



## Configuration Guide

# Configuring SIP Proxy User Templates in AOS

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This configuration guide explains how to create and define a proxy user template on ADTRAN Operating System (AOS) products. This guide provides an overview of Session Initiation Protocol (SIP) proxy user templates, as well as how to configure them. Additionally, the guide provides a user template example configuration.

This guide consists of the following sections:

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## SIP Proxy User Templates Overview

User templates makes it possible to route traffic for users not already known by the SIP proxy. This feature can also direct certain calls to local external public switched telephone network (PSTN) gateways. Users are dynamically added to the proxy user database when an INVITE, SUBSCRIBE, or OPTIONS message is received from the user, allowing SIP messages to be routed for the identified user.

Proxy user templates consist of number patterns used to identify potential SIP proxy users that do not register. The templates also define which users to permit and decline access to the system for processing SIP messages, specify where the users are located, how long they remain in the user database, and which proxy mode to use. All other SIP configuration and call handling settings are beyond the scope of this document. Refer to *Additional Resources on page 6* for a list of additional documents available online at <https://supportforums.adtran.com>.

## Hardware and Software Requirements and Limitations

SIP proxy user templates are supported on AOS products as outlined in the *Product Feature Matrix*, available online at <https://supportforums.adtran.com>.

## Configuring SIP Proxy User Templates

This section provides the steps that are required to configure a SIP proxy user template. Follow these steps to create a user template:

*Step 1: Access the CLI on page 2*

*Step 2: Create a SIP Proxy User Template on page 3*

### Step 1: Access the CLI

To access the CLI on your AOS unit, follow these steps:

1. Boot up the unit.
2. Telnet to the unit (**telnet** <ip address>), for example:

**telnet 10.10.10.1**



*If during the unit's setup process you have changed the default Internet Protocol (IP) address (10.10.10.1), use the configured IP address.*

3. Enter your user name and password at the prompt.



*The AOS default user name is **admin** and the default password is **password**. If your product no longer has the default user name and password, contact your system administrator for the appropriate user name and password.*

4. Enter the Enable mode by entering **enable** at the prompt as follows:

```
>enable
```

5. Enter your Enable mode password at the prompt.



*The default Enable mode password is **password**. If your product no longer has the default Enable password, contact your system administrator for the appropriate password.*

6. Enter the unit's Global Configuration mode as follows:

```
#configure terminal
```

```
(config)#
```

## Step 2: Create a SIP Proxy User Template

Configuring a SIP proxy user template consists of creating the user template, defining the **target**, assigning **accept** patterns to match potential users, specifying the **proxy-mode**, and optionally specifying the **expire-time**. The optional step of defining **reject** patterns to match users for the purpose of rejecting them from the SIP proxy user database is described in Step 3. Use the following steps to configure a proxy user template:

1. Enter the **sip proxy user-template** *<name>* command at the Global Configuration mode prompt to create a proxy user template and enter the proxy user template configuration mode, for example:

```
>enable
```

```
#configure terminal
```

```
(config)#sip proxy user-template Set1
```

```
(config-template-Set1)#
```

2. Define the proxy user's location with the **target** command from within the **Set1** proxy user template configuration mode. This command indicates the host name or IP address, protocol, and port number to use. Issuing the **no** form of this command removes the target configuration. By default, there is no target configured. If a target is configured with no protocol or port specified, the SIP proxy operates using UDP on port 5060. If a protocol is specified, but no port is specified, the SIP proxy uses port 5060.

The following example specifies the users matching the proxy user template **Set1** are located at IP address **10.10.10.3** and to use UDP port **5060**:

```
(config-template-Set1)#target 10.10.10.3
```

3. Define the number patterns to match a user ID to either accept or reject the user as an entry to the SIP proxy user database. If a match is successful, the user originating the SIP message is either accepted as an entry to the database (for accept patterns) or rejected (for reject patterns). Using the **accept** command

creates an accept pattern for the proxy user template and permits SIP message for the matching user. Using the **reject** command creates a reject pattern for the proxy user template and refuses SIP messages for the matching user. When creating a successful proxy user template, at least one accept pattern must be created, but reject patterns are optional. AOS processes the reject patterns before the accept patterns, regardless of the order they appear in the configuration of the proxy user template. Issuing the **no** form of this command removes the configured pattern entry from the proxy user template. You can enter a complete phone number, or use wildcards to help define the user ID number patterns. Repeat this step as many times as necessary to cover all patterns.

Valid characters for templates are as follows:

0 - 9	Match the exact digit(s) only
X	Match any single digit 0 through 9
N	Match any single digit 2 through 9
M	Match any single digit 1 through 8
\$	Match any number string dialed
[]	Match any digit in the list within the brackets (for example, [1,4,6])
,()	Formatting characters that are ignored but allowed
-	Use within brackets to specify a range, otherwise ignored

The following are example template entries using wildcards:

1) NXX-XXXX	Match any 7-digit number beginning with 2 through 9
2) 1-NXX-NXX-XXXX	Match any number with a leading 1, then 2 through 9, then any 2 digits, then 2 through 9, then any 6 digits
3) 555-XXXX	Match any 7-digit number beginning with 555
4) XXXX\$	Match any number with at least 5 digits
5) [7,8]\$	Match any number beginning with 7 or 8
6) 1234	Match exactly 1234

Some template number rules:

- 1) All brackets must be closed with no nesting of brackets and no wildcards within the brackets.
- 2) All brackets can hold digits and commas, for example: [1239]; [1,2,3,9]. Commas are implied between numbers within brackets and are ignored.
- 3) Brackets can contain a range of numbers using a hyphen, for example: [1-39]; [1-3,9].
- 4) The \$ wildcard is only allowed at the end of the template, for example: 91256\$; XXXX\$.

The following example configures the **Set1** proxy user template to permit SIP messages for users with the **256-555** exchange in their ID:

```
(config-template-Set1)#accept 256555XXXX
```

The following example configures the **Set1** proxy user template to reject the user matching ID **2565556031** as an entry to the SIP proxy user database:

```
(config-template-Set1)#reject 2565556031
```

4. Set the appropriate SIP proxy operation mode for users added to the SIP proxy user database by using the **proxy-mode** command. AOS supports three SIP proxy modes: **outbound-proxy**, **stateful**, or **transparent** proxy modes. The three proxy modes can be used simultaneously within an AOS product. Using the **no** form of this command returns to the default setting of **auto**. The **auto** setting detects the correct proxy mode for outbound requests based upon how the INVITE is addressed. The correct proxy mode for inbound requests cannot be detected until the SIP proxy has seen an outbound message from

the user. Therefore, in situations where it is essential to correctly identify the proxy mode for inbound messages, the most appropriate proxy mode should be manually configured, and the **auto** setting should not be used.



*For the optimum interoperability results, ADTRAN recommends using stateful proxy mode with proxy user templates.*

The following example enables stateful proxy mode operation for users added by the **Set1** proxy user template:

```
(config-template-Set1)#proxy-mode stateful
```

- Optional. Set the **expire-time** for the number of seconds before a proxy user entry is removed from the SIP proxy user database. This command applies to a user entry created as a result of matching the specified proxy user template. Issuing the **no** form of this command returns to the default value of **3600** seconds.

The following example sets the time expiration to **7200** seconds (or 2 hours) for the **Set1** proxy user template:

```
(config-template-Set1)#expire-time 7200
```

## Configuration Example

The following is an example configuration creating two SIP proxy user templates: **Set1** and **Set2**. Both user templates use the **stateful** proxy mode and have multiple **reject** and **accept** entries, covering a range of number patterns to match.

```
!
sip proxy
!
sip proxy sip-server primary sip.example.com
!
sip proxy user-template Set1
  target 10.10.10.2
  reject 256555603[25]
  reject 2565556041
  accept 25655560XX
  proxy-mode stateful
!
```

## Additional Resources

The following documents are available online at <https://supportformus.adtran.com> and contain additional information relating to SIP and proxy settings in AOS products:

- For more information about SIP proxy configuration, refer to the configuration guide *Configuring SIP Proxy in AOS*.
- For more information about the CLI, refer to the *AOS Command Reference Guide*.