Troubleshoot ISE Static Route Configuration Issues with Bond Interfaces and ADE-OS Network Reset

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Issue

On a Cisco Identity Services Engine (ISE) node running version 3.4.0.608 Patch 4, attempts to remove or re-add static default routes via CLI fail with system-level errors. The issue manifests when trying to manage default routes on bonded interfaces, specifically when the CLI shows two default routes (one via 10.224.12.1 on bond2 and another via 10.224.16.1 on eth0).

When attempting to remove the default route using the command:

```
no ip route 0.0.0.0 0.0.0.0 gateway 10.224.12.1
```

The route remains present in the routing table. When trying to re-add the route:

```
ip route 0.0.0.0 0.0.0.0 gateway 10.224.12.1
```

The system returns these errors:

```
Route is already present in running configuration: RTNETLINK answers: File exists
% Error: Error adding static route.
```

Additionally, attempts to resolve the issue using **reset-config** from the console resulted in the process hanging during "saving running configuration" and ISE services becoming stuck in initializing state.

Environment

- Cisco Identity Services Engine (ISE) version 3.4.0.608 Patch 4
- ISE node with bonded interface configuration (bond2)
- Multiple default routes configured (bond2 and eth0 interfaces)
- Network interface bonding enabled between GigabitEthernet4 and GigabitEthernet5
- Node configured with sponsor portal functionality

Resolution

The resolution involved manually removing stale routing entries from the ADE-OS routing tables and policy routing rules at the Linux root level, followed by proper reconfiguration through the ISE CLI.

Step 1: Access Root Shell and Identify Stale Entries

Access the **ISE node** at root level and examine the **current routing configuration**:

```
ip rule show
```

Check the routing table (table 5 in this case):

```
ip route show table 5
```

Review the **static route configuration file**:

```
cat /opt/system/etc/staticroute.cfg
```

Step 2: Remove Stale Route Entries

Delete the **stale entries** from the route table:

```
ip route delete 10.224.12.0/24 dev bond2 proto kernel table 5
ip route delete default via 10.224.12.1 dev bond2 table 5
```

Remove the **policy routing rule**:

```
ip rule delete from 10.224.12.20 table 5 priority 900
```

Step 3: Clean Static Route Configuration File

Edit and clear the **static route configuration file**:

```
viedit /opt/system/etc/staticroute.cfg
```

Delete **all entries** inside this file, or alternatively remove **the file** entirely:

```
rm -rf /opt/system/etc/staticroute.cfg
```

Step 4: Reconfigure Route via ISE CLI

After cleaning the stale entries, reconfigure the **default route** through the ISE CLI:

```
configure terminal
ip route 0.0.0.0 0.0.0.0 gateway 10.224.12.1
end
```

Verify the route configuration:

```
show ip route
```

Step 5: Rejoin ISE Cluster

If the node was deregistered from the ISE cluster during troubleshooting, rejoin it to the deployment after confirming stable routing operation.

⚠**Caution**: Possible. The details mentioned here appear to contain procedures or commands that could cause significant impact if executed. Please ensure these procedures or commands have been evaluated by an SME or Business Unit before executing or recommending.

Cause

The issue was caused by stale routing entries in the ADE-OS routing tables and policy routing rules that became desynchronized from the ISE running configuration. This desynchronization occurred due to multiple route configuration changes performed while ISE services were running, particularly involving bonded interfaces and sponsor portal configurations. The Linux kernel routing tables retained entries that conflicted with ISE CLI operations, preventing proper route management through the standard ISE interface.

Historical logs showed the default route had been removed and re-added multiple times, but insufficient debug information was available to identify the original trigger for the routing behavior.

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