HarfBuzz
the Free and Open Shaping Engine

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Agenda

- Introduction
- History
- Old HarfBuzz
- New HarfBuzz
- Scope
- Design
- Status
- Roadmap

Intro

حرف‌باز

Free and Open Unicode Shaping Engine

History

FreeType OpenType Layout

GNOME

KDE

Pango

Qt

Old HarfBuzz

2006

Qt Shapers

Problems

- Inefficient
- Fragile
- Ugly

New HarfBuzz

Baking

Scope

Generic Shaper

- OpenType
- ATT
- Graphite
- Fallback
- …

Just Shaper

- No Itemizer
- No Bidi
- No Line Breaking
- No Rasterization

Goals

- Beautiful
- Robust
- Flexible
- Efficient
- Portable

Consumers

- GUI Toolkits
- Web Browsers
- Word Processors
- Designer Tools
- Font Design Tools
- Terminal Emulators
- Batch Doc Processors
- TeX Engines

Design

For Humans

hb_face_t

hb_font_t

hb_buffer_t

Unicode Callbacks

Font Callbacks

SFNT-Based

Garbage-In Glyphs-Out

Fallbacks

In-Place

Error Handling

Backend-Independent

Backend API

Thread-Safe

No Dependencies

Well

Some C++

MIT-Licensed

OpenType 1.6

- Mark filtering sets
- cmap type 14
- Mirroring

Status

OpenType Layout

API Review

Shapers

Test Suite

Q?