

## Chapter 28

# Configuration Groups

This chapter discusses the following topics:

Overview on page 536

Configuration Groups Configuration Statements on page 537

Configuration Groups Configuration Guidelines on page 537

Examples: Configuration Groups on page 548

Using JUNOS Default Groups on page 559

Summary of Configuration Group Statements on page 562

## Overview

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Configuration groups allow you to create a group containing configuration statements and to direct the inheritance of that group's statements in the rest of the configuration. The same group can be applied to different sections of the configuration, and different sections of one group's configuration statements can be inherited in different places in the configuration.

Configuration groups allow you to create smaller, more logically constructed configuration files, making it easier to configure and maintain the JUNOS software. For example, you can group statements that are repeated in many places in the configuration, such as when configuring interfaces, and thereby limit updates to just the group.

You can also use wildcards in a configuration group to allow configuration data to be inherited by any object that matches a wildcard expression.

The configuration group mechanism is separate from the grouping mechanisms used elsewhere in the configuration, such as Border Gateway Protocol (BGP) groups. Configuration groups provide a generic mechanism that can be used throughout the configuration but that are known only to the JUNOS software command-line interface (CLI). The individual software processes that perform the actions directed by the configuration receive the expanded form of the configuration; they have no knowledge of configuration groups.

### ***Inheritance Model***

Configuration groups use true inheritance, which involves a dynamic, ongoing relationship between the source of the configuration data and the target of that data. Data values changed in the configuration group are automatically inherited by the target. The target need not contain the inherited information, although the inherited values can be overridden in the target without affecting the source from which they were inherited.

This inheritance model allows you to see only the instance-specific information without seeing the inherited details. A command pipe in configuration mode allows you to display the inherited data.

## Configuration Groups Configuration Statements

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To configure configuration groups and inheritance, you can include the groups statement at the [edit] hierarchy level:

```
[edit]
groups {
  group-name {
    configuration-data;
  }
}
```

Include the apply-groups [ *group-names* ] statement anywhere in the configuration that the configuration statements contained in a configuration group are needed.

## Configuration Groups Configuration Guidelines

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For areas of your configuration to inherit configuration statements, you must first put the statements into a configuration group and then apply that group to the levels in the configuration hierarchy that require the statements. This section covers the following topics:

Creating a Configuration Group on page 538

Applying a Configuration Group on page 539

Disabling Inheritance of a Configuration Group on page 542

Displaying Inherited Values on page 543

Using Wildcards on page 544

## Creating a Configuration Group

To create a configuration group, include the `groups` statement at the `[edit]` hierarchy level:

```
[edit]
groups {
  group-name {
    configuration-data;
  }
  lccn-re0 {
    configuration-data;
  }
  lccn-re1 {
    configuration-data;
  }
}
```

*group-name* is the name of a configuration group. To configure multiple groups, specify more than one *group-name*. On routers that support multiple Routing Engines, you can also specify two special group names:

`re0`—Configuration statements applied to the Routing Engine in slot 0.

`re1`—Configuration statements applied to the Routing Engine in slot 1.

The configuration specified in group `re0` is only applied if the current Routing Engine is in slot 0; likewise, the configuration specified in group `re1` is only applied if the current Routing Engine is in slot 1. Therefore, both Routing Engines can use the same configuration file, each using only the configuration statements that apply to it. Each `re0` or `re1` group contains at a minimum the configuration for the hostname and the management interface (`fxp0`). If each Routing Engine uses a different management interface, the group also should contain the configuration for the backup router and static routes.

*configuration-data* contains the configuration statements applied elsewhere in the configuration with the `apply-groups` statement. To have a configuration inherit the statements in a configuration group, include the `apply-groups` statement. For information about the `apply-groups` statement, see “Applying a Configuration Group” on page 539.

In addition, the TX Matrix platform supports group names for the Routing Engines in each T640 routing node. Providing special group names for all Routing Engines in the routing matrix allows you to configure the individual Routing Engines in each T640 routing node differently. Parameters that are not configured at the `[edit groups]` hierarchy level apply to all Routing Engines in the routing matrix.

The group names have the following formats:

`lccn-re0`—Configuration statements applied to the Routing Engine in slot 0 in a specified T640 routing node.

`lccn-re1`—Configuration statements applied to the Routing Engine in slot 1 in a specified T640 routing node.

*n* identifies the T640 routing node and can be from 0 through 3. For example, to configure Routing Engine 1 properties for lcc3, you include statements at the [edit groups lcc3-re1] hierarchy level. For information about the TX Matrix platform and routing matrix, see the “TX Matrix Platform and T640 Routing Node Configuration Guidelines” on page 742.

### **Applying a Configuration Group**

To have a configuration inherit the statements in a configuration group, include the `apply-groups` statement:

```
apply-groups [ group-names ];
```

If you specify more than one group name, list them in order of inheritance priority. The configuration data in the first group takes priority over the data in subsequent groups.

For routers that support multiple Routing Engines, you can specify `re0` and `re1` group names. The configuration specified in group `re0` is only applied if the current Routing Engine is in slot 0; likewise, the configuration specified in group `re1` is only applied if the current Routing Engine is in slot 1. Therefore, both Routing Engines can use the same configuration file, each using only the configuration statements that apply to it. Each `re0` or `re1` group contains at a minimum the configuration for the hostname and the management interface (`fxp0`). If each Routing Engine uses a different management interface, the group also should contain the configuration for the backup router and static routes.

You can include the `apply-groups` statement at any level of the configuration hierarchy, listing group names within each `apply-groups` statement in priority order.

You can include only one `apply-groups` statement at each specific level of the configuration hierarchy. The `apply-groups` statement at a specific hierarchy level lists the configuration groups to be added to the containing statement’s list of configuration groups.

Values specified at the specific hierarchy level override values inherited from the configuration group.

Groups listed in nested `apply-groups` statements take priority over groups in outer statements. In the following example, the BGP neighbor 10.0.0.1 inherits configuration data from group one first, then from groups two and three. Configuration data in group one overrides data in any other group. Data from group ten is used only if a statement is not contained in any other group.

```

apply-groups [ eight nine ten ];
protocols {
  apply-groups seven;
  bgp {
    apply-groups [ five six ];
    group some-bgp-group {
      apply-groups four;
      neighbor 10.0.0.1 {
        apply-groups [ one two three ];
      }
    }
  }
}

```

### Example: Configuring and Applying Configuration Groups

In this example, the Simple Network Management Protocol (SNMP) configuration is divided between the group `basic` and the normal configuration hierarchy.

There are a number of advantages to placing the system-specific configuration (SNMP contact) into a configuration group and thus separating it from the normal configuration hierarchy—the user can replace (using the `load replace` command) either section without discarding data from the other.

In addition, setting a contact for a specific box is now possible because the group data would be hidden by the router-specific data.

```

[edit]
groups {
  basic {      # User-defined group name
    snmp {    # This group contains some SNMP data
      contact "My Engineering Group";
      community BasicAccess {
        authorization read-only;
      }
    }
  }
}
apply-groups basic; # Enable inheritance from group "basic"
snmp {             # Some normal (non-group) configuration
  location "West of Nowhere";
}

```

This configuration is equivalent to the following:

```
[edit]
snmp {
  location "West of Nowhere";
  contact "My Engineering Group";
  community BasicAccess {
    authorization read-only;
  }
}
```

For information about how to disable inheritance of a configuration group, see “Disabling Inheritance of a Configuration Group” on page 542.

### Example: Creating and Applying Configuration Groups on a TX Matrix Platform

```
[edit]
groups {
  re0 { # Routing Engine 0 on TX Matrix platform
    system {
      host-name <host-name>;
      backup-router <ip-address>;
    }
    interfaces {
      fxp0 {
        unit 0 {
          family inet {
            address <ip-address>;
          }
        }
      }
    }
  }
  re1 { # Routing Engine 1 on TX Matrix platform
    system {
      host-name <host-name>;
      backup-router <ip-address>;
    }
    interfaces {
      fxp0 {
        unit 0 {
          family inet {
            address <ip-address>;
          }
        }
      }
    }
  }
}
```

```

lcc0-re0 { # Routing Engine 0 on T640 routing node numbered 0
  system {
    host-name <host-name>;
    backup-router <ip-address>;
  }
  interfaces {
    fxp0 {
      unit 0 {
        family inet {
          address <ip-address>;
        }
      }
    }
  }
}
lcc0-re1 { # Routing Engine 1 on T640 routing node numbered 0
  system {
    host-name <host-name>;
    backup-router <ip-address>;
  }
  interfaces {
    fxp0 {
      unit 0 {
        family inet {
          address <ip-address>;
        }
      }
    }
  }
}
}
apply-groups [ re0 re1 lcc0-re0 lcc0-re1 ];

```

### Disabling Inheritance of a Configuration Group

To disable inheritance of a configuration group at any level except the top level of the hierarchy, include the `apply-groups-except` statement:

```
apply-groups-except [ group-names ];
```

This is useful when you use the `apply-group` statement at a specific hierarchy level but also want to override the values inherited from the configuration group for a specific parameter.

#### Example: Disabling Inheritance on Interface s0-1/1/0

In the following example, the `apply-groups` statement is applied globally at the interfaces level. The `apply-groups-except` statement is also applied at interface `s0-1/1/0` so that it uses the default values `hold-time` and `link-mode`.

```

[edit]
groups {
  global {
    interfaces {
      <*> {
        hold-time down 640;
        link-mode full-duplex;
      }
    }
  }
}

```

```

apply-groups global;
interfaces {
  so-1/1/0 {
    apply-groups-except global; # Disables inheritance from group "global":
                                # so-1/1/0 uses default values for "hold-time"
                                # and "link-mode"
  }
}

```

For information about applying a configuration group, see “Applying a Configuration Group” on page 539.

### Displaying Inherited Values

Configuration groups can add some confusion regarding the actual values used by the router, because configuration data can be inherited from configuration groups. To view the actual values used by the router, use the `display inheritance` command after the pipe in a `show` command. This command displays the inherited statements at the level at which they are inherited and the group from which they have been inherited.

```

[edit]
user@host# show | display inheritance
snmp {
  location "West of Nowhere";
  ##
  ## 'My Engineering Group' was inherited from group 'basic'
  ##
  contact "My Engineering Group";
  ##
  ## 'BasicAccess' was inherited from group 'basic'
  ##
  community BasicAccess {
    ##
    ## 'read-only' was inherited from group 'basic'
    ##
    authorization read-only;
  }
}

```

To display the expanded configuration (the configuration, including the inherited statements) without the `##` lines, use the `except ##` command after the pipe in a `show` command:

```

[edit]
user@host# show | display inheritance | except ##
snmp {
  location "West of Nowhere";
  contact "My Engineering Group";
  community BasicAccess {
    authorization read-only;
  }
}

```

## Using Wildcards

You can use wildcards to identify names and allow one statement to provide data for a variety of statements. For example, grouping the configuration of the sonet-options statement over all SONET/SDH interfaces or the dead interval for Open Shortest Path First (OSPF) over all Asynchronous Transfer Mode (ATM) interfaces simplifies configuration files and eases their maintenance.

Wildcarding in normal configuration data is done in a style that is consistent with traditional UNIX shell name wildcarding. In this style of wildcarding, you can use the following metacharacters:

Asterisk ( \* )—Matches any string of characters.

Question mark ( ? )—Matches any single character.

Open bracket ( [ )—Introduces a character class.

Close bracket ( ] )—Indicates the end of a character class. If the close bracket is missing, the open bracket matches a [ rather than introduce a character class.

A character class matches any of the characters between the square brackets. Character classes must be enclosed in quotation marks ( " ").

Hyphen ( - )—Specifies a range of characters.

Exclamation point ( ! )—The character class can be complemented by making an exclamation point the first character of the character class. To include a ] in a character class, make it the first character listed (after the !, if any). To include a minus sign, make it the first or last character listed.

Wildcarding in configuration groups follows the same rules, but the wildcard pattern must be enclosed in angle brackets (<pattern>) to differentiate it from other wildcarding in the configuration file. For example:

```
[edit]
groups {
  sonet-default {
    interfaces {
      <so-*> {
        sonet-options {
          payload-scrambler;
          rfc-2615;
        }
      }
    }
  }
}
```

Wildcard expressions match (and provide configuration data for) existing statements in the configuration that match their expression only. In the example above, the expression <so-\*> passes its sonet-options statement to any interface that matches the expression so-\*

Angle brackets allow you to pass normal wildcarding through without modification. In all matching within the configuration, whether it is done with or without wildcards, the first item encountered in the configuration that matches is used. In the following example, data from the wildcarded BGP groups is inherited in the order in which the groups are listed. The preference value from <\*a\*> overrides the preference in <\*b\*>, just as the p value from <\*c\*> overrides the one from <\*d\*>. Data values from any of these groups override the data values from abcd.

```
[edit]
user@host# show
groups {
  one {
    protocols {
      bgp {
        group <*a*> {
          preference 1;
        }
        group <*b*> {
          preference 2;
        }
        group <*c*> {
          out-delay 3;
        }
        group <*d*> {
          out-delay 4;
        }
        group abcd {
          preference 10;
          hold-time 10;
          out-delay 10;
        }
      }
    }
  }
}
protocols {
  bgp {
    group abcd {
      apply-groups one;
    }
  }
}
```

```
[edit]
user@host# show | display inheritance
protocols {
  bgp {
    group abcd {
      ##
      ## '1' was inherited from group 'one'
      ##
      preference 1;
      ##
      ## '10' was inherited from group 'one'
      ##
      hold-time 10;
      ##
      ## '3' was inherited from group 'one'
      ##
      out-delay 3;
    }
  }
}
```

### Example: Using Wildcards

The following example demonstrates the use of wildcarding. The interface so-0/0/0 inherits data from the various SONET/SDH interface wildcard patterns in group one.

```
[edit]
user@host# show
groups {
  one {
    interfaces {
      <so-*> {
        sonet-options {
          rfc-2615;
        }
      }
      <so-0/*> {
        sonet-options {
          fcs 32;
        }
      }
      <so-*/0/*> {
        sonet-options {
          fcs 16;
        }
      }
      <so-*/*/0> {
        sonet-options {
          payload-scrambler;
        }
      }
    }
  }
}
```

```

apply-groups one;
interfaces {
  so-0/0/0 {
    unit 0 {
      family inet {
        address 10.0.0.1/8;
      }
    }
  }
}
[edit]
user@host# show | display inheritance
interfaces {
  so-0/0/0 {
    ##
    ## 'sonet-options' was inherited from group 'one'
    ##
    sonet-options {
      ##
      ## '32' was inherited from group 'one'
      ##
      fcs 32;
      ##
      ## 'payload-scrambler' was inherited from group 'one'
      ##
      payload-scrambler;
      ##
      ## 'rfc-2615' was inherited from group 'one'
      ##
      rfc-2615;
    }
    unit 0 {
      family inet {
        address 10.0.0.1/8;
      }
    }
  }
}

```

## Examples: Configuration Groups

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The following examples illustrate ways to use configuration groups and inheritance:

Configuring Sets of Statements on page 548

Configuring Interfaces on page 550

Configuring Peer Entities on page 553

Establishing Regional Configurations on page 555

Selecting Wildcard Names on page 557

### **Configuring Sets of Statements**

When sets of statements exist in configuration groups, all values are inherited. For example:

```
[edit]
user@host# show
groups {
  basic {
    snmp {
      interface so-1/1/1.0;
    }
  }
}
apply-groups basic;
snmp {
  interface so-0/0/0.0;
}
[edit]
user@host# show | display inheritance
snmp {
  ##
  ## 'so-1/1/1.0' was inherited from group 'basic'
  ##
  interface [ so-0/0/0.0 so-1/1/1.0 ];
}
```

For sets that are not displayed within brackets, all values are also inherited. For example:

```
[edit]
user@host# show
groups {
  worldwide {
    system {
      name-server {
        10.0.0.100;
        10.0.0.200;
      }
    }
  }
}
apply-groups worldwide;
system {
  name-server {
    10.0.0.1;
    10.0.0.2;
  }
}

[edit]
user@host# show | display inheritance
system {
  name-server {
    ##
    ## '10.0.0.100' was inherited from group 'worldwide'
    ##
    10.0.0.100;
    ##
    ## '10.0.0.200' was inherited from group 'worldwide'
    ##
    10.0.0.200;
  }
}
```

## Configuring Interfaces

You can use configuration groups to separate the common interface media parameters from the interface-specific addressing information. The following example places configuration data for ATM interfaces into a group called atm-options:

```
[edit]
user@host# show
groups {
  atm-options {
    interfaces {
      <at-*> {
        atm-options {
          vpi 0 maximum-vcs 1024;
        }
        unit <*> {
          encapsulation atm-snap;
          point-to-point;
          family iso;
        }
      }
    }
  }
}
apply-groups atm-options;
interfaces {
  at-0/0/0 {
    unit 100 {
      vci 0.100;
      family inet {
        address 10.0.0.100/30;
      }
    }
    unit 200 {
      vci 0.200;
      family inet {
        address 10.0.0.200/30;
      }
    }
  }
}
```

```

[edit]
user@host# show | display inheritance
interfaces {
  at-0/0/0 {
    ##
    ## "atm-options" was inherited from group "atm-options"
    ##
    atm-options {
      ##
      ## "1024" was inherited from group "atm-options"
      ##
      vpi 0 maximum-vcs 1024;
    }
    unit 100 {
      ##
      ## "atm-snap" was inherited from group "atm-options"
      ##
      encapsulation atm-snap;
      ##
      ## "point-to-point" was inherited from group "atm-options"
      ##
      point-to-point;
      vci 0.100;
      family inet {
        address 10.0.0.100/30;
      }
      ##
      ## "iso" was inherited from group "atm-options"
      ##
      family iso;
    }
    unit 200 {
      ##
      ## "atm-snap" was inherited from group "atm-options"
      ##
      encapsulation atm-snap;
      ##
      ## "point-to-point" was inherited from group "atm-options"
      ##
      point-to-point;
      vci 0.200;
      family inet {
        address 10.0.0.200/30;
      }
      ##
      ## "iso" was inherited from group "atm-options"
      ##
      family iso;
    }
  }
}

```

```
[edit]
user@host# show | display inheritance | except ##
interfaces {
  at-0/0/0 {
    atm-options {
      vpi 0 maximum-vc 1024;
    }
    unit 100 {
      encapsulation atm-snap;
      point-to-point;
      vci 0.100;
      family inet {
        address 10.0.0.100/30;
      }
      family iso;
    }
    unit 200 {
      encapsulation atm-snap;
      point-to-point;
      vci 0.200;
      family inet {
        address 10.0.0.200/30;
      }
      family iso;
    }
  }
}
```

## Configuring Peer Entities

In this example, we create a group `some-isp` that contains configuration data relating to another Internet service provide (ISP). We can then insert `apply-group` statements at any point to allow any location in the configuration hierarchy to inherit this data.

```
[edit]
user@host# show
groups {
  some-isp {
    interfaces {
      <ge-*> {
        gigheter-options {
          flow-control;
        }
      }
    }
    protocols {
      bgp {
        group <*> {
          neighbor <*> {
            remove-private;
          }
        }
      }
      pim {
        interface <*> {
          version 1;
        }
      }
    }
  }
}
interfaces {
  ge-0/0/0 {
    apply-groups some-isp;
    unit 0 {
      family inet {
        address 10.0.0.1/24;
      }
    }
  }
}
protocols {
  bgp {
    group main {
      neighbor 10.254.0.1 {
        apply-groups some-isp;
      }
    }
  }
}
```

```

    pim {
        interface ge-0/0/0.0 {
            apply-groups some-isp;
        }
    }
}
[edit]
user@host# show | display inheritance
interfaces {
    ge-0/0/0 {
        ##
        ## "gigether-options" was inherited from group "some-isp"
        ##
        gigether-options {
            ##
            ## "flow-control" was inherited from group "some-isp"
            ##
            flow-control;
        }
        unit 0 {
            family inet {
                address 10.0.0.1/24;
            }
        }
    }
}
protocols {
    bgp {
        group main {
            neighbor 10.254.0.1 {
                ##
                ## "remove-private" was inherited from group "some-isp"
                ##
                remove-private;
            }
        }
    }
}
pim {
    interface ge-0/0/0.0 {
        ##
        ## "1" was inherited from group "some-isp"
        ##
        version 1;
    }
}
}

```

## Establishing Regional Configurations

In this example, one group is populated with configuration data that is standard throughout the company, while another group contains regional deviations from this standard:

```
[edit]
user@host# show
groups {
  standard {
    interfaces {
      <t3-*> {
        t3-options {
          compatibility-mode larscom subrate 10;
          idle-cycle-flag ones;
        }
      }
    }
  }
  northwest {
    interfaces {
      <t3-*> {
        t3-options {
          long-buildout;
          compatibility-mode kentrox;
        }
      }
    }
  }
}
apply-groups standard;
interfaces {
  t3-0/0/0 {
    apply-groups northwest;
  }
}
```

```
[edit]
user@host# show | display inheritance
interfaces {
  t3-0/0/0 {
    ##
    ## "t3-options" was inherited from group "northwest"
    ##
    t3-options {
      ##
      ## "long-buildout" was inherited from group "northwest"
      ##
      long-buildout;
      ##
      ## "kentrox" was inherited from group "northwest"
      ##
      compatibility-mode kentrox;
      ##
      ## "ones" was inherited from group "standard"
      ##
      idle-cycle-flag ones;
    }
  }
}
```

## Selecting Wildcard Names

You can combine wildcarding and thoughtful use of names in statements to tailor statement values:

```
[edit]
user@host# show
groups {
  mpls-conf {
    protocols {
      mpls {
        label-switched-path <*-major> {
          retry-timer 5;
          bandwidth 155m;
          optimize-timer 60;
        }
        label-switched-path <*-minor> {
          retry-timer 15;
          bandwidth 64k;
          optimize-timer 120;
        }
      }
    }
  }
}
apply-groups mpls-conf;
protocols {
  mpls {
    label-switched-path metro-major {
      to 10.0.0.10;
    }
    label-switched-path remote-minor {
      to 10.0.0.20;
    }
  }
}
```

```
[edit]
user@host# show | display inheritance
protocols {
  mpls {
    label-switched-path metro-major {
      to 10.0.0.10;
      ##
      ## "5" was inherited from group "mpls-conf"
      ##
      retry-timer 5;
      #
      ## "155m" was inherited from group "mpls-conf"
      ##
      bandwidth 155m;
      ##
      ## "60" was inherited from group "mpls-conf"
      ##
      optimize-timer 60;
    }
    label-switched-path remote-minor {
      to 10.0.0.20;
      ##
      ## "15" was inherited from group "mpls-conf"
      ##
      retry-timer 15;
      ##
      ## "64k" was inherited from group "mpls-conf"
      ##
      bandwidth 64k;
      ##
      ## "120" was inherited from group "mpls-conf"
      ##
      optimize-timer 120;
    }
  }
}
```

## Using JUNOS Default Groups

---

The JUNOS software provides a default, hidden configuration group called `junos-defaults` that is automatically applied to the configuration of your routing platform. The `junos-defaults` group contains preconfigured statements that contain predefined values for common applications. Some of the statements must be referenced to take effect, such as applications like FTP or Telnet. Other statements are applied automatically, such as terminal settings. All of the preconfigured statements begin with the reserved name `junos-`.



**NOTE:** You can override the JUNOS default configuration values with manual configuration, but you cannot delete or edit the configuration group itself. If you delete a configuration, the defaults return when a new configuration is added.

You cannot use the `apply-groups` statement with the JUNOS defaults group.

---

To view the full set of available preset statements from the JUNOS default group, issue the `show groups junos-defaults configuration mode` command at the top level of the configuration. The following example displays a partial list of JUNOS default groups:

```
user@host# show groups junos-defaults
#
# Make vt100 the default for the console port
#
system {
  ports {
    console type vt100;
  }
}
applications {
  #
  # File Transfer Protocol
  #
  application junos-ftp {
    application-protocol ftp;
    protocol tcp;
    destination-port 21;
  }
  #
  # Trivial File Transfer Protocol
  #
  application junos-tftp {
    application-protocol tftp;
    protocol udp;
    destination-port 69;
  }
  #
  # RPC port mapper on TCP
  #
```

```

application junos-rpc-portmap-tcp {
  application-protocol rpc-portmap;
  protocol tcp;
  destination-port 111;
}
#
# RPC port mapper on UDP
#
}

```

To reference statements available from the `junos-defaults` group, include the selected `junos- default-name` statement at the applicable hierarchy level.

### **Example: Referencing the Preset Statement from the JUNOS Default Group**

The following example is a preset statement from the JUNOS default groups that is available for FTP in a stateful firewall:

```

[edit]
groups {
  junos-defaults {
    applications {
      application junos-ftp {          # Use FTP default configuration
        application-protocol ftp;
        protocol tcp;
        destination-port 21;
      }
    }
  }
}

```

To reference a preset JUNOS default statement from the JUNOS default groups, include the `junos- default-name` statement at the applicable hierarchy level. For example, to reference the JUNOS default statement for FTP in a stateful firewall, include the `junos-ftp` statement at the `[edit services stateful-firewall rule rule-name term term-name from applications]` hierarchy level:

```

[edit]
services {
  stateful-firewall {
    rule my-rule {
      term my-term {
        from {
          applications junos-ftp; #Reference predefined statement, junos-ftp,
                                #for FTP in the stateful firewall configuration
        }
      }
    }
  }
}

```

**Example: Viewing Default Statements That Have Been Applied to the Configuration**

To view the JUNOS defaults that have been applied to the configuration, issue the `show | display inheritance defaults` command. For example, to view the inherited JUNOS defaults at the `[edit system ports]` hierarchy level:

```
user@host# show system ports | display inheritance defaults
## ## 'console' was inherited from group 'junos-defaults'
## 'vt100' was inherited from group 'junos-defaults'
## console type vt100;
```

If you choose not to use existing JUNOS default statements, you can create your own configuration groups manually. For more information about manually creating of configuration groups, see “Overview” on page 536 and “Configuration Groups Configuration Statements” on page 537.

## Summary of Configuration Group Statements

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

### *apply-groups*

**Syntax** `apply-groups [ group-names ];`

**Hierarchy Level** All hierarchy levels

**Description** Apply a configuration group to a specific hierarchy level in a configuration, to have a configuration inherit the statements in the configuration group.

You can specify more than one group name. You must list them in order of inheritance priority. The configuration data in the first group takes priority over the data in subsequent groups.

For routers that support multiple Routing Engines, you can specify `re0` and `re1` as group names. The configuration specified in group `re0` is applied only if the current Routing Engine is in slot 0; likewise, the configuration specified in group `re1` is applied only if the current Routing Engine is in slot 1. Therefore, both Routing Engines can use the same configuration file, each using only the configuration statements that apply to it. Each `re0` or `re1` group contains at a minimum the configuration for the hostname and the management interface (`fxp0`). If each Routing Engine uses a different management interface, the group also should contain the configuration for the backup router and static routes.

You can include the `apply-groups` statement at any level of the configuration hierarchy.

You can include only one `apply-groups` statement at each specific level of the configuration hierarchy. The `apply-groups` statement at a specific hierarchy level lists the configuration groups to be added to the containing statement's list of configuration groups.

**Options** *group-name*—One or more names specified in the groups statement.

**Usage Guidelines** See “Applying a Configuration Group” on page 539.

**Required Privilege Level** `configure`—To enter configuration mode; other required privilege levels depend on where the statement is located in the configuration hierarchy.

**See Also** `groups` on page 563

***apply-groups-except***

<b>Syntax</b>	<code>apply-groups-except [ <i>group-names</i> ];</code>
<b>Hierarchy Level</b>	All hierarchy levels except the top level
<b>Description</b>	Disables inheritance of a configuration group.
<b>Options</b>	<i>group-names</i> —One or more names specified in the groups statement.
<b>Usage Guidelines</b>	See “Disabling Inheritance of a Configuration Group” on page 542.
<b>Required Privilege Level</b>	configure—To enter configuration mode; other required privilege levels depend on where the statement is located in the configuration hierarchy.
<b>See Also</b>	groups on page 563

***groups***

<b>Syntax</b>	<pre>groups {     <i>group-name</i> {         <i>configuration-data</i>;     }     lccn-re0 {         <i>configuration-data</i>;     }     lccn-re1 {         <i>configuration-data</i>;     } }</pre>
<b>Hierarchy Level</b>	[edit]
<b>Description</b>	Create a configuration group.
<b>Options</b>	<p><i>configuration-data</i>—The configuration statements that are to be applied elsewhere in the configuration with the <code>apply-groups</code> statement, to have the target configuration inherit the statements in the group.</p> <p><i>group-name</i>—Name of the configuration group. To configure multiple groups, specify more than one <i>group-name</i>. On routers that support multiple Routing Engines, you can also specify two special group names:</p> <p>re0—Configuration statements that are to be applied to the Routing Engine in slot 0.</p> <p>re1—Configuration statements that are to be applied to the Routing Engine in slot 1.</p>

The configuration specified in group `re0` is applied only if the current Routing Engine is in slot 0; likewise, the configuration specified in group `re1` is applied only if the current Routing Engine is in slot 1. Therefore, both Routing Engines can use the same configuration file, each using only the configuration statements that apply to it. Each `re0` or `re1` group contains at a minimum the configuration for the hostname and the management interface (`fxp0`). If each Routing Engine uses a different management interface, the group also should contain the configuration for the backup router and static routes.

(routing matrix only) The TX Matrix platform supports group names for the Routing Engines in each connected T640 routing node in the following formats:

`lccn-re0`—Configuration statements applied to the Routing Engine in slot 0 of the specified T640 routing node that is connected to a TX Matrix platform.

`lccn-re1`—Configuration statements applied to the specified to the Routing Engine in slot 1 of the specified T640 routing node that is connected to a TX Matrix platform.

*n* identifies the T640 routing node and can be from 0 through 3.

**Usage Guidelines** See “Creating a Configuration Group” on page 538.

**Required Privilege Level** `configure`—To enter configuration mode.

**See Also** `apply-groups` on page 562, `apply-groups-except` on page 563