



airship | *Elevate Your Infrastructure*



Airship Confirmation Review

OSF Board of Directors

October 22, 2019

Strategic Focus



airship



Mission Statement

Openly **collaborate** across a diverse, global **community** to provide and integrate a collection of loosely coupled but **interoperable**, **open source** tools that declaratively **automates cloud lifecycle management**.

Airship is

... an open source community. Everyone is welcome to join and encouraged to contribute in variety of ways – use cases, code, test cases, documentation, reviews, ... or simply ideas.

... a project guided by the OpenStack Foundation principles since its formation, even before acceptance as an OpenStack project

Airship

- Supports the OSF's strategic focus area related to container infrastructure
- Deploys OSF projects and is used by other OSF projects
- Manages the full lifecycle of data center infrastructure
- Allows operators to manage their infrastructure deployments and lifecycle through declarative YAML documents

Governance

Developer Roles

Contributor

- Has had changes merged within the last 12 months
- Eligible to vote in the election of Technical Committee
- Read only access to Airship repositories

Core Reviewer

- Nominated and approved by the established Core, following established OpenStack processes
- Write access to the specific Airship repository
- Can be Cores of multiple Airship components

Technical Committee

- Ensures Airship projects are adhering to the projects core principles, promote standardization, define and organizes the Airship versioning and release process
- 5 Members elected by Contributors
- Elections take place once per year.
- Anyone who has demonstrated commitment to the Airship project in the last 12 months is eligible to run
- No term limits for TC seats
- No more than 2 of the 5 seats can be filled by any one organization

Working Committee

- WC intends to:
 - Help influence the project strategy
 - Help arbitrate when there is a disagreement between Core Reviewers within a single project or between Airship projects
 - Perform marketing and communications
 - Help provide product management as well as ecosystem support
- 5 Members elected by Core Reviewers
- Elections take place once per year.
- Any Contributor is eligible to run
- No term limits for WC seats
- No more than 2 of the 5 seats can be filled by any one organization

Current Committee Members

Technical Committee

- James Gu, *independent
- Alexander Hughes, Accenture
- Jan-Erik Mångs, Ericsson
- Alexey Odinokov, Mirantis
- Ryan van Wyk, AT&T

Working Committee

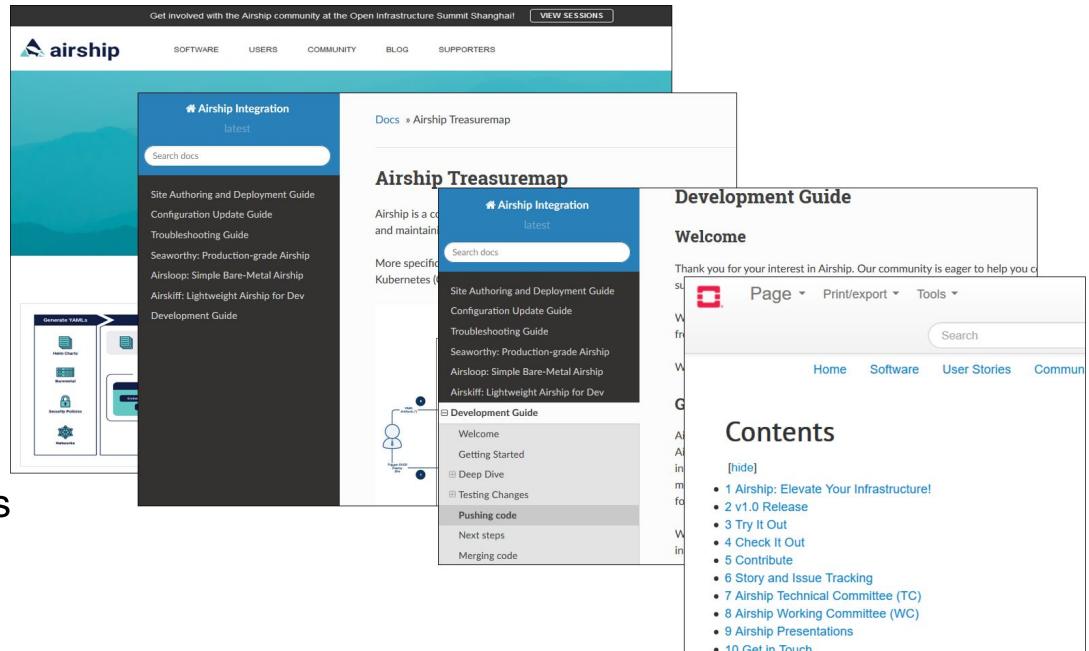
- Nishant Kumar, Ericsson
- Matt McEuen, AT&T
- Kaspars Skels, Ericsson
- Drew Walters, AT&T

Technical Best Practices

Technical Best Practices: Documentation

Documentation includes:

- Overview, Architecture, Getting Started
- Site Authoring and Deployment Guides
- Contributor / Review Guide
- Component and Integration Testing Docs
- Dev and Ops-focused Guides
- More on the way...



Technical Best Practices: Code Review

Code Review Follows Established

OSF Community Norms

- Core Reviewer teams per Airship project, nominated/ratified by those core teams
- Two +2s, WF +1, and Zuul gating required for merge
- +1s from non-cores (and cores) strongly encouraged
- Documentation and CI/CD are reviewed as code

The screenshot shows a code review interface for an OpenDev project. The top navigation bar includes links for All, My, Projects, People, Documentation, Changes, Drafts, Draft Comments, Edits, Watched Changes, Starred Changes, Groups, Airship, Airship Pegleg, Airship Specs, and AI. The main content area displays a merged pull request titled "MAAS improvements for DNS & NodePort". The pull request details include the author (Kaspars Skels), committer (Kaspars Skels), commit hash (44d6f90a2d5ada8d4f1fb4a1607e3ba8299a3d5), parent(s) (fb851a69e0c191f89d4648206799c79939bae2), and change ID (16cab0b3fc541d43d738f3dc144bb29d84ab718). The pull request was created on Aug 26, 2019, at 3:28 PM and merged on Sep 26, 2019, at 10:25 AM. The review summary indicates +2 Drew Walters, +2 Ahmad Mahmoudi, +2 Zuul, and +1 Evgeniy L. The review log shows a Zuul check with various test results: openstack-tox-docs (SUCCESS in 3m 30s), treasuremap-seaworthy-site-lint (SUCCESS in 3m 49s), treasuremap-seaworthy-virt-site-lint (SUCCESS in 3m 25s), treasuremap-airskiff-ubuntu-site-lint (SUCCESS in 4m 08s), treasuremap-airskiff-suse-site-lint (SUCCESS in 3m 27s), treasuremap-airskilloop-site-lint (SUCCESS in 3m 07s), treasuremap-airskiff-aiab-site-lint (SUCCESS in 6m 30s), treasuremap-airskiff-deployment-ubuntu (SUCCESS in 58m 20s (non-voting)), treasuremap-airskiff-deployment-suse (FAILURE in 42m 38s (non-voting)), and Zuul gate with various success messages. Buttons for Cherry Pick and Revert are visible.

Author	Kaspars Skels <kaspars.skels@att.com>	Aug 26, 2019 3:28 PM
Committer	Kaspars Skels <kaspars.skels@att.com>	Sep 26, 2019 10:25 AM
Commit	44d6f90a2d5ada8d4f1fb4a1607e3ba8299a3d5	(gitweb)
Parent(s)	fb851a69e0c191f89d4648206799c79939bae2	(gitweb)
Change-Id	16cab0b3fc541d43d738f3dc144bb29d84ab718	

Code-Review	+2 Drew Walters	Evgeniy L
Verified	+1 Ahmad Mahmoudi	Roy Tang
Workflow	+1 Zuul	Scott Hussey
		Stas Egorov

Zuul check	Sep 26 11:27 AM
openstack-tox-docs	SUCCESS in 3m 30s
treasuremap-seaworthy-site-lint	SUCCESS in 3m 49s
treasuremap-seaworthy-virt-site-lint	SUCCESS in 3m 25s
treasuremap-airskiff-ubuntu-site-lint	SUCCESS in 4m 08s
treasuremap-airskiff-suse-site-lint	SUCCESS in 3m 27s
treasuremap-airskilloop-site-lint	SUCCESS in 3m 07s
treasuremap-airskiff-aiab-site-lint	SUCCESS in 6m 30s
treasuremap-airskiff-deployment-ubuntu	SUCCESS in 58m 20s (non-voting)
treasuremap-airskiff-deployment-suse	FAILURE in 42m 38s (non-voting)
Zuul gate	Sep 27 2:44 PM
openstack-tox-docs	SUCCESS in 3m 39s
treasuremap-seaworthy-site-lint	SUCCESS in 2m 47s
treasuremap-seaworthy-virt-site-lint	SUCCESS in 3m 00s
treasuremap-airskiff-ubuntu-site-lint	SUCCESS in 2m 35s
treasuremap-airskiff-suse-site-lint	SUCCESS in 2m 48s
treasuremap-airskilloop-site-lint	SUCCESS in 4m 32s
treasuremap-airskiff-aiab-site-lint	SUCCESS in 6m 55s

Review metrics available at: https://www.stackalytics.com/?project_type=all&module=airship-group&metric=marks

Technical Best Practices: Testing & CI/CD

Airship has multi-faceted testing:

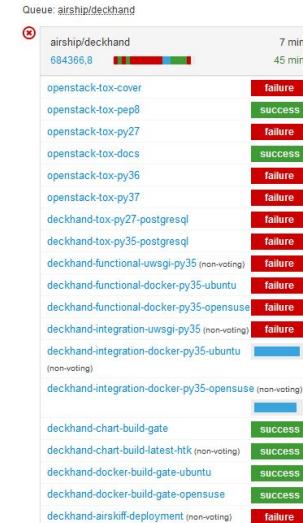
- Linting and unit testing, via Zuul
- Lightweight integration testing per change, via Zuul
- Voting and non-voting checks
- VM-based 3rd-party integration run per Treasuremap change
- Nightly 3rd-party bare metal deployment testing
- Developer documentation for local testing

Code-Review	+2	Matt McEuen	Nishant Kumar
Verified	+2	Zuul	
Workflow	+1	Matt McEuen	

Zuul check	Sep 23 3:07 PM
openstack-tox-docs	SUCCESS in 4m 11s
openstack-tox-pep8	SUCCESS in 3m 25s
airship-promenade-lint-ws	SUCCESS in 1m 39s
airship-promenade-docker-build-gate	SUCCESS in 5m 19s
airship-promenade-chart-build-gate	SUCCESS in 1m 52s
airship-promenade-chart-build-latest-htk	SUCCESS in 1m 46s (non-voting)
airship-promenade-genesis-gate	SUCCESS in 16m 08s
Zuul gate	Sep 26 11:17 AM
openstack-tox-docs	SUCCESS in 3m 35s
openstack-tox-pep8	SUCCESS in 3m 19s
airship-promenade-lint-ws	SUCCESS in 1m 46s
airship-promenade-docker-build-gate	SUCCESS in 5m 07s
airship-promenade-chart-build-gate	SUCCESS in 2m 43s
airship-promenade-genesis-gate	SUCCESS in 16m 27s

Code-Review	+2	Drew Walters	Matt McEuen
Verified	+2	Zuul	
Workflow	+1	Sean Eagan	

Zuul check	Sep 23 10:23 AM
openstack-tox-cover	SUCCESS in 4m 30s
openstack-tox-docs	SUCCESS in 5m 48s
openstack-tox-py35	SUCCESS in 6m 07s
openstack-tox-py36	SUCCESS in 5m 49s
openstack-tox-pep8	SUCCESS in 4m 47s
armada-chart-build-gate	SUCCESS in 2m 31s
armada-chart-build-latest-htk	SUCCESS in 2m 11s (non-voting)
armada-docker-build-gate-ubuntu_bionic	SUCCESS in 5m 29s
armada-docker-build-gate-ubuntu_xenial	SUCCESS in 5m 13s
armada-docker-build-gate-opensuse	SUCCESS in 10m 27s
armada-airskiff-deploy	FAILURE in 1m 33s (non-voting)
Zuul gate	Sep 26 11:34 AM
openstack-tox-docs	SUCCESS in 5m 14s
openstack-tox-py35	SUCCESS in 5m 03s
openstack-tox-py36	SUCCESS in 3m 28s
openstack-tox-pep8	SUCCESS in 4m 36s
armada-chart-build-gate	SUCCESS in 2m 27s
armada-docker-build-gate-ubuntu_bionic	SUCCESS in 5m 50s
armada-docker-build-gate-ubuntu_xenial	SUCCESS in 4m 35s
armada-docker-build-gate-opensuse	SUCCESS in 7m 32s



ATT Airship CI
Patch Set 8:
Build Started <https://jenkins.atlantafoundry.com/job/airship-in-a-bottle/1025/>

ATT Airship CI
Patch Set 8:
Build Successful
<https://jenkins.atlantafoundry.com/job/airship-in-a-bottle/1025/> : SUCCESS

Open Collaboration

Open Collaboration

Airship community believes in and follows “[The Four Opens](#)” governing principles:

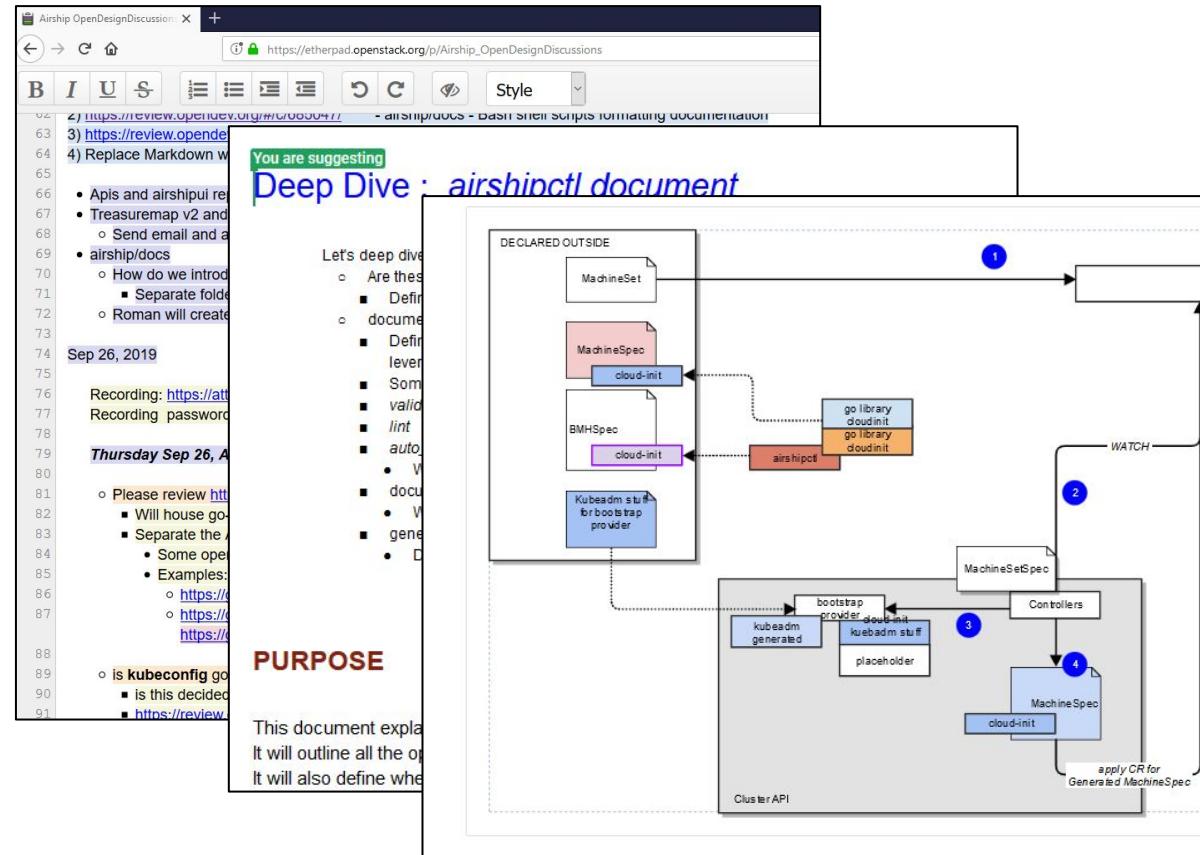
- Open Source
- Open Design
- Open Development
- Open Community

- Adheres to the [OpenStack Foundation Community Code of Conduct](#)
- Airship code is distributed under the Apache 2 license
- Meetings and discussions are held in public open forums
 - One open dev IRC meeting, one JIRA meeting, two open design meetings, and three open SIG meetings every week.

Open Design

Airship follows an inclusive design process

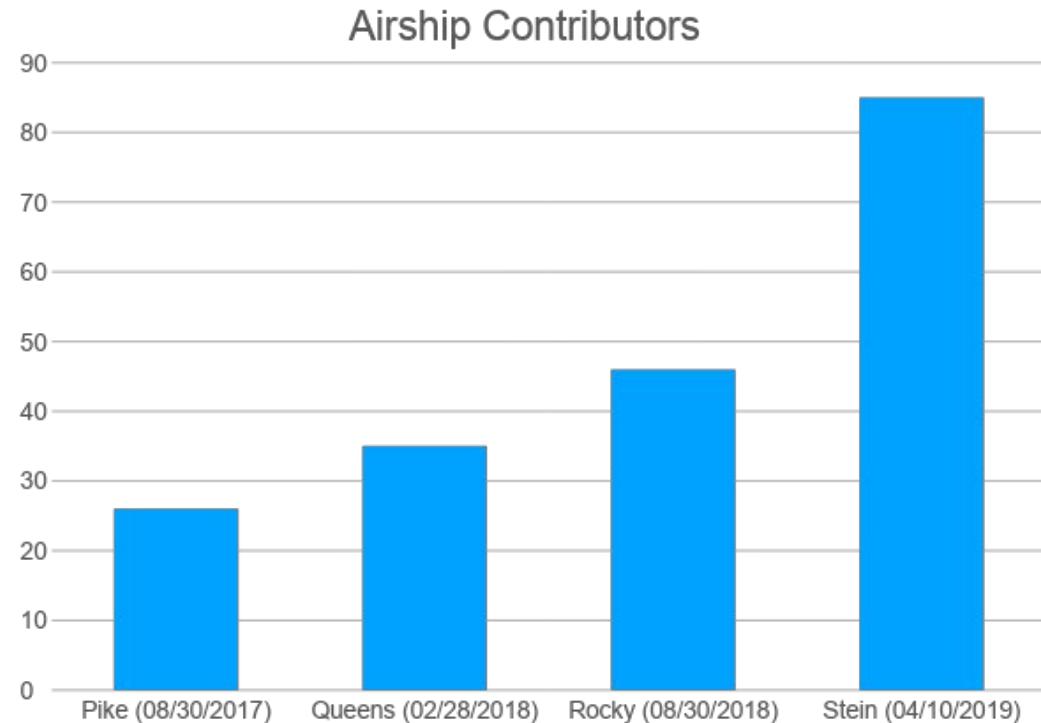
- Open agenda etherpads
- Open design documents
- Opt-in SIG design sessions
- Weekly scope grooming



Expanding Contributor Base and Growth of Community

All Time Metrics

- 3,862 commits in 25 repos
- 174 authors representing 20+ companies



Contribution Metrics Available at https://www.stackalytics.com/?project_type=openstack-others&module=airship-group&metric=commits



Contributors



海云捷迅
AWCLOUD



Active Engagement

Community Participation

- OpenStack Summits: Vancouver 2018, Berlin 2018, Denver 2019, Shanghai 2019
- PTG: Ireland 2017, Denver 2018, Denver 2019 and Shanghai 2019
- OpenStack and Open Infrastructure Days & Meetup events:
 - June 28-29 2018: OpenInfra Days, Seoul, South Korea
 - June 11-12, 2019: OpenInfra Days, Krakow City, Poland
 - June 21-23, 2019: IISc Global Conference, Palo Alto, CA
 - July 18-19, 2019: OpenInfra Days, Seoul, South Korea
- KubeCon San Diego: November 2019



Collaborations and Integrations



MULTUS



containerd



ceph



IRONIC
an OpenStack Community Project



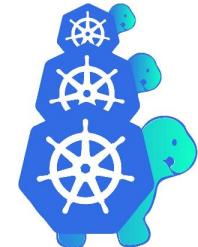
kubernetes



 OPEN CONTAINER INITIATIVE



CLOUD NATIVE COMPUTING FOUNDATION





Airship Early Adoption





“More than 20 Network Cloud regions deployed and managed by Airship to date, and 5G Core deployments inflight.”



“Airship has been an important part of SK Telecom’s cloud native infrastructure development. SK Telecom is integrating Airship not only with telco network, but also with innovative services like AI, Media, and Mobile Edge Computing systems.”



“Aside from contributing to Airship upstream and collaborating with AT&T on key roadmap features, Mirantis is integrating much of the code into Mirantis Cloud Platform (MCP), Mirantis’s core product that empowers telcos and enterprises to efficiently run Kubernetes on-premises.”



“Ericsson is positive of an alignment between Airship and CNCF. We are increasing our upstream investments to the related opensource projects, and will work closely with AT&T and the Airship and CNCF communities to align and evolve capabilities in both communities.”



“StarlingX uses Airship Armada for orchestrating the deployment of multiple Helm charts.”



“Airship is core to realizing high-availability cloud services optimized for edge computing systems and applications.”

Future Plans

Future Plans



November 2019

- Bootstrap First Host
- Ephemeral Cluster
- Target Cluster
- Baremetal Provisioning
- Kubernetes Provisioning

February 2020

- Workflows for Software LCM
- MVPs for Most other Features
- Demonstrate at least one alternative to Baremetal

May 2020

- Full Feature Set



Community Channels

Mailing Lists: lists.airshipit.org

Freenode IRC: #airshipit

Website: www.airshipit.org

OpenDev: <https://opendev.org/airship>

YouTube: <https://www.youtube.com/user/OpenStackFoundation/>

AT&T and Mirantis Airship Webinar: [Elevate Your Infrastructure](#)

[Using Airship](#)

Q&A

Technical Overview

Technical Overview

MOTIVATIONS FOR AIRSHIP:

The Airship Community wants to accelerate the growth of SDN as a whole, and we believe the Open Infrastructure needs to be simpler, faster and cheaper to do so.

Cloud Operators experience challenges in creating, updating, and managing the entire lifecycle of their own private cloud infrastructure, such as:

- 1) Lengthy and complicated processes;
- 2) The need for custom development to enable an ecosystem of various open source and proprietary software integrated into one cloud platform;
- 3) Demands for resources with a wide array of deep skillsets;
- 4) Difficulties keeping up with the cadence of new open source releases due to the slow process of deployment and upgrades; and
- 5) Challenges of scalability and security.

Technical Overview

AIRSHIP AS AN ANSWER:

When AT&T, SKT and Intel set out to apply the learnings from years of building and managing Open Infrastructure at scale, we set clear goals to solve these very challenges:

- 1) Open Source Orchestration with Batteries Included
- 2) Simplified Singular Deployment Method
- 3) Predictable Fast and Seamless Deployments and Upgrades of the End-to-End Platform
- 4) Resiliency and Enterprise-Grade Security Built In From the Ground Up
- 5) Not Be Opinionated on the Use Case (wide adoption)



Technical Overview

Airship 1.0 Core Principles

Focu s

The focus is a declarative platform to introduce OpenStack on Kubernetes (OOK), and the lifecycle mgmt. of the resulting cloud, with the scale, speed, resiliency, flexibility & operational predictability demanded of network clouds.

Key Tenets

DECLARATIVE



Sites are declared using YAML, including both hard assets & soft assets. You manage the document and Airship implements it.

CONTAINER BASED



Containers are the unit of software delivery for Airship. This allows progress from dev, to testing, and production with confidence.

ONE WORKFLOW



One workflow that handles both initial deployments and future site updates with virtually no difference in interacting with the two

ARCHITECTURALLY FLEXIBLE

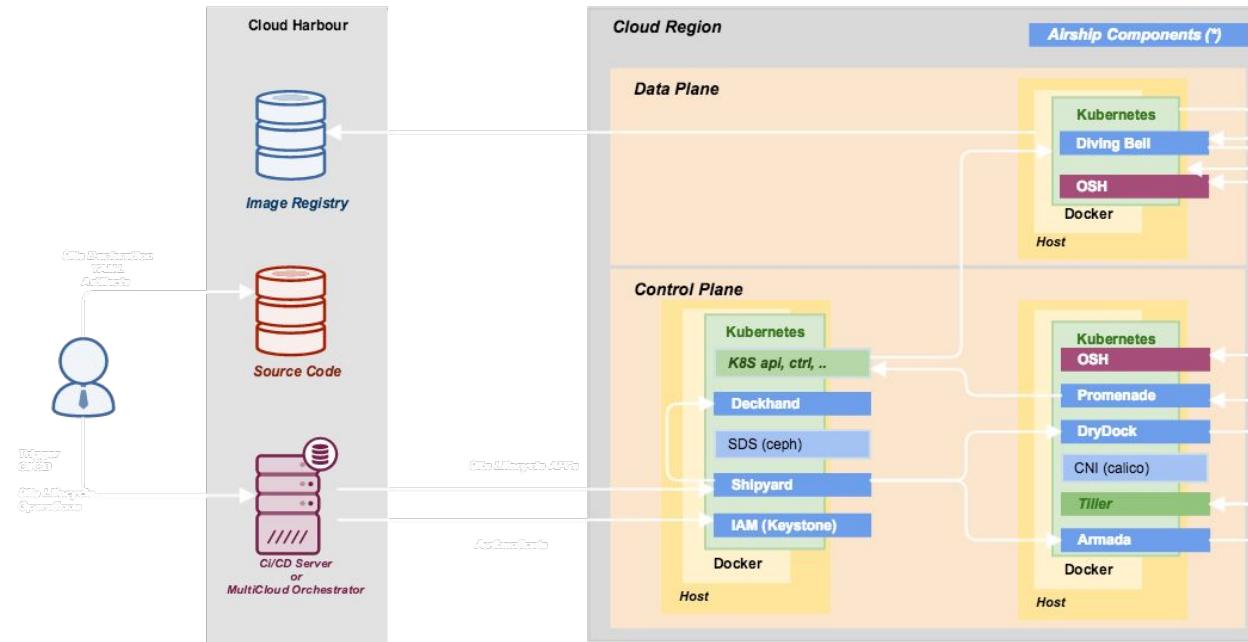


Airship manages our entire cloud platform, not just OpenStack including small and large environments



Technical Overview

Airship 1.0 Architecture



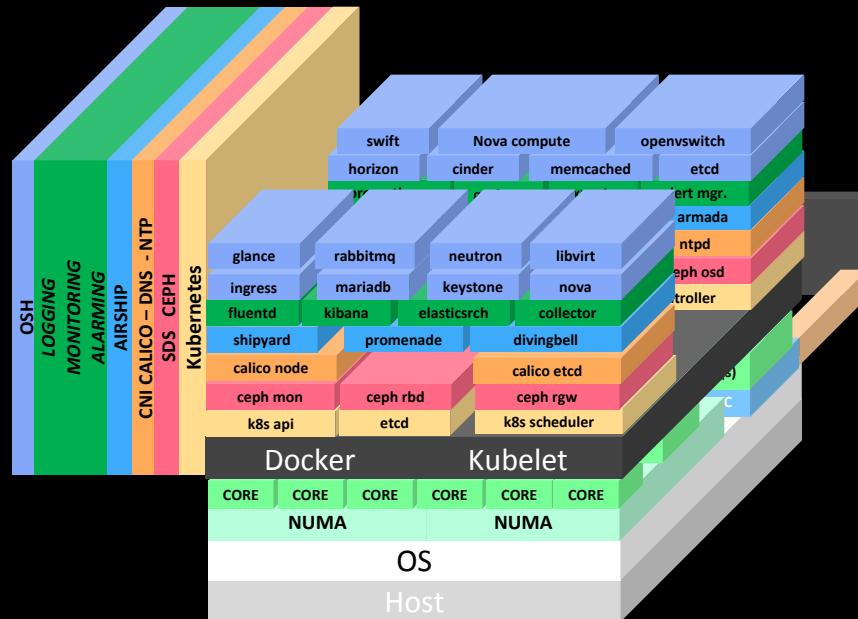
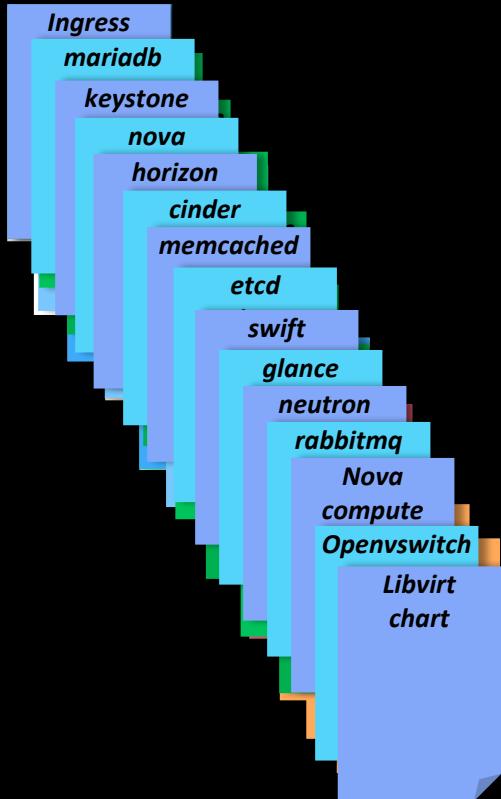


Technical Overview

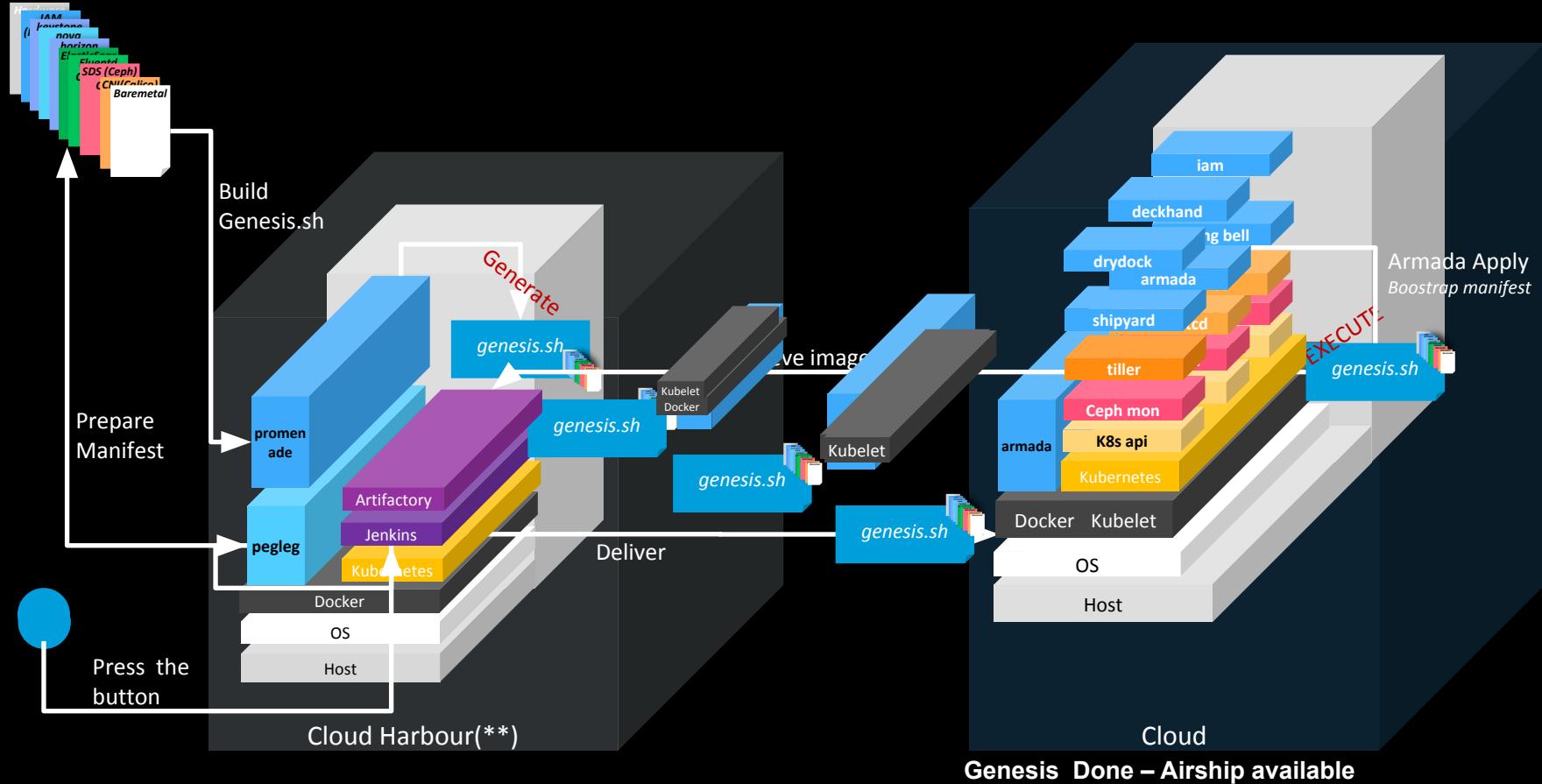
Airship 1.0 Core Components

Component	Purpose
Drydock	Declarative Baremetal Provisioning
Deckhand	Customization of YAML (Layering, Substitution, ...)
Promenade	Declarative Kubernetes + etcd HA Cluster Bootstrapping and LCM
Armada	Declarative Helm Chart Orchestration
Shipyard	Orchestration Engine for Airship Workflows
Pegleg	Configuration Organization Tool
DivingBell	Declarative Host OS Management and LCM

How do we use Airship | What do we mean by declarative



How do we use Airship| How do we bootstrap the cloud?



How do we use Airship | How do we deploy a cloud?

