



# OSPF Forwarding Address Suppression in Translated Type-5 LSAs

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The OSPF Forwarding Address Suppression in Translated Type-5 LSAs feature causes a not-so-stubby area (NSSA) area border router (ABR) to translate Type-7 link state advertisements (LSAs) to Type-5 LSAs, but to use the address 0.0.0.0 for the forwarding address instead of that specified in the Type-7 LSA. This feature causes devices that are configured not to advertise forwarding addresses into the backbone to direct forwarded traffic to the translating NSSA ABRs.

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## Prerequisites for OSPF Forwarding Address Suppression

This document presumes that you have OSPF configured on the networking device; it does not document other steps to configure OSPF.

## Information About OSPF Forwarding Address Suppression

### Benefits of OSPF Forwarding Address Suppression

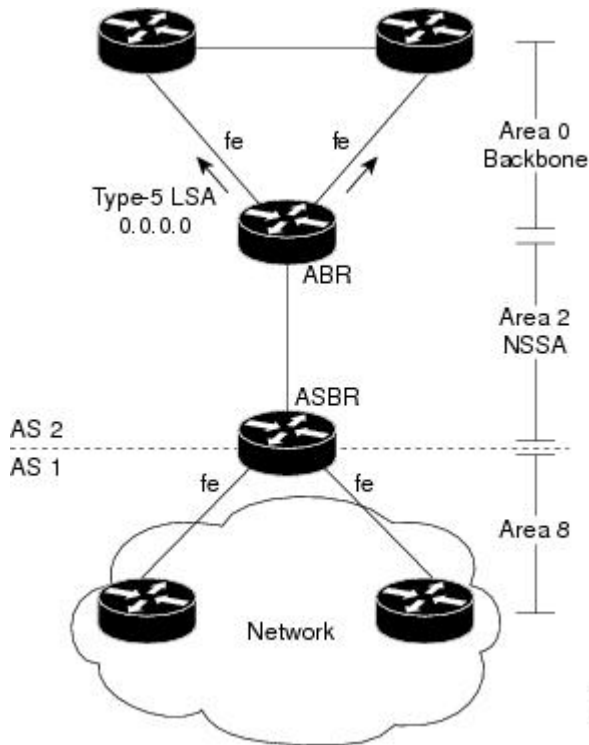
The OSPF Forwarding Address Suppression in Translated Type-5 LSAs feature causes an NSSA ABR to translate Type-7 LSAs to Type-5 LSAs, but use the 0.0.0.0 as the forwarding address instead of that specified in the Type-7 LSA. This feature causes devices that are configured not to advertise forwarding addresses into the backbone to direct forwarded traffic to the translating NSSA ASBRs.

### When to Suppress OSPF Forwarding Address in Translated Type-5 LSAs

In the figure below, it would be advantageous to filter Area 2 addresses from Area 0 to minimize the number of routes introduced into the backbone (Area 0). However, using the **area range** command to consolidate and

summarize routes at the area boundary--filtering the Area 2 addresses--will not work because the Area 2 addresses include forwarding addresses for Type-7 LSAs that are generated by the ASBR. If these Type-7 LSA forwarding addresses have been filtered out of Area 0, the backbone routers cannot reach the prefixes advertised in the translated Type-5 LSAs (autonomous system external LSAs).

**Figure 1: OSPF Forwarding Address Suppression in Translated Type-5 LSAs**



This problem is solved by suppressing the forwarding address on the ABR so that the forwarding address is set to 0.0.0.0 in the Type-5 LSAs that were translated from Type-7 LSAs. A forwarding address set to 0.0.0.0 indicates that packets for the external destination should be forwarded to the advertising OSPF device, in this case, the translating NSSA ABR.

Before configuring this feature, consider the following caution.



**Caution** Configuring this feature causes the device to be noncompliant with RFC 1587. Also, suboptimal routing might result because there might be better paths to reach the destination's forwarding address. This feature should not be configured without careful consideration and not until the network topology is understood.

## How to Suppress the OSPF Forwarding Address

### Suppressing the OSPF Forwarding Address in Translated Type-5 LSAs

This task describes how to suppress the OSPF forwarding address in translated Type-5 LSAs. Before configuring this feature, consider the following caution.

**Caution**

Configuring this feature causes the device to be noncompliant with RFC 1587. Also, suboptimal routing might result because there might be better paths to reach the destination's forwarding address. This feature should not be configured without careful consideration and not until the network topology is understood.

**SUMMARY STEPS**

1. **enable**
2. **configure terminal**
3. **router ospf *process-id***
4. **area *area-id* nssa translate type7 suppress-fa**
5. **end**

**DETAILED STEPS**

	<b>Command or Action</b>	<b>Purpose</b>
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> enable	Enables higher privilege levels, such as privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# configure terminal	Enters global configuration mode.
<b>Step 3</b>	<b>router ospf <i>process-id</i></b> <b>Example:</b> Device(config)# router ospf 1	Enables OSPF routing and enters router configuration mode. <ul style="list-style-type: none"> <li>• The <i>process-id</i> argument identifies the OSPF process.</li> </ul>
<b>Step 4</b>	<b>area <i>area-id</i> nssa translate type7 suppress-fa</b> <b>Example:</b> Device(config-router)# area 10 nssa translate type7 suppress-fa	Configures an area as a not-so-stubby-area (NSSA) and suppresses the forwarding address in translated Type-7 LSAs.
<b>Step 5</b>	<b>end</b> <b>Example:</b> Device(config-router)# end	Exits configuration mode and returns to privileged EXEC mode.

# Configuration Examples for OSPF Forwarding Address Suppression

## Suppressing OSPF Forwarding Address in Translated Type-5 LSAs Example

This example suppresses the forwarding address in translated Type-5 LSAs:

```
interface gigabitethernet 0/0/0
 ip address 10.93.1.1 255.255.255.0
 ip ospf cost 1
!
interface gigabitethernet 0/0/1
 ip address 10.94.1.1 255.255.255.0
!
router ospf 1
 network 10.93.0.0 0.0.255.255 area 0.0.0.0
 network 10.94.0.0 0.0.255.255 area 10
 area 10 nssa translate type7 suppress-fa
```

## Additional References

The following sections provide references related to OSPF Forwarding Address Suppression in Translated Type-5 LSAs:

### Related Documents

Related Topic	Document Title
OSPF commands	<i>Cisco IOS IP Routing: OSPF Command Reference</i>
Configuring OSPF	"Configuring OSPF"
Cisco IOS master command list, all releases	<a href="#">Cisco IOS Master Command List, All Releases</a>
OSPFv3 Address Families	" <i>OSPFv3 Address Families</i> " module

### Standards

Standard	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	--

**MIBs**

MIB	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

**RFCs**

RFC	Title
RFC 1587	<i>The OSPF NSSA Option</i>  <b>Note</b> Configuring the OSPF Forwarding Address Suppression in Translated Type-5 LSAs feature causes the router to be noncompliant with RFC 1587, <i>The OSPF NSSA Option</i>

**Technical Assistance**

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	<a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a>

## Feature Information for OSPF Forwarding Address Suppression

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

**Table 1: Feature Information for OSPF Forwarding Address Suppression in Translated Type-5 LSAs**

Feature Name	Releases	Feature Information
OSPF Forwarding Address Suppression in Translated Type-5 LSAs	Cisco IOS XE Release 2.1	<p>The OSPF Forwarding Address Suppression in Translated Type-5 LSAs feature causes a not-so-stubby area (NSSA) area border router (ABR) to translate Type-7 link state advertisements (LSAs) to Type-5 LSAs, but to use the address 0.0.0.0 for the forwarding address instead of that specified in the Type-7 LSA. This feature causes routers that are configured not to advertise forwarding addresses into the backbone to direct forwarded traffic to the translating NSSA ABRs.</p> <p>The following commands are introduced or modified in the feature documented in this module:</p> <ul style="list-style-type: none"> <li>• <b>area nssa translate</b></li> <li>• <b>show ip ospf</b></li> </ul>

**Table 2: Feature Information for OSPF Forwarding Address Suppression in Translated Type-5 LSAs**

Feature Name	Releases	Feature Information
OSPF Forwarding Address Suppression in Translated Type-5 LSAs	Cisco IOS XE Release 17.4	This feature was introduced.