Key Points from "A CTO's Guide to Real-Time Linux" Whitepaper

The whitepaper "A CTO's Guide to Real-Time Linux," published in November 2023, provides insights into real-time Linux systems, their uses, and practical considerations for deployment.

Key points include:

Nearly 30% of global data will require real-time processing by 2025.

Growth in demand for real-time Linux in sectors like industrial PCs, edge servers, PLCs, robotics, drones, healthcare, automotive, aerospace, defense, and telecommunication.

Real-time Linux focuses on deterministic processing to meet stringent latency requirements.

Real-time Linux is not synonymous with optimized performance; instead, it ensures consistent and predictable response times.

Real-time Linux is not solely dependent on a real-time kernel; rather, it involves the whole system stack, from hardware to networking layers and applications.

PREEMPT_RT patch is the primary method for bringing real-time capabilities to the Linux kernel.

Real-time Linux is beneficial for latency-sensitive use cases, but having a real-time kernel alone doesn't guarantee a real-time system.

Real-time Linux has numerous applications in various industries, including healthcare, automotive, energy, and telecommunication.

Real-time Linux enables digital transformation initiatives like Industry 4.0 and enhances connectivity, flexibility, and control over industrial processes.

Real-time Linux supports virtualized radio access networks (vRAN), contributing to the development of efficient and high-performing 5G network architectures.