Edit This Page

Imported Docs

- – Community

This section of the Kubernetes documentation surfaces key topics imported from various repos in the broader Kubernetes community for better findability.

Community

kubernetes/community is the starting point for becoming a contributor – improving docs, improving code, giving talks etc.

Create an Issue Edit this Page

Edit This Page

- Kubernetes Contributor Guide
  - Disclaimer
- Welcome
- Before you get started
  - Sign the CLA
  - Code of Conduct
  - Setting up your development environment
  - Community Expectations and Roles
- Your First Contribution
  - Find something to work on
    - Find a good first topic
    - Learn about SIGs
      - Sig structure
      - Find a SIG that is related to your contribution
    - File an Issue
- Contributing
  - * Communication
  - GitHub workflow
  - Open a Pull Request
  - Code Review
  - Testing
  - Security
  - Documentation
  - Issues Management or Triage
- Community
  - Communication

    - Events
        * Meetups
    - Mentorship
- Advanced Topics
    - * Meetups
        * KubeCon
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Kubernetes Contributor Guide

Disclaimer

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- Contributing
  - * Communication
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Kubernetes Developer Guide

- – The process of developing and contributing code to the Kubernetes project
  – Setting up your dev environment, coding, and debugging
  – Developing against the Kubernetes API
  – Writing plugins
  – Building releases

The developer guide is for anyone wanting to either write code which directly accesses the Kubernetes API, or to contribute directly to the Kubernetes project. It assumes some familiarity with concepts in the User Guide and the Cluster Admin Guide.

The process of developing and contributing code to the Kubernetes project

- **Contributor Guide** (Please start here) to learn about how to contribute to Kubernetes
- **GitHub Issues** (issues.md): How incoming issues are triaged.
- **Pull Request Process** (/contributors/guide/pull-requests.md): When and why pull requests are closed.

- **Getting Recent Builds** (getting-builds.md): How to get recent builds including the latest builds that pass CI.
- **Automated Tools** (automation.md): Descriptions of the automation that is running on our github repository.

Setting up your dev environment, coding, and debugging

- **Development Guide** (development.md): Setting up your development environment.
- **Testing** (testing.md): How to run unit, integration, and end-to-end tests in your development sandbox.
- **Hunting flaky tests** (flaky-tests.md): We have a goal of 99.9% flake free tests. Here's how to run your tests many times.
- **Logging Conventions** (logging.md): Glog levels.
- **Profiling Kubernetes** (profiling.md): How to plug in go pprof profiler to Kubernetes.
- **Instrumenting Kubernetes with a new metric** (instrumentation.md): How to add a new metrics to the Kubernetes code base.
- **Coding Conventions** (coding-conventions.md): Coding style advice for contributors.
- **Document Conventions** (how-to-doc.md) Document style advice for contributors.
- **Running a cluster locally** (running-locally.md): A fast and lightweight local cluster deployment for development.

Developing against the Kubernetes API

- The REST API documentation explains the REST API exposed by apiserver.
- **Annotations** (Annotations): are for attaching arbitrary non-identifying metadata to objects. Programs that automate Kubernetes objects may use annotations to store small amounts of their state.
- **API Conventions** (api-conventions.md): Defining the verbs and resources used in the Kubernetes API.
- **API Client Libraries** (client-libraries.md): A list of existing client libraries, both supported and user-contributed.

Writing plugins

- **Authentication** (Authentication): The current and planned states of authentication tokens.
- **Authorization Plugins** (Authorization): Authorization applies to all HTTP requests on the main apiserver port. This doc explains the available authorization implementations.
- **Admission Control Plugins** (admission_control)

Building releases

See the kubernetes/release repository for details on creating releases and related tools and helper scripts.

Create an Issue Edit this Page

Edit This Page

Kubernetes Enhancement Proposal Process

- – status: implementable
- Kubernetes Enhancement Proposal Process
  - Table of Contents
  - Summary
  - Motivation
  - Reference-level explanation
    - What type of work should be tracked by a KEP
    - KEP Template
    - KEP Metadata
    - KEP Workflow
    - Git and GitHub Implementation
    - KEP Editor Role
    - Important Metrics
    - Prior Art
  - Drawbacks
  - Alternatives
    - Github issues vs. KEPs
  - Unresolved Questions
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---

kep-number: 1 title: Kubernetes Enhancement Proposal Process authors: - “@calebamiles” - “@jbeda” owning-sig: sig-architecture participating-sigs: - kubernetes-wide reviewers: - name: “@timothysc” approvers: - name: “@bgrant0607” editor: name: “@jbeda” creation-date: 2017-08-22

status: implementable

Kubernetes Enhancement Proposal Process

Table of Contents

Summary

A standardized development process for Kubernetes is proposed in order to

- provide a common structure for proposing changes to Kubernetes
- ensure that the motivation for a change is clear
- allow for the enumeration stability milestones and stability graduation criteria
- persist project information in a Version Control System (VCS) for future Kubernauts
- support the creation of *high value user facing* information such as:

    - an overall project development roadmap
    - motivation for impactful user facing changes
- reserve GitHub issues for tracking work in flight rather than creating "umbrella" issues
- ensure community participants are successfully able to drive changes to completion across one or more releases while stakeholders are adequately represented throughout the process

This process is supported by a unit of work called a Kubernetes Enhancement Proposal or KEP. A KEP attempts to combine aspects of a

- feature, and effort tracking document
- a product requirements document
- design document

into one file which is created incrementally in collaboration with one or more Special Interest Groups (SIGs).

Motivation

For cross project SIGs such as SIG PM and SIG Release an abstraction beyond a single GitHub Issue or Pull request seems to be required in order to understand and communicate upcoming changes to Kubernetes. In a blog post describing the road to Go 2, Russ Cox explains

> that it is difficult but essential to describe the significance of a problem in a way that someone working in a different environment can understand

as a project it is vital to be able to track the chain of custody for a proposed enhancement from conception through implementation.

Without a standardized mechanism for describing important enhancements our talented technical writers and product managers struggle to weave a coherent narrative explaining why a particular release is important. Additionally for critical infrastructure such as Kubernetes adopters need a forward looking road map in order to plan their adoption strategy.

The purpose of the KEP process is to reduce the amount of "tribal knowledge" in our community. By moving decisions from a smattering of mailing lists, video calls and hallway conversations into a well tracked artifact this process aims to enhance communication and discoverability.

A KEP is broken into sections which can be merged into source control incrementally in order to support an iterative development process. An important goal of the KEP process is ensuring that the process for submitting the content contained in design proposals is both clear and efficient. The KEP process is intended to create high quality uniform design and implementation documents for SIGs to deliberate.

Reference-level explanation

What type of work should be tracked by a KEP

The definition of what constitutes an "enhancement" is a foundational concern for the Kubernetes project. Roughly any Kubernetes user or operator facing enhancement should follow the KEP process: if an enhancement would be described in either written or verbal communication to anyone besides the KEP author or developer then consider creating a KEP.

Similarly, any technical effort (refactoring, major architectural change) that will impact a large section of the development community should also be communicated widely. The KEP process is suited for this even if it will have zero impact on the typical user or operator.

As the local bodies of governance, SIGs should have broad latitude in describing what constitutes an enhancement which should be tracked through the KEP process. SIGs may find that helpful to enumerate what *does not* require a KEP rather than what does. SIGs also have the freedom to customize the KEP template according to their SIG specific concerns. For example the KEP template used to track API changes will likely have different subsections than the template for proposing governance changes. However, as changes start impacting other SIGs or the larger developer community outside of a SIG, the KEP process should be used to coordinate and communicate.

Enhancements that have major impacts on multiple SIGs should use the KEP process. A single SIG will own the KEP but it is expected that the set of approvers will span the impacted SIGs. The KEP process is the way that SIGs can negotiate and communicate changes that cross boundaries.

KEPs will also be used to drive large changes that will cut across all parts of the project. These KEPs will be owned by SIG-architecture and should be seen as a way to communicate the most fundamental aspects of what Kubernetes is.

KEP Template

The template for a KEP is precisely defined here

KEP Metadata

There is a place in each KEP for a YAML document that has standard metadata. This will be used to support tooling around filtering and display. It is also critical to clearly communicate the status of a KEP.

Metadata items: * **kep-number** Required * Each proposal has a number. This is to make all references to proposals as clear as possible. This is especially important as we create a network cross references between proposals. * Before

having the `Approved` status, the number for the KEP will be in the form of `draft-YYYYMMDD`. The `YYYYMMDD` is replaced with the current date when first creating the KEP. The goal is to enable fast parallel merges of pre-acceptance KEPs. * On acceptance a sequential dense number will be assigned. This will be done by the editor and will be done in such a way as to minimize the chances of conflicts. The final number for a KEP will have no prefix. * **title** Required * The title of the KEP in plain language. The title will also be used in the KEP filename. See the template for instructions and details. * **status** Required * The current state of the KEP. * Must be one of `provisional`, `implementable`, `implemented`, `deferred`, `rejected`, `withdrawn`, or `replaced`. * **authors** Required * A list of authors for the KEP. This is simply the github ID. In the future we may enhance this to include other types of identification. * **owning-sig** Required * The SIG that is most closely associated with this KEP. If there is code or other artifacts that will result from this KEP, then it is expected that this SIG will take responsibility for the bulk of those artifacts. * Sigs are listed as `sig-abc-def` where the name matches up with the directory in the `kubernetes/community` repo. * **participating-sigs** Optional * A list of SIGs that are involved or impacted by this KEP. * A special value of `kubernetes-wide` will indicate that this KEP has impact across the entire project. * **reviewers** Required * Reviewer(s) chosen after triage according to proposal process * If not yet chosen replace with `TBD` * Same name/contact scheme as `authors` * Reviewers should be a distinct set from authors. * **approvers** Required * Approver(s) chosen after triage according to proposal process * Approver(s) are drawn from the impacted SIGs. It is up to the individual SIGs to determine how they pick approvers for KEPs impacting them. The approvers are speaking for the SIG in the process of approving this KEP. The SIGs in question can modify this list as necessary. * The approvers are the individuals that make the call to move this KEP to the `approved` state. * Approvers should be a distinct set from authors. * If not yet chosen replace with `TBD` * Same name/contact scheme as `authors` * **editor** Required * Someone to keep things moving forward. * If not yet chosen replace with `TBD` * Same name/contact scheme as `authors` * **creation-date** Required * The date that the KEP was first submitted in a PR. * In the form `yyyy-mm-dd` * While this info will also be in source control, it is helpful to have the set of KEP files stand on their own. * **last-updated** Optional * The date that the KEP was last changed significantly. * In the form `yyyy-mm-dd` * **see-also** Optional * A list of other KEPs that are relevant to this KEP. * In the form `KEP-123` * **replaces** Optional * A list of KEPs that this KEP replaces. Those KEPs should list this KEP in their `superseded-by`. * In the form `KEP-123` * **superseded-by** * A list of KEPs that supersede this KEP. Use of this should be paired with this KEP moving into the `Replaced` status. * In the form `KEP-123`

KEP Workflow

A KEP has the following states

- `provisional`: The KEP has been proposed and is actively being defined. This is the starting state while the KEP is being fleshed out and actively defined and discussed. The owning SIG has accepted that this is work that needs to be done.
- `implementable`: The approvers have approved this KEP for implementation.
- `implemented`: The KEP has been implemented and is no longer actively changed.
- `deferred`: The KEP is proposed but not actively being worked on.
- `rejected`: The approvers and authors have decided that this KEP is not moving forward. The KEP is kept around as a historical document.
- `withdrawn`: The KEP has been withdrawn by the authors.
- `replaced`: The KEP has been replaced by a new KEP. The `superseded-by` metadata value should point to the new KEP.

Git and GitHub Implementation

KEPs are checked into the community repo under the `/kep` directory. In the future, as needed we can add SIG specific subdirectories. KEPs in SIG specific subdirectories have limited impact outside of the SIG and can leverage SIG specific OWNERS files.

New KEPs can be checked in with a file name in the form of `draft-YYYYMMDD-my-title.md`. As significant work is done on the KEP the authors can assign a KEP number. This is done by taking the next number in the NEXT_KEP_NUMBER file, incrementing that number, and renaming the KEP. No other changes should be put in that PR so that it can be approved quickly and minimize merge conflicts. The KEP number can also be done as part of the initial submission if the PR is likely to be uncontested and merged quickly.

KEP Editor Role

Taking a cue from the Python PEP process, we define the role of a KEP editor. The job of an KEP editor is likely very similar to the PEP editor responsibilities and will hopefully provide another opportunity for people who do not write code daily to contribute to Kubernetes.

In keeping with the PEP editors which

> Read the PEP to check if it is ready: sound and complete. The ideas must make technical sense, even if they don't seem likely to be accepted. The title should accurately describe the content. Edit the PEP for language (spelling, grammar, sentence structure, etc.), markup (for reST PEPs), code style (examples should match PEP 8 & 7).

KEP editors should generally not pass judgement on a KEP beyond editorial corrections. KEP editors can also help inform authors about the process and otherwise help things move smoothly.

Important Metrics

It is proposed that the primary metrics which would signal the success or failure of the KEP process are

- how many "enhancements" are tracked with a KEP
- distribution of time a KEP spends in each state
- KEP rejection rate
- PRs referencing a KEP merged per week
- number of issued open which reference a KEP
- number of contributors who authored a KEP
- number of contributors who authored a KEP for the first time
- number of orphaned KEPs
- number of retired KEPs
- number of superseded KEPs

Prior Art

The KEP process as proposed was essentially stolen from the Rust RFC process which itself seems to be very similar to the Python PEP process

Drawbacks

Any additional process has the potential to engender resentment within the community. There is also a risk that the KEP process as designed will not sufficiently address the scaling challenges we face today. PR review bandwidth is already at a premium and we may find that the KEP process introduces an unreasonable bottleneck on our development velocity.

It certainly can be argued that the lack of a dedicated issue/defect tracker beyond GitHub issues contributes to our challenges in managing a project as large as Kubernetes, however, given that other large organizations, including GitHub itself, make effective use of GitHub issues perhaps the argument is overblown.

The centrality of Git and GitHub within the KEP process also may place too high a barrier to potential contributors, however, given that both Git and GitHub are required to contribute code changes to Kubernetes today perhaps it would be reasonable to invest in providing support to those unfamiliar with this tooling.

Expanding the proposal template beyond the single sentence description currently required in the features issue template may be a heavy burden for non native English speakers and here the role of the KEP editor combined with kindness and empathy will be crucial to making the process successful.

Alternatives

This KEP process is related to - the generation of a architectural roadmap - the fact that the what constitutes a feature is still undefined - issue management - the difference between an accepted design and a proposal - the organization of design proposals

this proposal attempts to place these concerns within a general framework.

Github issues vs. KEPs

The use of GitHub issues when proposing changes does not provide SIGs good facilities for signaling approval or rejection of a proposed change to Kubernetes since anyone can open a GitHub issue at any time. Additionally managing a proposed change across multiple releases is somewhat cumbersome as labels and milestones need to be updated for every release that a change spans. These long lived GitHub issues lead to an ever increasing number of issues open against `kubernetes/features` which itself has become a management problem.

In addition to the challenge of managing issues over time, searching for text within an issue can be challenging. The flat hierarchy of issues can also make navigation and categorization tricky. While not all community members might not be comfortable using Git directly, it is imperative that as a community we work to educate people on a standard set of tools so they can take their experience to other projects they may decide to work on in the future. While git is a fantastic version control system (VCS), it is not a project management tool nor a cogent way of managing an architectural catalog or backlog; this proposal is limited to motivating the creation of a standardized definition of work in order to facilitate project management. This primitive for describing a unit of work may also allow contributors to create their own personalized view of the state of the project while relying on Git and GitHub for consistency and durable storage.

Unresolved Questions

- How reviewers and approvers are assigned to a KEP
- Example schedule, deadline, and time frame for each stage of a KEP
- Communication/notification mechanisms
- Review meetings and escalation procedure roadmap][]

- the fact that the what constitutes a feature is still undefined
- issue management
- the difference between an accepted design and a proposal
- the organization of design proposals

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Unresolved Questions

- How reviewers and approvers are assigned to a KEP
- Approval decision process for a KEP
- Example schedule, deadline, and time frame for each stage of a KEP
- Communication/notification mechanisms
- Review meetings and escalation procedure
- Decision on where development should occur

Mentors

- caleb miles
  - github: calebamiles

  - slack: calebamiles
  - email: caleb.miles@coreos.com
  - pronoun: “he”

Create an Issue Edit this Page

Edit This Page

- Kubernetes Mentoring Initiatives
  - Kubernetes Pilots
  - Current mentoring activities:
    * · Inspiration and Thanks

Kubernetes Mentoring Initiatives

This folder will be used for all mentoring initiatives for Kubernetes.

Kubernetes Pilots

We understand that everyone has different learning styles and we want to support as many of those as possible. Mentoring is vital to the growth of an individual and organization of every kind. For Kubernetes, the larger the project becomes, it’s necessary to keep a continuous pipeline of quality contributors.

What’s a Pilot?
A pilot is a Kubernetes mentor helping new and current members navigate the seas of our repos.

Current mentoring activities:

All are currently in an incubation phase. Please reach out to Paris Pittman (parispittman@google.com or Paris on Kubernetes slack channel) for more information on how to get involved.

Mentors On Demand
* Meet Our Contributors

Long Term Contributor Ladder Growth * Group Mentoring Cohorts

Students * Outreachy * Google Summer of Code

Inspiration and Thanks

This is not an out of the box program but was largely inspired by the following:
* Ada Developer Academy
* Apache Mentoring Programme * exercism.io * Google Summer of Code
* Outreachy * OpenStack Mentoring

Thanks to:
* the many contributors who reviewed and participated in brainstorming,
* founding mentees for their willingness to try this out,
* founding Pilots (@chrislovecnm, @luxas, @kow3ns)

We welcome PRs, suggestions, and help! try this out,
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Create an Issue Edit this Page

Edit This Page

v1.10 Release Notes

- v1.10.0
  - Downloads for v1.10.0
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Major Themes
    - Node
    - Storage
    - Windows
    - OpenStack
    - API-machinery
    - Auth
    - Azure
    - CLI
    - Network
  - Before Upgrading
  - Known Issues
  - Deprecations
  - Other Notable Changes
    - Apps
    - AWS
    - Auth

        * CLI
        * Cluster Lifecycle
        * GCP
        * Instrumentation
        * Node
        * OpenStack
        * Scalability
        * Storage
        * Windows
        * Autoscaling
        * API-Machinery
        * Network
        * Azure
        * Scheduling
        * Other changes
    - Non-user-facing Changes
    - External Dependencies
- v1.10.0-rc.1
    - Downloads for v1.10.0-rc.1
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-beta.4
        * Other notable changes
- v1.10.0-beta.4
    - Downloads for v1.10.0-beta.4
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-beta.3
        * Other notable changes
- v1.10.0-beta.3
    - Downloads for v1.10.0-beta.3
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-beta.2
        * Other notable changes
- v1.10.0-beta.2
    - Downloads for v1.10.0-beta.2
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-beta.1
        * Action Required
        * Other notable changes

- v1.10.0-beta.1
  - Downloads for v1.10.0-beta.1
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Changelog since v1.10.0-alpha.3
    - Action Required
    - Other notable changes
- v1.10.0-alpha.3
  - Downloads for v1.10.0-alpha.3
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Changelog since v1.10.0-alpha.2
    - Other notable changes
- v1.10.0-alpha.2
  - Downloads for v1.10.0-alpha.2
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Changelog since v1.10.0-alpha.1
    - Action Required
    - Other notable changes
- v1.10.0-alpha.1
  - Downloads for v1.10.0-alpha.1
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Changelog since v1.9.0
    - Action Required
    - Other notable changes

v1.10.0

Documentation & Examples

Downloads for v1.10.0

filename	sha256 hash
kubernetes.tar.gz	`a48d4f6eb4bf329a87915d2264250f2045aab1e8c6cc3e574a887ec42b5c6edc`
kubernetes-src.tar.gz	`3b51bf50370fc022f5e4578b071db6b63963cd64b35c41954d4a2a8f6738c0a7`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`8f35d820d21bfdb3186074eb2ed5212b983e119215356a7a76a9f773`
kubernetes-client-darwin-amd64.tar.gz	`ae06d0cd8f6fa8d145a9dbdb77e6cba99ad9cfce98b01c766df1394c`
kubernetes-client-linux-386.tar.gz	`8147723a68763b9791def5b41d75745e835ddd82f23465a2ba7797b8`
kubernetes-client-linux-amd64.tar.gz	`845668fe2f854b05aa6f0b133314df83bb41a486a6ba613dbb1374bf`
kubernetes-client-linux-arm.tar.gz	`5d2552a6781ef0ecaf308fe6a02637faef217c98841196d4bd7c52a0`
kubernetes-client-linux-arm64.tar.gz	`9d5e4ba43ad7250429015f33f728c366daa81e894e8bfe8063d73ce9`
kubernetes-client-linux-ppc64le.tar.gz	`acabf3a26870303641ce60a59b5bb9702c8a7445b16f4293abc7868e`
kubernetes-client-linux-s390x.tar.gz	`8d836df10b50d11434b5ee797aecc21714723f02fc47fe3dd600426e`
kubernetes-client-windows-386.tar.gz	`ca183b66f910ff11fa468e47251c68d256ef145fcfc2d23d4347d066`
kubernetes-client-windows-amd64.tar.gz	`817aea754a059c635f4d690aa0232a8e77eb74e76357cafd8f105569`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`f2e0505bee7d9217332b96be11d1b88c06f51049f7a44666b0ede80bfb`
kubernetes-server-linux-arm.tar.gz	`a7be68c32a299c98353633f3161f910c4b970c8364ccee5f98e1991364`
kubernetes-server-linux-arm64.tar.gz	`4df4add2891d02101818653ac68b57e6ce4760fd298f47467ce767ac02`
kubernetes-server-linux-ppc64le.tar.gz	`199b52461930c0218f984884069770fb7e6ceaf66342d5855b209ff188`
kubernetes-server-linux-s390x.tar.gz	`578f93fc22d2a5bec7dc36633946eb5b7359d96233a2ce74f8b3c5a231`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`8c03412881eaab5f3ea828bbb81e8ebcfc092d311b2685585817531fa`
kubernetes-node-linux-arm.tar.gz	`d6a413fcadb1b933a761ac9b0c864f596498a8ac3cc4922c1569306cc`
kubernetes-node-linux-arm64.tar.gz	`46d6b74759fbc3b2aad42357f019dae0e882cd4639e499e31b5b02934`
kubernetes-node-linux-ppc64le.tar.gz	`bdecc12feab2464ad917623ade0cbf58675e0566db38284b79445841c`
kubernetes-node-linux-s390x.tar.gz	`afe35c2854f35939be75ccfb0ec81399acf4043ae7cf19dd6fbe63862`
kubernetes-node-windows-amd64.tar.gz	`eac14e3420ca9769e067cbf929b5383cd77d56e460880a30c0df1bbfb`

Major Themes

Node

Many of the changes within SIG-Node revolve around control. With the beta release of the `kubelet.config.k8s.io` API group, a significant subset of Kubelet configuration can now be configured via a versioned config file. Kubernetes

v1.10 adds alpha support for the ability to configure whether containers in a pod should share a single process namespace, and the CRI has been upgraded to v1alpha2, which adds support for Windows Container Configuration. Kubernetes v1.10 also ships with the beta release of the CRI validation test suite.

The Resource Management Working Group graduated three features to beta in the 1.10 release. First, CPU Manager, which allows users to request exclusive CPU cores. This helps performance in a variety of use-cases, including network latency sensitive applications, as well as applications that benefit from CPU cache residency. Next, Huge Pages, which allows pods to consume either 2Mi or 1Gi Huge Pages. This benefits applications that consume large amounts of memory. Use of Huge Pages is a common tuning recommendation for databases and JVMs. Finally, the Device Plugin feature, which provides a framework for vendors to advertise their resources to the Kubelet without changing Kubernetes core code. Targeted devices include GPUs, High-performance NICs, FPGAs, InfiniBand, and other similar computing resources that may require vendor specific initialization and setup.

Storage

This release brings additional power to both local storage and Persistent Volumes. Mount namespace propagation allows a container to mount a volume as rslave so that host mounts can be seen inside the container, or as rshared so that mounts made inside a container can be seen by the host. (Note that this is not supported on Windows.) Local Ephemeral Storage Capacity Isolation makes it possible to set requests and limits on ephemeral local storage resources. In addition, you can now create Local Persistent Storage, which enables PersistentVolumes to be created with locally attached disks, and not just network volumes.

On the Persistent Volumes side, this release Prevents deletion of Persistent Volume Claims that are used by a pod and Persistent Volumes that are bound to a Persistent Volume Claim, making it impossible to delete storage that is in use by a pod.

This release also includes Topology Aware Volume Scheduling for local persistent volumes, the stable release of Detailed storage metrics of internal state, and beta support for Out-of-tree CSI Volume Plugins.

Windows

This release continues to enable more existing features on Windows, including container CPU resources, image filesystem stats, and flexvolumes. It also adds Windows service control manager support and experimental support for Hyper-V isolation of single-container pods.

OpenStack

SIG-OpenStack updated the OpenStack provider to use newer APIs, consolidated community code into one repository, engaged with the Cloud Provider Working Group to have a consistent plan for moving provider code into individual repositories, improved testing of provider code, and strengthened ties with the OpenStack developer community.

API-machinery

API Aggregation has been upgraded to "stable" in Kubernetes 1.10, so you can use it in production. Webhooks have seen numerous improvements, including alpha Support for self-hosting authorizer webhooks.

Auth

This release lays the groundwork for new authentication methods, including the alpha release of External client-go credential providers and the TokenRequest API. In addition, Pod Security Policy now lets administrators decide what contexts pods can run in, and gives administrators the ability to limit node access to the API.

Azure

Kubernetes 1.10 includes alpha Azure support for cluster-autoscaler, as well as support for Azure Virtual Machine Scale Sets.

CLI

This release includes a change to kubectl get and describe to work better with extensions, as the server, rather than the client, returns this information for a smoother user experience.

Network

In terms of networking, Kubernetes 1.10 is about control. Users now have beta support for the ability to configure a pod's resolv.conf, rather than relying on the cluster DNS, as well as configuring the NodePort IP address. You can also switch the default DNS plugin to CoreDNS (beta).

Before Upgrading

- In-place node upgrades to this release from versions 1.7.14, 1.8.9, and 1.9.4 are not supported if using subpath volumes with PVCs. Such pods should be drained from the node first.
- The minimum supported version of Docker is now 1.11; if you are using Docker 1.10 or below, be sure to upgrade Docker before upgrading Kubernetes. (#57845, @yujuhong)
- The Container Runtime Interface (CRI) version has increased from v1alpha1 to v1alpha2. Runtimes implementing the CRI will need to update to the new version, which configures container namespaces using an enumeration rather than booleans. This change to the alpha API is not backwards compatible; implementations of the CRI such as containerd, will need to update to the new API version. (#58973, @verb)
- The default Flexvolume plugin directory for COS images on GCE has changed to `/home/kubernetes/flexvolume`, rather than `/etc/srv/kubernetes/kubelet-plugins/volu` Existing Flexvolume installations in clusters using COS images must be moved to the new directory, and installation processes must be updated with the new path. (#58171, @verult)
- Default values differ between the Kubelet's componentconfig (config file) API and the Kubelet's command line. Be sure to review the default values when migrating to using a config file. For example, the authz mode is set to "AlwaysAllow" if you rely on the command line, but defaults to the more secure "Webhook" mode if you load config from a file. (#59666, @mtaufen)
- [GCP kube-up.sh] Variables that were part of kube-env that were only used for kubelet flags are no longer being set, and are being replaced by the more portable mechanism of the kubelet configuration file. The individual variables in the kube-env metadata entry were never meant to be a stable interface and this release note only applies if you are depending on them. (#60020, @roberthbailey)
- kube-proxy: feature gates are now specified as a map when provided via a JSON or YAML KubeProxyConfiguration, rather than as a string of key-value pairs. For example:

KubeProxyConfiguration Before:

```
apiVersion: kubeproxy.config.k8s.io/v1alpha1
kind: KubeProxyConfiguration
**featureGates: "SupportIPVSProxyMode=true"**
```

KubeProxyConfiguration After:

```
apiVersion: kubeproxy.config.k8s.io/v1alpha1
```

```
kind: KubeProxyConfiguration
**featureGates:**
**  SupportIPVSProxyMode: true**
```

(#57962, @xiangpengzhao)

- The `kubeletconfig` API group has graduated from alpha to beta, and the name has changed to `kubelet.config.k8s.io`. Please use `kubelet.config.k8s.io/v1beta1`, as `kubeletconfig/v1alpha1` is no longer available. (#53833, @mtaufen)
- kube-apiserver: the experimental in-tree Keystone password authenticator has been removed in favor of extensions that enable use of Keystone tokens. (#59492, @dims)
- The udpTimeoutMilliseconds field in the kube-proxy configuration file has been renamed to udpIdleTimeout. Administrators must update their files accordingly. (#57754, @ncdc)
- The kubelet's `--cloud-provider=auto-detect` feature has been removed; make certain to specify the cloud provider. (#56287, @stewart-yu)
- kube-apiserver: the OpenID Connect authenticator no longer accepts tokens from the Google v3 token APIs; users must switch to the "https://www.googleapis.com/oauth2/v4/token%22 endpoint.
- kube-apiserver: the root /proxy paths have been removed (deprecated since v1.2). Use the /proxy subresources on objects that support HTTP proxying. (#59884, @mikedanese)
- Eviction thresholds set to 0% or 100% will turn off eviction. (#59681, @mtaufen)
- CustomResourceDefinitions: OpenAPI v3 validation schemas containing `$ref`references are no longer permitted. Before upgrading, ensure CRD definitions do not include those `$ref` fields. (#58438, @carlory)
- Webhooks now do not skip cluster-scoped resources. Before upgrading your Kubernetes clusters, double check whether you have configured webhooks for cluster-scoped objects (e.g., nodes, persistentVolume), as these webhooks will start to take effect. Delete/modify the configs if that's not desirable. (#58185, @caesarxuchao)
- Using kubectl gcp auth plugin with a Google Service Account to authenticate to a cluster now additionally requests a token with the "userinfo.email" scope. This way, users can write ClusterRoleBindings/RoleBindings with the email address of the service account directly. (This is a breaking change if the numeric uniqueIDs of the Google service accounts were being used in RBAC role bindings. The behavior can be overridden by explicitly specifying the scope values as comma-separated string in the "users[*].config.scopes" field in the KUBECONFIG file.)

This way, users can now set a Google Service Account JSON key in the GOOGLE_APPLICATION_CREDENTIALS environment variable, craft a kubeconfig file with GKE master IP+CA cert, and authenticate to GKE in headless mode without requiring gcloud CLI. (#58141, @ahmetb)

- kubectl port-forward no longer supports the deprecated -p flag; the flag itself is unnecessary and should be replaced by just the `<pod-name>`. (#59705, @phsiao)
- Removed deprecated –require-kubeconfig flag, removed default –kubeconfig value ((#58367, @zhangxiaoyu-zidif)
- The public-address-override, address, and port flags have been removed and replaced by bind-address, insecure-bind-address, and insecure-port, respectively. They are marked as deprecated in #36604, which is more than a year ago. (#59018, @hzxuzhonghu)
- The alpha `--init-config-dir` flag has been removed. Instead, use the `--config` flag to reference a kubelet configuration file directly. (#57624, @mtaufen)
- Removed deprecated and unmaintained salt support. kubernetes-salt.tar.gz will no longer be published in the release tarball. (#58248, @mikedanese)
- The deprecated –mode switch for GCE has been removed.(#61203)
- The word “manifest” has been expunged from the Kubelet API. (#60314)
- https://github.com/kubernetes/kubernetes/issues/49213 sig-cluster-lifecycle has decided to phase out the cluster/ directory over the next couple of releases in favor of deployment automations maintained outside of the core repo and outside of kubernetes orgs. @kubernetes/sig-cluster-lifecycle-misc)
  - Remove deprecated ContainerVM support from GCE kube-up. (#58247, @mikedanese)
  - Remove deprecated kube-push.sh functionality. (#58246, @mikedanese)
  - Remove deprecated container-linux support in gce kube-up.sh. (#58098, @mikedanese)
  - Remove deprecated and unmaintained photon-controller kube-up.sh. (#58096, @mikedanese)
  - Remove deprecated and unmaintained libvirt-coreos kube-up.sh. (#58023, @mikedanese)
  - Remove deprecated and unmaintained windows installer. (#58020, @mikedanese)

  - Remove deprecated and unmaintained openstack-heat kube-up.sh. (#58021, @mikedanese)
  - Remove deprecated vagrant kube-up.sh. (#58118,@roberthbailey)
- The DaemonSet controller, its integration tests, and its e2e tests, have been updated to use the apps/v1 API. Users should, but are not yet required to, update their scripts accordingly. (#59883, @kow3ns)
- MountPropagation feature is now beta. As a consequence, all volume mounts in containers are now `rslave` on Linux by default. To make this default work in all Linux environments the entire mount tree should be marked as shareable, e.g. via `mount --make-rshared /`. All Linux distributions that use systemd already have the root directory mounted as rshared and hence they need not do anything. In Linux environments without systemd we recommend running `mount --make-rshared /` during boot before docker is started, (@jsafrane)

Known Issues

- Use of subPath module with hostPath volumes can cause issues during reconstruction (#61446) and with containerized kubelets (#61456). The workaround for this issue is to specify the complete path in the hostPath volume. Use of subPathmounts nested within atomic writer volumes (configmap, secret, downwardAPI, projected) does not work (#61545), and socket files cannot be loaded from a subPath (#62377). Work on these issues is ongoing.
- Kubeadm is currently omitting etcd certificates in a self-hosted deployment; this will be fixed in a point relelase. (#61322)
- Some users, especially those with very large clusters, may see higher memory usage by the kube-controller-manager in 1.10. (#61041)

Deprecations

- etcd2 as a backend is deprecated and support will be removed in Kubernetes 1.13.
- VolumeScheduling and LocalPersistentVolume features are beta and enabled by default. The PersistentVolume NodeAffinity alpha annotation is deprecated and will be removed in a future release. (#59391, @msau42)
- The alpha Accelerators feature gate is deprecated and will be removed in v1.11. Please use device plugins (https://github.com/kubernetes/features/issues/368) instead. They can be enabled using the DevicePlugins feature gate. (#57384, @mindprince)

- The ability to use kubectl scale jobs is deprecated. All other scale operations remain in place, but the ability to scale jobs will be removed in a future release. (#60139, @soltysh)
- Flags that can be set via the Kubelet's –config file are now deprecated in favor of the file. (#60148, @mtaufen)
- `--show-all` (which only affected pods and only for human readable/non-API printers) is now defaulted to true and deprecated. The flag determines whether pods in a terminal state are displayed. It will be inert in 1.11 and removed in a future release. (#60210, @deads2k)
- The ability to use the insecure HTTP port of kube-controller-manager and cloud-controller-manager has been deprecated, and will be removed in a future release. Use `--secure-port` and `--bind-address` instead. (#59582, @sttts)
- The ability to use the insecure flags `--insecure-bind-address`, `--insecure-port` in the apiserver has been deprecated and will be removed in a future release. Use `--secure-port` and `--bind-address` instead. (#59018, @hzxuzhonghu)
- The recycling reclaim policy has been deprecated. Users should use dynamic provisioning instead. (#59063, @ayushpateria)
- kube-apiserver flag –tls-ca-file has had no effect for some time. It is now deprecated and slated for removal in 1.11. If you are specifying this flag, you must remove it from your launch config before upgrading to 1.11. (#58968, @deads2k)
- The `PodSecurityPolicy` API has been moved to the `policy/v1beta1` API group. The `PodSecurityPolicy` API in the `extensions/v1beta1` API group is deprecated and will be removed in a future release. Authorizations for using pod security policy resources should change to reference the `policy` API group after upgrading to 1.11. (#54933, @php-coder)
- Add `--enable-admission-plugin --disable-admission-plugin` flags and deprecate `--admission-control`. When using the separate flag, the order in which they're specified doesn't matter. (#58123, @hzxuzhonghu)
- The kubelet –docker-disable-shared-pid flag, which runs docker containers with a process namespace that is shared between all containers in a pod, is now deprecated and will be removed in a future release. It is replaced by `v1.Pod.Spec.ShareProcessNamespace`, which configures this behavior. This field is alpha and can be enabled with –feature-gates=PodShareProcessNamespace=true. (#58093, @verb)
- The kubelet's cadvisor port has been deprecated. The default will change to 0 (disabled) in 1.12, and the cadvisor port will be removed entirely in 1.13. (#59827, @dashpole)

- rktnetes has been deprecated in favor of rktlet. Please see https://github.com/kubernetes-incubator/rktlet for more information. (#58418, @yujuhong)
- The Kubelet now explicitly registers all of its command-line flags with an internal flagset, which prevents flags from third party libraries from unintentionally leaking into the Kubelet's command-line API. Many unintentionally leaked flags are now marked deprecated, so that users have a chance to migrate away from them before they are removed. In addition, one previously leaked flag, –cloud-provider-gce-lb-src-cidrs, has been entirely removed from the Kubelet's command-line API, because it is irrelevant to Kubelet operation. The deprecated flags are:
  - –application_metrics_count_limit
  - –boot_id_file
  - –container_hints
  - –containerd
  - –docker
  - –docker_env_metadata_whitelist
  - –docker_only
  - –docker-tls
  - –docker-tls-ca
  - –docker-tls-cert
  - –docker-tls-key
  - –enable_load_reader
  - –event_storage_age_limit
  - –event_storage_event_limit
  - –global_housekeeping_interval
  - –google-json-key
  - –log_cadvisor_usage
  - –machine_id_file
  - –storage_driver_user
  - –storage_driver_password
  - –storage_driver_host
  - –storage_driver_db
  - –storage_driver_table
  - –storage_driver_secure
  - –storage_driver_buffer_duration

(#57613, @mtaufen)

- The boostrapped RBAC role and rolebinding for the `cloud-provider` service account is now deprecated. If you're currently using this service account, you must create and apply your own RBAC policy for new clusters. (#59949, @nicksardo)
- Format-separated endpoints for the OpenAPI spec, such as /swagger.json, /swagger-2.0.0.0.json, and so on, have been deprecated. The old endpoints

will remain in 1.10, 1.11, 1.12 and 1.13, and get removed in 1.14. Please use single `/openapi/v2` endpoint with the appropriate Accept: header instead. For example:

previous	now
GET /swagger.json	GET /openapi/v2 Accept: application/json
GET /swagger-2.0.0.pb-v1	GET /openapi/v2 Accept: application/com.github.proto-openapi.spec.v2@v1.
GET /swagger-2.0.0.pb-v1.gz	GET /openapi/v2 Accept: application/com.github.proto-openapi.spec.v2@v1.

(#59293, @roycaihw)

Other Notable Changes

Apps

- Updated defaultbackend image to 1.4 and deployment apiVersion to apps/v1. Users should concentrate on updating scripts to the new version. (#57866, @zouyee)
- Fix StatefulSet to work correctly with set-based selectors. (#59365, @ayushpateria)
- Fixes a case when Deployment with recreate strategy could get stuck on old failed Pod. (#60301, @tnozicka)
- ConfigMap objects now support binary data via a new `binaryData` field. When using `kubectl create configmap --from-file`, files containing non-UTF8 data will be placed in this new field in order to preserve the non-UTF8 data. Note that kubectl's `--append-hash` feature doesn't take `binaryData` into account. Use of this feature requires 1.10+ apiserver and kubelets. (#57938, @dims)

AWS

- Add AWS cloud provider option to use an assumed IAM role. For example, this allows running Controller Manager in a account separate from the worker nodes, but still allows all resources created to interact with the workers. ELBs created would be in the same account as the worker nodes for instance.(#59668, @brycecarman)
- AWS EBS volume plugin now includes block and volumeMode support. (#58625, @screeley44)
- On AWS kubelet returns an error when started under conditions that do not allow it to work (AWS has not yet tagged the instance), rather than failing silently. (#60125, @vainu-arto)

- AWS Security Groups created for ELBs will now be tagged with the same additional tags as the ELB; that is, the tags specified by the "service.beta.kubernetes.io/aws-load-balancer-additional-resource-tags" annotation. This is useful for identifying orphaned resources. (#58767, @2rs2ts)
- AWS Network Load Balancers will now be deleted properly, including security group rules. Fixes #57568 (#57569, @micahhausler)
- Time for attach/detach retry operations has been decreased from 10-12s to 2-6s (#56974, @gnufied)

Auth

- Contexts must be named in kubeconfigs. (#56769, @dixudx)
- vSphere operations will no longer fail due to authentication errors. (#57978, @prashima)
- This removes the cloud-provider role and role binding from the rbac boostrapper and replaces it with a policy applied via addon mgr. This also creates a new clusterrole allowing the service account to create events for any namespace.
- client-go: alpha support for out-of-tree exec-based credential providers. For example, a cloud provider could create their own authentication system rather than using the standard authentication provided with Kubernetes. (#59495, @ericchiang)
- The node authorizer now allows nodes to request service account tokens for the service accounts of pods running on them. This allows agents using the node identity to take actions on behalf of local pods. (#55019, @mikedanese)
- kube-apiserver: the OpenID Connect authenticator can now verify ID Tokens signed with JOSE algorithms other than RS256 through the –oidc-signing-algs flag. (#58544, @ericchiang)
- Requests with invalid credentials no longer match audit policy rules where users or groups are set, correcting a problem where authorized requests were getting through. (#59398, @CaoShuFeng)
- The Stackdriver Metadata Agent addon now includes RBAC manifests, enabling it to watch nodes and pods. (#57455, @kawych)
- Fix RBAC role for certificate controller to allow cleaning up of Certificate Signing Requests that are Approved and issued or Denied. (#59375, @mikedanese)

- kube-apiserver: Use of the `--admission-control-config-file` with a file containing an AdmissionConfiguration apiserver.k8s.io/v1alpha1 config object no longer leads to an error when launching kube-apiserver. (#58439 @liggitt)
- Default enabled admission plugins are now `NamespaceLifecycle,LimitRanger,ServiceAccount,Persis` Please note that if you previously had not set the `--admission-control` flag, your cluster behavior may change (to be more standard). (#58684, @hzxuzhonghu)
- Encryption key and encryption provider rotation now works properly. (#58375, @liggitt
- RBAC: The system:kubelet-api-admin cluster role can be used to grant full access to the kubelet API so integrators can grant this role to the –kubelet-client-certificate credential given to the apiserver. (#57128, @liggitt)
- DenyEscalatingExec admission controller now checks psp HostNetwork as well as hostIPC and hostPID. hostNetwork is also checked to deny exec /attach. (#56839, [@hzxuzhonghu]=(https://github.com/hzxuzhonghu))
- When using Role-Based Access Control, the "admin", "edit", and "view" roles now have the expected permissions on NetworkPolicy resources, rather than reserving those permissions to only cluster-admin. (#56650, @danwinship)
- Added docker-logins config to kubernetes-worker charm. (#56217, @Cynerva)
- Add ability to control primary GID of containers through Pod Spec at Pod level and Per Container SecurityContext level. (#52077)

CLI

- Use structured generator for kubectl autoscale. (#55913, @wackxu)
- Allow kubectl to set image|env on a cronjob (#57742, @soltysh)
- Fixed crash in kubectl cp when path has multiple leading slashes. (#58144, @tomerf)
- kubectl port-forward now allows using resource name (e.g., deployment/www) to select a matching pod, as well as the use of –pod-running-timeout to wait until at least one pod is running. (#59705, @phsiao)
- 'cj' has been added as a shortname for CronJobs, as in `kubectl get cj` (#59499, @soltysh)
- `crds` has been added as a shortname for CustomResourceDefinition, as in `kubectl get crds` (#59061, @nikhita)

- Fix kubectl explain for resources not existing in default version of API group, such as `batch/v1, Kind=CronJob`. (#58753, @soltysh)
- Added the ability to select pods in a chosen node to be drained based on given pod label-selector. (#56864, @juanvallejo)
- Kubectl explain now prints out the Kind and API version of the resource being explained. (#55689, @luksa)

Cluster Lifecycle

- The default Kubernetes version for kubeadm is now 1.10. (#61127, @timothysc)
- The minimum Kubernetes version in kubeadm is now v1.9.0. (#57233, @xiangpengzhao)
- Fixes a bug in Heapster deployment for google sink. (#57902, @kawych)
- On cluster provision or upgrade, kubeadm now generates certs and secures all connections to the etcd static-pod with mTLS. This includes the etcd serving cert, the etcd peer cert, and the apiserver etcd client cert. Flags and hostMounts are added to the etcd and apiserver static-pods to load these certs. For connections to etcd, https is now used in favor of http. (#57415, @stealthybox These certs are also generated on upgrade. (#60385, @stealthybox)
- Demoted controlplane passthrough flags apiserver-extra-args, controller-manager-extra-args, scheduler-extra-args to alpha flags (#59882, @krisnova)
- The new flag `--apiserver-advertise-dns-address` is used in the node's kubelet.confg to point to the API server, allowing users to define a DNS entry instead of an IP address. (#59288, @stevesloka)
- MasterConfiguration manifiest The criSocket flag is now usable within the `MasterConfiguration` and `NodeConfiguration` manifest files that exist for configuring kubeadm. Before it only existed as a command line flag and was not able to be configured when using the `--config` flag and the manifest files. (#59057(#59292, @JordanFaust)
- `kubeadm init` can now omit the tainting of the master node if configured to do so in `kubeadm.yaml` using `noTaintMaster: true`. For example, uses can create a file with the content:

```
apiVersion: [kubeadm.k8s.io/v1alpha1](http://kubeadm.k8s.io/v1alpha1)
kind: MasterConfiguration
kubernetesVersion: v1.9.1
noTaintMaster: true
```

And point to the file using the –config flag, as in

```
kubeadm init --config /etc/kubeadm/kubeadm.yaml
```

(#55479, @ijc)

- kubeadm: New "imagePullPolicy" option in the init configuration file, that gets forwarded to kubelet static pods to control pull policy for etcd and control plane images. This option allows for precise image pull policy specification for master nodes and thus for more tight control over images. It is useful in CI environments and in environments, where the user has total control over master VM templates (thus, the master VM templates can be preloaded with the required Docker images for the control plane services). (#58960, @rosti)
- Fixed issue with charm upgrades resulting in an error state. (#59064, @hyperbolic2346)
- kube-apiserver –advertise-address is now set using downward API for self-hosted Kubernetes with kubeadm. (#56084, @andrewsykim)
- When using client or server certificate rotation, the Kubelet will no longer wait until the initial rotation succeeds or fails before starting static pods. This makes running self-hosted masters with rotation more predictable. (#58930, @smarterclayton)
- Kubeadm no longer throws an error for the –cloud-provider=external flag. (#58259, @dims)
- Added support for network spaces in the kubeapi-load-balancer charm. (#58708, @hyperbolic2346)
- Added support for network spaces in the kubernetes-master charm. (#58704, @hyperbolic2346)
- Added support for network spaces in the kubernetes-worker charm. (#58523, @hyperbolic2346)
- Added support for changing nginx and default backend images to kubernetes-worker config. (#58542, @hyperbolic2346)
- kubeadm now accepts `--apiserver-extra-args`, `--controller-manager-extra-args` and `--scheduler-extra-args`, making it possible to override / specify additional flags for control plane components. One good example is to deploy Kubernetes with a different admission-control flag on API server. (#58080, @simonferquel)
- Alpha Initializers have been removed from kubadm admission control. Kubeadm users who still want to use Initializers can use apiServerExtraArgs through the kubeadm config file to enable it when booting up the cluster. (#58428, @dixudx)

- ValidatingAdmissionWebhook and MutatingAdmissionWebhook are beta, and are enabled in kubeadm by default. (#58255, @dixudx)
- Add proxy_read_timeout flag to kubeapi_load_balancer charm. (#57926, @wwwtyro)
- Check for known manifests during preflight instead of only checking for non-empty manifests directory. This makes the preflight checks less heavy-handed by specifically checking for well-known files (kube-apiserver.yaml, kube-controller-manager.yaml, kube-scheduler.yaml, etcd.yaml) in /etc/kubernetes/manifests instead of simply checking for a non-empty directory. (#57287, @mattkelly)
- PVC Protection alpha feature was renamed to Storage Protection. The Storage Protection feature is beta. (#59052, @pospispa)
- iSCSI sessions managed by kubernetes will now explicitly set startup.mode to 'manual' to prevent automatic login after node failure recovery. This is the default open-iscsi mode, so this change will only impact users who have changed their startup.mode to be 'automatic' in /etc/iscsi/iscsid.conf. (#57475, @stmcginnis)
- The IPVS feature gateway is now enabled by default in kubeadm, which makes the –feature-gates=SupportIPVSProxyMode=true obsolete, and it is no longer supported. (#60540, @m1093782566)

GCP

- ingress-gce image in glbc.manifest updated to 1.0.0 (#61302, @rramkumar1)

Instrumentation

- For advanced auditing, audit policy supports subresources wildcard matching, such as "resource/", "/subresource","*". (#55306, @hzxuzhonghu)
- Auditing is now enabled behind a featureGate in kubeadm. A user can supply their own audit policy with configuration option as well as a place for the audit logs to live. If no policy is supplied a default policy will be provided. The default policy will log all Metadata level policy logs. It is the example provided in the documentation. (#59067, @chuckha)
- Reduce Metrics Server memory requirement from 140Mi + 4Mi per node to 40Mi + 4Mi per node. (#58391, @kawych)
- Annotations is added to advanced audit api. (#58806, @CaoShuFeng)
- Reorganized iptables rules to fix a performance regression on clusters with thousands of services. (#56164, @danwinship)

- Container runtime daemon (e.g. dockerd) logs in GCE cluster will be uploaded to stackdriver and elasticsearch with tag `container-runtime`. (#59103, @Random-Liu)
- Enable prometheus apiserver metrics for custom resources. (#57682, @nikhita)
- Add apiserver metric for number of requests dropped because of inflight limit, making it easier to figure out on which dimension the master is overloaded. (#58340, @gmarek)
- The Metrics Server now exposes metrics via the /metric endpoint. These metrics are in the prometheus format. (#57456, @kawych)
- Reduced the CPU and memory requests for the Metrics Server Nanny sidecar container to free up unused resources. (#57252, @kawych)
- Enabled log rotation for load balancer's api logs to prevent running out of disk space. (#56979, @hyperbolic2346)
- Fixed `etcd-version-monitor` to backward compatibly support etcd 3.1 go-grpc-prometheus metrics format. (#56871, @jpbetz)

Node

- Summary of Container Runtime changes:
  - [beta] cri-tools: CLI and validation tools for CRI is now v1.0.0-beta.0. This release mainly focused on UX improvements. [@feiskyer]
  - [stable] containerd: containerd v1.1 natively supports CRI v1alpha2 now, so users can use Kubernetes v1.10 with containerd v1.1 directly, without having to use the intermediate cri-containerd daemon. All Kubernetes 1.10 tests passed. [@Random-Liu]
  - [stable] cri-o: cri-o v1.10 updated CRI version to v1alpha2 and made several bug and stability fixes. [@mrunalp]
  - [stable] frakti: frakti v1.10 implemented GCE Persistent Disk as a high performance volume, fixed several bugs, added ARM64 support, and passed all CRI validation conformance tests and node e2e conformance tests. [@resouer]
- Fixed race conditions around devicemanager Allocate() and endpoint deletion. (#60856, @jiayingz)
- kubelet initial flag parse now normalizes flags instead of exiting. (#61053, @andrewsykim)
- Fixed regression where –cpu-cfs-quota flag did not work when –cgroups-per-qos was enabled (#61294, @derekwaynecarr)

- Kubelet now supports container log rotation for container runtimes implementing CRI (container runtime interface). The feature can be enabled with feature gate `CRIContainerLogRotation`. The flags `--container-log-max-size` and `--container-log-max-files` can be used to configure the rotation behavior. (#59898, @Random-Liu)
- Fixed a bug where if an error was returned that was not an `autorest.DetailedError` we would return `"not found", nil` which caused nodes to go to `NotReady` state. (#57484, @brendandburns)
- HugePages feature is beta, and thus enabled by default. (#56939, @derekwaynecarr)
- Avoid panic when failing to allocate a Cloud CIDR (aka GCE Alias IP Range). (#58186, @negz)
- 'none' can now be specified in KubeletConfiguration.EnforceNodeAllocatable (–enforce-node-allocatable) to explicitly disable enforcement. (#59515, @mtaufen)
- The alpha KubeletConfiguration.ConfigTrialDuration field is no longer available. It can still be set using the dynamic configuration alpha feature. (#59628, @mtaufen)
- Summary API will include pod CPU and Memory stats for CRI container runtime. (#60328, @Random-Liu)
- Some field names in the Kubelet's now v1beta1 config API differ from the v1alpha1 API: for example, PodManifestPath is renamed to StaticPodPath, ManifestURL is renamed to StaticPodURL, and ManifestURLHeader is renamed to StaticPodURLHeader. Users should focus on switching to the v1beta1 API. (#60314, @mtaufen)
- The DevicePlugins feature has graduated to beta, and is now enabled by default; users should focus on moving to the v1beta API if possible. (#60170, @jiayingz)
- Per-cpu metrics have been disabled by default for to improve scalability. (#60106, @dashpole)
- When the `PodShareProcessNamespace` alpha feature is enabled, setting `pod.Spec.ShareProcessNamespace` to `true` will cause a single process namespace to be shared between all containers in a pod. (#58716, @verb)
- Resource quotas on extended resources such as GPUs are now supported. (#57302, @lichuqiang)
- If the TaintNodesByCondition is enabled, a node will be tainted when it is under PID pressure. (#60008, @k82cn)
- The Kubelet Summary API will now include total usage of pods through the "pods" SystemContainer. (#57802, @dashpole)

- vSphere Cloud Provider supports VMs provisioned on vSphere v6.5. (#59519, @abrarshivani)
- Created k8s.gcr.io image repo alias to pull images from the closest regional repo. Replaces gcr.io/google_containers. (#57824, @thockin)
- Fix the bug where kubelet in the standalone mode would wait for the update from the apiserver source, even if there wasn't one. (#59276, @roboll)
- Changes secret, configMap, downwardAPI and projected volumes to mount read-only, instead of allowing applications to write data and then reverting it automatically. Until version 1.11, setting the feature gate ReadOnlyAPIDataVolumes=false will preserve the old behavior. (#58720, @joelsmith)
- Fixes a bug where kubelet crashes trying to free memory under memory pressure. (#58574, @yastij)
- New alpha feature limits the number of processes running in a pod. Cluster administrators will be able to place limits by using the new kubelet command line parameter –pod-max-pids. Note that since this is a alpha feature they will need to enable the "SupportPodPidsLimit" feature. By default, we do not set any maximum limit, If an administrator wants to enable this, they should enable SupportPodPidsLimit=true in the –feature-gates= parameter to kubelet and specify the limit using the –pod-max-pids parameter. The limit set is the total count of all processes running in all containers in the pod. (#57973,@dims)
- Fixes bug finding master replicas in GCE when running multiple Kubernetes clusters. (#58561, @jesseshieh)
- –tls-min-version on kubelet and kube-apiserver allow for configuring minimum TLS versions (#58528, @deads2k)
- Fix a bug affecting nested data volumes such as secret, configmap, etc. (#57422, @joelsmith)
- kubelet will no longer attempt to remove images being used by running containers when garbage collecting. (#57020, @dixudx)
- Allow kubernetes components to react to SIGTERM signal and shutdown gracefully. (#57756, @mborsz)
- Fixed garbage collection and resource quota issue when the controller-manager uses –leader-elect=false (#57340, @jmcmeek)
- Fixed issue creating docker secrets with kubectl 1.9 for accessing docker private registries. (#57463, @dims)
- The CPU Manager feature is now beta, and is enabled by default, but the default policy is no-op so no action is required. (#55977, @ConnorDoyle)

OpenStack

- Fixed a bug in the OpenStack cloud provider where dual stack deployments (IPv4 and IPv6) did not work well when using kubenet as the network plugin. (#59749, @zioproto)
- Fixed a bug that tries to use the octavia client to query flip. (#59075, @jrperritt)
- Kubernetes now registers metadata.hostname as node name for OpenStack nodes, eliminating a problem with invalid node names. (#58502, @dixudx)
- Authentication information for OpenStack cloud provider can now be specified as environment variables. When we convert the OpenStack cloud provider to run in an external process, we can now use the kubernetes Secrets capability to inject the OS* *variables. This way we can specify the cloud configuration as a configmap, and specify secrets for the userid/password information. The configmap is mounted as a file, and the secrets are made available as environment variables. The external controller itself runs as a pod/daemonset. For backward compatibility, we preload all the OS** variables, and if anything is in the config file, then that overrides the environment variables. (#58300, @dims)
- Fixed issue when using OpenStack config drive for node metadata. Since we need to run commands such as blkid, we need to ensure that api server and kube controller are running in the privileged mode. (#57561, @dims)
- Orphaned routes are properly removed from terminated instances. (#56258, @databus23)
- OpenStack Cinder will now detach properly when Nova is shut down. (#56846, @zetaab)

Scalability

- Added the ability to limit the increase in apiserver memory usage when audit logging with buffering is enabled. (#61118, @shyamjvs)
- Upgrade to etcd client 3.2.13 and grpc 1.7.5 to improve HA etcd cluster stability. (#57480, @jpbetz)

Storage

- Fixes CVE-2017-1002101 - See https://issue.k8s.io/60813 for details on this **major security fix**. (#61044, @liggitt)

- Fixed missing error checking that could cause kubelet to crash in a race condition. (#60962, @technicianted)
- Fixed a regression that prevented using `subPath` volume mounts with secret, configMap, projected, and downwardAPI volumes. (#61080, @liggitt)
- K8s supports cephfs fuse mount. (#55866, @zhangxiaoyu-zidif)
- Use GiB unit for creating and resizing volumes for Glusterfs. (#56581, @gnufied)
- Adding support for Block Volume type to rbd plugin. (#56651, @sbezverk)
- Add FSType for CSI volume source to specify filesystems (alpha defaults to ext4) (#58209, @NickrenREN)
- Enabled File system resize of mounted volumes. (#58794, @gnufied)
- The Local Volume Plugin has been updated to support Block volumeMode PVs. With this change, it is now possible to create local volume PVs for raw block devices. (#59303, @dhirajh)
- Fixed an issue where Portworx volume driver wasn't passing namespace and annotations to the Portworx Create API. (#59607, @harsh-px)
- Addressed breaking changes introduced by new 0.2.0 release of CSI spec. Specifically, csi.Version was removed from all API calls and Ccontroller-Probe and NodeProbe were consolidated into a single Probe API call. (#59209, @sbezverk)
- GCE PD volume plugin now supports block volumes. (#58710, @screeley44)
- Implements MountDevice and UnmountDevice for the CSI Plugin, the functions will call through to NodeStageVolume/NodeUnstageVolume for CSI plugins. (#60115, @davidz627)
- The LocalStorageCapacityIsolation feature is beta and enabled by default. The LocalStorageCapacityIsolation feature added a new resource type ResourceEphemeralStorage "ephemeral-storage" so that this resource can be allocated, limited, and consumed as the same way as CPU/memory. All the features related to resource management (resource request/limit, quota, limitrange) are available for local ephemeral storage. This local ephemeral storage represents the storage for root file system, which will be consumed by containers' writable layer and logs. Some volumes such as emptyDir might also consume this storage. (#60159, @jingxu97)
- VolumeScheduling and LocalPersistentVolume features are beta and enabled by default. The PersistentVolume NodeAffinity alpha annotation is deprecated and will be removed in a future release. (#59391, @msau42)

- K8s now supports rbd-nbd for Ceph rbd volume mounts. (#58916, @ianchakeres)
- CSI now allows credentials to be specified on CreateVolume/DeleteVolume, ControllerPublishVolume/ControllerUnpublishVolume, and NodePublishVolume/NodeUnpublishVolume operations. Before this change all API calls had to fetch key/value stored in secret and use it to authenticate/authorize these operations. With this change API calls receive key/value as a input parameter so they not need to know where and how credentials were stored and fetched. Main goal was to make these API calls CO (Container Orchestrator) agnostic. (#60118, @sbezverk)
- StorageOS volume plugin has been updated to support mount options and environments where the kubelet runs in a container and the device location should be specified. (#58816, @croomes)
- Get parent dir via canonical absolute path when trying to judge mountpoint, fixing a problem that caused an NFS volume with improper permissions to get stuck in `TERMINATING` status. (#58433, [@yue9944882]](https://github.com/yue9944882))
- Clusters with GCE feature 'DiskAlphaAPI' enabled can now dynamically provision GCE PD volumes. (#59447, @verult)
- Added `keyring` parameter for Ceph RBD provisioner. (#58287, @madddi)
- Added xfsprogs to hyperkube container image. (#56937, @redbaron)
- Improved messages user gets during and after volume resizing is done, providing a clear message to the user explaining what to do when resizing is finished. (#58415, @gnufied)
- MountPropagation feature is now beta. As consequence, all volume mounts in containers are now "rslave" on Linux by default. To make this default work in all Linux environments you should have entire mount tree marked as shareable via "mount –make-rshared /". All Linux distributions that use systemd already have root directory mounted as rshared and hence they need not do anything. In Linux environments without systemd we recommend running "mount –make-rshared /" during boot, before docker is started. (#59252, @jsafrane)
- Volume metrics support for vSphere Cloud Provider has been added. You can now monitor available space, capacity, and used space on volumes created using vSphere. (#59328, @divyenpatel)
- Emit number of bound and unbound persistent volumes as Metrics. This PR adds four kinds of Volume Metrics for kube-controller-manager: bound PVC numbers, unbound PVC numbers, bound PV numbers and unbound PV numbers. The PVC metrics use namespace as dimension and the PV

metrics use StorageClassName as its dimension. With these metrics we can better monitor the use of volumes in the cluster. (#57872, @mlmhl)

- Add windows config to Kubelet CRI so that WindowsContainerResources can be managed. (#57076, @feiskyer)
- PersistentVolumes that are bound to a PersistentVolumeClaim will not be deleted. (#58743, @NickrenREN)
- The VolumeAttachment API is now available as V1beta1, and is enabled by default. The Alpha API is deprecated and will be removed in a future release. (#58462, @NickrenREN)
- Add storage-backend configuration option to kubernetes-master charm. (#58830, @wwwtyro)
- Fixed dynamic provisioning of GCE PDs to round to the next GB (base 1000) instead of GiB (base 1024). (#56600, @edisonxiang)
- PersistentVolume flexVolume sources can now reference secrets in a namespace other than the PersistentVolumeClaim's namespace. (#56460, @liggitt)

Windows

- kubelet and kube-proxy can now be run as native Windows services. (#60144, @alinbalutoiu)
- WindowsContainerResources is set now for windows containers. (#59333, @feiskyer)
- Disable mount propagation for windows containers (because it is not supported by the OS). (#60275, @feiskyer)
- Fix image file system stats for windows nodes. (#59743, @feiskyer)
- Kubernetes will now return an error if New-SmbGlobalMapping failed when mounting an azure file on Windows. (#59540, @andyzhangx)
- Kubernetes now uses the more reliable GlobalMemoryStatusEx to get total physical memory on windows nodes. (#57124, @JiangtianLi)
- Windows containers now support experimental Hyper-V isolation by setting annotation `experimental.windows.kubernetes.io/isolation-type=hyperv` and feature gates HyperVContainer. At the moment this function only supports one container per pod. (#58751, @feiskyer)
- Get windows kernel version directly from registry rather than windows.getVersion(). (#58498, @feiskyer)
- Fixed controller manager crash when using mixed case names in a vSphere cloud provider environment. (#57286, @rohitjogvmw)

- Flexvolume is now enabled on Windows nodes. (#56921, @andyzhangx)

Autoscaling

- The getSubnetIDForLB() returns subnet id rather than net id. (#58208, @FengyunPan)
- `kubectl scale` can now scale any resource (kube, CRD, aggregate) conforming to the standard scale endpoint (#58298, @p0lyn0mial)
- Cluster Autoscaler has been updated to Version 1.2.0, which includes fixes around GPUs and base image change. See https://github.com/kubernetes/autoscaler/releases/tag/cluste autoscaler-1.2.0for details. (#60842, @mwielgus)
- Allows HorizontalPodAutoscaler to use global metrics not associated with any Kubernetes object (for example metrics from a hosting service running outside of the Kubernetes cluster). (#60096, @MaciekPytel)
- fluentd-gcp resources can be modified via a ScalingPolicy. (#59657, @x13n)
- Added anti-affinity to kube-dns pods. Otherwise the "no single point of failure" setting doesn't actually work (a single node failure can still take down the entire cluster). (#57683, @vainu-arto)

API-Machinery

- Fixed webhooks to use the scheme provided in clientConfig, instead of defaulting to http. (#60943, @jennybuckley)
- The webhook admission controller in a custom apiserver now works off-the-shelf. (#60995, @caesarxuchao)
- Upgrade the default etcd server version to 3.1.12 to pick up critical etcd "mvcc "unsynced" watcher restore operation" fix. (#60998, @jpbetz)
- Fixed bug allowing garbage collector to enter a broken state that could only be fixed by restarting the controller-manager. (#61201, @jennybuckley)
- kube-apiserver: The external hostname no longer longer use the cloud provider API to select a default. It can be set explicitly using –external-hostname, if needed. If there is no default, AdvertiseAddress or os.Hostname() will be used, in that order. (#56812, @dims)
- Custom resources can be listed with a set of grouped resources (category) by specifying the categories in the CustomResourceDefinition spec. Example: They can be used with `kubectl get important`, where `important` is a category. (#59561, @nikhita)

- Fixed an issue making it possible to create a situation in which two webhooks make it impossible to delete each other. ValidatingWebhooks and MutatingWebhooks will not be called on admission requests for ValidatingWebhookConfiguration and MutatingWebhookConfiguration objects in the admissionregistration.k8s.io group (#59840, @jennybuckley)
- Fixed potential deadlock when deleting CustomResourceDefinition for custom resources with finalizers. (#60542, @liggitt)
- A buffered audit backend can be used with other audit backends. (#60076, @crassirostris)
- Introduced `--http2-max-streams-per-connection` command line flag on api-servers and set default to 1000 for aggregated API servers. (#60054, @MikeSpreitzer)
- APIserver backed by etcdv3 exports metric shows number of resources per kind. (#59757, @gmarek)
- Add `kubectl create job --from-cronjob` command. (#60084, @soltysh)
- `/status` and `/scale` subresources have been added for custom resources. See https://github.com/kubernetes/kubernetes/pull/55168 for more details. (#55168, @nikhita)
- Restores the ability of older clients to delete and scale jobs with initContainers. (#59880, @liggitt)
- Fixed a race condition causing apiserver crashes during etcd healthchecking. (#60069, @wojtek-t)
- Fixed a race condition in k8s.io/client-go/tools/cache.SharedInformer that could violate the sequential delivery guarantee and cause panics on shutdown in Kubernetes 1.8.* and 1.9.*. (#59828, @krousey)
- Add automatic etcd 3.2->3.1 and 3.1->3.0 minor version rollback support to gcr.io/google_container/etcd images. For HA clusters, all members must be stopped before performing a rollback. (#59298, @jpbetz)
- The `meta.k8s.io/v1alpha1` objects for retrieving tabular responses from the server (`Table`) or fetching just the `ObjectMeta` for an object (as `PartialObjectMetadata`) are now beta as part of `meta.k8s.io/v1beta1` and configurations must be changed to use the new API. Clients may request alternate representations of normal Kubernetes objects by passing an `Accept` header like `application/json;as=Table;g=meta.k8s.io;v=v1beta1` or `application/json;as=PartialObjectMe` Older servers will ignore this representation or return an error if it is not available. Clients may request fallback to the normal object by adding a non-qualified mime-type to their `Accept` header like `application/json` - the server will then respond with either the alternate representation

if it is supported or the fallback mime-type which is the normal object response. (#59059, @smarterclayton)

- kube-apiserver now uses SSH tunnels for webhooks if the webhook is not directly routable from apiserver's network environment. (#58644, @yguo0905)
- Access to externally managed IP addresses via the kube-apiserver service proxy subresource is no longer allowed by default. This can be re-enabled via the `ServiceProxyAllowExternalIPs` feature gate, but will be disallowed completely in 1.11 (#57265, @brendandburns)
- The apiregistration.k8s.io (aggregation) is now generally available. Users should transition from the v1beta1 API to the v1 API. (#58393, @deads2k)
- Fixes an issue where the resourceVersion of an object in a DELETE watch event was not the resourceVersion of the delete itself, but of the last update to the object. This could disrupt the ability of clients clients to re-establish watches properly. (#58547, @liggitt)
- kube-apiserver: requests to endpoints handled by unavailable extension API servers (as indicated by an `Available` condition of `false` in the registered APIService) now return `503` errors instead of `404` errors. (#58070, @weekface)
- Custom resources can now be submitted to and received from the API server in application/yaml format, consistent with other API resources. (#58260, @liggitt)

Network

- Fixed kube-proxy to work correctly with iptables 1.6.2 and later. (#60978, @danwinship)
- Makes the kube-dns addon optional so that users can deploy their own DNS solution. (#57113, @wwwtyro)
- `kubectl port-forward` now supports specifying a service to port forward to, as in `kubectl port-forward svc/myservice 8443:443`. Additional support has also been added for looking up targetPort for a service, as well as enabling using svc/name to select a pod. (#59809, @phsiao)
- Make NodePort IP addresses configurable. (#58052, @m1093782566)
- Fixed the issue in kube-proxy iptables/ipvs mode to properly handle incorrect IP version. (#56880, @MrHohn)
- Kubeadm: CoreDNS supports migration of the kube-dns configuration to

CoreDNS configuration when upgrading the service discovery from kube-dns to CoreDNS as part of Beta. (#58828, @rajansandeep)

- Adds BETA support for `DNSConfig` field in PodSpec and `DNSPolicy=None`, so configurable pod resolve.conf is now enabled by default. (#59771, @MrHohn)
- Removed some redundant rules created by the iptables proxier to improve performance on systems with very many services. (#57461, @danwinship)
- Fix an issue where port forwarding doesn't forward local TCP6 ports to the pod (#57457, @vfreex)
- Correctly handle transient connection reset errors on GET requests from client library. (#58520, @porridge)
- GCE: Allows existing internal load balancers to continue using a subnetwork that may have been wrongfully chosen due to a bug choosing subnetworks on automatic networks. (#57861, @nicksardo)

Azure

- Set node external IP for azure node when disabling UseInstanceMetadata. (#60959, @feiskyer)
- Changed default azure file/dir mode to 0755. (#56551, @andyzhangx)
- Fixed azure file plugin failure issue on Windows after node restart. (#60625, @andyzhangx)(#60623, @feiskyer)
- Fixed race condition issue when detaching azure disk, preventing `Multi-Attach error`s when scheduling one pod from one node to another. (#60183, @andyzhangx)
- Add AzureDisk support for vmss nodes. (#59716, @feiskyer)
- Map correct vmset name for Azure internal load balancers. (#59747, @feiskyer)
- Node's providerID will now follow the Azure resource ID format (`azure:///subscriptions/<id>/resourceGroups/<rg>/providers/Microsoft.Compute/virtualMac` rather than `azure://d84a1c30-0c9f-11e8-8a34-000d3a919531`) when useInstanceMetadata is enabled (#59539, @feiskyer)
- Azure public IP is now correctly removed after a service is deleted. (#59340, @feiskyer)
- Added PV size grow feature for azure filesystems. (#57017, @andyzhangx)
- Ensured IP is set for Azure internal load balancer. (#59083, @feiskyer)

- Set fsGroup by securityContext.fsGroup in azure file. However,f user both sets gid=xxx in mountOptions in azure storage class and securityContext.fsGroup, gid=xxx setting in mountOptions takes precedence. (#58316, @andyzhangx)
- If an Azure disk is not found, K8s will immediately detach it. (#58345, @rootfs)
- Instrumented the Azure cloud provider for Prometheus monitoring. (#58204, @cosmincojocar)
- Fixed device name change issues for azure disk. (#57953, @andyzhangx) (#57549, @andyzhangx)
- Support multiple scale sets in Azure cloud provider. (#57543, @feiskyer)
- Support LoadBalancer for Azure Virtual Machine Scale Sets (#57131, @feiskyer)
- Fixed incorrect error info when creating an azure file PVC failed. (#56550, @andyzhangx)
- Added mount options support for azure disk. For example:

```
kind: StorageClass
apiVersion: storage.k8s.io/v1
metadata:
  name: hdd
provisioner: kubernetes.io/azure-disk
mountOptions:
  - barrier=1
  - acl
parameters:
  skuname: Standard_LRS
  kind: Managed
  fstype: ext3
```

(#56147, @andyzhangx)

Scheduling

- Fixed a bug the in scheduler cache by using Pod UID as the cache key instead of namespace/name (#61069, @anfernee)
- When `TaintNodesByCondition` is enabled, added `node.kubernetes.io/unschedulable:NoSchedule` (#61161, @k82cn)
- kube-scheduler: Support extender managed extended resources in kube-scheduler (#60332, @yguo0905)

- Updated priority of mirror pod according to PriorityClassName. (#58485, @k82cn)
- kube-scheduler: restores default leader election behavior. Setting the `--leader-elect` command line parameter to `true` (#60524, @dims)
- All pods with priorityClassName system-node-critical and system-cluster-critical will be critical pods while preserving backwards compatibility. (#58835, @ravisantoshgudimetla)
- Priority admission controller picks a global default with the lowest priority value if more than one such default PriorityClass exists. (#59991, @bsalamat)
- Disallow PriorityClass names with 'system-' prefix for user defined priority classes. (#59382, @bsalamat)
- kube-scheduler: Use default predicates/prioritizers if they are unspecified in the policy config. (#59363, @yguo0905)
- Scheduler should be able to read from config file if configmap is not present. (#59386, @ravisantoshgudimetla)
- Add apiserver metric for current inflight-request usage. (#58342, @gmarek)
- Stability: Make Pod delete event handling of scheduler more robust. (#58712, @bsalamat)* Allow scheduler set AlwaysCheckAllPredicates, short circuit all predicates if one predicate fails can greatly improve the scheduling performance. (#56926, @wgliang)
- GCE: support passing kube-scheduler policy config via SCHEDULER_POLICY_CONFIG. This allows us to specify a customized scheduler policy configuration. (#57425, @yguo0905)
- Returns an error for non overcommitable resources if they don't have limit field set in container spec to prevent users from creating invalid configurations. (#57170, @jiayingz)
- GCE: Fixed ILB creation on automatic networks with manually created subnetworks. (#57351, @nicksardo)
- Multiple Performance Improvements to the MatchInterPodAffinity predicate (#57476, @misterikkit)(#57477, @misterikkit)
- The calico-node addon tolerates all NoExecute and NoSchedule taints by default. So Calico components can even be scheduled on tainted nodes. (#57122, @caseydavenport)
- The scheduler skips pods that use a PVC that either does not exist or is being deleted. (#55957, @jsafrane)

Other changes

- Updated dashboard version to v1.8.3, which keeps auto-generated certs in memory. (#57326, @floreks)
- fluentd-gcp addon: Fixed bug with reporting metrics in event-exporter. (#60126, @serathius)
- Avoid hook errors when effecting label changes on kubernetes-worker charm. (#59803, @wwwtyro)
- Fixed charm issue where docker login would run prior to daemon options being set. (#59396, @kwmonroe)
- Implementers of the cloud provider interface will note the addition of a context to this interface. Trivial code modification will be necessary for a cloud provider to continue to compile. (#59287, @cheftako)
- Added configurable etcd quota backend bytes in GCE. (#59259, @wojtek-t)
- GCP: allow a master to not include a metadata concealment firewall rule (if it's not running the metadata proxy). (#58104, @ihmccreery)
- Fixed issue with kubernetes-worker option allow-privileged not properly handling the value True with a capital T. (#59116, @hyperbolic2346)
- Controller-manager –service-sync-period flag has been removed. (It was never used in the code and should have no user impact.) (#59359, @khenidak)
- [fluentd-gcp addon] Switch to the image provided by Stackdriver. The Stackdriver Logging Agent container image uses fluentd v0.14.25. (#59128, @bmoyles0117)

Non-user-facing Changes

- CRI now uses moutpoint as image filesystem identifier instead of UUID. (#59475, @Random-Liu)
- GCE: support Cloud TPU API in cloud provider (#58029, @yguo0905)
- kubelet now notifies systemd that it has finished starting, if systemd is available and running. (#60654, @dcbw)
- Do not count failed pods as unready in HPA controller (#60648, @bskiba)
- fixed foreground deletion of podtemplates (#60683, @nilebox)
- Conformance tests are added for the DaemonSet kinds in the apps/v1 group version. Deprecated versions of DaemonSet will not be tested for

conformance, and conformance is only applicable to release 1.10 and later. (#60456, @kow3ns)

- Log audit backend can now be configured to perform batching before writing events to disk. (#60237, @crassirostris)
- New conformance tests added for the Garbage Collector (#60116, @jennybuckley)
- Fixes a bug where character devices are not recongized by the kubelet (#60440, @andrewsykim)
- StatefulSet in apps/v1 is now included in Conformance Tests. (#60336, @enisoc)
- dockertools: disable memory swap on Linux. (#59404, @ohmystack)
- Increase timeout of integration tests (#60458, @jennybuckley)
- force node name lowercase on static pod name generating (#59849, @yue9944882
- fix device name change issue for azure disk (#60346, @andyzhangx)
- Additional changes to iptables kube-proxy backend to improve performance on clusters with very large numbers of services. (#60306, @danwinship)
- add spelling checking script (#59463, @dixudx)
- Use consts as predicate name in handlers (#59952, @resouer)
- Fix instanceID for vmss nodes. (#59857, @feiskyer)
- Increase allowed lag for ssh key sync loop in tunneler to allow for one failure (#60068, @wojtek-t)
- Set an upper bound (5 minutes) on how long the Kubelet will wait before exiting when the client cert from disk is missing or invalid. This prevents the Kubelet from waiting forever without attempting to bootstrap a new client credentials. (#59316, @smarterclayton)
- Add ipset binary for IPVS to hyperkube docker image (#57648, @Fsero)
- Making sure CSI E2E test runs on a local cluster (#60017, @sbezverk)
- Fix kubelet PVC stale metrics (#59170, @cofyc)
- Separate current ARM rate limiter into read/write (#59830, @khenidak)
- Improve control over how ARM rate limiter is used within Azure cloud provider, add generic cache for Azure VM/LB/NSG/RouteTable (#59520, @feiskyer)
- fix typo (#59619, @jianliao82)

- DaemonSet, Deployment, ReplicaSet, and StatefulSet objects are now persisted in etcd in apps/v1 format (#58854, @liggitt)
- YAMLDecoder Read now tracks rest of buffer on io.ErrShortBuffer (#58817, @karlhungus)
- Prevent kubelet from getting wedged if initialization of modules returns an error. (#59020, @brendandburns)
- Fixed a race condition inside kubernetes-worker that would result in a temporary error situation. (#59005, @hyperbolic2346)
- Fix regression in the CRI: do not add a default hostname on short image names (#58955, @runcom)
- use containing API group when resolving shortname from discovery (#58741, @dixudx)
- remove spaces from kubectl describe hpa (#56331, @shiywang)
- fluentd-es addon: multiline stacktraces are now grouped into one entry automatically (#58063, @monotek)
- Default scheduler code is moved out of the plugin directory. (#57852, @misterikkit)
- CDK nginx ingress is now handled via a daemon set. (#57530, @hyperbolic2346)
- Move local PV negative scheduling tests to integration (#57570, @sbezverk)
- Only create Privileged PSP binding during e2e tests if RBAC is enabled. (#56382, @mikkeloscar)
- ignore nonexistent ns net file error when deleting container network in case a retry (#57697, @dixudx)
- Use old dns-ip mechanism with older cdk-addons. (#57403, @wwwtyro)
- Retry 'connection refused' errors when setting up clusters on GCE. (#57394, @mborsz)
- YAMLDecoder Read now returns the number of bytes read (#57000, @sel)
- Drop hacks used for Mesos integration that was already removed from main kubernetes repository (#56754, @dims)
- Compare correct file names for volume detach operation (#57053, @prashima)
- Fixed documentation typo in IPVS README. (#56578, @shift)
- The ConfigOK node condition has been renamed to KubeletConfigOk. (#59905, @mtaufen)

- Adding pkg/kubelet/apis/deviceplugin/v1beta1 API. (#59588, @jiayingz)
- Fixes volume predicate handler for equiv class (#59335, @resouer)
- Bugfix: vSphere Cloud Provider (VCP) does not need any special service account anymore. (#59440, @rohitjogvmw)
- fix the error prone account creation method of blob disk (#59739, @andyzhangx)
- Updated kubernetes-worker to request new security tokens when the aws cloud provider changes the registered node name. (#59730, @hyperbolic2346)
- Pod priority can be specified ins PodSpec even when the feature is disabled, but it will be effective only when the feature is enabled. (#59291, @bsalamat)* Add generic cache for Azure VMSS (#59652, @feiskyer)
- fix the create azure file pvc failure if there is no storage account in current resource group (#56557, @andyzhangx)
- Implement envelope service with gRPC, so that KMS providers can be pulled out from API server. (#55684, @wu-qiang)
- Enable golint for `pkg/scheduler` and fix the golint errors in it. (#58437, @tossmilestone)
- Ensure euqiv hash calculation is per schedule (#59245, @resouer)
- Upped the timeout for apiserver communication in the juju kubernetes-worker charm. (#59219, @hyperbolic2346)
- kubeadm init: skip checking cri socket in preflight checks (#58802, @dixudx)
- Configurable etcd compaction frequency in GCE (#59106, @wojtek-t)
- Fixed a bug which caused the apiserver reboot failure in the presence of malfunctioning webhooks. (#59073, @caesarxuchao)
- GCE: Apiserver uses `InternalIP` as the most preferred kubelet address type by default. (#59019, @MrHohn)
- CRI: Add a call to reopen log file for a container. (#58899, @yujuhong)
- The alpha KubeletConfigFile feature gate has been removed, because it was redundant with the Kubelet's –config flag. It is no longer necessary to set this gate to use the flag. The –config flag is still considered alpha. (#58978, @mtaufen)
- Fixing extra_sans option on master and load balancer. (#58843, @hyperbolic2346)

- Ensure config has been created before attempting to launch ingress. (#58756, @wwwtyro)
- Support metrics API in `kubectl top` commands. (#56206, @brancz)
- Bump GCE metadata proxy to v0.1.9 to pick up security fixes. (#58221, @ihmccreery)
- "ExternalTrafficLocalOnly" has been removed from feature gate. It has been a GA feature since v1.7. (#56948, @MrHohn)
- feat(fakeclient): push event on watched channel on add/update/delete (#57504, @yue9944882)
- Fixes a possible deadlock preventing quota from being recalculated (#58107, @ironcladlou)
- Bump metadata proxy version to v0.1.7 to pick up security fix. (#57762, @ihmccreery)
- The kubelet uses a new release 3.1 of the pause container with the Docker runtime. This version will clean up orphaned zombie processes that it inherits. (#57517, @verb)
- Add cache for VM get operation in azure cloud provider (#57432, @karataliu)
- Configurable liveness probe initial delays for etcd and kube-apiserver in GCE (#57749, @wojtek-t)
- Fixed garbage collection hang (#57503, @liggitt
- Improve scheduler performance of MatchInterPodAffinity predicate. (#57478, @misterikkit)
- Add the path '/version/' to the `system:discovery` cluster role. (#57368, @brendandburns)
- adding predicates ordering for the kubernetes scheduler. (#57168, @yastij)
- Fix ipvs proxier nodeport ethassumption (#56685, @m1093782566)
- Fix Heapster configuration and Metrics Server configuration to enable overriding default resource requirements. (#56965, @kawych)
- Improved event generation in volume mount, attach, and extend operations (#56872, @davidz627)
- Remove ScrubDNS interface from cloudprovider. (#56955, @feiskyer)
- Fixed a garbage collection race condition where objects with ownerRefs pointing to cluster-scoped objects could be deleted incorrectly. (#57211, @liggitt)

- api-server provides specific events when unable to repair a service cluster ip or node port (#54304, @frodenas)
- delete useless params containerized (#56146, @jiulongzaitian)
- dockershim now makes an Image's Labels available in the Info field of ImageStatusResponse (#58036, @shlevy)
- Support GetLabelsForVolume in OpenStack Provider (#58871, @edisonx-iang)
- Add "nominatedNodeName" field to PodStatus. This field is set when a pod preempts other pods on the node. (#58990, @bsalamat)* Fix the PersistentVolumeLabel controller from initializing the PV labels when it's not the next pending initializer. (#56831, @jhorwit2)
- Rename StorageProtection to StorageObjectInUseProtection (#59901, @NickrenREN)
- Add support for cloud-controller-manager in local-up-cluster.sh (#57757, @dims)
- GCE: A role and clusterrole will now be provided with GCE/GKE for allowing the cloud-provider to post warning events on all services and watching configmaps in the kube-system namespace. No user action is required. (#59686, @nicksardo)
- Wait for kubedns to be ready when collecting the cluster IP. (#57337, @wwwtyro)

External Dependencies

- The supported etcd server version is 3.1.12, as compared to 3.0.17 in v1.9 (#60988)
- The validated docker versions are the same as for v1.9: 1.11.2 to 1.13.1 and 17.03.x (ref)
- The Go version is go1.9.3, as compared to go1.9.2 in v1.9. (#59012)
- The minimum supported go is the same as for v1.9: go1.9.1. (#55301)
- CNI is the same as v1.9: v0.6.0 (#51250)
- CSI is updated to 0.2.0 as compared to 0.1.0 in v1.9. (#60736)
- The dashboard add-on has been updated to v1.8.3, as compared to 1.8.0 in v1.9. (#517326)
- Heapster has is the same as v1.9: v1.5.0. It will be upgraded in v1.11. (ref)
- Cluster Autoscaler has been updated to v1.2.0. (#60842, @mwielgus)
- Updates kube-dns to v1.14.8 (#57918, @rramkumar1)
- Influxdb is unchanged from v1.9: v1.3.3 (#53319)
- Grafana is unchanged from v1.9: v4.4.3 (#53319)
- CAdvisor is v0.29.1 (#60867)

- fluentd-gcp-scaler is v0.3.0 (#61269)
- Updated fluentd in fluentd-es-image to fluentd v1.1.0 (#58525, @monotek)
- fluentd-elasticsearch is v2.0.4 (#58525)
- Updated fluentd-gcp to v3.0.0. (#60722)
- Ingress glbc is v1.0.0 (#61302)
- OIDC authentication is coreos/go-oidc v2 (#58544)
- Updated fluentd-gcp updated to v2.0.11. (#56927, @x13n)
- Calico has been updated to v2.6.7 (#59130, @caseydavenport)

v1.10.0-rc.1

Documentation & Examples

Downloads for v1.10.0-rc.1

filename	sha256 hash
kubernetes.tar.gz	`d7409a0bf36558b8328eefc01959920641f1fb2630fe3ac19b266fcea05a1646`
kubernetes-src.tar.gz	`4384bfe4151850e5d169b125c0cba51b7c2f00aa9972a6b4c22c44af74e8e3f8`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`1eb98b5d527ee9ed375f06df96c1158b9879880eb12d68a81e823d7a`
kubernetes-client-darwin-amd64.tar.gz	`be7e35e9698b84ace37e0ed54640c3958c0d9eea8bd413eb8b604ec0`
kubernetes-client-linux-386.tar.gz	`825a80abdb1171e72c1660fb7854ed6e8290cb7cb54ebb88c3570b3f`
kubernetes-client-linux-amd64.tar.gz	`97e22907c3f0780818b7124c50451ae78e930cd99ec8f96f188cdd08`
kubernetes-client-linux-arm64.tar.gz	`d27674c7daec425f0fa72ca14695e7f13c81cfd08517ceb1f5ce1bb0`
kubernetes-client-linux-arm.tar.gz	`e54f1fc7cf95981f54d68108ad0113396357ff0c7baaf6a76a635f0d`
kubernetes-client-linux-ppc64le.tar.gz	`7535a6668e6ca6888b22615439fae8c68d37d62f572b284755db8760`
kubernetes-client-linux-s390x.tar.gz	`6a9f90e2ea5cb50b2691c45d327cca444ae9bfc41cba43ca22016679`
kubernetes-client-windows-386.tar.gz	`cc5fef5e054588ad41870a379662d8429bd0f09500bcf4a67648bf65`
kubernetes-client-windows-amd64.tar.gz	`a06033004c5cecc43494d95dd5d5e75f698cf8e4d358c229c5fef222`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`e844897e9a39ca14a449e077cb4e4f2dc6c7d5326b95a1e47bef3b6f9c`
kubernetes-server-linux-arm64.tar.gz	`c15476626cd750a8f59c30c3389ada482995aea66b510c43732035d33e`
kubernetes-server-linux-arm.tar.gz	`74a1ff7478d7ca5c4ccb2fb772ef13745a20cfb512e3e66f238abb9812`

filename	sha256 hash
kubernetes-server-linux-ppc64le.tar.gz	`3b004717fe811352c15fe71f3122d2eaac7e0d1c4ff07d8810894c877b`
kubernetes-server-linux-s390x.tar.gz	`b6ff40f13355b47e2c02c6c016ac334a3f5008769ed7b4377c617c2fc9`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`a3a3e27c2b77fa46b7c9ff3b8bfdc672c2657e47fc4b1ca3d76cdc102`
kubernetes-node-linux-arm64.tar.gz	`af172c9d71ba2d15e14354159ac34ca7fe112b7d2d2ba38325c46795`
kubernetes-node-linux-arm.tar.gz	`fb904aa009c3309e92505ceff15863f83d9317af15cbf729bcbd198f5`
kubernetes-node-linux-ppc64le.tar.gz	`659f0091578e42b111417d45f708be2ac60447512e485dab7d2f4abae`
kubernetes-node-linux-s390x.tar.gz	`ce40dcc55ca299401ddf146b2622dd7f19532e95620bae63aea58a45a`
kubernetes-node-windows-amd64.tar.gz	`0f8b5c551f58cdf298d41258483311cef66fe1b41093152a43120514a`

Changelog since v1.10.0-beta.4

Other notable changes

- Updates kubeadm default to use 1.10 (#61127, @timothysc)
- Bump ingress-gce image in glbc.manifest to 1.0.0 (#61302, @rramkumar1)
- Fix regression where kubelet –cpu-cfs-quota flag did not work when –cgroups-per-qos was enabled (#61294, @derekwaynecarr)
- Fix bug allowing garbage collector to enter a broken state that could only be fixed by restarting the controller-manager. (#61201, @jennybuckley)
- When `TaintNodesByCondition` enabled, added `node.kubernetes.io/unschedulable:NoSchedule` (#61161, @k82cn)
  - taint to the node if `spec.Unschedulable` is true.
  - When `ScheduleDaemonSetPods` enabled, `node.kubernetes.io/unschedulable:NoSchedule`
  - toleration is added automatically to DaemonSet Pods; so the `unschedulable` field of
  - a node is not respected by the DaemonSet controller.
- Fixed kube-proxy to work correctly with iptables 1.6.2 and later. (#60978, @danwinship)
- Audit logging with buffering enabled can increase apiserver memory usage (e.g. up to 200MB in 100-node cluster). The increase is bounded by the buffer size (configurable). Ref: issue #60500 (#61118, @shyamjvs)
- Fix a bug in scheduler cache by using Pod UID as the cache key instead of namespace/name (#61069, @anfernee)

v1.10.0-beta.4

Documentation & Examples

Downloads for v1.10.0-beta.4

filename	sha256 hash
kubernetes.tar.gz	69132f3edcf549c686055903e8ef007f0c92ec05a8ec1e3fea4d5b4dc4685580
kubernetes-src.tar.gz	60ba32e493c0a1449cdbd615d709e9d46780c91c88255e8e9f468c5e4e124576

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	80ef567c51aa705511ca20fbfcad2e85f1dc4fb750c0f58e0d82f416
kubernetes-client-darwin-amd64.tar.gz	925830f3c6c135adec206012ae94807b58b9438008ae87881e7a9d64
kubernetes-client-linux-386.tar.gz	9e4f40325a27b79f16eb3254c6283d67e2fecd313535b300f9931800
kubernetes-client-linux-amd64.tar.gz	85ee9bfa519e49283ab711c73f52809f8fc43616cc2076dc060987e6
kubernetes-client-linux-arm.tar.gz	f0123581243a278052413e862208a797e78e7689c6dba0da08ab3200
kubernetes-client-linux-arm64.tar.gz	dd19b034e1798f5bb0b1c6230ef294ca8f3ef7944837c5d49dce4659
kubernetes-client-linux-ppc64le.tar.gz	84a46003fe0140f8ecec03befceed7a4d955f9f88abdced99ecee24b
kubernetes-client-linux-s390x.tar.gz	c4ee2bf9f7ea66ab41b350220920644bee3eeceb13cfd19873843a9a
kubernetes-client-windows-386.tar.gz	917e768179e82a33232281b9b6e555cee75cf6315bd3c60a1fce4717
kubernetes-client-windows-amd64.tar.gz	915f3cc888332b360701a4b20d1af384ec5388636f2c3e3868e36124

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	01b50da6bae8abe4e2c813381c3848ff615fc1d8164d11b163ac081955
kubernetes-server-linux-arm.tar.gz	0a1ebd399759a68972e6248b09ce46a76deef931e51c807e032fefc421
kubernetes-server-linux-arm64.tar.gz	b8298a06aed6cd1c624855fb4e2d7258e8f9201fbc5bfebc8190c24273
kubernetes-server-linux-ppc64le.tar.gz	b3b03dc71476f70c8a62cf5ac72fe0bfa433005778d39bfbc43fe22567
kubernetes-server-linux-s390x.tar.gz	940bc9b4f73f32896f3c55d1b5824f931517689ec62b70600c8699e84b

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	bcc29195864e4e486a7e8194be06f3cf575203e012790ea6d70003349
kubernetes-node-linux-arm.tar.gz	35ab99a6cd30c2ea6a1f2347d244fb8583bfd7ef1d54f89fbf9a3a3be

filename	sha256 hash
kubernetes-node-linux-arm64.tar.gz	`fcb611d964c7e1c546fbbb38c8b30b3e3bb54226540caa0b80930f53e`
kubernetes-node-linux-ppc64le.tar.gz	`4de7b25cf712df27b6eec5232dc2891e07dbeb8c3699a145f777cc062`
kubernetes-node-linux-s390x.tar.gz	`2f0b6a01c7c86209f031f47e1901bf3da82efef4db5b73b4e7d83be04`
kubernetes-node-windows-amd64.tar.gz	`619013157435d8da7f58bb339aa21d5a080c341aebe226934d1139d29`

Changelog since v1.10.0-beta.3

Other notable changes

- Fix a regression that prevented using `subPath` volume mounts with secret, configMap, projected, and downwardAPI volumes (#61080, @liggitt)
- Upgrade the default etcd server version to 3.1.12 to pick up critical etcd "mvcc "unsynced" watcher restore operation" fix. (#60998, @jpbetz)
- Fixed missing error checking that could cause kubelet to crash in a race condition. (#60962, @technicianted)

v1.10.0-beta.3

Documentation & Examples

Downloads for v1.10.0-beta.3

filename	sha256 hash
kubernetes.tar.gz	`65880d0bb77eeb83554bb0a6c78b6d3a25cd38ef7d714bbe2c73b203386618d6`
kubernetes-src.tar.gz	`e9fbf8198fd80c92dd7e2ecf0cf6cefda06f9b89e7986ae141412f8732dae47c`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`50b1a41e70804f74b3e76d7603752d45dfd47011fd986d055462e133`
kubernetes-client-darwin-amd64.tar.gz	`3658e70ae9761464df50c6cae8d57349648c80d16658892e42ea898d`
kubernetes-client-linux-386.tar.gz	`00b8c048b201931ab1fb059df030e0bfc866f3c3ff464213aa6071ff`
kubernetes-client-linux-amd64.tar.gz	`364d6439185399e72f96bea1bf2863deb2080f4bf6df721932ef14ec`
kubernetes-client-linux-arm.tar.gz	`98670b2e965e118fb02901aa949cd1eb12d34ffd0bba7ff22014e9ad`
kubernetes-client-linux-arm64.tar.gz	`5f4febc543aa2f10c0c8aee9c9a8cb169b19b04486bda4cf1f72c80f`
kubernetes-client-linux-ppc64le.tar.gz	`ff3d020e97e2ff4c1824db910f13945d70320fc3988cc24385708cab`
kubernetes-client-linux-s390x.tar.gz	`508695afe6d3466488bc20cad31c184723cb238d1c311d2d1c4f9f1c`
kubernetes-client-windows-386.tar.gz	`9f6372cfb973d04a150e1388d96cb60e7fe6ccb9ba63a146ff2dee49`

filename	sha256 hash
kubernetes-client-windows-amd64.tar.gz	`2c85f2f13dc535d3c777f186b7e6d9403d64ac18ae01d1e460a8979e`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`4797ada6fd43e223d67840e815c1edb244a3b40a3a1b6ecfde7789119f`
kubernetes-server-linux-arm.tar.gz	`fb2fdb4b2feb41adbbd33fe4b7abbe9780d91a288a64ff7acf85d5ef94`
kubernetes-server-linux-arm64.tar.gz	`bc1f35e1999beaac91b65050f70c8e539918b927937e88bfcfa34a0c26`
kubernetes-server-linux-ppc64le.tar.gz	`cce312f5af7dd182c8cc4ef35a768fef788a849a93a6f2f36e9d2991e7`
kubernetes-server-linux-s390x.tar.gz	`42edec36fa34a4cc4959af20a587fb05924ccc87c94b0f845953ba1cee`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`e517986261e3789cada07d9063ae96ed9b17ffd80c1b220b6ae9c4123`
kubernetes-node-linux-arm.tar.gz	`9eb213248982816a855a7ff18c9421d5e987d5f1c472880a16bc6c477`
kubernetes-node-linux-arm64.tar.gz	`e938dce3ec05cedcd6ab8e2b63224170db00e2c47e67685eb3cb4bad2`
kubernetes-node-linux-ppc64le.tar.gz	`bc9bf3d55f85d3b30f0a28fd79b7610ecdf019b8bc8d7f978da62ee00`
kubernetes-node-linux-s390x.tar.gz	`c5a1b18b8030ec86748e23d45f1de63783c2e95d67b0d6c2fcbcd545c`
kubernetes-node-windows-amd64.tar.gz	`df4f4e8df8665ed08a9a3d9816e61c6c9f0ce50e4185b6c7a7f34135a`

Changelog since v1.10.0-beta.2

Other notable changes

- kubelet initial flag parse should normalize flags instead of exiting. (#61053, @andrewsykim)
- Fixes CVE-2017-1002101 - See https://issue.k8s.io/60813 for details (#61044, @liggitt)
- Fixes the races around devicemanager Allocate() and endpoint deletion. (#60856, @jiayingz)
- When ScheduleDaemonSetPods is enabled, the DaemonSet controller will delegate Pods scheduling to default scheduler. (#59862, @k82cn)
- Set node external IP for azure node when disabling UseInstanceMetadata (#60959, @feiskyer)
- Bug fix, allow webhooks to use the scheme provided in clientConfig, instead of defaulting to http. (#60943, @jennybuckley)
- Downgrade default etcd server version to 3.1.11 due to #60589 (#60891, @shyamjvs)

- kubelet and kube-proxy can now be ran as Windows services (#60144, @alinbalutoiu)

v1.10.0-beta.2

Documentation & Examples

Downloads for v1.10.0-beta.2

filename	sha256 hash
kubernetes.tar.gz	d07d77f16664cdb5ce86c87de36727577f48113efdb00f83283714ac1373d521
kubernetes-src.tar.gz	c27b06e748e4c10f42472f51ddfef7e9546e4ec9d2ce9f7a9a3c5768de8d97bf

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	d63168f9155f04e4b47fe96381f9aa06c3d498b6e6b71d1fb8c3ffeb
kubernetes-client-darwin-amd64.tar.gz	f473cbe830c1bfb738b0a66f07b3cd858ba185232eba26fe776f90d8
kubernetes-client-linux-386.tar.gz	2a0f74d30cdaf19ed7c3fde3528e98a8cd98fdb9dc6e6a501525e698
kubernetes-client-linux-amd64.tar.gz	69c18569717a97cb5e6bc22bebcf2f64969ba68b11685faaf2949c4f
kubernetes-client-linux-arm.tar.gz	10e1d76a1ee6c0df9f9cce40d18c350a1e3e3665e6fe64d22e4433b6
kubernetes-client-linux-arm64.tar.gz	12f081b99770548c8ddd688ae6b417c196f8308bd5901abbed6f203e
kubernetes-client-linux-ppc64le.tar.gz	6e1a035b4857539c90324e00b150ae65aaf4f4524250c9ca7d77ad59
kubernetes-client-linux-s390x.tar.gz	5a8e2b0d14e18a39f821b09a7d73fa5c085cf6c197aeb540a3fe289e
kubernetes-client-windows-386.tar.gz	03fac6befb94b85fb90e0bb47596868b4da507d803806fad2a5fb4b8
kubernetes-client-windows-amd64.tar.gz	3bf8dd42eb70735ebdbda4ec4ec54e9507410e2f97ab2f364b88c2f2

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	1278703060865281aa48b1366e3c4b0720d4eca623ba08cf852a4719a6
kubernetes-server-linux-arm.tar.gz	b1e2b399bec8c25b7b6037203485d2d09b091afc51ffebf861d5bddb8b
kubernetes-server-linux-arm64.tar.gz	4c3d0ed44d6a19ae178034117891678ec373894b02f8d33627b37a36c2
kubernetes-server-linux-ppc64le.tar.gz	88a7b52030104a4c6fb1f8c5f79444ed853f381e1463fec7e4939a9998
kubernetes-server-linux-s390x.tar.gz	35981580c00bff0e3d92238f961e37dd505c08bcd4cafb11e274daa1eb

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`ceedb0a322167bae33042407da5369e0b7889fbaa3568281500c921a`
kubernetes-node-linux-arm.tar.gz	`b84ab4c486bc8f00841fccce2aafe4dcef25606c8f3184bce2551ab6`
kubernetes-node-linux-arm64.tar.gz	`b79a41145c28358a64d7a689cd282cf8361fe87c410fbae1cdc8db76`
kubernetes-node-linux-ppc64le.tar.gz	`afc00f67b9f6d4fc149d4426fc8bbf6083077e11a1d2330d70be7e765`
kubernetes-node-linux-s390x.tar.gz	`f6128bbccddfe8ce39762bacb5c13c6c68d76a4bf8d35e773560332e`
kubernetes-node-windows-amd64.tar.gz	`b1dde1ed2582cd511236fec69ebd6ca30281b30cc37e0841c493f069`

Changelog since v1.10.0-beta.1

Action Required

- ACTION REQUIRED: LocalStorageCapacityIsolation feature is beta and enabled by default. (#60159, @jingxu97)

Other notable changes

- Upgrade the default etcd server version to 3.2.16 (#59836, @jpbetz)
- Cluster Autoscaler 1.1.2 (#60842, @mwielgus)
- ValidatingWebhooks and MutatingWebhooks will not be called on admission requests for ValidatingWebhookConfiguration and MutatingWebhookConfiguration objects in the admissionregistration.k8s.io group (#59840, @jennybuckley)
- Kubeadm: CoreDNS supports migration of the kube-dns configuration to CoreDNS configuration when upgrading the service discovery from kube-dns to CoreDNS as part of Beta. (#58828, @rajansandeep)
- Fix broken useManagedIdentityExtension for azure cloud provider (#60775, @feiskyer)
- kubelet now notifies systemd that it has finished starting, if systemd is available and running. (#60654, @dcbw)
- Do not count failed pods as unready in HPA controller (#60648, @bskiba)
- fixed foreground deletion of podtemplates (#60683, @nilebox)
- Conformance tests are added for the DaemonSet kinds in the apps/v1 group version. Deprecated versions of DaemonSet will not be tested for conformance, and conformance is only applicable to release 1.10 and later. (#60456, @kow3ns)
- Log audit backend can now be configured to perform batching before writing events to disk. (#60237, @crassirostris)
- Fixes potential deadlock when deleting CustomResourceDefinition for custom resources with finalizers (#60542, @liggitt)
- fix azure file plugin failure issue on Windows after node restart (#60625, @andyzhangx)

- Set Azure vmType to standard if it is not set in azure cloud config. (#60623, @feiskyer)
- On cluster provision or upgrade, kubeadm generates an etcd specific CA for all etcd related certificates. (#60385, @stealthybox)
- kube-scheduler: restores default leader election behavior. leader-elect command line parameter should "true" (#60524, @dims)
- client-go: alpha support for exec-based credential providers (#59495, @ericchiang)

v1.10.0-beta.1

Documentation & Examples

Downloads for v1.10.0-beta.1

filename	sha256 hash
kubernetes.tar.gz	`428139d9877f5f94acc806cc4053b0a5f8eac2acc219f06efd0817807473dbc5`
kubernetes-src.tar.gz	`5bfdecdbb43d946ea965f22ec6b8a0fc7195197a523aefebc2b7b926d4252edf`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`8cc086e901fe699df5e0711438195e675e099848a72ba272b290d22a`
kubernetes-client-darwin-amd64.tar.gz	`b2782b8f6dbfe3fa962b08606cbf3366b071b78c47794d2ef67f9d48`
kubernetes-client-linux-386.tar.gz	`a4001ad2387ccb4557b15c560b0ea8ea4d7c7ed494375346e3f83c10`
kubernetes-client-linux-amd64.tar.gz	`b95d354e80d9f00a883e5eeb8c2e0ceaacc0f3cc8c904cb2eca1e1b6`
kubernetes-client-linux-arm64.tar.gz	`647d234c59bc1d6f8eea88624d85b09bbe1272d9e27e1f7963e03cc0`
kubernetes-client-linux-arm.tar.gz	`187da9ad060ac7d426811772f6c3d891a354945af6a7d8832ac7097e`
kubernetes-client-linux-ppc64le.tar.gz	`6112396b8f0e7b1401b374aa2ae6195849da7718572036b6f060a722`
kubernetes-client-linux-s390x.tar.gz	`09789cf33d8eed610ad2eef7d3ae25a4b4a63ee5525e452f9094097a`
kubernetes-client-windows-386.tar.gz	`1e71bc9979c8915587cdea980dad36b0cafd502f972c051c2aa63c3b`
kubernetes-client-windows-amd64.tar.gz	`3c2978479c6f65f1cb5043ba182a0571480090298b7d62090d9bf11b`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`d887411450bbc06e2f4a24ce3c478fe6844856a8707b3236c045d44ab9`
kubernetes-server-linux-arm64.tar.gz	`907f037eea90bf893520d3adeccdf29eda69eea32c564b08cecbedfd06`
kubernetes-server-linux-arm.tar.gz	`f2ac4ad4f831a970cb35c1d7194788850dff722e859a08a879c918db12`

filename	sha256 hash
kubernetes-server-linux-ppc64le.tar.gz	`0bebb59217b491c5aa4b4b9dc740c0c8c5518872f6f86853cbe30493ea`
kubernetes-server-linux-s390x.tar.gz	`5f343764e04e3a8639dffe225cc6f8bc6f17e1584b2c68923708546f48`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`c4475c315d4ae27c30f80bc01d6ea8b0b8549ec6a60a5dc745cf11a0c`
kubernetes-node-linux-arm64.tar.gz	`4512a4c3e62cd26fb0d3f78bfc8de9a860e7d88e7c913c5df4c239536`
kubernetes-node-linux-arm.tar.gz	`1da407ad152b185f520f04215775a8fe176550a31a2bb79e3e829687`
kubernetes-node-linux-ppc64le.tar.gz	`f23f6f819e6d894f8ca7457f80ee4ede729fd35ac59e9c65ab031b56a`
kubernetes-node-linux-s390x.tar.gz	`205c789f52a4c666a63ac7944ffa8ee325cb97e788b748c262eae59b8`
kubernetes-node-windows-amd64.tar.gz	`aa7675fd22d9ca671585f429f6981aa79798f1894025c3abe3a7154f3`

Changelog since v1.10.0-alpha.3

Action Required

- [action required] Default Flexvolume plugin directory for COS images on GCE is changed to `/home/kubernetes/flexvolume`. (#58171, @verult)
- action required: [GCP kube-up.sh] Some variables that were part of kube-env are no longer being set (ones only used for kubelet flags) and are being replaced by a more portable mechanism (kubelet configuration file). The individual variables in the kube-env metadata entry were never meant to be a stable interface and this release note only applies if you are depending on them. (#60020, @roberthbailey)
- action required: Deprecate format-separated endpoints for OpenAPI spec. Please use single `/openapi/v2` endpoint instead. (#59293, @roycaihw)
- action required: kube-proxy: feature gates are now specified as a map when provided via a JSON or YAML KubeProxyConfiguration, rather than as a string of key-value pairs. (#57962, @xiangpengzhao)
- Action Required: The boostrapped RBAC role and rolebinding for the `cloud-provider` service account is now deprecated. If you're currently using this service account, you must create and apply your own RBAC policy for new clusters. (#59949, @nicksardo)
- ACTION REQUIRED: VolumeScheduling and LocalPersistentVolume features are beta and enabled by default. The PersistentVolume NodeAffinity alpha annotation is deprecated and will be removed in a future release. (#59391, @msau42)
- action required: Deprecate the kubelet's cadvisor port. The default will change to 0 (disabled) in 1.12, and the cadvisor port will be removed entirely in 1.13. (#59827, @dashpole)

- action required: The `kubeletconfig` API group has graduated from alpha to beta, and the name has changed to `kubelet.config.k8s.io`. Please use `kubelet.config.k8s.io/v1beta1`, as `kubeletconfig/v1alpha1` is no longer available. (#53833, @mtaufen)
- Action required: Default values differ between the Kubelet's componentconfig (config file) API and the Kubelet's command line. Be sure to review the default values when migrating to using a config file. (#59666, @mtaufen)
- kube-apiserver: the experimental in-tree Keystone password authenticator has been removed in favor of extensions that enable use of Keystone tokens. (#59492, @dims)
- The udpTimeoutMilliseconds field in the kube-proxy configuration file has been renamed to udpIdleTimeout. Action required: administrators need to update their files accordingly. (#57754, @ncdc)

Other notable changes

- Enable IPVS feature gateway by default (#60540, @m1093782566)
- dockershim now makes an Image's Labels available in the Info field of ImageStatusResponse (#58036, @shlevy)
- kube-scheduler: Support extender managed extended resources in kube-scheduler (#60332, @yguo0905)
- Fix the issue in kube-proxy iptables/ipvs mode to properly handle incorrect IP version. (#56880, @MrHohn)
- WindowsContainerResources is set now for windows containers (#59333, @feiskyer)
- GCE: support Cloud TPU API in cloud provider (#58029, @yguo0905)
- The node authorizer now allows nodes to request service account tokens for the service accounts of pods running on them. (#55019, @mikedanese)
- Fix StatefulSet to work with set-based selectors. (#59365, @ayushpateria)
- New conformance tests added for the Garbage Collector (#60116, @jennybuckley)
- Make NodePort IP addresses configurable (#58052, @m1093782566)
- Implements MountDevice and UnmountDevice for the CSI Plugin, the functions will call through to NodeStageVolume/NodeUnstageVolume for CSI plugins. (#60115, @davidz627)
- Fixes a bug where character devices are not recongized by the kubelet (#60440, @andrewsykim)
- [fluentd-gcp addon] Switch to the image, provided by Stackdriver. (#59128, @bmoyles0117)
- StatefulSet in apps/v1 is now included in Conformance Tests. (#60336, @enisoc)
- K8s supports rbd-nbd for Ceph rbd volume mounts. (#58916, @ianchakeres)
- AWS EBS volume plugin got block volume support (#58625, @screeley44)

- Summary API will include pod CPU and Memory stats for CRI container runtime. (#60328, @Random-Liu)
- dockertools: disable memory swap on Linux. (#59404, @ohmystack)
- On AWS kubelet returns an error when started under conditions that do not allow it to work (AWS has not yet tagged the instance). (#60125, @vainu-arto)
- Increase timeout of integration tests (#60458, @jennybuckley)
- Fixes a case when Deployment with recreate strategy could get stuck on old failed Pod. (#60301, @tnozicka)
- Buffered audit backend is introduced, to be used with other audit backends. (#60076, @crassirostris)
- Update dashboard version to v1.8.3 (#57326, @floreks)
- GCE PD volume plugin got block volume support (#58710, @screeley44)
- force node name lowercase on static pod name generating (#59849, @yue9944882)
- AWS Security Groups created for ELBs will now be tagged with the same additional tags as the ELB (i.e. the tags specified by the "service.beta.kubernetes.io/aws-load-balancer-additional-resource-tags" annotation.) (#58767, @2rs2ts)
- Fixes an error when deleting an NLB in AWS - Fixes #57568 (#57569, @micahhausler)
- fix device name change issue for azure disk (#60346, @andyzhangx)
- On cluster provision or upgrade, kubeadm now generates certs and secures all connections to the etcd static-pod with mTLS. (#57415, @stealthybox)
- Some field names in the Kubelet's now v1beta1 config API differ from the v1alpha1 API: PodManifestPath is renamed to StaticPodPath, ManifestURL is renamed to StaticPodURL, ManifestURLHeader is renamed to StaticPodURLHeader. (#60314, @mtaufen)
- Adds BETA support for `DNSConfig` field in PodSpec and `DNSPolicy=None`. (#59771, @MrHohn)
- kubeadm: Demote controlplane passthrough flags to alpha flags (#59882, @kris-nova)
- DevicePlugins feature graduates to beta. (#60170, @jiayingz)
- Additional changes to iptables kube-proxy backend to improve performance on clusters with very large numbers of services. (#60306, @danwinship)
- CSI now allows credentials to be specified on CreateVolume/DeleteVolume, ControllerPublishVolume/ControllerUnpublishVolume, and NodePublishVolume/NodeUnpublishVolume operations (#60118, @sbezverk)
- Disable mount propagation for windows containers. (#60275, @feiskyer)
- Introduced `--http2-max-streams-per-connection` command line flag on api-servers and set default to 1000 for aggregated API servers. (#60054, @MikeSpreitzer)
- APIserver backed by etcdv3 exports metric showing number of resources per kind (#59757, @gmarek)
- The DaemonSet controller, its integration tests, and its e2e tests, have

been updated to use the apps/v1 API. (#59883, @kow3ns)
- Fix image file system stats for windows nodes (#59743, @feiskyer)
- Custom resources can be listed with a set of grouped resources (category) by specifying the categories in the CustomResourceDefinition spec. Example: They can be used with `kubectl get all`, where `all` is a category. (#59561, @nikhita)
- [fluentd-gcp addon] Fixed bug with reporting metrics in event-exporter (#60126, @serathius)
- Critical pods to use priorityClasses. (#58835, @ravisantoshgudimetla)
- `--show-all` (which only affected pods and only for human readable/non-API printers) is now defaulted to true and deprecated. It will be inert in 1.11 and removed in a future release. (#60210, @deads2k)
- Removed some redundant rules created by the iptables proxier, to improve performance on systems with very many services. (#57461, @danwinship)
- Disable per-cpu metrics by default for scalability. (#60106, @dashpole)
  - Fix inaccurate disk usage monitoring of overlayFs.
  - Retry docker connection on startup timeout to avoid permanent loss of metrics.
- When the `PodShareProcessNamespace` alpha feature is enabled, setting `pod.Spec.ShareProcessNamespace` to `true` will cause a single process namespace to be shared between all containers in a pod. (#60181, @verb)
- add spelling checking script (#59463, @dixudx)
- Allows HorizontalPodAutoscaler to use global metrics not associated with any Kubernetes object (for example metrics from a hoster service running outside of Kubernetes cluster). (#60096, @MaciekPytel)
- fix race condition issue when detaching azure disk (#60183, @andyzhangx)
- Add kubectl create job command (#60084, @soltysh)
- [Alpha] Kubelet now supports container log rotation for container runtime which implements CRI(container runtime interface). (#59898, @Random-Liu)
  - The feature can be enabled with feature gate `CRIContainerLogRotation`.
  - The flags `--container-log-max-size` and `--container-log-max-files` can be used to configure the rotation behavior.
- Reorganized iptables rules to fix a performance regression on clusters with thousands of services. (#56164, @danwinship)
- StorageOS volume plugin updated to support mount options and environments where the kubelet runs in a container and the device location should be specified. (#58816, @croomes)
- Use consts as predicate name in handlers (#59952, @resouer)
- `/status` and `/scale` subresources are added for custom resources. (#55168, @nikhita)
- Allow kubectl env to specify which keys to import from a config map (#60040, @PhilipGough)
- Set default enabled admission plugins `NamespaceLifecycle,LimitRanger,ServiceAccount,Persistent` (#58684, @hzxuzhonghu)
- Fix instanceID for vmss nodes. (#59857, @feiskyer)

- Deprecate kubectl scale jobs (only jobs). (#60139, @soltysh)
- Adds new flag `--apiserver-advertise-dns-address` which is used in node kubelet.confg to point to API server (#59288, @stevesloka)
- Fix kube-proxy flags validation for –healthz-bind-address and –metrics-bind-address to allow specifying ip:port. (#54191, @MrHohn)
- Increase allowed lag for ssh key sync loop in tunneler to allow for one failure (#60068, @wojtek-t)
- Flags that can be set via the Kubelet's –config file are now deprecated in favor of the file. (#60148, @mtaufen)
- PVC Protection alpha feature was renamed to Storage Protection. Storage Protection feature is beta. (#59052, @pospispa)
- kube-apiserver: the root /proxy paths have been removed (deprecated since v1.2). Use the /proxy subresources on objects that support HTTP proxying. (#59884, @mikedanese)
- Set an upper bound (5 minutes) on how long the Kubelet will wait before exiting when the client cert from disk is missing or invalid. This prevents the Kubelet from waiting forever without attempting to bootstrap a new client credentials. (#59316, @smarterclayton)
- v1.Pod now has a field to configure whether a single process namespace should be shared between all containers in a pod. This feature is in alpha preview. (#58716, @verb)
- Priority admission controller picks a global default with the lowest priority value if more than one such default PriorityClass exists. (#59991, @bsalamat)
- Add ipset binary for IPVS to hyperkube docker image (#57648, @Fsero)
- kube-apiserver: the OpenID Connect authenticator can now verify ID Tokens signed with JOSE algorithms other than RS256 through the –oidc-signing-algs flag. (#58544, @ericchiang)
  - kube-apiserver: the OpenID Connect authenticator no longer accepts tokens from the Google v3 token APIs, users must switch to the "https://www.googleapis.com/oauth2/v4/token%22 endpoint.
- Rename StorageProtection to StorageObjectInUseProtection (#59901, @NickrenREN)
- kubeadm: add criSocket field to MasterConfiguration manifiest (#59057, @JordanFaust)
- kubeadm: add criSocket field to NodeConfiguration manifiest (#59292, @JordanFaust)
- The `PodSecurityPolicy` API has been moved to the `policy/v1beta1` API group. The `PodSecurityPolicy` API in the `extensions/v1beta1` API group is deprecated and will be removed in a future release. Authorizations for using pod security policy resources should change to reference the `policy` API group after upgrading to 1.11. (#54933, @php-coder)
- Restores the ability of older clients to delete and scale jobs with initContainers (#59880, @liggitt)
- Support for resource quota on extended resources (#57302, @lichuqiang)
- Fix race causing apiserver crashes during etcd healthchecking (#60069,

@wojtek-t)

- If TaintNodesByCondition enabled, taint node when it under PID pressure (#60008, @k82cn)
- Expose total usage of pods through the "pods" SystemContainer in the Kubelet Summary API (#57802, @dashpole)
- Unauthorized requests will not match audit policy rules where users or groups are set. (#59398, @CaoShuFeng)
- Making sure CSI E2E test runs on a local cluster (#60017, @sbezverk)
- Addressing breaking changes introduced by new 0.2.0 release of CSI spec (#59209, @sbezverk)
- GCE: A role and clusterrole will now be provided with GCE/GKE for allowing the cloud-provider to post warning events on all services and watching configmaps in the kube-system namespace. (#59686, @nicksardo)
- Updated PID pressure node condition (#57136, @k82cn)
- Add AWS cloud provider option to use an assumed IAM role (#59668, @brycecarman)
- `kubectl port-forward` now supports specifying a service to port forward to: `kubectl port-forward svc/myservice 8443:443` (#59809, @phsiao)
- Fix kubelet PVC stale metrics (#59170, @cofyc)
- - Separate current ARM rate limiter into read/write (#59830, @khenidak)
  - - Improve control over how ARM rate limiter is used within Azure cloud provider
- The ConfigOK node condition has been renamed to KubeletConfigOk. (#59905, @mtaufen)
- fluentd-gcp resources can be modified via a ScalingPolicy (#59657, @x13n)
- Adding pkg/kubelet/apis/deviceplugin/v1beta1 API. (#59588, @jiayingz)
- Fixes volume predicate handler for equiv class (#59335, @resouer)
- Bugfix: vSphere Cloud Provider (VCP) does not need any special service account anymore. (#59440, @rohitjogvmw)
- Fixing a bug in OpenStack cloud provider, where dual stack deployments (IPv4 and IPv6) did not work well when using kubenet as the network plugin. (#59749, @zioproto)
- Get parent dir via canonical absolute path when trying to judge mountpoint (#58433, @yue9944882)
- Container runtime daemon (e.g. dockerd) logs in GCE cluster will be uploaded to stackdriver and elasticsearch with tag `container-runtime` (#59103, @Random-Liu)
- Add AzureDisk support for vmss nodes (#59716, @feiskyer)
- Fixed a race condition in k8s.io/client-go/tools/cache.SharedInformer that could violate the sequential delivery guarantee and cause panics on shutdown. (#59828, @krousey)
- Avoid hook errors when effecting label changes on kubernetes-worker charm. (#59803, @wwwtyro)
- kubectl port-forward now allows using resource name (e.g., deploy-

ment/www) to select a matching pod, as well as allows the use of –pod-running-timeout to wait till at least one pod is running. (#59705, @phsiao)

  - kubectl port-forward no longer support deprecated -p flag

- Deprecate insecure HTTP port of kube-controller-manager and cloud-controller-manager. Use `--secure-port` and `--bind-address` instead. (#59582, @sttts)
- Eviction thresholds set to 0% or 100% are now ignored. (#59681, @mtaufen)
- [advanced audit] support subresources wildcard matching. (#55306, @hzxuzhonghu)
- CronJobs can be accessed through cj alias (#59499, @soltysh)
- fix typo in resource_allocation.go (#58275, @carmark)
- fix the error prone account creation method of blob disk (#59739, @andyzhangx)
- Add automatic etcd 3.2->3.1 and 3.1->3.0 minor version rollback support to gcr.io/google_container/etcd images. For HA clusters, all members must be stopped before performing a rollback. (#59298, @jpbetz)
- `kubeadm init` can now omit the tainting of the master node if configured to do so in `kubeadm.yaml`. (#55479, @ijc)
- Updated kubernetes-worker to request new security tokens when the aws cloud provider changes the registered node name. (#59730, @hyperbolic2346)
- Controller-manager –service-sync-period flag is removed (was never used in the code). (#59359, @khenidak)
- Pod priority can be specified ins PodSpec even when the feature is disabled, but it will be effective only when the feature is enabled. (#59291, @bsalamat)
- kubeadm: Enable auditing behind a feature gate. (#59067, @chuckha)
- Map correct vmset name for Azure internal load balancers (#59747, @feiskyer)
- Add generic cache for Azure VMSS (#59652, @feiskyer)
- kubeadm: New "imagePullPolicy" option in the init configuration file, that gets forwarded to kubelet static pods to control pull policy for etcd and control plane images. (#58960, @rosti)
- fix the create azure file pvc failure if there is no storage account in current resource group (#56557, @andyzhangx)
- Add generic cache for Azure VM/LB/NSG/RouteTable (#59520, @feiskyer)
- The alpha KubeletConfiguration.ConfigTrialDuration field is no longer available. (#59628, @mtaufen)
- Updates Calico version to v2.6.7 (Fixed a bug where Felix would crash when parsing a NetworkPolicy with a named port. See https://github.com/projectcalico/calico/releases/tag/v2.6.7) (#59130, @caseydavenport)
- return error if New-SmbGlobalMapping failed when mounting azure file

on Windows (#59540, @andyzhangx)
- Disallow PriorityClass names with 'system-' prefix for user defined priority classes. (#59382, @bsalamat)
- Fixed an issue where Portworx volume driver wasn't passing namespace and annotations to the Portworx Create API. (#59607, @harsh-px)
- Enable apiserver metrics for custom resources. (#57682, @nikhita)
- fix typo (#59619, @jianliao82)
  - incase -> in case
  - selction -> selection
- Implement envelope service with gRPC, so that KMS providers can be pulled out from API server. (#55684, @wu-qiang)
- Enable golint for `pkg/scheduler` and fix the golint errors in it. (#58437, @tossmilestone)
- AWS: Make attach/detach operations faster. from 10-12s to 2-6s (#56974, @gnufied)
- CRI starts using moutpoint as image filesystem identifier instead of UUID. (#59475, @Random-Liu)
- DaemonSet, Deployment, ReplicaSet, and StatefulSet objects are now persisted in etcd in apps/v1 format (#58854, @liggitt)
- 'none' can now be specified in KubeletConfiguration.EnforceNodeAllocatable (–enforce-node-allocatable) to explicitly disable enforcement. (#59515, @mtaufen)
- vSphere Cloud Provider supports VMs provisioned on vSphere v1.6.5 (#59519, @abrarshivani)
- Annotations is added to advanced audit api (#58806, @CaoShuFeng)
- 2nd try at using a vanity GCR name (#57824, @thockin)
- Node's providerID is following Azure resource ID format now when useInstanceMetadata is enabled (#59539, @feiskyer)
- Block Volume Support: Local Volume Plugin update (#59303, @dhirajh)
- [action-required] The Container Runtime Interface (CRI) version has increased from v1alpha1 to v1alpha2. Runtimes implementing the CRI will need to update to the new version, which configures container namespaces using an enumeration rather than booleans. (#58973, @verb)
- Fix the bug where kubelet in the standalone mode would wait for the update from the apiserver source. (#59276, @roboll)
- Add "keyring" parameter for Ceph RBD provisioner (#58287, @madddi)
- Ensure euqiv hash calculation is per schedule (#59245, @resouer)
- kube-scheduler: Use default predicates/prioritizers if they are unspecified in the policy config (#59363, @yguo0905)
- Fixed charm issue where docker login would run prior to daemon options being set. (#59396, @kwmonroe)
- Implementers of the cloud provider interface will note the addition of a context to this interface. Trivial code modification will be necessary for a cloud provider to continue to compile. (#59287, @cheftako)
- /release-note-none (#58264, @WanLinghao)
- Use a more reliable way to get total physical memory on windows nodes

(#57124, @JiangtianLi)
- Add xfsprogs to hyperkube container image. (#56937, @redbaron)
- Ensure Azure public IP removed after service deleted (#59340, @feiskyer)
- Improve messages user gets during and after volume resizing is done. (#58415, @gnufied)
- Fix RBAC permissions for Stackdriver Metadata Agent. (#57455, @kawych)
- Scheduler should be able to read from config file if configmap is not present. (#59386, @ravisantoshgudimetla)
- MountPropagation feature is now beta. As consequence, all volume mounts in containers are now "rslave" on Linux by default. (#59252, @jsafrane)
- Fix RBAC role for certificate controller to allow cleaning. (#59375, @mikedanese)
- Volume metrics support for vSphere Cloud Provider (#59328, @divyenpatel)
- Announcing the deprecation of the recycling reclaim policy. (#59063, @ayushpateria)
- Intended for post-1.9 (#57872, @mlmhl)
- The `meta.k8s.io/v1alpha1` objects for retrieving tabular responses from the server (`Table`) or fetching just the `ObjectMeta` for an object (as `PartialObjectMetadata`) are now beta as part of `meta.k8s.io/v1beta1`. Clients may request alternate representations of normal Kubernetes objects by passing an `Accept` header like `application/json;as=Table;g=meta.k8s.io;v=v1beta1` or `application/json;as=PartialObjectMetadata;g=meta.k8s.io;v1=v1beta1`. Older servers will ignore this representation or return an error if it is not available. Clients may request fallback to the normal object by adding a non-qualified mime-type to their `Accept` header like `application/json` - the server will then respond with either the alternate representation if it is supported or the fallback mime-type which is the normal object response. (#59059, @smarterclayton)
- add PV size grow feature for azure file (#57017, @andyzhangx)
- Upgrade default etcd server version to 3.2.14 (#58645, @jpbetz)
- Add windows config to Kubelet CRI (#57076, @feiskyer)
- Configurable etcd quota backend bytes in GCE (#59259, @wojtek-t)
- Remove unmaintained kube-registry-proxy support from gce kube-up. (#58564, @mikedanese)
- Allow expanding mounted volumes (#58794, @gnufied)
- Upped the timeout for apiserver communication in the juju kubernetes-worker charm. (#59219, @hyperbolic2346)
- kubeadm init: skip checking cri socket in preflight checks (#58802, @dixudx)
- Add "nominatedNodeName" field to PodStatus. This field is set when a pod preempts other pods on the node. (#58990, @bsalamat)
- Changes secret, configMap, downwardAPI and projected volumes to

mount read-only, instead of allowing applications to write data and then reverting it automatically. Until version 1.11, setting the feature gate ReadOnlyAPIDataVolumes=false will preserve the old behavior. (#58720, @joelsmith)
- Fixed issue with charm upgrades resulting in an error state. (#59064, @hyperbolic2346)
- Ensure IP is set for Azure internal load balancer. (#59083, @feiskyer)
- Postpone PV deletion when it is being bound to a PVC (#58743, @NickrenREN)
- Add V1beta1 VolumeAttachment API, co-existing with Alpha API object (#58462, @NickrenREN)
- When using client or server certificate rotation, the Kubelet will no longer wait until the initial rotation succeeds or fails before starting static pods. This makes running self-hosted masters with rotation more predictable. (#58930, @smarterclayton)

v1.10.0-alpha.3

Documentation & Examples

Downloads for v1.10.0-alpha.3

filename	sha256 hash
kubernetes.tar.gz	`246f0373ccb25a243a387527b32354b69fc2211c422e71479d22bfb3a829c8fb`
kubernetes-src.tar.gz	`f9c60bb37fb7b363c9f66d8efd8aa5a36ea2093c61317c950719b3ddc86c5e10`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`ca8dfd7fbd34478e7ba9bba3779fcca08f7efd4f218b0c8a7f52bbee`
kubernetes-client-darwin-amd64.tar.gz	`713c35d99f44bd19d225d2c9f2d7c4f3976b5dd76e9a817b2aaf68ee`
kubernetes-client-linux-386.tar.gz	`7601e55e3bb0f0fc11611c68c4bc000c3cbbb7a09652c386e482a167`
kubernetes-client-linux-amd64.tar.gz	`8a6c498531c1832176e22d622008a98bac6043f05dec967476496515`
kubernetes-client-linux-arm64.tar.gz	`81561820fb5a000152e9d8d94882e0ed6228025ea7973ee98173b5fc`
kubernetes-client-linux-arm.tar.gz	`6ce8c3ed253a10d78e62e000419653a29c411cd64910325b21ff3370`
kubernetes-client-linux-ppc64le.tar.gz	`a46b42c94040767f6bbf2ce10aef36d8dbe94c0069f866a848d69b22`
kubernetes-client-linux-s390x.tar.gz	`fa3e656b612277fc4c303aef95c60b58ed887e36431db23d26b536f2`
kubernetes-client-windows-386.tar.gz	`832e12266495ac55cb54a999bc5ae41d42d160387b487d8b4ead577d`
kubernetes-client-windows-amd64.tar.gz	`7056a3eb5a8f9e8fa0326aa6e0bf97fc5b260447315f8ec7340be574`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`dc8e2be2fcb6477249621fb5c813c853371a3bf8732c5cb3a6d6cab667`
kubernetes-server-linux-arm64.tar.gz	`399071ad9042a72bccd6e1aa322405c02b4a807c0b4f987d608c4c9c36`
kubernetes-server-linux-arm.tar.gz	`7457ad16665e331fa9224a3d61690206723721197ad9760c3b488de960`
kubernetes-server-linux-ppc64le.tar.gz	`ffcb728d879c0347bd751c9bccac3520bb057d203ba1acd55f8c727295`
kubernetes-server-linux-s390x.tar.gz	`f942f6e15886a1fb0d91d04adf47677068c56070dff060f38c371c3ee3`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`81b22beb30be9d270016c7b35b86ea585f29c0c5f09128da9341f9f67`
kubernetes-node-linux-arm64.tar.gz	`d9020b99c145f44c519b1a95b55ed24e69d9c679a02352c7e05e86042`
kubernetes-node-linux-arm.tar.gz	`1d10bee4ed62d70b318f5703b2cd8295a08e199f810d6b361f367907e`
kubernetes-node-linux-ppc64le.tar.gz	`67cd4dde212abda37e6f9e6dee1bb59db96e0727100ef0aa561c15562`
kubernetes-node-linux-s390x.tar.gz	`362b030e011ea6222b1f2dec62311d3971bcce4dba94997963e2a091e`
kubernetes-node-windows-amd64.tar.gz	`e609a2b0410acbb64d3ee6d7f134d98723d82d05bdbead1eaafd3584c`

Changelog since v1.10.0-alpha.2

Other notable changes

- Fixed issue with kubernetes-worker option allow-privileged not properly handling the value True with a capital T. (#59116, @hyperbolic2346)
- Added anti-affinity to kube-dns pods (#57683, @vainu-arto)
- cloudprovider/openstack: fix bug the tries to use octavia client to query flip (#59075, @jrperritt)
- Windows containers now support experimental Hyper-V isolation by setting annotation `experimental.windows.kubernetes.io/isolation-type=hyperv` and feature gates HyperVContainer. Only one container per pod is supported yet. (#58751, @feiskyer)
- `crds` is added as a shortname for CustomResourceDefinition i.e. `kubectl get crds` can now be used. (#59061, @nikhita)
- Fix an issue where port forwarding doesn't forward local TCP6 ports to the pod (#57457, @vfreex)
- YAMLDecoder Read now tracks rest of buffer on io.ErrShortBuffer (#58817, @karlhungus)
- Prevent kubelet from getting wedged if initialization of modules returns an error. (#59020, @brendandburns)
- Fixed a race condition inside kubernetes-worker that would result in a temporary error situation. (#59005, @hyperbolic2346)

- [GCE] Apiserver uses `InternalIP` as the most preferred kubelet address type by default. (#59019, @MrHohn)
- Deprecate insecure flags `--insecure-bind-address`, `--insecure-port` and remove `--public-address-override`. (#59018, @hzxuzhonghu)
- Support GetLabelsForVolume in OpenStack Provider (#58871, @edisonxiang)
- Build using go1.9.3. (#59012, @ixdy)
- CRI: Add a call to reopen log file for a container. (#58899, @yujuhong)
- The alpha KubeletConfigFile feature gate has been removed, because it was redundant with the Kubelet's –config flag. It is no longer necessary to set this gate to use the flag. The –config flag is still considered alpha. (#58978, @mtaufen)
- `kubectl scale` can now scale any resource (kube, CRD, aggregate) conforming to the standard scale endpoint (#58298, @p0lyn0mial)
- kube-apiserver flag –tls-ca-file has had no effect for some time. It is now deprecated and slated for removal in 1.11. If you are specifying this flag, you must remove it from your launch config before upgrading to 1.11. (#58968, @deads2k)
- Fix regression in the CRI: do not add a default hostname on short image names (#58955, @runcom)
- Get windows kernel version directly from registry (#58498, @feiskyer)
- Remove deprecated –require-kubeconfig flag, remove default –kubeconfig value (#58367, @zhangxiaoyu-zidif)
- Google Cloud Service Account email addresses can now be used in RBAC (#58141, @ahmetb)
  - Role bindings since the default scopes now include the "user-
  - info.email"
  - scope. This is a breaking change if the numeric uniqueIDs of the Google
  - service accounts were being used in RBAC role bindings. The behavior
  - can be overridden by explicitly specifying the scope values as
  - comma-separated string in the "users[*].config.scopes" field in the
  - KUBECONFIG file.
- kube-apiserver is changed to use SSH tunnels for webhook iff the webhook is not directly routable from apiserver's network environment. (#58644, @yguo0905)
- Updated priority of mirror pod according to PriorityClassName. (#58485, @k82cn)
- Fixes a bug where kubelet crashes trying to free memory under memory pressure (#58574, @yastij)

v1.10.0-alpha.2

Documentation & Examples

Downloads for v1.10.0-alpha.2

filename	sha256 hash
kubernetes.tar.gz	89efeb8b16c40e5074f092f51399995f0fe4a0312367a8f54bd227c3c6fcb629
kubernetes-src.tar.gz	eefbbf435f1b7a0e416f4e6b2c936c49ce5d692994da8d235c5e25bc408eec57

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	878366200ddfb9128a133d7d377057c6f878b24357062cf5243c0f0a
kubernetes-client-darwin-amd64.tar.gz	dc065b9ecfa513607eac6e7dd125b2c25c9a9e7c13d0b2b6e56586e1
kubernetes-client-linux-386.tar.gz	93c2462051935d8f6bca6c72d09948963d47cd64426660f63e0cea7d
kubernetes-client-linux-amd64.tar.gz	0eef61285fad1f9ff8392c59986d3a41887abc642bcb5cb451c5a530
kubernetes-client-linux-arm64.tar.gz	6cf7913730a57b503beaf37f5c4d0f97789358983ed03654036f8b98
kubernetes-client-linux-arm.tar.gz	f03c3ecbf4c08d263f2daa8cbe838e20452d6650b80e9a74762c155c
kubernetes-client-linux-ppc64le.tar.gz	25a2f93ebb721901d262adae4c0bdaa4cf1293793e9dff4507e031b8
kubernetes-client-linux-s390x.tar.gz	3e0b9ef771f36edb61bd61ccb67996ed41793c01f8686509bf93e585
kubernetes-client-windows-386.tar.gz	387e5e6b0535f4f5996c0732f1b591d80691acaec86e35482c7b90e0
kubernetes-client-windows-amd64.tar.gz	c10a72d40252707b732d33d03beec3c6380802d0a6e3214cbbf4af25

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	42c1e016e8b0c5cc36c7bf574abca18c63e16d719d35e19ddbcbcd5aae
kubernetes-server-linux-arm64.tar.gz	b7774c54344c75bf5c703d4ca271f0af6c230e86cbe40eafd9cbf98a4f
kubernetes-server-linux-arm.tar.gz	c11c8554506b64d6fd1a6e79bfc4e1e19f4f826b9ba98de81bc757901e
kubernetes-server-linux-ppc64le.tar.gz	196bd957804b2a9049189d225e49bf78e52e9adef12c072128e4e85d35
kubernetes-server-linux-s390x.tar.gz	be12fbea28a6cb089734782fe11e6f90a30785b9ad1ec02bc08a59afeb

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	a1feb239dfc473b49adf95d7d94e4a9c6c7d07416d4e935e3fc10175f
kubernetes-node-linux-arm64.tar.gz	26583c0bd08313bdc0bdfba6745f3ccd0f117431d3a5e2623bb501567

filename	sha256 hash
kubernetes-node-linux-arm.tar.gz	`79c6299a5482467e3e85ee881f21edf5d491bc28c94e547d9297d1e1a`
kubernetes-node-linux-ppc64le.tar.gz	`2732fd288f1eac44c599423ce28cbdb85b54a646970a3714be5ff86d1`
kubernetes-node-linux-s390x.tar.gz	`8d49432f0ff3baf55e71c29fb6ffc1673b2a45b9eae2e1906138b1409`
kubernetes-node-windows-amd64.tar.gz	`15ff74edfa98cd1afadcc4e53dd592b1e2935fbab76ad731309d355ae`

Changelog since v1.10.0-alpha.1

Action Required

- Bug fix: webhooks now do not skip cluster-scoped resources (#58185, @caesarxuchao)
  - Action required: Before upgrading your Kubernetes clusters, double check if you had configured webhooks for cluster-scoped objects (e.g., nodes, persistentVolume), these webhooks will start to take effect. Delete/modify the configs if that's not desirable.

Other notable changes

- Fixing extra_sans option on master and load balancer. (#58843, @hyperbolic2346)
- ConfigMap objects now support binary data via a new `binaryData` field. When using `kubectl create configmap --from-file`, files containing non-UTF8 data will be placed in this new field in order to preserve the non-UTF8 data. Use of this feature requires 1.10+ apiserver and kubelets. (#57938, @dims)
- New alpha feature to limit the number of processes running in a pod. Cluster administrators will be able to place limits by using the new kubelet command line parameter –pod-max-pids. Note that since this is a alpha feature they will need to enable the "SupportPodPidsLimit" feature. (#57973, @dims)
- Add storage-backend configuration option to kubernetes-master charm. (#58830, @wwwtyro)
- use containing API group when resolving shortname from discovery (#58741, @dixudx)
- Fix kubectl explain for resources not existing in default version of API group (#58753, @soltysh)
- Ensure config has been created before attempting to launch ingress. (#58756, @wwwtyro)
- Access to externally managed IP addresses via the kube-apiserver service proxy subresource is no longer allowed by default. This can be re-enabled via the `ServiceProxyAllowExternalIPs` feature gate, but will be disallowed completely in 1.11 (#57265, @brendandburns)

- Added support for external cloud providers in kubeadm (#58259, @dims)
- rktnetes has been deprecated in favor of rktlet. Please see https://github.com/kubernetes-incubator/rktlet for more information. (#58418, @yujuhong)
- Fixes bug finding master replicas in GCE when running multiple Kubernetes clusters (#58561, @jesseshieh)
- Update Calico version to v2.6.6 (#58482, @tmjd)
- Promoting the apiregistration.k8s.io (aggregation) to GA (#58393, @deads2k)
- Stability: Make Pod delete event handling of scheduler more robust. (#58712, @bsalamat)
- Added support for network spaces in the kubeapi-load-balancer charm (#58708, @hyperbolic2346)
- Added support for network spaces in the kubernetes-master charm (#58704, @hyperbolic2346)
- update etcd unified version to 3.1.10 (#54242, @zouyee)
- updates fluentd in fluentd-es-image to fluentd 1.1.0 (#58525, @monotek)
- Support metrics API in `kubectl top` commands. (#56206, @brancz)
- Added support for network spaces in the kubernetes-worker charm (#58523, @hyperbolic2346)
- CustomResourceDefinitions: OpenAPI v3 validation schemas containing `$ref`references are no longer permitted (valid references could not be constructed previously because property ids were not permitted either). Before upgrading, ensure CRD definitions do not include those `$ref` fields. (#58438, @carlory)
- Openstack: register metadata.hostname as node name (#58502, @dixudx)
- Added nginx and default backend images to kubernetes-worker config. (#58542, @hyperbolic2346)
- –tls-min-version on kubelet and kube-apiserver allow for configuring minimum TLS versions (#58528, @deads2k)
- Fixes an issue where the resourceVersion of an object in a DELETE watch event was not the resourceVersion of the delete itself, but of the last update to the object. This could disrupt the ability of clients clients to re-establish watches properly. (#58547, @liggitt)
- Fixed crash in kubectl cp when path has multiple leading slashes (#58144, @tomerf)
- kube-apiserver: requests to endpoints handled by unavailable extension API servers (as indicated by an `Available` condition of `false` in the registered APIService) now return `503` errors instead of `404` errors. (#58070, @weekface)
- Correctly handle transient connection reset errors on GET requests from client library. (#58520, @porridge)
- Authentication information for OpenStack cloud provider can now be specified as environment variables (#58300, @dims)
- Bump GCE metadata proxy to v0.1.9 to pick up security fixes. (#58221, @ihmccreery)

- - kubeadm now supports CIDR notations in NO_PROXY environment variable (#53895, @kad)
- kubeadm now accept `--apiserver-extra-args`, `--controller-manager-extra-args` and `--scheduler-extra-args` to override / specify additional flags for control plane components (#58080, @simonferquel)
- Add `--enable-admission-plugin` `--disable-admission-plugin` flags and deprecate `--admission-control`. (#58123, @hzxuzhonghu)
  - Afterwards, don't care about the orders specified in the flags.
- "ExternalTrafficLocalOnly" has been removed from feature gate. It has been a GA feature since v1.7. (#56948, @MrHohn)
- GCP: allow a master to not include a metadata concealment firewall rule (if it's not running the metadata proxy). (#58104, @ihmccreery)
- kube-apiserver: fixes loading of `--admission-control-config-file` containing AdmissionConfiguration apiserver.k8s.io/v1alpha1 config object (#58439, @liggitt)
- Fix issue when using OpenStack config drive for node metadata (#57561, @dims)
- Add FSType for CSI volume source to specify filesystems (#58209, @NickrenREN)
- OpenStack cloudprovider: Ensure orphaned routes are removed. (#56258, @databus23)
- Reduce Metrics Server memory requirement (#58391, @kawych)
- Fix a bug affecting nested data volumes such as secret, configmap, etc. (#57422, @joelsmith)
- kubectl now enforces required flags at a more fundamental level (#53631, @dixudx)
- Remove alpha Initializers from kubadm admission control (#58428, @dixudx)
- Enable ValidatingAdmissionWebhook and MutatingAdmissionWebhook in kubeadm from v1.9 (#58255, @dixudx)
- Fixed encryption key and encryption provider rotation (#58375, @liggitt)
- set fsGroup by securityContext.fsGroup in azure file (#58316, @andyzhangx)
- Remove deprecated and unmaintained salt support. kubernetes-salt.tar.gz will no longer be published in the release tarball. (#58248, @mikedanese)
- Detach and clear bad disk URI (#58345, @rootfs)
- Allow version arg in kubeadm upgrade apply to be optional if config file already have version info (#53220, @medinatiger)
- feat(fakeclient): push event on watched channel on add/update/delete (#57504, @yue9944882)
- Custom resources can now be submitted to and received from the API server in application/yaml format, consistent with other API resources. (#58260, @liggitt)
- remove spaces from kubectl describe hpa (#56331, @shiywang)
- fluentd-gcp updated to version 2.0.14. (#58224, @zombiezen)
- Instrument the Azure cloud provider for Prometheus monitoring.

(#58204, @cosmincojocar)
- -Add scheduler optimization options, short circuit all predicates if … (#56926, @wgliang)
- Remove deprecated ContainerVM support from GCE kube-up. (#58247, @mikedanese)
- Remove deprecated kube-push.sh functionality. (#58246, @mikedanese)
- The getSubnetIDForLB() should return subnet id rather than net id. (#58208, @FengyunPan)
- Avoid panic when failing to allocate a Cloud CIDR (aka GCE Alias IP Range). (#58186, @negz)
- Handle Unhealthy devices (#57266, @vikaschoudhary16)
- Expose Metrics Server metrics via /metric endpoint. (#57456, @kawych)
- Remove deprecated container-linux support in gce kube-up.sh. (#58098, @mikedanese)
- openstack cinder detach problem is fixed if nova is shutdowned (#56846, @zetaab)
- Fixes a possible deadlock preventing quota from being recalculated (#58107, @ironcladlou)
- fluentd-es addon: multiline stacktraces are now grouped into one entry automatically (#58063, @monotek)
- GCE: Allows existing internal load balancers to continue using an outdated subnetwork (#57861, @nicksardo)
- ignore images in used by running containers when GC (#57020, @dixudx)
- Remove deprecated and unmaintained photon-controller kube-up.sh. (#58096, @mikedanese)
- The kubelet flag to run docker containers with a process namespace that is shared between all containers in a pod is now deprecated and will be replaced by a new field in `v1.Pod` that configures this behavior. (#58093, @verb)
- fix device name change issue for azure disk: add remount logic (#57953, @andyzhangx)
- The Kubelet now explicitly registers all of its command-line flags with an internal flagset, which prevents flags from third party libraries from unintentionally leaking into the Kubelet's command-line API. Many unintentionally leaked flags are now marked deprecated, so that users have a chance to migrate away from them before they are removed. One previously leaked flag, –cloud-provider-gce-lb-src-cidrs, was entirely removed from the Kubelet's command-line API, because it is irrelevant to Kubelet operation. (#57613, @mtaufen)
- Remove deprecated and unmaintained libvirt-coreos kube-up.sh. (#58023, @mikedanese)
- Remove deprecated and unmaintained windows installer. (#58020, @mikedanese)
- Remove deprecated and unmaintained openstack-heat kube-up.sh. (#58021, @mikedanese)
- Fixes authentication problem faced during various vSphere operations.

(#57978, @prashima)
- fluentd-gcp updated to version 2.0.13. (#57789, @x13n)
- Add support for cloud-controller-manager in local-up-cluster.sh (#57757, @dims)
- Update CSI spec dependency to point to v0.1.0 tag (#57989, @Nickren-REN)
- Update kube-dns to Version 1.14.8 that includes only small changes to how Prometheus metrics are collected. (#57918, @rramkumar1)
- Add proxy_read_timeout flag to kubeapi_load_balancer charm. (#57926, @wwwtyro)
- Adding support for Block Volume type to rbd plugin. (#56651, @sbezverk)
- Fixes a bug in Heapster deployment for google sink. (#57902, @kawych)
- Forbid unnamed contexts in kubeconfigs. (#56769, @dixudx)
- Upgrade to etcd client 3.2.13 and grpc 1.7.5 to improve HA etcd cluster stability. (#57480, @jpbetz)
- Default scheduler code is moved out of the plugin directory. (#57852, @misterikkit)
  - plugin/pkg/scheduler -> pkg/scheduler
  - plugin/cmd/kube-scheduler -> cmd/kube-scheduler
- Bump metadata proxy version to v0.1.7 to pick up security fix. (#57762, @ihmccreery)
- HugePages feature is beta (#56939, @derekwaynecarr)
- GCE: support passing kube-scheduler policy config via SCHEDULER_POLICY_CONFIG (#57425, @yguo0905)
- Returns an error for non overcommitable resources if they don't have limit field set in container spec. (#57170, @jiayingz)
- Update defaultbackend image to 1.4 and deployment apiVersion to apps/v1 (#57866, @zouyee)
- kubeadm: set kube-apiserver advertise address using downward API (#56084, @andrewsykim)
- CDK nginx ingress is now handled via a daemon set. (#57530, @hyperbolic2346)
- The kubelet uses a new release 3.1 of the pause container with the Docker runtime. This version will clean up orphaned zombie processes that it inherits. (#57517, @verb)
- Allow kubectl set image|env on a cronjob (#57742, @soltysh)
- Move local PV negative scheduling tests to integration (#57570, @sbezverk)
- fix azure disk not available issue when device name changed (#57549, @andyzhangx)
- Only create Privileged PSP binding during e2e tests if RBAC is enabled. (#56382, @mikkeloscar)
- RBAC: The system:kubelet-api-admin cluster role can be used to grant full access to the kubelet API (#57128, @liggitt)
- Allow kubernetes components to react to SIGTERM signal and shutdown

gracefully. (#57756, @mborsz)
- ignore nonexistent ns net file error when deleting container network in case a retry (#57697, @dixudx)
- check psp HostNetwork in DenyEscalatingExec admission controller. (#56839, @hzxuzhonghu)
- The alpha `--init-config-dir` flag has been removed. Instead, use the `--config` flag to reference a kubelet configuration file directly. (#57624, @mtaufen)
- Add cache for VM get operation in azure cloud provider (#57432, @karataliu)
- Fix garbage collection when the controller-manager uses –leader-elect=false (#57340, @jmcmeek)
- iSCSI sessions managed by kubernetes will now explicitly set startup.mode to 'manual' to (#57475, @stmcginnis)
  - prevent automatic login after node failure recovery. This is the default open-iscsi mode, so
  - this change will only impact users who have changed their startup.mode to be 'automatic'
  - in /etc/iscsi/iscsid.conf.
- Configurable liveness probe initial delays for etcd and kube-apiserver in GCE (#57749, @wojtek-t)
- Fixed garbage collection hang (#57503, @liggitt)
- Fixes controller manager crash in certain vSphere cloud provider environment. (#57286, @rohitjogvmw)
- Remove useInstanceMetadata parameter from Azure cloud provider. (#57647, @feiskyer)
- Support multiple scale sets in Azure cloud provider. (#57543, @feiskyer)
- GCE: Fixes ILB creation on automatic networks with manually created subnetworks. (#57351, @nicksardo)
- Improve scheduler performance of MatchInterPodAffinity predicate. (#57476, @misterikkit)
- Improve scheduler performance of MatchInterPodAffinity predicate. (#57477, @misterikkit)
- Improve scheduler performance of MatchInterPodAffinity predicate. (#57478, @misterikkit)
- Allow use resource ID to specify public IP address in azure_loadbalancer (#53557, @yolo3301)
- Fixes a bug where if an error was returned that was not an `autorest.DetailedError` we would return `"not found", nil` which caused nodes to go to `NotReady` state. (#57484, @brendandburns)
- Add the path '/version/' to the `system:discovery` cluster role. (#57368, @brendandburns)
- Fixes issue creating docker secrets with kubectl 1.9 for accessing docker private registries. (#57463, @dims)
- adding predicates ordering for the kubernetes scheduler. (#57168, @yastij)

- Free up CPU and memory requested but unused by Metrics Server Pod Nanny. (#57252, @kawych)
- The alpha Accelerators feature gate is deprecated and will be removed in v1.11. Please use device plugins instead. They can be enabled using the DevicePlugins feature gate. (#57384, @mindprince)
- Fixed dynamic provisioning of GCE PDs to round to the next GB instead of GiB (#56600, @edisonxiang)
- Separate loop and plugin control (#52371, @cheftako)
- Use old dns-ip mechanism with older cdk-addons. (#57403, @wwwtyro)
- Retry 'connection refused' errors when setting up clusters on GCE. (#57394, @mborsz)
- Upgrade to etcd client 3.2.11 and grpc 1.7.5 to improve HA etcd cluster stability. (#57160, @jpbetz)
- Added the ability to select pods in a chosen node to be drained, based on given pod label-selector (#56864, @juanvallejo)
- Wait for kubedns to be ready when collecting the cluster IP. (#57337, @wwwtyro)
- Use "k8s.gcr.io" for container images rather than "gcr.io/google_containers". This is just a redirect, for now, so should not impact anyone materially. (#54174, @thockin)
  - Documentation and tools should all convert to the new name. Users should take note of this in case they see this new name in the system.
- Fix ipvs proxier nodeport eth* assumption (#56685, @m1093782566)

v1.10.0-alpha.1

Documentation & Examples

Downloads for v1.10.0-alpha.1

filename	sha256 hash
kubernetes.tar.gz	`403b90bfa32f7669b326045a629bd15941c533addcaf0c49d3c3c561da0542f2`
kubernetes-src.tar.gz	`266da065e9eddf19d36df5ad325f2f854101a0e712766148e87d998e789b80cf`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`5aaa8e294ae4060d34828239e37f37b45fa5a69508374be668965102`
kubernetes-client-darwin-amd64.tar.gz	`40a8e3bab11b88a2bb8e748f0b29da806d89b55775508039abe9c38c`
kubernetes-client-linux-386.tar.gz	`e08dde0b561529f0b2bb39c141f4d7b1c943749ef7c1f9779facf5fb`

filename	sha256 hash
kubernetes-client-linux-amd64.tar.gz	`76a05d31acaab932ef45c67e1d6c9273933b8bc06dd5ce9bad3c7345`
kubernetes-client-linux-arm64.tar.gz	`4b833c9e80f3e4ac4958ea0ffb5ae564b31d2a524f6a14e58802937b`
kubernetes-client-linux-arm.tar.gz	`f1484ab75010a2258ed7717b1284d0c139d17e194ac9e391b8f1c099`
kubernetes-client-linux-ppc64le.tar.gz	`da884f09ec753925b2c1f27ea0a1f6c3da2056855fc88f47929bb3d6`
kubernetes-client-linux-s390x.tar.gz	`c486f760c6707fc92d1659d3cbe33d68c03190760b73ac215957ee52`
kubernetes-client-windows-386.tar.gz	`514c550b7ff85ac33e6ed333bcc06461651fe4004d8b7c12ca67f5dc`
kubernetes-client-windows-amd64.tar.gz	`ddad59222f6a8cb4e88c4330c2a967c4126cb22ac5e0d7126f9f65cc`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`514efd798ce1d7fe4233127f3334a3238faad6c26372a2d457eff02cbe`
kubernetes-server-linux-arm64.tar.gz	`f71f75fb96221f65891fc3e04fd52ae4e5628da8b7b4fbedece3fab4cb`
kubernetes-server-linux-arm.tar.gz	`a9d8c2386813fd690e60623a6ee1968fe8f0a1a8e13bc5cc12b2caf8e8`
kubernetes-server-linux-ppc64le.tar.gz	`21336a5e40aead4e2ec7e744a99d72bf8cb552341f3141abf8f235beb2`
kubernetes-server-linux-s390x.tar.gz	`257e44d38fef83f08990b6b9b5e985118e867c0c33f0e869f0900397b9`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`97bf1210f0595ebf496ca7b000c4367f8a459d97ef72459efc6d0e07a`
kubernetes-node-linux-arm64.tar.gz	`eebcd3c14fb4faeb82ab047a2152db528adc2d9f7b20eef6f5dc58202`
kubernetes-node-linux-arm.tar.gz	`3d4428416c775a0a6463f623286bd2ecdf9240ce901e1fbae180dfb56`
kubernetes-node-linux-ppc64le.tar.gz	`5cc96b24fad0ac1779a66f9b136d90e975b07bf619fea905e6c26ac5a`
kubernetes-node-linux-s390x.tar.gz	`134c13338edf4efcd511f4161742fbaa6dc232965d3d926c3de435e8a`
kubernetes-node-windows-amd64.tar.gz	`ae54bf2bbcb99cdcde959140460d0f83c0ecb187d060b594ae9c53499`

Changelog since v1.9.0

Action Required

- [action required] Remove the kubelet's `--cloud-provider=auto-detect` feature (#56287, @stewart-yu)

Other notable changes

- Fix Heapster configuration and Metrics Server configuration to enable overriding default resource requirements. (#56965, @kawych)

- YAMLDecoder Read now returns the number of bytes read (#57000, @sel)
- Retry 'connection refused' errors when setting up clusters on GCE. (#57324, @mborsz)
- Update kubeadm's minimum supported Kubernetes version in v1.10.x to v1.9.0 (#57233, @xiangpengzhao)
- Graduate CPU Manager feature from alpha to beta. (#55977, @Connor-Doyle)
- Drop hacks used for Mesos integration that was already removed from main kubernetes repository (#56754, @dims)
- Compare correct file names for volume detach operation (#57053, @prashima)
- Improved event generation in volume mount, attach, and extend operations (#56872, @davidz627)
- GCE: bump COS image version to cos-stable-63-10032-71-0 (#57204, @yujuhong)
- fluentd-gcp updated to version 2.0.11. (#56927, @x13n)
- calico-node addon tolerates all NoExecute and NoSchedule taints by default. (#57122, @caseydavenport)
- Support LoadBalancer for Azure Virtual Machine Scale Sets (#57131, @feiskyer)
- Makes the kube-dns addon optional so that users can deploy their own DNS solution. (#57113, @wwwtyro)
- Enabled log rotation for load balancer's api logs to prevent running out of disk space. (#56979, @hyperbolic2346)
- Remove ScrubDNS interface from cloudprovider. (#56955, @feiskyer)
- Fix `etcd-version-monitor` to backward compatibly support etcd 3.1 go-grpc-prometheus metrics format. (#56871, @jpbetz)
- enable flexvolume on Windows node (#56921, @andyzhangx)
- When using Role-Based Access Control, the "admin", "edit", and "view" roles now have the expected permissions on NetworkPolicy resources. (#56650, @danwinship)
- Fix the PersistentVolumeLabel controller from initializing the PV labels when it's not the next pending initializer. (#56831, @jhorwit2)
- kube-apiserver: The external hostname no longer use the cloud provider API to select a default. It can be set explicitly using –external-hostname, if needed. (#56812, @dims)
- Use GiB unit for creating and resizing volumes for Glusterfs (#56581, @gnufied)
- PersistentVolume flexVolume sources can now reference secrets in a namespace other than the PersistentVolumeClaim's namespace. (#56460, @liggitt)
- Scheduler skips pods that use a PVC that either does not exist or is being deleted. (#55957, @jsafrane)
- Fixed a garbage collection race condition where objects with ownerRefs pointing to cluster-scoped objects could be deleted incorrectly. (#57211, @liggitt)

- Kubectl explain now prints out the Kind and API version of the resource being explained (#55689, @luksa)
- api-server provides specific events when unable to repair a service cluster ip or node port (#54304, @frodenas)
- Added docker-logins config to kubernetes-worker charm (#56217, @Cynerva)
- delete useless params containerized (#56146, @jiulongzaitian)
- add mount options support for azure disk (#56147, @andyzhangx)
- Use structured generator for kubectl autoscale (#55913, @wackxu)
- K8s supports cephfs fuse mount. (#55866, @zhangxiaoyu-zidif)
- COS: Keep the docker network checkpoint (#54805, @yujuhong)
- Fixed documentation typo in IPVS README. (#56578, @shift)

See the Releases Page for older releases.

Release notes of older releases can be found in:

- CHANGELOG-1.2.md
- CHANGELOG-1.3.md
- CHANGELOG-1.4.md
- CHANGELOG-1.5.md
- CHANGELOG-1.6.md
- CHANGELOG-1.7.md
- CHANGELOG-1.8.md
- CHANGELOG-1.9.md

[]()

Create an Issue Edit this Page

Edit This Page

v1.10 Release Notes

- v1.10.0
  - Downloads for v1.10.0
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Major Themes
    - Node
    - Storage
    - Windows
    - OpenStack
    - API-machinery

        * Auth
        * Azure
        * CLI
        * Network
    - Before Upgrading
    - Known Issues
    - Deprecations
    - Other Notable Changes
        * Apps
        * AWS
        * Auth
        * CLI
        * Cluster Lifecycle
        * GCP
        * Instrumentation
        * Node
        * OpenStack
        * Scalability
        * Storage
        * Windows
        * Autoscaling
        * API-Machinery
        * Network
        * Azure
        * Scheduling
        * Other changes
    - Non-user-facing Changes
    - External Dependencies
- v1.10.0-rc.1
    - Downloads for v1.10.0-rc.1
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-beta.4
        * Other notable changes
- v1.10.0-beta.4
    - Downloads for v1.10.0-beta.4
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-beta.3
        * Other notable changes
- v1.10.0-beta.3
    - Downloads for v1.10.0-beta.3
        * Client Binaries
        * Server Binaries

        * Node Binaries
    - Changelog since v1.10.0-beta.2
        * Other notable changes
- v1.10.0-beta.2
    - Downloads for v1.10.0-beta.2
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-beta.1
        * Action Required
        * Other notable changes
- v1.10.0-beta.1
    - Downloads for v1.10.0-beta.1
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-alpha.3
        * Action Required
        * Other notable changes
- v1.10.0-alpha.3
    - Downloads for v1.10.0-alpha.3
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-alpha.2
        * Other notable changes
- v1.10.0-alpha.2
    - Downloads for v1.10.0-alpha.2
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.10.0-alpha.1
        * Action Required
        * Other notable changes
- v1.10.0-alpha.1
    - Downloads for v1.10.0-alpha.1
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.9.0
        * Action Required
        * Other notable changes

v1.10.0

Documentation & Examples

Downloads for v1.10.0

filename	sha256 hash
kubernetes.tar.gz	a48d4f6eb4bf329a87915d2264250f2045aab1e8c6cc3e574a887ec42b5c6edc
kubernetes-src.tar.gz	3b51bf50370fc022f5e4578b071db6b63963cd64b35c41954d4a2a8f6738c0a7

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	8f35d820d21bfdb3186074eb2ed5212b983e119215356a7a76a9f773
kubernetes-client-darwin-amd64.tar.gz	ae06d0cd8f6fa8d145a9dbdb77e6cba99ad9cfce98b01c766df1394c
kubernetes-client-linux-386.tar.gz	8147723a68763b9791def5b41d75745e835ddd82f23465a2ba7797b8
kubernetes-client-linux-amd64.tar.gz	845668fe2f854b05aa6f0b133314df83bb41a486a6ba613dbb1374bf
kubernetes-client-linux-arm.tar.gz	5d2552a6781ef0ecaf308fe6a02637faef217c98841196d4bd7c52a0
kubernetes-client-linux-arm64.tar.gz	9d5e4ba43ad7250429015f33f728c366daa81e894e8bfe8063d73ce9
kubernetes-client-linux-ppc64le.tar.gz	acabf3a26870303641ce60a59b5bb9702c8a7445b16f4293abc7868e
kubernetes-client-linux-s390x.tar.gz	8d836df10b50d11434b5ee797aecc21714723f02fc47fe3dd600426e
kubernetes-client-windows-386.tar.gz	ca183b66f910ff11fa468e47251c68d256ef145fcfc2d23d4347d066
kubernetes-client-windows-amd64.tar.gz	817aea754a059c635f4d690aa0232a8e77eb74e76357cafd8f105569

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	f2e0505bee7d9217332b96be11d1b88c06f51049f7a44666b0ede80bfb
kubernetes-server-linux-arm.tar.gz	a7be68c32a299c98353633f3161f910c4b970c8364ccee5f98e1991364
kubernetes-server-linux-arm64.tar.gz	4df4add2891d02101818653ac68b57e6ce4760fd298f47467ce767ac02
kubernetes-server-linux-ppc64le.tar.gz	199b52461930c0218f984884069770fb7e6ceaf66342d5855b209ff188
kubernetes-server-linux-s390x.tar.gz	578f93fc22d2a5bec7dc36633946eb5b7359d96233a2ce74f8b3c5a231

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	8c03412881eaab5f3ea828bbb81e8ebcfc092d311b2685585817531fa
kubernetes-node-linux-arm.tar.gz	d6a413fcadb1b933a761ac9b0c864f596498a8ac3cc4922c1569306cc

filename	sha256 hash
kubernetes-node-linux-arm64.tar.gz	`46d6b74759fbc3b2aad42357f019dae0e882cd4639e499e31b5b0293`
kubernetes-node-linux-ppc64le.tar.gz	`bdecc12feab2464ad917623ade0cbf58675e0566db38284b79445841`
kubernetes-node-linux-s390x.tar.gz	`afe35c2854f35939be75ccfb0ec81399acf4043ae7cf19dd6fbe6386`
kubernetes-node-windows-amd64.tar.gz	`eac14e3420ca9769e067cbf929b5383cd77d56e460880a30c0df1bbf`

Major Themes

Node

Many of the changes within SIG-Node revolve around control. With the beta release of the `kubelet.config.k8s.io` API group, a significant subset of Kubelet configuration can now be configured via a versioned config file. Kubernetes v1.10 adds alpha support for the ability to configure whether containers in a pod should share a single process namespace, and the CRI has been upgraded to v1alpha2, which adds support for Windows Container Configuration. Kubernetes v1.10 also ships with the beta release of the CRI validation test suite.

The Resource Management Working Group graduated three features to beta in the 1.10 release. First, CPU Manager, which allows users to request exclusive CPU cores. This helps performance in a variety of use-cases, including network latency sensitive applications, as well as applications that benefit from CPU cache residency. Next, Huge Pages, which allows pods to consume either 2Mi or 1Gi Huge Pages. This benefits applications that consume large amounts of memory. Use of Huge Pages is a common tuning recommendation for databases and JVMs. Finally, the Device Plugin feature, which provides a framework for vendors to advertise their resources to the Kubelet without changing Kubernetes core code. Targeted devices include GPUs, High-performance NICs, FPGAs, InfiniBand, and other similar computing resources that may require vendor specific initialization and setup.

Storage

This release brings additional power to both local storage and Persistent Volumes. Mount namespace propagation allows a container to mount a volume as rslave so that host mounts can be seen inside the container, or as rshared so that mounts made inside a container can be seen by the host. (Note that this is not supported on Windows.) Local Ephemeral Storage Capacity Isolation makes it possible to set requests and limits on ephemeral local storage resources. In addition, you can now create Local Persistent Storage, which enables PersistentVolumes to be created with locally attached disks, and not just network volumes.

On the Persistent Volumes side, this release Prevents deletion of Persistent Volume Claims that are used by a pod and Persistent Volumes that are bound to a Persistent Volume Claim, making it impossible to delete storage that is in use by a pod.

This release also includes Topology Aware Volume Scheduling for local persistent volumes, the stable release of Detailed storage metrics of internal state, and beta support for Out-of-tree CSI Volume Plugins.

Windows

This release continues to enable more existing features on Windows, including container CPU resources, image filesystem stats, and flexvolumes. It also adds Windows service control manager support and experimental support for Hyper-V isolation of single-container pods.

OpenStack

SIG-OpenStack updated the OpenStack provider to use newer APIs, consolidated community code into one repository, engaged with the Cloud Provider Working Group to have a consistent plan for moving provider code into individual repositories, improved testing of provider code, and strengthened ties with the OpenStack developer community.

API-machinery

API Aggregation has been upgraded to "stable" in Kubernetes 1.10, so you can use it in production. Webhooks have seen numerous improvements, including alpha Support for self-hosting authorizer webhooks.

Auth

This release lays the groundwork for new authentication methods, including the alpha release of External client-go credential providers and the TokenRequest API. In addition, Pod Security Policy now lets administrators decide what contexts pods can run in, and gives administrators the ability to limit node access to the API.

Azure

Kubernetes 1.10 includes alpha Azure support for cluster-autoscaler, as well as support for Azure Virtual Machine Scale Sets.

CLI

This release includes a change to kubectl get and describe to work better with extensions, as the server, rather than the client, returns this information for a smoother user experience.

Network

In terms of networking, Kubernetes 1.10 is about control. Users now have beta support for the ability to configure a pod's resolv.conf, rather than relying on the cluster DNS, as well as configuring the NodePort IP address. You can also switch the default DNS plugin to CoreDNS (beta).

Before Upgrading

- In-place node upgrades to this release from versions 1.7.14, 1.8.9, and 1.9.4 are not supported if using subpath volumes with PVCs. Such pods should be drained from the node first.
- The minimum supported version of Docker is now 1.11; if you are using Docker 1.10 or below, be sure to upgrade Docker before upgrading Kubernetes. (#57845, @yujuhong)
- The Container Runtime Interface (CRI) version has increased from v1alpha1 to v1alpha2. Runtimes implementing the CRI will need to update to the new version, which configures container namespaces using an enumeration rather than booleans. This change to the alpha API is not backwards compatible; implementations of the CRI such as containerd, will need to update to the new API version. (#58973, @verb)
- The default Flexvolume plugin directory for COS images on GCE has changed to `/home/kubernetes/flexvolume`, rather than `/etc/srv/kubernetes/kubelet-plugins/volu` Existing Flexvolume installations in clusters using COS images must be moved to the new directory, and installation processes must be updated with the new path. (#58171, @verult)
- Default values differ between the Kubelet's componentconfig (config file) API and the Kubelet's command line. Be sure to review the default values when migrating to using a config file. For example, the authz mode is set to "AlwaysAllow" if you rely on the command line, but defaults to the more secure "Webhook" mode if you load config from a file. (#59666, @mtaufen)
- [GCP kube-up.sh] Variables that were part of kube-env that were only used for kubelet flags are no longer being set, and are being replaced by the more portable mechanism of the kubelet configuration file. The

individual variables in the kube-env metadata entry were never meant to be a stable interface and this release note only applies if you are depending on them. (#60020, @roberthbailey)

- kube-proxy: feature gates are now specified as a map when provided via a JSON or YAML KubeProxyConfiguration, rather than as a string of key-value pairs. For example:

KubeProxyConfiguration Before:

```
apiVersion: kubeproxy.config.k8s.io/v1alpha1
kind: KubeProxyConfiguration
**featureGates: "SupportIPVSProxyMode=true"**
```

KubeProxyConfiguration After:

```
apiVersion: kubeproxy.config.k8s.io/v1alpha1
kind: KubeProxyConfiguration
**featureGates:**
**  SupportIPVSProxyMode: true**
```

(#57962, @xiangpengzhao)

- The `kubeletconfig` API group has graduated from alpha to beta, and the name has changed to `kubelet.config.k8s.io`. Please use `kubelet.config.k8s.io/v1beta1`, as `kubeletconfig/v1alpha1` is no longer available. (#53833, @mtaufen)
- kube-apiserver: the experimental in-tree Keystone password authenticator has been removed in favor of extensions that enable use of Keystone tokens. (#59492, @dims)
- The udpTimeoutMilliseconds field in the kube-proxy configuration file has been renamed to udpIdleTimeout. Administrators must update their files accordingly. (#57754, @ncdc)
- The kubelet's `--cloud-provider=auto-detect` feature has been removed; make certain to specify the cloud provider. (#56287, @stewart-yu)
- kube-apiserver: the OpenID Connect authenticator no longer accepts tokens from the Google v3 token APIs; users must switch to the "https://www.googleapis.com/oauth2/v4/token%22 endpoint.
- kube-apiserver: the root /proxy paths have been removed (deprecated since v1.2). Use the /proxy subresources on objects that support HTTP proxying. (#59884, @mikedanese)
- Eviction thresholds set to 0% or 100% will turn off eviction. (#59681, @mtaufen)
- CustomResourceDefinitions: OpenAPI v3 validation schemas containing `$ref`references are no longer permitted. Before upgrading, ensure CRD definitions do not include those `$ref` fields. (#58438, @carlory)

- Webhooks now do not skip cluster-scoped resources. Before upgrading your Kubernetes clusters, double check whether you have configured webhooks for cluster-scoped objects (e.g., nodes, persistentVolume), as these webhooks will start to take effect. Delete/modify the configs if that's not desirable. (#58185, @caesarxuchao)
- Using kubectl gcp auth plugin with a Google Service Account to authenticate to a cluster now additionally requests a token with the "userinfo.email" scope. This way, users can write ClusterRoleBindings/RoleBindings with the email address of the service account directly. (This is a breaking change if the numeric uniqueIDs of the Google service accounts were being used in RBAC role bindings. The behavior can be overridden by explicitly specifying the scope values as comma-separated string in the "users[*].config.scopes" field in the KUBECONFIG file.) This way, users can now set a Google Service Account JSON key in the GOOGLE_APPLICATION_CREDENTIALS environment variable, craft a kubeconfig file with GKE master IP+CA cert, and authenticate to GKE in headless mode without requiring gcloud CLI. (#58141, @ahmetb)
- kubectl port-forward no longer supports the deprecated -p flag; the flag itself is unnecessary and should be replaced by just the `<pod-name>`. (#59705, @phsiao)
- Removed deprecated –require-kubeconfig flag, removed default –kubeconfig value ((#58367, @zhangxiaoyu-zidif)
- The public-address-override, address, and port flags have been removed and replaced by bind-address, insecure-bind-address, and insecure-port, respectively. They are marked as deprecated in #36604, which is more than a year ago. (#59018, @hzxuzhonghu)
- The alpha `--init-config-dir` flag has been removed. Instead, use the `--config` flag to reference a kubelet configuration file directly. (#57624, @mtaufen)
- Removed deprecated and unmaintained salt support. kubernetes-salt.tar.gz will no longer be published in the release tarball. (#58248, @mikedanese)
- The deprecated –mode switch for GCE has been removed.(#61203)
- The word "manifest" has been expunged from the Kubelet API. (#60314)
- https://github.com/kubernetes/kubernetes/issues/49213 sig-cluster-lifecycle has decided to phase out the cluster/ directory over the next couple of releases in favor of deployment automations maintained outside of the core repo and outside of kubernetes orgs. @kubernetes/sig-cluster-lifecycle-misc)
  - Remove deprecated ContainerVM support from GCE kube-up. (#58247, @mikedanese)

  - Remove deprecated kube-push.sh functionality. (#58246, @mikedanese)
  - Remove deprecated container-linux support in gce kube-up.sh. (#58098, @mikedanese)
  - Remove deprecated and unmaintained photon-controller kube-up.sh. (#58096, @mikedanese)
  - Remove deprecated and unmaintained libvirt-coreos kube-up.sh. (#58023, @mikedanese)
  - Remove deprecated and unmaintained windows installer. (#58020, @mikedanese)
  - Remove deprecated and unmaintained openstack-heat kube-up.sh. (#58021, @mikedanese)
  - Remove deprecated vagrant kube-up.sh. (#58118,@roberthbailey)
- The DaemonSet controller, its integration tests, and its e2e tests, have been updated to use the apps/v1 API. Users should, but are not yet required to, update their scripts accordingly. (#59883, @kow3ns)
- MountPropagation feature is now beta. As a consequence, all volume mounts in containers are now `rslave` on Linux by default. To make this default work in all Linux environments the entire mount tree should be marked as shareable, e.g. via `mount --make-rshared /`. All Linux distributions that use systemd already have the root directory mounted as rshared and hence they need not do anything. In Linux environments without systemd we recommend running `mount --make-rshared /` during boot before docker is started, (@jsafrane)

Known Issues

- Use of subPath module with hostPath volumes can cause issues during reconstruction (#61446) and with containerized kubelets (#61456). The workaround for this issue is to specify the complete path in the hostPath volume. Use of subPathmounts nested within atomic writer volumes (configmap, secret, downwardAPI, projected) does not work (#61545), and socket files cannot be loaded from a subPath (#62377). Work on these issues is ongoing.
- Kubeadm is currently omitting etcd certificates in a self-hosted deployment; this will be fixed in a point relelase. (#61322)
- Some users, especially those with very large clusters, may see higher memory usage by the kube-controller-manager in 1.10. (#61041)

Deprecations

- etcd2 as a backend is deprecated and support will be removed in Kubernetes 1.13.
- VolumeScheduling and LocalPersistentVolume features are beta and enabled by default. The PersistentVolume NodeAffinity alpha annotation is deprecated and will be removed in a future release. (#59391, @msau42)
- The alpha Accelerators feature gate is deprecated and will be removed in v1.11. Please use device plugins (https://github.com/kubernetes/features/issues/368) instead. They can be enabled using the DevicePlugins feature gate. (#57384, @mindprince)
- The ability to use kubectl scale jobs is deprecated. All other scale operations remain in place, but the ability to scale jobs will be removed in a future release. (#60139, @soltysh)
- Flags that can be set via the Kubelet's –config file are now deprecated in favor of the file. (#60148, @mtaufen)
- `--show-all` (which only affected pods and only for human readable/non-API printers) is now defaulted to true and deprecated. The flag determines whether pods in a terminal state are displayed. It will be inert in 1.11 and removed in a future release. (#60210, @deads2k)
- The ability to use the insecure HTTP port of kube-controller-manager and cloud-controller-manager has been deprecated, and will be removed in a future release. Use `--secure-port` and `--bind-address` instead. (#59582, @sttts)
- The ability to use the insecure flags `--insecure-bind-address`, `--insecure-port` in the apiserver has been deprecated and will be removed in a future release. Use `--secure-port` and `--bind-address` instead. (#59018, @hzxuzhonghu)
- The recycling reclaim policy has been deprecated. Users should use dynamic provisioning instead. (#59063, @ayushpateria)
- kube-apiserver flag –tls-ca-file has had no effect for some time. It is now deprecated and slated for removal in 1.11. If you are specifying this flag, you must remove it from your launch config before upgrading to 1.11. (#58968, @deads2k)
- The `PodSecurityPolicy` API has been moved to the `policy/v1beta1` API group. The `PodSecurityPolicy` API in the `extensions/v1beta1` API group is deprecated and will be removed in a future release. Authorizations for using pod security policy resources should change to reference the `policy` API group after upgrading to 1.11. (#54933, @php-coder)

- Add `--enable-admission-plugin --disable-admission-plugin` flags and deprecate `--admission-control`. When using the separate flag, the order in which they're specified doesn't matter. (#58123, @hzxuzhonghu)
- The kubelet –docker-disable-shared-pid flag, which runs docker containers with a process namespace that is shared between all containers in a pod, is now deprecated and will be removed in a future release. It is replaced by `v1.Pod.Spec.ShareProcessNamespace`, which configures this behavior. This field is alpha and can be enabled with –feature-gates=PodShareProcessNamespace=true. (#58093, @verb)
- The kubelet's cadvisor port has been deprecated. The default will change to 0 (disabled) in 1.12, and the cadvisor port will be removed entirely in 1.13. (#59827, @dashpole)
- rktnetes has been deprecated in favor of rktlet. Please see https://github.com/kubernetes-incubator/rktlet for more information. (#58418, @yujuhong)
- The Kubelet now explicitly registers all of its command-line flags with an internal flagset, which prevents flags from third party libraries from unintentionally leaking into the Kubelet's command-line API. Many unintentionally leaked flags are now marked deprecated, so that users have a chance to migrate away from them before they are removed. In addition, one previously leaked flag, –cloud-provider-gce-lb-src-cidrs, has been entirely removed from the Kubelet's command-line API, because it is irrelevant to Kubelet operation. The deprecated flags are:
  - –application_metrics_count_limit
  - –boot_id_file
  - –container_hints
  - –containerd
  - –docker
  - –docker_env_metadata_whitelist
  - –docker_only
  - –docker-tls
  - –docker-tls-ca
  - –docker-tls-cert
  - –docker-tls-key
  - –enable_load_reader
  - –event_storage_age_limit
  - –event_storage_event_limit
  - –global_housekeeping_interval
  - –google-json-key
  - –log_cadvisor_usage
  - –machine_id_file
  - –storage_driver_user
  - –storage_driver_password

  - –storage_driver_host
  - –storage_driver_db
  - –storage_driver_table
  - –storage_driver_secure
  - –storage_driver_buffer_duration

(#57613, @mtaufen)

- The boostrapped RBAC role and rolebinding for the `cloud-provider` service account is now deprecated. If you're currently using this service account, you must create and apply your own RBAC policy for new clusters. (#59949, @nicksardo)
- Format-separated endpoints for the OpenAPI spec, such as /swagger.json, /swagger-2.0.0.0.json, and so on, have been deprecated. The old endpoints will remain in 1.10, 1.11, 1.12 and 1.13, and get removed in 1.14. Please use single `/openapi/v2` endpoint with the appropriate Accept: header instead. For example:

previous	now
GET /swagger.json	GET /openapi/v2 Accept: application/json
GET /swagger-2.0.0.pb-v1	GET /openapi/v2 Accept: application/com.github.proto-openapi.spec.v2@v1.
GET /swagger-2.0.0.pb-v1.gz	GET /openapi/v2 Accept: application/com.github.proto-openapi.spec.v2@v1.

(#59293, @roycaihw)

Other Notable Changes

Apps

- Updated defaultbackend image to 1.4 and deployment apiVersion to apps/v1. Users should concentrate on updating scripts to the new version. (#57866, @zouyee)
- Fix StatefulSet to work correctly with set-based selectors. (#59365, @ayushpateria)
- Fixes a case when Deployment with recreate strategy could get stuck on old failed Pod. (#60301, @tnozicka)
- ConfigMap objects now support binary data via a new `binaryData` field. When using `kubectl create configmap --from-file`, files containing non-UTF8 data will be placed in this new field in order to preserve the non-UTF8 data. Note that kubectl's `--append-hash` feature doesn't take `binaryData` into account. Use of this feature requires 1.10+ apiserver and kubelets. (#57938, @dims)

AWS

- Add AWS cloud provider option to use an assumed IAM role. For example, this allows running Controller Manager in a account separate from the worker nodes, but still allows all resources created to interact with the workers. ELBs created would be in the same account as the worker nodes for instance.(#59668, @brycecarman)
- AWS EBS volume plugin now includes block and volumeMode support. (#58625, @screeley44)
- On AWS kubelet returns an error when started under conditions that do not allow it to work (AWS has not yet tagged the instance), rather than failing silently. (#60125, @vainu-arto)
- AWS Security Groups created for ELBs will now be tagged with the same additional tags as the ELB; that is, the tags specified by the "service.beta.kubernetes.io/aws-load-balancer-additional-resource-tags" annotation. This is useful for identifying orphaned resources. (#58767, @2rs2ts)
- AWS Network Load Balancers will now be deleted properly, including security group rules. Fixes #57568 (#57569, @micahhausler)
- Time for attach/detach retry operations has been decreased from 10-12s to 2-6s (#56974, @gnufied)

Auth

- Contexts must be named in kubeconfigs. (#56769, @dixudx)
- vSphere operations will no longer fail due to authentication errors. (#57978, @prashima)
- This removes the cloud-provider role and role binding from the rbac boostrapper and replaces it with a policy applied via addon mgr. This also creates a new clusterrole allowing the service account to create events for any namespace.
- client-go: alpha support for out-of-tree exec-based credential providers. For example, a cloud provider could create their own authentication system rather than using the standard authentication provided with Kubernetes. (#59495, @ericchiang)
- The node authorizer now allows nodes to request service account tokens for the service accounts of pods running on them. This allows agents using the node identity to take actions on behalf of local pods. (#55019, @mikedanese)

- kube-apiserver: the OpenID Connect authenticator can now verify ID Tokens signed with JOSE algorithms other than RS256 through the –oidc-signing-algs flag. (#58544, @ericchiang)
- Requests with invalid credentials no longer match audit policy rules where users or groups are set, correcting a problem where authorized requests were getting through. (#59398, @CaoShuFeng)
- The Stackdriver Metadata Agent addon now includes RBAC manifests, enabling it to watch nodes and pods. (#57455, @kawych)
- Fix RBAC role for certificate controller to allow cleaning up of Certificate Signing Requests that are Approved and issued or Denied. (#59375, @mikedanese)
- kube-apiserver: Use of the `--admission-control-config-file` with a file containing an AdmissionConfiguration apiserver.k8s.io/v1alpha1 config object no longer leads to an error when launching kube-apiserver. (#58439 @liggitt)
- Default enabled admission plugins are now `NamespaceLifecycle,LimitRanger,ServiceAccount,Persis` Please note that if you previously had not set the `--admission-control` flag, your cluster behavior may change (to be more standard). (#58684, @hzxuzhonghu)
- Encryption key and encryption provider rotation now works properly. (#58375, @liggitt
- RBAC: The system:kubelet-api-admin cluster role can be used to grant full access to the kubelet API so integrators can grant this role to the –kubelet-client-certificate credential given to the apiserver. (#57128, @liggitt)
- DenyEscalatingExec admission controller now checks psp HostNetwork as well as hostIPC and hostPID. hostNetwork is also checked to deny exec /attach. (#56839, [@hzxuzhonghu]=(https://github.com/hzxuzhonghu))
- When using Role-Based Access Control, the “admin”, “edit”, and “view” roles now have the expected permissions on NetworkPolicy resources, rather than reserving those permissions to only cluster-admin. (#56650, @danwinship)
- Added docker-logins config to kubernetes-worker charm. (#56217, @Cynerva)
- Add ability to control primary GID of containers through Pod Spec at Pod level and Per Container SecurityContext level. (#52077)

CLI

- Use structured generator for kubectl autoscale. (#55913, @wackxu)

- Allow kubectl to set image|env on a cronjob (#57742, @soltysh)
- Fixed crash in kubectl cp when path has multiple leading slashes. (#58144, @tomerf)
- kubectl port-forward now allows using resource name (e.g., deployment/www) to select a matching pod, as well as the use of –pod-running-timeout to wait until at least one pod is running. (#59705, @phsiao)
- 'cj' has been added as a shortname for CronJobs, as in `kubectl get cj` (#59499, @soltysh)
- `crds` has been added as a shortname for CustomResourceDefinition, as in `kubectl get crds` (#59061, @nikhita)
- Fix kubectl explain for resources not existing in default version of API group, such as `batch/v1, Kind=CronJob`. (#58753, @soltysh)
- Added the ability to select pods in a chosen node to be drained based on given pod label-selector. (#56864, @juanvallejo)
- Kubectl explain now prints out the Kind and API version of the resource being explained. (#55689, @luksa)

Cluster Lifecycle

- The default Kubernetes version for kubeadm is now 1.10. (#61127, @timothysc)
- The minimum Kubernetes version in kubeadm is now v1.9.0. (#57233, @xiangpengzhao)
- Fixes a bug in Heapster deployment for google sink. (#57902, @kawych)
- On cluster provision or upgrade, kubeadm now generates certs and secures all connections to the etcd static-pod with mTLS. This includes the etcd serving cert, the etcd peer cert, and the apiserver etcd client cert. Flags and hostMounts are added to the etcd and apiserver static-pods to load these certs. For connections to etcd, https is now used in favor of http. (#57415, @stealthybox These certs are also generated on upgrade. (#60385, @stealthybox)
- Demoted controlplane passthrough flags apiserver-extra-args, controller-manager-extra-args, scheduler-extra-args to alpha flags (#59882, @krisnova)
- The new flag `--apiserver-advertise-dns-address` is used in the node's kubelet.confg to point to the API server, allowing users to define a DNS entry instead of an IP address. (#59288, @stevesloka)

- MasterConfiguration manifiest The criSocket flag is now usable within the `MasterConfiguration` and `NodeConfiguration` manifest files that exist for configuring kubeadm. Before it only existed as a command line flag and was not able to be configured when using the `--config` flag and the manifest files. (#59057(#59292, @JordanFaust)
- `kubeadm init` can now omit the tainting of the master node if configured to do so in `kubeadm.yaml` using `noTaintMaster: true`. For example, uses can create a file with the content:

```
apiVersion: [kubeadm.k8s.io/v1alpha1](http://kubeadm.k8s.io/v1alpha1)
kind: MasterConfiguration
kubernetesVersion: v1.9.1
noTaintMaster: true
```

And point to the file using the –config flag, as in

```
kubeadm init --config /etc/kubeadm/kubeadm.yaml
```

(#55479, @ijc)

- kubeadm: New "imagePullPolicy" option in the init configuration file, that gets forwarded to kubelet static pods to control pull policy for etcd and control plane images. This option allows for precise image pull policy specification for master nodes and thus for more tight control over images. It is useful in CI environments and in environments, where the user has total control over master VM templates (thus, the master VM templates can be preloaded with the required Docker images for the control plane services). (#58960, @rosti)
- Fixed issue with charm upgrades resulting in an error state. (#59064, @hyperbolic2346)
- kube-apiserver –advertise-address is now set using downward API for self-hosted Kubernetes with kubeadm. (#56084, @andrewsykim)
- When using client or server certificate rotation, the Kubelet will no longer wait until the initial rotation succeeds or fails before starting static pods. This makes running self-hosted masters with rotation more predictable. (#58930, @smarterclayton)
- Kubeadm no longer throws an error for the –cloud-provider=external flag. (#58259, @dims)
- Added support for network spaces in the kubeapi-load-balancer charm. (#58708, @hyperbolic2346)
- Added support for network spaces in the kubernetes-master charm. (#58704, @hyperbolic2346)
- Added support for network spaces in the kubernetes-worker charm. (#58523, @hyperbolic2346)

- Added support for changing nginx and default backend images to kubernetes-worker config. (#58542, @hyperbolic2346)
- kubeadm now accepts `--apiserver-extra-args`, `--controller-manager-extra-args` and `--scheduler-extra-args`, making it possible to override / specify additional flags for control plane components. One good example is to deploy Kubernetes with a different admission-control flag on API server. (#58080, @simonferquel)
- Alpha Initializers have been removed from kubadm admission control. Kubeadm users who still want to use Initializers can use apiServerExtraArgs through the kubeadm config file to enable it when booting up the cluster. (#58428, @dixudx)
- ValidatingAdmissionWebhook and MutatingAdmissionWebhook are beta, and are enabled in kubeadm by default. (#58255, @dixudx)
- Add proxy_read_timeout flag to kubeapi_load_balancer charm. (#57926, @wwwtyro)
- Check for known manifests during preflight instead of only checking for non-empty manifests directory. This makes the preflight checks less heavy-handed by specifically checking for well-known files (kube-apiserver.yaml, kube-controller-manager.yaml, kube-scheduler.yaml, etcd.yaml) in /etc/kubernetes/manifests instead of simply checking for a non-empty directory. (#57287, @mattkelly)
- PVC Protection alpha feature was renamed to Storage Protection. The Storage Protection feature is beta. (#59052, @pospispa)
- iSCSI sessions managed by kubernetes will now explicitly set startup.mode to 'manual' to prevent automatic login after node failure recovery. This is the default open-iscsi mode, so this change will only impact users who have changed their startup.mode to be 'automatic' in /etc/iscsi/iscsid.conf. (#57475, @stmcginnis)
- The IPVS feature gateway is now enabled by default in kubeadm, which makes the –feature-gates=SupportIPVSProxyMode=true obsolete, and it is no longer supported. (#60540, @m1093782566)

GCP

- ingress-gce image in glbc.manifest updated to 1.0.0 (#61302, @rramkumar1)

Instrumentation

- For advanced auditing, audit policy supports subresources wildcard matching, such as “resource/”, “/subresource”,”*“. (#55306, @hzxuzhonghu)
- Auditing is now enabled behind a featureGate in kubeadm. A user can supply their own audit policy with configuration option as well as a place for the audit logs to live. If no policy is supplied a default policy will be provided. The default policy will log all Metadata level policy logs. It is the example provided in the documentation. (#59067, @chuckha)
- Reduce Metrics Server memory requirement from 140Mi + 4Mi per node to 40Mi + 4Mi per node. (#58391, @kawych)
- Annotations is added to advanced audit api. (#58806, @CaoShuFeng)
- Reorganized iptables rules to fix a performance regression on clusters with thousands of services. (#56164, @danwinship)
- Container runtime daemon (e.g. dockerd) logs in GCE cluster will be uploaded to stackdriver and elasticsearch with tag `container-runtime`. (#59103, @Random-Liu)
- Enable prometheus apiserver metrics for custom resources. (#57682, @nikhita)
- Add apiserver metric for number of requests dropped because of inflight limit, making it easier to figure out on which dimension the master is overloaded. (#58340, @gmarek)
- The Metrics Server now exposes metrics via the /metric endpoint. These metrics are in the prometheus format. (#57456, @kawych)
- Reduced the CPU and memory requests for the Metrics Server Nanny sidecar container to free up unused resources. (#57252, @kawych)
- Enabled log rotation for load balancer's api logs to prevent running out of disk space. (#56979, @hyperbolic2346)
- Fixed `etcd-version-monitor` to backward compatibly support etcd 3.1 go-grpc-prometheus metrics format. (#56871, @jpbetz)

Node

- Summary of Container Runtime changes:
  - [beta] cri-tools: CLI and validation tools for CRI is now v1.0.0-beta.0. This release mainly focused on UX improvements. [@feiskyer]
  - [stable] containerd: containerd v1.1 natively supports CRI v1alpha2 now, so users can use Kubernetes v1.10 with containerd v1.1 directly,

without having to use the intermediate cri-containerd daemon. All Kubernetes 1.10 tests passed. [@Random-Liu]
  - [stable] cri-o: cri-o v1.10 updated CRI version to v1alpha2 and made several bug and stability fixes. [@mrunalp]
  - [stable] frakti: frakti v1.10 implemented GCE Persistent Disk as a high performance volume, fixed several bugs, added ARM64 support, and passed all CRI validation conformance tests and node e2e conformance tests. [@resouer]

- Fixed race conditions around devicemanager Allocate() and endpoint deletion. (#60856, @jiayingz)
- kubelet initial flag parse now normalizes flags instead of exiting. (#61053, @andrewsykim)
- Fixed regression where kubelet –cpu-cfs-quota flag did not work when –cgroups-per-qos was enabled (#61294, @derekwaynecarr)
- Kubelet now supports container log rotation for container runtimes implementing CRI (container runtime interface). The feature can be enabled with feature gate `CRIContainerLogRotation`. The flags `--container-log-max-size` and `--container-log-max-files` can be used to configure the rotation behavior. (#59898, @Random-Liu)
- Fixed a bug where if an error was returned that was not an `autorest.DetailedError` we would return `"not found", nil` which caused nodes to go to `NotReady` state. (#57484, @brendandburns)
- HugePages feature is beta, and thus enabled by default. (#56939, @derekwaynecarr)
- Avoid panic when failing to allocate a Cloud CIDR (aka GCE Alias IP Range). (#58186, @negz)
- 'none' can now be specified in KubeletConfiguration.EnforceNodeAllocatable (–enforce-node-allocatable) to explicitly disable enforcement. (#59515, @mtaufen)
- The alpha KubeletConfiguration.ConfigTrialDuration field is no longer available. It can still be set using the dynamic configuration alpha feature. (#59628, @mtaufen)
- Summary API will include pod CPU and Memory stats for CRI container runtime. (#60328, @Random-Liu)
- Some field names in the Kubelet's now v1beta1 config API differ from the v1alpha1 API: for example, PodManifestPath is renamed to StaticPodPath, ManifestURL is renamed to StaticPodURL, and ManifestURLHeader is renamed to StaticPodURLHeader. Users should focus on switching to the v1beta1 API. (#60314, @mtaufen)

- The DevicePlugins feature has graduated to beta, and is now enabled by default; users should focus on moving to the v1beta API if possible. (#60170, @jiayingz)
- Per-cpu metrics have been disabled by default for to improve scalability. (#60106, @dashpole)
- When the `PodShareProcessNamespace` alpha feature is enabled, setting `pod.Spec.ShareProcessNamespace` to `true` will cause a single process namespace to be shared between all containers in a pod. (#58716, @verb)
- Resource quotas on extended resources such as GPUs are now supported. (#57302, @lichuqiang)
- If the TaintNodesByCondition is enabled, a node will be tainted when it is under PID pressure. (#60008, @k82cn)
- The Kubelet Summary API will now include total usage of pods through the "pods" SystemContainer. (#57802, @dashpole)
- vSphere Cloud Provider supports VMs provisioned on vSphere v6.5. (#59519, @abrarshivani)
- Created k8s.gcr.io image repo alias to pull images from the closest regional repo. Replaces gcr.io/google_containers. (#57824, @thockin)
- Fix the bug where kubelet in the standalone mode would wait for the update from the apiserver source, even if there wasn't one. (#59276, @roboll)
- Changes secret, configMap, downwardAPI and projected volumes to mount read-only, instead of allowing applications to write data and then reverting it automatically. Until version 1.11, setting the feature gate ReadOnlyAPIDataVolumes=false will preserve the old behavior. (#58720, @joelsmith)
- Fixes a bug where kubelet crashes trying to free memory under memory pressure. (#58574, @yastij)
- New alpha feature limits the number of processes running in a pod. Cluster administrators will be able to place limits by using the new kubelet command line parameter –pod-max-pids. Note that since this is a alpha feature they will need to enable the "SupportPodPidsLimit" feature. By default, we do not set any maximum limit, If an administrator wants to enable this, they should enable SupportPodPidsLimit=true in the –feature-gates= parameter to kubelet and specify the limit using the –pod-max-pids parameter. The limit set is the total count of all processes running in all containers in the pod. (#57973,@dims)
- Fixes bug finding master replicas in GCE when running multiple Kubernetes clusters. (#58561, @jesseshieh)

- –tls-min-version on kubelet and kube-apiserver allow for configuring minimum TLS versions (#58528, @deads2k)
- Fix a bug affecting nested data volumes such as secret, configmap, etc. (#57422, @joelsmith)
- kubelet will no longer attempt to remove images being used by running containers when garbage collecting. (#57020, @dixudx)
- Allow kubernetes components to react to SIGTERM signal and shutdown gracefully. (#57756, @mborsz)
- Fixed garbage collection and resource quota issue when the controller-manager uses –leader-elect=false (#57340, @jmcmeek)
- Fixed issue creating docker secrets with kubectl 1.9 for accessing docker private registries. (#57463, @dims)
- The CPU Manager feature is now beta, and is enabled by default, but the default policy is no-op so no action is required. (#55977, @ConnorDoyle)

OpenStack

- Fixed a bug in the OpenStack cloud provider where dual stack deployments (IPv4 and IPv6) did not work well when using kubenet as the network plugin. (#59749, @zioproto)
- Fixed a bug that tries to use the octavia client to query flip. (#59075, @jrperritt)
- Kubernetes now registers metadata.hostname as node name for OpenStack nodes, eliminating a problem with invalid node names. (#58502, @dixudx)
- Authentication information for OpenStack cloud provider can now be specified as environment variables. When we convert the OpenStack cloud provider to run in an external process, we can now use the kubernetes Secrets capability to inject the OS* *variables. This way we can specify the cloud configuration as a configmap, and specify secrets for the userid/password information. The configmap is mounted as a file, and the secrets are made available as environment variables. The external controller itself runs as a pod/daemonset. For backward compatibility, we preload all the OS** variables, and if anything is in the config file, then that overrides the environment variables. (#58300, @dims)
- Fixed issue when using OpenStack config drive for node metadata. Since we need to run commands such as blkid, we need to ensure that api server and kube controller are running in the privileged mode. (#57561, @dims)

- Orphaned routes are properly removed from terminated instances. (#56258, @databus23)
- OpenStack Cinder will now detach properly when Nova is shut down. (#56846, @zetaab)

Scalability

- Added the ability to limit the increase in apiserver memory usage when audit logging with buffering is enabled. (#61118, @shyamjvs)
- Upgrade to etcd client 3.2.13 and grpc 1.7.5 to improve HA etcd cluster stability. (#57480, @jpbetz)

Storage

- Fixes CVE-2017-1002101 - See https://issue.k8s.io/60813 for details on this **major security fix**. (#61044, @liggitt)
- Fixed missing error checking that could cause kubelet to crash in a race condition. (#60962, @technicianted)
- Fixed a regression that prevented using `subPath` volume mounts with secret, configMap, projected, and downwardAPI volumes. (#61080, @liggitt)
- K8s supports cephfs fuse mount. (#55866, @zhangxiaoyu-zidif)
- Use GiB unit for creating and resizing volumes for Glusterfs. (#56581, @gnufied)
- Adding support for Block Volume type to rbd plugin. (#56651, @sbezverk)
- Add FSType for CSI volume source to specify filesystems (alpha defaults to ext4) (#58209, @NickrenREN)
- Enabled File system resize of mounted volumes. (#58794, @gnufied)
- The Local Volume Plugin has been updated to support Block volumeMode PVs. With this change, it is now possible to create local volume PVs for raw block devices. (#59303, @dhirajh)
- Fixed an issue where Portworx volume driver wasn't passing namespace and annotations to the Portworx Create API. (#59607, @harsh-px)
- Addressed breaking changes introduced by new 0.2.0 release of CSI spec. Specifically, csi.Version was removed from all API calls and Ccontroller-Probe and NodeProbe were consolidated into a single Probe API call. (#59209, @sbezverk)

- GCE PD volume plugin now supports block volumes. (#58710, @screeley44)
- Implements MountDevice and UnmountDevice for the CSI Plugin, the functions will call through to NodeStageVolume/NodeUnstageVolume for CSI plugins. (#60115, @davidz627)
- The LocalStorageCapacityIsolation feature is beta and enabled by default. The LocalStorageCapacityIsolation feature added a new resource type ResourceEphemeralStorage "ephemeral-storage" so that this resource can be allocated, limited, and consumed as the same way as CPU/memory. All the features related to resource management (resource request/limit, quota, limitrange) are available for local ephemeral storage. This local ephemeral storage represents the storage for root file system, which will be consumed by containers' writable layer and logs. Some volumes such as emptyDir might also consume this storage. (#60159, @jingxu97)
- VolumeScheduling and LocalPersistentVolume features are beta and enabled by default. The PersistentVolume NodeAffinity alpha annotation is deprecated and will be removed in a future release. (#59391, @msau42)
- K8s now supports rbd-nbd for Ceph rbd volume mounts. (#58916, @ianchakeres)
- CSI now allows credentials to be specified on CreateVolume/DeleteVolume, ControllerPublishVolume/ControllerUnpublishVolume, and NodePublishVolume/NodeUnpublishVolume operations. Before this change all API calls had to fetch key/value stored in secret and use it to authenticate/authorize these operations. With this change API calls receive key/value as a input parameter so they not need to know where and how credentials were stored and fetched. Main goal was to make these API calls CO (Container Orchestrator) agnostic. (#60118, @sbezverk)
- StorageOS volume plugin has been updated to support mount options and environments where the kubelet runs in a container and the device location should be specified. (#58816, @croomes)
- Get parent dir via canonical absolute path when trying to judge mountpoint, fixing a problem that caused an NFS volume with improper permissions to get stuck in `TERMINATING` status. (#58433, [@yue9944882]](https://github.com/yue9944882))
- Clusters with GCE feature 'DiskAlphaAPI' enabled can now dynamically provision GCE PD volumes. (#59447, @verult)
- Added `keyring` parameter for Ceph RBD provisioner. (#58287, @madddi)
- Added xfsprogs to hyperkube container image. (#56937, @redbaron)

- Improved messages user gets during and after volume resizing is done, providing a clear message to the user explaining what to do when resizing is finished. (#58415, @gnufied)
- MountPropagation feature is now beta. As consequence, all volume mounts in containers are now "rslave" on Linux by default. To make this default work in all Linux environments you should have entire mount tree marked as shareable via "mount –make-rshared /". All Linux distributions that use systemd already have root directory mounted as rshared and hence they need not do anything. In Linux environments without systemd we recommend running "mount –make-rshared /" during boot, before docker is started. (#59252, @jsafrane)
- Volume metrics support for vSphere Cloud Provider has been added. You can now monitor available space, capacity, and used space on volumes created using vSphere. (#59328, @divyenpatel)
- Emit number of bound and unbound persistent volumes as Metrics. This PR adds four kinds of Volume Metrics for kube-controller-manager: bound PVC numbers, unbound PVC numbers, bound PV numbers and unbound PV numbers. The PVC metrics use namespace as dimension and the PV metrics use StorageClassName as its dimension. With these metrics we can better monitor the use of volumes in the cluster. (#57872, @mlmhl)
- Add windows config to Kubelet CRI so that WindowsContainerResources can be managed. (#57076, @feiskyer)
- PersistentVolumes that are bound to a PersistentVolumeClaim will not be deleted. (#58743, @NickrenREN)
- The VolumeAttachment API is now available as V1beta1, and is enabled by default. The Alpha API is deprecated and will be removed in a future release. (#58462, @NickrenREN)
- Add storage-backend configuration option to kubernetes-master charm. (#58830, @wwwtyro)
- Fixed dynamic provisioning of GCE PDs to round to the next GB (base 1000) instead of GiB (base 1024). (#56600, @edisonxiang)
- PersistentVolume flexVolume sources can now reference secrets in a namespace other than the PersistentVolumeClaim's namespace. (#56460, @liggitt)

Windows

- kubelet and kube-proxy can now be run as native Windows services. (#60144, @alinbalutoiu)

- WindowsContainerResources is set now for windows containers. (#59333, @feiskyer)
- Disable mount propagation for windows containers (because it is not supported by the OS). (#60275, @feiskyer)
- Fix image file system stats for windows nodes. (#59743, @feiskyer)
- Kubernetes will now return an error if New-SmbGlobalMapping failed when mounting an azure file on Windows. (#59540, @andyzhangx)
- Kubernetes now uses the more reliable GlobalMemoryStatusEx to get total physical memory on windows nodes. (#57124, @JiangtianLi)
- Windows containers now support experimental Hyper-V isolation by setting annotation `experimental.windows.kubernetes.io/isolation-type=hyperv` and feature gates HyperVContainer. At the moment this function only supports one container per pod. (#58751, @feiskyer)
- Get windows kernel version directly from registry rather than windows.getVersion(). (#58498, @feiskyer)
- Fixed controller manager crash when using mixed case names in a vSphere cloud provider environment. (#57286, @rohitjogvmw)
- Flexvolume is now enabled on Windows nodes. (#56921, @andyzhangx)

Autoscaling

- The getSubnetIDForLB() returns subnet id rather than net id. (#58208, @FengyunPan)
- `kubectl scale` can now scale any resource (kube, CRD, aggregate) conforming to the standard scale endpoint (#58298, @p0lyn0mial)
- Cluster Autoscaler has been updated to Version 1.2.0, which includes fixes around GPUs and base image change. See https://github.com/kubernetes/autoscaler/releases/tag/cluste autoscaler-1.2.0for details. (#60842, @mwielgus)
- Allows HorizontalPodAutoscaler to use global metrics not associated with any Kubernetes object (for example metrics from a hosting service running outside of the Kubernetes cluster). (#60096, @MaciekPytel)
- fluentd-gcp resources can be modified via a ScalingPolicy. (#59657, @x13n)
- Added anti-affinity to kube-dns pods. Otherwise the "no single point of failure" setting doesn't actually work (a single node failure can still take down the entire cluster). (#57683, @vainu-arto)

API-Machinery

- Fixed webhooks to use the scheme provided in clientConfig, instead of defaulting to http. (#60943, @jennybuckley)
- The webhook admission controller in a custom apiserver now works off-the-shelf. (#60995, @caesarxuchao)
- Upgrade the default etcd server version to 3.1.12 to pick up critical etcd "mvcc "unsynced" watcher restore operation" fix. (#60998, @jpbetz)
- Fixed bug allowing garbage collector to enter a broken state that could only be fixed by restarting the controller-manager. (#61201, @jennybuckley)
- kube-apiserver: The external hostname no longer longer use the cloud provider API to select a default. It can be set explicitly using –external-hostname, if needed. If there is no default, AdvertiseAddress or os.Hostname() will be used, in that order. (#56812, @dims)
- Custom resources can be listed with a set of grouped resources (category) by specifying the categories in the CustomResourceDefinition spec. Example: They can be used with `kubectl get important`, where `important` is a category. (#59561, @nikhita)
- Fixed an issue making it possible to create a situation in which two webhooks make it impossible to delete each other. ValidatingWebhooks and MutatingWebhooks will not be called on admission requests for ValidatingWebhookConfiguration and MutatingWebhookConfiguration objects in the admissionregistration.k8s.io group (#59840, @jennybuckley)
- Fixed potential deadlock when deleting CustomResourceDefinition for custom resources with finalizers. (#60542, @liggitt)
- A buffered audit backend can be used with other audit backends. (#60076, @crassirostris)
- Introduced `--http2-max-streams-per-connection` command line flag on api-servers and set default to 1000 for aggregated API servers. (#60054, @MikeSpreitzer)
- APIserver backed by etcdv3 exports metric shows number of resources per kind. (#59757, @gmarek)
- Add `kubectl create job --from-cronjob` command. (#60084, @soltysh)
- `/status` and `/scale` subresources have been added for custom resources. See https://github.com/kubernetes/kubernetes/pull/55168 for more details. (#55168, @nikhita)

- Restores the ability of older clients to delete and scale jobs with initContainers. (#59880, @liggitt)
- Fixed a race condition causing apiserver crashes during etcd healthchecking. (#60069, @wojtek-t)
- Fixed a race condition in k8s.io/client-go/tools/cache.SharedInformer that could violate the sequential delivery guarantee and cause panics on shutdown in Kubernetes 1.8.* and 1.9.*. (#59828, @krousey)
- Add automatic etcd 3.2->3.1 and 3.1->3.0 minor version rollback support to gcr.io/google_container/etcd images. For HA clusters, all members must be stopped before performing a rollback. (#59298, @jpbetz)
- The `meta.k8s.io/v1alpha1` objects for retrieving tabular responses from the server (`Table`) or fetching just the `ObjectMeta` for an object (as `PartialObjectMetadata`) are now beta as part of `meta.k8s.io/v1beta1` and configurations must be changed to use the new API. Clients may request alternate representations of normal Kubernetes objects by passing an `Accept` header like `application/json;as=Table;g=meta.k8s.io;v=v1beta1` or `application/json;as=PartialObjectMe` Older servers will ignore this representation or return an error if it is not available. Clients may request fallback to the normal object by adding a non-qualified mime-type to their `Accept` header like `application/json` - the server will then respond with either the alternate representation if it is supported or the fallback mime-type which is the normal object response. (#59059, @smarterclayton)
- kube-apiserver now uses SSH tunnels for webhooks if the webhook is not directly routable from apiserver's network environment. (#58644, @yguo0905)
- Access to externally managed IP addresses via the kube-apiserver service proxy subresource is no longer allowed by default. This can be re-enabled via the `ServiceProxyAllowExternalIPs` feature gate, but will be disallowed completely in 1.11 (#57265, @brendandburns)
- The apiregistration.k8s.io (aggregation) is now generally available. Users should transition from the v1beta1 API to the v1 API. (#58393, @deads2k)
- Fixes an issue where the resourceVersion of an object in a DELETE watch event was not the resourceVersion of the delete itself, but of the last update to the object. This could disrupt the ability of clients clients to re-establish watches properly. (#58547, @liggitt)
- kube-apiserver: requests to endpoints handled by unavailable extension API servers (as indicated by an `Available` condition of `false` in the registered APIService) now return `503` errors instead of `404` errors. (#58070, @weekface)

- Custom resources can now be submitted to and received from the API server in application/yaml format, consistent with other API resources. (#58260, @liggitt)

Network

- Fixed kube-proxy to work correctly with iptables 1.6.2 and later. (#60978, @danwinship)
- Makes the kube-dns addon optional so that users can deploy their own DNS solution. (#57113, @wwwtyro)
- `kubectl port-forward` now supports specifying a service to port forward to, as in `kubectl port-forward svc/myservice 8443:443`. Additional support has also been added for looking up targetPort for a service, as well as enabling using svc/name to select a pod. (#59809, @phsiao)
- Make NodePort IP addresses configurable. (#58052, @m1093782566)
- Fixed the issue in kube-proxy iptables/ipvs mode to properly handle incorrect IP version. (#56880, @MrHohn)
- Kubeadm: CoreDNS supports migration of the kube-dns configuration to CoreDNS configuration when upgrading the service discovery from kube-dns to CoreDNS as part of Beta. (#58828, @rajansandeep)
- Adds BETA support for `DNSConfig` field in PodSpec and `DNSPolicy=None`, so configurable pod resolve.conf is now enabled by default. (#59771, @MrHohn)
- Removed some redundant rules created by the iptables proxier to improve performance on systems with very many services. (#57461, @danwinship)
- Fix an issue where port forwarding doesn't forward local TCP6 ports to the pod (#57457, @vfreex)
- Correctly handle transient connection reset errors on GET requests from client library. (#58520, @porridge)
- GCE: Allows existing internal load balancers to continue using a subnetwork that may have been wrongfully chosen due to a bug choosing subnetworks on automatic networks. (#57861, @nicksardo)

Azure

- Set node external IP for azure node when disabling UseInstanceMetadata. (#60959, @feiskyer)
- Changed default azure file/dir mode to 0755. (#56551, @andyzhangx)

- Fixed azure file plugin failure issue on Windows after node restart. (#60625, @andyzhangx)(#60623, @feiskyer)
- Fixed race condition issue when detaching azure disk, preventing `Multi-Attach error`s when scheduling one pod from one node to another. (#60183, @andyzhangx)
- Add AzureDisk support for vmss nodes. (#59716, @feiskyer)
- Map correct vmset name for Azure internal load balancers. (#59747, @feiskyer)
- Node's providerID will now follow the Azure resource ID format (`azure:///subscriptions/<id>/resourceGroups/<rg>/providers/Microsoft.Compute/virtualMac` rather than `azure://d84a1c30-0c9f-11e8-8a34-000d3a919531`) when useInstanceMetadata is enabled (#59539, @feiskyer)
- Azure public IP is now correctly removed after a service is deleted. (#59340, @feiskyer)
- Added PV size grow feature for azure filesystems. (#57017, @andyzhangx)
- Ensured IP is set for Azure internal load balancer. (#59083, @feiskyer)
- Set fsGroup by securityContext.fsGroup in azure file. However,f user both sets gid=xxx in mountOptions in azure storage class and securityContext.fsGroup, gid=xxx setting in mountOptions takes precedence. (#58316, @andyzhangx)
- If an Azure disk is not found, K8s will immediately detach it. (#58345, @rootfs)
- Instrumented the Azure cloud provider for Prometheus monitoring. (#58204, @cosmincojocar)
- Fixed device name change issues for azure disk. (#57953, @andyzhangx) (#57549, @andyzhangx)
- Support multiple scale sets in Azure cloud provider. (#57543, @feiskyer)
- Support LoadBalancer for Azure Virtual Machine Scale Sets (#57131, @feiskyer)
- Fixed incorrect error info when creating an azure file PVC failed. (#56550, @andyzhangx)
- Added mount options support for azure disk. For example:

```
kind: StorageClass
apiVersion: storage.k8s.io/v1
metadata:
  name: hdd
provisioner: kubernetes.io/azure-disk
mountOptions:
```

```
  - barrier=1
  - acl
parameters:
  skuname: Standard_LRS
  kind: Managed
  fstype: ext3
```

(#56147, @andyzhangx)

Scheduling

- Fixed a bug the in scheduler cache by using Pod UID as the cache key instead of namespace/name (#61069, @anfernee)
- When `TaintNodesByCondition` is enabled, added `node.kubernetes.io/unschedulable:NoSchedule` (#61161, @k82cn)
- kube-scheduler: Support extender managed extended resources in kube-scheduler (#60332, @yguo0905)
- Updated priority of mirror pod according to PriorityClassName. (#58485, @k82cn)
- kube-scheduler: restores default leader election behavior. Setting the `--leader-elect` command line parameter to `true` (#60524, @dims)
- All pods with priorityClassName system-node-critical and system-cluster-critical will be critical pods while preserving backwards compatibility. (#58835, @ravisantoshgudimetla)
- Priority admission controller picks a global default with the lowest priority value if more than one such default PriorityClass exists. (#59991, @bsalamat)
- Disallow PriorityClass names with 'system-' prefix for user defined priority classes. (#59382, @bsalamat)
- kube-scheduler: Use default predicates/prioritizers if they are unspecified in the policy config. (#59363, @yguo0905)
- Scheduler should be able to read from config file if configmap is not present. (#59386, @ravisantoshgudimetla)
- Add apiserver metric for current inflight-request usage. (#58342, @gmarek)
- Stability: Make Pod delete event handling of scheduler more robust. (#58712, @bsalamat)* Allow scheduler set AlwaysCheckAllPredicates, short circuit all predicates if one predicate fails can greatly improve the scheduling performance. (#56926, @wgliang)

- GCE: support passing kube-scheduler policy config via SCHEDULER_POLICY_CONFIG. This allows us to specify a customized scheduler policy configuration. (#57425, @yguo0905)
- Returns an error for non overcommitable resources if they don't have limit field set in container spec to prevent users from creating invalid configurations. (#57170, @jiayingz)
- GCE: Fixed ILB creation on automatic networks with manually created subnetworks. (#57351, @nicksardo)
- Multiple Performance Improvements to the MatchInterPodAffinity predicate (#57476, @misterikkit)(#57477, @misterikkit)
- The calico-node addon tolerates all NoExecute and NoSchedule taints by default. So Calico components can even be scheduled on tainted nodes. (#57122, @caseydavenport)
- The scheduler skips pods that use a PVC that either does not exist or is being deleted. (#55957, @jsafrane)

Other changes

- Updated dashboard version to v1.8.3, which keeps auto-generated certs in memory. (#57326, @floreks)
- fluentd-gcp addon: Fixed bug with reporting metrics in event-exporter. (#60126, @serathius)
- Avoid hook errors when effecting label changes on kubernetes-worker charm. (#59803, @wwwtyro)
- Fixed charm issue where docker login would run prior to daemon options being set. (#59396, @kwmonroe)
- Implementers of the cloud provider interface will note the addition of a context to this interface. Trivial code modification will be necessary for a cloud provider to continue to compile. (#59287, @cheftako)
- Added configurable etcd quota backend bytes in GCE. (#59259, @wojtek-t)
- GCP: allow a master to not include a metadata concealment firewall rule (if it's not running the metadata proxy). (#58104, @ihmccreery)
- Fixed issue with kubernetes-worker option allow-privileged not properly handling the value True with a capital T. (#59116, @hyperbolic2346)
- Controller-manager –service-sync-period flag has been removed. (It was never used in the code and should have no user impact.) (#59359, @khenidak)

- [fluentd-gcp addon] Switch to the image provided by Stackdriver. The Stackdriver Logging Agent container image uses fluentd v0.14.25. (#59128, @bmoyles0117)

Non-user-facing Changes

- CRI now uses moutpoint as image filesystem identifier instead of UUID. (#59475, @Random-Liu)
- GCE: support Cloud TPU API in cloud provider (#58029, @yguo0905)
- kubelet now notifies systemd that it has finished starting, if systemd is available and running. (#60654, @dcbw)
- Do not count failed pods as unready in HPA controller (#60648, @bskiba)
- fixed foreground deletion of podtemplates (#60683, @nilebox)
- Conformance tests are added for the DaemonSet kinds in the apps/v1 group version. Deprecated versions of DaemonSet will not be tested for conformance, and conformance is only applicable to release 1.10 and later. (#60456, @kow3ns)
- Log audit backend can now be configured to perform batching before writing events to disk. (#60237, @crassirostris)
- New conformance tests added for the Garbage Collector (#60116, @jennybuckley)
- Fixes a bug where character devices are not recongized by the kubelet (#60440, @andrewsykim)
- StatefulSet in apps/v1 is now included in Conformance Tests. (#60336, @enisoc)
- dockertools: disable memory swap on Linux. (#59404, @ohmystack)
- Increase timeout of integration tests (#60458, @jennybuckley)
- force node name lowercase on static pod name generating (#59849, @yue9944882
- fix device name change issue for azure disk (#60346, @andyzhangx)
- Additional changes to iptables kube-proxy backend to improve performance on clusters with very large numbers of services. (#60306, @danwinship)
- add spelling checking script (#59463, @dixudx)
- Use consts as predicate name in handlers (#59952, @resouer)
- Fix instanceID for vmss nodes. (#59857, @feiskyer)

- Increase allowed lag for ssh key sync loop in tunneler to allow for one failure (#60068, @wojtek-t)
- Set an upper bound (5 minutes) on how long the Kubelet will wait before exiting when the client cert from disk is missing or invalid. This prevents the Kubelet from waiting forever without attempting to bootstrap a new client credentials. (#59316, @smarterclayton)
- Add ipset binary for IPVS to hyperkube docker image (#57648, @Fsero)
- Making sure CSI E2E test runs on a local cluster (#60017, @sbezverk)
- Fix kubelet PVC stale metrics (#59170, @cofyc)
- Separate current ARM rate limiter into read/write (#59830, @khenidak)
- Improve control over how ARM rate limiter is used within Azure cloud provider, add generic cache for Azure VM/LB/NSG/RouteTable (#59520, @feiskyer)
- fix typo (#59619, @jianliao82)
- DaemonSet, Deployment, ReplicaSet, and StatefulSet objects are now persisted in etcd in apps/v1 format (#58854, @liggitt)
- YAMLDecoder Read now tracks rest of buffer on io.ErrShortBuffer (#58817, @karlhungus)
- Prevent kubelet from getting wedged if initialization of modules returns an error. (#59020, @brendandburns)
- Fixed a race condition inside kubernetes-worker that would result in a temporary error situation. (#59005, @hyperbolic2346)
- Fix regression in the CRI: do not add a default hostname on short image names (#58955, @runcom)
- use containing API group when resolving shortname from discovery (#58741, @dixudx)
- remove spaces from kubectl describe hpa (#56331, @shiywang)
- fluentd-es addon: multiline stacktraces are now grouped into one entry automatically (#58063, @monotek)
- Default scheduler code is moved out of the plugin directory. (#57852, @misterikkit)
- CDK nginx ingress is now handled via a daemon set. (#57530, @hyperbolic2346)
- Move local PV negative scheduling tests to integration (#57570, @sbezverk)

- Only create Privileged PSP binding during e2e tests if RBAC is enabled. (#56382, @mikkeloscar)
- ignore nonexistent ns net file error when deleting container network in case a retry (#57697, @dixudx)
- Use old dns-ip mechanism with older cdk-addons. (#57403, @wwwtyro)
- Retry 'connection refused' errors when setting up clusters on GCE. (#57394, @mborsz)
- YAMLDecoder Read now returns the number of bytes read (#57000, @sel)
- Drop hacks used for Mesos integration that was already removed from main kubernetes repository (#56754, @dims)
- Compare correct file names for volume detach operation (#57053, @prashima)
- Fixed documentation typo in IPVS README. (#56578, @shift)
- The ConfigOK node condition has been renamed to KubeletConfigOk. (#59905, @mtaufen)
- Adding pkg/kubelet/apis/deviceplugin/v1beta1 API. (#59588, @jiayingz)
- Fixes volume predicate handler for equiv class (#59335, @resouer)
- Bugfix: vSphere Cloud Provider (VCP) does not need any special service account anymore. (#59440, @rohitjogvmw)
- fix the error prone account creation method of blob disk (#59739, @andyzhangx)
- Updated kubernetes-worker to request new security tokens when the aws cloud provider changes the registered node name. (#59730, @hyperbolic2346)
- Pod priority can be specified ins PodSpec even when the feature is disabled, but it will be effective only when the feature is enabled. (#59291, @bsalamat)* Add generic cache for Azure VMSS (#59652, @feiskyer)
- fix the create azure file pvc failure if there is no storage account in current resource group (#56557, @andyzhangx)
- Implement envelope service with gRPC, so that KMS providers can be pulled out from API server. (#55684, @wu-qiang)
- Enable golint for `pkg/scheduler` and fix the golint errors in it. (#58437, @tossmilestone)
- Ensure euqiv hash calculation is per schedule (#59245, @resouer)

- Upped the timeout for apiserver communication in the juju kubernetes-worker charm. (#59219, @hyperbolic2346)
- kubeadm init: skip checking cri socket in preflight checks (#58802, @dix-udx)
- Configurable etcd compaction frequency in GCE (#59106, @wojtek-t)
- Fixed a bug which caused the apiserver reboot failure in the presence of malfunctioning webhooks. (#59073, @caesarxuchao)
- GCE: Apiserver uses `InternalIP` as the most preferred kubelet address type by default. (#59019, @MrHohn)
- CRI: Add a call to reopen log file for a container. (#58899, @yujuhong)
- The alpha KubeletConfigFile feature gate has been removed, because it was redundant with the Kubelet's –config flag. It is no longer necessary to set this gate to use the flag. The –config flag is still considered alpha. (#58978, @mtaufen)
- Fixing extra_sans option on master and load balancer. (#58843, @hyperbolic2346)
- Ensure config has been created before attempting to launch ingress. (#58756, @wwwtyro)
- Support metrics API in `kubectl top` commands. (#56206, @brancz)
- Bump GCE metadata proxy to v0.1.9 to pick up security fixes. (#58221, @ihmccreery)
- "ExternalTrafficLocalOnly" has been removed from feature gate. It has been a GA feature since v1.7. (#56948, @MrHohn)
- feat(fakeclient): push event on watched channel on add/update/delete (#57504, @yue9944882)
- Fixes a possible deadlock preventing quota from being recalculated (#58107, @ironcladlou)
- Bump metadata proxy version to v0.1.7 to pick up security fix. (#57762, @ihmccreery)
- The kubelet uses a new release 3.1 of the pause container with the Docker runtime. This version will clean up orphaned zombie processes that it inherits. (#57517, @verb)
- Add cache for VM get operation in azure cloud provider (#57432, @karataliu)
- Configurable liveness probe initial delays for etcd and kube-apiserver in GCE (#57749, @wojtek-t)
- Fixed garbage collection hang (#57503, @liggitt

- Improve scheduler performance of MatchInterPodAffinity predicate. (#57478, @misterikkit)
- Add the path '/version/' to the `system:discovery` cluster role. (#57368, @brendandburns)
- adding predicates ordering for the kubernetes scheduler. (#57168, @yastij)
- Fix ipvs proxier nodeport ethassumption (#56685, @m1093782566)
- Fix Heapster configuration and Metrics Server configuration to enable overriding default resource requirements. (#56965, @kawych)
- Improved event generation in volume mount, attach, and extend operations (#56872, @davidz627)
- Remove ScrubDNS interface from cloudprovider. (#56955, @feiskyer)
- Fixed a garbage collection race condition where objects with ownerRefs pointing to cluster-scoped objects could be deleted incorrectly. (#57211, @liggitt)
- api-server provides specific events when unable to repair a service cluster ip or node port (#54304, @frodenas)
- delete useless params containerized (#56146, @jiulongzaitian)
- dockershim now makes an Image's Labels available in the Info field of ImageStatusResponse (#58036, @shlevy)
- Support GetLabelsForVolume in OpenStack Provider (#58871, @edisonxiang)
- Add "nominatedNodeName" field to PodStatus. This field is set when a pod preempts other pods on the node. (#58990, @bsalamat)* Fix the PersistentVolumeLabel controller from initializing the PV labels when it's not the next pending initializer. (#56831, @jhorwit2)
- Rename StorageProtection to StorageObjectInUseProtection (#59901, @NickrenREN)
- Add support for cloud-controller-manager in local-up-cluster.sh (#57757, @dims)
- GCE: A role and clusterrole will now be provided with GCE/GKE for allowing the cloud-provider to post warning events on all services and watching configmaps in the kube-system namespace. No user action is required. (#59686, @nicksardo)
- Wait for kubedns to be ready when collecting the cluster IP. (#57337, @wwwtyro)

External Dependencies

- The supported etcd server version is 3.1.12, as compared to 3.0.17 in v1.9 (#60988)
- The validated docker versions are the same as for v1.9: 1.11.2 to 1.13.1 and 17.03.x (ref)
- The Go version is go1.9.3, as compared to go1.9.2 in v1.9. (#59012)
- The minimum supported go is the same as for v1.9: go1.9.1. (#55301)
- CNI is the same as v1.9: v0.6.0 (#51250)
- CSI is updated to 0.2.0 as compared to 0.1.0 in v1.9. (#60736)
- The dashboard add-on has been updated to v1.8.3, as compared to 1.8.0 in v1.9. (#517326)
- Heapster has is the same as v1.9: v1.5.0. It will be upgraded in v1.11. (ref)
- Cluster Autoscaler has been updated to v1.2.0. (#60842, @mwielgus)
- Updates kube-dns to v1.14.8 (#57918, @rramkumar1)
- Influxdb is unchanged from v1.9: v1.3.3 (#53319)
- Grafana is unchanged from v1.9: v4.4.3 (#53319)
- CAdvisor is v0.29.1 (#60867)
- fluentd-gcp-scaler is v0.3.0 (#61269)
- Updated fluentd in fluentd-es-image to fluentd v1.1.0 (#58525, @monotek)
- fluentd-elasticsearch is v2.0.4 (#58525)
- Updated fluentd-gcp to v3.0.0. (#60722)
- Ingress glbc is v1.0.0 (#61302)
- OIDC authentication is coreos/go-oidc v2 (#58544)
- Updated fluentd-gcp updated to v2.0.11. (#56927, @x13n)
- Calico has been updated to v2.6.7 (#59130, @caseydavenport)

v1.10.0-rc.1

Documentation & Examples

Downloads for v1.10.0-rc.1

filename	sha256 hash
kubernetes.tar.gz	`d7409a0bf36558b8328eefc01959920641f1fb2630fe3ac19b266fcea05a1646`
kubernetes-src.tar.gz	`4384bfe4151850e5d169b125c0cba51b7c2f00aa9972a6b4c22c44af74e8e3f8`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`1eb98b5d527ee9ed375f06df96c1158b9879880eb12d68a81e823d7a`
kubernetes-client-darwin-amd64.tar.gz	`be7e35e9698b84ace37e0ed54640c3958c0d9eea8bd413eb8b604ec0`
kubernetes-client-linux-386.tar.gz	`825a80abdb1171e72c1660fb7854ed6e8290cb7cb54ebb88c3570b3f`
kubernetes-client-linux-amd64.tar.gz	`97e22907c3f0780818b7124c50451ae78e930cd99ec8f96f188cdd08`
kubernetes-client-linux-arm64.tar.gz	`d27674c7daec425f0fa72ca14695e7f13c81cfd08517ceb1f5ce1bb0`
kubernetes-client-linux-arm.tar.gz	`e54f1fc7cf95981f54d68108ad0113396357ff0c7baaf6a76a635f0d`
kubernetes-client-linux-ppc64le.tar.gz	`7535a6668e6ca6888b22615439fae8c68d37d62f572b284755db8760`
kubernetes-client-linux-s390x.tar.gz	`6a9f90e2ea5cb50b2691c45d327cca444ae9bfc41cba43ca22016679`
kubernetes-client-windows-386.tar.gz	`cc5fef5e054588ad41870a379662d8429bd0f09500bcf4a67648bf65`
kubernetes-client-windows-amd64.tar.gz	`a06033004c5cecc43494d95dd5d5e75f698cf8e4d358c229c5fef222`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`e844897e9a39ca14a449e077cb4e4f2dc6c7d5326b95a1e47bef3b6f9c`
kubernetes-server-linux-arm64.tar.gz	`c15476626cd750a8f59c30c3389ada482995aea66b510c43732035d33e`
kubernetes-server-linux-arm.tar.gz	`74a1ff7478d7ca5c4ccb2fb772ef13745a20cfb512e3e66f238abb9812`
kubernetes-server-linux-ppc64le.tar.gz	`3b004717fe811352c15fe71f3122d2eaac7e0d1c4ff07d8810894c877b`
kubernetes-server-linux-s390x.tar.gz	`b6ff40f13355b47e2c02c6c016ac334a3f5008769ed7b4377c617c2fc9`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`a3a3e27c2b77fa46b7c9ff3b8bfdc672c2657e47fc4b1ca3d76cdc102`
kubernetes-node-linux-arm64.tar.gz	`af172c9d71ba2d15e14354159ac34ca7fe112b7d2d2ba38325c467950`
kubernetes-node-linux-arm.tar.gz	`fb904aa009c3309e92505ceff15863f83d9317af15cbf729bcbd198f5`
kubernetes-node-linux-ppc64le.tar.gz	`659f0091578e42b111417d45f708be2ac60447512e485dab7d2f4abae`
kubernetes-node-linux-s390x.tar.gz	`ce40dcc55ca299401ddf146b2622dd7f19532e95620bae63aea58a45a`
kubernetes-node-windows-amd64.tar.gz	`0f8b5c551f58cdf298d41258483311cef66fe1b41093152a43120514a`

Changelog since v1.10.0-beta.4

Other notable changes

- Updates kubeadm default to use 1.10 (#61127, @timothysc)
- Bump ingress-gce image in glbc.manifest to 1.0.0 (#61302, @rramkumar1)
- Fix regression where kubelet –cpu-cfs-quota flag did not work when –cgroups-per-qos was enabled (#61294, @derekwaynecarr)

- Fix bug allowing garbage collector to enter a broken state that could only be fixed by restarting the controller-manager. (#61201, @jennybuckley)
- When `TaintNodesByCondition` enabled, added `node.kubernetes.io/unschedulable:NoSchedule` (#61161, @k82cn)
  - taint to the node if `spec.Unschedulable` is true.
  - When `ScheduleDaemonSetPods` enabled, `node.kubernetes.io/unschedulable:NoSchedule`
  - toleration is added automatically to DaemonSet Pods; so the `unschedulable` field of
  - a node is not respected by the DaemonSet controller.
- Fixed kube-proxy to work correctly with iptables 1.6.2 and later. (#60978, @danwinship)
- Audit logging with buffering enabled can increase apiserver memory usage (e.g. up to 200MB in 100-node cluster). The increase is bounded by the buffer size (configurable). Ref: issue #60500 (#61118, @shyamjvs)
- Fix a bug in scheduler cache by using Pod UID as the cache key instead of namespace/name (#61069, @anfernee)

v1.10.0-beta.4

Documentation & Examples

Downloads for v1.10.0-beta.4

filename	sha256 hash
kubernetes.tar.gz	`69132f3edcf549c686055903e8ef007f0c92ec05a8ec1e3fea4d5b4dc4685580`
kubernetes-src.tar.gz	`60ba32e493c0a1449cdbd615d709e9d46780c91c88255e8e9f468c5e4e124576`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`80ef567c51aa705511ca20fbfcad2e85f1dc4fb750c0f58e0d82f416`
kubernetes-client-darwin-amd64.tar.gz	`925830f3c6c135adec206012ae94807b58b9438008ae87881e7a9d64`
kubernetes-client-linux-386.tar.gz	`9e4f40325a27b79f16eb3254c6283d67e2fecd313535b300f9931800`
kubernetes-client-linux-amd64.tar.gz	`85ee9bfa519e49283ab711c73f52809f8fc43616cc2076dc060987e6`
kubernetes-client-linux-arm.tar.gz	`f0123581243a278052413e862208a797e78e7689c6dba0da08ab3200`
kubernetes-client-linux-arm64.tar.gz	`dd19b034e1798f5bb0b1c6230ef294ca8f3ef7944837c5d49dce4659`
kubernetes-client-linux-ppc64le.tar.gz	`84a46003fe0140f8ecec03befceed7a4d955f9f88abdced99ecee24b`
kubernetes-client-linux-s390x.tar.gz	`c4ee2bf9f7ea66ab41b350220920644bee3eeceb13cfd19873843a9a`
kubernetes-client-windows-386.tar.gz	`917e768179e82a33232281b9b6e555cee75cf6315bd3c60a1fce4717`
kubernetes-client-windows-amd64.tar.gz	`915f3cc888332b360701a4b20d1af384ec5388636f2c3e3868e36124`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`01b50da6bae8abe4e2c813381c3848ff615fc1d8164d11b163ac081955`
kubernetes-server-linux-arm.tar.gz	`0a1ebd399759a68972e6248b09ce46a76deef931e51c807e032fefc421`
kubernetes-server-linux-arm64.tar.gz	`b8298a06aed6cd1c624855fb4e2d7258e8f9201fbc5bfebc8190c24273`
kubernetes-server-linux-ppc64le.tar.gz	`b3b03dc71476f70c8a62cf5ac72fe0bfa433005778d39bfbc43fe22567`
kubernetes-server-linux-s390x.tar.gz	`940bc9b4f73f32896f3c55d1b5824f931517689ec62b70600c8699e84b`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`bcc29195864e4e486a7e8194be06f3cf575203e012790ea6d70003349`
kubernetes-node-linux-arm.tar.gz	`35ab99a6cd30c2ea6a1f2347d244fb8583bfd7ef1d54f89fbf9a3a3be`
kubernetes-node-linux-arm64.tar.gz	`fcb611d964c7e1c546fbbb38c8b30b3e3bb54226540caa0b80930f53e`
kubernetes-node-linux-ppc64le.tar.gz	`4de7b25cf712df27b6eec5232dc2891e07dbeb8c3699a145f777cc062`
kubernetes-node-linux-s390x.tar.gz	`2f0b6a01c7c86209f031f47e1901bf3da82efef4db5b73b4e7d83be04`
kubernetes-node-windows-amd64.tar.gz	`619013157435d8da7f58bb339aa21d5a080c341aebe226934d1139d29`

Changelog since v1.10.0-beta.3

Other notable changes

- Fix a regression that prevented using `subPath` volume mounts with secret, configMap, projected, and downwardAPI volumes (#61080, @liggitt)
- Upgrade the default etcd server version to 3.1.12 to pick up critical etcd "mvcc "unsynced" watcher restore operation" fix. (#60998, @jpbetz)
- Fixed missing error checking that could cause kubelet to crash in a race condition. (#60962, @technicianted)

v1.10.0-beta.3

Documentation & Examples

Downloads for v1.10.0-beta.3

filename	sha256 hash
kubernetes.tar.gz	`65880d0bb77eeb83554bb0a6c78b6d3a25cd38ef7d714bbe2c73b203386618d6`

filename	sha256 hash
kubernetes-src.tar.gz	e9fbf8198fd80c92dd7e2ecf0cf6cefda06f9b89e7986ae141412f8732dae47c

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	50b1a41e70804f74b3e76d7603752d45dfd47011fd986d055462e133
kubernetes-client-darwin-amd64.tar.gz	3658e70ae9761464df50c6cae8d57349648c80d16658892e42ea898d
kubernetes-client-linux-386.tar.gz	00b8c048b201931ab1fb059df030e0bfc866f3c3ff464213aa6071ff
kubernetes-client-linux-amd64.tar.gz	364d6439185399e72f96bea1bf2863deb2080f4bf6df721932ef14ec
kubernetes-client-linux-arm.tar.gz	98670b2e965e118fb02901aa949cd1eb12d34ffd0bba7ff22014e9ad
kubernetes-client-linux-arm64.tar.gz	5f4febc543aa2f10c0c8aee9c9a8cb169b19b04486bda4cf1f72c80f
kubernetes-client-linux-ppc64le.tar.gz	ff3d020e97e2ff4c1824db910f13945d70320fc3988cc24385708cab
kubernetes-client-linux-s390x.tar.gz	508695afe6d3466488bc20cad31c184723cb238d1c311d2d1c4f9f1c
kubernetes-client-windows-386.tar.gz	9f6372cfb973d04a150e1388d96cb60e7fe6ccb9ba63a146ff2dee49
kubernetes-client-windows-amd64.tar.gz	2c85f2f13dc535d3c777f186b7e6d9403d64ac18ae01d1e460a8979e

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	4797ada6fd43e223d67840e815c1edb244a3b40a3a1b6ecfde7789119f
kubernetes-server-linux-arm.tar.gz	fb2fdb4b2feb41adbbd33fe4b7abbe9780d91a288a64ff7acf85d5ef94
kubernetes-server-linux-arm64.tar.gz	bc1f35e1999beaac91b65050f70c8e539918b927937e88bfcfa34a0c26
kubernetes-server-linux-ppc64le.tar.gz	cce312f5af7dd182c8cc4ef35a768fef788a849a93a6f2f36e9d2991e7
kubernetes-server-linux-s390x.tar.gz	42edec36fa34a4cc4959af20a587fb05924ccc87c94b0f845953ba1cee

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	e517986261e3789cada07d9063ae96ed9b17ffd80c1b220b6ae9c4123
kubernetes-node-linux-arm.tar.gz	9eb213248982816a855a7ff18c9421d5e987d5f1c472880a16bc6c477
kubernetes-node-linux-arm64.tar.gz	e938dce3ec05cedcd6ab8e2b63224170db00e2c47e67685eb3cb4bad2
kubernetes-node-linux-ppc64le.tar.gz	bc9bf3d55f85d3b30f0a28fd79b7610ecdf019b8bc8d7f978da62ee00
kubernetes-node-linux-s390x.tar.gz	c5a1b18b8030ec86748e23d45f1de63783c2e95d67b0d6c2fcbcd545c
kubernetes-node-windows-amd64.tar.gz	df4f4e8df8665ed08a9a3d9816e61c6c9f0ce50e4185b6c7a7f34135a

Changelog since v1.10.0-beta.2

Other notable changes

- kubelet initial flag parse should normalize flags instead of exiting. (#61053, @andrewsykim)
- Fixes CVE-2017-1002101 - See https://issue.k8s.io/60813 for details (#61044, @liggitt)
- Fixes the races around devicemanager Allocate() and endpoint deletion. (#60856, @jiayingz)
- When ScheduleDaemonSetPods is enabled, the DaemonSet controller will delegate Pods scheduling to default scheduler. (#59862, @k82cn)
- Set node external IP for azure node when disabling UseInstanceMetadata (#60959, @feiskyer)
- Bug fix, allow webhooks to use the scheme provided in clientConfig, instead of defaulting to http. (#60943, @jennybuckley)
- Downgrade default etcd server version to 3.1.11 due to #60589 (#60891, @shyamjvs)
- kubelet and kube-proxy can now be ran as Windows services (#60144, @alinbalutoiu)

v1.10.0-beta.2

Documentation & Examples

Downloads for v1.10.0-beta.2

filename	sha256 hash
kubernetes.tar.gz	`d07d77f16664cdb5ce86c87de36727577f48113efdb00f83283714ac1373d521`
kubernetes-src.tar.gz	`c27b06e748e4c10f42472f51ddfef7e9546e4ec9d2ce9f7a9a3c5768de8d97bf`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`d63168f9155f04e4b47fe96381f9aa06c3d498b6e6b71d1fb8c3ffeb`
kubernetes-client-darwin-amd64.tar.gz	`f473cbe830c1bfb738b0a66f07b3cd858ba185232eba26fe776f90d8`
kubernetes-client-linux-386.tar.gz	`2a0f74d30cdaf19ed7c3fde3528e98a8cd98fdb9dc6e6a501525e698`
kubernetes-client-linux-amd64.tar.gz	`69c18569717a97cb5e6bc22bebcf2f64969ba68b11685faaf2949c4f`
kubernetes-client-linux-arm.tar.gz	`10e1d76a1ee6c0df9f9cce40d18c350a1e3e3665e6fe64d22e4433b6`
kubernetes-client-linux-arm64.tar.gz	`12f081b99770548c8ddd688ae6b417c196f8308bd5901abbed6f203e`

filename	sha256 hash
kubernetes-client-linux-ppc64le.tar.gz	6e1a035b4857539c90324e00b150ae65aaf4f4524250c9ca7d77ad59
kubernetes-client-linux-s390x.tar.gz	5a8e2b0d14e18a39f821b09a7d73fa5c085cf6c197aeb540a3fe289e
kubernetes-client-windows-386.tar.gz	03fac6befb94b85fb90e0bb47596868b4da507d803806fad2a5fb4b8
kubernetes-client-windows-amd64.tar.gz	3bf8dd42eb70735ebdbda4ec4ec54e9507410e2f97ab2f364b88c2f2

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	1278703060865281aa48b1366e3c4b0720d4eca623ba08cf852a4719a6
kubernetes-server-linux-arm.tar.gz	b1e2b399bec8c25b7b6037203485d2d09b091afc51ffebf861d5bddb8b
kubernetes-server-linux-arm64.tar.gz	4c3d0ed44d6a19ae17803411789167 8ec373894b02f8d33627b37a36c2
kubernetes-server-linux-ppc64le.tar.gz	88a7b52030104a4c6fb1f8c5f79444ed853f381e1463fec7e4939a9998
kubernetes-server-linux-s390x.tar.gz	35981580c00bff0e3d92238f961e37dd505c08bcd4cafb11e274daa1eb

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	ceedb0a322167bae33042407da5369e0b7889fbaa3568281500c921af
kubernetes-node-linux-arm.tar.gz	b84ab4c486bc8f00841fccce2aafe4dcef25606c8f3184bce2551ab64
kubernetes-node-linux-arm64.tar.gz	b79a41145c28358a64d7a689cd282cf8361fe87c410fbae1cdc8db76c
kubernetes-node-linux-ppc64le.tar.gz	afc00f67b9f6d4fc149d4426fc8bbf6083077e11a1d2330d70be7e765
kubernetes-node-linux-s390x.tar.gz	f6128bbccddfe8ce39762bacb5c13c6c68d76a4bf8d35e773560332eb
kubernetes-node-windows-amd64.tar.gz	b1dde1ed2582cd511236fec69ebd6ca30281b30cc37e0841c493f0692

Changelog since v1.10.0-beta.1

Action Required

- ACTION REQUIRED: LocalStorageCapacityIsolation feature is beta and enabled by default. (#60159, @jingxu97)

Other notable changes

- Upgrade the default etcd server version to 3.2.16 (#59836, @jpbetz)
- Cluster Autoscaler 1.1.2 (#60842, @mwielgus)
- ValidatingWebhooks and MutatingWebhooks will not be called on admission requests for ValidatingWebhookConfiguration and MutatingWebhookConfiguration objects in the admissionregistration.k8s.io group

(#59840, @jennybuckley)
- Kubeadm: CoreDNS supports migration of the kube-dns configuration to CoreDNS configuration when upgrading the service discovery from kube-dns to CoreDNS as part of Beta. (#58828, @rajansandeep)
- Fix broken useManagedIdentityExtension for azure cloud provider (#60775, @feiskyer)
- kubelet now notifies systemd that it has finished starting, if systemd is available and running. (#60654, @dcbw)
- Do not count failed pods as unready in HPA controller (#60648, @bskiba)
- fixed foreground deletion of podtemplates (#60683, @nilebox)
- Conformance tests are added for the DaemonSet kinds in the apps/v1 group version. Deprecated versions of DaemonSet will not be tested for conformance, and conformance is only applicable to release 1.10 and later. (#60456, @kow3ns)
- Log audit backend can now be configured to perform batching before writing events to disk. (#60237, @crassirostris)
- Fixes potential deadlock when deleting CustomResourceDefinition for custom resources with finalizers (#60542, @liggitt)
- fix azure file plugin failure issue on Windows after node restart (#60625, @andyzhangx)
- Set Azure vmType to standard if it is not set in azure cloud config. (#60623, @feiskyer)
- On cluster provision or upgrade, kubeadm generates an etcd specific CA for all etcd related certificates. (#60385, @stealthybox)
- kube-scheduler: restores default leader election behavior. leader-elect command line parameter should "true" (#60524, @dims)
- client-go: alpha support for exec-based credential providers (#59495, @ericchiang)

v1.10.0-beta.1

Documentation & Examples

Downloads for v1.10.0-beta.1

filename	sha256 hash
kubernetes.tar.gz	`428139d9877f5f94acc806cc4053b0a5f8eac2acc219f06efd0817807473dbc5`
kubernetes-src.tar.gz	`5bfdecdbb43d946ea965f22ec6b8a0fc7195197a523aefebc2b7b926d4252edf`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`8cc086e901fe699df5e0711438195e675e099848a72ba272b290d22a`
kubernetes-client-darwin-amd64.tar.gz	`b2782b8f6dbfe3fa962b08606cbf3366b071b78c47794d2ef67f9d48`
kubernetes-client-linux-386.tar.gz	`a4001ad2387ccb4557b15c560b0ea8ea4d7c7ed494375346e3f83c10`
kubernetes-client-linux-amd64.tar.gz	`b95d354e80d9f00a883e5eeb8c2e0ceaacc0f3cc8c904cb2eca1e1b6`
kubernetes-client-linux-arm64.tar.gz	`647d234c59bc1d6f8eea88624d85b09bbe1272d9e27e1f7963e03cc0`
kubernetes-client-linux-arm.tar.gz	`187da9ad060ac7d426811772f6c3d891a354945af6a7d8832ac7097e`
kubernetes-client-linux-ppc64le.tar.gz	`6112396b8f0e7b1401b374aa2ae6195849da7718572036b6f060a722`
kubernetes-client-linux-s390x.tar.gz	`09789cf33d8eed610ad2eef7d3ae25a4b4a63ee5525e452f9094097a`
kubernetes-client-windows-386.tar.gz	`1e71bc9979c8915587cdea980dad36b0cafd502f972c051c2aa63c3b`
kubernetes-client-windows-amd64.tar.gz	`3c2978479c6f65f1cb5043ba182a0571480090298b7d62090d9bf11b`

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	`d887411450bbc06e2f4a24ce3c478fe6844856a8707b3236c045d44ab9`
kubernetes-server-linux-arm64.tar.gz	`907f037eea90bf893520d3adeccdf29eda69eea32c564b08cecbedfd06`
kubernetes-server-linux-arm.tar.gz	`f2ac4ad4f831a970cb35c1d7194788850dff722e859a08a879c918db12`
kubernetes-server-linux-ppc64le.tar.gz	`0bebb59217b491c5aa4b4b9dc740c0c8c5518872f6f86853cbe30493ea`
kubernetes-server-linux-s390x.tar.gz	`5f343764e04e3a8639dffe225cc6f8bc6f17e1584b2c68923708546f48`

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	`c4475c315d4ae27c30f80bc01d6ea8b0b8549ec6a60a5dc745cf11a0c`
kubernetes-node-linux-arm64.tar.gz	`4512a4c3e62cd26fb0d3f78bfc8de9a860e7d88e7c913c5df4c239536`
kubernetes-node-linux-arm.tar.gz	`1da407ad152b185f520f04215775a8fe176550a31a2bb79e3e829687`
kubernetes-node-linux-ppc64le.tar.gz	`f23f6f819e6d894f8ca7457f80ee4ede729fd35ac59e9c65ab031b56a`
kubernetes-node-linux-s390x.tar.gz	`205c789f52a4c666a63ac7944ffa8ee325cb97e788b748c262eae59b8`
kubernetes-node-windows-amd64.tar.gz	`aa7675fd22d9ca671585f429f6981aa79798f1894025c3abe3a7154f3`

Changelog since v1.10.0-alpha.3

Action Required

- [action required] Default Flexvolume plugin directory for COS images on GCE is changed to `/home/kubernetes/flexvolume`. (#58171, @verult)
- action required: [GCP kube-up.sh] Some variables that were part of kube-env are no longer being set (ones only used for kubelet flags) and are being replaced by a more portable mechanism (kubelet configuration file). The

individual variables in the kube-env metadata entry were never meant to be a stable interface and this release note only applies if you are depending on them. (#60020, @roberthbailey)

- action required: Deprecate format-separated endpoints for OpenAPI spec. Please use single `/openapi/v2` endpoint instead. (#59293, @roycaihw)
- action required: kube-proxy: feature gates are now specified as a map when provided via a JSON or YAML KubeProxyConfiguration, rather than as a string of key-value pairs. (#57962, @xiangpengzhao)
- Action Required: The boostrapped RBAC role and rolebinding for the `cloud-provider` service account is now deprecated. If you're currently using this service account, you must create and apply your own RBAC policy for new clusters. (#59949, @nicksardo)
- ACTION REQUIRED: VolumeScheduling and LocalPersistentVolume features are beta and enabled by default. The PersistentVolume NodeAffinity alpha annotation is deprecated and will be removed in a future release. (#59391, @msau42)
- action required: Deprecate the kubelet's cadvisor port. The default will change to 0 (disabled) in 1.12, and the cadvisor port will be removed entirely in 1.13. (#59827, @dashpole)
- action required: The `kubeletconfig` API group has graduated from alpha to beta, and the name has changed to `kubelet.config.k8s.io`. Please use `kubelet.config.k8s.io/v1beta1`, as `kubeletconfig/v1alpha1` is no longer available. (#53833, @mtaufen)
- Action required: Default values differ between the Kubelet's componentconfig (config file) API and the Kubelet's command line. Be sure to review the default values when migrating to using a config file. (#59666, @mtaufen)
- kube-apiserver: the experimental in-tree Keystone password authenticator has been removed in favor of extensions that enable use of Keystone tokens. (#59492, @dims)
- The udpTimeoutMilliseconds field in the kube-proxy configuration file has been renamed to udpIdleTimeout. Action required: administrators need to update their files accordingly. (#57754, @ncdc)

Other notable changes

- Enable IPVS feature gateway by default (#60540, @m1093782566)
- dockershim now makes an Image's Labels available in the Info field of ImageStatusResponse (#58036, @shlevy)
- kube-scheduler: Support extender managed extended resources in kube-scheduler (#60332, @yguo0905)
- Fix the issue in kube-proxy iptables/ipvs mode to properly handle incorrect IP version. (#56880, @MrHohn)
- WindowsContainerResources is set now for windows containers (#59333, @feiskyer)

- GCE: support Cloud TPU API in cloud provider (#58029, @yguo0905)
- The node authorizer now allows nodes to request service account tokens for the service accounts of pods running on them. (#55019, @mikedanese)
- Fix StatefulSet to work with set-based selectors. (#59365, @ayushpateria)
- New conformance tests added for the Garbage Collector (#60116, @jennybuckley)
- Make NodePort IP addresses configurable (#58052, @m1093782566)
- Implements MountDevice and UnmountDevice for the CSI Plugin, the functions will call through to NodeStageVolume/NodeUnstageVolume for CSI plugins. (#60115, @davidz627)
- Fixes a bug where character devices are not recongized by the kubelet (#60440, @andrewsykim)
- [fluentd-gcp addon] Switch to the image, provided by Stackdriver. (#59128, @bmoyles0117)
- StatefulSet in apps/v1 is now included in Conformance Tests. (#60336, @enisoc)
- K8s supports rbd-nbd for Ceph rbd volume mounts. (#58916, @ianchakeres)
- AWS EBS volume plugin got block volume support (#58625, @screeley44)
- Summary API will include pod CPU and Memory stats for CRI container runtime. (#60328, @Random-Liu)
- dockertools: disable memory swap on Linux. (#59404, @ohmystack)
- On AWS kubelet returns an error when started under conditions that do not allow it to work (AWS has not yet tagged the instance). (#60125, @vainu-arto)
- Increase timeout of integration tests (#60458, @jennybuckley)
- Fixes a case when Deployment with recreate strategy could get stuck on old failed Pod. (#60301, @tnozicka)
- Buffered audit backend is introduced, to be used with other audit backends. (#60076, @crassirostris)
- Update dashboard version to v1.8.3 (#57326, @floreks)
- GCE PD volume plugin got block volume support (#58710, @screeley44)
- force node name lowercase on static pod name generating (#59849, @yue9944882)
- AWS Security Groups created for ELBs will now be tagged with the same additional tags as the ELB (i.e. the tags specified by the "service.beta.kubernetes.io/aws-load-balancer-additional-resource-tags" annotation.) (#58767, @2rs2ts)
- Fixes an error when deleting an NLB in AWS - Fixes #57568 (#57569, @micahhausler)
- fix device name change issue for azure disk (#60346, @andyzhangx)
- On cluster provision or upgrade, kubeadm now generates certs and secures all connections to the etcd static-pod with mTLS. (#57415, @stealthybox)
- Some field names in the Kubelet's now v1beta1 config API differ from the v1alpha1 API: PodManifestPath is renamed to StaticPodPath, ManifestURL is renamed to StaticPodURL, ManifestURLHeader is renamed to

StaticPodURLHeader. (#60314, @mtaufen)
- Adds BETA support for `DNSConfig` field in PodSpec and `DNSPolicy=None`. (#59771, @MrHohn)
- kubeadm: Demote controlplane passthrough flags to alpha flags (#59882, @kris-nova)
- DevicePlugins feature graduates to beta. (#60170, @jiayingz)
- Additional changes to iptables kube-proxy backend to improve performance on clusters with very large numbers of services. (#60306, @danwinship)
- CSI now allows credentials to be specified on CreateVolume/DeleteVolume, ControllerPublishVolume/ControllerUnpublishVolume, and NodePublishVolume/NodeUnpublishVolume operations (#60118, @sbezverk)
- Disable mount propagation for windows containers. (#60275, @feiskyer)
- Introduced `--http2-max-streams-per-connection` command line flag on api-servers and set default to 1000 for aggregated API servers. (#60054, @MikeSpreitzer)
- APIserver backed by etcdv3 exports metric showing number of resources per kind (#59757, @gmarek)
- The DaemonSet controller, its integration tests, and its e2e tests, have been updated to use the apps/v1 API. (#59883, @kow3ns)
- Fix image file system stats for windows nodes (#59743, @feiskyer)
- Custom resources can be listed with a set of grouped resources (category) by specifying the categories in the CustomResourceDefinition spec. Example: They can be used with `kubectl get all`, where `all` is a category. (#59561, @nikhita)
- [fluentd-gcp addon] Fixed bug with reporting metrics in event-exporter (#60126, @serathius)
- Critical pods to use priorityClasses. (#58835, @ravisantoshgudimetla)
- `--show-all` (which only affected pods and only for human readable/non-API printers) is now defaulted to true and deprecated. It will be inert in 1.11 and removed in a future release. (#60210, @deads2k)
- Removed some redundant rules created by the iptables proxier, to improve performance on systems with very many services. (#57461, @danwinship)
- Disable per-cpu metrics by default for scalability. (#60106, @dashpole)
  - Fix inaccurate disk usage monitoring of overlayFs.
  - Retry docker connection on startup timeout to avoid permanent loss of metrics.
- When the `PodShareProcessNamespace` alpha feature is enabled, setting `pod.Spec.ShareProcessNamespace` to `true` will cause a single process namespace to be shared between all containers in a pod. (#60181, @verb)
- add spelling checking script (#59463, @dixudx)
- Allows HorizontalPodAutoscaler to use global metrics not associated with any Kubernetes object (for example metrics from a hoster service running outside of Kubernetes cluster). (#60096, @MaciekPytel)
- fix race condition issue when detaching azure disk (#60183, @andyzhangx)
- Add kubectl create job command (#60084, @soltysh)

- [Alpha] Kubelet now supports container log rotation for container runtime which implements CRI(container runtime interface). (#59898, @Random-Liu)
  - The feature can be enabled with feature gate `CRIContainerLogRotation`.
  - The flags `--container-log-max-size` and `--container-log-max-files` can be used to configure the rotation behavior.
- Reorganized iptables rules to fix a performance regression on clusters with thousands of services. (#56164, @danwinship)
- StorageOS volume plugin updated to support mount options and environments where the kubelet runs in a container and the device location should be specified. (#58816, @croomes)
- Use consts as predicate name in handlers (#59952, @resouer)
- `/status` and `/scale` subresources are added for custom resources. (#55168, @nikhita)
- Allow kubectl env to specify which keys to import from a config map (#60040, @PhilipGough)
- Set default enabled admission plugins `NamespaceLifecycle,LimitRanger,ServiceAccount,Persistent`
(#58684, @hzxuzhonghu)
- Fix instanceID for vmss nodes. (#59857, @feiskyer)
- Deprecate kubectl scale jobs (only jobs). (#60139, @soltysh)
- Adds new flag `--apiserver-advertise-dns-address` which is used in node kubelet.confg to point to API server (#59288, @stevesloka)
- Fix kube-proxy flags validation for –healthz-bind-address and –metrics-bind-address to allow specifying ip:port. (#54191, @MrHohn)
- Increase allowed lag for ssh key sync loop in tunneler to allow for one failure (#60068, @wojtek-t)
- Flags that can be set via the Kubelet's –config file are now deprecated in favor of the file. (#60148, @mtaufen)
- PVC Protection alpha feature was renamed to Storage Protection. Storage Protection feature is beta. (#59052, @pospispa)
- kube-apiserver: the root /proxy paths have been removed (deprecated since v1.2). Use the /proxy subresources on objects that support HTTP proxying. (#59884, @mikedanese)
- Set an upper bound (5 minutes) on how long the Kubelet will wait before exiting when the client cert from disk is missing or invalid. This prevents the Kubelet from waiting forever without attempting to bootstrap a new client credentials. (#59316, @smarterclayton)
- v1.Pod now has a field to configure whether a single process namespace should be shared between all containers in a pod. This feature is in alpha preview. (#58716, @verb)
- Priority admission controller picks a global default with the lowest priority value if more than one such default PriorityClass exists. (#59991, @bsalamat)
- Add ipset binary for IPVS to hyperkube docker image (#57648, @Fsero)
- kube-apiserver: the OpenID Connect authenticator can now verify ID Tokens signed with JOSE algorithms other than RS256 through the –oidc-

signing-algs flag. (#58544, @ericchiang)
  - kube-apiserver: the OpenID Connect authenticator no longer accepts tokens from the Google v3 token APIs, users must switch to the "https://www.googleapis.com/oauth2/v4/token%22 endpoint.
- Rename StorageProtection to StorageObjectInUseProtection (#59901, @NickrenREN)
- kubeadm: add criSocket field to MasterConfiguration manifiest (#59057, @JordanFaust)
- kubeadm: add criSocket field to NodeConfiguration manifiest (#59292, @JordanFaust)
- The `PodSecurityPolicy` API has been moved to the `policy/v1beta1` API group. The `PodSecurityPolicy` API in the `extensions/v1beta1` API group is deprecated and will be removed in a future release. Authorizations for using pod security policy resources should change to reference the `policy` API group after upgrading to 1.11. (#54933, @php-coder)
- Restores the ability of older clients to delete and scale jobs with initContainers (#59880, @liggitt)
- Support for resource quota on extended resources (#57302, @lichuqiang)
- Fix race causing apiserver crashes during etcd healthchecking (#60069, @wojtek-t)
- If TaintNodesByCondition enabled, taint node when it under PID pressure (#60008, @k82cn)
- Expose total usage of pods through the "pods" SystemContainer in the Kubelet Summary API (#57802, @dashpole)
- Unauthorized requests will not match audit policy rules where users or groups are set. (#59398, @CaoShuFeng)
- Making sure CSI E2E test runs on a local cluster (#60017, @sbezverk)
- Addressing breaking changes introduced by new 0.2.0 release of CSI spec (#59209, @sbezverk)
- GCE: A role and clusterrole will now be provided with GCE/GKE for allowing the cloud-provider to post warning events on all services and watching configmaps in the kube-system namespace. (#59686, @nicksardo)
- Updated PID pressure node condition (#57136, @k82cn)
- Add AWS cloud provider option to use an assumed IAM role (#59668, @brycecarman)
- `kubectl port-forward` now supports specifying a service to port forward to: `kubectl port-forward svc/myservice 8443:443` (#59809, @phsiao)
- Fix kubelet PVC stale metrics (#59170, @cofyc)
- - Separate current ARM rate limiter into read/write (#59830, @khenidak)
  - - Improve control over how ARM rate limiter is used within Azure cloud provider
- The ConfigOK node condition has been renamed to KubeletConfigOk. (#59905, @mtaufen)
- fluentd-gcp resources can be modified via a ScalingPolicy (#59657, @x13n)
- Adding pkg/kubelet/apis/deviceplugin/v1beta1 API. (#59588, @jiay-

ingz)
- Fixes volume predicate handler for equiv class (#59335, @resouer)
- Bugfix: vSphere Cloud Provider (VCP) does not need any special service account anymore. (#59440, @rohitjogvmw)
- Fixing a bug in OpenStack cloud provider, where dual stack deployments (IPv4 and IPv6) did not work well when using kubenet as the network plugin. (#59749, @zioproto)
- Get parent dir via canonical absolute path when trying to judge mount-point (#58433, @yue9944882)
- Container runtime daemon (e.g. dockerd) logs in GCE cluster will be uploaded to stackdriver and elasticsearch with tag `container-runtime` (#59103, @Random-Liu)
- Add AzureDisk support for vmss nodes (#59716, @feiskyer)
- Fixed a race condition in k8s.io/client-go/tools/cache.SharedInformer that could violate the sequential delivery guarantee and cause panics on shutdown. (#59828, @krousey)
- Avoid hook errors when effecting label changes on kubernetes-worker charm. (#59803, @wwwtyro)
- kubectl port-forward now allows using resource name (e.g., deployment/www) to select a matching pod, as well as allows the use of –pod-running-timeout to wait till at least one pod is running. (#59705, @phsiao)
  - kubectl port-forward no longer support deprecated -p flag
- Deprecate insecure HTTP port of kube-controller-manager and cloud-controller-manager. Use `--secure-port` and `--bind-address` instead. (#59582, @sttts)
- Eviction thresholds set to 0% or 100% are now ignored. (#59681, @mtaufen)
- [advanced audit] support subresources wildcard matching. (#55306, @hzxuzhonghu)
- CronJobs can be accessed through cj alias (#59499, @soltysh)
- fix typo in resource_allocation.go (#58275, @carmark)
- fix the error prone account creation method of blob disk (#59739, @andyzhangx)
- Add automatic etcd 3.2->3.1 and 3.1->3.0 minor version rollback support to gcr.io/google_container/etcd images. For HA clusters, all members must be stopped before performing a rollback. (#59298, @jpbetz)
- `kubeadm init` can now omit the tainting of the master node if configured to do so in `kubeadm.yaml`. (#55479, @ijc)
- Updated kubernetes-worker to request new security tokens when the aws cloud provider changes the registered node name. (#59730, @hyperbolic2346)
- Controller-manager –service-sync-period flag is removed (was never used in the code). (#59359, @khenidak)
- Pod priority can be specified ins PodSpec even when the feature is disabled, but it will be effective only when the feature is enabled. (#59291,

@bsalamat)
- kubeadm: Enable auditing behind a feature gate. (#59067, @chuckha)
- Map correct vmset name for Azure internal load balancers (#59747, @feiskyer)
- Add generic cache for Azure VMSS (#59652, @feiskyer)
- kubeadm: New "imagePullPolicy" option in the init configuration file, that gets forwarded to kubelet static pods to control pull policy for etcd and control plane images. (#58960, @rosti)
- fix the create azure file pvc failure if there is no storage account in current resource group (#56557, @andyzhangx)
- Add generic cache for Azure VM/LB/NSG/RouteTable (#59520, @feiskyer)
- The alpha KubeletConfiguration.ConfigTrialDuration field is no longer available. (#59628, @mtaufen)
- Updates Calico version to v2.6.7 (Fixed a bug where Felix would crash when parsing a NetworkPolicy with a named port. See https://github.com/projectcalico/calico/releases/tag/v2.6.7) (#59130, @caseydavenport)
- return error if New-SmbGlobalMapping failed when mounting azure file on Windows (#59540, @andyzhangx)
- Disallow PriorityClass names with 'system-' prefix for user defined priority classes. (#59382, @bsalamat)
- Fixed an issue where Portworx volume driver wasn't passing namespace and annotations to the Portworx Create API. (#59607, @harsh-px)
- Enable apiserver metrics for custom resources. (#57682, @nikhita)
- fix typo (#59619, @jianliao82)
  - incase -> in case
  - selction -> selection
- Implement envelope service with gRPC, so that KMS providers can be pulled out from API server. (#55684, @wu-qiang)
- Enable golint for `pkg/scheduler` and fix the golint errors in it. (#58437, @tossmilestone)
- AWS: Make attach/detach operations faster. from 10-12s to 2-6s (#56974, @gnufied)
- CRI starts using moutpoint as image filesystem identifier instead of UUID. (#59475, @Random-Liu)
- DaemonSet, Deployment, ReplicaSet, and StatefulSet objects are now persisted in etcd in apps/v1 format (#58854, @liggitt)
- 'none' can now be specified in KubeletConfiguration.EnforceNodeAllocatable (–enforce-node-allocatable) to explicitly disable enforcement. (#59515, @mtaufen)
- vSphere Cloud Provider supports VMs provisioned on vSphere v1.6.5 (#59519, @abrarshivani)
- Annotations is added to advanced audit api (#58806, @CaoShuFeng)
- 2nd try at using a vanity GCR name (#57824, @thockin)
- Node's providerID is following Azure resource ID format now when useIn-

stanceMetadata is enabled (#59539, @feiskyer)
- Block Volume Support: Local Volume Plugin update (#59303, @dhirajh)
- [action-required] The Container Runtime Interface (CRI) version has increased from v1alpha1 to v1alpha2. Runtimes implementing the CRI will need to update to the new version, which configures container namespaces using an enumeration rather than booleans. (#58973, @verb)
- Fix the bug where kubelet in the standalone mode would wait for the update from the apiserver source. (#59276, @roboll)
- Add "keyring" parameter for Ceph RBD provisioner (#58287, @madddi)
- Ensure euqiv hash calculation is per schedule (#59245, @resouer)
- kube-scheduler: Use default predicates/prioritizers if they are unspecified in the policy config (#59363, @yguo0905)
- Fixed charm issue where docker login would run prior to daemon options being set. (#59396, @kwmonroe)
- Implementers of the cloud provider interface will note the addition of a context to this interface. Trivial code modification will be necessary for a cloud provider to continue to compile. (#59287, @cheftako)
- /release-note-none (#58264, @WanLinghao)
- Use a more reliable way to get total physical memory on windows nodes (#57124, @JiangtianLi)
- Add xfsprogs to hyperkube container image. (#56937, @redbaron)
- Ensure Azure public IP removed after service deleted (#59340, @feiskyer)
- Improve messages user gets during and after volume resizing is done. (#58415, @gnufied)
- Fix RBAC permissions for Stackdriver Metadata Agent. (#57455, @kawych)
- Scheduler should be able to read from config file if configmap is not present. (#59386, @ravisantoshgudimetla)
- MountPropagation feature is now beta. As consequence, all volume mounts in containers are now "rslave" on Linux by default. (#59252, @jsafrane)
- Fix RBAC role for certificate controller to allow cleaning. (#59375, @mikedanese)
- Volume metrics support for vSphere Cloud Provider (#59328, @divyenpatel)
- Announcing the deprecation of the recycling reclaim policy. (#59063, @ayushpateria)
- Intended for post-1.9 (#57872, @mlmhl)
- The `meta.k8s.io/v1alpha1` objects for retrieving tabular responses from the server (`Table`) or fetching just the `ObjectMeta` for an object (as `PartialObjectMetadata`) are now beta as part of `meta.k8s.io/v1beta1`. Clients may request alternate representations of normal Kubernetes objects by passing an `Accept` header like `application/json;as=Table;g=meta.k8s.io;v=v1beta1` or `application/json;as=PartialObjectMetadata;g=meta.k8s.io;v1=v1beta1`. Older servers will ignore this representation or return an error if it is not

available. Clients may request fallback to the normal object by adding a non-qualified mime-type to their `Accept` header like `application/json` - the server will then respond with either the alternate representation if it is supported or the fallback mime-type which is the normal object response. (#59059, @smarterclayton)
- add PV size grow feature for azure file (#57017, @andyzhangx)
- Upgrade default etcd server version to 3.2.14 (#58645, @jpbetz)
- Add windows config to Kubelet CRI (#57076, @feiskyer)
- Configurable etcd quota backend bytes in GCE (#59259, @wojtek-t)
- Remove unmaintained kube-registry-proxy support from gce kube-up. (#58564, @mikedanese)
- Allow expanding mounted volumes (#58794, @gnufied)
- Upped the timeout for apiserver communication in the juju kubernetes-worker charm. (#59219, @hyperbolic2346)
- kubeadm init: skip checking cri socket in preflight checks (#58802, @dix-udx)
- Add "nominatedNodeName" field to PodStatus. This field is set when a pod preempts other pods on the node. (#58990, @bsalamat)
- Changes secret, configMap, downwardAPI and projected volumes to mount read-only, instead of allowing applications to write data and then reverting it automatically. Until version 1.11, setting the feature gate ReadOnlyAPIDataVolumes=false will preserve the old behavior. (#58720, @joelsmith)
- Fixed issue with charm upgrades resulting in an error state. (#59064, @hyperbolic2346)
- Ensure IP is set for Azure internal load balancer. (#59083, @feiskyer)
- Postpone PV deletion when it is being bound to a PVC (#58743, @NickrenREN)
- Add V1beta1 VolumeAttachment API, co-existing with Alpha API object (#58462, @NickrenREN)
- When using client or server certificate rotation, the Kubelet will no longer wait until the initial rotation succeeds or fails before starting static pods. This makes running self-hosted masters with rotation more predictable. (#58930, @smarterclayton)

v1.10.0-alpha.3

Documentation & Examples

Downloads for v1.10.0-alpha.3

filename	sha256 hash

filename	sha256 hash
kubernetes.tar.gz	246f0373ccb25a243a387527b32354b69fc2211c422e71479d22bfb3a829c8fb
kubernetes-src.tar.gz	f9c60bb37fb7b363c9f66d8efd8aa5a36ea2093c61317c950719b3ddc86c5e10

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	ca8dfd7fbd34478e7ba9bba3779fcca08f7efd4f218b0c8a7f52bbee
kubernetes-client-darwin-amd64.tar.gz	713c35d99f44bd19d225d2c9f2d7c4f3976b5dd76e9a817b2aaf68ee
kubernetes-client-linux-386.tar.gz	7601e55e3bb0f0fc11611c68c4bc000c3cbbb7a09652c386e482a167
kubernetes-client-linux-amd64.tar.gz	8a6c498531c1832176e22d622008a98bac6043f05dec967476496515
kubernetes-client-linux-arm64.tar.gz	81561820fb5a000152e9d8d94882e0ed6228025ea7973ee98173b5fc
kubernetes-client-linux-arm.tar.gz	6ce8c3ed253a10d78e62e000419653a29c411cd64910325b21ff3370
kubernetes-client-linux-ppc64le.tar.gz	a46b42c94040767f6bbf2ce10aef36d8dbe94c0069f866a848d69b22
kubernetes-client-linux-s390x.tar.gz	fa3e656b612277fc4c303aef95c60b58ed887e36431db23d26b536f2
kubernetes-client-windows-386.tar.gz	832e12266495ac55cb54a999bc5ae41d42d160387b487d8b4ead577d
kubernetes-client-windows-amd64.tar.gz	7056a3eb5a8f9e8fa0326aa6e0bf97fc5b260447315f8ec7340be574

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	dc8e2be2fcb6477249621fb5c813c853371a3bf8732c5cb3a6d6cab667
kubernetes-server-linux-arm64.tar.gz	399071ad9042a72bccd6e1aa322405c02b4a807c0b4f987d608c4c9c36
kubernetes-server-linux-arm.tar.gz	7457ad16665e331fa9224a3d61690206723721197ad9760c3b488de960
kubernetes-server-linux-ppc64le.tar.gz	ffcb728d879c0347bd751c9bccac3520bb057d203ba1acd55f8c727295
kubernetes-server-linux-s390x.tar.gz	f942f6e15886a1fb0d91d04adf47677068c56070dff060f38c371c3ee3

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	81b22beb30be9d270016c7b35b86ea585f29c0c5f09128da9341f9f67
kubernetes-node-linux-arm64.tar.gz	d9020b99c145f44c519b1a95b55ed24e69d9c679a02352c7e05e86042
kubernetes-node-linux-arm.tar.gz	1d10bee4ed62d70b318f5703b2cd8295a08e199f810d6b361f367907e
kubernetes-node-linux-ppc64le.tar.gz	67cd4dde212abda37e6f9e6dee1bb59db96e0727100ef0aa561c15562
kubernetes-node-linux-s390x.tar.gz	362b030e011ea6222b1f2dec62311d3971bcce4dba94997963e2a091e
kubernetes-node-windows-amd64.tar.gz	e609a2b0410acbb64d3ee6d7f134d98723d82d05bdbead1eaafd3584c

Changelog since v1.10.0-alpha.2

Other notable changes

- Fixed issue with kubernetes-worker option allow-privileged not properly handling the value True with a capital T. (#59116, @hyperbolic2346)
- Added anti-affinity to kube-dns pods (#57683, @vainu-arto)
- cloudprovider/openstack: fix bug the tries to use octavia client to query flip (#59075, @jrperritt)
- Windows containers now support experimental Hyper-V isolation by setting annotation `experimental.windows.kubernetes.io/isolation-type=hyperv` and feature gates HyperVContainer. Only one container per pod is supported yet. (#58751, @feiskyer)
- `crds` is added as a shortname for CustomResourceDefinition i.e. `kubectl get crds` can now be used. (#59061, @nikhita)
- Fix an issue where port forwarding doesn't forward local TCP6 ports to the pod (#57457, @vfreex)
- YAMLDecoder Read now tracks rest of buffer on io.ErrShortBuffer (#58817, @karlhungus)
- Prevent kubelet from getting wedged if initialization of modules returns an error. (#59020, @brendandburns)
- Fixed a race condition inside kubernetes-worker that would result in a temporary error situation. (#59005, @hyperbolic2346)
- [GCE] Apiserver uses `InternalIP` as the most preferred kubelet address type by default. (#59019, @MrHohn)
- Deprecate insecure flags `--insecure-bind-address`, `--insecure-port` and remove `--public-address-override`. (#59018, @hzxuzhonghu)
- Support GetLabelsForVolume in OpenStack Provider (#58871, @edisonxiang)
- Build using go1.9.3. (#59012, @ixdy)
- CRI: Add a call to reopen log file for a container. (#58899, @yujuhong)
- The alpha KubeletConfigFile feature gate has been removed, because it was redundant with the Kubelet's –config flag. It is no longer necessary to set this gate to use the flag. The –config flag is still considered alpha. (#58978, @mtaufen)
- `kubectl scale` can now scale any resource (kube, CRD, aggregate) conforming to the standard scale endpoint (#58298, @p0lyn0mial)
- kube-apiserver flag –tls-ca-file has had no effect for some time. It is now deprecated and slated for removal in 1.11. If you are specifying this flag, you must remove it from your launch config before upgrading to 1.11. (#58968, @deads2k)
- Fix regression in the CRI: do not add a default hostname on short image names (#58955, @runcom)
- Get windows kernel version directly from registry (#58498, @feiskyer)
- Remove deprecated –require-kubeconfig flag, remove default –kubeconfig

value (#58367, @zhangxiaoyu-zidif)
- Google Cloud Service Account email addresses can now be used in RBAC (#58141, @ahmetb)
  - Role bindings since the default scopes now include the "user-info.email"
  - scope. This is a breaking change if the numeric uniqueIDs of the Google
  - service accounts were being used in RBAC role bindings. The behavior
  - can be overridden by explicitly specifying the scope values as
  - comma-separated string in the "users[*].config.scopes" field in the
  - KUBECONFIG file.
- kube-apiserver is changed to use SSH tunnels for webhook iff the webhook is not directly routable from apiserver's network environment. (#58644, @yguo0905)
- Updated priority of mirror pod according to PriorityClassName. (#58485, @k82cn)
- Fixes a bug where kubelet crashes trying to free memory under memory pressure (#58574, @yastij)

v1.10.0-alpha.2

Documentation & Examples

Downloads for v1.10.0-alpha.2

filename	sha256 hash
kubernetes.tar.gz	`89efeb8b16c40e5074f092f51399995f0fe4a0312367a8f54bd227c3c6fcb629`
kubernetes-src.tar.gz	`eefbbf435f1b7a0e416f4e6b2c936c49ce5d692994da8d235c5e25bc408eec57`

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	`878366200ddfb9128a133d7d377057c6f878b24357062cf5243c0f0a`
kubernetes-client-darwin-amd64.tar.gz	`dc065b9ecfa513607eac6e7dd125b2c25c9a9e7c13d0b2b6e56586e1`
kubernetes-client-linux-386.tar.gz	`93c2462051935d8f6bca6c72d09948963d47cd64426660f63e0cea7d`
kubernetes-client-linux-amd64.tar.gz	`0eef61285fad1f9ff8392c59986d3a41887abc642bcb5cb451c5a530`
kubernetes-client-linux-arm64.tar.gz	`6cf7913730a57b503beaf37f5c4d0f97789358983ed03654036f8b98`
kubernetes-client-linux-arm.tar.gz	`f03c3ecbf4c08d263f2daa8cbe838e20452d6650b80e9a74762c155c`
kubernetes-client-linux-ppc64le.tar.gz	`25a2f93ebb721901d262adae4c0bdaa4cf1293793e9dff4507e031b8`

filename	sha256 hash
kubernetes-client-linux-s390x.tar.gz	3e0b9ef771f36edb61bd61ccb67996ed41793c01f8686509bf93e585
kubernetes-client-windows-386.tar.gz	387e5e6b0535f4f5996c0732f1b591d80691acaec86e35482c7b90e0
kubernetes-client-windows-amd64.tar.gz	c10a72d40252707b732d33d03beec3c6380802d0a6e3214cbbf4af25

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	42c1e016e8b0c5cc36c7bf574abca18c63e16d719d35e19ddbcbcd5aae
kubernetes-server-linux-arm64.tar.gz	b7774c54344c75bf5c703d4ca271f0af6c230e86cbe40eafd9cbf98a4f
kubernetes-server-linux-arm.tar.gz	c11c8554506b64d6fd1a6e79bfc4e1e19f4f826b9ba98de81bc757901e
kubernetes-server-linux-ppc64le.tar.gz	196bd957804b2a9049189d225e49bf78e52e9adef12c072128e4e85d35
kubernetes-server-linux-s390x.tar.gz	be12fbea28a6cb089734782fe11e6f90a30785b9ad1ec02bc08a59afeb

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	a1feb239dfc473b49adf95d7d94e4a9c6c7d07416d4e935e3fc10175f
kubernetes-node-linux-arm64.tar.gz	26583c0bd08313bdc0bdfba6745f3ccd0f117431d3a5e2623bb501567
kubernetes-node-linux-arm.tar.gz	79c6299a5482467e3e85ee881f21edf5d491bc28c94e547d9297d1e1a
kubernetes-node-linux-ppc64le.tar.gz	2732fd288f1eac44c599423ce28cbdb85b54a646970a3714be5ff86d1
kubernetes-node-linux-s390x.tar.gz	8d49432f0ff3baf55e71c29fb6ffc1673b2a45b9eae2e1906138b1409
kubernetes-node-windows-amd64.tar.gz	15ff74edfa98cd1afadcc4e53dd592b1e2935fbab76ad731309d355ae

Changelog since v1.10.0-alpha.1

Action Required

- Bug fix: webhooks now do not skip cluster-scoped resources (#58185, @caesarxuchao)
  - Action required: Before upgrading your Kubernetes clusters, double check if you had configured webhooks for cluster-scoped objects (e.g., nodes, persistentVolume), these webhooks will start to take effect. Delete/modify the configs if that's not desirable.

Other notable changes

- Fixing extra_sans option on master and load balancer. (#58843, @hyperbolic2346)

- ConfigMap objects now support binary data via a new `binaryData` field. When using `kubectl create configmap --from-file`, files containing non-UTF8 data will be placed in this new field in order to preserve the non-UTF8 data. Use of this feature requires 1.10+ apiserver and kubelets. (#57938, @dims)
- New alpha feature to limit the number of processes running in a pod. Cluster administrators will be able to place limits by using the new kubelet command line parameter –pod-max-pids. Note that since this is a alpha feature they will need to enable the "SupportPodPidsLimit" feature. (#57973, @dims)
- Add storage-backend configuration option to kubernetes-master charm. (#58830, @wwwtyro)
- use containing API group when resolving shortname from discovery (#58741, @dixudx)
- Fix kubectl explain for resources not existing in default version of API group (#58753, @soltysh)
- Ensure config has been created before attempting to launch ingress. (#58756, @wwwtyro)
- Access to externally managed IP addresses via the kube-apiserver service proxy subresource is no longer allowed by default. This can be re-enabled via the `ServiceProxyAllowExternalIPs` feature gate, but will be disallowed completely in 1.11 (#57265, @brendandburns)
- Added support for external cloud providers in kubeadm (#58259, @dims)
- rktnetes has been deprecated in favor of rktlet. Please see https://github.com/kubernetes-incubator/rktlet for more information. (#58418, @yujuhong)
- Fixes bug finding master replicas in GCE when running multiple Kubernetes clusters (#58561, @jesseshieh)
- Update Calico version to v2.6.6 (#58482, @tmjd)
- Promoting the apiregistration.k8s.io (aggregation) to GA (#58393, @deads2k)
- Stability: Make Pod delete event handling of scheduler more robust. (#58712, @bsalamat)
- Added support for network spaces in the kubeapi-load-balancer charm (#58708, @hyperbolic2346)
- Added support for network spaces in the kubernetes-master charm (#58704, @hyperbolic2346)
- update etcd unified version to 3.1.10 (#54242, @zouyee)
- updates fluentd in fluentd-es-image to fluentd 1.1.0 (#58525, @monotek)
- Support metrics API in `kubectl top` commands. (#56206, @brancz)
- Added support for network spaces in the kubernetes-worker charm (#58523, @hyperbolic2346)
- CustomResourceDefinitions: OpenAPI v3 validation schemas containing `$ref`references are no longer permitted (valid references could not be constructed previously because property ids were not permitted either). Before upgrading, ensure CRD definitions do not include those `$ref` fields.

(#58438, @carlory)
- Openstack: register metadata.hostname as node name (#58502, @dixudx)
- Added nginx and default backend images to kubernetes-worker config. (#58542, @hyperbolic2346)
- –tls-min-version on kubelet and kube-apiserver allow for configuring minimum TLS versions (#58528, @deads2k)
- Fixes an issue where the resourceVersion of an object in a DELETE watch event was not the resourceVersion of the delete itself, but of the last update to the object. This could disrupt the ability of clients clients to re-establish watches properly. (#58547, @liggitt)
- Fixed crash in kubectl cp when path has multiple leading slashes (#58144, @tomerf)
- kube-apiserver: requests to endpoints handled by unavailable extension API servers (as indicated by an `Available` condition of `false` in the registered APIService) now return `503` errors instead of `404` errors. (#58070, @weekface)
- Correctly handle transient connection reset errors on GET requests from client library. (#58520, @porridge)
- Authentication information for OpenStack cloud provider can now be specified as environment variables (#58300, @dims)
- Bump GCE metadata proxy to v0.1.9 to pick up security fixes. (#58221, @ihmccreery)
- - kubeadm now supports CIDR notations in NO_PROXY environment variable (#53895, @kad)
- kubeadm now accept `--apiserver-extra-args`, `--controller-manager-extra-args` and `--scheduler-extra-args` to override / specify additional flags for control plane components (#58080, @simonferquel)
- Add `--enable-admission-plugin` `--disable-admission-plugin` flags and deprecate `--admission-control`. (#58123, @hzxuzhonghu)
  - Afterwards, don't care about the orders specified in the flags.
- "ExternalTrafficLocalOnly" has been removed from feature gate. It has been a GA feature since v1.7. (#56948, @MrHohn)
- GCP: allow a master to not include a metadata concealment firewall rule (if it's not running the metadata proxy). (#58104, @ihmccreery)
- kube-apiserver: fixes loading of `--admission-control-config-file` containing AdmissionConfiguration apiserver.k8s.io/v1alpha1 config object (#58439, @liggitt)
- Fix issue when using OpenStack config drive for node metadata (#57561, @dims)
- Add FSType for CSI volume source to specify filesystems (#58209, @NickrenREN)
- OpenStack cloudprovider: Ensure orphaned routes are removed. (#56258, @databus23)
- Reduce Metrics Server memory requirement (#58391, @kawych)
- Fix a bug affecting nested data volumes such as secret, configmap, etc. (#57422, @joelsmith)

- kubectl now enforces required flags at a more fundamental level (#53631, @dixudx)
- Remove alpha Initializers from kubadm admission control (#58428, @dixudx)
- Enable ValidatingAdmissionWebhook and MutatingAdmissionWebhook in kubeadm from v1.9 (#58255, @dixudx)
- Fixed encryption key and encryption provider rotation (#58375, @liggitt)
- set fsGroup by securityContext.fsGroup in azure file (#58316, @andyzhangx)
- Remove deprecated and unmaintained salt support. kubernetes-salt.tar.gz will no longer be published in the release tarball. (#58248, @mikedanese)
- Detach and clear bad disk URI (#58345, @rootfs)
- Allow version arg in kubeadm upgrade apply to be optional if config file already have version info (#53220, @medinatiger)
- feat(fakeclient): push event on watched channel on add/update/delete (#57504, @yue9944882)
- Custom resources can now be submitted to and received from the API server in application/yaml format, consistent with other API resources. (#58260, @liggitt)
- remove spaces from kubectl describe hpa (#56331, @shiywang)
- fluentd-gcp updated to version 2.0.14. (#58224, @zombiezen)
- Instrument the Azure cloud provider for Prometheus monitoring. (#58204, @cosmincojocar)
- -Add scheduler optimization options, short circuit all predicates if … (#56926, @wgliang)
- Remove deprecated ContainerVM support from GCE kube-up. (#58247, @mikedanese)
- Remove deprecated kube-push.sh functionality. (#58246, @mikedanese)
- The getSubnetIDForLB() should return subnet id rather than net id. (#58208, @FengyunPan)
- Avoid panic when failing to allocate a Cloud CIDR (aka GCE Alias IP Range). (#58186, @negz)
- Handle Unhealthy devices (#57266, @vikaschoudhary16)
- Expose Metrics Server metrics via /metric endpoint. (#57456, @kawych)
- Remove deprecated container-linux support in gce kube-up.sh. (#58098, @mikedanese)
- openstack cinder detach problem is fixed if nova is shutdowned (#56846, @zetaab)
- Fixes a possible deadlock preventing quota from being recalculated (#58107, @ironcladlou)
- fluentd-es addon: multiline stacktraces are now grouped into one entry automatically (#58063, @monotek)
- GCE: Allows existing internal load balancers to continue using an outdated subnetwork (#57861, @nicksardo)
- ignore images in used by running containers when GC (#57020, @dixudx)
- Remove deprecated and unmaintained photon-controller kube-up.sh.

(#58096, @mikedanese)
- The kubelet flag to run docker containers with a process namespace that is shared between all containers in a pod is now deprecated and will be replaced by a new field in `v1.Pod` that configures this behavior. (#58093, @verb)
- fix device name change issue for azure disk: add remount logic (#57953, @andyzhangx)
- The Kubelet now explicitly registers all of its command-line flags with an internal flagset, which prevents flags from third party libraries from unintentionally leaking into the Kubelet's command-line API. Many unintentionally leaked flags are now marked deprecated, so that users have a chance to migrate away from them before they are removed. One previously leaked flag, –cloud-provider-gce-lb-src-cidrs, was entirely removed from the Kubelet's command-line API, because it is irrelevant to Kubelet operation. (#57613, @mtaufen)
- Remove deprecated and unmaintained libvirt-coreos kube-up.sh. (#58023, @mikedanese)
- Remove deprecated and unmaintained windows installer. (#58020, @mikedanese)
- Remove deprecated and unmaintained openstack-heat kube-up.sh. (#58021, @mikedanese)
- Fixes authentication problem faced during various vSphere operations. (#57978, @prashima)
- fluentd-gcp updated to version 2.0.13. (#57789, @x13n)
- Add support for cloud-controller-manager in local-up-cluster.sh (#57757, @dims)
- Update CSI spec dependency to point to v0.1.0 tag (#57989, @Nickren-REN)
- Update kube-dns to Version 1.14.8 that includes only small changes to how Prometheus metrics are collected. (#57918, @rramkumar1)
- Add proxy_read_timeout flag to kubeapi_load_balancer charm. (#57926, @wwwtyro)
- Adding support for Block Volume type to rbd plugin. (#56651, @sbezverk)
- Fixes a bug in Heapster deployment for google sink. (#57902, @kawych)
- Forbid unnamed contexts in kubeconfigs. (#56769, @dixudx)
- Upgrade to etcd client 3.2.13 and grpc 1.7.5 to improve HA etcd cluster stability. (#57480, @jpbetz)
- Default scheduler code is moved out of the plugin directory. (#57852, @misterikkit)
  - plugin/pkg/scheduler -> pkg/scheduler
  - plugin/cmd/kube-scheduler -> cmd/kube-scheduler
- Bump metadata proxy version to v0.1.7 to pick up security fix. (#57762, @ihmccreery)
- HugePages feature is beta (#56939, @derekwaynecarr)
- GCE: support passing kube-scheduler policy config via SCHED-

ULER_POLICY_CONFIG (#57425, @yguo0905)

- Returns an error for non overcommitable resources if they don't have limit field set in container spec. (#57170, @jiayingz)
- Update defaultbackend image to 1.4 and deployment apiVersion to apps/v1 (#57866, @zouyee)
- kubeadm: set kube-apiserver advertise address using downward API (#56084, @andrewsykim)
- CDK nginx ingress is now handled via a daemon set. (#57530, @hyperbolic2346)
- The kubelet uses a new release 3.1 of the pause container with the Docker runtime. This version will clean up orphaned zombie processes that it inherits. (#57517, @verb)
- Allow kubectl set image|env on a cronjob (#57742, @soltysh)
- Move local PV negative scheduling tests to integration (#57570, @sbezverk)
- fix azure disk not available issue when device name changed (#57549, @andyzhangx)
- Only create Privileged PSP binding during e2e tests if RBAC is enabled. (#56382, @mikkeloscar)
- RBAC: The system:kubelet-api-admin cluster role can be used to grant full access to the kubelet API (#57128, @liggitt)
- Allow kubernetes components to react to SIGTERM signal and shutdown gracefully. (#57756, @mborsz)
- ignore nonexistent ns net file error when deleting container network in case a retry (#57697, @dixudx)
- check psp HostNetwork in DenyEscalatingExec admission controller. (#56839, @hzxuzhonghu)
- The alpha `--init-config-dir` flag has been removed. Instead, use the `--config` flag to reference a kubelet configuration file directly. (#57624, @mtaufen)
- Add cache for VM get operation in azure cloud provider (#57432, @karataliu)
- Fix garbage collection when the controller-manager uses –leader-elect=false (#57340, @jmcmeek)
- iSCSI sessions managed by kubernetes will now explicitly set startup.mode to 'manual' to (#57475, @stmcginnis)
  - prevent automatic login after node failure recovery. This is the default open-iscsi mode, so
  - this change will only impact users who have changed their startup.mode to be 'automatic'
  - in /etc/iscsi/iscsid.conf.
- Configurable liveness probe initial delays for etcd and kube-apiserver in GCE (#57749, @wojtek-t)
- Fixed garbage collection hang (#57503, @liggitt)
- Fixes controller manager crash in certain vSphere cloud provider environment. (#57286, @rohitjogvmw)

- Remove useInstanceMetadata parameter from Azure cloud provider. (#57647, @feiskyer)
- Support multiple scale sets in Azure cloud provider. (#57543, @feiskyer)
- GCE: Fixes ILB creation on automatic networks with manually created subnetworks. (#57351, @nicksardo)
- Improve scheduler performance of MatchInterPodAffinity predicate. (#57476, @misterikkit)
- Improve scheduler performance of MatchInterPodAffinity predicate. (#57477, @misterikkit)
- Improve scheduler performance of MatchInterPodAffinity predicate. (#57478, @misterikkit)
- Allow use resource ID to specify public IP address in azure_loadbalancer (#53557, @yolo3301)
- Fixes a bug where if an error was returned that was not an `autorest.DetailedError` we would return `"not found", nil` which caused nodes to go to `NotReady` state. (#57484, @brendandburns)
- Add the path '/version/' to the `system:discovery` cluster role. (#57368, @brendandburns)
- Fixes issue creating docker secrets with kubectl 1.9 for accessing docker private registries. (#57463, @dims)
- adding predicates ordering for the kubernetes scheduler. (#57168, @yastij)
- Free up CPU and memory requested but unused by Metrics Server Pod Nanny. (#57252, @kawych)
- The alpha Accelerators feature gate is deprecated and will be removed in v1.11. Please use device plugins instead. They can be enabled using the DevicePlugins feature gate. (#57384, @mindprince)
- Fixed dynamic provisioning of GCE PDs to round to the next GB instead of GiB (#56600, @edisonxiang)
- Separate loop and plugin control (#52371, @cheftako)
- Use old dns-ip mechanism with older cdk-addons. (#57403, @wwwtyro)
- Retry 'connection refused' errors when setting up clusters on GCE. (#57394, @mborsz)
- Upgrade to etcd client 3.2.11 and grpc 1.7.5 to improve HA etcd cluster stability. (#57160, @jpbetz)
- Added the ability to select pods in a chosen node to be drained, based on given pod label-selector (#56864, @juanvallejo)
- Wait for kubedns to be ready when collecting the cluster IP. (#57337, @wwwtyro)
- Use "k8s.gcr.io" for container images rather than "gcr.io/google_containers". This is just a redirect, for now, so should not impact anyone materially. (#54174, @thockin)
  - Documentation and tools should all convert to the new name. Users should take note of this in case they see this new name in the system.
- Fix ipvs proxier nodeport eth* assumption (#56685, @m1093782566)

v1.10.0-alpha.1

Documentation & Examples

Downloads for v1.10.0-alpha.1

filename	sha256 hash
kubernetes.tar.gz	403b90bfa32f7669b326045a629bd15941c533addcaf0c49d3c3c561da0542f2
kubernetes-src.tar.gz	266da065e9eddf19d36df5ad325f2f854101a0e712766148e87d998e789b80cf

Client Binaries

filename	sha256 hash
kubernetes-client-darwin-386.tar.gz	5aaa8e294ae4060d34828239e37f37b45fa5a69508374be668965102
kubernetes-client-darwin-amd64.tar.gz	40a8e3bab11b88a2bb8e748f0b29da806d89b55775508039abe9c38c
kubernetes-client-linux-386.tar.gz	e08dde0b561529f0b2bb39c141f4d7b1c943749ef7c1f9779facf5fb
kubernetes-client-linux-amd64.tar.gz	76a05d31acaab932ef45c67e1d6c9273933b8bc06dd5ce9bad3c7345
kubernetes-client-linux-arm64.tar.gz	4b833c9e80f3e4ac4958ea0ffb5ae564b31d2a524f6a14e58802937b
kubernetes-client-linux-arm.tar.gz	f1484ab75010a2258ed7717b1284d0c139d17e194ac9e391b8f1c099
kubernetes-client-linux-ppc64le.tar.gz	da884f09ec753925b2c1f27ea0a1f6c3da2056855fc88f47929bb3d6
kubernetes-client-linux-s390x.tar.gz	c486f760c6707fc92d1659d3cbe33d68c03190760b73ac215957ee52
kubernetes-client-windows-386.tar.gz	514c550b7ff85ac33e6ed333bcc06461651fe4004d8b7c12ca67f5dc
kubernetes-client-windows-amd64.tar.gz	ddad59222f6a8cb4e88c4330c2a967c4126cb22ac5e0d7126f9f65cc

Server Binaries

filename	sha256 hash
kubernetes-server-linux-amd64.tar.gz	514efd798ce1d7fe4233127f3334a3238faad6c26372a2d457eff02cbe
kubernetes-server-linux-arm64.tar.gz	f71f75fb96221f65891fc3e04fd52ae4e5628da8b7b4fbedece3fab4cb
kubernetes-server-linux-arm.tar.gz	a9d8c2386813fd690e60623a6ee1968fe8f0a1a8e13bc5cc12b2caf8e8
kubernetes-server-linux-ppc64le.tar.gz	21336a5e40aead4e2ec7e744a99d72bf8cb552341f3141abf8f235beb2
kubernetes-server-linux-s390x.tar.gz	257e44d38fef83f08990b6b9b5e985118e867c0c33f0e869f0900397b9

Node Binaries

filename	sha256 hash
kubernetes-node-linux-amd64.tar.gz	97bf1210f0595ebf496ca7b000c4367f8a459d97ef72459efc6d0e07a
kubernetes-node-linux-arm64.tar.gz	eebcd3c14fb4faeb82ab047a2152db528adc2d9f7b20eef6f5dc58202

filename	sha256 hash
kubernetes-node-linux-arm.tar.gz	`3d4428416c775a0a6463f623286bd2ecdf9240ce901e1fbae180dfb56`
kubernetes-node-linux-ppc64le.tar.gz	`5cc96b24fad0ac1779a66f9b136d90e975b07bf619fea905e6c26ac5a`
kubernetes-node-linux-s390x.tar.gz	`134c13338edf4efcd511f4161742fbaa6dc232965d3d926c3de435e8a`
kubernetes-node-windows-amd64.tar.gz	`ae54bf2bbcb99cdcde959140460d0f83c0ecb187d060b594ae9c5349`

Changelog since v1.9.0

Action Required

- [action required] Remove the kubelet's `--cloud-provider=auto-detect` feature (#56287, @stewart-yu)

Other notable changes

- Fix Heapster configuration and Metrics Server configuration to enable overriding default resource requirements. (#56965, @kawych)
- YAMLDecoder Read now returns the number of bytes read (#57000, @sel)
- Retry 'connection refused' errors when setting up clusters on GCE. (#57324, @mborsz)
- Update kubeadm's minimum supported Kubernetes version in v1.10.x to v1.9.0 (#57233, @xiangpengzhao)
- Graduate CPU Manager feature from alpha to beta. (#55977, @Connor-Doyle)
- Drop hacks used for Mesos integration that was already removed from main kubernetes repository (#56754, @dims)
- Compare correct file names for volume detach operation (#57053, @prashima)
- Improved event generation in volume mount, attach, and extend operations (#56872, @davidz627)
- GCE: bump COS image version to cos-stable-63-10032-71-0 (#57204, @yujuhong)
- fluentd-gcp updated to version 2.0.11. (#56927, @x13n)
- calico-node addon tolerates all NoExecute and NoSchedule taints by default. (#57122, @caseydavenport)
- Support LoadBalancer for Azure Virtual Machine Scale Sets (#57131, @feiskyer)
- Makes the kube-dns addon optional so that users can deploy their own DNS solution. (#57113, @wwwtyro)
- Enabled log rotation for load balancer's api logs to prevent running out of disk space. (#56979, @hyperbolic2346)
- Remove ScrubDNS interface from cloudprovider. (#56955, @feiskyer)

- Fix `etcd-version-monitor` to backward compatibly support etcd 3.1 go-grpc-prometheus metrics format. (#56871, @jpbetz)
- enable flexvolume on Windows node (#56921, @andyzhangx)
- When using Role-Based Access Control, the “admin”, “edit”, and “view” roles now have the expected permissions on NetworkPolicy resources. (#56650, @danwinship)
- Fix the PersistentVolumeLabel controller from initializing the PV labels when it’s not the next pending initializer. (#56831, @jhorwit2)
- kube-apiserver: The external hostname no longer use the cloud provider API to select a default. It can be set explicitly using –external-hostname, if needed. (#56812, @dims)
- Use GiB unit for creating and resizing volumes for Glusterfs (#56581, @gnufied)
- PersistentVolume flexVolume sources can now reference secrets in a namespace other than the PersistentVolumeClaim’s namespace. (#56460, @liggitt)
- Scheduler skips pods that use a PVC that either does not exist or is being deleted. (#55957, @jsafrane)
- Fixed a garbage collection race condition where objects with ownerRefs pointing to cluster-scoped objects could be deleted incorrectly. (#57211, @liggitt)
- Kubectl explain now prints out the Kind and API version of the resource being explained (#55689, @luksa)
- api-server provides specific events when unable to repair a service cluster ip or node port (#54304, @frodenas)
- Added docker-logins config to kubernetes-worker charm (#56217, @Cynerva)
- delete useless params containerized (#56146, @jiulongzaitian)
- add mount options support for azure disk (#56147, @andyzhangx)
- Use structured generator for kubectl autoscale (#55913, @wackxu)
- K8s supports cephfs fuse mount. (#55866, @zhangxiaoyu-zidif)
- COS: Keep the docker network checkpoint (#54805, @yujuhong)
- Fixed documentation typo in IPVS README. (#56578, @shift)

See the Releases Page for older releases.

Release notes of older releases can be found in:

- CHANGELOG-1.2.md
- CHANGELOG-1.3.md
- CHANGELOG-1.4.md
- CHANGELOG-1.5.md
- CHANGELOG-1.6.md
- CHANGELOG-1.7.md
- CHANGELOG-1.8.md
- CHANGELOG-1.9.md

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