

Helix DNA Framework

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Content Plan

- About Helix DNA Project
 - Helix DNA Framework
 - Use Case
-

RealNetworks, Inc.



- ❑ Leadership in media **streaming**
 - ❑ Creator of **RealAudio** and **RealVideo** (compressed audio and video formats)
 - ❑ **RealPlayer**, one of the most popular media players
 - ❑ Creation of **Helix DNA Framework** as an open-source project
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An open-source project

- ❑ Reduction of development costs
 - ❑ Give access to code source
 - ❑ 2 open-source licenses:
 - GNU General Public License (**GPL**), for Helix DNA Client and Helix Player
 - Real Networks Public Source License (**RPSL**)
 - ❑ 1 commercial license:
 - Real Networks Community Source License (**RCSL**)
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Helix DRM

- ❑ **Secure delivery platform** of live and on-demand media content

- ❑ 3 major components:
 - **Helix DRM Packager**
 - ❑ prevent unauthorized use of content
 - ❑ distribution via streaming or download
 - **Helix DRM License Server**
 - ❑ Manage, authorize and report content transactions
 - **Helix DRM Client**
 - ❑ Download and streaming playback of secure formats



Helix Community

- ❑ place where to share the result of open-source development
- ❑ lie on the helix philosophy
- ❑ composed of programmers, engineers, testers, and **users!**
- ❑ objective: extend Helix DNA
- ❑ Provides:
 - free support for developers
 - professional support for licensed customers
 - all tools and utilities necessary for development and use of Helix systems

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-

Helix DNA Platform

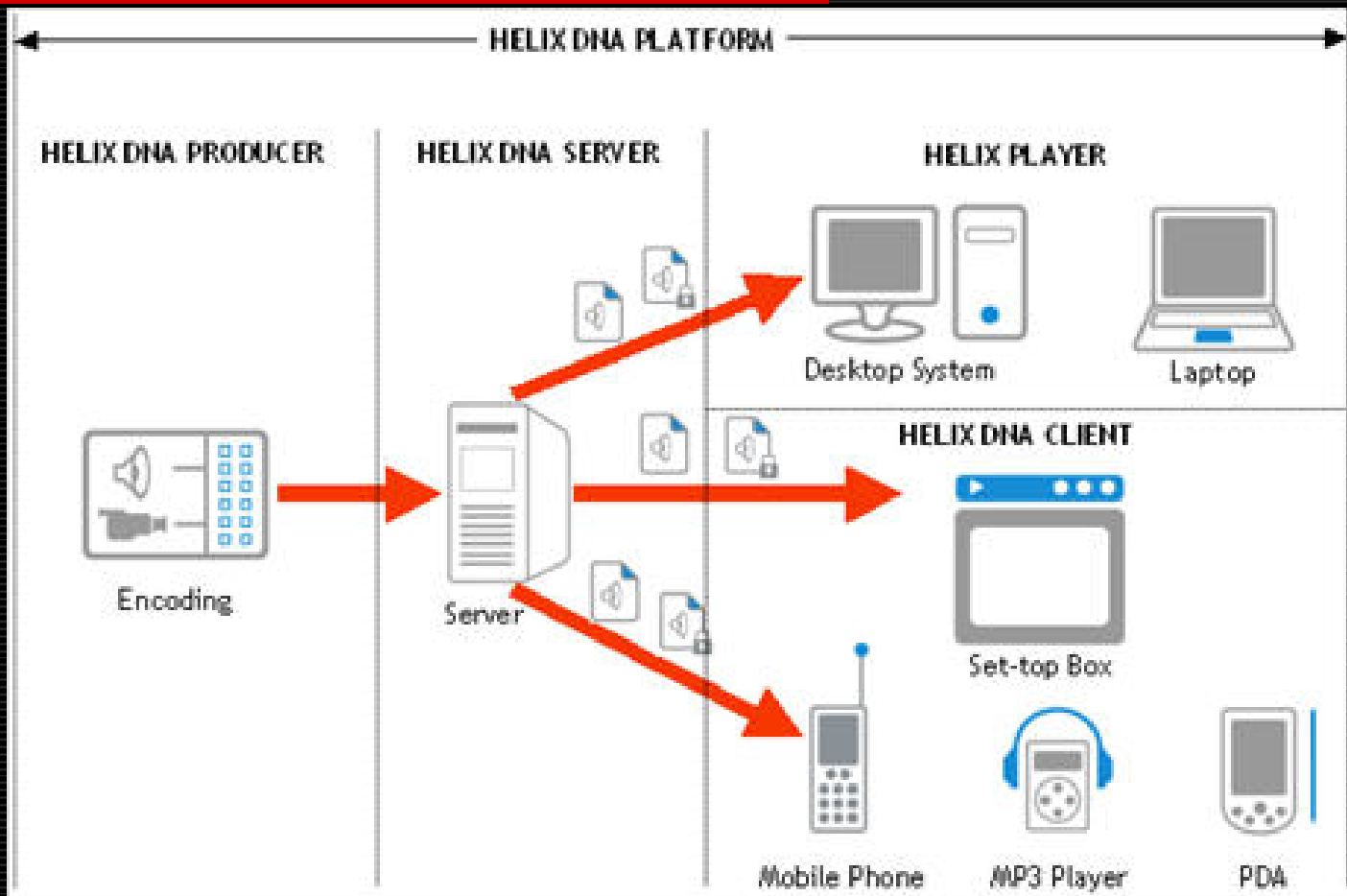
- The Helix Platform
- Helix DNA Producer
- Helix DNA Server
- Helix DNA Client



The Helix Platform (1/3)

- ❑ **Encode, deliver** and **playback** digital media
 - ❑ Use of **RTP, RTSP, RTCP** and **SDP** protocols for streaming
 - RTSP (Real Transport Streaming Protocol)
 - RTP (Real Transport Protocol)
 - RTCP (RTP Control Protocol)
 - SDP (Session Description Protocol)
 - ❑ Supports streaming over both TCP and UDP
 - ❑ Possibility to develop **plug-ins** for server and client
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The Helix Platform (2/3)



The Helix Platform (3/3)

Operating Systems supporting Helix

- ❑ Helix Producer
 - Command Line Application and SDK: Linux, Mac OS X, Windows NT4, 2000, and XP

- ❑ Helix Server
 - Version 11: Linux, Unix (Solaris), Windows Server 2003
 - Version 10: Linux, Unix (Solaris, AIX, HP/UX), Windows x86, FreeBSD, NetBSD, OpenBSD, Tru64
 - Version 9: Linux, Unix (Solaris, AIX, HP/UX), FreeBSD, Tru64

- ❑ Helix Client
 - Helix Player: Linux, Symbian, Solaris (experimental)
 - Real Player: Windows 2000 or XP, Mac OS X, Linux, Unix (Solaris, HP/UX)

Helix DNA Producer (1/2)

"The encoding engine and APIs that allow you to convert video and audio into digital media in a streamlined fashion."

- ❑ Composed of:
 - [Helix DNA Producer SDK](#) - Source code for Helix DNA Producer SDK
 - [Helix DNA Producer Apps](#) - Apps built using Helix DNA Producer SDK

-> Applications Built on Helix DNA Producer:

- ❑ [RealProducer from RealNetworks](#) : Retail version of Helix Producer built with Helix DNA technology
- ❑ [HPG](#): User interface for editing and running Helix DNA Producer jobs
- ❑ [RealHandy](#): GUI for encoding audio clips for Nokia Series 60 mobile phones



Helix DNA Producer (2/2)

- ❑ **Supported input A/V data type:**
 - Live audio and video capture devices
 - Uncompressed Wav, QuickTime, AVI
 - NeXT Sound files
 - Sun audio files
 - AIFF files
 - **Windows only:** Compressed AVI, Digital Video (DV) files, MPEG1, MPEG2, MPEG4, Compressed QuickTime

- ❑ **Supported output A/V data type:**
 - RealMedia streaming broadcast
 - File output in RealMedia format (*.rm and *.rmvb.)
 - Ogg Vorbis Audio

- ❑ **Pre-filters: Video and audio filters**

- ❑ **Other Features**
 - Logging
 - Encoding Statistics

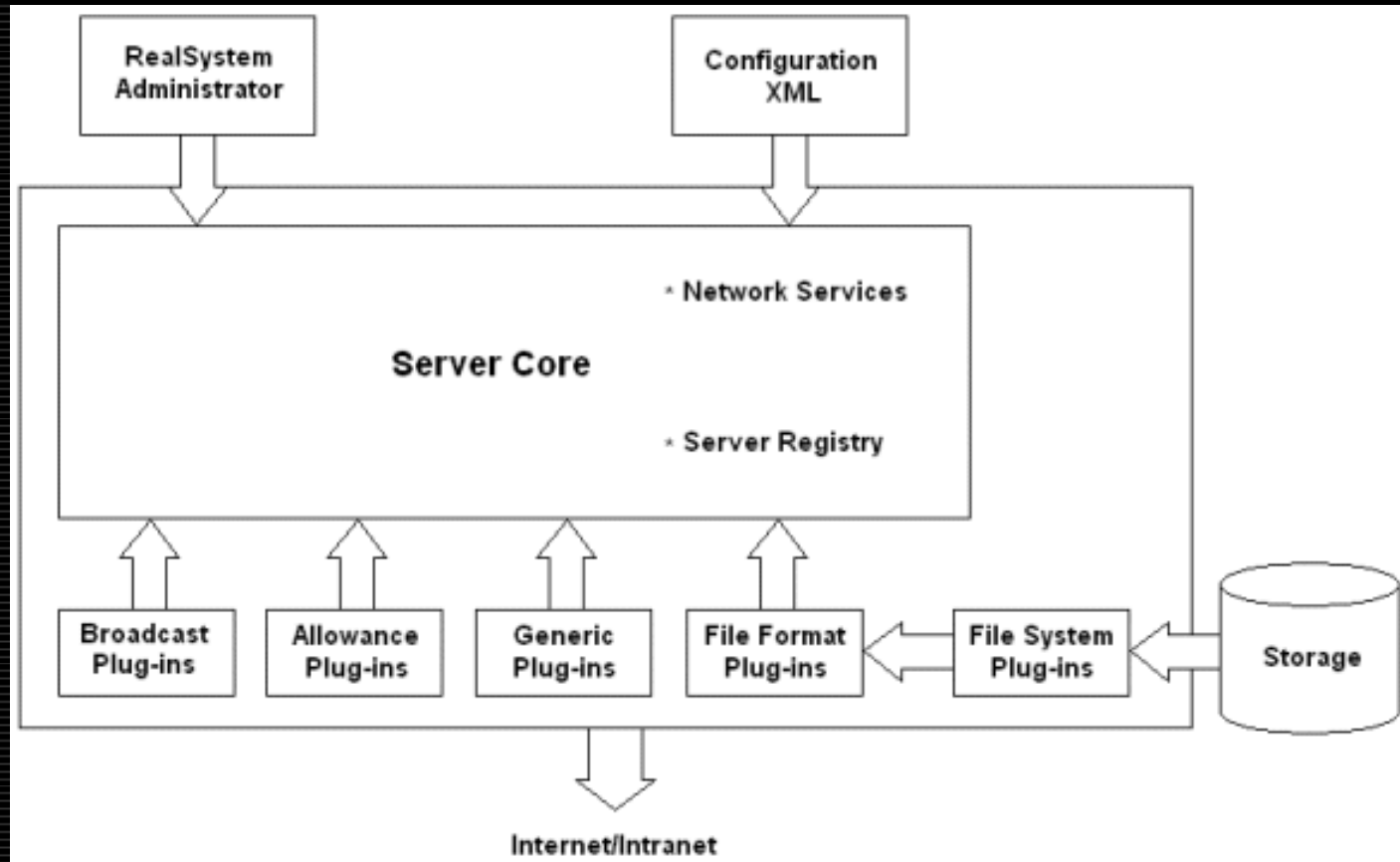


Helix DNA Server (1/2)

- ❑ Used to **store** and **provide streaming media content** over the Internet
- ❑ **Unicast** and **multicast** streaming
- ❑ **RTSP/RTP**, **SDP** and **HTTP** protocols used for streaming
- ❑ Deliver RealAudio, RealVideo, Windows Media, QuickTime, MP3, MPEG-4, 3GPP and more
- ❑ 2 main components:
 - The **core**, or *Media Delivery Engine*
 - The **plug-ins**



Helix DNA Server (2/2)



Server Architecture

Helix DNA Client (1/3)

- ❑ Universal **playback** engine (local file and Internet streams)
- ❑ Interoperable with all Helix certified products (like Helix DNA Server and Producer)
- ❑ Can be ported to **any operating system** and used with any processor
- ❑ Enables playback of **digital media products** and applications for any format, operating system, or device
- ❑ Supports any audio or video codec through well-defined file format and decoder APIs
- ❑ Includes modules to support:
 - audio mixing
 - resampling
 - volume handling and management
 - windowing and alphablending of multiple visual data types

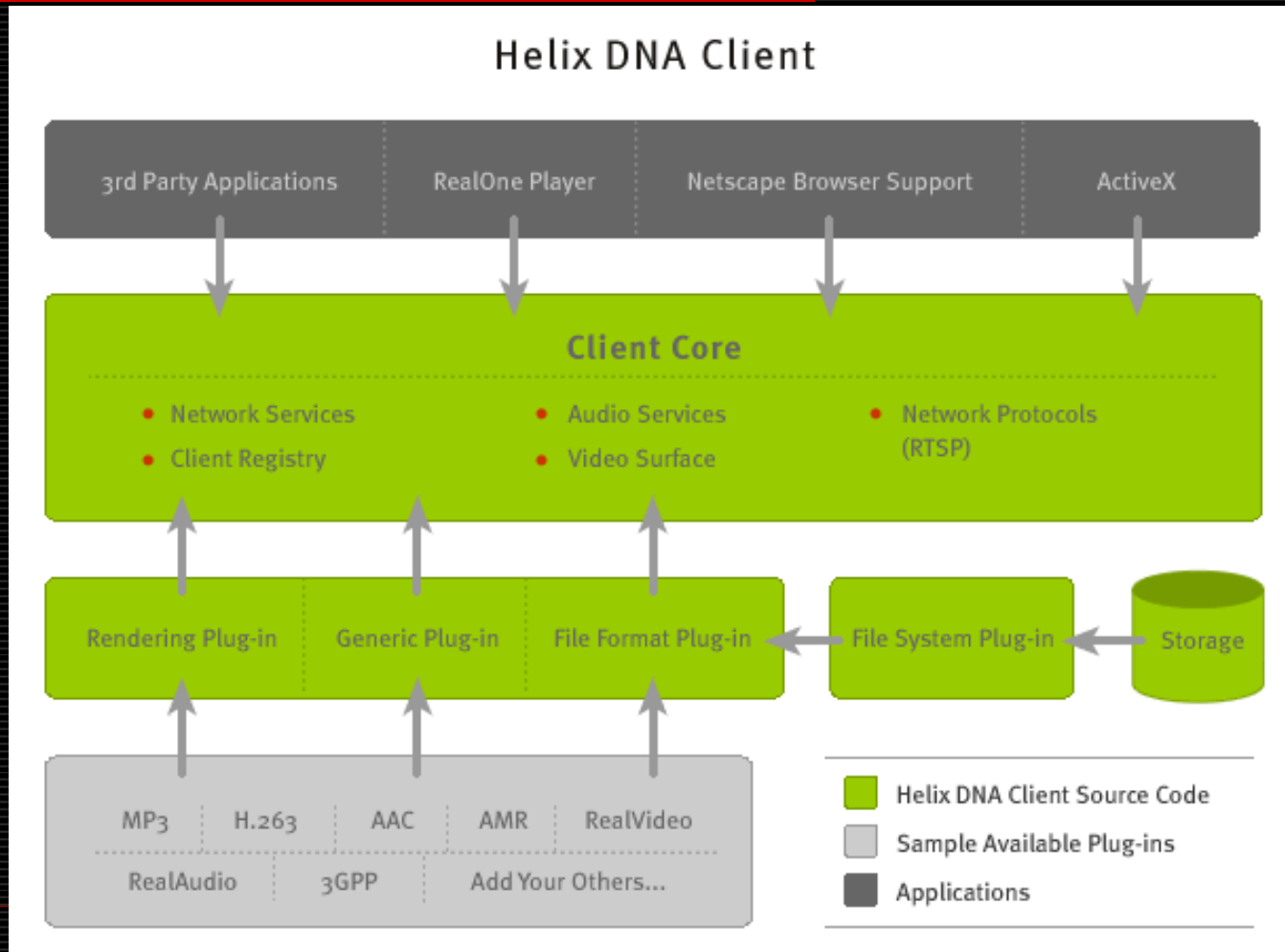


Helix DNA Client (2/3)

- ❑ contains support in source code form for the following data types:
 - ❑ MP3
 - ❑ H.263
 - ❑ SMIL
 - ❑ JPEG
 - ❑ GIF
 - ❑ PNG
 - ❑ RealPix
 - ❑ PCM
 - ❑ WAV

- ❑ next improvement, will contain support for:
 - ❑ AVI
 - ❑ AU
 - ❑ RealText
 - ❑ Ogg Vorbis

Helix DNA Client (3/3)



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-

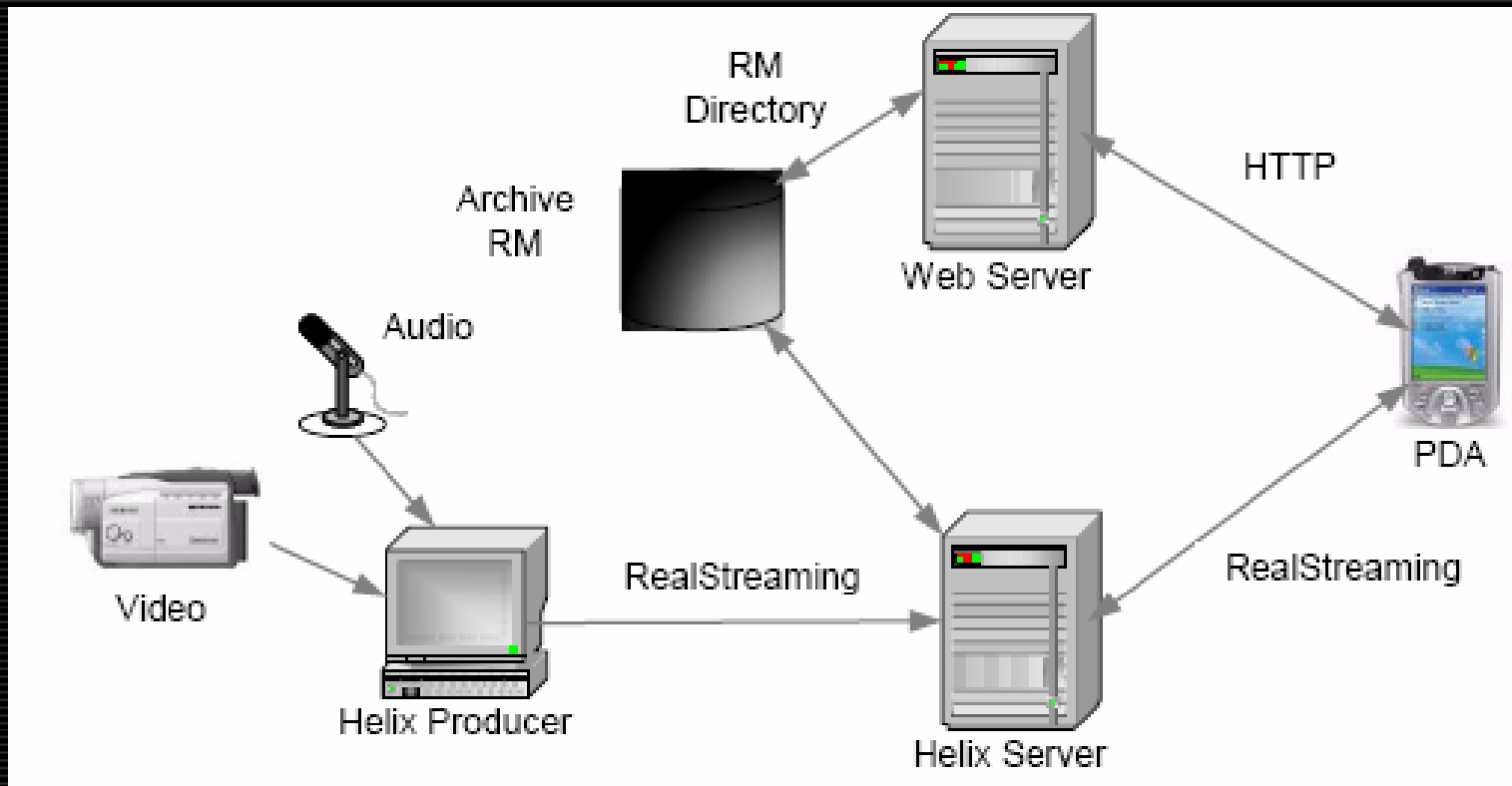
Use Case (1/2)

Mobile Course Portal

- ❑ *MSIS Kelly School of Business, Indiana University, Bloomington, USA*
 - ❑ Portal framework for **collaborative work** and **distance education**
 - ❑ Easy access to Course Management System of the University
 - ❑ **Wireless devices** such as PDA, mobile phones, tablet PC's...
 - ❑ **Webcasting** technology for PDA
 - ❑ Choice of **Helix Platform**, for its **open source** licence
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Use Case (1/2)

Mobile Course Portal



Webcasting for PDA with Helix Platform

Key References

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Thank you
Questions or comments?

