

Enabling Virtual Manufacturing Enterprises with Cloud Computing – An Analysis of Criteria for the Selection of Database as a Service Offers

Reference:

R. Hans, D. Dahlen, S. Zöller, D. Schuller, U. Lampe, “Enabling Virtual Manufacturing Enterprises with Cloud Computing – An Analysis of Criteria for the Selection of Database as a Service Offers,” in Américo Azevedo: Advances in Sustainable and Competitive Manufacturing Systems, Porto, Portugal, 2013, pages 427-438.

Abstract:

In our globalized world, small- and medium-sized enterprises in the manufacturing domain face a highly competitive environment. They are subject to various challenges, such as very short product life cycles and a strong price competition with companies from low-cost countries. To remain competitive in such an environment, new forms of collaborations, like Virtual Manufacturing Enterprises, are required. An essential part of virtual organisations is data provisioning. Thereby, data from various sources like factories’ ERP systems or data provided by sensors need to be processed and stored. In this context, data storage is a crucial architectural element that influences both functional aspects and competitive aspects, especially costs, of Virtual Manufacturing Enterprises. For realizing Virtual Manufacturing Enterprises with low up-front investments, the application of new technologies, such as Cloud Computing, is required. For storage of information in databases “Database as a Service” offers from the Cloud can be exploited. However, since there is a huge amount of providers acting on a non-transparent market, it is difficult to find appropriate “Database as a Service” offerings. To overcome this problem, we provide a criteria catalogue for the selection of providers and their services. Further, we show how different offers, which at the first glance look very similar, could cause very different expenses. With our work, we simplify the selection and evaluation of Cloud storage providers and provide an evaluation of current Cloud storage service offers.