

## Gridcore Case Study

### **ABB's Collaborative High Performance Computing environment. Spring 2009**

During the spring 2009 the Corporate Research unit within ABB Sweden sent out a Request For Proposal where they explained the new needs in terms of HPC resources for the close future. Gridcore AB was selected to deliver this deal. This Case Study explains how the HPC farm was built, previous requirements and Gridcore's solution.

**“Gridcore does for sure know the HPC area. They fully met our expectations in terms of delivery time and quality”**

Peter Lofgren, Coordinator of the Simulation Network within ABB



**Valve Hall. Courtesy of ABB**

#### **Customer details**

**Customer:** ABB Sweden  
**Customer size:** 9.000 (Sweden)  
**Country:** Sweden  
**Industry:** Power transmission and industrial automation

[www.abb.com](http://www.abb.com)

#### **Customer profile**

ABB employs almost 9.000 people in Sweden and has operations in 35 different locations. In Sweden the company is a leading supplier of products and systems for power transmission as well as for process and industrial automation. Västerås with 4.400 employees and Ludvika with 2.500 are the two largest centers of operation. Through its ten Business Centers in the country ABB has increased its customer value thanks to this local presence.

The Corporate Research unit within ABB in Sweden is located in Västerås (100 km west of Stockholm). Its main research and development efforts focus on the core businesses of the ABB Group - Automation and Power. Together with their colleagues in ABBs' other R&D centers they develop technologies for future products, solutions and services.

### **System Requirements**

Spring 2009, the Corporate Research unit within ABB described to Gridcore/IBM its needs in terms of the computing resources to be used by their Engineers and Scientists. These resources were going to be located in Sweden and substitute the existing Linux cluster. Several research groups located at more than five countries are potential users of the system, furthermore this system may be either expanded and/or replicated to other locations to solve the growing needs of computer resources in the years to come.

In addition to hardware requirements, the system should be designed to support CFD applications such as ANSYS/Fluent, CFX and OpenFOAM.

**“Our target is to get a standardized simulation environment within the global company with as high benefit/cost ratio as possible”**

Peter Lofgren, Coordinator of the Simulation Network within ABB



A complete support as well as a complete delivery of the cluster including hardware, system installation, applications integration and a comprehensive interface to the system was also required.

## Gridcore's solution

The proposed solution was constructed by using standard protocols and work methods, which are as valid for one local installation as it is for a global deployment. Gridcore and IBM (who worked together for this deal) have ready to use methods and channels to construct verified turnkey clusters by specification from the Corporate Research unit within ABB and that may be delivered to any ABB office in any country, using local service and support from IBM.

Regarding the hardware, the system has been provided with latest technology with a High Speed Node Interconnection, High Speed I/O Network and the fastest processors.

Regarding the software, Gridcore has provided the Corporate Research unit within ABB's HPC platform with some of the products of Gridcore's software (EGompute®) such as GcDistro®, a modularized environment completely updated and easily expandable and GcPortal® an easy and comprehensive way of accessing the cluster using a graphical interface.

## Delivery time and start up

The new system was up and running in less than 2 weeks from the delivery time.

## **“Fast and with High Quality. Our expectations were completely met.”**

Peter Lofgren, Coordinator of the Simulation Network within ABB

## A collaborative environment: 4 countries involved

The new HPC farm is not only used by all the scientists and engineers working at the Corporate Research unit within ABB in Sweden. There are several groups working in the same platform from different ABB sites and countries such as: Motors and Machines, Metallurgy and Transformers units within ABB in Sweden, Corporate Research and Turbosystem units within ABB in Switzerland, ABB SACE in Italy and the Corporate Research unit within ABB in Poland.

This environment is possible thanks to GcPortal, a comprehensive, easy to use and graphical access to the HPC platform. Thanks to GcPortal, different Corporate Research units within ABB may work together, share information, simulations results and HPC resources no matter how far they are from Sweden, maximizing this way the efficiency of the HPC farm.

Gridcore AB  
Aschebergsgatan 46  
41133, Göteborg  
Sweden  
Tel. +46 (0)31 18 21 60  
Fax. +46 (0)31 20 32 92  
info@gridcore.se  
www.gridcore.se  
Organisationsnummer: 556629-7866

Gridcore GmbH,  
Liebknechtstr. 33  
D-70565 Stuttgart  
Germany  
Tel: +49 711 78 11 86 50  
Fax: +49 711 78 11 86 51

## A growing system

The Corporate Research unit within ABB in Sweden is constantly growing and improving. It is a centralized system, used by several ABB sites that needs constant updates and reconfigurations to address all the needs of engineers and scientists. Gridcore professional support team address all these issues.

## To sum up

The Corporate Research unit within ABB in Sweden is currently using a high-quality latest technology HPC resource delivered, integrated and support by Gridcore's professional team.

The cluster achieves the highest efficiency as it is used by several ABB sites placed in different countries thanks to GcPortal.

Gridcore provides the Corporate Research unit within ABB with a personal and direct support to address new requirements and future expansions.

### Further information

For more information about ABB Sweden:  
[www.abb.se](http://www.abb.se)

For more information about Gridcore AB:  
[www.gridcore.se](http://www.gridcore.se)

All rights Reserved

All brand and product names that appear in this document are or may be trademarks of, and are used to identify products or services of, their respective owners.

This publication could include technical inaccuracies or photographic or typographical errors. This publication was produced in Sweden, August 2009. Gridcore AB may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. References herein to Gridcore products and services do not imply that Gridcore intends to make them available in other countries