HERE'S HOW:

2

you choose
to deploy to one
or both

Burning Down the Cloud

Burning Down The Cloud Cloud Migration Lessons

Time Warner Cable
Charter Communications

Time Warner Cable
Charter Communications OpenStack DevOps

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Agenda

1. Decisions
2. What do you need to be successful
3. Getting Started
4. Tracking / Communicating / Tracking
5. Lessons learned

Change is Hard

One Knut is	One Sickle is	One Galleon is
1 Knut	29 Knuts	493 Knuts
0.03448... Sickles	1 Sickle	17 Sickles
0.002028... Galleons	0.05882... Galleons	1 Galleon

Decisions: Charter Communications Merger

- Mergers are dynamic
  - Charter bought TWC nearly 2 years ago and is still working through the changes
  - One of the changes was the future of the TWC OpenStack cloud
    - **January 2017 the powers that be determined TWC OpenStack would be abandoned**
    - **A requirement also that there be no user impact**
    - Users (projects and users) would need to move their workloads: AWS or VSphere
  - The OpenStack Operators at TWC were more accustomed to regular growth, not shrinkage
    - Doubled the cloud each of the preceding two years

Decisions: Other Key Points

Made without perfect knowledge

1. TimeFrame: 7 months
   - Buffer timeframe: additional 3 months
   - Actual time to shutdown = 54 weeks
2. Dismantling HW stack in flight - JUST SAY NO
   - Distributed system that works with pooled resources - fundamentally changes as HW is removed.
   - Allows options as migration project progresses
3. Dismantling of Team is not allowed:
   - The minimal viable team was defined as part of the decision
   - OpenStack team assigned to other projects is prohibited
4. Minimize Changes to the cloud
5. Project Management support: 2 project managers

What do you need to be successful?

- Well rounded team:
  - Technically
  - Attitude
- Project Management support
- Management support
  - Push customers
  - Protect team
- Time
- Monitoring

Team Support: Long term uncertainty

- Uncertain when the migration project would end.
- Uncertain HW challenges
- 24 X 7 on-call 25% of time
- Meeting cadence
- Flexibility
- Training
- Personal Projects
- Retention packages

Starting Point

- Accounting: Who, What, When and Where?
  - Business critical vs experimental
  - 200 + Projects
  - 300 + Users
  - 2400 VMs
- Project / User Engagement:
  - ID of owners: changing with merger
  - ID of assets: Some customers not knowledgeable
  - Education of what needs to be done
- Reporting

Tracking/Communication/Tracking/Communication

- Reporting: How to make it meaningful?
- Project Management is essential
- Controlling project access:
  - Disable project:
    - Does not delete resources
    - Keeps anyone from making changes
  - Disabling router: stops data flows into / out of project
  - Shutting down VMs but not deleted
  - Deleting VMs
- Question: When is project considered done?
  - Decision to NOT delete resources but to disable and shutdown.

HW / SW / Support

- HW obsolescence: How to handle?
  - With extra capacity
- SW obsolescence:
  - No or minimal updates: Meant security was a risk
- Support obsolescence:
  - Costly support was not renewed after the first 3 months; cloud should be obsoleted.
- Strategy to NOT dismantle HW was key.
  - Allowed over provisioned HW to help mitigate obsolescence

Swift centric projects were overlooked initially

- Missed in first enumeration of projects based on VMs only
- Large data stores to small archives
- Data migration timelines
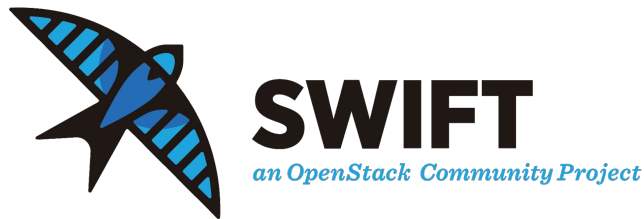
Lessons Learned

- You can't communicate too much 📞

- Protect the team

- Protect the cloud

- System Accounts vs Personal Accounts

- Inventory and Use tracking

Why didn't you… ?

- V2V
  - The environment (VLANs etc) were "going away". A simple V2V wasn't really practical. Additionally, it wouldn't take advantage of the features/benefits of the new environment.
- Just redeploy apps
  - This was the preferred/ideal goal state. Sadly most of our customers (businesses within Charter) had no handy way to rebuild/rehost their applications. In many cases, they hadn't even identified owners. Additionally, turnover within those TWC -> Charter transitions left many owners with no experience with the application that they now owned.
- Just turn off the cloud
  - Primary requirement was NO IMPACT on running productions applications. Also, as the cloud operators were application agnostic (even ignorant) there was no way we could just down apps/services.

Too many pets...

http://go.to/funpic

… not enough cattle.

Main take aways

1. Service accounts vs personal accounts
2. Team engagement: through shutdown or handoff
3. Inventory management and User management
4. Extra Hardware in lieu of Support contracts
5. No updates, and minimizing changes
6. Exercising CI/CD methodology throughout time period
7. How to get owners off of a successful cloud

Q & A

We seem to have a few minutes for any questions and maybe answers and definitely flying discs

Related Sessions

- Introducing Tatu (ssh as a service)
  4:40 Wed Rm 121-122
  https://www.openstack.org/summit/vancouver-2018/summit-schedule/events/20693/better-ssh-management-for-clouds-introducing-tatu-ssh-as-a-service
- Private Enterprise Cloud Issues (forum session)
  Operators/Users talk more freely and less formally about lessons learned running an enterprise cloud. Yours Truly moderating
  1:50 Wed Rm 221-222
  https://etherpad.openstack.org/p/YVR-private-enterprise-cloud-issues
  https://www.openstack.org/summit/vancouver-2018/summit-schedule/events/21777/private-enterprise-cloud-issues

Your Presenters were….

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… and one more thing.

David Byrne is playing Vancouver tomorrow night! Ticket Master!

http://davidbyrne.com/explore/american-utopia/tour