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(54) Title: ESTABLISHING CONNECTIVITY IN NETWORKS

(57) Abstract

A network includes a number of domains ("layer 2 domains") interconnected by routers. Within each domain, traffic is forwarded based on MAC addresses (or other data link layer addresses). The routes route traffic based on IP addresses or other network layer addresses. To restrict network connectivity, a network administrator specifies connectivity groups each of which is a group of sub-networks that are allowed to communicate. The administrator also specifies which entities (MAC addresses, ports, or user names) belong to the same group. The entities may be in the same or different domains. A computer system automatically creates access control lists for routers to allow or deny traffic as specified by the administrator. The computer system also creates VLANs to allow or deny traffic as specified, wherein each VLAN is part of a domain or is a whole domain. Connectivity within each domain is restricted by VLANs and connectivity between domains is restricted by access control lists.

