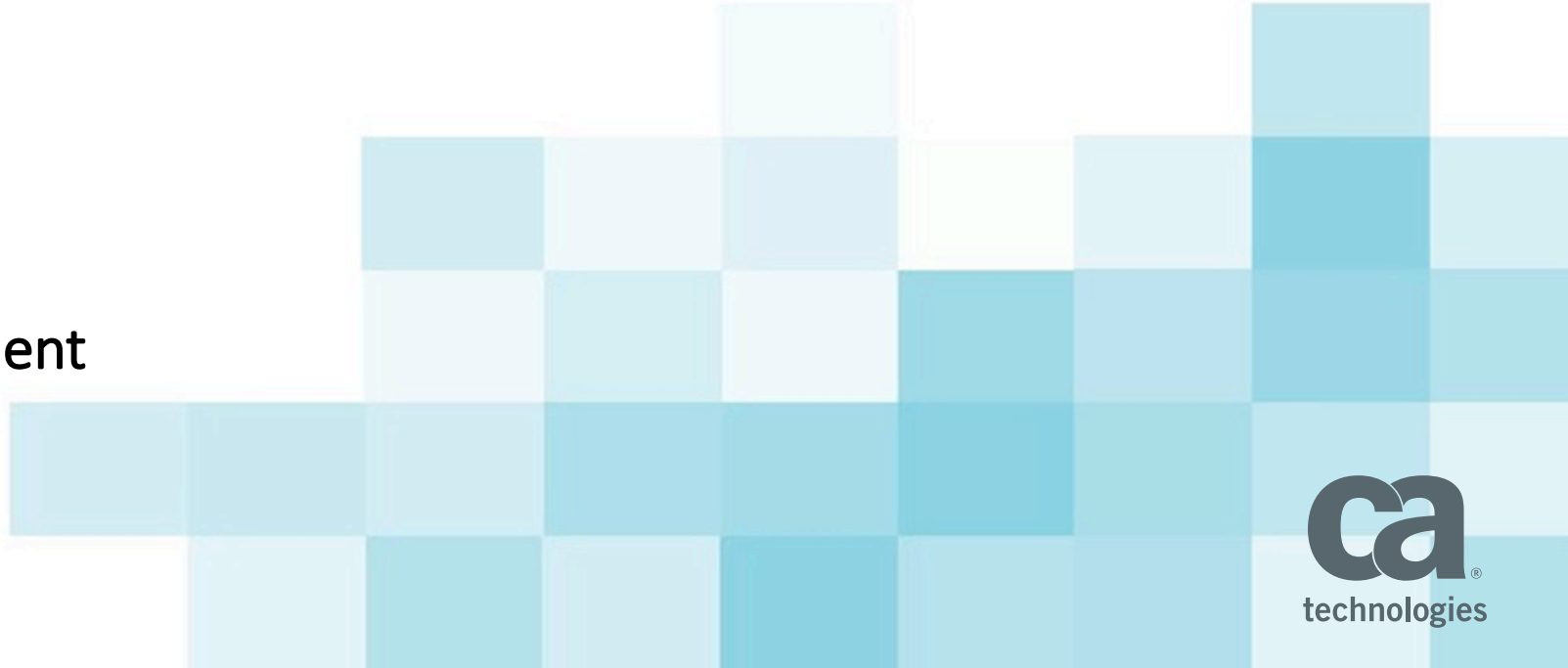
execute “APIM Automation Techniques” do
  command <<-EOH
      headless-install.presentation >> aric.demo
  EOH
  not_if { ::yourbrain.exists?('/automation'&'/apim') }
end

Aric Day | CA API Management
aric.day@ca.com



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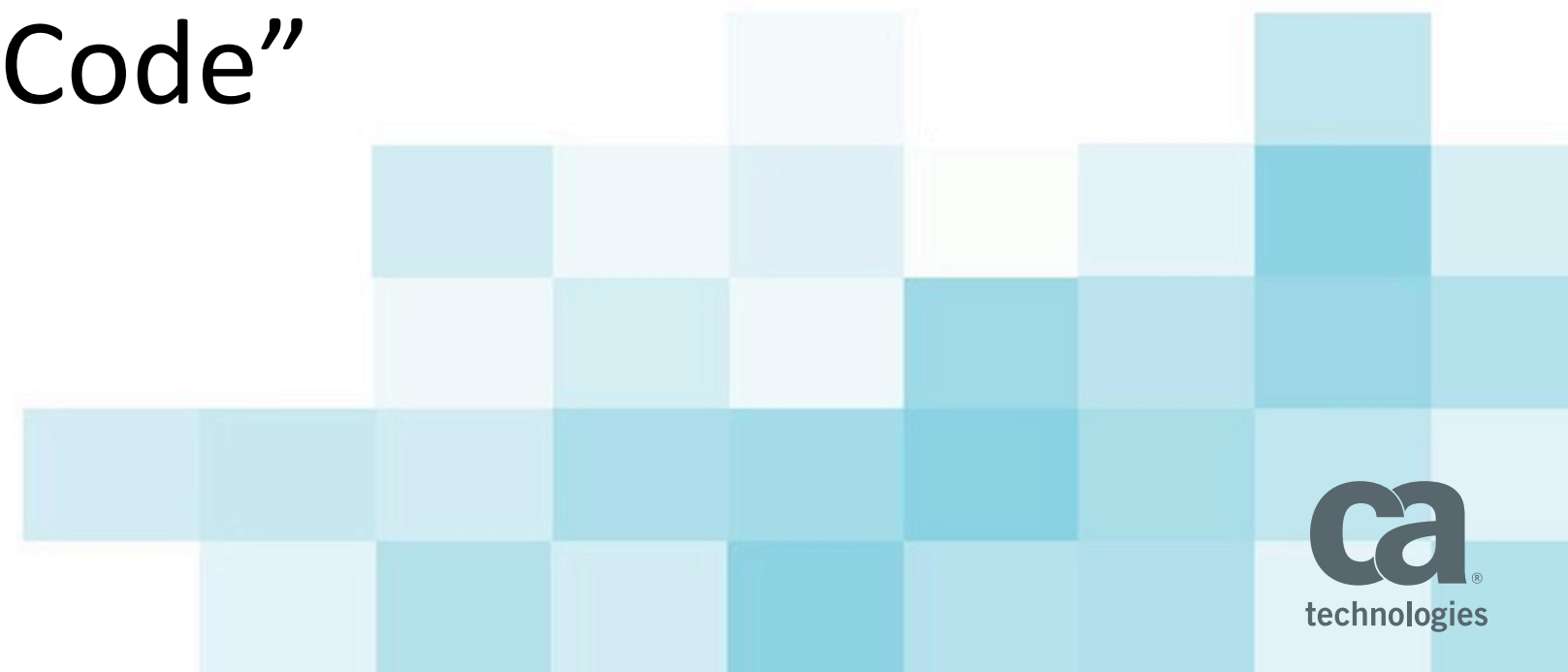
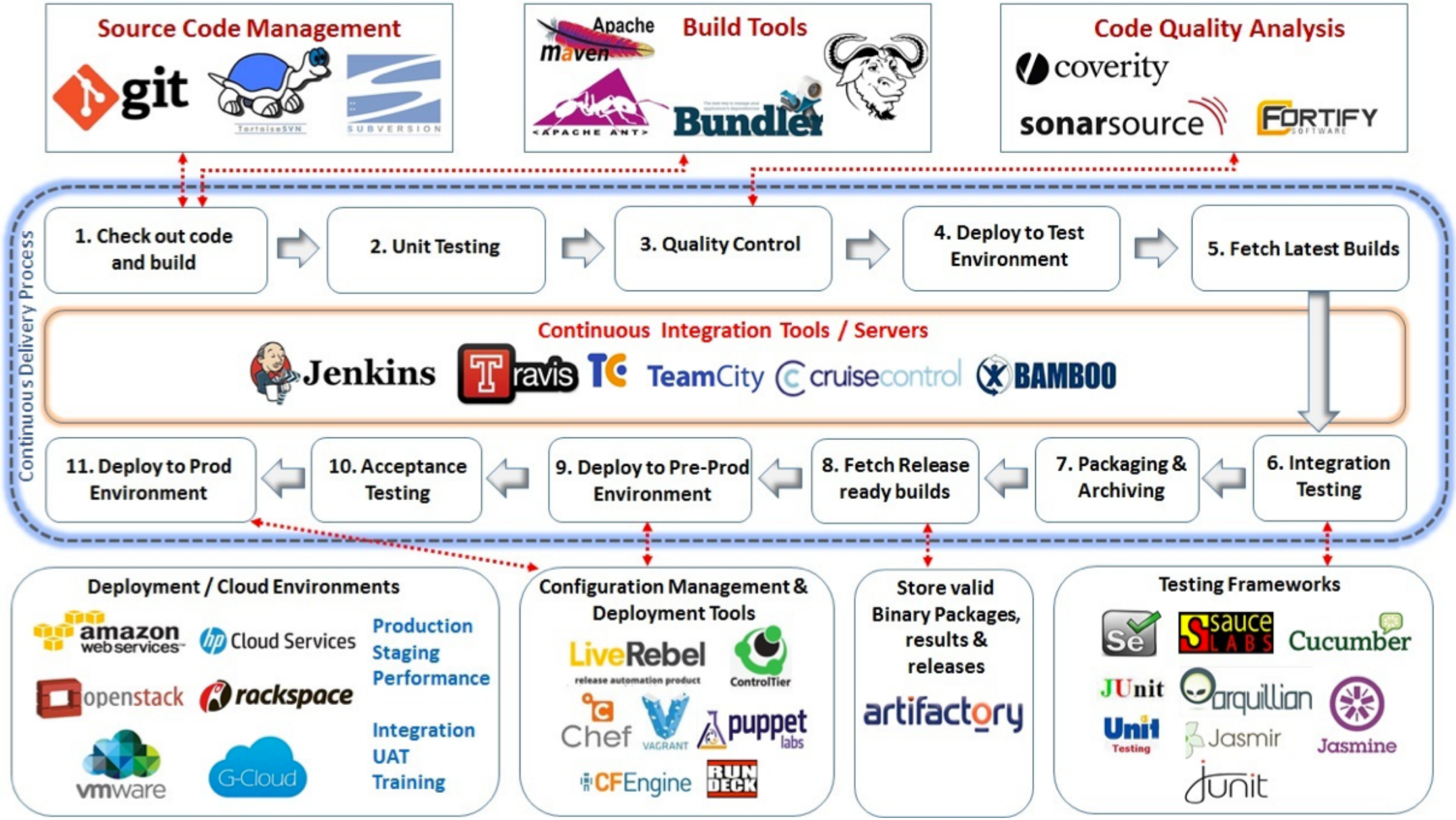
CA API Gateway introduced ssgconfig-headless create in **v9.1**

“Cattle vs Cats”

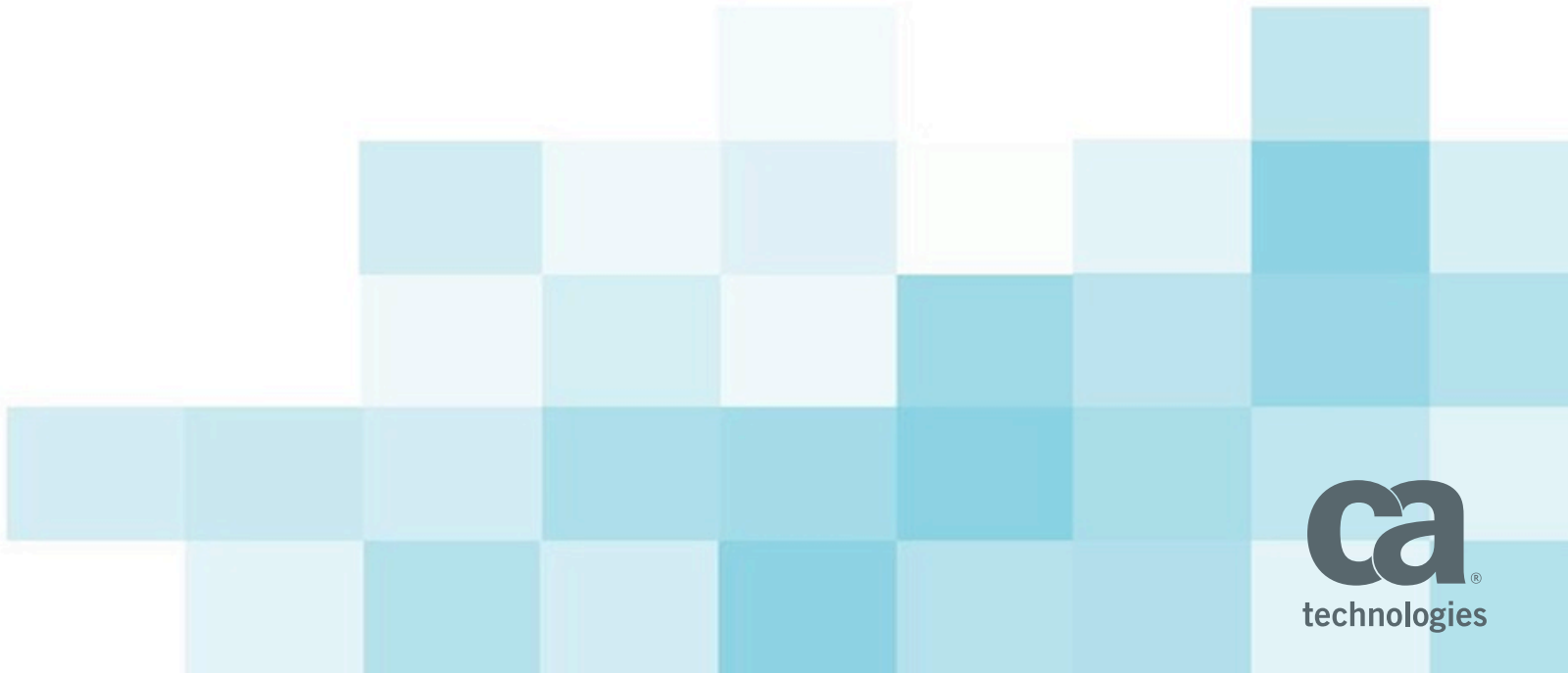
“Everything as Code”





Source: http://linuxplusubuntu.com/?cat=21

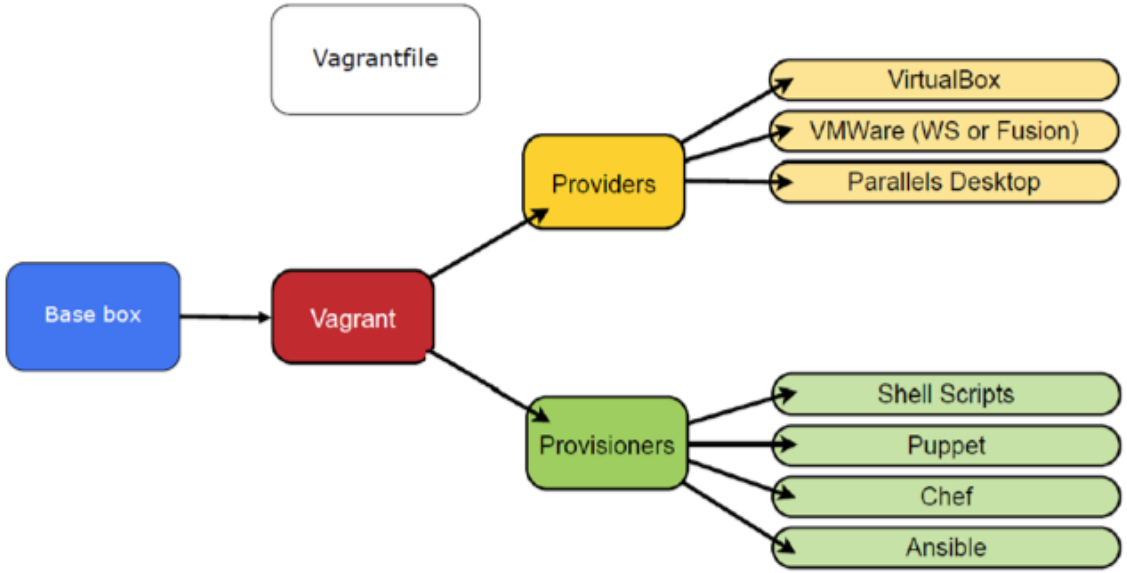
What are provisioners?

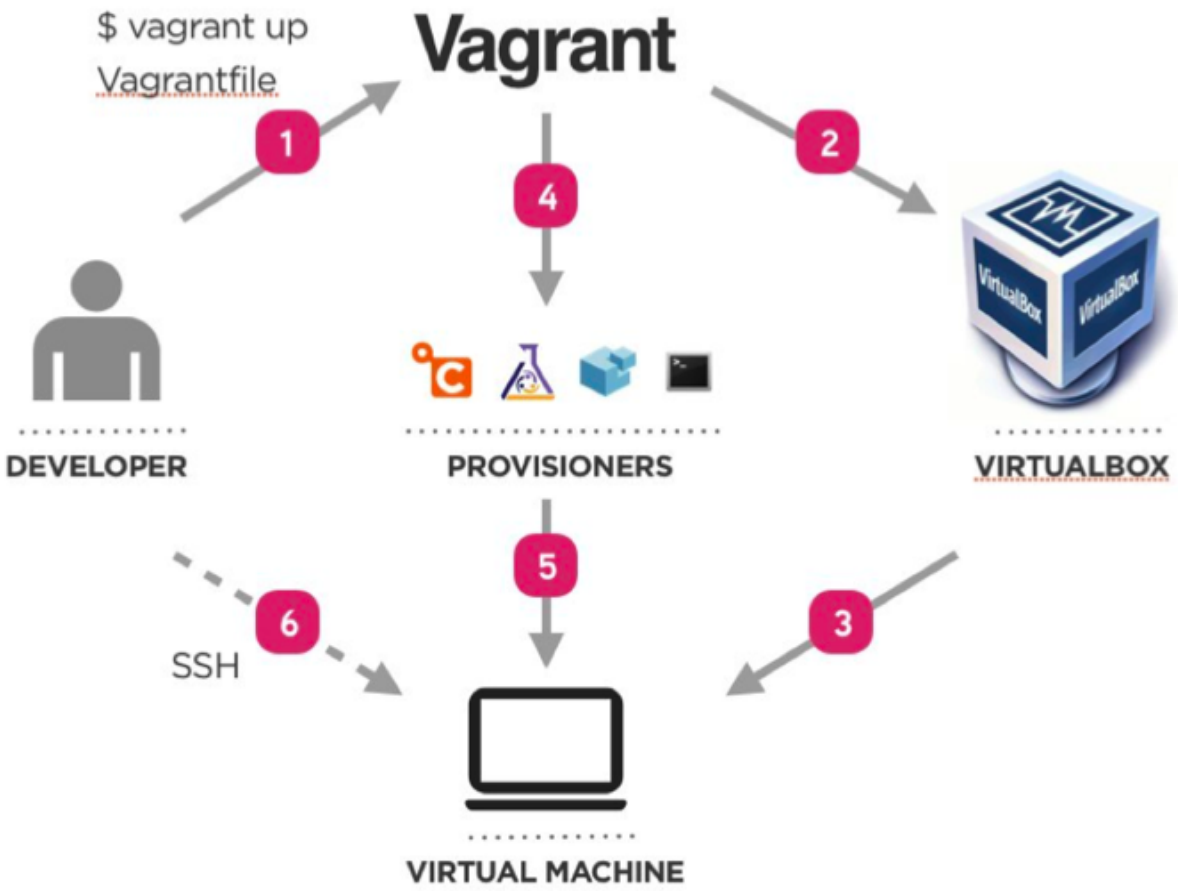


Open source tool used to deploy applications to remote nodes and provision servers in a repeatable way. It gives you a common framework for pushing multi-tier applications and application artifacts using a push (SSH) model setup. Ansible is built on YAML playbooks that you can apply to an extensive variety of systems for deploying your app.

Open source tool for configuration management, focused on the developer side for its user base. Chef operates as a master-client model, with a separate workstation needed to control the master. It's based in Ruby, with pure Ruby used for most elements you write.

Puppet is based in Ruby, but uses a customized Domain Scripting Language (DSL) closer to JSON for working within it. It runs as a master-client setup and uses a model-driven approach.





http://www.softqubes.com/blog/introduction-of-vagrant-development/

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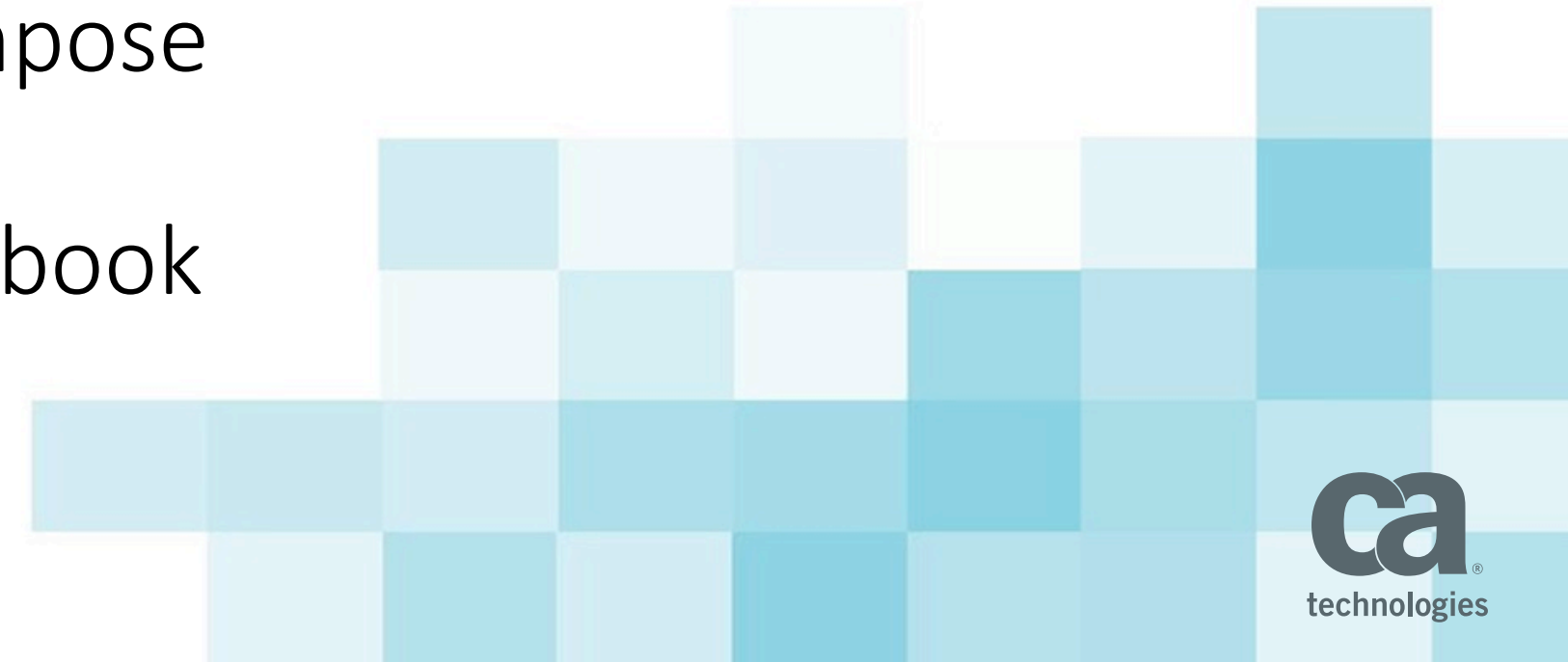
DEMO Provisioners

AWS user-data.sh

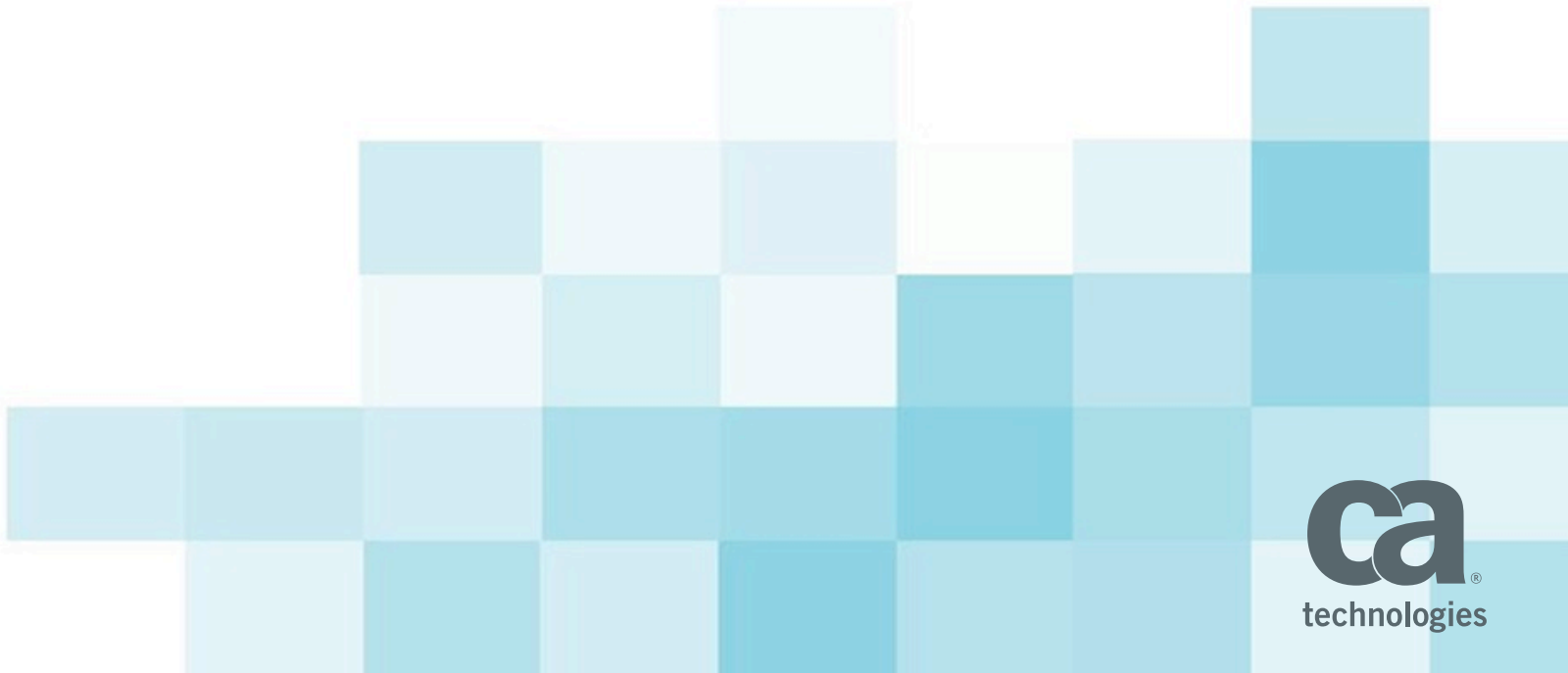
Docker-Compose

Ansible Playbook



The Demo

AWS: user-data on create



aws-user-data.sh

```
#!/bin/bash
service mysql start
service ssg start
sleep 2m
mkdir -p /opt/SecureSpan/Gateway/node/default/etc/bootstrap/license
mkdir -p /opt/SecureSpan/Gateway/node/default/etc/bootstrap/services
mkdir -p /opt/SecureSpan/Gateway/node/default/etc/bootstrap/bundle
chmod -R 775 /opt/SecureSpan/Gateway/node/default/etc/bootstrap/
touch /opt/SecureSpan/Gateway/node/default/etc/bootstrap/license/license.xml
touch /opt/SecureSpan/Gateway/node/default/etc/bootstrap/bundle/05_samp_folder.req.bundle
curl -k https://s3.amazonaws.com/aricawslicense/CA_GW_9.xml >> /opt/SecureSpan/Gateway/node/default/etc/bootstrap/license/license.xml
curl -k https://s3.amazonaws.com/aricawslicense/samp_folder.bundle >> /opt/SecureSpan/Gateway/node/default/etc/bootstrap/bundle/05_samp_folder.req.bundle
touch /opt/SecureSpan/Gateway/node/default/etc/bootstrap/services/restman
chown -R layer7:gateway /opt/SecureSpan/Gateway/node/default/etc/bootstrap/
echo configure.db=true > create-node.properties
echo database.type=mysql >> create-node.properties
echo database.host=localhost >> create-node.properties
echo database.port=3306 >> create-node.properties
echo database.name=ssg >> create-node.properties
echo database.user=gateway >> create-node.properties
echo database.pass=7layer >> create-node.properties
echo database.admin.user=root >> create-node.properties
echo database.admin.pass=7layer  >> create-node.properties
echo node.enable=true >> create-node.properties
echo configure.node=true >> create-node.properties
echo admin.user=admin >> create-node.properties
echo admin.pass=CAdemo123 >> create-node.properties
echo cluster.host=`hostname` >> create-node.properties
echo cluster.pass=7layer >> create-node.properties
cat create-node.properties | /opt/SecureSpan/Gateway/config/bin/ssgconfig-headless create
sleep 1m
service ssg restart
```

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AWS CLI

Configure AWS AMI with user-data (vanilla image, simple policy)

```
$ aws ec2 run-instances --image-id ami-94929b83 --count 1 \
--instance-type c3.xlarge --key-name AricAWS2 --subnet-id \
subnet-ba9583cd --security-group-ids sg-682ff414 \
--user-data file://aws-user-data.sh
```

License file and Bundle xml stored in S3 Bucket – Closed VPN

curl -k https://s3.amazonaws.com/aricawslicense/CA_GW_9.xml
>>/opt/SecureSpan/Gateway/node/default/etc/bootstrap/license/license.xml
curl -k https://s3.amazonaws.com/aricawslicense/samp_folder.bundle
>>/opt/SecureSpan/Gateway/node/default/etc/bootstrap/bundle/05_samp_folder.req.bundle

create-node.properties file created on the fly, after startup of SSG

cat create-node.properties | /opt/SecureSpan/Gateway/config/bin/ssgconfig-headless create

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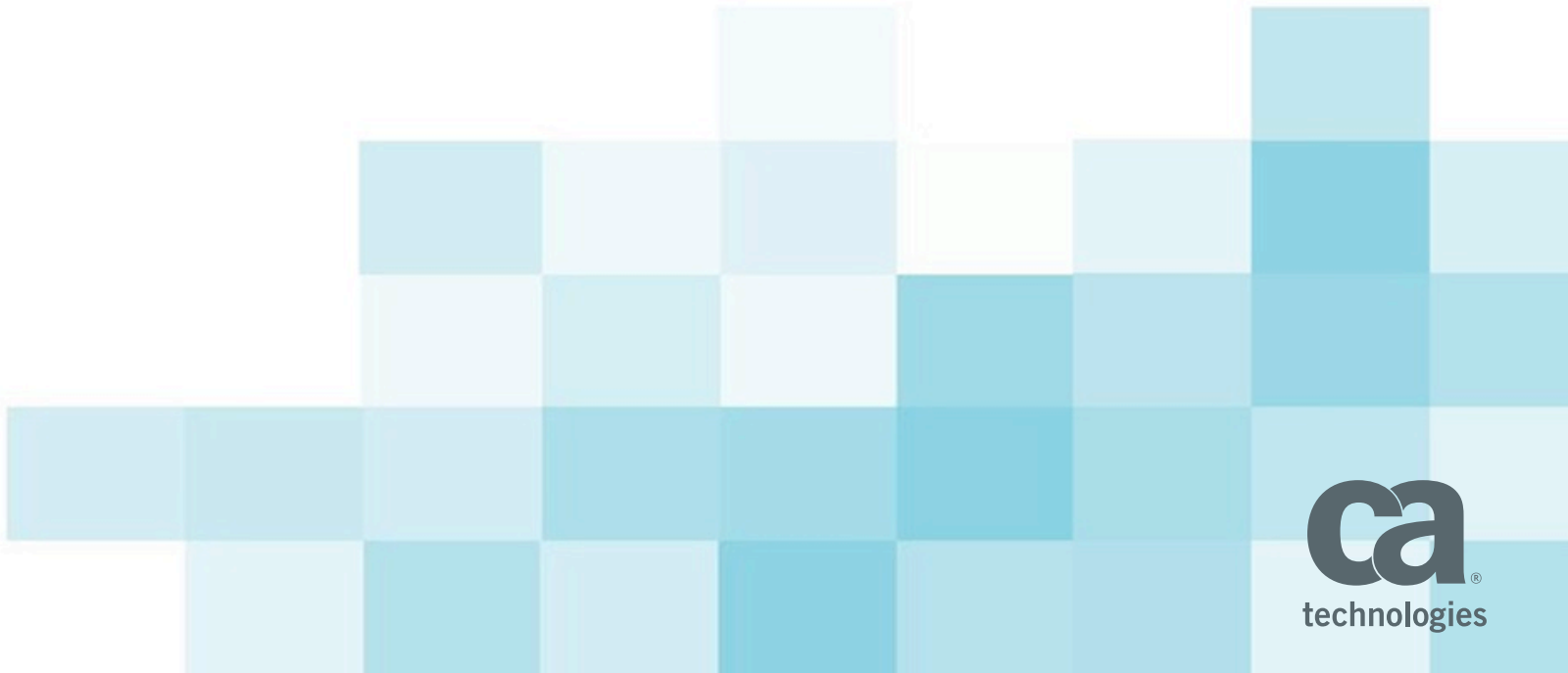
AWS CLI

```
## Retrieve User-Data from an instance

$ aws ec2 describe-instance-attribute --instance-id i-0e7c4ef441ce5ed30
--attribute userData
```

```
## Retrieve User-Data from an instance

$ aws ec2 describe-instance-attribute --instance-id i-0e7c4ef441ce5ed30
--attribute userData --output text --query "UserData.Value" | base64 --
decode
```

vagrant up

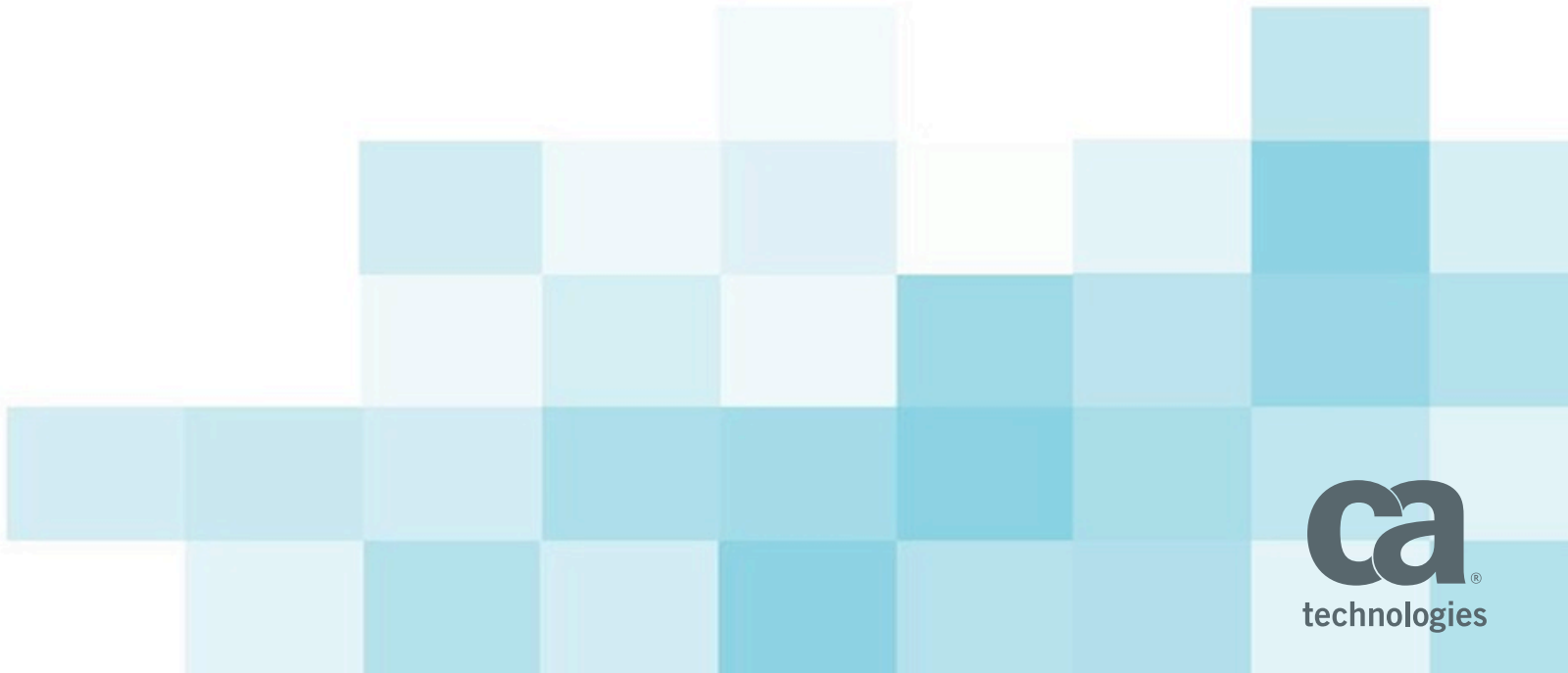


Vagrantfile

```
Vagrant.configure(2) do |config|
    config.vm.box = "box-cutter/centos67”
    config.vm.hostname = "centos67.apim.ca”
    config.vm.define "centos67" do |centos67|
    end

    config.vm.network "private_network", ip: "192.168.249.1”

    config.vm.provider "virtualbox" do |vb|
      vb.memory = 3072
      vb.name = "centos67”
     end

    config.vm.provision "chef_solo" do |chef|
    chef.cookbooks_path = "cookbooks"
    chef.run_list = ['recipe[ca_apim::default]']
    end
end
```

Chef Recipe

```
chef.cookbooks_path = "cookbooks"
chef.run_list = ['recipe[ca_apim::default]']
```



/vagrant/cookbooks/ca_apim/recipes/default.rb

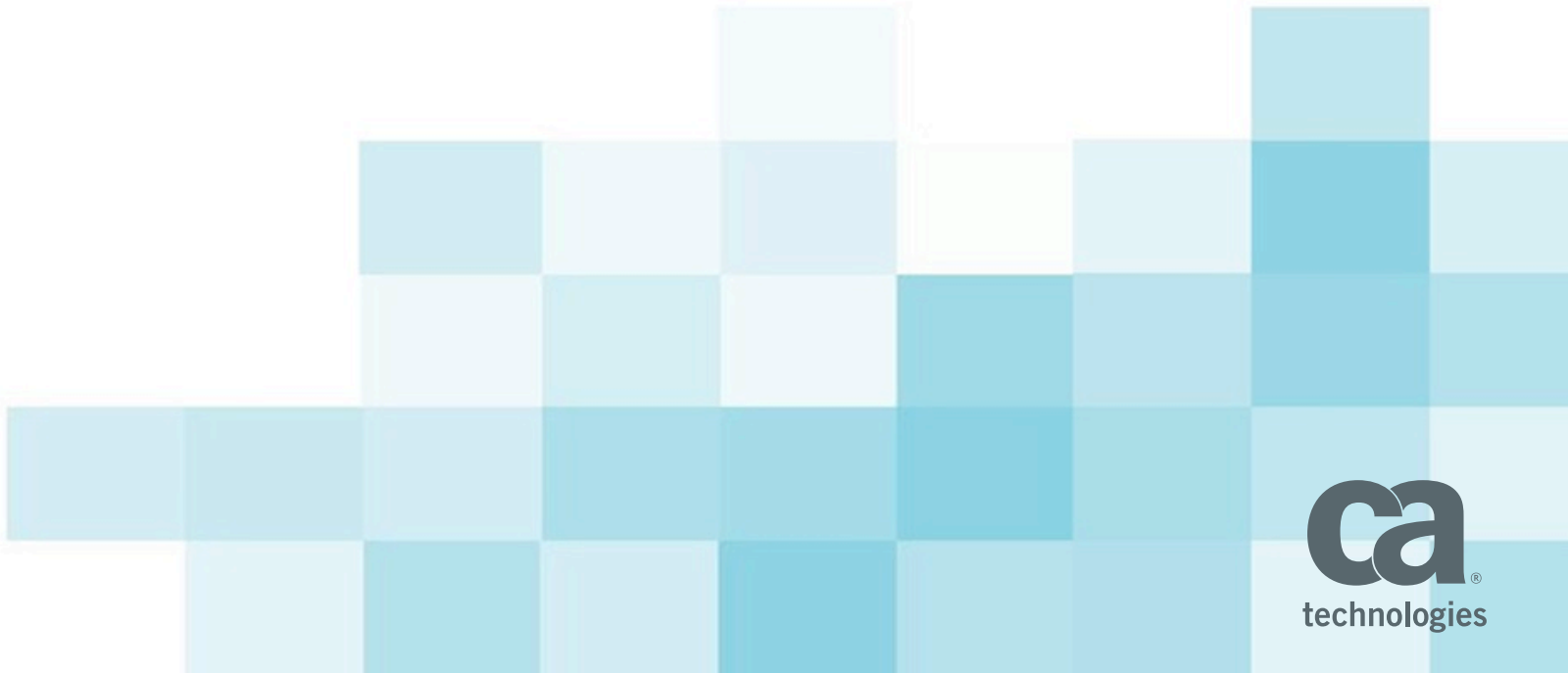
```
execute "configure properties" do
  command <<-EOH
    cat create-node.properties | /opt/SecureSpan/Gateway/config/bin/ssgconfig-headless create
    service ssg restart
  EOH
  cwd '/vagrant/vagrant_data'
end

directory "/opt/SecureSpan/Gateway/node/default/etc/bootstrap/license" do
  owner 'root'
  group 'root'
  mode  '0775'
  recursive true
end

execute "my.cnf copy" do
  command <<-EOH
    rm -f /etc/my.cnf
    cp my.cnf /etc/
    service mysqld restart
  EOH
  cwd '/vagrant/vagrant_data'
end

execute "bootstrap license" do
  command <<-EOH
    cp SSG_Gateway_9.xml /opt/SecureSpan/Gateway/node/default/etc/bootstrap/license/
    cp SSG_MAG_9.xml /opt/SecureSpan/Gateway/node/default/etc/bootstrap/license/
    chmod -R 775 /opt/SecureSpan/Gateway/node/default/etc/bootstrap/license/*.xml
    service ssg stop
    service ssg start
    sleep 15
  EOH
  cwd '/vagrant/vagrant_data'
  not_if {::File.exists?('/opt/SecureSpan/Gateway/node/default/etc/bootstrap/license/SSG_Gateway_9.xml')}
end
```

/vagrant/cookbooks/ca_apim/recipes/default.rb

```
directory "/opt/SecureSpan/Gateway/node/default/etc/bootstrap/services" do
  owner 'root'
  group 'root'
  mode  '0775'
  recursive true
end

execute "install restman" do
  command <<-EOH
    touch restman
    service ssg restart
  EOH
  cwd '/opt/SecureSpan/Gateway/node/default/etc/bootstrap/services'
end

execute "install sskar files" do
  command <<-EOH
    sleep 30
    ./GatewayMigrationUtility.sh migrateIn -z prop.txt --bundle Template.xml --results argfiles/testMigrateIn.xml
    service ssg restart
    sleep 30
  EOH
  cwd '/vagrant/GMU-1.3'
end
```

Ansible Playbook

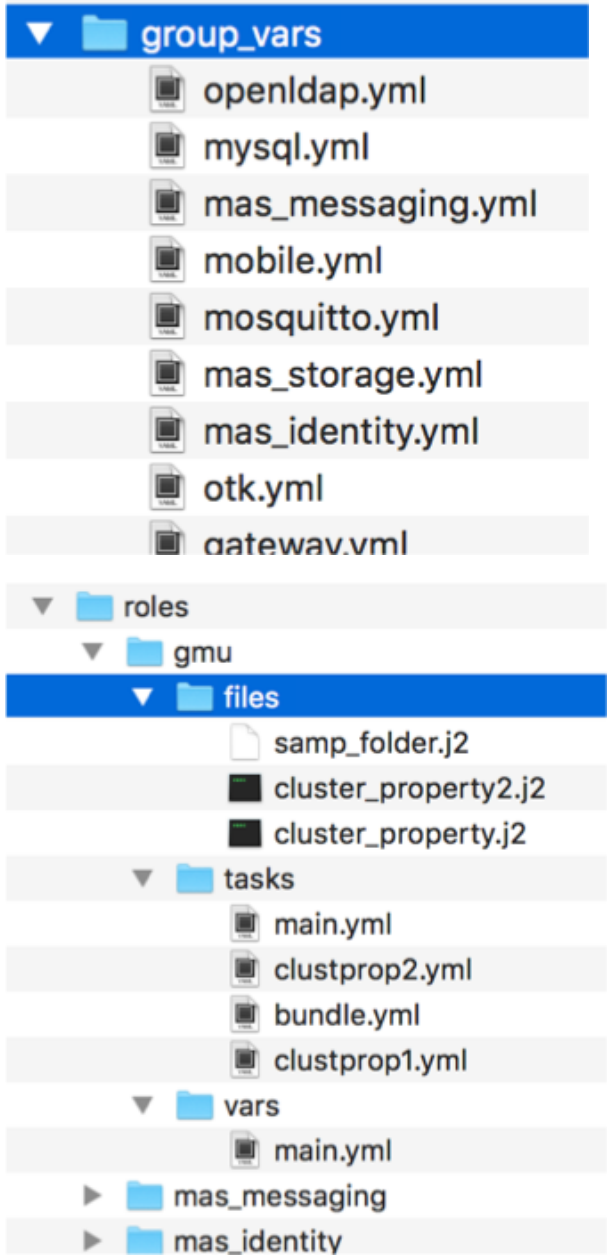
role= gateway_otk_mobile_mas_aws.yml



gateway_otk_mobile_mas_aws.yml

gateway_otk_mobile_mas_aws.yml

```yaml
---
- hosts: all
  vars_files:
    - group_vars/mysql.yml
    - group_vars/cassandra.yml
    - group_vars/mosquitto.yml
    - group_vars/openldap.yml
    - group_vars/gateway.yml
    - group_vars/otk.yml
    - group_vars/mobile.yml
    - group_vars/mas.yml
    - group_vars/mas_messaging.yml
    - group_vars/mas_identity.yml
    - group_vars/mas_storage.yml
  roles:
    - common
    - mysql
    - cassandra
    - gateway
    - otk
    - otk_schema_data
    - mobile
    - mobile_schema_data
    - otk_extras
    - private_key
    - mas_messaging
    #- mas_identity
    #- mas_storage
    #- gmu
    - restart_services
```



SOURCE: https://github.com/aricday/mpls_user_group/tree/master/mag_mas_ansible

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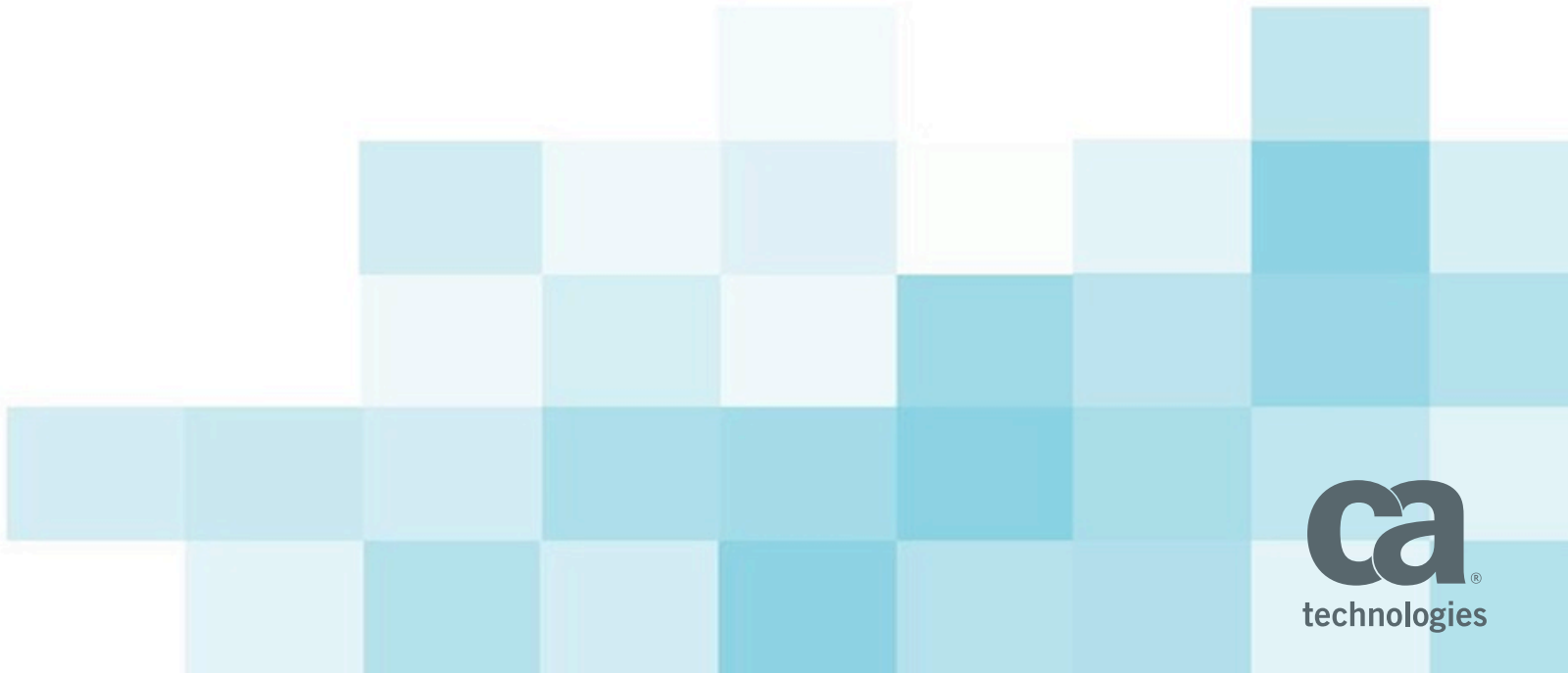
Docker-Compose

docker ps --format "table {{.Names}} \t{{.Image}} \t{{.Status}} \t{{.Ports}}"



docker-compose.yml

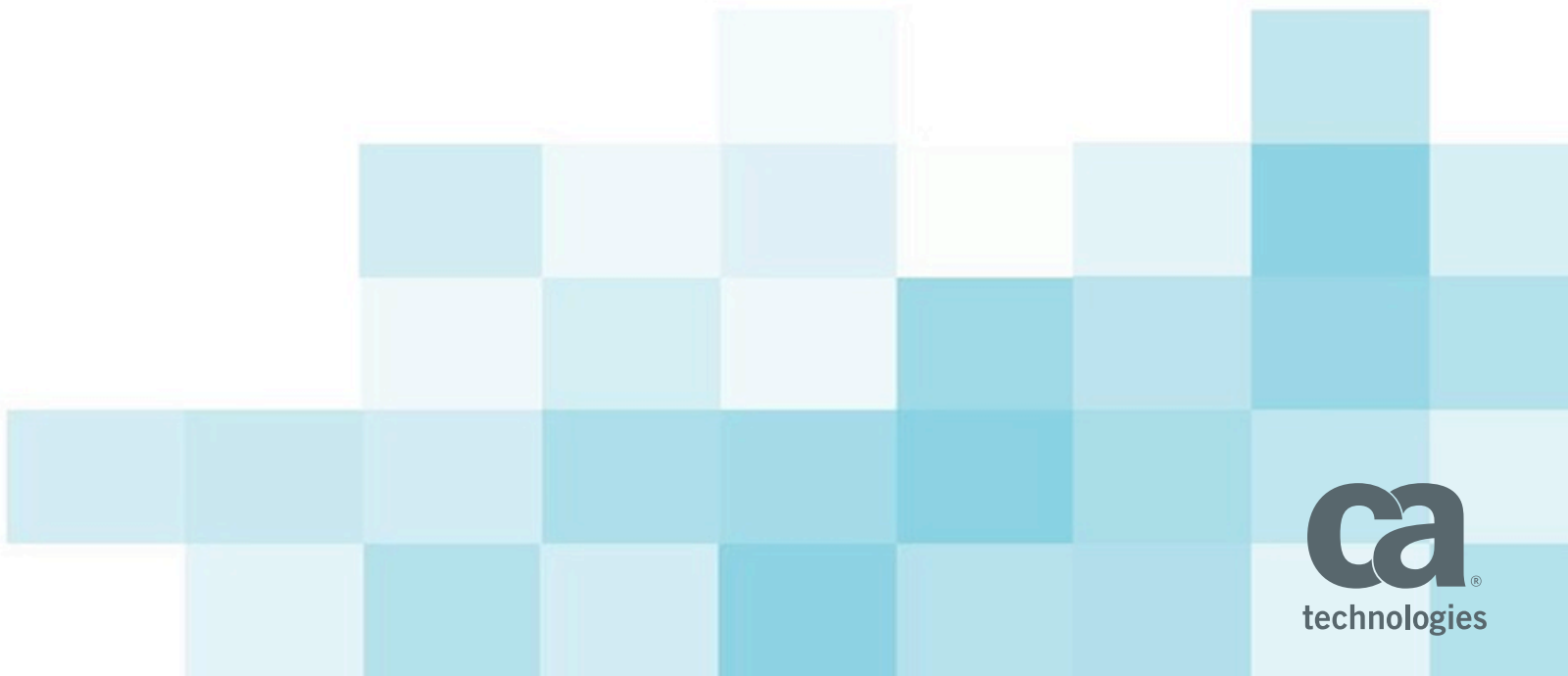
docker-compose.yml

```
mas:
  image: caapimcollab/mobile-app-services:4.0.00-CR01
  ports:
    - "8080:8080"
    - ${MAS_PORT}:8443
    - "8883:8883"
  hostname: ${MAS_HOSTNAME}
  volumes:
    - /opt/docker/rc.d/bootstrap/restman
    - /opt/docker/rc.d/bootstrap/policyman
    - ${PWD}/files/mas/liquibase/otk-testdata.xml:/db/liquibase/otk-testdata.xml
    - ${PWD}/files/mas/liquibase/mag-otk-testdata.xml:/db/liquibase/mag-otk-testdata.xml
    - ${PWD}/files/mas/liquibase/mag-testdata.xml:/db/liquibase/mag-testdata.xml
    - ${PWD}/files/mas/liquibase/mas-identity-testdata.xml:/db/liquibase/mas-identity-testdata.xml
    - ${PWD}/files/mas/bundles/proxy_folder.bundle:/opt/SecureSpan/Gateway/node/default/etc/bootstrap/bundle/proxy_folder.bundle
    - ${PWD}/files/mas/provision/add-otk-user.sh:/opt/docker/rc.d/after-start/add-otk-user.sh:rw
    - ${PWD}/files/mas/provision/x-add-otk-user.sh:/opt/docker/rc.d/after-start/x-add-otk-user.sh:rw
    # these are in MAS until MSGW quickstart load is added
    - ${PWD}/files/msgw/provision/x-add-quickstart-templates.sh:/opt/docker/rc.d/after-start/x-add-quickstart-templates.sh:rw
    - ${PWD}/files/msgw/quickstart/beer_data.json:/opt/SecureSpan/Gateway/node/default/etc/bootstrap/quickstart/beer_data.json
  env_file:
    - ${PWD}/.env
  # override the env_file defaults with shell environment variables
  environment:
    - SERVICE_IGNORE=yes
    - HOSTNAME=${MAS_HOSTNAME}
    - MAS_HOSTNAME
    - MDC_HOSTNAME
    - OTK_HOSTNAME
    - SSG_LICENSE
    - SSG_SSL_KEY=${MAS_SSL_KEY_B64}
    - SSG_SSL_KEY_PASS=${MAS_SSL_KEY_PASS}
    - BUNDLE_TEMPLATE_HOSTNAME
    - BUNDLE_TEMPLATE_OTK_HOSTNAME
    - BUNDLE_TEMPLATE_DEV_CONSOLE_CALLBACK
    - BUNDLE_TEMPLATE_HOSTNAME_ENCODED
    - BUNDLE_TEMPLATE_PROTOCOL_HOSTNAME_ENCODED
    - ADD_TEST_CLIENTS=true
    - MSGW_SSL_PUBLIC_CERT_B64
```

SOURCE: https://github.com/aricday/mpls_user_group/tree/master/mpls_ms_demo

Migration & Configuration

./GatewayMigrationUtility.sh migrateIn -z prop.txt --bundle standardEnv.xml --results standardIn.xml



RESTman Example

```
/usr/bin/curl -u admin:CAdemo123 -X POST -k -H 'Content-Type: application/xml' \
--data @/var/tmp/mas_identity_cassandra_connection.xml -s -D -
https://localhost:9443/restman/1.0/cassandraConnections
```

```
/usr/bin/curl  -u admin:CAdemo123 -X POST -k -H 'Content-Type: multipart/form-data' --form
entityIdReplace=3fdf42538190460396f3e703d31b22d9::0000000000000000ffffffffffffffe --form
entityIdReplace=7a3b078427ed19baaac98cf92fef120b::a35793fbfcc3bb287271b858898bb6d2 --form
entityIdReplace=3772b9a8f897e0a2e0b5bae228f70a6e::0000000000000000ffffffffffffffe --form
entityIdReplace=a6adb5912420041ef353d70fd39cdab0::a35793fbfcc3bb287271b858898bb6d6 --form
ScimSecuritySelection=TLSOAuthToken --form \
file=@/var/tmp/MAS-Identity-4.1.00-b595.sskar -s -D -
https://localhost:9443/restman/1.0/solutionKitManagers
```

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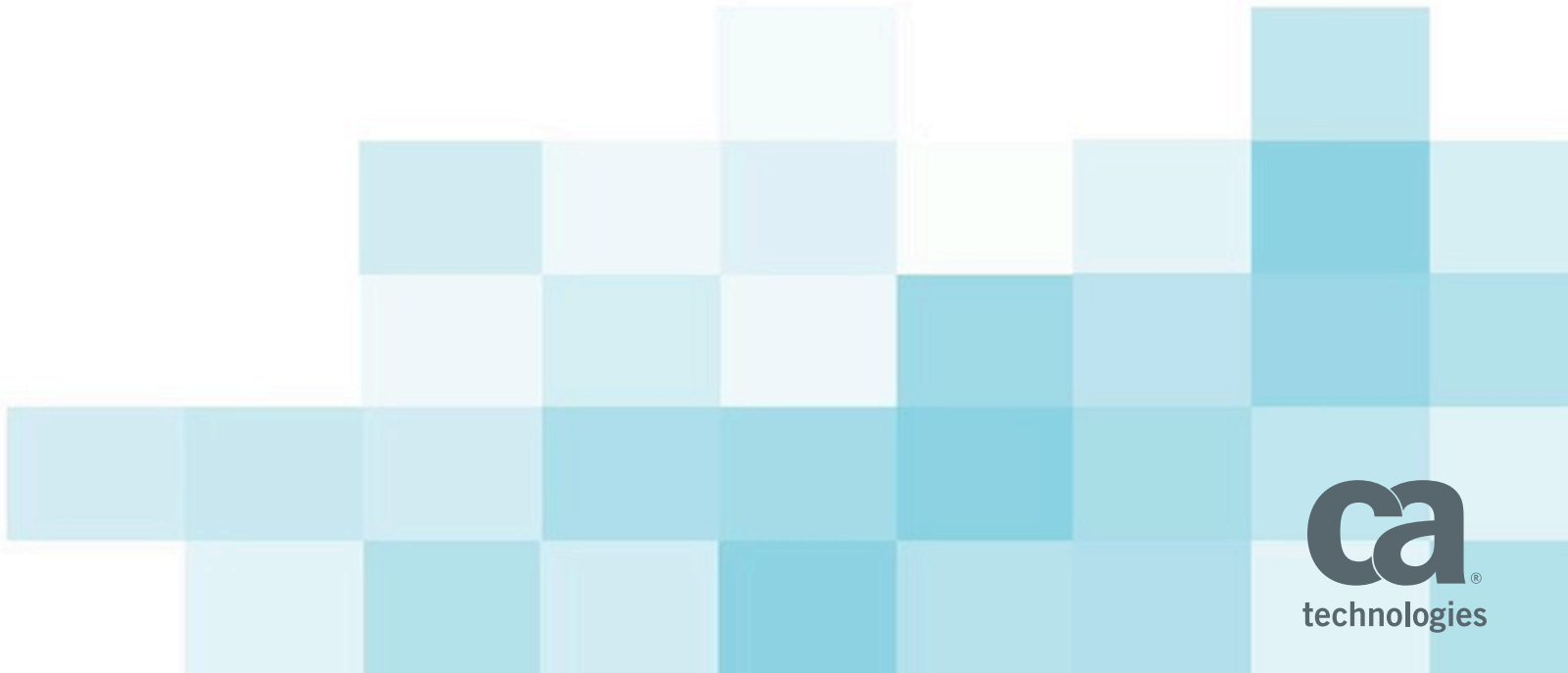
Execution Time, Cost & Reliability?

Decrease Cost – Increase Speed - 100% Repeatable



April 17, 2018

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