

# TNE30019/TNE80014 – Unix for Telecommunications

## HTTP – An Overview

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## The Web is **NOT** the Internet

### Web is an Internet Application

- Uses HTTP (HyperTextTransfer Protocol) to transfer content between client and server (version 1.1 specified in IETF RFC 2616)
- Content type is flagged with MIME Types
- Most important MIME type: HTML (HyperText Markup Language)

### Web Servers

- Deliver Content
- No claim on how to present it (at least in the early days)

### Web Browsers (Clients)

- Retrieve content from remote servers
- Organise and format content on display
- Present user interface for input

## Outline

- The Web
- HTTP – Basic Protocol Details
- HTTP – Common Protocol Commands

## HTTP Overview

- **HTTP** is text-based Protocol
  - Runs over TCP
  - Many Internet protocols are text based
  - Slightly higher bandwidth requirements
  - Easier to extend and debug
- Once TCP connection is established
  - Client (browser) sends **request** to server
  - Server sends **response** based on request
  - And so on...
- Types of requests and valid responses defined by HTTP

## HTTP – Retrieving Content (Client Request)

### Traditional request

```
GET page.html
<name>:<value>
CRLF
```

- Protocol parameters are specified as name-value pairs
- Tell server how to process request
- CRLF means empty line – tells server request header is finished

### Modern request

```
GET page.html HTTP/1.1
Host:www.server.com
<name>:<value>
CRLF
```

- Allows multi-homed hosts

## HTTP – Other Request Types

### HEAD

Request information about content without actually downloading it

### POST

Post user selected information to web page (CGI Script) to process and return result – think forms

### OPTIONS

Set (or request) options to be used in transactions

## HTTP – Retrieving Content (Server Response)

### Response

```
HTTP/<version> <error_code> <error_string>
<name>:<value>
CRLF
[<message body>]
```

### Status line (first line)

Response status, for example:

- HTTP/1.1 200 OK
- HTTP/1.1 404 Not Found

### Parameters (name-value pairs)

Server type, content MIME type, transfer encoding, length, etc.

### Message body

Content, for example HTML

## HTTP – Other Request Types

### PUT

Client sends content to be stored on server

Typically not allowed in server configurations

### DELETE

Deletes specified page/content from server

Also often not allowed

### Other commands

These relate to use of named proxies