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## Configuring IPv6 with ESX and ESXi 4.1



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## Purpose

This article provides information about configuring IPv6 with ESX and ESXi 4.1.

## Resolution

## vSphere 4.1 and IPv6

In vSphere 4.1, IPv6 is disabled by default for the COS, the VMkernel, and ESXi.

You can enable IPv6 for the COS and VMkernel from the command line and from Networking Properties.

To enable IPv6 from the command line:

1. Run the commands:

```
#esxcfg-vswif -6 true
#esxcfg-vmknic -6 true
```

2. Reboot.

To enable IPv6 from Networking Properties:

1. In vCenter Server, select the host, click **Configuration > Networking > Properties**.
2. Select **Enable IPv6 support on this host system**.
3. Click **OK**.

## IPsec

Internet Protocol Security (IPsec) is used for secure communication and is included in the TCP/IP protocol stack. Secure communication between two partners is based on cryptographic algorithms with Public or Pre-Shared keys. To establish a secure communication, keys must be exchanged Manually or Automatically:

- Manual Key Exchange (Pre-Shared) – Keys are exchanged through a different communication channel
- Automated Key Exchange – Public keys are exchanged during initialization sequence using the same channel

## Notes:

- ESX supports IPv4 with Internet Key Exchange Version 2 (IKEv2). However, IPv6 does not support IKEv2. IPv6 only supports manual keying.
- IPv6 in ESX supports IPsec with manual keying.

A new set of commands (`esxcfg-ipsec` and `vicfg-ipsec`) provides an interface to configure IPsec properties:

- The command `# esxcfg-ipsec -h` gives further information
- To add a Security Association (SA), run the command:

```
# esxcfg-ipsec --add-sa --sa-src x:x:x:: --sa-dst x:x:x:: --sa-mode transport --ealgo null --spi 0x200 --ialgo hmac-sha1 --ikey key saname
```

- To add a Security Policy (SP), run the command:

```
# esxcfg-ipsec --add-sp --sp-src x:x::/x --sp-dst x:x::/x --src-port 100 --dst-port 200 --ulproto tcp --dir out --action ipsec --sp-mode transport --sa-name saname spname
```

- To add a generic SP with default options, run the command:

```
# esxcfg-ipsec --add-sp --sp-src any --sp-dst any --src-port any --dst-port any --ulproto any --dir out --action ipsec --sp-mode transport --sa-name saname spname
```

- To add a SP (such as a firewall rule), run the command:

```
#esxcfg-ipsec --add-sp --sp-src x:x::/x --sp-dst x:x::/x --src-port 100 --dst-port
```

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VMware ESXi 4.1.x  
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```
200 --ulproto tcp --dir out --action discard sname
```

- To delete an SA, run the command:

```
esxcfg-ipsec --remove-sa saname
```

- To delete a SP, run the command:

```
esxcfg-ipsec --remove-sp sname
```

- To flush all SPs, run the command:

```
esxcfg-ipsec --flush-sp
```

**Note:** IPsec cannot be configured through vSphere Client.

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