

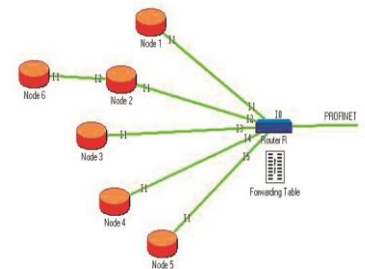
Aspect Orientated Networking

Networking today is generally considered as state-of-the-art. However many important considerations were not made during development of TCP. Therefore, it is reasonable to deal with other possible approaches in network technologies. In this bachelor thesis the concept for a Content-Based Networking of A. Carzaniga and his team was analyzed. It is the aim of this paper to find out if this concept could be advantageously applied to an industrial networking environment. For that purpose the realtime network PROFINET was used as basis. It is meant to be extended by a content-based part. Content-based Networking means routing a packet not by its fixed address, but by its content. After accurate analysis of the concept some missing thoughts were detected. A precise structure of the packets and a concept for packet fragmentation had to be supplemented. After the implementation of a routing algorithm and following performance tests it was found that this process is not suitable for large and time-critical networks. Since the performance only plummets with increasing complexity of the network, the algorithm could already be implemented for small networks.

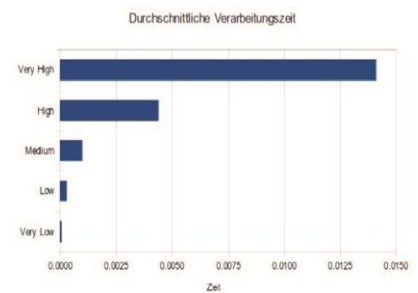


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Example of a network structure



Average processing time