

Memory optimized virtual machine sizes

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Applies to: ✓ Linux VMs ✓ Windows VMs ✓ Flexible scale sets ✓ Uniform scale sets

Memory optimized VM sizes offer a high memory-to-CPU ratio that is great for relational database servers, medium to large caches, and in-memory analytics. This article provides information about the number of vCPUs, data disks and NICs. You can also learn about storage throughput and network bandwidth for each size in this grouping.

💡 Tip

Try the **Virtual machines selector tool** to find other sizes that best fit your workload.

- [Dv2 and DSv2-series](#), a follow-on to the original D-series, features a more powerful CPU. The Dv2-series is about 35% faster than the D-series. It runs on the Intel® Xeon® 8171M 2.1 GHz (Skylake) or the Intel® Xeon® E5-2673 v4 2.3 GHz (Broadwell) or the Intel® Xeon® E5-2673 v3 2.4 GHz (Haswell) processors, and with the Intel Turbo Boost Technology 2.0. The Dv2-series has the same memory and disk configurations as the D-series.

Dv2 and DSv2-series are ideal for applications that demand faster vCPUs, better temporary storage performance, or have higher memory demands. They offer a powerful combination for many enterprise-grade applications.

- The [Eav4 and Easv4-series](#) utilize AMD's 2.35Ghz EPYC™ 7452 processor in a multi-threaded configuration with up to 256 MB L3 cache, increasing options for running most memory optimized workloads. The Eav4-series and Easv4-series have the same memory and disk configurations as the Ev3 & Esv3-series.
- The [Ebsv5 and Ebdsv5 series](#) deliver higher remote storage performance in each VM size than the Ev4 series. The increased remote storage performance of the Ebsv5 and Ebdsv5 VMs is ideal for storage throughput-intensive workloads, such as relational databases and data analytics applications.
- The [Ev3 and Esv3-series](#) feature the Intel® Xeon® 8171M 2.1 GHz (Skylake) or the Intel® Xeon® E5-2673 v4 2.3 GHz (Broadwell) processor in a hyper-threaded configuration. This configuration provides a better value proposition for most general

purpose workloads, and brings the Ev3 into alignment with the general purpose VMs of most other clouds. Memory has been expanded (from 7 GiB/vCPU to 8 GiB/vCPU) while disk and network limits have been adjusted on a per core basis to align with the move to hyper-threading. The Ev3 is the follow up to the high memory VM sizes of the D/Dv2 families.

- The [Ev4 and Esv4-series](#) runs on 2nd Generation Intel® Xeon® Platinum 8272CL (Cascade Lake) processors in a hyper-threaded configuration, are ideal for various memory-intensive enterprise applications and feature up to 504 GiB of RAM. It features the [Intel® Turbo Boost Technology 2.0](#) , [Intel® Hyper-Threading Technology](#) and [Intel® Advanced Vector Extensions 512 \(Intel AVX-512\)](#) . The Ev4 and Esv4-series don't include a local temp disk. For more information, see [Azure VM sizes with no local temp disk](#).
- The [Edv4 and Edsv4-series](#) runs on 2nd Generation Intel® Xeon® Platinum 8272CL (Cascade Lake) processors, ideal for extremely large databases or other applications that benefit from high vCPU counts and large amounts of memory. Additionally, these VM sizes include fast, larger local SSD storage for applications that benefit from low latency, high-speed local storage. It features an all core Turbo clock speed of 3.4 GHz, [Intel® Turbo Boost Technology 2.0](#) , [Intel® Hyper-Threading Technology](#) and [Intel® Advanced Vector Extensions 512 \(Intel AVX-512\)](#) .
- The [Easv5 and Eadsv5-series](#) utilize AMD's 3rd Generation EPYC™ 7763v processor in a multi-threaded configuration with up to 256 MB L3 cache, increasing customer options for running most memory optimized workloads. These virtual machines offer a combination of vCPUs and memory to meet the requirements associated with most memory-intensive enterprise applications, such as relational database servers and in-memory analytics workloads.
- The [Edv5 and Edsv5-series](#) run on the 3rd Generation Intel® Xeon® Platinum 8370C (Ice Lake) processors in a hyper-threaded configuration. These series are ideal for various memory-intensive enterprise applications. They feature up to 672 GiB of RAM, [Intel® Turbo Boost Technology 2.0](#) , [Intel® Hyper-Threading Technology](#) and [Intel® Advanced Vector Extensions 512 \(Intel® AVX-512\)](#) . The series also support [Intel® Deep Learning Boost](#) . These new VM sizes have 50% larger local storage, and better local disk IOPS for both read and write compared to the [Ev3/Esv3](#) sizes with [Gen2 VMs](#). It features an all core Turbo clock speed of 3.4 GHz.
- The [Epsv5 and Epdsv5-series](#) are ARM64-based VMs featuring the 80 core, 3.0 GHz Ampere Altra processor. These series are designed for common enterprise workloads.

They're optimized for database, in-memory caching, analytics, gaming, web, and application servers running on Linux.

- The [Ev5 and Esv5-series](#) runs on the Intel® Xeon® Platinum 8272CL (Ice Lake) processors in a hyper-threaded configuration, are ideal for various memory-intensive enterprise applications and feature up to 512 GiB of RAM. It features an all core Turbo clock speed of 3.4 GHz.
- The [M-series](#) offers a high vCPU count (up to 128 vCPUs) and a large amount of memory (up to 3.8 TiB). It's also ideal for extremely large databases or other applications that benefit from high vCPU counts and large amounts of memory.
- The [Mv2-series](#) offers the highest vCPU count (up to 416 vCPUs) and largest memory (up to 11.4 TiB) of any VM in the cloud. It's ideal for extremely large databases or other applications that benefit from high vCPU counts and large amounts of memory.

Azure Compute offers virtual machine sizes that are Isolated to a specific hardware type and dedicated to a single customer. These virtual machine sizes are best suited for workloads that require a high degree of isolation from other customers for workloads involving elements like compliance and regulatory requirements. Customers can also choose to further subdivide the resources of these Isolated virtual machines by using [Azure support for nested virtual machines](#) . See the pages for virtual machine families below for your isolated VM options.

Other sizes

- [General purpose](#)
- [Compute optimized](#)
- [Storage optimized](#)
- [GPU optimized](#)
- [High performance compute](#)
- [Previous generations](#)

Next steps

Learn more about how [Azure compute units \(ACU\)](#) can help you compare compute performance across Azure SKUs.

For more information on how Azure names its VMs, see [Azure virtual machine sizes naming conventions](#).