# INtime® Distributed RTOS

## Reliable, deterministic RTOS for cost-effective, scalable PC solutions

**INtime**
distributed RTOS

Scalable real-time solutions need multi-kernel support. Today's embedded solutions are built on a range of hardware, from simple, single-core based PCs to complex, networked, multi-host PC systems. The embedded virtualization technology of INtime Distributed RTOS is designed to provide the scalability, flexibility, and reliability that real-time applications demand on one or multiple PC hosts.
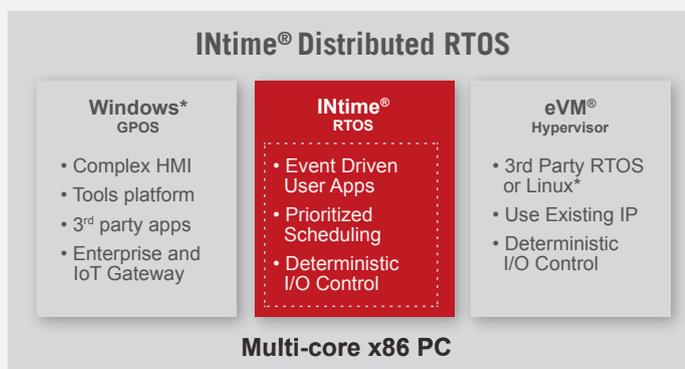
INtime Distributed RTOS partitions applications onto own RTOS environments to ensure protection at the application level. Robust IPC services between execution cores and network connected PC hosts facilitate cooperative data processing and control execution. This innovative RTOS design allows developers to scale out solutions across multiple nodes or multiple hosts, or both, optimizing system hardware costs.

## Explicit hardware partitioning for multiple autonomous processes

INtime Distributed RTOS explicitly partitions multi-core hosts into distinct processing nodes, dedicating one execution core, RAM, and I/O resources to each node. This asymmetric multi-processing (AMP) approach allows real-time applications to run independently from one another. INtime Distributed RTOS enables solutions to be scaled to different core counts and topologies, without the need to rewrite applications.

Develop individual INtime® RTOS applications and distribute them across the system – without modification – onto explicitly partitioned environments. Processes easily interact from separate environments with global objects across GOBSnet Inter Process Communication (IPC), the global objects network that enables INtime Software and Windows* processes to interoperate across nodes and hosts in a deterministic way without requiring any code changes. Deterministic applications run as part of a networked system, accessing services and resources across the entire solution. All processes execute in protected user mode (Ring 3) out of up to 4 GB of memory, ensuring memory protection between processes.

### INtime® Distributed RTOS

**Windows***
**GPOS**
- Complex HMI
- Tools platform
- 3rd party apps
- Enterprise and IoT Gateway

**INtime®**
**RTOS**
- Event Driven User Apps
- Prioritized Scheduling
- Deterministic I/O Control

**eVM®**
**Hypervisor**
- 3rd Party RTOS or Linux*
- Use Existing IP
- Deterministic I/O Control

**Multi-core x86 PC**

- Complete Object-based RTOS solution
- Explicit HW Partitioning for enhanced Application Protection
- Deterministic – Hard Real-time capable
- Flexible Deployments due to Multi-process Architecture
- Reduced Complexity – less physical connections
- GOBSnet IPC – Cross-node and Cross-PC communication
- Binary Compatibility with INtime® for Windows*

**INtime Distributed RTOS is a networked OS using the embedded virtualization technology of INtime RTOS.**

# System requirements

- Any Intel*- or PC-compatible x86 platform with standard BIOS services
- PATA, SATA, or USB flash drive support to install and load INtime Distributed RTOS and applications
- Intel* I210/I2xx, Intel* PRO/1000, Intel* PRO/100, Realtek* RTL 8xxx-100/1000, Broadcom* BCM 5xxx-100/1000 Ethernet*
- At least 16 MB of RAM available for each dedicated INtime Distributed RTOS kernel plus RAM for real-time application

# Development system requirements

- INtime® Software Development Kit (SDK)
- Ethernet connection to INtime Distributed RTOS host
- Visit www.tenasys.com or contact us directly for information regarding device driver availability

# Ordering information

INtime Distributed RTOS is licensed software. Multiple instances of the INtime Software Operating System can be installed on hardware with more than one logical processor. Licenses can be purchased for a one or two instance deployment or more than two instances per PC system as described below.

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| **RTOS-RT** | INtime Distributed RTOS run-time incorporation fee for redistribution of base operating system and derivative works. This license covers usage of up to two INtime Software kernel instances per PC system. |
| **RTOS-MCRT** | INtime Distributed RTOS run-time incorporation fee for redistribution of base operating system and derivative works. This license applies for three or more INtime Software kernel instances per PC system. |

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For more information visit www.tenasys.com or contact one of our world wide offices

TenAsys is headquartered in Beaverton, Oregon U.S.A. with a global sales and support presence across the United States, Europe, and Asia.

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