



# [Tcl/Tk state] present

EuroTcl 2012 @ TUGM

10<sup>th</sup> European Tcl/Tk User Meeting, München

*Donal Fellows, TCT*

# Current Releases

- Tcl/Tk 8.4.19
  - Will be 1 more, when 8.6.0 is done
  - Release 19 was in April 2008
- Tcl/Tk 8.5.11
  - *Current recommended series*
  - Release 11 was in November 2011
  - Should be a new one “soon”
- Platforms Supported
  - Unix (Linux, Solaris, ...)
  - Windows (2K, XP, Vista, 7)
    - Older requires 8.4 or before
  - OSX (Leopard, Snow Leopard, Lion)
    - Older requires 8.4 or before

tcl tk

UNIVERSAL SCRIPTING

# The Future

- Tcl 8.6
  - Second beta was in August 2011
  - Lot of people using the Fossil trunk
- The Blocker
  - TIP #376
    - Waiting for TDBC full release
- Other Features
  - Not blocking, but highly likely to happen
    - Improvements to msgcat and zlib



Want  
Release *THIS*  
Year!

tcltk

UNIVERSAL SCRIPTING

# Tcl 8.6 — Headline Features

- Non-Recursive Execution Engine (NRE)
  - Coroutines, Tailcalls, very deep recursion
- TclOO Object System
  - Simple but powerful; there to be built on
- [incrTcl] Object System
  - Built on TclOO
- Threads
  - Use that multi-core CPU
- TDBC & SQLite
  - Database support built-in

tcl / tk  
UNIVERSAL SCRIPTING

# Tcl 8.6 — Headline Features

- **HTTP/1.1**
  - Modern web protocol support
- **IPv6**
  - It's coming, and we're ready...
- **Try ... trap ... finally ...**
  - Exception codes for all Tcl-generated errors
- **Many New Commands**
  - **throw, chan pipe, chan push, zlib, binary encode, ...**
- **64-Bit Builds on All Platforms**

tcl/tk

UNIVERSAL SCRIPTING

# Tcl 8.6 — New Features by TIP

- TIP #106: Add Encoding Abilities to the [dde] Command
- TIP #162: IPv6 Sockets for Tcl
- TIP #195: A Unique Prefix Handling Command
- TIP #210: Add 'tempfile' Subcommand to 'file'
- TIP #230: Tcl Channel Transformation Reflection API
- TIP #234: Add Support For Zlib Compression
- TIP #257: Object Orientation for Tcl
- TIP #285: Script Cancellation with [interp cancel] and Tcl\_CancelEval
- TIP #304: A Standalone [chan pipe] Primitive for Advanced Child IPC
- TIP #313: Inexact Searching in Sorted List
- TIP #314: Ensembles with Parameters
- TIP #315: Add pathSeparator to tcl\_platform Array
- TIP #317: Extend binary Ensemble with Binary Encodings
- TIP #318: Extend Default Whitespace in 'string trim' Beyond ASCII
- TIP #320: Improved Variable Handling in the Core Object System
- TIP #323: Do Nothing Gracefully
- TIP #326: Add -stride Option to lsort
- TIP #327: Proper Tailcalls

# Tcl 8.6 — New Features by TIP

- TIP #328: **Coroutines**
- TIP #329: **Try/Catch/Finally** syntax
- TIP #331: Allow **[lset]** to **Extend Lists**
- TIP #332: **Half-Close** for Bidirectional Channels
- TIP #341: Multiple **'dict filter'** Patterns
- TIP #343: A **Binary Specifier** for [format/scan]
- TIP #348: Substituted **'errorstack'** / **'traceback'**
- TIP #354: Minor Production-Driven **TclOO** Revisions
- TIP #362: Simple 32 and **64 bit Registry** Support
- TIP #364: **Threading** Support: Configuration and Package
- TIP #378: Fixing the **Performance of TIP 280**
- TIP #380: **TclOO Slots** for Flexible Declarations
- TIP #381: **Call Chain** Introspection and Control
- TIP #388: **Extending Unicode literals** past the BMP
- TIP #395: New **'string is entier'** Command
- TIP #396: Symmetric Coroutines, Multiple Args, and **yieldto**
- TIP #397: Extensible **Object Copying**
- TIP #398: Quickly **Exit** with **Non-Blocking Blocked Channels**

tcl / tk

UNIVERSAL SCRIPTING

# Tcl 8.6 — New C API by TIP

- TIP #265: A Convenient C-side Command **Option Parser** for Tcl
- TIP #307: Make **TclTransferResult()** Public
- TIP #316: **Portable** Access Functions for **Stat** Buffers
- TIP #322: Publish the **NRE API**
- TIP #330: **Eliminate** `interp->result` from the Public Headers
- TIP #335: An API for **Detecting Active Interpreters**
- TIP #336: Supported Access To `interp->errorline`
- TIP #337: Make **TclBackgroundException()** Public
- TIP #338: Embedder Access to **Startup Scripts** of `*_Main()`
- TIP #353: **NR-enabled Expressions** for Extensions
- TIP #356: **NR-enabled Substitutions** for Extensions
- TIP #357: Export **TclLoadFile**

tcl/tk

UNIVERSAL SCRIPTING



# Tk 8.6 — Headline Changes

- PNG Image Support
  - Including alpha channel
- Standard Font Selection Dialog
- Busy Widget Handling
  - Adopted from BLT
- Rotated Text on Canvas

tk

UNIVERSAL SCRIPTING

# Tk 8.6 — New Features by TIP

- TIP #97: **Moving Vertices** of Canvas Items
- TIP #119: **Angled Text** on a Canvas
- TIP #171: Change Default **<MouseWheel>** Bindings Behavior
- TIP #197: **Unfocussed Text Widget Cursor** Control
- TIP #236: **Absolute Positioning** of Canvas Items
- TIP #244: **PNG** Photo Image Support for Tk
- TIP #321: Add a **[tk busy]** Command
- TIP #324: A Standard Dialog For **Font Selection**
- TIP #359: **Extended Window Manager Hint** Support
- TIP #360: **Modernize X11 Menus**

tk

UNIVERSAL SCRIPTING

# Tcl's "Hidden" Features

- Bytecode Assembler ("*assemble*")
  - Want to write in Tcl's bytecode directly?
- Bytecode Disassembler ("*disassemble*")
  - How does Tcl actually execute your code?
- Coroutine Code Injector ("*inject*")
  - Adding code to a coroutine
- Value Representation Inspection ("*representation*")
  - Peek at Tcl's real types
- Control over Socket Address Resolution
  - "*socketAF*" for determining the address family in *socket*
  - "*noReverseDNS*" for turning off conversion of IP addresses to names in *fconfigure*
- Look in the *tcl::unsupported* Namespace

# Further Ahead

- Tcl 8.7
  - Many features proposed (76 TIPs)
  - Probably nothing revolutionary
- Tcl 9.0
  - Clear out old mostly-unused APIs
  - Better compilation of Tcl code
    - Optimizing bytecode compiler
    - Native code generation?
  - Death to Octal Constants!
- Open Question on Whether 8.7 or 9.0 Follows 8.6

tcl/tk

UNIVERSAL SCRIPTING