

# The Way To A Big System Administrator

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March 24, 2013

# What Is A System?

A cluster of *applications*, running on a *network* of *computers*, developed by a team of *developers*, required by a team of *businessmen*, funded by some *funders*, for a group of *end users*.

# Job Challenges

- ▶ Reliable service
- ▶ Secure system
- ▶ Responsive and fast problem solving
- ▶ Capacity planning

# Qualifications

- ▶ A broad mind with necessary depth computing theory and practice, business insight
- ▶ Cooperative skills  
clear mind, concise definition
- ▶ The will and ability to improve
- ▶ Carefulness

# Keep An Open Mind

- ▶ Inspiring conventions
- ▶ Valuable news source

# Keep An Open Mind - Conventions

You don't have to monitor them all; you'd better be aware of the most authoritative and inspiring sessions.



# Keep An Open Mind - News



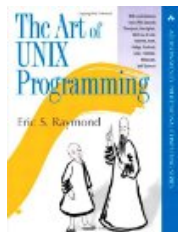
newsletters, announce mailling lists,  
blogs by authors

# Build A Solid Ground

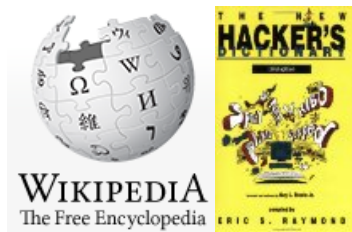
- ▶ Learn about the Unix-like and OSS world
- ▶ Understand your operating system
- ▶ Know the network
- ▶ Care about security
- ▶ Necessary programming skills
- ▶ Understand the database



# Build A Solid Ground - The Unix And OSS World



best intro to  
Unix-like world

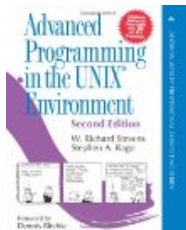


best references to  
technical terms

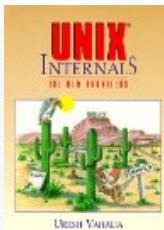


best engineering  
knowledge base

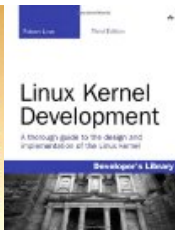
# Build A Solid Ground - Operating System



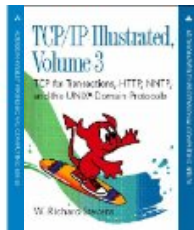
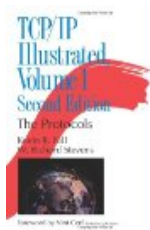
OS interface



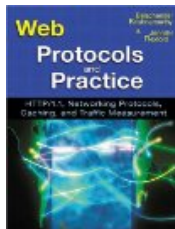
OS internals



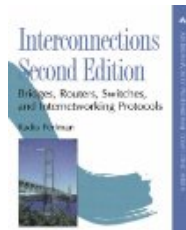
# Build A Solid Ground - Internet



some others like TCP/IP  
Guide



All the Internet is  
about, see also  
rfc2616



The network  
infrastructure

# Build A Solid Ground - Network Security



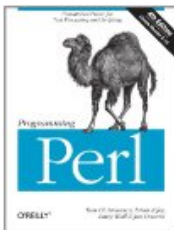
penetration testing and intrusion detection

# Build A Solid Ground - Programming skills

Read code, write readable and testable code!



A must-read to understand C, the programming language behind almost all system tools



Perl is behind kinds of analysis tools



Bash scripting is a required skill





The definitive reference is  
**The MySQL Manual**

Try to get in-depth understanding by getting involved.

Don't work? Report and fix it!

No such feature? Make and share it!

# Be Productive

## Deployment workflow

*clean* submits - CI - moderated deployment  
test functionality and performance



**Jenkins**



**puppet**  
labs



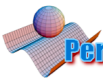
**VAGRANT**

## IDC management



**RackTables**

## Performance analysis



**Performance Dynamics Company**<sup>SM</sup>



# Be Cooperative

- ▶ Communication skills  
theory, terminology, diagram
- ▶ Problem definition  
expected behavior, reproducible, concise
- ▶ Documentation  
make it for different readers

## General issue workflow

- ▶ Problem tracking  
define and report, discuss, fix, verify, close
- ▶ Feature request  
define and request, discuss, devide into pieces, implement, verify, close
- ▶ Divide a big issue into assignable pieces

## Issue tracking system



Take time to enjoy your life!  
Don't get tired and irritable.

# Understand Reliability

- ▶ Solid up-to-date knowledge  
technique, business
- ▶ High-quality code and workflow
- ▶ Avoid single point of failure  
load-balancing, active-standby redundancy
- ▶ Fast recovery of data subsystem  
MySQL Master HA
- ▶ Effective Monitoring



Thank You

Thank you!