Providing Music Notation Services over Internet

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State of the Art

- Notation editors (GUI)
- Score sharing software
- JIT compilation services
Problem

• Lack of low-latency alternative to create musical notation.

• Lack of an API that allows for web application building.
Solution

- Provide a service that quickly compiles music notation representations into several encoded forms (PNG, SVG, DSL).

- Provide a web API via a server-client architecture.
GUIDO Engine

- Compiles Guido Music Notation (GMN) markup language.
- Interprets this into an abstract representation.
- Translates abstract representation into a graphical representation.
- Draws representation onto a device.
REST architectural style

• client-server model
• stateless (almost…)
• client-side caching
• uniform interface (GET, POST, etc.)
• layering of multiple servers
• code-on-demand
REST design practices

- Transferring metadata along with data
- Human readable, hierarchical URIs
- URI points to idea, not necessarily to permanent object
GUIDO HTTPD server

- Uses GNU libmicrohttpd to handle POST, GET, and DELETE requests (uniform interface)
- *almost* stateless - use of SHA1 key as resource identifiers prevent too-long URIs
- example
Guido Web Api

- Function as URI segment
- Arguments to functions and options as key-value pairs
- Return values as standard MIME images or JSON
• Example uses server-side layout calculations and client-side drawing to avoid lengthy transfers.

• Also possible to do server-side drawing.

• Potential for creating fast embedded scores as well as simple editing applications.
Other GUIDO projects

- Mozilla license
- iOS and Android applications
- inSCORE
- Looks to be the fastest and most complete provider of music representations and data.
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GUIDO <3 Linux!

- GUIDO is currently not included in major Linux distributions.

- GUIDO has the potential to be the open-source alternative for fast music representation and could be useful for many of the applications used today.
sourceforge.net/p/guidolib
guidoeditor.grame.fr

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