

Atmos SMT



A monitoring system that gives peace of mind that your Atmos applications are working as they should, without the need for human intervention.

The challenge

When a system works in the background it is often difficult to ensure that the system is operational 24/7 without having someone constantly checking if all is in good working order. This can tie up valuable time for the operator, so having an automated service means the operator can continue with their daily duties safe in the knowledge that the Atmos solutions are working.

What is Atmos SMT?

The Atmos System Management Tool (SMT) comprises of the SMT Client application and a series of services that monitor and control the core Atmos applications (including Atmos Pipe, Atmos SIM Online hydraulic model and Atmos Data Manager OPC server/client applications). Put all together the SMT client and services allow the user to setup, monitor and control redundant systems on multiple remote servers in a generic fashion.

Some of the features of the Atmos SMT System include:

- Viewing the Atmos applications (services) installed on remote machines
- Instruct the remote Atmos applications to run appropriate configurations
- Monitor the status of remote Atmos applications
- Configure groups of servers to carry out the same tasks, either in a redundant or parallel manner

- Manually switch active machines in a redundant group
- View the status of redundant groups of servers
- See events from Atmos applications and the redundancy system

The Atmos SMT system can be broken down into two parts, the front end client application (the SMT Client) and the backend services (Application Services).

The backend Application Services are Windows Services with no user front end, they are responsible for running the Atmos applications, managing redundancy and providing events and status information.

The SMT Client is a standard Windows client application that can be installed on any machine with network access to the Application Services. Once installed the following features are available:

- Configuration of servers with groups and tasks
- Configuration of sites
- Monitoring of groups and tasks (status information and events)
- Control of the system servers and services
- Control of the defined tasks



The different services that Atmos SMT monitors include:

LDS Service

The LDS Service provides the Atmos Pipe leak detection system information to the SMT System, it runs LDS configurations to connect to data sources and then perform leak detection on the data provided. It is an OPC Server and an OPC UA Server, and provides a full set of outputs via OPC and to Atmos SMT client.

LDS Test Service

The LDS Test Service provides the option to replay data from an Atmos database through the Atmos leak detection system. This is used for re-tuning Atmos LDS configurations or re-running historical leak data.

Data Manager Service

The Data Manager Service (or DM Service) runs Atmos Data Manager configurations, it uses these to gather data from other OPC Servers, and it can also act as a client writing values to OPC Servers.

Fault Condition Monitor Service

The Fault Condition Monitor Service (or FCM Service) allows control of SMT Groups via OPC tags, it reads from and writes to an OPC Server to listen to requests and report group and member status.

SQL Monitor Service

The SQL Monitor Service monitors SQL Server and provides data replication and maintenance to other Atmos applications; it also handles creating databases for applications and ensuring that there is free disk space.

SIM Service

The SIM Service gives the Atmos SIM application information to the SMT System. When provided with a pipeline model created in the Atmos SIM GUI it simulates the pipeline in real-time, and provides an output (via OPC and a custom communication channel) of pipeline conditions. The SIM Service also provides Atmos Batch, Atmos Pig, and Atmos SIM leak detection with information via OPC when configured.

Automation Service

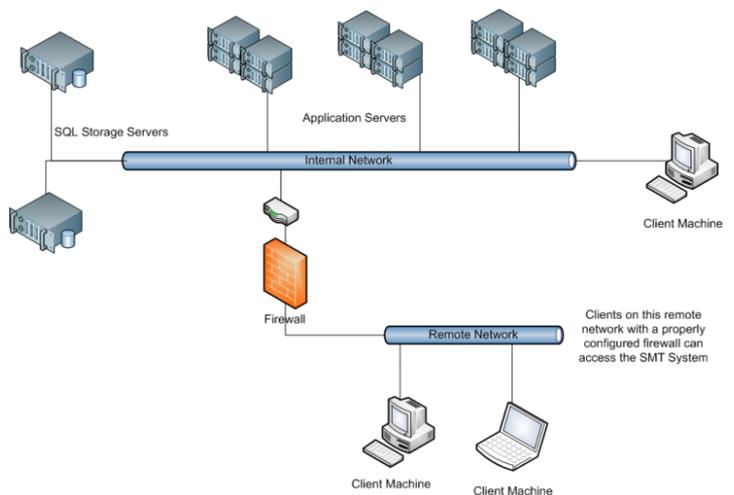
This service provides an extensive interface to control aspects of the SMT via a Data Manager, it can be used to automate tasks for trainer systems or to perform complex actions based on OPC inputs.

Optimizer Service

The Optimizer provides scheduled runs of a specially configured Atmos SIM model to determine the most efficient pipeline operations to meet forecasted demands in the near future. It can be controlled via the Atmos GUI.

SMT Client

The SMT Client is the graphical user interface that allows a user to configure, monitor and control all SMT applications and services. The SMT Client is a crucial part of the overall system.



Atmos International (Atmos) provides pipeline leak detection and simulation technology to the oil, gas, water, and associated industries. The company was founded in 1995 in the UK by the inventor of the statistical pipeline leak detection system – Atmos Pipe,

now one of a suite of leak and theft detection solutions from Atmos. These technologies are implemented on hundreds of pipelines in over 50 countries, including major oil and gas companies such as Shell, BP, ExxonMobil, and Total.

With associated offices in the USA, China, Russia, Singapore and Costa Rica, and local agents in 28 countries, the multi-cultural and multilingual team can provide effective support all over the world.

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