What I did on my Holiday

Oliver Gorwits, miltonkeynes.pm
The day job

• I’m a network engineer
• Routers, Switches, Cisco, etc
• I’m a Perl jockey, too
I am geek.

- A fortnight off in May/June
- Decide to learn some New Tech
- Poke the allotment a bit
What’s ‘new’?

• I don’t do:
  • XML
  • Javascript
  • Perl OO crack (Moose)
XML + Images
Netdisco

- Maps your network
- Web UI with tables of data
- Uses SNMP, cron
Netdisco Demo
Frontpanel patch

- Draws pretty pictures of hardware
- Compiled from vendor’s images and SNMP
- Problems:
  - “Database” of switches is a Perl file
  - Limited language to represent all devices
XML to the Rescue

- XML database of switches
  - Updated by non-Perl people
- Flexible schema
  - New designs and configurations
XML 101

<date type="ISO8601">
  <year>2002</year>
  <month>06</month>
  <day>01</day>
</date>
RELAX-NG Compact

element date {
    attribute type { text }?,
    element year { text },
    element month { text },
    element day { text }
}
Workflow

1. XML describing device parts
2. XML combining them to describe a device
3. XSLT selects and converts to Perl
   - XML::LibXML and XML::LibXSLT
4. Imager reads Perl and draws image
Device XML

<chassis type="cevChassis.596" image="c3560_8_1.gif">
  <portGroup type="cevPortNIC100"
    x="113" y="57"
    xStep="19" yStep="0"
    width="8" height="1"
    countDirection="across"/>
  
  <port type="cevPortBaseTEther" x="397" y="55"/>
  
  <container type="cevContainerSFP" x="418" y="55"/>
</chassis>
Output
Output (2)
Javascript
Toolbox

• Catalyst
  • “The Elegant MVC Web Application Framework”
• DBIx::Class
  • “Extensible and flexible object-relational mapper.”
• CatalystX::ListFramework
  • “Foundations for displaying and editing lists in a Catalyst application”
The Concept

- “Simple” relational database
- Web UI for:
  - Create, Retrieve, Update, Delete
- All auto-generated
- All AJAX
DBIx::Class Reflection

- Reflection means to view metadata
- In the context of a database:
  - What tables are available?
  - What columns do they have?
  - Data types, constrains, relations...
AJAX

• Asynchronous Javascript and XML
• Browsers make web requests without reloading the page (e.g. Gmail)
• Javascript calls the XMLHttpRequest API
ExtJS

- “A cross-browser JavaScript library for building rich internet applications”
- Object oriented Javascript
  - Quite Perlish, which surprised me
- Tables, forms, AJAX, etc
ListFramework

- Pete and Andy’s work from Dragonstaff
  - ExtJS v1
  - DBIx::Class
  - No reflection
  - Little AJAX (no bad thing!)
Aims

• Almost fully zero-conf
• Reflection on-the-fly
• ExtJS 2.1
  • Single page load, no HTML, fully AJAX
package MyApp;

use base 'CatalystX::ListFramework::Builder';

__PACKAGE__->build_listframework('/path/to/myapp/config.yml');
# config.yml has the database connection parameters

1;
ListFramework Demo
Perl OO crack
REPL

- Read, Eval, Print, Loop
- A “programming shell”
  - Common and mature in Ruby, Python
- mst wrote Devel::REPL using Moose
- Super-useful for testing, hacking, etc!
Devel::REPL Demo
Sick Idea

- London.pm Tech Meet
  - VirtualSue’s Cisco talk
  - Question about Perl in the “Cisco shell”
- ... IOS + Perl, can it be done?
  - (or faked, at least)
Moose

- Post-modern Object System for Perl 5
- Really easy to hook in, around methods
- Great showcase for OO
  - Embracing, extending...
The Cut and Shut

- Use Net::Appliance::Session
- Like Expect.pm on speed, talks to Cisco
- A Plugin for Devel::REPL
- User at the Devel::REPL shell
  - Commands go either to Cisco, or Perl
Devel::REPL::Plugin::NAS Demo
Any holiday left?
The End