

Distinguish, differentiate, compare and explain what is the Difference between TFTP and FTP application layer protocols. Comparison and Differences.

TFTP Protocol

In the old days, TFTP was typically used for downloading boot code to diskless workstations. TFTP was simple enough to fit into EEPROMs of diskless workstations (only a few KBytes of code).

Today, TFTP is most often used for downloading new code to Internet appliances (Internet Access Devices, routers, switches, VOIP gateways etc.).

FTP Protocol

FTP is an abbreviation for File Transfer Protocol, an Internet protocol that is used to transfer material over the Internet by implementing TCP. It can be used to move files from one computer to another computer over a network.

Difference between TFTP and FTP application layer protocols

S.No.	TFTP	FTP
1	TFTP does not provide authentication (login).	Authentication based on login with username and password.
2	It uses UDP and thus no connections. TFTP server handles Errors in the transmission (lost packets, checksum errors).	FTP uses TCP (reliable transmission). Errors are handled by the underlying TCP layer.
3	TFTP uses a simple lock-step protocol (acknowledge each data). It limits the throughput.	The underlying TCP layer handles the transmission of data and control information. TCP guarantees maximum throughput (flow control, congestion control) and error control.
4	It is very simple. Because it uses the equally simple UDP transport protocol, TFTP clients or servers have a very small footprint. It suits for use in bootloaders.	FTP is more complex than TFTP, thus requires a larger memory footprint. Often FTP does not suit the small device bootloaders which must fit into constrained EEPROM storage.
5	This protocol uses only 1 channel, i.e. control packets (commands) flow in one direction while data packets carrying user data flow in the reverse direction over the same UDP sockets.	FTP separates user data and control information by using 2 separate TCP connections.