

A black and white photograph of a statue of a religious figure, likely a saint, wearing a long robe and holding a book. The statue is positioned on the left side of the slide, partially obscured by a brown rectangular overlay.

DESARROLLO DE APLICACIONES WEB CON ARQUITECTURA REST

■ Miguel Orjuela



Universidad del
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Personas con
propósito
que ayudan a
transformar vidas



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DESARROLLO DE APLICACIONES WEB CON ARQUITECTURA REST

2019

Módulo # 1

Arquitectura Cliente Servidor



Miguel Angel Orjuela Rocha

Ingeniero de Sistemas y Computación

Contenido

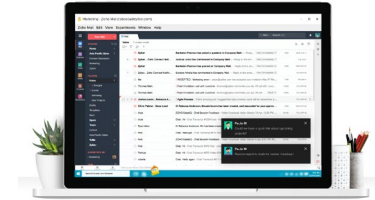
- Introducción al curso
- Editor de línea de comandos
- Editores de código
- Git
- Arquitectura cliente-servidor

Introducción

Tipos de desarrollo

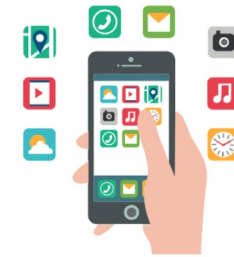
- Aplicaciones de **escritorio**

- Responsiva
- Se necesita descargar e instalar
- Plataforma (Windows/Mac/Linux)



- Aplicación **móvil**

- Para usar donde se esté y a cualquier momento
- Se ejecutan en dispositivo
- Se necesitan descargar e instalar (pero hay app stores)
- No mucho espacio en pantalla



- Aplicación **web**

- Se usa en el explorador/Acceso instantáneo
- No responsiva (depende de los datos del servidor)
- Seguridad del servidor es tarea pesada
- Tecnologías de cliente (browser) + Tecnologías de servidor



¿Qué es una aplicación web?

- Son herramientas que los usuarios pueden utilizar accediendo a un **servidor web** a través de **internet** o de una **intranet** mediante un **navegador**.
- Es un programa que se codifica en un **lenguaje interpretable por los navegadores web** en la que se confía la ejecución al navegador.



Tecnología requerida

- Es de conocimiento común que la gran mayoría de los profesionales que trabajan en Rails se desarrollan e implementan en plataformas que no son de Microsoft.
- Linux también es bastante bueno para el desarrollo de Rails.



Pila de Software

web stack = web application stack = solution stack

Paquete de software necesario para el desarrollo de páginas y aplicaciones web.

Se componen de un sistema operativo, un servidor web, una base de datos y un intérprete de lenguaje de programación.

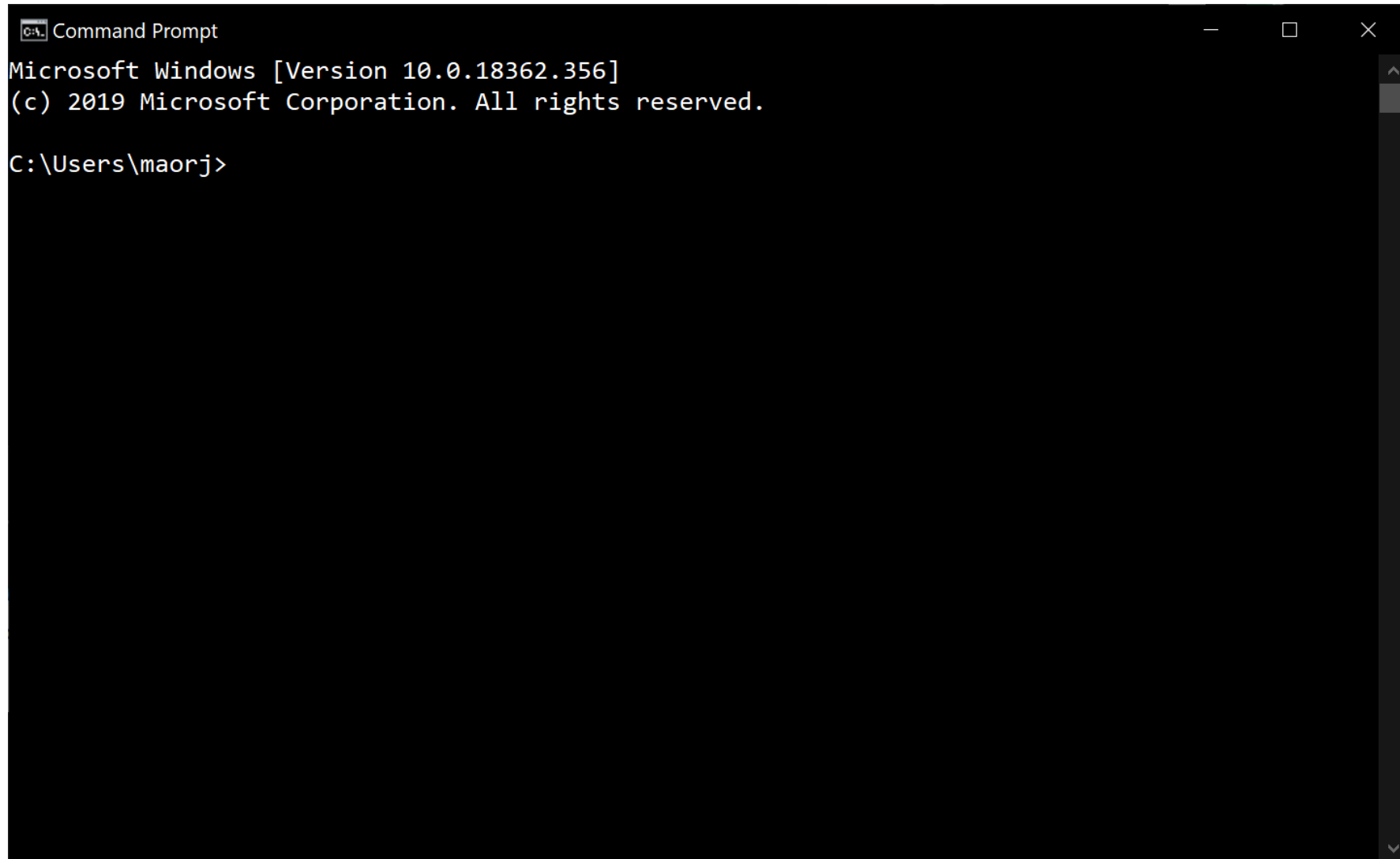


Propósitos del curso

- Explicar cómo desarrollar aplicaciones web personalizadas
 - Herramienta de elección: Ruby on Rails (RoR)
- Presentar los principios generales del desarrollo Web
- Ser una introducción completa al desarrollo de aplicaciones web, incluyendo una base básica en:
 - Ruby
 - Rails
 - HTML
 - CSS
 - Bases de datos
 - Sistema de Control de Versiones
- Brindar herramientas suficientes para iniciar su carrera como desarrollador web o emprendedor tecnológico.

Editor de línea de
comandos

Editor de línea de comandos



A screenshot of a Windows Command Prompt window. The title bar at the top reads "Command Prompt" with a small icon on the left and standard window controls (minimize, maximize, close) on the right. The main area of the window has a black background with white text. The text displayed is: "Microsoft Windows [Version 10.0.18362.356]" followed by "(c) 2019 Microsoft Corporation. All rights reserved." on the next line. Below this, the current directory is shown as "C:\Users\maorj>". A vertical scrollbar is visible on the right side of the window.

```
Command Prompt
Microsoft Windows [Version 10.0.18362.356]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\maorj>
```

FILE COMMANDS

ls - directory listing
ls -al - formatted listing with hidden files
cd dir - change directory to dir
cd - change to home
pwd - show current directory
mkdir dir - create directory dir
rm file - delete file
rm -r dir - delete directory dir
rm -f file - force remove file
rm -rf dir - remove directory dir

cp file1 file2 - copy file1 to file2
mv file1 file2 - rename file1 to file2
ln -s file link - create symbolic link 'link' to file
touch file - create or update file
cat > file - place standard input into file
more file - output the contents of the file
less file - output the contents of the file
head file - output first 10 lines of file
tail file - output last 10 lines of file
tail -f file - output contents of file as it grows

SSH

ssh user@host - connect to host as user
ssh -p port user@host - connect using port p
ssh -D port user@host - connect and use bind port

INSTALLATION

./configure
make
make install

NETWORK

ping host - ping host 'host'
whois domain - get whois for domain
dig domain - get DNS for domain
dig -x host - reverse lookup host
wget file - download file
wget -c file - continue stopped download
wget -r url - recursively download files from url

SYSTEM INFO

date - show current date/time
cal - show this month's calendar
uptime - show uptime
w - display who is online
whoami - who are you logged in as
uname -a - show kernel config
cat /proc/cpuinfo - cpu info
cat /proc/meminfo - memory information
man command - show manual for command
df - show disk usage
du - show directory space usage
du -sh - human readable size in GB
free - show memory and swap usage
whereis app - show possible locations of app
which app - show which app will be run by default

SEARCHING

grep pattern files - search for pattern in files
grep -r pattern dir - search recursively for pattern in dir
command | grep pattern - search for pattern in the output of command
locate file - find all instances of file

PROCESS MANAGEMENT

ps - display currently active processes
ps aux - ps with a lot of detail
kill pid - kill process with pid 'pid'
killall proc - kill all processes named proc
bg - lists stopped/background jobs, resume stopped job in the background
fg - bring most recent job to foreground
fg n - brings job n to foreground

FILE PERMISSIONS

chmod octal file - change permission of file

4 - read (r)
2 - write (w)
1 - execute (x)

order: owner/group/world

eg:
chmod 777 - rwx for everyone
chmod 755 - rw for owner, rx for group/world

COMPRESSION

tar cf file.tar files - tar files into file.tar
tar xf file.tar - untar into current directory
tar tf file.tar - show contents of archive

tar flags:

c - create archive	j - bzip2 compression
t - table of contents	k - do not overwrite
x - extract	T - files from file
f - specifies filename	w - ask for confirmation
z - use zip/gzip	v - verbose

gzip file - compress file and rename to file.gz
gzip -d file.gz - decompress file.gz

SHORTCUTS

ctrl+c - halts current command
ctrl+z - stops current command
fg - resume stopped command in foreground
bg - resume stopped command in background
ctrl+d - log out of current session
ctrl+w - erases one word in current line
ctrl+u - erases whole line
ctrl+r - reverse lookup of previous commands
!! - repeat last command
exit - log out of current session

VIM

quitting

:x - exit, saving changes
:wq - exit, saving changes
:q - exit, if no changes
:q! - exit, ignore changes

inserting text

i - insert before cursor
I - insert before line
a - append after cursor
A - append after line
o - open new line after cur line
O - open new line before cur line
r - replace one character
R - replace many characters

VIM

motion

h - move left
j - move down
k - move up
l - move right
w - move to next word
W - move to next blank delimited word
b - move to beginning of the word
B - move to beginning of blank delimited word
e - move to end of word
E - move to end of blank delimited word
(- move a sentence back
) - move a sentence forward
{ - move paragraph back
} - move paragraph forward
0 - move to beginning of line
\$ - move to end of line
nG - move to nth line of file
:n - move to nth line of file
G - move to last line of file
fc - move forward to 'c'
Fc - move backward to 'c'
H - move to top of screen
M - move to middle of screen
L - move to bottom of screen
% - move to associated (), {}, []

deleting text

x - delete character to the right
X - delete character to the left
D - delete to the end of line
dd - delete current line
:d - delete current line

searching

/string - search forward for string
?string - search back for string
n - search for next instance of string
N - search for previous instance of string

replace

:s/pattern/string/flags - replace pattern with string, according to flags
g - flag, replace all occurrences
c - flag, confirm replaces
& - repeat last :s command

files

:w file - write to file
:r file - read file in after line
:n - go to next file
:p - go to previous file
:e file - edit file
!!cmd - replace line with output of cmd

other

u - undo last change
U - undo all changes to line

Editores de código

Editores de código

- Editores de texto
 - SublimeText 3
 - Atom
- Entornos integrados de Desarrollo (IDEs)
 - VisualStudioCode
 - RubyMine
 - Cloud9
 - Repl.it

Git

Git

- Sistema manejador de versions
- Herramienta para despliegue de código

Git SCM

Instalación de Git

The screenshot shows the Git SCM website (git-scm.com) in a web browser. The page features the Git logo and the tagline "--local-branching-on-the-cheap". A search bar is located in the top right corner. The main content area describes Git as a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. It also mentions that Git is easy to learn and has a tiny footprint with lightning fast performance, outclassing SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows. A diagram illustrates the branching model with stacks of code and colored lines representing branches and merges.

About
The advantages of Git compared to other source control systems.

Documentation
Command reference pages, Pro Git book content, videos and other material.

Downloads
GUI clients and binary releases for all major platforms.

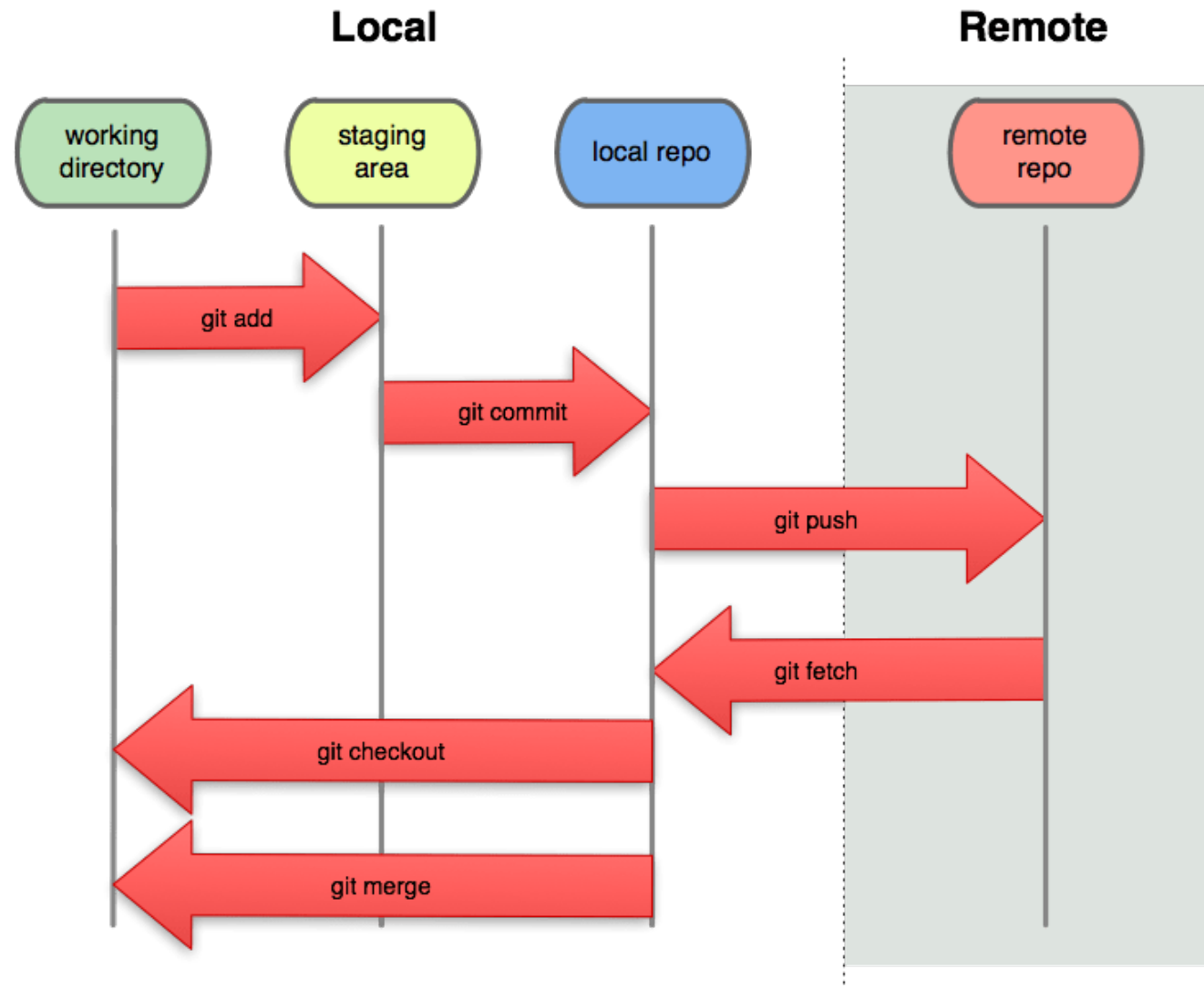
Community
Get involved! Bug reporting, mailing list, chat, development and more.

Latest source Release
2.23.0
Release Notes (2019-08-16)
[Download 2.23.0 for Windows](#)

Pro Git by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

[Windows GUIs](#) [Tarballs](#)

Flujo de trabajo Git

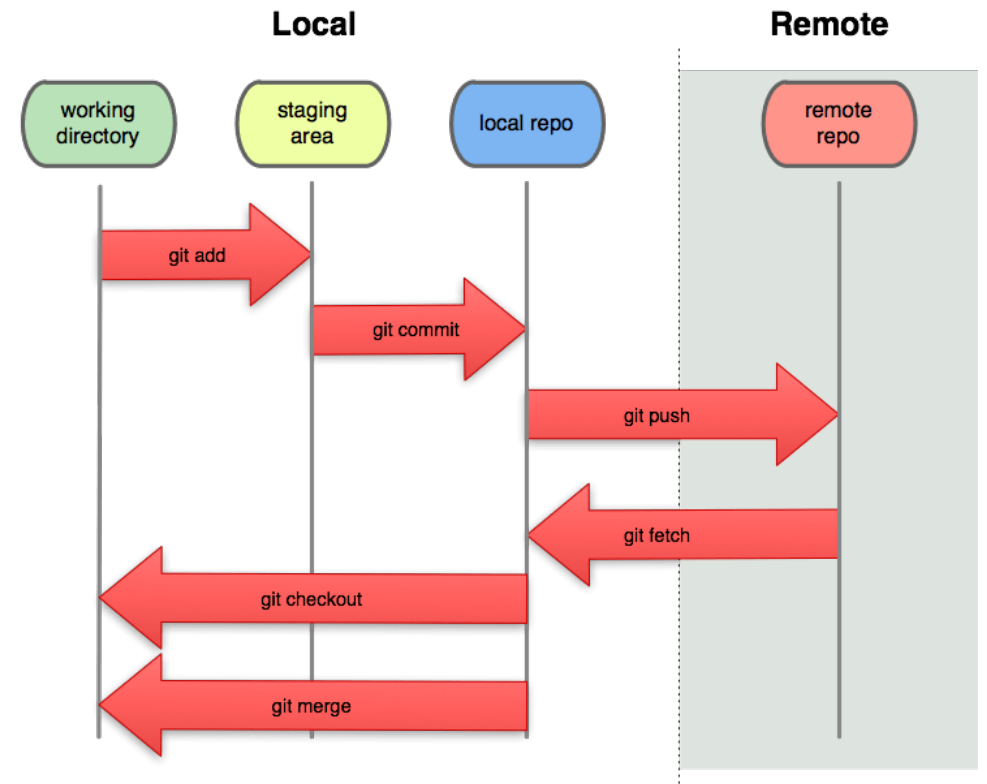


Comandos de Git

Common Git Commands





- `$git config`
- `$git init`
- `$git clone <path>`
- `$git add <file_name>`
- `$git commit`
- `$git status`
- `$git remote`
- `$git checkout <branch_name>`
- `$git branch`
- `$git push`
- `$git pull`
- `$git merge <branch_name>`
- `$git diff`
- `$git reset`
- `$git revert`
- `$git tag`
- `$git log`





Github

maorjuela73 (Miguel Orjuela)

github.com/maorjuela73







 Set status

Miguel Orjuela
maorjuela73

Edit profile

 Universidad de los Andes

Organizations



Overview

Repositories

Projects

Packages

Stars

Followers

Following

Popular repositories

Customize your pins

SaltClassificationModel
Modelo de clasificación de sal para el Salt Identification Challenge
Jupyter Notebook ★ 1

alf
R

coursera-test

mujeresseguras
CSS

sistabet
R

tic-tank.github.io
Forked from tic-tank/tic-tank.github.io
Project web page
HTML

269 contributions in the last year

Contribution settings

an

Feb

Mar

Apr

May

Jun

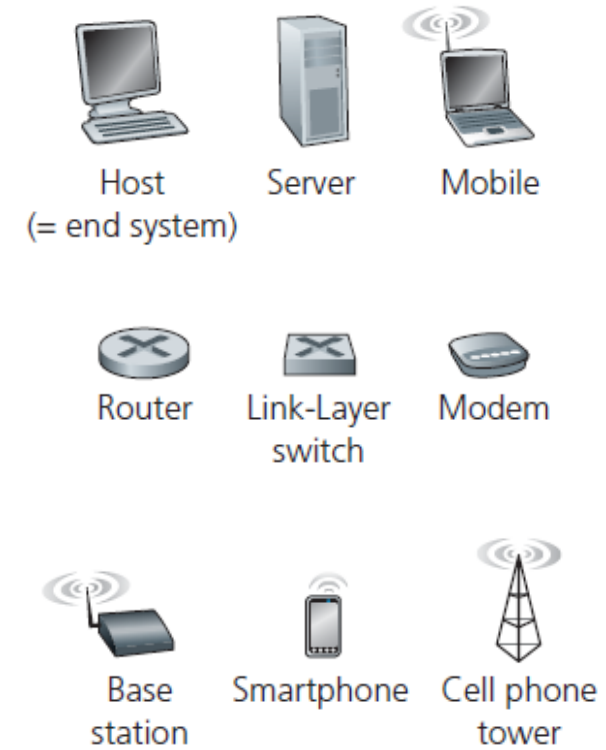
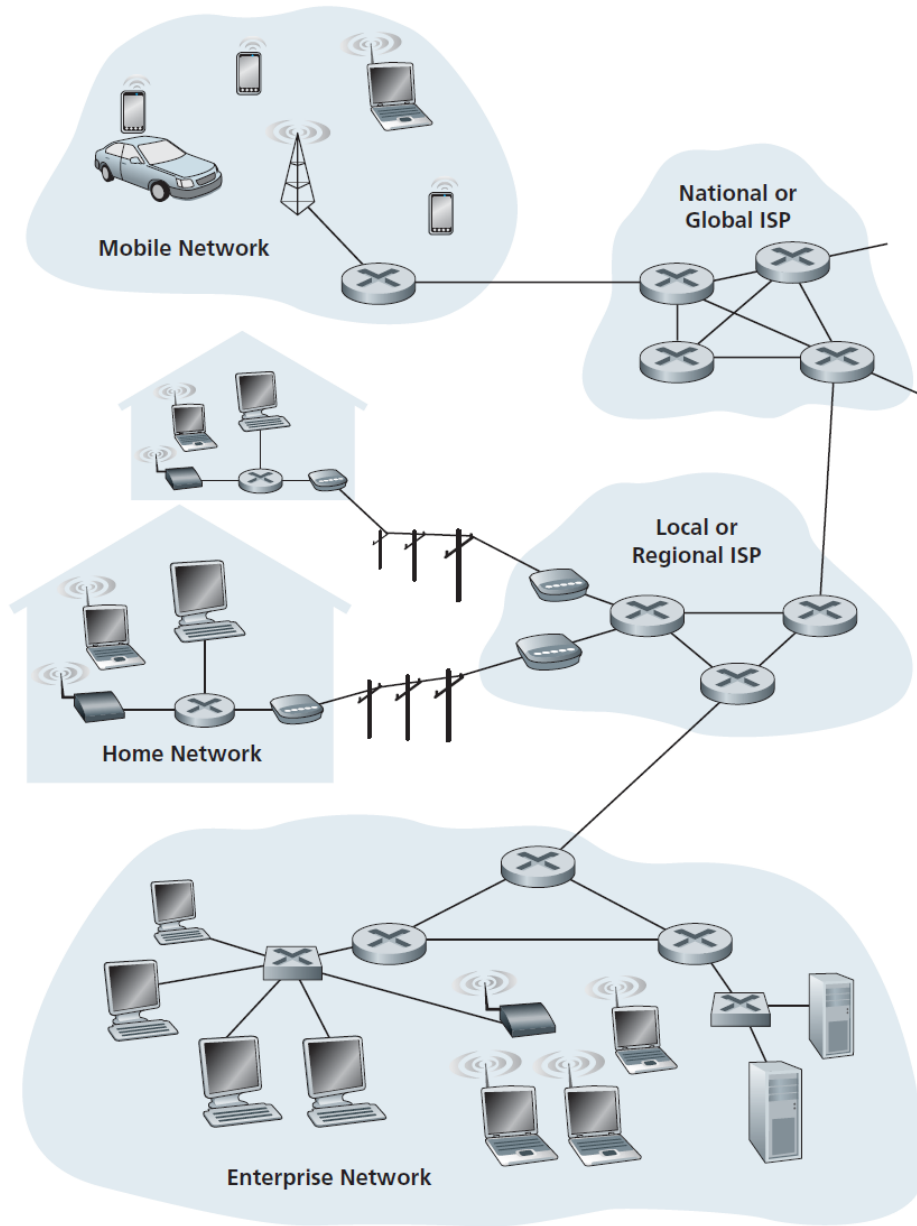
Jul

Aug

Sep

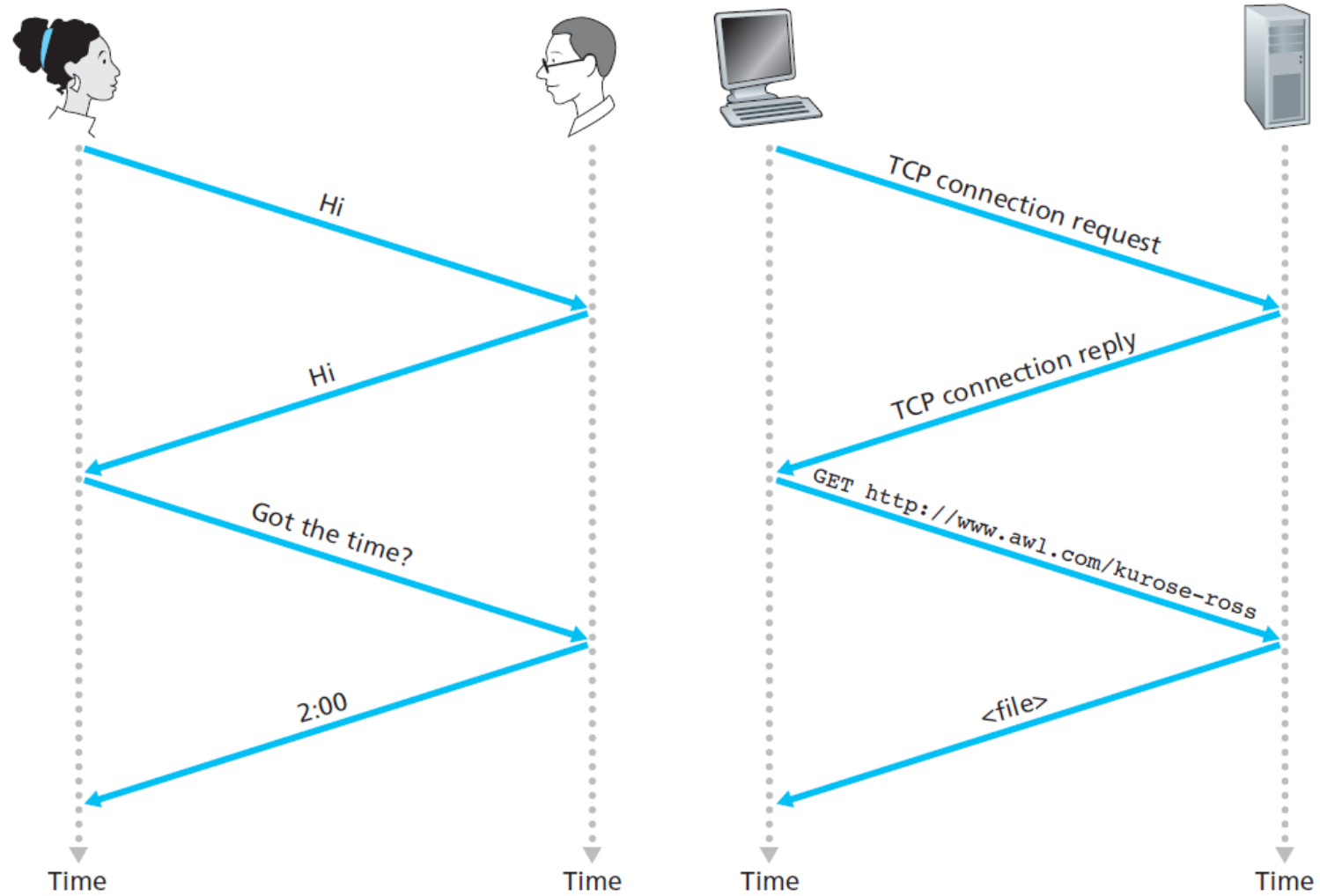
Arquitectura Cliente Servidor

Internet





Protocolo de red

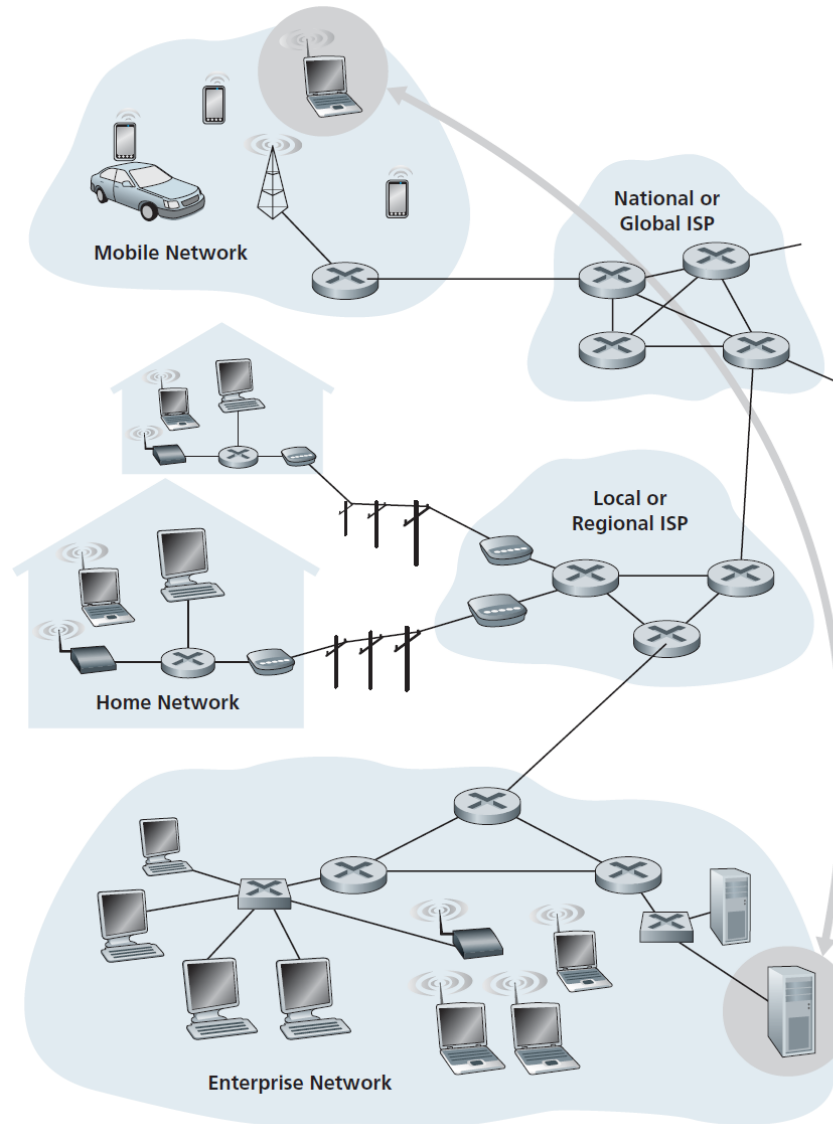


Protocolo humano

Protocolo de red

Sistemas finales o Estaciones finales

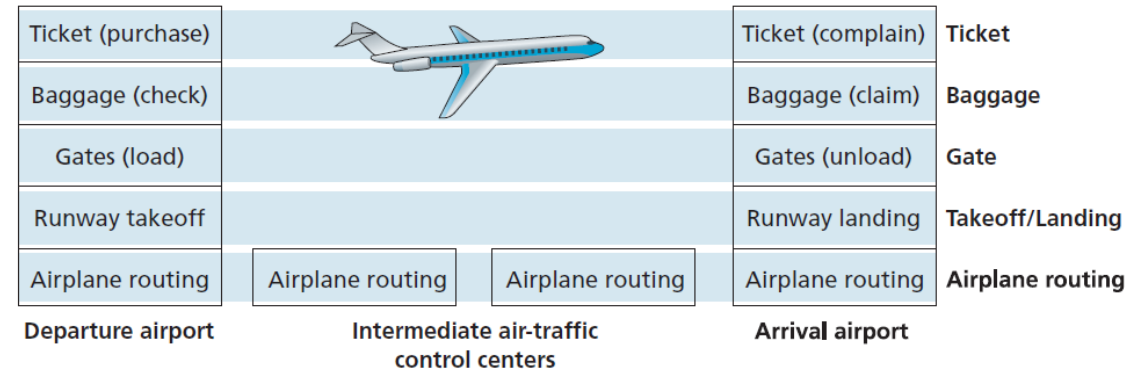
- Las computadoras que están conectadas a una red informática a veces se denominan sistemas finales o estaciones finales.
- Están etiquetados como sistemas finales porque se ubican en el borde de la red.
- El usuario final siempre interactúa con los sistemas finales.
- Los sistemas finales son los dispositivos que proporcionan información o servicios



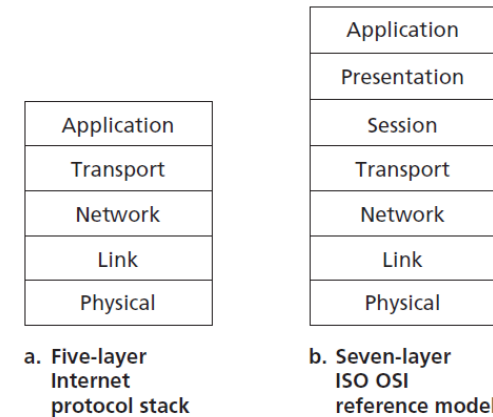


Arquitectura basada en capas

- Internet es un sistema extremadamente complicado.
- Hay muchas piezas en Internet: numerosas aplicaciones y protocolos, varios tipos de sistemas finales, conmutadores de paquetes y varios tipos de medios de enlace.

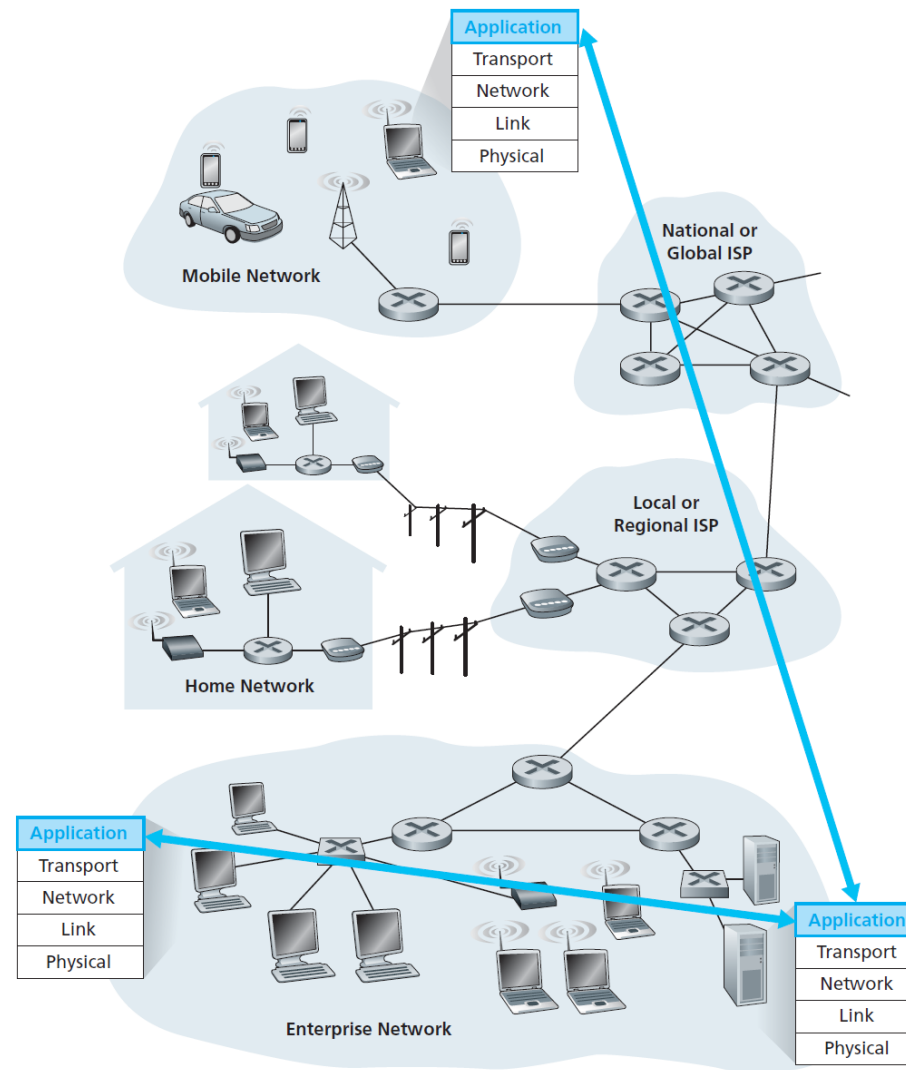


Capas horizontales del funcionamiento de aerolínea



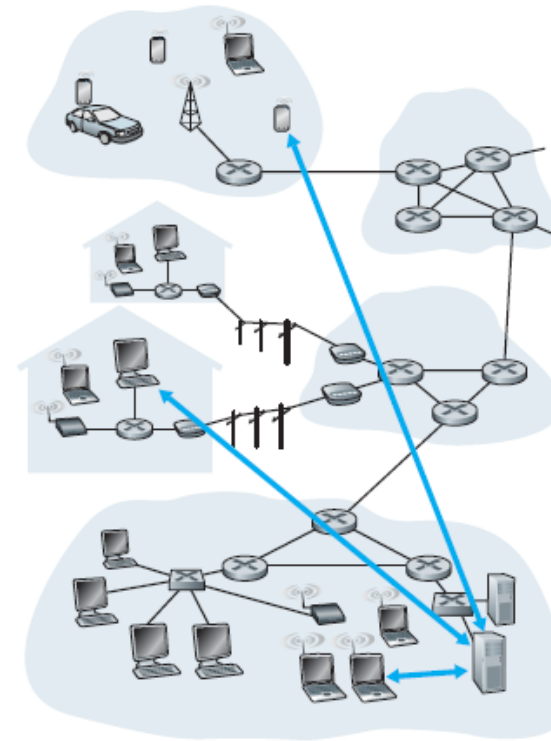
Pila de protocolos de internet – Modelo de referencia OSI

Arquitectura basada en capas

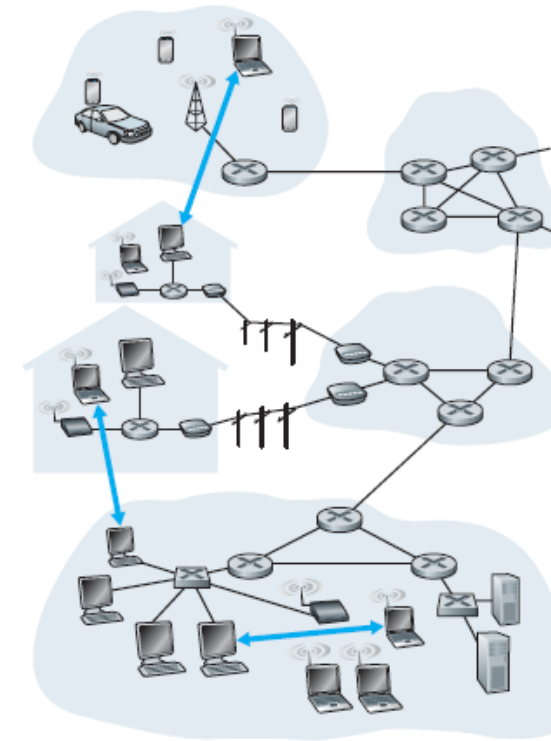


Aplicaciones de Red

- En las aplicaciones web hay dos programas distintos que se comunican entre sí:
 - El programa del navegador que se ejecuta en el host del usuario
 - El programa del servidor web que se ejecuta en el host del servidor web.
- En un sistema de intercambio de archivos P2P hay un programa en cada host que participa en la comunidad de intercambio de archivos (los programas en los distintos hosts pueden ser similares o idénticos).

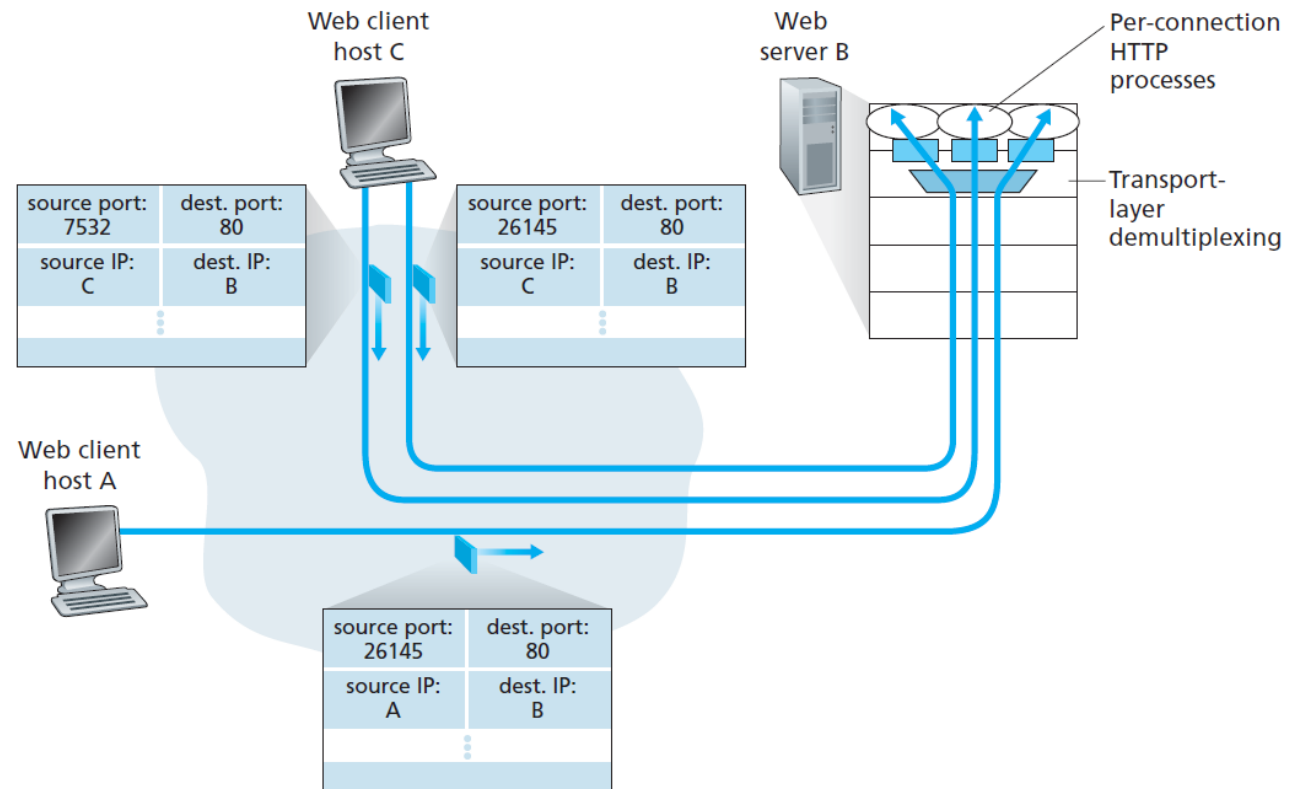


a. Client-server architecture



b. Peer-to-peer architecture

Protocolos de direccionamiento



Dos clientes, que usan el mismo número de puerto de destino (80) para comunicarse con la misma aplicación de servidor web