RTOSVisor

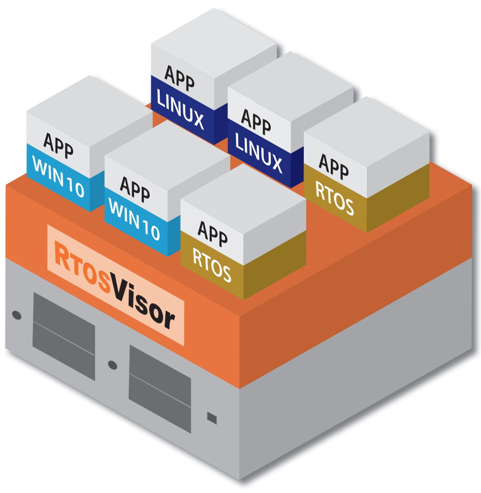
acontis Real-time Hypervisor Software

Run Multiple Operating Systems on a Single Hardware Platform

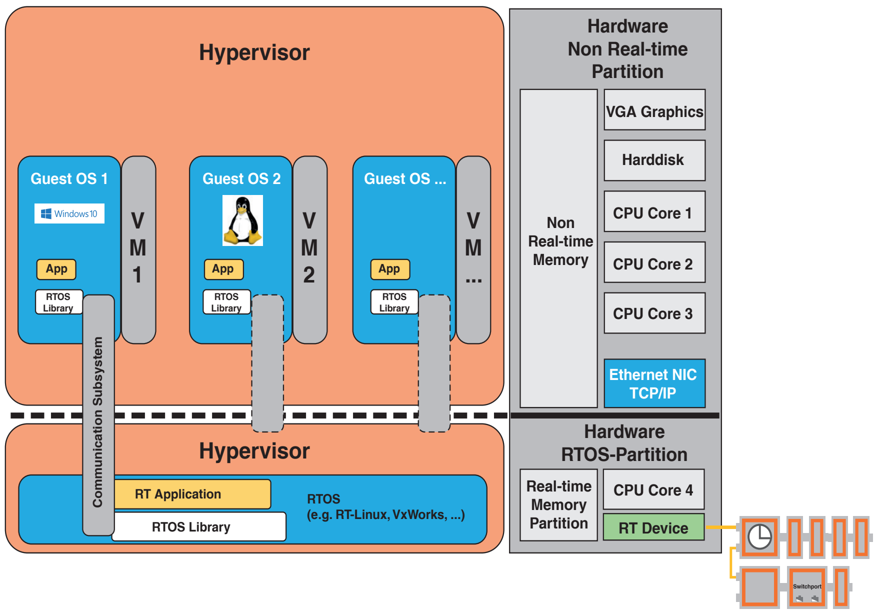
Hardware and Workload Consolidation

Today, Real-time virtualization has become an important part to consolidate hardware in industrial and other hard Real-time demanding environments.
The acontis RTOSVisor, a Type 1 Hypervisor, expands the existing Type 2 Hypervisor solutions to target more sophisticated use cases. This solution is a perfect fit for IIOT devices, Edge Controllers, and high-end Real-time workload consolidation.
Using the existing, industry proven acontis Real-time virtualization technology, multiple hard Real-time operating systems (Real-time Linux, VxWorks, etc.) can run in native speed. In addition, based on proven virtualization solutions, multiple standard operating systems like Windows and Linux (Ubuntu, Debian, Fedora, etc.) operate in parallel. Providing para-virtualization as well as PCI/USB and VGA passthrough for highest possible performance are one of the key features the RTOSVisor provides.
Each guest OS is fully independent and separated and can be rebooted or shutdown while the other guests continue without being affected.

Real-time Virtualization



Architecture Overview



The RTOSVisor is booted by the BIOS. The hypervisor is responsible for system configuration and partitioning and will boot the Real-time Operating Systems first. Direct and non-virtualized hardware access guarantee fast Real-time response. In a final step the RTOSVisor will boot unmodified Guest Operating Systems like Windows or Ubuntu. These Guest Operating Systems run fully isolated on Virtual Hardware inside a Virtual Machine under control of the Hypervisor. A communication subsystem which is connecting all the guest operating systems is provided by the Hypervisor. All guests can communicate through the communication subsystem with each other and also have access to the hard disk.

Technical Features

- Multiple Windows and/or standard Linux instances
- Multiple Real-time Operating Systems (RT-Linux, VxWorks, etc.)
- Fully separated and independent guest operation
- User defined guest startup sequence
- Utilize any number of CPU cores per guest
- Independent reboot of all guests while others continue operation
- Fast interrupt handling and short thread latencies
- Virtual Network between all guests
- Inter-OS Communication: Shared Memory, Events, Interlocked data access, Pipes, Message Queues and Real-time sockets for high speed application level communication
- Fileserver for all guests
- RTOS containers including applications run on bare metal core with no virtualization overhead and direct hardware access

acontis technologies

acontis technologies
www.acontis.com
sales@acontis.com

GERMANY – Headquarters
acontis technologies GmbH
Gartenstr. 46, 88212 Ravensburg
Tel. +49 (0) 751 - 560 30 30

USA
acontis technologies Incorporated
945 Concord St., Framingham, MA 01701
Ph. +1-508-809-7200

JAPAN
acontis technologies Japan
〒２２６−００２７
神奈川県横浜市緑区長津田１−２２−１０−４２
電話: +81−(0)８０−３０９７−４１１１