网络设计与应用管理实践

Network Design and Application Management Practice
Part II

liuyu@mail.cnu.edu.cn
Network Analysis and Administer Lab
2013.2

Agenda

- Shell

- UNIX Basic

- Package Management

13年2月28日星期四

Shell

- A shell is a piece of software that provides an interface for users to an operating system shell which provides access to the services of a kernel.

- Operating system shells generally fall into one of two categories: command-line and graphical.

Command-line Shell

- The command shell is a separate software program that provides direct communication between the user and the operating system.

- Command-line shells provide a command-line interface (CLI) to the operating system

13年2月28日星期四

CLI vs GUI

- CLI proponents claim that certain operations can be performed much faster under CLI shells than under GUI shells (such as moving files, for example)

- GUI proponents advocate the comparative usability and simplicity of GUI shells.

CLI or GUI

- On a server mainly used for data transfers and processing with expert administration, a CLI is likely to be the best choice.

- a GUI would be more appropriate for a computer to be used for image or video editing and the development of the above data.

Windows CLI

- MS-DOS : Command.com

- Windows XP : Cmd.exe

  - create and edit batch files (also called scripts) to automate routine tasks

  - use the Windows Script Host, CScript.exe, to run more sophisticated scripts

Windows batch files

- Control command:

  - Call, Echo, Endlocal, For, Goto, If, Pause, Rem, Setlocal, Shift...

- Redirection operator:

  - >, <, >>, >&, <&, |

  - Handle: STDIN, STDOUT,STDERR

CScripts

- Cscript.exe is a command-line version of the Windows Script Host that provides command-line options for setting script properties.

- Windows Script Host supports scripts written in VBScript (.vbs) or JScript (.js).

PowerShell

- Windows PowerShell is built on top of, and is integrated with, the Microsoft .NET Framework.

- Additionally PowerShell enables easy access to COM and WMI to provide an environment in which administrators perform administrative tasks on both local and remote Windows systems.

UNIX Shell

- Bourne shell (sh)
  - Almquist shell (ash)
    - Debian Almquist shell (dash)
- Bourne-Again shell (bash)
- Korn shell (ksh)
- Z zhell (zsh)
- C shell (csh)
  - TENEX C shell (tcsh)

Bourne shell

- The Bourne shell, or sh, was the default Unix shell of Unix Version 7, and replaced the Thompson shell, whose executable file had the same name, sh.

- It was developed by Stephen Bourne, of AT&T Bell Laboratories, and was released in 1977 in the Version 7 Unix release distributed to colleges and universities.

Almquist shell

- The Almquist shell was originally Kenneth Almquist's clone of the SVR4-variant of the Bourne shell

- it is a fast, small, POSIX-compatible Unix shell designed to replace the Bourne shell in later BSD distributions.

- Derivatives of ash are installed as the default shell (/bin/sh) on FreeBSD, NetBSD, DragonFly BSD and Minix.

Debian Almquist shell

- Debian Almquist shell (dash) is a Unix shell, much smaller than bash but still aiming at POSIX-compliancy.

- Dash is a direct descendant of the NetBSD version of the Almquist Shell (ash). It was ported to Linux by Herbert Xu in early 1997. It was renamed to dash in 2002.

Bourne-Again shell

- Bash is a free software Unix shell written for the GNU Project. Its name is an acronym which stands for Bourne-again shell.

- The name is a pun on the name of the Bourne shell (sh) the phrase born again.

- Bash was created in 1987 by Brian Fox. In 1990 Chet Ramey became the primary maintainer.

13年2月28日星期四

Bash

- Bash is a POSIX shell with a number of extensions.

- It can be run on most Unix-like operating systems. It is the default shell on most systems built on top of the Linux kernel as well as on Mac OS X and Darwin.

Bash

- It has also been ported to Microsoft Windows using Subsystem for UNIX-based Applications (SUA), or POSIX emulation provided by Cygwin and MSYS. It has been ported to MS-DOS by the DJGPP project and to Novell NetWare.

Korn shell

- The Korn shell (ksh) is a Unix shell which was developed by David Korn (AT&T Bell Laboratories) in the early 1980s.

- MKS Inc.'s MKS Korn shell was included with Microsoft's Services for Unix (SFU) up to version 2.0.

Z shell

- The Z shell (zsh) is a Unix shell that can be used as an interactive login shell and as a powerful command interpreter for shell scripting.

- The first version of zsh was written by Paul Falstad in 1990 when he was a student at Princeton University.

C shell

- The C shell is a Unix shell that was created by Bill Joy while a graduate student at University of California, Berkeley in the late 1970s.

- beginning with the 2BSD release of the BSD Unix system that Joy began distributing in 1978.

UNIX Basic

- Basic command
  - File Operation
  - Sys Management
- Editor
  - VI
  - Emacs

File Operation

- file Copy, delete and move

    - cp

    - rm rmdir

    - mv

- dir create and delete

    - mkdir rmdir

File Operation

- cd

- pwd

- ls

- wget

Backup and Compression

- tar, gtar

- zip unzip

- gzip

- bzip

Privileges and

- chmod

- chown

- passwd

- su, sudo, pfexec

System Management

- reboot, shutdown, poweroff, init

- du, df, dd

- cat, echo, grep

- format

- ifconfig, netstat

VI and VIM

- The original vi program was written by Bill Joy in 1976 for an early BSD Unix release.

- Vim is a text editor released by Bram Moolenaar in 1991 for the Amiga computer.

- The name "Vim" is an acronym for "Vi IMproved"

EMACS

- Development began in the mid-70s and continues actively as of 2009.

- Emacs has, perhaps, more editing commands compared to other editors, numbering over 1,000 commands.

Emacs

- Emacs development began at the MIT AI Lab during the 1970s. Before its introduction, the Incompatible Timesharing System (ITS), the operating system on the AI Lab's PDP-6 and PDP-10 computers, featured a default line editor known as Tape Editor and Corrector (TECO)

E with MACroS

- Editing MACroS

- Emack & Bolio's

GNU Emacs

- The most popular version of Emacs is GNU Emacs, a part of the GNU project, which is commonly referred to simply as "Emacs".

- Richard Stallman 1984. develop from Gosling Emacs 1981.

- As of July 2009, the latest stable release of GNU Emacs is version 23.1.

Package Management

- Linux:
  - Red Hat: RPM /YUM
  - Ubuntu/Debian: APT
  - SuSE: YaST /Zypper
- Solaris:
  - Solaris 10: blastwave (csw)
  - OpenSolaris:pkg

APT

- apt-get

- apt-cache

Q&A

- Q&A

- break