INTERNET AUDIO STREAMING

Tim Neese
MultiTech Consulting, Inc.
Audio

Quality

- Quality streaming begins with quality audio
- Ensure source material is “clean”
- Acquire audio directly from the console or program distribution system
- Streaming audio should be processed separately from broadcast audio
- Avoid using off-air audio
- Avoid re-streaming audio unless the source bitrate is 3X the stream bitrate
Audio

Encoding

- Format (MP3, HE-AAC, HE-AAC v2, Others)
  - HE-AAC v2 offers better audio quality at lower bitrates
  - MP3 is universal but requires higher bitrates for quality
  - Consider offering both formats

- Bitrate
  - Higher bitrates yield better quality but consume more bandwidth
  - There is a point of diminishing returns
  - 32 kb/s is generally considered a good starting point for HE-AAC v2
  - 96 kb/s works well for MP3
  - “High quality” streams are often encoded at 80 kb/s (HE-AAC) and 256 kb/s (MP3)
Audio

- Hardware
  - Streaming Encoder
    - A hardware encoder provides excellent reliability and features
    - Professional grade audio components
    - On-board audio processing
    - No operating system to maintain
  - Computer
    - Minimal hardware usually provides good service
    - A professional sound card is beneficial
    - An external audio processor or processing software should be utilized
    - Encoding software must be installed
    - Requires judicious application of operating system updates
Software

- Players
  - Cross platform compatibility
  - Mobile players vs desktop players
  - HTML5 and Flash

- Servers
  - Shoutcast
  - Icecast
  - Wowza
Provider/Host

- Items to consider
  - Number of simultaneous listeners
  - Supported formats / bitrates
  - Support for multiple formats
  - Preconfigured player provided
  - What server platform
  - Stream monitoring
  - Assistance with reporting
Software

- Licensing
  - Legally acquired software
  - Licensed encoders
Royalties

- Music
  - Traditional fees paid by broadcasters (ASCAP, BMI, SESAC and now GMR)
  - Broadcast and streaming are separate fees
  - Reporting requirements vary by entity

- Digital Performance
  - RIAA – Adminstrated by Sound Exchange
  - Different categories of licenses
  - Monthly reporting requirements
Royalties

- Syndicated Programming/Copyright
  - Ensure you have explicit permission to stream a program
Devices/Services

- Encoder/Computer
  - Secure settings with a password
  - Change default manufacturer password
  - Place equipment behind a firewall and block access to administrative interfaces

- Stream data and reports
  - Use secure web connections (https)
  - Change passwords often
THANK YOU!

Tim Neese
MultiTech Consulting, Inc.
PO Box 549
Swannanoa, NC 28778
(828) 231-7755