CLAIMS

1. A method for accelerating data delivery comprising:

establishing a connection for transporting one or more transport layer packets;

configuring a predetermined rule to select a transport layer packet to undergo an acceleration mode, wherein unselected transport layer packets undergo a non-acceleration mode;

receiving the transport layer packet selected based on the predetermined rule and retrieving one or more identifiers associated with the transport layer packet;

~~creating~~ creating mapping ~~among~~between the one or more identifiers associated with the transport layer packet and a connection identifier;

determining whether there is mapping between the transport layer packet and the one or more identifiers;

directing the transport layer packet through at least one acceleration stream to accelerate the transport layer packet to a destination provided by the one or more identifiers if there is mapping between the transport layer packet and the one or more identifiers.~~,~~

~~2. The method according to claim 1,~~ wherein the predetermined rule is configured to select a transport layer packet based on the one or more identifiers, and~~.~~

~~3. The method according to claim 1 or 2,~~ wherein the one or more identifiers comprise one or more of a s~~S~~ource IP address, a s~~S~~ource IP port number, a d~~D~~estination IP address, a d~~D~~estination port number, ~~and~~ or a stream ID.

~~4~~2. The method according to claim 1, ~~further comprising a~~ wherein the connection identifier ~~for~~ is configured to authenticat~~e~~~~ing~~ the transport layer packet transported over the connection.

~~5~~3. The method according to any one of claims 1 or 2, further comprising placing one or more corresponding payloads of the transport layer packets into ~~the~~ a communication buffer associated with the connection identifier.

~~6~~4. The method according to any one of claims 1 to 3, wherein when directing the transport layer packet through the at least one acceleration stream, a transparent proxy module performs one or more operations comprising encrypting the transport layer packet, and multiplexing one or more data communication sessions onto the at least one acceleration stream.

~~7~~5. The method according to any one of claims 1 to 4, wherein when directing the transport layer packet through the at least one acceleration stream~~accelerating the network traffic to the destination~~, a remote proxy module performs one or more operations comprising decrypting the encrypted transport layer packet, and demultiplexing the one or more data communications.

~~8~~6. The method according to any one of claims ~~6~~1 ~~or 7~~ to 5, wherein the receiving of the transport layer packet utilizes a first transmission protocol, the non-acceleration mode comprises the first transmission protocol, and the acceleration mode comprises a second transmission protocol different from the first transmission protocol.

~~9~~7. The method according to any one of claims 1 to 6, wherein the method further comprises limiting bandwidth based on the following:

dl_rate = min(min(estimated_stap_bw, current_dl_rate * adaptive_factor), upper_con_capacity)

wherein,

• dl_rate: the desired in-coming or out-going speed (bandwidth utilization) in the next phase
• estimated_stap_bw: estimated bandwidth from acceleration transport protocol
• current_dl_rate: the current in-coming or out-going speed (bandwidth utilization)
• adaptive_factor: to minimize the buffer overrun scenarios, it reduces incoming
• upper_con_capcity: configured upper limit in the bandwidth utilization

~~10~~8. An apparatus for accelerating data delivery comprising:

a transparent proxy module configured to establish a connection to a remote proxy, wherein the connection is for transporting one or more transport layer packets; and configure a predetermined rule to select a transport layer packet to undergo an acceleration mode, wherein unselected transport layer packets undergo a non-acceleration mode;

the transparent proxy module configured to receive the transport layer packet selected based on the predetermined rule and retrieve one or more identifiers associated with the transport layer packet; create a map ~~among~~between the one or more identifiers associated with the transport layer packet and a connection identifier; and determine whether there is mapping between the transport layer packet and the one or more identifiers; and direct the transport layer packet through at least one acceleration stream to accelerate the transport layer packet to a destination provided by the one or more identifiers if there is mapping between the transport layer packet and the one or more identifiers,

wherein the predetermined rule is configured to select a transport layer packet based on the one or more identifiers, and

wherein the one or more identifiers comprise one or more of a source IP address, a source IP port number, a destination IP address, a destination port number, or a stream ID.

~~11~~9. A system for accelerating data delivery comprising:

a user device;

a service device; and

an apparatus for accelerating data delivery,

wherein the user device, the service device and the apparatus interconnect via a communication means, and are operable to perform the steps as detailed in claims 1 to ~~9~~7 to accelerate data delivery between the user device and the service device.

10~~12~~. A computer program product comprising a plurality of data processor executable instructions that when executed by a data processor in a system causes the system to perform the method as detailed in claims 1 to ~~9~~7.