RESONATE | APPLICATION NOTE

Accommodating and Mapping Traffic Growth with Multiple Primary Schedulers

Resonate Central Dispatch Application Note

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Companies with complex multi-server Internet or intranet sites face the ongoing challenge of handling increasing traffic volumes and effectively managing growth.

Resonate's Central Dispatch™, a distributed software-based server management solution, can help. With its ability to incorporate multiple scheduling servers within a single logical site, Central Dispatch provides a mechanism to accommodate traffic growth, while maintaining the efficiency and management simplicity of a single site.

KEY BENEFITS OF MULTIPLE SCHEDULERS

- **Schedules traffic to sites with millions of requests per day**
- **Pooled site resources provide highest availability**
- **Simplifies resource deployment**
- **Maximizes resource utilization**
- **Simplifies site management and network design**

Scaling to Accommodate Traffic Growth

Central Dispatch supports sites with millions of requests per day. Through its triangular data flow, downstream data passes directly from content servers to clients without passing back through the scheduling server. Through this architecture, the Central Dispatch site enables maximal data throughput and unparalleled scalability.

For very large, high traffic sites in which a single scheduler's utilization is maximized, Central Dispatch offers the ability to add additional schedulers to the Central Dispatch cluster (Figure 1). Schedulers A and B both schedule traffic to all available content servers. A site containing multiple schedulers behaves and is managed as a single cluster, allowing for flexible placement of resources based on site requirements across subnets or multiple data centers.

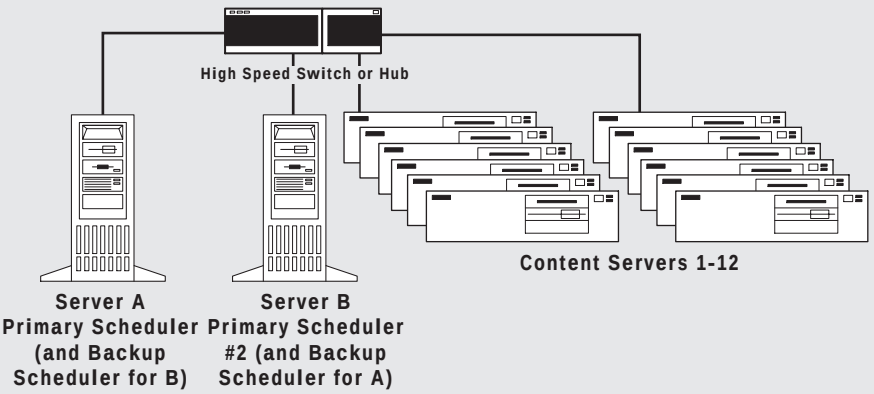

Figure 1—Multiple Schedulers for High Traffic Site

Providing High Availability and Optimized Resource Utilization

Pooling site resources into a single integrated cluster virtually eliminates downtime. Primary schedulers can serve as back-ups to each other, and because connection requests are routed around failed systems, users are insulated from failures on individual systems. With Central Dispatch deployed with multiple primary schedulers, even planned scheduling server downtime does not need to mean the site is unavailable to users. Since active schedulers can serve as backup systems to each other, costs for dedicated or idle back-up hardware are eliminated. Similarly, because it isn't necessary to split large sites into two or more clusters, costs associated with network redesign and reconfiguration are also eliminated.

Managing as a Single Virtual Site

Central Dispatch provides a central point of control and administration, enabling all servers within a site to be managed from a single workstation. From a management perspective, a site with multiple primary schedulers is treated as a single cluster, significantly simplifying administration and management. Traffic can be directed by schedulers on different subnets to provide availability in the event of a switch failure or other hardware failure in a single data center (Figure 2). There is only one site to set up and monitor, and the transition to a larger site is seamless—it is unnecessary to go through the time-consuming process of separating resources, reconfiguring the first site, and setting up a new second site. Central Dispatch provides one integrated view of site activity and health, allowing users to track and analyze the ongoing (live) performance of the site and all its nodes.

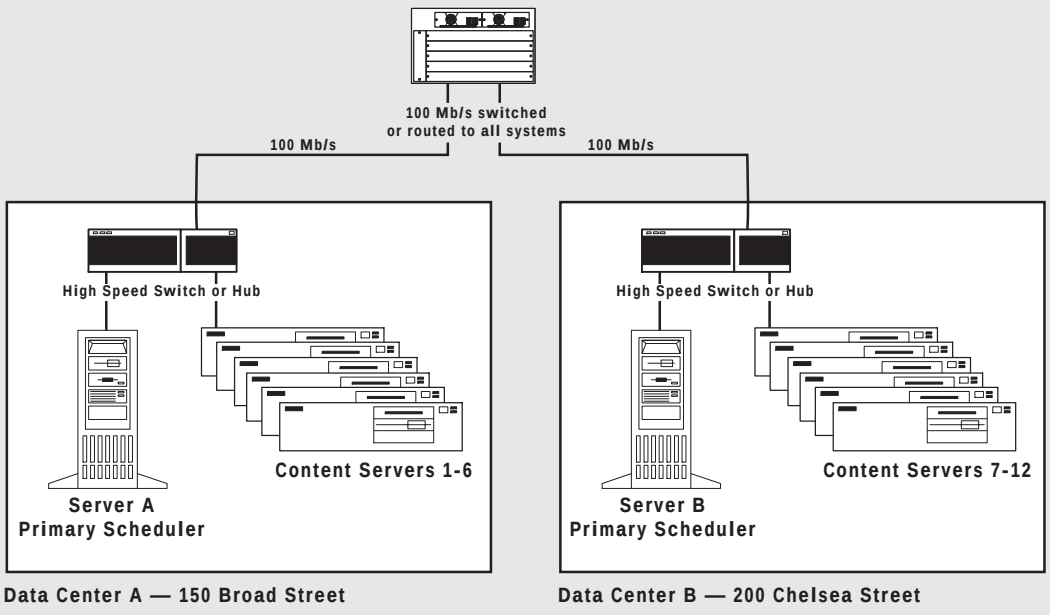

Figure 2—Multiple Schedulers for Distribution Between Data Centers and High Availability

Considerations When Evaluating Alternative Solutions

- How is site growth handled? For example, can existing sites grow to accommodate increased traffic, or is the approach to split sites into two or more independent clusters?
- How is management performed? Can all systems be managed as a single logical entity?
- How is back up for primary schedulers performed? Are dedicated resources required?
- Can additional schedulers and/or servers be deployed (a) without interrupting service, and (b) without impacting existing network architecture and topology?
- What, if any, are the limiting factors with respect to growing a site? How many content servers can a single site include? How many primary schedulers can a site include?
- Can nodes (schedulers, servers) within a site span multiple networks and/or buildings?
- Can site resources be easily reallocated within a site or between sites to accommodate changing demands? How is this accomplished?
- What is the traffic flow within a site (from client request through client response)? What are the potential bottlenecks as traffic volume increases?
- During peak conditions, does the site receive more than 1500 hits/sec?

Considerations for Deploying Multiple Primary Schedulers

- If so, are the most powerful systems being used as the primary scheduler(s)? Is the primary scheduler(s) functioning in a dedicated (scheduler-only) manner?
- Do the primary and backup schedulers have enough headroom available to handle traffic spikes and the increased traffic resulting from failover conditions?
- Can the existing resources handle the expected traffic? If not, what additional systems (content servers, schedulers) will be needed?

Multiple Scheduler Capabilities Summary

Central Dispatch's multiple scheduler capability can schedule traffic to sites with millions of requests per day, provide for optimized resource utilization, and simplify resource deployment. Through multiple schedulers, even the highest traffic sites can be managed as a single Central Dispatch cluster, substantially easing the burden of site management and configuration.

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