



Enterprise-class Networking

XML-based Network Management

Tail-f Systems is the leading provider of XML-based network management software and tools to enable networking equipment providers to build network management systems. Tail-f's family of products includes ConfD, Instant NETCONF Agent and ConfM. The first two provide embedded network management solutions. ConfD is used to build carrier-grade network management systems with CLI, Web, SNMP, and NETCONF interfaces. Instant NETCONF Agent is a portable tool for adding a northbound NETCONF interface to an embedded management system. ConfM is used for extending the configuration capabilities of EMS/NMS applications.

Flexible Deployment Options

Tail-f's ConfD supports a wide range of hardware deployment models including appliances, blade servers, and chassis. For example, ConfD can reside on a dedicated management blade or be distributed across multiple functional blades in a chassis. While ConfD is designed for performance and scalability, it is also optimized for memory footprint constraints associated with devices found in the wiring closet. ConfD meets the requirements of the data center for performance and reliability while delivering the granular access control required by managed service platforms.

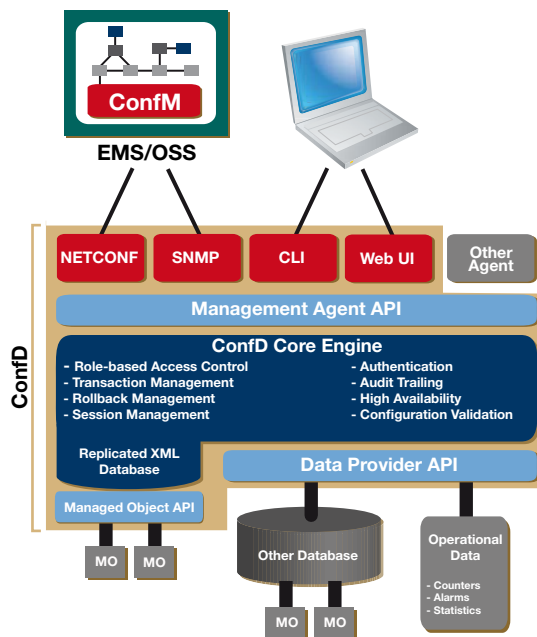


Figure 1: Tail-f Systems Product Overview

Tail-f Systems Capabilities

- Rapid application development
- CLI, Web, SNMP, and NETCONF interfaces
- Southbound NETCONF interface
- Cisco and Juniper style CLIs
- High-performance light weight XML database
- Transaction management
- Replication and high availability
- Clustering
- Fine-grained access control and auditing
- Enterprise-class security
- Compact memory footprint

Powerful Management Interfaces

ConfD enables developers to rapidly build the critical northbound CLI, Web UI, SNMP, and NETCONF management interfaces required by a network device. New northbound interfaces, such as a SOAP interface, can also be easily added to ConfD. All management interfaces are automatically rendered from a common data model using ConfD's powerful software engine. This approach radically speeds time-to-market and reduces sustaining engineering costs resulting from tedious recoding that is typical in stovepipe architecture.



ConfD's CLI and Web UI include a rich set of features designed to meet the needs of network administrators. For example, the CLI interface can be automatically rendered in Cisco (IOS and IOS XR) or Juniper styles. The Web UI uses modern tools such as AJAX that enables real time updates of information. Both CLI and Web UI interfaces can be extended and customized to conform to corporate branding guidelines.

Transaction Management

As networked applications and services increase in complexity so must the process of configuration management. Configuring a new VLAN, provisioning a VPN, or setting up a media session are examples of networking operations that require multiple interdependent steps. In such situations all configuration changes must be made or none at all. Built into ConfD is a powerful function called transaction management that is designed to address situations where synchronization of managed objects is mandatory.

With transaction management multiple configuration steps can be made in a single transaction and only executed once the system has validated that the changes can be consistently implemented. While this approach was first adopted as part of the NETCONF protocol to enable automated configuration changes to large networks, transaction management is now becoming a requirement in the data center where network outages are not tolerated. ConfD supports transaction management across all management interfaces.

Security and Auditing

Security has become a priority at the highest levels inside an organization. In addition to mitigating threats to mission-critical network systems, IT organizations must also comply with a wide range of regulations. ConfD supports fine-grained access controls and auditing as well as robust authorization and authentication systems.

Clustering Network Elements into a Single View

To deliver on the promise of scalable performance, stackable appliances and multi-blade products must have a fast and simple way of configuring added capacity. ConfD enables users to view multiple blades or appliances as if they are a single system and coherently monitor and control them.

Embedded Systems

ConfD is an XML-based software application that allows equipment providers to rapidly build enterprise-class embedded management applications. Developers can choose some or all of the management interfaces supplied with ConfD (CLI, Web, SNMP, and NETCONF) and similarly choose to either use ConfD's database or an existing data store. This flexible product architecture allows ConfD to be used for new projects and as a fast path to augment existing management applications with new functionality. ConfD runs on a wide variety of Linux platforms as well as Solaris and QNX.

Instant NETCONF Agent is a portable software application that allows developers of embedded network management systems to significantly reduce the time and complexity of developing a northbound NETCONF interface.

Element Management

ConfM is a Java-based software engine that provides developers of EMS/NMS software the capability to extend their applications with a southbound NETCONF interface and intelligent network-wide configuration management functions. When added to an EMS/NMS application, ConfM can work with a variety of embedded NETCONF implementations, including Tail-f's own ConfD and Instant NETCONF Agent.

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