



Release Notes:

Helix Mobile Server 11.1

Helix Mobile Gateway 11.1

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1. Version Information

Release: Helix Mobile Server 11.1 and Helix Mobile Gateway 11.1

Version: 11.1.0.719

Build: servproxya11-051906-7069

Release Status: General Availability

Products: Helix Mobile Server, Helix Mobile Gateway

Files:

Redhat Enterprise Linux 4 Software:

mbgw1110-linux-rhel4.tar.gz

mbpx1110-linux-rhel4.tar.gz

mbrs1110-linux-rhel4.tar.gz

Solaris 8 and Solaris 9 Software:

mbgw1110-solaris-8.tar.gz

mbpx1110-solaris-8.tar.gz

mbrs1110-solaris-8.tar.gz

Windows Server 2003 Software:

mbgw1110-win32.zip

mbpx1110-win32.zip

mbrs1110-win32.zip

Documentation:

HelixMobileServerAdmin.pdf

HelixMobileServerConfig.pdf

HelixMobileProxyAdmin.pdf

HelixMobileProxyConfig.pdf

Note: not all files are distributed with all distributions.

2. Hardware/Software Requirements

Supported Platforms:

- Redhat Enterprise Linux 4
- Solaris 8
- Solaris 9
- Windows Server 2003

Additional information about platform configuration recommendations for operating systems and hardware available at:

http://www.realnetworks.com/resources/contentdelivery/server/recommended_platforms.html

3. What's New

3GP Reduced Startup Delay: Helix Server v11.1 will now offer quicker startup with 3GP Live Streams as well. RSD had previously not been supported for this data-type.

NADU Rate Adaptation: Helix Server v11.1 will now support the use of NADU packets for use in Rate Adaptation.

4. Documentation Additions

4.1 Security Updates

Please review the recent Security Update and Incident Report. The most recent posting can be reviewed by visiting:

<http://www.service.real.com/help/faq/security>

4.2 Operating System Configuration Changes

4.2.1 Memory Allocation

The Helix Mobile Server and Proxy consume memory on a per-client basis. The amount of memory consumed will vary, according to the nature of the presentation streamed to each.

You may allocate up to two gigabytes of memory to the Helix Mobile Server. Memory is allocated by using the `-m #` command line flag at startup, where `#` is the amount of memory to allocate, in megabytes. For example, starting the server with the command `Bin/rmserver rmserver.cfg -m 512` would allocate 512 megabytes of memory to the server process.

4.2.2 File Descriptor Settings

RealNetworks recommends increasing the default file descriptor setting for your Solaris and Linux servers. File descriptors are heavily used by the server, for each file read, each open socket, etc. The recommended number of file descriptors to set is 65536 for each CPU. So on a dual processor machine you would set the value to 131072, and on a quad processor machine you would set it to 262144.

4.2.2.1 RHEL4

1. Examine system fd limit and ensure it meets or exceeds the recommended minimum:

```
$ cat /proc/sys/fs/file-max
```

If it doesn't, increase it by editing the file `/etc/sysctl.conf` (all file edits will require root access) and adding:

```
fs.file-max = number_of_desired_file_descriptors
```

2. Edit as root `/etc/security/limits.conf` and add the lines:

```
*      soft      nofile      number_of_desired_file_descriptors
*      hard      nofile      number_of_desired_file_descriptors
```

3. Edit `/etc/pam.d/login` and add the following line:

```
session    required    pam_limits.so
```

4. Edit `/etc/pam.d/sshd` and add the following line:

```
session    required    pam_limits.so
```

4.2.2.2 Solaris 8 and Solaris 9

1. examine system fd limit and ensure it exceeds the recommended minimum:

```
$ ulimit -Hn
```

If it doesn't, increase it by editing the file `/etc/system` (all file edits will require root access) and adding:

```
set rlim_fd_max=number_of_desired_file_descriptors
```

Solaris boxes running SLTA alone should also have file descriptor limits increased

4.2.3 Solaris 8 and Solaris 9 Patch Recommendations

Testing at RealNetworks has shown some instability of Solaris 8 and 9 operating systems related to high levels of UDP usage. Sun has provided and recommends the following patch in order to address this situation.

<http://sunsolve.sun.com/search/document.do?assetkey=1-26-57728-1>

This patch is not necessary unless the operating systems experience kernel panic messages related to the UDP module.

4.2.4 RHEL4 Kernel Configuration Recommendations

Testing at RealNetworks has shown some instability on Red Hat Enterprise Linux 4. This instability is manifested as "kernel panics" related to "out of memory and no killable processes". This is partially because the 11.1 release of the Helix Mobile Server and Helix Mobile Gateway has a larger memory

footprint than previous releases. Because of the 1 gigabyte (default) kernel virtual memory limitation on 32-bit systems with less than 4G RAM, we are recommending application of the 4G/4G patch set:

- `linux-2.6.0-4g4g.patch`
- `linux-2.6.8-4g4g-backout.patch`
- `linux-2.6.9-4g4g-hugemem-warning.patch`
- `linux-2.6.9-net-b44-4g4g.patch`
- `linux-2.6.9-4g4g-noncacheable.patch`

Note: This should only be necessary in cases where there will likely be enough player load on the server that memory usage would exceed 1 gigabyte. If the server is started with a memory flag setting of less than 1 gigabyte (`-m 1024`), this patch solution will not be required.

To install the Linux kernel patches, do the following steps:

1. Download the kernel-2.6.9-5.0.5.EL.i686 kernel from <http://rhn.redhat.com>; you can find it by searching for “kernel” under “Packages”
2. Please refer to your Linux documentation regarding updating your Linux kernel
3. During the configuration step of your kernel update, make the following changes:
 - a. Under “Processor type and features” change the following:
 - i. Select “4 GB kernel-space and 4 GB user-space virtual memory support”
 - ii. Select “Symmetric multi-processing support”
 - iii. Deselect “Virtual Kernel Preemption”
 - b. Under “High Memory Support (65GB)”, select “4GB”
4. Save the configuration, and compile and install the kernel

4.2.5 PSTACK Installation

There are known stability issues on Solaris and Linux systems running Helix Mobile Server and Helix Mobile Gateway which don't have pstack installed. Pstack is installed and configured on Solaris by default, however if you are running RHEL4, you will need to install and configure pstack for reliable Helix Mobile Server and Helix Mobile Gateway operation. You find the pstack package by searching for “pstack” under Packages at <http://rhn.redhat.com>. Please refer to your Linux documentation for instructions on installing or updating package files.

4.3 Cross Version Plug-in Compatibility

Plug-ins are not binary-compatible between v9/v10 and v11 on Linux due to changes in compiler versions. The plugins need to be recompiled with the updated build environment to be useful. For more information, go to <http://www.helixcommunity.org>.

4.4 RTPLive Legacy Mode Support

A new configuration variable has been added to fix an issue with live streams using RTP which caused sync, and other QOS issues. The variable is `<Var RTPLiveLegacyMode="1"/>`. When this flag is set to 1, RTP transport forces initial RTPtime and sequence to be 0. After a PAUSE, sequence will be the last sequence number of RTP packet plus 1 and RTPtime will reflect the elapsed time between the PAUSE and PLAY request (i.e. RTPtime is offset only at the initial PLAY request). This is in accordance with 3GPP specifications

4.5 Server Installation and Configuration file migration

Helix Mobile Server or Helix Mobile Gateway should not be installed over a previous version of the software. Please uninstall your previous server, or install to a new file system location.

Configuration files from previous versions of the Helix Mobile Server or Helix Mobile Gateway software may contain incompatible entries, or may be missing entries which are required for basic server operation. Please update the installed configuration file to match your configuration rather than simply using previous configuration files.

4.6 Encoder Redundancy

Encoder Redundancy and Scalable Multicast are not compatible features, and will not work together. Encoder Redundancy cannot be enabled for Scalable Multicast streams.

4.7 IP Binding and the Localhost Interface

By default, the server will bind to the Localhost interface for the keep-alive check. In cases where the admin specifically doesn't want the server to bind to the Localhost interface, the `--hbi` command line flag may be used to specify a different interface for the keep-alive check.

5. Fixes Supplied in this Release

Listed Issues Fixed as part of v11.1

- Various crashes and memory leaks were fixed
- Various security vulnerabilities were addressed
- Other Issues Fixed in version 11.1:
 - Server and Proxy can now allocate up to 4 GB of memory on Solaris
 - Rebuffering state encountered when playing live content with Turboplay enabled
 - Audio glitch when using Reduced Startup functionality over a TCP connection
 - Logging on time interval is not always reliable
 - Server occasionally fails to pick up RTP live encoder streams
 - Various issues with Meta-data not being properly sent to the client
 - Log data fails to get written on Solaris versions of the server and proxy
 - Capability Exchange profiles longer than 20000 bytes were not parsed
 - Certain Windows Media clips fail to playback
 - Rate Manager will occasionally attempt to upshift when the buffer depth is too low
 - Quicktime Player version 7 won't fall back to HTTP mode if RTSP is unavailable over the network
 - Windows Media won't playback through a version 11.0 proxy from a version 9.0 server
 - Basic authentication fails to work to the Quicktime Player version 6.4
 - ProfileCacheSize value in the x-wap-profile header is ignored
 - Various playback rendering issues on some handsets
 - Intended restarts initiated from the admin system fail in the Firefox browser
 - Proxy will fall back to UDP when configured to support Multicast only
 - Proxy chaining fails with a Bad Gateway error
 - Proxy routing fails to cache or split and falls to pass-through
 - SDPGen returns a 404 error for live stream requests from RTP encoders
 - ASXGen request returns error if the requested file does not have an .asx extension
 - 3GP Live streams are not included in the bandwidth usage reports

- Helix Windows Service frequently times out on shutdown attempt
- Various Logging format issues
- Server sends AutoBandwidthDetection response early in HTTP Cloaking requests
- URLs containing hostnames which resolve to IPv6 addresses don't stream
- No errors are logged if there are port conflicts in the broadcast configuration

6. Known Issues

Below is a summary of known issues in functional and stability areas of the Helix Mobile Server 11.1 and Helix Mobile Gateway 11.1.

Admin System

- Clicking on some pages of the Helix Admin System will cause extraneous 404 errors in the server's logs
- Changing the Transmitter Source name in the Admin System requires a server restart for the change to take effect, however the Admin System will not notify the user that this is required

Content Browser

- RealVideo 10 files are listed as RealVideo 9
- Restricting Content Browsing to specific extensions does not function
- Directories in the Content Browser windows are improperly displayed as files

Delayed Shutdown

- Disabling "Allow New Client Connections" will not keep new clients from connecting when a Delayed Shutdown of the server is in progress

General

- System time changes of more than a few seconds while the server is running, and particularly while the server is under load can cause severe memory leaks and potentially restarts. This sort of system time change may be triggered by NTP services, daylight savings changes, or simply by manual date/time changes. We recommend disabling these sorts of services on systems running Helix Mobile Server and Helix Mobile Gateway, and that time adjustments be made during server down times, or times of low load.
- Stability issues on Windows quad-processor servers under high load
- Seeking within RealText files is broken

Installer

- The Server and Proxy installers on Linux will exit prematurely with an error if the user attempts to install the server in a directory tree which contains a space character.

Java Monitor

- Bandwidth Usage is not recorded for 3GP Live streams being played

Licensing

- Attempting to start the Helix Mobile Gateway using a license intended for the Helix Mobile Server will generate random error messages

Live

- The Standby message does not work with RTP based broadcasts
- If two SDP files refer to the same live feed, when the second SDP file is requested, the stream will be dropped

Logging

- Superfluous error message: "couldn't lookup session for channel <0x1>" is getting written to the error log

Multicast

- When configuring Scalable Multicast, "VirtualPath" values cannot be numeric only; "2" won't work, but "2a" will

Proxy

- Proxy does not support Caching or Splitting for scenarios where Proxy Routing is used
- Setting the proxy configuration variable `DefaultStreamPageSize` to a value larger than 32768 will cause the proxy to fail over to pass-through, and to generate `DESCRIBE` timed out error messages
- Helix Proxy v8.0 will not cache on-demand content from the server, but will fall back to pass-through mode

Rate Adaptation

- When MDP is enabled, and you are using TCP Limirate, the server has a tendency to over send data. The higher the bitrate, the more it will over send. You can compensate for this by increasing the `MaxBurst` size variable on the server when streaming at higher bitrates until the margin of error is within acceptable limits
- Poor QOS is experienced when using MDP with the Quicktime client

Reduced Startup Delay

- Setting the variable "CPUThresholdToDisableRSD" to 100 will roll the value back to the default of 65; 99 is the highest value the system will recognize
- Reduced Startup Delay causes QOS issues (stuttering) in RealMedia files which only have audio tracks

Splitting

- Encoder Redundancy fails when using Push Splitting; use Pull Splitting if Encoder Redundancy is needed
- When setting up a broadcast receiver with, the IPv6 wildcard address and netmask (: : /0) is not treated as valid

SNMP

- The SNMP v1 user name must be set to "public" for traps to function properly
- The Trap Interval value has no effect
- The Master Agent doesn't return an error message if it is started with an invalid configuration
- The Master Agent doesn't return an error message if authentication information is invalid
- The Master Agent prints an error when starting without a community string being configured; this error message should be ignored
- Setting the trap values for CPU or MaxConnections to zero doesn't disable these traps; you must set them to a value which is high enough that is won't be reached
- ServerStart trap is never sent

Windows Media Support

- Windows Media 9 live streams won't work if hosted from SLTA
- Windows Media Push Splitting fails on Windows and Solaris 5.8 if configured to use UDP
- Windows Media Pull Splitting fails; use Push Splitting configured for TCP

- **Windows Media Pull Encoding usually fails to connect; use Push Encoding instead**
- **Windows Media streams fail to connect to the Helix Mobile Gateway via an IPv6 network**
- **Windows Media clips will not play properly if clicked on in the Content Browsing window**
- **There are various logging errors which occur when playing MMS through the Helix Mobile Gateway**

7. MD5 Checksum

```
db68eef454b354ebd1c1b636b0fddc66 mbgw1110-linux-rhel4.tar.gz
c6c12cb9586c684be944f1c0002537b1 mbgw1110-solaris-8.tar.gz
5260b5e4f23445b021a2cf5d591d5670 mbgw1110-win32.zip
c75adc3d6c71229adc98785a31a21fa3 mbpx1110-linux-rhel4.tar.gz
fafdf1a635898bb0b5946f3cbb064ddf mbpx1110-solaris-8.tar.gz
fb5ab3ab132dc88b257f5c4835d42ac0 mbpx1110-win32.zip
a2e8a034b0a121f6760b53ef1ee7aa90 mbrs1110-linux-rhel4.tar.gz
8b86412520338443dc3ad323e4e8a475 mbrs1110-solaris-8.tar.gz
7f0249936998ef9917db84b681acbc7b mbrs1110-win32.zip
```