- v1.20.15
  - Downloads for v1.20.15
    - Source Code
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Changelog since v1.20.14
  - Changes by Kind
    - Bug or Regression
  - Dependencies
    - Added
    - Changed
    - Removed
- v1.20.14
  - Downloads for v1.20.14
    - Source Code
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Changelog since v1.20.13
  - Changes by Kind
    - Bug or Regression
  - Dependencies
    - Added
    - Changed
    - Removed
- v1.20.13
  - Downloads for v1.20.13
    - Source Code
    - Client Binaries
    - Server Binaries
    - Node Binaries
  - Changelog since v1.20.12
  - Changes by Kind
    - Feature
    - Failing Test
    - Bug or Regression
  - Dependencies
    - Added
    - Changed
    - Removed
- v1.20.12
  - Downloads for v1.20.12
    - Source Code
    - Client Binaries
    - Server Binaries

        * Node Binaries
    - Changelog since v1.20.11
    - Changes by Kind
        * API Change
        * Bug or Regression
        * Other (Cleanup or Flake)
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.11
    - Downloads for v1.20.11
        * Source Code
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.20.10
    - Important Security Information
        * CVE-2021-25741: Symlink Exchange Can Allow Host Filesystem Access
    - Changes by Kind
        * Bug or Regression
        * Other (Cleanup or Flake)
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.10
    - Downloads for v1.20.10
        * Source Code
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.20.9
    - Changes by Kind
        * Feature
        * Bug or Regression
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.9
    - Downloads for v1.20.9
        * Source Code
        * Client Binaries
        * Server Binaries

        * Node Binaries
    - Changelog since v1.20.8
    - Changes by Kind
        * Feature
        * Bug or Regression
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.8
    - Downloads for v1.20.8
        * Source Code
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.20.7
    - Changes by Kind
        * Feature
        * Failing Test
        * Bug or Regression
        * Other (Cleanup or Flake)
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.7
    - Downloads for v1.20.7
        * Source Code
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.20.6
    - Changes by Kind
        * API Change
        * Feature
        * Bug or Regression
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.6
    - Downloads for v1.20.6
        * Source Code
        * Client binaries
        * Server binaries
        * Node binaries

  - Changelog since v1.20.5
  - Important Security Information
    * CVE-2021-25735: Validating Admission Webhook does not observe some previous fields
  - Changes by Kind
    * API Change
    * Feature
    * Bug or Regression
    * Uncategorized
  - Dependencies
    * Added
    * Changed
    * Removed
- v1.20.5
  - Downloads for v1.20.5
    * Source Code
    * Client binaries
    * Server binaries
    * Node binaries
  - Changelog since v1.20.4
  - Changes by Kind
    * Failing Test
    * Bug or Regression
  - Dependencies
    * Added
    * Changed
    * Removed
- v1.20.4
  - Downloads for v1.20.4
    * Source Code
    * Client binaries
    * Server binaries
    * Node binaries
  - Changelog since v1.20.3
  - Dependencies
    * Added
    * Changed
    * Removed
- v1.20.3
  - Downloads for v1.20.3
    * Source Code
    * Client binaries
    * Server binaries
    * Node binaries
  - Changelog since v1.20.2
  - Changes by Kind

        * API Change
        * Failing Test
        * Bug or Regression
        * Other (Cleanup or Flake)
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.2
    - Downloads for v1.20.2
        * Source Code
        * Client binaries
        * Server binaries
        * Node binaries
    - Changelog since v1.20.1
    - Changes by Kind
        * Bug or Regression
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.1
    - Downloads for v1.20.1
        * Source Code
        * Client binaries
        * Server binaries
        * Node binaries
    - Changelog since v1.20.0
    - Changes by Kind
        * Bug or Regression
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.0
    - Downloads for v1.20.0
        * Source Code
        * Client Binaries
        * Server Binaries
        * Node Binaries
    - Changelog since v1.19.0
    - What's New (Major Themes)
        * Dockershim deprecation
        * External credential provider for client-go
        * CronJob controller v2 is available through feature gate
        * PID Limits graduates to General Availability

        * API Priority and Fairness graduates to Beta
        * IPv4/IPv6 run
        * go1.15.5
        * CSI Volume Snapshot graduates to General Availability
        * Non-recursive Volume Ownership (FSGroup) graduates to Beta
        * CSIDriver policy for FSGroup graduates to Beta
        * Security Improvements for CSI Drivers (Alpha)
        * Introducing Graceful Node Shutdown (Alpha)
        * Runtime log sanitation
        * Pod resource metrics
        * Introducing RootCAConfigMap
        * kubectl debug graduates to Beta
        * Removing deprecated flags in kubeadm
        * Pod Hostname as FQDN graduates to Beta
        * TokenRequest / TokenRequestProjection graduates to General Availability
        * RuntimeClass feature graduates to General Availability.
        * Cloud Controller Manager now exclusively shipped by Cloud Provider
    - Known Issues
        * Summary API in kubelet doesn't have accelerator metrics
    - Urgent Upgrade Notes
        * (No, really, you MUST read this before you upgrade)
    - Changes by Kind
        * Deprecation
        * API Change
        * Feature
        * Documentation
        * Failing Test
        * Bug or Regression
        * Other (Cleanup or Flake)
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.0-rc.0
    - Downloads for v1.20.0-rc.0
        * Source Code
        * Client binaries
        * Server binaries
        * Node binaries
    - Changelog since v1.20.0-beta.2
    - Changes by Kind
        * Feature
        * Failing Test
        * Bug or Regression

    - Dependencies
        - Added
        - Changed
        - Removed
- v1.20.0-beta.2
    - Downloads for v1.20.0-beta.2
        - Source Code
        - Client binaries
        - Server binaries
        - Node binaries
    - Changelog since v1.20.0-beta.1
    - Urgent Upgrade Notes
        - (No, really, you MUST read this before you upgrade)
    - Changes by Kind
        - Deprecation
        - API Change
        - Feature
        - Documentation
        - Bug or Regression
        - Other (Cleanup or Flake)
    - Dependencies
        - Added
        - Changed
        - Removed
- v1.20.0-beta.1
    - Downloads for v1.20.0-beta.1
        - Source Code
        - Client binaries
        - Server binaries
        - Node binaries
    - Changelog since v1.20.0-beta.0
    - Changes by Kind
        - Deprecation
        - API Change
        - Feature
        - Documentation
        - Bug or Regression
        - Other (Cleanup or Flake)
    - Dependencies
        - Added
        - Changed
        - Removed
- v1.20.0-beta.0
    - Downloads for v1.20.0-beta.0
        - Source Code
        - Client binaries

        * Server binaries
        * Node binaries
    - Changelog since v1.20.0-alpha.3
    - Urgent Upgrade Notes
        * (No, really, you MUST read this before you upgrade)
    - Changes by Kind
        * Deprecation
        * API Change
        * Feature
        * Documentation
        * Bug or Regression
        * Other (Cleanup or Flake)
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.0-alpha.3
    - Downloads for v1.20.0-alpha.3
        * Source Code
        * Client binaries
        * Server binaries
        * Node binaries
    - Changelog since v1.20.0-alpha.2
    - Changes by Kind
        * API Change
        * Feature
        * Bug or Regression
        * Other (Cleanup or Flake)
    - Dependencies
        * Added
        * Changed
        * Removed
- v1.20.0-alpha.2
    - Downloads for v1.20.0-alpha.2
        * Source Code
        * Client binaries
        * Server binaries
        * Node binaries
    - Changelog since v1.20.0-alpha.1
    - Changes by Kind
        * Deprecation
        * API Change
        * Feature
        * Bug or Regression
        * Other (Cleanup or Flake)
    - Dependencies

        * Added
        * Changed
        * Removed
- v1.20.0-alpha.1
  - Downloads for v1.20.0-alpha.1
    * Source Code
    * Client binaries
    * Server binaries
    * Node binaries
  - Changelog since v1.20.0-alpha.0
  - Urgent Upgrade Notes
    * (No, really, you MUST read this before you upgrade)
  - Changes by Kind
    * Deprecation
    * API Change
    * Feature
    * Documentation
    * Failing Test
    * Bug or Regression
    * Other (Cleanup or Flake)
  - Dependencies
    * Added
    * Changed
    * Removed

v1.20.15

Downloads for v1.20.15

Source Code

filename	sha512 hash
kubernetes.tar.gz	470f3c6779d9bb19adc7153f2f7a235f4ce4c30cab193b630683b86853508bd670d4
kubernetes-src.tar.gz	cb2fd7da08d2db9ae287769295b2e89448853973934f5d87c6bd0553e7fcc6386395

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	d7a844366586ca9723515a738ed6a3680e9511e79887511ab9e86bd7963a66e82e5
kubernetes-client-linux-386.tar.gz	650632e8bd8160e50fe9ecbb00317164e70f33f316cc917eb0bd3fd0c190e58ca3523

filename	sha512 hash
kubernetes-client-linux-amd64.tar.gz	86708ac887310f3aa7b699cddf699c534f4aac52a2adc6b89a54adb69bca42293e01
kubernetes-client-linux-arm.tar.gz	1481caec0a0038d084e38cf1c82966db94edc3b26da720a8342da2a5f3874ef0f2396
kubernetes-client-linux-arm64.tar.gz	bf5e45156e418ef30afd06c851af3ab632f577e6c473d8662f93b9251ed46498ee2aba
kubernetes-client-linux-ppc64le.tar.gz	a7d05f624a1a457ce5c7be96d350980b7ab4d2dfac65ba64a05033d8b98ecad5ef5e
kubernetes-client-linux-s390x.tar.gz	b3b7aec85f9b7a06c07346f576241c15cbd7bb02992736e2ca425816a05ec3a00641
kubernetes-client-windows-386.tar.gz	1f15833353981aa148bb661c3d49300f677b45be4360b518adcc9213a186079ba6a
kubernetes-client-windows-amd64.tar.gz	d7b7fd01bc01924330b1fed5ca8259c4288202d9007eafe5de46f7bf673be151b1e53

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	0def92227a7770ff2792c3dcec5f3a6343792b98946171dc8e947c3adc9ecda2cee7aa
kubernetes-server-linux-arm.tar.gz	09a63ac5792d53cbdb7bae1b540db1e8a72710811b925b804619336d1289ece7bc3
kubernetes-server-linux-arm64.tar.gz	1996558e18f4546882128bd85f5a16e716b0f714424bec96d8ad189a951120e4eb51
kubernetes-server-linux-ppc64le.tar.gz	3eadf2f1822bf8c3b3b87939768f7601358bd8851c60d8fe8a7378de4f1ee31f3229ef
kubernetes-server-linux-s390x.tar.gz	9174603184ffe7499e064edc5d0296c3bed317957fa1f3199ed1422151900a60ae53c

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	5f9deac2b607e6218a128c2229e1366e9bb55dc2d61851c77fa7cb2e867c0dee5724
kubernetes-node-linux-arm.tar.gz	0fb7889007f82614c3e9bc9a8c93a8fa221327f7b7047124a907bb8a89482ecfa927a
kubernetes-node-linux-arm64.tar.gz	5727a51f435c4e5c17d2b478213800b5894f102363f6a707d3cdaa56998c79567068
kubernetes-node-linux-ppc64le.tar.gz	097579a553c589e70cce4e699060d9bd80a8f3f8b9f1ff012d30eddb92ed59ba6181c

filename	sha512 hash
kubernetes-node-linux-s390x.tar.gz	6e1041306cc5a75ce751728b7b397d9740bde9e56281a84b896e51a562a60a0262c
kubernetes-node-windows-amd64.tar.gz	393c64990d7721aa6ac088bc891a7a441915579876ed7a6317f8aa8a73f506bc58c9

Changelog since v1.20.14

Changes by Kind

Bug or Regression

- Fixes a panic in kube-scheduler handling pods with invalid selectors (#107558, @Zheaoli) [SIG Scheduling]
- Fixes a rare race condition handling requests that timeout (#107461, @liggitt) [SIG API Machinery]

Dependencies

Added

Nothing has changed.

Changed

Nothing has changed.

Removed

Nothing has changed.

v1.20.14

Downloads for v1.20.14

Source Code

filename	sha512 hash
kubernetes.tar.gz	9f8f475869bed7bed86105952db2b724297ed74fc372d1f8a63a8823a2c37e03ce06
kubernetes-src.tar.gz	dfb681d97bd6a56cda41800bb5b067b2003377b36fd02afb4b40fb53efdc0876389

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	b1cef8cd140cab08878dcf79b00f079f49e2d4ec0087e7e2cf452cc29ac091c5678f97
kubernetes-client-linux-386.tar.gz	814782d2039955cb85db41eaa18d43442722c99ced5adc3a35adaf6670320788e83
kubernetes-client-linux-amd64.tar.gz	61afee2f3e228b900ad7552b79b0cd8a284379f011815fc3144af7a87897331f7882d
kubernetes-client-linux-arm.tar.gz	878d92562e52ea8ef2027780ab3ea0d4e9c55ad8d57557f5e9cdb1f3e2ef63d201184
kubernetes-client-linux-arm64.tar.gz	41bd448d434b8490b9977cf3eb45f0dc52ef64963558def866e6cc8e1cbd7fb746944
kubernetes-client-linux-ppc64le.tar.gz	fd0b5c810eb4ebf39e047c1929fba69ffb5d2e8b65e7d9a6d94757c75496b98ba7e4f
kubernetes-client-linux-s390x.tar.gz	b5c2f1985f5df632de2a24db2f834bdc478d93976495234ec4c6749f2f6673b17554a
kubernetes-client-windows-386.tar.gz	e5a15ac3034962be2ae39f1c51b4f5e4c1ab8040c36a830a59736c459db310189cccf
kubernetes-client-windows-amd64.tar.gz	b925913f21a6c989eb80a1badf3e733fc676f5a20ecc5fd5b7cdf9ad55f3f1275e7aa8

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	e7fe2125526fe617fe3beb4b8bc46fbb8dd1f3422fcd5913f70feaeec5765d1db8abea
kubernetes-server-linux-arm.tar.gz	4bcf507181a6b69efa81902f88c1c466ce9d9131ba44b2557df36b764a6102d7a6a23
kubernetes-server-linux-arm64.tar.gz	a810dbd5ef47156e031856384bab0c5410efff17f418d9f3d2652e1f7164c6014aa28c
kubernetes-server-linux-ppc64le.tar.gz	8462b4a79e14077dc65fb1861d0c88efabe8a73ba283ff7d2fc627a73f6552a72b92c
kubernetes-server-linux-s390x.tar.gz	3d91112b046e703488a370eb1d1d08828e57f4a9616fc123d75d314fa986297c6d12

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	043a75802d596b6a88ea2b483f1bc8a22d70cf76631a9b5ed98a48495dc5189a743
kubernetes-node-linux-arm.tar.gz	c33c82c6ffc73faf33f62462bf34dc25d1df271eed0ea488fb0e5491158124b75f0a1b5

filename	sha512 hash
kubernetes-node-linux-arm64.tar.gz	ed56afb4af483d8afe0e556bfb77b76429308333a10587b263a073462b80b59a8071
kubernetes-node-linux-ppc64le.tar.gz	3c4ff24ff810f68619b7901d85acb81bb5a2dece6b9c220556659b3624dc03c4d6fb1
kubernetes-node-linux-s390x.tar.gz	cf6f1e2dda855413350c35e4d4a989bae6bb4a742b9e14ca37fbc3767261ddb6d322
kubernetes-node-windows-amd64.tar.gz	55aaaf1089b6603538c4d1ead4818b728f7ad64f6bad4d179488c54d6ea70bdb9de

Changelog since v1.20.13

Changes by Kind

Bug or Regression

- Ensure Pods are removed from the scheduler cache when the scheduler misses deletion events due to transient errors (#106695, @alculquicondor) [SIG Scheduling]
- Fix: skip instance not found when decoupling vmss from lb (#105834, @nilo19) [SIG Cloud Provider]
- Fixed SELinux relabeling of CSI volumes after CSI driver failure. (#106554, @jsafrane) [SIG Node and Storage]
- Kubeadm: allow the "certs check-expiration" command to not require the existence of the cluster CA key (ca.key file) when checking the expiration of managed certificates in kubeconfig files. (#106927, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: during execution of the "check expiration" command, treat the etcd CA as external if there is a missing etcd CA key file (etcd/ca.key) and perform the proper validation on certificates signed by the etcd CA. Additionally, make sure that the CA for all entries in the output table is included - for both certificates on disk and in kubeconfig files. (#106923, @neolit123) [SIG Cluster Lifecycle]
- Scheduler's assumed pods have 2min instead of 30s to receive nodeName pod updates (#106686, @ahg-g) [SIG Scheduling]

Dependencies

Added

Nothing has changed.

Changed

Nothing has changed.

Removed

Nothing has changed.

v1.20.13

Downloads for v1.20.13

Source Code

filename	sha512 hash
kubernetes.tar.gz	947fd04975772d24ee31d36a1d71ed346e746e6f21649fd3edcf190132960fcc8dab1
kubernetes-src.tar.gz	625de292afb64174baee7ecf6d3fd504d249814a8087083e429927969561a41ebcbe

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	1917f22cd1c24baa96a4180ea59f1947de8c916afacb9f24836ef052794ac06dd7e68
kubernetes-client-linux-386.tar.gz	60d1697f3b28f7cfd4554e25bb24cc234bbe550dc1b2e4cc4dee3c967c6db17ca58e0
kubernetes-client-linux-amd64.tar.gz	9996bfaf06a141215f1d9b955fa12509860a7844e12fed90d93df34f039a340176293
kubernetes-client-linux-arm.tar.gz	bae6152f2e7adad87a33c0316bea027d57283984b363fb9311ba50eb884931c2f958
kubernetes-client-linux-arm64.tar.gz	3538a624d90a7c53a3afc6f9fbde5429c4456734fc796c3d9cb5018154d5fd2db6600
kubernetes-client-linux-ppc64le.tar.gz	fea02182f587e136bd2856a13e8e08e7f429c4284c46478a1246baba2d0c0dea56eea
kubernetes-client-linux-s390x.tar.gz	8934de190a5dcbca3cdc7ddb138aa0b68a35f7079b6e1a4cb1788e4cd4fdc0990422
kubernetes-client-windows-386.tar.gz	6695048689384b02f2d88a8521008ff25e0eeb1942a2bb5b1283118309b14f4bfb3a5
kubernetes-client-windows-amd64.tar.gz	06fee53995bf3b996952235a156d7fc4d7b195809df444b6041aa5cf4e2e9ba94783b

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	093adbdb906d0e1cd0e411923b86cfd17c5738af3ccf7d582beebbab1807a1c9e1a9

filename	sha512 hash
kubernetes-server-linux-arm.tar.gz	809f35ce523e6ee81b9ba8620da9323febcac7f19f6c3c9af58431532ac7cd15fed155
kubernetes-server-linux-arm64.tar.gz	7f78363274b1a18e73684224bc49c990b3177b5273d452ef11dd43de54a61b2a314
kubernetes-server-linux-ppc64le.tar.gz	5c1c48e089b4eb05e4af5792df019338181c4944d8c7ac482f837c72560eaab6b5c01
kubernetes-server-linux-s390x.tar.gz	6becbc3f9090865864e35da36610c6c334929ebd9be21302470c8dd42fb6bd95f9d9

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	ebdad27e4e04ff3a01ee401ddaa8e97a29fb1eeca206ad9c5e7f3a559ed44cd238609
kubernetes-node-linux-arm.tar.gz	2ea6a436cd58a484dc20701354a40d0348bb9f8b4e68c804e2c99ce980ccbcfebec65
kubernetes-node-linux-arm64.tar.gz	a1d13edb0d4db7b1d5c1e509137d83b48b190ab97ddc69099bc159840710eb8fdd
kubernetes-node-linux-ppc64le.tar.gz	ff0d1aa8b973c1caec51201f08da93c3fa3647612095a0907ef23d2f17ca3e851a6ac7
kubernetes-node-linux-s390x.tar.gz	9db952b4211f0ea245198603b09e531ef8943396af073bbbaec8409a85660cf19317
kubernetes-node-windows-amd64.tar.gz	0defcafccc2d4c82169a40449211b45d9e3fb11d13612e7332463604e52f1dae97bf6

Changelog since v1.20.12

Changes by Kind

Feature

- Update debian-base, debian-iptables, setcap images to pick up CVE fixes
  - Debian-base to v1.9.0
  - Debian-iptables to v1.6.7 (#106148, @cpanato) [SIG Release and Testing]

Failing Test

- Fixes hostpath storage e2e tests within SELinux enabled env (#105788, @Elbehery) [SIG Testing]

Bug or Regression

- EndpointSlice Mirroring controller now cleans up managed EndpointSlices when a Service selector is added (#106136, @robscott) [SIG Apps, Network and Testing]
- Fix concurrent map access causing panics when logging timed-out API calls. (#106124, @marseel) [SIG API Machinery]
- Support more than 100 disk mounts on Windows (#105673, @andyzhangx) [SIG Storage and Windows]

Dependencies

Added

Nothing has changed.

Changed

- k8s.io/kube-openapi: d219536 → 83f114c

Removed

Nothing has changed.

v1.20.12

Downloads for v1.20.12

Source Code

filename	sha512 hash
kubernetes.tar.gz	f550a84d3c17f81d282d65cf5c04060524de9ceac9875a4264686981dfb1b4d039ea2
kubernetes-src.tar.gz	148c3bc5dc3f705b0e2fd6806b0973cf2e264618297c1ab1813aef26a27e39da28e89

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	c925d724f025a444060a97b04c9cd08091474c03b223acf99cf0ab867e34ada178b2
kubernetes-client-linux-386.tar.gz	bb1a66c919ae86bc596ba4638652ad71b9e5b6dfea313becd03b0e74aad00a69fed
kubernetes-client-linux-amd64.tar.gz	a8f667828b815678f508f9a355755a9a84ae0f3cc09613f34c334bcac60ed7469e02af
kubernetes-client-linux-arm.tar.gz	4fa83c283557bd96b6cd5c8a08b205a4c9cac6122c4c28dfa66f086704e4d1c80ea55

filename	sha512 hash
kubernetes-client-linux-arm64.tar.gz	5147261a92f6e073027eaf98c7a6808f85d86c9c6d3577ae2b3c6ed4a69b1597242fb
kubernetes-client-linux-ppc64le.tar.gz	49f24b976798f5e0fbc65f314853969471f2105100baa321bf95f2cf779ac4ecdc8bd5
kubernetes-client-linux-s390x.tar.gz	ac77cbea55562c711f7bd14d3d325f7d350205fe9c638f5d364b70b8e318b00a2714
kubernetes-client-windows-386.tar.gz	8312584bd7d6b101f7854da1f48f2762e3818096a70a029f2144e7db945c8952a73f9
kubernetes-client-windows-amd64.tar.gz	158db7d15496342a98ce290fd4e995448afc36191cbc2d8937272b9a990b1c1033e5

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	f2b1579e5fc496a9ba5038f73fe6fd90e9f0c6df8d835b906113f773d1f36d760dbce1
kubernetes-server-linux-arm.tar.gz	299b3ee742bea839faa62839f91039d958e61f4d37900457528973de0e8b57d1116d
kubernetes-server-linux-arm64.tar.gz	9bb11c91770b49080c388c5f8ce808633f563976b8d9b2c0795540d789823c2a5a23
kubernetes-server-linux-ppc64le.tar.gz	acbfb224f318687c51fcb9f16e5e13009b7f6f1db694a093cc49d24cbc2098074ade27
kubernetes-server-linux-s390x.tar.gz	045664a13274a34296f059b815f323516d146a52f0ecf6087b65219874c1629f25a53

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	05b965ca07a109b0e5499b0235c1c09caf2122feb5ffb3fef9114299cdd5d8835c5d1c
kubernetes-node-linux-arm.tar.gz	2def2fe68258da3395c57eac7eb2e1a98dbc9f5485c4b8d24c71fc44d2f2454a48db5
kubernetes-node-linux-arm64.tar.gz	a34b027dc8b92e63e78993baf6e8ad8cb45869b6c86a5cb2cf052ea308f285b18beb
kubernetes-node-linux-ppc64le.tar.gz	7bf833e8f05f86ef390f317521dcce8b7ba2665af54db038abd114d4b94530a77ebc0
kubernetes-node-linux-s390x.tar.gz	ab6aa43089b4df8f855de3cc62457dfb7ef2ecd6a0a77eab245fd373ae470aefedfe4b
kubernetes-node-windows-amd64.tar.gz	c86e5c4f2695a5a82b08dff37996e6b7917088598a6ded41e201c577a9e70334a2364

Changelog since v1.20.11

Changes by Kind

API Change

- Kube-apiserver: Fixes handling of CRD schemas containing literal null values in enums (#104990, @liggitt) [SIG API Machinery, Apps and Network]

Bug or Regression

- Detach volumes from vSphere nodes not tracked by attach-detach controller (#104910, @gnufied) [SIG Cloud Provider and Storage]
- Fix: consolidate logs for instance not found error (#105364, @nilo19) [SIG Cloud Provider]
- Fix: ignore not a VMSS error for VMAS nodes in EnsureBackendPoolDeleted. (#105404, @ialidzhikov) [SIG Cloud Provider]
- Fix: ignore the case when updating Azure tags (#104687, @nilo19) [SIG Cloud Provider]
- Revert PR #102925 which introduced unexpected scheduling behavior based on balanced resource allocation (#105239, @damemi) [SIG Scheduling]
- Updates golang.org/x/text to v0.3.6 to fix CVE-2020-28852 (#102602, @jonesbr17) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation and Node]

Other (Cleanup or Flake)

- Allow CSI drivers to just run offline expansion tests (#102665, @gnufied) [SIG Storage and Testing]

Dependencies

Added

Nothing has changed.

Changed

- golang.org/x/text: v0.3.4 → v0.3.6

Removed

Nothing has changed.

v1.20.11

Downloads for v1.20.11

Source Code

filename	sha512 hash
kubernetes.tar.gz	2804919885242d853ad7ed6f6c9ee98d317293c1d2dad4ad1c5f5739d497b40018f6
kubernetes-src.tar.gz	66960f3bd5844d093a85366855d613018bf514e88f3ea32ae7ecd9c89753ae6dd09b

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	e3112ba3e80b61f07dea3e12782af45095a964cbdd36eb6c58061d07a03a8fda9bdb
kubernetes-client-linux-386.tar.gz	b60e14c9908124181d109c1b13b828f0e307be34ee7bc99ab7ae61c6a673d1c217a4
kubernetes-client-linux-amd64.tar.gz	fdb48e8d190da6461a0dc5ea7ba0d85b6bc4ac7b8da124783104e961f8fbbfca6d26
kubernetes-client-linux-arm.tar.gz	8c8d2a78b20198a35f0f1b5c9dbab836b61d0fe6b46458a63fd1e9b4114c9928a481
kubernetes-client-linux-arm64.tar.gz	a83047b95a2d938e8599289f180681e8a6c143bff92e6324be59cf4ab477d6d07f22b
kubernetes-client-linux-ppc64le.tar.gz	a6dd9e2b13d0fd1aa87e912b44cfcacdcaf78456cf397ba3a83af151cbe66f584cd6a8
kubernetes-client-linux-s390x.tar.gz	558bffc5eddd81ac51eaa5ea26244793acc6f8874660bcf7aaa3cad03b3ff5c63042d2
kubernetes-client-windows-386.tar.gz	c0ef52430c67a3592b5091477f956561d366560be60dbd785a22113dc0895089ad0f
kubernetes-client-windows-amd64.tar.gz	afba62da4ca2fd60a821df207f1d6977359a58c9810a023e663ffe312e0b30624cf4c3

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	99bd926e7056784c212a7f1392e1f5e9b4c201aec45df142564ba246af77a638dc3c2
kubernetes-server-linux-arm.tar.gz	30c24631e5d5c12ecb52017974503f52acac17359d0ea67c3430686051c545378919
kubernetes-server-linux-arm64.tar.gz	a1c5a28dfc74138d35b623a93ac45efdc4a4c2f7bb025df5463bd406ea5133485560
kubernetes-server-linux-ppc64le.tar.gz	dad9aed9ba361f3e0d437b5327714ca8c8d0585513ce69efafc5ae978234918fb1ca4

filename	sha512 hash
kubernetes-server-linux-s390x.tar.gz	ae22ae6127136033f6ea3439b132dafc01ff4266170ca27af2441a518ba5a17f0e6399

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	97d9668fd9111b781d86ee5f63a1aed5db4411d80e66f64dbaf70e5e76bacf893dfc1
kubernetes-node-linux-arm.tar.gz	6aa4b1ba4b3de25368a826ee041772efa52290dca6b0d6a522d7a852eeb898b8686
kubernetes-node-linux-arm64.tar.gz	1dae937bb79b00795e38f37aad47b34363d5dd670040bdba8a933e508315a813b7
kubernetes-node-linux-ppc64le.tar.gz	002ffa177c2ab6badc227c5f1641b4c4dc31a886e0fb02a8f9ef03c19cdb935de38ab
kubernetes-node-linux-s390x.tar.gz	b9a779f0d14e4b30f6d9311af282ff4b78773a31cc50fe531662eccce29b32afdac9f8
kubernetes-node-windows-amd64.tar.gz	20369ff5e114eb7947091e23b5723c7ea04239f9fcb2d5753a7250411a7b5e856792

Changelog since v1.20.10

Important Security Information

This release contains changes that address the following vulnerabilities:

CVE-2021-25741: Symlink Exchange Can Allow Host Filesystem Access

A security issue was discovered in Kubernetes where a user may be able to create a container with subpath volume mounts to access files & directories outside of the volume, including on the host filesystem.

Affected Versions: - kubelet v1.22.0 - v1.22.1 - kubelet v1.21.0 - v1.21.4 - kubelet v1.20.0 - v1.20.10 - kubelet <= v1.19.14

Fixed Versions: - kubelet v1.22.2 - kubelet v1.21.5 - kubelet v1.20.11 - kubelet v1.19.15

This vulnerability was reported by Fabricio Voznika and Mark Wolters of Google.

CVSS Rating: High (8.8) CVSS:3.0/AV:N/AC:L/PR:L/UI:N/S:U/C:H/I:H/A:H

Changes by Kind

Bug or Regression

- Fix: skip case sensitivity when checking Azure NSG rules fix: ensure InstanceShutdownByProviderID return false for creating Azure VMs (#104448, @feiskyer) [SIG Cloud Provider]
- Kube-proxy: delete stale conntrack UDP entries for loadbalancer ingress IP. (#104152, @aojea) [SIG Network]
- Metrics changes: Fix exposed buckets of `scheduler_volume_scheduling_duration_seconds_bucket` metric (#100720, @dntosas) [SIG Apps, Instrumentation, Scheduling and Storage]
- Pass additional flags to subpath mount to avoid flakes in certain conditions (#104348, @mauriciopoppe) [SIG Storage]
- When using `kubectl replace` (or the equivalent API call) on a Service, the caller no longer needs to do a read-modify-write cycle to fetch the allocated values for `.spec.clusterIP` and `.spec.ports[].nodePort`. Instead the API server will automatically carry these forward from the original object when the new object does not specify them. (#104674, @thockin) [SIG Network]

Other (Cleanup or Flake)

- Kube-apiserver: sets an upper-bound on the lifetime of idle keep-alive connections and time to read the headers of incoming requests (#103958, @liggitt) [SIG API Machinery and Node]

Dependencies

Added

Nothing has changed.

Changed

Nothing has changed.

Removed

Nothing has changed.

v1.20.10

Downloads for v1.20.10

Source Code

filename	sha512 hash
kubernetes.tar.gz	88676e1166e0dd5d0fae8995f52e96d5d61cb3e66112f6e819462c478da72eba5d07
kubernetes-src.tar.gz	b20f3dda03bbe92ee8f4b5de3fe690faa25ebb12df9eeeca6b0a2cc7eed30ad1f5c59c

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	dba72b5163cab7963d0ae044f5983989d66fe28073b6ae95a9d2c42542ed7e67f1d2
kubernetes-client-linux-386.tar.gz	7260212c7748572337c72edc76461038be3b8d10fd5bec85817aebe75e081140eb20
kubernetes-client-linux-amd64.tar.gz	e0505ae0c1e3b59847ba03209ea52c972d2e6c2007e1908a340c3cbc0f81d963ed21
kubernetes-client-linux-arm.tar.gz	021e541b17aa1371fa9579d89653a483a5ef1dc558be9ac5c0dcd64e56292835a274
kubernetes-client-linux-arm64.tar.gz	b9588f0682495b3a1c4087d0532fda962ca491a77100084dba4806eddc820bfe8bb7
kubernetes-client-linux-ppc64le.tar.gz	f32fc5bec1e59576bfa31d604c197db254a9dfca448d798f0d391ef89b43f75149a773
kubernetes-client-linux-s390x.tar.gz	3c0d4d2156774dc8357992de6b1e9ca0694c47ee571c7c909628e88fcdbaa34ff677c
kubernetes-client-windows-386.tar.gz	f5c252dbd14c4f8ffabe163c6733de78f7fb19766e8c9aa8a394f956a5c3f77ca3a46fa
kubernetes-client-windows-amd64.tar.gz	ce523ede2fd98f8b8e339297fc093f878ba170da97ccc3786765db4f1dc5fda3ca14bc

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	124ca7f34d73ef70051dbbe8d1671bbfd8cc6278b14ed23ee79afc336f40c00e829cb
kubernetes-server-linux-arm.tar.gz	23959c52a6ecd2d92e95847c301e2c130cd6172d97727508bc4b4563c4006db2fea7
kubernetes-server-linux-arm64.tar.gz	81b2d8c30ac595a6d4fa593c7ecec0c9d8dceb3664e10b25c09d9a66edc408b4e386
kubernetes-server-linux-ppc64le.tar.gz	6d55b2b8b3841d83d582ca52d9546c5bf8d6d2f18da04808cbf96e93605b9724e44
kubernetes-server-linux-s390x.tar.gz	babcc91feabb6fb8bcde20ecbe049e942a755c65b71d1266b009f68c16201975cd27

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	b13c7b1053ded43beacabb328c06de990a8b41132d31d49e0b169983ab20dfe963e
kubernetes-node-linux-arm.tar.gz	64e41c121909ea93b2e0fdd1caf75fd94dbf1addb0a01f0b921830f91ace4b5b6d65f
kubernetes-node-linux-arm64.tar.gz	32dfa2e2e2d5f81b19cfd62953e40fb7e628864753b28dddb06af7db72f39a96cc4f2
kubernetes-node-linux-ppc64le.tar.gz	6cac7f3e6cee8bebadcd0d13664c7860d3f762cfc73028fd4100f821d506d12af5c081
kubernetes-node-linux-s390x.tar.gz	d6578a29141f5e8fcd28f8b50d9bd0853a99db1bb8ef7f456d68cc223874aa4cfa3e0
kubernetes-node-windows-amd64.tar.gz	6a8a502dabbbedc4d5af4ff82eeabf96aa41d45ec0f4b00a359ca50aea2f1e12bdda5

Changelog since v1.20.9

Changes by Kind

Feature

- Kubernetes 1.20.x is now built using Go 1.15.15 (#104215, @cpanato) [SIG Cloud Provider, Instrumentation, Release and Testing]

Bug or Regression

- Disable aufs module for gce clusters (#103831, @lizhuqi) [SIG Cloud Provider]
- Fix kube-apiserver metric reporting for the deprecated watch path of /api//watch/... (#104191, @wojtek-t) [SIG API Machinery and Instrumentation]
- Fix: Provide IPv6 support for internal load balancer (#103794, @nilo19) [SIG Cloud Provider]
- Fix: ignore not a VMSS error for VMAS nodes in reconcileBackendPools (#103997, @nilo19) [SIG Cloud Provider]
- Fix: return empty VMAS name if using standalone VM (#103470, @nilo19) [SIG Cloud Provider]
- Fixed a bug that scheduler extenders are not called on preemptions (#103019, @ordovicia) [SIG Scheduling]
- Fixes an issue cleaning up CertificateSigningRequest objects with an unparseable `status.certificate` field (#103949, @liggitt) [SIG Apps and Auth]
- Fixes issue with websocket-based watches of Service objects not closing correctly on timeout (#102542, @liggitt) [SIG API Machinery and Testing]

Dependencies

Added

Nothing has changed.

Changed

- sigs.k8s.io/apiserver-network-proxy/konnectivity-client: v0.0.19 → v0.0.22

Removed

Nothing has changed.

v1.20.9

Downloads for v1.20.9

Source Code

filename	sha512 hash
kubernetes.tar.gz	3efdb061bd0a4b2ff15130fa15cac4092a6555a77656870e7d03411f4932d53196f41
kubernetes-src.tar.gz	88ecb846eecbb61c382098a83b0faad18de2a99a0395a95b909d286a2ea477827fc8

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	40d423d91b41a9751a4ca6db8165e7beaf6d12b86f1bcacb3157c3e1d7b16a914fc
kubernetes-client-linux-386.tar.gz	584d3242e293571d139b9d10b1ef74dea0efb8014aa51c232bc0eff35fd044a4f911e
kubernetes-client-linux-amd64.tar.gz	d7b50aed4c5ab79a22bf7f21a1e5fd5fa749400dd8cb78265eb7ea1ec755c91e3230
kubernetes-client-linux-arm.tar.gz	e9a98733af4a7ad73f149a9eb790fc0d05dfe47d0ecb1a321c253306f8e1de453ca71
kubernetes-client-linux-arm64.tar.gz	6c41f4a85b240e81f275a9a652341517b514346788c8da4298eac28a07fed9d68256
kubernetes-client-linux-ppc64le.tar.gz	402d840d4802d155583e86e0500a0685e6472b073659f264896bca0280395b87f783
kubernetes-client-linux-s390x.tar.gz	b3da04aedc2384d376718f7ca18271e118c06ce6200fa106bda1e5ee0cf40124fdcd4
kubernetes-client-windows-386.tar.gz	817a969e05e8bb667bb439793ad025762e13334ed44e05a17275a19bf518a0a6345

filename	sha512 hash
kubernetes-client-windows-amd64.tar.gz	fafeca9e8b895bb02757bc79600e786d45536812d66d5b3fb469684ee468dcc2fc1c1

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	5a548833c8a67083ae3dfae1869d741ea3d4abf5a2ad69f3c7155bffe73376573102e
kubernetes-server-linux-arm.tar.gz	964bb74d721c4949b0241613cc51f0c6a417fe4a55c616f6dcf23e8cbc1bc6440457a
kubernetes-server-linux-arm64.tar.gz	f1e80b61f0dd3ea0cd8abd92a04037de4b14e743d22dd49e6f4e2f8e5f9e203c8f045
kubernetes-server-linux-ppc64le.tar.gz	3451b747040c47ea6bec31e9e8af4bad57ac2b5062390837e41cb7e725d32dc5547e
kubernetes-server-linux-s390x.tar.gz	d05a7ee6b9d3b562b411960d607f238582b838d676ec20ee7801646087e990d5865

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	97bade5c27730b528b8e622ab622a0ca47eefdd05f90afda933013413b534442dc1e
kubernetes-node-linux-arm.tar.gz	1ee2df007821cc1dc974ce85953d79a4ffb7edda7596d653b46dd8260ea5ff31f888e
kubernetes-node-linux-arm64.tar.gz	2bee7411e1196e640945311a449a3519297f673e74ec5dcdaebd774f8c13e2d0cf925
kubernetes-node-linux-ppc64le.tar.gz	15c0ac8c8844f463e0099803cfc5c25f448c9ed9e0553802c26184eb7e3437c524d2d
kubernetes-node-linux-s390x.tar.gz	bf0b9aef4d1137fa23976077fbba2f5aa00670cdaf56618f3ddce43143601329bcf035
kubernetes-node-windows-amd64.tar.gz	91ea19155da5071f5a0c9165003b3b6f4f21ccff0c226f3c53cff99594c73993559d7b2

Changelog since v1.20.8

Changes by Kind

Feature

- Kubernetes 1.20.x is now built using Go 1.15.14 (#103677, @puerco) [SIG Cloud Provider, Instrumentation, Release and Testing]

- Updates the following images to pick up CVE fixes:
  - `debian` to v1.8.0
  - `debian-iptables` to v1.6.5
  - `setcap` to v2.0.3 (#103235, @thejoycekung) [SIG API Machinery, Release and Testing]

Bug or Regression

- Fix scoring for NodeResourcesMostAllocated and NodeResourcesBalancedAllocation plugins when nodes have containers with no requests. This was leaving to under-utilization of small nodes. (#102925, @alculquicondor) [SIG Scheduling]
- Switch scheduler to generate the merge patch on pod status instead of the full pod (#103133, @marwanad) [SIG Scheduling]
- VSphere: Fix regression during attach disk if datastore is within a storage folder or datastore cluster. (#102999, @gnufied) [SIG Cloud Provider]

Dependencies

Added

Nothing has changed.

Changed

- sigs.k8s.io/structured-merge-diff/v4: v4.0.3 → v4.1.2

Removed

Nothing has changed.

v1.20.8

Downloads for v1.20.8

Source Code

filename	sha512 hash
kubernetes.tar.gz	b0ade36bb26edbc37eadc503da8284bd4e1dae2246b561061090ca57256b9ce20c7
kubernetes-src.tar.gz	78405401efcf50ae4f6e2d85d247248b7adc5c8e1d7e59fea2f8d003876f88d9c87e3c

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	5c94e146d0fdfe94c1992b589a7555284e24fe8f057bc2f7865e8bddadd6a2e4c6763
kubernetes-client-linux-386.tar.gz	4b2b33436830a50494815b5707629468978787cef3209b2708c38da1cb9ac4da8c2
kubernetes-client-linux-amd64.tar.gz	882727866b4dab3e997671f19f4a8ef5093117789970d963d2d2c6cdc64c2eac720a
kubernetes-client-linux-arm.tar.gz	f48aa147248a06688ec963f10c9c1ffb23fc91feebcdfecc48e699f19288c0b5e92f6ab
kubernetes-client-linux-arm64.tar.gz	71d55dfbfad4ddcc2b3e391c7e61f55a96f019da436c09391764eeffcab02e2d0f11b
kubernetes-client-linux-ppc64le.tar.gz	960ee003f8302210273adceb499b9161f5c8624c5a23b145843afd8bc717b769dbf5
kubernetes-client-linux-s390x.tar.gz	4d6a8e3848f7119cc41a5030cb177ac3d7720971c502b63d06898a2a42a769d91ad
kubernetes-client-windows-386.tar.gz	2020d727bc4348b45689dc95c418d2251550f2e266712c12a8fa0e60b8e9aef5160f
kubernetes-client-windows-amd64.tar.gz	8d777d837482485acb34b99127f5334c43d165e6487e4237aecc64c7dd1f15fb7b07

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	236455073c8257a45a7829a275bcc91c54fa8b389b526185d30dee52d24dd890bef
kubernetes-server-linux-arm.tar.gz	9e81aba963f9ccd56b179fad687f585f096dec1376c4f77c34d9147ab7ba1aed5cc47
kubernetes-server-linux-arm64.tar.gz	11e3c3d31121e71701f5db01b0992f7aa20bf761458c173034bb73c8d33f4ba05ecd
kubernetes-server-linux-ppc64le.tar.gz	21171bd02fc1b4677ff42ea4d872c7d578c6e65b6fbb2144734cef77ab27bf285770b
kubernetes-server-linux-s390x.tar.gz	4b02ed18db70bd95d907a38647d3eed8a9d451cafeab3874ba396bb0c4f648fef617

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	f85fb88138550128c6444a3bc88e3cfbea0629a6befc044e5ffd849afe3e48b92965a9
kubernetes-node-linux-arm.tar.gz	7219f099f7540db0f5d24914dc2951af831495e33cf18beec70dbba0e9bca7a7fe8e5

filename	sha512 hash
kubernetes-node-linux-arm64.tar.gz	a0623d262701c967c8b556e2e82de1b516b23ed96fa3d220a1cfbfabd110546d5608
kubernetes-node-linux-ppc64le.tar.gz	978de5097ca18eee9ac49ca1171cc064ed489cb70fea77528b238b5e2caeccb94f0a0
kubernetes-node-linux-s390x.tar.gz	119a5c3a3a4f46ae164ffdf35fadef0cb39285f711e33a0fb137985412068c7d05fe463
kubernetes-node-windows-amd64.tar.gz	6ed8a1a02e4b6980d04009dd21568afdcaafe847f980b7ce937495fd849674e9e7834

Changelog since v1.20.7

Changes by Kind

Feature

- Kubernetes is now built using Go 1.15.13 (#102786, @thejoycekung) [SIG Cloud Provider, Instrumentation, Release and Testing]

Failing Test

- Fixes the `should receive events on concurrent watches in same order` conformance test to work properly on clusters that auto-create additional configmaps in namespaces (#101950, @liggitt) [SIG API Machinery and Testing]

Bug or Regression

- Added jitter factor to lease controller that better smears load on kube-apiserver over time. (#101652, @marseel) [SIG API Machinery and Scalability]
- Avoid caching the Azure VMSS instances whose network profile is nil (#100948, @feiskyer) [SIG Cloud Provider]
- Azure: avoid setting cached Sku when updating VMSS and VMSS instances (#102005, @feiskyer) [SIG Cloud Provider]
- Fix a bug on the endpoint slices mirroring controller where endpoint NotReadyAddresses were mirrored as Ready to the corresponding EndpointSlice (#102683, @aojea) [SIG Apps and Network]
- Fix a bug that a preemptor pod may exist as a phantom in the scheduler. (#102498, @Huang-Wei) [SIG Scheduling]
- Fix errors when accessing Windows container stats for Dockershim (#98510, @jsturtevant) [SIG Node and Windows]
- Fix removing pods from podTopologyHints mapping (#101896, @aheng-ch) [SIG Node]
- Fix: avoid nil-pointer panic when checking the frontend IP configuration (#101739, @nilo19) [SIG Cloud Provider]

- Fix: delete non existing disk issue (#102083, @andyzhangx) [SIG Cloud Provider]
- Fixed false-positive uncertain volume attachments, which led to unexpected detachment of CSI migrated volumes (#101737, @Jiawei0227) [SIG Apps and Storage]
- Fixed garbage collection of dangling VolumeAttachments for PersistentVolumes migrated to CSI on startup of kube-controller-manager. (#102176, @timebertt) [SIG Apps and Storage]
- Improve speed of vSphere PV provisioning and reduce number of API calls (#102350, @gnufied) [SIG Cloud Provider and Storage]
- Kubeadm: remove the "ephemeral_storage" request from the etcd static pod that kubeadm deploys on stacked etcd control plane nodes. This request has caused sporadic failures on some setups due to a problem in the kubelet with cadvisor and the LocalStorageCapacityIsolation feature gate. See this issue for more details: https://github.com/kubernetes/kubernetes/issues/99305 (#102673, @jackfrancis) [SIG Cluster Lifecycle]
- Register/Deregister Targets in chunks for AWS TargetGroup (#101592, @M00nF1sh) [SIG Cloud Provider]
- Respect annotation size limit for server-side apply updates to the client-side apply annotation. Also, fix opt-out of this behavior by setting the client-side apply annotation to the empty string. (#102105, @julianvmodesto) [SIG API Machinery]
- Reverted the previous fix for portforward cleanup because it introduced a kubelet regression which can lead into segmentation faults. (#102586, @saschagrunert) [SIG API Machinery and Node]
- ServiceOwnsFrontendIP shouldn't report error when the public IP doesn't match (#102516, @nilo19) [SIG Cloud Provider]

Other (Cleanup or Flake)

- Update the Debian images to pick up CVE fixes in the base images:
  - Update the `debian-base` image to v1.7.0
  - Update the `debian-iptables` image to v1.6.1 (#102341, @cpanato) [SIG API Machinery and Testing]

Dependencies

Added

Nothing has changed.

Changed

- sigs.k8s.io/apiserver-network-proxy/konnectivity-client: v0.0.15 → v0.0.19

Removed

Nothing has changed.

v1.20.7

Downloads for v1.20.7

Source Code

filename	sha512 hash
kubernetes.tar.gz	05e50f62e86e84599d14589d1a4987ed44314bf5937d186b4608cafb100cb1e54a03
kubernetes-src.tar.gz	903fd613da5208e28afa2ef239105cd76e7f14e53759b1b27bf12f23777efef39754db

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	5ac340bbc5a840f7eadb98729ea7cf4a5b7622ddc8ac859d63c58fc870e3ed7fd4e23
kubernetes-client-linux-386.tar.gz	5b1b6a1366dcae5d9f2b273df848efbca1643da3be5ead55274f531893cb642564ce
kubernetes-client-linux-amd64.tar.gz	e7bac0324907e48fba1bb9cf0eea3a68f9645591a6e09c6f0af36f3bead88765d8503
kubernetes-client-linux-arm.tar.gz	8c2341b19b628cf05aab97837d5f1462040d6b05a13f6e36e44f6f3d1e41caa943c42
kubernetes-client-linux-arm64.tar.gz	e33af0aad60dbbb655f40e839f67203fddeb461d672cda5c53bd40eac512a4ab82df
kubernetes-client-linux-ppc64le.tar.gz	612e133edeeb9c4ac518bf36a54b3d3b9855ff76c6f7e8e57e37a5ced33f3901418bd
kubernetes-client-linux-s390x.tar.gz	42841d3aa4fac6641d098af4680aa21d7a39cad2f995f6df7a98eecb2229f28be2cec3
kubernetes-client-windows-386.tar.gz	4e3056728af43e3f3668078ed749d85a8e4570c4bd0838ea4ddbbf1c77ec66628bdc
kubernetes-client-windows-amd64.tar.gz	e58bff0542268525d3914a47248f541abd744e5e8c1cbec091ae88721993b0f21aedc

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	2183e85071f2f1b740654a46f432338cc8127469fef9cb4a2325e541fb9778af390f264

filename	sha512 hash
kubernetes-server-linux-arm.tar.gz	8e9a7065163ab2c52b19571dd2d2254a9f3a8c1b70210598bd45737ce25fb554513
kubernetes-server-linux-arm64.tar.gz	1c511917488b0658e01b24b09dfb2cdca781e5881c87024a557b8a74eb6d07b3f31
kubernetes-server-linux-ppc64le.tar.gz	ddd02508a8ba749f96ae093b50cc1ec0a3e370c7549d5d581c07e69fc1902995588
kubernetes-server-linux-s390x.tar.gz	9ddcc4b33f7aca8a5a100472ccbab9cda01a7df87f3f4b74e0d9017c4029c6a7668

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	4c46d50eb0e5242c1e0071ffcc137d98f02e8b65368437be5dc7f85a66c0b7ecfacb5
kubernetes-node-linux-arm.tar.gz	1a4d1772f9777fd297b359d10fab9aa43e16eaed240dc83e0022dd52f4128f244f6b
kubernetes-node-linux-arm64.tar.gz	3fae8d1b00b5c0179a913ff69d8fb298ab43eb38ee283c3787db7b37736e03ace8df
kubernetes-node-linux-ppc64le.tar.gz	80d3fb738378193b673aba991087d1570c7f2b02710237c427ccd979067af335164a
kubernetes-node-linux-s390x.tar.gz	335816760573f7931290c6aa0c629ab95ab34fecd5fef80ebbf18d83f9db04bab95df
kubernetes-node-windows-amd64.tar.gz	85eb114dc57562ca35ed86b3928b0f016c9b1446135f889840bd90490dcdf832458

Changelog since v1.20.6

Changes by Kind

API Change

- We have added a new Priority & Fairness rule that exempts all probes (/readyz, /healthz, /livez) to prevent restarting of "healthy" kube-apiserver instance(s) by kubelet. (#101112, @tkashem) [SIG API Machinery]

Feature

- Kubernetes is now built using go1.15.11 (#101192, @cpanato) [SIG Cloud Provider, Instrumentation, Release and Testing]
- Kubernetes is now built using go1.15.12 (#101845, @cpanato) [SIG Cloud Provider, Instrumentation, Release and Testing]

Bug or Regression

- Azurefile: Normalize share name to not include capital letters (#100731, @kassarl) [SIG Cloud Provider and Storage]
- EndpointSlice IP validation now matches Endpoints IP validation. (#101084, @robscott) [SIG Apps and Network]
- EndpointSlice controllers are less likely to create duplicate EndpointSlices. (#101763, @aojea) [SIG Apps and Network]
- Ensure service deleted when the Azure resource group has been deleted (#100944, @feiskyer) [SIG Cloud Provider]
- Fix panic in JSON logging format caused by missing Duration encoder (#101158, @serathius) [SIG API Machinery, Cluster Lifecycle and Instrumentation]
- Fix smb mount PermissionDenied issue on Windows (#99550, @andyzhangx) [SIG Cloud Provider, Storage and Windows]
- Fix: azure file inline volume namespace issue in csi migration translation (#101235, @andyzhangx) [SIG Apps, Cloud Provider, Node and Storage]
- Fix: not tagging static public IP (#101752, @nilo19) [SIG Cloud Provider]
- Fix: set "host is down" as corrupted mount (#101398, @andyzhangx) [SIG Cloud Provider and Storage]
- Fixed a bug where startupProbe stopped working after a container's first restart (#101093, @wzshiming) [SIG Node]
- Fixed port-forward memory leak for long-running and heavily used connections. (#99839, @saschagrunert) [SIG API Machinery and Node]
- Kubectl create service now respects namespace flag (#101005, @zxh326) [SIG CLI]
- Kubelet: improve the performance when waiting for a synchronization of the node list with the kube-apiserver (#99336, @neolit123) [SIG Node]
- No support endpointslice in linux userpace mode (#101503, @JornShen) [SIG Network]
- Renames the timeout field for the DelegatingAuthenticationOptions to TokenRequestTimeout and set the timeout only for the token review client. Previously the timeout was also applied to watches making them reconnecting every 10 seconds. (#101103, @p0lyn0mial) [SIG API Machinery, Auth and Cloud Provider]
- Respect ExecProbeTimeout=false for dockershim (#101126, @jackfrancis) [SIG Node and Testing]

Dependencies

Added

Nothing has changed.

Changed

Nothing has changed.

Removed

Nothing has changed.

v1.20.6

Downloads for v1.20.6

Source Code

filename	sha512 hash
kubernetes.tar.gz	233b3e03868b2797692315b9ba393d09e7af7400e5a30c5845bcac5ede318777a17
kubernetes-src.tar.gz	0a723205ad2c351a9a340f03b212a6d79d7e2127bc97df9501f3f052ad8986c4bb6d

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	0561b19727929235139f0bcf1ff80452fb9d7106c38d8a478f4190146f382150349b7
kubernetes-client-linux-386.tar.gz	998c299c84fbc6f734bb59cc997d90551ed9c239993a560621c86cef9e27f16b9cca9
kubernetes-client-linux-amd64.tar.gz	0a26d9e79209834383b72c6a89ae970994ebc90aa6c0d9f918a30ee1072554e82b55
kubernetes-client-linux-arm.tar.gz	7d4c0cc3f8173335a259791eb74fd56ab1ab5f877cbfd0299c4737bac5cce42e3147b
kubernetes-client-linux-arm64.tar.gz	23af444d2e1f52bcd4740dffb90b8d675f499eda09eb5491757a224c963203014b491
kubernetes-client-linux-ppc64le.tar.gz	8cdeea12720d97ccfbc8db4d58e91b1e16481c77bd6de8c34e5d970dc8c6e977d64a
kubernetes-client-linux-s390x.tar.gz	da701bccd2ff554a5342930e09a3d0835de1049b189ef4b3f72de65985aac79f72c31
kubernetes-client-windows-386.tar.gz	72d84fffc421d18b5642954b733c95237badb778c1cbfd764ce6b3b6dd35fcb27123
kubernetes-client-windows-amd64.tar.gz	eac279d3b05511bd80c23f8246343342a25b51aa753f9fb49156ce1c624c14d78cd3

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	ac936e05aef7bb887a5fb57d50f8c384ee395b5f34c85e5c0effd8709db042359f6324

filename	sha512 hash
kubernetes-server-linux-arm.tar.gz	4851d9e5a15b47f6743b0b366c442df7a762144ab32b5832539fcf5ee16d6307cd95
kubernetes-server-linux-arm64.tar.gz	228980d9bad6286e190f8ce303b015013b412c2b42044443985f1c6059d4771ad4d4
kubernetes-server-linux-ppc64le.tar.gz	6e410e4d5ecda14c4aa4f0785890f4797d7ecb8fa8376a84acc2313dab140d48deab
kubernetes-server-linux-s390x.tar.gz	01c07642fc12e98efe18c5107b22e9eb30517f93cc27b69ef20bfc7a06434c9a8b9b72

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	a69c1fec018fec82885366f9ab39bc62f5de97fc6521c15b7c1a6a31066ea84a6a21c0
kubernetes-node-linux-arm.tar.gz	fec49ed50b2b9bd291db0b13f8bf3cabfccb39939b42d457c857c4894e1c267bcbfb4
kubernetes-node-linux-arm64.tar.gz	2ab612065a8c519994bfe7259eec787806522d56e508a05c0e663b490993bb924275
kubernetes-node-linux-ppc64le.tar.gz	cfd16d3cfbd3a206465694dcfae5132a3ee61cac6fed3495f9598f439f7e32b6a2d2fff
kubernetes-node-linux-s390x.tar.gz	d469d0b259c7913c2c2dec0ee1a103b32626628167bc2913e9aad7b3140b1a28a32
kubernetes-node-windows-amd64.tar.gz	326f10514ca38882d95934fc854d46d017164584356b870fd59f6cf9fe5b925ad4b61

Changelog since v1.20.5

Important Security Information

This release contains changes that address the following vulnerabilities:

CVE-2021-25735: Validating Admission Webhook does not observe some previous fields

A security issue was discovered in kube-apiserver that could allow node updates to bypass a Validating Admission Webhook. You are only affected by this vulnerability if you run a Validating Admission Webhook for Nodes that denies admission based at least partially on the old state of the Node object.

Note: This only impacts validating admission plugins that rely on old values in certain fields, and does not impact calls from kubelet that go through the built-in NodeRestriction admission plugin.

Affected Versions: - kube-apiserver v1.20.0 - v1.20.5 - kube-apiserver v1.19.0 - v1.19.9 - kube-apiserver <= v1.18.17

Fixed Versions: - kube-apiserver v1.21.0 - kube-apiserver v1.20.6 - kube-apiserver v1.19.10 - kube-apiserver v1.18.18

This vulnerability was reported by Rogerio Bastos & Ari Lima from RedHat

CVSS Rating: Medium (6.5) CVSS:3.0/AV:N/AC:L/PR:H/UI:N/S:U/C:N/I:H/A:H

Changes by Kind

API Change

- Fixes using server-side apply with APIService resources (#100714, @kevindelgado) [SIG API Machinery, Apps and Testing]
- Regenerate protobuf code to fix CVE-2021-3121 (#100501, @joelsmith) [SIG API Machinery, Apps, Auth, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation, Node and Storage]

Feature

- AWS cloudprovider supports auto-discovering subnets without any kubernetes.io/cluster/ tags. It also supports additional service annotation service.beta.kubernetes.io/aws-load-balancer-subnets to manually configure the subnets. (#97431, @kishorj) [SIG Cloud Provider]
- Kubernetes is now built using go1.15.10 (#100375, @cpanato) [SIG Cloud Provider, Instrumentation, Release and Testing]

Bug or Regression

-

Changelog

General

- Fix priority expander falling back to a random choice even though there is a higher priority option to choose
- Clone `kubernetes/kubernetes` in `update-vendor.sh` shallowly, instead of fetching all revisions
- Speed up binpacking by reducing the number of PreFilter calls (call once per pod instead of #pods*#nodes times)
- Speed up finding unneeded nodes by 5x+ in very large clusters by reducing the number of PreFilter calls
- Expose `--max-nodes-total` as a metric
- Errors in `IncreaseSize` changed from type `apiError` to `cloudProviderError`

- Make `build-in-docker` and `test-in-docker` work on Linux systems with SELinux enabled
- Fix an error where existing nodes were not considered as destinations while finding place for pods in scale-down simulations
- Remove redundant log lines and reduce severity around parsing kubeEnv
- Don't treat nodes created by virtual kubelet as nodes from non-autoscaled node groups
- Remove redundant logging around calculating node utilization
- Add configurable `--network` and `--rm` flags for docker in `Makefile`
- Subtract DaemonSet pods' requests from node allocatable in the denominator while computing node utilization
- Include taints by condition when determining if a node is unready/still starting
- Fix `update-vendor.sh` to work on OSX and zsh
- Add best-effort eviction for DaemonSet pods while scaling down non-empty nodes
- Add build support for ARM64

AliCloud

- Add missing daemonsets and replicasets to ALI example cluster role

Apache CloudStack

- Add support for Apache CloudStack

AWS

- Regenerate list of EC2 instances
- Fix pricing endpoint in AWS China Region

Azure

- Add optional jitter on initial VMSS VM cache refresh, keep the refreshes spread over time
- Serve from cache for the whole period of ongoing throttling
- Fix unwanted VMSS VMs cache invalidation
- Enforce setting the number of retries if cloud provider backoff is enabled
- Don't update capacity if VMSS provisioning state is updating
- Support allocatable resources overrides via VMSS tags
- Add missing stable labels in template nodes
- Proactively set instance status to deleting on node deletions

Cluster API

- Migrate interaction with the API from using internal types to using Unstructured
- Improve tests to work better with constrained resources
- Add support for node auto-discovery
- Add support for `--cloud-config`
- Update group identifier to use for Cluster API annotations

Exoscale

- Add support for Exoscale

GCE

- Decrease the number of GCE Read Requests made while deleting nodes
- Base pricing of custom instances on their instance family type
- Add pricing information for missing machine types
- Add pricing information for different GPU types
- Ignore the new `topology.gke.io/zone` label when comparing groups
- Add missing stable labels to template nodes

HuaweiCloud

- Add auto scaling group support
- Implement node group by AS
- Implement getting desired instance number of node group
- Implement increasing node group size
- Implement TemplateNodeInfo
- Implement caching instances

IONOS

- Add support for IONOS

Kubemark

- Skip non-kubemark nodes while computing node information for node groups.

Magnum

- Add Magnum support in the Cluster Autoscaler helm chart

Packet

- Allow empty nodepools

- Add support for multiple nodepools
- Add pricing support

Image

Image: `k8s.gcr.io/autoscaling/cluster-autoscaler:v1.20.0` (#97012, @towca) [SIG Cloud Provider]

- Fixed a bug where a high churn of events was causing master instability by reducing the maximum number of objects (events) attached to a single etcd lease. (#100084, @mborsz) [SIG API Machinery, Instrumentation and Scalability]
- Fixed a race condition on API server startup ensuring previously created webhook configurations are effective before the first write request is admitted. (#95783, @roycaihw) [SIG API Machinery]
- Fixes a data race issue in the priority and fairness API server filter (#100667, @tkashem) [SIG API Machinery]
- Kubectl: Fixed panic when describing an ingress backend without an API Group (#100541, @eddiezane) [SIG CLI]
- Reverts breaking change to inline AzureFile volumes in v1.20.2-v1.20.5; referenced secrets are now correctly searched for in the same namespace as the pod as in previous releases. (#100399, @andyzhangx) [SIG Cloud Provider and Storage]
- The endpointslice mirroring controller mirrors endpoints annotations and labels to the generated endpoint slices, it also ensures that updates on any of these fields on the endpoints are mirrored. The well-known annotation endpoints.kubernetes.io/last-change-trigger-time is skipped and not mirrored. (#100443, @aojea) [SIG Apps, Network and Testing]
- The maximum number of ports allowed in EndpointSlices has been increased from 100 to 20,000 (#99795, @robscott) [SIG Network]

Uncategorized

- GCE L4 Loadbalancers now handle > 5 ports in service spec correctly. (#99595, @prameshj) [SIG Cloud Provider]

Dependencies

Added

Nothing has changed.

Changed

- github.com/gogo/protobuf: v1.3.1 → v1.3.2
- github.com/kisielk/errcheck: v1.2.0 → v1.5.0
- github.com/yuin/goldmark: v1.1.27 → v1.2.1
- golang.org/x/sync: cd5d95a → 67f06af
- golang.org/x/tools: c1934b7 → 113979e
- sigs.k8s.io/structured-merge-diff/v4: v4.0.2 → v4.0.3

Removed

Nothing has changed.

v1.20.5

Downloads for v1.20.5

Source Code

filename	sha512 hash
kubernetes.tar.gz	62bd8e4c2e8b361dbc898ac125138f4b75b6b56b748c46957dc524ce5cfe90f488ba
kubernetes-src.tar.gz	1d1a24ee881c6d244a77b6b4eaf3111e5c377a9b482bc04d8c706dd2c0140e5b740

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	db419e60b6e45e584a32bd676a8b34407cf3dd8e59b481c1211540e174b456d2644
kubernetes-client-linux-386.tar.gz	9073195515d4b381aa9e7afbcb30c242657e1dc76a9c464c5ba37841d71e372d36e9
kubernetes-client-linux-amd64.tar.gz	275f7d8a800e2a2bfaf7bdf35eb137f6d481796afaf52de6baa908f15630d866c79b49
kubernetes-client-linux-arm.tar.gz	c5569f162f44fd424c4bfe9f3f68483bb49a47e504fc73fe37e8b38649969b6987461a
kubernetes-client-linux-arm64.tar.gz	89451fa9ccb6304efc78506edd7949d8241710ce3c198286e9b50f2bac66dec07b5a1
kubernetes-client-linux-ppc64le.tar.gz	b2443e00e6a045c9ed0c01f20b37fb2e7064c36a3692e8b5cbdf653fdab1858e57602
kubernetes-client-linux-s390x.tar.gz	a47e9c9c484f07c5dd623c9e32393fdd168a83b7d9577efaa0ef68861f779b07a81cc
kubernetes-client-windows-386.tar.gz	1ddd3d521c40af6c282640407d5459c950b8d9465c7d936960ad4c22e85bb0bcacf
kubernetes-client-windows-amd64.tar.gz	bc97f5e26f1e60ef03956ea51a4ae79b2f8cd4f71499bac5cc2e39874a2f98d96fcf882

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	28529733bf34f5d5b72eabe30a81df98cc7f8e529590f807745cd67986a2c5c3eb86c
kubernetes-server-linux-arm.tar.gz	4d4bd4d7f8e0e5b4d1a26dd6b50067a57b117b0e24a7e04592315b75c3794a573d2
kubernetes-server-linux-arm64.tar.gz	4118246f839fab24d898f51df9c2c7703ad165c074d9068305f61647afa73e2c7803fe
kubernetes-server-linux-ppc64le.tar.gz	566607d25af1d73abbb88b751bf029d1c1870d9009578e67805bcffa10a4e78c990f2
kubernetes-server-linux-s390x.tar.gz	e0240219ab1ef9c961f5320883a210310c7001d11f7ee400939bf06f45150627389a2

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	8ae94b478c0d66ba2145b4c34ff56fca99c1828f513a0775810b240d0888caa253bf5
kubernetes-node-linux-arm.tar.gz	c8b618ead2bfbd5fa4d4b9b1fef9eb746535a0082704b23a501649a1d13e6a3573c5
kubernetes-node-linux-arm64.tar.gz	2deaad22f71224bc9a0686cf2dddbeae0fd32981987de8533648afad4039ddc14acd
kubernetes-node-linux-ppc64le.tar.gz	06ed7c9d1da460f5087580ea167f48ac57d71c81bf94bf129005e604558d75ca6bc9e
kubernetes-node-linux-s390x.tar.gz	867ed419dc5097925ef70baa0614817fcbd206525e64d97436868dbc590de7ab624f
kubernetes-node-windows-amd64.tar.gz	d5907941461d42560e1094278eedd6e32a32816a088336f225d6958bbaf7e2b14cbl

Changelog since v1.20.4

Changes by Kind

Failing Test

- Fix handing special characters in the volume path on Windows (#99008, @yujuhong) [SIG Storage]
- Kube-proxy: fix a bug on UDP NodePort Services where stale conntrack entries may blackhole the traffic directed to the NodePort. (#98305, @aojea) [SIG Network]

Bug or Regression

- Avoid systemd-logind loading configuration warning (#97950, @wzshiming) [SIG Node]
- Count pod overhead against an entity's ResourceQuota (#99600, @gjkim42) [SIG API Machinery and Node]
- EndpointSlice controller is now less likely to emit FailedToUpdateEndpointSlices events. (#100113, @robscott) [SIG Apps and Network]
- EndpointSliceMirroring controller is now less likely to emit FailedToUpdateEndpointSlices events. (#100143, @robscott) [SIG Apps and Network]
- Ensure only one LoadBalancer rule is created when HA mode is enabled (#99825, @feiskyer) [SIG Cloud Provider]
- Fix kubelet from panic after getting the wrong signal (#98200, @wzshiming) [SIG Node]
- Fix repeatedly acquire the inhibit lock (#98088, @wzshiming) [SIG Node]
- Fixed bug that caused cAdvisor to incorrectly detect single-socket multi-NUMA topology. (#99207, @iwankgb) [SIG Node]
- Fixing a bug where a failed node may not have the NoExecute taint set correctly (#98168, @CKchen0726) [SIG Apps and Node]
- Kubelet now cleans up orphaned volume directories automatically (#95301, @lorenz) [SIG Node and Storage]
- Resolves spurious `Failed to list *v1.Secret` or `Failed to list *v1.ConfigMap` messages in kubelet logs. (#99538, @liggitt) [SIG Auth and Node]
- Sync node status during kubelet node shutdown. Adds an pod admission handler that rejects new pods when the node is in progress of shutting down. (#98005, @wzshiming) [SIG Node]
- We will no longer automatically delete all data when a failure is detected during creation of the volume data file on a CSI volume. Now we will only remove the data file and volume path. (#96021, @huffmanca) [SIG Storage]

Dependencies

Added

Nothing has changed.

Changed

- github.com/google/cadvisor: v0.38.7 → v0.38.8
- sigs.k8s.io/apiserver-network-proxy/konnectivity-client: v0.0.14 → v0.0.15

Removed

Nothing has changed.

v1.20.4

Downloads for v1.20.4

Source Code

filename	sha512 hash
kubernetes.tar.gz	25768fae152a5fd078fe35ddcf0408a7d41672c35319316bd7e68707ba5ac3b7a4d2
kubernetes-src.tar.gz	f9a87103c43f4b13894e0dc28c86e31d9db4a57820ae2396ad6a9214f6562a21ebd9

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	4e4652861306a46bd3496a5264f29d16323ef48064719fcf52e3f1219104ef82c74e08
kubernetes-client-linux-386.tar.gz	361b766d2ed032f4debc8a5e449df6d541dbf53c661c89454c2d45f9e3264369c8f26
kubernetes-client-linux-amd64.tar.gz	daf1ec0cbd14885170a51d2a09bf652bfaa4d26925c1b4babdc427d2a2903b1a295
kubernetes-client-linux-arm.tar.gz	d74537f4589101ed00f72072c3c58e9ab7e15e05957a80fe5f88733989fba70ae2c3d0
kubernetes-client-linux-arm64.tar.gz	4051005c00891c011c327b4fb9563280da800046d9b142f74e1fd9dc6c1b495c188c
kubernetes-client-linux-ppc64le.tar.gz	dfa16aac6b0168019d08e581f523ce9835ed57cceaf6dec986f7f4918eae8b02da3930
kubernetes-client-linux-s390x.tar.gz	c5cc9def94e603cbfcc82e0350453144efd76cc47fbbf47446a6c165921be4794015de
kubernetes-client-windows-386.tar.gz	ff153bc9b47dab33f582b1100554564a57ecf198f98a383cf5f1e6dff31e4343581a147
kubernetes-client-windows-amd64.tar.gz	a9cbe788710956f77cff04f1260523898b3e99ff98f0923fbbd0d6b1d9a34374d04983

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	37738bc8430b0832f32c6d13cdd68c376417270568cd9b31a1ff37e96cfebcc1e2970
kubernetes-server-linux-arm.tar.gz	52064d5f78ad89efbd938592bd072f05fd5e163cba7402833b67241a8548fbefd7822
kubernetes-server-linux-arm64.tar.gz	59331e2fe845ddda8c00c4c4ac6e3b4a95eea7467a7b922fb8e97ce407b8930752eb
kubernetes-server-linux-ppc64le.tar.gz	f87dc98b19c1e639d764509024140519cb79d6edd8470ed908ab7ca7b4c37c798d4

filename	sha512 hash
kubernetes-server-linux-s390x.tar.gz	e55d8d80e541597ff8e19193f15351c88100b5a5b4d26f6469db38df01e1b08dc7d5f

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	9279cc36e48612d0b1c360c5d903cb1f39f0b395f8426e13b90ccabc4670785e743c8
kubernetes-node-linux-arm.tar.gz	f2f764929ef2a9b0c21bc6911e9ece1b587f75723a6fe7ebabc0256771eaade6f5c0db
kubernetes-node-linux-arm64.tar.gz	3a5ab2918e0e73fbfa4aa566ba385d677fd7948f81fbc571d9c3dde1820a82bf50359
kubernetes-node-linux-ppc64le.tar.gz	42477f8983ad17edf00906d16de1d50ca6218c14c0e724b719c98c97feacd546b4e53
kubernetes-node-linux-s390x.tar.gz	4dffc957fa9a3b10133741f7e51b86ccf4b0ce8c5e7e7f9a34ebe2b14b4ff62cc89049d
kubernetes-node-windows-amd64.tar.gz	a26eb1ac9e0746ec75151e5dae973b61d08d2a6f98c035f13f1db6ea5a67024272b0

Changelog since v1.20.3

Dependencies

Added

Nothing has changed.

Changed

Nothing has changed.

Removed

Nothing has changed.

v1.20.3

Downloads for v1.20.3

Source Code

filename	sha512 hash
kubernetes.tar.gz	c27f43c347533334faa11df04a23b5339d8bbcefc564059c38419ea5e9f070ef51edb3
kubernetes-src.tar.gz	e572d336b17ef0beea75fe78fda3d7dce93e6f4e098622270c6740715968b06a62a6a

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	f90ea7c4b8ad9299b0fa7fad1c9484b1ba652885280d6ef108c004856ff8fb0468671
kubernetes-client-linux-386.tar.gz	019aec22d646443b2aa5f97cb2da627691c0382cd5444a9e2b641244ce70966b629
kubernetes-client-linux-amd64.tar.gz	a34f8c2103c2b3e2a0dbed2b80c916b138c865a31f302341b7762ad9f8dd0165e319
kubernetes-client-linux-arm.tar.gz	e7cfce07cdfd7bf781921e865fe1e2b194b52290a0ba686a1dc76be2ee0c34f0cacbb0
kubernetes-client-linux-arm64.tar.gz	a6d819d2372f1376a8dcbc5087a43def88b9e34d0753f61da29efc21d44e7317af1cd
kubernetes-client-linux-ppc64le.tar.gz	715763eaf6759fb1c1117ef0e43ceccb5ffb941a9a49ddd664e5668cba3622c519dc91
kubernetes-client-linux-s390x.tar.gz	dd74a13d442af6d4383fe146e7d96fc926c1fa5f787019738bfa67c5f4ce1f335f5cb14
kubernetes-client-windows-386.tar.gz	c4b3422745bd25413608b439ee41ddb51ce870e530d39b98b25a054d8a50a8c75e5
kubernetes-client-windows-amd64.tar.gz	d5cfbe5a78726cc9381e55572cf60f14faa8a9b1dc2501455f77faa5bfe344ffa833d12

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	2783ee27af2ee03212cc1839f6de4300b52197e584a0cf4bd30e14059835e473a45a0
kubernetes-server-linux-arm.tar.gz	355af9f48ad46b9ad5b414a4196b8d4f80c694181aa20e68ae38f841dcc0aee30a3c4
kubernetes-server-linux-arm64.tar.gz	ab230aef4019cc6d42405f37e6a5f5c4084b7e7cfaa411c3a875c38eb8fc23b69980cb
kubernetes-server-linux-ppc64le.tar.gz	c2806db25632e957f64776cbdebf55e1f910a98a4ee366688c6fa266bf38f71849326
kubernetes-server-linux-s390x.tar.gz	47548b041b45160f496ba86fbf22719c1356989de83591834d93ffae8b0c3cbac5f8a

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	0b63fe481e313e85036162f2beaad3fb0cf7dad9ca8d96d0d81b979aff1c22168fc9c2
kubernetes-node-linux-arm.tar.gz	ffd240add49e7295601c24d9ac14a6ecb736b2454a43b4ea21e348f4c2117989d226
kubernetes-node-linux-arm64.tar.gz	b9de51df41fb64a5da5e05fa3ab670aedd8e1251ead72beb1959ed7048fcaf3e34a48
kubernetes-node-linux-ppc64le.tar.gz	1ef555356b5e6a2dff42bd872ebcc86598e9e984752fc5acd01f1e245c47af3abe4c4c
kubernetes-node-linux-s390x.tar.gz	cf0e2d6129e4f7df050f2ceef68177ce8c1e3a33e1c7a4ffb5bf3b2dcfc43b29a1afde75
kubernetes-node-windows-amd64.tar.gz	96bd5fac7b2510fb769c9db1c5605ab5300003e43715966c719579c57829241eacee

Changelog since v1.20.2

Changes by Kind

API Change

- Kubernetes is now built using go1.15.8 (#98962, @cpanato) [SIG Cloud Provider, Instrumentation, Release and Testing]

Failing Test

- Kubelet: the HostPort implementation in dockershim was not taking into consideration the HostIP field, causing that the same HostPort can not be used with different IP addresses. This bug causes the conformance test "HostPort validates that there is no conflict between pods with same hostPort but different hostIP and protocol" to fail. (#98838, @aojea) [SIG Network and Node]

Bug or Regression

- Aggregate errors when putting vmss (#98350, @nilo19) [SIG Cloud Provider]
- Avoid marking node as Ready until node has synced with API servers at least once (#97995, @ehashman) [SIG Node]
- Cleanup subnet in frontend IP configs to prevent huge subnet request bodies in some scenarios. (#98132, @nilo19) [SIG Cloud Provider]
- Fix CSI-migrated inline EBS volumes failing to mount if their volumeID is prefixed by aws:// (#96821, @wongma7) [SIG Storage]
- Fix azure file migration issue (#97877, @andyzhangx) [SIG Auth, Cloud Provider and Storage]
- Fix kubectl-convert import known versions (#97754, @wzshiming) [SIG CLI and Testing]

- Fix the description of command line flags that can override –config (#98786, @changshuchao) [SIG Scheduling]
- Fix the panic when kubelet registers if a node object already exists with no Status.Capacity or Status.Allocatable (#97803, @TeddyAndrieux) [SIG Node]
- Fix the regression with the slow pods termination. Before this fix pods may take an additional time to terminate - up to one minute. Reversing the change that ensured that CNI resources cleaned up when the pod is removed on API server. (#97980, @SergeyKanzhelev) [SIG Node]
- Fix to recover CSI volumes from certain dangling attachments (#96617, @yuga711) [SIG Apps and Storage]
- Fixed a bug that the kubelet cannot start on BtrfS. (#98014, @gjkim42) [SIG Node]
- Fixed an issue with garbage collection failing to clean up namespaced children of an object also referenced incorrectly by cluster-scoped children (#98068, @liggitt) [SIG API Machinery and Apps]
- Fixed provisioning of Cinder volumes migrated to CSI when StorageClass with AllowedTopologies was used. (#98311, @jsafrane) [SIG Storage]
- Fixes a panic in the disruption budget controller for PDB objects with invalid selectors (#98775, @ialidzhikov) [SIG Apps]
- Fixes connection errors when using `--volume-host-cidr-denylist` or `--volume-host-allow-local-loopback` (#98436, @liggitt) [SIG Network and Storage]
- Kubeadm: get k8s CI version markers from k8s infra bucket (#98836, @hasheddan) [SIG Cluster Lifecycle and Release]
- Kubelet should ignore cgroup driver check on Windows node. (#98383, @pacoxu) [SIG Node]
- Make podTopologyHints protected by lock (#95111, @choury) [SIG Node]
- Static pods will be deleted gracefully. (#98103, @gjkim42) [SIG Node]
- Truncates a message if it hits the NoteLengthLimit when the scheduler records an event for the pod that indicates the pod has failed to schedule. (#98715, @carlory) [SIG Scheduling]
- Warning about using a deprecated volume plugin is logged only once. (#96751, @jsafrane) [SIG Storage]

Other (Cleanup or Flake)

- Kubeadm: change the default image repository for CI images from 'gcr.io/kubernetes-ci-images' to 'gcr.io/k8s-staging-ci-images' (#97087, @SataQiu) [SIG Cluster Lifecycle]
- Resolves flakes in the Ingress conformance tests due to conflicts with controllers updating the Ingress object (#98430, @liggitt) [SIG Network and Testing]

Dependencies

Added

Nothing has changed.

Changed

- github.com/google/cadvisor: v0.38.6 → v0.38.7

Removed

Nothing has changed.

v1.20.2

Downloads for v1.20.2

Source Code

filename	sha512 hash
kubernetes.tar.gz	d59e625a3d3627f56f9b8e3534c41f24f401dcd285fd8472e7f5c523b53bac4b2536a
kubernetes-src.tar.gz	735683ca71a463fdedf2b41962017326978831d29917f1a2aedf5d31fbb7efbc7e4a0

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	8424cb607641eee063be453c9ef5ec9852e59940c142cdb162981a8e9302a8d3b1a7
kubernetes-client-linux-386.tar.gz	57a0f18ecacdeece25b9feac14ceaeae6a1378d8555cf1bb8d78d797e0638bccea03e
kubernetes-client-linux-amd64.tar.gz	e4513cdd65ed980d493259cc7eaa63c415f97516db2ea45fa8c743a6e413a0cdaf299
kubernetes-client-linux-arm.tar.gz	1fa70eb8299d318d375feebceeba320675d776135d07c4c8e37422f12d79324a857e8
kubernetes-client-linux-arm64.tar.gz	4f97226c12faede121a7d72e8aa5f19b011a04938d1887558318a52b5956cf48181f9
kubernetes-client-linux-ppc64le.tar.gz	7fdcf5e73887aede426e2d21817c43f87ecd79a56939494da95db1ef981ffcd8901506
kubernetes-client-linux-s390x.tar.gz	84eb41d506aeaf99e4ee10fe9b1fc39794eedcc830131c4304a2c50d0125b19a59476
kubernetes-client-windows-386.tar.gz	0de8cd43e18db5155a236d35c6d9fbcbd35a7a6bb10219ab4b748663dd6c181b20

filename	sha512 hash
kubernetes-client-windows-amd64.tar.gz	0959e4945003d2aaad5c9163ec60092a6a7ae3efaf60b3086f14d1d13a6bd4438e55

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	65abf178782e43bc21e8455ffbfdadf6064dbeae3ff704ccf9e13e8acee18235c280b06
kubernetes-server-linux-arm.tar.gz	4cac058ade494999292fa4fff0f46c2f3f614d8a6f63d3f0991ee942c0d0aacf6af9ae8b
kubernetes-server-linux-arm64.tar.gz	f5ef9bc1013b638cdc17071e60c987572185d9aea796c44ddd2c791770debe1f7225
kubernetes-server-linux-ppc64le.tar.gz	1d9ad46458137e5490832465c6ed997e6d986746e02985c525a0780c9e91857024d
kubernetes-server-linux-s390x.tar.gz	d9c907cd4e75441970409a9801cff97529af8517c85d2a1c5e9ab055c1886b0e0fd62

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	ca7eac350099de154e18a2ce48a535a51914582118e6461f3f7566fcd288df3e3edd6
kubernetes-node-linux-arm.tar.gz	c89cc37562ed2f10ff1a33e0fb114b9b236c7a88c4c391cda8c824f63133ed7ce96f78
kubernetes-node-linux-arm64.tar.gz	9bb9de800055d98982a66745188bb40b32e46753371d024480c4b127243baee945
kubernetes-node-linux-ppc64le.tar.gz	a8fa4430e89177aaa7f32d1e0186f979d727137f08b3cb09d56353005de3a28e74ac5
kubernetes-node-linux-s390x.tar.gz	bed3a68c7769e2579b9961e28656f0b2f639ae2f2461ba42df3bcf4decc81009cea60
kubernetes-node-windows-amd64.tar.gz	87cf939ec89d7275515a94e9718d6167e883980c3e6d91fa2fae12408f3561085b23e

Changelog since v1.20.1

Changes by Kind

Bug or Regression

- Fix Azure file share not deleted issue when the namespace is deleted (#97417, @andyzhangx) [SIG Cloud Provider and Storage]

- Fix counting error in service/nodeport/loadbalancer quota check (#97826, @pacoxu) [SIG API Machinery and Network]
- Fix missing cadvisor machine metrics. (#97006, @lingsamuel) [SIG Node]
- Fix: azure file latency issue for metadata-heavy workloads (#97082, @andyzhangx) [SIG Cloud Provider and Storage]
- Fixed bug in CPUManager with race on container map access (#97427, @klueska) [SIG Node]
- GCE Internal LoadBalancer sync loop will now release the ILB IP address upon sync failure. An error in ILB forwarding rule creation will no longer leak IP addresses. (#97740, @prameshj) [SIG Cloud Provider and Network]
- Kubeadm: avoid detection of the container runtime for commands that do not need it (#97847, @pacoxu) [SIG Cluster Lifecycle]
- Performance regression #97685 has been fixed. (#97860, @MikeSpreitzer) [SIG API Machinery]
- Use network.Interface.VirtualMachine.ID to get the binded VM Skip standalone VM when reconciling LoadBalancer (#97639, @nilo19) [SIG Cloud Provider]

Dependencies

Added

Nothing has changed.

Changed

Nothing has changed.

Removed

Nothing has changed.

v1.20.1

Downloads for v1.20.1

Source Code

filename	sha512 hash
kubernetes.tar.gz	154929ba535dcb564610d7c0f80906917b431ddd67bd462e7a82e889de54a86e8fe
kubernetes-src.tar.gz	6031392d46b677439549a342c17a07eb33de3f5964b8b476fcb0dbf150bc80a995e4

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	f5280e35b65059f02cc242ec25235036d67fa49bdfdf82174aa8131b8ac8d6423a566
kubernetes-client-linux-386.tar.gz	0d50f018ec0ad46ecd2c89d282e57d6b3bda6eb71be19184f0565e77537fbfeddf5e4
kubernetes-client-linux-amd64.tar.gz	a07146819c2777583875f1761807bca509404d7f1842d1bdcf1cb1247938dc14caf3a
kubernetes-client-linux-arm.tar.gz	1be85ece9f0ec319417a0d0f3217d285e90565300bfad2a6dd35e496b1bdca6fd13a
kubernetes-client-linux-arm64.tar.gz	a1e78fde3169b9da98edddfb1581798b743c8978ac6dd08d68dcea66b0c6e32049d
kubernetes-client-linux-ppc64le.tar.gz	74a943773da29acd250c3c20089ba1d196148fa23ea01cd8a9810209cb8eadf719b
kubernetes-client-linux-s390x.tar.gz	bba2f76ac2c778b3e1b5cc1c0f72eb56942caba059736676dc688254b78f6fd8e1cce
kubernetes-client-windows-386.tar.gz	aa0017c720cbd1a88b363a52668e196eb590f0403dc78c635841eb5749d190d3bd8
kubernetes-client-windows-amd64.tar.gz	67413fc5a262cd02094863cde26a099ccadbfaa66daa8e62a82d657f222eb2ed1eaf5

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	0a5ff7082b9bd54592697ec9c4ea75e1be80de712823e5b76687a5a110c392e3e8cd
kubernetes-server-linux-arm.tar.gz	ea27b814cca68851d20b50ce25f3e81d22a1aff7333dc77e3e9d6a48bcb3cc5253a72
kubernetes-server-linux-arm64.tar.gz	b93857e8c38e433f3edd1ea5727c64b79e1898bcfb8b31a823024c06c2dc66b04748
kubernetes-server-linux-ppc64le.tar.gz	5f952f48a3b0abccf5117f4d2b2f826a7d191f0f49d3a1a7726246bf276f1747dad96f
kubernetes-server-linux-s390x.tar.gz	166ca5d1a96ddba55d6a75b8bd0fe5e833e771fc07460457e90afd3ab15b588d0416

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	6a3d406bd48a3fbeec48d40bd2fc6e38bf189f07731c7c7a7222355a816bcc4887b9
kubernetes-node-linux-arm.tar.gz	518cf973bd8daa47e64c3cfa8d5e6f2d13f142d85517ea506ed61472a43fc6558b384

filename	sha512 hash
kubernetes-node-linux-arm64.tar.gz	4f3f695de1690a48470d76e0ad12713b30c5a48a754533ccd83464ca7eba33892f5a
kubernetes-node-linux-ppc64le.tar.gz	61344e120a07ba2925d3e1117ece76bd8b1fa58cb45ddabc49ef0dcb7553650cb3d
kubernetes-node-linux-s390x.tar.gz	1494481817de129b52e7d7ba1046fe0fd73abdd918c85ef3327f9221c0c14213ca62
kubernetes-node-windows-amd64.tar.gz	2180bf72bc7948fcec27940dbcff88892d2b37b1690f2398c1c6f0a8f48dc7a0aec46f

Changelog since v1.20.0

Changes by Kind

Bug or Regression

- AcceleratorStats will be available in the Summary API of kubelet when cri_stats_provider is used. (#97018, @ruiwen-zhao) [SIG Node]
- Fixed FibreChannel volume plugin corrupting filesystems on detach of multipath volumes. (#97013, @jsafrane) [SIG Storage]
- Fixed a bug in kubelet that will saturate CPU utilization after containerd got restarted. (#97175, @hanlins) [SIG Node]
- Kubeadm now installs version 3.4.13 of etcd when creating a cluster with v1.19 (#97284, @pacoxu) [SIG Cluster Lifecycle]
- Kubeadm: Fixes a kubeadm upgrade bug that could cause a custom CoreDNS configuration to be replaced with the default. (#97016, @rajansandeep) [SIG Cluster Lifecycle]

Dependencies

Added

Nothing has changed.

Changed

- github.com/google/cadvisor: v0.38.5 → v0.38.6

Removed

Nothing has changed.

v1.20.0

Documentation

Downloads for v1.20.0

Source Code

filename	sha512 hash
kubernetes.tar.gz	ebfe49552bbda02807034488967b3b62bf9e3e507d56245e298c4c19090387
kubernetes-src.tar.gz	bcbd67ed0bb77840828c08c6118ad0c9bf2bcda16763afaafd8731fd6ce735

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	3609f6483f4244676162232b3294d7a2dc40ae5bdd86a842a05aa768f5223b8
kubernetes-client-linux-386.tar.gz	e06c08016a08137d39804383fdc33a40bb2567aa77d88a5c3fd5b9d93f5b581
kubernetes-client-linux-amd64.tar.gz	081472833601aa4fa78e79239f67833aa4efcb4efe714426cd01d4ddf6f36fb
kubernetes-client-linux-arm.tar.gz	037f84a2f29fe62d266cab38ac5600d058cce12cbc4851bcf062fafba796c1f
kubernetes-client-linux-arm64.tar.gz	275727e1796791ca3cbe52aaa713a2660404eab6209466fdc1cfa8559c9b361
kubernetes-client-linux-ppc64le.tar.gz	7a9965293029e9fcdb2b7387467f022d2026953b8461e6c84182abf35c28b78
kubernetes-client-linux-s390x.tar.gz	85fc449ce1980f5f030cc32e8c8e2198c1cc91a448e04b15d27debc3ca56aa8
kubernetes-client-windows-386.tar.gz	4c0a27dba1077aaee943e0eb7a787239dd697e1d968e78d1933c1e60b02d5d2
kubernetes-client-windows-amd64.tar.gz	29336faf7c596539b8329afbbdceeddc843162501de4afee44a40616278fa1f

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	fb56486a55dbf7dbacb53b1aaa690bae18d33d244c72a1e2dc95fb0fcce4510
kubernetes-server-linux-arm.tar.gz	735ed9993071fe35b292bf06930ee3c0f889e3c7edb983195b1c8e4d7113047
kubernetes-server-linux-arm64.tar.gz	ffab155531d5a9b82487ee1abf4f6ef49626ea58b2de340656a762e46cf3e0f
kubernetes-server-linux-ppc64le.tar.gz	9d5730d35c4ddfb4c5483173629fe55df35d1e535d96f02459468220ac2c97c

filename	sha512 hash
kubernetes-server-linux-s390x.tar.gz	`6e4c165306940e8b99dd6e590f8542e31aed23d2c7a6808af0357fa425cec1a`

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	`3e6c90561dd1c27fa1dff6953c503251c36001f7e0f8eff3ec918c74ae2d9aa`
kubernetes-node-linux-arm.tar.gz	`26db385d9ae9a97a1051a638e7e3de22c4bbff389d5a419fe40d5893f9e4fa8`
kubernetes-node-linux-arm64.tar.gz	`5b8b63f617e248432b7eb913285a8ef8ba028255216332c05db949666c3f9e9`
kubernetes-node-linux-ppc64le.tar.gz	`60da7715996b4865e390640525d6e98593ba3cd45c6caeea763aa5355a7f989`
kubernetes-node-linux-s390x.tar.gz	`9407dc55412bd04633f84fcefe3a1074f3eaa772a7cb9302242b8768d6189b7`
kubernetes-node-windows-amd64.tar.gz	`9d4261af343cc330e6359582f80dbd6efb57d41f882747a94bbf47b4f93292c`

Changelog since v1.19.0

What's New (Major Themes)

Dockershim deprecation

Docker as an underlying runtime is being deprecated. Docker-produced images will continue to work in your cluster with all runtimes, as they always have. The Kubernetes community has written a blog post about this in detail with a dedicated FAQ page for it.

External credential provider for client-go

The client-go credential plugins can now be passed in the current cluster information via the `KUBERNETES_EXEC_INFO` environment variable. Learn more about this on client-go credential plugins documentation.

CronJob controller v2 is available through feature gate

An alternative implementation of the `CronJob` controller is now available as an alpha feature in this release, which has experimental performance improvement by using informers instead of polling. While this will be the default behavior in the future, you can try them in this release through a feature gate.

PID Limits graduates to General Availability

PID Limits features are now generally available on both `SupportNodePidsLimit` (node-to-pod PID isolation) and `SupportPodPidsLimit` (ability to limit PIDs per pod), after being enabled-by-default in beta stage for a year.

API Priority and Fairness graduates to Beta

Initially introduced in 1.18, Kubernetes 1.20 now enables API Priority and Fairness (APF) by default. This allows `kube-apiserver` to categorize incoming requests by priority levels.

IPv4/IPv6 run

IPv4/IPv6 dual-stack has been reimplemented for 1.20 to support dual-stack Services, based on user and community feedback. If your cluster has dual-stack enabled, you can create Services which can use IPv4, IPv6, or both, and you can change this setting for existing Services. Details are available in updated IPv4/IPv6 dual-stack docs, which cover the nuanced array of options.

We expect this implementation to progress from alpha to beta and GA in coming releases, so we're eager to have you comment about your dual-stack experiences in #k8s-dual-stack or in enhancements #563.

go1.15.5

go1.15.5 has been integrated into the Kubernetes project as of this release, including other infrastructure related updates on this effort.

CSI Volume Snapshot graduates to General Availability

CSI Volume Snapshot moves to GA in the 1.20 release. This feature provides a standard way to trigger volume snapshot operations in Kubernetes and allows Kubernetes users to incorporate snapshot operations in a portable manner on any Kubernetes environment regardless of supporting underlying storage providers. Additionally, these Kubernetes snapshot primitives act as basic building blocks that unlock the ability to develop advanced, enterprise-grade, storage administration features for Kubernetes: including application or cluster level backup solutions. Note that snapshot support will require Kubernetes distributors to bundle the Snapshot controller, Snapshot CRDs, and validation webhook. In addition, a CSI driver supporting the snapshot functionality must also be deployed on the cluster.

Non-recursive Volume Ownership (FSGroup) graduates to Beta

By default, the `fsgroup` setting, if specified, recursively updates permissions for every file in a volume on every mount. This can make mount, and pod startup, very slow if the volume has many files. This setting enables a pod to

specify a `PodFSGroupChangePolicy` that indicates that volume ownership and permissions will be changed only when permission and ownership of the root directory do not match with expected permissions on the volume.

CSIDriver policy for FSGroup graduates to Beta

The FSGroup's CSIDriver Policy is now beta in 1.20. This allows CSIDrivers to explicitly indicate if they want Kubernetes to manage permissions and ownership for their volumes via `fsgroup`.

Security Improvements for CSI Drivers (Alpha)

In 1.20, we introduce a new alpha feature `CSIServiceAccountToken`. This feature allows CSI drivers to impersonate the pods that they mount the volumes for. This improves the security posture in the mounting process where the volumes are ACL'ed on the pods' service account without handing out unnecessary permissions to the CSI drivers' service account. This feature is especially important for secret-handling CSI drivers, such as the secrets-store-csi-driver. Since these tokens can be rotated and short-lived, this feature also provides a knob for CSI drivers to receive `NodePublishVolume` RPC calls periodically with the new token. This knob is also useful when volumes are short-lived, e.g. certificates.

Introducing Graceful Node Shutdown (Alpha)

The `GracefulNodeShutdown` feature is now in Alpha. This allows kubelet to be aware of node system shutdowns, enabling graceful termination of pods during a system shutdown. This feature can be enabled through feature gate.

Runtime log sanitation

Logs can now be configured to use runtime protection from leaking sensitive data. Details for this experimental feature is available in documentation.

Pod resource metrics

On-demand metrics calculation is now available through `/metrics/resources`. When enabled, the endpoint will report the requested resources and the desired limits of all running pods.

Introducing `RootCAConfigMap`

`RootCAConfigMap` graduates to Beta, separating from `BoundServiceAccountTokenVolume`. The `kube-root-ca.crt` ConfigMap is now available to every namespace, by default. It contains the Certificate Authority bundle for verify kube-apiserver connections.

`kubectl debug` graduates to Beta

`kubectl alpha debug` graduates from alpha to beta in 1.20, becoming `kubectl debug`. `kubectl debug` provides support for common debugging workflows directly from kubectl. Troubleshooting scenarios supported in this release of `kubectl` include: Troubleshoot workloads that crash on startup by creating a copy of the pod that uses a different container image or command. Troubleshoot distroless containers by adding a new container with debugging tools, either in a new copy of the pod or using an ephemeral container. (Ephemeral containers are an alpha feature that are not enabled by default.) Troubleshoot on a node by creating a container running in the host namespaces and with access to the host's filesystem. Note that as a new builtin command, `kubectl debug` takes priority over any `kubectl` plugin named "debug". You will need to rename the affected plugin. Invocations using `kubectl alpha debug` are now deprecated and will be removed in a subsequent release. Update your scripts to use `kubectl debug` instead of `kubectl alpha debug`! For more information about kubectl debug, see Debugging Running Pods on the Kubernetes website, kubectl help debug, or reach out to SIG CLI by visiting #sig-cli or commenting on enhancement #1441.

Removing deprecated flags in kubeadm

`kubeadm` applies a number of deprecations and removals of deprecated features in this release. More details are available in the Urgent Upgrade Notes and Kind / Deprecation sections.

Pod Hostname as FQDN graduates to Beta

Previously introduced in 1.19 behind a feature gate, `SetHostnameAsFQDN` is now enabled by default. More details on this behavior are available in documentation for DNS for Services and Pods

`TokenRequest` / `TokenRequestProjection` graduates to General Availability

Service account tokens bound to a pod is now a stable feature. The feature gates will be removed in 1.21 release. For more information, refer to notes below on the changelogs.

RuntimeClass feature graduates to General Availability.

The `node.k8s.io` API groups are promoted from `v1beta1` to `v1`. `v1beta1` is now deprecated and will be removed in a future release, please start using `v1`. (#95718, @SergeyKanzhelev) [SIG Apps, Auth, Node, Scheduling and Testing]

Cloud Controller Manager now exclusively shipped by Cloud Provider

Kubernetes will no longer ship an instance of the Cloud Controller Manager binary. Each Cloud Provider is expected to ship their own instance of this binary. Details for a Cloud Provider to create an instance of such a binary can be found here. Anyone with questions on building a Cloud Controller Manager should reach out to SIG Cloud Provider. Questions about the Cloud Controller Manager on a Managed Kubernetes solution should go to the relevant Cloud Provider. Questions about the Cloud Controller Manager on a non managed solution can be brought up with SIG Cloud Provider.

Known Issues

Summary API in kubelet doesn't have accelerator metrics

Currently, cadvisor_stats_provider provides AcceleratorStats but cri_stats_provider does not. As a result, when using cri_stats_provider, kubelet's Summary API does not have accelerator metrics. #96873.

Urgent Upgrade Notes

(No, really, you MUST read this before you upgrade)

- A bug was fixed in kubelet where exec probe timeouts were not respected. This may result in unexpected behavior since the default timeout (if not specified) is `1s` which may be too small for some exec probes. Ensure that pods relying on this behavior are updated to correctly handle probe timeouts. See configure probe section of the documentation for more details.
  - This change in behavior may be unexpected for some clusters and can be disabled by turning off the `ExecProbeTimeout` feature gate. This gate will be locked and removed in future releases so that exec probe timeouts are always respected. (#94115, @andrewsykim) [SIG Node and Testing]
- RuntimeClass feature graduates to General Availability. Promote `node.k8s.io` API groups from `v1beta1` to `v1`. `v1beta1` is now deprecated and will be removed in a future release, please start using `v1`. (#95718, @SergeyKanzhelev) [SIG Apps, Auth, Node, Scheduling and Testing]
- API priority and fairness graduated to beta. 1.19 servers with APF turned on should not be run in a multi-server cluster with 1.20+ servers. (#96527, @adtac) [SIG API Machinery and Testing]
- For CSI drivers, kubelet no longer creates the target_path for NodePublishVolume in accordance with the CSI spec. Kubelet also no longer checks if staging and target paths are mounts or corrupted. CSI drivers need

to be idempotent and do any necessary mount verification. (#88759, @andyzhangx) [SIG Storage]

- Kubeadm: http://git.k8s.io/enhancements/keps/sig-cluster-lifecycle/kubeadm/2067-rename-master-label-taint/README.md (#95382, @neolit123) [SIG Cluster Lifecycle]
  - The label applied to control-plane nodes "node-role.kubernetes.io/master" is now deprecated and will be removed in a future release after a GA deprecation period.
  - Introduce a new label "node-role.kubernetes.io/control-plane" that will be applied in parallel to "node-role.kubernetes.io/master" until the removal of the "node-role.kubernetes.io/master" label.
  - Make "kubeadm upgrade apply" add the "node-role.kubernetes.io/control-plane" label on existing nodes that only have the "node-role.kubernetes.io/master" label during upgrade.
  - Please adapt your tooling built on top of kubeadm to use the "node-role.kubernetes.io/control-plane" label.
  - The taint applied to control-plane nodes "node-role.kubernetes.io/master:NoSchedule" is now deprecated and will be removed in a future release after a GA deprecation period.
  - Apply toleration for a new, future taint "node-role.kubernetes.io/control-plane:NoSchedule" to the kubeadm CoreDNS / kube-dns managed manifests. Note that this taint is not yet applied to kubeadm control-plane nodes.
  - Please adapt your workloads to tolerate the same future taint preemptively.
- Kubeadm: improve the validation of serviceSubnet and podSubnet. ServiceSubnet has to be limited in size, due to implementation details, and the mask can not allocate more than 20 bits. PodSubnet validates against the corresponding cluster "–node-cidr-mask-size" of the kube-controller-manager, it fail if the values are not compatible. kubeadm no longer sets the node-mask automatically on IPv6 deployments, you must check that your IPv6 service subnet mask is compatible with the default node mask /64 or set it accordingly. Previously, for IPv6, if the podSubnet had a mask lower than /112, kubeadm calculated a node-mask to be multiple of eight and splitting the available bits to maximise the number used for nodes. (#95723, @aojea) [SIG Cluster Lifecycle]
- The deprecated flag –experimental-kustomize is now removed from kubeadm commands. Use –experimental-patches instead, which was introduced in 1.19. Migration information available in –help description for –experimental-patches. (#94871, @neolit123)
- Windows hyper-v container feature gate is deprecated in 1.20 and will be removed in 1.21 (#95505, @wawa0210) [SIG Node and Windows]
- The kube-apiserver ability to serve on an insecure port, deprecated since

v1.10, has been removed. The insecure address flags `--address` and `--insecure-bind-address` have no effect in kube-apiserver and will be removed in v1.24. The insecure port flags `--port` and `--insecure-port` may only be set to 0 and will be removed in v1.24. (#95856, @knight42, [SIG API Machinery, Node, Testing])

- Add dual-stack Services (alpha). This is a BREAKING CHANGE to an alpha API. It changes the dual-stack API wrt Service from a single ipFamily field to 3 fields: ipFamilyPolicy (SingleStack, PreferDualStack, RequireDualStack), ipFamilies (a list of families assigned), and clusterIPs (inclusive of clusterIP). Most users do not need to set anything at all, defaulting will handle it for them. Services are single-stack unless the user asks for dual-stack. This is all gated by the "IPv6DualStack" feature gate. (#91824, @khenidak) [SIG API Machinery, Apps, CLI, Network, Node, Scheduling and Testing]

- `TokenRequest` and `TokenRequestProjection` are now GA features. The following flags are required by the API server:

  - `--service-account-issuer`, should be set to a URL identifying the API server that will be stable over the cluster lifetime.
  - `--service-account-key-file`, set to one or more files containing one or more public keys used to verify tokens.
  - `--service-account-signing-key-file`, set to a file containing a private key to use to sign service account tokens. Can be the same file given to `kube-controller-manager` with `--service-account-private-key-file`. (#95896, @zshihang) [SIG API Machinery, Auth, Cluster Lifecycle]

- kubeadm: make the command "kubeadm alpha kubeconfig user" accept a "–config" flag and remove the following flags:

  - apiserver-advertise-address / apiserver-bind-port: use either localAPIEndpoint from InitConfiguration or controlPlaneEndpoint from ClusterConfiguration.
  - cluster-name: use clusterName from ClusterConfiguration
  - cert-dir: use certificatesDir from ClusterConfiguration (#94879, @knight42) [SIG Cluster Lifecycle]

- Resolves non-deterministic behavior of the garbage collection controller when ownerReferences with incorrect data are encountered. Events with a reason of `OwnerRefInvalidNamespace` are recorded when namespace mismatches between child and owner objects are detected. The kubectl-check-ownerreferences tool can be run prior to upgrading to locate existing objects with invalid ownerReferences.

  - A namespaced object with an ownerReference referencing a uid of a namespaced kind which does not exist in the same namespace is now consistently treated as though that owner does not exist, and

the child object is deleted.
  - A cluster-scoped object with an ownerReference referencing a uid of a namespaced kind is now consistently treated as though that owner is not resolvable, and the child object is ignored by the garbage collector. (#92743, @liggitt) [SIG API Machinery, Apps and Testing]

Changes by Kind

Deprecation

- Docker support in the kubelet is now deprecated and will be removed in a future release. The kubelet uses a module called "dockershim" which implements CRI support for Docker and it has seen maintenance issues in the Kubernetes community. We encourage you to evaluate moving to a container runtime that is a full-fledged implementation of CRI (v1alpha1 or v1 compliant) as they become available. (#94624, @dims) [SIG Node]
- Kubeadm: deprecate self-hosting support. The experimental command "kubeadm alpha self-hosting" is now deprecated and will be removed in a future release. (#95125, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: graduate the "kubeadm alpha certs" command to a parent command "kubeadm certs". The command "kubeadm alpha certs" is deprecated and will be removed in a future release. Please migrate. (#94938, @yagonobre) [SIG Cluster Lifecycle]
- Kubeadm: remove the deprecated "kubeadm alpha kubelet config enable-dynamic" command. To continue using the feature please defer to the guide for "Dynamic Kubelet Configuration" at k8s.io. This change also removes the parent command "kubeadm alpha kubelet" as there are no more sub-commands under it for the time being. (#94668, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: remove the deprecated –kubelet-config flag for the command "kubeadm upgrade node" (#94869, @neolit123) [SIG Cluster Lifecycle]
- Kubectl: deprecate –delete-local-data (#95076, @dougsland) [SIG CLI, Cloud Provider and Scalability]
- Kubelet's deprecated endpoint `metrics/resource/v1alpha1` has been removed, please adopt `metrics/resource`. (#94272, @RainbowMango) [SIG Instrumentation and Node]
- Removes deprecated scheduler metrics DeprecatedSchedulingDuration, DeprecatedSchedulingAlgorithmPredicateEvaluationSecondsDuration, DeprecatedSchedulingAlgorithmPriorityEvaluationSecondsDuration (#94884, @arghya88) [SIG Instrumentation and Scheduling]
- Scheduler alpha metrics binding_duration_seconds and scheduling_algorithm_preemption_evaluation_seconds are deprecated, Both of those metrics are now covered as part of framework_extension_point_duration_seconds, the former as a PostFilter the latter and a Bind plugin. The plan is to remove both in 1.21 (#95001, @arghya88) [SIG Instrumentation and Scheduling]

- Support `controlplane` as a valid EgressSelection type in the EgressSelectorConfiguration API. `Master` is deprecated and will be removed in v1.22. (#95235, @andrewsykim) [SIG API Machinery]
- The v1alpha1 PodPreset API and admission plugin has been removed with no built-in replacement. Admission webhooks can be used to modify pods on creation. (#94090, @deads2k) [SIG API Machinery, Apps, CLI, Cloud Provider, Scalability and Testing]

API Change

- `TokenRequest` and `TokenRequestProjection` features have been promoted to GA. This feature allows generating service account tokens that are not visible in Secret objects and are tied to the lifetime of a Pod object. See https://kubernetes.io/docs/tasks/configure-pod-container/configure-service-account/#service-account-token-volume-projection for details on configuring and using this feature. The `TokenRequest` and `TokenRequestProjection` feature gates will be removed in v1.21.
  - kubeadm's kube-apiserver Pod manifest now includes the following flags by default "–service-account-key-file", "–service-account-signing-key-file", "–service-account-issuer". (#93258, @zshihang) [SIG API Machinery, Auth, Cluster Lifecycle, Storage and Testing]
- A new `nofuzz` go build tag now disables gofuzz support. Release binaries enable this. (#92491, @BenTheElder) [SIG API Machinery]
- Add WindowsContainerResources and Annotations to CRI-API UpdateContainerResourcesRequest (#95741, @katiewasnothere) [SIG Node]
- Add a `serving` and `terminating` condition to the EndpointSlice API. `serving` tracks the readiness of endpoints regardless of their terminating state. This is distinct from `ready` since `ready` is only true when pods are not terminating. `terminating` is true when an endpoint is terminating. For pods this is any endpoint with a deletion timestamp. (#92968, @andrewsykim) [SIG Apps and Network]
- Add dual-stack Services (alpha). This is a BREAKING CHANGE to an alpha API. It changes the dual-stack API wrt Service from a single ipFamily field to 3 fields: ipFamilyPolicy (SingleStack, PreferDualStack, RequireDualStack), ipFamilies (a list of families assigned), and clusterIPs (inclusive of clusterIP). Most users do not need to set anything at all, defaulting will handle it for them. Services are single-stack unless the user asks for dual-stack. This is all gated by the "IPv6DualStack" feature gate. (#91824, @khenidak) [SIG API Machinery, Apps, CLI, Network, Node, Scheduling and Testing]
- Add support for hugepages to downward API (#86102, @derekwaynecarr) [SIG API Machinery, Apps, CLI, Network, Node, Scheduling and Testing]
- Adds kubelet alpha feature, `GracefulNodeShutdown` which makes kubelet aware of node system shutdowns and result in graceful termination of pods during a system shutdown. (#96129, @bobbypage) [SIG Node]
- AppProtocol is now GA for Endpoints and Services. The ServiceAppPro-

tocol feature gate will be deprecated in 1.21. (#96327, @robscott) [SIG Apps and Network]

- Automatic allocation of NodePorts for services with type LoadBalancer can now be disabled by setting the (new) parameter Service.spec.allocateLoadBalancerNodePorts=false. The default is to allocate NodePorts for services with type LoadBalancer which is the existing behavior. (#92744, @uablrek) [SIG Apps and Network]
- Certain fields on Service objects will be automatically cleared when changing the service's `type` to a mode that does not need those fields. For example, changing from type=LoadBalancer to type=ClusterIP will clear the NodePort assignments, rather than forcing the user to clear them. (#95196, @thockin) [SIG API Machinery, Apps, Network and Testing]
- Document that ServiceTopology feature is required to use `service.spec.topologyKeys`. (#96528, @andrewsykim) [SIG Apps]
- EndpointSlice has a new NodeName field guarded by the EndpointSliceNodeName feature gate.
  - EndpointSlice topology field will be deprecated in an upcoming release.
  - EndpointSlice "IP" address type is formally removed after being deprecated in Kubernetes 1.17.
  - The discovery.k8s.io/v1alpha1 API is deprecated and will be removed in Kubernetes 1.21. (#96440, @robscott) [SIG API Machinery, Apps and Network]
- External facing API podresources is now available under k8s.io/kubelet/pkg/apis/ (#92632, @RenaudWasTaken) [SIG Node and Testing]
- Fewer candidates are enumerated for preemption to improve performance in large clusters. (#94814, @adtac)
- Fix conversions for custom metrics. (#94481, @wojtek-t) [SIG API Machinery and Instrumentation]
- GPU metrics provided by kubelet are now disabled by default. (#95184, @RenaudWasTaken)
- If BoundServiceAccountTokenVolume is enabled, cluster admins can use metric `serviceaccount_stale_tokens_total` to monitor workloads that are depending on the extended tokens. If there are no such workloads, turn off extended tokens by starting `kube-apiserver` with flag `--service-account-extend-token-expiration=false` (#96273, @zshihang) [SIG API Machinery and Auth]
- Introduce alpha support for exec-based container registry credential provider plugins in the kubelet. (#94196, @andrewsykim) [SIG Node and Release]
- Introduces a metric source for HPAs which allows scaling based on container resource usage. (#90691, @arjunrn) [SIG API Machinery, Apps, Autoscaling and CLI]
- Kube-apiserver now deletes expired kube-apiserver Lease objects:
  - The feature is under feature gate `APIServerIdentity`.
  - A flag is added to kube-apiserver: `identity-lease-garbage-collection-check-period-seconds` (#95895, @roycaihw) [SIG API Machinery, Apps, Auth and Testing]

- Kube-controller-manager: volume plugins can be restricted from contacting local and loopback addresses by setting `--volume-host-allow-local-loopback=false`, or from contacting specific CIDR ranges by setting `--volume-host-cidr-denylist` (for example, `--volume-host-cidr-denylist=127.0.0.1/28,feed::/16`) (#91785, @mattcary) [SIG API Machinery, Apps, Auth, CLI, Network, Node, Storage and Testing]
- Migrate scheduler, controller-manager and cloud-controller-manager to use LeaseLock (#94603, @wojtek-t) [SIG API Machinery, Apps, Cloud Provider and Scheduling]
- Modify DNS-1123 error messages to indicate that RFC 1123 is not followed exactly (#94182, @mattfenwick) [SIG API Machinery, Apps, Auth, Network and Node]
- Move configurable fsgroup change policy for pods to beta (#96376, @gnufied) [SIG Apps and Storage]
- New flag is introduced, i.e. –topology-manager-scope=container|pod. The default value is the "container" scope. (#92967, @cezaryzukowski) [SIG Instrumentation, Node and Testing]
- New parameter `defaultingType` for `PodTopologySpread` plugin allows to use k8s defined or user provided default constraints (#95048, @alculquicondor) [SIG Scheduling]
- NodeAffinity plugin can be configured with AddedAffinity. (#96202, @alculquicondor) [SIG Node, Scheduling and Testing]
- Promote RuntimeClass feature to GA. Promote node.k8s.io API groups from v1beta1 to v1. (#95718, @SergeyKanzhelev) [SIG Apps, Auth, Node, Scheduling and Testing]
- Reminder: The labels "failure-domain.beta.kubernetes.io/zone" and "failure-domain.beta.kubernetes.io/region" are deprecated in favor of "topology.kubernetes.io/zone" and "topology.kubernetes.io/region" respectively. All users of the "failure-domain.beta. . . " labels should switch to the "topology. . . " equivalents. (#96033, @thockin) [SIG API Machinery, Apps, CLI, Cloud Provider, Network, Node, Scheduling, Storage and Testing]
- Server Side Apply now treats LabelSelector fields as atomic (meaning the entire selector is managed by a single writer and updated together), since they contain interrelated and inseparable fields that do not merge in intuitive ways. (#93901, @jpbetz) [SIG API Machinery, Auth, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation, Network, Node, Storage and Testing]
- Services will now have a `clusterIPs` field to go with `clusterIP`. `clusterIPs[0]` is a synonym for `clusterIP` and will be synchronized on create and update operations. (#95894, @thockin) [SIG Network]
- The ServiceAccountIssuerDiscovery feature gate is now Beta and enabled by default. (#91921, @mtaufen) [SIG Auth]
- The status of v1beta1 CRDs without "preserveUnknownFields:false" now shows a violation, "spec.preserveUnknownFields: Invalid value: true: must be false". (#93078, @vareti)

- The usage of mixed protocol values in the same LoadBalancer Service is possible if the new feature gate MixedProtocolLBService is enabled. The feature gate is disabled by default. The user has to enable it for the API Server. (#94028, @janosi) [SIG API Machinery and Apps]
- This PR will introduce a feature gate CSIServiceAccountToken with two additional fields in `CSIDriverSpec`. (#93130, @zshihang) [SIG API Machinery, Apps, Auth, CLI, Network, Node, Storage and Testing]
- Users can try the CronJob controller v2 using the feature gate. This will be the default controller in future releases. (#93370, @alaypatel07) [SIG API Machinery, Apps, Auth and Testing]
- VolumeSnapshotDataSource moves to GA in 1.20 release (#95282, @xing-yang) [SIG Apps]
- WinOverlay feature graduated to beta (#94807, @ksubrmnn) [SIG Windows]

Feature

- A new metric `apiserver_request_filter_duration_seconds` has been introduced that measures request filter latency in seconds. (#95207, @tkashem) [SIG API Machinery and Instrumentation]
- A new set of alpha metrics are reported by the Kubernetes scheduler under the `/metrics/resources` endpoint that allow administrators to easily see the resource consumption (requests and limits for all resources on the pods) and compare it to actual pod usage or node capacity. (#94866, @smarter-clayton) [SIG API Machinery, Instrumentation, Node and Scheduling]
- Add –experimental-logging-sanitization flag enabling runtime protection from leaking sensitive data in logs (#96370, @serathius) [SIG API Machinery, Cluster Lifecycle and Instrumentation]
- Add a StorageVersionAPI feature gate that makes API server update storageversions before serving certain write requests. This feature allows the storage migrator to manage storage migration for built-in resources. Enabling internal.apiserver.k8s.io/v1alpha1 API and APIServerIdentity feature gate are required to use this feature. (#93873, @roycaihw) [SIG API Machinery, Auth and Testing]
- Add a metric for time taken to perform recursive permission change (#95866, @JornShen) [SIG Instrumentation and Storage]
- Add a new `vSphere` metric: `cloudprovider_vsphere_vcenter_versions`. Its content shows `vCenter` hostnames with the associated server version. (#94526, @Danil-Grigorev) [SIG Cloud Provider and Instrumentation]
- Add a new flag to set priority for the kubelet on Windows nodes so that workloads cannot overwhelm the node thereby disrupting kubelet process. (#96051, @ravisantoshgudimetla) [SIG Node and Windows]

- Add feature to size memory backed volumes (#94444, @derekwaynecarr) [SIG Storage and Testing]
- Add foreground cascading deletion to kubectl with the new `kubectl delete foreground|background|orphan` option. (#93384, @zhouya0)
- Add metrics for azure service operations (route and loadbalancer). (#94124, @nilo19) [SIG Cloud Provider and Instrumentation]
- Add network rule support in Azure account creation. (#94239, @andyzhangx)
- Add node_authorizer_actions_duration_seconds metric that can be used to estimate load to node authorizer. (#92466, @mborsz) [SIG API Machinery, Auth and Instrumentation]
- Add pod_ based CPU and memory metrics to Kubelet's /metrics/resource endpoint (#95839, @egernst) [SIG Instrumentation, Node and Testing]
- Added `get-users` and `delete-user` to the `kubectl config` subcommand (#89840, @eddiezane) [SIG CLI]
- Added counter metric "apiserver_request_self" to count API server self-requests with labels for verb, resource, and subresource. (#94288, @LogicalShark) [SIG API Machinery, Auth, Instrumentation and Scheduling]
- Added new k8s.io/component-helpers repository providing shared helper code for (core) components. (#92507, @ingvagabund) [SIG Apps, Node, Release and Scheduling]
- Adds `create ingress` command to `kubectl` (#78153, @amimof) [SIG CLI and Network]
- Adds a headless service on node-local-cache addon. (#88412, @stafot) [SIG Cloud Provider and Network]
- Allow cross-compilation of kubernetes on different platforms. (#94403, @bnrjee) [SIG Release]
- Azure: Support multiple services sharing one IP address (#94991, @nilo19) [SIG Cloud Provider]
- CRDs: For structural schemas, non-nullable null map fields will now be dropped and defaulted if a default is available. null items in the list will continue being preserved, and fail validation if not nullable. (#95423, @apelisse) [SIG API Machinery]
- Changed: default "Accept: */*" header added to HTTP probes. See https://kubernetes.io/docs/tasks/configure-pod-container/configure-liveness-readiness-startup-probes/#http-probes (https://github.com/kubernetes/website/pull/24756) (#95641, @fonsecas72) [SIG Network and Node]

- Client-go credential plugins can now be passed in the current cluster information via the KUBERNETES_EXEC_INFO environment variable. (#95489, @ankeesler) [SIG API Machinery and Auth]
- Command to start network proxy changes from 'KUBE_ENABLE_EGRESS_VIA_KONNECTIVITY_SE
  ./cluster/kube-up.sh' to 'KUBE_ENABLE_KONNECTIVITY_SERVICE=true
  ./hack/kube-up.sh' (#92669, @Jefftree) [SIG Cloud Provider]
- Configure AWS LoadBalancer health check protocol via service annotations. (#94546, @kishorj)
- DefaultPodTopologySpread graduated to Beta. The feature gate is enabled by default. (#95631, @alculquicondor) [SIG Scheduling and Testing]
- E2e test for PodFsGroupChangePolicy (#96247, @saikat-royc) [SIG Storage and Testing]
- Ephemeral containers now apply the same API defaults as initContainers and containers (#94896, @wawa0210) [SIG Apps and CLI]
- Graduate the Pod Resources API to G.A Introduces the pod_resources_endpoint_requests_total metric which tracks the total number of requests to the pod resources API (#92165, @RenaudWasTaken) [SIG Instrumentation, Node and Testing]
- In dual-stack bare-metal clusters, you can now pass dual-stack IPs to `kubelet --node-ip`. eg: `kubelet --node-ip 10.1.0.5,fd01::0005`. This is not yet supported for non-bare-metal clusters.

  In dual-stack clusters where nodes have dual-stack addresses, hostNetwork pods will now get dual-stack PodIPs. (#95239, @danwinship) [SIG Network and Node]
- Introduce api-extensions category which will return: mutating admission configs, validating admission configs, CRDs and APIServices when used in kubectl get, for example. (#95603, @soltysh) [SIG API Machinery]
- Introduces a new GCE specific cluster creation variable KUBE_PROXY_DISABLE. When set to true, this will skip over the creation of kube-proxy (whether the daemonset or static pod). This can be used to control the lifecycle of kube-proxy separately from the lifecycle of the nodes. (#91977, @varunmar) [SIG Cloud Provider]
- Kube-apiserver now maintains a Lease object to identify itself:
  - The feature is under feature gate `APIServerIdentity`.
  - Two flags are added to kube-apiserver: `identity-lease-duration-seconds`, `identity-lease-renew-interval-seconds` (#95533, @roycaihw) [SIG API Machinery]
- Kube-apiserver: The timeout used when making health check calls to etcd can now be configured with `--etcd-healthcheck-timeout`. The default

timeout is 2 seconds, matching the previous behavior. (#93244, @Sh4d1) [SIG API Machinery]

- Kube-apiserver: added support for compressing rotated audit log files with `--audit-log-compress` (#94066, @lojies) [SIG API Machinery and Auth]
- Kubeadm now prints warnings instead of throwing errors if the current system time is outside of the NotBefore and NotAfter bounds of a loaded certificate. (#94504, @neolit123)
- Kubeadm: Add a preflight check that the control-plane node has at least 1700MB of RAM (#93275, @xlgao-zju) [SIG Cluster Lifecycle]
- Kubeadm: add the "–cluster-name" flag to the "kubeadm alpha kubeconfig user" to allow configuring the cluster name in the generated kubeconfig file (#93992, @prabhu43) [SIG Cluster Lifecycle]
- Kubeadm: add the "–kubeconfig" flag to the "kubeadm init phase upload-certs" command to allow users to pass a custom location for a kubeconfig file. (#94765, @zhanw15) [SIG Cluster Lifecycle]
- Kubeadm: make etcd pod request 100m CPU, 100Mi memory and 100Mi ephemeral_storage by default (#94479, @knight42) [SIG Cluster Lifecycle]
- Kubeadm: make the command "kubeadm alpha kubeconfig user" accept a "–config" flag and remove the following flags:
  - apiserver-advertise-address / apiserver-bind-port: use either localAPIEndpoint from InitConfiguration or controlPlaneEndpoint from ClusterConfiguration.
  - cluster-name: use clusterName from ClusterConfiguration
  - cert-dir: use certificatesDir from ClusterConfiguration (#94879, @knight42) [SIG Cluster Lifecycle]
- Kubectl create now supports creating ingress objects. (#94327, @rikatz) [SIG CLI and Network]
- Kubectl rollout history sts/sts-name –revision=some-revision will start showing the detailed view of the sts on that specified revision (#86506, @dineshba) [SIG CLI]
- Kubectl: Previously users cannot provide arguments to a external diff tool via KUBECTL_EXTERNAL_DIFF env. This release now allow users to specify args to KUBECTL_EXTERNAL_DIFF env. (#95292, @dougsland) [SIG CLI]
- Kubemark now supports both real and hollow nodes in a single cluster. (#93201, @ellistarn) [SIG Scalability]
- Kubernetes E2E test image manifest lists now contain Windows images. (#77398, @claudiubelu) [SIG Testing and Windows]
- Kubernetes is now built using go1.15.2

  - build: Update to k/repo-infra@v0.1.1 (supports go1.15.2)
  - build: Use go-runner:buster-v2.0.1 (built using go1.15.1)
  - bazel: Replace –features with Starlark build settings flag
  - hack/lib/util.sh: some bash cleanups
    * switched one spot to use kube::logging
    * make kube::util::find-binary return an error when it doesn't find anything so that hack scripts fail fast instead of with "binary not found errors".
    * this required deleting some genfeddoc stuff. the binary no longer exists in k/k repo since we removed federation/, and I don't see it in https://github.com/kubernetes-sigs/kubefed/ either. I'm assuming that it's gone for good now.
  - bazel: output go_binary rule directly from go_binary_conditional_pure

    From: @mikedanese: Instead of aliasing. Aliases are annoying in a number of ways. This is specifically bugging me now because they make the action graph harder to analyze programmatically. By using aliases here, we would need to handle potentially aliased go_binary targets and dereference to the effective target.

    The comment references an issue with `pure = select(...)` which appears to be resolved considering this now builds.
  - make kube::util::find-binary not dependent on bazel-out/ structure

    Implement an aspect that outputs go_build_mode metadata for go binaries, and use that during binary selection. (#94449, @justaugustus) [SIG Architecture, CLI, Cluster Lifecycle, Node, Release and Testing]

- Kubernetes is now built using go1.15.5
  - build: Update to k/repo-infra@v0.1.2 (supports go1.15.5) (#95776, @justaugustus) [SIG Cloud Provider, Instrumentation, Release and Testing]
- New default scheduling plugins order reduces scheduling and preemption latency when taints and node affinity are used (#95539, @soulxu) [SIG Scheduling]
- Only update Azure data disks when attach/detach (#94265, @andyzhangx) [SIG Cloud Provider]
- Promote SupportNodePidsLimit to GA to provide node-to-pod PID isolation. Promote SupportPodPidsLimit to GA to provide the ability to limit PIDs per pod. (#94140, @derekwaynecarr)

- SCTP support in API objects (Pod, Service, NetworkPolicy) is now GA. Note that this has no effect on whether SCTP is enabled on nodes at the kernel level, and note that some cloud platforms and network plugins do not support SCTP traffic. (#95566, @danwinship) [SIG Apps and Network]
- Scheduler now ignores Pod update events if the resourceVersion of old and new Pods are identical. (#96071, @Huang-Wei) [SIG Scheduling]
- Scheduling Framework: expose Run[Pre]ScorePlugins functions to PreemptionHandle which can be used in PostFilter extension point. (#93534, @everpeace) [SIG Scheduling and Testing]
- SelectorSpreadPriority maps to PodTopologySpread plugin when DefaultPodTopologySpread feature is enabled (#95448, @alculquicondor) [SIG Scheduling]
- Send GCE node startup scripts' logs to console and journal. (#95311, @karan)
- SetHostnameAsFQDN has been graduated to Beta and therefore it is enabled by default. (#95267, @javidiaz) [SIG Node]
- Support [service.beta.kubernetes.io/azure-pip-ip-tags] annotations to allow customers to specify ip-tags to influence public-ip creation in Azure [Tag1=Value1, Tag2=Value2, etc.] (#94114, @MarcPow) [SIG Cloud Provider]
- Support custom tags for cloud provider managed resources (#96450, @nilo19) [SIG Cloud Provider]
- Support customize load balancer health probe protocol and request path (#96338, @nilo19) [SIG Cloud Provider]
- Support for Windows container images (OS Versions: 1809, 1903, 1909, 2004) was added to the pause:3.4 image. (#91452, @claudiubelu) [SIG Node, Release and Windows]
- Support multiple standard load balancers in one cluster (#96111, @nilo19) [SIG Cloud Provider]
- The beta `RootCAConfigMap` feature gate is enabled by default and causes kube-controller-manager to publish a "kube-root-ca.crt" ConfigMap to every namespace. This ConfigMap contains a CA bundle used for verifying connections to the kube-apiserver. (#96197, @zshihang) [SIG API Machinery, Apps, Auth and Testing]
- The kubelet_runtime_operations_duration_seconds metric buckets were set to 0.005 0.0125 0.03125 0.078125 0.1953125 0.48828125 1.220703125 3.0517578125 7.62939453125 19.073486328125 47.6837158203125 119.20928955078125 298.0232238769531 and 745.0580596923828 seconds (#96054, @alvaroaleman) [SIG Instrumentation and Node]

- There is a new pv_collector_total_pv_count metric that counts persistent volumes by the volume plugin name and volume mode. (#95719, @tsmetana) [SIG Apps, Instrumentation, Storage and Testing]
- Volume snapshot e2e test to validate PVC and VolumeSnapshotContent finalizer (#95863, @RaunakShah) [SIG Cloud Provider, Storage and Testing]
- Warns user when executing kubectl apply/diff to a resource currently being deleted. (#95544, @SaiHarshaK) [SIG CLI]
- `kubectl alpha debug` has graduated to beta and is now `kubectl debug`. (#96138, @verb) [SIG CLI and Testing]
- `kubectl debug` gains support for changing container images when copying a pod for debugging, similar to how `kubectl set image` works. See `kubectl help debug` for more information. (#96058, @verb) [SIG CLI]

Documentation

- Fake dynamic client: document that List does not preserve TypeMeta in UnstructuredList (#95117, @andrewsykim) [SIG API Machinery]
- Kubelet: remove alpha warnings for CNI flags. (#94508, @andrewsykim) [SIG Network and Node]
- Updates docs and guidance on cloud provider InstancesV2 and Zones interface for external cloud providers:
  - removes experimental warning for InstancesV2
  - document that implementation of InstancesV2 will disable calls to Zones
  - deprecate Zones in favor of InstancesV2 (#96397, @andrewsykim) [SIG Cloud Provider]

Failing Test

- Resolves an issue running Ingress conformance tests on clusters which use finalizers on Ingress objects to manage releasing load balancer resources (#96742, @spencerhance) [SIG Network and Testing]
- The Conformance test "validates that there is no conflict between pods with same hostPort but different hostIP and protocol" now validates the connectivity to each hostPort, in addition to the functionality. (#96627, @aojea) [SIG Scheduling and Testing]

Bug or Regression

- Add kubectl wait –ignore-not-found flag (#90969, @zhouya0) [SIG CLI]
- Added support to kube-proxy for externalTrafficPolicy=Local setting via Direct Server Return (DSR) load balancers on Windows. (#93166, @elweb9858) [SIG Network]

- Alter wording to describe pods using a pvc (#95635, @RaunakShah) [SIG CLI]
- An issues preventing volume expand controller to annotate the PVC with `volume.kubernetes.io/storage-resizer` when the PVC StorageClass is already updated to the out-of-tree provisioner is now fixed. (#94489, @ialidzhikov) [SIG API Machinery, Apps and Storage]
- Azure ARM client: don't segfault on empty response and http error (#94078, @bpineau) [SIG Cloud Provider]
- Azure armclient backoff step defaults to 1 (no retry). (#94180, @feiskyer)
- Azure: fix a bug that kube-controller-manager would panic if wrong Azure VMSS name is configured (#94306, @knight42) [SIG Cloud Provider]
- Both apiserver_request_duration_seconds metrics and RequestReceivedTimestamp fields of an audit event now take into account the time a request spends in the apiserver request filters. (#94903, @tkashem)
- Build/lib/release: Explicitly use '–platform' in building server images

  When we switched to go-runner for building the apiserver, controller-manager, and scheduler server components, we no longer reference the individual architectures in the image names, specifically in the 'FROM' directive of the server image Dockerfiles.

  As a result, server images for non-amd64 images copy in the go-runner amd64 binary instead of the go-runner that matches that architecture.

  This commit explicitly sets the '–platform=linux/${arch}' to ensure we're pulling the correct go-runner arch from the manifest list.

  Before: `FROM ${base_image}`

  After: `FROM --platform=linux/${arch} ${base_image}` (#94552, @justaugustus) [SIG Release]
- Bump node-problem-detector version to v0.8.5 to fix OOM detection in with Linux kernels 5.1+ (#96716, @tosi3k) [SIG Cloud Provider, Scalability and Testing]
- CSIDriver object can be deployed during volume attachment. (#93710, @Jiawei0227) [SIG Apps, Node, Storage and Testing]
- Ceph RBD volume expansion now works even when ceph.conf was not provided. (#92027, @juliantaylor)
- Change plugin name in fsgroupapplymetrics of csi and flexvolume to distinguish different driver (#95892, @JornShen) [SIG Instrumentation, Storage and Testing]

- Change the calculation of pod UIDs so that static pods get a unique value - will cause all containers to be killed and recreated after in-place upgrade. (#87461, @bboreham) [SIG Node]
- Change the mount way from systemd to normal mount except ceph and glusterfs intree-volume. (#94916, @smileusd) [SIG Apps, Cloud Provider, Network, Node, Storage and Testing]
- Changes to timeout parameter handling in 1.20.0-beta.2 have been reverted to avoid breaking backwards compatibility with existing clients. (#96727, @liggitt) [SIG API Machinery and Testing]
- Clear UDP conntrack entry on endpoint changes when using nodeport (#71573, @JacobTanenbaum) [SIG Network]
- Cloud node controller: handle empty providerID from getProviderID (#95342, @nicolehanjing) [SIG Cloud Provider]
- Disable watchcache for events (#96052, @wojtek-t) [SIG API Machinery]
- Disabled `LocalStorageCapacityIsolation` feature gate is honored during scheduling. (#96092, @Huang-Wei) [SIG Scheduling]
- Do not fail sorting empty elements. (#94666, @soltysh) [SIG CLI]
- Dual-stack: make nodeipam compatible with existing single-stack clusters when dual-stack feature gate become enabled by default (#90439, @SataQiu) [SIG API Machinery]
- Duplicate owner reference entries in create/update/patch requests now get deduplicated by the API server. The client sending the request now receives a warning header in the API response. Clients should stop sending requests with duplicate owner references. The API server may reject such requests as early as 1.24. (#96185, @roycaihw) [SIG API Machinery and Testing]
- Endpoint slice controller now mirrors parent's service label to its corresponding endpoint slices. (#94443, @aojea)
- Ensure getPrimaryInterfaceID not panic when network interfaces for Azure VMSS are null (#94355, @feiskyer) [SIG Cloud Provider]
- Exposes and sets a default timeout for the SubjectAccessReview client for DelegatingAuthorizationOptions (#95725, @p0lyn0mial) [SIG API Machinery and Cloud Provider]
- Exposes and sets a default timeout for the TokenReview client for DelegatingAuthenticationOptions (#96217, @p0lyn0mial) [SIG API Machinery and Cloud Provider]
- Fix CVE-2020-8555 for Quobyte client connections. (#95206, @misterikkit) [SIG Storage]

- Fix IP fragmentation of UDP and TCP packets not supported issues on LoadBalancer rules (#96464, @nilo19) [SIG Cloud Provider]
- Fix a bug that DefaultPreemption plugin is disabled when using (legacy) scheduler policy. (#96439, @Huang-Wei) [SIG Scheduling and Testing]
- Fix a bug where loadbalancer deletion gets stuck because of missing resource group. (#93962, @phiphi282)
- Fix a concurrent map writes error in kubelet (#93773, @knight42) [SIG Node]
- Fix a panic in `kubectl debug` when a pod has multiple init or ephemeral containers. (#94580, @kiyoshim55)
- Fix a regression where kubeadm bails out with a fatal error when an optional version command line argument is supplied to the "kubeadm upgrade plan" command (#94421, @rosti) [SIG Cluster Lifecycle]
- Fix azure disk attach failure for disk size bigger than 4TB (#95463, @andyzhangx) [SIG Cloud Provider]
- Fix azure disk data loss issue on Windows when unmount disk (#95456, @andyzhangx) [SIG Cloud Provider and Storage]
- Fix azure file migration panic (#94853, @andyzhangx) [SIG Cloud Provider]
- Fix bug in JSON path parser where an error occurs when a range is empty (#95933, @brianpursley) [SIG API Machinery]
- Fix client-go prometheus metrics to correctly present the API path accessed in some environments. (#74363, @aanm) [SIG API Machinery]
- Fix detach azure disk issue when vm not exist (#95177, @andyzhangx) [SIG Cloud Provider]
- Fix etcd_object_counts metric reported by kube-apiserver (#94773, @tkashem) [SIG API Machinery]
- Fix incorrectly reported verbs for kube-apiserver metrics for CRD objects (#93523, @wojtek-t) [SIG API Machinery and Instrumentation]
- Fix k8s.io/apimachinery/pkg/api/meta.SetStatusCondition to update ObservedGeneration (#95961, @KnicKnic) [SIG API Machinery]
- Fix kubectl SchemaError on CRDs with schema using x-kubernetes-preserve-unknown-fields on array types. (#94888, @sttts) [SIG API Machinery]
- Fix memory leak in kube-apiserver when underlying time goes forth and back. (#96266, @chenyw1990) [SIG API Machinery]

- Fix missing csi annotations on node during parallel csinode update. (#94389, @pacoxu) [SIG Storage]
- Fix network_programming_latency metric reporting for Endpoints/EndpointSlice deletions, where we don't have correct timestamp (#95363, @wojtek-t) [SIG Network and Scalability]
- Fix paging issues when Azure API returns empty values with non-empty nextLink (#96211, @feiskyer) [SIG Cloud Provider]
- Fix pull image error from multiple ACRs using azure managed identity (#96355, @andyzhangx) [SIG Cloud Provider]
- Fix race condition on timeCache locks. (#94751, @auxten)
- Fix regression on `kubectl port-forward` when TCP and UCP services were configured on the same port. (#94728, @amorenoz)
- Fix scheduler cache snapshot when a Node is deleted before its Pods (#95130, @alculquicondor) [SIG Scheduling]
- Fix the `cloudprovider_azure_api_request_duration_seconds` metric buckets to correctly capture the latency metrics. Previously, the majority of the calls would fall in the "+Inf" bucket. (#94873, @marwanad) [SIG Cloud Provider and Instrumentation]
- Fix vSphere volumes that could be erroneously attached to wrong node (#96224, @gnufied) [SIG Cloud Provider and Storage]
- Fix verb & scope reporting for kube-apiserver metrics (LIST reported instead of GET) (#95562, @wojtek-t) [SIG API Machinery and Testing]
- Fix vSphere detach failure for static PVs (#95447, @gnufied) [SIG Cloud Provider and Storage]
- Fix: azure disk resize error if source does not exist (#93011, @andyzhangx) [SIG Cloud Provider]
- Fix: detach azure disk broken on Azure Stack (#94885, @andyzhangx) [SIG Cloud Provider]
- Fix: resize Azure disk issue when it's in attached state (#96705, @andyzhangx) [SIG Cloud Provider]
- Fix: smb valid path error (#95583, @andyzhangx) [SIG Storage]
- Fix: use sensitiveOptions on Windows mount (#94126, @andyzhangx) [SIG Cloud Provider and Storage]
- Fixed a bug causing incorrect formatting of `kubectl describe ingress`. (#94985, @howardjohn) [SIG CLI and Network]

- Fixed a bug in client-go where new clients with customized `Dial`, `Proxy`, `GetCert` config may get stale HTTP transports. (#95427, @roycaihw) [SIG API Machinery]
- Fixed a bug that prevents kubectl to validate CRDs with schema using x-kubernetes-preserve-unknown-fields on object fields. (#96369, @gautierdelorme) [SIG API Machinery and Testing]
- Fixed a bug that prevents the use of ephemeral containers in the presence of a validating admission webhook. (#94685, @verb) [SIG Node and Testing]
- Fixed a bug where aggregator_unavailable_apiservice metrics were reported for deleted apiservices. (#96421, @dgrisonnet) [SIG API Machinery and Instrumentation]
- Fixed a bug where improper storage and comparison of endpoints led to excessive API traffic from the endpoints controller (#94112, @damemi) [SIG Apps, Network and Testing]
- Fixed a regression which prevented pods with `docker/default` seccomp annotations from being created in 1.19 if a PodSecurityPolicy was in place which did not allow `runtime/default` seccomp profiles. (#95985, @saschagrunert) [SIG Auth]
- Fixed bug in reflector that couldn't recover from "Too large resource version" errors with API servers 1.17.0-1.18.5 (#94316, @janeczku) [SIG API Machinery]
- Fixed bug where kubectl top pod output is not sorted when –sort-by and –containers flags are used together (#93692, @brianpursley) [SIG CLI]
- Fixed kubelet creating extra sandbox for pods with RestartPolicyOnFailure after all containers succeeded (#92614, @tnqn) [SIG Node and Testing]
- Fixes an issue proxying to ipv6 pods without specifying a port (#94834, @liggitt) [SIG API Machinery and Network]
- Fixes code generation for non-namespaced create subresources fake client test. (#96586, @Doude) [SIG API Machinery]
- Fixes high CPU usage in kubectl drain (#95260, @amandahla) [SIG CLI]
- For vSphere Cloud Provider, If VM of worker node is deleted, the node will also be deleted by node controller (#92608, @lubronzhan) [SIG Cloud Provider]
- Gracefully delete nodes when their parent scale set went missing (#95289, @bpineau) [SIG Cloud Provider]
- HTTP/2 connection health check is enabled by default in all Kubernetes clients. The feature should work out-of-the-box. If needed, users can tune the feature via the HTTP2_READ_IDLE_TIMEOUT_SECONDS and HTTP2_PING_TIMEOUT_SECONDS environment variables. The

feature is disabled if HTTP2_READ_IDLE_TIMEOUT_SECONDS is set to 0. (#95981, @caesarxuchao) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation and Node]

- If the user specifies an invalid timeout in the request URL, the request will be aborted with an HTTP 400.
  - If the user specifies a timeout in the request URL that exceeds the maximum request deadline allowed by the apiserver, the request will be aborted with an HTTP 400. (#96061, @tkashem) [SIG API Machinery, Network and Testing]
- If we set SelectPolicy MinPolicySelect on scaleUp behavior or scaleDown behavior,Horizontal Pod Autoscaler doesn't automatically scale the number of pods correctly (#95647, @JoshuaAndrew) [SIG Apps and Autoscaling]
- Ignore apparmor for non-linux operating systems (#93220, @wawa0210) [SIG Node and Windows]
- Ignore root user check when windows pod starts (#92355, @wawa0210) [SIG Node and Windows]
- Improve error messages related to nodePort endpoint changes conntrack entries cleanup. (#96251, @ravens) [SIG Network]
- In dual-stack clusters, kubelet will now set up both IPv4 and IPv6 iptables rules, which may fix some problems, eg with HostPorts. (#94474, @danwinship) [SIG Network and Node]
- Increase maximum IOPS of AWS EBS io1 volume to current maximum (64,000). (#90014, @jacobmarble)
- Ipvs: ensure selected scheduler kernel modules are loaded (#93040, @cmluciano) [SIG Network]
- K8s.io/apimachinery: runtime.DefaultUnstructuredConverter.FromUnstructured now handles converting integer fields to typed float values (#93250, @liggitt) [SIG API Machinery]
- Kube-proxy now trims extra spaces found in loadBalancerSourceRanges to match Service validation. (#94107, @robscott) [SIG Network]
- Kubeadm ensures "kubeadm reset" does not unmount the root "/var/lib/kubelet" directory if it is mounted by the user. (#93702, @thtanaka)
- Kubeadm now makes sure the etcd manifest is regenerated upon upgrade even when no etcd version change takes place (#94395, @rosti) [SIG Cluster Lifecycle]
- Kubeadm now warns (instead of error out) on missing "ca.key" files for root CA, front-proxy CA and etcd CA, during "kubeadm join –control-plane"

if the user has provided all certificates, keys and kubeconfig files which require signing with the given CA keys. (#94988, @neolit123)

- Kubeadm: add missing "–experimental-patches" flag to "kubeadm init phase control-plane" (#95786, @Sh4d1) [SIG Cluster Lifecycle]
- Kubeadm: avoid a panic when determining if the running version of CoreDNS is supported during upgrades (#94299, @zouyee) [SIG Cluster Lifecycle]
- Kubeadm: ensure the etcd data directory is created with 0700 permissions during control-plane init and join (#94102, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: fix coredns migration should be triggered when there are newdefault configs during kubeadm upgrade (#96907, @pacoxu) [SIG Cluster Lifecycle]
- Kubeadm: fix the bug that kubeadm tries to call 'docker info' even if the CRI socket was for another CR (#94555, @SataQiu) [SIG Cluster Lifecycle]
- Kubeadm: for Docker as the container runtime, make the "kubeadm reset" command stop containers before removing them (#94586, @BedivereZero) [SIG Cluster Lifecycle]
- Kubeadm: make the kubeconfig files for the kube-controller-manager and kube-scheduler use the LocalAPIEndpoint instead of the ControlPlaneEndpoint. This makes kubeadm clusters more reseliant to version skew problems during immutable upgrades: https://kubernetes.io/docs/setup/release/version-skew-policy/#kube-controller-manager-kube-scheduler-and-cloud-controller-manager (#94398, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: relax the validation of kubeconfig server URLs. Allow the user to define custom kubeconfig server URLs without erroring out during validation of existing kubeconfig files (e.g. when using external CA mode). (#94816, @neolit123) [SIG Cluster Lifecycle]
- Kubectl: print error if users place flags before plugin name (#92343, @knight42) [SIG CLI]
- Kubelet: assume that swap is disabled when `/proc/swaps` does not exist (#93931, @SataQiu) [SIG Node]
- New Azure instance types do now have correct max data disk count information. (#94340, @ialidzhikov) [SIG Cloud Provider and Storage]
- Port mapping now allows the same `containerPort` of different containers to different `hostPort` without naming the mapping explicitly. (#94494, @SergeyKanzhelev)

- Print go stack traces at -v=4 and not -v=2 (#94663, @soltysh) [SIG CLI]
- Recreate EndpointSlices on rapid Service creation. (#94730, @robscott)
- Reduce volume name length for vSphere volumes (#96533, @gnufied) [SIG Storage]
- Remove ready file and its directory (which is created during volume SetUp) during emptyDir volume TearDown. (#95770, @jingxu97) [SIG Storage]
- Reorganized iptables rules to fix a performance issue (#95252, @tssurya) [SIG Network]
- Require feature flag CustomCPUCFSQuotaPeriod if setting a non-default cpuCFSQuotaPeriod in kubelet config. (#94687, @karan) [SIG Node]
- Resolves a regression in 1.19+ with workloads targeting deprecated beta os/arch labels getting stuck in NodeAffinity status on node startup. (#96810, @liggitt) [SIG Node]
- Resolves non-deterministic behavior of the garbage collection controller when ownerReferences with incorrect data are encountered. Events with a reason of `OwnerRefInvalidNamespace` are recorded when namespace mismatches between child and owner objects are detected. The kubectl-check-ownerreferences tool can be run prior to upgrading to locate existing objects with invalid ownerReferences.
  - A namespaced object with an ownerReference referencing a uid of a namespaced kind which does not exist in the same namespace is now consistently treated as though that owner does not exist, and the child object is deleted.
  - A cluster-scoped object with an ownerReference referencing a uid of a namespaced kind is now consistently treated as though that owner is not resolvable, and the child object is ignored by the garbage collector. (#92743, @liggitt) [SIG API Machinery, Apps and Testing]
- Skip [k8s.io/kubernetes@v1.19.0/test/e2e/storage/testsuites/base.go:162]: Driver azure-disk doesn't support snapshot type DynamicSnapshot – skipping skip [k8s.io/kubernetes@v1.19.0/test/e2e/storage/testsuites/base.go:185]: Driver azure-disk doesn't support ntfs – skipping (#96144, @qinpingli) [SIG Storage and Testing]
- StatefulSet Controller now waits for PersistentVolumeClaim deletion before creating pods. (#93457, @ymmt2005)
- StreamWatcher now calls HandleCrash at appropriate sequence. (#93108, @lixiaobing1)
- Support the node label `node.kubernetes.io/exclude-from-external-load-balancers` (#95542, @nilo19) [SIG Cloud Provider]

- The AWS network load balancer attributes can now be specified during service creation (#95247, @kishorj) [SIG Cloud Provider]
- The `/debug/api_priority_and_fairness/dump_requests` path at an apiserver will no longer return a phantom line for each exempt priority level. (#93406, @MikeSpreitzer) [SIG API Machinery]
- The kube-apiserver will no longer serve APIs that should have been deleted in GA non-alpha levels. Alpha levels will continue to serve the removed APIs so that CI doesn't immediately break. (#96525, @deads2k) [SIG API Machinery]
- The kubelet recognizes the –containerd-namespace flag to configure the namespace used by cadvisor. (#87054, @changyaowei) [SIG Node]
- Unhealthy pods covered by PDBs can be successfully evicted if enough healthy pods are available. (#94381, @michaelgugino) [SIG Apps]
- Update Calico to v3.15.2 (#94241, @lmm) [SIG Cloud Provider]
- Update default etcd server version to 3.4.13 (#94287, @jingyih) [SIG API Machinery, Cloud Provider, Cluster Lifecycle and Testing]
- Update max azure data disk count map (#96308, @andyzhangx) [SIG Cloud Provider and Storage]
- Update the PIP when it is not in the Succeeded provisioning state during the LB update. (#95748, @nilo19) [SIG Cloud Provider]
- Update the frontend IP config when the service's `pipName` annotation is changed (#95813, @nilo19) [SIG Cloud Provider]
- Update the route table tag in the route reconcile loop (#96545, @nilo19) [SIG Cloud Provider]
- Use NLB Subnet CIDRs instead of VPC CIDRs in Health Check SG Rules (#93515, @t0rr3sp3dr0) [SIG Cloud Provider]
- Users will see increase in time for deletion of pods and also guarantee that removal of pod from api server would mean deletion of all the resources from container runtime. (#92817, @kmala) [SIG Node]
- Very large patches may now be specified to `kubectl patch` with the `--patch-file` flag instead of including them directly on the command line. The `--patch` and `--patch-file` flags are mutually exclusive. (#93548, @smarterclayton) [SIG CLI]
- Volume binding: report UnschedulableAndUnresolvable status instead of an error when bound PVs not found (#95541, @cofyc) [SIG Apps, Scheduling and Storage]
- Warn instead of fail when creating Roles and ClusterRoles with custom verbs via kubectl (#92492, @eddiezane) [SIG CLI]

- When creating a PVC with the volume.beta.kubernetes.io/storage-provisioner annotation already set, the PV controller might have incorrectly deleted the newly provisioned PV instead of binding it to the PVC, depending on timing and system load. (#95909, @pohly) [SIG Apps and Storage]
- [kubectl] Fail when local source file doesn't exist (#90333, @bamarni) [SIG CLI]

Other (Cleanup or Flake)

- Handle slow CronJob lister in CronJob controller v2 and improve memory footprint. (#96443, @alaypatel07) [SIG Apps]
- –redirect-container-streaming is no longer functional. The flag will be removed in v1.22 (#95935, @tallclair) [SIG Node]
- A new metric `requestAbortsTotal` has been introduced that counts aborted requests for each `group`, `version`, `verb`, `resource`, `subresource` and `scope`. (#95002, @p0lyn0mial) [SIG API Machinery, Cloud Provider, Instrumentation and Scheduling]
- API priority and fairness metrics use snake_case in label names (#96236, @adtac) [SIG API Machinery, Cluster Lifecycle, Instrumentation and Testing]
- Add fine-grained debugging to intra-pod conformance test to troubleshoot networking issues for potentially unhealthy nodes when running conformance or sonobuoy tests. (#93837, @jayunit100)
- Add the following metrics:
  - network_plugin_operations_total
  - network_plugin_operations_errors_total (#93066, @AnishShah)
- Adds a bootstrapping ClusterRole, ClusterRoleBinding and group for /metrics, /livez/*, /readyz/*, & /healthz/- endpoints. (#93311, @logicalhan) [SIG API Machinery, Auth, Cloud Provider and Instrumentation]
- AdmissionReview objects sent for the creation of Namespace API objects now populate the `namespace` attribute consistently (previously the `namespace` attribute was empty for Namespace creation via POST requests, and populated for Namespace creation via server-side-apply PATCH requests) (#95012, @nodo) [SIG API Machinery and Testing]
- Applies translations on all command descriptions (#95439, @HerrNaN) [SIG CLI]
- Base-images: Update to debian-iptables:buster-v1.3.0
  - Uses iptables 1.8.5
  - base-images: Update to debian-base:buster-v1.2.0
  - cluster/images/etcd: Build etcd:3.4.13-1 image
    - Uses debian-base:buster-v1.2.0 (#94733, @justaugustus) [SIG API Machinery, Release and Testing]
- Changed: default "Accept-Encoding" header removed from HTTP probes. See https://kubernetes.io/docs/tasks/configure-pod-container/configure-

liveness-readiness-startup-probes/#http-probes (#96127, @fonsecas72) [SIG Network and Node]
- Client-go header logging (at verbosity levels >= 9) now masks `Authorization` header contents (#95316, @sfowl) [SIG API Machinery]
- Decrease warning message frequency on setting volume ownership for configmap/secret. (#92878, @jvanz)
- Enhance log information of verifyRunAsNonRoot, add pod, container information (#94911, @wawa0210) [SIG Node]
- Fix func name NewCreateCreateDeploymentOptions (#91931, @lixiaobing1) [SIG CLI]
- Fix kubelet to properly log when a container is started. Previously, kubelet may log that container is dead and was restarted when it was actually started for the first time. This behavior only happened on pods with initContainers and regular containers. (#91469, @rata)
- Fixes the message about no auth for metrics in scheduler. (#94035, @zhouya0) [SIG Scheduling]
- Generators for services are removed from kubectl (#95256, @Git-Jiro) [SIG CLI]
- Introduce kubectl-convert plugin. (#96190, @soltysh) [SIG CLI and Testing]
- Kube-scheduler now logs processed component config at startup (#96426, @damemi) [SIG Scheduling]
- Kubeadm: Separate argument key/value in log msg (#94016, @mrueg) [SIG Cluster Lifecycle]
- Kubeadm: remove the CoreDNS check for known image digests when applying the addon (#94506, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: update the default pause image version to 1.4.0 on Windows. With this update the image supports Windows versions 1809 (2019LTS), 1903, 1909, 2004 (#95419, @jsturtevant) [SIG Cluster Lifecycle and Windows]
- Kubectl: the `generator` flag of `kubectl autoscale` has been deprecated and has no effect, it will be removed in a feature release (#92998, @SataQiu) [SIG CLI]
- Lock ExternalPolicyForExternalIP to default, this feature gate will be removed in 1.22. (#94581, @knabben) [SIG Network]
- Mask ceph RBD adminSecrets in logs when logLevel >= 4. (#95245, @sfowl)
- Remove offensive words from kubectl cluster-info command. (#95202, @rikatz)
- Remove support for "ci/k8s-master" version label in kubeadm, use "ci/latest" instead. See kubernetes/test-infra#18517. (#93626, @vikkyomkar)
- Remove the dependency of csi-translation-lib module on apiserver/cloud-provider/controller-manager (#95543, @wawa0210) [SIG Release]
- Scheduler framework interface moved from pkg/scheduler/framework/v1alpha to pkg/scheduler/framework (#95069, @farah) [SIG Scheduling, Storage

and Testing]
- Service.beta.kubernetes.io/azure-load-balancer-disable-tcp-reset is removed. All Standard load balancers will always enable tcp resets. (#94297, @MarcPow) [SIG Cloud Provider]
- Stop propagating SelfLink (deprecated in 1.16) in kube-apiserver (#94397, @wojtek-t) [SIG API Machinery and Testing]
- Strip unnecessary security contexts on Windows (#93475, @ravisantoshgudimetla) [SIG Node, Testing and Windows]
- To ensure the code be strong, add unit test for GetAddressAndDialer (#93180, @FreeZhang61) [SIG Node]
- UDP and SCTP protocols can left stale connections that need to be cleared to avoid services disruption, but they can cause problems that are hard to debug. Kubernetes components using a loglevel greater or equal than 4 will log the conntrack operations and its output, to show the entries that were deleted. (#95694, @aojea) [SIG Network]
- Update CNI plugins to v0.8.7 (#94367, @justaugustus) [SIG Cloud Provider, Network, Node, Release and Testing]
- Update cri-tools to v1.19.0 (#94307, @xmudrii) [SIG Cloud Provider]
- Update etcd client side to v3.4.13 (#94259, @jingyih) [SIG API Machinery and Cloud Provider]
- Users will now be able to configure all supported values for AWS NLB health check interval and thresholds for new resources. (#96312, @kishorj) [SIG Cloud Provider]
- V1helpers.MatchNodeSelectorTerms now accepts just a Node and a list of Terms (#95871, @damemi) [SIG Apps, Scheduling and Storage]
- vSphere: improve logging message on node cache refresh event (#95236, @andrewsykim) [SIG Cloud Provider]
- `MatchNodeSelectorTerms` function moved to `k8s.io/component-helpers` (#95531, @damemi) [SIG Apps, Scheduling and Storage]
- `kubectl api-resources` now prints the API version (as 'API group/version', same as output of `kubectl api-versions`). The column APIGROUP is now APIVERSION (#95253, @sallyom) [SIG CLI]
- `kubectl get ingress` now prefers the `networking.k8s.io/v1` over `extensions/v1beta1` (deprecated since v1.14). To explicitly request the deprecated version, use `kubectl get ingress.v1beta1.extensions`. (#94309, @liggitt) [SIG API Machinery and CLI]

Dependencies

Added

- cloud.google.com/go/firestore: v1.1.0
- github.com/Azure/go-autorest: v14.2.0+incompatible
- github.com/armon/go-metrics: f0300d1
- github.com/armon/go-radix: 7fddfc3
- github.com/bketelsen/crypt: 5cbc8cc

- github.com/form3tech-oss/jwt-go: v3.2.2+incompatible
- github.com/fvbommel/sortorder: v1.0.1
- github.com/hashicorp/consul/api: v1.1.0
- github.com/hashicorp/consul/sdk: v0.1.1
- github.com/hashicorp/errwrap: v1.0.0
- github.com/hashicorp/go-cleanhttp: v0.5.1
- github.com/hashicorp/go-immutable-radix: v1.0.0
- github.com/hashicorp/go-msgpack: v0.5.3
- github.com/hashicorp/go-multierror: v1.0.0
- github.com/hashicorp/go-rootcerts: v1.0.0
- github.com/hashicorp/go-sockaddr: v1.0.0
- github.com/hashicorp/go-uuid: v1.0.1
- github.com/hashicorp/go.net: v0.0.1
- github.com/hashicorp/logutils: v1.0.0
- github.com/hashicorp/mdns: v1.0.0
- github.com/hashicorp/memberlist: v0.1.3
- github.com/hashicorp/serf: v0.8.2
- github.com/jmespath/go-jmespath/internal/testify: v1.5.1
- github.com/mitchellh/cli: v1.0.0
- github.com/mitchellh/go-testing-interface: v1.0.0
- github.com/mitchellh/gox: v0.4.0
- github.com/mitchellh/iochan: v1.0.0
- github.com/pascaldekloe/goe: 57f6aae
- github.com/posener/complete: v1.1.1
- github.com/ryanuber/columnize: 9b3edd6
- github.com/sean-/seed: e2103e2
- github.com/subosito/gotenv: v1.2.0
- github.com/willf/bitset: d5bec33
- gopkg.in/ini.v1: v1.51.0
- gopkg.in/yaml.v3: 9f266ea
- rsc.io/quote/v3: v3.1.0
- rsc.io/sampler: v1.3.0

Changed

- cloud.google.com/go/bigquery: v1.0.1 → v1.4.0
- cloud.google.com/go/datastore: v1.0.0 → v1.1.0
- cloud.google.com/go/pubsub: v1.0.1 → v1.2.0
- cloud.google.com/go/storage: v1.0.0 → v1.6.0
- cloud.google.com/go: v0.51.0 → v0.54.0
- github.com/Azure/go-autorest/autorest/adal: v0.8.2 → v0.9.5
- github.com/Azure/go-autorest/autorest/date: v0.2.0 → v0.3.0
- github.com/Azure/go-autorest/autorest/mocks: v0.3.0 → v0.4.1
- github.com/Azure/go-autorest/autorest: v0.9.6 → v0.11.1
- github.com/Azure/go-autorest/logger: v0.1.0 → v0.2.0
- github.com/Azure/go-autorest/tracing: v0.5.0 → v0.6.0

- github.com/Microsoft/go-winio: fc70bd9 → v0.4.15
- github.com/aws/aws-sdk-go: v1.28.2 → v1.35.24
- github.com/blang/semver: v3.5.0+incompatible → v3.5.1+incompatible
- github.com/checkpoint-restore/go-criu/v4: v4.0.2 → v4.1.0
- github.com/containerd/containerd: v1.3.3 → v1.4.1
- github.com/containerd/ttrpc: v1.0.0 → v1.0.2
- github.com/containerd/typeurl: v1.0.0 → v1.0.1
- github.com/coreos/etcd: v3.3.10+incompatible → v3.3.13+incompatible
- github.com/docker/docker: aa6a989 → bd33bbf
- github.com/go-gl/glfw/v3.3/glfw: 12ad95a → 6f7a984
- github.com/golang/groupcache: 215e871 → 8c9f03a
- github.com/golang/mock: v1.3.1 → v1.4.1
- github.com/golang/protobuf: v1.4.2 → v1.4.3
- github.com/google/cadvisor: v0.37.0 → v0.38.5
- github.com/google/go-cmp: v0.4.0 → v0.5.2
- github.com/google/pprof: d4f498a → 1ebb73c
- github.com/google/uuid: v1.1.1 → v1.1.2
- github.com/gorilla/mux: v1.7.3 → v1.8.0
- github.com/gorilla/websocket: v1.4.0 → v1.4.2
- github.com/jmespath/go-jmespath: c2b33e8 → v0.4.0
- github.com/karrick/godirwalk: v1.7.5 → v1.16.1
- github.com/opencontainers/go-digest: v1.0.0-rc1 → v1.0.0
- github.com/opencontainers/runc: 819fcc6 → v1.0.0-rc92
- github.com/opencontainers/runtime-spec: 237cc4f → 4d89ac9
- github.com/opencontainers/selinux: v1.5.2 → v1.6.0
- github.com/prometheus/procfs: v0.1.3 → v0.2.0
- github.com/quobyte/api: v0.1.2 → v0.1.8
- github.com/spf13/cobra: v1.0.0 → v1.1.1
- github.com/spf13/viper: v1.4.0 → v1.7.0
- github.com/storageos/go-api: 343b3ef → v2.2.0+incompatible
- github.com/stretchr/testify: v1.4.0 → v1.6.1
- github.com/vishvananda/netns: 52d707b → db3c7e5
- go.etcd.io/etcd: 17cef6e → dd1b699
- go.opencensus.io: v0.22.2 → v0.22.3
- golang.org/x/crypto: 75b2880 → 7f63de1
- golang.org/x/exp: da58074 → 6cc2880
- golang.org/x/lint: fdd1cda → 738671d
- golang.org/x/net: ab34263 → 69a7880
- golang.org/x/oauth2: 858c2ad → bf48bf1
- golang.org/x/sys: ed371f2 → 5cba982
- golang.org/x/text: v0.3.3 → v0.3.4
- golang.org/x/time: 555d28b → 3af7569
- golang.org/x/xerrors: 9bdfabe → 5ec99f8
- google.golang.org/api: v0.15.1 → v0.20.0
- google.golang.org/genproto: cb27e3a → 8816d57
- google.golang.org/grpc: v1.27.0 → v1.27.1

- google.golang.org/protobuf: v1.24.0 → v1.25.0
- honnef.co/go/tools: v0.0.1-2019.2.3 → v0.0.1-2020.1.3
- k8s.io/gengo: 8167cfd → 83324d8
- k8s.io/klog/v2: v2.2.0 → v2.4.0
- k8s.io/kube-openapi: 6aeccd4 → d219536
- k8s.io/system-validators: v1.1.2 → v1.2.0
- k8s.io/utils: d5654de → 67b214c
- sigs.k8s.io/apiserver-network-proxy/konnectivity-client: v0.0.9 → v0.0.14
- sigs.k8s.io/structured-merge-diff/v4: v4.0.1 → v4.0.2

Removed

- github.com/armon/consul-api: eb2c6b5
- github.com/go-ini/ini: v1.9.0
- github.com/ugorji/go: v1.1.4
- github.com/xlab/handysort: fb3537e
- github.com/xordataexchange/crypt: b2862e3
- vbom.ml/util: db5cfe1

v1.20.0-rc.0

Downloads for v1.20.0-rc.0

Source Code

filename	sha512 hash
kubernetes.tar.gz	acfee8658831f9503fccda0904798405434f17be7064a361a9f34c6ed04f1c0f685e79c
kubernetes-src.tar.gz	9d962f8845e1fa221649cf0c0e178f0f03808486c49ea15ab5ec67861ec5aa948cf18b

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	062b57f1a450fe01d6184f104d81d376bdf5720010412821e315fd9b1b622a400ac9
kubernetes-client-linux-386.tar.gz	86e96d2c2046c5e62e02bef30a6643f25e01f1b3eba256cab7dd61252908540c26cb0
kubernetes-client-linux-amd64.tar.gz	619d3afb9ce902368390e71633396010e88e87c5fd848e3adc71571d1d4a25be0025
kubernetes-client-linux-arm.tar.gz	60965150a60ab3d05a248339786e0c7da4b89a04539c3719737b13d71302bac1dd9
kubernetes-client-linux-arm64.tar.gz	688e064f4ef6a17189dbb5af468c279b9de35e215c40500fb97b1d46692d2227470
kubernetes-client-linux-ppc64le.tar.gz	47b8abc02b42b3b1de67da184921b5801d7e3cb09befac840c85913193fc5ac4e5e3

filename	sha512 hash
kubernetes-client-linux-s390x.tar.gz	971b41d3169f30e6c412e0254c180636abb7ccc8dcee6641b0e9877b69752fc61aa3
kubernetes-client-windows-386.tar.gz	2d34e8387e31531d9aca5655f2f0d18e75b01825dc1c39b7beb73a7b7b610e2ba42
kubernetes-client-windows-amd64.tar.gz	f909640f4140693bb871936f10a40e79b43502105d0adb318b35bb7a64a770ad9d0

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	0ea4458ae34108c633b4d48f1f128c6274dbc82b613492e78b3e0a2f656ac0df0bb9
kubernetes-server-linux-arm.tar.gz	aef6a4d457faa29936603370f29a8523bb274211c3cb5101bd31aaf469c91ba6bd14
kubernetes-server-linux-arm64.tar.gz	4829f473e9d60f9929ad17c70fdc2b6b6509ed75418be0b23a75b28580949736cb5
kubernetes-server-linux-ppc64le.tar.gz	9ab0790d382a3e28df1c013762c09da0085449cfd09d176d80be932806c24a715ea
kubernetes-server-linux-s390x.tar.gz	98670b587e299856dd9821b7517a35f9a65835b915b153de08b66c54d82160438b

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	699e9c8d1837198312eade8eb6fec390f6a2fea9e08207d2f58e8bb6e3e799028aca6
kubernetes-node-linux-arm.tar.gz	f3b5eab0669490e3cd7e802693daf3555d08323dfff6e73a881fce00fed4690e8bdaf1
kubernetes-node-linux-arm64.tar.gz	e5012f77363561a609aaf791baaa17d09009819c4085a57132e5feb5366275a54640
kubernetes-node-linux-ppc64le.tar.gz	2a6d6501620b1a9838dff05c66a40260cc22154a28027813346eb16e18c386bc3865
kubernetes-node-linux-s390x.tar.gz	5eca02777519e31428a1e5842fe540b813fb8c929c341bbc71dcfd60d98deb89060f8
kubernetes-node-windows-amd64.tar.gz	8ace02e7623dff894e863a2e0fa7dfb916368431d1723170713fe82e334c0ae0481b3

Changelog since v1.20.0-beta.2

Changes by Kind

Feature

- Kubernetes is now built using go1.15.5
  - build: Update to k/repo-infra@v0.1.2 (supports go1.15.5) (#95776, @justaugustus) [SIG Cloud Provider, Instrumentation, Release and Testing]

Failing Test

- Resolves an issue running Ingress conformance tests on clusters which use finalizers on Ingress objects to manage releasing load balancer resources (#96742, @spencerhance) [SIG Network and Testing]
- The Conformance test "validates that there is no conflict between pods with same hostPort but different hostIP and protocol" now validates the connectivity to each hostPort, in addition to the functionality. (#96627, @aojea) [SIG Scheduling and Testing]

Bug or Regression

- Bump node-problem-detector version to v0.8.5 to fix OOM detection in with Linux kernels 5.1+ (#96716, @tosi3k) [SIG Cloud Provider, Scalability and Testing]
- Changes to timeout parameter handling in 1.20.0-beta.2 have been reverted to avoid breaking backwards compatibility with existing clients. (#96727, @liggitt) [SIG API Machinery and Testing]
- Duplicate owner reference entries in create/update/patch requests now get deduplicated by the API server. The client sending the request now receives a warning header in the API response. Clients should stop sending requests with duplicate owner references. The API server may reject such requests as early as 1.24. (#96185, @roycaihw) [SIG API Machinery and Testing]
- Fix: resize Azure disk issue when it's in attached state (#96705, @andyzhangx) [SIG Cloud Provider]
- Fixed a bug where aggregator_unavailable_apiservice metrics were reported for deleted apiservices. (#96421, @dgrisonnet) [SIG API Machinery and Instrumentation]
- Fixes code generation for non-namespaced create subresources fake client test. (#96586, @Doude) [SIG API Machinery]
- HTTP/2 connection health check is enabled by default in all Kubernetes clients. The feature should work out-of-the-box. If needed, users can tune the feature via the HTTP2_READ_IDLE_TIMEOUT_SECONDS and HTTP2_PING_TIMEOUT_SECONDS environment variables. The feature is disabled if HTTP2_READ_IDLE_TIMEOUT_SECONDS is

set to 0. (#95981, @caesarxuchao) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation and Node]
- Kubeadm: fix coredns migration should be triggered when there are newdefault configs during kubeadm upgrade (#96907, @pacoxu) [SIG Cluster Lifecycle]
- Reduce volume name length for vSphere volumes (#96533, @gnufied) [SIG Storage]
- Resolves a regression in 1.19+ with workloads targeting deprecated beta os/arch labels getting stuck in NodeAffinity status on node startup. (#96810, @liggitt) [SIG Node]

Dependencies

Added

Nothing has changed.

Changed

- github.com/google/cadvisor: v0.38.4 → v0.38.5

Removed

Nothing has changed.

v1.20.0-beta.2

Downloads for v1.20.0-beta.2

Source Code

filename	sha512 hash
kubernetes.tar.gz	fe769280aa623802a949b6a35fbddadbba1d6f9933a54132a35625683719595ecf58
kubernetes-src.tar.gz	ce1c8d97c52e5189af335d673bd7e99c564816f6adebf249838f7e3f0e920f323b4e39

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	d6c14bd0f6702f4bbdf14a6abdfa4e5936de5b4efee38aa86c2bd7272967ec6d7868
kubernetes-client-linux-386.tar.gz	b923c44cb0acb91a8f6fd442c2168aa6166c848f5d037ce50a7cb11502be3698db65
kubernetes-client-linux-amd64.tar.gz	8cae14146a9034dcd4e9d69d5d700f195a77aac35f629a148960ae028ed8b4fe1221

filename	sha512 hash
kubernetes-client-linux-arm.tar.gz	1f54e5262a0432945ead57fcb924e6bfedd9ea76db1dd9ebd946787a2923c247cf16
kubernetes-client-linux-arm64.tar.gz	31cf79c01e4878a231b4881fe3ed5ef790bd5fb5419388438d3f8c6a2129e655aba9e
kubernetes-client-linux-ppc64le.tar.gz	2527948c40be2e16724d939316ad5363f15aa22ebf42d59359d8b6f757d30cfef6447
kubernetes-client-linux-s390x.tar.gz	b777ad764b3a46651ecb0846e5b7f860bb2c1c4bd4d0fcc468c6ccffb7d3b8dcb6dc
kubernetes-client-windows-386.tar.gz	8a2f58aaab01be9fe298e4d01456536047cbdd39a37d3e325c1f69ceab3a0504998b
kubernetes-client-windows-amd64.tar.gz	2f69cda177a178df149f5de66b7dba7f5ce14c1ffeb7c8d7dc4130c701b47d89bb2fb

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	3ecaac0213d369eab691ac55376821a80df5013cb12e1263f18d1c236a9e49d42b3c
kubernetes-server-linux-arm.tar.gz	580030b57ff207e177208fec0801a43389cae10cc2c9306327d354e7be6a055390184
kubernetes-server-linux-arm64.tar.gz	3e3286bd54671549fbef0dfdaaf1da99bc5c3efb32cc8d1e1985d9926520cea0c43bc
kubernetes-server-linux-ppc64le.tar.gz	9fa051e7e97648e97e26b09ab6d26be247b41b1a5938d2189204c9e6688e455afe76
kubernetes-server-linux-s390x.tar.gz	fa85d432eff586f30975c95664ac130b9f5ae02dc52b97613ed7a41324496631ea11d

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	86e631f95fe670b467ead2b88d34e0364eaa275935af433d27cc378d82dcaa22041c
kubernetes-node-linux-arm.tar.gz	a8754ff58a0e902397056b8615ab49af07aca347ba7cc4a812c238e3812234862270f
kubernetes-node-linux-arm64.tar.gz	28d727d7d08e2c856c9b4a574ef2dbf9e37236a0555f7ec5258b4284fa0582fb94b06
kubernetes-node-linux-ppc64le.tar.gz	a1283449f1a0b155c11449275e9371add544d0bdd4609d6dc737ed5f7dd228e84e2
kubernetes-node-linux-s390x.tar.gz	5806028ba15a6a9c54a34f90117bc3181428dbb0e7ced30874c9f4a953ea5a0e9b2c

filename	sha512 hash
kubernetes-node-windows-amd64.tar.gz	d5327e3b7916c78777b9b69ba0f3758c3a8645c67af80114a0ae52babd7af27bb504

Changelog since v1.20.0-beta.1

Urgent Upgrade Notes

(No, really, you MUST read this before you upgrade)

- A bug was fixed in kubelet where exec probe timeouts were not respected. Ensure that pods relying on this behavior are updated to correctly handle probe timeouts.

This change in behavior may be unexpected for some clusters and can be disabled by turning off the ExecProbeTimeout feature gate. This gate will be locked and removed in future releases so that exec probe timeouts are always respected. (#94115, @andrewsykim) [SIG Node and Testing] - For CSI drivers, kubelet no longer creates the target_path for NodePublishVolume in accordance with the CSI spec. Kubelet also no longer checks if staging and target paths are mounts or corrupted. CSI drivers need to be idempotent and do any necessary mount verification. (#88759, @andyzhangx) [SIG Storage] - Kubeadm: - The label applied to control-plane nodes "node-role.kubernetes.io/master" is now deprecated and will be removed in a future release after a GA deprecation period. - Introduce a new label "node-role.kubernetes.io/control-plane" that will be applied in parallel to "node-role.kubernetes.io/master" until the removal of the "node-role.kubernetes.io/master" label. - Make "kubeadm upgrade apply" add the "node-role.kubernetes.io/control-plane" label on existing nodes that only have the "node-role.kubernetes.io/master" label during upgrade. - Please adapt your tooling built on top of kubeadm to use the "node-role.kubernetes.io/control-plane" label.

- The taint applied to control-plane nodes "node-role.kubernetes.io/master:NoSchedule" is now deprecated and will be removed in a future release after a GA deprecation period.
- Apply toleration for a new, future taint "node-role.kubernetes.io/control-plane:NoSchedule" to the kubeadm CoreDNS / kube-dns managed manifests. Note that this taint is not yet applied to kubeadm control-plane nodes.
- Please adapt your workloads to tolerate the same future taint preemptively.

For more details see: http://git.k8s.io/enhancements/keps/sig-cluster-lifecycle/kubeadm/2067-rename-master-label-taint/README.md (#95382, @neolit123) [SIG Cluster Lifecycle]

Changes by Kind

Deprecation

- Docker support in the kubelet is now deprecated and will be removed in a future release. The kubelet uses a module called "dockershim" which implements CRI support for Docker and it has seen maintenance issues in the Kubernetes community. We encourage you to evaluate moving to a container runtime that is a full-fledged implementation of CRI (v1alpha1 or v1 compliant) as they become available. (#94624, @dims) [SIG Node]
- Kubectl: deprecate –delete-local-data (#95076, @dougsland) [SIG CLI, Cloud Provider and Scalability]

API Change

- API priority and fairness graduated to beta 1.19 servers with APF turned on should not be run in a multi-server cluster with 1.20+ servers. (#96527, @adtac) [SIG API Machinery and Testing]
- Add LoadBalancerIPMode feature gate (#92312, @Sh4d1) [SIG Apps, CLI, Cloud Provider and Network]
- Add WindowsContainerResources and Annotations to CRI-API UpdateContainerResourcesRequest (#95741, @katiewasnothere) [SIG Node]
- Add a 'serving' and `terminating` condition to the EndpointSlice API.

  `serving` tracks the readiness of endpoints regardless of their terminating state. This is distinct from `ready` since `ready` is only true when pods are not terminating. `terminating` is true when an endpoint is terminating. For pods this is any endpoint with a deletion timestamp. (#92968, @andrewsykim) [SIG Apps and Network]
- Add support for hugepages to downward API (#86102, @derekwaynecarr) [SIG API Machinery, Apps, CLI, Network, Node, Scheduling and Testing]
- Adds kubelet alpha feature, `GracefulNodeShutdown` which makes kubelet aware of node system shutdowns and result in graceful termination of pods during a system shutdown. (#96129, @bobbypage) [SIG Node]
- AppProtocol is now GA for Endpoints and Services. The ServiceAppProtocol feature gate will be deprecated in 1.21. (#96327, @robscott) [SIG Apps and Network]
- Automatic allocation of NodePorts for services with type LoadBalancer can now be disabled by setting the (new) parameter Service.spec.allocateLoadBalancerNodePorts=false. The default is to allocate NodePorts for services with type LoadBalancer which is the existing behavior. (#92744, @uablrek) [SIG Apps and Network]

- Document that ServiceTopology feature is required to use `service.spec.topologyKeys`. (#96528, @andrewsykim) [SIG Apps]
- EndpointSlice has a new NodeName field guarded by the EndpointSliceNodeName feature gate.
  - EndpointSlice topology field will be deprecated in an upcoming release.
  - EndpointSlice "IP" address type is formally removed after being deprecated in Kubernetes 1.17.
  - The discovery.k8s.io/v1alpha1 API is deprecated and will be removed in Kubernetes 1.21. (#96440, @robscott) [SIG API Machinery, Apps and Network]
- Fewer candidates are enumerated for preemption to improve performance in large clusters (#94814, @adtac) [SIG Scheduling]
- If BoundServiceAccountTokenVolume is enabled, cluster admins can use metric `serviceaccount_stale_tokens_total` to monitor workloads that are depending on the extended tokens. If there are no such workloads, turn off extended tokens by starting `kube-apiserver` with flag `--service-account-extend-token-expiration=false` (#96273, @zshihang) [SIG API Machinery and Auth]
- Introduce alpha support for exec-based container registry credential provider plugins in the kubelet. (#94196, @andrewsykim) [SIG Node and Release]
- Kube-apiserver now deletes expired kube-apiserver Lease objects:
  - The feature is under feature gate `APIServerIdentity`.
  - A flag is added to kube-apiserver: `identity-lease-garbage-collection-check-period-seconds` (#95895, @roycaihw) [SIG API Machinery, Apps, Auth and Testing]
- Move configurable fsgroup change policy for pods to beta (#96376, @gnufied) [SIG Apps and Storage]
- New flag is introduced, i.e. –topology-manager-scope=container|pod. The default value is the "container" scope. (#92967, @cezaryzukowski) [SIG Instrumentation, Node and Testing]
- NodeAffinity plugin can be configured with AddedAffinity. (#96202, @alculquicondor) [SIG Node, Scheduling and Testing]
- Promote RuntimeClass feature to GA. Promote node.k8s.io API groups from v1beta1 to v1. (#95718, @SergeyKanzhelev) [SIG Apps, Auth, Node, Scheduling and Testing]
- Reminder: The labels "failure-domain.beta.kubernetes.io/zone" and "failure-domain.beta.kubernetes.io/region" are deprecated in favor of "topology.kubernetes.io/zone" and "topology.kubernetes.io/region" respectively. All users of the "failure-domain.beta. . . " labels should switch to the "topology. . . " equivalents. (#96033, @thockin) [SIG API Machinery,

Apps, CLI, Cloud Provider, Network, Node, Scheduling, Storage and Testing]

- The usage of mixed protocol values in the same LoadBalancer Service is possible if the new feature gate MixedProtocolLBSVC is enabled. "action required" The feature gate is disabled by default. The user has to enable it for the API Server. (#94028, @janosi) [SIG API Machinery and Apps]
- This PR will introduce a feature gate CSIServiceAccountToken with two additional fields in `CSIDriverSpec`. (#93130, @zshihang) [SIG API Machinery, Apps, Auth, CLI, Network, Node, Storage and Testing]
- Users can try the CronJob controller v2 using the feature gate. This will be the default controller in future releases. (#93370, @alaypatel07) [SIG API Machinery, Apps, Auth and Testing]
- VolumeSnapshotDataSource moves to GA in 1.20 release (#95282, @xing-yang) [SIG Apps]

Feature

- TokenRequest and TokenRequestProjection are now GA features. The following flags are required by the API server:
  - `--service-account-issuer`, should be set to a URL identifying the API server that will be stable over the cluster lifetime.
  - `--service-account-key-file`, set to one or more files containing one or more public keys used to verify tokens.
  - `--service-account-signing-key-file`, set to a file containing a private key to use to sign service account tokens. Can be the same file given to `kube-controller-manager` with `--service-account-private-key-file`. (#95896, @zshihang) [SIG API Machinery and Cluster Lifecycle]
- A new set of alpha metrics are reported by the Kubernetes scheduler under the `/metrics/resources` endpoint that allow administrators to easily see the resource consumption (requests and limits for all resources on the pods) and compare it to actual pod usage or node capacity. (#94866, @smarter-clayton) [SIG API Machinery, Instrumentation, Node and Scheduling]
- Add –experimental-logging-sanitization flag enabling runtime protection from leaking sensitive data in logs (#96370, @serathius) [SIG API Machinery, Cluster Lifecycle and Instrumentation]
- Add a StorageVersionAPI feature gate that makes API server update storageversions before serving certain write requests. This feature allows the storage migrator to manage storage migration for built-in resources. Enabling internal.apiserver.k8s.io/v1alpha1 API and APIServerIdentity feature gate are required to use this feature. (#93873, @roycaihw) [SIG API Machinery, Auth and Testing]
- Add a new `vSphere` metric: `cloudprovider_vsphere_vcenter_versions`. It's content show `vCenter` hostnames with the associated server version.

(#94526, @Danil-Grigorev) [SIG Cloud Provider and Instrumentation]
- Add feature to size memory backed volumes (#94444, @derekwaynecarr) [SIG Storage and Testing]
- Add node_authorizer_actions_duration_seconds metric that can be used to estimate load to node authorizer. (#92466, @mborsz) [SIG API Machinery, Auth and Instrumentation]
- Add pod_ based CPU and memory metrics to Kubelet's /metrics/resource endpoint (#95839, @egernst) [SIG Instrumentation, Node and Testing]
- Adds a headless service on node-local-cache addon. (#88412, @stafot) [SIG Cloud Provider and Network]
- CRDs: For structural schemas, non-nullable null map fields will now be dropped and defaulted if a default is available. null items in list will continue being preserved, and fail validation if not nullable. (#95423, @apelisse) [SIG API Machinery]
- E2e test for PodFsGroupChangePolicy (#96247, @saikat-royc) [SIG Storage and Testing]
- Gradudate the Pod Resources API to G.A Introduces the pod_resources_endpoint_requests_total metric which tracks the total number of requests to the pod resources API (#92165, @RenaudWasTaken) [SIG Instrumentation, Node and Testing]
- Introduce api-extensions category which will return: mutating admission configs, validating admission configs, CRDs and APIServices when used in kubectl get, for example. (#95603, @soltysh) [SIG API Machinery]
- Kube-apiserver now maintains a Lease object to identify itself:
  - The feature is under feature gate `APIServerIdentity`.
  - Two flags are added to kube-apiserver: `identity-lease-duration-seconds`, `identity-lease-renew-interval-seconds` (#95533, @roycaihw) [SIG API Machinery]
- Kube-apiserver: The timeout used when making health check calls to etcd can now be configured with `--etcd-healthcheck-timeout`. The default timeout is 2 seconds, matching the previous behavior. (#93244, @Sh4d1) [SIG API Machinery]
- Kubectl: Previously users could not provide arguments to an external diff tool via KUBECTL_EXTERNAL_DIFF env. This release now allow users to specify args to KUBECTL_EXTERNAL_DIFF env. (#95292, @dougsland) [SIG CLI]
- Scheduler now ignores Pod update events if the resourceVersion of old and new Pods are identical. (#96071, @Huang-Wei) [SIG Scheduling]
- Support custom tags for cloud provider managed resources (#96450, @nilo19) [SIG Cloud Provider]
- Support customize load balancer health probe protocol and request path (#96338, @nilo19) [SIG Cloud Provider]
- Support multiple standard load balancers in one cluster (#96111, @nilo19) [SIG Cloud Provider]
- The beta `RootCAConfigMap` feature gate is enabled by default and causes kube-controller-manager to publish a "kube-root-ca.crt" ConfigMap to every namespace. This ConfigMap contains a CA bundle used for veri-

fying connections to the kube-apiserver. (#96197, @zshihang) [SIG API Machinery, Apps, Auth and Testing]
- The kubelet_runtime_operations_duration_seconds metric got additional buckets of 60, 300, 600, 900 and 1200 seconds (#96054, @alvaroaleman) [SIG Instrumentation and Node]
- There is a new pv_collector_total_pv_count metric that counts persistent volumes by the volume plugin name and volume mode. (#95719, @tsmetana) [SIG Apps, Instrumentation, Storage and Testing]
- Volume snapshot e2e test to validate PVC and VolumeSnapshotContent finalizer (#95863, @RaunakShah) [SIG Cloud Provider, Storage and Testing]
- Warns user when executing kubectl apply/diff to resource currently being deleted. (#95544, @SaiHarshaK) [SIG CLI]
- `kubectl alpha debug` has graduated to beta and is now `kubectl debug`. (#96138, @verb) [SIG CLI and Testing]
- `kubectl debug` gains support for changing container images when copying a pod for debugging, similar to how `kubectl set image` works. See `kubectl help debug` for more information. (#96058, @verb) [SIG CLI]

Documentation

- Updates docs and guidance on cloud provider InstancesV2 and Zones interface for external cloud providers:
  - removes experimental warning for InstancesV2
  - document that implementation of InstancesV2 will disable calls to Zones
  - deprecate Zones in favor of InstancesV2 (#96397, @andrewsykim) [SIG Cloud Provider]

Bug or Regression

- Change plugin name in fsgroupapplymetrics of csi and flexvolume to distinguish different driver (#95892, @JornShen) [SIG Instrumentation, Storage and Testing]
- Clear UDP conntrack entry on endpoint changes when using nodeport (#71573, @JacobTanenbaum) [SIG Network]
- Exposes and sets a default timeout for the TokenReview client for DelegatingAuthenticationOptions (#96217, @p0lyn0mial) [SIG API Machinery and Cloud Provider]
- Fix CVE-2020-8555 for Quobyte client connections. (#95206, @misterikkit) [SIG Storage]
- Fix IP fragmentation of UDP and TCP packets not supported issues on LoadBalancer rules (#96464, @nilo19) [SIG Cloud Provider]
- Fix a bug that DefaultPreemption plugin is disabled when using (legacy) scheduler policy. (#96439, @Huang-Wei) [SIG Scheduling and Testing]
- Fix bug in JSON path parser where an error occurs when a range is empty

(#95933, @brianpursley) [SIG API Machinery]
- Fix client-go prometheus metrics to correctly present the API path accessed in some environments. (#74363, @aanm) [SIG API Machinery]
- Fix memory leak in kube-apiserver when underlying time goes forth and back. (#96266, @chenyw1990) [SIG API Machinery]
- Fix paging issues when Azure API returns empty values with non-empty nextLink (#96211, @feiskyer) [SIG Cloud Provider]
- Fix pull image error from multiple ACRs using azure managed identity (#96355, @andyzhangx) [SIG Cloud Provider]
- Fix vSphere volumes that could be erroneously attached to wrong node (#96224, @gnufied) [SIG Cloud Provider and Storage]
- Fixed a bug that prevents kubectl to validate CRDs with schema using x-kubernetes-preserve-unknown-fields on object fields. (#96369, @gautierdelorme) [SIG API Machinery and Testing]
- For vSphere Cloud Provider, If VM of worker node is deleted, the node will also be deleted by node controller (#92608, @lubronzhan) [SIG Cloud Provider]
- HTTP/2 connection health check is enabled by default in all Kubernetes clients. The feature should work out-of-the-box. If needed, users can tune the feature via the HTTP2_READ_IDLE_TIMEOUT_SECONDS and HTTP2_PING_TIMEOUT_SECONDS environment variables. The feature is disabled if HTTP2_READ_IDLE_TIMEOUT_SECONDS is set to 0. (#95981, @caesarxuchao) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation and Node]
- If the user specifies an invalid timeout in the request URL, the request will be aborted with an HTTP 400.
  - If the user specifies a timeout in the request URL that exceeds the maximum request deadline allowed by the apiserver, the request will be aborted with an HTTP 400. (#96061, @tkashem) [SIG API Machinery, Network and Testing]
- Improve error messages related to nodePort endpoint changes conntrack entries cleanup. (#96251, @ravens) [SIG Network]
- Print go stack traces at -v=4 and not -v=2 (#94663, @soltysh) [SIG CLI]
- Remove ready file and its directory (which is created during volume SetUp) during emptyDir volume TearDown. (#95770, @jingxu97) [SIG Storage]
- Resolves non-deterministic behavior of the garbage collection controller when ownerReferences with incorrect data are encountered. Events with a reason of `OwnerRefInvalidNamespace` are recorded when namespace mismatches between child and owner objects are detected.
  - A namespaced object with an ownerReference referencing a uid of a namespaced kind which does not exist in the same namespace is now consistently treated as though that owner does not exist, and the child object is deleted.
  - A cluster-scoped object with an ownerReference referencing a uid of a namespaced kind is now consistently treated as though that owner is not resolvable, and the child object is ignored by the garbage collector.

(#92743, @liggitt) [SIG API Machinery, Apps and Testing]
- Skip [k8s.io/kubernetes@v1.19.0/test/e2e/storage/testsuites/base.go:162]: Driver azure-disk doesn't support snapshot type DynamicSnapshot – skipping skip [k8s.io/kubernetes@v1.19.0/test/e2e/storage/testsuites/base.go:185]: Driver azure-disk doesn't support ntfs – skipping (#96144, @qinpingli) [SIG Storage and Testing]
- The AWS network load balancer attributes can now be specified during service creation (#95247, @kishorj) [SIG Cloud Provider]
- The kube-apiserver will no longer serve APIs that should have been deleted in GA non-alpha levels. Alpha levels will continue to serve the removed APIs so that CI doesn't immediately break. (#96525, @deads2k) [SIG API Machinery]
- Update max azure data disk count map (#96308, @andyzhangx) [SIG Cloud Provider and Storage]
- Update the route table tag in the route reconcile loop (#96545, @nilo19) [SIG Cloud Provider]
- Volume binding: report UnschedulableAndUnresolvable status instead of an error when bound PVs not found (#95541, @cofyc) [SIG Apps, Scheduling and Storage]
- [kubectl] Fail when local source file doesn't exist (#90333, @bamarni) [SIG CLI]

Other (Cleanup or Flake)

- Handle slow CronJob lister in CronJob controller v2 and improve memory footprint. (#96443, @alaypatel07) [SIG Apps]
- –redirect-container-streaming is no longer functional. The flag will be removed in v1.22 (#95935, @tallclair) [SIG Node]
- A new metric `requestAbortsTotal` has been introduced that counts aborted requests for each `group`, `version`, `verb`, `resource`, `subresource` and `scope`. (#95002, @p0lyn0mial) [SIG API Machinery, Cloud Provider, Instrumentation and Scheduling]
- API priority and fairness metrics use snake_case in label names (#96236, @adtac) [SIG API Machinery, Cluster Lifecycle, Instrumentation and Testing]
- Applies translations on all command descriptions (#95439, @HerrNaN) [SIG CLI]
- Changed: default "Accept-Encoding" header removed from HTTP probes. See https://kubernetes.io/docs/tasks/configure-pod-container/configure-liveness-readiness-startup-probes/#http-probes (#96127, @fonsecas72) [SIG Network and Node]
- Generators for services are removed from kubectl (#95256, @Git-Jiro) [SIG CLI]
- Introduce kubectl-convert plugin. (#96190, @soltysh) [SIG CLI and Testing]
- Kube-scheduler now logs processed component config at startup (#96426,

@damemi) [SIG Scheduling]
- Users will now be able to configure all supported values for AWS NLB health check interval and thresholds for new resources. (#96312, @kishorj) [SIG Cloud Provider]

Dependencies

Added

- cloud.google.com/go/firestore: v1.1.0
- github.com/armon/go-metrics: f0300d1
- github.com/armon/go-radix: 7fddfc3
- github.com/bketelsen/crypt: 5cbc8cc
- github.com/hashicorp/consul/api: v1.1.0
- github.com/hashicorp/consul/sdk: v0.1.1
- github.com/hashicorp/errwrap: v1.0.0
- github.com/hashicorp/go-cleanhttp: v0.5.1
- github.com/hashicorp/go-immutable-radix: v1.0.0
- github.com/hashicorp/go-msgpack: v0.5.3
- github.com/hashicorp/go-multierror: v1.0.0
- github.com/hashicorp/go-rootcerts: v1.0.0
- github.com/hashicorp/go-sockaddr: v1.0.0
- github.com/hashicorp/go-uuid: v1.0.1
- github.com/hashicorp/go.net: v0.0.1
- github.com/hashicorp/logutils: v1.0.0
- github.com/hashicorp/mdns: v1.0.0
- github.com/hashicorp/memberlist: v0.1.3
- github.com/hashicorp/serf: v0.8.2
- github.com/mitchellh/cli: v1.0.0
- github.com/mitchellh/go-testing-interface: v1.0.0
- github.com/mitchellh/gox: v0.4.0
- github.com/mitchellh/iochan: v1.0.0
- github.com/pascaldekloe/goe: 57f6aae
- github.com/posener/complete: v1.1.1
- github.com/ryanuber/columnize: 9b3edd6
- github.com/sean-/seed: e2103e2
- github.com/subosito/gotenv: v1.2.0
- github.com/willf/bitset: d5bec33
- gopkg.in/ini.v1: v1.51.0
- gopkg.in/yaml.v3: 9f266ea
- rsc.io/quote/v3: v3.1.0
- rsc.io/sampler: v1.3.0

Changed

- cloud.google.com/go/bigquery: v1.0.1 → v1.4.0
- cloud.google.com/go/datastore: v1.0.0 → v1.1.0

- cloud.google.com/go/pubsub: v1.0.1 → v1.2.0
- cloud.google.com/go/storage: v1.0.0 → v1.6.0
- cloud.google.com/go: v0.51.0 → v0.54.0
- github.com/Microsoft/go-winio: fc70bd9 → v0.4.15
- github.com/aws/aws-sdk-go: v1.35.5 → v1.35.24
- github.com/blang/semver: v3.5.0+incompatible → v3.5.1+incompatible
- github.com/checkpoint-restore/go-criu/v4: v4.0.2 → v4.1.0
- github.com/containerd/containerd: v1.3.3 → v1.4.1
- github.com/containerd/ttrpc: v1.0.0 → v1.0.2
- github.com/containerd/typeurl: v1.0.0 → v1.0.1
- github.com/coreos/etcd: v3.3.10+incompatible → v3.3.13+incompatible
- github.com/docker/docker: aa6a989 → bd33bbf
- github.com/go-gl/glfw/v3.3/glfw: 12ad95a → 6f7a984
- github.com/golang/groupcache: 215e871 → 8c9f03a
- github.com/golang/mock: v1.3.1 → v1.4.1
- github.com/golang/protobuf: v1.4.2 → v1.4.3
- github.com/google/cadvisor: v0.37.0 → v0.38.4
- github.com/google/go-cmp: v0.4.0 → v0.5.2
- github.com/google/pprof: d4f498a → 1ebb73c
- github.com/google/uuid: v1.1.1 → v1.1.2
- github.com/gorilla/mux: v1.7.3 → v1.8.0
- github.com/gorilla/websocket: v1.4.0 → v1.4.2
- github.com/karrick/godirwalk: v1.7.5 → v1.16.1
- github.com/opencontainers/runc: 819fcc6 → v1.0.0-rc92
- github.com/opencontainers/runtime-spec: 237cc4f → 4d89ac9
- github.com/opencontainers/selinux: v1.5.2 → v1.6.0
- github.com/prometheus/procfs: v0.1.3 → v0.2.0
- github.com/quobyte/api: v0.1.2 → v0.1.8
- github.com/spf13/cobra: v1.0.0 → v1.1.1
- github.com/spf13/viper: v1.4.0 → v1.7.0
- github.com/stretchr/testify: v1.4.0 → v1.6.1
- github.com/vishvananda/netns: 52d707b → db3c7e5
- go.opencensus.io: v0.22.2 → v0.22.3
- golang.org/x/exp: da58074 → 6cc2880
- golang.org/x/lint: fdd1cda → 738671d
- golang.org/x/net: ab34263 → 69a7880
- golang.org/x/oauth2: 858c2ad → bf48bf1
- golang.org/x/sys: ed371f2 → 5cba982
- golang.org/x/text: v0.3.3 → v0.3.4
- golang.org/x/time: 555d28b → 3af7569
- golang.org/x/xerrors: 9bdfabe → 5ec99f8
- google.golang.org/api: v0.15.1 → v0.20.0
- google.golang.org/genproto: cb27e3a → 8816d57
- google.golang.org/grpc: v1.27.0 → v1.27.1
- google.golang.org/protobuf: v1.24.0 → v1.25.0
- honnef.co/go/tools: v0.0.1-2019.2.3 → v0.0.1-2020.1.3

- k8s.io/gengo: 8167cfd → 83324d8
- k8s.io/klog/v2: v2.2.0 → v2.4.0
- k8s.io/kube-openapi: 8b50664 → d219536
- k8s.io/utils: d5654de → 67b214c
- sigs.k8s.io/apiserver-network-proxy/konnectivity-client: v0.0.12 → v0.0.14
- sigs.k8s.io/structured-merge-diff/v4: b3cf1e8 → v4.0.2

Removed

- github.com/armon/consul-api: eb2c6b5
- github.com/go-ini/ini: v1.9.0
- github.com/ugorji/go: v1.1.4
- github.com/xordataexchange/crypt: b2862e3

v1.20.0-beta.1

Downloads for v1.20.0-beta.1

Source Code

filename	sha512 hash
kubernetes.tar.gz	4eddf4850c2d57751696f352d0667309339090aeb30ff93e8db8a22c6cdebf74cb2d5
kubernetes-src.tar.gz	59de5221162e9b6d88f5abbdb99765cb2b2e501498ea853fb65f2abe390211e28d9f

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	d69ffed19b034a4221fc084e43ac293cf392e98febf5bf580f8d92307a8421d8b3aab1
kubernetes-client-linux-386.tar.gz	1b542e165860c4adcd4550adc19b86c3db8cd75d2a1b8db17becc752da78b730ee4
kubernetes-client-linux-amd64.tar.gz	90ad52785eecb43a6f9035b92b6ba39fc84e67f8bc91cf098e70f8cfdd405c4b9d5c0
kubernetes-client-linux-arm.tar.gz	d0cb3322b056e1821679afa70728ffc0d3375e8f3326dabbe8185be2e60f665ab8985
kubernetes-client-linux-arm64.tar.gz	3aecc8197e0aa368408624add28a2dd5e73f0d8a48e5e33c19edf91d5323071d16a2
kubernetes-client-linux-ppc64le.tar.gz	6ff145058f62d478b98f1e418e272555bfb5c7861834fbbf10a8fb334cc7ff09b32f266
kubernetes-client-linux-s390x.tar.gz	ff7b8bb894076e05a3524f6327a4a6353b990466f3292e84c92826cb64b5c82b3855
kubernetes-client-windows-386.tar.gz	6c6dcac9c725605763a130b5a975f2b560aa976a5c809d4e0887900701b707baccb9

filename	sha512 hash
kubernetes-client-windows-amd64.tar.gz	d12e3a29c960f0ddd1b9aabf5426ac1259863ac6c8f2be1736ebeb57ddca6b1c747e

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	904e8c049179e071c6caa65f525f465260bb4d4318a6dd9cc05be2172f39f7cfc69d1
kubernetes-server-linux-arm.tar.gz	5934959374868aed8d4294de84411972660bca7b2e952201a9403f37e40c60a5c53e
kubernetes-server-linux-arm64.tar.gz	4c884585970f80dc5462d9a734d7d5be9558b36c6e326a8a3139423efbd7284fa9f5
kubernetes-server-linux-ppc64le.tar.gz	235b78b08440350dcb9f13b63f7722bd090c672d8e724ca5d409256e5a5d4f46d43
kubernetes-server-linux-s390x.tar.gz	220fc9351702b3ecdcf79089892ceb26753a8a1deaf46922ffb3d3b62b999c93fef894

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	fe59d3a1f21c47bab126f689687657f77fbcb46a2caeef48eecd073b2b22879f997a46
kubernetes-node-linux-arm.tar.gz	93e545aa963cfd11e0b2c6d47669b5ef70c5a86ef80c3353c1a074396bff1e8e7371dc
kubernetes-node-linux-arm64.tar.gz	5e0f177f9bec406a668d4b37e69b191208551fdf289c82b5ec898959da4f8a00a2b06
kubernetes-node-linux-ppc64le.tar.gz	574412059e4d257eb904cd4892a075b6a2cde27adfa4976ee64c46d6768facece3384
kubernetes-node-linux-s390x.tar.gz	b1ffaa6d7f77d89885c642663cb14a86f3e2ec2afd223e3bb2000962758cf0f1532096
kubernetes-node-windows-amd64.tar.gz	388983765213cf3bdc1f8b27103ed79e39028767e5f1571e35ed1f91ed100e49f3027

Changelog since v1.20.0-beta.0

Changes by Kind

Deprecation

- ACTION REQUIRED: The kube-apiserver ability to serve on an insecure port, deprecated since v1.10, has been removed. The insecure address

flags `--address` and `--insecure-bind-address` have no effect in kube-apiserver and will be removed in v1.24. The insecure port flags `--port` and `--insecure-port` may only be set to 0 and will be removed in v1.24. (#95856, @knight42) [SIG API Machinery, Node and Testing]

API Change

- – `TokenRequest` and `TokenRequestProjection` features have been promoted to GA. This feature allows generating service account tokens that are not visible in Secret objects and are tied to the lifetime of a Pod object. See https://kubernetes.io/docs/tasks/configure-pod-container/configure-service-account/#service-account-token-volume-projection for details on configuring and using this feature. The `TokenRequest` and `TokenRequestProjection` feature gates will be removed in v1.21.
  – kubeadm's kube-apiserver Pod manifest now includes the following flags by default "–service-account-key-file", "–service-account-signing-key-file", "–service-account-issuer". (#93258, @zshihang) [SIG API Machinery, Auth, Cluster Lifecycle, Storage and Testing]
- Certain fields on Service objects will be automatically cleared when changing the service's `type` to a mode that does not need those fields. For example, changing from type=LoadBalancer to type=ClusterIP will clear the NodePort assignments, rather than forcing the user to clear them. (#95196, @thockin) [SIG API Machinery, Apps, Network and Testing]
- Services will now have a `clusterIPs` field to go with `clusterIP`. `clusterIPs[0]` is a synonym for `clusterIP` and will be synchronized on create and update operations. (#95894, @thockin) [SIG Network]

Feature

- A new metric `apiserver_request_filter_duration_seconds` has been introduced that measures request filter latency in seconds. (#95207, @tkashem) [SIG API Machinery and Instrumentation]
- Add a new flag to set priority for the kubelet on Windows nodes so that workloads cannot overwhelm the node there by disrupting kubelet process. (#96051, @ravisantoshgudimetla) [SIG Node and Windows]
- Changed: default "Accept: */*" header added to HTTP probes. See https://kubernetes.io/docs/tasks/configure-pod-container/configure-liveness-readiness-startup-probes/#http-probes (https://github.com/kubernetes/website/pull/24756) (#95641, @fonsecas72) [SIG Network and Node]
- Client-go credential plugins can now be passed in the current cluster information via the KUBERNETES_EXEC_INFO environment variable. (#95489, @ankeesler) [SIG API Machinery and Auth]
- Kube-apiserver: added support for compressing rotated audit log files with `--audit-log-compress` (#94066, @lojies) [SIG API Machinery and Auth]

Documentation

- Fake dynamic client: document that List does not preserve TypeMeta in UnstructuredList (#95117, @andrewsykim) [SIG API Machinery]

Bug or Regression

- Added support to kube-proxy for externalTrafficPolicy=Local setting via Direct Server Return (DSR) load balancers on Windows. (#93166, @elweb9858) [SIG Network]
- Disable watchcache for events (#96052, @wojtek-t) [SIG API Machinery]
- Disabled `LocalStorageCapacityIsolation` feature gate is honored during scheduling. (#96092, @Huang-Wei) [SIG Scheduling]
- Fix bug in JSON path parser where an error occurs when a range is empty (#95933, @brianpursley) [SIG API Machinery]
- Fix k8s.io/apimachinery/pkg/api/meta.SetStatusCondition to update ObservedGeneration (#95961, @KnicKnic) [SIG API Machinery]
- Fixed a regression which prevented pods with `docker/default` seccomp annotations from being created in 1.19 if a PodSecurityPolicy was in place which did not allow `runtime/default` seccomp profiles. (#95985, @saschagrunert) [SIG Auth]
- Kubectl: print error if users place flags before plugin name (#92343, @knight42) [SIG CLI]
- When creating a PVC with the volume.beta.kubernetes.io/storage-provisioner annotation already set, the PV controller might have incorrectly deleted the newly provisioned PV instead of binding it to the PVC, depending on timing and system load. (#95909, @pohly) [SIG Apps and Storage]

Other (Cleanup or Flake)

- Kubectl: the `generator` flag of `kubectl autoscale` has been deprecated and has no effect, it will be removed in a feature release (#92998, @SataQiu) [SIG CLI]
- V1helpers.MatchNodeSelectorTerms now accepts just a Node and a list of Terms (#95871, @damemi) [SIG Apps, Scheduling and Storage]
- `MatchNodeSelectorTerms` function moved to `k8s.io/component-helpers` (#95531, @damemi) [SIG Apps, Scheduling and Storage]

Dependencies

Added

Nothing has changed.

Changed

Nothing has changed.

Removed

Nothing has changed.

v1.20.0-beta.0

Downloads for v1.20.0-beta.0

Source Code

filename	sha512 hash
kubernetes.tar.gz	385e49e32bbd6996f07bcadbf42285755b8a8ef9826ee1ba42bd82c65827cf13f63e5
kubernetes-src.tar.gz	842e80f6dcad461426fb699de8a55fde8621d76a94e54288fe9939cc1a3bbd0f4799a

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	bde5e7d9ee3e79d1e69465a3ddb4bb36819a4f281b5c01a7976816d7c784410812d
kubernetes-client-linux-386.tar.gz	721bb8444c9e0d7a9f8461e3f5428882d76fcb3def6eb11b8e8e08fae7f738363069
kubernetes-client-linux-amd64.tar.gz	71e4edc41afbd65f813e7ecbc22b27c95f248446f005e288d758138dc4cc708735be7
kubernetes-client-linux-arm.tar.gz	bbefc749156f63898973f2f7c7a6f1467481329fb430d641fe659b497e64d679886482
kubernetes-client-linux-arm64.tar.gz	9803190685058b4b64d002c2fbfb313308bcea4734ed53a8c340cfdae4894d8cb13b
kubernetes-client-linux-ppc64le.tar.gz	bcdceea64cba1ae38ea2bab50d8fd77c53f6d673de12566050b0e3c204334610e6c1
kubernetes-client-linux-s390x.tar.gz	41e36d00867e90012d5d5adfabfaae8d9f5a9fd32f290811e3c368e11822916b973af
kubernetes-client-windows-386.tar.gz	c50fec5aec2d0e742f851f25c236cb73e76f8fc73b0908049a10ae736c0205b8fff83eb
kubernetes-client-windows-amd64.tar.gz	0fd6777c349908b6d627e849ea2d34c048b8de41f7df8a19898623f597e6debd35b7

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	30d982424ca64bf0923503ae8195b2e2a59497096b2d9e58dfd491cd6639633027ac

filename	sha512 hash
kubernetes-server-linux-arm.tar.gz	f08b62be9bc6f0745f820b0083c7a31eedb2ce370a037c768459a59192107b944c8f4
kubernetes-server-linux-arm64.tar.gz	e3472b5b3dfae0a56e5363d52062b1e4a9fc227a05e0cf5ece38233b2c442f427970a
kubernetes-server-linux-ppc64le.tar.gz	06c254e0a62f755d31bc40093d86c44974f0a60308716cc3214a6b3c249a4d74534d
kubernetes-server-linux-s390x.tar.gz	2edeb4411c26a0de057a66787091ab1044f71774a464aed898ffee26634a40127181c

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	cc1d5b94b86070b5e7746d7aaeaeac3b3a5e5ebbff1ec33885f7eeab270a6177d593c
kubernetes-node-linux-arm.tar.gz	75e82c7c9122add3b24695b94dcb0723c52420c3956abf47511e37785aa48a1fa825
kubernetes-node-linux-arm64.tar.gz	16ef27c40bf4d678a55fcd3d3f7d09f1597eec2cc58f9950946f0901e52b82287be397
kubernetes-node-linux-ppc64le.tar.gz	939865f2c4cb6a8934f22a06223e416dec5f768ffc1010314586149470420a1d62aef9
kubernetes-node-linux-s390x.tar.gz	bbfdd844075fb816079af7b73d99bc1a78f41717cdbadb043f6f5872b4dc47bc619f
kubernetes-node-windows-amd64.tar.gz	a2b3ea40086fd71aed71a4858fd3fc79fd1907bc9ea8048ff3c82ec56477b0a791b72

Changelog since v1.20.0-alpha.3

Urgent Upgrade Notes

(No, really, you MUST read this before you upgrade)

- Kubeadm: improve the validation of serviceSubnet and podSubnet. ServiceSubnet has to be limited in size, due to implementation details, and the mask can not allocate more than 20 bits. PodSubnet validates against the corresponding cluster "–node-cidr-mask-size" of the kube-controller-manager, it fail if the values are not compatible. kubeadm no longer sets the node-mask automatically on IPv6 deployments, you must check that your IPv6 service subnet mask is compatible with the default node mask /64 or set it accordingly. Previously, for IPv6, if the podSubnet had a mask lower than /112, kubeadm calculated a node-mask to be multiple of eight and splitting the available bits to maximise the number used for nodes. (#95723, @aojea) [SIG Cluster Lifecycle]

- Windows hyper-v container feature gate is deprecated in 1.20 and will be removed in 1.21 (#95505, @wawa0210) [SIG Node and Windows]

Changes by Kind

Deprecation

- Support 'controlplane' as a valid EgressSelection type in the EgressSelectorConfiguration API. 'Master' is deprecated and will be removed in v1.22. (#95235, @andrewsykim) [SIG API Machinery]

API Change

- Add dual-stack Services (alpha). This is a BREAKING CHANGE to an alpha API. It changes the dual-stack API wrt Service from a single ipFamily field to 3 fields: ipFamilyPolicy (SingleStack, PreferDualStack, RequireDualStack), ipFamilies (a list of families assigned), and clusterIPs (inclusive of clusterIP). Most users do not need to set anything at all, defaulting will handle it for them. Services are single-stack unless the user asks for dual-stack. This is all gated by the "IPv6DualStack" feature gate. (#91824, @khenidak) [SIG API Machinery, Apps, CLI, Network, Node, Scheduling and Testing]
- Introduces a metric source for HPAs which allows scaling based on container resource usage. (#90691, @arjunrn) [SIG API Machinery, Apps, Autoscaling and CLI]

Feature

- Add a metric for time taken to perform recursive permission change (#95866, @JornShen) [SIG Instrumentation and Storage]
- Allow cross compilation of kubernetes on different platforms. (#94403, @bnrjee) [SIG Release]
- Command to start network proxy changes from 'KUBE_ENABLE_EGRESS_VIA_KONNECTIVITY_SE
  ./cluster/kube-up.sh' to 'KUBE_ENABLE_KONNECTIVITY_SERVICE=true
  ./hack/kube-up.sh' (#92669, @Jefftree) [SIG Cloud Provider]
- DefaultPodTopologySpread graduated to Beta. The feature gate is enabled by default. (#95631, @alculquicondor) [SIG Scheduling and Testing]
- Kubernetes E2E test image manifest lists now contain Windows images. (#77398, @claudiubelu) [SIG Testing and Windows]
- Support for Windows container images (OS Versions: 1809, 1903, 1909, 2004) was added the pause:3.4 image. (#91452, @claudiubelu) [SIG Node, Release and Windows]

Documentation

- Fake dynamic client: document that List does not preserve TypeMeta in UnstructuredList (#95117, @andrewsykim) [SIG API Machinery]

Bug or Regression

- Exposes and sets a default timeout for the SubjectAccessReview client for DelegatingAuthorizationOptions. (#95725, @p0lyn0mial) [SIG API Machinery and Cloud Provider]
- Alter wording to describe pods using a pvc (#95635, @RaunakShah) [SIG CLI]
- If we set SelectPolicy MinPolicySelect on scaleUp behavior or scaleDown behavior,Horizontal Pod Autoscaler doesn't automatically scale the number of pods correctly (#95647, @JoshuaAndrew) [SIG Apps and Autoscaling]
- Ignore apparmor for non-linux operating systems (#93220, @wawa0210) [SIG Node and Windows]
- Ipvs: ensure selected scheduler kernel modules are loaded (#93040, @cm-luciano) [SIG Network]
- Kubeadm: add missing "–experimental-patches" flag to "kubeadm init phase control-plane" (#95786, @Sh4d1) [SIG Cluster Lifecycle]
- Reorganized iptables rules to fix a performance issue (#95252, @tssurya) [SIG Network]
- Unhealthy pods covered by PDBs can be successfully evicted if enough healthy pods are available. (#94381, @michaelgugino) [SIG Apps]
- Update the PIP when it is not in the Succeeded provisioning state during the LB update. (#95748, @nilo19) [SIG Cloud Provider]
- Update the frontend IP config when the service's `pipName` annotation is changed (#95813, @nilo19) [SIG Cloud Provider]

Other (Cleanup or Flake)

- NO (#95690, @nikhita) [SIG Release]

Dependencies

Added

- github.com/form3tech-oss/jwt-go: v3.2.2+incompatible

Changed

- github.com/Azure/go-autorest/autorest/adal: v0.9.0 → v0.9.5
- github.com/Azure/go-autorest/autorest/mocks: v0.4.0 → v0.4.1
- golang.org/x/crypto: 75b2880 → 7f63de1

Removed

Nothing has changed.

v1.20.0-alpha.3

Downloads for v1.20.0-alpha.3

Source Code

filename	sha512 hash
kubernetes.tar.gz	542cc9e0cd97732020491456402b6e2b4f54f2714007ee1374a7d363663a1b41e82b
kubernetes-src.tar.gz	5e5d725294e552fd1d14fd6716d013222827ac2d4e2d11a7a1fdefb77b3459bbeb69

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	60004939727c75d0f06adc4449e16b43303941937c0e9ea9aca7d947e93a5aed5d11
kubernetes-client-linux-386.tar.gz	7edba9c4f1bf38fdf1fa5bff2856c05c0e127333ce19b17edf3119dc9b80462c027404
kubernetes-client-linux-amd64.tar.gz	db1818aa82d072cb3e32a2a988e66d76ecf7cebc6b8a29845fa2d6ec27f14a36e4b98
kubernetes-client-linux-arm.tar.gz	d2922e70d22364b1f5a1e94a0c115f849fe2575b231b1ba268f73a9d86fc0a9fbb78d
kubernetes-client-linux-arm64.tar.gz	2e3ae20e554c7d4fc3a8afdfcafe6bbc81d4c5e9aea036357baac7a3fdc2e8098aa8a8
kubernetes-client-linux-ppc64le.tar.gz	b54a34e572e6a86221577de376e6f7f9fcd82327f7fe94f2fc8d21f35d302db8a0f3d51
kubernetes-client-linux-s390x.tar.gz	5be1b70dc437d3ba88cb0b89cd1bc555f79896c3f5b5f4fa0fb046a0d09d758b994d
kubernetes-client-windows-386.tar.gz	88cf3f66168ef3bf9a5d3d2275b7f33799406e8205f2c202997ebec23d449aa4bb48b
kubernetes-client-windows-amd64.tar.gz	87d2d4ea1829da8cfa1a705a03ea26c759a03bd1c4d8b96f2c93264c4d172bb63a91

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	7af691fc0b13a937797912374e3b3eeb88d5262e4eb7d4ebe92a3b64b3c226cb049a
kubernetes-server-linux-arm.tar.gz	557c47870ecf5c2090b2694c8f0c8e3b4ca23df5455a37945bd037bc6fb5b8f417bf7
kubernetes-server-linux-arm64.tar.gz	981de6cf7679d743cdeef1e894314357b6809013381480187050 4ef30564e32b5675e
kubernetes-server-linux-ppc64le.tar.gz	506578a21601ccff609ae757a55e68634c15cbfecbf13de972c96b32a155ded29bd71

filename	sha512 hash
kubernetes-server-linux-s390x.tar.gz	af0cdcd4a77a7cc8060a076641615730a802f1f02dab084e41926023489efec6102d3

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	2d92c61596296279de1efae23b2b707415565d9d50cd61a7231b8d10325732b059b
kubernetes-node-linux-arm.tar.gz	c298de9b5ac1b8778729a2d8e2793ff86743033254fbc27014333880b03c519de816
kubernetes-node-linux-arm64.tar.gz	daa3c65afda6d7aff206c1494390bbcc205c2c6f8db04c10ca967a690578a01c49d49
kubernetes-node-linux-ppc64le.tar.gz	05661908bb73bfcaf9c2eae96e9a6a793db5a7a100bce6df9e057985dd53a7a5248d
kubernetes-node-linux-s390x.tar.gz	845e518e2c4ef0cef2c3b58f0b9ea5b5fe9b8a249717f789607752484c424c26ae854b
kubernetes-node-windows-amd64.tar.gz	530e536574ed2c3e5973d3c0f0fdd2b4d48ef681a7a7c02db13e605001669eeb4f4b8

Changelog since v1.20.0-alpha.2

Changes by Kind

API Change

- New parameter `defaultingType` for `PodTopologySpread` plugin allows to use k8s defined or user-provided default constraints (#95048, @alculquicondor) [SIG Scheduling]

Feature

- Added new k8s.io/component-helpers repository providing shared helper code for (core) components. (#92507, @ingvagabund) [SIG Apps, Node, Release and Scheduling]
- Adds `create ingress` command to `kubectl` (#78153, @amimof) [SIG CLI and Network]
- Kubectl create now supports creating ingress objects. (#94327, @rikatz) [SIG CLI and Network]
- New default scheduling plugins order reduces scheduling and preemption latency when taints and node affinity are used (#95539, @soulxu) [SIG Scheduling]
- SCTP support in API objects (Pod, Service, NetworkPolicy) is now GA. Note that this has no effect on whether SCTP is enabled on nodes at

the kernel level, and note that some cloud platforms and network plugins do not support SCTP traffic. (#95566, @danwinship) [SIG Apps and Network]
- Scheduling Framework: expose Run[Pre]ScorePlugins functions to PreemptionHandle which can be used in PostFilter extension point. (#93534, @everpeace) [SIG Scheduling and Testing]
- SelectorSpreadPriority maps to PodTopologySpread plugin when DefaultPodTopologySpread feature is enabled (#95448, @alculquicondor) [SIG Scheduling]
- SetHostnameAsFQDN has been graduated to Beta and therefore it is enabled by default. (#95267, @javidiaz) [SIG Node]

Bug or Regression

- An issues preventing volume expand controller to annotate the PVC with `volume.kubernetes.io/storage-resizer` when the PVC StorageClass is already updated to the out-of-tree provisioner is now fixed. (#94489, @ialidzhikov) [SIG API Machinery, Apps and Storage]
- Change the mount way from systemd to normal mount except ceph and glusterfs intree-volume. (#94916, @smileusd) [SIG Apps, Cloud Provider, Network, Node, Storage and Testing]
- Fix azure disk attach failure for disk size bigger than 4TB (#95463, @andyzhangx) [SIG Cloud Provider]
- Fix azure disk data loss issue on Windows when unmount disk (#95456, @andyzhangx) [SIG Cloud Provider and Storage]
- Fix verb & scope reporting for kube-apiserver metrics (LIST reported instead of GET) (#95562, @wojtek-t) [SIG API Machinery and Testing]
- Fix vSphere detach failure for static PVs (#95447, @gnufied) [SIG Cloud Provider and Storage]
- Fix: smb valid path error (#95583, @andyzhangx) [SIG Storage]
- Fixed a bug causing incorrect formatting of `kubectl describe ingress`. (#94985, @howardjohn) [SIG CLI and Network]
- Fixed a bug in client-go where new clients with customized `Dial`, `Proxy`, `GetCert` config may get stale HTTP transports. (#95427, @roycaihw) [SIG API Machinery]
- Fixes high CPU usage in kubectl drain (#95260, @amandahla) [SIG CLI]
- Support the node label `node.kubernetes.io/exclude-from-external-load-balancers` (#95542, @nilo19) [SIG Cloud Provider]

Other (Cleanup or Flake)

- Fix func name NewCreateCreateDeploymentOptions (#91931, @lixiaobing1) [SIG CLI]
- Kubeadm: update the default pause image version to 1.4.0 on Windows. With this update the image supports Windows versions 1809 (2019LTS), 1903, 1909, 2004 (#95419, @jsturtevant) [SIG Cluster Lifecycle and Win-

dows]
- Upgrade snapshot controller to 3.0.0 (#95412, @saikat-royc) [SIG Cloud Provider]
- Remove the dependency of csi-translation-lib module on apiserver/cloud-provider/controller-manager (#95543, @wawa0210) [SIG Release]
- Scheduler framework interface moved from pkg/scheduler/framework/v1alpha to pkg/scheduler/framework (#95069, @farah) [SIG Scheduling, Storage and Testing]
- UDP and SCTP protocols can left stale connections that need to be cleared to avoid services disruption, but they can cause problems that are hard to debug. Kubernetes components using a loglevel greater or equal than 4 will log the conntrack operations and its output, to show the entries that were deleted. (#95694, @aojea) [SIG Network]

Dependencies

Added

Nothing has changed.

Changed

Nothing has changed.

Removed

Nothing has changed.

v1.20.0-alpha.2

Downloads for v1.20.0-alpha.2

Source Code

filename	sha512 hash
kubernetes.tar.gz	45089a4d26d56a5d613ecbea64e356869ac738eca3cc71d16b74ea8ae1b4527bcc3
kubernetes-src.tar.gz	646edd890d6df5858b90aaf68cc6e1b4589b8db09396ae921b5c400f2188234999e6

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	c136273883e24a2a50b5093b9654f01cdfe57b97461d34885af4a68c2c4d108c0758
kubernetes-client-linux-386.tar.gz	6ec59f1ed30569fa64ddb2d0de32b1ae04cda4ffe13f339050a7c9d7c63d425ee6f6d9

filename	sha512 hash
kubernetes-client-linux-amd64.tar.gz	7b40a4c087e2ea7f8d055f297fcd39a3f1cb6c866e7a3981a9408c3c3eb5363c64861
kubernetes-client-linux-arm.tar.gz	cda9955feebea5acb8f2b5b87895d24894bbbbde47041453b1f926ebdf47a258ce04
kubernetes-client-linux-arm64.tar.gz	f65bd9241c7eb88a4886a285330f732448570aea4ededaebeabcf70d17ea185f51bf8
kubernetes-client-linux-ppc64le.tar.gz	1e377599af100a81d027d9199365fb8208d443a8e0a97affff1a79dc18796e14b78cb
kubernetes-client-linux-s390x.tar.gz	1cdee81478246aa7e7b80ae4efc7f070a5b058083ae278f59fad088b75a8052761b0e
kubernetes-client-windows-386.tar.gz	d8774167c87b6844c348aa15e92d5033c528d6ab9e95d08a7cb22da68bafd8e46d4
kubernetes-client-windows-amd64.tar.gz	f664b47d8daa6036f8154c1dc1f881bfe683bf57c39d9b491de3848c03d051c50c664

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	d6fcb4600be0beb9de222a8da64c35fe22798a0da82d41401d34d0f0fc7e28175121
kubernetes-server-linux-arm.tar.gz	022a76cf10801f8afbabb509572479b68fdb4e683526fa0799cdbd9bab4d3f6ecb76c
kubernetes-server-linux-arm64.tar.gz	0679aadd60bbf6f607e5befad74b5267eb2d4c1b55985cc25a97e0f4c5efb7acbb3ec
kubernetes-server-linux-ppc64le.tar.gz	9f2cfeed543b515eafb60d9765a3afff4f3d323c0a5c8a0d75e3de25985b2627817bfc
kubernetes-server-linux-s390x.tar.gz	937258704d7b9dcd91f35f2d34ee9dd38c18d9d4e867408c05281bfbbb919ad012c9

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	076165d745d47879de68f4404eaf432920884be48277eb409e84bf2c61759633bf357
kubernetes-node-linux-arm.tar.gz	1ff2e2e3e43af41118cdfb70c778e15035bbb1aca833ffd2db83c4bcd44f55693e956c
kubernetes-node-linux-arm64.tar.gz	b232c7359b8c635126899beee76998078eec7a1ef6758d92bcdebe8013b0b1e4d7b3
kubernetes-node-linux-ppc64le.tar.gz	51d415a068f554840f4c78d11a4fedebd7cb03c686b0ec864509b24f7a8667ebf54bb

filename	sha512 hash
kubernetes-node-linux-s390x.tar.gz	b51c082d8af358233a088b632cf2f6c8cfe5421471c27f5dc9ba4839ae6ea75df25d84
kubernetes-node-windows-amd64.tar.gz	91b9d26620a2dde67a0edead0039814efccbdfd54594dda3597aaced6d89140dc92

Changelog since v1.20.0-alpha.1

Changes by Kind

Deprecation

- Action-required: kubeadm: graduate the "kubeadm alpha certs" command to a parent command "kubeadm certs". The command "kubeadm alpha certs" is deprecated and will be removed in a future release. Please migrate. (#94938, @yagonobre) [SIG Cluster Lifecycle]
- Action-required: kubeadm: remove the deprecated feature –experimental-kustomize from kubeadm commands. The feature was replaced with –experimental-patches in 1.19. To migrate see the –help description for the –experimental-patches flag. (#94871, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: deprecate self-hosting support. The experimental command "kubeadm alpha self-hosting" is now deprecated and will be removed in a future release. (#95125, @neolit123) [SIG Cluster Lifecycle]
- Removes deprecated scheduler metrics DeprecatedSchedulingDuration, DeprecatedSchedulingAlgorithmPredicateEvaluationSecondsDuration, DeprecatedSchedulingAlgorithmPriorityEvaluationSecondsDuration (#94884, @arghya88) [SIG Instrumentation and Scheduling]
- Scheduler alpha metrics binding_duration_seconds and scheduling_algorithm_preemption_evaluation_seconds are deprecated, Both of those metrics are now covered as part of framework_extension_point_duration_seconds, the former as a PostFilter the latter and a Bind plugin. The plan is to remove both in 1.21 (#95001, @arghya88) [SIG Instrumentation and Scheduling]

API Change

- GPU metrics provided by kubelet are now disabled by default (#95184, @RenaudWasTaken) [SIG Node]
- New parameter `defaultingType` for `PodTopologySpread` plugin allows to use k8s defined or user provided default constraints (#95048, @alculquicondor) [SIG Scheduling]
- Server Side Apply now treats LabelSelector fields as atomic (meaning the entire selector is managed by a single writer and updated together), since they contain interrelated and inseparable fields that do not merge in intuitive ways. (#93901, @jpbetz) [SIG API Machinery, Auth, CLI, Cloud

Provider, Cluster Lifecycle, Instrumentation, Network, Node, Storage and Testing]

- Status of v1beta1 CRDs without "preserveUnknownFields:false" will show violation "spec.preserveUnknownFields: Invalid value: true: must be false" (#93078, @vareti) [SIG API Machinery]

Feature

- Added `get-users` and `delete-user` to the `kubectl config` subcommand (#89840, @eddiezane) [SIG CLI]
- Added counter metric "apiserver_request_self" to count API server self-requests with labels for verb, resource, and subresource. (#94288, @LogicalShark) [SIG API Machinery, Auth, Instrumentation and Scheduling]
- Added new k8s.io/component-helpers repository providing shared helper code for (core) components. (#92507, @ingvagabund) [SIG Apps, Node, Release and Scheduling]
- Adds `create ingress` command to `kubectl` (#78153, @amimof) [SIG CLI and Network]
- Allow configuring AWS LoadBalancer health check protocol via service annotations (#94546, @kishorj) [SIG Cloud Provider]
- Azure: Support multiple services sharing one IP address (#94991, @nilo19) [SIG Cloud Provider]
- Ephemeral containers now apply the same API defaults as initContainers and containers (#94896, @wawa0210) [SIG Apps and CLI]
- In dual-stack bare-metal clusters, you can now pass dual-stack IPs to `kubelet --node-ip`. eg: `kubelet --node-ip 10.1.0.5,fd01::0005`. This is not yet supported for non-bare-metal clusters.

  In dual-stack clusters where nodes have dual-stack addresses, hostNetwork pods will now get dual-stack PodIPs. (#95239, @danwinship) [SIG Network and Node]
- Introduces a new GCE specific cluster creation variable KUBE_PROXY_DISABLE. When set to true, this will skip over the creation of kube-proxy (whether the daemonset or static pod). This can be used to control the lifecycle of kube-proxy separately from the lifecycle of the nodes. (#91977, @varunmar) [SIG Cloud Provider]
- Kubeadm: do not throw errors if the current system time is outside of the NotBefore and NotAfter bounds of a loaded certificate. Print warnings instead. (#94504, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: make the command "kubeadm alpha kubeconfig user" accept a "–config" flag and remove the following flags:

  - apiserver-advertise-address / apiserver-bind-port: use either localAPIEndpoint from InitConfiguration or controlPlaneEndpoint from ClusterConfiguration.
  - cluster-name: use clusterName from ClusterConfiguration
  - cert-dir: use certificatesDir from ClusterConfiguration (#94879, @knight42) [SIG Cluster Lifecycle]
- Kubectl rollout history sts/sts-name –revision=some-revision will start showing the detailed view of the sts on that specified revision (#86506, @dineshba) [SIG CLI]
- Scheduling Framework: expose Run[Pre]ScorePlugins functions to PreemptionHandle which can be used in PostFilter extension point. (#93534, @everpeace) [SIG Scheduling and Testing]
- Send gce node startup scripts' logs to console and journal (#95311, @karan) [SIG Cloud Provider and Node]
- Support kubectl delete orphan/foreground/background options (#93384, @zhouya0) [SIG CLI and Testing]

Bug or Regression

- Change the mount way from systemd to normal mount except ceph and glusterfs intree-volume. (#94916, @smileusd) [SIG Apps, Cloud Provider, Network, Node, Storage and Testing]
- Cloud node controller: handle empty providerID from getProviderID (#95342, @nicolehanjing) [SIG Cloud Provider]
- Fix a bug where the endpoint slice controller was not mirroring the parent service labels to its corresponding endpoint slices (#94443, @aojea) [SIG Apps and Network]
- Fix azure disk attach failure for disk size bigger than 4TB (#95463, @andyzhangx) [SIG Cloud Provider]
- Fix azure disk data loss issue on Windows when unmount disk (#95456, @andyzhangx) [SIG Cloud Provider and Storage]
- Fix detach azure disk issue when vm not exist (#95177, @andyzhangx) [SIG Cloud Provider]
- Fix network_programming_latency metric reporting for Endpoints/EndpointSlice deletions, where we don't have correct timestamp (#95363, @wojtek-t) [SIG Network and Scalability]
- Fix scheduler cache snapshot when a Node is deleted before its Pods (#95130, @alculquicondor) [SIG Scheduling]
- Fix vSphere detach failure for static PVs (#95447, @gnufied) [SIG Cloud Provider and Storage]
- Fixed a bug that prevents the use of ephemeral containers in the presence of a validating admission webhook. (#94685, @verb) [SIG Node and Testing]
- Gracefully delete nodes when their parent scale set went missing (#95289, @bpineau) [SIG Cloud Provider]

- In dual-stack clusters, kubelet will now set up both IPv4 and IPv6 iptables rules, which may fix some problems, eg with HostPorts. (#94474, @danwinship) [SIG Network and Node]
- Kubeadm: for Docker as the container runtime, make the "kubeadm reset" command stop containers before removing them (#94586, @BedivereZero) [SIG Cluster Lifecycle]
- Kubeadm: warn but do not error out on missing "ca.key" files for root CA, front-proxy CA and etcd CA, during "kubeadm join –control-plane" if the user has provided all certificates, keys and kubeconfig files which require signing with the given CA keys. (#94988, @neolit123) [SIG Cluster Lifecycle]
- Port mapping allows to map the same `containerPort` to multiple `hostPort` without naming the mapping explicitly. (#94494, @SergeyKanzhelev) [SIG Network and Node]
- Warn instead of fail when creating Roles and ClusterRoles with custom verbs via kubectl (#92492, @eddiezane) [SIG CLI]

Other (Cleanup or Flake)

- Added fine-grained debugging to the intra-pod conformance test for helping easily resolve networking issues for nodes that might be unhealthy when running conformance or sonobuoy tests. (#93837, @jayunit100) [SIG Network and Testing]
- AdmissionReview objects sent for the creation of Namespace API objects now populate the `namespace` attribute consistently (previously the `namespace` attribute was empty for Namespace creation via POST requests, and populated for Namespace creation via server-side-apply PATCH requests) (#95012, @nodo) [SIG API Machinery and Testing]
- Client-go header logging (at verbosity levels >= 9) now masks `Authorization` header contents (#95316, @sfowl) [SIG API Machinery]
- Enhance log information of verifyRunAsNonRoot, add pod, container information (#94911, @wawa0210) [SIG Node]
- Errors from staticcheck:
vendor/k8s.io/client-go/discovery/cached/memory/memcache_test.go:94:2:
this value of g is never used (SA4006) (#95098, @phunziker) [SIG API Machinery]
- Kubeadm: update the default pause image version to 1.4.0 on Windows. With this update the image supports Windows versions 1809 (2019LTS), 1903, 1909, 2004 (#95419, @jsturtevant) [SIG Cluster Lifecycle and Windows]
- Masks ceph RBD adminSecrets in logs when logLevel >= 4 (#95245, @sfowl) [SIG Storage]
- Upgrade snapshot controller to 3.0.0 (#95412, @saikat-royc) [SIG Cloud Provider]
- Remove offensive words from kubectl cluster-info command (#95202, @rikatz) [SIG Architecture, CLI and Testing]

- The following new metrics are available.
  - network_plugin_operations_total
  - network_plugin_operations_errors_total (#93066, @AnishShah) [SIG Instrumentation, Network and Node]
- vSphere: improve logging message on node cache refresh event (#95236, @andrewsykim) [SIG Cloud Provider]
- `kubectl api-resources` now prints the API version (as 'API group/version', same as output of `kubectl api-versions`). The column APIGROUP is now APIVERSION (#95253, @sallyom) [SIG CLI]

Dependencies

Added

- github.com/jmespath/go-jmespath/internal/testify: v1.5.1

Changed

- github.com/aws/aws-sdk-go: v1.28.2 → v1.35.5
- github.com/jmespath/go-jmespath: c2b33e8 → v0.4.0
- k8s.io/kube-openapi: 6aeccd4 → 8b50664
- sigs.k8s.io/apiserver-network-proxy/konnectivity-client: v0.0.9 → v0.0.12
- sigs.k8s.io/structured-merge-diff/v4: v4.0.1 → b3cf1e8

Removed

Nothing has changed.

v1.20.0-alpha.1

Downloads for v1.20.0-alpha.1

Source Code

filename	sha512 hash
kubernetes.tar.gz	e7daed6502ea07816274f2371f96fe1a446d0d7917df4454b722d9eb3b5ff6163bfbb
kubernetes-src.tar.gz	e91213a0919647a1215d4691a63b12d89a3e74055463a8ebd71dc1a4cabf4006b36

Client binaries

filename	sha512 hash
kubernetes-client-darwin-amd64.tar.gz	1f3add5f826fa989820d715ca38e8864b66f30b59c1abeacbb4bfb96b4e9c694eac6b
kubernetes-client-linux-386.tar.gz	c62acdc8993b0a950d4b0ce0b45473bf96373d501ce61c88adf4007afb15c1d53da8

filename	sha512 hash
kubernetes-client-linux-amd64.tar.gz	1203ababfe00f9bc5be5c059324c17160a96530c1379a152db33564bbe644ccdb94
kubernetes-client-linux-arm.tar.gz	31860088596e12d739c7aed94556c2d1e217971699b950c8417a3cea1bed4e78c9ff
kubernetes-client-linux-arm64.tar.gz	8d469f37fe20d6e15b5debc13cce4c22e8b7a4f6a4ac787006b96507a85ce761f63b2
kubernetes-client-linux-ppc64le.tar.gz	0d62ee1729cd5884946b6c73701ad3a570fa4d642190ca0fe5c1db0fb0cba9da3ac8
kubernetes-client-linux-s390x.tar.gz	0fc0420e134ec0b8e0ab2654e1e102cebec47b48179703f1e1b79d51ee0d6da55a4e7
kubernetes-client-windows-386.tar.gz	3fb53b5260f4888c77c0e4ff602bbcf6bf38c364d2769850afe2b8d8e8b95f7024807c
kubernetes-client-windows-amd64.tar.gz	2f44c93463d6b5244ce0c82f147e7f32ec2233d0e29c64c3c5759e23533aebd12671b

Server binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	ae82d14b1214e4100f0cc2c988308b3e1edd040a65267d0eddb9082409f79644e553
kubernetes-server-linux-arm.tar.gz	9a2a5828b7d1ddb16cc19d573e99a4af642f84129408e6203eeeb0558e7b8db77f32
kubernetes-server-linux-arm64.tar.gz	ed700dd226c999354ce05b73927388d36d08474c15333ae689427de15de27c84feb0
kubernetes-server-linux-ppc64le.tar.gz	abb7a9d726538be3ccf5057a0c63ff9732b616e213c6ebb81363f0c49f1e168ce8068
kubernetes-server-linux-s390x.tar.gz	3a51888af1bfdd2d5b0101d173ee589c1f39240e4428165f5f85c610344db219625fa

Node binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	d0f28e3c38ca59a7ff1bfecb48a1ce97116520355d9286afdca1200d346c10018f5bb
kubernetes-node-linux-arm.tar.gz	ed9d3f13028beb3be39bce980c966f82c4b39dc73beaae38cc075fea5be30b0309e5
kubernetes-node-linux-arm64.tar.gz	ad5b3268db365dcdded9a9a4bffc90c7df0f844000349accdf2b8fb5f1081e553de9b
kubernetes-node-linux-ppc64le.tar.gz	c4de2524e513996def5eeba7b83f7b406f17eaf89d4d557833a93bd035348c81fa937

filename	sha512 hash
kubernetes-node-linux-s390x.tar.gz	9157b44e3e7bd5478af9f72014e54d1afa5cd19b984b4cd8b348b312c385016bb77
kubernetes-node-windows-amd64.tar.gz	8b40a43c5e6447379ad2ee8aac06e8028555e1b370a995f6001018a62411abe5fbbc

Changelog since v1.20.0-alpha.0

Urgent Upgrade Notes

(No, really, you MUST read this before you upgrade)

- Azure blob disk feature(`kind`: `Shared`, `Dedicated`) has been deprecated, you should use `kind`: `Managed` in `kubernetes.io/azure-disk` storage class. (#92905, @andyzhangx) [SIG Cloud Provider and Storage]
- CVE-2020-8559 (Medium): Privilege escalation from compromised node to cluster. See https://github.com/kubernetes/kubernetes/issues/92914 for more details. The API Server will no longer proxy non-101 responses for upgrade requests. This could break proxied backends (such as an extension API server) that respond to upgrade requests with a non-101 response code. (#92941, @tallclair) [SIG API Machinery]

Changes by Kind

Deprecation

- Kube-apiserver: the componentstatus API is deprecated. This API provided status of etcd, kube-scheduler, and kube-controller-manager components, but only worked when those components were local to the API server, and when kube-scheduler and kube-controller-manager exposed unsecured health endpoints. Instead of this API, etcd health is included in the kube-apiserver health check and kube-scheduler/kube-controller-manager health checks can be made directly against those components' health endpoints. (#93570, @liggitt) [SIG API Machinery, Apps and Cluster Lifecycle]
- Kubeadm: deprecate the "kubeadm alpha kubelet config enable-dynamic" command. To continue using the feature please defer to the guide for "Dynamic Kubelet Configuration" at k8s.io. (#92881, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: remove the deprecated "kubeadm alpha kubelet config enable-dynamic" command. To continue using the feature please defer to the guide for "Dynamic Kubelet Configuration" at k8s.io. This change also removes the parent command "kubeadm alpha kubelet" as there are no more sub-commands under it for the time being. (#94668, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: remove the deprecated –kubelet-config flag for the command "kubeadm upgrade node" (#94869, @neolit123) [SIG Cluster Lifecycle]

- Kubelet's deprecated endpoint `metrics/resource/v1alpha1` has been removed, please adopt to `metrics/resource`. (#94272, @RainbowMango) [SIG Instrumentation and Node]
- The v1alpha1 PodPreset API and admission plugin has been removed with no built-in replacement. Admission webhooks can be used to modify pods on creation. (#94090, @deads2k) [SIG API Machinery, Apps, CLI, Cloud Provider, Scalability and Testing]

API Change

- A new `nofuzz` go build tag now disables gofuzz support. Release binaries enable this. (#92491, @BenTheElder) [SIG API Machinery]
- A new alpha-level field, `SupportsFsGroup`, has been introduced for CSIDrivers to allow them to specify whether they support volume ownership and permission modifications. The `CSIVolumeSupportFSGroup` feature gate must be enabled to allow this field to be used. (#92001, @huffmanca) [SIG API Machinery, CLI and Storage]
- Added pod version skew strategy for seccomp profile to synchronize the deprecated annotations with the new API Server fields. Please see the corresponding section in the KEP for more detailed explanations. (#91408, @saschagrunert) [SIG Apps, Auth, CLI and Node]
- Adds the ability to disable Accelerator/GPU metrics collected by Kubelet (#91930, @RenaudWasTaken) [SIG Node]
- Custom Endpoints are now mirrored to EndpointSlices by a new EndpointSliceMirroring controller. (#91637, @robscott) [SIG API Machinery, Apps, Auth, Cloud Provider, Instrumentation, Network and Testing]
- External facing API podresources is now available under k8s.io/kubelet/pkg/apis/ (#92632, @RenaudWasTaken) [SIG Node and Testing]
- Fix conversions for custom metrics. (#94481, @wojtek-t) [SIG API Machinery and Instrumentation]
- Generic ephemeral volumes, a new alpha feature under the `GenericEphemeralVolume` feature gate, provide a more flexible alternative to `EmptyDir` volumes: as with `EmptyDir`, volumes are created and deleted for each pod automatically by Kubernetes. But because the normal provisioning process is used (`PersistentVolumeClaim`), storage can be provided by third-party storage vendors and all of the usual volume features work. Volumes don't need to be empty; for example, restoring from snapshot is supported. (#92784, @pohly) [SIG API Machinery, Apps, Auth, CLI, Instrumentation, Node, Scheduling, Storage and Testing]
- Kube-controller-manager: volume plugins can be restricted from contacting local and loopback addresses by setting `--volume-host-allow-local-loopback=false`, or from contacting specific CIDR ranges by setting `--volume-host-cidr-denylist` (for example, `--volume-host-cidr-denylist=127.0.0.1/28,feed::/16`) (#91785, @mattcary) [SIG API Machinery, Apps, Auth, CLI, Network, Node, Storage and Testing]
- Kubernetes is now built with golang 1.15.0-rc.1.

  - The deprecated, legacy behavior of treating the CommonName field on X.509 serving certificates as a host name when no Subject Alternative Names are present is now disabled by default. It can be temporarily re-enabled by adding the value x509ignoreCN=0 to the GODEBUG environment variable. (#93264, @justaugustus) [SIG API Machinery, Auth, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation, Network, Node, Release, Scalability, Storage and Testing]
- Migrate scheduler, controller-manager and cloud-controller-manager to use LeaseLock (#94603, @wojtek-t) [SIG API Machinery, Apps, Cloud Provider and Scheduling]
- Modify DNS-1123 error messages to indicate that RFC 1123 is not followed exactly (#94182, @mattfenwick) [SIG API Machinery, Apps, Auth, Network and Node]
- The ServiceAccountIssuerDiscovery feature gate is now Beta and enabled by default. (#91921, @mtaufen) [SIG Auth]
- The kube-controller-manager managed signers can now have distinct signing certificates and keys. See the help about `--cluster-signing-[signer-name]-{cert,key}-file`. `--cluster-signing-{cert,key}-file` is still the default. (#90822, @deads2k) [SIG API Machinery, Apps and Auth]
- When creating a networking.k8s.io/v1 Ingress API object, `spec.tls[*].secretName` values are required to pass validation rules for Secret API object names. (#93929, @liggitt) [SIG Network]
- WinOverlay feature graduated to beta (#94807, @ksubrmnn) [SIG Windows]

Feature

- ACTION REQUIRED : In CoreDNS v1.7.0, metrics names have been changed which will be backward incompatible with existing reporting formulas that use the old metrics' names. Adjust your formulas to the new names before upgrading.

  Kubeadm now includes CoreDNS version v1.7.0. Some of the major changes include:

  - Fixed a bug that could cause CoreDNS to stop updating service records.
  - Fixed a bug in the forward plugin where only the first upstream server is always selected no matter which policy is set.
  - Remove already deprecated options `resyncperiod` and `upstream` in the Kubernetes plugin.
  - Includes Prometheus metrics name changes (to bring them in line with standard Prometheus metrics naming convention). They will be backward incompatible with existing reporting formulas that use the old metrics' names.
  - The federation plugin (allows for v1 Kubernetes federation) has been removed. More details are available in https://coredns.io/2020/06/15/coredns-

1.7.0-release/ (#92651, @rajansandeep) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle and Instrumentation]

- Add metrics for azure service operations (route and loadbalancer). (#94124, @nilo19) [SIG Cloud Provider and Instrumentation]
- Add network rule support in Azure account creation (#94239, @andyzhangx) [SIG Cloud Provider]
- Add tags support for Azure File Driver (#92825, @ZeroMagic) [SIG Cloud Provider and Storage]
- Added kube-apiserver metrics: apiserver_current_inflight_request_measures and, when API Priority and Fairness is enable, windowed_request_stats. (#91177, @MikeSpreitzer) [SIG API Machinery, Instrumentation and Testing]
- Audit events for API requests to deprecated API versions now include a `"k8s.io/deprecated": "true"` audit annotation. If a target removal release is identified, the audit event includes a `"k8s.io/removal-release": "<majorVersion>.<minorVersion>"` audit annotation as well. (#92842, @liggitt) [SIG API Machinery and Instrumentation]
- Cloud node-controller use InstancesV2 (#91319, @gongguan) [SIG Apps, Cloud Provider, Scalability and Storage]
- Kubeadm: Add a preflight check that the control-plane node has at least 1700MB of RAM (#93275, @xlgao-zju) [SIG Cluster Lifecycle]
- Kubeadm: add the "–cluster-name" flag to the "kubeadm alpha kubeconfig user" to allow configuring the cluster name in the generated kubeconfig file (#93992, @prabhu43) [SIG Cluster Lifecycle]
- Kubeadm: add the "–kubeconfig" flag to the "kubeadm init phase upload-certs" command to allow users to pass a custom location for a kubeconfig file. (#94765, @zhanw15) [SIG Cluster Lifecycle]
- Kubeadm: deprecate the "–csr-only" and "–csr-dir" flags of the "kubeadm init phase certs" subcommands. Please use "kubeadm alpha certs generate-csr" instead. This new command allows you to generate new private keys and certificate signing requests for all the control-plane components, so that the certificates can be signed by an external CA. (#92183, @wallrj) [SIG Cluster Lifecycle]
- Kubeadm: make etcd pod request 100m CPU, 100Mi memory and 100Mi ephemeral_storage by default (#94479, @knight42) [SIG Cluster Lifecycle]
- Kubemark now supports both real and hollow nodes in a single cluster. (#93201, @ellistarn) [SIG Scalability]
- Kubernetes is now built using go1.15.2
  - build: Update to k/repo-infra@v0.1.1 (supports go1.15.2)

  - build: Use go-runner:buster-v2.0.1 (built using go1.15.1)
  - bazel: Replace –features with Starlark build settings flag
  - hack/lib/util.sh: some bash cleanups
    * switched one spot to use kube::logging
    * make kube::util::find-binary return an error when it doesn't find anything so that hack scripts fail fast instead of with " binary not found errors.
    * this required deleting some genfeddoc stuff. the binary no longer exists in k/k repo since we removed federation/, and I don't see it in https://github.com/kubernetes-sigs/kubefed/ either. I'm assuming that it's gone for good now.
  - bazel: output go_binary rule directly from go_binary_conditional_pure

    From: @mikedanese: Instead of aliasing. Aliases are annoying in a number of ways. This is specifically bugging me now because they make the action graph harder to analyze programmatically. By using aliases here, we would need to handle potentially aliased go_binary targets and dereference to the effective target.

    The comment references an issue with `pure = select(...)` which appears to be resolved considering this now builds.
  - make kube::util::find-binary not dependent on bazel-out/ structure

    Implement an aspect that outputs go_build_mode metadata for go binaries, and use that during binary selection. (#94449, @justaugustus) [SIG Architecture, CLI, Cluster Lifecycle, Node, Release and Testing]

- Only update Azure data disks when attach/detach (#94265, @andyzhangx) [SIG Cloud Provider]
- Promote SupportNodePidsLimit to GA to provide node to pod pid isolation Promote SupportPodPidsLimit to GA to provide ability to limit pids per pod (#94140, @derekwaynecarr) [SIG Node and Testing]
- Rename pod_preemption_metrics to preemption_metrics. (#93256, @ahg-g) [SIG Instrumentation and Scheduling]
- Server-side apply behavior has been regularized in the case where a field is removed from the applied configuration. Removed fields which have no other owners are deleted from the live object, or reset to their default value if they have one. Safe ownership transfers, such as the transfer of a `replicas` field from a user to an HPA without resetting to the default value are documented in Transferring Ownership (#92661, @jpbetz) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation and Testing]

- Set CSIMigrationvSphere feature gates to beta. Users should enable CSIMigration + CSIMigrationvSphere features and install the vSphere CSI Driver (https://github.com/kubernetes-sigs/vsphere-csi-driver) to move workload from the in-tree vSphere plugin "kubernetes.io/vsphere-volume" to vSphere CSI Driver.

  Requires: vSphere vCenter/ESXi Version: 7.0u1, HW Version: VM version 15 (#92816, @divyenpatel) [SIG Cloud Provider and Storage]
- Support [service.beta.kubernetes.io/azure-pip-ip-tags] annotations to allow customers to specify ip-tags to influence public-ip creation in Azure [Tag1=Value1, Tag2=Value2, etc.] (#94114, @MarcPow) [SIG Cloud Provider]
- Support a smooth upgrade from client-side apply to server-side apply without conflicts, as well as support the corresponding downgrade. (#90187, @julianvmodesto) [SIG API Machinery and Testing]
- Trace output in apiserver logs is more organized and comprehensive. Traces are nested, and for all non-long running request endpoints, the entire filter chain is instrumented (e.g. authentication check is included). (#88936, @jpbetz) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation and Scheduling]
- `kubectl alpha debug` now supports debugging nodes by creating a debugging container running in the node's host namespaces. (#92310, @verb) [SIG CLI]

Documentation

- Kubelet: remove alpha warnings for CNI flags. (#94508, @andrewsykim) [SIG Network and Node]

Failing Test

- Kube-proxy iptables min-sync-period defaults to 1 sec. Previously, it was 0. (#92836, @aojea) [SIG Network]

Bug or Regression

- A panic in the apiserver caused by the `informer-sync` health checker is now fixed. (#93600, @ialidzhikov) [SIG API Machinery]
- Add kubectl wait –ignore-not-found flag (#90969, @zhouya0) [SIG CLI]
- Adding fix to the statefulset controller to wait for pvc deletion before creating pods. (#93457, @ymmt2005) [SIG Apps]
- Azure ARM client: don't segfault on empty response and http error (#94078, @bpineau) [SIG Cloud Provider]

- Azure: fix a bug that kube-controller-manager would panic if wrong Azure VMSS name is configured (#94306, @knight42) [SIG Cloud Provider]
- Azure: per VMSS VMSS VMs cache to prevent throttling on clusters having many attached VMSS (#93107, @bpineau) [SIG Cloud Provider]
- Both apiserver_request_duration_seconds metrics and RequestReceivedTimestamp field of an audit event take into account the time a request spends in the apiserver request filters. (#94903, @tkashem) [SIG API Machinery, Auth and Instrumentation]
- Build/lib/release: Explicitly use '–platform' in building server images

  When we switched to go-runner for building the apiserver, controller-manager, and scheduler server components, we no longer reference the individual architectures in the image names, specifically in the 'FROM' directive of the server image Dockerfiles.

  As a result, server images for non-amd64 images copy in the go-runner amd64 binary instead of the go-runner that matches that architecture.

  This commit explicitly sets the '–platform=linux/${arch}' to ensure we're pulling the correct go-runner arch from the manifest list.

  Before: `FROM ${base_image}`

  After: `FROM --platform=linux/${arch} ${base_image}` (#94552, @justaugustus) [SIG Release]
- CSIDriver object can be deployed during volume attachment. (#93710, @Jiawei0227) [SIG Apps, Node, Storage and Testing]
- CVE-2020-8557 (Medium): Node-local denial of service via container /etc/hosts file. See https://github.com/kubernetes/kubernetes/issues/93032 for more details. (#92916, @joelsmith) [SIG Node]
- Do not add nodes labeled with kubernetes.azure.com/managed=false to backend pool of load balancer. (#93034, @matthias50) [SIG Cloud Provider]
- Do not fail sorting empty elements. (#94666, @soltysh) [SIG CLI]
- Do not retry volume expansion if CSI driver returns FailedPrecondition error (#92986, @gnufied) [SIG Node and Storage]
- Dockershim security: pod sandbox now always run with `no-new-privileges` and `runtime/default` seccomp profile dockershim seccomp: custom profiles can now have smaller seccomp profiles when set at pod level (#90948, @pjbgf) [SIG Node]
- Dual-stack: make nodeipam compatible with existing single-stack clusters when dual-stack feature gate become enabled by default (#90439, @SataQiu) [SIG API Machinery]

- Endpoint controller requeues service after an endpoint deletion event occurs to confirm that deleted endpoints are undesired to mitigate the effects of an out of sync endpoint cache. (#93030, @swetharepakula) [SIG Apps and Network]
- EndpointSlice controllers now return immediately if they encounter an error creating, updating, or deleting resources. (#93908, @robscott) [SIG Apps and Network]
- EndpointSliceMirroring controller now copies labels from Endpoints to EndpointSlices. (#93442, @robscott) [SIG Apps and Network]
- EndpointSliceMirroring controller now mirrors Endpoints that do not have a Service associated with them. (#94171, @robscott) [SIG Apps, Network and Testing]
- Ensure backoff step is set to 1 for Azure armclient. (#94180, @feiskyer) [SIG Cloud Provider]
- Ensure getPrimaryInterfaceID not panic when network interfaces for Azure VMSS are null (#94355, @feiskyer) [SIG Cloud Provider]
- Eviction requests for pods that have a non-zero DeletionTimestamp will always succeed (#91342, @michaelgugino) [SIG Apps]
- Extended DSR loadbalancer feature in winkernel kube-proxy to HNS versions 9.3-9.max, 10.2+ (#93080, @elweb9858) [SIG Network]
- Fix HandleCrash order (#93108, @lixiaobing1) [SIG API Machinery]
- Fix a concurrent map writes error in kubelet (#93773, @knight42) [SIG Node]
- Fix a regression where kubeadm bails out with a fatal error when an optional version command line argument is supplied to the "kubeadm upgrade plan" command (#94421, @rosti) [SIG Cluster Lifecycle]
- Fix azure file migration panic (#94853, @andyzhangx) [SIG Cloud Provider]
- Fix bug where loadbalancer deletion gets stuck because of missing resource group #75198 (#93962, @phiphi282) [SIG Cloud Provider]
- Fix calling AttachDisk on a previously attached EBS volume (#93567, @gnufied) [SIG Cloud Provider, Storage and Testing]
- Fix detection of image filesystem, disk metrics for devicemapper, detection of OOM Kills on 5.0+ linux kernels. (#92919, @dashpole) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation and Node]
- Fix etcd_object_counts metric reported by kube-apiserver (#94773, @tkashem) [SIG API Machinery]

- Fix incorrectly reported verbs for kube-apiserver metrics for CRD objects (#93523, @wojtek-t) [SIG API Machinery and Instrumentation]
- Fix instance not found issues when an Azure Node is recreated in a short time (#93316, @feiskyer) [SIG Cloud Provider]
- Fix kube-apiserver /readyz to contain "informer-sync" check ensuring that internal informers are synced. (#93670, @wojtek-t) [SIG API Machinery and Testing]
- Fix kubectl SchemaError on CRDs with schema using x-kubernetes-preserve-unknown-fields on array types. (#94888, @sttts) [SIG API Machinery]
- Fix memory leak in EndpointSliceTracker for EndpointSliceMirroring controller. (#93441, @robscott) [SIG Apps and Network]
- Fix missing csi annotations on node during parallel csinode update. (#94389, @pacoxu) [SIG Storage]
- Fix the `cloudprovider_azure_api_request_duration_seconds` metric buckets to correctly capture the latency metrics. Previously, the majority of the calls would fall in the "+Inf" bucket. (#94873, @marwanad) [SIG Cloud Provider and Instrumentation]
- Fix: azure disk resize error if source does not exist (#93011, @andyzhangx) [SIG Cloud Provider]
- Fix: detach azure disk broken on Azure Stack (#94885, @andyzhangx) [SIG Cloud Provider]
- Fix: determine the correct ip config based on ip family (#93043, @aramase) [SIG Cloud Provider]
- Fix: initial delay in mounting azure disk & file (#93052, @andyzhangx) [SIG Cloud Provider and Storage]
- Fix: use sensitiveOptions on Windows mount (#94126, @andyzhangx) [SIG Cloud Provider and Storage]
- Fixed Ceph RBD volume expansion when no ceph.conf exists (#92027, @juliantaylor) [SIG Storage]
- Fixed a bug where improper storage and comparison of endpoints led to excessive API traffic from the endpoints controller (#94112, @damemi) [SIG Apps, Network and Testing]
- Fixed a bug whereby the allocation of reusable CPUs and devices was not being honored when the TopologyManager was enabled (#93189, @klueska) [SIG Node]
- Fixed a panic in kubectl debug when pod has multiple init containers or ephemeral containers (#94580, @kiyoshim55) [SIG CLI]

- Fixed a regression that sometimes prevented `kubectl port-forward` to work when TCP and UDP services were configured on the same port (#94728, @amorenoz) [SIG CLI]
- Fixed bug in reflector that couldn't recover from "Too large resource version" errors with API servers 1.17.0-1.18.5 (#94316, @janeczku) [SIG API Machinery]
- Fixed bug where kubectl top pod output is not sorted when –sort-by and –containers flags are used together (#93692, @brianpursley) [SIG CLI]
- Fixed kubelet creating extra sandbox for pods with RestartPolicyOnFailure after all containers succeeded (#92614, @tnqn) [SIG Node and Testing]
- Fixed memory leak in endpointSliceTracker (#92838, @tnqn) [SIG Apps and Network]
- Fixed node data lost in kube-scheduler for clusters with imbalance on number of nodes across zones (#93355, @maelk) [SIG Scheduling]
- Fixed the EndpointSliceController to correctly create endpoints for IPv6-only pods.

  Fixed the EndpointController to allow IPv6 headless services, if the IPv6DualStack feature gate is enabled, by specifying `ipFamily: IPv6` on the service. (This already worked with the EndpointSliceController.) (#91399, @danwinship) [SIG Apps and Network]
- Fixes a bug evicting pods after a taint with a limited tolerationSeconds toleration is removed from a node (#93722, @liggitt) [SIG Apps and Node]
- Fixes a bug where EndpointSlices would not be recreated after rapid Service recreation. (#94730, @robscott) [SIG Apps, Network and Testing]
- Fixes a race condition in kubelet pod handling (#94751, @auxten) [SIG Node]
- Fixes an issue proxying to ipv6 pods without specifying a port (#94834, @liggitt) [SIG API Machinery and Network]
- Fixes an issue that can result in namespaced custom resources being orphaned when their namespace is deleted, if the CRD defining the custom resource is removed concurrently with namespaces being deleted, then recreated. (#93790, @liggitt) [SIG API Machinery and Apps]
- Ignore root user check when windows pod starts (#92355, @wawa0210) [SIG Node and Windows]
- Increased maximum IOPS of AWS EBS io1 volumes to 64,000 (current AWS maximum). (#90014, @jacobmarble) [SIG Cloud Provider and Storage]
- K8s.io/apimachinery: runtime.DefaultUnstructuredConverter.FromUnstructured now handles converting integer fields to typed float values (#93250,

@liggitt) [SIG API Machinery]

- Kube-aggregator certificates are dynamically loaded on change from disk (#92791, @p0lyn0mial) [SIG API Machinery]
- Kube-apiserver: fixed a bug returning inconsistent results from list requests which set a field or label selector and set a paging limit (#94002, @wojtek-t) [SIG API Machinery]
- Kube-apiserver: jsonpath expressions with consecutive recursive descent operators are no longer evaluated for custom resource printer columns (#93408, @joelsmith) [SIG API Machinery]
- Kube-proxy now trims extra spaces found in loadBalancerSourceRanges to match Service validation. (#94107, @robscott) [SIG Network]
- Kube-up now includes CoreDNS version v1.7.0. Some of the major changes include:
  - Fixed a bug that could cause CoreDNS to stop updating service records.
  - Fixed a bug in the forward plugin where only the first upstream server is always selected no matter which policy is set.
  - Remove already deprecated options `resyncperiod` and `upstream` in the Kubernetes plugin.
  - Includes Prometheus metrics name changes (to bring them in line with standard Prometheus metrics naming convention). They will be backward incompatible with existing reporting formulas that use the old metrics' names.
  - The federation plugin (allows for v1 Kubernetes federation) has been removed. More details are available in https://coredns.io/2020/06/15/coredns-1.7.0-release/ (#92718, @rajansandeep) [SIG Cloud Provider]
- Kubeadm now makes sure the etcd manifest is regenerated upon upgrade even when no etcd version change takes place (#94395, @rosti) [SIG Cluster Lifecycle]
- Kubeadm: avoid a panic when determining if the running version of CoreDNS is supported during upgrades (#94299, @zouyee) [SIG Cluster Lifecycle]
- Kubeadm: ensure "kubeadm reset" does not unmount the root "/var/lib/kubelet" directory if it is mounted by the user (#93702, @thtanaka) [SIG Cluster Lifecycle]
- Kubeadm: ensure the etcd data directory is created with 0700 permissions during control-plane init and join (#94102, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: fix the bug that kubeadm tries to call 'docker info' even if the CRI socket was for another CR (#94555, @SataQiu) [SIG Cluster

Lifecycle]

- Kubeadm: make the kubeconfig files for the kube-controller-manager and kube-scheduler use the LocalAPIEndpoint instead of the ControlPlaneEndpoint. This makes kubeadm clusters more reseliant to version skew problems during immutable upgrades: https://kubernetes.io/docs/setup/release/version-skew-policy/#kube-controller-manager-kube-scheduler-and-cloud-controller-manager (#94398, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: relax the validation of kubeconfig server URLs. Allow the user to define custom kubeconfig server URLs without erroring out during validation of existing kubeconfig files (e.g. when using external CA mode). (#94816, @neolit123) [SIG Cluster Lifecycle]
- Kubeadm: remove duplicate DNS names and IP addresses from generated certificates (#92753, @QianChenglong) [SIG Cluster Lifecycle]
- Kubelet: assume that swap is disabled when `/proc/swaps` does not exist (#93931, @SataQiu) [SIG Node]
- Kubelet: fix race condition in pluginWatcher (#93622, @knight42) [SIG Node]
- Kuberuntime security: pod sandbox now always runs with `runtime/default` seccomp profile kuberuntime seccomp: custom profiles can now have smaller seccomp profiles when set at pod level (#90949, @pjbgf) [SIG Node]
- New Azure instance types do now have correct max data disk count information. (#94340, @ialidzhikov) [SIG Cloud Provider and Storage]
- Pods with invalid Affinity/AntiAffinity LabelSelectors will now fail scheduling when these plugins are enabled (#93660, @damemi) [SIG Scheduling]
- Require feature flag CustomCPUCFSQuotaPeriod if setting a non-default cpuCFSQuotaPeriod in kubelet config. (#94687, @karan) [SIG Node]
- Reverted devicemanager for Windows node added in 1.19rc1. (#93263, @liggitt) [SIG Node and Windows]
- Scheduler bugfix: Scheduler doesn't lose pod information when nodes are quickly recreated. This could happen when nodes are restarted or quickly recreated reusing a nodename. (#93938, @alculquicondor) [SIG Scalability, Scheduling and Testing]
- The EndpointSlice controller now waits for EndpointSlice and Node caches to be synced before starting. (#94086, @robscott) [SIG Apps and Network]
- The `/debug/api_priority_and_fairness/dump_requests` path at an apiserver will no longer return a phantom line for each exempt priority level. (#93406, @MikeSpreitzer) [SIG API Machinery]

- The kubelet recognizes the –containerd-namespace flag to configure the namespace used by cadvisor. (#87054, @changyaowei) [SIG Node]
- The terminationGracePeriodSeconds from pod spec is respected for the mirror pod. (#92442, @tedyu) [SIG Node and Testing]
- Update Calico to v3.15.2 (#94241, @lmm) [SIG Cloud Provider]
- Update default etcd server version to 3.4.13 (#94287, @jingyih) [SIG API Machinery, Cloud Provider, Cluster Lifecycle and Testing]
- Updated Cluster Autoscaler to 1.19.0; (#93577, @vivekbagade) [SIG Autoscaling and Cloud Provider]
- Use NLB Subnet CIDRs instead of VPC CIDRs in Health Check SG Rules (#93515, @t0rr3sp3dr0) [SIG Cloud Provider]
- Users will see increase in time for deletion of pods and also guarantee that removal of pod from api server would mean deletion of all the resources from container runtime. (#92817, @kmala) [SIG Node]
- Very large patches may now be specified to `kubectl patch` with the `--patch-file` flag instead of including them directly on the command line. The `--patch` and `--patch-file` flags are mutually exclusive. (#93548, @smarterclayton) [SIG CLI]
- When creating a networking.k8s.io/v1 Ingress API object, `spec.rules[*].http` values are now validated consistently when the `host` field contains a wildcard. (#93954, @Miciah) [SIG CLI, Cloud Provider, Cluster Lifecycle, Instrumentation, Network, Storage and Testing]

Other (Cleanup or Flake)

- –cache-dir sets cache directory for both http and discovery, defaults to $HOME/.kube/cache (#92910, @soltysh) [SIG API Machinery and CLI]
- Adds a bootstrapping ClusterRole, ClusterRoleBinding and group for /metrics, /livez/*, /readyz/*, & /healthz/- endpoints. (#93311, @logicalhan) [SIG API Machinery, Auth, Cloud Provider and Instrumentation]
- Base-images: Update to debian-iptables:buster-v1.3.0
  - Uses iptables 1.8.5
  - base-images: Update to debian-base:buster-v1.2.0
  - cluster/images/etcd: Build etcd:3.4.13-1 image
    - Uses debian-base:buster-v1.2.0 (#94733, @justaugustus) [SIG API Machinery, Release and Testing]
- Build: Update to debian-base@v2.1.2 and debian-iptables@v12.1.1 (#93667, @justaugustus) [SIG API Machinery, Release and Testing]
- Build: Update to debian-base@v2.1.3 and debian-iptables@v12.1.2 (#93916, @justaugustus) [SIG API Machinery, Release and Testing]
- Build: Update to go-runner:buster-v2.0.0 (#94167, @justaugustus) [SIG Release]

- Fix kubelet to properly log when a container is started. Before, sometimes the log said that a container is dead and was restarted when it was started for the first time. This only happened when using pods with initContainers and regular containers. (#91469, @rata) [SIG Node]
- Fix: license issue in blob disk feature (#92824, @andyzhangx) [SIG Cloud Provider]
- Fixes the flooding warning messages about setting volume ownership for configmap/secret volumes (#92878, @jvanz) [SIG Instrumentation, Node and Storage]
- Fixes the message about no auth for metrics in scheduler. (#94035, @zhouya0) [SIG Scheduling]
- Kube-up: defaults to limiting critical pods to the kube-system namespace to match behavior prior to 1.17 (#93121, @liggitt) [SIG Cloud Provider and Scheduling]
- Kubeadm: Separate argument key/value in log msg (#94016, @mrueg) [SIG Cluster Lifecycle]
- Kubeadm: remove support for the "ci/k8s-master" version label. This label has been removed in the Kubernetes CI release process and would no longer work in kubeadm. You can use the "ci/latest" version label instead. See kubernetes/test-infra#18517. (#93626, @vikkyomkar) [SIG Cluster Lifecycle]
- Kubeadm: remove the CoreDNS check for known image digests when applying the addon (#94506, @neolit123) [SIG Cluster Lifecycle]
- Kubernetes is now built with go1.15.0 (#93939, @justaugustus) [SIG Release and Testing]
- Kubernetes is now built with go1.15.0-rc.2 (#93827, @justaugustus) [SIG API Machinery, CLI, Cloud Provider, Cluster Lifecycle, Instrumentation, Node, Release and Testing]
- Lock ExternalPolicyForExternalIP to default, this feature gate will be removed in 1.22. (#94581, @knabben) [SIG Network]
- Service.beta.kubernetes.io/azure-load-balancer-disable-tcp-reset is removed. All Standard load balancers will always enable tcp resets. (#94297, @MarcPow) [SIG Cloud Provider]
- Stop propagating SelfLink (deprecated in 1.16) in kube-apiserver (#94397, @wojtek-t) [SIG API Machinery and Testing]
- Strip unnecessary security contexts on Windows (#93475, @ravisantoshgudimetla) [SIG Node, Testing and Windows]
- To ensure the code be strong, add unit test for GetAddressAndDialer (#93180, @FreeZhang61) [SIG Node]
- Update CNI plugins to v0.8.7 (#94367, @justaugustus) [SIG Cloud Provider, Network, Node, Release and Testing]
- Update Golang to v1.14.5
  - Update repo-infra to 0.0.7 (to support go1.14.5 and go1.13.13)
    - Includes:
      - bazelbuild/bazel-toolchains@3.3.2
      - bazelbuild/rules_go@v0.22.7 (#93088, @justaugustus) [SIG

Release and Testing]
- Update Golang to v1.14.6
  - Update repo-infra to 0.0.8 (to support go1.14.6 and go1.13.14)
    - Includes:
      - bazelbuild/bazel-toolchains@3.4.0
      - bazelbuild/rules_go@v0.22.8 (#93198, @justaugustus) [SIG Release and Testing]
- Update cri-tools to v1.19.0 (#94307, @xmudrii) [SIG Cloud Provider]
- Update default etcd server version to 3.4.9 (#92349, @jingyih) [SIG API Machinery, Cloud Provider, Cluster Lifecycle and Testing]
- Update etcd client side to v3.4.13 (#94259, @jingyih) [SIG API Machinery and Cloud Provider]
- `kubectl get ingress` now prefers the `networking.k8s.io/v1` over `extensions/v1beta1` (deprecated since v1.14). To explicitly request the deprecated version, use `kubectl get ingress.v1beta1.extensions`. (#94309, @liggitt) [SIG API Machinery and CLI]

Dependencies

Added

- github.com/Azure/go-autorest: v14.2.0+incompatible
- github.com/fvbommel/sortorder: v1.0.1
- github.com/yuin/goldmark: v1.1.27
- sigs.k8s.io/structured-merge-diff/v4: v4.0.1

Changed

- github.com/Azure/go-autorest/autorest/adal: v0.8.2 → v0.9.0
- github.com/Azure/go-autorest/autorest/date: v0.2.0 → v0.3.0
- github.com/Azure/go-autorest/autorest/mocks: v0.3.0 → v0.4.0
- github.com/Azure/go-autorest/autorest: v0.9.6 → v0.11.1
- github.com/Azure/go-autorest/logger: v0.1.0 → v0.2.0
- github.com/Azure/go-autorest/tracing: v0.5.0 → v0.6.0
- github.com/Microsoft/hcsshim: v0.8.9 → 5eafd15
- github.com/cilium/ebpf: 9f1617e → 1c8d4c9
- github.com/containerd/cgroups: bf292b2 → 0dbf7f0
- github.com/coredns/corefile-migration: v1.0.8 → v1.0.10
- github.com/evanphx/json-patch: e83c0a1 → v4.9.0+incompatible
- github.com/google/cadvisor: 8450c56 → v0.37.0
- github.com/json-iterator/go: v1.1.9 → v1.1.10
- github.com/opencontainers/go-digest: v1.0.0-rc1 → v1.0.0
- github.com/opencontainers/runc: 1b94395 → 819fcc6
- github.com/prometheus/client_golang: v1.6.0 → v1.7.1
- github.com/prometheus/common: v0.9.1 → v0.10.0
- github.com/prometheus/procfs: v0.0.11 → v0.1.3
- github.com/rubiojr/go-vhd: 0bfd3b3 → 02e2102

- github.com/storageos/go-api: 343b3ef → v2.2.0+incompatible
- github.com/urfave/cli: v1.22.1 → v1.22.2
- go.etcd.io/etcd: 54ba958 → dd1b699
- golang.org/x/crypto: bac4c82 → 75b2880
- golang.org/x/mod: v0.1.0 → v0.3.0
- golang.org/x/net: d3edc99 → ab34263
- golang.org/x/tools: c00d67e → c1934b7
- k8s.io/kube-openapi: 656914f → 6aeccd4
- k8s.io/system-validators: v1.1.2 → v1.2.0
- k8s.io/utils: 6e3d28b → d5654de

Removed

- github.com/godbus/dbus: ade71ed
- github.com/xlab/handysort: fb3537e
- sigs.k8s.io/structured-merge-diff/v3: v3.0.0
- vbom.ml/util: db5cfe1