

VLAN

VLAN or Virtual LAN is a technique that permits grouping of equipment in a common network. There are several options, on a port level or on a MAC-address level. Furthermore, there are supplier specific solutions. Historically companies and organisations have used routers to segment large networks. This segmentation can also be done using VLAN.

A network with installed equipment forms a common “broadcast” domain for all connected devices. If the network needs to be expanded some form of segmentation is usually necessary, partly because of speed but also to provide administrative benefits. This is normally done using one or more routers.

In a network each connection is a separate collision domain, whereas all equipment belongs to the same broadcast domain, and because of this all broadcasts will be forwarded to all devices. When the network is expanded, there is a risk of further broadcasts due to the connection of more equipment, which in turn limits network performance. Some equipment can also utilise multicast and communicate data to a number of recipients. All this traffic may need to be limited, which can be done with routers or with VLAN (Virtual LAN).

The principle is, using a switch with VLAN-support, to specify those devices that are to be associated to a common virtual network. This virtual network creates a separate broadcast domain, which eliminates unwanted traffic to the remaining devices. In the example opposite, B1,B2 and B3 communicate with each other in a virtual network. The video camera A1 sends information constantly, but only to A2. Other devices communicate according to the standard for a switched network.

