



ReThink of PaaS

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“All problems in computer science can be solved by another level of indirection.”

– David Wheeler



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Agenda

- IaaS vs. PaaS
- VisualOps as another PaaS
- Next Step



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IaaS vs PaaS

IaaS — Ops without Purchase

PaaS — Dev without Ops



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What are the Ops includes

- Deploy - deploy code and dependency to machines
- Secure - secure the setup
- Upgrade - continuous deploy
- Fail over - recover service when something failed
- Scale - scale out/in as load changing



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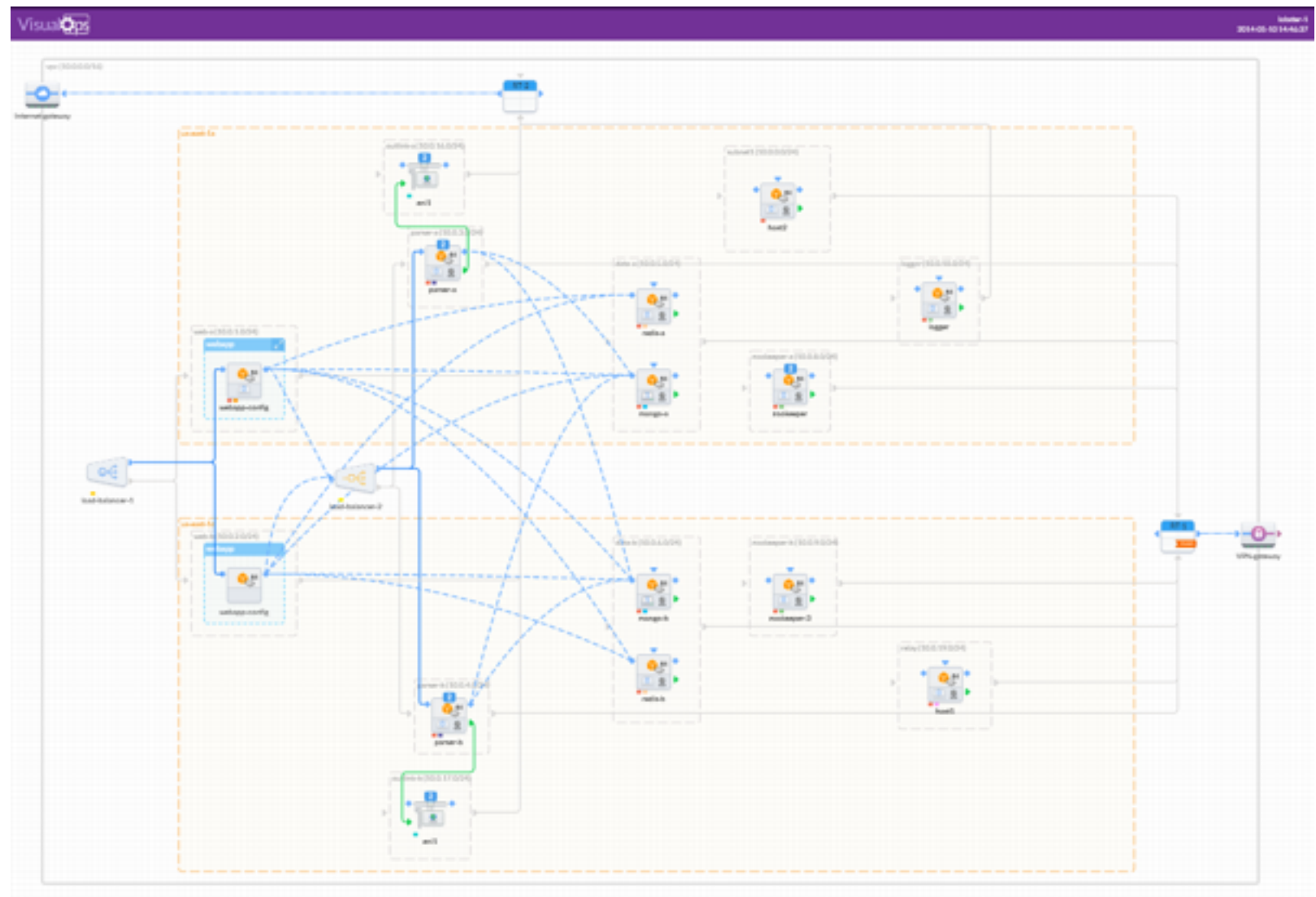
Ensure service runs as you defined

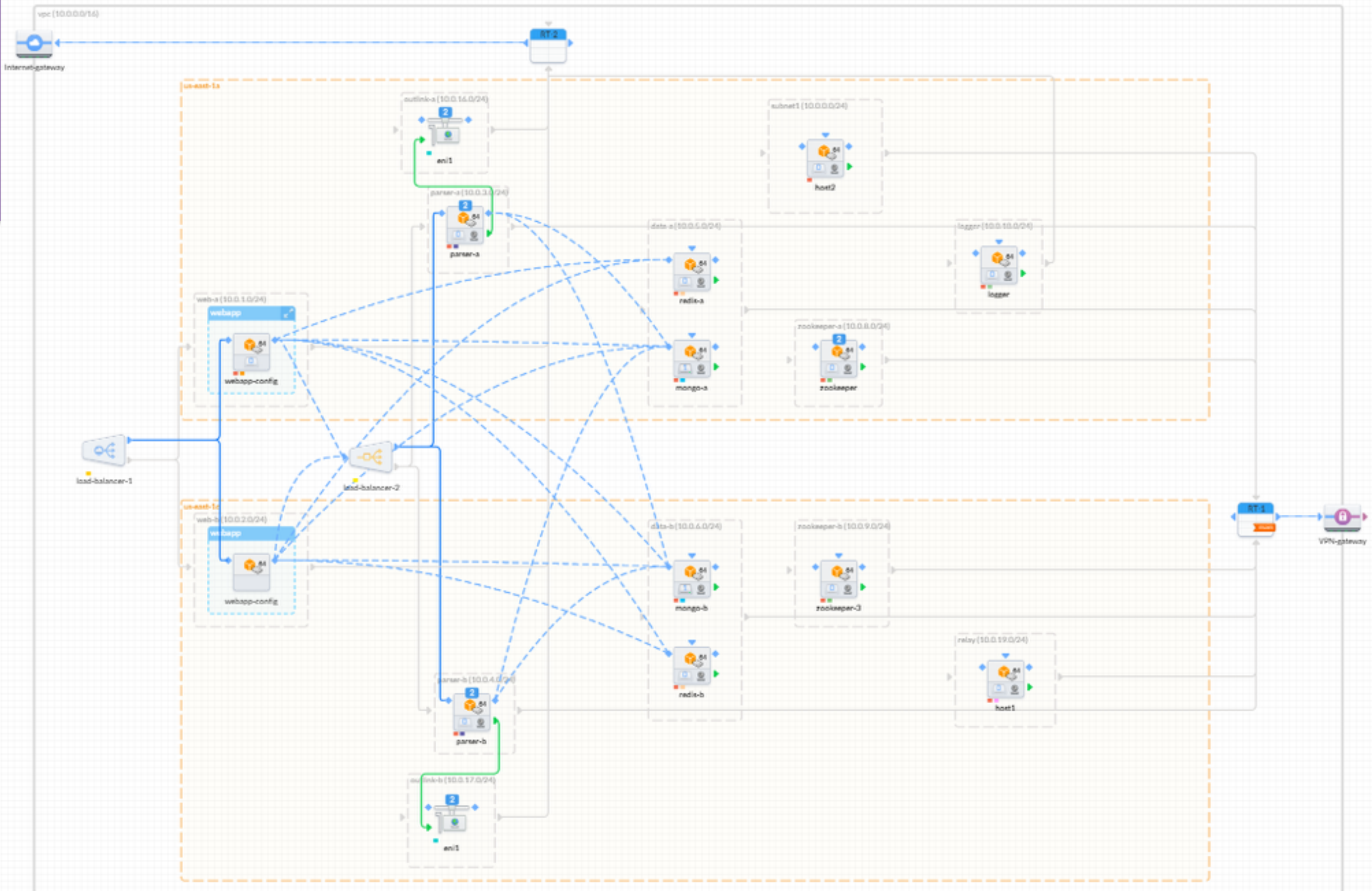


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VisualOps: IDE for Cloud App

- Design VPC infrastructure with an intuitive interface
- Manage load balancer, route tables, security group connectivity, etc. in a integrated env
- and even more...







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VisualOps as another PaaS

- Architecture and work flow are designed by users
- Integrated softwares and resources configuration
- Deploy code and dependent environment
- Ensure App always as your design

The screenshot displays the VisualOps interface with a workflow diagram on the left and a detailed log of deployment steps on the right.

Workflow Diagram: Shows a sequence of steps: 'vpe (10.0.0.0/24)' leading to 'subnet1 (10.0.0.0/24)', which then leads to 'seed1' and 'seed2' (both 10.0.1.0/24). A 'sternat-gateway' is also connected to the workflow.

Deployment Log:

- Directory /opt/visualops/tmp is in the correct state
- Command "grep -q \$(hostname) /etc/hosts || echo "10.0.1.5 \$(hostname)" >> /etc/hosts" run
- State 2: 2014-05-10 15:07:02
- File /etc/yum.repos.d/datostax.repo is in the correct state
- State 3: 2014-05-10 15:07:12
- All specified packages are already installed. None of the targeted packages are installed
- State 4: 2014-05-10 15:07:17
- File /etc/cassandra/conf/cassandra.yaml updated
- State 5: 2014-05-10 15:08:52
- State 6: 2014-05-10 15:08:57
- Directory /var/lib/cassandra/data is in the correct state
- Directory /var/lib/cassandra/saved_caches is in the correct state
- Directory /var/lib/cassandra/commitlog is in the correct state
- State 7: 2014-05-10 15:09:02
- Service started
- Starting Cassandra: OK

Property State (7):

Step	Property	Value
1	cmd	grep -q \$(hostname) /etc/hosts echo "\$(self.PrivateIpAddress) \$(hostname)" >> /etc/hosts
2	yum repo	datostax
3	yum pkg	java-1.6.0-openjdk:removed, java-1.7.0-openjdk, java-1.7.0-open
4	file	
5	wait	@(seed1.state.7)
6	dir	/var/lib/cassandra/commitlog, /var/lib/cassandra/data, /var/lib/cassandra
7	service	cassandra /etc/cassandra/conf/cassandra.yaml



VisualOne

Internet-gateway

vpc (10.0.0.0/16)

us-east-1a

subnet0 (10.0.0.0/24)

seed1

us-east-1b

subnet1 (10.0.1.0/24)

seed2

Directory /opt/visualops/tmp is in the correct state
Command "grep -q \$(hostname) /etc/hosts || echo "10.0.1.5 \$(hostname)" >> /etc/hosts" run

State 2
2014-05-10 15:07:02
SUCCESS
File /etc/yum.repos.d/datastax.repo is in the correct state

State 3
2014-05-10 15:07:12
SUCCESS
All specified packages are already installed.
None of the targeted packages are installed

State 4
2014-05-10 15:07:17
SUCCESS

State 5
2014-05-10 15:08:52
SUCCESS
File /etc/cassandra/conf/cassandra.yaml updated

State 6
2014-05-10 15:08:57
SUCCESS
Directory /var/lib/cassandra/data is in the correct state
Directory /var/lib/cassandra/saved_caches is in the correct state
Directory /var/lib/cassandra/commitlog is in the correct state

State 7
2014-05-10 15:09:02
SUCCESS
Service started

Starting Cassandra: OK

Property

State (7)

1cmdgrep -q \$(hostname) /etc/hosts || echo "@{self.PrivateIpAddress

2yum repodatastax

3yum pkgjava-1.6.0-openjdk:removed, java-1.7.0-openjdk, java-1.7.0-open

4file

path/etc/cassandra/conf/cassandra.yaml

content

class_name: org.apache.cassandra.locator.SimpleSeedProvl
parameters:
seeds: "@{seed1.PrivateIpAddress},{seed2.Private"

concurrent_reads: 32
concurrent_writes: 32
memtable_flush_queue_size: 4
trickle_fsync: false
trickle_fsync_interval_in_kb: 10240

5wait@{seed1.state.7}

6dir/var/lib/cassandra/commitlog, /var/lib/cassandra/data, /var/lib
cassandra cassandra

7servicecassandra /etc/cassandra/conf/cassandra.yaml

Last saved: -

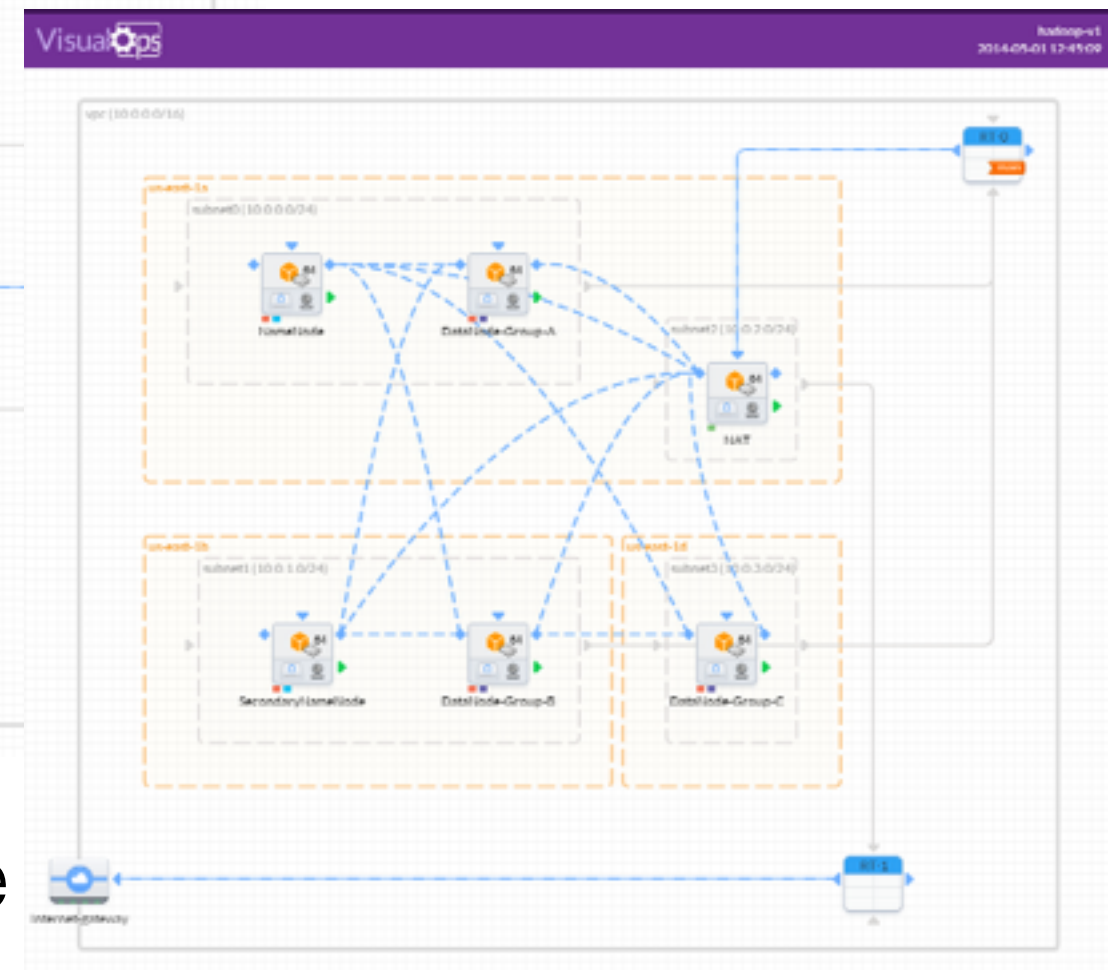
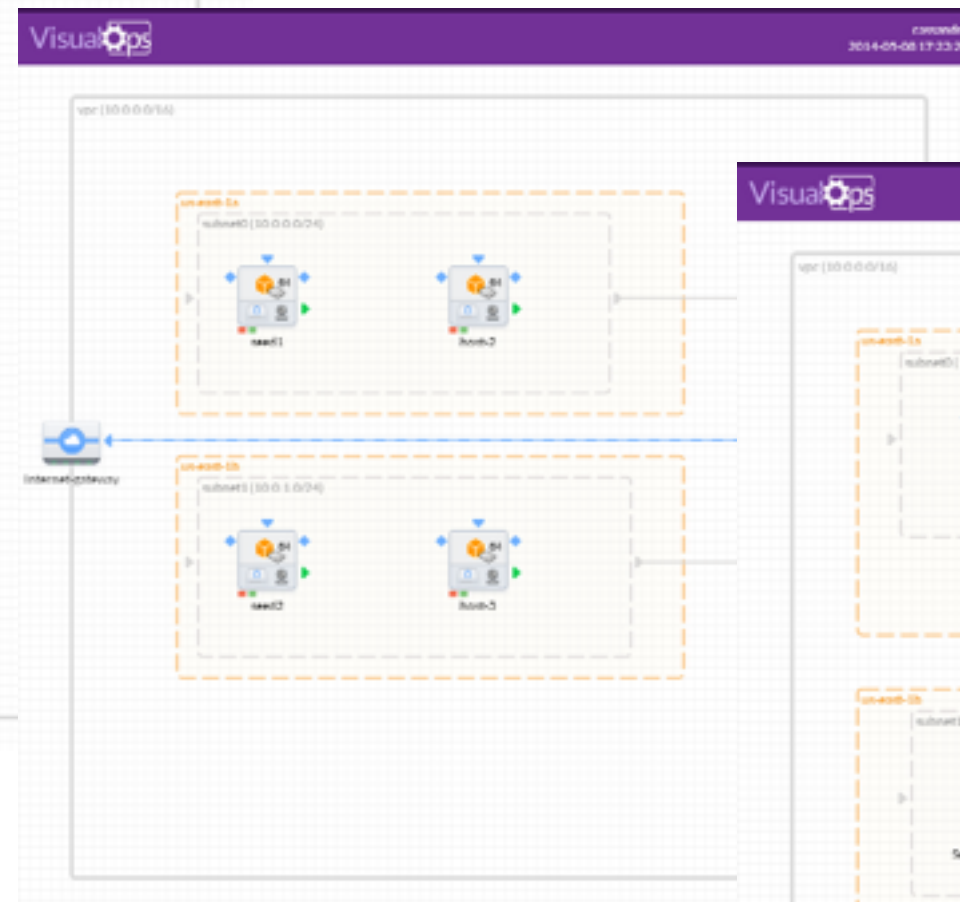
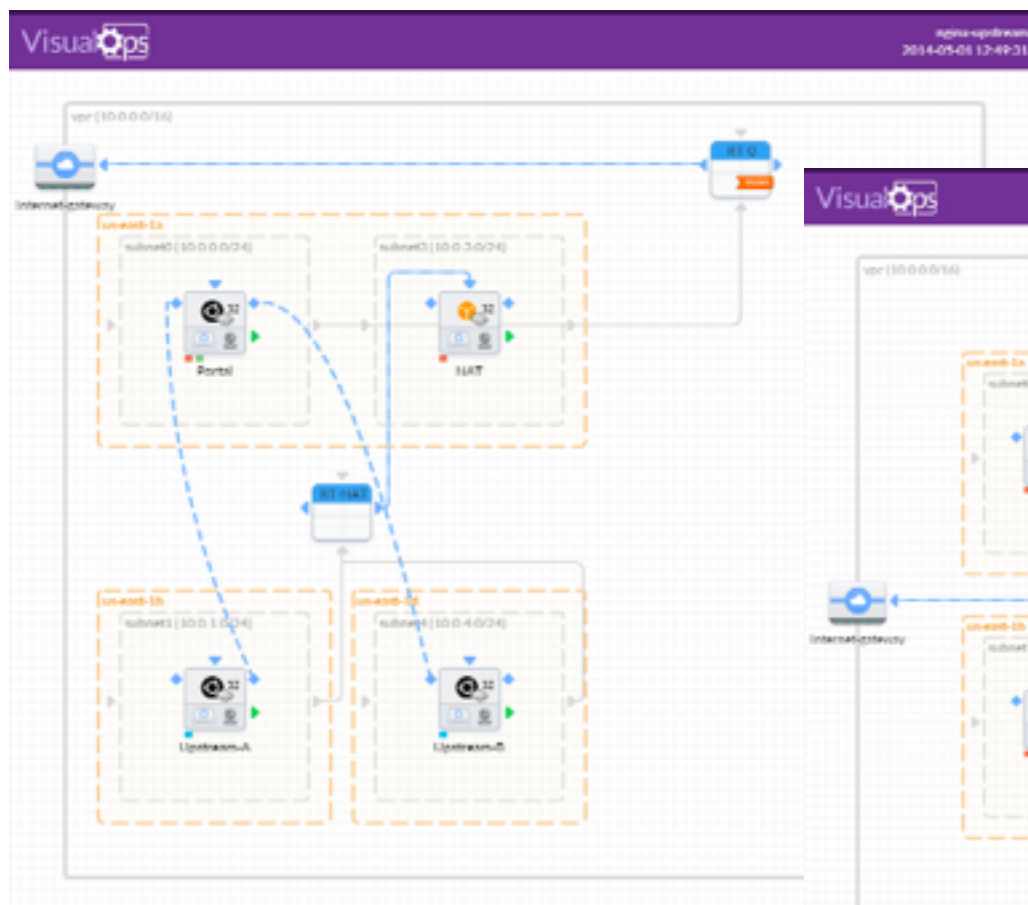
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Stack Store

Share your design with others



<https://github.com/VisualOps/StackStore>



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Case Study

Global

glant-spark - stack

glant-spark - app

Edit App

Power

Refresh

Search

Zoom

Undo

Redo

rk/spark-0.9.0-incubating/spark-0.9.0-incubating-bin-hadoop1.tgz extracted in /opt/spark/

- State 5

2014-05-08 23:15:55

SUCCESS

- State 6

2014-05-08 23:16:00

SUCCESS

Directory /opt/visualops/tmp updated
Command "hostname master" run

- State 7

2014-05-08 23:16:05

SUCCESS

Directory /opt/visualops/tmp is in the correct state
Command "grep -q master /etc/host || echo "10.0.0.4 master" >> /etc/hosts" run

grep: /etc/host: No such file or directory

- State 8

2014-05-08 23:16:10

SUCCESS

File /opt/spark/spark-0.9.0-incubating-bin-hadoop1/conf/spark-env.sh updated

- State 9

2014-05-08 23:16:15

SUCCESS

- State 10

2014-05-08 23:16:21

SUCCESS

File /etc/supervisord.conf updated

- State 11

2014-05-08 23:17:00

SUCCESS

Package was successfully installed
The following packages were installed/updated: python-pip.
Not starting already running service: spark

View details...

Property

State (11)

1

----- Packages -----

2

• yum pkg

java-1.7.0-openjdk

3

• dir

/opt/spark recursive

4

• archive

/opt/spark
http://www.apache.org/dist/incubator/spark/spark-

5

----- configuration files -----

6

• cmd

hostname master

7

• cmd

grep -q master /etc/host || echo "\${self.PrivateI

8

• file

* path /opt/spark/spark-0.9.0-incubating-bin-hadoop1/co
content

9

----- start daemon -----

10

• file

/etc/supervisord.conf

11

• supervisord

spark

mode

755

Last saved: -

78

0



Under the Hood

- Stack/Apps are designed in IDE and rendered to recipes
- Install agents when instances are initializing
- Agent executes recipe w/ SaltStack's state modules
- Backend coordinates agents if there are dependencies between them
- Re-enforce the states



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Coming Soon...

- More resources
- Public API for github push and other 3rd Party services
- Action triggered by resources' change...



Thank You!

<http://www.visualops.io>