



# FTP / SecureFTP

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- FTP-Protokoll
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- SecureFTP

# FTP Protokoll



- Basiert auf TELNET
- Kommandos: Port 21
- Daten: Port 20

# Einige wichtige FTP-Kommandos

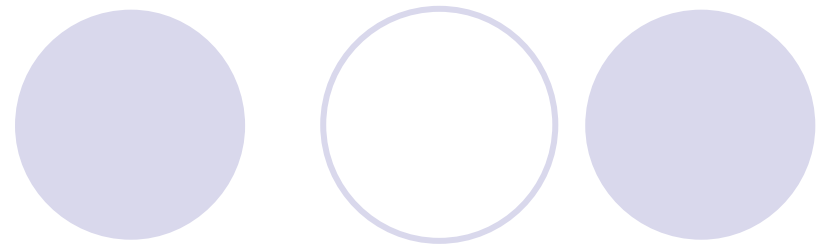
- USER / PASS
- PWD / CWD / MKD / RMD
- LIST
- DELE
- TYPE
- PORT / PASV
- RETR / STOR
- REST
- QUIT

# FTP-Replies



- 1xx : Der Befehl wird ausgeführt, ist aber noch nicht fertig (z.B. Dateitransfer beginnt)
- 2xx : Befehl korrekt ausgeführt (z.B. Verzeichniss erstellt)
- 3xx : Befehl korrekt ausgeführt, Server erwartet weiteres Kommando (z.B. User Name ok, bitte Passwort)
- 4xx: Befehl nicht akzeptiert, bitte Befehlsfolge wiederholen
- 5xx: Befehl nicht akzeptiert

# FTP-Replies 2

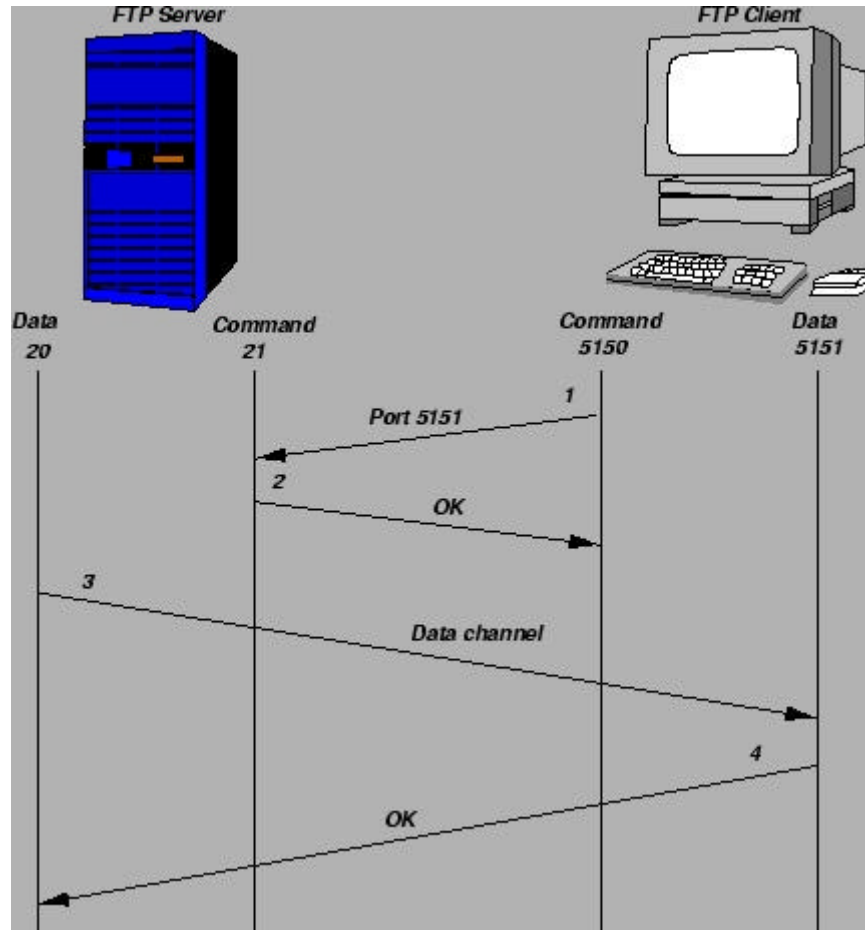


- x0x : Syntax
- x1x : Information
- x2x : Connection
- x3x : Authentication and accounting
- x5x : File system

# Einige wichtige FTP-Replies

- 331 User name okay, need password
- 230 User logged in, proceed
- 200 Command okay
- 500 Syntax error, command unrecognized
- 501 Syntax error in parameters or arguments
- 503 Bad sequence of commands
- 227 Entering Passive Mode
- 125 Data connection already open; transfer starting
- 450 Requested file action not taken. File unavailable (z.B. File busy)

# Active-Mode Dateitransfer

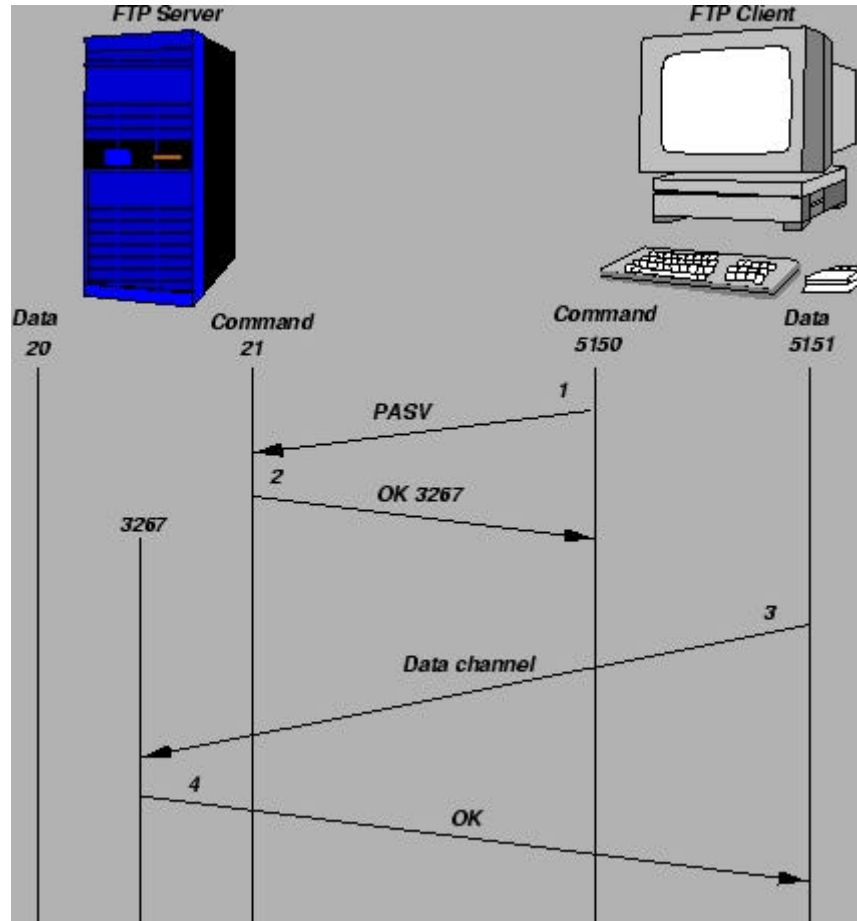


Active-Mode FTP Verbindung

Quelle: Building Internet Firewalls - D. Brent Chapman, Elizabeth D. Zwicky



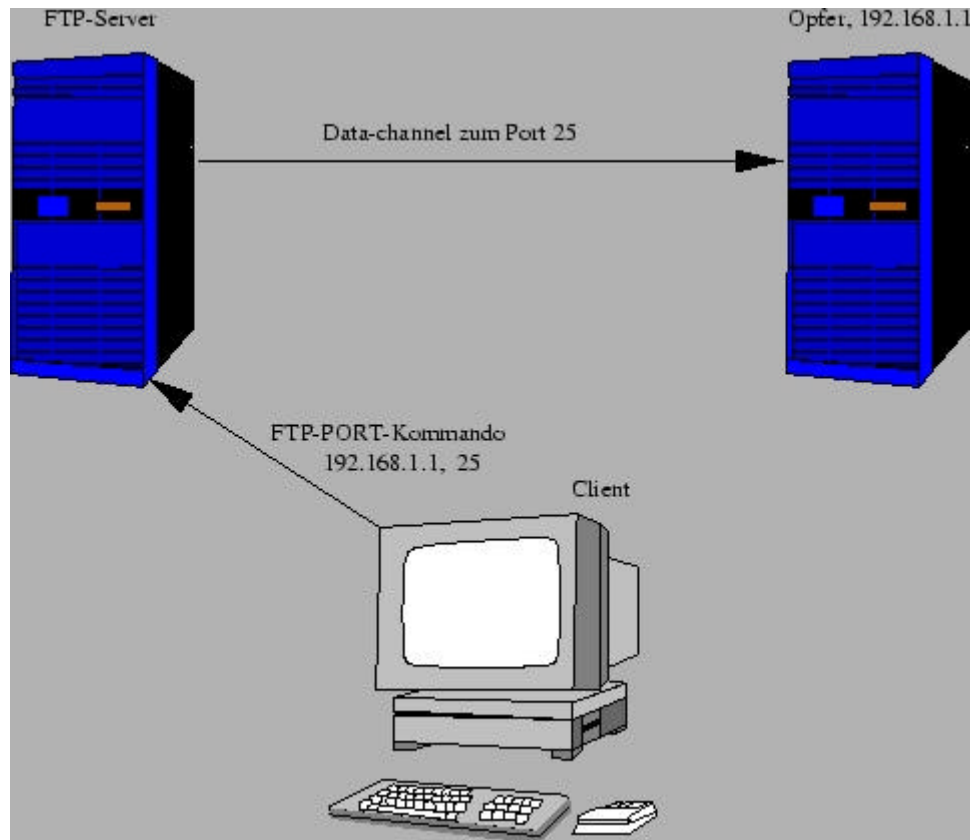
# Passive-Mode Transfer



Passive-Mode FTP Verbindung

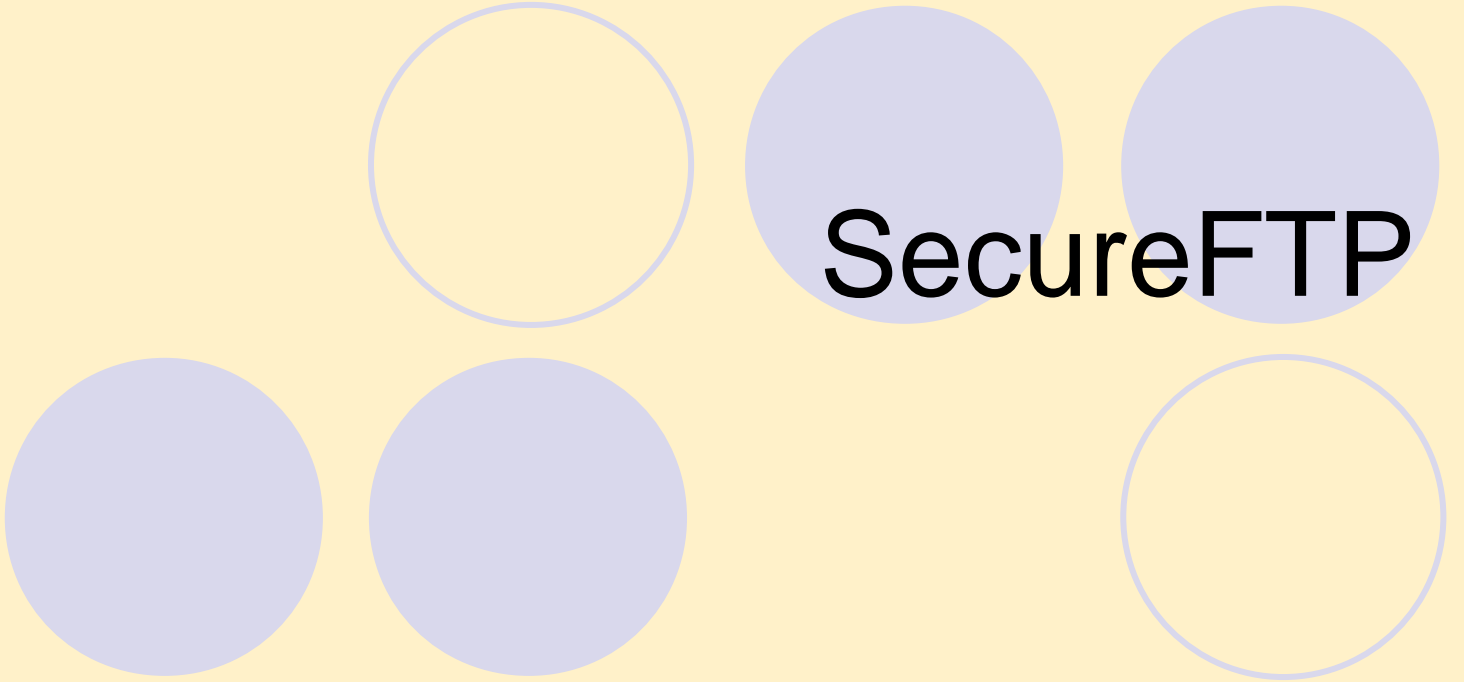
Quelle: Building Internet Firewalls - D. Brent Chapman, Elizabeth D. Zwicky

# FTP Bounce, Tunneling



FTP Bounce, Tunneling Attacke

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# SecureFTP Commands



- AUTH (Authentication/Security Mechanism)
- ADAT (Authentication/Security Data)
- PROT (Data Channel Protection Level)
- PBSZ (Protection Buffer Size)
- CCC (Clear Command Channel)
- MIC (Integrity Protected Command)
- CONF (Confidentiality Protected Command)
- ENC (Privacy Protected Command)

# SecureFTP Replies



- 232 User logged in, authorized by security data exchange
- 234 Security data exchange complete
- 535 Failed security check (hash, sequence, etc)