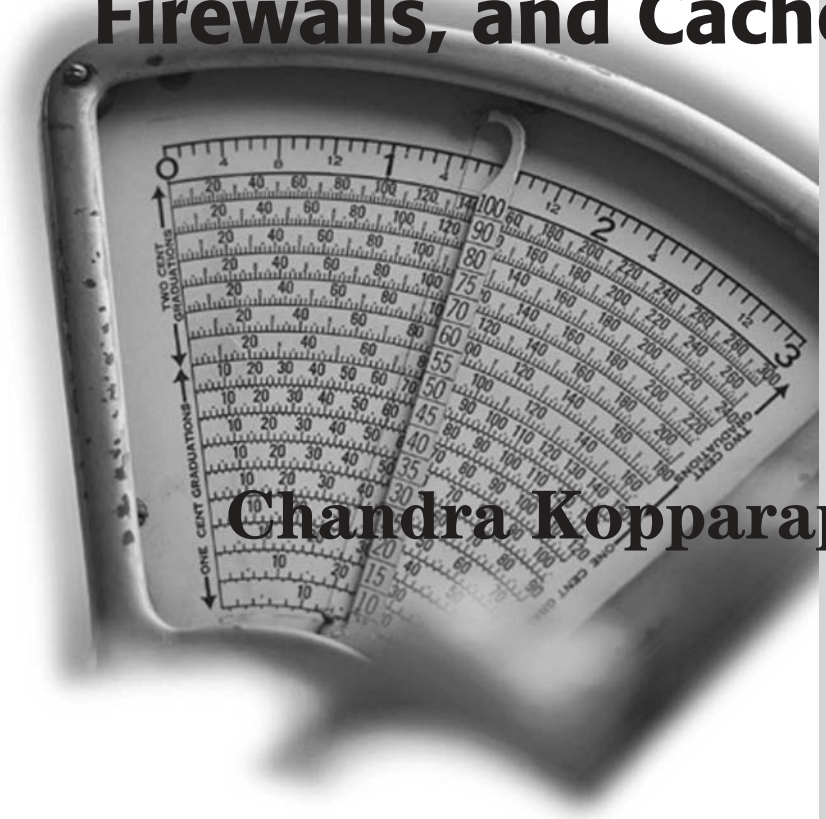
Load Balancing Servers, Firewalls, and Caches



Chandra Kopparapu

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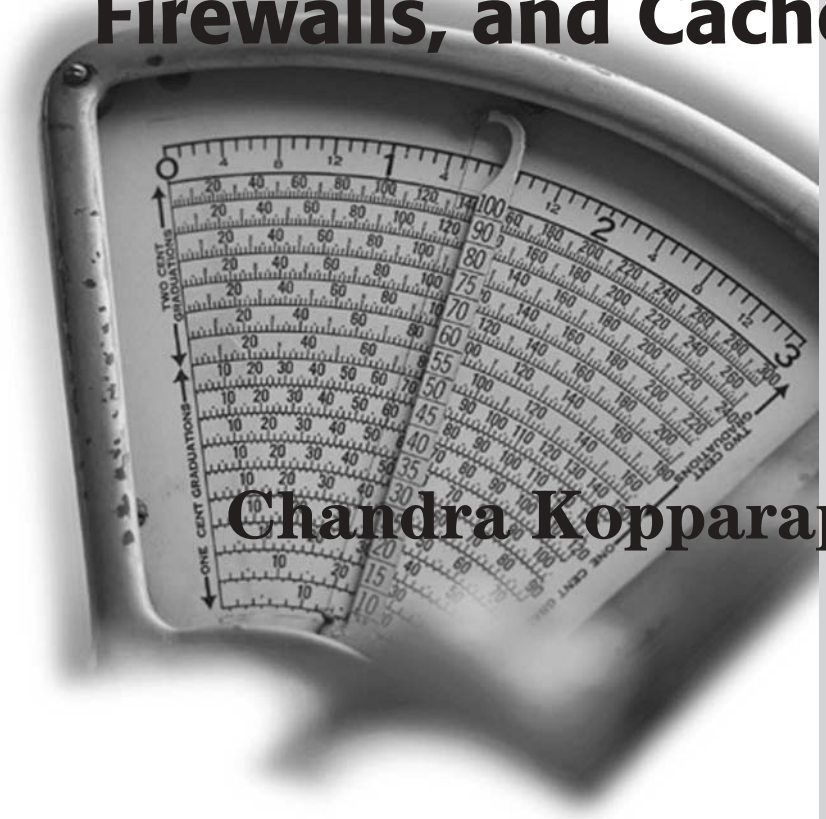

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To my beloved daughters,
Divya and Nitya,
who bring so much joy to my life.

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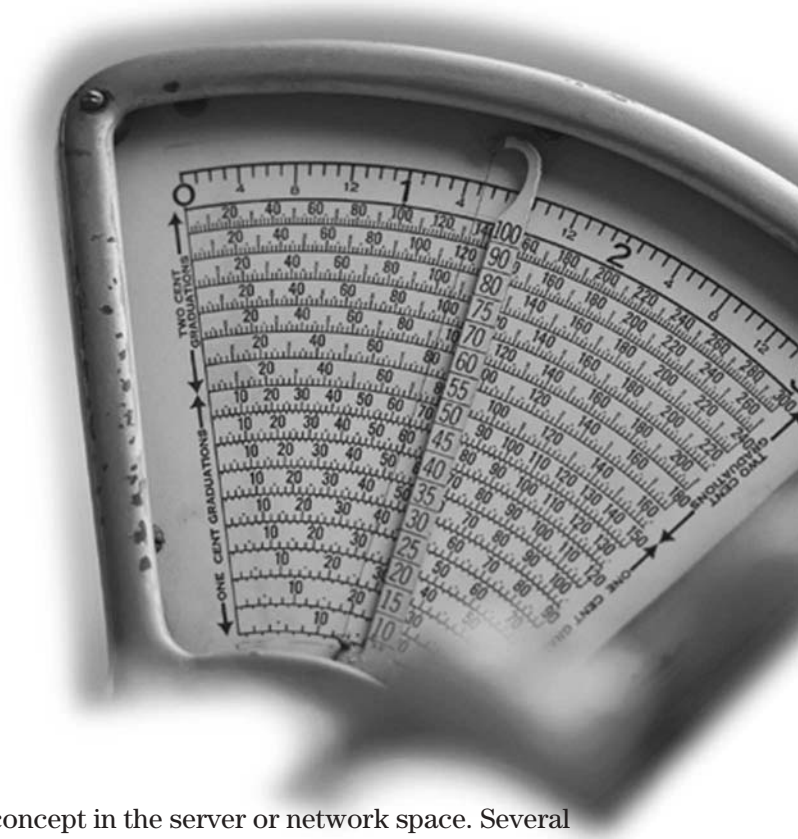
CHAPTER 1

Introduction



Load balancing is not a new concept in the server or network space. Several products perform different types of load balancing. For example, routers can distribute traffic across multiple paths to the same destination, balancing the load across different network resources. A server load balancer, on the other hand, distributes traffic among server resources rather than network resources. While load balancers started with simple load balancing, they soon evolved to perform a variety of functions: load balancing, traffic engineering, and intelligent traffic switching. Load balancers can perform sophisticated health checks on servers, applications, and content to improve availability and manageability. Because load balancers are deployed as the front end of a server farm, they also protect the servers from malicious users, and enhance security. Based on information in the IP packets or content in application requests, load balancers make intelligent decisions to direct the traffic appropriately—to the right data center, server, firewall, cache, or application.