intel.

Support Up to 1.58x More Web App Users on Kubernetes Clusters with Microsoft Azure Ds_v4 Series VMs vs. Older Ds_v3 Series VMs

Kubernetes

Handle 1.58x
as many web app
users with small
D8s_v4 VMs
vs. older D8s_v3 VMs

Handle 1.58x
as many web app
users with large
D32s_v4 VMs
vs. older D32s_v3 VMs

Get more from your Azure VMs with Newer Ds_v4 Series VMs Featuring 2nd Gen Intel® Xeon® Scalable Processors

Once your organization has decided to host Kubernetes-managed web server applications in the cloud with Microsoft Azure, it's time to select which VM types are most appropriate for your needs. Microsoft Azure offers older Ds_v3 Series VMs and a new Ds_v4 Series that features newer processors, both at the same cost. Tests show that selecting newer Azure D-series VMs enabled by 2nd Gen Intel® Xeon® Scalable processors can enable your organization to support more Kubernetes web app users per VM for a better overall value at multiple VM sizes.

Kubernetes is a platform for deploying and managing application containers, software units that include all components necessary to run applications, such as the application code, libraries, binaries, configuration files, and dependencies. Weathervane 2.0 is an application-level Kubernetes benchmark from VMware. It uses a real-time auction web app to determine how well a Kubernetes cluster can perform, and delivers results in terms of WvUsers, the maximum number of simulated users the application instances support.

In two series of Weathervane tests comparing clusters comprised of two sizes of Azure VMs, newer Ds_v4 VMs enabled by 2nd Gen Intel Xeon Scalable processors supported up to 1.58x the number of web app users as older Ds_v3 VMs.

For your Kubernetes website hosting needs, choose newer Azure D-series VMs enabled by 2nd Gen Intel Xeon Scalable processors, and get up to 1.58x the performance for the same cost.

Handle More Web App Users on Small VMs

If your organization hosts smaller websites with less traffic (such as internal employee portals), small-sized VMs with lower vCPU counts can meet your needs. In tests using the application-level Kubernetes benchmark Weathervane 2.0, which determines the number of simulated users that can comfortably access web apps on VMs while meeting Quality of Service (QoS) guidelines, newer D-series VMs significantly outperformed older D-series VMs.

As Figure 1 shows, in tests comparing the Weathervane performance of Kubernetes clusters made of small VMs with eight vCPUs, Azure Ds_v4 VMs enabled by 2nd Gen Intel Xeon Scalable processors handled 1.58x as many users as Ds_v3 VM using older processors. Because Ds_v3 and Ds_v4 VMs cost the same, selecting new Ds_v4 VMs offer a better overall value and ultimately reduce the number of cloud VMs your organization supports.

Number of Weathervane WvUsers in a small instance cluster (normalized)
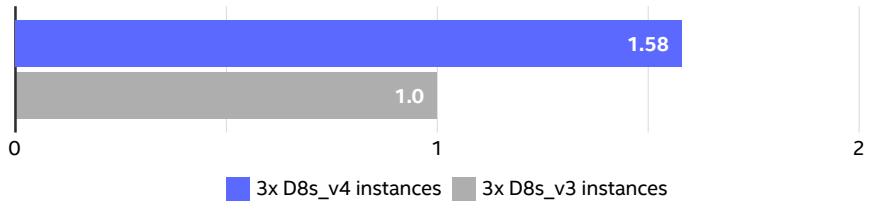

3x D8s_v4 instances   3x D8s_v3 instances

Figure 1. Relative test results comparing the Weathervane 2.0 performance of the small (eight-vCPU) Ds_v4 VM type to the small Ds_v3 VM type.

Handle More Web App Users on Large VMs

Websites that are accessible to the public require more backing resources to handle a larger traffic load. For large VMs, hosting Kubernetes-based websites on clusters built from Azure D-series VMs, you can get better performance by selecting newer Ds_v4 VMs enabled by 2nd Gen Intel® Xeon® Scalable processors rather than older Ds_v3 VMs.

As Figure 2 shows, when configuring Kubernetes clusters with 32 vCPUs per VM, Azure Ds_v4 VMs enabled by Intel Xeon Scalable processors supported 1.58x as many users as Ds_v3 VMs with older processors. Again, as with the small VM series, the older and newer D-series VMs are available at the same cost, which means selecting new Ds_v4 VMs can provide better value for your dollar.

Number of Weathervane WvUsers in a large instance cluster (normalized)
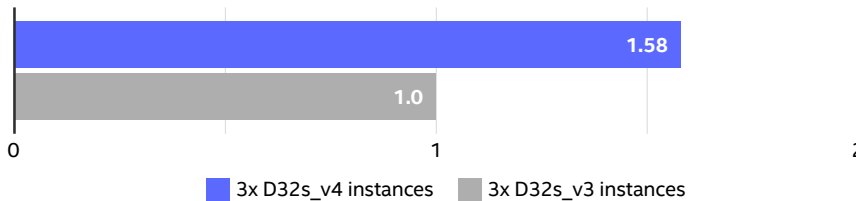

3x D32s_v4 instances   3x D32s_v3 instances

Figure 2. Relative test results comparing the Weathervane 2.0 performance of the large (32-vCPU) Ds_v4 VM type to the large Ds_v3 VM type

Whether the web apps your organization hosts see small or large numbers of users, choosing newer Ds_v4 VMs enabled by 2nd Gen Intel Xeon Scalable processors can allow you to support more visitors to your Kubernetes-based sites

Learn More

To begin running your Kubernetes-based web apps on Azure Ds_v4 VMs featuring 2nd Gen Intel Xeon Scalable processors, visit http://intel.com/microsoftazure.
For more test details, visit http://facts.pt/tjJuw4u.