

**Panel on Today's Multicore Solutions —  
Battle of the Multicores**

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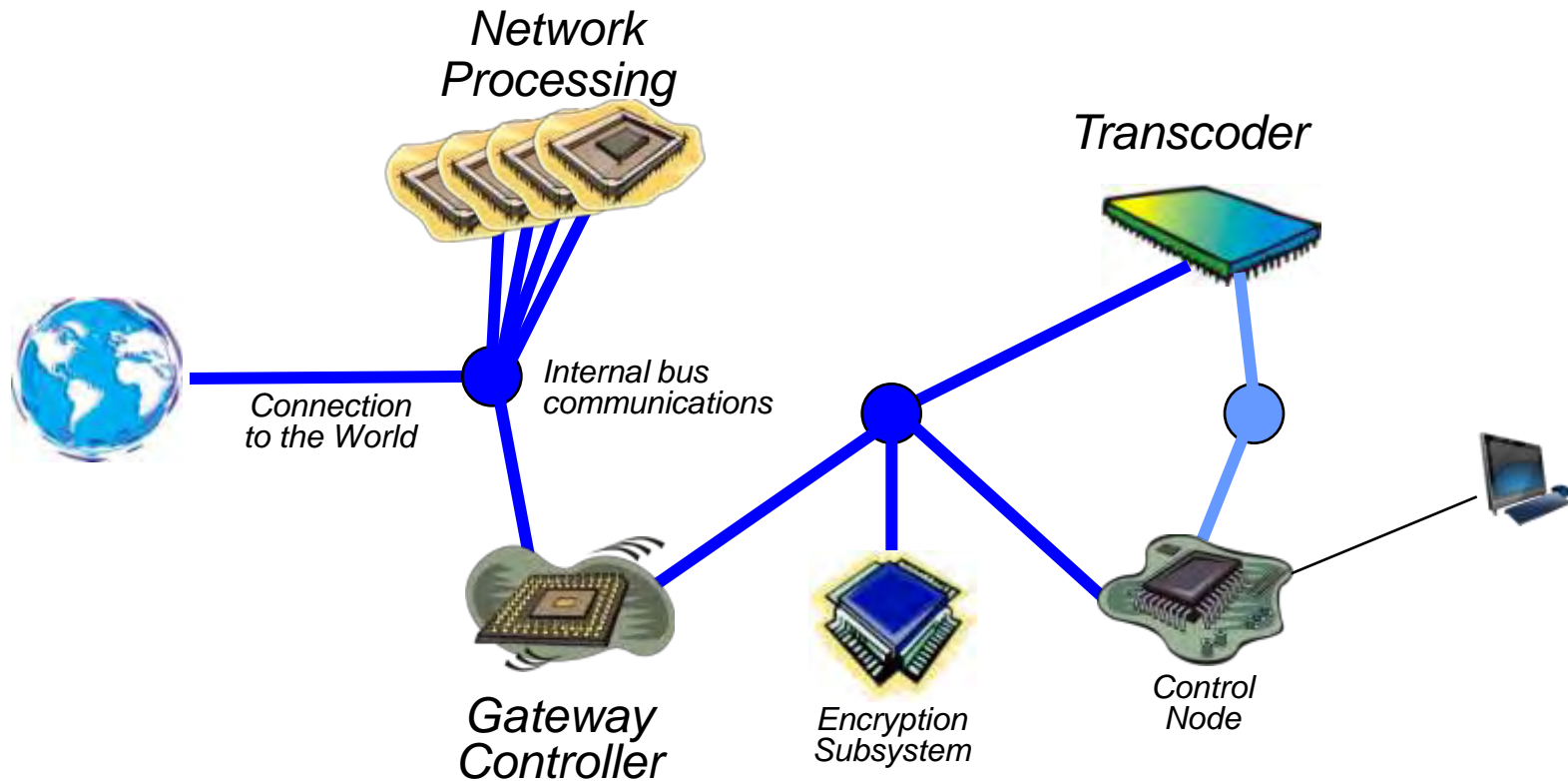


# What Virtutech is Doing?

Simics® - an adaptive virtual platform that enable customers to define, develop and deploy electronics systems more efficiently



# ... Today's Platform was Yesterday's Complex System

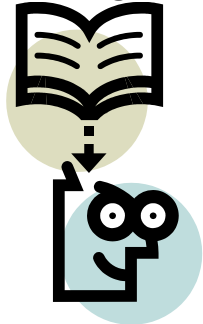


Product innovation now comes from interconnected subsystems

- Mix and Match Processor and Operating System Combinations
- Multicore System on Chip (SoC) devices

# The Overall Multicore Problem

## Educating Developers



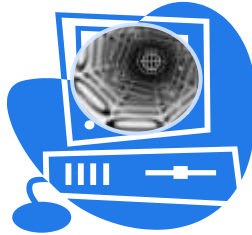
- Teaching APIs
- Teaching parallelism
- Learn on concurrency

## Performance-optimizing



- Getting it to work efficiently

## Getting code in place



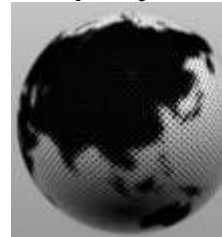
- Existing program as-is
- Parallelizing existing code
- Writing new programs

## Debugging



- Root causes:
  - of deviations from correct results
  - freezes, crashes, and errors
  - shared-memory locks are needed
- Forcing boundary conditions

## Field deployed devices



- ? field bug reports

# Just using hardware tends not to find all errors...

A computer that is running an x86-based version of Windows Server 2008 or an x86-based version of Windows Vista may use fewer processors than expected if the number of cores on a socket is not a power of 2

View products that this article applies to.

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**SYMPTOMS**

Consider the following scenario:

- You have a computer that uses a multicore processor. The number of the cores on a socket is not a power of 2. For example, the computer has a 6-core processor.

Article ID : 950182  
Last Review : April 11, 2008  
Revision : 1.2

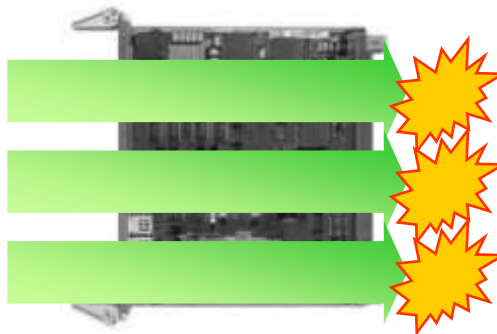
Typical “untested configuration because the hardware did not exist” error

# What Virtual Platform Enables

Synchronous stop  
for entire system



Determinism and  
repeatability



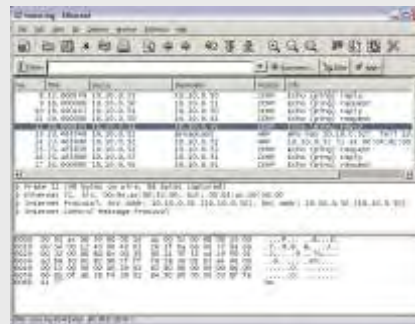
Reverse execution



Unlimited and powerful  
breakpoints

```
break -x 0x0000->0x1F00  
break-io uart0  
break-exception int13
```

Trace anything



Insight into all devices

