic                 0:off  1:off  2:off  3:on   4:on   5:on   6:off
.
```

- Individual components may be separately stopped/started as needed

- Database has its own separate startup and is assumed

SUSE

Important Files You Need to Know About (part1)

`/var/log/rhn/`

Log files from many SUSE Manager operations

`/var/cache/rhn/repodata/`

Where the client repository info is stored

`/etc/rhn/rhn.conf`

Many important settings for server operation

`/srv/www/htdocs/pub`

Web server data for bootstrap, bootstrap repositories, GPG keys

Important Files You Need to Know About (part 2)

`/var/spacewalk/packages`

Where your downloaded/synched rpm files are

There are MANY other files on the SUSE Manager system...

– but do not change them unless you are SURE

SUSE

Where to Look

Log File Details

- Every request is handled by Apache first

    `/var/log/apache2/access_log`

    `/var/log/apache2/error_log`

- WebUI (`/rhn/...`) and API requests are handled by Tomcat

    `/var/log/tomcat6/`

- Client-Server communication

    `/var/log/rhn/rhn_server_xmlrpc.log`

- Autoinstallation: Cobbler

    `/var/log/cobbler/`

Commands and Tools

Important Commands and Tools

`spacecmd`

All the power of the webUI and more!

`spacewalk-utils`

Scripts to shorten processes and accomplish important tasks – not installed by default, but supported

Neither of these tools prevents stupid!

Remember the Roots

`spacewalk-`   and   `rhn-`

- Retained the command structure to inherit upstream goodness

- API from upstream retains full functionality

- Consistency regardless of client distribution

- Don't be only SLES-y and YaST-y

  - Things like CA for SUMA actually follow upstream flow

Troubleshooting Common Issues

Most Support Issues Fall Into Two Categories

· Channel setup and synchronization

· Client registration and communication

Channel Setup and Synchronization

- Mirroring content with Customer Center

  – Requires Customer Center to be healthy

  – Can take a very long time – especially initially

- `mgr-ncc-sync` (NCC) and `mgr-sync` (SCC)

  – Scripts built by SUSE to interact with Customer Center

  – Both call `spacewalk-repo-sync` in non-interactive mode

  – Both use `taskomatic` scheduler

Channel Sync Process Flow

- `spacewalk-repo-sync` is scheduled by taskomatic
- Channel metadata read from repository, compared to what is already in the database
- RPM's get copied to unique (obscured) location under `/var/spacewalk`
  - If the exact RPM exists already in another channel, only a database pointer is created

- RPM metadata is parsed into the database as each is copied
- Errata (patch) info is not processed until all RPM's have been copied and parsed
- Client metadata cache (final step) is created in `/var/cache/rhn/repodata`

Watching the Channel Sync Process

- Individual channel sync logs are in `/var/log/rhn/reposync`
(1.7: one file per sync, 2.1: one file per channel)

- Taskomatic log is in `/var/log/rhn/rhn_taskomatic-daemon.log`

- Channel repository data is built in
`/var/cache/rhn/repodata/`*channellabel*
The files in progress have a .new extension, and are not there
when the repodata completes properly

- Validate completion of the repodata in the webUI –
"Channel → Details" should show "Completed" and the date/time
stamp will match

Let's
Troubleshoot!

Channel Sync Tips

- Internet speed is helpful but not the only variable
  - Much metadata has to be processed, requiring multiple database operations

- You can temporarily force the channel to use pre-downloaded yum repos from SMT or other locations

  - `spacewalk-repo-sync -c res6-x86_64 -u file:///location/of/smtrepo`

- Expect errors in initial channel sync – NCC/SCC issues, metadata change

  - "No more mirrors to try"

  - "Errata skipped because of missing package"

- Run it again until all is clean – be patient, drink coffee

Client Registration and Connectivity

Client Registration Requirements

- Properly synced channels – including SUSE Manager Tools

- Activation keys that point to the proper parent and child channels

- Availability of SUMA client software

  – Pre-installed on the client

  – Available to be installed from a bootstrap repository

    – Dependency resolution ASSUMES base media access at the time of registration

- Proper bootstrap script

- Bootstrap repository for SUSE distros can be built with

  `mgr-create-bootstrap-repo`

Activation Keys

- Activation keys and bootstrap scripts SHOULD be distribution/architecture specific

- Create your own key name that makes sense (vs auto-generated)

- Point the Activation Key at a synchronized parent channel

  - If you choose "SUSE Manager Default", it will try to auto-detect

- Do as much automation as possible in the activation key – package installs, System Group assignment, Configuration Channel assignments, deploy config files

- Choose the Provisioning entitlement always – the Lifecycle Management module purchase includes it

- Link your activation keys and bootstrap scripts

Bootstrap Scripts

- By default are designed to

  - Install necessary client software

  - Configure package management on the client to talk to YOUR SUSE Manager server or proxy

  - Register the system using the activation key specified (`rhnreg_ks`)

- Can be re-run without harm

- Contain a DO NOT EDIT section that

  - Detects package management subsystem (yum or zypper)

  - Performs action on the client based on this – updating the software management software as needed.

- Can be edited to call additional scripts for other actions to be performed at time of registration

- Display `– bootstrap complete –` when properly done

Let's
Troubleshoot!

Troubleshooting Client Registration

- If bootstrap script does not finish, review the client registration requirements above

- Uninstalled packages usually means you either do not have a populated bootstrap repo and/or access to base media

- Make sure all GPG keys are referenced in the bootstrap script for RH-based distributions (not needed for SUSE)

  - GPG key files should be in `/srv/www/htdocs/pub`

- If the system registers, but you see no base channel, ensure your bootstrap script/activation key match the distribution and architecture

Troubleshooting Client Communication

- osad uses port 5222 – make sure it is not being blocked

- Ensure you do not have duplicate entries for the client

- Symptom: Each new system registered overwrites a previously registered one.

  If you clone systems (as in vm's), make SURE you delete the `NCCcredentials` file FIRST:

  – In SLE it is stored in `/etc/zypp/credentials.d`

  – In RH-based systems it is stored in `/etc/`

SUSE.

Optimizing SUSE Manager

- Add more base RAM

- Allocate more ram to the `taskomatic` scheduler

  - Add memory using this parameter in `/etc/rhn/rhn.conf`

    ```
    # Set max taskomatic mem
    taskomatic.maxmemory=2048
    ```

- Add storage capacity (200GB recommended) to `/var/spacewalk`

  - Stop spacewalk services, and rename the directory

    mv /var/spacewalk /var/spacewalk-orig

  - Use YaST to add more disk space, and mount it at /var/spacewalk

  - Copy the data over and recover the disk space

  - Start spacewalk services

Your Tips or Questions Are Welcome!

Thank you.

Resources and Links

Troubleshooting chapter – installation manual

- https://www.suse.com/documentation/suse_manager/singlehtml/book_susemanager_install/book_susemanager_install.html#ch-troubleshooting

SUSE Manager Documentation

- https://www.suse.com/documentation/suse_manager/

SUSE Manager Public Wiki

- https://wiki.novell.com/index.php/SUSE_Manager

- Attend other SUSE Manager sessions at SUSECon 2014!