Virtual Clocks and Time Zones for Consolidated Environments

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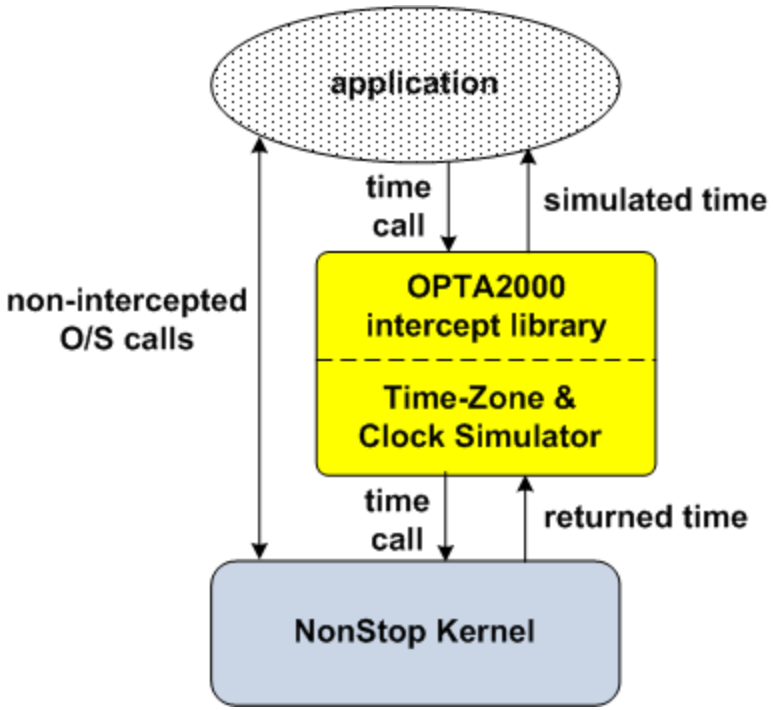
Today's Agenda

OPTA2000

Multiple applications operating in a consolidated environment or on a single server can each have their own virtual clock and can run in their respective time zones.

Introducing OPTA2000



Introducing OPTA2000

Clock Simulation Began With Y2K. So Did OPTA2000.

January 1, 2000

Clock simulation arose from the panic surrounding Y2K.

Everyone was required to upgrade their systems for Y2K compliance.

Developers had to recreate the millennium rollover without changing the system clock and risking a crash.

One system clock. One current time.

Introducing OPTA2000

The Need for Clock Simulation Did Not Disappear at the Stroke of Midnight on January 1, 2000.

- **Y2K7** - caused by the U.S. Daylight Saving Time date change in 2007
- **Y2K38** - Unix bug of 2038
- **Z2K9** - Microsoft Zune MP3 bug
- **Y10K** - Where will you be in the year 10,000?

One system clock. One current time.

Introducing OPTA2000

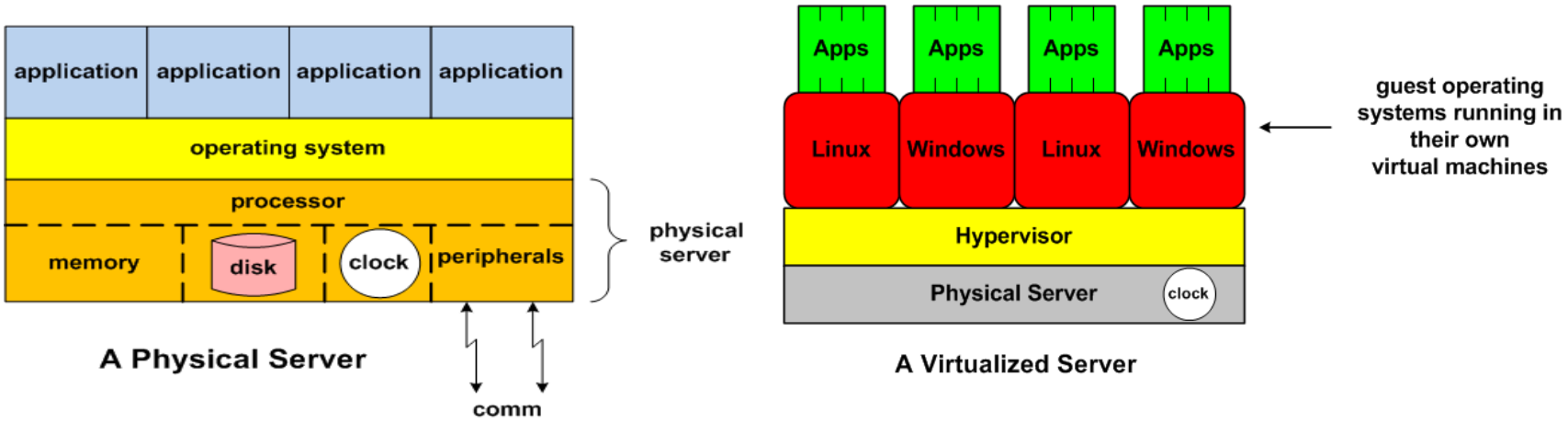
A Time-Sensitive Application Is One That Requires a Date/Time Specification That is Different Than That of the System Clock.

Examples:

- **Testing before production**
- **Consolidating global applications**
- **Consolidating disaster-recovery systems**
- **Consolidating user environments – DEV, QA, etc.**

Introducing OPTA2000

Is This Your Problem?
Multiple Applications on the Same Server Require Different Date/Time Specifications.



One system clock. One current time.

Introducing OPTA2000

HP NonStop systems have only one clock, too!

HP NonStop systems have *always* provided virtualized environments that allow many applications to share physical resources.

Example: Running several instances of a Pathway environment.

Here's the challenge: So many applications, only one system clock, only one system time.

One system clock. One current time.

Introducing OPTA2000

Here's the Problem!

Time-sensitive applications cannot be constrained by…

…one system clock. one current time.

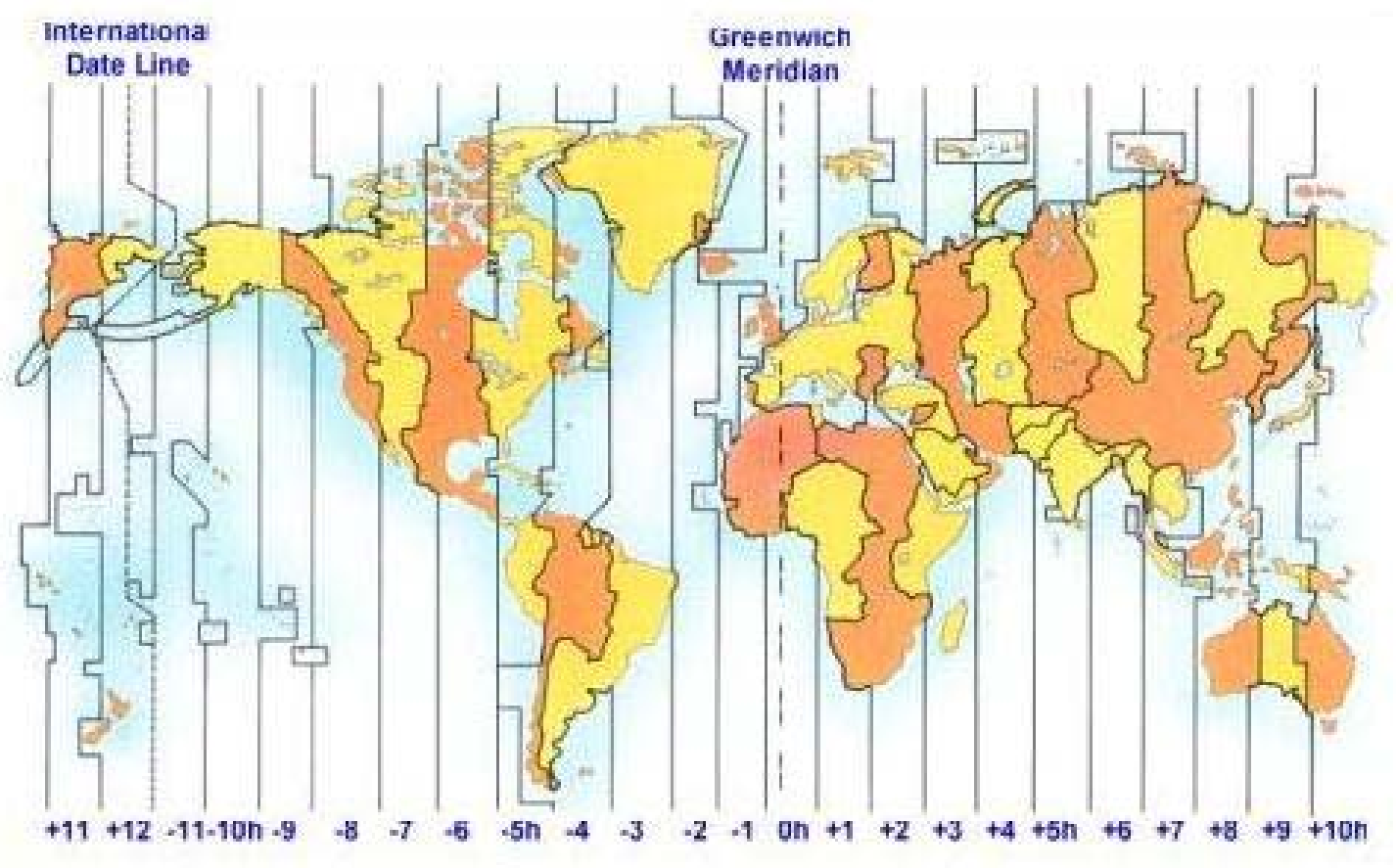
How do you support the hosting of multiple applications with different date/time requirements on the same platform…

…without constantly resetting the system clock?

How do you accommodate applications that need to run in user time, not system time?

Introducing OPTA2000

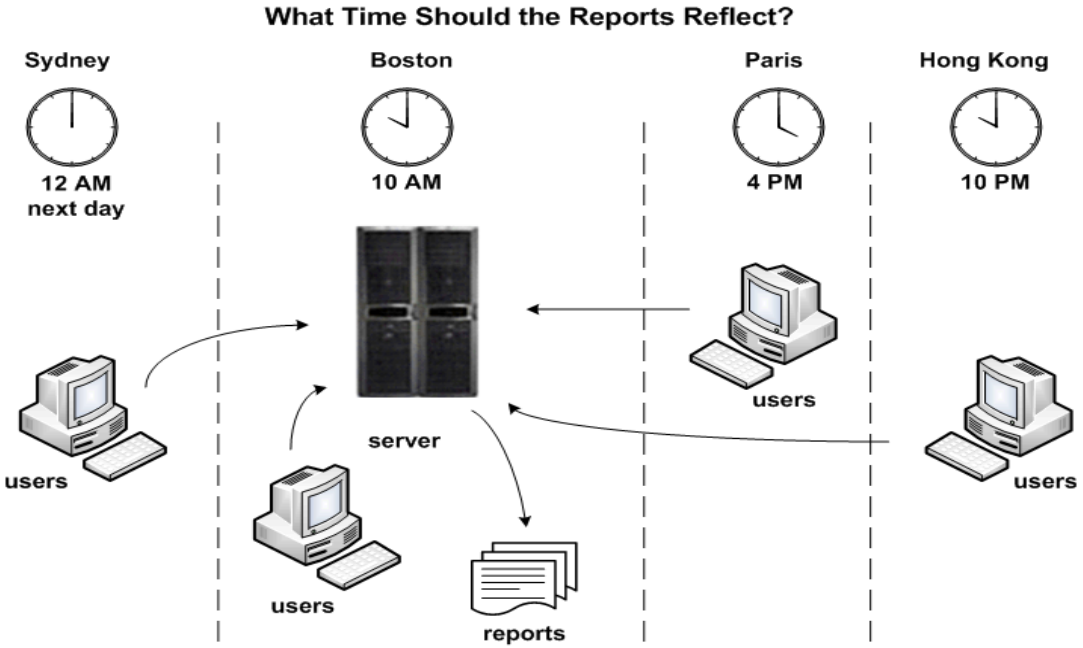
Let's Not Forget Time Zones!



www.happyzebra.com

Introducing OPTA2000

What Time Is It On Your Receipt?



OPTA2000 is Your Solution!

Time-Zone Simulation

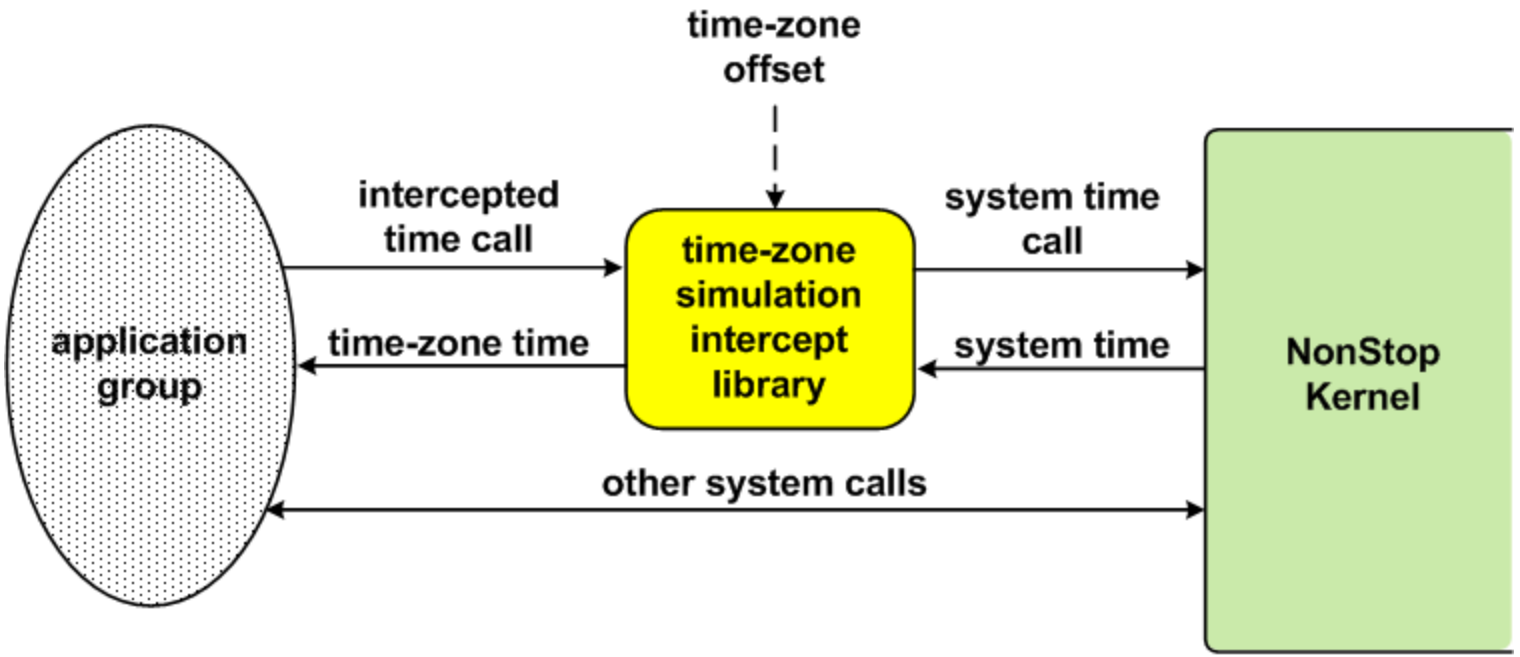
OPTA2000 creates virtual time zones that allow existing production and backup systems to support worldwide consolidated environments.

Clock Simulation

OPTA2000 creates virtual times that can be offset arbitrarily from the system time. Remember Y2K?

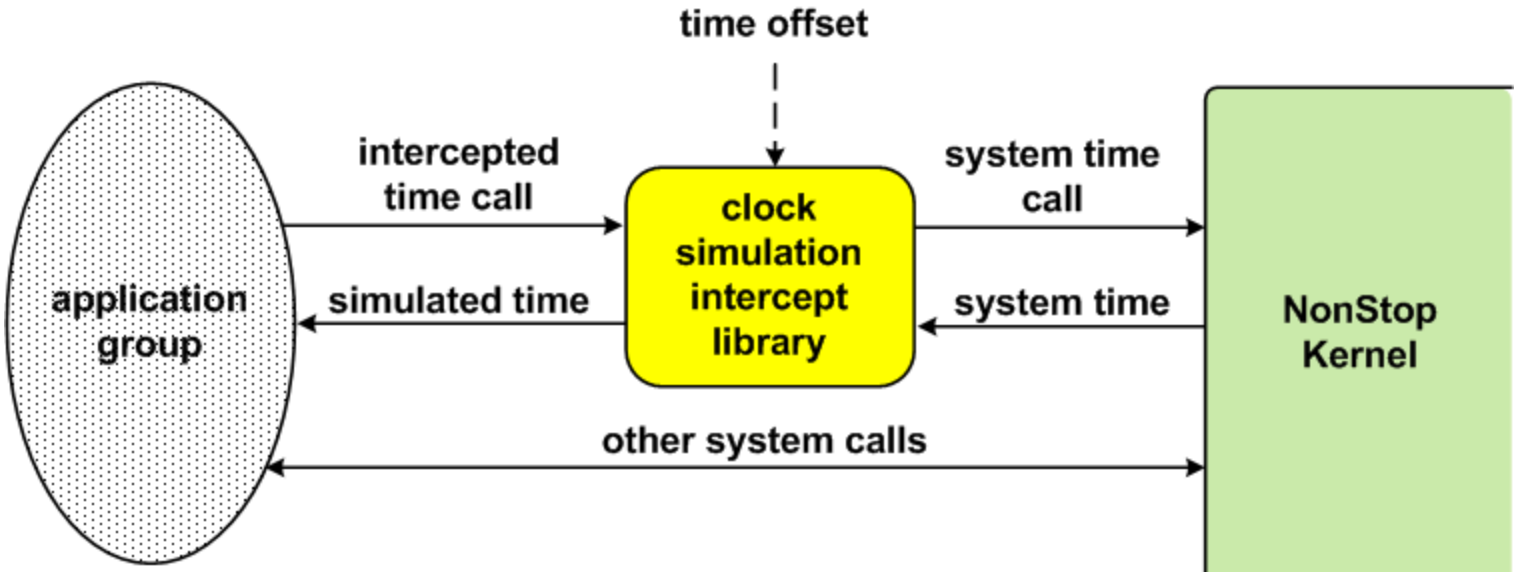
One system clock. One current time. One time zone.
No Problem!

How Does OPTA2000 Work?



Typical Time-Zone Simulation Architecture

How Does OPTA2000 Work?



Typical Clock Simulation Architecture

How does OPTA2000 Work?

Benefits of Clock Simulation With OPTA2000

- **Cost-effective**
  - *consolidation saves costs of hardware, licenses, IT resources*
- **Evaluate multiple applications simultaneously**
  - *each application has own virtual clock*
- **Test round-the-clock**
- **Test 3rd-party solutions' impact on stable production systems**
- **Evaluate "what if" scenarios**
  - *Leap Year rollovers • monthly / quarterly reports*
- **Ensure production consistency in batch-testing applications**
  - *test overnight runs for date continuity*

One system clock. One current time. No problem!

OPTA2000 Features

Supports All NonStop Application Types and Platforms (TNS, TNS/R, and TNS/E)

- **No changes necessary to customer applications.**
- Supports major third-party applications.
- Virtual time-zone feature supports worldwide consolidated environments. Multiple time zones on one NonStop server.
- Virtual clocks allow consolidation of multiple environments. Multiple system clocks on one NonStop server.
- Supports Daylight Saving Time (DST) transitions.
- Does not interfere with other applications on the same system.
- System View – for selected applications or users, permits access to specific CPUs only.
- Ideal for customers consolidating servers onto Integrity NonStop or Blades.

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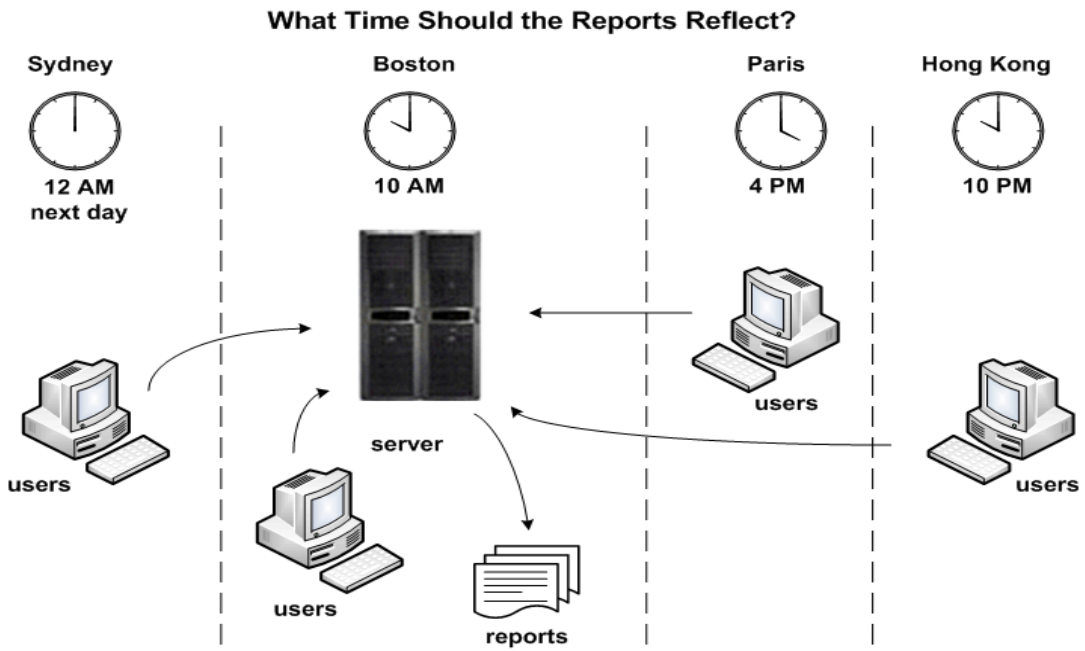
Time-Zone Simulation – A Consolidation Challenge

A Major U.S. East Coast Bank Uses OPTA2000 to Run Global NetBatch Environments From Its Central Data Center.

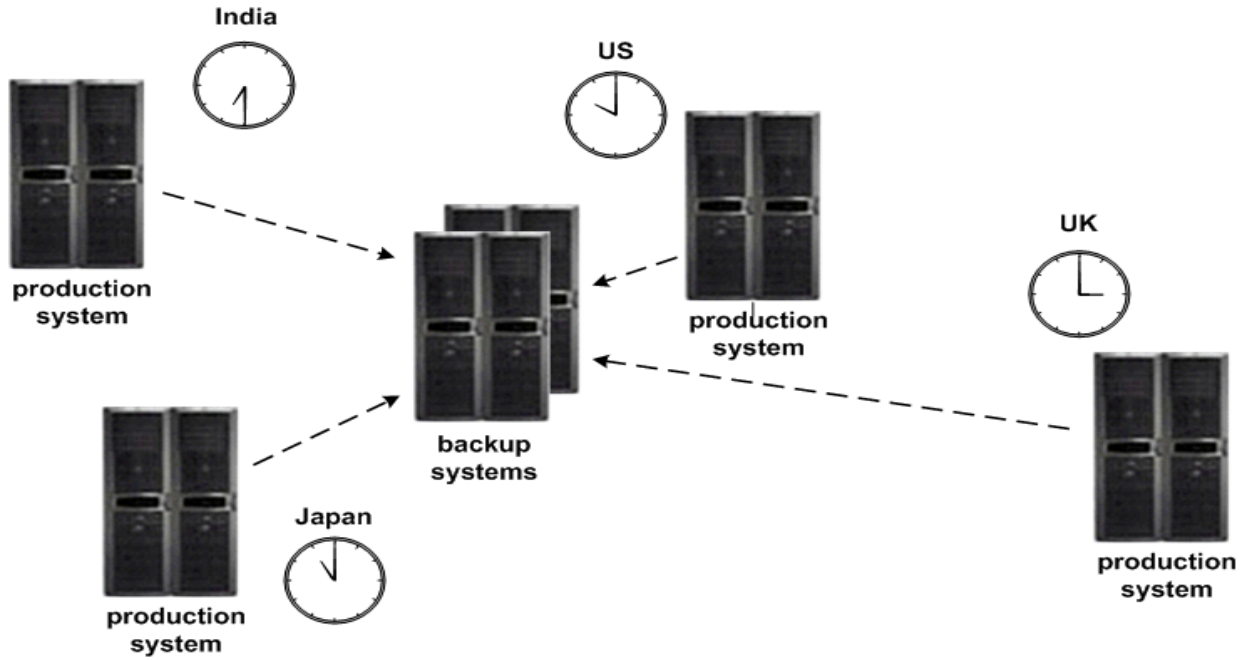


One system clock. One current time. One time zone.

No Problem!

Time-Zone Simulation – A Consolidation Challenge

A Global Manufacturer Uses OPTA2000 to Consolidate All of Its Worldwide Disaster-Recovery Systems into One U.S. Based Center.



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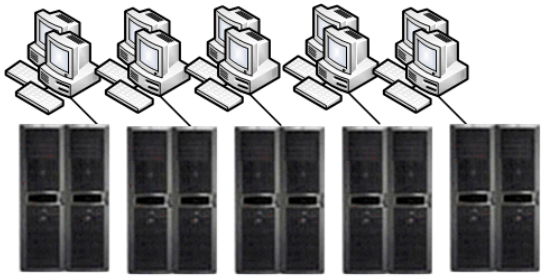
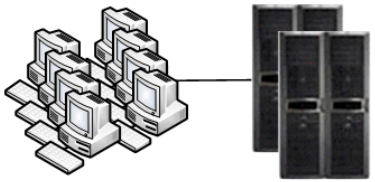
No Problem!

Clock Simulation – What Time Is It In Your Test Bed?



5 UAT test groups
5 NonStop S-Series servers

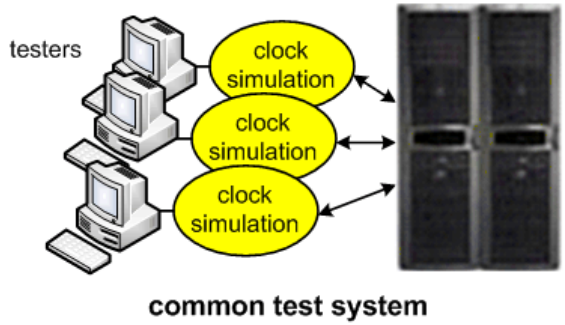


5 UAT test groups
2 NonStop Integrity servers

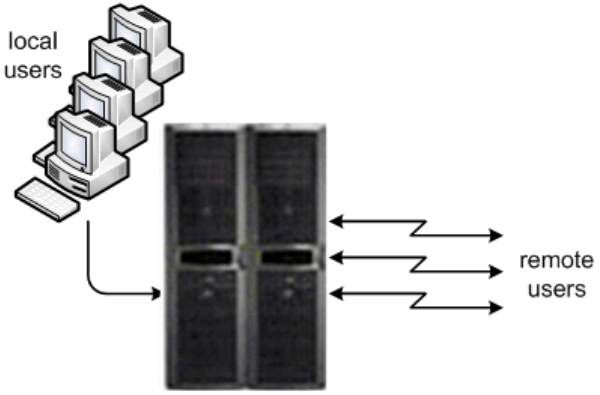
A major enterprise uses OPTA2000 to consolidate five test groups, each with its own NonStop S-Series server, into two groups sharing two NonStop Integrity servers.

One system clock. One current time.
No Problem!

Clock Simulation – What Time Is It In Your Test Bed?



common test system



production system

A prescription drug insurance provider uses two S7400 NonStop servers. One handles production; the other uses OPTA2000 to handle all backup, development, and testing apps.

One system clock. One current time.

No Problem!

Want To Learn More About OPTA2000?

The Connection

Application Jet Lag: Consolidating Global Data Services
May/June 2009

What Time Is It In Your Test Bed: Understanding the Benefits Of Clock Simulation
September/October 2009

Availability Digest

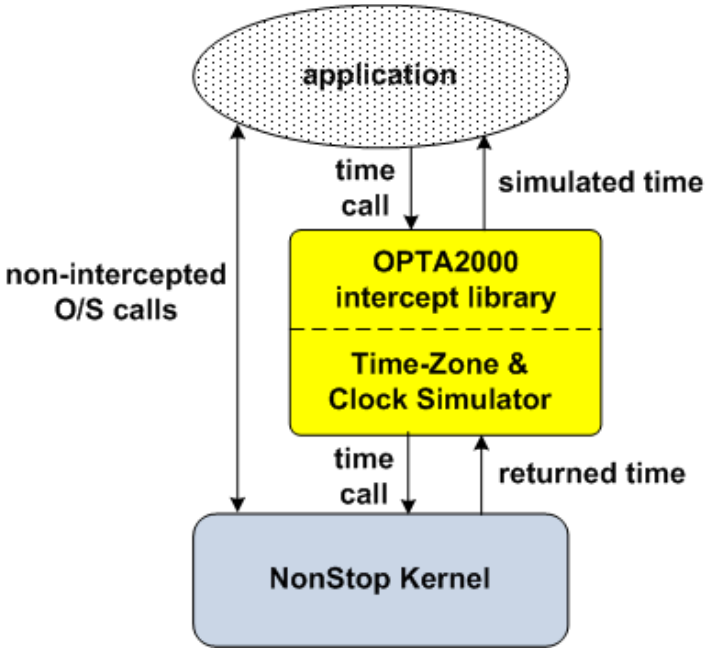
Virtualized Time From TANDsoft
January 2009
www.availabilitydigest.com

Find all three articles in the Resources Section of www.tandsoft.com

OPTA2000

Any Questions?

Ask them now, or contact me later at
jack.digiacomo@tandsoft.com



Thank You For Attending!

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TANDsoft's HP NonStop solutions include time-zone virtualization, time-sensitive application testing, file synchronization for disaster recovery, and the new Enscribe-2-SQL toolkit.