

How to Manually Configure failSAFE IP Interfaces

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1. How to Manually Configure failSAFE IP Interfaces

The failSAFE IP product provides network redundancy by allowing the same IP address to be configured on multiple interfaces.

This guide demonstrates how to manually configure failSAFE IP on a single OpenVMS node using two Ethernet interfaces.

In this example:

- WE0 uses the primary IP address 10.1.1.1.
- WE1 uses the primary IP address 10.1.1.2.

Each interface is also configured as the standby interface for the other. Only one instance of an IP address is active at a time. The failSAFE service continuously monitors interface status and automatically performs failover and recovery operations when necessary.

2. Procedure

2.1 Configure the Primary Interfaces

Use the following commands to configure the primary IP addresses for interfaces WE0 and WE1:

Primary IP WE0

```
$ TCPIP SET INTERFACE WE0 /HOST=10.1.1.1 -  
_$/NETWORK_MASK=255.255.255.0 -  
_$/BROADCAST_MASK=10.1.1.255
```

Save the permanent configuration:

```
$ TCPIP SET CONFIGURATION INTERFACE WE0 /HOST=10.1.1.1 -  
_$/NETWORK_MASK=255.255.255.0 -  
_$/BROADCAST_MASK=10.1.1.255
```

Primary IP WE1

```
$ TCPIP SET INTERFACE WE1 /HOST=10.1.1.2 -  
_$/NETWORK_MASK=255.255.255.0 -  
_$/BROADCAST_MASK=10.1.1.255
```

Save the permanent configuration:

```
$ TCPIP SET CONFIGURATION INTERFACE WE1 /HOST=10.1.1.2 -  
_$/NETWORK_MASK=255.255.255.0 -  
_$/BROADCAST_MASK=10.1.1.255
```

2.2 Configure the Standby Interfaces

Configure additional failSAFE standby interfaces so that each interface can assume ownership of the other interface's IP address during a failure.

Standby Interface WEA0

```
$ TCPIP SET INTERFACE WEA0 /HOST=10.1.1.2 -
_$/NETWORK_MASK=255.255.255.0 -
_$/BROADCAST_MASK=10.1.1.255
```

Save the permanent configuration:

```
$ TCPIP SET CONFIGURATION INTERFACE WEA0 /HOST=10.1.1.2 -
_$/NETWORK_MASK=255.255.255.0 -
_$/BROADCAST_MASK=10.1.1.255
```

Standby Interface WEB0

```
$ TCPIP SET INTERFACE WEB0 /HOST=10.1.1.1 -
_$/NETWORK_MASK=255.255.255.0 -
_$/BROADCAST_MASK=10.1.1.255
```

Save the permanent configuration:

```
$ TCPIP SET CONFIGURATION INTERFACE WEB0 /HOST=10.1.1.1 -
_$/NETWORK_MASK=255.255.255.0 -
_$/BROADCAST_MASK=10.1.1.255
```

2.3 Verify the Interface Configuration

Define the TCP/IP command symbols and verify WE0 and WE1 using IFCONFIG.

```
$ @SYS$STARTUP:TCPIP$DEFINE_COMMANDS.COM
```

Display the configuration for each interface:

Configuration for WE0

```
$ IFCONFIG WE0
```

Example output:

```
WE0: flags=c43<UP,BROADCAST,RUNNING,MULTICAST,SIMPLEX>

failSAFE IP Addresses:
    inet 10.1.1.2 netmask ffffffff00 broadcast 10.1.1.255 (on BART WE1)

*inet 10.1.1.1 netmask ffffffff00 broadcast 10.1.1.255 ipmtu 1500
```

Configuration for WE1

```
$ IFCONFIG WE1
```

Example output:

```
WE1: flags=c43<UP,BROADCAST,RUNNING,MULTICAST,SIMPLEX>

failSAFE IP Addresses:
    inet 10.1.1.1 netmask ffffffff00 broadcast 10.1.1.255 (on BART WE0)

*inet 10.1.1.2 netmask ffffffff00 broadcast 10.1.1.255 ipmtu 1500
```

Note

All primary IP addresses are created with a home interface. Home interfaces (*) are preferred failover and recovery targets. failSAFE IP attempts to return IP addresses to their designated home interfaces whenever possible.

2.4 Verify Failover Operation

Important

This command should only be run in a test environment or during a maintenance window, as it disrupts network connectivity.

To simulate a failure of interface WE0, enter the following command:

```
$ IFCONFIG WE0 FAIL
```

Display the interface configuration after the simulated failure:

Interface WE0 Configuration

```
$ IFCONFIG WE0
```

Example output:

```
WE0: flags=c43<UP,BROADCAST,RUNNING,MULTICAST,SIMPLEX>

*failSAFE IP - interface is in a failed state.

failSAFE IP Addresses:
    inet 10.1.1.2 netmask ffffffff00 broadcast 10.1.1.255 (on BART WE1)

    *inet 10.1.1.1 netmask ffffffff00 broadcast 10.1.1.255 (on BART WE1)
```

Interface WE1 Configuration

```
$ IFCONFIG WE1
```

Example output:

```
WE1: flags=c43<UP,BROADCAST,RUNNING,MULTICAST,SIMPLEX>

*inet 10.1.1.2 netmask ffffffff00 broadcast 10.1.1.255 ipmtu 1500

    inet 10.1.1.1 netmask ffffffff00 broadcast 10.1.1.255 ipmtu 1500
```

Notice that interface WE1 now hosts both IP addresses.
