

Ted Percival

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github.com/tedjp

Key skills and experience

- High performance web servers in Go and C++.
- HTTP, including HTTP2, with an emphasis on optimizing cache hit rates, object reuse, and data compression.
- Large-scale live video streaming including DASH, HLS and proprietary formats.
- C and C++ systems programming on Linux and Unix.
- Linux System Administration.

Employment history

Sling TV — Principal Software Engineer

October 2014 – present

Lead developer of Dynapack HTTP server. Serves Sling TV live and on-demand content in DASH, HLS and proprietary streaming formats. Serves thousands of requests per second to millions of subscribers. Go and C++.

- DASH streaming: manifest/MPD production, MP4 packaging and Common Encryption (CENC)
- HTTP Cache efficiency improvements: automatic ETags and conditional request handling, adaptive max-age, and modern cache-control mechanisms
- HLS streaming improvements and compliance HLS versions 3 through 7
- Reusable HTTP client and server functionality
- Reusable network object cache
- Proof-of-concept next generation server in C++ using Proxygen
- Thread-safety improvements
- Clip server to bridge functionality of backend metadata systems
- Work with operations staff during software roll-outs and production troubleshooting
- Work with 3rd party player developers

Dell — Software Engineer

November 2005 – October 2014

Safeguard – Enterprise identity and password management

- Developed client web application using Angular, Bootstrap, HTML, CSS and JavaScript.
- Interfaced with REST services API.

Quest Authentication Services – Linux and Unix integration with Microsoft Active Directory

- IPv6 support – planned and implemented across the product
- SNTP implementation
- Atomic file modification support in core libraries

Resource Central – Open source application integration for Quest Authentication Services

- Apache HTTP Server authentication module
- Sudo external identity provider integration
- Wireshark packet dissectors for Telnet encryption negotiation and Kerberos S4U2Self
- PAM conversation support in XScreenSaver

St Peters Lutheran College — Help Desk (IT Support)

November 2004 – November 2005

- System administration of load-balanced email and web proxy infrastructure
- Telephone and email-based IT support

Brisbane West Chamber of Commerce — Web Developer

June 2004 – September 2004 (contract)

- Commercial website with database-backed dynamic content.

Hobby projects

shitty – Novelty HTTP2 server and HTTP/2 HPACK library

fb64 – Base64 encoder/decoder library

Nerts – Android card game

- 2D graphics with rendering optimizations
- One month development timeframe

Stallone – NAT port-mapping gateway

- NAT-PMP protocol compliant
- Linux iptables-based firewall modification

tzdata-au – Corrected Australian timezone data for Debian and Ubuntu

- System data integration
- Debian packaging

Open source contributions

- Various minor and trivial contributions to projects including Wireshark, Go, Proxygen, Sudo, Debian, Pidgin, GNOME, Avahi and Linux.

Education

Studied “Diploma of Information Technology (Software Development – Object-Oriented Programming)” at Brisbane North Institute of TAFE, 2003 to 2005.

Certifications

- Hurricane Electric Certified IPv6 Sage, 2011
- Cisco Certified Network Associate (CCNA), 2003