

## **Improve Virtualized IT Resources and Application Performance**

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## Introduction

Over the past five years, virtualization has been rapidly adopted by businesses of all sizes. It has redefined the way servers are viewed and utilized. Most physical servers today operate at 10-15 percent of their total computing capacity, creating inefficiencies and increasing business operational costs. Virtualization solves this problem by enabling more services and applications to operate on a single server, increasing server utilization to as much as 85 percent. However, virtualization requires higher performance and continuous uptime, which in turn adds more demand on the network infrastructure.

With a virtualized network infrastructure, businesses can reduce IT costs while increasing the efficiency, utilization and flexibility of their existing assets. The legacy “one application to one server” is broken, and pooled common infrastructure resources lead to much more intense networking traffic.

To achieve virtualization goals (fewer servers, lower costs and improved business continuity), IT must first determine how to increase the overall availability and performance of hardware and applications in the server room.

Availability and performance have always been the two main requirements for servers. Given the significant increase in traffic virtualization creates on individual servers, IT departments need to upgrade network link speeds to the servers – typically to 10 Gigabit per second (10GE). In addition, traffic load balancing and network link aggregation are required, to ensure maximum throughput and availability of the connections (see Figure 1).

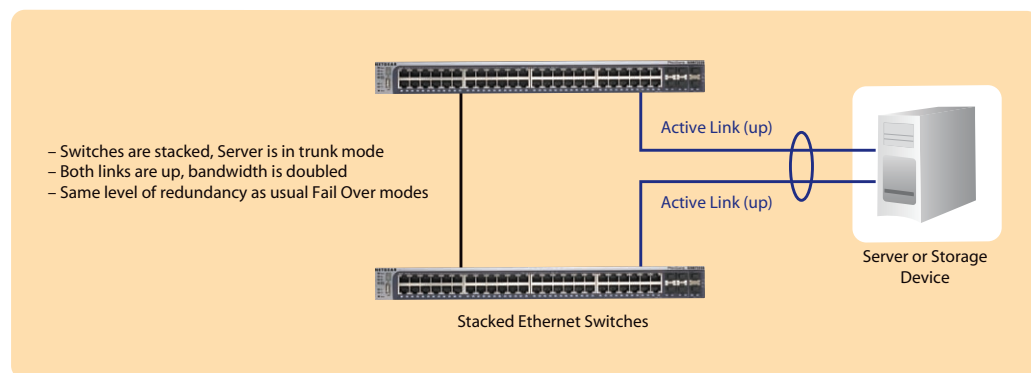


Figure 1. Enhanced Server Connection

## Solution

Over the past few years, leading networking vendors such as NETGEAR® have developed many advanced features to maximize throughput and availability for critical network infrastructure nodes. Stackable switches allow redundant multiple connections in an active-active configuration, as shown in Figure 1. The stack acts as a single logical switch and the server can aggregate its two Ethernet connections.

## NETGEAR® Solution

NETGEAR® provides reliable, high-performance, business-class networking products. With multiple 10 Gigabit ports and distributed trunking across the hardware stack architecture, NETGEAR simultaneously enables system redundancy and load balancing – enabling virtualized servers and storage hosts to benefit from redundant network connections (see Figure 2).

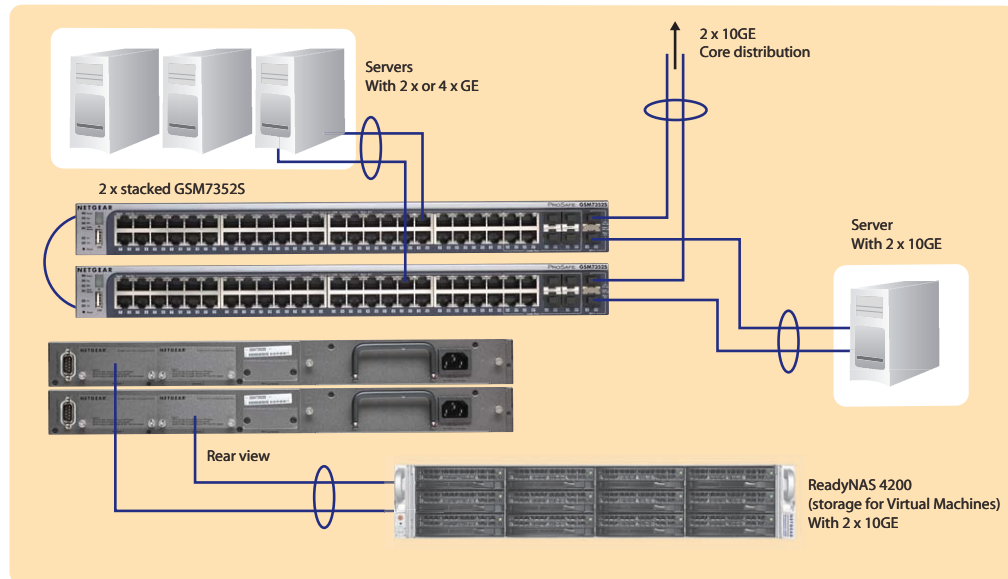


Figure 2. Network Solution

NETGEAR ProSafe® managed switches provide secure, high speed network access and modular expansion capabilities, which are essential for any virtualized network. Hardware stacking technology provides the bandwidth and redundancy needed to allow virtualized servers to maximize throughput and minimize downtime.

NETGEAR ReadyNAS® storage systems include redundant power supplies, built-in replication and support for multiple RAID configurations, to provide maximum data protection for NFS or iSCSI target storage for Virtual Machines.

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