

Chapter 9

Summary of Routing Instances Configuration Statements

The following sections explain each of the routing instance configuration statements. The statements are organized alphabetically.

description

Syntax	<code>description text;</code>
Hierarchy Level	<code>[edit routing-instances routing-instance-name]</code>
Description	Provide a textual description of the routing instance. Any descriptive text you include is displayed in the output of the <code>show route instance detail</code> command. It has no effect on the operation of the router.
Options	<i>text</i> —Text to describe the routing instance. If the text includes spaces, enclose the entire text in quotation marks (" ").
Required Privilege Level	<code>interface</code> —To view this statement in the configuration. <code>interface-control</code> —To add this statement to the configuration.

forwarding-options

See *The JUNOS Internet Software Configuration Guide: Policy Framework.*

instance-type

Syntax	instance-type (forwarding l2vpn no-forwarding vrf);
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Defines the type of routing instance.
Options	<p>forwarding—Provides support for filter-based forwarding, where interfaces are not associated with instances. All interfaces belong to the default instance. Other instances are used for populating RPD learned routes. See “Configure Filter-Based Forwarding” on page 157.</p> <p>l2vpn—Provides support for Layer 2 VPNs. For more detailed information about configuring VPNs, see the <i>JUNOS Internet Software Configuration Guide: MPLS Applications</i> .</p> <p>no-forwarding—The default routing instance type does not create a corresponding forwarding instance.</p> <p>vrf—VPN routing and forwarding instance. Provides support for Layer 3 VPNs, where interface routes for each instance go into the corresponding forwarding table only. For more detailed information about configuring VPNs, see the <i>JUNOS Internet Software Configuration Guide: MPLS Applications</i> .</p>
Default	no-forwarding
Usage Guidelines	See “Configure an Instance” on page 155.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

interface

Syntax	interface <i>interface-name</i> ;
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Identifies the logical, private interface between the provider edge (PE) router and the customer edge (CE) router on the PE side.
Usage Guidelines	See “Configure an Instance” on page 155.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

protocols

Syntax	<pre> protocols { bgp { <i>bgp-configuration</i>; } isis { <i>isis-configuration</i>; } ldp { <i>ldp-configuration</i>; } ospf { <i>ospf-configuration</i>; } pim { <i>pim-configuration</i>; } rip { <i>rip-configuration</i>; } } </pre>
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Specify the protocol for a routing instance. You can configure multiple instances of the following supported protocols: BGP, IS-IS, LDP, OSPF, PIM, or RIP.
Options	<p>bgp—Specify the Border Gateway Protocol for a routing instance. See “BGP Configuration Guidelines” on page 369 for a description of the BGP configuration statements.</p> <p>isis—Specify the Intermediate System-to-Intermediate System protocol for a routing instance. See “IS-IS Configuration Guidelines” on page 183 for a description of the IS-IS configuration statements.</p> <p>ldp—Specify the Label Distribution Protocol for a routing instance. For more detailed information about configuring LDP, see the <i>JUNOS Internet Software Configuration Guide: MPLS Applications</i>.</p> <p>ospf—Specify the Open Shortest Path First protocol for a routing instance. See “OSPF Configuration Guidelines” on page 239 for a description of the OSPF configuration statements.</p> <p>pim—Specify the Protocol Independent Multicast protocol for a routing instance. For more detailed information about configuring PIM, see the <i>JUNOS Internet Software Configuration Guide: Multicast</i>.</p> <p>rip—Specify the Routing Information Protocol for a routing instance. See “RIP Configuration Guidelines” on page 287 for a description of the RIP configuration statements.</p>
Usage Guidelines	See “Configure Multiple Instances of BGP” on page 145, “Configure Multiple Instances of IS-IS” on page 146, “Configure Multiple Instances of LDP” on page 149, “Configure Multiple Instances of OSPF” on page 150, “Configure Multiple Instances of PIM” on page 154, and “Configure Multiple Instances of RIP” on page 155.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

route-distinguisher

Syntax	route-distinguisher (<i>as-number:number</i> <i>ip-address:number</i>);
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	<p>An identifier attached to a route, enabling you to distinguish which VPN the route belongs. Each routing instance must have a unique route distinguisher associated with it. The route distinguisher is used to place bounds around a VPN so that the same IP address prefixes can be used in different VPNs without having them overlap. If the instance type is vrf, the route-distinguisher statement is required.</p> <p>The route distinguisher is a 6-byte value that you can specify in one of the following formats:</p> <p><i>as-number:number</i>, where <i>as-number</i> is your assigned AS number (a 2-byte value) and <i>number</i> is any 4-byte value. The AS number can be in the range of 1 through 65535.</p> <p><i>ip-address:number</i>, where <i>ip-address</i> is an IP address in your assigned prefix range (a 4-byte value) and <i>number</i> is any 2-byte value. The IP address can be in the range of 0 through 4294967295 ($2^{32} - 1$).</p>
Usage Guidelines	See “Configure a Route Distinguisher (Address Extension)” on page 157.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

routing-instances

Syntax	routing-instances { ... }
Hierarchy Level	[edit]
Description	Configure an additional routing entity for a router. You can create multiple instances of BGP, IS-IS, OSPF and RIP for a router.
Default	Routing instances are disabled for the router.
Options	<i>routing-instance-name</i> —Name of the routing instance, a maximum of 31 characters. The remaining statements are explained separately in other chapters.
Usage Guidelines	See “Complete Routing and Routing Protocol Configuration Statements” on page 15, “Configure Routing Tables and Routes” on page 39, “Configure Other Protocol-Independent Routing Properties” on page 77, “OSPF Configuration Guidelines” on page 239, and the <i>JUNOS Internet Software Configuration Guide: Policy Framework</i> .
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

routing-options

See routing-options on page 123

vrf-export

Syntax	vrf-export [<i>policy-names</i>];
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Defines which routes will be exported from a local instance table—instance-name.inet.0—to a remote PE. Specify one or more policy names.
Default	If the instance-type is vrf, vrf-import is a required statement.
Usage Guidelines	See “Configure Secondary VRF Import and Export Policy” on page 160.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

vrf-import

Syntax	vrf-import [<i>policy-names</i>];
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	How routes are imported into the local PE router's VRF table from the remote PE router.
Options	policy-name—Specify one or more policy names.
Default	If the instance-type is vrf, vrf-import is a required statement.
Usage Guidelines	See “Configure Secondary VRF Import and Export Policy” on page 160.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

vrf-table-label

Syntax	vrf-table-label;
Hierarchy Level	[edit routing-instances <i>routing-instance-name</i>]
Description	Make it possible to map the inner label of a packet to a specific VRF and thus allows the examination of the encapsulated IP header.
Usage Guidelines	See “Configure a VRF Table Label” on page 166.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

vrf-target

Syntax vrf-target;

Hierarchy Level [edit routing-instances *routing-instance-name*]

Description Configure a single policy for import and a single policy for export to replace the per-VRF policies for every community.

Usage Guidelines See “Configure a VRF Target” on page 166.

Required Privilege Level routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.