

# Support Up to 1.77x More Web App Users on Kubernetes Clusters with Microsoft Azure Es\_v4 Series VMs vs. Older Es\_v3 Series VMs



## Kubernetes



**Handle 1.48x  
as many web app  
users with small  
E8s\_v4 VMs**

*vs. older E8s\_v3 VMs*



**Handle 1.77x  
as many web app  
users with medium  
E16s\_v4 VMs**

*vs. older E16s\_v3 VMs*

## Get more from your Azure VMs with Newer Es\_v4 Series VMs Featuring 2<sup>nd</sup> Gen Intel® Xeon® Scalable Processors

After selecting Microsoft Azure to host your multi-tiered Kubernetes-managed web applications in the cloud, another decision remains: Which type of VM best suits your organization's needs? If you run memory-intensive workloads such as relational databases, Azure E-series offer memory-optimized VMs to handle this type of work. Within the E-series, Microsoft Azure offers older Es\_v3 Series VMs and a new Es\_v4 Series that features newer processors—both at the same cost. Tests show that selecting newer memory-optimized Azure E-series VMs enabled by 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors can help your organization handle more users accessing Kubernetes-based web apps per VM to deliver a better overall value at small and medium 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 Es\_v4 VMs enabled by 2<sup>nd</sup> Gen Intel Xeon Scalable processors supported up to 1.77x the number of web app users as older Es\_v3 VMs.

For your Kubernetes-based application needs, choose newer Azure E-series VMs enabled by 2<sup>nd</sup> Gen Intel Xeon Scalable processors, and get up to 1.77x 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 E-series VMs significantly outperformed older E-series VMs.

As Figure 1 shows, in tests comparing the Weathervane performance of Kubernetes clusters made of small VMs with eight vCPUs, Azure Es\_v4 VMs enabled by 2<sup>nd</sup> Gen Intel Xeon Scalable processors handled 1.48x as many users as Es\_v3 VM running on older processors. Because Es\_v3 and Es\_v4 VMs cost the same, selecting new Es\_v4 VMs offer a better overall value, ultimately reducing the number of cloud VMs your organization must support.

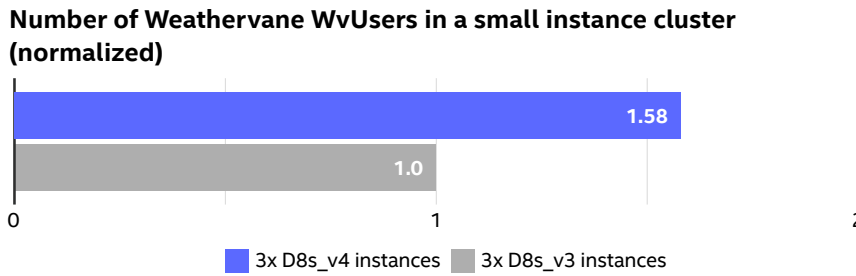


Figure 1. Relative test results comparing the Weathervane 2.0 performance of the small (eight-vCPU) Es\_v4 VM type to the small Es\_v3 VM type.

## Handle More Web App Users on Medium VMs

Websites that are accessible to the public require more backing resources to handle a larger traffic load. For medium VMs, hosting Kubernetes-based websites on clusters built from Azure E-series VMs, you can get better performance by selecting newer Es\_v4 VMs enabled by 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors rather than older Es\_v3 VMs.

As Figure 2 shows, when configuring Kubernetes clusters with 16 vCPUs per VM, Azure Es\_v4 VMs enabled by Intel Xeon Scalable processors supported 1.77x as many Weathervane users as Es\_v3 VMs with older processors. Again, as with the small VM series, the older and newer E-series VMs are available at the same cost, which means selecting new Es\_v4 VMs can provide better value for your dollar.

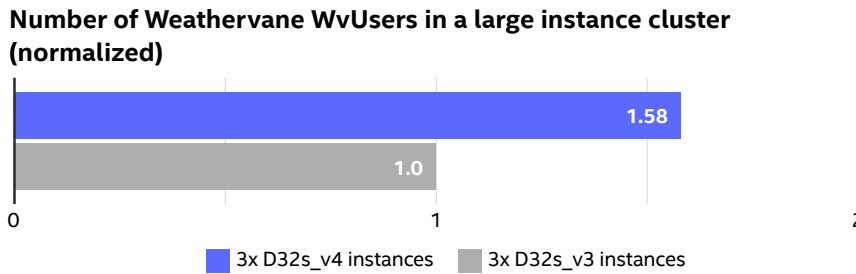


Figure 2. Relative test results comparing the Weathervane 2.0 performance of the medium (16-vCPU) Es\_v4 VM type to the medium Es\_v3 VM type.

Whether the web apps your organization hosts see small or medium numbers of users, choosing newer Es\_v4 VMs enabled by 2<sup>nd</sup> 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 Es\_v4 VMs featuring 2<sup>nd</sup> Gen Intel Xeon Scalable processors, visit <http://intel.com/microsoftazure>.

For more test details, visit <http://facts.pt/tjJuw4u>.



Performance varies by use, configuration and other factors. Learn more at <https://intel.com/benchmarks>.

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