Granby Street Video Network Plan

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Server layout

The system will contain one file server located at Relative Theory Records.
This server will most likely run FreeBSD 5.2 current, and have the majority of the disk space dedicated to file storage. The directory layout will most likely resemble this:

- Root
  - Storage
    - RT-Performances
    - RT-Clips
    - TL-Storage
    - HK-Storage
    - 757T-data
  - Active
    - TimeLounge
    - HellsKitchen
    - ClientBlabla
    - AnotherClient

The Active tree contains files that are actively replicated out to the clients. The storage tree contains videos that are worth keeping. It can be configured to allow clients in the store that can access all of the data in one of the storage directories, so visitors can watch footage of previous shows right off of the server.

This server will be accessible to the video editing station at Relative Theory by means of network connection. It should appear as a network computer, and video can simply be dragged over to the server and placed in the proper directories. This will take place via Samba on the server.

Under each client directory there will be a simple format for the files. Basically, they are numbered in the order in which they are to play:

01-RT-Live-Performance-03-22-04-BadReligion-STF.mpeg
02-RT-Live-Performance-02-12-04-KennyRogers-Gambler.mpeg
03-RT-Live-Performance-03-12-04-MurrayHead-OneNight.mpeg2
04-RT-Break-UpcomingStuff-NewReleases-04-12-04.mpeg
05-757T-757Techad01.mpeg (Awwyea!)
06-HK-Thisweekinreview.mpeg
07-757T-HRConnectblab.mpeg

This file structure would play in order, on the client, after the data has propagated.

In addition, another file is supported. This file controls the text overlay on the bottom of the video. The file will be named the same as the position:

01.txt

Inside of the simple text file 01.txt will live lines of text that will be shown over the bottom of the video:

Playing Friday @ Alternative Theory
Iron Maiden w/ Bruce Dickenson
Starting 9pm
Arrive early! Show is limited to 75 people

This text would rotate at the bottom of the screen during video 01's playback.

We can most likely add the ability to set a delay before it shows up in seconds.

This file would be created in the Active directory. This allows reuse of video clips from past performances without having to edit the actual video clips.

The server will contain a web server or some other easy mechanism that allows the content maintainer at Relative Theory to "publish" the Active directory to the client. Most likely this will be via a web page that is served from the server itself, and is restricted by password. A simple click would trigger the server to push the data to the client.

Security will be tightly controlled on our side to prevent malicious insertion of offensive, dirty or funny content.

Clients

The clients for the system are fairly basic. They will consist of a recycled "low end" PC system that contains a special video decoder board. The computers will not require a monitor or keyboard. They will run Debian Linux, a free operating system.

The video decoder card provides a composite/svideo video signal and stereo audio output. The placement and configuration of the setup will be different venue to venue. We should be able to use a composite video/audio cable run to the TV, or use a RF modulator to assign the feed to a channel. If worse comes to worse and they are using Cox cable, we should be able to notch out a channel and add our feed to the lineup, taking out home shopping network or the like. This will require an agile video modulator and a notch filter. EeeeeBay!

Network

Each client will have to maintain communications back to the server at Relative Theory. If the client is in the same building, then we will use standard cat5 copper or multimode fiber optic cable to connect them. If the venue is located in another physical building that we cannot connect via cable to we will use a wireless network connection.

Currently Relative Theory has wireless service from ESCO, and we will use that for the time being. With the network extensions to other venues, we can probably use the same equipment to offer HRConnect Netspot service at each venue, if the venue will allow it. It would also be possible to use the network connection for other things to support the businesses, at this time the focus is on the video distribution.

Monitoring

We will set up the system so that there is auditing and logging to troubleshoot errors. We should be able to tie it into the same monitoring system that monitors our commercial clients/web servers, or script out something new. The idea is we will receive a notification if something wrong happens, so we can be proactive to fix it.

We will look into opening a port on the system so that we can access the clients / server via secure shell. This will allow secure remote maintenance and upgrades in the event of the release of security patches.

Costs
Estimated breakdown of costs:

Clients
Optibase Cards for each client: $11.50 (I got 10)
PC – Free, we should be able to get them for free
Wireless bridge – approx $120 including wireless router and antenna.
(System could be turned into a Netspot for about $100 more, probably worth it)

Server
Free if we can find a midrange (PII computer system)
The only upgrade needed will be disk space, and drives seem to be $60 for 120gb+ these days.
It might be worth it to build a 2nd system and mirror the content across them, incase of disaster, or use a USB hard drive and mirror to it nightly.

Assuming we could take replace the wireless setup ESCO has running, we could possibly upgrade the infrastructure and break things down into VLANs so we could use MRTG and other traffic monitoring apps to watch for heavy utilization at client locations. Even if we can't we might want to look into at least a 100mbps connection between their editing station and the server, so file transfers don't run at 11mbps when moving 400mb worth of files.