Resource Management

This section is intended for Organization Administrators. Topics in this section include:

- Overview of Resource Management, page 6-1
- Using Resource Management, page 6-1

Overview of Resource Management

The following resources are currently supported by Resource Manager:

- MCU
  - Cisco MCU version 4.x and 5.x
- Gateways
  - Cisco Unified Videoconferencing Manager gateway products
- Gatekeepers/SIP servers
  - Cisco IOS H.323 Gatekeeper
  - Microsoft LCS

Using Resource Management

Use the Resource Management section to organize, assign, and monitor resources.

Accessing Resource Management

To access the Resource Management section and its tabs, in the sidebar menu, go to Admin > Resource Management. The Resource Management section contains the following tabs:

- Gatekeeper/SIP server—See the “Using the Gatekeeper/SIP Server tab” section on page 6-2
- MCU—See the “Using the MCU Tab” section on page 6-5
- Gateway—See the “Using the Gateway Tab” section on page 6-9
- Meeting Rooms—See the “Using the Meeting Rooms Tab” section on page 6-11. Meeting Rooms is hidden by default. It can be activated via the Resource Manager Configuration Tool.
- Terminals—See the “Using the Terminals Tab” section on page 6-13
Using the Gatekeeper/SIP Server tab

On the Gatekeeper/SIP server tab you can monitor, add, delete and modify gatekeeper and SIP server information. A gatekeeper/SIP server must be listed in the Gatekeeper/SIP server window before you can add an MCU to its registry.

The Internal Gatekeeper (the internal gatekeeper) is listed in the Gatekeeper/SIP window. MCUs and Gateways are registered to the Internal Gatekeeper. In addition, you can optionally configure the Cisco IOS H.323 Gatekeeper. The Cisco IOS H.323 Gatekeeper is automatically set as Internal Gatekeeper's neighbor. On the Cisco IOS H.323 Gatekeeper, the Internal Gatekeeper must be manually defined as its neighbor. The forwarding rule on the Cisco IOS H.323 Gatekeeper should be any dial string beginning with MCU service prefixes should go to the Internal Gatekeeper. Terminals can be registered to either the Internal Gatekeeper or the Cisco IOS H.323 Gatekeeper.

Accessing the Gatekeeper/SIP Server tab

Procedure

Step 1 In the sidebar menu, select Admin > Resource Management.
Step 2 In Resource Management, select the Gatekeeper/SIP server tab.

Adding a Gatekeeper/SIP Server

The procedure for adding a gatekeeper/SIP server differs slightly depending on which model you select.

Procedure

Step 1 On the Gatekeeper/SIP server tab, click Add.
Step 2 In the New Gatekeeper/SIP server window that appears, in the Name field, enter the name of the Gatekeeper/SIP server.
Step 3 In the IP Address field, enter an IP address for the Gatekeeper/SIP server.
Step 4 From the Model list, select the type of server that you want to add.

The window displays options relevant to the server you select. For example, the display of the Protocol list, the Dialing Plan Information, and the Advanced section is dependent on which server you select.

Before you configure SIP server settings in Resource Manager, make sure you have correctly set the required SIP server details for the Cisco MCU, on the Protocols tab, in the SIP section.
– Microsoft LCS—In the Protocol list, SIP is automatically displayed. In the SIP Domain field, enter the server domain.

– Other Model—From the Protocol list, select a server. If the server is a SIP server, in the SIP Domain field, enter the server domain.

**Step 5** From the Location list, set the device island to which the device belongs.

**Step 6** In the Dialing Plan Information section, select one or both of the following options:

– Hierarchical—Select this option if the gatekeeper has a parent-child relationship with other its neighbor in the dialing plan rather than a flat peer relationship.

  If you select Hierarchical, the Parent Gatekeeper list becomes active. Select a parent zone for the gatekeeper. None is automatically selected in the list if the gatekeeper is a parent at the top of the hierarchy.

  Do not select Hierarchical for a root gatekeeper. The root gatekeeper in a hierarchical tree structure has no parent but may have peer neighbors.

  **Note** The Dialing Plan Information section does not appear if Microsoft LCS is selected in Model list.

  **Note** Multi-gatekeeper dialing plan support is available for Cisco Gatekeepers only.

– Stripping—For a gatekeeper that is configured to strip (remove) zone prefixes.

**Step 7** To select a Zone Prefix for each prefix configured on the Gatekeeper/SIP server, click **Add Zone Prefix**.

  The Delete Zone Prefix button, prefix check box and prefix field appear.

**Step 8** Check **prefix**, and then enter a number in the prefix field.

  **Note** When checked, registered endpoint E.164 numbers and MCU/gateway service prefixes must not begin with the same digits as the gatekeeper prefix.

**Step 9** If you are using the Cisco IOS H.323 Gatekeeper, and you want to configure authorization options and point-to-point capabilities, in the Advanced section, click **Enable ECS advanced features (authorization and point-to-point)**. When this option is checked, Resource Manager uses the advanced Cisco IOS H.323 Gatekeeper Third Party Call Control API to create meetings with only two endpoints directly from the gatekeeper without using MCU resources. Resource Manager communicates with the Cisco IOS H.323 Gatekeeper to monitor and to authorize all point-to-point calls in the system.

**Step 10** Click **Configure**.

  An authorization window opens.

  Information appears in the Authorization Login, Authorization Password, and Authorization Port fields.

**Step 11** Click **OK**.

  **Note** You must perform Authorization to enable the gateway to support Direct Inward Dialing (DID), and to allow Resource Manager to communicate with the gatekeeper to monitor, authorize, and allocate resources for endpoint-initiated calls. In Authorization Mode, only terminals predefined in Resource
Manager can initiate calls. When a predefined terminal initiates a call to a non-predefined terminal, Resource Manager treats the non-predefined terminal as an external endpoint. Authorization is required to enable Virtual Conference ID and Dynamic Cascading capabilities.

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**Note**

Resource Manager does not allow you to extend an endpoint-initiated call when any one of the participating endpoints is invited to another meeting within 30 minutes of the scheduled end time of the endpoint initiated call. The 30-minute default setting for the Duration of Endpoint Initiated Calls field can be modified in the Resource Manager Configuration Tool.

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**Note**

Information appears automatically in the Port, SNMP Get Community, and Get SNMP Get Community fields, with default values. If the values on the real device are different, configure them accordingly.

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**Note**

If you add a gatekeeper, it is automatically designated as a neighbor of the internal gatekeeper.

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**Modifying a Gatekeeper/SIP Server definition**

**Procedure**

**Step 1**
On the Gatekeeper/SIP server tab, click the name of the server you want to modify.

**Step 2**
In the Modify Gatekeeper/SIP server window, edit the details as required.

**Step 3**
Click **OK**.

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**Deleting a Gatekeeper/SIP server**

**Note**

You cannot recover a Gatekeeper/SIP server once it is deleted.

**Procedure**

**Step 1**
On the Gatekeeper/SIP server tab, click the name of the server you want to delete.

**Step 2**
In the Modify Gatekeeper/SIP server window, click **Delete**.

**Step 3**
If you want to delete the IP addresses for additional gateways in the gateway pool, click **Modify** next to the IP Address field, and then in the Modify Gateway window, click **Delete**.

Depending on the current use of the gatekeeper/SIP server, the following events may occur:

- If there are any meetings scheduled within two hours of the time of deletion utilizing this gatekeeper/SIP server, Resource Manager does not allow the deletion.
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- If the gatekeeper/SIP server has other gateways mapped as “children,” Resource Manager reconfigures the gateway dialing plan using those children as root gatekeeper/SIP servers and dialing accordingly.
- If there are devices registered to the deleted gatekeeper/SIP server, after deletion, they appear as not registered to any gatekeeper/SIP server.

**Note**
Reconfigure manually, if necessary, after a gatekeeper/SIP server is deleted.

### Searching for a Gatekeeper/SIP Server

You can search for a Gatekeeper/SIP server by name.

**Procedure**

**Step 1**
In the Name field, enter all or part of the name of the gatekeeper or SIP server you want to find.

**Step 2**
Click **Search**.

If a Gatekeeper/SIP server is found, it appears in the list.

**Step 3**
To view the complete list of Gatekeeper/SIP servers, clear the Search field, and then click **Search**.

The following information about connection statuses is available in the list of search results:

- **Authorization Connection** indicates whether or not the Cisco IOS H.323 Gatekeeper/Resource Manager authorization link is established. This connection is only established as needed, therefore sometimes it can appear as disconnected which is not an error.
- **Call Control Connection** indicates whether or not the Cisco IOS H.323 Gatekeeper/API connection is established by Resource Manager.
- **SNMP Connection** indicates whether or not the SNMP connection between Resource Manager and Cisco IOS H.323 Gatekeeper is established.

### Using the MCU Tab

On the MCU tab you can monitor, add, delete and modify MCUs.

### Selecting a Priority for Meeting Cascading

You can cascade MCUs to reduce potential drain on network resources and increase the efficiency of MCU usage. The following points about cascading should be noted:

- The service representing the required meeting must be available on all participating MCUs.
- Resource Manager meeting control features may not function correctly in manually-cascaded meetings.
We do not recommend working with clustered MCUs (multiple MP units on a single MCU). Clustered MCU configurations have no control-overload balancing and may cause a single point of failure. Contact Cisco Customer Support for further information.

Each master MCU uses one port for every slave MCU.

Each slave MCU used in a cascaded meeting requires one additional port.

Resource Manager supports meeting cascading via the Prioritize field that appears in several locations in the Resource Manager user interface. Cascading is conducted according to the priority you select.

**Procedure**

**Step 1** In the Admin sidebar menu, click **Advanced Settings**.

**Step 2** On the Default Meeting Settings tab, in the **Prioritize** field, select one of the following options

- **Bandwidth**—Resource Manager allocates resources to conserve bandwidth. For example, at a site with two users and an MCU, Resource Manager creates a local meeting. In some cases, this may cause a meeting to cascade to conserve bandwidth, even though a single MCU is available to host the meeting.

- **Delay**—Resource Manager allocates resources to ensure the best video quality. Resource Manager invites all users directly to a main MCU, whatever their location. Since Delay can be costly in terms of bandwidth, it is recommended that you take topology into account before selecting the Delay option.

- **Local MCU**—Select this option if Resource Manager has more than one MCU and there are at least two meeting participants. Resource Manager invites all of the participating terminals to meetings hosted on their respective local MCUs (according to IP Topology settings), and then cascades these meetings together to form a single conference.

**Step 3** Click **OK**.

**Note**

You can also access the Prioritize field via User > Meeting Templates > Advanced and User > Meeting Scheduling > Advanced.

**Adding an MCU**

**Procedure**

**Step 1** On the MCU tab, click **Add**.

**Step 2** On the Basic tab, from the Model list, select the model of the MCU.

**Step 3** If you want to register the MCU to a gatekeeper, select from the **Registered to** list.

**Step 4** If you want to register the MCU to a SIP server, check **SIP Only**.

**Note**

Make sure the MCU is only registered to a SIP server and not registered to a H.323 gatekeeper.
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Step 5 From the Location list, select the device island to which the MCU belongs.

Step 6 If you want to designate a specific port via which Resource Manager communicates with the MCU or designate SNMP Community passwords (passwords for retrieving and sending information), click the Advanced tab and then edit the default entries in the fields.

Note When you check SIP Only, the Registered to field is inactive.

Note The Advanced tab is active only for certain MCU models, and its fields vary according to the MCU model.

Step 7 On either the Basic or the Advanced tab, click OK.

The new MCU appears in the list on the MCU tab.

Note If Resource Manager and an MCU are located on different networks, your security policy must allow SNMP and XML API connections between Resource Manager and the MCU.

Note Resource Manager cannot connect to a newly configured MCU, the MCU is added but its status is Offline. In this case, in the Modify MCU window, select the Online option, and then click OK. For information about modifying an MCU, see the “Modifying an MCU” section on page 6-7.

Updating an MCU

If the MCU configuration is modified (for example, if a new card is added to the MCU), the new MCU configuration data must be synchronized.

Procedure

Step 1 To synchronize new MCU configuration data, set the MCU to online status.

Step 2 Click Update.

Modifying an MCU

You can modify MCU information on the Basic tab and on the Advanced tab.

Note If the specified gatekeeper/SIP server is configured to strip prefixes, MCU service prefixes cannot begin with the same digits as the gatekeeper/SIP server prefix.
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**Procedure**

**Step 1** On the MCU tab, click the name of an MCU in the list.

**Step 2** In the **Modify MCU** window, on the Basic tab, edit the details as required.

**Step 3** In the Advanced Settings section of the Basic tab, you can select from the following options:
- Online—Default setting for all MCUs.
- Offline-up to date—To set the date when the MCU should be online again, click the calendar button and select a date. Resource Manager does automatically bring an MCU online; you must bring the MCU online manually on the specified date.

If you want the MCU to be permanently set to the offline option, check the **Permanently** check box. This activates fields in the window for editing that are otherwise read-only.

If you take an MCU offline, the following occurs:
- Resource Manager cannot schedule meetings for the offline MCU.
- All meetings currently in-progress are terminated. Resource Manager attempts to reschedule upcoming meetings for the offline MCU on other MCUs using the same services and with sufficient, available resources. If no replacement MCUs are available, upcoming meetings are lost and not restored if the MCU’s status is changed to back to online.
- Resource Manager attempts to reschedule all meetings scheduled to this MCU from the time the MCU goes offline to the date specified in the Offline-up to date field of the Modify MCU window.
- If the MCU is set to be Offline > Permanently, Resource Manager attempts to reschedule all future meetings.

The selection appears on the MCU tab, in the Status column.

**Step 4** On the Advanced tab, edit the details as required.

**Step 5** Click OK.

The changes appear in the MCU tab list.

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**Deleting an MCU**

**Caution**

If you delete an MCU, it cannot be recovered. Deleting an MCU or taking an MCU offline, interrupts any meetings that are in progress and causes any future meetings scheduled for the MCU to be rescheduled. There is no guarantee of successful rescheduling.

**Procedure**

**Step 1** On the MCU tab, click the name of the MCU you want to delete.

**Step 2** In the MCU window, select **Offline**, and then check the **Permanent** check box.

**Step 3** Click Delete.

**Step 4** In the message that appears, click OK.
The MCU is deleted from the list in the MCU tab.

### Searching for an MCU

You can search for an MCU by name.

**Procedure**

**Step 1** In the **Name** field, enter all or part of the name of an MCU.

**Step 2** Click **Search**.

If the MCU is located, the MCU name and details appear in the list on the MCU tab.

Information in the Connection column indicates whether or not a communication connection is established between Resource Manager and the MCU.

### Using the Gateway Tab

Registered gateways are listed on the Gateway tab. You can monitor, add, delete, and modify gateways on the Gateway tab.

Resource Manager does not control or communicate with gateways. Resource Manager uses gateway setup information to determine resource allocation. It is important that gateway setup information is accurate.

### Adding a Gateway

When you add a gateway, settings in Resource Manager must be consistent with the actual gateway configuration. The following guidelines are recommended:

- If you make changes to the gateway, maintain the IVR and DID numbers in Resource Manager.
- To ensure that there are gateway ports available for scheduled and ad hoc calls, maintain capacity information.

**Procedure**

**Step 1** In the Resource Management section, click the **Gateway** tab.

**Step 2** Click **Add**.

**Step 3** Enter information in the fields as required.

**Step 4** From the **Registered To** list, select the gatekeeper/SIP server to which the gateway is registered. A complete list of zone prefixes configured within Resource Manager is displayed following the gatekeeper/SIP server name.

**Step 5** To enable gateway pooling, modify the IP Address or add additional gateway IP addresses.

**Step 6** If the gateway only supports dial-in calls, check **Dial-in**.

**Step 7** In the Description field, enter a description for the gateway. This is optional.
Step 8 In the International Access code field, enter the numeric prefix required to make an international long distance call.

Step 9 In the Domestic Long Distance Prefix field, enter the numeric prefix required to make a long distance call within the same country.

Step 10 In the Country Code field, enter the country code for the gateway phone numbers. Resource Manager adds this prefix when dial-out is performed from this gateway to a terminal located in a different country than the gateway.

Step 11 If Allow Out of Area Calls is unchecked, only endpoints with the same area code as the gateway are allowed to reach Resource Manager via the gateway.

**Note** If Allow Out of Area Calls is unchecked, and then you request reserved ports for a gateway, make sure the specified gateway has sufficient resources to provide the additional ports.

If you check Allow Out of Area Calls, the gateway accepts incoming calls to Resource Manager from endpoints with a different area code that is different from the gateway area code. By default, the check box is checked.

Step 12 In the Area Code field, enter the domestic area code of the gateway number.

Step 13 In the Telephone Number field, specify a local telephone number that you want to assign to the specific port.

Step 14 Enter a number in the **To access an outside line for local calls, dial** field, for a gateway with no direct access to an outside line for local calls.

Step 15 Enter a number in the **To access an outside line for long distance calls, dial** field, for a gateway with no direct access to an outside line for long distance calls.

Step 16 To add or modify a gateway service, click **Add Service**.

Step 17 To delete a gateway service, click **Add Service**, and then click **Delete Service**.

Step 18 In the Bandwidth section, if you check the Restricted Mode check box, 56 appears in the Kbps list. Multiples of 56 Kbps are used instead of multiples of 64 Kbps.

Step 19 To add additional phone numbers to a gateway, in the Add Gateway window, click the **Additional** tab, and then enter the required information.

**Modifying a Gateway**

Modification of the gateway is restricted to adding service prefixes and bandwidth, unless you take the gateway offline.

**Procedure**

Step 1 On the Gateway tab, click the name of a gateway in the list.

Step 2 If you want to change the gateway name, in the Name field enter a new name.

Step 3 To add a Service Prefix, click **Add Service**.

Step 4 If you want to edit other fields in the Modify Gateway window, click **Offline**. All fields become active.
Deleting a Gateway

Procedure

Step 1
On the Gateway tab, click the name of a gateway in the list.
The Modify Gateway window appears.

Step 2
Click the Offline option.

Step 3
Check Permanently.

Step 4
Click Delete.
The gateway is deleted.

All upcoming meetings scheduled to use the deleted gateway are rescheduled. For each meeting that is successfully rescheduled, the organizer and participants are notified of the new gateway information. If there are insufficient resources on the network to support a meeting, the meeting is cancelled and the organizer and participants are notified of the cancellation.

Searching for a Gateway

You can search for a gateway by name.

Procedure

Step 1
In the Name field, enter all or part of the gateway name.

Step 2
Click Search.

If the gateway is located, the gateway name and details appear in the list on the Gateway tab.

The Connection column indicates whether Resource Manager established communication channel with the gateway.

Using the Meeting Rooms Tab

A meeting room is a resource that you can schedule or delete. You can edit its default values as well as change the details associated with it. You can also manage registered meeting types on the Meeting Rooms tab. A terminal can be assigned a meeting room and if that terminal is invited to a meeting, the meeting room automatically appears as part of the information associated with that terminal.

Note
The Meeting Rooms tab is hidden by default. It can be activated via the Resource Manager Configuration Tool. For more information, see “Resource Manager Configuration Tool” section on page B-1.
Adding a Meeting Room

You can add a new meeting room to the list on the Meeting Rooms tab.

Procedure

1. On the Meeting Rooms tab, click Add.
2. In the Add Meeting Room window, in the Room Name field, enter a meeting room name.
3. In the Room Location field, enter the location of the meeting room.
4. If you want to receive e-mail notifications regarding meeting types, click Notification E-Mail.
5. If you want to change the Default Time Zone, select a time zone from the list. The default value is set on Advanced Settings > Default > User Settings.
6. Click OK.

The information appears in the list on the Meeting Rooms tab.

Modifying a Meeting Room

You can modify a meeting room that appears in the list on the Meeting Rooms tab.

Procedure

1. On the Meeting Rooms tab, click the name of a meeting room in the list.
2. In the Modify Meeting Room window, complete the fields as required.
   
   Note: The fields are identical to the fields in the Add Meeting Room window.

3. Click OK.

The modified information appears in the list on the Meeting Rooms tab.

Deleting a Meeting Room

You can delete a meeting room from the list on the Meeting Rooms tab.

Procedure

1. On the Meeting Rooms tab, click the name of a meeting room in the list.
2. In the Modify Meeting Room window, click Delete.

The meeting room is deleted from the Meeting Rooms list.
Searching for a Meeting Room

You can search for a Meeting Room by name.

Procedure

**Step 1**  In the Meeting Room field, enter the meeting room name or part of the name.

**Step 2**  Click **Search**.

If a meeting room is found, it appears on the Meeting Rooms tab.

Using the Terminals Tab

Registered terminals are listed on the Terminals tab. You can monitor, add, delete, and modify terminals on the Terminals tab.

If the terminal information cannot be displayed in one window, at the bottom of the window, click the previous or next arrows or click a page number to move between Terminals window pages.

**Note**  The current number of terminals being used and the total number of available terminals appears at the bottom of the Terminals tab.

Adding a Terminal

Procedure

**Step 1**  In the Terminals tab, click **Add**.

The Add Terminal window appears.

**Step 1**  In the Name field, type the name of the terminal.

**Step 2**  To view and revise the list of default users, click **Default Users**.

**Step 3**  In the the Select Users window, select and organize Current Terminal and Current Users names as required, using the arrow buttons.

**Step 4**  To search for the name of a terminal or user, enter a name in the Names field, and then click **Check Names**.

**Step 5**  You can select from a group of terminals or users in the Select from list.

**Step 6**  Click **OK** to apply your selections and close the Select Users window.

**Step 7**  From the Terminal Type list, select an appropriate option

- IP(H.323)
- ISDN/PSTN(H.320)
- Dual(H.320 and H.323)
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Step 8 In the IP Phone number field, enter an E.164 IP phone number that is associated with the terminal. This field only appears when IP(H323) or IP(SIP) is selected in the Terminal Type field.

Step 9 From the Registered To list, select a gatekeeper/SIP server to which the specified terminal is registered to which you want the terminal to be registered.

Note In a multi-zone dialing plan, if the terminal is registered to a gatekeeper/SIP server that is not configured to strip prefixes, it is necessary to append the zone prefix to the E.164 number.

Step 10 From the Location list, select the meeting room location of the terminal. If the terminal is not located in a meeting room within your organization, select None.

Step 11 From the Bandwidth list, select an appropriate option (Audio or a bandwidth value in Kbps).

Step 12 From the Meeting Room list, select the meeting room in which the terminal is located.

Step 13 If you want to receive e-mail notifications regarding terminals, click Notification E-Mail, and then click Browse to select a location for the e-mail notifications.

Step 14 If you want to change the Default Time Zone for the terminal, select a time zone from the list.

Step 15 Click OK.

The new terminal appears in the list on the Terminals tab.

Note When a new terminal is added to the Terminals tab, it is available to users in the Meeting Schedule section, on the Invite tab.

Modifying a Terminal

You can modify a terminal that appears in the list on the Terminals tab.

Procedure

Step 1 On the Terminals tab, click the name of a terminal in the list.

Step 2 In the Modify Terminal window that appears, complete the fields as required.

Note Tabs on the Modify Terminal window are the same as on the Add Terminal window. For details, see the “Adding a Terminal” section on page 6-13.
Deleting a Terminal

You can delete a meeting room from the list on the Meeting Rooms tab.

Procedure

Step 1
On the Terminals tab, click the name of a terminal in the list.

Step 2
In the Modify Terminals window, click **Delete**.

The terminal is deleted from the Meeting Rooms list.

Searching for a Terminal

You can search for a terminal by name or by dialing information.

Procedure

Step 1
To search for a terminal by name, in the Name field, enter all or part of a terminal name, and then click **Search**.

Step 2
To search for a terminal by number, in the Dialing Info field, enter all or part of a terminal IP number or ISDN phone number, and then click **Search**.

**Note**
ISDN phone number of the terminal should be include without any dashes or spaces (available only when ISDN(H320) or Dual(H320 and H323) are selected in the Terminal Type field). Both IP and ISDN numbers are displayed if the terminal is configured as a dual terminal.

Search results are displayed in the Terminal tab list.