AAA Double Authentication Secured by Absolute Timeout

The AAA Double Authentication Secured by Absolute Timeout feature allows you to secure the double authentication mechanism by protecting it with a per-user session timeout. This feature optimizes the connections to the network that are authorized by service providers and increases the security of the overall access to the network by ensuring that no unwanted sessions are connected.

- Prerequisites for AAA Double Authentication Secured by Absolute Timeout, on page 1
- Restrictions for AAA Double Authentication Secured by Absolute Timeout, on page 1
- Information About AAA Double Authentication Secured by Absolute Timeout, on page 2
- How to Apply AAA Double Authentication Secured by Absolute Timeout, on page 2
- Configuration Examples for AAA Double Authentication Secured by Absolute Timeout, on page 3
- Additional References, on page 6
- Feature Information for AAA Double Authentication Secured by Absolute Timeout, on page 6

Prerequisites for AAA Double Authentication Secured by Absolute Timeout

- You need access to a Cisco RADIUS or TACACS+ server and should be familiar with configuring RADIUS or TACACS+.
- You should be familiar with configuring authentication, authorization, and accounting (AAA) and enabling AAA automated double authentication.

Restrictions for AAA Double Authentication Secured by Absolute Timeout

- The AAA Double Authentication Secured by Absolute Timeout feature is for PPP connections only. Automated double authentication cannot be used with other protocols, such as X.25 or Serial Line Internet Protocol (SLIP).

- There may be a minimal impact on performance if a TACACS+ server is used. However, there is no performance impact if a RADIUS server is used.

Information About AAA Double Authentication Secured by Absolute Timeout

AAA Double Authentication

Use the AAA double authentication mechanism to pass the first authentication using a host username and password. The second authentication, after the Challenge Handshake Authentication Protocol (CHAP) or the Password Authentication Protocol (PAP) authentication, uses a login username and password. In the first authentication, a PPP session timeout is applied to the virtual access interface if it is configured locally or remotely.

The AAA Double Authentication Secured by Absolute Timeout feature allows you to secure the double authentication mechanism by protecting it with a per-user session timeout. The per-user session timeout, which can be customized, supersedes the generic absolute timeout value. This method works on the same principle as per-user access control lists (ACLs) in double authentication.

How to Apply AAA Double Authentication Secured by Absolute Timeout

Applying AAA Double Authentication Secured by Absolute Timeout

To apply the absolute timeout, you must configure session-timeout in the login user profile as a link control protocol (LCP) per-user attribute. Use the **access-profile** command to enable AAA double authentication. This command is used to apply your per-user authorization attributes to an interface during a PPP session. Before you use the **access-profile** command, you must first reauthorize LCP per-user attributes (for example, Session-Timeout) and then reauthorize Network Control Protocols (NCPs) to apply other necessary criteria, such as ACLs and routes. See the section “Examples for AAA Double Authentication Secured by Absolute Timeout.”

Note The Timeout configuration in a TACACS+ user profile is different from the configuration in a RADIUS user profile. In a RADIUS profile, only one session-timeout is configured, along with the autocommand **access-profile**. The timeout is applied to the EXEC session and to the PPP session respectively. In TACACS+, however, the timeout must be configured under the service types “exec” and “ppp” (LCP) to apply a timeout to the EXEC session and to the PPP session. If the timeout is configured only under the service type “ppp,” the timeout value will not be available during an EXEC authorization, and the timeout will not be applied to the EXEC session.

Configuration Examples for AAA Double Authentication Secured by Absolute Timeout

Example: RADIUS User Profile

The following sample output shows that a RADIUS user profile has been applied and that AAA double authentication has been secured by an absolute timeout:

```
aaapbx2 Password = "password1",
 Service-Type = Framed,
 Framed-Protocol = PPP,
 Session-Timeout = 180,
 Idle-Timeout = 180000,
 cisco-avpair = "ip:inacl#1=permit tcp any any eq telnet"
 cisco-avpair = "ip:inacl#2=permit icmp any any"
broker_default Password = "password1",
 Service-Type = Administrative,
 cisco-avpair = "shell:autocmd=access-profile",
 Session-Timeout = 360,
 cisco-avpair = "ip:inacl#1=permit tcp any any"
 cisco-avpair = "ip:inacl#2=permit icmp any any"
broker_merge Password = "password1",
 Service-Type = Administrative,
 cisco-avpair = "shell:autocmd=access-profile merge",
 Session-Timeout = 360,
 cisco-avpair = "ip:inacl#1=permit tcp any any"
 cisco-avpair = "ip:inacl#2=permit icmp any any"
 cisco-avpair = "ip:route#3=10.4.0.0 255.0.0.0"
 cisco-avpair = "ip:route#4=10.5.0.0 255.0.0.0"
 cisco-avpair = "ip:route#5=10.6.0.0 255.0.0.0"
broker_replace Password = "password1",
 Service-Type = Administrative,
 cisco-avpair = "shell:autocmd=access-profile replace",
 Session-Timeout = 360,
 cisco-avpair = "ip:inacl#1=permit tcp any any"
 cisco-avpair = "ip:inacl#2=permit icmp any any"
 cisco-avpair = "ip:route#3=10.4.0.0 255.0.0.0"
 cisco-avpair = "ip:route#4=10.5.0.0 255.0.0.0"
 cisco-avpair = "ip:route#5=10.6.0.0 255.0.0.0"
```

Example: TACACS User Profile

The following sample output shows that a TACACS+ user profile has been applied and that AAA double authentication has been secured by an absolute timeout.

Remote Host Authentication

The following example shows how to allow the remote host to be authenticated by the local host during the first-stage authentication and provides the remote host authorization profile.

```
user = aaapbx2
 chap = cleartext Cisco
 pap = cleartext cisco
 login = cleartext cisco
```

```
 service = ppp protocol = lcp
  idletime = 3000
  timeout = 3
 service = ppp protocol = ip
  inacl#1="permit tcp any any eq telnet"
 service = ppp protocol = ipx
```

Using the access-profile Command Without Any Arguments

Using the **access-profile** command without any arguments causes the removal of any access lists that are found in the old configuration (both per-user and per-interface) and ensures that the new profile contains only access-list definitions.

```
user = broker_default
 login = cleartext Cisco
 chap = cleartext "cisco"
 service = exec
  autocmd = "access-profile"
! This is the autocommand that executes when broker_default logs in.
  timeout = 6
 service = ppp protocol = lcp
  timeout = 6
 service = ppp protocol = ip
! Put access lists, static routes, and other requirements that are
! needed here. Read the software specifications for details. If you leave
! this blank, the user will have no access lists (not even the ones that were
! installed prior to the creation of this user profile)!
  inacl#1="permit tcp any any"
  inacl#2="permit icmp host 10.0.0.0 any"
 service = ppp protocol = ipx
! Put access lists, static routes, and other requirements that are
! needed here. Read the software specifications for details. If you leave
! this blank, the user will have no access lists (not even the ones that were
! installed prior to the creation of this user profile)!
```

Using the access-profile Command with the merge Keyword

The **merge** keyword in the **access-profile** command is used to remove all old access lists, and any attribute-value (AV) pair is allowed to be uploaded and installed. The use of the **merge** keyword will allow for the uploading of any custom static routes, Service Advertisement Protocol (SAP) filters, and other requirements that users may need in their profiles. Configure the **merge** keyword with care because it leaves everything open in terms of conflicting configurations.

```
user = broker_merge
 login = cleartext Cisco
 chap = cleartext "cisco"
 service = exec
  autocmd = "access-profile merge"
! This is the autocommand that executes when broker_merge logs in.
  timeout = 6
 service = ppp protocol = lcp
 timeout = 6
 service = ppp protocol = ip
! Put access lists, static routes, and other requirements that are
! needed here. Read the software specifications for details. If you leave
! this blank, the user will have no access lists (not even the ones that were
! installed prior to the creation of this user profile)!
  route#1="10.4.0.0 255.0.0.0"
  route#2="10.5.0.0 255.0.0.0"
  route#3="10.6.0.0 255.0.0.0"
```

```
  inacl#5="permit tcp any any"
  inacl#6="permit icmp host 10.60.0.0 any"
 service = ppp protocol = ipx
! Put access lists, static routes, and other requirements that are
! needed here. Read the software specifications for details. If you leave
! this blank, the user will have no access lists (not even the ones that were
! installed prior to the creation of this user profile)!
```

Using the access-profile Command with the replace Keyword

If you use the **access-profile** command with the **replace** keyword, any old configurations are removed and a new configuration is installed.

Note When the **access-profile** command is configured, the new configuration is checked for address pools and address-AV pairs. Because addresses cannot be renegotiated at this point, the command will fail to work when it encounters such an address-AV pair.

```
user = broker_replace
 login = cleartext Cisco
 chap = cleartext "cisco"
 service = exec
  autocmd = "access-profile replace"
! This is the autocommand that executes when broker_replace logs in.
  timeout = 6
 service = ppp protocol = lcp
  timeout = 6
 service = ppp protocol = ip
! Put access lists, static routes, and other requirements that are
! needed here. Read the software specifications for details. If you leave
! this blank, the user will have no access lists (not even the ones that were
! installed prior to the creation of this user profile)!
  route#1="10.7.0.0 255.0.0.0"
  route#2="10.8.0.0 255.0.0.0"
  route#3="10.9.0.0 255.0.0.0"
  inacl#4="permit tcp any any"
 service = ppp protocol = ipx
! Put access lists, static routes, and other requirements that are
! needed here. Read the software specifications for details. If you leave
! this blank, the user will have no access lists (not even the ones that were
! installed prior to the creation of this user profile)!
```

Note The Timeout configuration in a TACACS+ user profile is different from the configuration in a RADIUS user profile. In a RADIUS profile, only one session-timeout is configured, along with the autocommand **access-profile**. The timeout will be applied to the EXEC session and to the PPP session. In the TACACS+ user profile, however, the timeout must be configured under the service types “exec” and “ppp” (LCP) to apply a timeout to the EXEC session and to the PPP session respectively. If the timeout is configured only under the service type “ppp,” the timeout value will not be available during an EXEC authorization, and the timeout will not be applied to the EXEC session.

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Master Command List, All Releases
Security commands	• Security Command Reference: Commands A to C • Security Command Reference: Commands D to L • Security Command Reference: Commands M to R • Security Command Reference: Commands S to Z

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for AAA Double Authentication Secured by Absolute Timeout

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for AAA Double Authentication Secured by Absolute Timeout

Feature Name	Releases	Feature Information
AAA Double Authentication Secured by Absolute Timeout		The AAA Double Authentication Secured by Absolute Timeout feature allows you to secure the double authentication mechanism by protecting it with a per-user session timeout. This feature optimizes the connection to the network by service providers to only connections that are authorized, and it increases the security of the overall access to the network by ensuring that no unwanted sessions are connected.