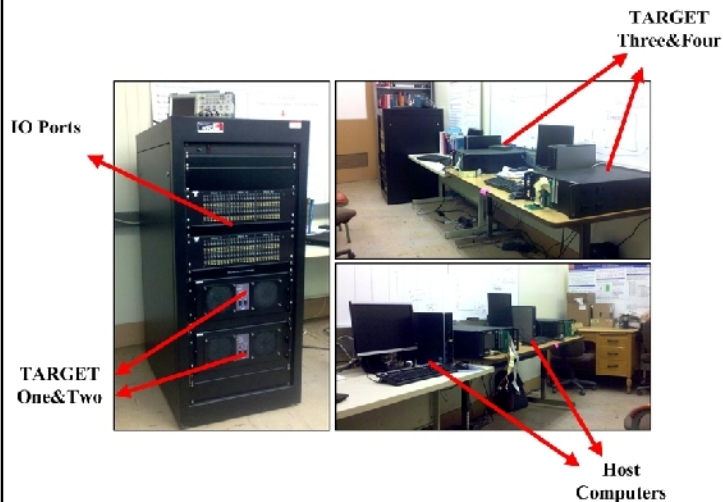


Advanced Real Time Simulation System

Real Time Simulation: Executing a computer model of a physical system at the same rate as actual "wall clock" time. For example, if a process takes 10 minutes to finish in the real-world, the simulation would take 10 minutes as well.



System Introduction

- ❖ 4 Real Time Target Machines;
- ❖ 8 CPUs with Totally 48 Cores: Intel Xeon Six-Core, 3.33 GHz;
- ❖ 4 User Programmable FPGAs : Xilinx Spartan-3 FPGAs;
- ❖ 512 Digital IO and 256 Analog IO;
- ❖ Dolphin Real Time Communication Link: Latency as low as 0.2 us.

Why Real Time Simulation

1- Gaining Time

- Find problems at an earlier stage in the design process;
- Proceeding to a device design while the actual system is not physically available.

2- Lowering Cost

- Reduces enormous cost on testing a new device under real conditions;
- The real-time system could test many possible configurations without physical modification.

3- Increasing Test Functionalities

- High flexibility by being able to modify all parameters and signals of the test system at a glance.
- Automatic test script to run tests 24 hours a day, 7 days a week.

Application Example in Smart Grid Design

