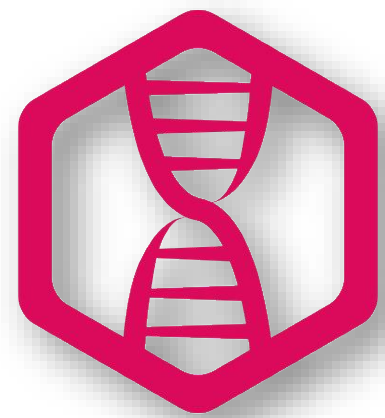


Using SALTSTACKto Provision and Configure Infrastructure on Azure

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AGENDA



LogDNA

Our Journey to Salt



Salt Cloud

Provisioning VMs
with Salt Cloud



Demo

Configuring an
Elasticsearch cluster



Questions

logdna

- . Cloud log management platform
- . YC 2015
- . Teamed up with Microsoft
- . Use Saltstack to manage infrastructure





VIEWS

Dashboard

Everything

Saltstack

```
Oct 26 16:36:40 salt-demo-esnode Salt Event state.apply "common" with status: non-zero retcode 1
    No matching sls found for 'common' in env 'base'
Oct 26 16:36:55 salt-demo-esnode Salt Event state.apply "logging" with status: OK | 1098.2 ms
    SUCCESS | Add LogDNA agent yum repo | 465.6 ms
    SUCCESS | Install LogDNA agent | 602.4 ms
    SUCCESS | Configure LogDNA Agent | 1.7 ms
    SUCCESS | Ensure LogDNA agent is running and enabled at boot | 28.5 ms
Oct 26 16:36:55 salt-demo-esmaster Salt Event state.apply "logging" with status: OK | 1174.1 ms
    SUCCESS | Add LogDNA agent yum repo | 496.6 ms
    SUCCESS | Install LogDNA agent | 643.5 ms
    SUCCESS | Configure LogDNA Agent | 2.1 ms
    SUCCESS | Ensure LogDNA agent is running and enabled at boot | 31.9 ms
Oct 26 17:43:06 salt-demo-esmaster Salt Event state.highstate with status: non-zero retcode 2 | 151350.4 ms
    SUCCESS | common_packages | 27841.9 ms
    SUCCESS | common_packages | 20843.3 ms
    SUCCESS | common_packages | 21567.1 ms
    SUCCESS | Add LogDNA agent yum repo | 533.4 ms
    SUCCESS | Install LogDNA agent | 22860 ms
    SUCCESS | Configure LogDNA Agent | 20.6 ms
    FAILURE | Ensure LogDNA agent is running and enabled at boot | 34.7 ms
    SUCCESS | Download Oracle JDK | 25373.4 ms
    SUCCESS | Install Oracle JDK | 9666.8 ms
    SUCCESS | elasticsearch_repo | 182.2 ms
    SUCCESS | elasticsearch | 22179.7 ms
    SUCCESS | /etc/elasticsearch/elasticsearch.yml | 55.1 ms
    SUCCESS | elasticsearch | 184.7 ms
    SUCCESS | Install kopf elasticsearch GUI plugin | 7.4 ms
Oct 26 17:45:23 salt-demo-esnode Salt Event state.highstate with status: non-zero retcode 2 | 133433.1 ms
    SUCCESS | common_packages | 25426.2 ms
    SUCCESS | common_packages | 19700.7 ms
    SUCCESS | common_packages | 19248.5 ms
    SUCCESS | Add LogDNA agent yum repo | 517 ms
```

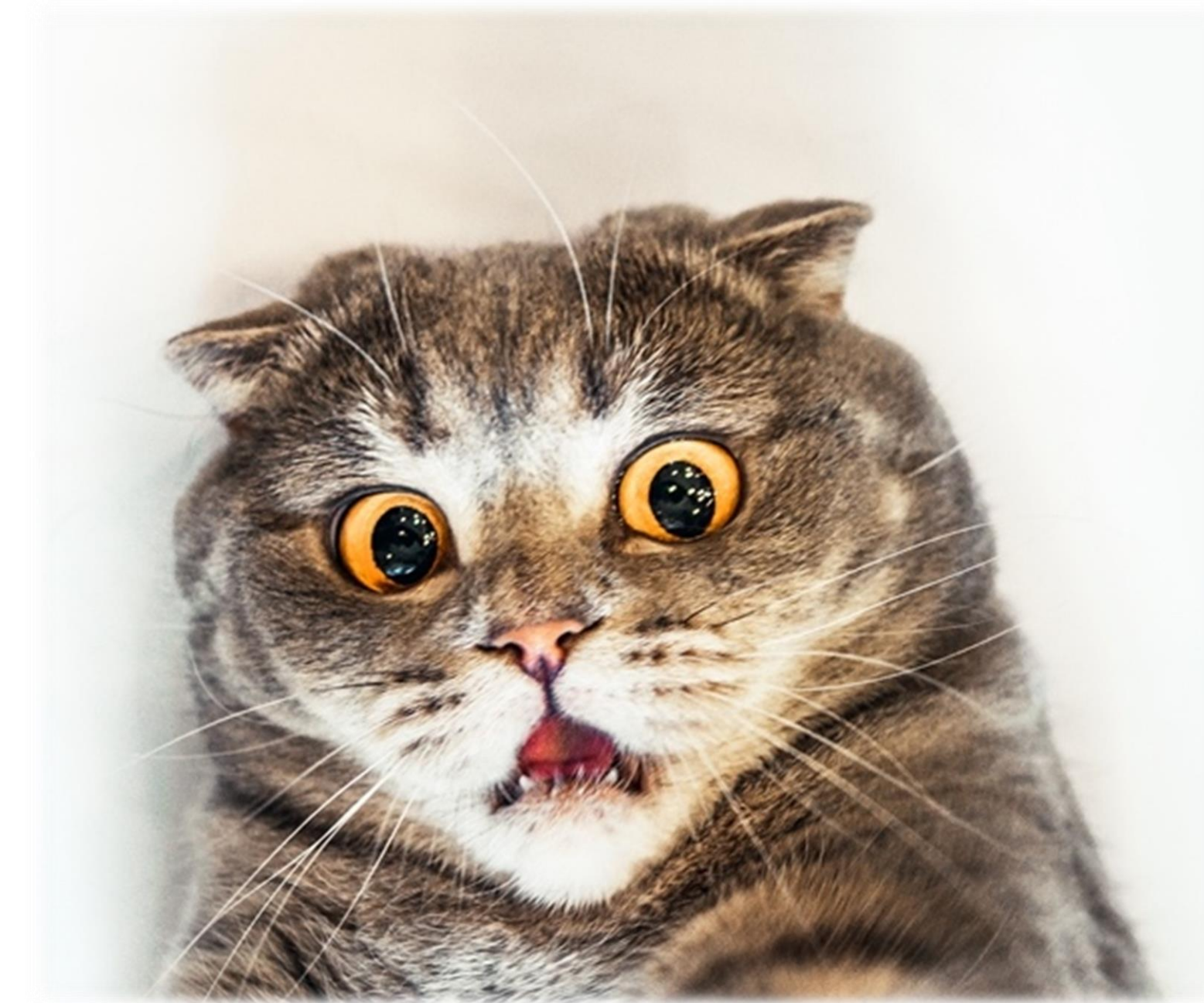

INFRASTRUCTURE IS COMPLICATED

- . Provision Network
- . Provision Machines
- . Install Dependencies
- . Retrieve App
- . Run App
- . Monitoring/Logging


Cloud Portal

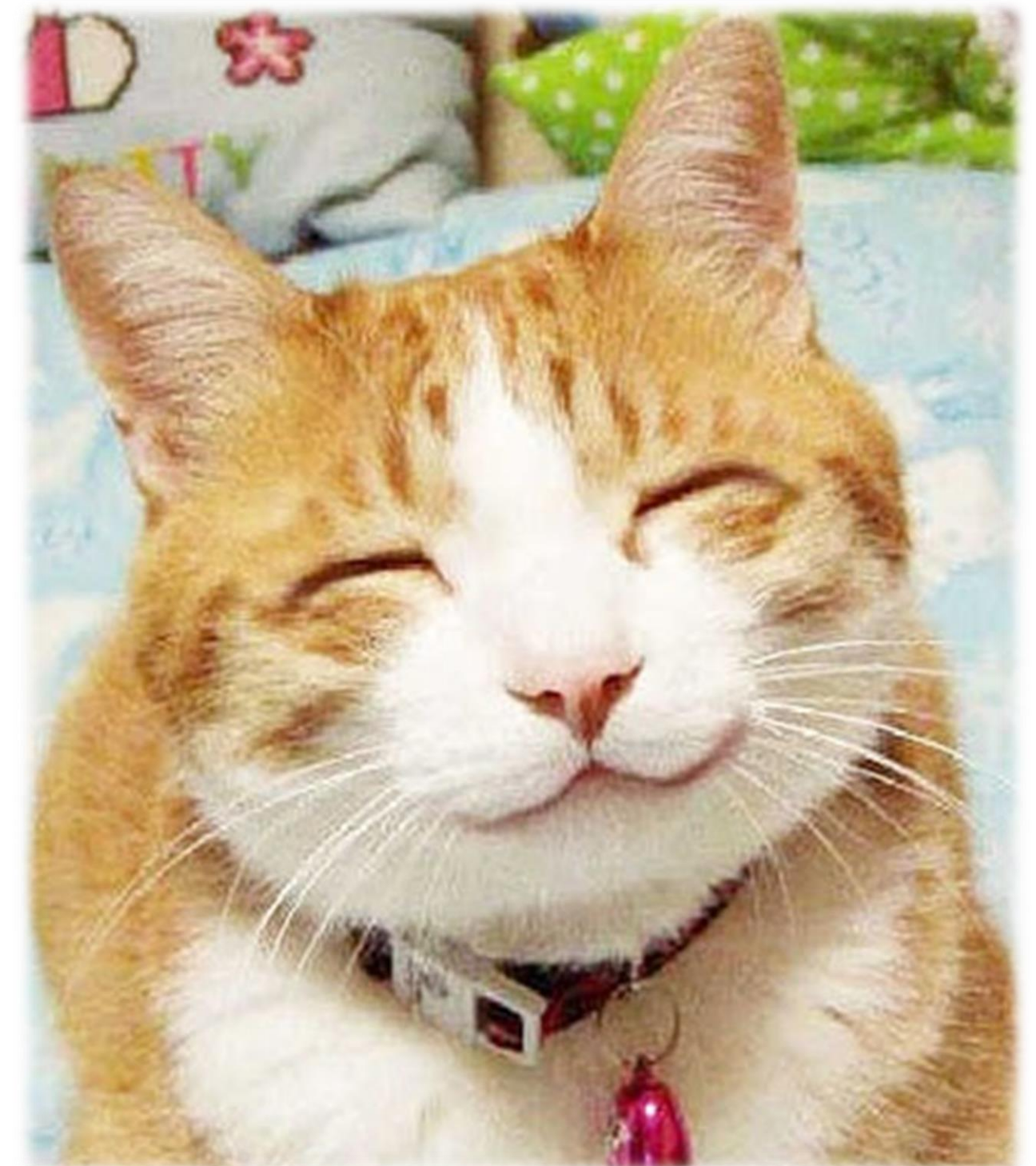
Bash Script

```
ssh  
apt-get <blah>  
git clone <app>  
./app
```



INFRASTRUCTURE ~~IS COMPLICATED~~ AS CODE

- . Provision Network
 - . Provision Machines
 - . Install Dependencies
 - . Retrieve App
 - . Run App
 - . Monitoring/Logging
- Azure Resource Template
- Salt Cloud
-  **SALTSTACK**



OUR JOURNEY TO SALT

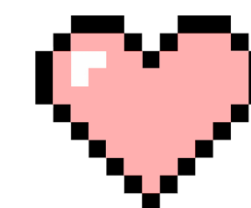
Why we chose Saltstack:

- Native cloud provider integrations, including Azure
- Highly scalable
- Highly performant
- State enforcement
- Cross-platform compatible

...because it's awesome!



logdna



Demo



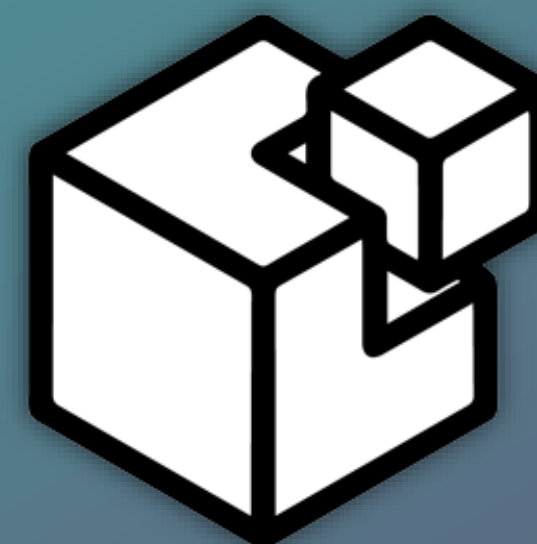
Elasticsearch

on

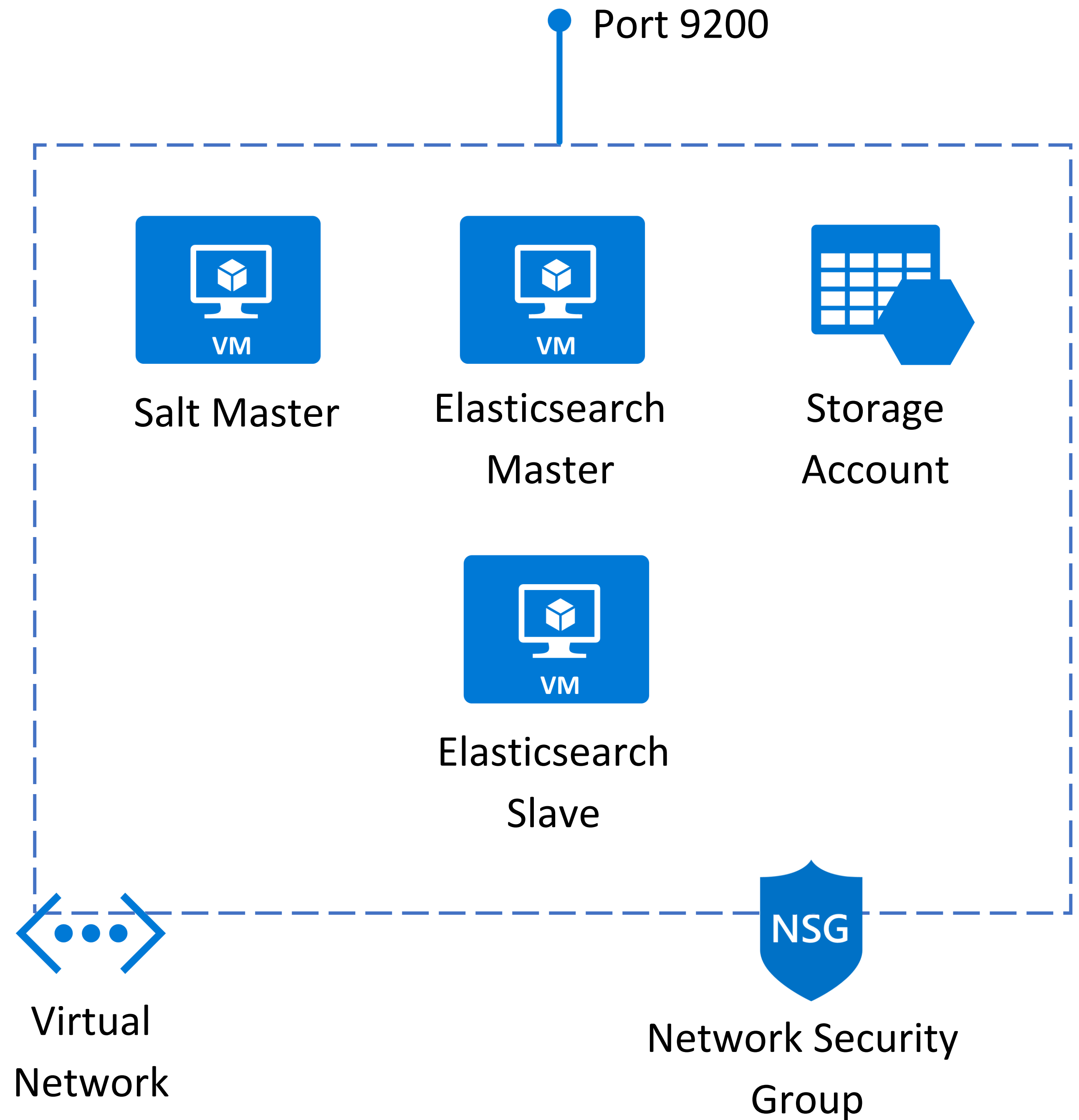
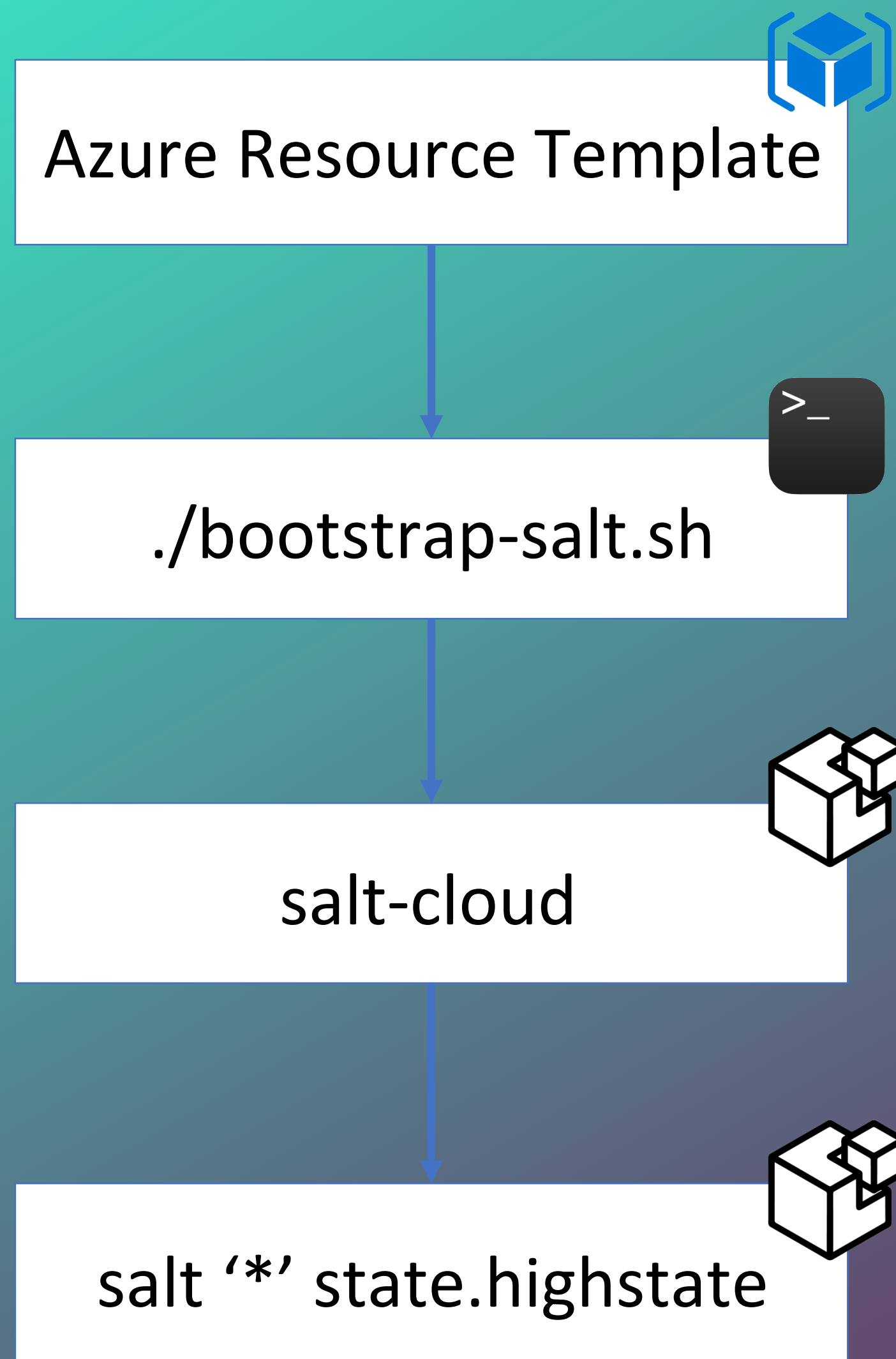


Azure

with



SaltStack



MICROSOFT AZURE

Azure Resource Manager (ARM):

- Azure Control Plane
- Classic vs ARM

Azure Resource Manager (ARM) Templates:

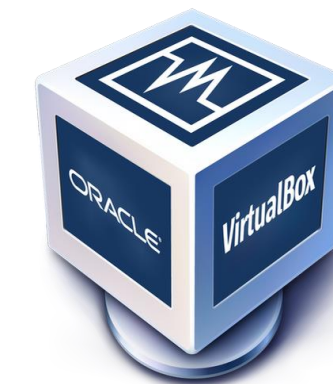
- JSON file that defines infrastructure and configuration
- Simplifies orchestration and ensure idempotency
- QuickStart Templates: github.com/Azure/azure-quickstart-templates
- ARM Visualizer: armviz.io



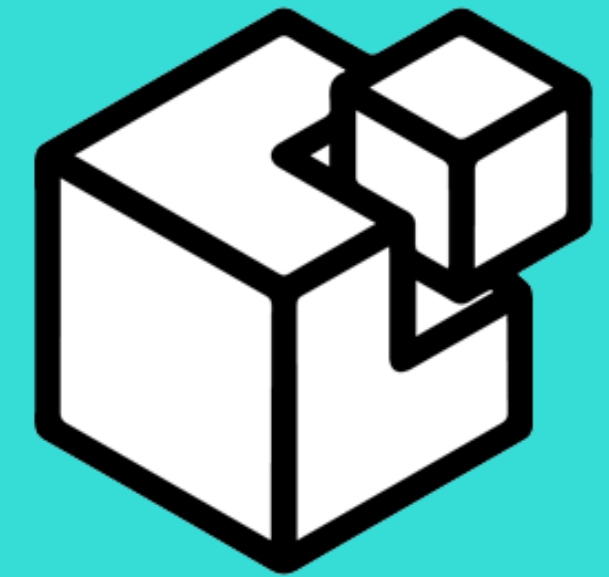
SALT

Salt Cloud

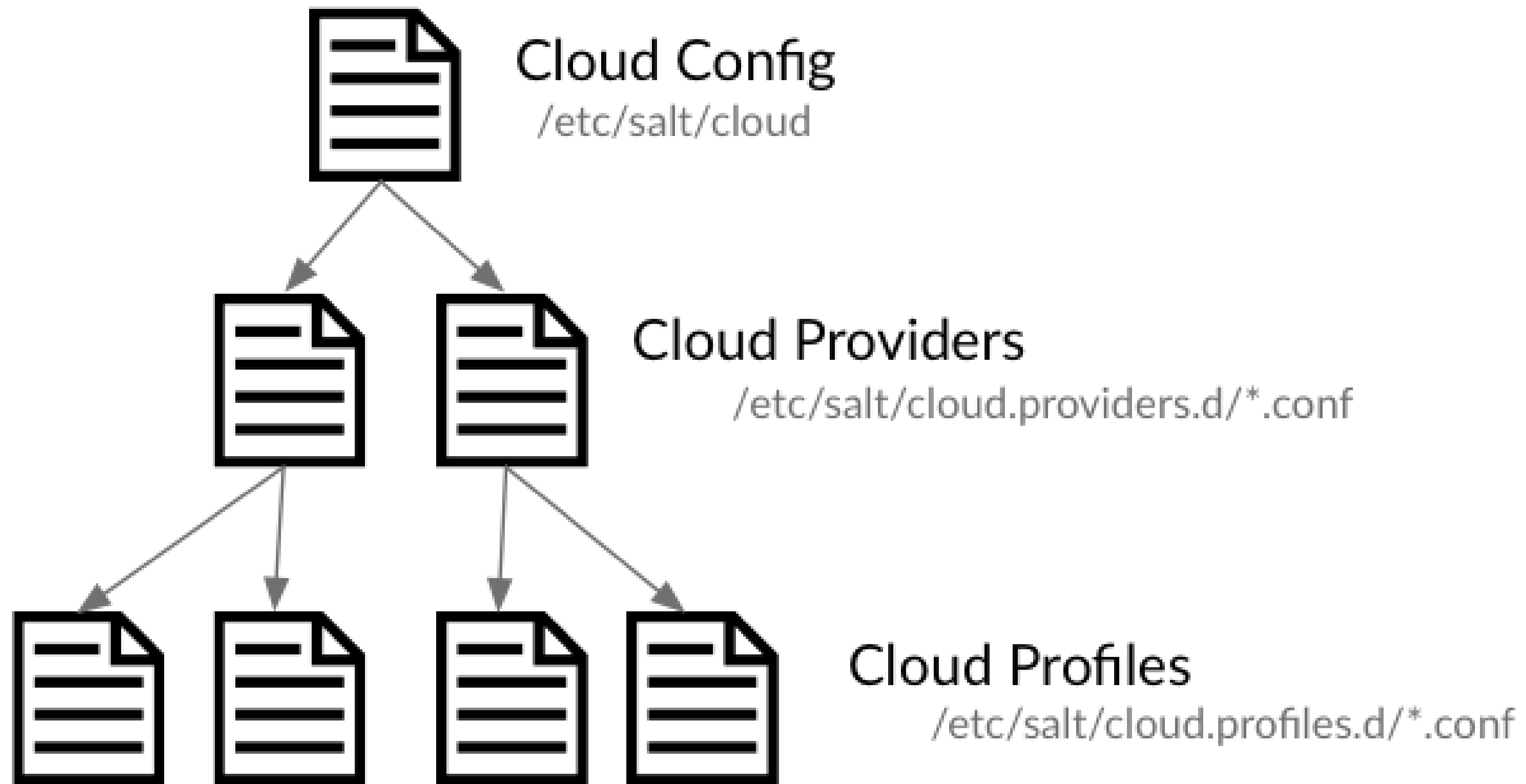
- Natively spin up and bootstrap systems on your cloud provider
- Salt Cloud supports the ARM provisioning model
- Salt cloud providers require specific configuration and dependencies



...and many others



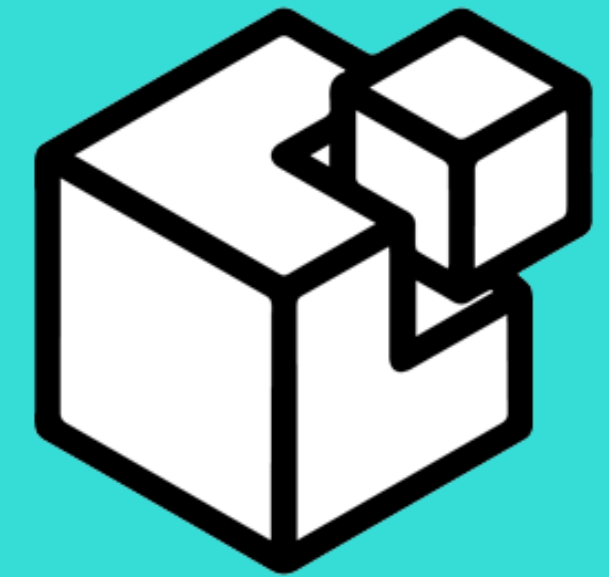
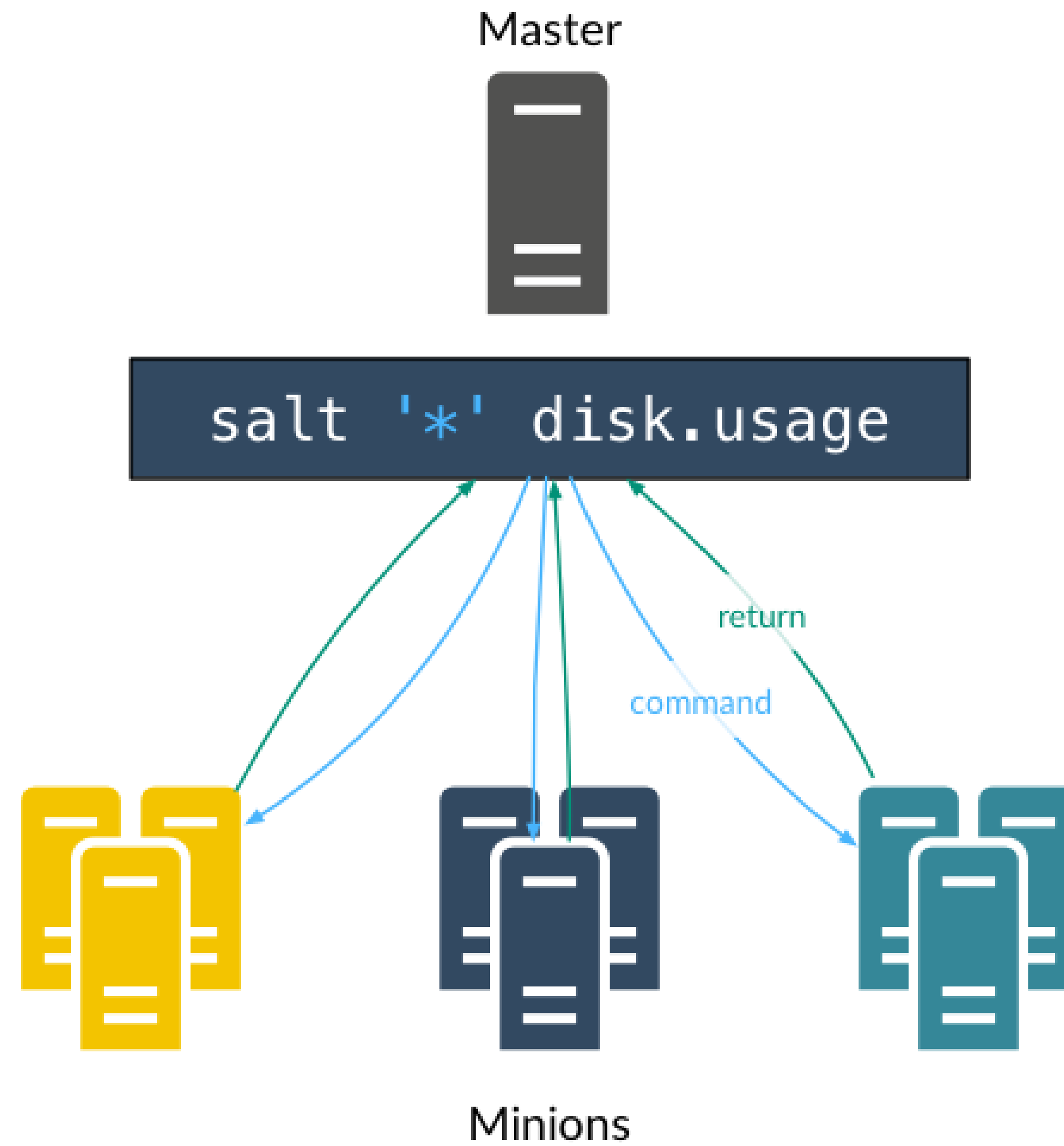
SALT CLOUD CONFIGURATION



SALT

Salt Stack

- Minions
- Execution Modules
- Formulas (States)
- Grains
- Top File



Top File

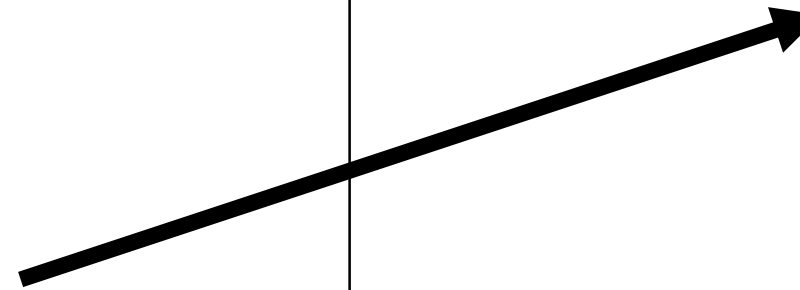
```
base:
  '*':
    - common_packages
    - logging
  'roles:elasticsearch':
    - match: grain
    - elasticsearch
  'roles:elasticsearchmaster':
    - match: grain
    - elasticsearchmaster
```

/etc/salt/top.sls

Formula Files

```
common_packages:
  pkg.installed:
    - names:
    - git
    - tmux
    - tree
```

/etc/salt/common_packages.sls



SUMMARY

- Use ARM templates to simplify orchestration
- salt-cloud abstracts the nitty gritty details of a cloud provider
- salt configures and runs the software
- LogDNA Salt engine ingests state run results

RESOURCES

- Code Story

www.microsoft.com/reallifecode/2017/05/09/provision-configure-infrastructure-azure-using-saltstack/

- ElasticSearch on Azure using SaltStack

www.github.com/baronomasia/azure-saltstack-elasticsearch

- LogDNA

<https://logdna.com>

- Using an existing formula (MySQL)

www.github.com/jpoon/azure-saltstack-mysql

Questions?

