SimManager™
Enabling Simulation-Based Virtual Product Development

Overview
MSC.SimManager™ is a Web-based environment that manages and automates simulation processes, provides control and access to associated data and histories, and ultimately delivers knowledge of product performance earlier in the development process. By enabling the implementation of best-practice simulation processes and providing full traceability of input parameters, MSC.SimManager ensures consistency of simulation results and increases the productivity from existing simulation tools. Engineers are able to perform more simulations, establish trends from previous data, evaluate design changes, generate comparative reports and collaborate with colleagues across the enterprise to make faster, more informed decisions.

Creating An Efficient And Effective Simulation Environment
MSC.SimManager manages simulation processes and simulation data at the object level, rather than at the file level. This enables full auditing of the sequence of steps performed during the course of a simulation and the ability to fully track the pedigree of every result. For instance, it is possible to associate a result with the model variant, material data, software version, platform, date, individual who performed the simulation, and even the associated part geometry stored in the Product Data Management system.

The software is also designed to handle the huge volumes of “what-if” data that is generated during the course of an investigation. Without MSC.SimManager, this data is often “lost” as there is no association between the “work-in-progress” simulation data and the product definition stored in the PDM system. With MSC.SimManager, comparison reports, which compile data from multiple simulations, can be generated easily and quickly.

Capabilities
- Enterprise Simulation Portal
  - Web-based portal(s) that drive performance-based product development and build corporate engineering knowledge
  - Automatically manages resulting data (without laborious file check-in/out procedures) and provides ability to fully trace data pedigree
  - Easily configurable to support company/industry best practices
  - Web services (WSDL) support provides easy integration with other tools and applications.
  - Supports complex analytical processes and large volumes of data
- Enterprise Application Integration (EAI)
  - Integrate with leading PLM systems via common middleware applications such as WebSphere Business Integration and JBoss
- Integrated Client/API
- Report Generator (optional)
  - Easy to use, template-based creation of reports
- Studio (optional)
  - Rapid configuration environment
- Integration with leading Web application servers and relational databases.

Benefits
- Improve productivity through the automation of numerous manual and otherwise error-prone steps
- Learn from historical data with a system that provides full traceability of model and data pedigree
- Leverage existing investments by integrating heterogeneous tools and applications
- Leverage existing PLM infrastructure to manage both geometry and simulation data
MSC.SimManager Modules

MSC.SimManager Portal Server

The Portal Server is the foundational module that is used for rapid deployment of enterprise simulation portals.

Action Encapsulation

The Portal Server includes tools to encapsulate applications and best practice procedures on both client and server machines. The server-side action encapsulation can utilize existing job submission or resource management systems. The client-side action encapsulation enables the integration of any interactive pre/post processor application(s) or other engineering application(s).

Web Portal Features

MSC.SimManager provides a standard web-based user interface, which is configurable to the individual needs of a customer. The software supports multi-lingual portals. A tree-based viewer and workbenches are provided for easy navigation, sorting and filtering of data. An Audit Trail Viewer provides a dynamic view of a simulation result and the ability to navigate data dependencies.

Data Management

MSC.SimManager Portal Server utilizes standard relational database systems such as DB2, Oracle, or SQL Server to manage all the meta-data for content and context. Additionally, there is a scalable vault management system for the data files, which supports standard hierarchical storage solutions. The data management component has a comprehensive business logic layer, which manages the object life-cycle and the object context including the creation of the audit trail. Extended search capabilities allow for very complex analytical searches tying together all objects created throughout the simulation process.

Integrated Client/API

MSC.SimManager includes an interface to enable external applications to access the MSC.SimManager database and to launch actions within MSC.SimManager. This enables a tight integration with pre- and post-processing tools and lets users work in their familiar environments while making use of the powerful process and data management capabilities of MSC.SimManager. The client/server protocol is based on Web Services and therefore works with corporate firewalls and offers the same accessability as the standard Web-based interface.

MSC.SimManager Report Generator

The Report Generator allows the creation of standardized, formal reports. Data for a report is collected automatically and comparison reports can be generated easily. The system ensures that only equivalent data is compared, avoiding comparisons between inconsistent data sets.

MSC.SimManager Studio

MSC.SimManager Studio is a client-based application that allows easy and fast configuration of the MSC.SimManager solution.

Deployment

MSC.SimManager is a Java based application, which can be deployed in heterogeneous environments and configured as a high-availability, 7x24 service. MSC.SimManager operates with standard Web application servers on Windows, Linux and Unix operating systems.

MSC.SimManager solutions are delivered through MSC.Software’s Services organization or MSC.SimManager certified partners.