

## Constructing Happy IT Society.

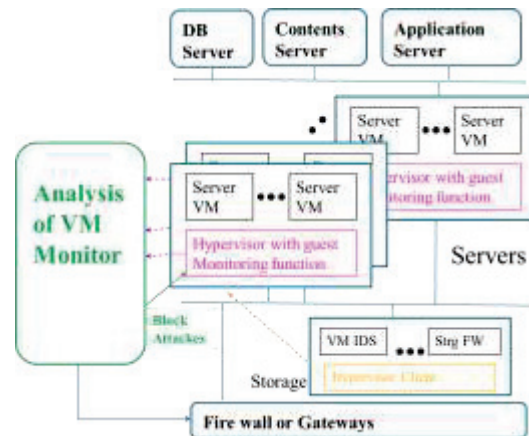
Sakai Lab deeply and widely studies innovative information processing. Current research topics are (1) secure information processing and (2) dependable information processing. Our aim is to build up future comfortable, safe and reliable society by ultimately developing information systems, including computers. For this purpose, we approach with various technologies. Please refer to the following Web page for researches and the activities of our laboratory so far.

<http://www.mtl.t.u-tokyo.ac.jp/>

### 1 Ultra Secure Information System

It is a pressing need to realize information systems' security not only for an individual but also for an international society.

We are constructing a platform where technologies of architecture and software are combined to prevent information leakage, and are building a prototype system to verify the idea. We also propose mechanisms to avoid zero-day attacks, which are extremely difficult to prevent, and are implementing a testbed system to prove it.



Ultra-Secure Server Architecture

### 2 Dependable Computing

We are developing the next generation “dependable” IT systems by fairly improving reliability, safety, solidity and extendability. One major approach is to design an ultra dependable microprocessor architecture..

In addition, we also research on dependable operating systems and application programs. Dependable Computing is definitely the most important theme of IT for all people to enjoy the benefits of the information society.



Ultra Dependable CPU Testbed

### 3 New Generation Microprocessor

#### Architecture

Microprocessors take the leading role in information processing. Semiconductor microfabrication has been driving the advancement of microprocessor performance, but it is about to reach the limit. We need to develop parallel processing / speculation processing at various levels, and develop a large capacity, high speed, power saving microprocessor by combining innovative technologies such as three-dimensional VLSI.

Our laboratory is pursuing research on next generation microprocessor architecture to meet such demands..



Cluster Computer for System Development