Aruba OpenSDS Technical Meeting Notes/Agenda

This meeting is for OpenSDS design reviews and technical discussions and is open to everyone interested in OpenSDS. This document captures the agenda and notes from each meeting. If there is anything you want to discuss at this meeting, please add an item in the agenda.

Schedule

OpenSDS Technical Meeting runs weekly. There are two bi-weekly meeting times:

It is held bi-weekly at 4:00pm-5:00pm UTC (9:00am-10:00am PT and 12:00pm-1:00pm ET) on Tuesdays.
Zoom Link: https://zoom.us/j/777978108

It is also held bi-weekly at 1:00am-2:00am UTC (6:00pm-7:00pm PT and 9:00pm-10:00pm ET) on Thursdays. Zoom Link: https://zoom.us/j/229373941

Contact xingyang105@gmail.com to be added to the calendar invite.

OpenSDS Links

- Mailing list: opensds-tech-discuss@lists.opensds.io
    - Contact Xing Yang <xingyang105@gmail.com> to be added to the mailing list
    - Or Subscribe at https://lists.opensds.io/mailman/listinfo/opensds-tech-discuss
- Slack:
    - Get invite to join here:
- Github: https://github.com/opensds

Organizers

- Xing Yang <xingyang105@gmail.com>

Previous Meetings

July 3, 2018

It is held bi-weekly on Tuesdays at 9:00am-10:00am PT or 12:00pm-1:00pm ET (4:00pm-5:00pm UTC). Zoom Link: https://zoom.us/j/777978108

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Aruba was released! https://github.com/opensds/opensds/blob/development/docs/readthedocs/releases.rst
- Project status tracking: https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit#
- Open discussions

Meetings on June 19, 2018 and June 28, 2018 were canceled due to OSS in Tokyo on June 20-22 and LC3 in Beijing on June 25-27.

June 14, 2018

Meeting will be on June 14, 2018 Thursday 6:00pm-7:00pm PT or 9:00pm-10:00pm ET (or June 15, 2018 Friday 1:00am-2:00am UTC)

It is held bi-weekly at 6:00pm-7:00pm PT or 9:00pm-10:00pm ET on Thursdays (1:00am-2:00am UTC on Fridays). Zoom Link: https://zoom.us/j/229373941

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- We are trying to wrap up with Aruba release, currently busy with bug fixing. Went through project status tracking today. All the items on the feature list are marked as “Done” now. https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit#

- Did a quick overview of the POC test plan for Aruba.

June 5, 2018

It is held bi-weekly on Tuesdays at 9:00am-10:00am PT or 12:00pm-1:00pm ET (4:00pm-5:00pm UTC). Zoom Link: https://zoom.us/j/777978108

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Did project status tracking: https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit#
    - Create volume from snapshot PR submitted by Xiaoyan. It's being reviewed and we hope to get it merged this week.
    - Installer with keystone and dashboard works but there are still bugs that need to be fixed.
- Talked a little bit about Cinder Lib as we are interested in using it for OpenStack integration. It was discussed during Cinder IRC meeting last week. Cinder team had some concerns regarding it and will evaluate it further in the next IRC meeting. Cinder Lib removes some layers such as volume controller and scheduler (compared to Cinder-stand-alone), but it still needs a sqllite db to persist data. Also making it work for every Cinder driver will be a lot of effort.
- Discussed about adding Aruba release info in ReadTheDocs. Also discussed about having milestones for Bali release. Sean will send out a proposal for milestone and RC dates.

May 31, 2018

Meeting will be on May 31, 2018 Thursday 6:00pm-7:00pm PT or 9:00pm-10:00pm ET (or June 1, 2018 Friday 1:00am-2:00am UTC)

It is held bi-weekly at 6:00pm-7:00pm PT or 9:00pm-10:00pm ET on Thursdays (1:00am-2:00am UTC on Fridays). Zoom Link: https://zoom.us/j/229373941

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Did project status tracking today: https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit#
    - Roland from Linbit submitted DRBD host-based replication driver and it was merged! https://github.com/opensds/opensds/pull/425.
      Two issues reported by Roland:
        - DRBD: Shared state in OpenSDS:
          https://github.com/opensds/opensds/issues/427
          This issue was already fixed by Jerry:
          https://github.com/opensds/opensds/pull/421
        - DRBD: Export of underlying backing devices:
          https://github.com/opensds/opensds/issues/426
    - Jerry is working on replication testing with CSI plugin. He showed us how it works. Good progress on coding. More testing is needed on the Dorado setup.
    - Xiaoyan from Intel is working on Create Volume from Snapshot. Plan to submit PR by the end of next week.
    - PengYi is working on Installation with Keystone and Dashboard. Should be ready early next week.
        - Kei said he would like to test it when it is ready.
    - Haibo has completed FC Connector work.

May 22, 2018 (Meeting is canceled due to OpenStack Summit in Vancouver May 21-24)

May 17, 2018

Meeting will be on May 17, 2018 Thursday 6:00pm-7:00pm PT or 9:00pm-10:00pm ET (or May 18 Friday 1:00am-2:00am UTC)

It is held bi-weekly at 6:00pm-7:00pm PT or 9:00pm-10:00pm ET on Thursdays (1:00am-2:00am UTC on Fridays). Zoom Link: https://zoom.us/j/229373941

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design discussions
    - [Leon] Discussed Profiles properties PR:
      https://github.com/opensds/design-specs/pull/10

- Project status tracking: https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit#
    - Discussed the status of the DRBD replication driver and issues discovered during the implementation. Roland is testing the DRBD driver and trying to submit a PR next week.

May 8, 2018

It is held bi-weekly on Tuesdays at 9:00am-10:00am PT or 12:00pm-1:00pm ET (4:00pm-5:00pm UTC). Zoom Link: https://zoom.us/j/777978108

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design discussions
    - Thin OpenSDS update: https://docs.google.com/document/d/1dofjc_v71OETT3-OpV2_T-otm_UknxixZmtgn471h9M/edit?usp=sharing
    - (Leon) Service catalog integration
        - https://docs.google.com/presentation/d/1AtnSJHJ8exCVoyeQ8X8Fst3ZkAor_56t9HSnGmj9Wgo/edit?usp=sharing
- OpenSDS mini-summit presentations are uploaded here: https://github.com/opensds/presentations/tree/master/mini-summit-kubecon-copenhagen-2018
- Host based replication development issues: When testing creating replication using CLI, only need to provide primaryVolumeID and SecondaryVolumeID, no need to provide replicationDriverData. DR controller will figure out how to attach source and target volumes and pass data to the replication driver.

May 3, 2018 (Meeting was canceled for this week as many people were at CloudNativeCon/KubeCon in Copenhagen)

April 24, 2018

It is held bi-weekly on Tuesdays at 9:00am-10:00am PT or 12:00pm-1:00pm ET (4:00pm-5:00pm UTC). Zoom Link: https://zoom.us/j/777978108

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- [Leon Wang] Ansible deployment: standalone scenario and csi integration scenario
    - opensds-installer repo is created for production level deployment tools
    - Leon did a demo on using Ansible script to deploy standalone OpenSDS and using osdscli to test the deployment.
    - Leon also did a demo on using Ansible script to deploy OpenSDS CSI integration. This demo ran into issues. Will investigate and fix the issues before submitting the PR.
- Revisit and resolve issues in this design spec: https://github.com/opensds/design-specs/pull/6
    - Leon will update the spec to specify that the current PR will handle capacity in the scheduler in a simple way without differentiating between thin/thick and the issues regarding thin provisioning and oversubscription will be addressed in the future.
- Replication implementation status:
    - Jerry has finished implementing array-based replication and also finished coding for the DR controller that supports host-based replication.
    - Roland is implementing host-based replication driver for DRBD and has made good progress.
    - Jerry will add info regarding host name to replication driver data after the volume is attached for host-based replication so Roland can use it for the DRBD driver.
- PR's for review: Cinder compatible API: https://github.com/opensds/design-specs/pull/9/
    - Pengyi will add more details on what parameters are supported/unsupported by OpenSDS in Cinder APIs.
- Code in the "replication" branch will be merged to "development" branch, and will be merged to Master after testing.
- Project tracking:
    - https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit?usp=sharing

April 19, 2018

It is held bi-weekly at 5:00pm-6:00pm PT or 8:00pm-9:00pm ET on Thursdays (12:00am-1:00am UTC on Fridays). Zoom Link: https://zoom.us/j/229373941

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Discussed about service broker (sig-catalog) integration with OpenSDS. Will go through design reviews in future meetings.

- Discussed about what can be supported by thin OpenSDS. Since this is based on CSI support, only functions supported by CSI will be supported in this option. Also discussed about possible ways to deploy thin OpenSDS. Need to do more investigation on this.

April 10, 2018

It is held bi-weekly on Tuesdays at 9:00am-10:00am PT or 12:00pm-1:00pm ET (4:00pm-5:00pm UTC). Zoom Link: https://zoom.us/j/777978108

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- [Leon Wang] Leon gave a demo on Helm charts. Right now it installs Hotpot. Next should look into adding Sushi installation into the Helm charts.
- Reddy gave an update on NVMeoF design. Good progress on the design. Looking for a developer to implement it. Development will be 3 phases:
    - Phase 1: A kernel target and initiator driver for Aruba. Will convert an existing driver written in Go for K8S to a driver for OpenSDS.
    - Phase 2: Add smartness to the driver. Figure out where to create volume when you have a pool of storage targets. Need to do discovery. Need to be Swordfish compatible.
    - Phase 3: Use the user mode initiator.
    - Limitations:
        - No extend volume
        - No snapshot
    - Will consider adding replication support in Bali.
    - Reddy asked Jay if Lenovo customers would be interested in this feature. Jay will check and get back to him.
    - Design should be ready for review in the next Technical meeting.

April 5, 2018

It is held bi-weekly at 5:00pm-6:00pm PT or 8:00pm-9:00pm ET on Thursdays (12:00am-1:00am UTC on Fridays). Zoom Link: https://zoom.us/j/229373941

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design discussions
    - Discussed about the multi-OpenStack design diagram:

        - https://docs.google.com/presentation/d/1NQlyqNS-rnBAfFS4WvZXrfBg7UNQjrD-eneaIfLzo-s/edit?usp=sharing
        - https://docs.google.com/document/d/1xZWMlVSd1ove-N-xWv3ZmRbiauzBmdgiQu2C6HRSJKI/edit#
        - Added more comments on the multi-OpenStack diagram based on Kei's feedback.

- OpenSDS Testing
    - OpenSDS is integrated with OpenStack Keystone Identity Service. When Keystone is installed and configured, it can be used to provide authentication and authorization. If Keystone is not installed, noauth will be used. Here are the steps on how to test OpenSDS using noauth: https://docs.google.com/document/d/1xCj5p7TvqIeaJEIk1On29OlhM6risQJZI6XD1rVQfC8/edit?usp=sharing

- Project tracking:
    - https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit?usp=sharing

March 27, 2018

It is held bi-weekly at 4:00pm-5:00pm UTC (9:00am-10:00am PT and 12:00pm-1:00pm ET) on Tuesdays. Zoom Link: https://zoom.us/j/777978108

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design discussions:
    - Discussed issues regarding DRBD replication driver implementation which is captured here:
        - https://docs.google.com/document/d/1gzDIoSaSzZ-B6jxgIdsLIsyBd1OX_NGwHe7JP1Hh-Iw/edit?usp=sharing
    - Reviewed PRs:
        - Capabilities properties based on Swordfish: https://github.com/opensds/design-specs/pull/6/
        - Create volume from snapshot: https://github.com/opensds/design-specs/pull/8
- Project tracking:
    - https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit?usp=sharing
- Open discussions

March 22, 2018

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design reviews
    - Full and Thin OpenSDS
        - https://docs.google.com/presentation/d/1-JXBvkZ-Q14QGY1ITSC-Sxmk44mJQ9KWE_LzF9OAe4k/edit?usp=sharing
        - Notes: Thin OpenSDS is for some container only environment that does not need all the controls in the Full OpenSDS. Our focus is still Full OpenSDS with all the intelligence built in our controller. We also want our common CSI plugin (which communicates with OpenSDS API) to be leveraged by users who want the CSI plugin to reach the storage backend quickly.
- Open discussions
    - Kei asked how to test the multi-tenancy support. Currently UI is not developed yet so it is not available through the UI. By the Aruba release, we should be able to test the multi-tenancy support through the UI.

March 15, 2018

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- UI reviewed: https://dirtyq.github.io/Prototype/
    - Feedback provided here: https://docs.google.com/document/d/1BeUFUr576VhqEEDSHHjS22h7eEPSnErANEiVTc6aPMc/edit
- [Leon Wang]: Did demo using ansible deployment for NBP and OpenSDS
    - https://github.com/opensds/opensds/wiki/OpenSDS-Integration-with-Kubernetes-CSI
- [Leon Wang]: Reviewed Capabilities Properties design
    - https://github.com/opensds/design-specs/pull/6
- Alternative meeting times
    - Proposed to keep this meeting time (5:00PM PT, 8:00PM ET) and run it bi-weekly.

    - Set up another bi-weekly meeting time at 9:00AM PT (12:00PM ET) to accommodate people in different time zones.

March 8, 2018

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design proposal PR review:
    - Multi-tenancy support
        - https://github.com/opensds/design-specs/pull/3
        - This spec proposes to add tenant_id to API router and data model.
    - State machine design
        - https://github.com/opensds/design-specs/pull/4
        - This spec proposes statuses for volume, snapshot, and volume attachment.
    - Add capabilities report design proposal
        - https://github.com/opensds/design-specs/pull/1
        - This is already implemented. If no more issues, this spec can be merged soon.
    -
- Reviewed project tracking sheet:
    - https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit?usp=sharing

March 1, 2018

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design reviews:
    - Discuss about IOPs in Profiles design:
        - https://docs.google.com/document/d/1irNnz019j0XuW6SZNigs6QuYFOCC3uL44EkRYJiHyq8/edit#
        - Reviewed QoS specs keys in Cinder drivers. MaxIOPS and MaxBWS are used in most of the drivers which have implemented QoS support. We can have a Performance Profile and add MaxIOPS and MaxBWS to it.
    - [Leon Wang] Hotpot development work tracking:

        - https://docs.google.com/spreadsheets/d/1eFZsYCqTW8-zc8K6IMFUVhmzrZQKpOeO8Br0cCraPIU/edit?usp=sharing
        - Reviewed project tracking sheet.
- Open discussions

February 22, 2018

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design reviews:
    - Continue to discuss about host-based replication using DRBD
        - https://docs.google.com/document/d/1J7oAghv67m-rvnzxWbgVs9g_mabmGe4R8l_ZtRWyfC8/edit#
        - Notes: Linbit reviewed docs on replication design proposal and host-based replication using DRBD and provided comments:
            - It is possible to write a replication driver for DRBD in this design model
            - To ensure write-order-consistency for a replication group, need to add constraint that all members block devices of a replication group must be co-located on the same linux host on each side of the replication.
            - DRBD-9 is a major leap in DRBD's development. In OpenSDS use case it brings support for replication to multiple secondaries (without stacking) and auto promote (using drbdadm primary & secondary no longer necessary). So the suggestion is for the host-based replication design to be used with the drbd-9 kernel driver.
    - Revisit Profiles design
        - https://docs.google.com/document/d/1irNnz019j0XuW6SZNigs6QuYFOCC3uL44EkRYJiHyq8/edit#
        - Notes: Got feedback from George Ericson (Dell EMC) on how to use “schedule” in DataProtectionLineOfService. It can be used to describe policies for taking periodic snapshots and replication period in replication.
            - Details of the schedule spec is in the schedule schema: https://redfish.dmtf.org/schemas/swordfish/v1/Schedule.v1_1_0.json
            - Search for the “schedule” example usage in the user guide: https://www.snia.org/sites/default/files/SMI/swordfish/Swordfish_v1.0.5_UserGuide.pdf

            - Swordfish Spec: https://www.snia.org/sites/default/files/SMI/swordfish/V105/Swordfish_v1.0.5_Specification.pdf
        - Notes: Feedback from Kei on “MaxIOPS” in IO connectivity capabilities. Kei believes both IOPs and throughput (or both block size and IOPs) should be specified and IOPs alone (currently in Swordfish) is not enough.
            - Action: Take a look of QoS specs in Cinder and how MaxIOPS is defined in Swordfish spec. Will discuss again next week.
    - [Leon Wang] Enable containerized deployment in ansible script
        - https://github.com/opensds/opensds/pull/272
        - Leon gave a demo.
        - Action: Leon will merge ansible script for Hotpot. Need more testing on ansible script for Sushi currently in Leon’s own repo. Will create a separate repo under https://github.com/opensds when ready and move all installation scripts there. Provide a single doc on how to deploy both Sushi and Hotpot together so it is easier for customers to consume.
- Open discussions

February 15, 2018

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- Design reviews:
    - Discuss host-based replication using DRBD
        - https://docs.google.com/document/d/1J7oAghv67m-rvnzxWbgVs9g_mabmGe4R8l_ZtRWyfC8/edit#
        - Notes: Reviewed the WIP design doc on host-based replication using DRBD which tried to map DRBD’s replication steps to the host-based replication design. Allen said the steps look fine. DRBD talks to the local linux device. It does not have a network service. Application is local by definition in this environment. At failover time, stop the applications and services at the primary node before the manual failover is the safest way.
        - There’s a way to use DRBD in a Pacemaker cluster for more automatic failover (DRBD’s auto-promote feature). Using the auto-promote feature, there is no need to change the Primary and Secondary roles manually; only stopping of the services and umounting, respectively mounting, is necessary.
- PRs that need attention:
    - https://github.com/opensds/design-specs/pulls

    - There are two PRs in review:
        - Extend volume: https://github.com/opensds/design-specs/pull/2
        - Capabilities reporting: https://github.com/opensds/design-specs/pull/1

February 8, 2018

Agenda/Notes: (Please add items you want to discuss in the agenda and add your name next to it)

- OpenStack and OpenSDS integration (Xing Yang)
    - https://docs.google.com/document/d/1xZWMlVSd1ove-N-xWv3ZmRbiauzBmdgiQu2C6HRSJKI/edit?usp=sharing
    - This design proposes to integrate OpenSDS with OpenStack Keystone, Glance, and implement Cinder compatible APIs. Start with integrating with one OpenStack setup. Long term goal is to allow OpenSDS to manage multiple OpenStack clouds.
- Docker compose install demo (Leon Wang)
    - https://github.com/opensds/opensds/wiki/How-to-Run-Containerized-OpenSDS-for-Testing-Work
    - Feedback: Do more demos like this in future meetings, after integrated this with ansible. Also demo on northbound plugin deployment together with southbound controller.
- Enhance pools capabilities reporting for provisioning Ceph backend (Leon Wang):
    - https://docs.google.com/presentation/d/1xEQi95ov6c0DaHTIZ495Z9b22i3Lbb0kw2pTUSOy1y4/edit?usp=sharing
    - Q (Phillip): Why not focus on storage provisioning but move on to deployment? A: The purpose of using crush map to configure Ceph pools is to report Ceph pools capabilities more efficiently (rather than using default setting) and therefore it is a way for more efficient provisioning.

February 1, 2018

Agenda/Notes:

- A quick overview of architecture and road map
- Update from OpenSDS TSC meeting
    - Open source data protection agent:
        - https://docs.google.com/presentation/d/1B2vwcI6LUxI3JOK-APZNtH6-8hPBbqTmDI9XQnuws1A/edit

        - Notes: Data protection agent will be open sourced and made available on github. OpenSDS can integrate with the agent as part of the data protection workflow to achieve data consistency.
    - Replication design:
        - https://docs.google.com/document/d/1ymjJdBjFntaVcnR-m--VdSILkzOOj3CM4mZA1Sg5Mk0/edit#
        - Notes: Discussed about array based replication workflow.
            - In multi-region deployment, should have one database per region instead of one globally distributed database.
            - Primary site controller triggers secondary site controller to do a discovery of the remote replication relationship on the backend array after creating one replication db entry and creating replication relationship on the arrays. Then the secondary site controller will create the other replication db entry.
            - Replication API should have information on all replication sites including more than two sites so that it can pass on that info to primary site controller and primary site controller will know which controller from which site to call to discover and create relevant replication entries.
            - TODO: Investigate using gRPC in cross region deployment.
    - Profiles design:
        - https://docs.google.com/document/d/1irNnz019j0XuW6SZNigs6QuYFOCC3uL44EkRYJiHyq8/edit#
        - Notes:
            - Take a look of Swordfish v1.0.5 user guide for examples on how to use the Schedule.
            - Remove "DataProtectionLineOfService" and “ReplicaInfos” as key names in profiles json and only list relevant properties from them in the json body.
- [Leon Wang] Capabilities Report Design review
    - Design spec is uploaded here: https://github.com/opensds/design-specs/pull/1
    - Gap analysis in Ceph (Existing way of reporting pools uses default Ceph setting and is not efficient; Explore better way of reporting pools using crush map): https://docs.google.com/presentation/d/1xEQi95ov6c0DaHTIZ495Z9b22i3Lbb0kw2pTUSOy1y4/edit?usp=sharing

January 25, 2018

Agenda/Notes:

- A quick overview of OpenSDS

- Design Reviews
    - Continue to discuss Profiles design based on Swordfish spec.
        - https://docs.google.com/document/d/1irNnz019j0XuW6SZNigs6QuYFOCC3uL44EkRYJiHyq8/edit#
        - Notes: We'll pick the relevant properties from Swordfish spec for our Profiles now and add more later if needed.
    - Enumeration
        - https://docs.google.com/document/d/1f-ta2CbORuXPTdEZybl48hqbBpq2wnsy1puxbzlvLik/edit#heading=h.2u5kbzcaj13a
        - Notes: Change project_id to tenant_id; query volumes by pool_id, lun_id, host.
    - Minimum required features
        - https://docs.google.com/document/d/1lOntboT99pN-5iS4Z6_gz1Dzwlx7y1Q2weo1VxC_Knk/edit#
        - Notes: Decided what minimum required features should be included in Aruba and what should be in Bali.