Contents

Process placement commands

affinity location-set

Use **affinity location-set** to set the affinity of a process to a set of CPUs.

Use **undo affinity location-set** to remove the affinity setting for the specified CPUs for a process.

Syntax

affinity location-set { **slot** *slot-number* }&<1-5> { **attract** *strength* | **default** | **none** | **repulse** *strength* }

undo affinity location-set { **slot** *slot-number* }&<1-5>

Default

No location affinity is set for any process.

Views

Placement process view

Predefined user roles

network-admin

Parameters

slot *slot-number*: Specifies an IRF member device by its member ID.

&<1-5>: Indicates that you can specify a maximum of five CPUs.

attract *strength*: Sets a positive affinity in the range of 1 to 100000. The higher the value, the stronger the preference for the process to run on the specified CPUs.

default: Sets the affinity to the default, a positive affinity of 200.

none: Sets the affinity to 0, which means the active process has no preference for any location and the system determines its location.

repulse *strength*: Sets a negative affinity in the range of 1 to 100000. The higher the value, the weaker the preference for the process to run on the specified CPUs.

Examples

# Set a positive affinity of 500 to the specified slot for the **staticroute** process.

```
<Sysname> system-view
[Sysname] placement program staticroute
[Sysname-program-staticroute] affinity location-set slot 1 attract 500
```

affinity location-type

Use **affinity location-type** to set the affinity of a process to a location type.

Use **undo affinity location-type** to remove the affinity setting for the specified location type for a process.

Syntax

affinity location-type { **current** | **paired** | **primary** } { **attract** *strength* | **default** | **none** | **repulse** *strength* }

undo affinity location-type { **current** | **paired** | **primary** }

Default

No location type affinity is set for any process.

Views

Placement process view

Predefined user roles

network-admin

Parameters

current: Specifies the affinity to the current location of the active process. You can use the **display placement program** command to view the current location of an active process.

paired: Specifies the affinity to the locations of all standby processes.

primary: Specifies the affinity to the master device.

attract *strength*: Sets a positive affinity in the range of 1 to 100000. The higher the value, the stronger the preference of the process to run on the specified location type.

default: Sets the affinity to the default, a positive affinity of 200.

none: Sets the affinity to 0, which means the active process does not have any preference for any location type and the system determines its location.

repulse *strength*: Sets a negative affinity in the range of 1 to 100000. The higher the value, the weaker the preference for the process to run on the specified location type.

Examples

# Set a positive affinity of 500 to the current location for the **staticroute** process.

```
<Sysname> system-view
[Sysname] placement program staticroute
[Sysname-program-staticroute] affinity location-type current attract 500
```

Related commands

affinity location-set

affinity program

affinity program

Use **affinity program** to set the affinity for one process to run on the same location as another process.

Use **undo affinity program** to remove the affinity setting for one process to run on the same location as the specified process.

Syntax

affinity program *program-name* { **attract** *strength* | **default** | **none** | **repulse** *strength* }

undo affinity program *program-name*

Default

No process affinity is set for any process.

Views

Placement process view

Predefined user roles

network-admin

Parameters

program-name: Specifies the name of a process running on the device. The process name is a case-insensitive string of 1 to 15 characters. You can use the **display placement program all** command to view information about all processes running on the device.

attract *strength*: Sets a positive affinity in the range of 1 to 100000. The higher the value, the stronger the preference for the current process to run on the same location as the specified process.

default: Sets the affinity to the default, a positive affinity of 200.

none: Sets the affinity to 0, which means the active process has no preference for any other process and the system determines its location.

repulse *strength*: Sets a negative affinity in the range of 1 to 100000. The higher the value, the weaker the preference for the current process to run on the same location as the specified process.

Examples

# Set a negative affinity of 200 for the **staticroute** process to run on the same location as the **syslog** process.

```
<Sysname> system-view
[Sysname] placement program staticroute
[Sysname-program-staticroute] affinity program syslog repulse 200
```

Related commands

affinity location-set

affinity location-type

affinity self

Use **affinity self** to set the affinity of all instances of a process to run on the same location.

Use **undo affinity self** to restore the default.

Syntax

affinity self { **attract** *strength* | **default** | **none** | **repulse** *strength* }

undo affinity self

Default

No self affinity is set for any process.

Views

Placement process view

Predefined user roles

network-admin

Parameters

attract *strength*: Specifies a positive affinity in the range of 1 to 100000. The higher the value, the stronger the preference for all the instances of the current process to run on the same location.

default: Sets the affinity to the default, a positive affinity of 200.

none: Sets the affinity to 0, which means the instances of the process have no preference to run on the same location and the system determines their locations.

repulse *strength*: Sets a negative affinity in the range of 1 to 100000. The higher the value, the weaker the preference for all the instances of the current process to run on the same location.

Usage guidelines

This command sets the preference for a process to run all its instances on the same location or different locations. If the process has only one instance, the command does not take effect.

The self affinity set in the placement process view of a process or any of its instances takes effect on all the instances of the process. If you execute this command multiple times, the most recent configuration takes effect.

To view the instances of a process, use the **display placement program all** command.

Examples

# Set a negative self affinity of 200 for the **staticroute** process.

```
<Sysname> system-view
[Sysname] placement program staticroute
[Sysname-program-staticroute] affinity self repulse 200
```

Related commands

affinity location-set

affinity location-type

display ha service-group

Use **display ha service-group** to display service group information.

Syntax

display ha service-group { *service-group-name* [**instance** *instance-name*] | **all** }

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

service-group-name: Specifies a service group running on the device. The service group name is a case-insensitive string of 1 to 15 characters.

instance *instance-name*: Specifies a service group instance by its name, a case-insensitive string of 1 to 31 characters.

all: Specifies all service groups running on the device.

Usage guidelines

A service group is a collection of processes. Typically, a service group contains only one process. If a process has instances, the corresponding service group also has instances.

Examples

# Display information about all service groups.

```
<Sysname> display ha service-group all
Service Group                     Current Location      State
-----------------------------------------------------------------------------
```

```
syslog                          1/0                 Realtime Backup
...
```

# Display information about the **staticroute** service group.

```
<Sysname> display ha service-group staticroute
Service Group                   Current Location     State
------------------------------------------------------------------------------
staticroute                     1/0 (Active)         Realtime Backup

  Detailed information about services of the program:
  Service           PID    Type      Location   State
  -------------------------------------------------------------
  ifm               200    Active    1/0        Realtime Backup
  staticroute       200    Active    1/0        Realtime Backup
```

Table 1 Command output

Field	Description
Service Group	Service group name.
Current Location	Current location of the active processes for a service group.
State	Backup state of the active and standby processes for a service group.
Detailed information about services of the program	Detailed information about all active and standby processes in a service group.
Service	Service name.
PID	Process ID.
Type	Process type: **Active** or **Standby**.
Location	Location of the active process of a service.
State	Process status: • **Realtime Backup**. • **Batch Backup**. • **Stopping**. • **Degrading**. • **Upgrading**.

display placement location

Use **display placement location** to display the processes running on the specified location.

Syntax

display placement location { **all** | **slot** *slot-number* }

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

all: Displays all processes running on the device.

slot *slot-number*: Specifies an IRF member device by its member ID.

Examples

# Display all processes running on the device.

```
<Sysname> display placement location all
Program(s) placed at location: 1/0
  syslog
...
```

display placement policy

Use **display placement policy** to display process placement policy information.

Syntax

display placement policy program { *program-name* | **all** | **default** }

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

program-name: Specifies a process by its name, a case-insensitive string of 1 to 15 characters.

all: Displays all process placement policies.

default: Displays the default process placement policy. If no default process placement policy is configured by using the **placement program default** command, the **display placement policy program default** command does not display any information.

Usage guidelines

The information about a placement policy is displayed only when the placement policy is configured for the specified process.

Examples

# Display the default process placement policy.

```
<Sysname> display placement policy program default
Program: [default]                                : source
-----------------------------------------------------------
  affinity location-set slot 1 attract 500        : system [default]
```

Table 2 Command output

Field	Description
Program	Process name and the placement policy for the process. If you execute the **display placement policy program default** command, the process name is displayed as **[default]**.
source	Source of the setting. If a default placement setting is configured in the view you enter with the **placement program default** command, this field displays

Field	Description
	system [default]. If a placement setting for the **staticroute** process is configured in the view you enter with the **placement program** *program-name* command, this field displays **system staticroute**.

display placement program

Use **display placement program** to display the location of an active process.

Syntax

display placement program { *program-name* | **all** }

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

program-name: Specifies a process by its name, a case-insensitive string of 1 to 15 characters.

all: Specifies all processes running on the device.

Examples

# Display the location of the **staticroute** active process.

```
<Sysname> display placement program staticroute
Program                           Placed at location
----------------------------------------------------
staticroute                       1/0
```

Table 3 Command output

Field	Description
Program	Process name.
Placed at location	Location of the active process. If the active process is abnormal or is starting up, this field displays **NA**.

display placement reoptimize

Use **display placement reoptimize** to display the predicted location changes that will occur after you execute the **placement reoptimize** command.

Syntax

display placement reoptimize program { *program-name* [**instance** *instance-name*] | **all** }

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

program-name: Specifies a process (that supports process optimization) by its name, a case-insensitive string of 1 to 15 characters.

instance *instance-name*: Specifies an instance of the specified process. The instance name is a case-insensitive string of 1 to 31 characters. Whether a process has multiple instances depends on the system software.

all: Specifies all processes that are running on the device and that support process optimization.

Examples

# Display the predicted location changes for all processes.

```
<Sysname> display placement reoptimize program all
Predicted changes to the placement
Program                           Current location       New location
----------------------------------------------------------------------
staticroute                       1/0                    1/0
...
```

The output shows the process name, current location of the active process, and new location of the active process after optimization.

placement program

Use **placement program** to enter placement process view.

Use **undo placement program** to delete the placement policy for a process.

Syntax

placement program { *program-name* [**instance** *instance-name*] | **default** }

undo placement program { *program-name* [**instance** *instance-name*] | **default** }

Views

System view

Predefined user roles

network-admin

Parameters

program-name: Specifies a process name, a case-insensitive string of 1 to 15 characters.

instance *instance-name*: Specifies the name of an instance of the specified process. The instance name is a case-insensitive string of 1 to 31 characters. If you do not specify this option, this command enters process placement policy view and the settings in process placement policy view take effect on all instances. Whether a process has multiple instances depends on the system software.

default: Configures the default placement policy for all processes.

Usage guidelines

You configure a process placement policy to optimize the distribution of processes in your system for optimal distribution of CPU and memory resources.

For an instance of a process, the priorities of the settings in placement policy view of an instance, placement policy view of a process, and the default placement policy view are in descending order. For a process, the settings in placement policy view of the process take precedence over the settings in the default placement policy view.

A process placement policy contains the **affinity location-type**, **affinity location-set**, **affinity program**, and **affinity self** commands. The commands describe the preferences of the process for a specific location.

You can configure all the **affinity** commands in the placement policy for a process. Based on the placement policy and hardware resources, the system automatically determines the location for running the active process. Before you apply the policy, you can use the **display placement reoptimize** command to view the predicted location for the process. When a process switchover occurs, the process on the predicted location is selected as the active process.

Examples

# Enter the placement process view of the **staticroute** process.

```
<Sysname> system-view
[Sysname] placement program staticroute
[Sysname-program-staticroute]
```

# Enter the default placement process view.

```
<Sysname> system-view
[Sysname] placement program default
[Sysname-program-default]
```

placement reoptimize

Use **placement reoptimize** to apply configured process placement policies for optimizing process placement.

Syntax

placement reoptimize

Views

System view

Predefined user roles

network-admin

Usage guidelines

To avoid neighbor flapping of related protocols, make sure HA features such as NSR or GR are configured for the processes and are stable before optimizing process placement.

After you execute this command, the system bases its placement decisions on the new process placement policies, hardware resources, and locations and states of active processes. The process on the new location is selected as the active process. If the new location for an active process is different from its current location, a process switchover is triggered. The system changes the state of the original active process to standby and the state of the standby process on the new location to active. You can use the **display placement program** command to view the new location of the active process.

To keep the system stable, do not perform any tasks that require process restart when you execute this command.

Examples

# Reoptimize process placement.

```
<Sysname> system-view
```

```
[Sysname] placement reoptimize
Predicted changes to the placement
Program                           Current location       New location
---------------------------------------------------------------------
staticroute                       1/0                    1/0
Continue? [y/n]:y
Re-optimization of the placement start. You will be notified on completion
Re-optimization of the placement complete. Use 'display placement' to view the new placement
```

This example uses only the **staticroute** process.