v1.14.10

[Documentation](#)

Downloads for v1.14.10

filename	sha512 hash
[kubernetes.tar.gz](#)	b2b73d186769461236f94b7d1faa5d5806534bae5d9404f223f3e6aeaf1bc7a0c3bc505e2b8f3d34cec1
[kubernetes-src.tar.gz](#)	93f716ecbb29a5510eac8c6d075b842fc79cd02d979dd27a73c90065944854ff09d653ea68a734c95610

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz](#)	baeb3f08d027766a1282a55fb5490e8c91b484d17952eb7a99623bdcb5a7b088cc7b6056302a27307d28a59
[kubernetes-client-darwin-amd64.tar.gz](#)	b6d3bd9589edf7282d3c6157fa271cdfdaca393470d7da0acecd8798884bcaa569ddb02d7a5d4374218504a
[kubernetes-client-linux-386.tar.gz](#)	9dc28d1a7e9ec20170d8980dc9da5c14fbce211b9117c248c92c64b9f0e954b179e35ee8b503d8a151a93a8
[kubernetes-client-linux-amd64.tar.gz](#)	b60f3834a53642ca35c412c0aee0fb30a485005c2280d93bcb01added6012ac18c541c663b0a2a95129f233

filename	sha512 hash
kubernetes-client-linux-arm.tar.gz	af29757e2dd82b031219ad3ea1c48a9e7bb03c15bd97d44dad93d0b30eb74dc8738a36ba8e2abda5516b6a1
kubernetes-client-linux-arm64.tar.gz	63ba22e2b2d37da43250398f15f3a61b94d0cef72947ddca8c81a7ee74d67ed04caa01107fc10e480a607bc
kubernetes-client-linux-ppc64le.tar.gz	c6ba8cf78bb2c2f1610d2585c297d4fbac345eb0c34407d63ef7eca9c1ca21cdf11c8a19f242ffa0db4a96c
kubernetes-client-linux-s390x.tar.gz	671b88174e5c551da3e272381300cf23d512af2c8c52fae710f57ed1d8fa9b165855874e4630f56afddb651
kubernetes-client-windows-386.tar.gz	8c70038716716e289aa05deda4e2cb723d82b0d9537e7dcebcd76bd40850ebb1f4ed15bca7e36250fb4548e
kubernetes-client-windows-amd64.tar.gz	5cbe78764a3bd6e7c1ab8654027d73754fbcd5728819a65133b4fa355757ed9e4c70d90fc38013965dba2e5

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	b66b3c1e34f56891c58d0ac4097f4c83be7422ef7201fde015cffcd1ec214e5fcb16788c04bf61bb88950e4
kubernetes-server-linux-arm.tar.gz	3e67d2013afe3a60d4e7df8363e887d79271ec59b5a19f0c32721e1bedd9dafae5a224271e1c89c16b34a7a
kubernetes-server-linux-arm64.tar.gz	c3491e360340816f475f1b44165b81d4f531ce02a9b89cef286e03875c6bb672b1102a181ea42e6cad76b4f
kubernetes-server-linux-ppc64le.tar.gz	70d831d7718340ff303afcdef7afbe09e832b7780e03985e6480fd747546610051a97e4d3e9300d7d802373
kubernetes-server-linux-s390x.tar.gz	86696bc9912616d645e0fa3facb3e9d0123a271657b2bc5a4802eb7e8a9e43c7fd40e9111729d7a1a8b8597

Node Binaries

filename	sha512 hash

[kubernetes-node-linux-amd64.tar.gz](#)	3f509a406e2c1c889ad447d37f9f34043d61f7e60f14dad2c6a94980283381695e99d058b6a783423d4c5e7
[kubernetes-node-linux-arm.tar.gz](#)	d1196bfb3584d6bdd9e30907af7f3536c420eebea1d2db9b9506eba53668d4d739b88db8187aea7444ca996
[kubernetes-node-linux-arm64.tar.gz](#)	954dd6b23c2ff14e6bc5003039093c80f48315e89eb73e9cff0fca13ff66becbab24c51c5b84f2e3af599d9
[kubernetes-node-linux-ppc64le.tar.gz](#)	a1c491707b4974acfaad6d04767dffb04800181aa1205a91019f56188714692c76df3d9d1e9af19ff12da53
[kubernetes-node-linux-s390x.tar.gz](#)	d70599ca75b6024bfd8514801873fd4262cf5c7d6e4524217180854945d82f0634a7eb947ea4df996dc4db2
[kubernetes-node-windows-amd64.tar.gz](#)	3f8bfc75734c19cc52e6e46bb843cfb429cba61cd7bfa8eab8273d39aa7b13bde142ef1d9daffac092265cd

Changelog since v1.14.9

Other notable changes

- azure: update disk lock logic per vm during attach/detach to allow concurrent updates for different nodes. ([#85115](#), [@aramase](#))
- fix vmss dirty cache issue in disk attach/detach on vmss node ([#85158](#), [@andyzhangx](#))
- fix race condition when attach/delete azure disk in same time ([#84917](#), [@andyzhangx](#))
- fix azure load balancer update dns label issue ([#85329](#), [@nilo19](#))
- Ensure health probes are created for local traffic policy UDP services on Azure ([#85328](#), [@nilo19](#))

v1.14.9

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Downloads for v1.14.9

filename	sha512 hash
[kubernetes.tar.gz](#)	bc2de7897543f2c78b5a6ff0cddf60de7dafdb5586e3353b8105cb0ce5324c583289b5476cdaed444922
[kubernetes-src.tar.gz](#)	e869da8eb3c9e6929e8c10f3aa8cf0ea63279935967a88cbe42d643427d43c13b456c08be40e58039161

Client Binaries

filename	sha512 hash

[kubernetes-client-darwin-386.tar.gz](#)	cf78d75ffe2e5d618bc707b5d06d243336f4d04c51d6dcca01e37c9b85decfa47bb00cb65e1547b94007917
[kubernetes-client-darwin-amd64.tar.gz](#)	bc974988da19fbc5a518059486d1e0d9acd83f1a680ed227814a6f0a22ec2fd0eabb0b6f8e1392a6b16e331
[kubernetes-client-linux-386.tar.gz](#)	ddf0184d9897bf5ea7aec45af78fd0fedd96fa3cbfcff140efd53215883d8e5baeb650450144abe6e61752d
[kubernetes-client-linux-amd64.tar.gz](#)	f7931bc403584f009ba68d7bfdb145d0d097306da06acf192aef0608446b5b91c64d1d7ff99182d08932644
[kubernetes-client-linux-arm.tar.gz](#)	f9872a45b9b4c96e24e6c3922a45f8fd13f9d1fac7b69a644489836b823262aaefeca2f4cf47d1ddbe46f09
[kubernetes-client-linux-arm64.tar.gz](#)	631bedb727aaea5df486e63252ba2fbc90b74af5465631ca6fb77180af2ab9a75c583f209cf04545c147f7d
[kubernetes-client-linux-ppc64le.tar.gz](#)	e99c2810b36457a1061ba6cd703ce54407a2cd17ca53c0b413d8553ffdad49ab34d4f82cf69823dff682070
[kubernetes-client-linux-s390x.tar.gz](#)	1182cafc35632dfb651be66f8b4b630b1cca0642cc464236c3bca5d3b0bdd85091566f0b90b18d89d879b91
[kubernetes-client-windows-386.tar.gz](#)	01e69a9a7f8d4aa005ebef770eb4bacf199d4d55d650be5669afb66502d49ccff3dbe6a85e4bc128ae4cf87
[kubernetes-client-windows-amd64.tar.gz](#)	4387511eaa8229ff4ea08e183a46dc4670d64da576c25bf776bd22db738e7ad8effadb61d3942de98842a62

Server Binaries

filename	sha512 hash
[kubernetes-server-linux-amd64.tar.gz](#)	2e3905868e8f7cfc4b1e5a7ab49711c2c6c929f0f750bf6d932ada023b87cacf992f0b7b7be1a87ce4a50ab
[kubernetes-server-linux-arm.tar.gz](#)	9d699ca53692d4316ea3b72fbcf4c0c6e00956879a0d5e396219fe600f371b62905ad0f2b30aeeacc024149
[kubernetes-](#)	4ab4e5e18ca21f79540ff538ea4ae6dd65b6af76c5c3f1ed34662357ff3321dce72953f53ab0e330da819f3

filename	sha512 hash
[server-linux-arm64.tar.gz](#)	
[kubernetes-server-linux-ppc64le.tar.gz](#)	7b72f6de77936f3a44e060d0fc0e45604bc1614cf78eecb56ddfb8b56873057fcfc701f29ab3b5d78e5dd3a
[kubernetes-server-linux-s390x.tar.gz](#)	76cb6e81b1c14cb650084c133ec62b5298f8d95988160ad1402d8169490a785a7d682f548540ecd8032254d

Node Binaries

filename	sha512 hash
[kubernetes-node-linux-amd64.tar.gz](#)	b2600ef317d10cc56e7dc965b249d29c2a458eecb3207b06fd134c9e2a6f3a815b0d7cf73d21cd6c83d6cfa
[kubernetes-node-linux-arm.tar.gz](#)	ecd617226b5b30b5bdebf7d9e7729371d25d36fabe672b2354a3ad7b9fdb042e09e61834d0a005eefa3c8e6
[kubernetes-node-linux-arm64.tar.gz](#)	d4c5553dacab15c378d1e744342321943d6f8e66891ea199c00e4129219c11fd528bdb19beb32c185560e57
[kubernetes-node-linux-ppc64le.tar.gz](#)	bee9f3c240267fef015fd472cbe2e837204b484e9756cd7073257aebf07ece225de9b4a3317c2cafc212ef6
[kubernetes-node-linux-s390x.tar.gz](#)	79156467ebeed81211bb62e6becf378b07ec91bfe3ee36ec9d623b95b271ca49f34595b10f7c68419183cbd
[kubernetes-node-windows-amd64.tar.gz](#)	9d31f669c5dc04647fe44e546a96dc4f1d0e5df66ae44ea6be14d664b16ee3720ec37df4dab132ed34c0c65

Changelog since v1.14.8

Other notable changes

- Fix kubelet metrics gathering on non-English Windows hosts ([#84156](#), [@wawa0210](#))
- kube-apiserver: Fixed a regression accepting patch requests > 1MB ([#84963](#), [@liggitt](#))
- kube-apiserver: fixed a bug that could cause a goroutine leak if the apiserver encountered an encoding error serving a watch to a websocket watcher ([#84693](#), [@tedyu](#))
- azure: Add allow unsafe read from cache ([#83685](#), [@aramase](#))
- Adds a metric apiserver_request_error_total to kube-apiserver. This metric tallies the number of request_errors encountered by verb, group, version, resource, subresource, scope, component, and code. ([#84780](#), [@RainbowMango](#))
- fix: make azure disk URI as case insensitive ([#79020](#), [@andyzhangx](#))

- Fixed binding of block PersistentVolumes / PersistentVolumeClaims when BlockVolume feature is off. ([#84049](), [@jsafrane]())
- Fixed an issue with informers missing an `Added` event if a recently deleted object was immediately recreated at the same time the informer dropped a watch and relisted. ([#83911](), [@matte21]())
- CSI detach timeout increased from 10 seconds to 2 minutes ([#84321](), [@cduchesne]())
- Update to use go1.12.12 ([#84064](), [@cblecker]())
- Fix handling tombstones in pod-disruption-budged controller. ([#83951](), [@zouyee]())

v1.14.8

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Downloads for v1.14.8

filename	sha512 hash
kubernetes.tar.gz	1aeaa04a0dfb3656204589fb503a0da98d085514ef82d1da930cf093fb17a0e11887c52aaeb1351ec87e
kubernetes-src.tar.gz	1946bb8035d3cf6b40b6e58a8d886cb0fbd023e656af5a1c68047cc2eb3c28541ec4fb07d7420ff269ca

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-386.tar.gz	429099a2fface3c82650ec76b2b422d39f18b4efbfd209431a3f60d218f3c1874eff90499d9ec95a35c41b0
kubernetes-client-darwin-amd64.tar.gz	e51446c4557eebe65f9c36bd19bc23b72fc90c7a5e3bf3fb070d63ddc518ee5ab2e12163933da70b353ce0e
kubernetes-client-linux-386.tar.gz	6efe1d19c0c3998c0af559f33468bccc026b7e98d4efda1566b1e8adb9a4bb15dfa3dbc392a4ca211e40e21
kubernetes-client-linux-amd64.tar.gz	fe1d0816e843c228fdb9da659d61b217f2af9c05a4206bd091b93579142256354312a1fc4173193a0cf4c7f
kubernetes-client-linux-arm.tar.gz	cef8f09eb298569582c4861ef9bace4dc9ff3302bae798756f01d42bfb1e933379a9c842942b9c442de7b3d
kubernetes-client-linux-arm64.tar.gz	47c64414d87e68382652db2e5292fda0a86fdda6b9e3abab61f8647d07005c22692225535966838b5a61b3d
kubernetes-client-linux-ppc64le.tar.gz	0c4c026912b4ecd27c7ee9c995cc16b688c59cabd01f4702adbb6cceecf12f0fef311808d14d8482bf255c6

filename	sha512 hash
kubernetes-client-linux-s390x.tar.gz	9c7aac67511ec12b9176e9067c1d713605bf65f91c5adbf40b82f6e3598fb0676d9504377d7e653fb4a7958
kubernetes-client-windows-386.tar.gz	579c0276d3755a6cad3806fc2c5fce80d19dcbc3301a6dd5a2bf3853265444f8e8daed8156c30f8c7c337e6
kubernetes-client-windows-amd64.tar.gz	7a7a7f4d3543d922c9526b601293f486973137c748e668f048329a375943b26fa5721cc00781b11ea7c6b75

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	9fbdf873ff96bb47172157022182219ecce92131f1cea8f470340f5237532d8388c56ee4c821e3504ffcad1
kubernetes-server-linux-arm.tar.gz	7e0fb35a4322ca960b20feab1e9265daff3823bb83245753fa4ff763b55d5a2e91426bccb58bb4166fb1ee4
kubernetes-server-linux-arm64.tar.gz	d5f48ee89bb0cd4151c636c8f6f777c49af31bfe5aca6ee62ad1327bbcff5430338a342b8ed023c5b030a4e
kubernetes-server-linux-ppc64le.tar.gz	1c2f57ae61e3facb8ec5e9cb47f36173df49870c6c51d08a6eef414c5568cdcdf8fa4ecd70c78851454a9ca
kubernetes-server-linux-s390x.tar.gz	4eb8b48ceca578eb88446391858911c229f04bb8948930b521b40406ccc191295e7808d1353be8f4554319d

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	05d32dde64178f71e4f95bd0354d25536b298a017c968803c1a9c7e34a591b63beb478c43909e3113dd8039
kubernetes-node-linux-arm.tar.gz	ce80d5df529a08dc03c27e53f9dcd79a36159e2e9f1a44d475b8151b55e3f94ee47c74f9ca18c169a8a536f
kubernetes-node-linux-arm64.tar.gz	8905f2fc110439bf992239e09d0dca7cbba918ef2652ab9a1e511361ba3770433edbad0a13fb66b30c08530

kubernetes-node-linux-ppc64le.tar.gz	ccf0dd819fdba4c8e3a32e16fb2d26088b8bce84946a885b5ff2ce56c4704d1d95a855bae8929388af4c714
kubernetes-node-linux-s390x.tar.gz	c157679a832d0f76bde570d243bc9ddaf21663808a12f6ab4a3477118dea63aafeab67f0118460efd81e877
kubernetes-node-windows-amd64.tar.gz	7c87c34736ead06b1823ce004edf27a24773d873d6dff594a587621f3480ff134c7d912fcddc1eb30d4a665

Changelog since v1.14.7

Other notable changes

- Fixes an issue in the AWS cloudprovider, where ELBs fail to register instances (#82954, @M00nF1sh)
- Fixes a goroutine leak in kube-apiserver when a request times out. (#83333, @lavalamp)
- Fix aggressive VM calls for Azure VMSS (#83102, @feiskyer)
- Fixes a flaw (CVE-2019-11253) in json/yaml decoding where large or malformed documents could consume excessive server resources. Request bodies for normal API requests (create/delete/update/patch operations of regular resources) are now limited to 3MB. (#83261, @liggitt)
- Resolves bottleneck in internal API server communication that can cause increased goroutines and degrade API Server performance (#80465, @answer1991)
- Update to go 1.12.10 (#83139, @cblecker)
- fix: azure disk detach failure if node not exists (#82640, @andyzhangx)

v1.14.7

Documentation

Downloads for v1.14.7

filename	sha512 hash
kubernetes.tar.gz	c7ef389927f050fd365a5c4d31a6e4a0b0c8c910cec0a36547ed42338da9c11de528c98910ed9c971e1c
kubernetes-src.tar.gz	4d0f790d2b3dddb961874ec89a9de5547682662ea35f4d7c1fcf774548fb238b07d5ad90259137c0d84d

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-386.tar.gz	ffc9a90f252bdfe40562c63c2a607e832f883fb734731f22bcc436a7bcb6c58029204262d4b3a29e1c9de97
kubernetes-client-darwin-amd64.tar.gz	04278365c8b3e75b3515ab8982756b613ff79ac76aaf06cfc684d801f00db7485b8090dae43a468f7deb67f

filename	sha512 hash
kubernetes-client-linux-386.tar.gz	12c63a07b0dfc73fa2d08016987baf844ff86076f0abb184b813463479c7ce454856ad66af807492dc136ed
kubernetes-client-linux-amd64.tar.gz	6d84db16061dd8d3e3eb49c94d2559d0c7cb4896f0ca3003259c733da4fd2de8de87619cff27249b0f8b29f
kubernetes-client-linux-arm.tar.gz	7c5245c50d4b20d90a5e9726fd0dc6160644310008960476b04a998b8c557fcfdba0e3127ee17afc743decd
kubernetes-client-linux-arm64.tar.gz	68fc7335e6f0bc9a3c9f8b70da136d568606e8479d0568d928e04159164e15a118270ebdd39a32ff278f218
kubernetes-client-linux-ppc64le.tar.gz	3347649520483c6a176d3d07ade878cc1949dce7d522b3c0b39822f93b8e1acd8d28c1445766901af71a445
kubernetes-client-linux-s390x.tar.gz	a5dcf9fdf24aaa61c7224fab38018cf3f893a15337cab4dcad0b394bbb1e6a340912d0f643bbac391ff07a2
kubernetes-client-windows-386.tar.gz	d2ca52057ba30fb579ab9843abe68f98c15b6fb7bfcdc83e587108e814bca38cdb13f088c147bc53244606c
kubernetes-client-windows-amd64.tar.gz	542e1dddb45a242730e103179637f1a9db8c79ec7e5bf37695e5e09e2ee8bb484c9b2180f23178801b4411d

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	108b4fa348c2504d066c15d9bdc3d418780858fca21ce8cb561c30f318b9be155be932333e661ced7cee5b6
kubernetes-server-linux-arm.tar.gz	c19e1af460d52d2220531dbf899973d9388c22deebf636dbfcb99425f2ac28c9949ff867abf4e070f924600
kubernetes-server-linux-arm64.tar.gz	f2deeeb924a8202d21479db7a4812ce052da9cc5bde9ca40000c4d1a26b45879a5924c8a863a3b1b54a8d7f
kubernetes-server-linux-ppc64le.tar.gz	a548c9114f3e9cde8f07892e0c39843e5fad0f81a8b722a8c61b345d651d8fd3d51dc0ccdc9f790162a0a39
kubernetes-	d905534835fb61856ad5257cf9e9a2353720e8826291d03f036405acf80c769ad3ba6cf6d7d8f90e23bb189

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

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	d34df64b7593ee4fe01e85350968caf31bb6f0e8726af8966a978ea8f1b8436a5225e64ca75486d62ea0ad7
kubernetes-node-linux-arm.tar.gz	d2e570dcedcb36104272616b506802857bea96aef15f1b39425361965ecf3f6da5863a7d2acd2f8f254073a
kubernetes-node-linux-arm64.tar.gz	092aa8bdd4741eaf80aa7370d0e214779b984713a02467cb7d107201bbdf04d27ad7b0005302e477cbd009b
kubernetes-node-linux-ppc64le.tar.gz	89b6c5b9db9a0bd48b33daaf526a6367584b65013a181c8d500641d88d1c4d1e6e5295e671237636f0d095a
kubernetes-node-linux-s390x.tar.gz	bca2c439588fccb4f10f6bb5f2f06bdb9606ed9baf3101cd792b8b826c668905fddc82bd81b99204592f8b4
kubernetes-node-windows-amd64.tar.gz	e67828b5998342f8095f102e9c91e6ad5c59dbae3566c5acc4a83bb042b3ddb8118f224a11a44bbcb4af8c3

Known Issues

- There is a known issue [#82923](#82923) in the AWS cloudprovider, where ELBs fail to register instances. The fix has been merged [#82954](#82954) and will be included in v1.14.8.

Changelog since v1.14.6

Other notable changes

- When the number of jobs exceeds 500, cronjob should schedule without error. ([#77475](#77475), [@liucimin](#))
- Fix a bug in apiserver that could cause a valid update request to be rejected with a precondition check failure. ([#82303](#82303), [@roycaihw](#))
- kubectl cp now safely allows unpacking of symlinks that may point outside the destination directory ([#82384](#82384), [@tallclair](#))
- Limit use of tags when calling EC2 API to prevent API throttling for very large clusters ([#76749](#76749), [@mcrute](#))
- fix azure disk naming matching issue due to case sensitive comparison ([#81720](#81720), [@andyzhangx](#))
- Fix `kubectl logs -f` for windows server containers. ([#81747](#81747), [@Random-Liu](#))
- Fix VMSS LoadBalancer backend pools so that the network won't be broken when instances are upgraded to latest model ([#81411](#81411), [@nilo19](#))
- fix: detach azure disk issue using dangling error ([#81266](#81266), [@andyzhangx](#))
- remove iSCSI volume storage cleartext secrets in logs ([#81215](#81215), [@zouyee](#))

- Fix a bug in server printer that could cause kube-apiserver to panic. ([#79349](), [@roycaihw]())
- Fix a bug in the IPVS proxier where virtual servers are not cleaned up even though the corresponding Service object was deleted. ([#80942](), [@gongguan]())

v1.14.6

[Documentation]()

Downloads for v1.14.6

filename	sha512 hash
[kubernetes.tar.gz]()	efa84e3a0704ba093bd1d55f82510a5cb48aaf7b31068e3d14782739692efe60716d5a64528d5a35f0e0
[kubernetes-src.tar.gz]()	24bde69a7b503b23a0ce168688f6cf0227ac515ae7e0edb9faef346805c36b159bfd81cec5779bd02ed7

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz]()	587f7c1a0555b3b9bc91d2f392d2bbe7342c3f1a9502eb109667e4cc06888fb1ea74665b112dfd4b7bf3fa0
[kubernetes-client-darwin-amd64.tar.gz]()	afed84639adb98fed7087a238415dbbbb6643ab7403ecea11a08ea8b230312551a5770de1b42fd0a379a4d0
[kubernetes-client-linux-386.tar.gz]()	a5769eaf1dc8ea87c9e74f9992ba1d8772a56e839da6c8dac77a2e90f0bc7da67370a0bfeb5ef4024ec604a
[kubernetes-client-linux-amd64.tar.gz]()	59624a0d591ba210f8db5bfa1ce7e0e5b3f5c2774fea356f7e459db5d245a18d72ffc315f82b2f97d0e283c
[kubernetes-client-linux-arm.tar.gz]()	d94de8e20c2ef224a8ec706ea65e321c83aefd4e7b64e99df1ac9bba0f8bc743c884bd462fa6243293141cb
[kubernetes-client-linux-arm64.tar.gz]()	8668c27593c10578fee89f609e0eb61ab3b092853ab4fcad83eff081aed4055893387073fe2a55669db623b
[kubernetes-client-linux-ppc64le.tar.gz]()	dfa9c32dfa60093e2d9442ab036be7ff48a48c0305f88c4b4b958153473e1826f895fc98a92b21ef04505b0
[kubernetes-client-linux-s390x.tar.gz]()	5d3d15f8aacfa61c94b7d2bf3b13855c0fc71441fd20e3cb43f8f9dc11925609e86b355b695a8bb189887cc
[kubernetes-]()	1f6101dffa7de2345154e85bf78d87e85af4db23d3773182dbab2d382676e5977e477217225d0506ae4b0cd

filename	sha512 hash
client-windows-386.tar.gz	
kubernetes-client-windows-amd64.tar.gz	db9afa90d12cbc99b7b1d9c4c01744da06d11ac7c4c3eeef5033e895757a83de6cbb9ef6aa89c1bec14ed1c

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	8015cc64f10d25a0fa7890252084c1d256818f161e7dab8fe9a44cf9b74b0b20a1577ae21220b7f2e90745a
kubernetes-server-linux-arm.tar.gz	476d99a3c05a81480f7e4f197b113f3b1294921686a45184ab5342fcab796be28c42c444078cb78cdd9ef07
kubernetes-server-linux-arm64.tar.gz	524b65e0d41f72783aea50e01e6ccdca86467f867d7d51e934bce208229058c9df17d5be20491e272685ef0
kubernetes-server-linux-ppc64le.tar.gz	479b4017695c6aa245ba87a8828ad83e7dce92b73590b991af1427077eaab93db11209fc1b755aae639dfca
kubernetes-server-linux-s390x.tar.gz	5fa9d87803e2ddb488ff8fbf06df8d78d5c39d7c97d3d690ea33a7a0a5000b9095645bb160a222f5494b74c

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	7987d3cea7a985aae0211cf03257501eba2218f0038152a4da2ee623f00feb6a26a46db04ffd619d3d7b992
kubernetes-node-linux-arm.tar.gz	907c019335e531e0316d3538e1f0ff0f827e6eb83d46cee5a64270b9826f7ea89468a8f399ea1922acfe2a7
kubernetes-node-linux-arm64.tar.gz	3b1470381c806ed29482669cc36bfdec425e9f8f88211b75fa48dde4a29ef6b2e768736741d56f49127f73b
kubernetes-node-linux-ppc64le.tar.gz	2988fa171f0f1bd73e9e6424d9b87aada1b77f0464551479709f51e52fa008805fff1a48edd1e81574bc33e
kubernetes-	2ab0fd57591ca42b9a43df110efdb3b7265acd6d94c3d3d62e09192a7374bb76ecbf89264d8bb7487fc6dd1

node-linux-s390x.tar.gz	
kubernetes-node-windows-amd64.tar.gz	`23ab6aabea7eeb95e57a1a392984e9bdd0e7064373eb7b38f9f4bfc7c56e3163604a20a57fbb31924bc4b6e`

Changelog since v1.14.5

Other notable changes

- update to use go 1.12.6 ([#78958](#), [@tao12345666333](#))
- update to use go 1.12.7 ([#79966](#), [@tao12345666333](#))
- Update to use go 1.12.8 ([#81390](#), [@cblecker](#))
- Update to use go 1.12.9 ([#81489](#), [@BenTheElder](#))
- Update golang/x/net dependency to bring in fixes for CVE-2019-9512, CVE-2019-9514 ([#81525](#), [@cblecker](#))
- cpuUsageNanoCores is now reported in the Kubelet summary API on Windows nodes ([#80176](#), [@liyanhui1228](#))
- API: the metadata.selfLink field is deprecated in individual and list objects. It will no longer be returned starting in v1.20, and the field will be removed entirely in v1.21. ([#80978](#), [@wojtek-t](#))
- Fix Azure client requests stuck issues on http.StatusTooManyRequests (HTTP Code 429). ([#81279](#), [@feiskyer](#))
- Update the GCE windows node image to include hot fixes since July. ([#81236](#), [@YangLu1031](#))
- Fix public IP not found issues for VMSS nodes ([#80703](#), [@feiskyer](#))
- Fix a conformance test that was skipped when client had a newer micro version than server. ([#80598](#), [@smarterclayton](#))
- Fix error in `kubeadm join --discovery-file` when using discovery files with embedded credentials ([#80675](#), [@fabriziopandini](#))
- make node lease renew interval more heuristic based on node-status-update-frequency in kubelet ([#80173](#), [@gaorong](#))
- Pass-through volume MountOptions to global mount (NodeStageVolume) on the node for CSI ([#80191](#), [@davidz627](#))
- Bugfix: csi plugin supporting raw block that does not need attach mounted failed ([#79920](#), [@cwdsuzhou](#))
- changes timeout value in csi plugin from 15s to 2min which fixes the timeout issue ([#79529](#), [@andyzhangx](#))
- The AWS credential provider can now obtain ECR credentials even without the AWS cloud provider or being on an EC2 instance. Additionally, AWS credential provider caching has been improved to honor the ECR credential timeout. ([#75587](#), [@tiffanyfay](#))
- Reduces GCE PD Node Attach Limits by 1 since the node boot disk is considered an attachable disk ([#80923](#), [@davidz627](#))

v1.14.5

[Documentation](#)

Downloads for v1.14.5

filename	sha512 hash
[kubernetes.tar.gz](#)	`8e529c27d8ce17bb35061870d19135fa7fde84790afc2c3780ecce524da8f3e61b4edcc0c60e83a1ea77`
[kubernetes-](#)	`0fa3a20b5aad9204507eba2cc6a5126170c652a7d59369dd1da8fa652a3e2052d1fdfd678a7e1762aef8`

[src.tar.gz](#)	

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz](#)	a3b92e34c5e7e9679e306b5fbdea06611b5b0e775db28091ed64afd6f9b930bd7641f6ab69ba5dd128bbf31
[kubernetes-client-darwin-amd64.tar.gz](#)	79e7e1b5dc257d5358f994e518fa1c5dfae789a81ab936c6dec22e8bb87b364b1949d6b8fe1ec216c83cb0c
[kubernetes-client-linux-386.tar.gz](#)	e0a822d551b0b6634179694f1c188ea716e3ceded9bf268f19c6fcc397013476f0d2b5ae199d9408c886d10
[kubernetes-client-linux-amd64.tar.gz](#)	c56527f9378c16e90800b59d2bb2aa535d7ecb731edd8fb5e5824a5ff8e0d43b3ebfc1187628b38d6288c57
[kubernetes-client-linux-arm.tar.gz](#)	23d09797a0927b2f64ca1ffabac5131a2b013fa1ca85879681f75f83d242326e3db9b359816f905617727ef
[kubernetes-client-linux-arm64.tar.gz](#)	3fba6e0c1951f742862d8ead4a361445c8b663fcf605d2d3bdb17c5ca911f54b7944e3f64186793c6e51483
[kubernetes-client-linux-ppc64le.tar.gz](#)	0481eaa0d8c437511b9edb61338812b3dfac5b9a51a1a5cc1c88d9a735c66ea422fbf5a3a3a3479345f5748
[kubernetes-client-linux-s390x.tar.gz](#)	b4e291a966893949bae2d4752a7466d4bfc33265cf95f9caa677eb1e8f83341de378b9308a6b9ed5259a635
[kubernetes-client-windows-386.tar.gz](#)	0f34e1d80e57730daa93d94a375b8b0fe5a571997ee8ce28185684628b1675ae1e8573f68bf168c50b4b46e
[kubernetes-client-windows-amd64.tar.gz](#)	b00ee44e8af93986a3c27da355e5491709b777aa1e68d7f4fa0c632389602f4aa6b07527a075680cc83e903

Server Binaries

filename	sha512 hash
[kubernetes-server-linux-](#)	69d84f7885829db927205ddb49a4800c708de2922b04f65e85e4052988425c162c031c33553b669e772963d

[amd64.tar.gz](#)	
[kubernetes-server-linux-arm.tar.gz](#)	`37de1da7bfdbdbc7fd39e6a1f992f44504140bbdd0b36b0a62f16c38d3a172b1da1b86d6cff43a454f6e600`
[kubernetes-server-linux-arm64.tar.gz](#)	`051b2cf5753792a58d25a183914c79be57a9a5322057910bafb223294b18030f4c6b61f2bee48d858ac7a3b`
[kubernetes-server-linux-ppc64le.tar.gz](#)	`44805eb697eb97833d3c94482bfbc2e5b50acadff9db9b1cb63278990f6afcff5e50a9d9b6024e8d019494f`
[kubernetes-server-linux-s390x.tar.gz](#)	`024426ecc8f8a0e3ea64d506d678c092a92cc5f90ed998a9d55c7c2e5bf201144f4708bf46187786c58e672`

Node Binaries

filename	sha512 hash
[kubernetes-node-linux-amd64.tar.gz](#)	`84bc3a6aa82bc2a56d8f37e1abc1b572eaa7a0d85f242b9225c336b57164af3cccc31a4aa585f576875211c`
[kubernetes-node-linux-arm.tar.gz](#)	`a7364bb73a000e714478c66fbe1a7094e6e98eed58309fdf0af28d049541f1b2ccba65ebe4774d3e304356a`
[kubernetes-node-linux-arm64.tar.gz](#)	`2b30640bd37abbf14fb9c887ef62cf280bd397143b55816f76b44ba5912bece2516c1a4dbd40a4c12fe236e`
[kubernetes-node-linux-ppc64le.tar.gz](#)	`1cd0f330f33e476b20de5baffe7cb3b2935670b7ac3b14055af9ef751f697e39bd963be882b746d959a4352`
[kubernetes-node-linux-s390x.tar.gz](#)	`67a53cf0ab91cf1c7dc9c8b0bb941a463325e9673380890e9d1a6a61a6ff1e2e4ade53944ff19fb1deffe61`
[kubernetes-node-windows-amd64.tar.gz](#)	`9e34d7158273cbd5d329ab4f13ea92f9c4d793e0b72c9a10d9d466e2894f86befbeeacf6b6e9506b950eaec`

Changelog since v1.14.4

- Fix CVE-2019-11249: Incomplete fixes for CVE-2019-1002101 and CVE-2019-11246, kubectl cp potential directory traversal ([#80436](#))
- Fix CVE-2019-11247: API server allows access to custom resources via wrong scope ([#80750](#))

See also the [security announcement for this release](#).

v1.14.4

Documentation

Downloads for v1.14.4

filename	sha512 hash
kubernetes.tar.gz	6a25452a4b248c1a0ffbc0ea19316791e10255e5d8f2a54a211a8463b2219048bded45bad0c7f41f9181
kubernetes-src.tar.gz	5ab052b819c3d3fdb6149d597d3f638d9399b33868ebb76c4430ba34d741e9be0a23f295bd0a848745d2

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-386.tar.gz	73e611d1da3f4acf263a1e9c0b2bdd5a052eac2a28551e01db202cd7abaa1951ea6af34319980c912c6899c
kubernetes-client-darwin-amd64.tar.gz	01fefb89be8d5615f365e0a9860dd72e69b12b14d83272f599a9806fc652805baca075c5e08780aa9afa710
kubernetes-client-linux-386.tar.gz	9498c346f8f2202f220b2ad86bff8637d7de49183279fc72a21af44a6475fcb991062d610cc4b03ee7bad2d
kubernetes-client-linux-amd64.tar.gz	5e3bbc8de68a0c25b84b1160ce874a275447a206ce4ed851d076c108c231405437c99eab0034ffeebc33a4f
kubernetes-client-linux-arm.tar.gz	f15fa86947ef71490b5237f1f629f99cddc115626fcd88106efaa6d6a16be607df72049238f60e9ba77ae4c
kubernetes-client-linux-arm64.tar.gz	cdbd6efac49e58ae582d9e3cfa2ac90f2d6dca6271136847f88d582a627d1bb7233d816bd6ca025daf218d7
kubernetes-client-linux-ppc64le.tar.gz	43da65bf491dcb12b7f7ab9a3f3db2c933a40e1601302ab8482efe3458ad6570429bdcb700dbd196b6f911c
kubernetes-client-linux-s390x.tar.gz	6de5d190edc57dcf602d91da8c44ab5481d614791e64ca697b9393b53d52b861ff171a1c565af5774a4d28d
kubernetes-client-windows-386.tar.gz	f7c8b584de9662831f3082bbc8bdfbdf0a2df5056aded12febca843045cb5ff570b303ab002c2e8ae467524

filename	sha512 hash
kubernetes-client-windows-amd64.tar.gz	0136940266a354642d50fc4aa24ee1e14cf5098b142f8837041c19bba4626f2979e1efa9e559a22e32491f9

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	0405b9f0e1472f47739ec8e3d01694c992a3f0debe0f2fb233855a23bc55e66f5da0cc5a5f1927f807eae32
kubernetes-server-linux-arm.tar.gz	363105ee4895aa2b9df5ddb42fc4c726a16765dc02c1eb6c4dd3207e3f7726d7cf7da33fc48c7fb8681c3e6
kubernetes-server-linux-arm64.tar.gz	bc8417511f908786240ba295d061ddcaad2fdb60708e6f3bbbf93087cfc1ee2299a377686e2e9957d2c626e
kubernetes-server-linux-ppc64le.tar.gz	969b128a135c001d48a1652df9b1973769b4b692774247fb8ce2c7aa839d6ed815a03a34fe225b273bc82d8
kubernetes-server-linux-s390x.tar.gz	1492f504541ff3490b1b6e8c2450ae37c9931db5ad8609e1052c7baf99c8f8ff33739cdc00a4df12a89b389

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	7397c1005a9ccadfcd46bd158f3a246882c2d47b5a431bf378d5dcc9c99a16c757787d175692ee3c8cc2a56
kubernetes-node-linux-arm.tar.gz	5a4b7d20b5485249c4a68060eea1a17233d706412250a9d20f0f62d0c5b9ea6d3a89370eaf3f562062cb621
kubernetes-node-linux-arm64.tar.gz	c413ec8b454f3f833f71de6512232ae1c6606fe556b6fe84ec3ffdb5e928691872b013f48c6b281f084901a
kubernetes-node-linux-ppc64le.tar.gz	f60cf119c1a704201d44034922fd15bff832eec8b078868219cd38f91cc4850bf77a3827605f0b6f79e9406
kubernetes-node-linux-s390x.tar.gz	0bafef46dcb4c8dbf88062a228ae6730b29d7536655b07c3fb5283c56508f2c820c6beacc962d1c2de20695
kubernetes-	55d93e0f25d33970cfe05b63b9fd4b84e310230456ba1a32de6d3fd3ea87aa2f402672be0fea1910d6284f7

node-windows-amd64.tar.gz	

Changelog since v1.14.3

Other notable changes

- fix kubelet fail to delete orphaned pod directory when the kubelet's pods directory (default is "/var/lib/kubelet/pods") symbolically links to another disk device's directory ([#79094](), [@gaorong]())
- Fix possible fd leak and closing of dirs in doSafeMakeDir ([#79534](), [@odinuge]())
- Default resourceGroup should be used when the value of annotation azure-load-balancer-resource-group is an empty string. ([#79514](), [@feiskyer]())
- Remove pids cgroup controller requirement when related feature gates are disabled ([#79073](), [@rafatio]())
- Fix a bug where kubelet would not retry pod sandbox creation when the restart policy of the pod is Never ([#79451](), [@yujuhong]())
- Bump ip-masq-agent to v2.3.0 to fix vulnerabilities. ([#77832](), [@anfernee]())
- fix pod stuck issue due to corrupt mnt point in flexvol plugin, call Unmount if PathExists returns any error ([#75234](), [@andyzhangx]())
- vSphere: allow SAML token delegation (required for Zones support) ([#78876](), [@dougm]())
- fix: retry detach azure disk issue ([#78700](), [@andyzhangx]())
  - try to only update vm if detach a non-existing disk when got <200, error> after detach disk operation
- This adds some useful metrics around pending changes and last successful ([#78602](), [@paulgmiller]())
  - sync time.
  - The goal is for administrators to be able to alert on proxies that, for
  - whatever reason, are quite stale.
- Fix a string comparison bug in IPVS graceful termination where UDP real servers are not deleted. ([#78999](), [@andrewsykim]())
- Resolves spurious rollouts of workload controllers when upgrading the API server, due to incorrect defaulting of an alpha procMount field in pods ([#78883](), [@liggitt]())
- Fixes a memory leak in Kubelet on Windows caused by not not closing containers when fetching container metrics ([#78594](), [@benmoss]())

v1.14.3

[Documentation]()

Downloads for v1.14.3

filename	sha512 hash
[kubernetes.tar.gz]()	7e82dc2070b55ca8f4746579a66d9dcd61e750f8c20632f901cbeb8c9c5bc28b7c428531d96375a5491e
[kubernetes-src.tar.gz]()	58db2d138b1a0575dfdc9be1a742788c56626275f588d262ab64840627e4055c68480f3b2b96c0059967

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-386.tar.gz	29ee18e669171002a11b39fe5046577d91472dfb089de95ad23499a8eb686777887c0bcc81a1681b7ad28f3
kubernetes-client-darwin-amd64.tar.gz	2cf1680e9dfae84dbf4d1f10e9142a087ac9be56c9c5233b0cea669f9dae59ca645e23109a5f039c174dea4
kubernetes-client-linux-386.tar.gz	39ace58bdb85397b856b52d54e97eb9f489169995f55a55b278c1c923829c0c264113a3251f01b705e53f35
kubernetes-client-linux-amd64.tar.gz	dcb6eeebf618a01f2740919989984f8afca567f7a20fffff810bef97e9654af5e4b912f83c97e6ed13dd1b93f
kubernetes-client-linux-arm.tar.gz	4a7dd3310fa96e842ab3505f7815b0778af621fd639ab8296b4994428d930d63057f073e81ebc29852beaa4
kubernetes-client-linux-arm64.tar.gz	7f091cff9c63d58623b5b49967b8824e02139a347c9c5eb9c9fa178b3825320614623afc2e0a2414d29b3cb
kubernetes-client-linux-ppc64le.tar.gz	f7f43d71663a19c2526ae8496b76b2e9df2285ae31f94ba054e45704cc94e2e04cc563fdfce6afebd532eca
kubernetes-client-linux-s390x.tar.gz	23e782ab1fe8e5d30e1cdff8594de4cc4750ab178ae3c71c177c49acf9f35d908bdf8281ecb174a52664b98
kubernetes-client-windows-386.tar.gz	25c05c105996c0d75443e75b0809b7bf7c33d6d8d1d24d2b0b9c2f872838277030870c02c96bcd4ac378c66
kubernetes-client-windows-amd64.tar.gz	df0da8deca3a354406a4be3f025bd9b6729f68c4414126bdcf58a649228196de42d8b94227963bece055801

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	8d7192d1e74a139feca532d9956f6d3dc5289eb5c3eff643fd13d02815ed11a12dca5580e830d69cb142e1b
kubernetes-server-linux-	89c26c83562e32340ab58a0aa835c0b586c6626e811231129645205edfc0bf563aba4125bb932761a27757a

[arm.tar.gz](#)	
[kubernetes-server-linux-arm64.tar.gz](#)	`f74ef5b4a680167251b93d346c9864436f3906f72d676483c9ce27ea0f42e366eab0f85aebd138b915fae2e`
[kubernetes-server-linux-ppc64le.tar.gz](#)	`6bfc3cbd4604112de5a09fa9c8e35ad4637d1fedc024ef20fafb9ef5adf5f160656a6e7c3298d7f39f74187`
[kubernetes-server-linux-s390x.tar.gz](#)	`a1355a9db2e34b062b5e335c52e7a5e2b6e55490896bf9ec1f3900b048b73d4c9eeac6fd770efed269a7fbd`

Node Binaries

filename	sha512 hash
[kubernetes-node-linux-amd64.tar.gz](#)	`1eb8610f93153b5e274ae61f68f9ccd30bdb5373b6098b03a0f885da4b389bfd2f060208aedab663c03311b`
[kubernetes-node-linux-arm.tar.gz](#)	`cedef35f9e84c93d099117a413de39bb5a55e532de1b24dd6c53bcf849ed3100321a0edbd1b895d0a82c0cb`
[kubernetes-node-linux-arm64.tar.gz](#)	`d1f4152ece68cd3d96ff6632fd2229f7da630d5256fd8edd225ee75a4fc60976ad0778dfc71dee8bafdf6b1`
[kubernetes-node-linux-ppc64le.tar.gz](#)	`dbfc833c385c46118aac8d651b9053e48ee9f961fee0668756db0a1254d178d7c9d6c160e6dc9c14e643a18`
[kubernetes-node-linux-s390x.tar.gz](#)	`d715253ab6d2b6b6478d19f4ee4b69d4ba4ae5f20643c3b908fe6e481900f83440ded286c955aa1b189bf4e`
[kubernetes-node-windows-amd64.tar.gz](#)	`3e111f2121c4d87d9492c8ba13812537cce11bf2c52852715d0ee5a3d475981567a058b0a17de9f65e1ba09`

Changelog since v1.14.2

Other notable changes

- Fix vSphere SAML token auth when using Zones ([#78180](#), [@dougm](#))
- IPVS: Disable graceful termination for UDP traffic to solve issues with high number of UDP connections (DNS / syslog in particular) ([#77802](#), [@lbernail](#))
- Fix broken detection of non-root image user ID ([#78261](#), [@tallclair](#))
- fix azure retry issue when return 2XX with error ([#78298](#), [@andyzhangx](#))
- kubelet: fix fail to close kubelet->API connections on heartbeat failure when bootstrapping or client certificate rotation is disabled ([#78016](#), [@gaorong](#))

- Active watches of custom resources now terminate properly if the CRD is modified. ([#78029](), [@liggitt]())
- client-go and kubectl no longer write cached discovery files with world-accessible file permissions ([#77874](), [@yuchengwu]())
- Fix panic logspam when running kubelet in standalone mode. ([#77888](), [@tallclair]())
- Fixed a bug in the apiserver storage that could cause just-added finalizers to be ignored on an immediately following delete request, leading to premature deletion. ([#77619](), [@caesarxuchao]())
- Fixes a bug where dry-run is not honored for pod/eviction sub-resource. ([#76969](), [@apelisse]())
- fix incorrect prometheus azure metrics ([#77722](), [@andyzhangx]())
- fix KUBE_SERVER_PLATFORMS null error when cross compiling kubectl for non-linux platform ([#78059](), [@figo]())

v1.14.2

[Documentation]()

Downloads for v1.14.2

filename	sha512 hash
[kubernetes.tar.gz]()	ef1228ef7cdc3a53e9a5003acb1616aff48eba53db147af82c5e318c174f14db410bb55c030acd67d7f7
[kubernetes-src.tar.gz]()	1721ea726dd19f06bade3e9751379764ffb16289b8902164d78a000eb22da15f11358b208f3996df09cd

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz]()	f707f3293173cbb47dc8537b19d7da443e40d9c2b3945e8e0559513d227d98a97058b5ee3762fbf93e79b98
[kubernetes-client-darwin-amd64.tar.gz]()	dcd61588fc0b27d6539f937106a88f8ebb3f19e9a41d37a79804a2594e12860247883374d7594b52a248915
[kubernetes-client-linux-386.tar.gz]()	90ad262988898cc25c2d84fdf1d62d3cdf8f16a9b7598d477a1b516b7e87e19196a4e501388e68fccc30916
[kubernetes-client-linux-amd64.tar.gz]()	a4394293cecdc177db7d3ef29f9d9efb7f922d193b00d83fa17c847e2aa1cd1c38eff1f4233843fededf15d
[kubernetes-client-linux-arm.tar.gz]()	265599b200f6de8d2c01ac36a33a0fca9faf36fb68e3e3dd5dad9166b9e6605db2aadd4199a05b5b9e20d06
[kubernetes-client-linux-arm64.tar.gz]()	31799018b7840cafac0fa4f8cc474396feaab71340eb7f38a122109fdcf759afc6066e67c5a26fe234232ab
[kubernetes-]()	670bbe7c3142ccfa99a1eebc6d94798a8c3720165301ef615812aea64e512e03db4a9e2d80bfa073083b87c

filename	sha512 hash
client-linux-ppc64le.tar.gz	
kubernetes-client-linux-s390x.tar.gz	58d161e747ec0924f3a937bd4e6856be9bad9227ca2564f2b59cdc9bfd063d78cb9c6381441aac21d3d809a
kubernetes-client-windows-386.tar.gz	696caeb9611137bce1988c8bf7a1e326f92dbb6f9eb31f82cc2d9cf262888b220c3abed5edb8807c58d37b6
kubernetes-client-windows-amd64.tar.gz	156ccc2102a6f92fe1078feaed835913b34eac94bbd0846726eb43fa60f0beb724355e3a3be4de87630f27f

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	f7d9687eb49ea71f0d8b1ccfac33ed05cd341d7cfacb0711fce4a722801769deb05f72f19ade10b6dc29409
kubernetes-server-linux-arm.tar.gz	5c2247e4cab886cbca59ef47ea32d9ab8bb5f47495f844337dadce2362b76ebedc8a912f34131f9ec2e15bc
kubernetes-server-linux-arm64.tar.gz	a341bb15e659d4000fe29b88371cc1c02df4715786901b870546c04cd943f5cad56bd4f014062c4ef2d601f
kubernetes-server-linux-ppc64le.tar.gz	d179c809da68cc4530910dd1a7c3749598bd40f5b7a773b2b3a9b9d0b0e25c5a0fa8f2caa8f1874b7168d2a
kubernetes-server-linux-s390x.tar.gz	fdc8ffccd1c5a2e225f19b52eabceae5e8fac5e599235797b96d37223df10d45f70218dcbf5027a00db0129

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	12c6139a4b497220f239f6c5e9a9b2e864d6dc298495ef4243b780fcf6c9c3aab53c88fa33d8527ed45d79d
kubernetes-node-linux-arm.tar.gz	53e14c9dd53562747dcfdfff7738bccdd369a2bd6f550e1ce181aa219e48c0fe92f786c4ed8d4f62fada480
kubernetes-	5917436bdafab57f6564d6e32819b28f32d373bdb22ae53a46f7c7510283ffa87199d08db31862f8db286d5

[node-linux-arm64.tar.gz](#)	
[kubernetes-node-linux-ppc64le.tar.gz](#)	`12a8ca3c87f165ef4eb493adcd3038d5689c592b411ebbbc97741b1de67a40f91fed7c83d0bf97bd59719c8`
[kubernetes-node-linux-s390x.tar.gz](#)	`1919f8b370199261803ec856e558ad75100cf6db8f5619be5710f528a46a6c58692d659bb11525e351fd466`
[kubernetes-node-windows-amd64.tar.gz](#)	`86057b6ca519a6b454a4b898c7a12f12a2bb25c8be85e53fd2c9b1e4191e334611ca87e679b5832acdd37c0`

Changelog since v1.14.1

Other notable changes

- Update to use go 1.12.4 ([#76576](#), [@cblecker](#))
- Update to use go 1.12.5 ([#77528](#), [@cblecker](#))
- Check if container memory stats are available before accessing it ([#77656](#), [@yastij](#))
- Bump addon-manager to v9.0.1 ([#77282](#), [@MrHohn](#))
  - Rebase image on debian-base:v1.0.0
- If a pod has a running instance, the stats of its previously terminated instances will not show up in the kubelet summary stats any more for CRI runtimes like containerd and cri-o. ([#77426](#), [@Random-Liu](#))
  - This keeps the behavior consistent with Docker integration, and fixes an issue that some container Prometheus metrics don't work when there are summary stats for multiple instances of the same pod.
- Add name validation for dynamic client methods in client-go ([#75072](#), [@lblackstone](#))
- Fix issue in Portworx volume driver causing controller manager to crash ([#76341](#), [@harsh-px](#))
- Fixes segmentation fault issue with Protobuf library when log entries are deeply nested. ([#77224](#), [@qingling128](#))
- Update Cluster Autoscaler to 1.14.2 ([#77064](#), [@losipiuk](#))
  - https://github.com/kubernetes/autoscaler/releases/tag/cluster-autoscaler-1.14.2
  - https://github.com/kubernetes/autoscaler/releases/tag/cluster-autoscaler-1.14.1
- Fixes an error with stuck informers when an etcd watch receives update or delete events with missing data ([#76675](#), [@ryanmcnamara](#))
- [fluentd-gcp addon] Bump fluentd-gcp-scaler to v0.5.2 to pick up security fixes. ([#76762](#), [@serathius](#))
- specify azure file share name in azure file plugin ([#76988](#), [@andyzhangx](#))
- Windows nodes on GCE use a known-working 1809 image rather than the latest 1809 image. ([#76722](#), [@pjh](#))
- kube-proxy: os exit when CleanupAndExit is set to true ([#76732](#), [@JieJhih](#))
- Clean links handling in cp's tar code ([#76788](#), [@soltysh](#))
- Adds a new "storage_operation_status_count" metric for kube-controller-manager and kubelet to count success and error statues. ([#75750](#), [@msau42](#))
- kubeadm: Fix a bug where if couple of CRIs are installed a user override of the CRI during join (via kubeadm join --cri-socket ...) is ignored and kubeadm bails out with an error ([#76505](#), [@rosti](#))
- fix detach azure disk back off issue which has too big lock in failure retry condition ([#76573](#), [@andyzhangx](#))

- Ensure the backend pools are set correctly for Azure SLB with multiple backend pools (e.g. outbound rules) ([#76691](), [@feiskyer]())
- fix azure disk list corruption issue ([#77187](), [@andyzhangx]())
- [IPVS] Introduces flag ipvs-strict-arp to configure stricter ARP sysctls, defaulting to false to preserve existing behaviors. This was enabled by default in 1.13.0, which impacted a few CNI plugins. ([#75295](), [@lbernail]())
- [metrics-server addon] Restore connecting to nodes via IP addresses ([#76819](), [@serathius]())
- Fixes a NPD bug on GCI, so that it disables glog writing to files for log-counter ([#76211](), [@wangzhen127]())
- Fixes bug in DaemonSetController causing it to stop processing some DaemonSets for 5 minutes after node removal. ([#76060](), [@krzysztof-jastrzebski]())

v1.14.1

[Documentation]()

Downloads for v1.14.1

filename	sha512 hash
kubernetes.tar.gz	87f4cb0c6c137cbd07cc0e0b7049722ed2a3f21866ac02aecf1a0e03d350d1e90d7907487bac5ef224da
kubernetes-src.tar.gz	ef1b4ed78ed92124fbec2b2bf54ba3b293038f9c8f1df3883071ae9430450cab9c02c6111cf171ad8d61

Client Binaries

filename	sha512 hash
kubernetes-client-darwin-386.tar.gz	f9f14293ab8c6e6d49c5be16c2bcfad640a258d3e1ce600d6b327a4ba84c369f679b8ed65f7f96c23b7277c
kubernetes-client-darwin-amd64.tar.gz	761c6334ff33e0487feb15f9c335e0e44f36fbb1b5b95ddb8aad0383a085ce5c31f762d60b2fc4365052221
kubernetes-client-linux-386.tar.gz	58c4db0219debd85ded6dd0eac2ceac3432772805826b362d915571aec0b3f93e60eaee7181bbf28bf7fb7d
kubernetes-client-linux-amd64.tar.gz	66c3a470caecfb35ce9a995a6298e689aed5fabefbdb8aca5086adff572266ae47b997eea03ff3ce0272fdb
kubernetes-client-linux-arm.tar.gz	50f76e9cca5e056d9dabe7f27de7db72539cb33c3e24bb541e35cf32293b7614d4a22447ec6d9e6a604bfe9
kubernetes-client-linux-arm64.tar.gz	088621d5cbb8587896b38e6e1faa84471490a1bd2371c082143aeebc0bac6498422c9175014cba22e5190dd
kubernetes-client-linux-	d743819920dd3ac906a855af2c1a1327f991e4c295357c610b1fad5d5cd8abf5ac1296e3bf9a46fa3f8877a

filename	sha512 hash
[ppc64le.tar.gz](#)	
[kubernetes-client-linux-s390x.tar.gz](#)	71cdd44a0d5418500407e9eea6f7118b7384b8c9a4bafaefb78c107b23e0503393b5a831bbe8eaaab6a37b4
[kubernetes-client-windows-386.tar.gz](#)	ffeacdc7658da5564811047e66e2b8e370d037b8d983a2af0ceb9cf762f6214658f633fe626d6e97810f520
[kubernetes-client-windows-amd64.tar.gz](#)	f49b8acef5c31b59dfff0d63b4e175f54f605dd5783bdd57e18cdea766719860490281d2cdf0a3ea1f77d2c

Server Binaries

filename	sha512 hash
[kubernetes-server-linux-amd64.tar.gz](#)	4775257f919bf013a92d6e3b66099d85e09be32b462189ede82874ea860ccacc3f42ff2d70e9e55b9f3b788
[kubernetes-server-linux-arm.tar.gz](#)	2806099d6bdd32940a3221a076fff51eb9c79729e058a6b5ef283cfbbf71695d35b0d121643282a089d1ce3
[kubernetes-server-linux-arm64.tar.gz](#)	1aa3c44189f9be25181b69e6ef336955f92ceb0a35c07579e386e4c0584d4bbb5b6f7cb044ccb7002ea111f
[kubernetes-server-linux-ppc64le.tar.gz](#)	6e91be7bf7b3cb1dc20a395cbf32c70ad867f1300d09800bb2c6854c93ff8d9cf8c180b703f3172564f0b10
[kubernetes-server-linux-s390x.tar.gz](#)	ee915182eda63d67292464ed3a3e029c1749d016cd730e15dc8fd19fdcc8ee5ae7bc926681935b6e6837d55

Node Binaries

filename	sha512 hash
[kubernetes-node-linux-amd64.tar.gz](#)	df2b5010eea175fd45868c908cc769cc8fefb367899af448ef9c64db5e4a7b50db9bdba77b81943446d0abe
[kubernetes-node-linux-arm.tar.gz](#)	338ca18540c087c81b07bd341f390b78e446deb270d7e320ef108f9f293518c26580c17968c1a87fe7af254
[kubernetes-node-linux-](#)	dd2544dd9543cb9a556def0116fdccb8b14c0e7ae07debbf10f3b4ac0669a1f38be28327114781157cc9ae0

arm64.tar.gz	
kubernetes-node-linux-ppc64le.tar.gz	866fd6680f0d35c747c54369e6363b0241a233a505110a899236e1390ec7365b9ae7df4ddf7087514dc5102
kubernetes-node-linux-s390x.tar.gz	87e7b803f1ae05bf4652fd0b2f636ce61bd1100e40ce7c5c2530407346260435a8f649a41bfbfa5cacb7a81
kubernetes-node-windows-amd64.tar.gz	0e46f70d7f1ec542b33119a9773a98dfb46d80f96a9f31f22ccc33c902e4bb102e2d2453a0fcebcfe319b33

Changelog since v1.14.0

Other notable changes

- GCE/Windows: disable stackdriver logging agent to prevent node startup failures ([#76099](), [@yujuhong]())
- Support vSphere SAML token auth when using Zones ([#75515](), [@dougm]())
- Fix empty array expansion error in cluster/gce/util.sh ([#76111](), [@kewu1992]())
- [stackdriver addon] Bump prometheus-to-sd to v0.5.0 to pick up security fixes. ([#75362](), [@serathius]())
  - [fluentd-gcp addon] Bump fluentd-gcp-scaler to v0.5.1 to pick up security fixes.
  - [fluentd-gcp addon] Bump event-exporter to v0.2.4 to pick up security fixes.
  - [fluentd-gcp addon] Bump prometheus-to-sd to v0.5.0 to pick up security fixes.
  - [metatada-proxy addon] Bump prometheus-to-sd v0.5.0 to pick up security fixes.
- kube-proxy no longer automatically cleans up network rules created by running kube-proxy in other modes. If you are switching the mode that kube-proxy is in running in (EG: iptables to IPVS), you will need to run `kube-proxy --cleanup`, or restart the worker node (recommended) before restarting kube-proxy. ([#76109](), [@vllry]())
  - If you are not switching kube-proxy between different modes, this change should not require any action.
  - This fixes a bug where restarting the iptables proxier can cause connections to fail ([https://github.com/kubernetes/kubernetes/issues/75360]()).
- kubeadm: fixes error when upgrading from v1.13 to v1.14 clusters created with kubeadm v1.12. Please note that it is required to upgrade etcd during the final v1.13 to v1.14 upgrade. ([#75956](), [@fabriziopandini]())
- Fixes a regression proxying responses from aggregated API servers which could cause watch requests to hang until the first event was received ([#75887](), [@liggitt]())
- Increased verbose level for local openapi aggregation logs to avoid flooding the log during normal operation ([#75781](), [@roycaihw]())
- Update Cluster Autoscaler to 1.14.0; changelog: [https://github.com/kubernetes/autoscaler/releases/tag/cluster-autoscaler-1.14.0]() ([#75480](), [@losipiuk]())
- Ensures the conformance test image saves results before exiting when ginkgo returns non-zero value. ([#76039](), [@johnSchnake]())
- GCE Windows nodes will rely solely on kubernetes and kube-proxy (and not the GCE agent) for network address management. ([#75855](), [@pjh]())
- kubeadm: fix "upgrade plan" not defaulting to a "stable" version if no version argument is passed ([#75900](), [@neolit123]())
- kubeadm: preflight checks on external etcd certificates are now skipped when joining a control-plane node with automatic copy of cluster certificates (--certificate-key) ([#75847](), [@fabriziopandini]())

- [IPVS] Allow for transparent kube-proxy restarts ([#75283](#), [@lbernail](#))

v1.14.0

[Documentation](#)

Downloads for v1.14.0

filename	sha512 hash
[kubernetes.tar.gz](#)	0ad264a46f185a9ff4db0393508a9598dab146f438b2cfdc7527592eb422870b8f26ade7ed089359c067
[kubernetes-src.tar.gz](#)	c5175439decc1c5f54254572bfec3c9f61f39d6bd1cbc28d1f771f8f931b98f0c305f1871618ce7e9de9

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz](#)	68bdba50a2b0be755e73e34ffc758fd419940adace096b1ddebd44a0eae2c7cdaed984965ea8f2145c1cab0
[kubernetes-client-darwin-amd64.tar.gz](#)	255bd93082b3ac5d69bd4e45c75c9f19efee50ad6add50837ff2987ce16cbcc485fad334c980b17f69e5a34
[kubernetes-client-linux-386.tar.gz](#)	2bd115ad2503fdfe5482e4592fcc0c8a2aee36be5205220a13c8050cd1e55dd3c08377425dbe5a03e4ffd21
[kubernetes-client-linux-amd64.tar.gz](#)	a551adf8019b17fce5aff2b379fab3627588978a2d628b64ba1af6f3be1b435322368b00dd04fa739d01c34
[kubernetes-client-linux-arm.tar.gz](#)	24e771cd4074786330e07f5537259a28d0932102639326230d9161f12a8dc545638a55bc252771eb4e21e95
[kubernetes-client-linux-arm64.tar.gz](#)	16204f2345ab3523bbe3c868f04806a97c111d940b2594aaff67cf73b4259040c7770d5b0e7bdb7ffd7389f
[kubernetes-client-linux-ppc64le.tar.gz](#)	cd9ce829d585dd3331c53d35015d4017026d5efd24b9bc2f342995245628598c98bd8b1f1d706b196a7b304
[kubernetes-client-linux-s390x.tar.gz](#)	482c0a8e53b27f8922f58d89fb81842ddd9c3ffd120e635838992dc97d535e46b42e7d8c439cb739b7c1d63
[kubernetes-client-](#)	4446d666f999e979a7245e1b7ebf4817f7bd23aa247a38853a63b9cda473c7d4c2d376a2fd0df13ba15b740

filename	sha512 hash
windows-386.tar.gz	
kubernetes-client-windows-amd64.tar.gz	97f4789f21d10fd3df446e55bc489472dcd534c623bb40dc3cb20fe1edd74c1a89a50ce7caa4e5e0536f3b2

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	25739802a641517a8bbb933b69000a943e8dd38e616b8778149dd0138737abacf377683da2ff35fdd0bbb30
kubernetes-server-linux-arm.tar.gz	c1dbba77a4ff5661eb36c55182a753b88ccc9b89ca31e162b06672126743cfea115b2f8ea8658b12344c36d
kubernetes-server-linux-arm64.tar.gz	ad346bbe2a053c1106b51e5125698737dc7b76fa3bf439e14d4b4ba1c262678fede9c507c1098aac6e14d2c
kubernetes-server-linux-ppc64le.tar.gz	49f9bd1c751620ecf4b5c152f287d72b36abca21fd1dfe99443d984473c6efa051a910de585c42f5447ef7c
kubernetes-server-linux-s390x.tar.gz	d6be847f2a0358755a69dea26181e5fc1a80ac4939b8b04a3875e1f6693553cad562452bfad21b2e380ddda

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	75dc99919d1084d7d471a53ab60c743dc399145c99e83f37c6ba3c241b2c0b2ecc2c0d1b94690ff912e2a15
kubernetes-node-linux-arm.tar.gz	49013a4f01be8086fff332099d94903082688b9b295d2f34468462656da4709360025e9d84b069410c60897
kubernetes-node-linux-arm64.tar.gz	f8c0cb0c089cd1d1977c049002620b8cf748d193c1b76dd1d3aac01ff9273549c06a1e3dfe983dc40a95ee8
kubernetes-node-linux-ppc64le.tar.gz	48fc02c856a192388877189a43eb1cda531e548bb035f9dfe6a1e3c8d3bcbd0f8e14f29382da45702cb28a9
kubernetes-node-linux-	d7c5f52cf602fd0c0d0f72d4cfe1ceaa4bad70a42f37f21c103f17c3448ceb2396c1bfa521eeeb9eef5f317

[s390x.tar.gz](#)	
[kubernetes-node-windows-amd64.tar.gz](#)	120afdebe844b06a7437bb9788c3e7ea4fc6352aa18cc6a00e70f44f54664f844429f138870bc15862579da

Kubernetes v1.14 Release Notes

1.14 What's New

Support for Windows Nodes is Graduating to Stable ([#116](#))

- Support for Windows Server 2019 for worker nodes and containers
- Support for out of tree networking with Azure-CNI, OVN-Kubernetes and Flannel
- Improved support for pods, service types, workload controllers and metrics/quotas to closely match the capabilities offered for Linux containers kubernetes/enhancements: [#116](#) [[kep](#)]

Updated Plugin Mechanism for kubectl is Graduating to Stable ([#579](#))

- Extends functionality to kubectl to support extensions adding new commands as well as overriding specific subcommands (at any depth).
- Documentation fixes kubernetes/enhancements: [#579](#) [[kep](#)]

Durable Local Storage Management is Now GA ([#121](#))

- Makes locally attached (non-network attached) storage available as a persistent volume source.
- Allows users to take advantage of the typically cheaper and improved performance of persistent local storage kubernetes/kubernetes: [#73525](#), [#74391](#), [#74769](#) kubernetes/enhancements: [#121](#) [[kep](#)]

Pid Limiting is Graduating to Beta ([#757](#))

- Prevents a pod from starving pid resource
- Ability to isolate pid resources pod-to-pod and node-to-pod kubernetes/kubernetes: [#73651](#) kubernetes/enhancements: [#757](#) [[kep](#)]

Pod Priority and Preemption in Kubernetes ([#564](#))

- Pod priority and preemption enables Kubernetes scheduler to schedule more important Pods first and when cluster is out of resources, it removes less important pods to create room for more important ones. The importance is specified by priority. kubernetes/kubernetes: [#73498](#), [#73555](#), [#74465](#) kubernetes/enhancements: [#564](#) [[kep](#)]

Pod Ready++ ([#580](#))

- Introduces extension point for external feedback on pod readiness. kubernetes/kubernetes: [#74434](#), kubernetes/enhancements: [#580](#) [[kep](#)]

Kubeadm: Automate certificate copy between control planes in HA setups

- Joining control plane nodes to a HA cluster can now be simplified by enabling the optional automatic copy of certificates from an existing control plane node.
- You can now use `kubeadm init --experimental-upload-certs` and `kubeadm join --experimental-control-plane --certificate-key` . kubernetes/kubeadm: [#1373](#) kubernetes/enhancements: [#357](#) [kep](#)]

Kubeadm: Expose the `kubeadm join` workflow as phases

- The `kubeadm join` command can now be used in phases. Similar to the work that was done for `kubeadm init` in 1.13, in 1.14 the `join` phases can be now executed step-by-step/selectively using the `kubeadm join phase` sub-command. This makes it possible to further customize the workflow of joining nodes to the cluster. kubernetes/kubeadm: [#1204](#) kubernetes/enhancements: [kep](#)

Known Issues

- There is a known issue [coredns/coredns#2629](#) in CoreDNS 1.3.1, wherein if the Kubernetes API shuts down while CoreDNS is connected, CoreDNS will crash. The issue is fixed in CoreDNS 1.4.0 in [coredns/coredns#2529](#).
- Kubelet might fail to restart if an existing flexvolume mounted pvc contains a large number of directories, or is full. [#75019](#)

Urgent Upgrade Notes

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

- kube-apiserver:

  - Default RBAC policy no longer grants access to discovery and permission-checking APIs (used by `kubectl auth can-i`) to *unauthenticated* users. Upgraded clusters preserve prior behavior, but cluster administrators wishing to grant unauthenticated users access in new clusters will need to explicitly opt-in to expose the discovery and/or permission-checking APIs: ([#73807](#), [@dekkagaijin](#))
    - `kubectl create clusterrolebinding anonymous-discovery --clusterrole=system:discovery --group=system:unauthenticated`
    - `kubectl create clusterrolebinding anonymous-access-review --clusterrole=system:basic-user --group=system:unauthenticated`
  - The deprecated --storage-versions flag has been removed. The storage versions will always be the default value built-in the kube-apiserver binary. ([#67678](#), [@caesarxuchao](#))
  - The deprecated `--repair-malformed-updates` flag has been removed ([#73663](#), [@danielqsj](#))
  - The `/swaggerapi/*` schema docs, deprecated since 1.7, have been removed in favor of the /openapi/v2 schema docs. ([#72924](#), [@liggitt](#))
  - The /swagger.json and /swagger-2.0.0.pb-v1 schema documents, deprecated since v1.10, have been removed in favor of `/openapi/v2` ([#73148](#), [@liggitt](#))
  - `kube-apiserver` now only aggregates openapi schemas from `/openapi/v2` endpoints of aggregated API servers. The fallback to aggregate from `/swagger.json` has been removed. Ensure aggregated API servers provide schema information via `/openapi/v2` (available since v1.10). ([#73441](#), [@roycaihw](#))
  - The OpenAPI definitions with the prefix "io.k8s.kubernetes.pkg" (deprecated since 1.9) have been removed. ([#74596](#), [@sttts](#))
  - The `ValidateProxyRedirects` feature was promoted to Beta and enabled by default. This feature restricts redirect-following from the apiserver to same-host redirects. If nodes are configured to respond to CRI streaming requests on a different host interface than what the apiserver makes requests on (only the case if not using the built-in dockershim & setting the kubelet flag `--redirect-container-streaming=true`), then these requests will be broken. In that case, the feature can be temporarily disabled until the node configuration is corrected. We

suggest setting `--redirect-container-streaming=false` on the kubelet to avoid issues. ([#72552](), [@tallclair]())

- kubectl

  - The deprecated `--show-all` flag to `kubectl get` has been removed ([#69255](), [@Pingan2017]())

- kubelet

  - The deprecated `--experimental-fail-swap-on` flag has been removed ([#69552](), [@Pingan2017]())
  - Health check (liveness & readiness) probes using an HTTPGetAction will no longer follow redirects to different hostnames from the original probe request. Instead, these non-local redirects will be treated as a Success (the documented behavior). In this case an event with reason "ProbeWarning" will be generated, indicating that the redirect was ignored. If you were previously relying on the redirect to run health checks against different endpoints, you will need to perform the healthcheck logic outside the Kubelet, for instance by proxying the external endpoint rather than redirecting to it. ([#75416](), [@tallclair]())

- client-go

  - The deprecated versionless API group accessors (like `clientset.Apps()`) have been removed. Use an explicit version instead (like `clientset.AppsV1()`) ([#74422](), [@liggitt]())
  - The disk-cached discovery client is moved from k8s.io/client-go/discovery to k8s.io/client-go/discovery/cached/disk. The memory-cached discovery client is moved from k8s.io/client-go/discovery/cached to k8s.io/client-go/discovery/cached/memory. ([#72214](), [@caesarxuchao]())

- kubeadm

  - `kubeadm alpha preflight` and `kubeadm alpha preflight node` are removed; you can now use `kubeadm join phase preflight` ([#73718](), [@fabriziopandini]())

- The deprecated taints `node.alpha.kubernetes.io/notReady` and `node.alpha.kubernetes.io/unreachable` are no longer supported or adjusted. These uses should be replaced with `node.kubernetes.io/not-ready` and `node.kubernetes.io/unreachable` ([#73001](), [@shivnagarajan]())

- Any Prometheus queries that match `pod_name` and `container_name` labels (e.g. cadvisor or kubelet probe metrics) should be updated to use `pod` and `container` instead. `pod_name` and `container_name` labels will be present alongside `pod` and `container` labels for one transitional release and removed in the future. ([#69099](), [@ehashman]())

Deprecations

- kubectl

  - `kubectl convert` is deprecated and will be removed in v1.17.
  - The `--export` flag for the `kubectl get` command is deprecated and will be removed in v1.18. ([#73787](), [@soltysh]())

- kubelet

- OS and Arch information is now recorded in `kubernetes.io/os` and `kubernetes.io/arch` labels on Node objects. The previous labels (`beta.kubernetes.io/os` and `beta.kubernetes.io/arch`) are still recorded, but are deprecated and targeted for removal in v1.18. ([#73333](#), [@yujuhong](#))
  - The `--containerized` flag is deprecated and will be removed in a future release ([#74267](#), [@dims](#))

- hyperkube

  - The `--make-symlinks` flag is deprecated and will be removed in a future release. ([#74975](#), [@dims](#))

- API

  - Ingress resources are now available via `networking.k8s.io/v1beta1`. Ingress resources in `extensions/v1beta1` are deprecated and will no longer be served in v1.18. Existing persisted data is available via the new API group/version ([#74057](#), [@liggitt](#))
  - NetworkPolicy resources will no longer be served from `extensions/v1beta1` in v1.16. Migrate use to the `networking.k8s.io/v1` API, available since v1.8. Existing persisted data can be retrieved via the `networking.k8s.io/v1` API.
  - PodSecurityPolicy resources will no longer be served from `extensions/v1beta1` in v1.16. Migrate to the `policy/v1beta1` API, available since v1.10. Existing persisted data can be retrieved via the `policy/v1beta1` API.
  - DaemonSet, Deployment, and ReplicaSet resources will no longer be served from `extensions/v1beta1`, `apps/v1beta1`, or `apps/v1beta2` in v1.16. Migrate to the `apps/v1` API, available since v1.9. Existing persisted data can be retrieved via the `apps/v1` API.
  - PriorityClass resources have been promoted to `scheduling.k8s.io/v1` with no changes. The `scheduling.k8s.io/v1beta1` and `scheduling.k8s.io/v1alpha1` versions are now deprecated and will stop being served by default in v1.17. ([#73555](#), [#74465](#), [@bsalamat](#))
  - The `export` query parameter for list API calls is deprecated and will be removed in v1.18 ([#73783](#), [@deads2k](#))

- The following features are now GA, and the associated feature gates are deprecated and will be removed in v1.15:

  - `CustomPodDNS`
  - `HugePages`
  - `MountPropagation`
  - `PersistentLocalVolumes`

- CoreDNS: The following directives or keywords are deprecated and will be removed in v1.15:

  - `upstream` option of `kubernetes` plugin, becoming default behavior in v1.15.
  - `proxy` plugin replaced by `forward` plugin

Removed and deprecated metrics

Removed metrics
- `reflector_items_per_list`
- `reflector_items_per_watch`

- `reflector_last_resource_version`
- `reflector_list_duration_seconds`
- `reflector_lists_total`
- `reflector_short_watches_total`
- `reflector_watch_duration_seconds`
- `reflector_watches_total`

Deprecated metrics

- `rest_client_request_latency_seconds` -> `rest_client_request_duration_seconds`
- `apiserver_proxy_tunnel_sync_latency_secs` -> `apiserver_proxy_tunnel_sync_duration_seconds`
- `scheduler_scheduling_latency_seconds` -> `scheduler_scheduling_duration_seconds`
- `kubelet_pod_worker_latency_microseconds` -> `kubelet_pod_worker_duration_seconds`
- `kubelet_pod_start_latency_microseconds` -> `kubelet_pod_start_duration_seconds`
- `kubelet_cgroup_manager_latency_microseconds` -> `kubelet_cgroup_manager_duration_seconds`
- `kubelet_pod_worker_start_latency_microseconds` -> `kubelet_pod_worker_start_duration_seconds`
- `kubelet_pleg_relist_latency_microseconds` -> `kubelet_pleg_relist_duration_seconds`
- `kubelet_pleg_relist_interval_microseconds` -> `kubelet_pleg_relist_interval_seconds`
- `kubelet_eviction_stats_age_microseconds` -> `kubelet_eviction_stats_age_seconds`
- `kubelet_runtime_operations` -> `kubelet_runtime_operations_total`
- `kubelet_runtime_operations_latency_microseconds` -> `kubelet_runtime_operations_duration_seconds`
- `kubelet_runtime_operations_errors` -> `kubelet_runtime_operations_errors_total`
- `kubelet_device_plugin_registration_count` -> `kubelet_device_plugin_registration_total`
- `kubelet_device_plugin_alloc_latency_microseconds` -> `kubelet_device_plugin_alloc_duration_seconds`
- `docker_operations` -> `docker_operations_total`
- `docker_operations_latency_microseconds` -> `docker_operations_latency_seconds`
- `docker_operations_errors` -> `docker_operations_errors_total`
- `docker_operations_timeout` -> `docker_operations_timeout_total`
- `network_plugin_operations_latency_microseconds` -> `network_plugin_operations_latency_seconds`
- `sync_proxy_rules_latency_microseconds` -> `sync_proxy_rules_latency_seconds`
- `apiserver_request_count` -> `apiserver_request_total`
- `apiserver_request_latencies` -> `apiserver_request_latency_seconds`
- `apiserver_request_latencies_summary` -> `apiserver_request_latency_seconds`
- `apiserver_dropped_requests` -> `apiserver_dropped_requests_total`
- `etcd_helper_cache_hit_count` -> `etcd_helper_cache_hit_total`
- `etcd_helper_cache_miss_count` -> `etcd_helper_cache_miss_total`
- `etcd_helper_cache_entry_count` -> `etcd_helper_cache_entry_total`
- `etcd_request_cache_get_latencies_summary` -> `etcd_request_cache_get_latency_seconds`

- `etcd_request_cache_add_latencies_summary` -> `etcd_request_cache_add_latency_seconds`
- `etcd_request_latencies_summary` -> `etcd_request_latency_seconds`
- `transformation_latencies_microseconds` -> `transformation_latencies_seconds`
- `data_key_generation_latencies_microseconds` -> `data_key_generation_latencies_seconds`

Notable Features

- Increased the histogram resolution of the API server client certificate to accommodate short-lived (< 6h) client certificates. ([#74806](), [@mxinden]())
- Updated to use golang 1.12 ([#74632](), [@cblecker]())
- The `RunAsGroup` feature has been promoted to beta and enabled by default. `PodSpec` and `PodSecurityPolicy` objects can be used to control the primary GID of containers on supported container runtimes. ([#73007](), [@krmayankk]())
- Added the same information to an init container as a standard container in a pod when using `PodPresets` . ([#71479](), [@soggiest]())
- kube-conformance image will now run ginkgo with the `--dryRun` flag if the container is run with the environment variable E2E_DRYRUN set. ([#74731](), [@johnSchnake]())
- Introduced dynamic volume provisioning shim for CSI migration ([#73653](), [@ddebroy]())
- Applied resources from a directory containing kustomization.yaml ([#74140](), [@Liujingfang1]())
- kubeadm: Allowed to download certificate secrets uploaded by `init` or `upload-certs` phase, allowing to transfer certificate secrets (certificates and keys) from the cluster to other master machines when creating HA deployments. ([#74168](), [@ereslibre]())
- The `--quiet` option to `kubectl run` now suppresses resource deletion messages emitted when the `--rm` option is specified. ([#73266](), [@awh]())
- Added Custom Resource support to `kubectl autoscale` ([#72678](), [@rmohr]())
- Cinder volume limit can now be configured from node too ([#74542](), [@gnufied]())
- It is now possible to combine the `-f` and `-l` flags in `kubectl logs` ([#67573](), [@m1kola]())
- New conformance tests added for API Aggregation. ([#63947](), [@jennybuckley]())
- Moved fluentd-elasticsearch addon images to community controlled location ([#73819](), [@coffeepac]())
- Removed local etcd members from the etcd cluster when `kubeadm reset` ([#74112](), [@pytimer]())
- kubeadm will now not fail preflight checks when running on >= 5.0 Linux kernel ([#74355](), [@brb]())
- Scheduler cache snapshot algorithm has been optimized to improve scheduling throughput. ([#74041](), [@bsalamat]())
- It is now possible to upload certificates required to join a new control-plane to kubeadm-certs secret using the flag `--experimental-upload-certs` on `init` or upload-certs phase. ([#73907](), [@yagonobre]())
- `kubectl auth reconcile` now outputs details about what changes are being made ([#71564](), [@liggitt]())
- Added Kustomize as a subcommand in kubectl ([#73033](), [@Liujingfang1]())
- Added `kubelet_node_name` metrics. ([#72910](), [@danielqsj]())
- Updated AWS SDK to v1.16.26 for ECR PrivateLink support ([#73435](), [@micahhausler]())
- Expanded `kubectl wait` to work with more types of selectors. ([#71746](), [@rctl]())
- Added configuration for AWS endpoint fine control: ([#72245](), [@ampsingram]())
- The CoreDNS configuration now has the forward plugin for proxy in the default configuration instead of the proxy plugin. ([#73267](), [@rajansandeep]())
- Added alpha field storageVersionHash to the discovery document for each resource. Its value must be treated as opaque by clients. Only equality comparison on the value is valid. ([#73191](), [@caesarxuchao]())
- If you are running the cloud-controller-manager and you have the `pvlabel.kubernetes.io` alpha Initializer enabled, you must now enable PersistentVolume labeling using the `PersistentVolumeLabel`

admission controller instead. You can do this by adding `PersistentVolumeLabel` in the `--enable-admission-plugins` kube-apiserver flag. ([#73102](), [@andrewsykim]())
- kubectl supports copying files with wild card ([#72641](), [@dixudx]())
- kubeadm now attempts to detect an installed CRI by its usual domain socket, so that `--cri-socket` can be omitted from the command line if Docker is not used and there is a single CRI installed. ([#69366](), [@rosti]())
- `CSINodeInfo` and `CSIDriver` CRDs have been installed in the local cluster. ([#72584](), [@xing-yang]())
- Node OS/arch labels have been promoted to GA ([#73048](), [@yujuhong]())
- Added support for max attach limit for Cinder ([#72980](), [@gnufied]())
- Enabled mTLS encryption between etcd and kube-apiserver in GCE ([#70144](), [@wenjiaswe]())
- Added `ResourceVersion` as a precondition for delete in order to ensure a delete fails if an unobserved change happens to an object. ([#74040](), [@ajatprabha]())
- There is now support for collecting pod logs under `/var/log/pods/NAMESPACE_NAME_UID` to stackdriver with `k8s_pod` resource type. ([#74502](), [@Random-Liu]())
- Changed CRI pod log directory from `/var/log/pods/UID` to `/var/log/pods/NAMESPACE_NAME_UID`. ([#74441](), [@Random-Liu]())
- `RuntimeClass` has been promoted to beta, and is enabled by default. ([#75003](), [@tallclair]())
- New "dry_run" metric label (indicating the value of the dryRun query parameter) has been added into the metrics:
  - apiserver_request_total
  - apiserver_request_duration_seconds
    New "APPLY" value for the "verb" metric label which indicates a PATCH with "Content-Type: apply-patch+yaml". This value is experimental and will only be present if the ServerSideApply alpha feature is enabled. ([#74997](), [@jennybuckley]())
- GCE: bumped COS image version to `cos-beta-73-11647-64-0` ([#75149](), [@yguo0905]())
- Added alpha support for ephemeral CSI inline volumes that are embedded in pod specs. ([#74086](), [@vladimirvivien]())
- The NodeLease feature gate has been promoted to Beta, and is enabled by default ([#72096](), [@wojtek-t]())

API Changes

- [CRI] Added a new field called `runtime_handler` into `PodSandbox` and `PodSandboxStatus` to track the `RuntimeClass` information of a pod. ([#73833](), [@haiyanmeng]())

Detailed Bug Fixes And Changes

API Machinery

- client-go: `PortForwarder.GetPorts()` now contain correct local port if no local port was initially specified when setting up the port forwarder ([#73676](), [@martin-helmich]())
- Fixed an issue with missing `apiVersion/kind` in object data sent to admission webhooks ([#74448](), [@liggitt]())
- Prometheus metrics for `crd_autoregister`, `crd_finalizer` and `crd_naming_condition_controller` are exported. ([#71767](), [@roycaihw]())
- Fixed admission metrics in seconds. ([#72343](), [@danielqsj]())
- When a watch is closed by an HTTP2 load balancer and we are told to go away, skip printing the message to stderr by default.
- Spedup kubectl by >10 when calling out to kube-apiserver for discovery information. ([#73345](), [@sttts]())
- Fixed watch to not send the same set of events multiple times causing watcher to go back in time ([#73845](), [@wojtek-t]())

- Fix kube-apiserver not to create default/kubernetes service endpoints before it reports readiness via the /healthz and therefore is ready to serve requests. Also early during startup old endpoints are remove which might be left over from a previously crashed kube-apiserver. ([#74668](), [@sttts]())
- Add a configuration field to shorten the timeout of validating/mutating admission webhook call. The timeout value must be between 1 and 30 seconds. Default to 30 seconds when unspecified. ([#74562](), [@roycaihw]())
- The apiserver, including both the kube-apiserver and apiservers built with the generic apiserver library, will now return 413 RequestEntityTooLarge error if a json patch contains more than 10,000 operations. ([#74000](), [@caesarxuchao]())
- Fixed an error processing watch events when running skewed apiservers ([#73482](), [@liggitt]())
- jsonpath expressions containing `[start:end:step]` slice are now evaluated correctly ([#73149](), [@liggitt]())
- `metadata.deletionTimestamp` is no longer moved into the future when issuing repeated DELETE requests against a resource containing a finalizer. ([#73138](), [@liggitt]())
- Fixed kube-apiserver not to create default/kubernetes service endpoints before it reports readiness via the /healthz and therefore is ready to serve requests. Also early during startup old endpoints are remove which might be left over from a previously crashed kube-apiserver. ([#74668](), [@sttts]())
- `watch.Until` now works for long durations. ([#67350](), [@tnozicka]())
- Added duration metric for CRD webhook converters. ([#74376](), [@mbohlool]())
- Fixed keymutex issues which may crash in some platforms. ([#74348](), [@danielqsj]())
- Considerably reduced the CPU load in kube-apiserver while aggregating OpenAPI specifications from aggregated API servers. ([#71223](), [@sttts]())
- Fixed graceful apiserver shutdown to not drop outgoing bytes before the process terminates. ([#72970](), [@sttts]())

Apps

- Added deleting pods created by `DaemonSet` assigned to not existing nodes. ([#73401](), [@krzysztof-jastrzebski]())
- Pod eviction now honors graceful deletion by default if no delete options are provided in the eviction request. ([#72730](), [@liggitt]())

Auth

- Added `kubectl auth can-i --list` option, which allows users to know what actions they can do in specific namespaces. ([#64820](), [@WanLinghao]())
- The `rules` field in RBAC `Role` and `ClusterRole` objects is now correctly reported as optional in the openapi schema. ([#73250](), [@liggitt]())
- `system:kube-controller-manager` and `system:kube-scheduler` users are now permitted to perform delegated authentication/authorization checks by default RBAC policy ([#72491](), [@liggitt]())
- Error messages returned in authentication webhook status responses are now correctly included in the apiserver log ([#73595](), [@liggitt]())
- Fixed use of webhook admission plugins with multi-version custom resources ([#74154](), [@mbohlool]())

AWS

- Prevented AWS Network Load Balancer security groups ingress rules to be deleted by ensuring target groups are tagged. ([#73594](), [@masterzen]())
- AWS ELB health checks will now use HTTPS/SSL protocol for HTTPS/SSL backends. ([#70309](), [@2rs2ts]())

Azure

- Fixed failure to detach Azure disk when there is server side error ([#74398](), [@andyzhangx]())
- Fixed subnet annotation checking for Azure internal loadbalancer ([#74498](), [@feiskyer]())
- Fixed mixed protocol issue for Azure load balancer ([#74200](), [@andyzhangx]())

- Fixed Azure accounts timeout issue when there is no out-bound IP ([#74191](), [@andyzhangx]())
- Fixed Azure Container Registry anonymous repo image pull error ([#74715](), [@andyzhangx]())
- Fixed parse devicePath issue on Azure Disk ([#74499](), [@andyzhangx]())

CLI

- Fixed `--help` flag parsing ([#74682](), [@soltysh]())

- Fixed a bug where `kubectl describe` cannot obtain the event messages for a static pod ([#74156](), [@gaorong]())

- Fixed panic when performing a `set env` operation on a `--local` resource ([#65636](), [@juanvallejo]())

- Missing directories listed in a user's PATH are no longer considered errors and are instead logged by the `kubectl plugin list` command when listing available plugins. ([#73542](), [@juanvallejo]())

- Now users can get object info like:

```
  a. kubectl get pod test-pod -o custom-
columns=CONTAINER:.spec.containers[0:3].name
  b. kubectl get pod test-pod -o custom-
columns=CONTAINER:.spec.containers[-2:].name
```

([#73063](), [@WanLinghao]())

- The `kubectl api-resources` command will no longer fail to display any resources on a single failure ([#73035](), [@juanvallejo]())
- kubectl now loads config file once and uses persistent client config ([#71117](), [@dixudx]())
- Printed `SizeLimit` of `EmptyDir` in `kubectl describe pod` outputs. ([#69279](), [@dtaniwaki]())
- `kubectl delete --all-namespaces` is now a recognized flag. ([#73716](), [@deads2k]())

Cloud Provider

- Fixed a bug that caused PV allocation on non-English vSphere installations to fail ([#73115](), [@alvaroaleman]())

Cluster Lifecycle

- kubeadm: fixed nil pointer dereference caused by a bug in url parsing ([#74454](), [@bart0sh]())
- CoreDNS adds readinessProbe which prevents loadbalancing to unready pods, and also allows rolling updates to work as expected. ([#74137](), [@rajansandeep]())
- kubeadm no longer allows using v1alpha3 configs for anything else than converting them to `v1beta1`. ([#74025](), [@rosti]())
- kubeadm: now allows the usage of `--kubeconfig-dir` and `--config` flags on kubeadm init ([#73998](), [@yagonobre]())
- kubeadm: all master components are now exclusively relying on the `PriorityClassName` pod spec for annotating them as cluster critical components. Since `scheduler.alpha.kubernetes.io/critical-pod` annotation is no longer supported by Kubernetes 1.14 this annotation is no longer added to master components. ([#73857](), [@ereslibre]())
- kubeadm no longer dumps backtrace if it fails to remove the running containers on reset. ([#73951](), [@rosti]())
- kubeadm: fixed a bug in the underlying library for diff related to characters like '%' ([#73941](), [@neolit123]())
- Scale max-inflight now limits together with master VM sizes. ([#73268](), [@wojtek-t]())
- kubeadm reset: fixed a crash caused by the absence of a configuration file ([#73636](), [@bart0sh]())
- CoreDNS is now version 1.3.1 ([#73610](), [@rajansandeep]())

- kubeadm: When certificates are present in joining a new control plane now ensures that they match at least the required SANs ([#73093](), [@ereslibre]())
- kubeadm: added back `--cert-dir` option for `kubeadm init phase certs sa` ([#73239](), [@mattkelly]())
- kubeadm: now explicitly waits for `etcd` to have grown when joining a new control plane ([#72984](), [@ereslibre]())
- kubeadm: now pulls images when joining a new control plane instance ([#72870](), [@MalloZup]())
- Exited kube-proxy when configuration file changes ([#59176](), [@dixudx]())
- kube-addon-manager was updated to v9.0, and now uses kubectl v1.13.2 and prunes workload resources via the apps/v1 API ([#72978](), [@liggitt]())
- kubeadm: Now allows certain certs/keys to be missing on the secret when transferring secrets using `--experimental-upload-certs` feature ([#75415](), [@ereslibre]())

GCP

- Fixed liveness probe in fluentd-gcp cluster addon ([#74522](), [@Pluies]())
- Reduced GCE log rotation check from 1 hour to every 5 minutes. Rotation policy is unchanged (new day starts, log file size > 100MB). ([#72062](), [@jpbetz]())

Network

- Reduces the cache TTL for negative responses to 5s minimum. ([#74093](), [@blakebarnett]())

Node

- Fixed help message for `--container-runtime-endpoint` : only unix socket is support on Linux. ([#74712](), [@feiskyer]())
- Image garbage collection no longer fails for images with only one tag but more than one repository associated. ([#70647](), [@corvus-ch]())
- Re-issued Allocate grpc calls before starting a container that requests device-plugin resources if the cached state is missing. ([#73824](), [@jiayingz]())
- [CRI] Added a new field called `runtime_handler` into `PodSandbox` and `PodSandboxStatus` to track the `RuntimeClass` information of a pod. ([#73833](), [@haiyanmeng]())
- Kubelet now tries to stop containers in unknown state once before restart or remove. ([#73802](), [@Random-Liu]())
- When pleg channel is full, events are now discarded and count is recorded ([#72709](), [@changyaowei]())
- Fixed the unexpected `NotReady` status when Node's iops is full if the runtime is dockershim. ([#74389](), [@answer1991]())
- Fixed #73264 `cpuPeriod` was not reset, but used as set via flag, although it was disabled via alpha gate ([#73342](), [@szuecs]())
- Updated kubelet CLI summary documentation and generated webpage ([#73256](), [@deitch]())
- Set a low `oom_score_adj` for containers in pods with system-critical priorities ([#73758](), [@sjenning]())
- kubelet: Resolved hang/timeout issues when running large numbers of pods with unique `ConfigMap/Secret` references ([#74755](), [@liggitt]())
- Events reported for container creation, start, and stop now report the container name in the message and are more consistently formatted. ([#73892](), [@smarterclayton]())
- Removed stale `OutOfDisk` condition from kubelet side ([#72507](), [@dixudx]())
- Fixed the setting of `NodeAddresses` when using the vSphere CloudProvider and nodes that have multiple IP addresses. ([#70805](), [@danwinship]())
- Fixed dockershim panic issues when deleting docker images. ([#75367](), [@feiskyer]())
- Kubelet no longer watches `ConfigMaps` and `Secrets` for terminated pods, in worst scenario causing it to not be able to send other requests to kube-apiserver ([#74809](), [@oxddr]())

- A new `TaintNodesByCondition` admission plugin taints newly created Node objects as "not ready", to fix a race condition that could cause pods to be scheduled on new nodes before their taints were updated to accurately reflect their reported conditions. This admission plugin is enabled by default if the `TaintNodesByCondition` feature is enabled. ([#73097](#), [@bsalamat](#))
- kubelet now accepts `pid=<number>` in the `--system-reserved` and `--kube-reserved` options to ensure that the specified number of process IDs will be reserved for the system as a whole and for Kubernetes system daemons respectively. Please reference `Kube Reserved` and `System Reserved` in `Reserve Compute Resources for System Daemons` in the Kubernetes documentation for general discussion of resource reservation. To utilize this functionality, you must set the feature gate `SupportNodePidsLimit=true` ([#73651](#), [@RobertKrawitz](#))

Scheduling

- Improved fairness of the scheduling queue by placing pods which are attempted recently behind other pods with the same priority. ([#73700](#), [@denkensk](#))
- Improved scheduler robustness to ensure that unschedulable pods are reconsidered for scheduling when appropriate. ([#73700](#), [#72558](#), [@denkensk](#), [#73078](#), [@Huang-Wei](#))

Storage

- Fixed scanning of failed iSCSI targets. ([#74306](#), [@jsafrane](#))
- StorageOS volume plugin updated to fix an issue where volume mount succeeds even if request to mount via StorageOS API fails. ([#69782](#), [@darkowlzz](#))
- Ensured directories on volumes are group-executable when using `fsGroup` ([#73533](#), [@mxey](#))
- Updated CSI version to 1.1 ([#75391](#), [@gnufied](#))
- Ensured that volumes get provisioned based on the zone information provided in `allowedTopologies`. ([#72731](#), [@skarthiksrinivas](#))
- Extended the `VolumeSubpathEnvExpansion` alpha feature to support environment variable expansion ([#71351](#), [@kevtaylor](#))
- Fixed a bug that prevented deletion of dynamically provisioned volumes in Quobyte backends. ([#68925](#), [@casusbelli](#))

Testing

- e2e storage tests now run faster and are easier to read ([#72434](#), [@pohly](#))
- `e2e.test` now rejects unknown `--provider` values instead of merely warning about them. An empty provider name is not accepted anymore and was replaced by `skeleton` (a provider with no special behavior). ([#73402](#), [@pohly](#))
- Updated to go1.11.5 ([#73326](#), [@ixdy](#))
- Updated to use go1.12.1 ([#75413](#), [@BenTheElder](#))
- e2e tests that require SSH may now be used against clusters that have nodes without external IP addresses by setting the environment variable `KUBE_SSH_BASTION` to the `host:port` of a machine that is allowed to SSH to those nodes. The same private key that the test would use is used for the bastion host. The test connects to the bastion and then tunnels another SSH connection to the node. ([#72286](#), [@smarterclayton](#))
- `PidPressure` now evicts pods from lowest priority to highest priority ([#72844](#), [@dashpole](#))
- Split up the mondo `kubernetes-test` tarball into `kubernetes-test-portable` and `kubernetes-test-{OS}-{ARCH}` tarballs. ([#74065](#), [@ixdy](#))

VMware

- Applied zone labels to vSphere Volumes automatically. The zone labels are visible on the PV: ([#72687](#), [@subramanian-neelakantan](#))

Windows

Support for Windows nodes and Windows containers went going stable.

Support for Group Managed Service Accounts (GMSA) for Windows containers in Kubernetes. GMSA are a specific type of Active Directory account that provides automatic password management, simplified service principal name (SPN) management, and the ability to delegate the management to other administrators across multiple servers.

- Fixed smb remount and unmount issues on Windows ([#73661](), [@andyzhangx](), [#75087](), [@andyzhangx]())
- Added network stats for Windows nodes and containers ([#74788](), [@feiskyer]())
- The new test `[sig-network] DNS should now provide /etc/hosts entries for the cluster [LinuxOnly] [Conformance]` will validate the host entries set in the `/etc/hosts` file (pod's FQDN and hostname), which should be managed by Kubelet. ([#72729](), [@bclau]())
- Allowed the kubelet to pass Windows GMSA credentials down to Docker ([#73726](), [@wk8]())
- Added kube-proxy support for overlay networking and DSR in Windows and new flags for `network-name`, `source-vip`, and `enable-dsr`. ([#70896](), [@ksubrmnn]())
- windows: Ensured graceful termination when being run as windows service ([#73292](), [@steffengy]())
- vSphere cloud provider now correctly retrieves the VM's UUID when running on Windows ([#71147](), [@benmoss]())
- Kubelet: added `usageNanoCores` from CRI stats provider ([#73659](), [@feiskyer]())
- Introduced support for Windows nodes into the cluster bringup scripts for GCE. ([#73442](), [@pjh]())
- Added network stats for Windows nodes and pods. ([#70121](), [@feiskyer]())
- CoreDNS is only officially supported on Linux at this time. As such, when kubeadm is used to deploy this component into your kubernetes cluster, it will be restricted (using `nodeSelectors`) to run only on nodes with that operating system. This ensures that in clusters which include Windows nodes, the scheduler will not ever attempt to place CoreDNS pods on these machines, reducing setup latency and enhancing initial cluster stability. ([#69940](), [@MarcPow]())

External Dependencies

- Default etcd server and client have been updated to v3.3.10. ([#71615](), [#70168]())

- The list of validated docker versions has changed. 1.11.1 and 1.12.1 have been removed. The current list is 1.13.1, 17.03, 17.06, 17.09, 18.06, 18.09. ([#72823](), [#72831]())

- The default Go version was updated to 1.12.1. ([#75422]())

- CNI has been updated to v0.7.5 ([#75455]())

- CSI has been updated to v1.1.0. ([#75391]())

- The dashboard add-on has been updated to v1.10.1. ([#72495]())

- Cluster Autoscaler has been updated to v1.14.0 ([#75480]())

- kube-dns is unchanged at v1.14.13 since Kubernetes 1.12 ([#68900]())

- Influxdb is unchanged at v1.3.3 since Kubernetes 1.10 ([#53319]())

- Grafana is unchanged at v4.4.3 since Kubernetes 1.10 ([#53319]())

- Kibana has been upgraded to v6.6.1. ([#71251]())

- CAdvisor has been updated to v0.33.1 ([#75140]())

- fluentd-gcp-scaler is unchanged at v0.5.0 since Kubernetes 1.13 ([#68837]())

- Fluentd in fluentd-elasticsearch has been upgraded to v1.3.3 ([#71180](#))

- fluentd-elasticsearch has been updated to v2.4.0 ([#71180](#))

- The fluent-plugin-kubernetes_metadata_filter plugin in fluentd-elasticsearch has been updated to v2.1.6 ([#71180](#))

- fluentd-gcp is unchanged at v3.2.0 since Kubernetes 1.13 ([#70954](#))

- OIDC authentication is unchanged at coreos/go-oidc v2 since Kubernetes 1.10 ([#58544](#))

- Calico is unchanged at v3.3.1 since Kubernetes 1.13 ([#70932](#))

- crictl on GCE is unchanged at v1.12.0 since Kubernetes 1.13 ([#69033](#))

- CoreDNS has been updated to v1.3.1 ([#73610](#))

- event-exporter has been updated to v0.2.3 ([#67691](#))

- Es-image has been updated to Elasticsearch 6.6.1 ([#71252](#))

- metrics-server remains unchanged at v0.3.1 since Kubernetes 1.12 ([#68746](#))

- GLBC remains unchanged at v1.2.3 since Kubernetes 1.12 ([#66793](#))

- Ingress-gce remains unchanged at v1.2.3 since Kubernetes 1.12 ([#66793](#))

- ip-masq-agen remains unchanged at v2.1.1 since Kubernetes 1.12 ([#67916](#))

- [v1.14.0-rc.1](#)

- [v1.14.0-beta.2](#)

- [v1.14.0-beta.1](#)

- [v1.14.0-alpha.3](#)

- [v1.14.0-alpha.2](#)

- [v1.14.0-alpha.1](#)

v1.14.0-rc.1

[Documentation](#)

Downloads for v1.14.0-rc.1

filename	sha512 hash
[kubernetes.tar.gz](#)	5cb5e8b14b301864063fd7531ab3b755fea054f540c55ecce70ac49fb59193488575eb42ba89c8b4a44f
[kubernetes-src.tar.gz](#)	395424c2bcdb5e242995b18e8d6e5c00002ce2cb5a3964c28da0a4a181fada73ffceaccedb1fa9799be9

Client Binaries

filename	sha512 hash

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz](#)	ea304f3f8188db30cddd5423b25dc434b8f05315103f773619a65f83bee872581d83d5498a5f36a3064815e
[kubernetes-client-darwin-amd64.tar.gz](#)	17e106b63067429b9228a4879a7350c01ae98650ef2e6fcc23d00415c2e3a7c340abd5bcfc4b976f3d737d9
[kubernetes-client-linux-386.tar.gz](#)	406323ea4cbd524807e73b9a2f4eb0a813730b262402c224e5076080b84452137521e5782056e39bf6017bd
[kubernetes-client-linux-amd64.tar.gz](#)	293747816e5da30c53ca29f27479fae880404edd5fca413af165e52cc7ea7ff26312bb3916896eceea75af6
[kubernetes-client-linux-arm.tar.gz](#)	98b6749c367282048ecd0c5b70ae8b7dafad82c599e359cbbe782a530bbd7bdb84a198577251d6aedbc39fb
[kubernetes-client-linux-arm64.tar.gz](#)	0a650c53946ebd9c38705df36efabbf1fbe3da1acdf418cc4ab881530e6a9089b45ef36bd4a89467106561e
[kubernetes-client-linux-ppc64le.tar.gz](#)	807263f316f46c9334ec4dad84895cfe2b942ac4ed9aacf3ec8a63193e0d0a6ecaf573d00dfea278d1e552f
[kubernetes-client-linux-s390x.tar.gz](#)	5589562ce0da49f4987388e3e2b6fcf29e92859fae65fb57cdd61bba20ff574c7f3e07f4fa26bb63789f927
[kubernetes-client-windows-386.tar.gz](#)	101245cd70221b443150be046e5b5a2c6c83334085bb17f603f59bb68c5960f353d57b6761acf052449f4fb
[kubernetes-client-windows-amd64.tar.gz](#)	b1c3802f60cc70ebc1258cb8fc4ffa1154ecee8fda473b033be4f9d1b187354cfd75d085a1ad45a35fcc42a

Server Binaries

filename	sha512 hash
[kubernetes-server-linux-amd64.tar.gz](#)	8e09465aab0a1d1ec39afc98af17de9b5de99b763c0c5feb2dc824f2bbae25edb690e9d162fd44f5155bea3
[kubernetes-server-linux-arm.tar.gz](#)	9409c368e1f9f26e633b7df5d6c90435394931d48a21f4ad1548d172b18ac462a859019cc66dba4df69d3b1
[kubernetes-](#)	3893290dc11ca71746fee77a44a607ad9e02036bab56b7fc3be247b71b2cf5b3f639fa41317a713abbe9a99

filename	sha512 hash
server-linux-arm64.tar.gz	
kubernetes-server-linux-ppc64le.tar.gz	8ac1e70cb39aeb5b1fe92c3ebba428db2036be739f462cc2f876f17dc71a01ba263b5611a15d95e5934e2fc
kubernetes-server-linux-s390x.tar.gz	80576cb6cc3a69c4fc0a0358dee5772ecb38437c534a3454c9613426417d4af3c527a0809cce4d46653a7b0

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	71cd5dd6075a2eea851231a5a855e58b3f479d83358defafd068dd1d09e5b2c426a8a046ee621de91e17d7e
kubernetes-node-linux-arm.tar.gz	48babf4a52013c2bc69049167579ba1bc70c769b782a2704c9dfcf44a6a8a72f07e0789af347135ee4797f2
kubernetes-node-linux-arm64.tar.gz	cc19a52beaa7440ca7581e85d1e10137e93c2decdb7d7d7919e7fdcded63e4d94b3434513ca881dae844dd1
kubernetes-node-linux-ppc64le.tar.gz	241bf20ae366384efa0fb3798e07e1cdd3d4ea7ba91c146ef7761fb0b93a8514a0dd91f9eb47999ae263d67
kubernetes-node-linux-s390x.tar.gz	37ce3e021073c6c10cf240fb2c3f9a7ab35ece3c0b4a9fecbbdf790eb348b168d179824f3a8eb57d56f962b
kubernetes-node-windows-amd64.tar.gz	3248db12c274171f094ef41d6a59523aec35655ba35d151576ff2d2089c269f345e2c0646d585d7c04c440c

Changelog since v1.14.0-beta.2

Action Required

- ACTION REQUIRED: Health check (liveness & readiness) probes using an HTTPGetAction will no longer follow redirects to different hostnames from the original probe request. Instead, these non-local redirects will be treated as a Success (the documented behavior). In this case an event with reason "ProbeWarning" will be generated, indicating that the redirect was ignored. If you were previously relying on the redirect to run health checks against different endpoints, you will need to perform the healthcheck logic outside the Kubelet, for instance by proxying the external endpoint rather than redirecting to it. (#75416, @tallclair)

Other notable changes

- Restores --username and --password flags to kubectl (#75451, @liggitt)

- fix race condition issue for smb mount on windows ([#75371](), [@andyzhangx]())
- UDP Service conntrack entries for ExternalIPs are now correctly cleared when endpoints are added ([#75265](), [@JacobTanenbaum]())
- kubeadm: the kubeadm init output now provides join control-plane example only when the preconditions for joining a control plane are satisfied ([#75420](), [@fabriziopandini]())
- Fix dockershim panic issues when deleting docker images. ([#75367](), [@feiskyer]())
- kubeadm: Allow certain certs/keys to be missing on the secret when transferring secrets using `--experimental-upload-certs` feature ([#75415](), [@ereslibre]())
- Update to use go1.12.1 ([#75413](), [@BenTheElder]())
- Update CSI version to 1.1 ([#75391](), [@gnufied]())
- Ensure ownership when deleting a load balancer security group ([#74311](), [@hpedrorodrigues]())
- kubelet: updated logic of verifying a static critical pod. ([#75144](), [@Huang-Wei]())
- Allow disable outbound SNAT when Azure standard load balancer is used together with outbound rules. ([#75282](), [@feiskyer]())
- Add ResourceVersion as a precondition for delete in order to ensure a delete fails if an unobserved change happens to an object. ([#74040](), [@ajatprabha]())
- Services of type=LoadBalancer which have no endpoints will now immediately ICMP reject connections, rather than time out. ([#74394](), [@thockin]())
- Ensure Azure load balancer cleaned up on 404 or 403 when deleting LoadBalancer services. ([#75256](), [@feiskyer]())

v1.14.0-beta.2

[Documentation]()

Downloads for v1.14.0-beta.2

filename	sha512 hash
[kubernetes.tar.gz]()	c1d5f2615c3319fc167c577f40f385abe6652bf4fd3bdb04617b36029dc3000b190c18b4b3a29827da75
[kubernetes-src.tar.gz]()	0a8d8ed208bc0bf424060126c76fcd8dbbd53a9b9695647314a4097f7013f548b76850438933760ff768

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz]()	c919d030255c5d3879926d8aaa53939cd5aa37084799748452166ca6668bd1d10edf063d633682cddafaaed
[kubernetes-client-darwin-amd64.tar.gz]()	ec14d4a1d720890065211544b099be17315265534cfd20435194dc842cc807c20b5fae78f5b95ba7d05f3d9
[kubernetes-client-linux-386.tar.gz]()	6cee12be5b855600ee80f15d1e0511099941b099bd5b252549abdc2a65c077f10ca4d53ab9804a0ce8d51f3
[kubernetes-client-linux-]()	27d8cd48c1f3259055965b85a6b973ecb5b8a36894f94c232d773f89539e28e6c270bfe35427c70b4ad4800

[amd64.tar.gz](#)	
[kubernetes-client-linux-arm.tar.gz](#)	7f98230569c61fdf2b141e519f042b2e27ff37aeda746dc30bb7ce226b5d6b0c0bb85c6070b9ffc8d38c244
[kubernetes-client-linux-arm64.tar.gz](#)	159da67010af38d87c5318b7ad594120afd6a9b780d11d6e607e7214862cd6514b00da673cce72574771dbc
[kubernetes-client-linux-ppc64le.tar.gz](#)	d8ca7871d3d40947db69061284cb31c4d072d4da56fbb11a4485f6853f041835d9605cfc5dcea88d58c7f48
[kubernetes-client-linux-s390x.tar.gz](#)	1c58db90b6e09b8d8f956a00263cb20271b8403f7fb6c5b20d76cca9ed973c35d2f5c910a6d42980ec91594
[kubernetes-client-windows-386.tar.gz](#)	00fb87dd4899208dd6607c22828f3985ebfd5e1f97cb24e3b2c69c249a4887d5c26c603b3bb4c21f9e2b737
[kubernetes-client-windows-amd64.tar.gz](#)	7afdf637d62dde480162ad1521360b2bc78e0d4d20f6e6201e2f19b55b8e9bbd69c1ce8d03101c750ef389c

Server Binaries

filename	sha512 hash
[kubernetes-server-linux-amd64.tar.gz](#)	2ac3c4910cd36f02a62304d78fe144b821edf445c522028e6b57d2dc3bcc7355159a58815d5a6991b3f2c33
[kubernetes-server-linux-arm.tar.gz](#)	db06b5f1a83ca4ec82428ab771eae2858b188dc23780fb9b146494c06aa6175421090b200c58b670e2d4253
[kubernetes-server-linux-arm64.tar.gz](#)	b40e1745d1ecfcc95f3a750990244fa128381d6d74246798a62aecb8cec9c77cdcd470e79334eb5c670e1e3
[kubernetes-server-linux-ppc64le.tar.gz](#)	c84297fd2b18b6bdade5a135a3da929e286bbba5c8dd66778091bad4eea1ac4b97a32ab3b146a88f0716beb
[kubernetes-server-linux-s390x.tar.gz](#)	39c8f6e7f52bec155b11652b4e80c2c52acf8754dbdf80a9d5bab5370d1debf4f4783c1a6968d41822b00ff

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	bf19ae7140836aea1b6f414532eff886e3b91e0746b9224ce46e60e0b83fa90a8c3df1ff8e01ff340a1e187
kubernetes-node-linux-arm.tar.gz	4b8194340a8675107da3969845173fb34ed2b0a38745ec0ac395ebf2116ee84d55be6e22ff84fafbaf4ca60
kubernetes-node-linux-arm64.tar.gz	8494dae5225f3b543afd575003fe0f30eb0f3cf9bc9dfbae72d6bda8f17c5446165433c28842a114af66ac3
kubernetes-node-linux-ppc64le.tar.gz	0bd41d95f0a76c1b057a8913a8b2cffbf6d48c47aef1d9beed0de205b8010e8071e8f527eeaa003730ef97a
kubernetes-node-linux-s390x.tar.gz	169b16512df42a6cb5b000a3d6d6da5ae48a733c5d11b034eaec6b3816b86ec97b92e4075872900188bc296
kubernetes-node-windows-amd64.tar.gz	ccfebde5176cb28529552889250bf706add04df3c3f9aee5b8bdd9ebdb5bce334add8351cdbeebb9bd4b17b

Changelog since v1.14.0-beta.1

Action Required

- ACTION REQUIRED: The node.k8s.io API group and runtimeclasses.node.k8s.io resource have been migrated to a built-in API. If you were using RuntimeClasses (an default-disabled alpha feature, as of Kubernetes v1.12), then you must recreate all RuntimeClasses after upgrading, and the runtimeclasses.node.k8s.io CRD should be manually deleted. RuntimeClasses can no longer be created without a defined handler. (#74433, @tallclair)
  - Introduce a RuntimeClass v1beta1 API. This new beta API renames `runtimeHandler` to `handler`, makes it a required field, and cuts out the spec (handler is a top-level field).
- Transition CSINodeInfo and CSIDriver alpha CRDs to in-tree CSINode and CSIDriver core storage v1beta1 APIs. (#74283, @xing-yang)
  - ACTION REQUIRED: the alpha CRDs are no longer used and drivers will need to be updated to use the beta APIs.
  - The support for `_` in the CSI driver name will be dropped as the CSI Spec does not allow that.

Other notable changes

- Support collecting pod logs under /var/log/pods/NAMESPACE_NAME_UID to stackdriver with `k8s_pod` resource type. (#74502, @Random-Liu)
- --make-symlinks for hyperkube was marked hidden for a while, This flag is now deprecated and will be removed in a future release. (#74975, @dims)
- fix smb unmount issue on Windows (#75087, @andyzhangx)
- Kubelet no longer watches configmaps and secrets for terminated pods, in worst scenario causing it to not be able to send other requests to kube-apiserver (#74809, @oxddr)

- Fixes a bug concerning Quobyte volumes where user mappings only worked if the hosts Kubernetes plugin mount was provided via an external configuration using the *allow-usermapping-in-volumename* option. ([#74520](), [@casusbelli]())
- Change CRI pod log directory from `/var/log/pods/UID` to `/var/log/pods/NAMESPACE_NAME_UID`. ([#74441](), [@Random-Liu]())
  - It is recommended to drain the node before upgrade, or reboot the node after upgrade.
- Promote RuntimeClass to beta, and enable by default. ([#75003](), [@tallclair]())
- New "dry_run" metric label (indicating the value of the dryRun query parameter) into the metrics: ([#74997](), [@jennybuckley]())
  - apiserver_request_total
  - apiserver_request_duration_seconds
  - New "APPLY" value for the "verb" metric label which indicates a PATCH with "Content-Type: apply-patch+yaml". This value is experimental and will only be present if the ServerSideApply alpha feature is enabled.
- GCE: bump COS image version to cos-beta-73-11647-64-0 ([#75149](), [@yguo0905]())
- Add duration metric for CRD webhook converters ([#74376](), [@mbohlool]())
- Alpha support for ephemeral CSI inline volumes that are embedded in pod specs. ([#74086](), [@vladimirvivien]())
- Add support for node side CSI volume expansion ([#74863](), [@gnufied]())
- Add mechanism for Admission Webhooks to specify which version of AdmissionReview they support ([#74998](), [@mbohlool]())
  - Add mechanism for CRD Conversion Webhooks to specify which version of ConversionReview they support
- Add a new kubelet endpoint for serving first-class resource metrics ([#73946](), [@dashpole]())
- Deprecate AWS, Azure, GCE and Cinder specific volume limit predicates. ([#74544](), [@gnufied]())
- PodReadinessGate feature is now GA. The feature gate will not allow disabling it. ([#74434](), [@freehan]())
- If CSINodeInfo and CSIMigration feature flags are active in the cluster, Kubelet will post NotReady until CSINode is initialized with basic volume plugin mechanism information for well-known drivers ([#74835](), [@davidz627]())
- Add network stats for Windows nodes and containers ([#74788](), [@feiskyer]())
- kubeadm: when calling "reset" on a control-plane node, remove the APIEndpoint information for this node from the ClusterStatus in the kubeadm ConfigMap. ([#75082](), [@neolit123]())
- kube-apiserver now serves OpenAPI specs for registered CRDs with defined ([#71192](), [@roycaihw]())
  - validation schemata as an alpha feature, to be enabled via the "CustomResourcePublishOpenAPI" feature gate. Kubectl will validate client-side using those. Note that in
  - future, client-side validation in 1.14 kubectl against a 1.15 cluster will reject
  - unknown fields for CRDs with validation schema defined.
- Fix kubelet start failure issue on Azure Stack due to InstanceMetadata setting ([#74936](), [@rjaini]())
- add subcommand `kubectl create cronjob` ([#71651](), [@Pingan2017]())
- The CSIBlockVolume feature gate is now beta, and defaults to enabled. ([#74909](), [@bswartz]())
- Pre-existing log files are now opened with O_APPEND, instead of O_TRUNC. This helps prevent losing logs when components crash-loop, and also enables external log rotation utilities to truncate log files in-place without components extending log files to their pre-truncation sizes on subsequent writes. ([#74837](), [@mtaufen]())
- the test/e2e/e2e.test binary can test arbitrary storage drivers, see the `-storage.testdriver` parameter ([#72836](), [@pohly]())
- Fix panic in kubectl cp command ([#75037](), [@soltysh]())
- iscsi modules haven't even been loaded /sys/class/iscsi_host directory won't exist ([#74787](), [@jianglingxia]())
- the fluentd addon daemonset will now target all nodes. ([#74424](), [@liggitt]())

- - setting `ENABLE_METADATA_CONCEALMENT=true` in kube-up will now set a `cloud.google.com/metadata-proxy-ready=true` label on new nodes. In v1.16, the metadata proxy add-on will switch to using that label as a node selector.
  - setting `KUBE_PROXY_DAEMONSET=true` in kube-up will now set a `node.kubernetes.io/kube-proxy-ds-ready=true` label on new nodes. In v1.16, the kube-proxy daemonset add-on will switch to using that label as a node selector.
  - In 1.16, the masq-agent daemonset add-on will switch to using `node.kubernetes.io/masq-agent-ds-ready` as a node selector.
- Kubelet: replace `du` and `find` with a golang implementation ([#74675](), [@dashpole]())
  - Kubelet: periodically update machine info to support hot-add/remove
- kubeadm: add certificate-key and skip-certificate-key-print flags to kubeadm init ([#74671](), [@yagonobre]())
- Admission webhooks rules can now limit scope to only match namespaced, or only cluster-scoped resources with a `scope: "Cluster" | "Namespaced" | "*"` field. ([#74477](), [@liggitt]())
- The CSIPersistentVolume and KubeletPluginWatcher feature gates cannot be disabled, and will be removed in Kubernetes v1.16 ([#74830](), [@msau42]())
- Kubelet won't evict a static pod with priority `system-node-critical` upon resource pressure. ([#74222](), [@Huang-Wei]())
- Fixes panic if a kubelet is run against an older kube-apiserver ([#74529](), [@liggitt]())
- The resource group name in Azure providerID is not converted to lower cases. ([#74882](), [@feiskyer]())
- Remove the out-of-tree PersistentVolumeLabel controller because it cannot run without Initializers (removed in v1.14). If you are using AWS EBS, GCE PD, Azure Disk, Cinder Disk or vSphere volumes and rely on zone labels, then enable the `PersistentVolumeLabel` admission controller in the `kube-apiserver` in the `--enable-admission-plugins` flag. ([#74615](), [@andrewsykim]())
- kubeadm: improved RequiredIPVSKernelModulesAvailable warning message ([#74033](), [@bart0sh]())
- Add `nullable` support to CustomResourceDefinition OpenAPI validation schemata. ([#74804](), [@sttts]())
- Fix kube-apiserver not to create default/kubernetes service endpoints before it reports readiness via the /healthz and therefore is ready to serve requests. Also early during startup old endpoints are remove which might be left over from a previously crashed kube-apiserver. ([#74668](), [@sttts]())
- kubeadm: fix a bug where standard kubeconfig paths were searched even if the user provided /etc/kubernetes/admin.conf explicitly for commands that accept --kubeconfig, like kubeadm token. ([#71874](), [@neolit123]())
  - kubeadm: use the default kubeconfig (/etc/kubernetes/admin.conf) for "kubeadm reset" and "kubeadm upgrade" commands.
- Increase api server client certificate expiration histogram resolution to accommodate short-lived (< 6h) client certificates. ([#74806](), [@mxinden]())
- Default RBAC policy no longer grants access to discovery and permission-checking APIs (used by `kubectl auth can-i`) to _unauthenticated_ users. Upgraded clusters preserve prior behavior, but cluster administrators wishing to grant unauthenticated users access in new clusters will need to explicitly opt-in to expose the discovery and/or permission-checking APIs: ([#73807](), [@dekkagaijin]())
  - `kubectl create clusterrolebinding anonymous-discovery --clusterrole=system:discovery --group=system:unauthenticated`
  - `kubectl create clusterrolebinding anonymous-access-review --clusterrole=system:basic-user --group=system:unauthenticated`
- The PersistentLocalVolumes feature is GA. The feature gate cannot be disabled and will be removed in Kubernetes 1.17 ([#74769](), [@msau42]())
- kubelet: resolved hang/timeout issues when running large numbers of pods with unique configmap/secret references by reverting to 1.11 configmap/secret lookup behavior ([#74755](), [@liggitt]())
- Convert `latency` / `latencies` in metrics name to `duration`. ([#74418](), [@danielqsj]())

- - The following metrics are changed and mark previous metrics as deprecated:
    - `rest_client_request_latency_seconds` -> `rest_client_request_duration_seconds`
    - `apiserver_proxy_tunnel_sync_latency_secs` -> `apiserver_proxy_tunnel_sync_duration_seconds`
    - `scheduler_scheduling_latency_seconds` -> `scheduler_scheduling_duration_seconds`

- Fix help message for --container-runtime-endpoint: only unix socket is support on Linux. ([#74712](), [@feiskyer]())
- Update to use golang 1.12 ([#74632](), [@cblecker]())
- The `RunAsGroup` feature has been promoted to beta and enabled by default. PodSpec and PodSecurityPolicy objects can be used to control the primary GID of containers on supported container runtimes. ([#73007](), [@krmayankk]())
- fix Azure Container Registry anonymous repo image pull error ([#74715](), [@andyzhangx]())
- Adds the same information to an init container as a standard container in a pod when using PodPresets. ([#71479](), [@soggiest]())
- fix the flake in scheduling_queue_test.go ([#74611](), [@denkensk]())
- The kube-apiserver OpenAPI definitions with the prefix "io.k8s.kubernetes.pkg" (deprecated since 1.9) have been removed. ([#74596](), [@sttts]())
- kube-conformance image will now run ginkgo with the --dryRun flag if the container is run with the environment variable E2E_DRYRUN set. ([#74731](), [@johnSchnake]())
- The deprecated `MountPropagation` feature gate has been removed, and the feature is now unconditionally enabled. ([#74720](), [@bertinatto]())
- Introduce dynamic volume provisioning shim for CSI migration ([#73653](), [@ddebroy]())
- Fix --help flag parsing ([#74682](), [@soltysh]())
- This PR removes the following metrics: ([#74636](), [@logicalhan]())
  - reflector_items_per_list
  - reflector_items_per_watch
  - reflector_last_resource_version
  - reflector_list_duration_seconds
  - reflector_lists_total
  - reflector_short_watches_total
  - reflector_watch_duration_seconds
  - reflector_watches_total
  - While this is a backwards-incompatible change, it would have been impossible to setup reliable monitoring around these metrics since the labels were not stable.

- Add a configuration field to shorten the timeout of validating/mutating admission webhook call. The timeout value must be between 1 and 30 seconds. Default to 30 seconds when unspecified. ([#74562](), [@roycaihw]())
- client-go: PortForwarder.GetPorts() now contain correct local port if no local port was initially specified when setting up the port forwarder ([#73676](), [@martin-helmich]())
- The examples in kubectl apply/get/delete are updated to support `-k` which uses a `kustomization.yaml` file. ([#74140](), [@Liujingfang1]())
- kubeadm: Allow to download certificate secrets uploaded by `init` or `upload-certs` phase, allowing to transfer certificate secrets (certificates and keys) from the cluster to other master machines when creating HA deployments. ([#74168](), [@ereslibre]())
- Fixes an issue with missing apiVersion/kind in object data sent to admission webhooks ([#74448](), [@liggitt]())

- client-go: the deprecated versionless API group accessors (like `clientset.Apps()` have been removed). Use an explicit version instead (like `clientset.AppsV1()`) ([#74422](), [@liggitt]())
- The `--quiet` option to `kubectl run` now suppresses resource deletion messages emitted when the `--rm` option is specified. ([#73266](), [@awh]())
- Add Custom Resource support to "kubectl autoscale" ([#72678](), [@rmohr]())
- Image garbage collection no longer fails for images with only one tag but more than one repository associated. ([#70647](), [@corvus-ch]())
- Fix liveness probe in fluentd-gcp cluster addon ([#74522](), [@Pluies]())
- The new test `[sig-network] DNS should provide /etc/hosts entries for the cluster [LinuxOnly] [Conformance]` will validate the host entries set in the `/etc/hosts` file (pod's FQDN and hostname), which should be managed by Kubelet. ([#72729](), [@bclau]())
  - The test has the tag `[LinuxOnly]` because individual files cannot be mounted in Windows Containers, which means that it cannot pass using Windows nodes.

v1.14.0-beta.1

[Documentation]()

Downloads for v1.14.0-beta.1

filename	sha512 hash
[kubernetes.tar.gz]()	065014c751635f8c077fbcc105df578594baf8afd8b8339004909198e1bd68d0a7ce3644ed5d54e5964d
[kubernetes-src.tar.gz]()	244c19d9fad21ae154ee78fc94888dc60bcfcf3ec72bdc28a82e77c572cbc969d2abbf20397ef9564a35

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz]()	78a61a1e922daa39a9f7dd61b8bad87d202b537bda59f90ae8aae941c0ff412e3d328530af9dd9f22462cbd
[kubernetes-client-darwin-amd64.tar.gz]()	5a1d66fd90a5dc07b95b7617b5583595e0a4a664e7005f6281f846c85b21e28692b2e2d55b7c40c7b8cbb96
[kubernetes-client-linux-386.tar.gz]()	30991ce0776bae7551b98a811e3ccb5104b0859805c41a216db7d5779cddfb36ef3c5e658ea2adeaf67f8e6
[kubernetes-client-linux-amd64.tar.gz]()	5501a9c3a95e43f0c691b05043546f2c497d50a6ad88b88219842d61be83d7dcb8871ff9fd2447c02bc842c
[kubernetes-client-linux-arm.tar.gz]()	4bf341a2f943719d006f4cacc26fdf4d021560d37d49c8d9c4620d294142041155a88dc721d9373a8617e1b
[kubernetes-]()	1c0c660618947b053404ab8ef40bdec0a06d54a1f9edc585a7259806f878327d9ae54100bba98e5b7f44f5d

filename	sha512 hash
client-linux-arm64.tar.gz	
kubernetes-client-linux-ppc64le.tar.gz	9d2c3f4bfbad03b41859670f9cfda6596f51a89077fd4da2f74490f71b5de10e459954e897d2a1ba3a217c6
kubernetes-client-linux-s390x.tar.gz	9be5259caf39ff3c4d0f024d616bff50ac417d42a87c56b6877fbdf5aaadecee05631ac8ddd6dca20d52ae4
kubernetes-client-windows-386.tar.gz	5b1e75f532d9a4d656cd1c5ec48a19d01c4ca731c6c3d986ebbc48a9f1e1d61d6c5603145808fb929117cf2
kubernetes-client-windows-amd64.tar.gz	a501d3c0be55d5a73214a83d1f48b39a49d4a84f5f9988fa34cf66ef6bc78d3f3e06c40dc3d59538c3bff07

Server Binaries

filename	sha512 hash
kubernetes-server-linux-amd64.tar.gz	aed44ec5bc6bdaf41c20824a9841ee541bfd23362966f9326eca2cafbd03eca69325877784b8c9b058963dc
kubernetes-server-linux-arm.tar.gz	e751cb675013183a70a8817dca0b5c456a1ccf075244b411317e813b5164ae710460a53e81191ded9d2ccaf
kubernetes-server-linux-arm64.tar.gz	3aabb1a9bd07413d0740adfb638b0e5ca4cd4a58eda244c5ebc1ea01780e0b2863806c35792a0590069ef0c
kubernetes-server-linux-ppc64le.tar.gz	3c57e2b47b3b9ddc1039684840886877947141b1e4d31f909793678544fe92e10aa82a207936f0bcb3c6570
kubernetes-server-linux-s390x.tar.gz	fe418cfafc63cbccc1898086296e52026df27ff498753089792175ce0d41d889ca50a4eb5104a84b78a0a25

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	83b63d7e9d18fe35564105fd70629af9ba8f20112933b3ace92a48887702862e013ac3b3e144cfd44c8ead7
kubernetes-	e4ac000be25ced9b308ec698da9702bd10a0a7183bfea9648500ab9d0879989c54328cb4fb51be545831d18

node-linux-arm.tar.gz	
kubernetes-node-linux-arm64.tar.gz	35fa5ec8a7fc001fe33abd89f8a446ce0ea2a011db27dc8ff544c2b199b065b19372afe95e3616f53834724
kubernetes-node-linux-ppc64le.tar.gz	a5b938e9cdc39fc292269af4c3961a17b9bcdaf85b3c58db680f2d1a4fb088eb648efc268dfe3325aed96f6
kubernetes-node-linux-s390x.tar.gz	d8e2b5a945f881ddb0a25576a614d564ccef0ad4e93c84b30cdc57888e81e04932d798415a1a50cdfc6d2f8
kubernetes-node-windows-amd64.tar.gz	426774466800ca11cae16821c7d92917b2ce138fcb3f6dca813ec0f060649d6a50187982aaac31fbb081604

Changelog since v1.14.0-alpha.3

Action Required

- Added cadvisor metric labels `pod` and `container` where `pod_name` and `container_name` are present to match instrumentation guidelines. ([#69099](), [@ehashman]())
  - Action required: any Prometheus queries that match `pod_name` and `container_name` labels (e.g. cadvisor or kubelet probe metrics) should be updated to use `pod` and `container` instead. `pod_name` and `container_name` labels will be present alongside `pod` and `container` labels for one transitional release and removed in the future.

Other notable changes

- fix parse devicePath issue on Azure Disk ([#74499](), [@andyzhangx]())
- fix issue: fail to detach azure disk when there is server side error ([#74398](), [@andyzhangx]())
- Allow Cinder volume limit to be configured from node too ([#74542](), [@gnufied]())
- Fix subnet annotation checking for Azure internal loadbalancer ([#74498](), [@feiskyer]())
- Allow the kubelet to pass Windows GMSA credentials down to Docker ([#73726](), [@wk8]())
- PriorityClass in scheduling.k8s.io/v1beta1 and scheduling.k8s.io/v1alpha1 are deprecated by PriorityClass scheduling.k8s.io/v1 and will not be served starting in v1.17. ([#74465](), [@bsalamat]())
- kubeadm: fixed nil pointer dereference caused by a bug in url parsing ([#74454](), [@bart0sh]())
- Fix the unexpected NotReady status when Node's iops is full if the runtime is dockershim. ([#74389](), [@answer1991]())
- Split up the mondo `kubernetes-test` tarball into `kubernetes-test-portable` and `kubernetes-test-{OS}-{ARCH}` tarballs. ([#74065](), [@ixdy]())
- Move fluentd-elasticsearch addon images to community controlled location ([#73819](), [@coffeepac]())
- The PriorityClass API has been promoted to `scheduling.k8s.io/v1` with no changes. The `scheduling.k8s.io/v1beta1` version is now deprecated and will stop being served by default in v1.17. ([#73555](), [@bsalamat]())
- fix get azure accounts timeout issue when there is no out-bound IP ([#74191](), [@andyzhangx]())
- fix mixed protocol issue for azure load balancer ([#74200](), [@andyzhangx]())

- Don't update the Pod object after each scheduling attempt by adding a timestamp to the scheduling queue. ([#73700](), [@denkensk]())
- kubeadm: remove local etcd members from the etcd cluster when kubeadm reset ([#74112](), [@pytimer]())
- Fix keymutex issues which may crash in some platforms. ([#74348](), [@danielqsj]())
- Fixed scanning of failed iSCSI targets. ([#74306](), [@jsafrane]())
- kubeadm: Do not fail preflight checks when running on >= 5.0 Linux kernel ([#74355](), [@brb]())
- Reduces the cache TTL for negative responses to 5s minimum. ([#74093](), [@blakebarnett]())
- The Ingress API is now available via `networking.k8s.io/v1beta1` . `extensions/v1beta1` Ingress objects are deprecated and will no longer be served in v1.18. ([#74057](), [@liggitt]())
- kubelet's --containerized flag will no longer be supported and will be removed in a future release ([#74267](), [@dims]())
- Optimize scheduler cache snapshot algorithm to improve scheduling throughput. ([#74041](), [@bsalamat]())
- Extends the VolumeSubpathEnvExpansion alpha feature to support environment variable expansion ([#71351](), [@kevtaylor]())
  - Implements subPathExpr field for expanding environment variables into a subPath
  - The fields subPathExpr and subPath are mutually exclusive
  - Note: This is a breaking change from the previous version of this alpha feature
- Added kube-proxy support for overlay networking and DSR in Windows and new flags for network-name, source-vip, and enable-dsr. ([#70896](), [@ksubrmnn]())
- StorageOS volume plugin updated to fix an issue where volume mount succeeds even if request to mount via StorageOS API fails. ([#69782](), [@darkowlzz]())
- kubeadm: Allow to upload certificates required to join a new control-plane to kubeadm-certs secret using the flag `--experimental-upload-certs` on `init` or upload-certs phase. ([#73907](), [@yagonobre]())
- export query parameter is deprecated and will be removed in a future release ([#73783](), [@deads2k]())
- e2e storage tests run faster and are easier to read ([#72434](), [@pohly]())
- kubectl: fix a bug where "describe" cannot obtain the event messages for a static pod ([#74156](), [@gaorong]())
- windows: Ensure graceful termination when being run as windows service ([#73292](), [@steffengy]())
- CoreDNS adds readinessProbe which prevents loadbalancing to unready pods, and also allows rolling updates to work as expected. ([#74137](), [@rajansandeep]())
- Fixes use of webhook admission plugins with multi-version custom resources ([#74154](), [@mbohlool]())
- kubeadm no longer allows using v1alpha3 configs for anything else than converting them to v1beta1. ([#74025](), [@rosti]())
- Change kubelet metrics to conform metrics guidelines. ([#72470](), [@danielqsj]())
  - The following metrics are deprecated, and will be removed in a future release:
    - `kubelet_pod_worker_latency_microseconds`
    - `kubelet_pod_start_latency_microseconds`
    - `kubelet_cgroup_manager_latency_microseconds`
    - `kubelet_pod_worker_start_latency_microseconds`
    - `kubelet_pleg_relist_latency_microseconds`
    - `kubelet_pleg_relist_interval_microseconds`
    - `kubelet_eviction_stats_age_microseconds`
    - `kubelet_runtime_operations`
    - `kubelet_runtime_operations_latency_microseconds`
    - `kubelet_runtime_operations_errors`
    - `kubelet_device_plugin_registration_count`
    - `kubelet_device_plugin_alloc_latency_microseconds`
  - Please convert to the following metrics:
    - `kubelet_pod_worker_duration_seconds`

- `kubelet_pod_start_duration_seconds`
- `kubelet_cgroup_manager_duration_seconds`
- `kubelet_pod_worker_start_duration_seconds`
- `kubelet_pleg_relist_duration_seconds`
- `kubelet_pleg_relist_interval_seconds`
- `kubelet_eviction_stats_age_seconds`
- `kubelet_runtime_operations_total`
- `kubelet_runtime_operations_duration_seconds`
- `kubelet_runtime_operations_errors_total`
- `kubelet_device_plugin_registration_total`
- `kubelet_device_plugin_alloc_duration_seconds`

- This change ensures that volumes get provisioned based on the zone information provided in allowedTopologies. ([#72731](#72731), [@skarthiksrinivas](#))

```
Storage class spec:
kind: StorageClass
apiVersion: storage.k8s.io/v1
metadata:
  name: fastpolicy1
provisioner: kubernetes.io/vsphere-volume
parameters:
    diskformat: zeroedthick
    storagePolicyName: vSAN Default Storage Policy
allowedTopologies:
- matchLabelExpressions:
  - key: failure-domain.beta.kubernetes.io/zone
    values:
    - zone1
```

  - PV creation Logs:
  - I0109 11:17:52.321372 1 vsphere.go:1147] Starting to create a vSphere volume with volumeOptions: &{CapacityKB:1048576 Tags:map[kubernetes.io/created-for/pvc/namespace:default kubernetes.io/created-for/pvc/name:pvcsc-1-policy kubernetes.io/created-for/pv/name:pvc-34650c12-1400-11e9-aef4-005056804cc9] Name:kubernetes-dynamic-pvc-34650c12-1400-11e9-aef4-005056804cc9 DiskFormat:zeroedthick Datastore: VSANStorageProfileData: StoragePolicyName:vSAN Default Storage Policy StoragePolicyID: SCSIControllerType: Zone:[zone1]}
  - ...
  - I0109 11:17:59.430113 1 vsphere.go:1334] The canonical volume path for the newly created vSphere volume is "[vsanDatastore] 98db185c-6683-d8c7-bc55-0200435ec5da/kubernetes-dynamic-pvc-34650c12-1400-11e9-aef4-005056804cc9.vmdk"
  - Ran regression tests (no zone) and they passed.

- vSphere cloud provider correctly retrieves the VM's UUID when running on Windows ([#71147](#71147), [@benmoss](#))
- Re-issue Allocate grpc calls before starting a container that requests device-plugin resources if the cached state is missing. ([#73824](#73824), [@jiayingz](#))
- [CRI] Add a new field called `runtime_handler` into PodSandbox and PodSandboxStatus to track the RuntimeClass information of a pod. ([#73833](#73833), [@haiyanmeng](#))
- kubelet: OS and Arch information is now recorded in `kubernetes.io/os` and `kubernetes.io/arch` labels on Node objects. The previous labels (`beta.kubernetes.io/os` and

`beta.kubernetes.io/arch`) are still recorded, but are deprecated and targeted for removal in 1.18. ([#73333](), [@yujuhong]())

- This change applies zone labels to vSphere Volumes automatically. The zone labels are visible on the PV: ([#72687](), [@subramanian-neelakantan]())
  - $ kubectl get pv --show-labels
  - NAME CAPACITY ACCESSMODES STATUS CLAIM REASON AGE LABELS
  - pv-abc 5Gi RWO Bound default/claim1 46s failure-domain.beta.kubernetes.io/region=VC1,failure-domain.beta.kubernetes.io/zone=cluster-1
- fix smb remount issue on Windows ([#73661](), [@andyzhangx]())
- Kubelet now tries to stop containers in unknown state once before restart or remove. ([#73802](), [@Random-Liu]())
- Deprecate --export flag from kubectl get command. ([#73787](), [@soltysh]())
- Breaking changes in client-go: ([#72214](), [@caesarxuchao]())
  - The disk-cached discovery client is moved from k8s.io/client-go/discovery to k8s.io/client-go/discovery/cached/disk.
  - The memory-cached discovery client is moved from k8s.io/client-go/discovery/cached to k8s.io/client-go/discovery/cached/memory.
- kubelet now accepts `pid=<number>` in the `--system-reserved` and `--kube-reserved` options to ensure that the specified number of process IDs will be reserved for the system as a whole and for Kubernetes system daemons respectively. Please reference `Kube Reserved` and `System Reserved` in `Reserve Compute Resources for System Daemons` in the Kubernetes documentation for general discussion of resource reservation. To utilize this functionality, you must set the feature gate `SupportNodePidsLimit=true` ([#73651](), [@RobertKrawitz]())
- The apiserver, including both the kube-apiserver and apiservers built with the generic apiserver library, will now return 413 RequestEntityTooLarge error if a json patch contains more than 10,000 operations. ([#74000](), [@caesarxuchao]())
- kubeadm: allow the usage of --kubeconfig-dir and --config flags on kubeadm init ([#73998](), [@yagonobre]())
- when pleg channel is full, discard events and record its count ([#72709](), [@changyaowei]())
- ls ->lt in line 6 ([#73898](), [@xiezongzhe]())
- Events reported for container creation, start, and stop now report the container name in the message and are more consistently formatted. ([#73892](), [@smarterclayton]())
- `kubectl auth reconcile` now outputs details about what changes are being made ([#71564](), [@liggitt]())
- kubeadm: fix a bug in the underlying library for diff related to characters like '%' ([#73941](), [@neolit123]())
- kube-apiserver: a request body of a CREATE/UPDATE/PATCH/DELETE resource operation larger than 100 MB will return a 413 "request entity too large" error. ([#73805](), [@caesarxuchao]())
  - Custom apiservers built with the latest apiserver library will have the 100MB limit on the body of resource requests as well. The limit can be altered via ServerRunOptions.MaxRequestBodyBytes.
  - The body size limit does not apply to subresources like pods/proxy that proxy request content to another server.
- Kustomize is developed in its own repo https://github.com/kubernetes-sigs/kustomize ([#73033](), [@Liujingfang1]())
  - This PR added a new subcommand `kustomize` in kubectl.
  - kubectl kustomize has the same effect as kustomize build
  - To build API resources from somedir with a kustomization.yaml file
  - kubectl kustomize
  - This command can be piped to apply or delete
  - kubectl kustomize | kubectl apply -f -
  - kubectl kustomize | kubectl delete -f -

- kubeadm: all master components are now exclusively relying on the `PriorityClassName` pod spec for annotating them as cluster critical components. Since `scheduler.alpha.kubernetes.io/critical-pod` annotation is no longer supported by Kubernetes 1.14 this annotation is no longer added to master components. ([#73857](), [@ereslibre]())
- Speedup kubectl by >10 when calling out to kube-apiserver for discovery information. ([#73345](), [@sttts]())
- kubeadm no longer dumps backtrace if it fails to remove the running containers on reset. ([#73951](), [@rosti]())

v1.14.0-alpha.3

[Documentation]()

Downloads for v1.14.0-alpha.3

filename	sha512 hash
[kubernetes.tar.gz]()	5060dcf689dad4e19da5029eb8fc3060a4b2bad988fddff438d0703a45c02481bcfbc15f45d2855f4fd5
[kubernetes-src.tar.gz]()	754c948b5d25b01f211866d473257be5fb576b4b97703eb6fc08679d6525e1f53195a450f3f47b77fabb

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz]()	5bd74dfc86bacf89d6b05d541e13bf390216039a42cc90fef2b248820acd84f56a445ec66d52497ff77e1af
[kubernetes-client-darwin-amd64.tar.gz]()	34e16661d66d337083583dfb478756ec8cc664d7cfc2dd1817bf1da03cdc380668be9df9f178b5fd5ccab50
[kubernetes-client-linux-386.tar.gz]()	15f99e85bcc95f7b8e1b4c6ecc23de36e89a54108003db926e97ec2e7253f363f6ed85e39a47305dbccf596
[kubernetes-client-linux-amd64.tar.gz]()	2e61cf9b776150c4f1830d068ffee9701cb04979152ed6b62fc1bf53163e6194029a4f75536e7fda71c3dfc
[kubernetes-client-linux-arm.tar.gz]()	67fb3805bb1b4a77f6603fbde9bd1d26e179de1a594c85618aa7b17be6abc510a9a0cd499ef4fe974574cf7
[kubernetes-client-linux-arm64.tar.gz]()	28930dc384b51051081a52874bc4d6dafa3c992dfa214b977ef711de2c2bc3f90bdaa6243bded1e750997fe
[kubernetes-client-linux-ppc64le.tar.gz]()	f59eda797a57961d52fe67ba8b25a3a10267f9ce46029ed2140ef4b02615ba9944bd83d7a6e7874c7268a09
kubernetes-	c56bfb64e55cf95251157a8229a3e94310b2c46bb1c1250050893873e3112578978c1f8e29fa56fac63e2aa

filename	sha512 hash
[client-linux-s390x.tar.gz](#)	
[kubernetes-client-windows-386.tar.gz](#)	e49a00fbe600892dc5eed0bc21bac64806da65280c818ca79b5e8adbed7fd5ecebb6b647cb9b89ac8622579
[kubernetes-client-windows-amd64.tar.gz](#)	797e20969ed4935adcbc80ccbcd72ec5aa697e70b0d071eceefc6dbacea69aff9f6660e7eefad6661ace0af

Server Binaries

filename	sha512 hash
[kubernetes-server-linux-amd64.tar.gz](#)	eddfc9afd7337475c3865443170d1425dcf4a87d981555871a69bcf132e73d99b1ffa08a00490b30c60232f
[kubernetes-server-linux-arm.tar.gz](#)	dc85cd3a039cc0516beb19018c8378f3b7b88fa2edb8fa1476305e89eb7c64fef2d938bd48fd257ea8e690f
[kubernetes-server-linux-arm64.tar.gz](#)	d7c3a72abaa4c3e3243f8b4b3a8adb8be2758e0f883423ea62d2c61b2081464a8976ad43ea0640a7e453aa4
[kubernetes-server-linux-ppc64le.tar.gz](#)	b268a94eb056eea8bdf4d5739dec430f75a6a6b3c18e30df68d970c3566b3e4a638b3577f6219596ae54eac
[kubernetes-server-linux-s390x.tar.gz](#)	f4cfd8d2faacdd1f0065f9e0f4f8d0db7bd8f438f812f70a07f4cb5272ae9bed3ec876b3cbaf2f2a71e65e4

Node Binaries

filename	sha512 hash
[kubernetes-node-linux-amd64.tar.gz](#)	7040ee3c032ec4fe14530c3e47ee53d731acb947b06e2d560cbcd0e7e513142c0f300302059aaef03e24311
[kubernetes-node-linux-arm.tar.gz](#)	3d32e5243d1c65bce573cfb0f60d643ef3fc684a15551dbc8c3d5435e6854ff104c46c77b0b8708d9c661d5
[kubernetes-node-linux-arm64.tar.gz](#)	d3a17027fa1c057528422b35e32260f5b7c7246400df595f0ebda5d150456d4388129b1ead4229f98f2b461
[kubernetes-](#)	89ed1f5093b49ab9d58d7a70089e881bf388f3316cb2607fa18e3bf072aff3d27aabe99124334774e63decb

node-linux-ppc64le.tar.gz	
kubernetes-node-linux-s390x.tar.gz	`755a60824a9b8c4090a791d332e410692708ecece90e37388f58eb2c7ddddea6b859fefcc5a53ec3d275fee`
kubernetes-node-windows-amd64.tar.gz	`c71d8055d89e535771f345e0f673da021915a7a82c75951855ba2574a4250c8a57d0636b4ec9bba209edde8`

Changelog since v1.14.0-alpha.2

Action Required

- The --storage-versions flag of kube-apiserver is removed. The storage versions will always be the default value built-in the kube-apiserver binary. ([#67678](), [@caesarxuchao]())

Other notable changes

- fix [#73264]() cpuPeriod was not reset, but used as set via flag, although it was disabled via alpha gate ([#73342](), [@szuecs]())

- Update kubelet CLI summary documentation and generated Webpage ([#73256](), [@deitch]())

- Considerably reduced the CPU load in kube-apiserver while aggregating OpenAPI specifications from aggregated API servers. ([#71223](), [@sttts]())

- kubeadm: add a preflight check that throws a warning if the cgroup driver for Docker on Linux is not "systemd" as per the k8s.io CRI installation guide. ([#73837](), [@neolit123]())

- Kubelet: add usageNanoCores from CRI stats provider ([#73659](), [@feiskyer]())

- Fix watch to not send the same set of events multiple times causing watcher to go back in time ([#73845](), [@wojtek-t]())

- `system:kube-controller-manager` and `system:kube-scheduler` users are now permitted to perform delegated authentication/authorization checks by default RBAC policy ([#72491](), [@liggitt]())

- Prevent AWS Network Load Balancer security groups ingress rules to be deleted by ensuring target groups are tagged. ([#73594](), [@masterzen]())

- Set a low oom_score_adj for containers in pods with system-critical priorities ([#73758](), [@sjenning]())

- Ensure directories on volumes are group-executable when using fsGroup ([#73533](), [@mxey]())

- kube-apiserver now only aggregates openapi schemas from `/openapi/v2` endpoints of aggregated API servers. The fallback to aggregate from `/swagger.json` has been removed. Ensure aggregated API servers provide schema information via `/openapi/v2` (available since v1.10). ([#73441](), [@roycaihw]())

- Change docker metrics to conform metrics guidelines and using histogram for better aggregation. ([#72323](), [@danielqsj]())

  - The following metrics are deprecated, and will be removed in a future release:
    - `docker_operations`

- - - `docker_operations_latency_microseconds`
    - - `docker_operations_errors`
    - - `docker_operations_timeout`
    - - `network_plugin_operations_latency_microseconds`
  - Please convert to the following metrics:
    - - `docker_operations_total`
    - - `docker_operations_latency_seconds`
    - - `docker_operations_errors_total`
    - - `docker_operations_timeout_total`
    - - `network_plugin_operations_latency_seconds`

- `kubectl delete --all-namespaces` is a recognized flag. ([#73716](), [@deads2k]())

- MAC Address filter has been fixed in vSphere Cloud Provider, it no longer ignores `00:1c:14` and `00:05:69` prefixes ([#73721](), [@frapposelli]())

- Add kubelet_node_name metrics. ([#72910](), [@danielqsj]())

- The HugePages feature gate has graduated to GA, and can no longer be disabled. The feature gate will be removed in v1.16 ([#72785](), [@derekwaynecarr]())

- Fix a bug that aggregated openapi spec may override swagger securityDefinitions and swagger info in kube-apiserver ([#73484](), [@roycaihw]())

- Fixes a bug that prevented deletion of dynamically provisioned volumes in Quobyte backends. ([#68925](), [@casusbelli]())

- error messages returned in authentication webhook status responses are now correctly included in the apiserver log ([#73595](), [@liggitt]())

- kubeadm: `kubeadm alpha preflight` and `kubeadm alpha preflight node` are removed; you can now use `kubeadm join phase preflight` ([#73718](), [@fabriziopandini]())

- kube-apiserver: the deprecated `repair-malformed-updates` has been removed ([#73663](), [@danielqsj]())

- e2e.test now rejects unknown --provider values instead of merely warning about them. An empty provider name is not accepted anymore and was replaced by "skeleton" (= a provider with no special behavior). ([#73402](), [@pohly]())

- Updated AWS SDK to v1.16.26 for ECR PrivateLink support ([#73435](), [@micahhausler]())

- Expand kubectl wait to work with more types of selectors. ([#71746](), [@rctl]())

- The CustomPodDNS feature gate has graduated to GA, and can no longer be disabled. The feature gate will be removed in v1.16 ([#72832](), [@MrHohn]())

- The `rules` field in RBAC Role and ClusterRole objects is now correctly reported as optional in the openapi schema. ([#73250](), [@liggitt]())

- AWS ELB health checks will now use HTTPS/SSL protocol for HTTPS/SSL backends. ([#70309](), [@2rs2ts]())

- kubeadm reset: fixed crash caused by absence of a configuration file ([#73636](), [@bart0sh]())

- CoreDNS is now version 1.3.1 ([#73610](), [@rajansandeep]())

- A new `k8s_external` plugin that allows external zones to point to Kubernetes in-cluster services.
- CoreDNS now checks if a zone transfer is allowed. Also allow a TTL of 0 to avoid caching in the cache plugin.
- TTL is also applied to negative responses (NXDOMAIN, etc).

- Missing directories listed in a user's PATH are no longer considered errors and are instead logged by the "kubectl plugin list" command when listing available plugins. ([#73542](), [@juanvallejo]())

- remove kubelet flag '--experimental-fail-swap-on' (deprecated in v1.8) ([#69552](), [@Pingan2017]())

- Introduced support for Windows nodes into the cluster bringup scripts for GCE. ([#73442](), [@pjh]())

- Now users could get object info like: ([#73063](), [@WanLinghao]())

  - a. kubectl get pod test-pod -o custom-columns=CONTAINER:.spec.containers[0:3].name
  - b. kubectl get pod test-pod -o custom-columns=CONTAINER:.spec.containers[-2:].name

- scheduler: use incremental scheduling cycle in PriorityQueue to put all in-flight unschedulable pods back to active queue if we received move request ([#73309](), [@cofyc]())

- fixes an error processing watch events when running skewed apiservers ([#73482](), [@liggitt]())

- Prometheus metrics for crd_autoregister, crd_finalizer and crd_naming_condition_controller are exported. ([#71767](), [@roycaihw]())

- Adds deleting pods created by DaemonSet assigned to not existing nodes. ([#73401](), [@krzysztof-jastrzebski]())

- Graduate Pod Priority and Preemption to GA. ([#73498](), [@bsalamat]())

- Adds configuration for AWS endpoint fine control: ([#72245](), [@ampsingram]())

  - OverrideEndpoints bool Set to true to allow custom endpoints
  - ServiceDelimiter string Delimiter to use to separate overridden services (multiple services) Defaults to "&"
  - ServicenameDelimiter string Delimiter to use to separate servicename from its configuration parameters Defaults "|"
  - OverrideSeparator string Delimiter to use to separate region of occurrence, url and signing region for each override Defaults to ","
  - ServiceOverrides string example: s3|region1, [https://s3.foo.bar](), some signing_region & ec2|region2, [https://ec2.foo.bar](), signing_region

- The CoreDNS configuration now has the forward plugin for proxy in the default configuration instead of the proxy plugin. ([#73267](), [@rajansandeep]())

- Fixed a bug that caused PV allocation on non-English vSphere installations to fail ([#73115](), [@alvaroaleman]())

v1.14.0-alpha.2

[Documentation]()

Downloads for v1.14.0-alpha.2

filename	sha512 hash

[kubernetes.tar.gz](#)	1330e4421b61f6b1e6e4dee276d4742754bd3dd4493508d67ebb4445065277c619c4da8b4835febf0b2c
[kubernetes-src.tar.gz](#)	352c043bebf13a616441c920f3eec80d3f02f111d8488c31aa903e1483bce6d1fbe7472208f647301429

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz](#)	ee5aba4efce323167e6d897a2ff6962a240e466333bcae9390be2c8521c6da50ac2cb6139510b693aad49d6
[kubernetes-client-darwin-amd64.tar.gz](#)	4b5c0b340322956a8d096c595124a765ac318d0eb460d6320218f2470e22d88221a0a9f1f93d5f3075f1c36
[kubernetes-client-linux-386.tar.gz](#)	7a5bfe68dd58c8478746a410872b615daf8abb9a78754140fb4d014a0c9177a87859ac046f56f5743fb97a9
[kubernetes-client-linux-amd64.tar.gz](#)	c3139f58070241f2da815f701af3c0bd0ea4fdec1fe54bb859bd11237ac9b75ecb01b62ac1c7a459a4dd796
[kubernetes-client-linux-arm.tar.gz](#)	9d96d2e1e11aa61e2c3a5f4f27c18866feae9833b6ee70b15f5cdb5f992849dc1f79821af856b467487092a
[kubernetes-client-linux-arm64.tar.gz](#)	7b4dd825cf9f217c18b28976a3faa94f0bd4868e541e5be7d57cd770e2b163c6daddf12e5f9ad51d92abde7
[kubernetes-client-linux-ppc64le.tar.gz](#)	490638e250c24b6bad8b67358fd7890f7a2f6456ae8ffe537c28bb5b3ce7abc591e6fecbddd6744f0f6c0e2
[kubernetes-client-linux-s390x.tar.gz](#)	9dd8c3361eda15dd1594066c55b79cb9a34578c225b2b48647cd5b34619cf23106b845ee25b80d979f8b69e
[kubernetes-client-windows-386.tar.gz](#)	d624b8aead053201765b713d337528be82a71328ee3dd569f556868ceeb4904e64584892a016d247608fc45
[kubernetes-client-windows-amd64.tar.gz](#)	a1cf8c67984dd4eb4610fa05d27fe9e9e4123159f933e3986e9db835b9cf136962168f0003071001e01e2c1

Server Binaries

filename	sha512 hash

[kubernetes-server-linux-amd64.tar.gz](#)	b93982b56371994c540cd11e6bc21808279340617164992c10f30d8e6ae4d5e270e41c1edc0625d3458a189
[kubernetes-server-linux-arm.tar.gz](#)	bfd76c6b26e5927166d776f6110b97ee36c1d63ad39e2d18899f3e428ebb0f9615bb677ac8e9bcc1864c72a
[kubernetes-server-linux-arm64.tar.gz](#)	6721dec0df9466cd6c056160c73d598296cebb0af9259eb21b693abb8708901bc8bc30e11815e14d00d6eb1
[kubernetes-server-linux-ppc64le.tar.gz](#)	f8cd307db8141d989ae1218dd2b438bc9cee017d533b1451d2345f9689c451fdb080acd1b9b2f535ed04017
[kubernetes-server-linux-s390x.tar.gz](#)	de7514bbd87a1b363e1bc7787f37d5ea10faac4afe7c5163c23c4df16781aa77570ec553bc4f4b6094166c1

Node Binaries

filename	sha512 hash
[kubernetes-node-linux-amd64.tar.gz](#)	8c37fd2fe6232d2c148e23df021b8b5347136263399932bcdff0c7a0186f3145de9ede4936b14de7484cc6d
[kubernetes-node-linux-arm.tar.gz](#)	389e4e77ab9e62968a25b8f4e146a2c3fbb3db2e60e051922edf6395c26cc5380e5a77bf67022339d6ebfe9
[kubernetes-node-linux-arm64.tar.gz](#)	7efc32dfeefcef7f860913c25431bd891a435e92cb8d5a95f8deca1a82aa899a007d4b19134493694a4bccb
[kubernetes-node-linux-ppc64le.tar.gz](#)	da30c03bca4b81d810a7df006db02333dea87e336d6cdca9c93392e01c7e43bf4902c969efa7fa53e8a70a0
[kubernetes-node-linux-s390x.tar.gz](#)	cce43b7f0350b9e5a77ea703225adb9714ef022d176db5b99a0327937d19021d7a8e93ef1169389fd53b895
[kubernetes-node-windows-amd64.tar.gz](#)	d3accf522d80cbfb3d03e9eaa60a09767ba11e88a8a5b44a629192a7c6916b1fb3440f022a5ffc4ea78f359

Changelog since v1.14.0-alpha.1

Action Required

- Promote ValidateProxyRedirects to Beta, and enable by default. This feature restricts redirect following from the apiserver to same-host redirects. ([#72552](), [@tallclair]())
  - ACTION REQUIRED: If nodes are configured to respond to CRI streaming requests on a different host interface than what the apiserver makes requests on (only the case if not using the built-in dockershim & setting the kubelet flag `--redirect-container-streaming=true`), then these requests will be broken. In that case, the feature can be temporarily disabled until the node configuration is corrected. We suggest setting `--redirect-container-streaming=false` on the kubelet to avoid issues.

Other notable changes

- Added alpha field storageVersionHash to the discovery document for each resource. Its value must be treated as opaque by clients. Only equality comparison on the value is valid. ([#73191](), [@caesarxuchao]())
- Fix admission metrics in seconds. ([#72343](), [@danielqsj]())
  - Add metrics `*_admission_latencies_milliseconds` and `*_admission_latencies_milliseconds_summary` for backward compatible, but will be removed in a future release.
- Pod eviction now honors graceful deletion by default if no delete options are provided in the eviction request ([#72730](), [@liggitt]())
- Update to go1.11.5 ([#73326](), [@ixdy]())
- Change proxy metrics to conform metrics guidelines. ([#72334](), [@danielqsj]())
  - The metrics `sync_proxy_rules_latency_microseconds` is deprecated, and will be removed in a future release, please convert to metrics `sync_proxy_rules_latency_seconds`.
- Add network stats for Windows nodes and pods. ([#70121](), [@feiskyer]())
- kubeadm: When certificates are present joining a new control plane make sure that they match at least the required SANs ([#73093](), [@ereslibre]())
- A new `TaintNodesByCondition` admission plugin taints newly created Node objects as "not ready", to fix a race condition that could cause pods to be scheduled on new nodes before their taints were updated to accurately reflect their reported conditions. This admission plugin is enabled by default if the `TaintNodesByCondition` feature is enabled. ([#73097](), [@bsalamat]())
- kube-addon-manager was updated to v9.0, and now uses kubectl v1.13.2 and prunes workload resources via the apps/v1 API ([#72978](), [@liggitt]())
- When a watch is closed by an HTTP2 load balancer and we are told to go away, skip printing the message to stderr by default. ([#73277](), [@smarterclayton]())
- If you are running the cloud-controller-manager and you have the `pvlabel.kubernetes.io` alpha Initializer enabled, you must now enable PersistentVolume labeling using the `PersistentVolumeLabel` admission controller instead. You can do this by adding `PersistentVolumeLabel` in the `--enable-admission-plugins` kube-apiserver flag. ([#73102](), [@andrewsykim]())
- The alpha Initializers feature, `admissionregistration.k8s.io/v1alpha1` API version, `Initializers` admission plugin, and use of the `metadata.initializers` API field have been removed. Discontinue use of the alpha feature and delete any existing `InitializerConfiguration` API objects before upgrading. The `metadata.initializers` field will be removed in a future release. ([#72972](), [@liggitt]())
- Scale max-inflight limits together with master VM sizes. ([#73268](), [@wojtek-t]())
- kubectl supports copying files with wild card ([#72641](), [@dixudx]())
- kubeadm: add back `--cert-dir` option for `kubeadm init phase certs sa` ([#73239](), [@mattkelly]())
- Remove deprecated args '--show-all' ([#69255](), [@Pingan2017]())
- As per deprecation policy in https://kubernetes.io/docs/reference/using-api/deprecation-policy/ ([#73001](), [@shivnagarajan]())

- - the taints "node.alpha.kubernetes.io/notReady" and "node.alpha.kubernetes.io/unreachable". are no
  - longer supported or adjusted. These uses should be replaced with "node.kubernetes.io/not-ready"
  - and "node.kubernetes.io/unreachable" respectively instead.
- The /swagger.json and /swagger-2.0.0.pb-v1 schema documents, deprecated since v1.10, have been removed in favor of `/openapi/v2` ([#73148](), [@liggitt]())
- CoreDNS is only officially supported on Linux at this time. As such, when kubeadm is used to deploy this component into your kubernetes cluster, it will be restricted (using nodeSelectors) to run only on nodes with that operating system. This ensures that in clusters which include Windows nodes, the scheduler will not ever attempt to place CoreDNS pods on these machines, reducing setup latency and enhancing initial cluster stability. ([#69940](), [@MarcPow]())
- kubeadm now attempts to detect an installed CRI by its usual domain socket, so that --cri-socket can be omitted from the command line if Docker is not used and there is a single CRI installed. ([#69366](), [@rosti]())
- scheduler: makes pod less racing so as to be put back into activeQ properly ([#73078](), [@Huang-Wei]())
- jsonpath expressions containing `[start:end:step]` slice are now evaluated correctly ([#73149](), [@liggitt]())
- metadata.deletionTimestamp is no longer moved into the future when issuing repeated DELETE requests against a resource containing a finalizer. ([#73138](), [@liggitt]())
- The "kubectl api-resources" command will no longer fail to display any resources on a single failure ([#73035](), [@juanvallejo]())
- e2e tests that require SSH may be used against clusters that have nodes without external IP addresses by setting the environment variable `KUBE_SSH_BASTION` to the `host:port` of a machine that is allowed to SSH to those nodes. The same private key that the test would use is used for the bastion host. The test connects to the bastion and then tunnels another SSH connection to the node. ([#72286](), [@smarterclayton]())
- kubeadm: explicitly wait for `etcd` to have grown when joining a new control plane ([#72984](), [@ereslibre]())
- Install CSINodeInfo and CSIDriver CRDs in the local cluster. ([#72584](), [@xing-yang]())
- kubectl loads config file once and uses persistent client config ([#71117](), [@dixudx]())
- remove stale OutOfDisk condition from kubelet side ([#72507](), [@dixudx]())
- Node OS/arch labels are promoted to GA ([#73048](), [@yujuhong]())
- Fix graceful apiserver shutdown to not drop outgoing bytes before the process terminates. ([#72970](), [@sttts]())
- Change apiserver metrics to conform metrics guidelines. ([#72336](), [@danielqsj]())
  - The following metrics are deprecated, and will be removed in a future release:
    - `apiserver_request_count`
    - `apiserver_request_latencies`
    - `apiserver_request_latencies_summary`
    - `apiserver_dropped_requests`
    - `etcd_helper_cache_hit_count`
    - `etcd_helper_cache_miss_count`
    - `etcd_helper_cache_entry_count`
    - `etcd_request_cache_get_latencies_summary`
    - `etcd_request_cache_add_latencies_summary`
    - `etcd_request_latencies_summary`
    - `transformation_latencies_microseconds`
    - `data_key_generation_latencies_microseconds`
  - Please convert to the following metrics:
    - `apiserver_request_total`
    - `apiserver_request_latency_seconds`
    - `apiserver_dropped_requests_total`
    - `etcd_helper_cache_hit_total`

- etcd_helper_cache_miss_total
- etcd_helper_cache_entry_total
- etcd_request_cache_get_latency_seconds
- etcd_request_cache_add_latency_seconds
- etcd_request_latency_seconds
- transformation_latencies_seconds
- data_key_generation_latencies_seconds

- acquire lock before operating unschedulablepodsmap ([#73022](), [@denkensk]())
- Print `SizeLimit` of `EmptyDir` in `kubectl describe pod` outputs. ([#69279](), [@dtaniwaki]())
- add goroutine to move unschedulable pods to activeq if they are not retried for more than 1 minute ([#72558](), [@denkensk]())
- PidPressure evicts pods from lowest priority to highest priority ([#72844](), [@dashpole]())
- Reduce GCE log rotation check from 1 hour to every 5 minutes. Rotation policy is unchanged (new day starts, log file size > 100MB). ([#72062](), [@jpbetz]())
- Add support for max attach limit for Cinder ([#72980](), [@gnufied]())
- Fixes the setting of NodeAddresses when using the vSphere CloudProvider and nodes that have multiple IP addresses. ([#70805](), [@danwinship]())
- kubeadm: pull images when joining a new control plane instance ([#72870](), [@MalloZup]())
- Enable mTLS encryption between etcd and kube-apiserver in GCE ([#70144](), [@wenjiaswe]())
- The `/swaggerapi/*` schema docs, deprecated since 1.7, have been removed in favor of the /openapi/v2 schema docs. ([#72924](), [@liggitt]())
- Allow users to use Docker 18.09 with kubeadm ([#72823](), [@dims]())

v1.14.0-alpha.1

[Documentation]()

Downloads for v1.14.0-alpha.1

filename	sha512 hash
[kubernetes.tar.gz]()	fac80e5674e547d00987516fb2eca6ea9947529307566be6a12932e3c9e430e8ad094afae748f31e9574
[kubernetes-src.tar.gz]()	d1b5b2c15cb0daa076606f4ccf887724b0166dee0320f2a61d16ab4689931ab0cf5dac4c499aea3d434e

Client Binaries

filename	sha512 hash
[kubernetes-client-darwin-386.tar.gz]()	307c426e4abaf81648af393ddd641c225d87b02d8662d1309fe3528f14ed91b2470f6b46dc8ce0459cf196e
[kubernetes-client-darwin-amd64.tar.gz]()	8daa85f3e8feaea0d55f20f850038dd113f0f08b62eef944b08a9109d4e69f323a8fcf20c12790c78386b45
[kubernetes-client-linux-	28d73c299cb9859fdfeb3e4869a7a9c77f5679309c2613bd2c72d92dafd5faad0653a7377616190edd29cb8

filename	sha512 hash
[386.tar.gz](#)	
[kubernetes-client-linux-amd64.tar.gz](#)	eb923e13026f80b743a57100d4f94995f322ab6f107c34ffd9aa74b5a6c6a4a410aff8921a4f675ace7db2f
[kubernetes-client-linux-arm.tar.gz](#)	279b0d0c560900021abea4bbfc25aeca7389f0b37d80022dc3335147344663424e7ba6a0abecb2dca1d2fac
[kubernetes-client-linux-arm64.tar.gz](#)	d69d28361b9c9e16f3e6804ccda92d55ee743e63aba7fded04edf1f7202b1fa96c235e36ab2ca17df99b4ae
[kubernetes-client-linux-ppc64le.tar.gz](#)	ca6ebb87df98bf179c94f54a4e8ae2ef2ea534b1bc5014331f937aa9d4c0442d5423651457871ef5c51f481
[kubernetes-client-linux-s390x.tar.gz](#)	13fa2058ceba66d8da5ba5982aa302cdd1c61d15253183ab97739229584a178f057f7979b49a035cb235519
[kubernetes-client-windows-386.tar.gz](#)	42ba4bba477e2958aab674a0fbf888bd5401fa5fbc39466b6cad0fc97e249ac949042c513bf176957bcb336
[kubernetes-client-windows-amd64.tar.gz](#)	d5f339fe4d37c61babc97208446d1859423b7679f34040f72e9138b72a18d982e66732d1f4b4f3443700f9c

Server Binaries

filename	sha512 hash
[kubernetes-server-linux-amd64.tar.gz](#)	bcbcbd3ac4419e54e894d1e595f883e61fcf9db0353a30d794a9e5030cde8957abe8124fa5265e8c52fbc93
[kubernetes-server-linux-arm.tar.gz](#)	fda4ea9168555f724659601b06737dea6ec95574569df4ef7e4ab6c2cca3327623ef310bf34f792767f00ee
[kubernetes-server-linux-arm64.tar.gz](#)	c142857711ec698844cd61188e70b5ab185ba2c8828cf5563a2f42958489e2ae4dbb2c1626271d4f5582167
[kubernetes-server-linux-ppc64le.tar.gz](#)	524a40c5717b24c5a3b2491c4c61cf3038ba5ae7f343797a1b56a5906d6a0a3eb57e9ae78590c28ac3d441d
[kubernetes-server-linux-s390x.tar.gz](#)	ef943fe326b05ece57f2e409ab1cc5fe863f5effa591abae17181c84a5eb4061e9f394ffcc8ee6ebb3f5165

Node Binaries

filename	sha512 hash
kubernetes-node-linux-amd64.tar.gz	396f7588e9131dd1b99d101c8bb94fb7e67ab067327ee58dab5a6e24887d8fbb6fc78fe50804abb0ab2f626
kubernetes-node-linux-arm.tar.gz	b75c1550438da0b66582d6de90436ee3c44e41e67f74947d93ee9a07ed2b7757762f3f2b05bd7b5589d7e1e
kubernetes-node-linux-arm64.tar.gz	b6c46f9250b5565fa178ecc99ffedc6724b0bfffb73acc7d3da2c678af71008a264502cc4a48a6e7452bd0a
kubernetes-node-linux-ppc64le.tar.gz	8d505c61a59bc9fc53d6f219d6434ddd962ba383654c46e16d413cee0ad6bd26f276a9860ad3680349bcfac
kubernetes-node-linux-s390x.tar.gz	83b6cf0fb348faa93fa40ec2a947b202b3a5a2081c3896ae39618f947a57b431bc774fbe3a5437719f50f00
kubernetes-node-windows-amd64.tar.gz	43471680533685c534023787cd40431b67041bab43e93dea457283ee0f08a8fa02ee9ade3737d8e64d1d325

Changelog since v1.13.0

Action Required

- action required ([#68753](#), [@johnSchnake](#))
  - If you are running E2E tests which require SSH keys and you utilize environment variables to override their location, you may need to modify the environment variable set. On all providers the environment variable override can now be either an absolute path to the key or a relative path (relative to ~/.ssh). Specifically the changes are:
    - Created new GCE_SSH_KEY allowing specification of SSH keys for gce, gke, and kubemark.
    - AWS_SSH_KEY, previously assumed to be an absolute path can now be either relative or absolute
    - LOCAL_SSH_KEY (for local and vsphere providers) was previously assumed to be a filename relative to ~/.ssh but can now also be an absolute path
    - KUBE_SSH_KEY (for skeleton provider) was previously assumed to be a filename relative to ~/.ssh but can now also be an absolute path

Other notable changes

- Connections from Pods to Services with 0 endpoints will now ICMP reject immediately, rather than blackhole and timeout. ([#72534](#), [@thockin](#))
- Improve efficiency of preemption logic in clusters with many pending pods. ([#72895](#), [@bsalamat](#))

- Change scheduler metrics to conform metrics guidelines. ([#72332](), [@danielqsj]())
  - The following metrics are deprecated, and will be removed in a future release:
    - `e2e_scheduling_latency_microseconds`
    - `scheduling_algorithm_latency_microseconds`
    - `scheduling_algorithm_predicate_evaluation`
    - `scheduling_algorithm_priority_evaluation`
    - `scheduling_algorithm_preemption_evaluation`
    - `binding_latency_microseconds`
  - Please convert to the following metrics:
    - `e2e_scheduling_latency_seconds`
    - `scheduling_algorithm_latency_seconds`
    - `scheduling_algorithm_predicate_evaluation_seconds`
    - `scheduling_algorithm_priority_evaluation_seconds`
    - `scheduling_algorithm_preemption_evaluation_seconds`
    - `binding_latency_seconds`
- Fix SelectorSpreadPriority scheduler to match all selectors when distributing pods. ([#72801](), [@Ramyak]())
- Add bootstrap service account & cluster roles for node-lifecycle-controller, cloud-node-lifecycle-controller, and cloud-node-controller. ([#72764](), [@andrewsykim]())
- Fixes spurious 0-length API responses. ([#72856](), [@liggitt]())
- Updates Fluentd to 1.3.2 & added filter_parser ([#71180](), [@monotek]())
- The leaderelection package allows the lease holder to release its lease when the calling context is cancelled. This allows ([#71490](), [@smarterclayton]())
  - faster handoff when a leader-elected process is gracefully terminated.
- Make volume binder resilient to races between main schedule loop and async binding operation ([#72045](), [@cofyc]())
- Bump minimum docker API version to 1.26 (1.13.1) ([#72831](), [@yujuhong]())
- If the `TokenRequestProjection` feature gate is disabled, projected serviceAccountToken volume sources are now dropped at object creation time, or at object update time if the existing object did not have a projected serviceAccountToken volume source. Previously, these would result in validation errors. ([#72714](), [@mourya007]())
- Add `metrics-port` to kube-proxy cmd flags. ([#72682](), [@whypro]())
- kubectl: fixed an issue with "too old resource version" errors continuously appearing when calling `kubectl delete` ([#72825](), [@liggitt]())
- [Breaking change, client-go]: The WaitFor function returns, probably an ErrWaitTimeout, when the done channel is closed, even if the `WaitFunc` doesn't handle the done channel. ([#72364](), [@kdada]())
- removes newline from json output for windows nodes [#72657]() ([#72659](), [@jsturtevant]())
- The DenyEscalatingExec and DenyExecOnPrivileged admission plugins are deprecated and will be removed in v1.18. Use of `PodSecurityPolicy` or a custom admission plugin to limit creation of pods is recommended instead. ([#72737](), [@liggitt]())
- Fix `describe statefulset` not printing number of desired replicas correctly ([#72781](), [@tghartland]())
- Fix kube-proxy PodSecurityPolicy binding on GCE & GKE. This was only an issue when running kube-proxy as a DaemonSet, with PodSecurityPolicy enabled. ([#72761](), [@tallclair]())
- Drops `status.Conditions` of new `PersistentVolume` objects if it was not set on the old object during `PrepareForUpdate`. ([#72739](), [@rajathagasthya]())
- kubelet: fixes cadvisor internal error when "--container-runtime-endpoint" is set to "unix:///var/run/crio/crio.sock". ([#72340](), [@makocchi-git]())

- The `spec.SecurityContext.Sysctls` field is now dropped during creation of `Pod` objects unless the `Sysctls` feature gate is enabled. ([#72752](), [@rajathagasthya]())
  - The `spec.AllowedUnsafeSysctls` and `spec.ForbiddenSysctls` fields are now dropped during creation of `PodSecurityPolicy` objects unless the `Sysctls` feature gate is enabled.
- kubeadm: fixed storing of front-proxy certificate in secrets required by kube-controller-manager selfhosting pivoting ([#72727](), [@bart0sh]())
- Administrator is able to configure max pids for a pod on a node. ([#72076](), [@derekwaynecarr]())
- Move users of `factory.NewConfigFactory` to `scheduler.New` . ([#71875](), [@wgliang]())
- The `spec.SecurityContext.ShareProcessNamespace` field is now dropped during creation of `Pod` objects unless the `PodShareProcessNamespace` feature gate is enabled. ([#72698](), [@rajathagasthya]())
- kube-apiserver: When configuring integration with external KMS Providers, users can supply timeout value (i.e. how long should kube-apiserver wait before giving up on a call to KMS). ([#72540](), [@immutableT]())
- The `spec.readinessGates` field is now dropped during creation of `Pod` objects unless the `PodReadinessGates` feature gate is enabled. ([#72695](), [@rajathagasthya]())
- The `spec.dataSource` field is now dropped during creation of PersistentVolumeClaim objects unless the `VolumeSnapshotDataSource` feature gate is enabled. ([#72666](), [@rajathagasthya]())
- Stop kubelet logging a warning to override hostname if there's no change detected. ([#71560](), [@KashifSaadat]())
- client-go: fake clients now properly return NotFound errors when attempting to patch non-existent objects ([#70886](), [@bouk]())
- kubectl: fixes a bug determining the correct namespace while running in a pod when the `--context` flag is explicitly specified, and the referenced context specifies the namespace `default` ([#72529](), [@liggitt]())
- Fix scheduling starvation of pods in cluster with large number of unschedulable pods. ([#72619](), [@everpeace]())
- If the AppArmor feature gate is disabled, AppArmor-specific annotations in pod and pod templates are dropped when the object is created, and during update of objects that do not already contain AppArmor annotations, rather than triggering a validation error. ([#72655](), [@liggitt]())
- client-go: shortens refresh period for token files to 1 minute to ensure auto-rotated projected service account tokens are read frequently enough. ([#72437](), [@liggitt]())
- Multiple tests which previously failed due to lack of external IP addresses defined on the nodes should now be passable. ([#68792](), [@johnSchnake]())
- kubeadm: fixed incorrect controller manager pod mutations during selfhosting pivoting ([#72518](), [@bart0sh]())
- Increase Azure default maximumLoadBalancerRuleCount to 250. ([#72621](), [@feiskyer]())
- RuntimeClass is now printed with extra `RUNTIME-HANDLER` column. ([#72446](), [@Huang-Wei]())
- Updates the kubernetes dashboard add-on to v1.10.1. Skipping dashboard login is no longer enabled by default. ([#72495](), [@liggitt]())
- [GCP] Remove confusing error log entry form fluentd scalers. ([#72243](), [@cezarygerard]())
- change azure disk host cache to ReadOnly by default ([#72229](), [@andyzhangx]())
- Nodes deleted in the cloud provider with Ready condition `Unknown` should also be deleted on the API server. ([#72559](), [@andrewsykim]())
- `kubectl apply --prune` now uses the apps/v1 API to prune workload resources ([#72352](), [@liggitt]())
- Fixes a bug in HPA controller so HPAs are always updated every resyncPeriod (15 seconds). ([#72373](), [@krzysztof-jastrzebski]())
- IPVS: "ExternalTrafficPolicy: Local" now works with LoadBalancer services using loadBalancerIP ([#72432](), [@lbernail]())
- Fixes issue with cleaning up stale NFS subpath mounts ([#71804](), [@msau42]())
- Modify the scheduling result struct and improve logging for successful binding. ([#71926](), [@wgliang]())

- Run one etcd storage compaction per default interval of 5min. Do not run one for each resource and each CRD. This fixes the compaction log spam and reduces load on etcd. ([#68557](), [@sttts]())
- kube-apiserver: `--runtime-config` can once again be used to enable/disable serving specific resources in the `extensions/v1beta1` API group. Note that specific resource enablement/disablement is only allowed for the `extensions/v1beta1` API group for legacy reasons. Attempts to enable/disable individual resources in other API groups will print a warning, and will return an error in future releases. ([#72249](), [@liggitt]())
- kubeadm: fixed storing of etcd certificates in secrets required by kube-apiserver selfhosting pivoting ([#72478](), [@bart0sh]())
- kubeadm: remove the deprecated "--address" flag for controller-manager and scheduler. ([#71973](), [@MalloZup]())
- kube-apiserver: improves performance of requests made with service account token authentication ([#71816](), [@liggitt]())
- Use prometheus conventions for workqueue metrics. ([#71300](), [@danielqsj]())
  - It is now deprecated to use the following metrics:
    - `{WorkQueueName}_depth`
    - `{WorkQueueName}_adds`
    - `{WorkQueueName}_queue_latency`
    - `{WorkQueueName}_work_duration`
    - `{WorkQueueName}_unfinished_work_seconds`
    - `{WorkQueueName}_longest_running_processor_microseconds`
    - `{WorkQueueName}_retries`
  - Please convert to the following metrics:
    - `workqueue_depth`
    - `workqueue_adds_total`
    - `workqueue_queue_latency_seconds`
    - `workqueue_work_duration_seconds`
    - `workqueue_unfinished_work_seconds`
    - `workqueue_longest_running_processor_seconds`
    - `workqueue_retries_total`

- Fix inability to use k8s with dockerd having default IPC mode set to private. ([#70826](), [@kolyshkin]())
- Fix a race condition in the scheduler preemption logic that could cause nominatedNodeName of a pod not to be considered in one or more scheduling cycles. ([#72259](), [@bsalamat]())
- Fix registration for scheduling framework plugins with the default plugin set ([#72396](), [@y-taka-23]())
- The GA VolumeScheduling feature gate can no longer be disabled and will be removed in a future release ([#72382](), [@liggitt]())
- Fix race condition introduced by graceful termination which can lead to a deadlock in kube-proxy ([#72361](), [@lbernail]())
- Fixes issue where subpath volume content was deleted during orphaned pod cleanup for Local volumes that are directories (and not mount points) on the root filesystem. ([#72291](), [@msau42]())
- Fixes `kubectl create secret docker-registry` compatibility ([#72344](), [@liggitt]())
- Add-on manifests now use the apps/v1 API for DaemonSets, Deployments, and ReplicaSets ([#72203](), [@liggitt]())
- "kubectl wait" command now supports the "--all" flag to select all resources in the namespace of the specified resource types. ([#70599](), [@caesarxuchao]())
- `deployments/rollback` is now passed through validation/admission controllers ([#72271](), [@jhrv]())
- The `Lease` API type in the `coordination.k8s.io` API group is promoted to `v1` ([#72239](), [@wojtek-t]())

- Move compatibility_test.go to pkg/scheduler/api ([#72014](), [@huynq0911]())
- New Azure cloud provider option 'cloudProviderBackoffMode' has been added to reduce Azure API retries. Candidate values are: ([#70866](), [@feiskyer]())
  - default (or empty string): keep same with before.
  - v2: only backoff retry with Azure SDK with fixed exponent 2.

- Set percentage of nodes scored in each cycle dynamically based on the cluster size. ([#72140](), [@wgliang]())
- Fix AAD support for Azure sovereign cloud in kubectl ([#72143](), [@karataliu]())
- Make kube-proxy service abstraction optional. ([#71355](), [@bradhoekstra]())
  - Add the 'service.kubernetes.io/service-proxy-name' label to a Service to disable the kube-proxy service proxy implementation.

- kubectl: `-A` can now be used as a shortcut for `--all-namespaces` ([#72006](), [@soltysh]())
- discovery.CachedDiscoveryInterface implementation returned by NewMemCacheClient has changed semantics of Invalidate method -- the cache refresh is now deferred to the first cache lookup. ([#70994](), [@mborsz]())
- Fix device mountable volume names in DSW to prevent races in device mountable plugin, e.g. local. ([#71509](), [@cofyc]())
- Enable customize in kubectl: kubectl will be able to recognize directories with kustomization.YAML ([#70875](), [@Liujingfang1]())
- Stably sort controllerrevisions. This can prevent pods of statefulsets from continually rolling. ([#66882](), [@ryanmcnamara]())
- Update to use go1.11.4. ([#72084](), [@ixdy]())
- fixes an issue deleting pods containing subpath volume mounts with the VolumeSubpath feature disabled ([#70490](), [@liggitt]())
- Clean up old eclass code ([#71399](), [@resouer]())
- Fix a race condition in which kubeadm only waits for the kubelets kubeconfig file when it has performed the TLS bootstrap, but wasn't waiting for certificates to be present in the filesystem ([#72030](), [@ereslibre]())
- In addition to restricting GCE metadata requests to known APIs, the metadata-proxy now restricts query strings to known parameters. ([#71094](), [@dekkagaijin]())
- kubeadm: fix a possible panic when joining a new control plane node in HA scenarios ([#72123](), [@anitgandhi]())
- fix race condition when attach azure disk in vmss ([#71992](), [@andyzhangx]())
- Update to use go1.11.3 with fix for CVE-2018-16875 ([#72035](), [@seemethere]())
- kubeadm: fix a bug when syncing etcd endpoints ([#71945](), [@pytimer]())
- fix kubelet log flushing issue in azure disk ([#71990](), [@andyzhangx]())
- Disable proxy to loopback and linklocal ([#71980](), [@micahhausler]())
- Fix overlapping filenames in diff if multiple resources have the same name. ([#71923](), [@apelisse]())
- fix issue: vm sku restriction policy does not work in azure disk attach/detach ([#71941](), [@andyzhangx]())
- kubeadm: Create /var/lib/etcd with correct permissions (0700) by default. ([#71885](), [@dims]())
- Scheduler only activates unschedulable pods if node's scheduling related properties change. ([#71551](), [@mlmhl]())
- kube-proxy in IPVS mode will stop initiating connections to terminating pods for services with sessionAffinity set. ([#71834](), [@lbernail]())
- kubeadm: improve hostport parsing error messages ([#71258](), [@bart0sh]())
- Support graceful termination with IPVS when deleting a service ([#71895](), [@lbernail]())
- Include CRD for BGPConfigurations, needed for calico 2.x to 3.x upgrade. ([#71868](), [@satyasm]())
- apply: fix detection of non-dry-run enabled servers ([#71854](), [@apelisse]())
- Clear UDP conntrack entry on endpoint changes when using nodeport ([#71573](), [@JacobTanenbaum]())
- Add successful and failed history limits to cronjob describe ([#71844](), [@soltysh]())
- kube-controller-manager: fixed issue display help for the deprecated insecure --port flag ([#71601](), [@liggitt]())
- kubectl: fixes regression in --sort-by behavior ([#71805](), [@liggitt]())

- Fixes pod deletion when cleaning old cronjobs ([#71801](), [@soltysh]())
- kubeadm: use kubeconfig flag instead of kubeconfig-dir on init phase bootstrap-token ([#71803](), [@yagonobre]())
- kube-scheduler: restores ability to run without authentication configuration lookup permissions ([#71755](), [@liggitt]())
- Add aggregator_unavailable_apiservice_{count,gauge} metrics in the kube-aggregator. ([#71380](), [@sttts]())
- Fixes apiserver nil pointer panics when requesting v2beta1 autoscaling object metrics ([#71744](), [@yue9944882]())
- Only use the first IP address got from instance metadata. This is because Azure CNI would set up a list of IP addresses in instance metadata, while only the first one is the Node's IP. ([#71736](), [@feiskyer]())
- client-go: restores behavior of populating the BearerToken field in rest.Config objects constructed from kubeconfig files containing tokenFile config, or from in-cluster configuration. An additional BearerTokenFile field is now populated to enable constructed clients to periodically refresh tokens. ([#71713](), [@liggitt]())
- kubeadm: remove deprecated kubeadm config print-defaults command ([#71467](), [@rosti]())
- hack/local-up-cluster.sh now enables kubelet authentication/authorization by default (they can be disabled with KUBELET_AUTHENTICATION_WEBHOOK=false and KUBELET_AUTHORIZATION_WEBHOOK=false ([#71690](), [@liggitt]())
- Fixes an issue where Azure VMSS instances not existing in Azure were not being deleted by the Cloud Controller Manager. ([#71597](), [@marc-sensenich]())
- kubeadm reset correctly unmounts mount points inside /var/lib/kubelet ([#71663](), [@bart0sh]())
- Upgrade default etcd server to 3.3.10 ([#71615](), [@jpbetz]())
- When creating a service with annotation: service.beta.kubernetes.io/load-balancer-source-ranges containing multiple source ranges and service.beta.kubernetes.io/azure-shared-securityrule: "false", the NSG rules will be collapsed. ([#71484](), [@ritazh]())
- disable node's proxy use of http probe ([#68663](), [@WanLinghao]())
- Bumps version of kubernetes-cni to 0.6.0 ([#71629](), [@mauilion]())
- On GCI, NPD starts to monitor kubelet, docker, containerd crashlooping, read-only filesystem and corrupt docker overlay2 issues. ([#71522](), [@wangzhen127]())
- When a kubelet is using --bootstrap-kubeconfig and certificate rotation, it no longer waits for bootstrap to succeed before launching static pods. ([#71174](), [@smarterclayton]())
- Add an plugin interfaces for "reserve" and "prebind" extension points of the scheduling framework. ([#70227](), [@bsalamat]())
- Fix scheduling starvation of pods in cluster with large number of unschedulable pods. ([#71488](), [@bsalamat]())
- Reduce CSI log and event spam. ([#71581](), [@saad-ali]())
- Add conntrack as a dependency of kubelet and kubeadm when building rpms and debs. Both require conntrack to handle cleanup of connections. ([#71540](), [@mauilion]())
- UDP connections now support graceful termination in IPVS mode ([#71515](), [@lbernail]())
- Log etcd client errors. The verbosity is set with the usual `-v` flag. ([#71318](), [@sttts]())
- The `DefaultFeatureGate` package variable now only exposes readonly feature gate methods. Methods for mutating feature gates have moved into a `MutableFeatureGate` interface and are accessible via the `DefaultMutableFeatureGate` package variable. Only top-level commands and options setup should access `DefaultMutableFeatureGate`. ([#71302](), [@liggitt]())
- `node.kubernetes.io/pid-pressure` toleration is added for DaemonSet pods, and `node.kubernetes.io/out-of-disk` isn't added any more even if it's a critical pod. ([#67036](), [@Huang-Wei]())
- Update k8s.io/utils to allow for asynchronous process control ([#71047](), [@hoegaarden]())
- Fixes possible panic during volume detach, if corresponding volume plugin became non-attachable ([#71471](), [@mshaverdo]())
- Fix cloud-controller-manager crash when using AWS provider and PersistentVolume initializing controller ([#70432](), [@mvladev]())

- Fixes an issue where Portworx volumes cannot be mounted if 9001 port is already in use on the host and users remap 9001 to another port. ([#70392](), [@harsh-px]())
- Fix `SubPath` printing of `VolumeMounts` . ([#70127](), [@dtaniwaki]())
- Fixes incorrect paths (missing first letter) when copying files from pods to ([#69885](), [@clickyotomy]())
  - local in `kubectl cp'.

- Fix AWS NLB security group updates where valid security group ports were incorrectly removed ([#68422](), [@kellycampbell]())
  - when updating a service or when node changes occur.