



# Transform Set Configuration

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This chapter describes how to configure IPsec transform sets.

A transform set is a combination of individual IPsec transforms designed to enact a specific security policy for traffic. During the ISAKMP IPsec security association negotiation, the peers agree to use a particular transform set for protecting a particular data flow. Transform sets combine the following IPsec factors:

- Mechanism for payload authentication—AH transform
- Mechanism for payload encryption—ESP transform
- IPsec mode (transport versus tunnel)

A transform set is a combination of an AH transform, plus an ESP transform, plus the IPsec mode (either tunnel or transport mode).

The following topics are discussed:

- [Process Overview, on page 1](#)
- [Configuring a Transform Set, on page 2](#)
- [Verifying the Crypto Transform Set Configuration, on page 2](#)

## Process Overview

The basic sequence of actions required to configure an IPsec transform set is outlined below.

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- Step 1** Configure a crypto transform set by applying the example configuration in [Configuring a Transform Set, on page 2](#).
  - Step 2** Verify your Crypto Transform Set configuration by following the steps in [Verifying the Crypto Transform Set Configuration, on page 2](#).
  - Step 3** Save your configuration to flash memory, an external memory device, and/or a network location using the Exec mode command **save configuration**. For additional information on how to verify and save configuration files, refer to the *System Administration Guide* and the *Command Line Interface Reference*.
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## Configuring a Transform Set

Use the following example to create the crypto transform set:

```
configure
  context ctxt_name
    crypto ipsec transform-set transform_name ah hmac { md5-96 | none
| sha1-96 } esp hmac { { md5-96 | none | sha1-96 } { cipher { des-cbc |
3des-cbc | aes-cbc } | none }
      mode { transport | tunnel }
    end
```

Notes:

- *ctxt\_name* is the system context in which you wish to create and configure the crypto transform set(s).
- *transform\_name* is the name of the crypto transform set in the current context that you want to configure for IPsec configuration.
- For more information on parameters, refer to the *IPsec Transform Configuration Mode Commands* chapter in the *Command Line Interface Reference*.

## Verifying the Crypto Transform Set Configuration

Enter the following Exec mode command for the appropriate context to display and verify your crypto transform set configuration:

```
show crypto ipsec transform-set transform_name
```

This command produces an output similar to that displayed below using the configuration of a transform set named test1.

```
Transform-Set test1 :
AH : none
ESP : hmac md5-96, 3des-cbc
Encaps Mode : TUNNEL
```