



elasticsearch.

SaltStack与ES批量部署

Medcl, 2014.01.19

Agenda

- 什么是SaltStack?
- Salt特性
- Salt入门
- ElasticSearch批量部署实战

What's SaltStack?

“SaltStack is systems and configuration management software used to automate any infrastructure, cloud or DevOps function”



Intro

- 诞生于2011
- 100%开源, Apache 2.0
- C/S结构, master/minion
- 核心功能
 - 配置管理
 - 远程执行

Feature

- 上手简单
- 易于安装
- 快速、并行
- 可版本控制
- 支持多环境
- Masterless模式
- 灵活，可扩展

Concept

- Master
 - 发送命令
- Minion
 - 接受并执行命令
- Salt States
- Pillar
- Grains
- GitFS
- Targets
- Render

Grains

- minion启动时收集的关于系统的静态信息
 - salt '*' grains.ls
 - salt '*' grains.items
- 定义minion个性化属性
 - vi /etc/salt/minion

```
grains:
  roles:
    - webserver
    - memcache
  deployment: datacenter4
  cabinet: 13
  cab_u: 14-15
```

Pillar

- 变量！
- Pillar是一组key-value，使用yaml的语法格式
 - 如：foo: bar
- Pillar用来实现minion的个性化定制
 - 平台差异性，适应不同的OS
 - 环境差异性，适应不同的部署环境
 - 节点差异性，隐私数据
- 通俗来说，定义：
 - RedHat是httpd，Debian是apache2，
 - 测试环境用192的ip，数据库密码是xxx，线上ip是xxxxxx等

```
salt '*' pillar.data
{{ pillar['pkgs']['apache'] }}
{{ salt['pillar.get']('pkgs:apache', 'httpd') }}
```

Pillar

```
dev:
  'os:Debian':
    - match: grain
    - servers
```

```
{% if grains['os'] == 'RedHat' %}
apache: httpd
git: git
{% elif grains['os'] == 'Debian' %}
apache: apache2
git: git-core
{% endif %}
```

Salt States

- 用来描述系统的目标状态
- YAML格式，SLS后缀，（SaLt State）
- 通俗来说，用来定义：
 - 哪些机器、安装哪些软件、都有什么文件、文件什么内容、权限如何、服务哪些、服务运行状态等等

Salt States

```
apache:
  pkg:
    - installed
  service:
    - running
    - require:
      - pkg: apache
```

```
apache:
  pkg.installed:
    - name: {{ salt['pillar.get']('pkgs:apache', 'httpd') }}
```

Master安装

IP:192.168.56.104

```
yum install salt-master -y
```

```
vi /etc/salt/master
```

```
– auto_accept: True
```

```
/etc/init.d/salt-master start
```

配置文件

- auto_accept: True
- file_roots:
 - base:
 - - /srv/salt
- fileserver_backend:
 - - roots
- file_ignore_glob:
 - - '*.pyc'
 - - '*.swp'
- pillar_roots:
 - base:
 - - /srv/pillar

Minion安装

IP:192.168.56.102\103

```
yum install salt-minion -y
```

```
vi /etc/salt/minion
```

- master: 192.168.56.104
- id: node-2

```
/etc/init.d/salt-minion restart
```

命令介绍

- salt
- salt-key
 - minion节点授权
- salt-call
 - 本地运行命令
- salt-run
 - 执行一个salt-runner
- salt-ssh
 - 使用SSH来批量管理
- salt-syndic
 - 同步多Master
- salt-cp
 - 推送文件

目标匹配

- *salt '*' test.ping*
- salt '*.example.net' test.ping
- salt 'web?.example.net' test.ping
- salt 'web[1-5]' test.ping
- salt -E 'es-[1-2]|ufo-1' cmd.run 'ls /usr/local/'
- salt -L 'web1,web2,web3' test.ping
- salt -G 'os:CentOS' test.ping
- *salt -N group1 test.ping*
- salt -C 'webser and G@os:Debian or E@web-dc1-srv.*' test.ping

快速入门

- 内置命令 <http://docs.saltstack.com/ref/modules/all/index.html>
- 查看磁盘
 - salt '*' disk.usage
- 查看内存
 - salt '*' grains.item mem_total
 - salt '*' status.meminfo
- 执行命令
 - salt '*' cmd.run 'ls -l /etc'
 - salt '*' cmd.run "uptime"
 - salt '*' cmd.run 'java -version'
- 安装包
 - salt '*' pkg.install vim
- 查看网卡
 - salt '*' network.interfaces

手动添加Minion

```
[root@ops-master minions]# salt '*' test.ping
node-1:
    True
[root@ops-master minions]# salt-key -L
Accepted Keys:
node-1
ops-master
Unaccepted Keys:
node-2
Rejected Keys:
[root@ops-master minions]# salt-key -A
The following keys are going to be accepted:
Unaccepted Keys:
node-2
Proceed? [n/Y] y
Key for minion node-2 accepted.
[root@ops-master minions]# salt-key -L
Accepted Keys:
node-1
node-2
ops-master
Unaccepted Keys:
Rejected Keys:
```

Salt-SSH

```
node1:
  host: 192.168.56.103 # The IP addr or DNS hostname
  user: root           # Remote executions will be executed as user fred
  passwd: root         # The password to use for login, if omitted, keys are used
# sudo: True           # Whether to sudo to root, not enabled by default
node2:
  host: 192.168.56.102
  user: root
  passwd: root
```

```
[root@ops-master salt]# salt-ssh '*' test.ping
```

```
node1:
```

```
    True
```


```
node2:
```

```
    True
```

Batch Size

- 指定数量
 - salt '*' -b 1 test.ping
- 指定百分比
 - salt -G 'os:CentOS' --batch-size 25% test.ping
- Batch Size并不减少总的数量，只是限制同时执行任务的机器数量

halite



Console

Project

saltwui

Logout

Command

🔊

Action ▾

Enter target pattern

📄 ▾

⬆

📶

📁

🔄

Function

Target

Arguments

Enter module.function

*

Enter argument

-

+

▶ Execute

Monitor

Command ▶

Job ▾

Minion ▶

Event ▶

2013092413334989095

state.running *

Result ▶

Event ▶

20130924133344707270

test.ping *

Result ▶

Event ▾

2013-09-24_13:33:44.736453

salt/job/20130924133344707270/ret/ms-3

▾

_stamp:

2013-09-24_13:33:44.736453

cmd:

_return

fun:

test.ping

id:

ms-3

jid:

20130924133344707270

retcode:

0

return:

true

success:

true

2013-09-24_13:33:44.736366

salt/job/20130924133344707270/ret/ms-4

▶

2013-09-24_13:33:44.736282

salt/job/20130924133344707270/ret/ms-2

▶

2013-09-24_13:33:44.734990

salt/job/20130924133344707270/ret/ms-1

▶

2013-09-24_13:33:44.733611

salt/job/20130924133344707270/ret/ms-0

▶

2013-09-24_13:33:44.732653

salt/job/20130924133344707270/ret/alpha

▶

2013-09-24_13:33:44.707829

salt/job/20130924133344707270/new

▶

20130924133251241998

grains.items *

Result ▶

Event ▶

20130924133250928787

test.ping *

Result ▶

Event ▶

20130924133250906827

runner.manage.status

Result ▶

Event ▶

ELASTICSEARCH批量部署

任务清单

- 1.批量安装ES到节点
- 2.批量修改ES配置文件
- 3.批量管理节点的ES服务

- 要求:
 - 快速
 - 方便
 - 敏捷

States定义

- JAVA环境安装
- elasticsearch用户
- ElasticSearch程序部署
- ElasticSearch服务安装
- ElasticSearch服务启动

Pillar定义

- 安装文件服务器地址配置
- Elasticsearch服务配置
 - HEAP_SIZE大小
- Elasticsearch配置
 - 集群名称
 - 数据目录
 - 日志目录
 - 等等

• 配置文件

```
[root@ops-master salt]# tree
.
├── .
├── . . . ? base
│   ├── . . . ? . . . ? epel.sls
│   ├── . . . ? . . . ? files
│   ├── . . . ? . . . ? . . . ? epel-release-6-8.noarch.rpm
│   ├── . . . ? . . . ? . . . ? local.repo
│   ├── . . . ? . . . ? init.sls
│   ├── . . . ? . . . ? localrepo.sls
│   └── . . . ? elasticsearch
│       ├── . . . ? . . . ? config.sls
│       ├── . . . ? . . . ? files
│       ├── . . . ? . . . ? . . . ? config
│       ├── . . . ? . . . ? . . . ? . . . ? elasticsearch.yml
│       ├── . . . ? . . . ? . . . ? . . . ? logging.yml
│       ├── . . . ? . . . ? . . . ? service
│       ├── . . . ? . . . ? . . . ? elasticsearch.conf
│       ├── . . . ? . . . ? init.sls
│       ├── . . . ? . . . ? install.sls
│       ├── . . . ? . . . ? service.sls
│       └── . . . ? java
│           ├── . . . ? . . . ? init.sls
│           ├── . . . ? top.sls
│           ├── . . . ? users
│           └── . . . ? init.sls
```

```
[root@ops-master pillar]# tree
.
├── .
├── . . . ? config.sls
├── . . . ? es
│   ├── . . . ? . . . ? init.sls
│   ├── . . . ? top.sls
│   └── . . . ? users
│       └── . . . ? init.sls
```

top.sls

- base:
- ' * ':
- - base
- - users
- - java
- - elasticsearch

具体配置见附件

salt/top.sls

Demo

```
salt '*' state.highstate
```

```
salt '*' cmd.run 'java -version'
```

```
salt '*' cmd.run 'netstat -ano | grep 9200'
```

```
salt '*' cmd.run '/etc/init.d/elasticsearch status'
```

```
curl -XGET http://192.168.56.103:9200/\_cluster/health
```

Links

- <http://saltstack.org/>
- <https://github.com/saltstack/salt>
- <http://elasticsearch.cn>
- <https://github.com/medcl/salt-elasticsearch>

ESCC#2

第二届ES中文社区（线上）交流活动正在进行中
ElasticSearch China Conference 2014

争取每周一分享，大家踊跃报名，内容不限。

社区=大家+参与

```
salt -G 'os:CentOS' cmd.run 'poweroff'
```

Thank you