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furfix



x86-64-v2-AES vs host

Hi there! With proxmox 8 and the new standard x86-64-v2-AES cpu type...is there any benefit using it over "host"? I've always used "host" in all my VMs, but idk if I'm missing something for not choosing the new standard, in terms of performance/features.

12

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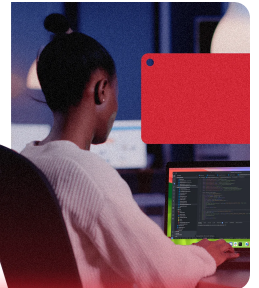
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Ragnos • 2y ago

x86-64-v2-AES is a generic type which is the same on every platform whereas host simply copies the cpu at hand. Generic types are to be preferred if you want a stable guest environment across different nodes with changing hardware. There might be instruction sets and features you're missing, and therefore performance optimizations, but in most cases it shouldn't matter



12

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throw0101a • 2y ago

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It is also the new minimum for RHEL 9:

- <https://developers.redhat.com/blog/2021/01/05/building-red-hat-enterprise-linux-9-for-the-x86-64-v2-microarchitecture-level>

It is what every Intel and AMD CPU since about 2009 can support, so even really old gear in data centres probably can handle it:

- https://en.wikipedia.org/wiki/X86-64#Microarchitecture_levels

A table of which CPU models support with -v levels is available from QEMU:

- <https://www.qemu.org/docs/master/system/i386/cpu.html>

-v3 is about 2015-era CPUs, and -v4 mostly adds AVX-512. I doubt most applications will gain large benefits with the newer instructions:

- <https://sunnyflunk.github.io/2023/01/15/x86-64-v3-Mixed-Bag-of-Performance.html>

Also happy that they threw AES in there.

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Do you only have 1 node or multiple? If just 1, always use "host", as you don't have to be worrying about compatibility with migrating a live VM anywhere.

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CompWizrd • 2y ago

host also safe if all your nodes have the same cpu capabilities.

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sinisterpisces • 10mo ago

Host is probably also the best option if you have multiple nodes but the VM is tied to a specific one because of hardware (PCIe/USB) passthrough.

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furfix OP • 2y ago

Thanks all for your comments! I defenetly understand a little more now about it. For one second I was hesitating, because I thought if they set it as default then it should be better, but now I see why they did it.

Thanks again!

[Skip to main content](#)[Log In](#)**smkhaha** • 1y ago

Wondering if someone can help pick the right guest CPU type in my situation:

Physical CPU is a Ryzen 7950x.

host gives best performance and capability (Windows Subsystem for Linux - WSL works), but causes random reboots in proxmox.

With x86-64-v4, WSL to not work due to lack of Virtualization support, but has great stability in proxmox.

Tried x86-64-v4 + svm custom CPU, but seems like WSL needs more than svm for virtualization support. Which CPU would you recommend that supports virtualization + proxmox stability?

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**aderumier2** • 2y ago

https://pve.proxmox.com/pve-docs/pve-admin-guide.html#_qemu_vcpu_list

"

In short:

If you don't care about live migration or have a homogeneous cluster where all nodes have the same CPU and same microcode version, set the CPU type to host, as in theory this will give your guests maximum performance.

If you care about live migration and security, and you have only Intel CPUs or only AMD CPUs, choose the lowest generation CPU model of your cluster.

If you care about live migration without security, or have mixed Intel/AMD cluster, choose the lowest compatible virtual QEMU CPU type.

"

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