

Interprocess Communication with Tcl

1 day
50% Lecture/50% Lab
Intermediate Level

Overview

In a world of distributed computing, getting your programs to talk to each other is vital. And Tcl greatly simplifies the process of creating network-enabled applications. A single Tcl command can connect a client to a server, and you can create useful, multi-client servers in less than 50 lines of Tcl code.

Benefits

In this course you will learn

- All of Tcl's mechanisms for interprocess communication including TCP/IP sockets as well as additional features such as implementing timers and timeouts.
- Recommended coding patterns for handling buffering and blocking problems
- Techniques for implementing multi-client servers

Intended Audience

This course is recommended for people with a basic Tcl programming background who need to create programs incorporating interprocess communication support.

Prerequisites

Students should have taken the *Introduction to Tcl/Tk* course, or have equivalent Tcl knowledge. Although Tcl can run on a number of operating systems, the course is normally taught in a UNIX/Linux or Windows environment; student need to be familiar with basic file system use (file system navigation; creating/opening files; etc.).

Training Approach

This is an intensive, interactive course, which is approximately 70% lecture and 30% lab. Questions are highly encouraged. On the final day, students are given access to a zipped file containing all of the solutions to the labs and the examples used throughout the course.

Course Outline

Day 1

Basic Interprocess Pipes

- A Review of the “exec” Command
- Drawbacks of “exec”
- Opening Interactive Pipes to Other Programs
- Write Pipes
- Read Pipes

Lab 1

Event-Driven Programming

- Bi-Directional Pipes
- Buffering Issues
- Flushing Channels
- Non-Blocking Channels
- Asynchronous Communication
- The Tcl Event Loop
- Handling Multiple Processes

Lab 2

For more information, contact

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Network Sockets

- The Limitations of Pipes
- TCP/IP Sockets in Tcl
- Client Sockets

Lab 3

- Server Sockets
- Standard Server Socket Setup

Lab 4

Timers and Timeouts

- Timers
- Simple Sleeping
- Scheduling Actions
- Building Good Actions
- Repeating Actions
- Canceling Scheduled Actions

Lab 5

- Implementing Timeouts

Lab 6