As the software-defined networks developed along the years, different network components were developed by several communities. The primary component, SDN controllers were developed to provide control rules and centralised management commands for the network devices in the infrastructure layer, which further allows inter-working configurations between the interfaces. By means of this objective, several SDN controllers were developed. They might show similarities as well as differences in terms of functionality and development of their framework. Numerous challenges were faced by the early released versions of these SDN controllers. The goal was to study these different SDN controllers in terms of their development, functionality and managing capabilities of the underlying network devices.

Several applications were developed to assist the SDN controller for implementation network services. Along with this, different network components such as software switches, protocols utilised in the SDN infrastructure are available today. Therefore, the aim of this Master Thesis was to research and study these different components related to the software-defined networks in terms of their functionality with services.