

En-Core Project / High Precision Analysis for Turbine Blade

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Subject Category: Aeronautical Technology

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● Abstract

We will contribute to strengthening international competitiveness by demonstrating technologies for high-temperature, high-efficiency turbines and ultra-low NOx lean burn combustors that reduce nitrogen oxide (NOx) and CO2 emissions.

● Reasons and benefits of using JAXA Supercomputer System

There are many large-scale analyses like LES in En-Core project. To avoid schedule delay of the project, JSS3 is necessary.

● Achievements of the Year

Flow analyses of the turbine vane including cooling holes were carried out.

● Publications

N/A

● Usage of JSS

● Computational Information

Process Parallelization Methods	MPI
Thread Parallelization Methods	Automatic Parallelization
Number of Processes	46 - 180
Elapsed Time per Case	200 Hour(s)

● **JSS3 Resources Used**

Fraction of Usage in Total Resources*¹(%): 0.09

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage* ² (%)
TOKI-SORA	0.00	0.00
TOKI-ST	617,294.86	0.76
TOKI-GP	0.00	0.00
TOKI-XM	0.00	0.00
TOKI-LM	0.00	0.00
TOKI-TST	0.00	0.00
TOKI-TGP	0.00	0.00
TOKI-TLM	0.00	0.00

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage* ² (%)
/home	4.55	0.00
/data and /data2	454.55	0.00
/ssd	232.73	0.06

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage* ² (%)
J-SPACE	0.00	0.00

*¹: Fraction of Usage in Total Resources: Weighted average of three resource types (Computing, File System, and Archiver).

*²: Fraction of Usage : Percentage of usage relative to each resource used in one year.

● **ISV Software Licenses Used**

ISV Software Licenses Resources		
	ISV Software Licenses Used (Hours)	Fraction of Usage*2(%)
ISV Software Licenses (Total)	0.00	0.00

*2: Fraction of Usage : Percentage of usage relative to each resource used in one year.