

SaltStack Best Practices

...for States

About Me

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Various projects using SaltStack as a key component:

- hadoop - real clusters
- white hat botnet - mobile game company
- fast parallel lamp stack application deployment
- configuration management
- custom web application testing
- Phoenix - open source HA implementation on AWS

This is an introduction to best practices

- focus is on salt states aka config mgmt
- salt config mgmt is flexible, but you must make decisions
- links to relevant resources used are listed at end of slides

States Overview

- pillars = centralized info on salt master
- state modules = python modules using salt execution modules, to enforce a desired state
- state files = user created files that determine the end state for some software on a server - user defined
(typically: yaml + jinja)

Best Practices List

- Keep all data in source control (git, svn...)
- Comment the yaml and jinja
- Make state ids descriptive, can even be a sentence
- Use module.function notation
- Always specify a name parameter
- Keep jinja usage simple, no complex logic
- Know evaluation order = Jinja -> yaml -> highstate -> low state -> execution
- Jinja macros are useful (e.g. like a template for each user, pulling from a pillar)
- Jinja allows easy call outs to salt modules - for data, or formatting data
- Lookup tables are very useful - os specific, sane defaults, environment specific

Best Practices List - Continued

If the jinja is getting heavy, use an alternate renderer (e.g. python)

Salt execution modules are a good way to format data (e.g. sets)

Keep dictionaries shallow

Group related files (e.g. `apache`, `apache/init.sls`, `apache/files/*`)

Use manual merges to override dictionaries aka parameters

- `'update'`, `'pillar.get'`, `'filter_by'`

Consider using automatic merge with pillar

- set master config variable `'pillar_source_merging_strategy'` option

Reference Links

<http://jinja.pocoo.org/docs/dev/templates/>

<http://www.yaml.org/refcard.html>

[https://youtu.be/ocFkyNAhBsA?
list=PL9svBjLDUI_8Cy3BWOfmeWwWgnCc6_eLb](https://youtu.be/ocFkyNAhBsA?list=PL9svBjLDUI_8Cy3BWOfmeWwWgnCc6_eLb)

[http://docs.saltstack.com/en/latest/topics/development/conventions/formulas.
html](http://docs.saltstack.com/en/latest/topics/development/conventions/formulas.html)