[redacted]

[redacted]

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How to Configure

CHAPTER 1

Configuring OSPF

Information About OSPF

Cisco OSPF Implementation

- Broadcast networks (Ethernet, Token Ring, and FDDI)
- Nonbroadcast multiaccess (NBMA) networks (Switched Multimegabit Data Service [SMDS], Frame Relay, and X.25)
-

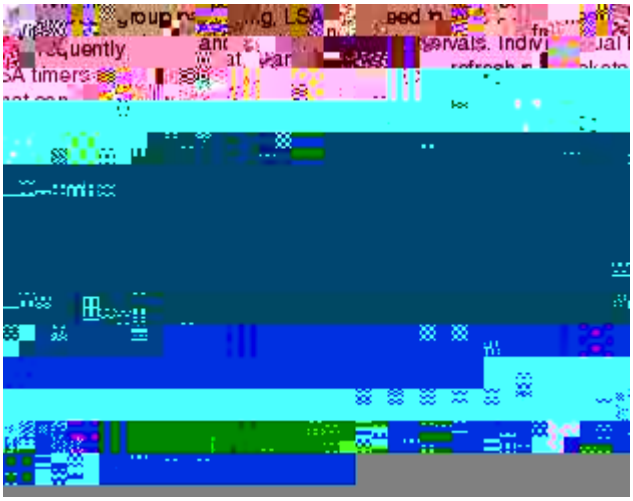
Because many routers might be attached to an OSPF network, a *designated router* is selected for

OSPF uses the largest IP address configured on the interfaces as

The

The figure below illustrates the case of refresh packets. The first timeline illustrates individual LSA timers; the second timeline illustrates individual LSA timers with group pacing.

Figure 3: OSPF LSAs on Individual Timers with Group Pacing



The group pacing

The former OSPF implementation for sending

DETAILED STEPS

DETAILED STEPS

Configuring OSPF for Nonbroadcast Networks

SUMMARY STEPS

1. **configure terminal**
2. **interface** *type number*
3. **ip ospf network point-to-multipoint non-br**

Configuring Route Summarization Between OSPF Areas

Configuring Route Summarization When Redistributing Routes into OSPF

SUMMARY STEPS

1. **summary-address** {*ip-address mask* | *prefix mask*} [**not-advertise**][**tag** *tag* [**nssa-only**]

DETAILED STEPS

Generating a Default Route

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospf** *process-id*
4. **default-information originate** [**always**] [**metric** *metric-value*] [**metric-type** *type-value*] [**route-map** *map-name*]
5. **end**

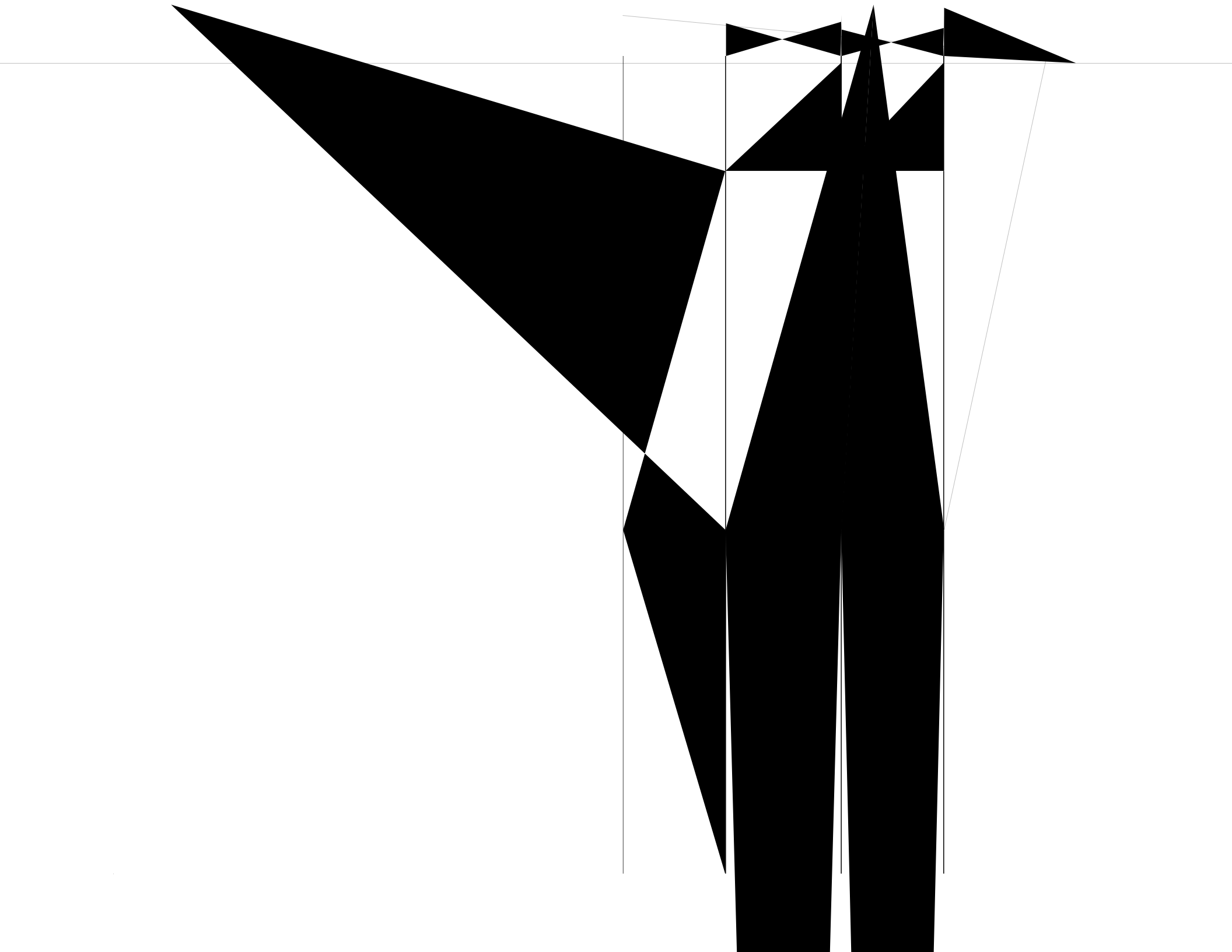
DETAILED STEPS

Configuring Lookup of DNS Names

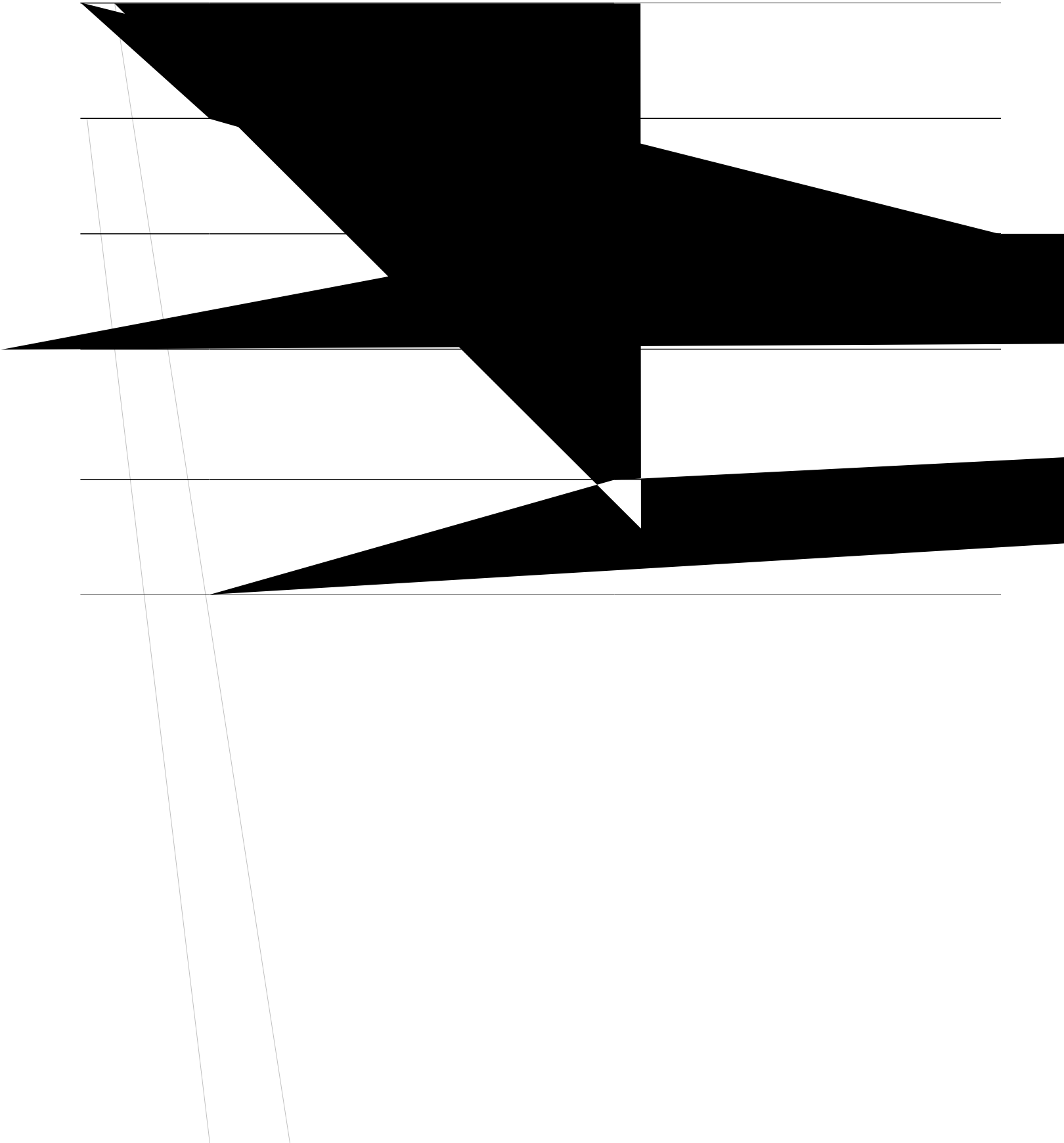
SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip ospf name-lookup**
4. **end**

DET



DETAILED STEPS



DETAILED STEPS

Logging Neighbors Going Up or Down

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospf** *process-id*
4.

Changing the LSA Group Pacing Interval

SUMMARY STEPS

1. **enable**
2. **configurc N able**

Monitoring and Maintaining OSPF

	Purpose
show ip ospf neighbor [*interface-name*] [*neighbor-id* **detail**	Displays OSPF neighbor information
	Displays a list

Restrictions for OSPF

On systems with a large number of interfaces, it may be possible to configure OSPF such that the number of links advertised in the router LSA

Router 2 Configuration

```
hostname Router 2
!
interface serial 0
 ip address 10.0.0.1 255.0.0.0
 ip ospf network point-to-multipoint
 encapsulation frame-relay
 frame-relay map ip 10.0.0.2 101 broadcast
 frame-relay map ip 10.0.0.4 102 broadcast
!
router ospf 1
 network 10.0.0.0 0.0.0.255 area 0
```

Router 3 Configuration

```
hostname Router 3
!
interface serial 3
 ip address 10.0.0.4 255.0.0.0
 ip ospf network point-to-multipoint
 encapsulation frame-relay
 clock rate 1000000
 frame-relay map ip 10.0.0.1 401 broadcast
 frame-relay map ip 10.0.0.2 402 broadcast
!
router ospf 1
 network 10.0.0.0 0.0.0.255 area 0
```

Router 4 Configuration

```
hostname Router 4
!
interface serial 2
```

LS RVCI
180.5051
5RXWH28500DP6.4 399.544 Tm(000905000000 650.104 Tm1905000000H)Tj1 0 0 1 177.6 382.584 Tm(VHU9050000063

The following example shows the configuration of the neighbor at 10.0.1.3:

```
interface serial 0
 ip address 10.0.1.3 255.255.255.0
 ip ospf network point-to-multipoint
 encapsulation frame-relay
 frame-relay
```

```
frame-relay local-dlci 301
frame-relay map ip 10.0.1.1
```

```
!
router ospf 1
 area 1 nssa
!
end
```

Device 2

```
hostname
```

Device 4

```
hostname Device4
!
```

```
LSA group pacing timer 240 secs
Interface flood
```

```
!
! Interface Ethernet0 is in
```

Example: Complex Internal Router with ABR and ASBR

The following example outlines a configuration for

You do not need to include definitions of all areas in an OSPF

Example: Complex OSPF Configuration for ABR

The following sample configuration accomplishes several tasks in setting up an ABR. These tasks can be

The

```
route map 1 permit
 match tag 5
 set metric 5
```

In the following configuration, a RIP-learned route

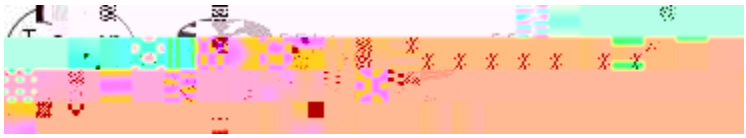
Example: Changing the OSPF Administrative Distances

The following configuration changes the external distance to 200, making it

Example: OSPF over On-Demand Routing

The following configuration allows OSPF over an on-demand circuit, as shown in the figure below. Note that the on-demand circuit is defined on one side only (BRI 0 on Router A); it is not required to be configured on both sides.

Figure 8: OSPF over On-Demand Circuit



Router A Configuration

```
username RouterB password 7 060C1A2F47
```

network 192.168.45.50 0.0.0.255 area

RFCs

Table 3: Feature Information for OSPF

CHAPTER 2

OSPFv3 Graceful Restart

The

To perform the graceful restart

	Command or Action	Purpose

```
Router status : Active
Router is running in SSO mode
OSPF restart state : NO_RESTART
Router ID 10.1.1.1, checkpoint Router ID 10.0.0.0
```

The following

Related Topic	Document Title
OSPFv3 M	*NSF-OSPF RFC 3623 OSPF Graceful Restart* module

Table 4: Feature Information for OSPFv3 Graceful Restart

CHAPTER 9

IPv6 Routing: OSPFv3

Open Shortest Path First version 3 (OSPFv3) is an IPv4 and IPv6 link-state routing protocol that supports IPv6 and IPv4 unicast address families (AFs).

- Finding Feature

OSPFv3 Customization

You can customize OSPFv3 for your network, but you likely will not need

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospfv3** [*process-id*]
4. **area** *area-ID* [**default-cost** | **nssa** | **stub**]

DETAILED STEPS

Forcing an SPF Calculation

SUMMARY STEPS

Configuration Examples for Load Balancing in OSPFv3

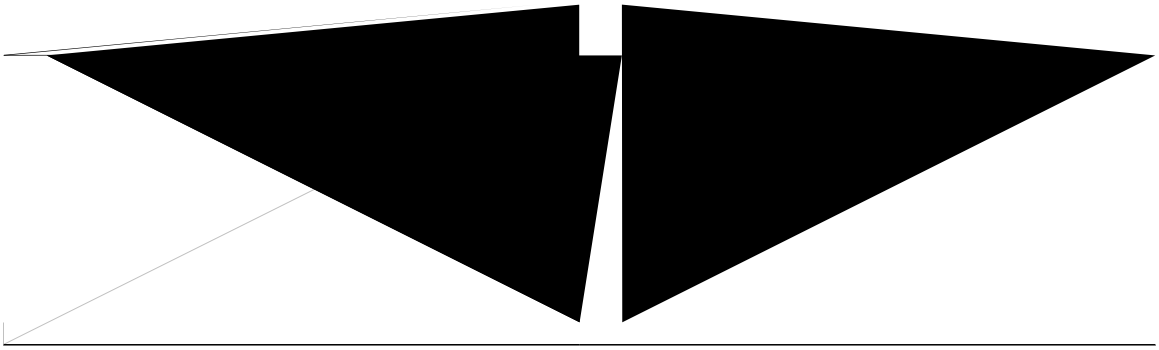
Example: Configuring the OSPFv3 Device Process

```
Device# show ospfv3 database
            OSPFv3 Device with ID (172.16.4.4)
```

Example: Forcing SPF Configuration

The following example shows how to trigger SPF to redo the SPF and F

Technical Assistance



When this third option is

Configuring Advertisement Until Routing Tables Converge

SUMMARY STEPS

1. Router(config)# **router ospf** *process-id*
2. **R**outer(config-router)# **max-metric rM**

	Command or Action	Purpose

The

```
Area Border Router
AS Boundary Router
Number of Links: 3

  Link connected to: a Transit Network
  (Link ID) Designated
```

Example Graceful Shutdown

In the

Technical Assistance

CHAPTER 9

OSPFUpdatePacket-PacingConfigurableTimers

This

- Cisco 7200 series
- Cisco 7400 series
- Cisco 7500 series

Determining Platform Support Through Cisco Feature Navigator

Cisco IOS software is packaged in feature sets that support specific platforms. To get updated information regarding platform support for this

Configuring a Group Packet Pacing Timer

To configure a retransmission packet pacing timer, use the following commands beginning in router configuration mode:

SUMMARSUMMAR

Verifying OSPF Packet-Pacing Timers

To verify that OSPF packet pacing has been configured, use the **show ip ospf**privileged EXEC command. The output of the **show ip ospf**command will display the type and delay time of the configurable pacing timers (flood, retransmission, group).

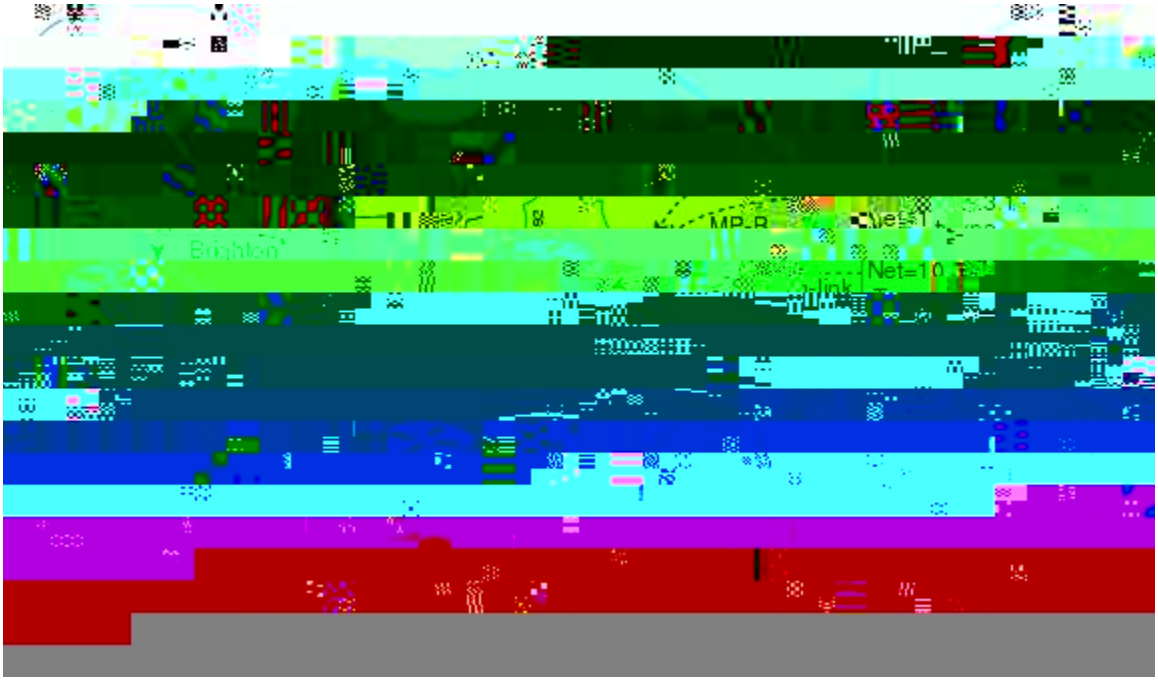
Monitoring and Maintaining OSPF Packet-Pacing Timers

Feature Overview

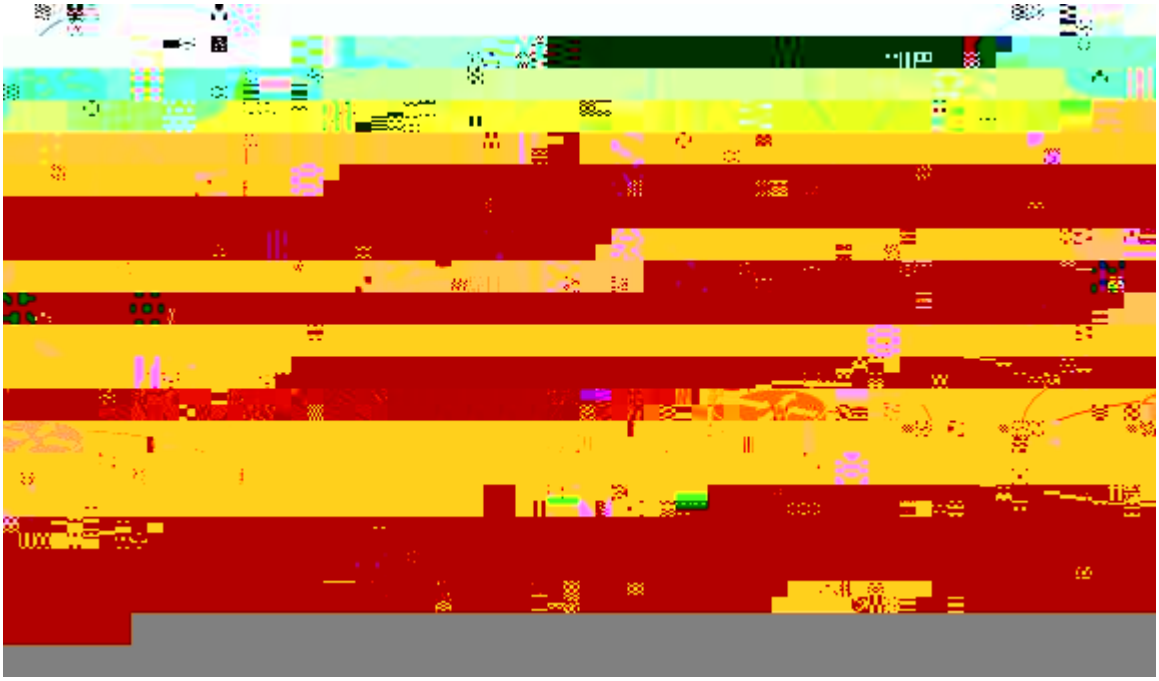
Using OSPF in PE-CE Router Connections

In an MPLS VPN configuration,

```
    Extended Community: RT:1:793 OSPF DOMAIN ID:0.0.0.100 OSPF
    RT:1:2:0 OSPF 2
Local
  10.3.1.2
```



Because the sham-link is seen



The following example

Restrictions

When OSPF is used as a protocol between PE and CE routers, the OSPF metric is preserved when routes are advertised over the VPN backbone. The metric is

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL:

http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

RFCs

No new or modified RFCs are supported by this feature.

SUMMARY STEPS

1. Router1# **configure terminal**
2. Router1(config)# **interface loopback** *interface-number*
3. Router1(config-if)# **ip vrf forwarding** *vrf-name*
4. Router1(config-if)# **ip address** *ip-address mask*
5. Router1(config)# **end**
6. Router2# **configure terminal**
7. Router2(config)# **interface loopback** *interface-number*
8. Router2(config-if)# **ip vrf forwarding** *vrf-name*
9. Router2(config-if)# **ip address** *ip-address mask*
10. Router1(config)# **end**
11. Router1(config)# **router ospf** *process-id vrf vrf-name*
12. Router1(config-if)# **area***area-id* **sham-link***source-address destination-address* **cost**

Monitoring and Maintaining a Sham-Link

SPF

between the OSPF and BGP protocols. When VPN routing and

	Command or Action	Purpose
	Example:	

```
ip vrf grc
   rd
```

MIBs

Table 10: Feature Information for OSPF Support for Multi-VRF on CE Routers

How to Suppress OSPF Forwarding Address in Translated Type-5 LSAs

Suppressing OSPF Forwarding Address in Translated Type-5 LSAs

Configuring this

Table 11: Feature Information for OSPF Forwarding Address Suppression in Translated Type-5 LSAs

Feature Name	Releases	Feature Information
		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.

[redacted]

Information About OSPF Inbound Filtering Using Route Maps with a Distribute List

Users can define a route map to prevent OSPF routes from being added to the routing table. This filtering happens at the moment when OSPF is installing the route in the routing table. This feature has no effect on link-state advertisement (LSA) flooding. In the route map, the user

RFCs

Table 12: Feature Information for OSPF Inbound Filtering Using Route Maps with a Distribute List

[redacted]

Information About OSPFv3 Fast Convergence: LSA and SPF Throttling

Fast Convergence: LSA and SPF Throttling

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ipv6 router ospf** *process-id*
4. **timers throttle spf** *spf-start spf-hold spf-max-wait*
5. **timers throttle lsa** *start-interval hold-interval max-interval*
6. **timers lsa arrival** *milliseconds*
7. **timers pacing flood** *milliseconds*

DETAILED STEPS

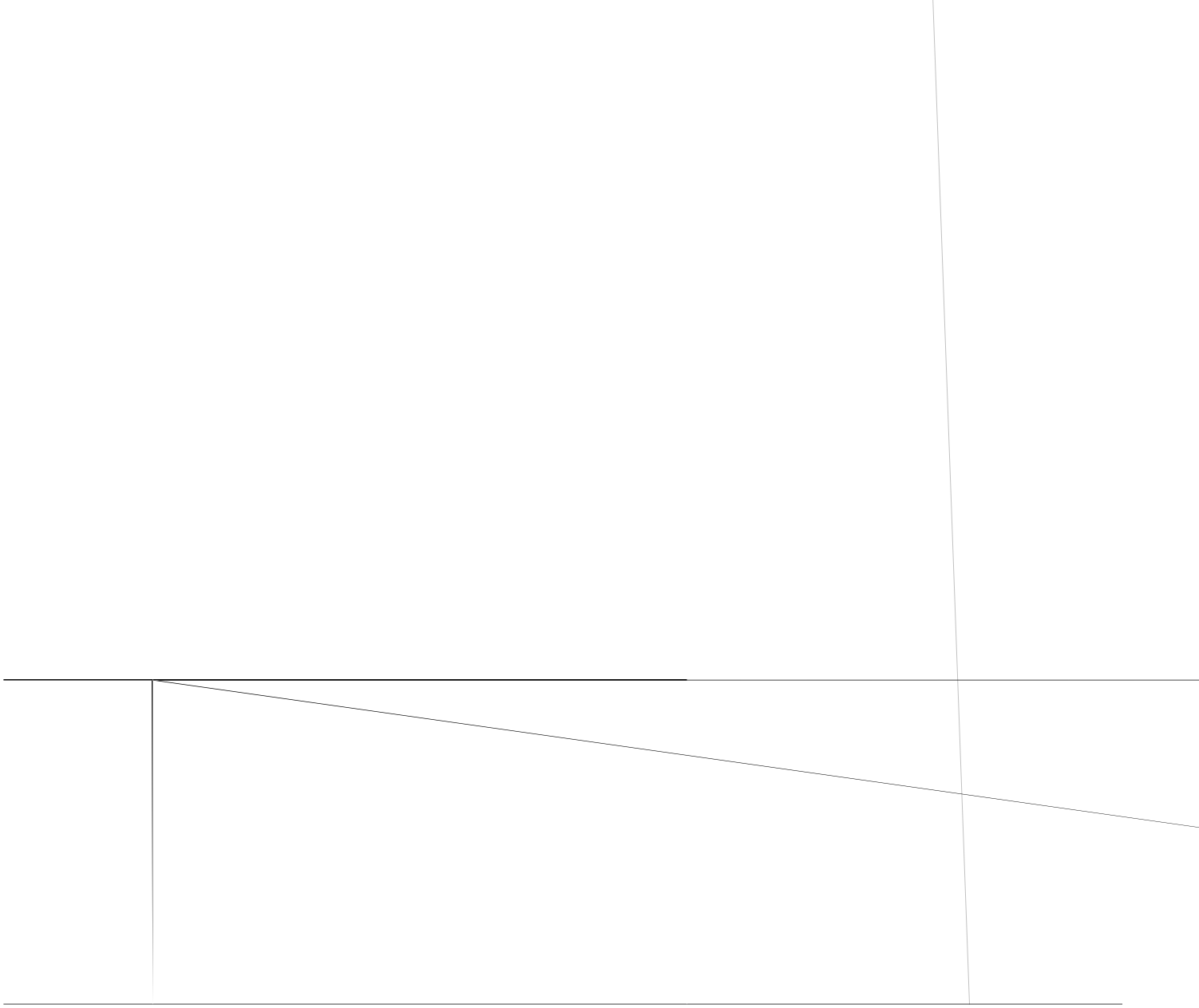
Related Topic	Document Title
	OSPF Shortest Path ني

Table 13: Feature Information for OSPFv3 Fast Convergence: LSA and SPF Throttling

Feature Name	Releases	Feature Information

CHAPTER 11

This feature also provides the ability to shut down OSPFv3 on a specific interface. In this case, OSPFv3 will not advertise the interface or form adjacencies over it; however,

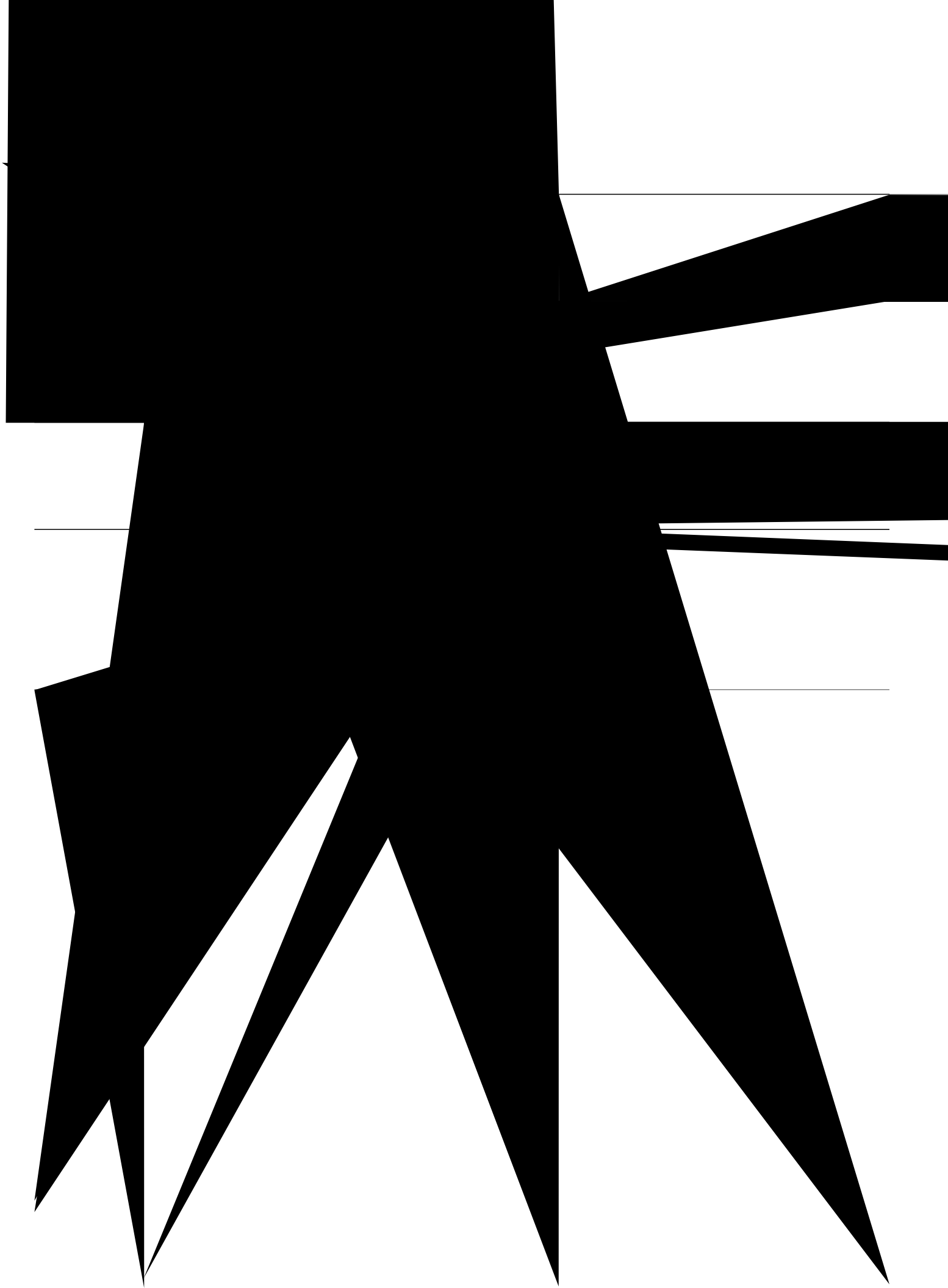


DETAILED STEPS

CHAPTER 12

OSPFv3 ABR Type 3 LSA Filtering

This



Additional References for OSPFv3 ABR Type 3 LSA Filtering

Related Documents

Feature Information for OSPFv3 ABR Type 3 LSA Filtering

The following table provides release information about the feature or features described in this module. This table

How to Configure OSPFv3 Demand Circuit Ignore

Configuring Demand Circuit Ignore Support for OSPFv3

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. Enter one of the

CHAPTER 1

OSPFv3 External Path Preference Option

The Open Shortest Path First version 3 (OSPFv3) external path preference option feature h

These rules

Table 17: Feature Information for OSPFv3 External Path Preference Option

CHAPTER 19

Configuring NSSA for OSPFv3

Cisco Open Short Shortest Path

How to Configure NSSA for OSPFv3

Configuring an OSPFv3 NSSA Area and Its Parameters

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospfv3**

	Command or Action	Purpose
		Configures

DETAILED STEPS

```
Router is not originating router-LSAs with maximum metric
Initial SPF schedule delay 5000 msecs
Minimum hold time between two consecutive SPFs 10000 msecs
Maximum wait time between two consecutive SPFs 10000 msecs
Minimum LSA interval 5 secs
Minimum LSA arrival 1000 msecs
LSA group pacing timer 240 secs
Interface flood pacing timer 33 msecs
Retransmission pacing timer 66 msecs
Number of external LSA 0. Checksum Sum 0x
```

Additional References for Configuring NSSA for OSPFv3

Related Documents

Table 19: Feature Information for Configuring NSSA for OSPFv3

How to Configure Prefix Suppression Support for OSPFv3

Configuring Prefix Suppression Support of the OSPFv3 Process

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router**

DETAILED STEPS

Troubleshooting IPv4 and IPv6 Prefix Suppression

Configuration Examples for Prefix Suppression Support for OSPFv3

Example: Configuring Prefix Suppression Support for OSPFv3

The following example shows how to configure prefix suppression support for OSPFv3 in router configuration mode:

```
router ospfv3 1
 prefix-suppression
 !
 address-family
```

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation,	http://www.cisco.com/cisco/web/support/index.html M

[redacted]

CHAPTER 17

Information About OSPF Retransmissions Limit

Overview About OSPF Retransmissions Limit

Cisco IOS Release 12.2(4)T added a limit to the number of retransmissions of database exchange and update packets for both demand and non-demand circuits. The retransmission

Table 21: Feature Information for OSPF Retransmissions Limit

Feature Name	Releases	Feature Information
		The

Prerequisites for Excluding Connected IP Prefixes from LSAs

Before you can use the mechanism to exclude IP prefixes from LSAs, the OSPF routing protocol must be configured.

Information About Excluding Connected IP Prefixes from LSAs

One way to

If you have globally suppressed IP prefixes from connected IP networks by configuring the **prefix-suppression** router configuration command, the interface configuration command takes

When the **show ip ospf interface** command is entered, the displayed output verifies that IP prefix suppression is enabled for Ethernet interface 0/0.

```
Router# show ip ospf interface

Ethernet0/0
```

CHAPTER 19

OSPFv2 Loop-Free Alternate Fast Reroute

The

Downstream Path

In the case of a

SUMMARY STEPS

1. **enable**
2.

[redacted]

	Command or Action	Purpose
	router ospf *process-id* Example: `Router(config)#`	Enables OSPF routing and enters router configuration mode.

Feature Information for OSPFv2 Loop-Free Alternate Fast Reroute

CHAPTER 20

OSPF Shortest Path First Throttling

- Configuration Examples

Verifying SPF Throttle Values

To verify SPF throttle timer values, use the **show ip ospf** command. The values are displayed in the lines that begin, "Initial SPF schedule delay...," "Minimum hold time between

CHAPTER 21

OSPF Support for Fast Hello Packets

The OSPF Support for Fast Hello Packets feature provides a way to configure the sending of hello packets in intervals less than 1 second. Such a configuration would result in faster convergence in an Open Shortest

Information About OSPF Support for Fast Hello Packets

OSPF Hello Interval and Dead Interval

OSPF hello packets are packets that an OSPF process sends to its OSPF neighbors to maintain connectivity with those neighbors. The hello packets are sent at a configurable interval (in seconds). The defaults are 10 seconds for an Ethernet link and

How to Configure OSPF Fast Hello Packets

Configuring OSPF Fast Hello Packets

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. **ip ospf dead-interval minimal hello-multiplier** *multiplier*
5. **end**
6. **show ip ospf interface** [*interface-type interface-number*]

DETAILED STEPS

Technical Assistance

Description	Link
The Cisco Support and Documen resM O	http://www.cisco.com/cisco/web/support/index.html e o

CHAPTER 22

Prerequisites for OSPF Incremental SPF

It is presumed that you have OSPF configured in your

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. An account on Cisco.com is not required.

CHAPTER 29

OSPF Limit on Number of Redistributed Routes

Open Shortest Path First (OSPF) supports a user-defined maximum number of

Information About OSPF Limit on Number of Redistributed Routes

If large number of IP routes are sent into OSPF by redistributing Border Gateway Protocol (BGP) into

Requesting a Warning About the Number of Routes Redistributed into OSPF

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router**

```
redistribute eigrp 10 subnets
redistribute maximum-prefix 600 85 warning-only
```

Additional References

Related Documents

Technical Assistance

CHAPTER 24

OSPF Link-State Advertisement Throttling

Finding Feature Information

	Command or Action	Purpose
	Example:	

Configuration Examples for OSPF LSA Throttling

Example OSPF LSA Throttling

This example

RFCs

RFCs	Title
No	--

CHAPTER 29

OSPF Support for Unlimited Software VRFs per PE Router

In a

- Restrictions for OSPF Support for Unlimited Software VRFs per PE Router, page 260
- Information About OSPF

How to Configure OSPF Support for Unlimited Software VRFs per PE Router

Configuring and Verifying Unlimited Software VRFs per Provider Edge Router

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospf** *process-id* [**vrf** *vpn-name*

	Command or Action	Purpose
		Displays general information about OSPF

```
Number of areas transit capable is 0
External flood list length 0
   Area BACKBONE(0)
       Number of interfaces in this area is 1
       Area has no authentication
       SPF algorithm last executed 00:00:15.204 ago
       SPF algorithm executed 2 times
       Area ranges are
       Number of
```


CHAPTER 20

Additional References

Related Documents

Feature Information for OSPF Area Transit Capability

The following table provides release information about the feature or features described in this module. This table

CHAPTER 27

OSPF Per

	Command or Action	Purpose
	ip address *ip-address*	Sets a primary or secondary IP address for an interface.

```
 no ip directed-broadcast
 ip ospf message-digest-key 1 md5 testing
 ip ospf lls
!
interface Ethernet2/0
 ip address 10.1.145.2 255.255.0.0
 no ip directed-broadcast
 ip ospf message-digest-key 1 md5 testing
!
 ip ospf lls disable
interface Ethernet3/0
 ip address 10.3.145.2 255.255.255.0
 no ip directed-broadcast
!
router ospf 1
 log-adjacency-changes detail
 area 0 authentication message-digest
 redistribute connected subnets
 network 10.0.0.0 0.255.255.255 area 1
 network
```

```
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 1, Adjacent neighbor count is 1
  Adjacent with neighbor 10.2.2.3  (Designated Router)
Suppress hello for 0 neighbor(s)
```

Additional References

CHAPTER 28

OSPF Link-State Database Overload Protection

The OSPF Link-State Database Overload Protection feature allows you to limit the number of nonself-generated link-state advertisements (LSAs) for a given Open Shortest Path First (OSPF)

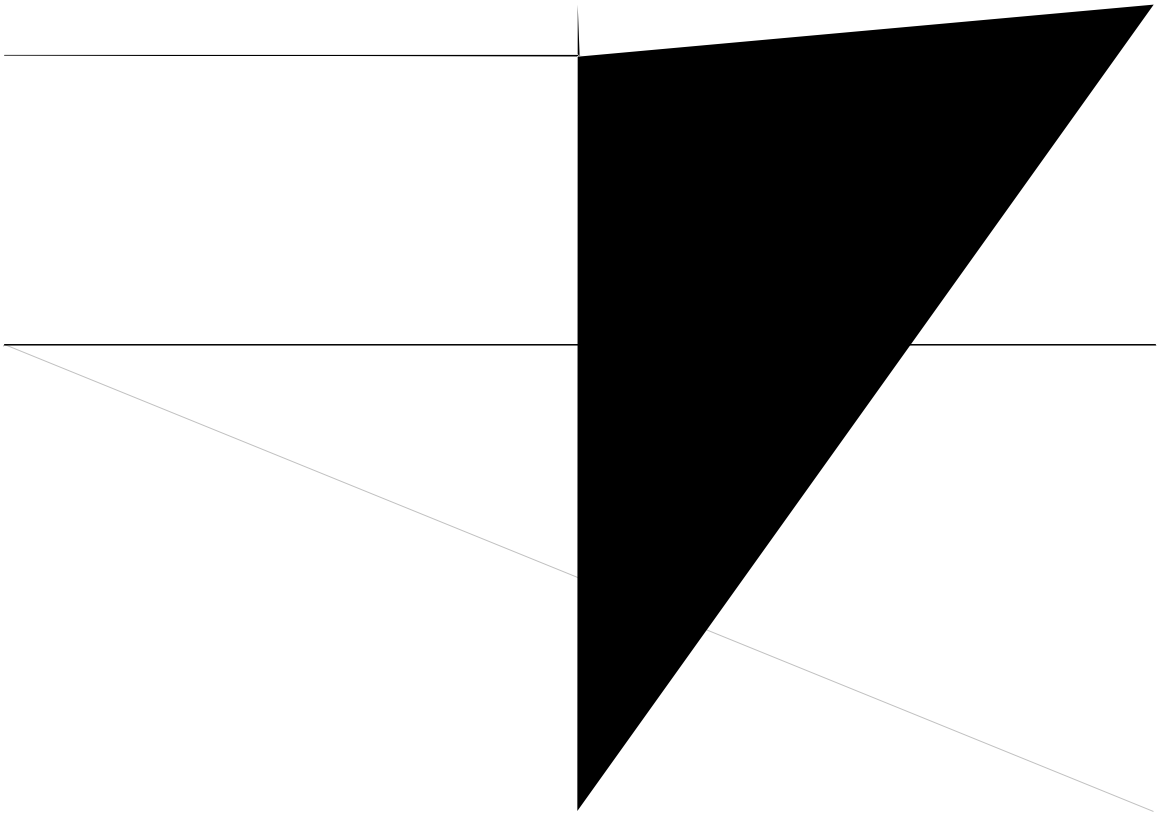
- How to Configure

OSPF

	Command or Action	Purpose
		Configures the router to send a

Configuration Examples for OSPF Link-State Database Overload Protection

Technical Assistance



Prerequisites for OSPF MIB Support of RFC 1850 and Latest Extensions

- OSPF must be configured on the router.
- Simple Network Management Protocol (SNMP) must be enabled on the router

Table 31: New OSPF-TRAP-MIB Objects

OSPF Control MIB Object	Trap MIB Objects
	↻ ospfIfStateChange ↻ ospfVirtIfStateChange ↻ ospfNbrStateChange ↻ ospfVirtNbrState ↻ ospfIfConfigError ↻ ospfVirtIfConfigError ↻ ospfIfAuthFailure ↻ ospfVirtIfAuthFailure ↻ ospfIfRxBadPacket ↻ ospfVirtIfRxBadPacket ↻ ospfTxRetransmit

Table 32: New CISCO-OSPF-MIB Objects

Enabling Specific OSPF Traps

SUMMARY STEPS

MIB

MIB	MIBs Link
	To locate and download MIBs for selected platforms, Cisco IOS

Table 34: Feature Information for OSPF MIB Support of RFC 1850 and Latest Extensions

Feature Name	Releases	Feature Information
		OSPF MIB Support of RFC 1850 and Latest Extensions feature introduces the capabilits

f

[redacted]

CHAPTER 30

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support.

Do not use the **mpls traffic-eng autor**

Additional References

Related Documents

Technical Assistance

Description	Link
	http://///

Information About OSPF TTL Security Check and OSPF Graceful Shutdown

TTL Security Check for OSPF

When the

connected to a network segment between the local and remote OSPF networks. This solution greatly reduces the effectiveness of Denial of Service (DoS) attacks against an OSPF autonomous system.

OSPF Graceful Shutdown

The OSPF Graceful Shutdown feature provides the ability to temporarily shut down the OSPF protocol in the least disruptive manner

Configuring TTL security in an existing

CHAPTER 32

Area Command in Interface Mode for OSPFv2

This document describes how to enable Open Shortest Path First version 2 (OSPFv2) on a per-interface basis to simplify the configuration of unnumbered interfaces. The **ip ospf area** command allows you to enable OSPFv2 explicitly on a

Restrictions for Area Command in Interface Mode for OSPFv2

The **ip ospf area** command is supported only for OSPFv2.

Removing an interface enable Command

When the **interface enable** command is removed, the interface will be detached

	Command or Action	Purpose
		Enters

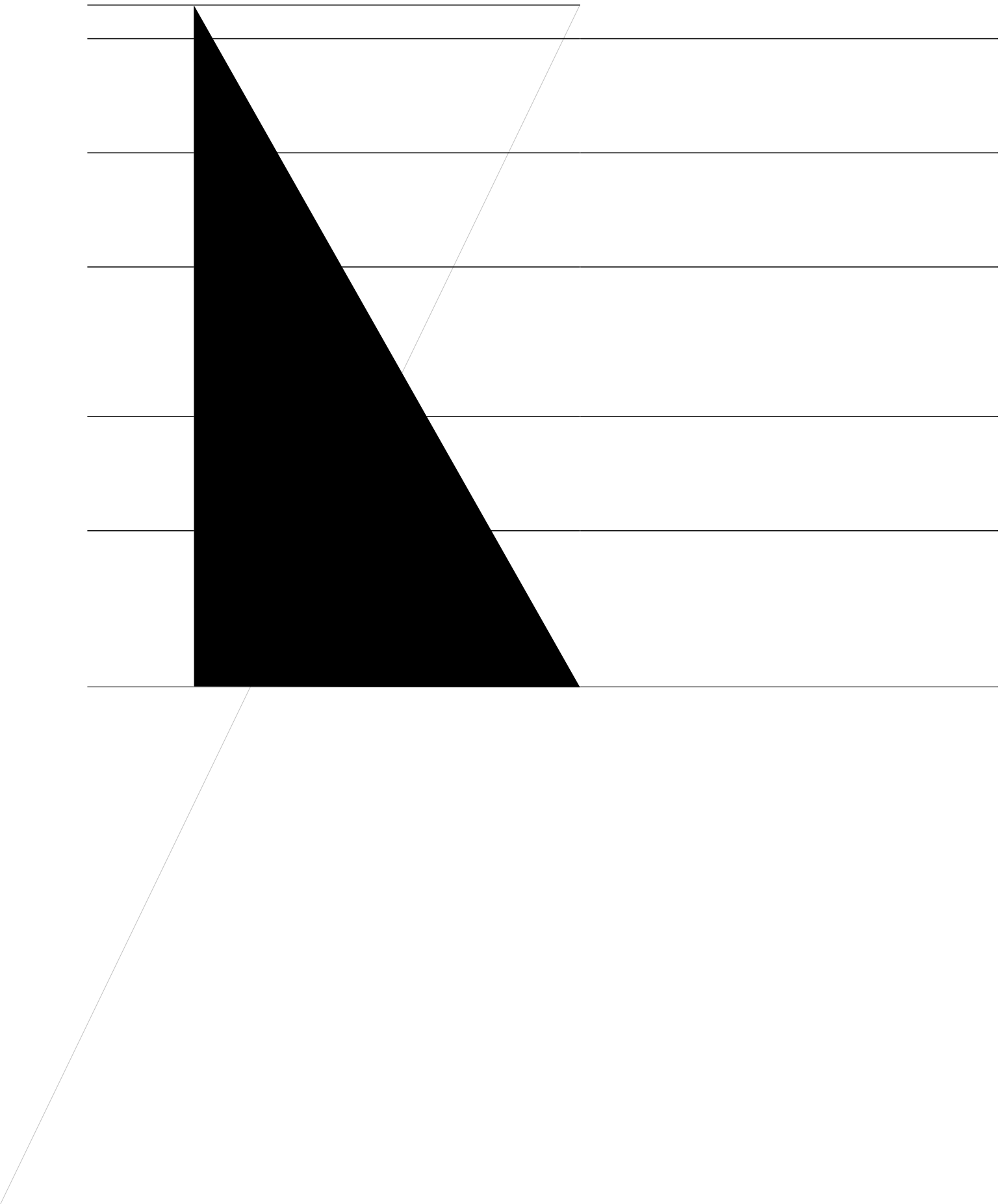
When the **show ip ospf interface**

RFCs

CHAPTER 33

OSPFv2 Local RIB

With the OSPFv2 Local RIB feature, each OSPF protocol instance has its own local Routing Information Base (RIB). The OSPF local RIB serves as the primary state for OSPF SPF route computation. The



Troubleshooting Tips

You can research the output from the **debug ip ospf rib** command to learn about the function of the local RIB and the interaction between the route redistribution process and the global RIB. For example, you can learn why the routes that OSPF placed in the global RIB are not the same ones that you anticipated.

Configuration Examples for the OSPFv2 Local RIB Feature

Example: Changing the Default Local RIB Criteria

In the following example, the **local-rib-criteria** command is entered without any keywords to specify that the local RIB will be used as criteria for all of the following options: forwarding address, inter-area summary,

Technical Assistance

Table 37: Feature Information for the OSPFv2 Local RIB Feature

CHAPTER 34

OSPFv3 Address Families

The Open Shortest Path First version 3 (OSPFv3) address families feature enables both IPv4 and IPv6 unicast traffic to be supported. With this feature, users may have two processes per interface, but only one process per address family (AF).

How to Configure OSPFv3 Address Families

SUMMARY STEPS

1. **enable**
2.

DETAILED STEPS

	Command or Action	Purpose
	default-metric	Sets default metric values for IPv4 and IPv6 routes redistributed into the OSPFv3 routing protocol.

DETAILED STEPS

They become one summarized route, as follows:

```
OI  2001:DB8::/48 [110/100]
     via FE80::A8BB:CCFF:FE00:6F00, Ethernet0/0
```

The task can be performed in Cisco IOS Release 15.1(3)S and 15.2(1)T and later releases.

Before You Begin

OSPFv3 routing must be enabled.

SUMMARY STEPS

1.

Configuration Examples for OSPFv3 Address Families

Example: Configuring OSPFv3 Address Families

```
Device# show ospfv3
 Routing Process "ospfv3 1" with ID 10.0.0.1
 Supports IPv6 Address Family
 Event-log enabled, Maximum number of events: 1000, Mode: cyclic
 Initial SPF schedule delay 5000 msecs
 Minimum hold
```

Standards and RFCs

Prerequisites for TTL Security Support for OSPFv3 on IPv6

The TTL Security Support for OSPFv3 on IPv6 feature is available only on platforms with OSPFv3 routing capabilities.

Information About TTL Security Support for OSPFv3 on IPv6

OSPFv3 TTL Security Support for Virtual and Sham Links

In OSPFv3, all areas must be connected to a backbone area. If there is a break in backbone

How to Configure TTL Security Support for OSPFv3 on IPv6

Configuring TTL Security Support on Virtual Links for OSPFv3 on IPv6

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospfv3** [*process-id*]
4. **address-family ipv6 unicast vrf** *vrf-name*
5. **area** *area-ID* **virtual-link** *router-id* **ttl-security hops** *hop-count*
6. **end**

DETAILED STEPS

DHEDGU-6292.991 H W R HF5 1 1 262.751 53 (6292.991 H ')Ti 3

	Command or Action	Purpose
		Defines an OSPFv3

Technical Assistance

Restrictions for OSPF NSR

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospf** *process-id*
4. **nsr**
5. **end**

Additional References

Feature Information for OSPF NSR

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 ei R 2 2 releaess s

CHAPTER 37

OSPFv3 NSR

The OSPFv3 NSR feature allows a router with redundant Route Processors (RPs)

extensions

DETAILED STEPS

	Command or Action	Purpose
	addr	Enters IPv4 or IPv6 address family configuration mode for OSPFv3 router configuration mode.

Number of

Additional References

Related Documents

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 tr d	http://www.cisco.com/cisco/web/support/index.html

CHAPTER 38

OSPFv3 MIB

The OSPFv3 MIB feature enables Ω Ω nar

Restrictions for OSPFv3 MIB Support

- To monitor multiple

DETAILED STEPS

Configuration Examples for OSPFv3 MIB

Technical Assistance

CHAPTER 39

OSPFv3 will not send or accept

DETAILED STEPS

Defining Encryption in an OSPFv3 Area

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ipv6 router ospf rid**

U

Standards and RFCs

Table 43: Feature Information for OSPFv3 IPSec ESP Encryption and Authentication

CHAPTER

OSPFv3 will not send or accept packets while in the

DETAILED STEPS

Technical Assistance

Description	Link
The Cisco Support and Documen	http://www.cisco.com/cisco/web/support/index.html

CHAPTER 11

OSPFv3 VRF-Lite/PE-CE

The OSPFv3 VRF-Lite/PE-CE feature adds Open Shortest Path First version 3

ج **ospfv3** *process-id* مم Applies to an

	Command or Action	Purpose
	configure terminal Example:	Enters global configuration mode.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface loopback** *interface-number*
4. **description** *string*
5. **vrf forwarding** *vrf-name*
6.

Configuring a Domain ID for an OSPFv3 PE-CE

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **vrf definition** *vrf-name*
4. **rd** *route-distinguisher*
5. **exit**
6. **router ospfv3** [*process-id*]
7. **address-family ipv6** [**unicast**] [**vrf** *vrf-name*]
8. **domain-id type** *type* **value** *hex-value*
9. **end**

DETAILED STEPS

DETAILED STEPS

```
 exit-address-family
!
address-family ipv6 unicast vrf v1
 router-id 2001:DB8:1::1
 domain-id type 0205 value 111111222222
 area 0 sham-link 2001:DB8:0:ABCD::5 2001:DB8:0:ABCD::7O        ::1
```

ipv6

RFC	Title
	OSPFv3

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