

# **HP-UX Multimedia Streaming Protocols (MSP) Release Notes**

**HP-UX 11i v1 and HP-UX 11i v2**



**Manufacturing Part Number: 5991-0719**

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U.S.A.

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# **1 HP-UX Multimedia Streaming Protocols (MSP) Release Notes**

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## **Announcement**

The following information applies to version 1.001 of the Multimedia Streaming Protocols (MSP) software on HP-UX 11i v1 and HP-UX 11i v2 operating systems.

The MSP framework for HP-UX multimedia streaming servers comprises libraries required for implementing the MSP protocols and transmitting real-time data.

The following lists the protocols that the multimedia streaming applications use:

- Real Time Protocol (RTP)
- Real Time Streaming Protocol (RTSP)
- Session Description Protocol (SDP)

In the HP-UX 11i v2 operating system both the 32-bit and 64-bit versions of MSP libraries are delivered but the HP-UX 11i v1 operating system contains only the 32-bit version of MSP libraries.

The MSP software is available as a Web upgrade on the HP-UX 11i v1 and HP-UX 11i v2 operating systems at <http://www.software.hp.com>.

## What Is in This Version

This section outlines the features that MSP offers.

The MSP software includes the following libraries:

- RTP library – `librtp.sl`
- RTSP library – `librtsp.sl`
- SDP library – `libsdp.sl`

## Protocol Overview

The following lists the protocols that MSP includes:

- RTP

Real Time Protocol (RTP) is a transport protocol that provides end-to-end network transport functions for applications transmitting data with real-time properties, such as interactive audio and video.

RTP consists of Real-Time Control Protocol (RTCP), a closely linked protocol, that provides a mechanism for reporting feedback on the transmitted real-time data.

- RTSP

Real Time Streaming Protocol (RTSP) controls the transfer of real-time media data and serves as a network-remote-control for multimedia services.

- SDP

Session Description Protocol (SDP) describes the general real-time multimedia sessions.

See *HP-UX Multimedia Streaming Protocols (MSP) Programmer's Guide*, available at <http://www.docs.hp.com/hpux/netcom/index.html>, for more information.

## Benefits

Multimedia application developers use these protocols for developing multimedia streaming applications. With MSP, developers can develop multimedia streaming applications on the HP-UX operating system.

MSP on HP-UX 11i v1 and HP-UX 11i v2 conforms to the following RFCs:

- RFC 1889 - *RTP: A Transport Protocol for Real-Time Applications*

- RFC 2326 - *Real Time Streaming Protocol (RTSP)*
- RFC 2327 - *SDP: Session Description Protocol*

## Documentation Availability

*HP-UX Multimedia Streaming Protocols (MSP) Programmer's Guide* is available at the following URL:

<http://docs.hp.com/hpux/netcom/index.html>.

## Man Pages

Table 1-1 describes the man pages that the MSP software depot contains.

**Table 1-1**                    **Man Pages**

<b>Man Page</b>	<b>Description</b>
rtp (7p)	Provides an introduction to the RTP library.
rtp_close (3n)	Describes <code>rtp_close()</code> that closes an RTP connection.
rtp_ioctl (3n)	Describes <code>rtp_ioctl()</code> that controls an RTP session.
rtp_open (3n)	Describes <code>rtp_open()</code> that opens an RTP session.
rtp_poll (3n)	Describes <code>rtp_poll()</code> that monitors I/O conditions on multiple RTP session descriptors.
rtp_recv (3n)	Describes <code>rtp_recv()</code> that receives RTP/RTCP packets from an RTP session.
rtp_send (3n)	Describes <code>rtp_send()</code> that sends an RTP packet.
rtsp (5)	Provides an introduction to the RTSP library.
rtsp_alloc_cache (3n)	Describes <code>rtsp_alloc_cache()</code> that dynamically allocates memory for the <code>rtsp_cache_t</code> structure and initializes the structure members with application-specified values.

**Table 1-1 Man Pages (Continued)**

<b>Man Page</b>	<b>Description</b>
rtsp_alloc_range (3n)	Describes <code>rtsp_alloc_range()</code> that dynamically allocates memory for the <code>rtsp_range_t</code> structure and initializes its members with application-specified values.
rtsp_alloc_rtpinfo (3n)	Describes <code>rtsp_alloc_rtpinfo()</code> that dynamically allocates memory for the <code>rtsp_rtpinfo_t</code> structure and initializes its members with application-specified values.
rtsp_append_msg_hdr (3n)	Describes <code>rtsp_append_msg_hdr()</code> that appends the header field information in an RTSP message.
rtsp_close (3n)	Describes <code>rtsp_close()</code> that closes an RTSP connection.
rtsp_alloc_xport_spec (3n)	Describes <code>rtsp_alloc_xport_spec()</code> that dynamically allocates memory for the <code>rtsp_xport_spec_t</code> structure and initializes its members with application-specified values.
rtsp_copy_msg_hdr (3n)	Describes <code>rtsp_copy_msg_hdr()</code> that copies header from one RTSP Message to another.
rtsp_create_conn (3n)	Describes <code>rtsp_create_conn()</code> that creates an RTSP connection.
rtsp_free_cache (3n)	Describes <code>rtsp_free_cache()</code> that frees the dynamically allocated memory for the <code>rtsp_cache_t</code> structure and its members.
rtsp_free_msg (3n)	Describes <code>rtsp_free_msg()</code> that frees the dynamically allocated memory for the <code>rtsp_msg_t</code> structure and its members.
rtsp_free_range (3n)	Describes <code>rtsp_free_range()</code> that frees the dynamically allocated memory for the <code>rtsp_range_t</code> structure and its members.

**Table 1-1 Man Pages (Continued)**

<b>Man Page</b>	<b>Description</b>
rtsp_free_rtpinfo (3n)	Describes <code>rtsp_free_rtpinfo()</code> that frees the dynamically allocated memory for the <code>rtsp_rtpinfo_t</code> structure and its members.
rtsp_free_session (3n)	Describes <code>rtsp_free_session()</code> that frees the dynamically allocated memory for the <code>rtsp_session_t</code> structure and its members.
rtsp_free_session_flds (3n)	Describes <code>rtsp_free_session_flds()</code> that frees the dynamically allocated memory for the <code>rtsp_session_t</code> structure and its members.
rtsp_free_xport_spec (3n)	Describes <code>rtsp_free_xport_spec()</code> that frees the dynamically allocated memory for the <code>rtsp_xport_spec_t</code> structure and its members.
rtsp_free_xport_spec_flds (3n)	Describes <code>rtsp_free_xport_spec_flds()</code> that frees the dynamically allocated memory for the <code>rtsp_xport_spec_t</code> structure members.
rtsp_get_conn_opt (3n)	Describes <code>rtsp_get_conn_opt()</code> that retrieves options associated with an RTSP connection.
rtsp_get_msg_body (3n)	Describes <code>rtsp_get_msg_body()</code> that gets the body of an RTSP message.
rtsp_get_msg_hdr (3n)	Describes <code>rtsp_get_msg_hdr()</code> that retrieves the header field from an RTSP message.
rtsp_get_msg_request_line (3n)	Describes <code>rtsp_get_msg_request_line()</code> that retrieves the RTSP method and the URL information from an RTSP request message.
rtsp_get_msg_response_line (3n)	Describes <code>rtsp_get_msg_response_line()</code> that retrieves the Status Code and the Reason Phrase information from an RTSP response message.
rtsp_init_cache (3n)	Describes <code>rtsp_init_cache()</code> that initializes the members of the <code>rtsp_cache_t</code> structure with their default values.

**Table 1-1 Man Pages (Continued)**

<b>Man Page</b>	<b>Description</b>
rtsp_init_range (3n)	Describes <code>rtsp_init_range()</code> that initializes the members of the <code>rtsp_range_t</code> structure with the default values.
rtsp_init_request_msg (3n)	Describes <code>rtsp_init_request_msg()</code> that creates a new RTSP request message and sets the Method and URL information in the message.
rtsp_init_response_msg (3n)	Describes <code>rtsp_init_response_msg()</code> that creates a new RTSP response message and sets the Status Code and Reason Phrase information in the message.
rtsp_init_rtpinfo (3n)	Describes <code>rtsp_init_rtpinfo()</code> that initializes the members of the <code>rtsp_rtpinfo_t</code> structure with the default values.
rtsp_init_session (3n)	Describes <code>rtsp_init_session()</code> that initializes the members of the <code>rtsp_session_t</code> structure with the specified values.
rtsp_init_xport_spec (3n)	Describes <code>rtsp_init_xport_spec()</code> that initializes the members of the <code>rtsp_xport_spec_t</code> structure with the default values.
rtsp_is_request_msg (3n)	Describes <code>rtsp_is_request_msg()</code> and <code>rtsp_is_response_msg()</code> that check if an RTSP message is a request message or a response message.
rtsp_open (3n)	Describes <code>rtsp_open()</code> that creates a new RTP connection to the peer.
rtsp_parse_url (3n)	Describes <code>rtsp_parse_url()</code> that parses a string containing the RTSP URL in RFC2326 format into the <code>rtsp_url_t</code> structure.
rtsp_recv (3n)	Describes <code>rtsp_recv()</code> that receives either an RTSP message or an interleaved media packet from an RTSP connection.

**Table 1-1 Man Pages (Continued)**

<b>Man Page</b>	<b>Description</b>
rtsp_send_msg (3n)	Describes <code>rtsp_send_msg()</code> that sends an RTSP message over an RTSP Connection.
rtsp_send_stream (3n)	Describes <code>rtsp_send_stream()</code> that sends interleaved binary data over an RTSP connection.
rtsp_set_conn_opt (3n)	Describes <code>rtsp_set_conn_opt()</code> that sets the options associated with a RTSP connection.
rtsp_set_msg_body (3n)	Describes <code>rtsp_set_msg_body()</code> that sets the body of an RTSP message.
rtsp_set_msg_hdr (3n)	Describes <code>set_msg_hdr()</code> that sets the Status Code and Reason Phrase information in an RTSP response message.
rtsp_set_msg_request_line (3n)	Describes <code>rtsp_set_msg_request_line()</code> that sets the RTSP Method and the URL information in an RTSP request message.
rtsp_set_msg_response_line (3n)	Describes <code>rtsp_set_msg_response_line()</code> that sets the Status Code and Reason Phrase information in an RTSP response message.
sdp (5)	Provides an introduction to the SDP library.
sdp_get (3n)	Describes APIs that get or set SDP structure members.
sdp_get_connection (3n)	Describes APIs that get or set SDP structure members.
sdp_get_media_info (3n)	Describes APIs that get or set SDP structure members for media descriptions.
sdp_init (3n)	Describes <code>sdp_init()</code> that allocates space and initializes the SDP structures, and <code>sdp_free()</code> that frees the space allocated for the SDP structures.

**Table 1-1**                    **Man Pages (Continued)**

<b>Man Page</b>	<b>Description</b>
sdp_parse_buf (3n)	Describes sdp_parse_buf () that parses the buffer containing SDP descriptions and fills up the sdp structure, and sdp_create_buf () that generates an SDP packet from the SDp structure,

## **Known Problems and Workarounds**

There are no known problems for MSP.

## Installing MSP

This chapter describes how to install the Multimedia Streaming Protocols (MSP) Software Developer's Kit (SDK) on the HP-UX 11i v1 and HP-UX 11i v2 operating systems.

It discusses the following topics:

- “Prerequisites” on page 16
- “Using swinstall to Install MSP” on page 16
- “Installing the rtp and rtcp Kernel Modules” on page 17

### Prerequisites

The following lists the prerequisites for installing MSP:

- HP systems running HP-UX 11i v1 or HP-UX 11i v2
- 1.3 MB of memory

### Using swinstall to Install MSP

You can download the MSP software bundle from the following URL:

<http://www.software.hp.com>

After downloading the software bundle, use the `swinstall` command to install the package on your system. You do not need to create or modify any system file while installing the MSP software on your system. The `swinstall` command creates and modifies the necessary files on your system automatically. For more information about the `swinstall` command, type `man 1 swinstall` at the HP-UX command prompt.

### Installation Instructions

To install MSP on the HP-UX 11i v1 or HP-UX 11i v2 operating system, complete the following steps:

- Step 1.** Review “Prerequisites” on page 16 to ensure your system meets MSP installation requirements.
- Step 2.** To download the MSP software, complete the following steps:
  - a. Go to the HP Software Depot at <http://www.software.hp.com>.

- b. Search for “MSP” and read the “Overview” and “Installation” pages for MSP.
- c. Select **Receive for Free >>** option at the bottom right of the Overview page.
- d. Choose the MSP release for the HP-UX 11i v1 or HP-UX 11i v2 operating system.
- e. Enter your registration information, and read and accept the Terms and Conditions statements.
- f. Select **Download** at the bottom of the page and save the MSP depot to a local file on your system, for example: `/tmp/MSP.depot`.

**Step 3.** Use the following `swinstall` command to install the MSP software depot on your system:

```
# swinstall -s <destination path>
```

where:

`<destination path>` specifies the absolute path of MSP depot on your system.

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**NOTE**            The `swinstall` command installs the library files and header files in the `/usr/lib` and `/usr/include` directories, respectively.

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## Installing the `rtp` and `rtcp` Kernel Modules

MSP contains the following Dynamically Loadable Kernel Modules (DLKM):

- `rtp`
- `rtcp`

The modules `rtp` and `rtcp` are automatically loaded after installing the MSP software. These modules are also loaded when you reboot your system after installing the MSP software.

If you wish to remove these modules, and load them at a later point in time, you can reload these modules manually using the `knadmin` or the `kcmodule` command. You can also use the `knadmin` or the `kcmodule` command to unload and query the status of these modules.

### For the HP-UX 11i v1 Operating System

This section discusses the different `knadmin` options that you use to load, unload, and query the status of the `rtp` and `rtcp` modules on the HP-UX 11i v1 operating system.

## Installing MSP

You can use the following command to load the `rtp` and `rtcp` kernel modules on the HP-UX 11i v1 operating system:

```
kmadmin -L rtp rtcp
```

You can use the following command to unload the `rtp` and `rtcp` kernel modules:

```
kmadmin -U rtp rtcp
```

You can use the following command to query the status of the `rtp` and `rtcp` kernel modules and to check if the modules are installed on the system:

```
kmadmin -Q rtp rtcp
```

For more information on the `kmadmin` command, type `man 1M kmadmin` at the HP-UX prompt.

### For the HP-UX 11i v2 Operating System

This section discusses the different `kcmodule` options that you use to load, unload, and query the status of the `rtp` and `rtcp` modules on the HP-UX 11i v2 operating system.

You can use the following command to load the `rtp` and `rtcp` kernel modules:

```
kcmodule rtp=loaded rtcp=loaded
```

You can use the following command to unload the `rtp` and `rtcp` kernel modules:

```
kcmodule rtp=unused rtcp=unused
```

You can use the following command to query the status of the `rtp` and `rtcp` kernel modules and to check if the modules are installed properly on the system:

```
kcmodule -q rtp rtcp
```

For more information on `kcmodule`, type `man 1M kcmodule` at the HP-UX prompt.

## **Software Availability in Native Languages**

This version of MSP is not available in non-English languages.

**Defect Fix**

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**Defect Fix**

The defect fixed in this release of MSP is SR 8606273202.