

Optimising the use of distributed heterogeneous IT resources through a global framework

Aerodynamic engineering HPC solutions benefit from Fujitsu's SynfiniWay™ through optimisation and standardisation of global IT infrastructures

Background

Aerodynamic engineers have a need to access a variety of HPC tools to manage tasks such as optimisation and simulation.

Maintaining effective usage of heterogeneous resources across a large aeronautic manufacturer with distributed IT is challenging. Legacy solutions built over many years are non-standard and usually provide little scope for integration.

Increased complexity of the CFD (Computational Fluid Dynamics) processes and design data require access to a wider scope of resources than was previously available.

Customer problem

The complexity of distributed heterogeneous resources makes it difficult for enterprises to deploy new aerodynamic processes and mandating that customisation is needed every time. Access to design data by disperse engineering teams has also become necessary.

Data access methods are not globalised across the enterprise. This leads to reduced data visibility and unnecessary regeneration of data which already exists in other locations.

The mix of parallel and sequential applications in the aerodynamics process chain creates difficulties to automate and schedule the required processes leading to reduced turnaround times.

Our offer

With SynfiniWay, the aerodynamic users benefit from a platform that brings standardisation, easy deployment of processes and a way to optimally use resources across a large distributed and virtualised compute environment.

SynfiniWay's global and virtual view of resources provides an IT independent way of running applications using a service oriented architecture.

The global data access methods of SynfiniWay ensure engineers have direct access to the latest data wherever it is located.

The priority based meta-scheduler ensures processes are placed in the most optimal location, wherever that happens to be. SynfiniWay manages implicit file transfer

between execution locations used within the business process chain.

Solution

The SynfiniWay framework integrates the existing aerodynamic tools to provide a global view of all needed resources. This integration allows engineers to keep their current desktop engineering interface whilst expanding data visibility and process execution resources that are available to them.

Through the SynfiniWay service oriented view of resources, aerodynamic processes are developed in one location and deployed on all sites. This greatly reduces development time allowing business processes to be integrated faster into the design chain.

Thanks to SynfiniWay's remote data access capability, model data held in the corporate repository is now available to any process or user regardless of their location. Data caching allows highly used files to remain locally in each site, reducing the burden on remote data access.

SynfiniWay's meta-scheduler provides priority based workflow scheduling to optimally manage each task of the CAE process chain.

Benefits

The service view of resources allows new business processes to be developed in a shorter time frame enabling faster deployment throughout distributed engineering departments.

Global data visibility has led to a 20% reduction in production jobs freeing up valuable IT resources and enabling more research jobs to be run.

Meta scheduling makes IT resource efficiency higher, providing engineers with better turnaround. The total time spent on model simulation is reduced.

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