

# TACACS+

## Embedded Tacacs+ Client Library



**AuthAgent TACACS+** is a lean, embedded implementation of the Cisco Tacacs+ Protocol version 1.78 as specified in draft-grant-tacacs-02, draft RFC. It implements a client/server mechanism to carry authentication and authorization information between a network service granting privileges and a shared server that has the centralized user and node information required to decide whether such privileges should be granted. When used in conjunction with protocols that secure the network path, **AuthAgent TACACS+** provides a

powerful, yet simple mechanism to authenticate and authorize access to VPNs, dial-up concentrators, Ethernet switches and wireless networks.

The TACACS+ protocol specifies the information exchange between a device provides network access to users (the "Tacacs+ client") and a device that manages authentication information for those users (the "Tacacs+ server"). Having this separation of roles allows for centralized authentication and administration, which is especially

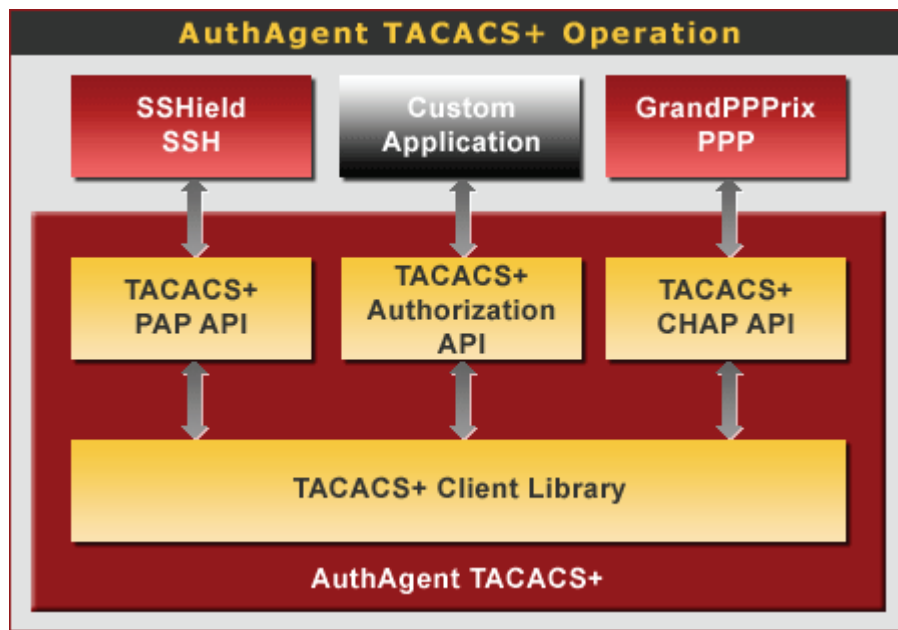
### Features

- ❖ Cisco draft-RFC compliant
- ❖ Includes PAP, CHAP, MS-CHAP and ENABLE client APIs
- ❖ Dynamic Shutdown and Restart.
- ❖ Can be used standalone, or integrated with other security protocols.
- ❖ Support for multiple CPU types (x86, PowerPC, MIPS, ARM/ Xscale)
- ❖ Royalty-free full source code distribution.

attractive to embedded devices that need to verify user credentials and authorize users, without having the overhead of maintaining and administering a database of sensitive user information. **AuthAgent TACACS+** provides a library to build customized Tacacs+ client applications, and facilitates this authentication on embedded devices.

### TACACS+ Security

Security for the Tacacs+ information exchange is enabled by means of a pre-configured shared secret known only to the client application on the **AuthAgent TACACS+** side (configured using its APIs), and to the Tacacs+ server in use. All transactions between them are encrypted using this shared secret, which itself is never sent out over the network. **AuthAgent TACACS+** encrypts sensitive user data, such as passwords, with a stream derived from an MD-5 hash, so that only the two ends of a Tacacs+ link can decode them.



### Special Features

- ❖ Robust interoperability-tested TACACS+ agent library.
- ❖ OS-independent and modular.
- ❖ Integrated into embedded devices with easy-to-use APIs.
- ❖ Supports multiple server configurations.

## Challenge Response Support

Besides supporting password authentication (PAP) logins, **AuthAgent TACACS+** provides APIs to support challenge-response authentication. **AuthAgent TACACS+** supports both CHAP and MS-CHAP authentication.

## Usage Scenarios

**AuthAgent TACACS+** can be used standalone or as an add-on for **TeamF1's** network security protocols included **SSHield**. It can also be combined with third-party security protocol implementations, allowing a common centralized back-end authentication server to hold and administer a user-directory that can be used across the board in an enterprise. Further, its made-for-

embedded design and dynamic shutdown and restart capabilities make it easy to use with a provisioning system.

## Built for OS independence

**AuthAgent TACACS+** is designed from the ground up to work with different operating systems including Linux® 2.4 based kernels, 2.6 based kernels, Green Hills INTEGRITY® and various versions of VxWorks®, including VxWorks-based Platforms such as Wind River® Platform for Network Equipment and others. It has been extensively tested across many CPU architectures and against several open source and Cisco TACACS+ servers. **AuthAgent TACACS+** uses TeamF1's AdaptOS library to abstract OS specific features.

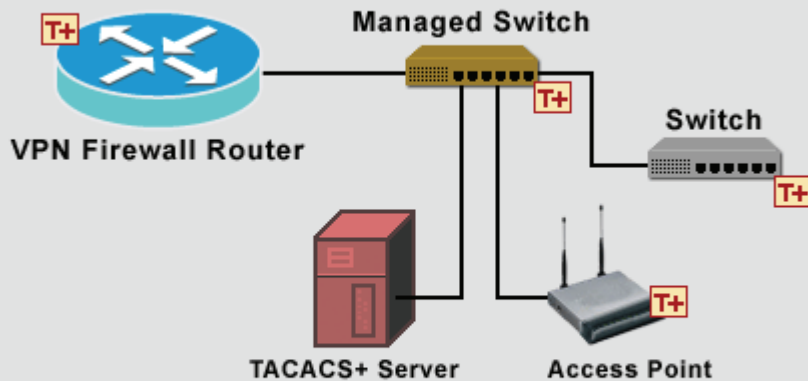
## Also Available

- ❖ **AuthAgent RADIUS**  
*RADIUS Authentication Agent*
- ❖ **AuthAgent X.509**  
*Digital Certificate Authentication*
- ❖ **AuthAgent Kerberos**  
*Kerberos V Authentication*

## Customization Flexibility

- ❖ Flexible APIs for configuring TACACS+ server settings including server name, retry count, timeouts and shared secrets on a serverspecific basis.
- ❖ Supports multiple TACACS+ servers.
- ❖ Can add new authentication methods.
- ❖ Supports all authorization methods through flexible API.
- ❖ Easily ported to new operating systems.
- ❖ Modular architecture allows for easy exclusion of unneeded functionality.

## Example AuthAgent TACACS+ Usage Scenarios



**T+** AuthAgent TACACS+ enabled

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