RTRI Updates Its Super Computer

The Railway Technical Research Institute (RTRI) introduced a new supercomputer and its opening ceremony was held on May 18. With this machine, we will be able to run simulation programs to analyze railway technical issues with more reality and to provide more practical and direct solutions. It will also be used for the research to apply information and communications technology to railway systems.

The new supercomputer, Cray XC50, was chosen based on its processing capacity, cost, compatibility with currently-used applications and versatility. It has five times faster processing speed than the replaced machine. (Table 1)

On this machine, the massive parallel numerical simulator and ISV application will be run and a variety of phenomena regarding railways will be analyzed.

President Kumagai of RTRI and Mr. Mamoru Nakano, President of Cray Japan Inc. at the opening ceremony

President Kumagai's greetings at the opening ceremony

After the research over 18 months, our new supercomputer started operation Today. Thanks to the efforts of Cray Japan Inc., we have introduced an extremely high-performance machine. In addition to this advanced tool, we will have to use our wisdom and intellect so that we will continue research to enhance safety and technology of railways and fulfill our mission to make railway systems more attractive. I believe our researchers will produce significant outcomes by fully utilizing this machine.

Table 1　Comparison of the performance of old and new supercomputers

Machine	New	Old （two machines）	
	XC50	XC30	CS300
Type	Large-scale parallel computer Multi-purpose computer	Large-scale parallel computer	Multi-purpose computer
Number of processors (Number of cores)	524 （9,432）	448 （5,376）	16 （112）
Memory	49 TB	14.3 TB	343 GB
Storage	720 TB	220 TB	11.2 TB
OS	CLE 6.0 （Cray Linux Environment）	CLE 5.0 （Cray Linux Environment）	Linux （RedHat EL6.3）
Theoretical computation performance	815 TFlops	103.2 TFlops	11.5 TFlops
		Total 114.7 TFlops	
Practical performance ratio	5	1	

President Kumagai is booting the CRAY XC50