Insider’s info from masters of the Clouds

How clouds magically work and how to improve the magic
## OpenShift plans and pricing

<table>
<thead>
<tr>
<th>Plan</th>
<th>Description</th>
<th>Pricing</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>STARTER</td>
<td>Free for individual learning and experimenting.</td>
<td></td>
<td>Red Hat hosted</td>
</tr>
<tr>
<td></td>
<td>• Public cloud</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 1 Project</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Community support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRO</td>
<td>For professional projects and hosting.</td>
<td>Starts at $50/mo</td>
<td>Red Hat hosted</td>
</tr>
<tr>
<td></td>
<td>• Public cloud</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 10 projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Custom domains</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Basic support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENTERPRISE</td>
<td>For enterprise teams and business-critical</td>
<td>Contact sales</td>
<td>Red Hat hosted</td>
</tr>
<tr>
<td></td>
<td>applications.</td>
<td>for pricing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Virtual private cloud</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Unlimited projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Premium support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENTERPRISE</td>
<td>For enterprise teams and business-critical</td>
<td>Contact sales</td>
<td>Red Hat hosted</td>
</tr>
<tr>
<td></td>
<td>applications.</td>
<td>for pricing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Any infrastructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Customizable, with full administrative control</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Standard or premium support</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
OpenShift Dedicated helps organizations focus on building and scaling their business with a private Kubernetes cluster fully-managed by Red Hat®.

No VMs to operate, no patching required

Master, Infrastructure, and compute nodes managed by Red Hat, backed by enterprise support.
## What’s in the package?

### FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High availability</strong></td>
<td>Multiple masters and infrastructure nodes ensure that your cluster has no single point of failure.</td>
</tr>
<tr>
<td><strong>Virtual Private Cloud integration</strong></td>
<td>Use VPC peering or configure your cluster’s VPC to connect to your existing VPCs and on-premises networks.</td>
</tr>
<tr>
<td><strong>Premium support</strong></td>
<td>Engineered, operated, and supported by Red Hat with a 99.5% uptime SLA and 24x7 coverage.</td>
</tr>
<tr>
<td><strong>Flexible authentication options</strong></td>
<td>Configure authentication to your cluster using LDAP, OpenID connect, GitHub and more.</td>
</tr>
<tr>
<td><strong>Integrated container registry</strong></td>
<td>A secure internal OpenShift registry is integrated with each cluster and ready to use out-of-the-box.</td>
</tr>
<tr>
<td><strong>Logging, metrics, and monitoring</strong></td>
<td>OpenShift Dedicated includes services for monitoring cluster events, tracking usage, and capacity planning.</td>
</tr>
</tbody>
</table>
How does this happen?

Magic!
SRE Shifts and Rotation

Why do we have a shift rotation?
To provide follow-the-sun support for the hosted environments we support
● Break-fix
● Scheduled Maintenance
● Customer Inquiries / Issues

What Is Shift Lead, Shift Secondary, Oncall, Region Lead?
● Shift Lead: Receives PD alerts, acts as first contact for CEE escalations
● Shift Secondary: Focuses on SNOW ticket queue, SBR-Shift Hosted interface
● Oncall: responds to PD alerts, CEE escalations - on the weekend
● Region Lead (Drew, Jindrich, Max): Regional coordination, escalation, backlog grooming

How often does the shift change?
● The Regional shift runs Friday to Friday
● The oncall shift runs Friday to Friday as well, but we will change to weekend only soon
Panic! How SRE gets notified?

OpenShift Escalation Policy

1. Immediately after an incident is triggered
   - Notify:
     - O-SRE-PWeekday Primary
       - On Call Now
       - Viacheslav Zak
     - Escalate after 10 minutes

2. Notify:
   - O-SRE-PWeekday Secondary
     - On Call Now
     - Gaurav Chaturvedi
   - Escalate after 10 minutes

3. Notify:
   - O-SRE-PWeekday Primary
     - On Call Now
     - Viacheslav Zak
   - Escalate after 6 minutes

4. Notify:
   - SRE-achvatal
     - On Call Now
   - SRE-drarders
     - On Call Now
   - SRE-gudall
     - On Call Now
   - SRE-haowang
     - On Call Now
   - SRE-jovvy
     - Jindrich Novy
   - SRE-mbaranes
   - SRE-mwhittin
   - SRE-prates
     - Paul Yates
   - SRE-vizak
     - Viacheslav Zak
   - SRE-chizhang
   - Escalate after 10 minutes

Inbound Services
- Pro Alerts
- Zabbix Service

Resources
- What is an escalation policy?
- Automatically run incident actions with Response Plays
- Mobilizing multiple responders
- Communicating with stakeholders

Incidents
- Responding to Incidents
- Triggering an Incident with the Web UI, Email, or API
- Incident Lifecycle

Settings
- Outbound Integrations and Webhooks
- Why am I not receiving events to my webhook/why was my webhook disabled?
- Specify Custom Urgency by Support Hours/Time of Day
- Alert Grouping behavior
  - Chat with support
How does this map to a particular SRE?
How does this map to a particular SRE?
Alert! Alert! What to do?
EBS Volumes stuck in a transition state (attaching, detaching, busy, etc)

Table of Contents
1. Check Description
2. Troubleshooting
   - 2.1. EBS Volume stuck detaching or busy
   - 2.2. EBS Volume stuck attaching
3. Using automation
   - 3.1. Prerequisites
   - 3.2. Safe detach stuck volumes
4. Further Reading

1. Check Description

<table>
<thead>
<tr>
<th>Severity</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Customer Impact</td>
<td>High</td>
</tr>
</tbody>
</table>
What is SRE doing when not on duty?
Cluster monitoring
### Status of Zabbix

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zabbix server is running</td>
<td>yes</td>
</tr>
<tr>
<td>Number of hosts (enabled/disabled/templates)</td>
<td>3944</td>
</tr>
<tr>
<td>Number of items (enabled/disabled/not supported)</td>
<td>954587</td>
</tr>
<tr>
<td>Number of triggers (enabled/disabled/problem)</td>
<td>418145</td>
</tr>
<tr>
<td>Number of users (online)</td>
<td>72</td>
</tr>
<tr>
<td>Required server performance, new values per second</td>
<td>1588.48</td>
</tr>
</tbody>
</table>

### System status

<table>
<thead>
<tr>
<th>Host group</th>
<th>Disaster</th>
<th>High</th>
<th>Average</th>
<th>Warning</th>
<th>Information</th>
<th>Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>amq-bosch-lot</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>ansible-tower-ops</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>app-sre</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>bermuda</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>bix</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>blix</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>blai-test</td>
<td>0</td>
<td>19</td>
<td>29</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Updated: 07:42:53
Pagerduty

Event ID: 56498877
Host Name: [redacted]
Id: 5331953
IP: 127.0.0.1
Name: EBS Attach State[aws://us-east-1a/vol-03280e2e]
Value: 0

Status: Resolved
Duration: 00h 18m

Notes:
There are no recent notes.

Resources:
- Incident Lifecycle
- Mobilizing multiple responders
- PagerDuty Common Event Format
- Chat with support
Standard Operational Procedure (S.O.P.)
3.2.2. Example Create: ops-rpm script

```
./ops-rpm pull
mkdir -p function/openshift-ops-firewall
cd function/openshift-ops-firewall
cp ../openshift-ops-yum/openshift-ops-firewall.spec openshift-ops-firewall.spec
mkdir -p etc/logrotate.d/
cp -HOME/myfile etc/logrotate.d/iptables_UDP
vi openshift-ops-Firewall.spec
git add .
git commit -m "Adding a firewall rpm"
cd -
./ops-rpm tag
```

3.2.3. Example Create: manual

```
git pull
git fetch --tags
mkdir -p function/openshift-ops-firewall
cd function/openshift-ops-firewall
cp ../openshift-ops-yum/openshift-ops-firewall.spec openshift-ops-firewall.spec
mkdir -p etc/logrotate.d/
cp -HOME/myfile etc/logrotate.d/iptables_UDP
vi openshift-ops-Firewall.spec
git add .
git commit -m "Adding a firewall rpm"
tito tag
git push && git push origin openshift-ops-firewall-0.5.1-1
```

3.3. Edit Existing RPMS

We will be using tito to build the rpms and srpms. This creates a little bit different rpm work flow than some of you might be used to.

1. Don’t change the Version, Release, or Changelog in the spec file
Which name to pick? Long one?
Which name to pick? Short one?

```bash
[novy@localhost ~]$ ls /usr/bin | awk '{ print length, $0 }' | sort -n -s | cut -d " " -f2- | head -n 32
```
What the tool does

Browses through ~/git

Looking for *.asciidoc

Full text search

$ o3 upgrade

Topic search

$ o3 ops-sop/v3/upgrade/3.9_to_3.11_automated_upgrade

Generates a script out of asciidoc

With a revision/based signature:

#### You used:

# OpenShift V3 AWS Automated Blue/Green Upgrade/Prerequities/Create persistent ssh session/
# /home/jnovy/git/ops-sop/v3/upgrade/aws_automated_upgrade.asciidoc
# 0a42dbc8 Changed use-tower[12].ops.rhcloud.com and tower.ops.rhcloud.com DNS entries to the new bastion centric names.
Live demo
Features, TODO, brainstorming

1. Evaluate variables like $CLUSTERID, $AWS_ACCOUNT.
2. Allow to inherit variables from environment.
3. Allow to run scripts from a jump host.
5. Distributed variant of ‘cheat’ tool - stuff stored in git/to be shared among multiple people.
6. Unit tests on SOP via Jenkins on a test cluster.
7. Open-source some SOPs so that they can be run by downstream SREs?
Ask a question please

ARGUING WITH AN ENGINEER IS A LOT LIKE WRESTLING IN THE MUD WITH A PIG.

AFTER A COUPLE OF HOURS YOU REALIZE THE PIG LIKES IT.
THANK YOU

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linkedin.com/company/red-hat
twitter.com/RedHatNews
youtube.com/user/RedHatVideos