FEATURE BRIEF

Advanced Quality of Service

Hyperconverged infrastructure (HCI) has enabled many organizations to modernize their datacenters while increasing operational efficiency. While HCI has been very successful for targeted applications, such as VDI, it's benefits are not being realized in more of the datacenter because of the inability to meet application Service Level Agreements (SLAs).

Pivot3's Advanced Quality of Service (QoS) allows business to meet application SLAs with easy to manage policies that provision performance, prioritize workloads, and manage data placement and protection. With the ability to automate and schedule granular QoS settings, Pivot3 HCI solutions enables organizations to leverage the benefits of HCI across more of the datacenter.

Figure 1: Advanced QoS Components

Policy

Each application workload has unique performance requirements, which is why Pivot3 customers can assign its appropriate performance policy on business priorities. QoS performance policies define performance targets for each workload that manage minimum IOPS and throughput, and maximum latency. A policy is assigned to the volume at creation and can be changed on-the-fly, or even scheduled to change as needed. By automating policy changes, QoS scheduling gives IT the agility to easily support cyclical business requirements.

Priorities

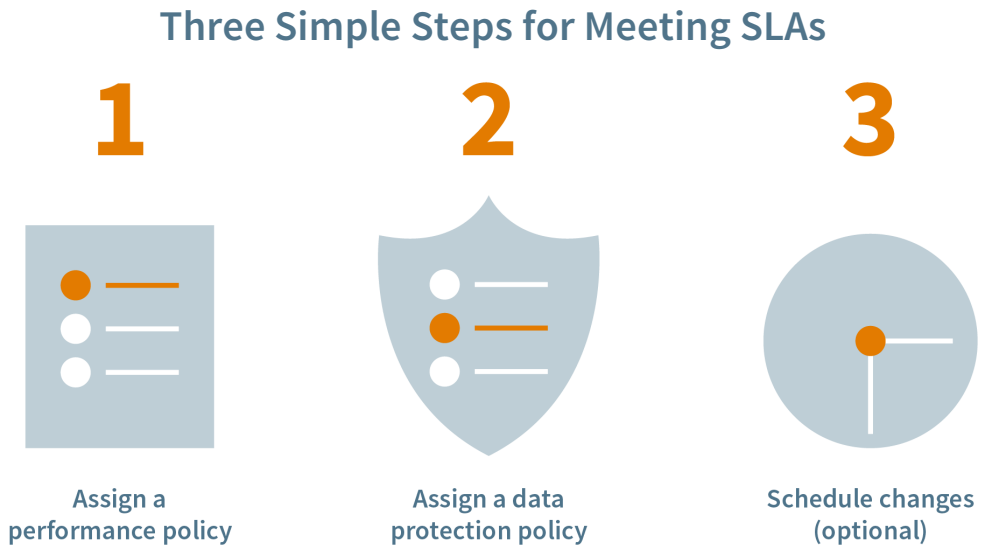
Each QoS policy has a corresponding Service Level that governs how each policy is prioritized when the system is under load. There are three service levels built into the QoS engine (Mission-Critical, Business-Critical, and Non-Critical), each associated with a QoS policy. They instruct the system on how important it is to maintain each QoS policy's targets. For example, if there's resource contention, QoS policy 1 (Mission-critical) will be maintained by prioritizing its I/O requests over Non-Critical workloads first, and Business-Critical workloads, if necessary.

Placement

Advanced QoS manages where data is stored in real-time (RAM, NVMe PCIe flash, SSD or HDD) to ensure performance Service Levels are met. The caching and tiering algorithms of the system are directly tied to the QoS policies and priorities to ensure that the right data is placed in the appropriate storage medium to deliver on the specified performance targets. The data is moved between tiers in real-time ensuring predictable performance and the most efficient use of system resources.

Protection

Data protection QoS provides policy-based management and automation of snapshots and their retention to best align with data protection needs. Policies can be applied to volumes or groups of volumes, and can be scheduled, allowing customers to set pre-defined schedules for both performance and data protection policies that can change automatically at pre-determined times. A queuing mechanism ensures that mission-critical jobs go to front of the queue to be executed first, business-critical jobs next, and finally, non-critical jobs.



Advanced QoS is part of software feature set included Pivot3 Acuity HCI Solutions and N5 Flash Arrays.