



Classifying Usage of LAN Ports

In recent years, technologies such as mobile devices have gained wide adoption. The thereby increased mobility has changed how people work. Consequently, more than a quarter of all office space worldwide is unused and many traditional office concepts do not provide adequate workplaces for all employee's work activities during their time at the office.



Locatee is a startup based in Zurich which helps companies tailor their office space to their employees' needs by using innovative analytics solutions. One way to achieve this is to measure when and for how long people use office desks in mobile offices of large organizations, which in turn helps companies better organize the office layout. Locatee makes use of the managed LAN connections of each office workspace consisting of network routers, managed L2 switches, and either a docking station, a workstation or a thin client. For the traffic analysis, it's important to map each workplace to a unique port on the designated switch. However, the access layer where the clients connect to the network, is often only partially documented. Frequent changes in the desk layout make it difficult to keep the access layer documentation up to date.

One possible goal for this thesis is to develop a classification algorithm to find the primary type of use of LAN ports on access layer switches. Perhaps a port is permanently connected to a thin client or a workstation. Perhaps it is sporadically connected to a notebook. Perhaps it is a trunk port or maybe the port is never even used. An additional goal could be to compare different classification algorithms and test them with different levels of detail and granularity using, for example, port down NetFlow data, statistics collected from SNMP or traffic patterns in terms of bytes sent or received.

Requirements: Creative thinking and advanced programming skills are advantageous to successfully work on this topic. The student(s) should be able to work independently!

Interested? Please contact us for more details!

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