

VLAN TAGGING FOR EFFICIENT TRAFFIC MANAGEMENT

SUMMARY

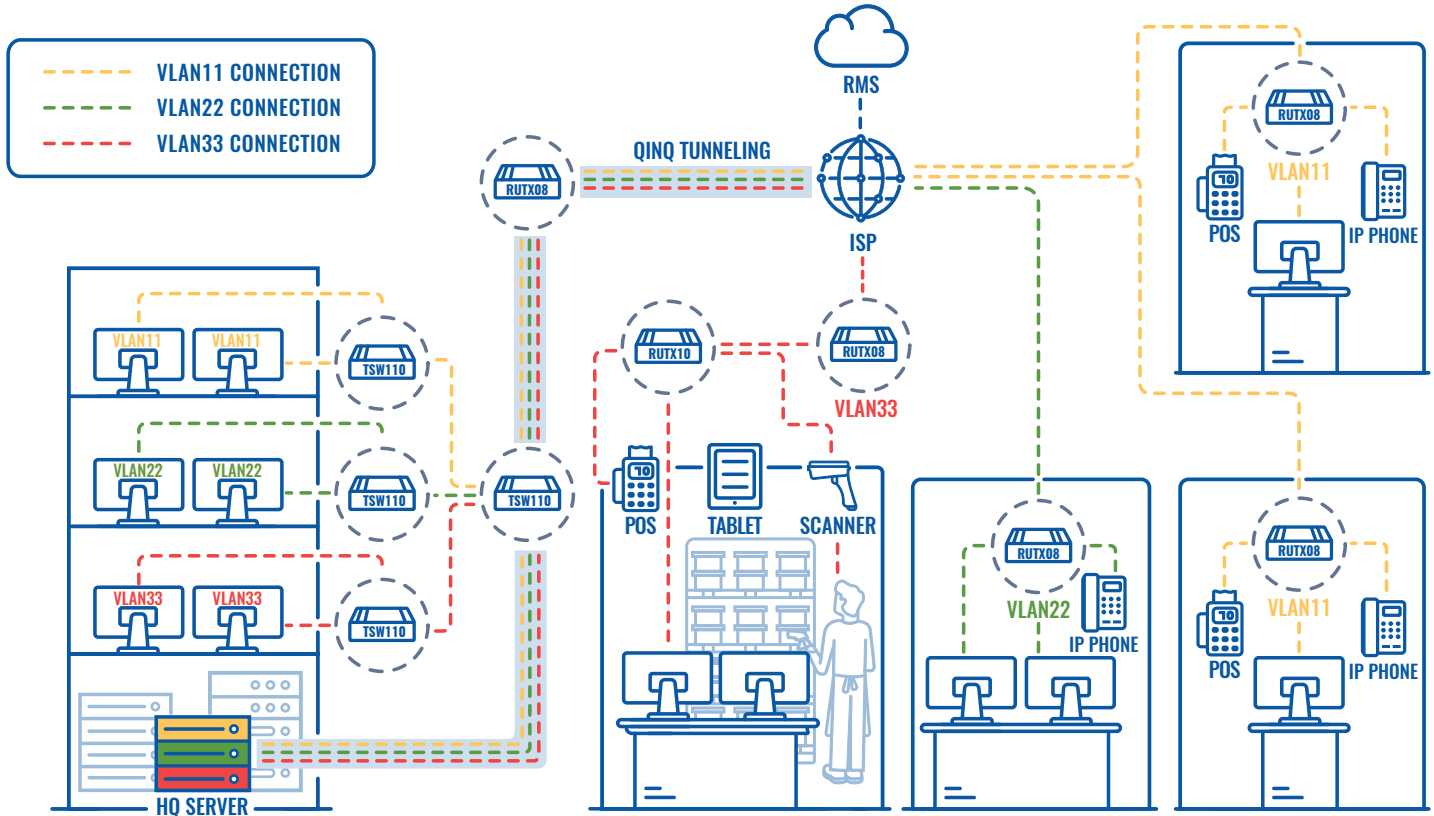
Every organization, regardless of whether it is public or private, has to document its activities and store documentation. The times of paper-based data storage are long gone with the emergence of electronic data collection, sharing, and storage methods. The processes of collecting, storing, and accessing information have become much simpler, more efficient, and budget-friendly. Nowadays, there is no need for company units to even have any physical links, including wires, as cloud-based communication is taking the lead. Virtual networks allow for remote branches of office to communicate and exchange data just as if they were placed in the same building.

CHALLENGE

Today, society and business operations are highly reliant on electronic access to information and continuous optimization. The main challenges lie in data availability, security, easy access, and costs. When the concept of networking was just starting, all the components had to be physically connected. As big of a change that it was, over time it appeared that in larger buildings it has become too expensive to get the employees connected into one local-area network (LAN), not to mention remote offices. That gave the start to a virtual local-area network (VLAN), which made it a much simpler, faster, and cheaper process to gather the devices into a network regardless of their location.

VLANs allow creating the same network rules and environment for the employees in different sites quickly and easily. However, sometimes the staff of different departments needs to have different access rights and addressing schemes in the same VLAN. This is where the VLAN tagging becomes very handy. Having this capability on a router as opposed to using this service from an ISP saves significant amounts of expenses and allows for much greater flexibility as there is no need to involve a third party every time you need to make a configuration. Everything stays completely under your control.

TOPOLOGY



SOLUTION

Imagine a company selling electronic goods. Usually, such companies are complex structures, comprising of multiple units that communicate with the headquarters. Each unit belongs to the same network, including the HQ. However, VLAN tagging (VLAN11, VLAN22, VLAN33) allows handling the traffic from each unit as if they are split into different networks. As per the topology, the traffic from the warehouse is tagged as VLAN33 and travels to the appropriate part of the HQ server. The traffic of the stores (VLAN11) and IT support (VLAN22) is also separated by tags and travels isolated from one another.

VLAN tagging allows for much easier network management without requiring multiple sets of cabling and networking devices. It also removes geographical boundaries as an entire global network can be managed from a single location. Besides, VLAN tagging also provides a possibility to prioritize specific sorts of traffic so that users or low priority traffic cannot directly affect the rest of the network. So overall, there are multiple reasons for VLAN tagging, including simplicity, security, traffic management, and economy.

Our RUTX08 router is used in each unit to connect the equipment to the network. It was chosen due to the simplicity of the solution, which does not require WIFI connectivity. RUTX08 has four Gigabit Ethernet ports for easy set-up and high data throughput. But that's not even the most important part - this model is capable of supporting up to 128 port/tag-based VLANs. This would be sufficient for even the most complicated network infrastructures. The TSW110 switch helps to speed up the deployment process even more with five additional Gigabit Ethernet ports and a plug-n-play design.

BENEFITS

- Simple management – VLANs allow network administrators to group together or separate traffic within the business network, prioritize traffic, etc.
- Security – the traffic is delivered only within the frames of destined VLANs and to specific recipients within the VLAN.
- Budget-friendly – network switched with VLANs is much cheaper than creating a routed network.
- Easy deployment - VLAN membership is configured completely through software and there is no need for using wires and cables to separate the traffic.
- Flexibility - a VLAN can be easily configured and managed regardless of geographical location.

WHY TELTONIKA NETWORKS?

Teltonika Networks offers several routers supporting VLAN tagging. Arranging VLANs this way enables the administrator to stay in full control of the network and does not require a service provider to make the necessary configurations and adjustments. It is also a much more budget-friendly option. Teltonika Networks devices are designed to be quick to deploy and easy to use, therefore the configuration processes are described in detail on our Wiki page. We also have enthusiastic and experienced support teams to help with any challenges whenever needed.

