

XCP-ng+Xen status update

Xen Summit 2026 - Munich

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XCP-ng

Turnkey Open Source Hypervisor

Summary

- General x86 improvements/features
- Improved ARM for Cloud
- AMD-SEV
- PV-IOMMU
- GPU Virtualization (virtio-gpu & SR-IOV)

General x86 (part 1)

- >128 vCPUs support (wip)
 - >1 ioreq page problem (in mailing list)
 - extended destination ID (in mailing list)
 - (todo) x2APIC in ACPI and CPUID topology
- XSAVE(C,S) (todo)
 - required for Architectural LBR
 - probably too many other things :)

General x86 (part 2)

- ~~LAM~~/LASS (in design)
 - in HVM/PVH guests
 - in Xen (PV guests) ?
- Invariant TSC accross live migration (todo)
 - (refer to Xen Summit 2025 design session)

ARM for Cloud (/XCP-ng on ARM)

- XAPI support (wip)
 - working bits (+guest !), some of it is already upstream
 - still work to do (VNC console, configuration ...)

Virtualization & boot settings

Virtualization mode

arm

ARM for Cloud

Open topics :

- Live migration support
 - Feature leveling
 - suspend/resume / save states
- Practical way to boot guests
 - OVMF / PVH-GRUB ?
- ...

AMD SEV(-ES)

Mostly blocked by fixed ASID (patches in mailing list, help welcome !)

- HVM ABI rework ?
- SEV/SEV-ES: Working-ish, experimental
 - *Running Linux with AMD SEV on Xen - Xen Summit 2025*
- Still missing bits (netfront support, ...)

AMD SEV-SNP ("modern SEV") ?

- SEV-SNP/RMP enablement / IOMMU adjustments: ok

Open issues :

- Tracking guests pages state (`PGC_coco_restricted` proposal)
- RMP vs superpages ?
A single 4K rmp entry can cause a 2M mapping to #PF[RMP]

PV-IOMMU

On-going discussions around VFIO vs Type I PV-IOMMU in Linux especially around PCI Passthrough. (unsolved issue for PV-IOMMU)

- LPC 2026 : *IOMMUFD Support for Microsoft Hypervisor Hosts*

Implementation effort on hold currently (lack of immediate use-case).

Could be brought back for SEV-TIO and vGPU live migration needs.

virtio-gpu

- virtio-based
 - virtio-pci (with QEMU) for now
- Goal: expose GPU DRM interface to guest (DRM Native Context)
- Some patches exists, some topics are still pending
 - How to support virtio shm ("map host memory to guest")
 - or alternatives to it ?
 - where to find patches ?

SR-IOV vGPUs

AMD MX-GPU:

- some rough edges during initial testing (issues with driver)
- still significant work to do

Intel Arc Pro (e.g Arc Pro B50)

- looks fairly easy to use
- upstream Linux (6.17+)
- testing still todo (but soon TM)

Q&A