To be able to centrally and safely manage the configurations of all of their Linux systems around the world, the concern initiated a project to select and implement a new solution for configuration and package management. The aim was to standardize the worldwide UNIX/Linux infrastructure and ensure compliance with security and IT policies.

In addition to basic configuration, the tool was intended to allow installation, upgrades and downgrades of packages from centrally managed repositories. The company awarded *matrix technology AG* with the contract for selection and implementation of the solution in the existing tool environment. The Munich–based IT service provider is currently providing the worldwide administration of the UNIX systems, including change coordination. It had already earned a good reputation with the client through various previous projects in the areas of IT infrastructure operations and management.

Challenge

The client's high demands with regard to:

- Security
- Multi-client capability
- Configuration concept
- Rollout
- Granularity
- Connection to external data sources
- Scalability
- Package management

Solution

For the project, *matrix technology AG* implemented the new configuration and package management tool in five steps:

1	2	3	4	5
Functional concept	Installation guidelines	Interface definition	Proof of concept	Implementation

Approach

First, a functional concept was prepared that described the requested scope of services in detail. It defined the following functional areas:

- **Configuration of the OS base**

For example, editing of config files, configuration of settings for the operating system kernel, generation of central info files

- **Configuration of applications that are close to the OS**

For example, Veritas Volume Manager, Veritas Cluster Server

- **Configuration/automation of package management**

For example, package management from and within configuration management, use of packages from frozen repositories, definition of package lists

- **Configuration management security**

For example, connection to the active directory, security audit and documentation, setup of a certificate authority for secure communication, definition of a review and approval process for configuration changes

- **Configuration management backend**

Implementation of numerous functions requested by the client, such as rollback of configuration changes to a previous status, configuration changes (both cyclical and trigger-cont- rolled), fully automated installation, connection and removal of clients to/from the master, serving sites with poor WAN connectivity through a proxy/slave instance

- **Configuration management policies**

For example, declarative instead of procedural definition of configurations, the possibility of retrieving deviations of a client from the target status, atomic changing of files (changing only the part to be edited rather than complete replacement of config files)

- **Continuously ensured configuration reliability**

For example, continuous audit of the system configurations rules with real time alerts, drift reports and automatic remediation. After this, *matrix technology AG* prepared detailed installation instructions for the client as well as interface definitions for external tools. *matrix technology AG* started to extensively index and classify the configuration management tools as candidates for this study. Following tools were taken into consideration in this regard: Puppet, Chef, Saltstack, Ansible, CFEngine and RUDDER. Based on the client´s requirements, only three of them were shortlisted for the poc phase:

- ➤ *Chef Enterprise* – one of the most scalable configuration management tools available
- ➤ *CFEngine3* – the most tested and most scalable configuration management tool
- ➤ *RUDDER* – a modern, web-driven, continuous auditing & configuration management tool as scalable as CFEngine since based on the same technology

Based on the results of the poc, the client finally chose RUDDER, which was implemented by the *matrix* team and handed over as part of an initial briefing on use of the configuration.
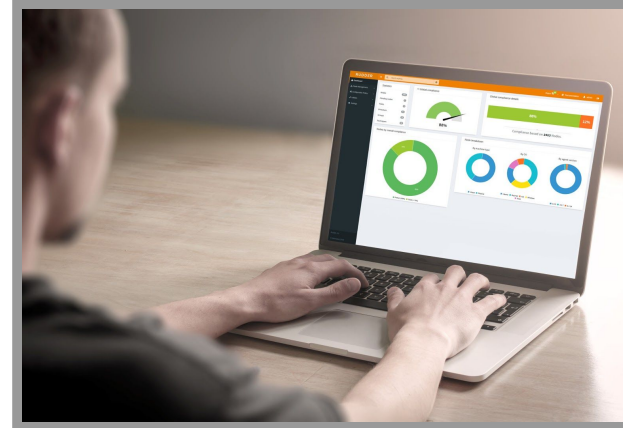
> " After a comparative study including Puppet, Chef, Ansible, Saltstack, CFEngine and RUDDER, the client finally chose RUDDER. "

Project results – Benefits for the Client

- ✓ Successful implementation of the tool for management of about 10,000 UNIX/Linux servers
- ✓ Fully open source
- ✓ SLES-friendly, broad basis tested on OS
- ✓ Maximum scalability
- ✓ Very high distribution of RUDDER
- ✓ Workflow with change management and validation possible
- ✓ Decentralized approach, particularly WAN-friendly
- ✓ Continuous reliability automatically ensured
- ✓ High quality professional support and services provided by RUDDER technical teams

Would you like to know more about Rudder, the French, open source and cross-platform solution for continuous configuration management?
Contact Alexandre at 01 85 08 88 08 or at abr@normation.com