



# Crypto Template IKEv2-Dynamic Payload Configuration Mode Commands

The Crypto Template IKEv2-Dynamic Payload Configuration Mode is used to assign the correct IPSec transform-set from a list of up to four different transform-sets, and to assign Mobile IP addresses. There should be two payloads configured. The first must have a dynamic addressing scheme from which the ChildSA gets a TIA address. The second payload supplies the ChildSA with a HoA, which is the default setting for *ip-address-allocation*.

## Command Modes

Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration

**configure > context** *context\_name* > **crypto template** *template\_name* **ikev2-dynamic** > **payload** *payload\_name*  
**match childsa match** { **any** | **ipv4** | **ipv6** }

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(cfg-crypto-tmpl-ikev2-tunnel-payload) #
```



## Important

The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

- [end](#), on page 1
- [exit](#), on page 2
- [ignore-rekeying-requests](#), on page 2
- [ip-address-allocation](#), on page 3
- [ipsec transform-set](#), on page 4
- [lifetime](#), on page 4
- [maximum-child-sa](#), on page 5
- [rekey](#), on page 6
- [tsi](#) , on page 7
- [tsr](#) , on page 8

# end

Exits the current configuration mode and returns to the Exec mode.

<b>Product</b>	All
<b>Privilege</b>	Security Administrator, Administrator
<b>Syntax Description</b>	<b>end</b>
<b>Usage Guidelines</b>	Use this command to return to the Exec mode.

## exit

Exits the current mode and returns to the parent configuration mode.

<b>Product</b>	All
<b>Privilege</b>	Security Administrator, Administrator
<b>Syntax Description</b>	<b>exit</b>
<b>Usage Guidelines</b>	Use this command to return to the parent configuration mode.

## ignore-rekeying-requests

Ignores CHILD SA rekey requests from the Packet Data Interworking Function (PDIF).

<b>Product</b>	All Security Gateway products
<b>Privilege</b>	Security Administrator
<b>Command Modes</b>	Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration  <b>configure &gt; context <i>context_name</i> &gt; crypto template <i>template_name</i> ikev2-dynamic &gt; payload <i>payload_name</i> match childsa match { any   ipv4   ipv6 }</b>  Entering the above command sequence results in the following prompt:  [ <i>context_name</i> ] <i>host_name</i> (cfg-crypto-tmpl-ikev2-tunnel-payload) #
<b>Syntax Description</b>	<b>ignore-rekeying-requests</b>
<b>Usage Guidelines</b>	Prevents creation of a CHILD SA based on this crypto template.

### Example

The following command prevents creation of a CHILD SA based on this crypto template:

```
ignore-rekeying-requests
```

# ip-address-allocation

Configures IP address allocation for subscribers using this crypto template payload. Configure two payloads per crypto template. The first must have a dynamic address to assign a tunnel inner address (TIA) to the ChildSA. The second payload is configured after a successful MAnaged IP (MIP) initiation and can use the default Home Address (HoA) option.

**Product** All Security Gateway products

**Privilege** Security Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration

**configure > context *context\_name* > crypto template *template\_name* ikev2-dynamic > payload *payload\_name* match childsa match { any | ipv4 | ipv6 }**

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(cfg-crypto-tmpl-ikev2-tunnel-payload)#
```

**Syntax Description** **ip-address-allocation { dynamic | home-address }**  
**default ip-address-allocation**

## default

Sets IP address allocation to the home-address.

## ip-address-allocation dynamic

Specifies that the IP address for the subscriber is allocated from a dynamic IP pool.

## ip-address-allocation home-address

The IP address for the subscriber is allocated by the Home Agent. This is the default setting for this command.

**Usage Guidelines** Use this command to configure how ChildSA payloads are allocated IP addresses for this crypto template.

## Example

The following command is for the first ChildSA and will ensure that it gets a TIA address from an IP address pool:

```
ip-address-allocation dynamic
```

The following command is for the second ChildSA and will ensure that it gets a HoA address from the HA:

```
default ip-address-allocation
```

# ipsec transform-set

Configures the IPSec transform set to be used for this crypto template payload.

**Product** All Security Gateway products

**Privilege** Security Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration

**configure** > **context** *context\_name* > **crypto template** *template\_name* **ikev2-dynamic** > **payload** *payload\_name*  
**match childsa match { any | ipv4 | ipv6 }**

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(cfg-crypto-tmpl-ikev2-tunnel-payload)#
```

**Syntax Description** [ no ] **ipsec transform-set list** *name* [*name2* ] [*name3* ] [*name4* ]

**no**

Specifies the IPSec transform set to be deleted. This is a space-separated list. From 1 to 4 transform sets can be entered. *name* must be an alphanumeric string of 1 through 127 characters.

**name**

Specifies the context configured IPSec transform set name to be used in the crypto template payload. This is a space-separated list. From 1 to 4 transform sets can be entered. *name* must be an alphanumeric string of 1 through 127 characters.

**Usage Guidelines** Use this command to list the IPSec transform set(s) to use in this crypto template payload.

## Example

The following command configures IPSec transform sets named *ipset1* and *ipset2* to be used in this crypto template payload:

```
ipsec transform-set list ipset1 ipset2
```

# lifetime

Configures the number of seconds for IPSec Child SAs derived from this crypto template payload to exist.

**Product** All Security Gateway products

**Privilege** Security Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration

```
configure > context context_name > crypto template template_name ikev2-dynamic > payload payload_name
match childsa match { any | ipv4 | ipv6 }
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name (cfg-crypto-tmpl-ikev2-tunnel-payload) #
```

### Syntax Description

```
lifetime { sec [ kilo-bytes kbytes ] | kilo-bytes kbytes }
default lifetime
```

#### **sec**

Specifies the number of seconds for IPSec Child Security Associations derived from this crypto template payload to exist. *sec* must be an integer from 60 through 604800. Default: 86400

#### **kilo-bytes *kbytes***

Specifies lifetime in kilobytes for IPSec Child Security Associations derived from this crypto template payload. *kbytes* must be an integer from 1 through 2147483647.

#### **default lifetime**

Sets the lifetime to its default value of 86400 seconds.

### Usage Guidelines

Use this command to configure the number of seconds and/or kilobytes for IPSec Child Security Associations derived from this crypto template payload to exist.

#### **Example**

The following command configures the IPSec child SA lifetime to be *120* seconds:

```
lifetime 120
```

## maximum-child-sa

Configures the maximum number of IPSec child security associations that can be derived from a single IKEv2 IKE security association.

### Product

All Security Gateway products

### Privilege

Security Administrator

### Command Modes

Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration

```
configure > context context_name > crypto template template_name ikev2-dynamic > payload payload_name
match childsa match { any | ipv4 | ipv6 }
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name (cfg-crypto-tmpl-ikev2-tunnel-payload) #
```

**Syntax Description** `maximum-child-sa num`  
`default maximum-child-sa`

**maximum-child-sa num**

Specifies the maximum number of IPSec child security associations that can be derived from a single IKEv2 IKE security association. *num* must be 1. Default: 1

**default maximum-child-sa**

Sets the maximum number of Child SAs to its default value of 1.

**Usage Guidelines** Use this command to configure the maximum number of IPSec child security associations that can be derived from a single IKEv2 IKE security association.

**Example**

The following command configures the maximum number of child SAs to 1:

```
maximum-child-sa 1
```

## rekey

Configures IPSec Child Security Association rekeying.

**Product** All Security Gateway products

**Privilege** Security Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration

```
configure > context context_name > crypto template template_name ikev2-dynamic > payload payload_name
match childsa match { any | ipv4 | ipv6 }
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(cfg-crypto-tmpl-ikev2-tunnel-payload) #
```

**Syntax Description** `[ no ] rekey [ keepalive ]`

**no**

Disables this feature.

**keepalive**

If specified, a session will be rekeyed even if there has been no data exchanged since the last rekeying operation. By default, rekeying is only performed if there has been data exchanged since the previous rekey.

**Usage Guidelines** Use this command to enable or disable the ability to rekey IPSec Child SAs after approximately 90% of the Child SA lifetime has expired. The default, and recommended setting, is not to perform rekeying. No rekeying

means the PDIF will not originate rekeying operations and will not process CHILD SA rekeying requests from the UE.

### Example

The following command disables rekeying:

```
no rekey
```

## tsi

Configures the IKEv2 Traffic Selector-Initiator (TSi) payload address options.

### Product

All Security Gateway products

### Privilege

Security Administrator

### Command Modes

Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration

```
configure > context context_name > crypto template template_name ikev2-dynamic > payload payload_name
match childsa match { any | ipv4 | ipv6 }
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(cfg-crypto-tmpl-ikev2-tunnel-payload)#
```

### Syntax Description

```
tsi start-address { any end-address any | endpoint end-address endpoint }
```

#### **any end-address any**

Configures the TSi payload to allow all IP addresses.

#### **endpoint end-address endpoint**

Configures the TSi payload to allow only the Mobile endpoint address. (Default)

### Usage Guidelines

On receiving a successful IKE\_SA\_INIT Response from PDIF, the MS sends an IKE\_AUTH Request for the first EAP-AKA authentication. If the MS is capable of doing multiple-authentication, it includes the MULTI\_AUTH\_SUPPORTED Notify payload in the IKE\_AUTH Request. MS also includes an IDi payload containing the NAI, SA, TSi, TSr, and CP (requesting IP address and DNS address) payloads.

### Example

Use the following example to configure a TSi payload that allows all addresses:

```
tsi start-address any end-address any
```

## tsr

Configures the IKEv2 Traffic Selector-Responder (TSr) payload address options.

---

### Product

All Security Gateway products

---

### Privilege

Security Administrator

---

### Command Modes

Exec > Global Configuration > Context Configuration > Crypto Template Configuration > Crypto Template IKEv2-Dynamic Payload Configuration

**configure** > **context** *context\_name* > **crypto template** *template\_name* **ikev2-dynamic** > **payload** *payload\_name*  
**match childsa match { any | ipv4 | ipv6 }**

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(cfg-crypto-tmpl-ikev2-tunnel-payload) #
```

---

### Syntax Description

[ **no** ] **tsr start-address** *ip address* **end-address** *ip address*

#### **no**

Disables the specified tsr address range.

#### **start-address ip address**

Specifies the starting IP address of the TSr payload in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

See the limitations listed in the *Usage* section.

#### **end-address ipv4 address**

Specifies the ending IP address of the TSr payload in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

See the limitations listed in the *Usage* section.

---

### Usage Guidelines

This command is used to specify an IP address range in the single TSr payload that the PDG/TTG returns in the last IKE\_AUTH message. This TSr is Child SA-specific.

This command is subject to the following limitations:

- The configuration is restricted to a maximum of four TSrs per payload and per childsa.
- Overlapping TSrs are not allowed either inside the same payload or across different payloads.
- When a TSr is configured via this command, only the configured TSr will be considered for narrowing-down. For example, if one IPv4 TSr is configured, and the gateway receives an IPv6 TSr, the gateway will reject the call with a TS\_UNACCEPTABLE notification.
- The UE/PEER must send both INTERNAL\_IP4\_ADDRESS and INTERNAL\_IP6\_ADDRESS in the Configuration Payload, whenever it needs both IPv4 and IPv6 addresses in TSrs. Otherwise, the gateway will respond back with only one type depending upon the type of address received in the Configuration Payload. For example, if the gateway receives only INTERNAL\_IP4\_ADDRESS in the Configuration Payload but both IPv4 and IPv6 addresses are in the TSrs, the GW will narrow down only the IPv4 address, and ignore the IPv6 TSrs.



- IPv4 TSrs are not allowed inside IPv6 payloads.
- IPv6 TSrs are not allowed inside IPv4 payloads.

**Example**

Use the following example to configure a TSr payload that specifies an IPv4 address range for the payload:

```
tsr start-address 10.2.3.4 end-address 10.2.3.155
```

tsr