



Paper Presentation

- Title:
A Programmable Audio/Video Streaming
Framework for Broadband Infrastructures.

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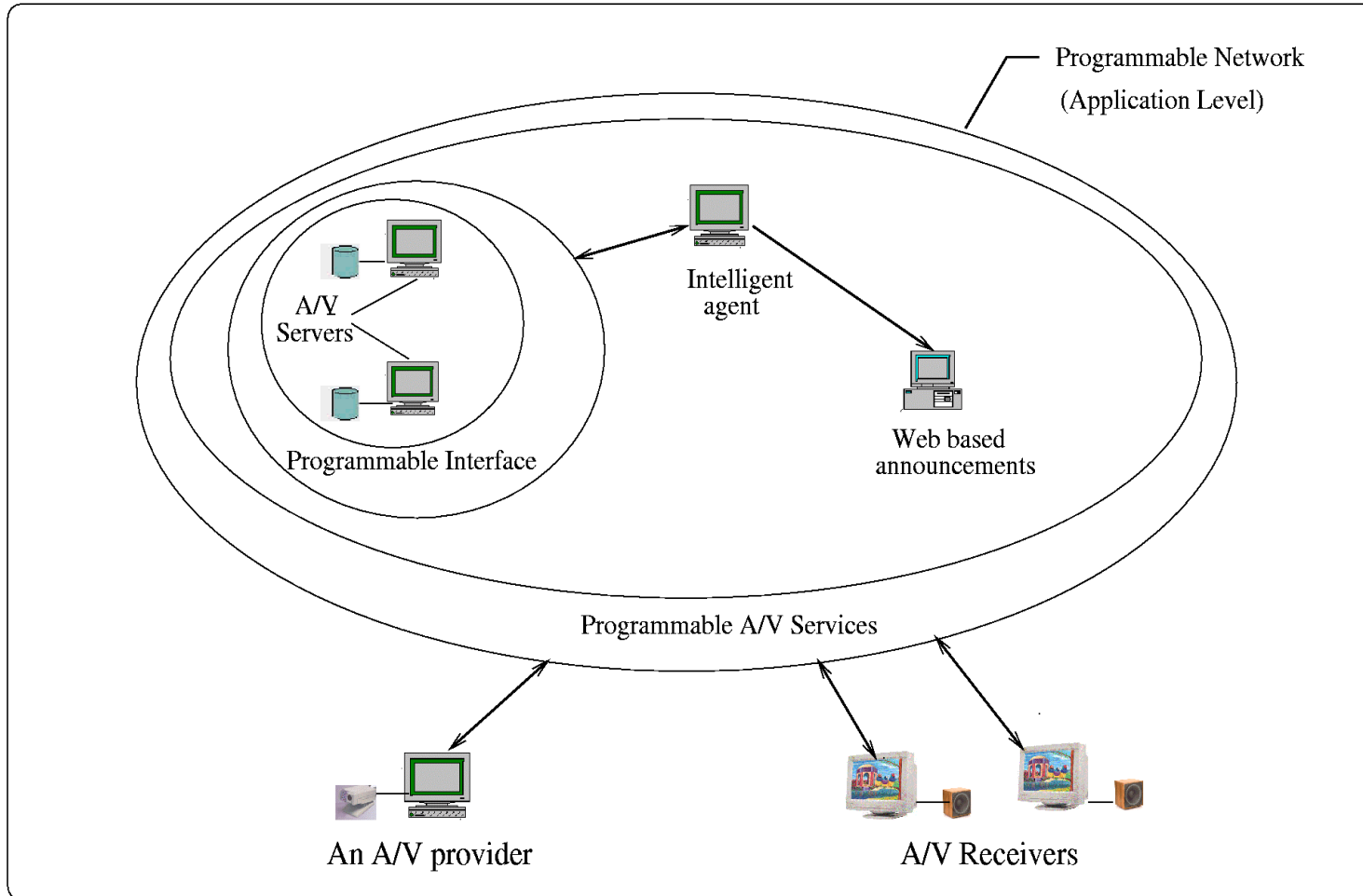


Streaming over Internet

- **Streaming over Internet:**
Computing performance, VoD, Mbone, high speed networks,
technology and standards
- **Emergence of high speed networks:** e.g. SingAREN, vBNS.
- **A Programmable A/V Streaming Framework:** to support A/V hosting by network at application level.

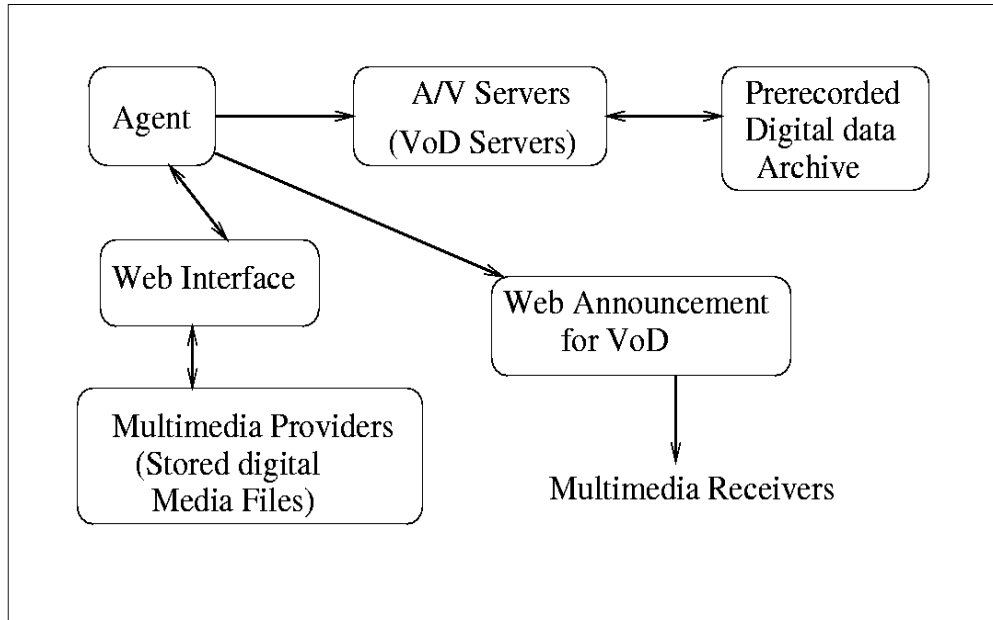


The Framework





Application: Pre-recorded A/V hosting

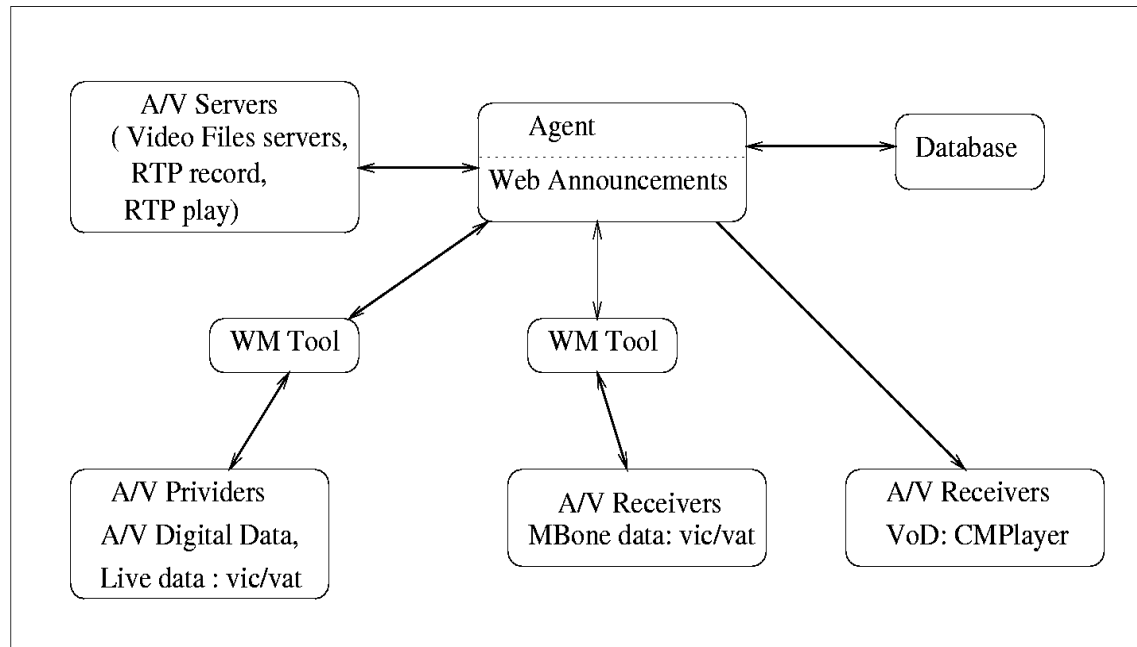


Other Applications:

Live media hosting,
multicast of recorded media.



Top Level Design



Advantages:

Setup cost, service programmability, no single point of failure, both live and stored A/V streams, dynamic servers addition/removal, etc.

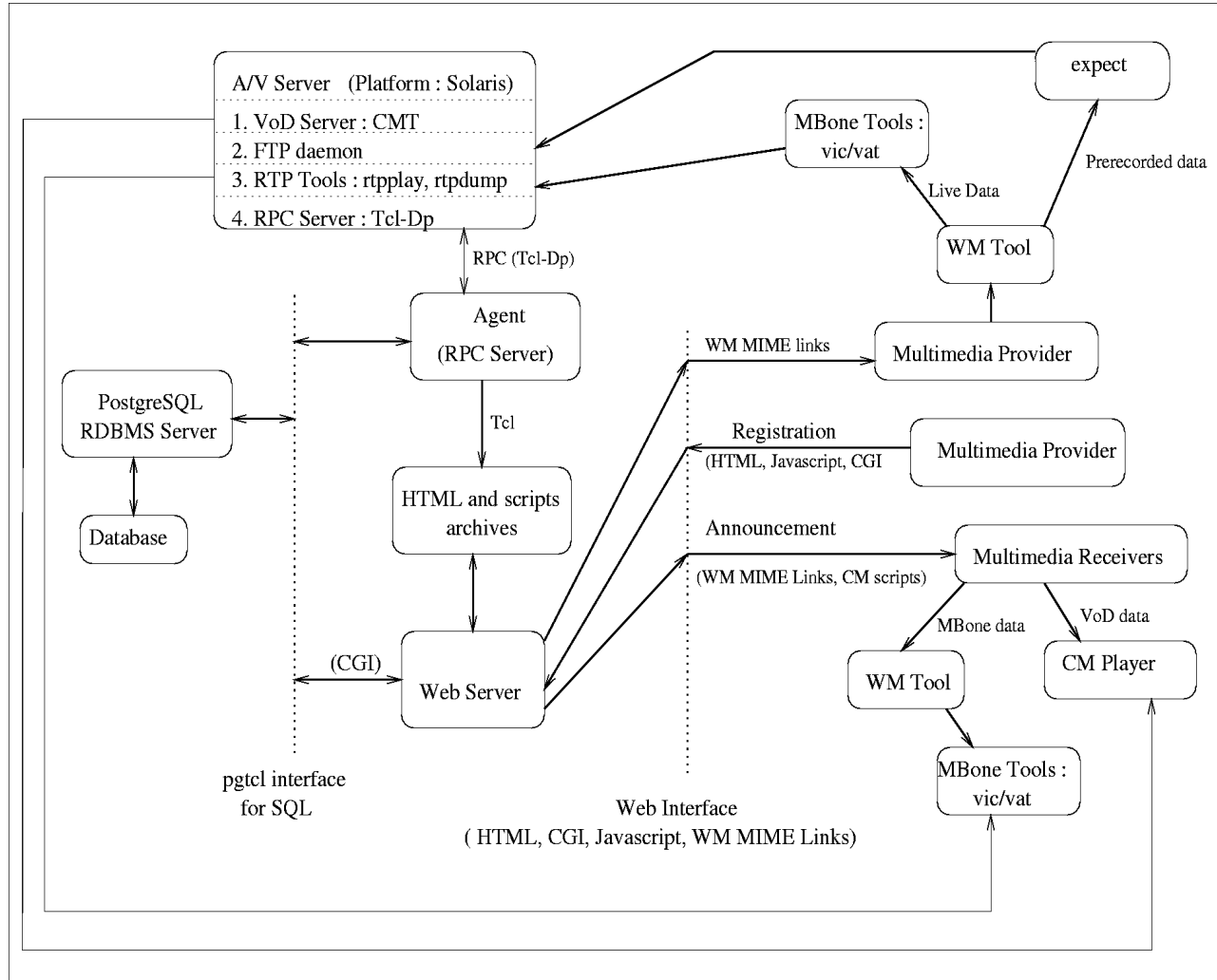


Implementation

- System Architecture
- Web Interface
- WM Tool
- Database
- Agent
- A/V Servers



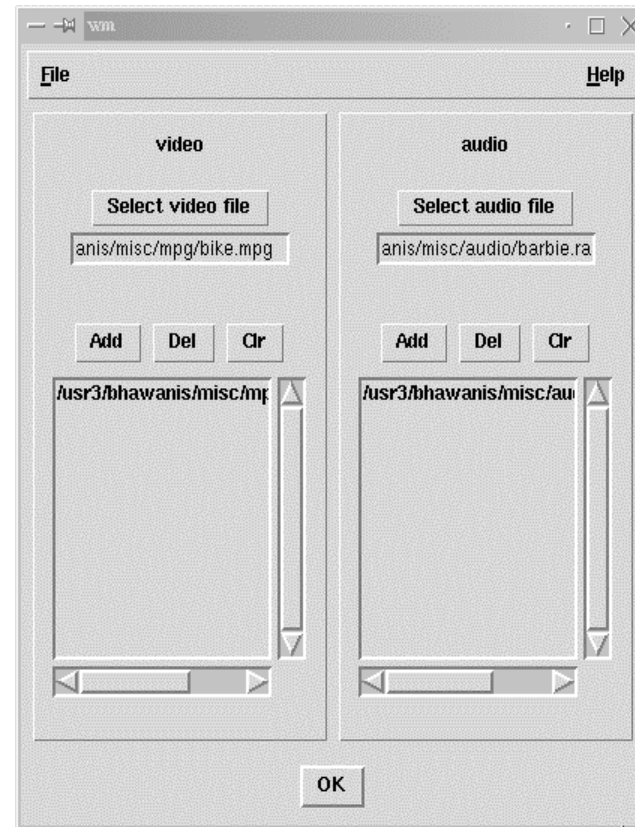
System Architecture





- **Web Interface : Registration and announcements**
(HTML, JavaScript, CGI, Perl, WM MIME type)

- **WM Tool:**



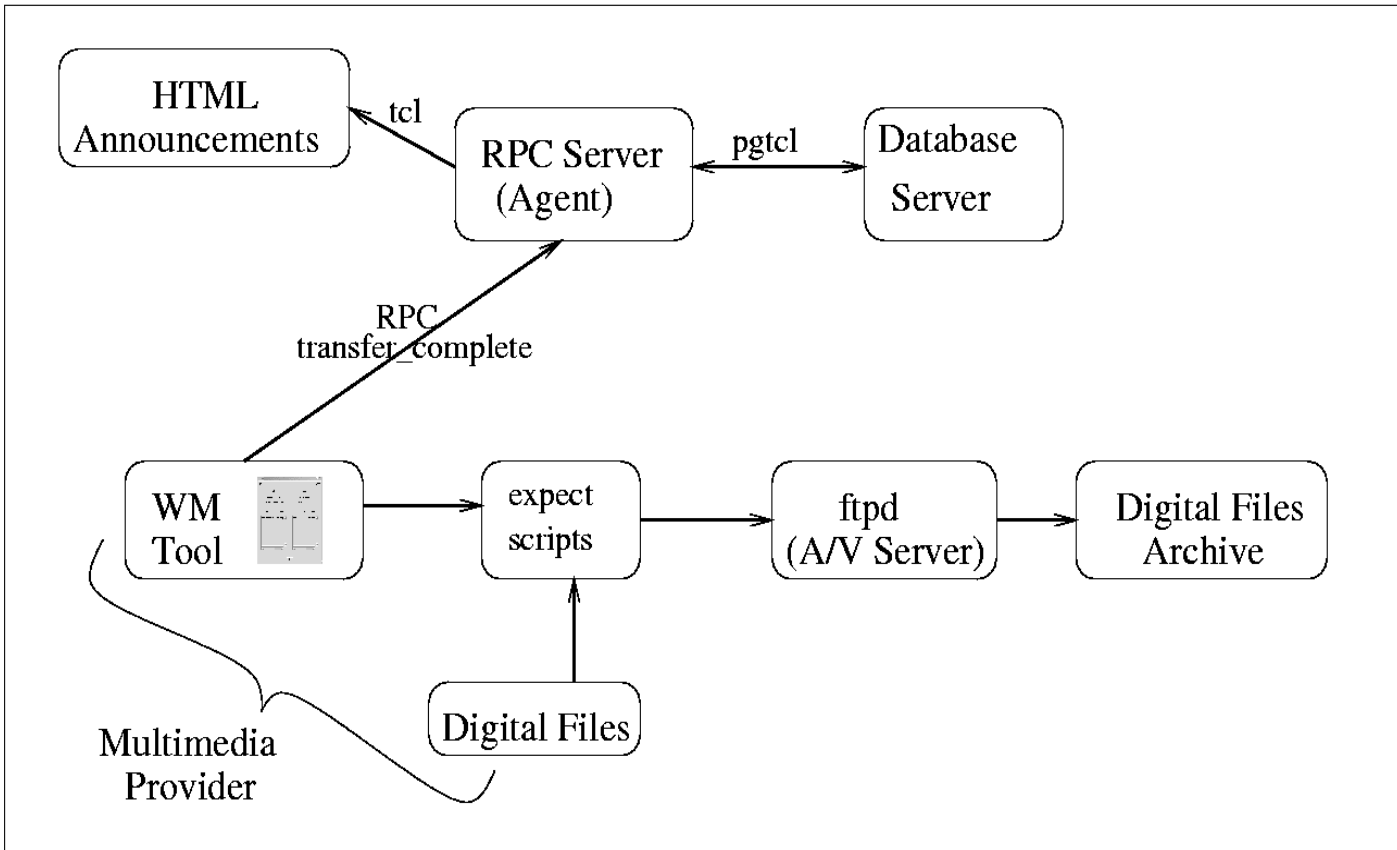


WM Tool

- User front end tool for accessing services
- Invoked by WM MIME type links
- The behavior depend upon the input values from script
- Interacts with agent to update database, announcements, obtaining free ports
- Invokes other tools (like expect, vic, vat)

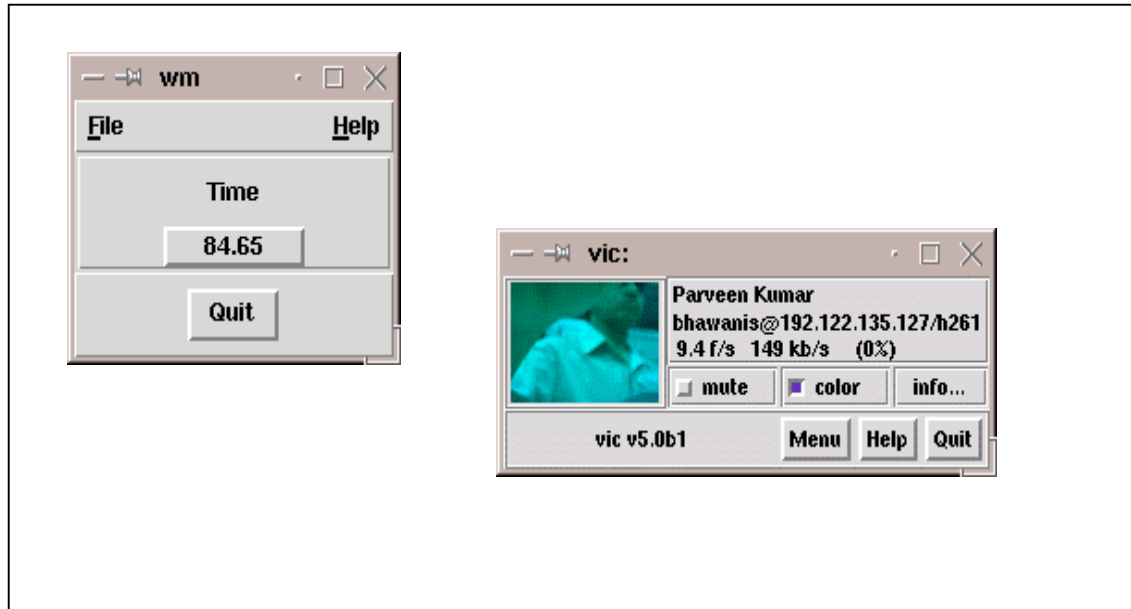


Working of WM Tool when used for providing pre-recorded media





WM Tool Interface when used to stream in live A/V data





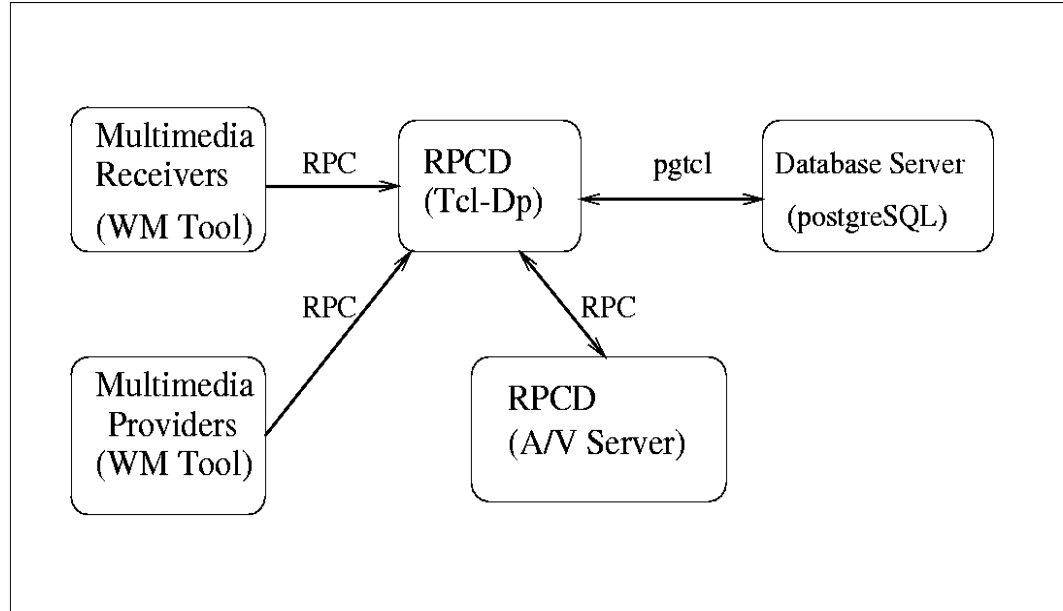
Database

- Unique Media Description
- Media Information
- Server media home directory mapping
- Schema for audio/video file names
- multicast information



Agent Implementation

- Is an RPC server written in Tcl-Dp
- Interacts with PostgreSQL through pgtcl interface and generates HTML pages.
- provides general RPC's for WM Tool for various cases
- Also invokes other RPC's at A/V servers





Conclusions

- Proposed a novel programmable A/V streaming framework and mentioned its advantages.
- Implemented the WM tool, intelligent agent, generic A/V servers, web interface, database.
- Came up with an initial working implementation of the framework which supports A/V hosting.

Future Work

- Caching Issues
- Dynamic Management : server allocation/addition, dynamic announcements, schema
- Scalability : More agents, schema.
- Pricing.