
KubeCon
CloudNativeCon
OPEN SOURCE SUMMIT
China 2019

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Intro + Deep Dive: SIG Windows

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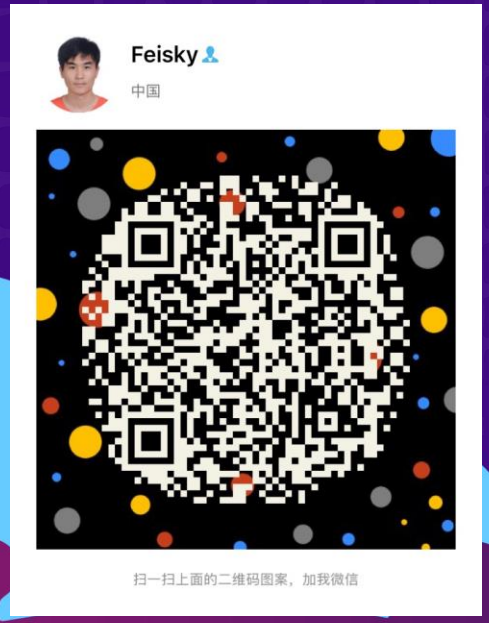
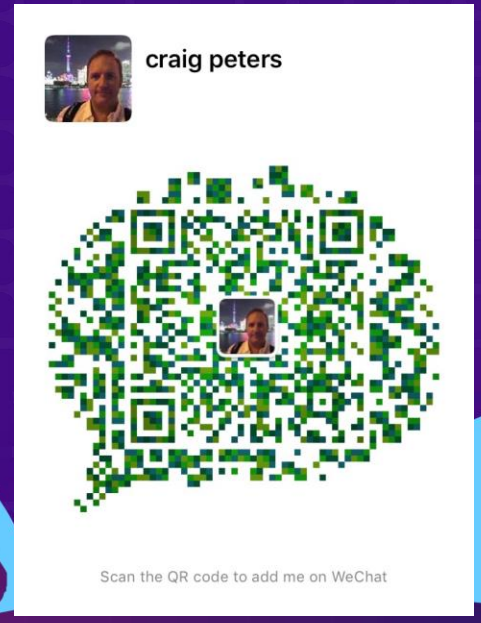
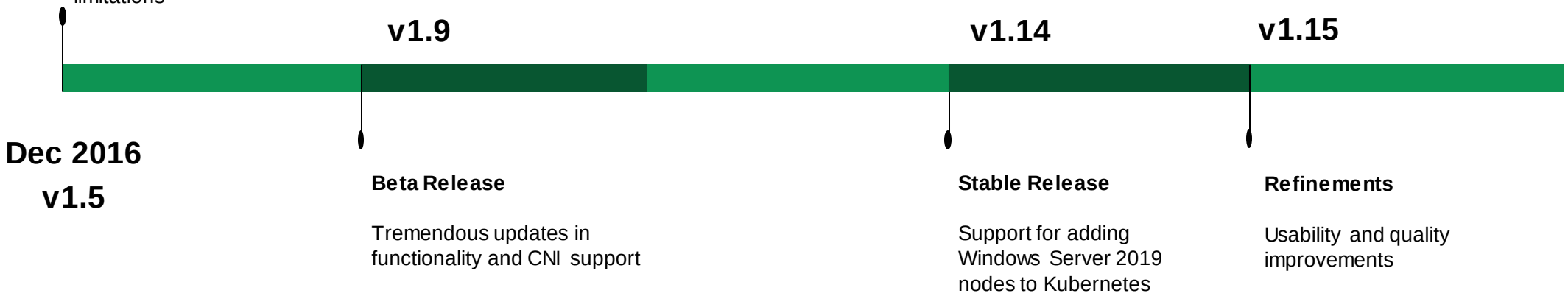




History


Alpha Release
Kubelet and kube-proxy running on windows Show the art of the possible despite limitations
Dec 2017
v1.9
March 2019
v1.14
Jun 2019
v1.15
Dec 2016
v1.5
Beta Release
Tremendous updates in functionality and CNI support
Stable Release
Support for adding Windows Server 2019 nodes to Kubernetes
Refinements
Usability and quality improvements

Updates

1.14 stable release of Windows node

- Windows Server 2019 support
- Significant advancements in code quality
- Validation of end user scenarios

- Alpha release of gMSA
- Test Automation
- Extensive end-user documentation

1.15 bug fixes and api updates for GMSA

Kubernetes 1.14: Caturnetes

Networking Update

- Networking topologies available
  - Overlay
    - Requires Windows Server 2019 with KB4489899
    - Win-overlay plugin available
    - Flannel vxlan support in alpha
  - Underlay - L2Bridge, L2Tunnel
    - win-bridge plugin available
    - Flannel host-gw support
  - Transparent – vSwitch extension
    - ovn-kubernetes
- Network Policy
  - Calico
  - OVN

Things to Consider

Read the documentation!

Where the container runs
- Need a Windows Server node = Use NodeSelector

If you're adding Windows and don't already have nodeSelector on Linux deployments
- Option 1 (preferred): Add a taint to Windows nodes, toleration to Windows deployments
- Option 2: Update your Helm Charts and YAML files

Resource Consumption
- Need higher limits (300Mb min) - need Windows background services per container

Kernel/User compatibility
- Windows kernel major version should match (for now) – use versioned tags, not latest!
- Build on Windows Server 2019 = must run on Windows Server 2019
- Hyper-V isolation [alpha] can run older containers on a newer node

Testing Update

Windows node is now being tested in test grid across Azure, GCP and vSphere

- Conformance tests (excluding LinuxOnly)
- Windows specific tests
- Testing 1.14.x and 1.15.x
- Ongoing dot release testing

Turnkey Solutions Available

- Amazon EKS
- Docker Enterprise
- Google GKE
- Huawei Cloud (CCE)
- Microsoft AKS
- Rancher
- RedHat OpenShift
- VMware/Pivotal Enterprise PKS

Future Plans

1.16 Plans

1. CRI-ContainerD (sig-node collaboration)
2. Kubeadm support (sig-cluster-lifecycle collaboration)
3. Continuing advancements in gMSA and Windows workload identity (sig-node/sig-api/sig-auth collaboration)
   - RunAsUserName enhancement
4. More CNIs and Storage plugins

CRI-ContainerD

- Aligned with Kubernetes goals and current Windows development
  - Improve compatibility: enable fixes to single file mapping
  - Be ready for dockershim deprecation when it happens
- Reduced footprint and installation
- Hyper-V isolation support
  - Future: Additional storage support
  - Future: Memory and CPU resource control

- KEP outlines plan over multiple releases & work spans multiple projects
  - Kubernetes
  - ContainerD
  - CNI plugins

How to Contribute

End User

- GitHub Issues
- Document/ Blog
- Community Meetings

Contributor

- Contributing Guide
- 1st Commit
- Member
- Fix Bugs
- Community Meetings

Tech Lead

- Commits
- Reviews
- Release Plans
- Presentations
- Cross Group Collaboration

Getting Started

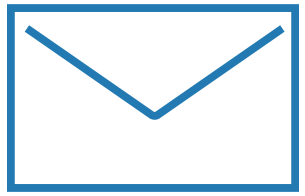
Join our weekly meetings at 12.30pm Eastern

View recorded community meetings

Find bugs you can fix in our project board

Help us write additional documentation and user stories

How to find us



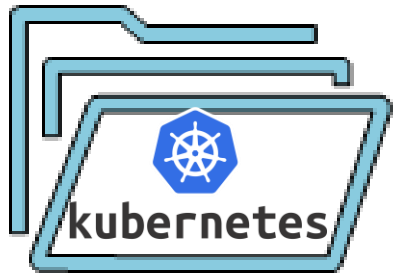
https://groups.google.com/forum/#!forum/kubernetes-sig-windows

#sig-windows
@m2
@patricklang

https://www.youtube.com/playlist?list=PL69nYSiGNLP2OH9InCcNkWNu2bl-gmIU4

https://github.com/kubernetes/community/tree/master/sig-windows

https://zoom.us/j/297282383



https://kubernetes.io/docs/setup/production-environment/windows/intro-windows-in-kubernetes/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Questions?
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Thank you