



# Linux for Developers

Jumpstart Your Linux Programming Skills





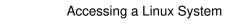
#### Meydan VIP Bridge, Dubai, United Arab Emirates

Dubai's 80-meter Meydan VIP Bridge carries the royal family and guests to the grandstand at the annual Dubai World Cup horse race. Opened in time for the March 27, 2010 World Cup, the bridge's architecture aims to evoke the flowing mane of a racehorse. At night, the bridge is lit with shimmering royal blue LED lights embedded in its steel cladding and smoothly following its undulations. While few people have the opportunity to cross this private bridge, it has been seen by millions worldwide, as a key location in the movie *Mission Impossible: Ghost Protocol*.

# Linux for Developers: Jumpstart Your Linux Programming Skills

# **Table of Contents**

Cover
Half Title
Title
Copyright
Dedication
Contents
Preface
I: Open Source Software
1 Introduction to Open Source Software
Defining Source Code
Closed Source
Open Source
Free Software
Choosing Open Source Licensing
Options
Key Terms
Examples
Useful Links
Summary
II: Linux Essentials



2 Introduction to Linux



Choosing the Right Distribution

Logging In

Using the GUI

Basic Command-Line Execution

Command-Line Structure

Getting Help

Summary

# 3 The Filesystem

Understanding the Filesystem

Learning the Most Used Directories

Naming Considerations

Navigating the Filesystem

Managing the Filesystem

Managing Directories

Managing Files

Summary

#### 4 Essential Commands

Command-Line Tools

Viewing Files

Finding Files

Comparing Files

Shell Features

Permissions

#### **Developer Tools**

File Compression Commands

The grep Command

Summary

#### 5 Text Editors

The vi Editor

Why Learn vi?

What Is vim?



Essential vi Commands

#### Additional Editors

**Emacs** 

gedit and kwrite

nano and joe

lime and bluefish

Summary

# 6 System Administration

#### **Essential Tasks**

Gaining Access to the Root Account

Displaying Disk Usage

#### Managing Software

Listing and Finding Software

Installing Software

#### **User Accounts**

Adding User Accounts

Modifying User Accounts

**Deleting User Accounts** 

**Understanding Groups** 

Managing Groups

Summary

# III: Linux Programming Languages

# 7 Overview of Linux Programming Languages

#### Scripting Languages

**BASH Shell Scripting** 

Perl Scripting

Python Scripting

Additional Scripting Languages

#### Compiled Languages

C Programming Basics

C++ Programming Basics



Java Programming Basics

**IDEs** 

Summary

## 8 BASH Shell Scripting

Basics of BASH Scripting

**Conditional Expressions** 

Integer Comparisons

File Test Comparisons

#### Flow Control Statements

The while loop

The for Loop

The case Statement

User Interaction

Additional Information

Summary

# 9 Perl Scripting

## Basics of Perl Scripting

**Executing Perl Code** 

Additional Perl Documentation

Variables and Values

Flow Control

Conditions

Additional Features

Summary

# 10 Python Scripting

#### Basics of Python Scripting

**Executing Python Code** 

Additional Documentation

Variables and Values

Flow Control



Conditions

Additional Features

Summary

## 11 C, C++, and Java

**Understanding System Libraries** 

Managing Shared Library Files

Viewing Shared Library Files

#### **Building Packages**

**Building RPM Packages** 

**Building Debian Packages** 

Exploring Java Installation and Basics

Summary

# IV: Using Git

#### 12 Git Essentials

Version Control Concepts

The First Generation

The Second Generation

The Third Generation

Installing Git

#### Git Concepts and Features

Git Stages

Choosing Your Git Repository Host

Configuring Git

Summary

# 13 Manage Files with Git

**Basic Configuration** 

git status

Handling a Multiple Location Situation

Telling Git to Ignore a File

Removing Files



Handling Branches Pushing Branches Summary

# 14 Manage Differences in Files

**Executing Diffs** 

Dealing with White Space Comparing Branches

Merging Files

Summary

# 15 Advanced Git Features

Managing Repositories

Getting Content from the Remote Server Connecting via SSH

Patching

Summary Index