Supermicro® Total Solution for Canonical with Kubernetes

Implement your Kubernetes container solution with Supermicro and Canonical

Container technology has brought about a step-change in virtualization technology. Organizations implementing containers see considerable opportunities to improve agility, efficiency, speed, and manageability within their IT environments. Kubernetes and containers are an exciting and evolving technology which can be daunting for teams and organizations to plan for and implement.

Together, Supermicro and Canonical, the company behind the Ubuntu operating system, have partnered to deliver solutions that feature Kubernetes. This production-grade container orchestration solution, using Supermicro components has been tested and validated in Supermicro labs, with best-in class hardware components along with the world-class, enterprise-ready, Canonical Distribution of Kubernetes. The solution also features enterprise-ready software-defined storage capabilities using Ceph storage architecture.

COMPONENTS OVERVIEW

This solution is built and validated with Supermicro SuperServers, SuperStorage systems, and Supermicro Ethernet switches optimized for performance and designed to provide the highest levels of reliability, quality and scalability.

Data Switches
2x SSE-C3632S

Management Switches
2x SSE-G3648B

Infrastructure Nodes
3x SYS-6019U-TN4RT

Cloud Nodes
6x SYS-6029U-TR4T

SPOTLIGHT ON CANONICAL KUBERNETES

- Built from upstream source, clean Kubernetes
- Security updates by Canonical, makers of Ubuntu, from kernel to Kubernetes
- Upgrades guaranteed, consume the latest Kubernetes at your own pace
- Robust encryption for all control plane components
- Training, certification, support and remote management available

SOLUTION BASICS

- Up to 216 Compute Cores
- Up to 3072 GB RAM memory
- Up to 36 TB raw storage
- Up to 40 GbE Data Networking
- 19U height
- High performance caching using NVMe flash storage

December 2018

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INFRASTRUCTURE ARCHITECTURE

Proven Supermicro configurations are cloud optimized for scale-out, high performance software defined storage (SDS). These Supermicro solutions feature the best enterprise grade components for reliability and availability. The cloud nodes are offered in three ready-to-deploy configurations to best suit different workloads:

- Value Option: 32 compute cores; 36 TB data using 6x 6 TB SATA HDDs; 384 GB of RAM; and a 10 GbE Data Network with Cumulus OS

- Balanced Option: 36 compute cores; 24 TB data using 6x 3.84 SATA SSDs; 512 GB RAM; and a 25 GbE Data Network with Supermicro OS

- Performance Option: 36 compute cores; 12 TB data using 6x 2 TB NVMe PCIe 3.0 SSDs; 512 GB RAM; and a 40 GbE Data Network with Cumulus OS

All cloud node options utilize Intel NVMe SSDs for high-performance caching.

SOLUTION HIGHLIGHTS

- Validated reference architectures
- Certified components
- Scale out – One rack to many racks
- Greenest Servers for the Cloud – Save hundreds of dollars per server
- Lowest Cost - Best Performance / Watt / $ / ft2
- Start as a pro by leveraging expert support and services
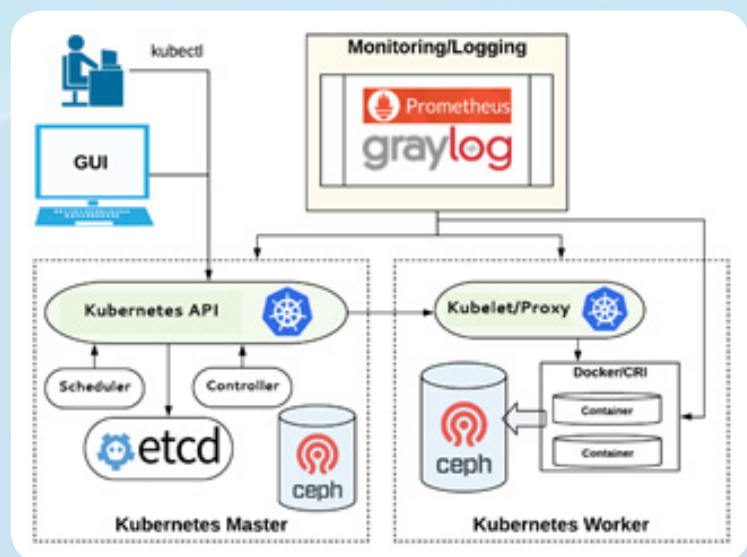
SOLUTION ARCHITECTURE

Canonical Kubernetes

The Canonical Distribution of Kubernetes (CDK) is pure upstream Kubernetes tested across the widest range of clouds — from public clouds to private data centers, from bare metal to virtualized infrastructure. Canonical also provides a rich ecosystem of tools, libraries, services, modern metrics, and monitoring tools to make CDK easy to consume so you can innovate faster.

Ceph Storage

The storage architecture provides unified block, file, and object access based on Ceph, a distributed storage solution designed for scalability, reliability, performance and manageability.

SUPPORT AND SERVICES

Enterprise support for Kubernetes is provided by Canonical in partnership with Supermicro where customers gain access to a global pool of knowledge & expertise. The partnership offers a Discovery and Design Service - together, we design your infrastructure to the required size and specifications.