

Perc® 8.9: Deterministic Real-Time Java for Embedded Systems

PTC Perc 8.9 builds upon Perc's real-time Java for embedded systems with enhancements to determinism, containerized deployment, runtime validation, diagnostic visibility, and OpenJDK security.

Perc 8.9 gives development teams greater control and visibility into runtime behavior while maintaining support for established embedded platforms and architectures.

Real-Time Determinism

Perc 8.9 improves real-time determinism for applications using lambda expressions in ROMized classes. Bootstrap methods now execute during PVM startup rather than upon first execution, helping reduce runtime variability.

Greater Control, Visibility and Runtime Confidence

New PVM command-line options assign logical rather than physical CPU cores, providing greater flexibility for container orchestration platforms such as Kubernetes. Enhanced class and method dump output and new verbose options improve visibility into runtime behavior, while PXL-accelerated AOT code validation helps prevent potential runtime crashes associated with mismatched dependencies.

Security Updates for Embedded Java

Perc 8.9 incorporates accumulated security patches and bug fixes from multiple OpenJDK 8 releases, helping development teams keep embedded Java deployments current. PVM Protect adds another layer of protection for deployed applications using TPM-based technologies.

Features	Specifications
Real-Time Determinism	Lambda bootstrap methods for ROMized classes execute at PVM startup, helping reduce variability during application execution.
Logical CPU Affinity	Supports environments where workloads may move among physical processor cores, including container orchestration systems such as Kubernetes.
Enhanced Diagnostics	Improved class and method dump formats and additional verbose options provide greater visibility into PVM runtime behavior.
Runtime Dependency Validation	Validates dependencies used by PXL-accelerated AOT code to help identify incompatible classes and prevent potential runtime crashes.
OpenJDK Security Updates	Incorporates accumulated security patches and bug fixes from OpenJDK 8u462-b08, 8u472-b08, 8u482-b08, and 8u492-b09.
Platform Support	Perc 64 8.9 supports 64-bit multi-core x86_64 and ARMv8-A targets; Perc Ultra SMP 8.9 supports 32-bit multi-core x86 and ARMv7-A (armhf) targets.
System Requirements	Minimum system requirements for Perc 64 8.9 and Perc Ultra SMP 8.9 remain unchanged from version 8.8.
PVM Protect	Helps secure deployed applications using TPM-based protection technologies. Supports RHEL/Rocky Linux 8.6+ and Ubuntu 22.04.4+ target systems.

Get Started with Perc 8.9

Bring greater determinism, visibility, and deployment flexibility to real-time Java applications with PTC Perc 8.9. Perc 64 8.9 and Perc Ultra SMP 8.9 are available now. Existing customers can access software, documentation, and license key requests through the [PTC eSupport portal](https://www.ptc.com/en/support/portal).

For more information about Perc, visit <https://www.ptc.com/en/products/developer-tools/perc>