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Subramanian et al.

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(54) ROUTING ARCHITECTURE INCLUDING A COMPUTE PLANE CONFIGURED FOR HIGH-SPEED PROCESSING OF PACKETS TO PROVIDE APPLICATION LAYER SUPPORT

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 - (CA)
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- (22) Filed: Dec. 13, 2000

Related U.S. Application Data

- (60) Provisional application No. 60/239,484, filed on Oct. 11, 2000.

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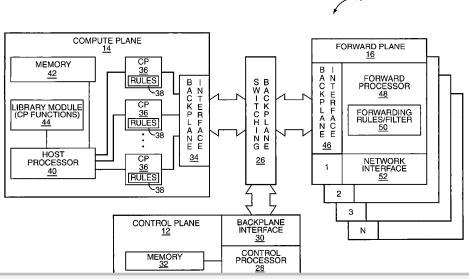
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(57) ABSTRACT

The present invention provides a routing architecture including a control plane, a compute plane, and a forward plane. The forward plane provides traditional forwarding of packets to the next-hop address, along with any necessary header manipulation, while the control plane configures the forward plane and the compute plane for desired operation. The compute plane is configured for high-speed processing of packets to provide application level support, including manipulating application data in the payload of the packets during routing. The forward plane preferably implements forwarding rules using filters sufficient to forward a received packet to the next-hop address, to the compute plane for application processing, or to the control plane to facilitate control or configuration.

37 Claims, 4 Drawing Sheets

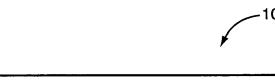






CONTROL PLANE 12						
	COMPUTE SERVICES 18	NETWORK SERVICES <u>20</u>				
	COMPUTE API <u>22</u>	NETWORK API <u>24</u>				
	COMPUTE PLANE 14	FORWARD PLANE 16				

FIG. 1



CONTROL PL 12	ANE
COMPUTE SERVICES 18	NETWORK SERVICES <u>20</u>
COMPUTE API 22	NETWORK API <u>24</u>
COMPUTE PLANE 14	FORWARD PLANE 16
	FORWARDED



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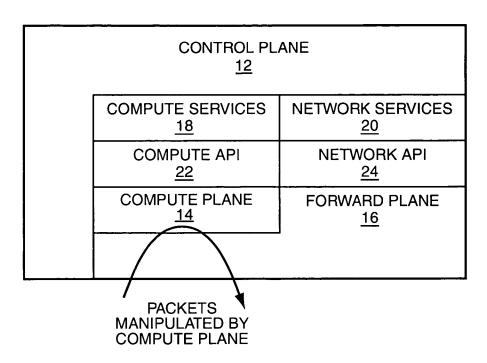
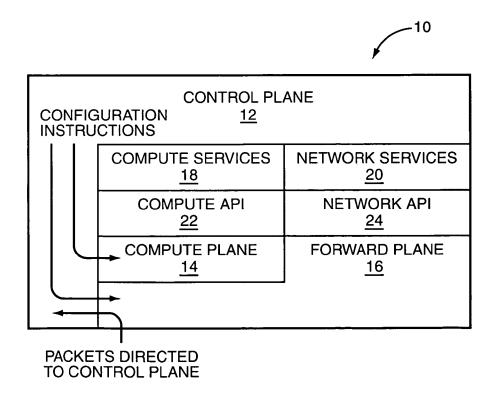
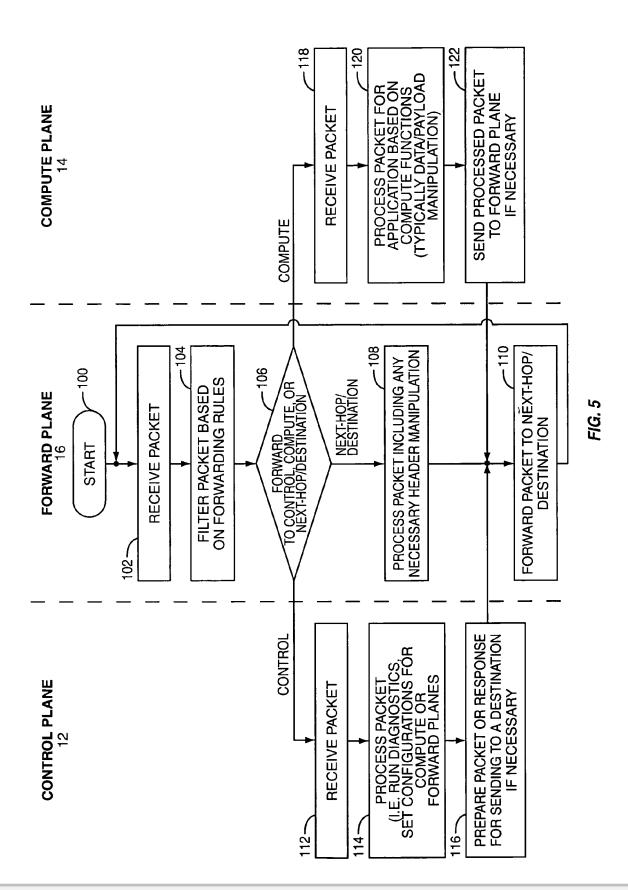


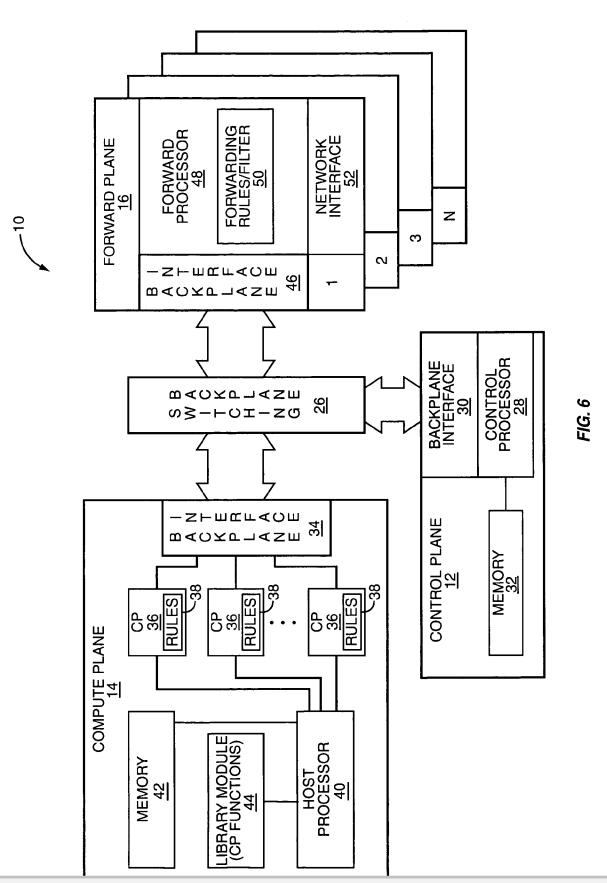
FIG. 3













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