



UPDATE MANAGEMENT SERVICE The advantage of a smooth Software distribution

SIMATIC IT

Answers for industry.

SIEMENS

Introduction

UMS – Update Management Service is part of the SIMATIC IT Maintenance Program, it leverages on SIMATIC IT Software Management Tool (SMT) and provides the technical capability to:

- monitor the software configuration and the level of update of Product, Libraries and their applications;
- distribute and install updates and enhancements;
- store the historic record of previously performed update activities.

How?

The monitoring activity is managed centrally by the Technical Support Service (TSS), which corresponds and exchanges information with a Software Management Tool (SMT) server installed at the customer plant.

On the SMT server, a central repository is created where all products, libraries and application updates are stored.

As soon as Hot fixes and/or application updates are available, the TSS will notify the customer.

There are 2 kinds of applicable update packages:

- the first, generic for all customers;
- the second, for specific customers and plants.

SMT, in fact, provides the TSS with the detailed customer software and hardware configuration, in order to improve the analysis of possible issues and to monitor and keep the software configuration up-to-date.

TSS provides on the customer's server a consistent package of updates to be installed.

The customer, always supported by the TSS, can decide when to schedule the updating phase of the system, according to the different production loads.

Subsequently and given specific conditions, the activity is performed remotely and automatically without interrupting the plant operations.

In a cluster configuration, SMT maintains continuity of service also in case the update procedure should require a restart of SIMATIC IT or a computer reboot. This is possible because SMT moves running applications from one node to the other before updating each cluster node.

The system keeps also track of the previous update packages and therefore supports potential corrective actions to be taken in the next phases.

Benefits

When the SMT tool was not in place yet, the update of each plant installation took time to be performed, and production had to be stopped, with an intense economic effort: the customer had to shut down the system for allowing the TSS to upload SIMATIC IT Product Hot Fixes and application updates and this procedure had to be done for all plants involved in the updating phase.

Furthermore, in some particularly critical situations, Siemens had to send experts in order to operate manually on site.

The SMT, instead, improves the performances of maintenance activity on SIMATIC IT systems installed at the customer's plant: the tool allows the TSS to largely improve the effectiveness of the support and to reduce response time.

Not only that, the customer can also streamline maintenance by:

- lowering rate of errors;
- keeping the installation always up-to-date;
- reducing the impacts on production;
- minimizing updating efforts.

This tool is also extremely meaningful to achieve a standard alignment of the same version of Product and Libraries in all plants involved in the project, in a specific given timeframe agreed with the customer.

This is the reason why complex configurations with a large number of servers distributed across the enterprise, both in local and in remote plants, will benefit mostly from the use of SMT.

Architecture and technical details.

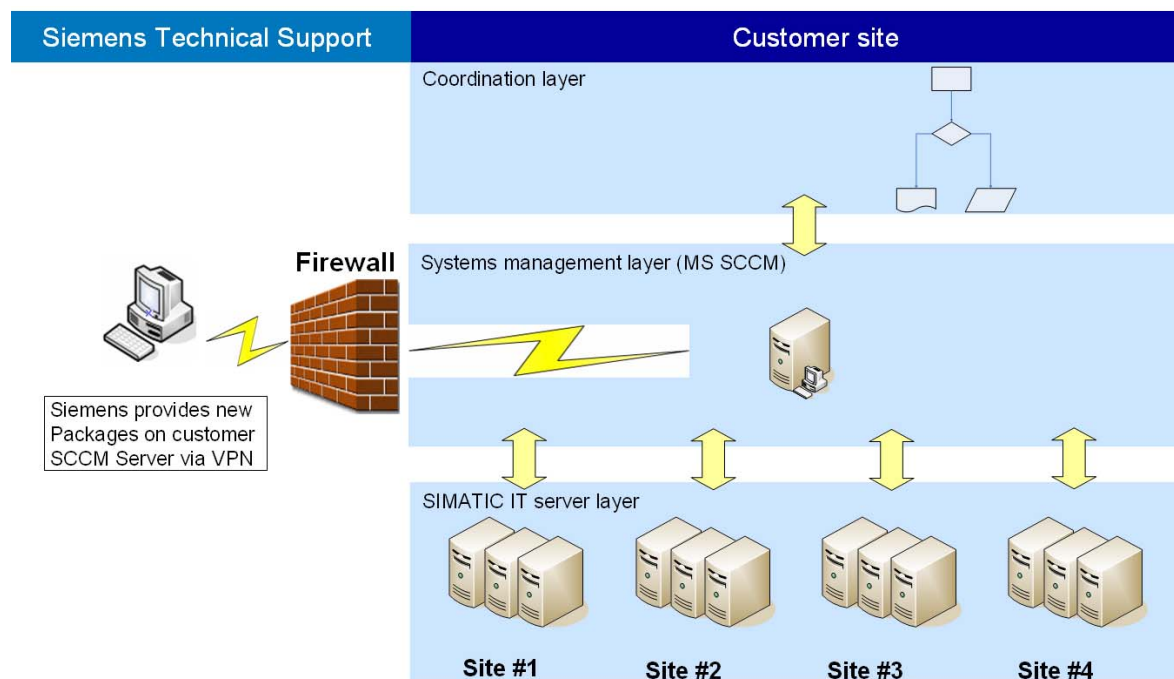
On the one hand, the SMT is based on the system management functionality provided by Microsoft, the System Center Configuration Manager (in short SCCM).

On the other hand, the SMT makes use of the SIMATIC IT cluster functionality.

Both redundant and non-redundant SIMATIC IT configurations are managed by SMT.

SMT is organized in 3 layers:

- a SIMATIC IT Server layer where SMT installation agents are responsible for executing the update installations on the target machines. SCCM clients interact with SCCM server to allow SW distribution and installation scheduling
- a System management layer where the SCCM server is running providing the capabilities to create and store the update packages, to advertise packages to clients. The SMT installation manager interacts with the SMT GUI user and provides automated procedures to streamline packaging and advertisement operations using the SCCM SDK API
- a Coordination layer where complex installation strategies can be defined and then executed by the SMT installation manager



Functionalities

SMT provides:

- Automated installation of updates for the SIMATIC IT application and product modules (HF)
- Distribution of update packages to SIMATIC IT servers within a site
- Distribution of update packages to SIMATIC IT servers to remote sites
- Support of quality procedures in application development and distribution by means of Installation Workflows
- Reporting on existing installation base:
 - Inventory
 - Update operation logs

Objects that can be updated via SMT:

- Customized SIMATIC IT application and (customer) Libraries layer, foreseeing 2 options:
 - Full application update:
 - The complete application is updated in the engineering environment and the complete set of application files is replaced on the target servers
 - It requires a restart of Production Modeler
 - Server cluster configuration is required to avoid downtime
 - Delta Application update which applies to:
 - Rule Containers
 - Data Builder Definitions
 - Custom Functions

Only modified libraries are distributed to the target servers and the rest of the application is synchronized on-line automatically. This update procedure does not require any stop of Production Modeler.

- User screens (CAB projects)
 - ASP.NET projects
- Interface connectivity (DIS project)
 - The DIS project file (and XSLT files) can be replaced at runtime in cluster configuration.

To increase the update reliability, all the installation files are first copied into the machine that needs to be updated before starting the set up.

The installation procedure can be either initiated upon request or scheduled for a later time.

Currently SIMATIC IT SMT has reached version 1.2