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*Riding the Media Wave:  
Taking Websites to the Next Level  
with Video and Audio*

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## *Topics to be covered*

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- Streaming Media Basics
  - Streaming Media vs. Downloadable Media
  - Windows Media Server/Player
  - ASX Files
- Sample Application: Online Surveys
  - Scripting WMP Methods
  - Scripting WMP Events
- Sample Application: Online Training
  - Marker Scripting
- Where to go from here
  - Technologies not covered
  - Resources available

# *Windows Media Services*

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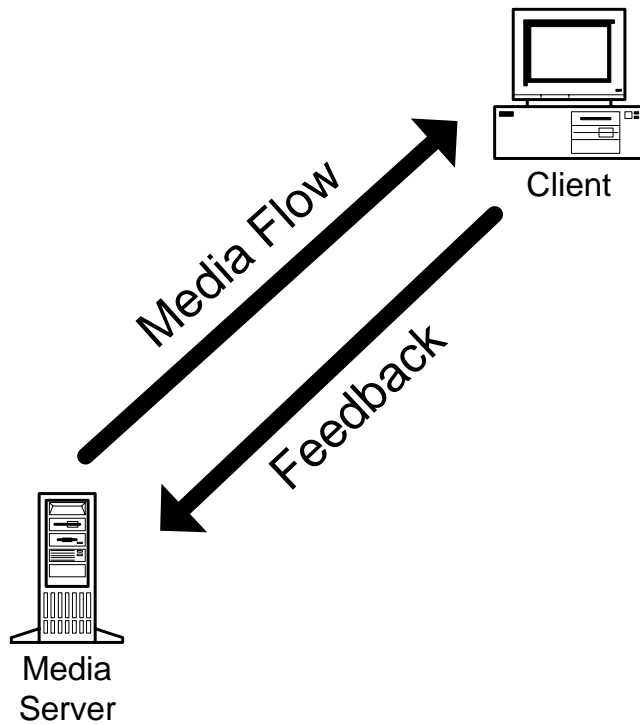
## ➤ Features

- Distribute audio and video
- Content is streamed to the end-user
- On demand and broadcast
- Unicast and Multicast

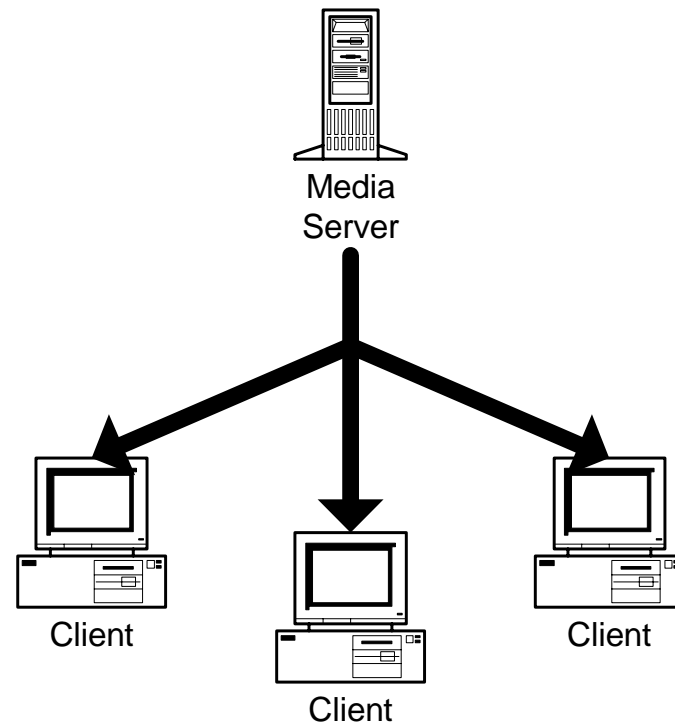
WMP

# Unicast vs. Multicast

## Unicast (One to One) Transport



## Multicast (One to Many) Transport



## *Web Server vs. Media Server*

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- What about streaming from a standard web server?
  - Multicast not available
  - Live streaming not available
  - Lower quality streaming

# Windows Media Player

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- Object syntax to embed on a web page
  - ID
  - ClassID
  - Codebase

```
<HTML>
<BODY>

<OBJECT ID="MediaPlayer1"
        classid="CLSID:22D6F312-B0F6-11D0-94AB-0080C74C7E95"
        codebase=
        "http://activex.microsoft.com/activex/controls/mpplayer/en/nsmp
2inf.cab#Version=6,4,5,715"
        standby="Loading Microsoft® Windows® Media Player
components..."
        type="application/x-oleobject">
</OBJECT>

</BODY>
</HTML>
```

# *Windows Media Player*

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- Initial Parameter - FileName
  - Determines the media clip to be loaded when the media player is instantiated
  - Can be a URL or a file location

```
<PARAM NAME="FileName" VALUE="http://www.abc.com/test.asf">
```

- "Advanced Stream Redirector" file
- XML format
- Identifies one or several media clips to be played
- Can be used to:
  - Create a playlist
  - Modify the displayed information on the Windows Media Player about the media clip
  - Control playback of the media clip
  - Protects content delivered via a web server

# ASX Example File

```
<ASX VERSION="3.0">
  <TITLE>Test WMP ASX File</TITLE>
  <AUTHOR>Avonelle Lovhaug</AUTHOR>
  <COPYRIGHT>(c) 2000, LVHG Inc.</COPYRIGHT>

  <ENTRY>
    <TITLE>Example Clip</TITLE>
    <AUTHOR>Loren Lovhaug</AUTHOR>
    <COPYRIGHT>(c) 2000, LVHG Inc.</COPYRIGHT>
    <REF HREF="http://www.mysite.com/media/test.asf" />
  </ENTRY>

  <ENTRY>
    <TITLE>Example Clip 2</TITLE>
    <AUTHOR>Loren Lovhaug</AUTHOR>
    <COPYRIGHT>(c) 2000, LVHG Inc.</COPYRIGHT>
    <REF HREF="http://www.mysite.com/media/test2.asf" />
  </ENTRY>

</ASX>
```

## *ASX Tags*

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- Each file starts with `<ASX Version="3.0">`
- Each clip identified with an `<Entry>` tag, plus:
  - `<TITLE>`
  - `<AUTHOR>`
  - `<COPYRIGHT>`
  - `<RATING>`
  - `<DESCRIPTION>`
- ASX file information overrides the data within an ASF file
- Case sensitive (be careful!)

## *Sample Application: Online Surveys*

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- Purpose: Provide a method for gather information through the use of online surveys.
  - Surveys are database driven
  - Different types of questions/responses
  - Media clips can be added to each question
  - Demonstrates use of scripting to control the Windows Media Player

# *Sample Application: Online Surveys*

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## ➤ Architecture:

- Database = Microsoft Access (SQL Server 7 in real-world application)
- VB COM component for data access and some HTML formatting
- Active Server Pages for presentation tier
- Media clips stored in a separate folder

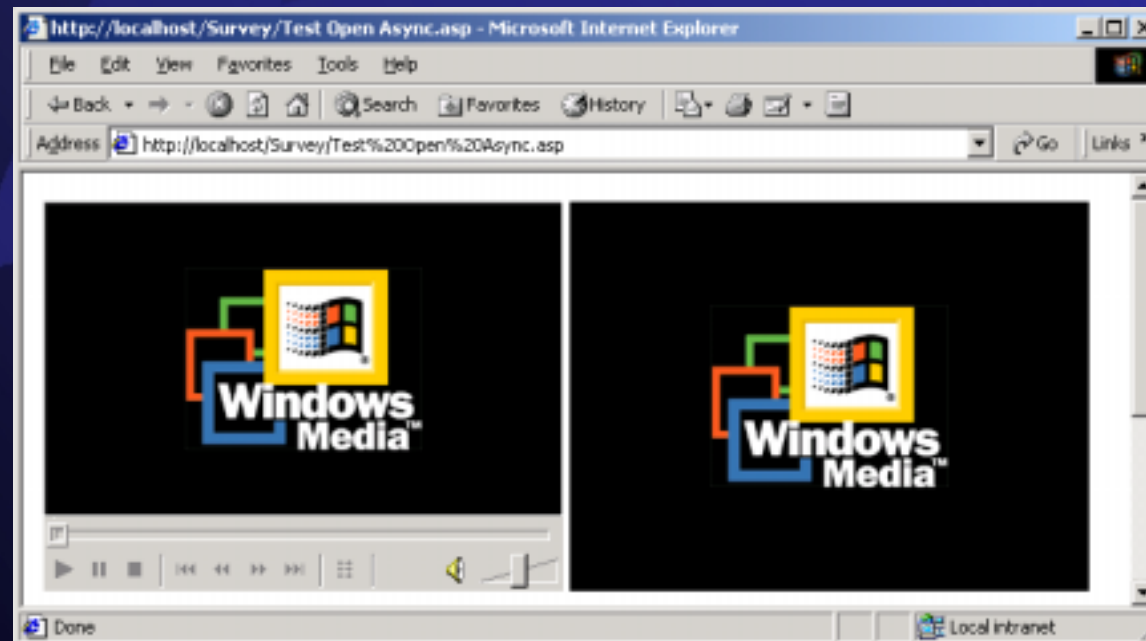
# Basic Properties

## ➤ AutoStart

```
<PARAM NAME="AutoStart" VALUE="0">
```

## ➤ ShowControls

```
<PARAM NAME="ShowControls" VALUE="0">
```



## *FileName vs. Open*

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- FileName property
  - Can be used with <PARAM> tag
  - Opens media synchronously
- Open method
  - Cannot be used with <PARAM> tag
  - Opens media asynchronously
  - Should also use the ReadyStateChange event

```
Sub WM1_ReadyStateChange(lReadyState)
```

```
    If lReadyState = 3 Then 'Has enough downloaded so we can play?
```

```
        WM1.Play
```

```
    End if
```

```
End Sub
```

## *Basic Methods*

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- Start/continue playback
  - WM.Play
- Pause playback
  - WM.Pause
- Stop playback
  - WM.Stop

Note: Complete Property, Method and Event information in the Windows Media SDK

➤ EndOfStream

- Occurs when the clip has completed playback
- For the Survey Application, used to check if the user has answered the question

# *Basic Media Player Events*

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## ➤ Error Event

- Occurs when an error has arisen
- SendErrorEvents property must be true for this event to fire
- ErrorDescription property – provides description text for the error
- ErrorCode property – provides the error number

## ➤ Warning Event

- SendWarningEvents property must be true

# *Online Training Considerations*

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- Most important visual components?
  - Video of speaker
  - PowerPoint slides
  - On-screen demo
- Provide navigation capabilities?
- Audience interaction/feedback?
- Offered live and from an archive?

# *Online Training Sample*

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- Training presented in 3 frames
  - Frame 1 - Video presentation
  - Frame 2 - PowerPoint slides
  - Frame 3 - Table of contents/navigation
- Navigation and slide changes occur with Markers
  - Marker: identifies a specific point in time in the media clip

## *Building a Table of Contents*

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- MarkerCount
  - Number of markers in media clip
- GetMarkerName(IMarker)
  - Retrieves "name" of the specified marker
  - Used for the navigation text in the table of contents
- CurrentMarker
  - Changes playback position to the indicated marker
- MarkerHit
  - Occurs with the playback "hits" a marker

## *How to use the MarkerHit event*

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- MarkerCount
  - Number of markers in media clip
- GetMarkerName(IMarker)
  - Retrieves "name" of the specified marker
  - Used for the navigation text in the table of contents
- CurrentMarker
  - Changes playback position to the indicated marker

## *Conclusion*

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- Streaming Media can...
  - Increase interactivity on a site
  - Provide additional information that text cannot
  - Add impact to your message

WFOV

## *Resources*

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- Embedding Windows Media Player (both IE and Netscape)
  - [http://msdn.microsoft.com/workshop/imedia/windowsmedia/CrContent/ahb\\_code.asp](http://msdn.microsoft.com/workshop/imedia/windowsmedia/CrContent/ahb_code.asp)
- Changing properties of the Windows Media Player (both IE and Netscape)
  - <http://msdn.microsoft.com/workshop/imedia/windowsmedia/CrContent/properties.asp>
- An Introduction to the ASX File Format
  - <http://msdn.microsoft.com/peerjournal/wm/g060199a.asp>

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*Questions?*

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