Modem Script and System Script Support in Large-Scale Dial-Out

This feature module describes the Modem Script and System Script Support in Large-Scale Dial-Out feature and includes the following sections:

Feature Overview

Modem connection and system login chat scripts are often used when asynchronous dial-on-demand routing (DDR) is configured. Currently, however, the large-scale dial-out network architecture does not allow chat scripts for a particular session to be passed through the network. Cisco IOS Release 12.2(2)T allows modem and system chat scripts to pass through large-scale dial-out networks by allocating two new authentication, authorization, and accounting (AAA) attributes for outbound service.

The AAA attributes define specific AAA elements in a user profile. Large-scale dial-out supports Cisco attribute-value (AV) pairs and TACACS+ attributes. The Modem Script and System Script Support in Large-Scale Dial-Out feature provides two new outbound service attributes for passing chat scripts: modem-script and system-script.

Americas Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Benefits

The Modem Script and System Script Support in Large-Scale Dial-Out feature allows users to use modem and system chat scripts by linking them to AAA service outbound attributes for use by Cisco network access servers in large-scale dial-out networks.

Related Documents

- *Cisco IOS Dial Technologies Configuration Guide,* Release 12.2
- *Cisco IOS Security Configuration Guide*, Release 12.2
- *CiscoSecure ACS for Windows NT User Guide 2.0*

Supported Platforms

The Asynchronous Line Monitoring feature feature was developed for and tested on several Cisco device platforms. Check Feature Navigator for the feature sets in which the Asynchronous Line Monitoring feature is available.

Determining Platform Support Through Cisco Feature Navigator

Cisco IOS software is packaged in feature sets that support specific platforms. To get updated information regarding platform support for this feature, access Cisco Feature Navigator. Cisco Feature Navigator dynamically updates the list of supported platforms as new platform support is added for the feature.

Cisco Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or release. Under the release section, you can compare releases side by side to display both the features unique to each software release and the features in common.

To access Cisco Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions at http://www.cisco.com/register.

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Cisco Feature Navigator home page at the following URL:

http://www.cisco.com/go/fn

Supported Standards, MIBs, and RFCs

Standards

No new or modified standards are supported by this feature.

MIBs

No new or modified MIBs are supported by this feature.

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml.

RFCs

No new or modified RFCs are supported by this feature.

Configuration Tasks

See the following sections for configuration tasks for the Modem Script and System Script Support in Large-Scale Dial-Out feature. Each task in the list is identified as either optional or required.

- Creating the Dial-Out Profile (required)
- Creating the Chat Script (required)
- Verifying Modem and System Chat Scripts with Large-Scale Dial-Out (optional but recommended)

Once these tasks are complete, you will need to complete the configuration tasks required for large-scale dial-out. See the chapter "Configuring Large-Scale Dial-Out" in the *Cisco IOS Dial Technologies Configuration Guide*, Cisco IOS Release 12.2.

Creating the Dial-Out Profile

To specify a name for the modem script and, if needed, a system script using cisco-avpair attributes for outbound service, use the following syntax to enter these attributes in the dial-out profile:

```
cisco-avpair = "outbound:modem-script=script-name"
cisco-avpair = "outbound:system-script=script-name"
```

To specify a name for the modem script and, if needed, a system script using TACACS+ attributes for outbound service, use the following syntax to enter these attributes in the dial-out profile:

```
service = outbound {
     modem-script = script-name
    system-script = script-name
}
```

Timesaver Remember that the dial-out profile name must have the characters "-out" appended to it and that the only required attribute for a profile is the Cisco AV pair `outbound:dial-number`.

See the section "Dial-Out Profile Examples" for examples of dial-out profiles.

For more information about defining profiles, see the *Cisco IOS Security Configuration Guide* and the chapter "Configuring Large-Scale Dial-Out" in the *Cisco IOS Dial Services Configuration Guide: Network Services.*

Creating the Chat Script

To configure the modem or system script name in the Cisco network access server (NAS), use the following command in global configuration mode:

Command	Purpose
Router(config)# **chat-script** *script-name expect-send*	Provides commands to dial a modem and commands to log on to remote systems when using DDR.

See the section "Chat Script Example" for an example of a chat script that works with a dial-out-profile.

Verifying Modem and System Chat Scripts with Large-Scale Dial-Out

To verify correct operation of the dial-out profile and modem chat script, use the **debug aaa authorization** command. See the "Verification Example" for a sample of the output from this command.

Monitoring and Maintaining Large-Scale Dial-Out Sessions

To monitor and maintain large-scale dial-out sessions, use the following commands in EXEC mode as needed:

Command	Purpose
Router# **clear dialer sessions**	Removes all dialer sessions and disconnects links.
Router# **debug aaa authorization**	Displays configuration information and information about AAA/TACACS+ authorization.
Router# **show dialer sessions**	Displays all dialer sessions.

Configuration Examples

This section provides the following configuration examples:

- Dial-Out Profile Examples
- Chat Script Example
- Verification Example

Dial-Out Profile Examples

The following is an example of a Cisco AV pair dial-out profile named "evergreen" that defines a modem script named "dialer-script":

```
evergreen-out   Password = "cisco",
      User-Service-Type = Outbound-User
      cisco-avpair = "outbound:dial-number=5551212",
      cisco-avpair = "outbound:addr=5.1.1.1",
```

```
cisco-avpair = "outbound:send-secret=cisco",
cisco-avpair = "outbound:modem-script=dialer-script"
```

The following is an example of how to define the same profile for TACACS+:

```
user = evergreen-out
{
    service = outbound {
        dial-number = 5551212
        addr = 5.1.1.1
        send-secret = cisco
        modem-script = dialer-script
    }
    service = ppp protocol = ip {
        default attribute = permit
    }
}
```

Chat Script Example

The following example creates a chat script for the Cisco NAS that references the dialer-script modem script created in the dial-out profile:

```
chat-script dialer-script "" AT OK ATDT\T TIMEOUT 60 CONNECT
```

Verification Example

Once connection is made, you can verify the configuration using the **debug aaa authorization** privileged EXEC command:

Router# **debug aaa authorization**

```
00:01:07: %LSDialout: temporary debug to verify the data integrity
00:01:07:        dial number = 5551212
00:01:07:        dialnum_count = 1
00:01:07:        force_56 = 0
00:01:07:        routing = 0
00:01:07:        data_svc = -1
00:01:07:        port_type = -1
00:01:07:        map_class =
00:01:07:        modem_script = dialer-script
00:01:07:        system_script =
00:01:07:        ip_address = 5.1.1.1
00:01:07:        send_secret = cisco
00:01:07:        send_auth = -1
00:01:07:        send_name =
00:01:07:        class =
```

Command Reference

This feature uses no new or modified commands. For information about all Cisco IOS commands, go to the Command Lookup Tool at http://tools.cisco.com/Support/CLILookup or to the *Cisco IOS Master Commands List*.

Appendix

The following new Cisco AV pairs and TACACS+ attributes are added to the large-scale dial outbound service attributes:

Modem Script Attribute

Specifies a name for the modem script.

Cisco AV Pair:

```
cisco-avpair = "outbound:modem-script=VALUE"
```

TACACS+ Support:

```
service = outbound {
     modem-script = VALUE
}
```

Value:

Modem script name that you assign.

System Script Attribute

Specifies a name for the system script.

Cisco AV Pair:

```
cisco-avpair = "outbound:system-script=VALUE"
```

TACACS+ Support:

```
service = outbound {
     system-script = VALUE
}
```

Value:

System script name that you assign.

Glossary

AAA—authentication, authorization, and accounting. Suite of network security services that provide the primary framework through which access control can be set up on your Cisco router or access server.

attributes—Data items sent between a network access server and a daemon that are used to direct AAA activities.

authentication, authorization, and accounting—See AAA.

chat script—Strings of text used to send commands for modem dialing, logging in to remote systems, and initializing asynchronous devices connected to an asynchronous line.

dial-out profile—Attributes that define specific AAA elements in a user profile. Large-scale dial-out supports a subset of Ascend AV pairs, RADIUS attributes, and a map class attribute providing outbound dialing services.