

Chapter 7

Conclusions

In this book, we examined data center networks in detail, focusing on some representative topologies of data center networks. First, we reviewed the current state-of-the-art for data center topologies. Then, we introduced several of the newly proposed topologies that have appeared in research and academic literature. We categorized these topologies according to their features. We analyzed several of the properties of these topologies, in terms of their scalability, performance and hardware redundancy and presented some performance results by comparing various metrics.

We explored the routing algorithms designed for various architectures, and the techniques for enhancing their performance taking advantage of available hardware redundancy. We examined the fault-tolerance characteristics of the architectures. Besides qualitative analysis, we also presented some quantitative results computed through simulations to compare the fault-tolerant characteristics of the architectures.

With this endeavour, we hope that the stage has been set to examine various DCN architectures using a standard set of metrics. We also expect that the detailed categorization and characterization of various aspects of the architectures will enable future researchers to develop new architectures and propose mechanisms to improve performance and dependability characteristics. Any architecture has to strike a balance between performance, cost and sustainability.