



CASSATT

Cassatt and F5: Dynamic Hardware Repurposing with Automatic Load Balancing

Executive Summary

Cassatt Active Response can be used in conjunction with the F5 BIG-IP® Local Traffic Manager™ (LTM) to make more efficient shared use of data center capital while saving administrative time.

Cassatt Active Response software continually allocates/reallocates bare-metal hardware – even across different data center networks— so as to maintain application service levels. Simultaneously, it can communicate with network switches and F5's BIG-IP LTM to continually update newly-assigned Virtual IP addresses (VIPs) as new servers are provisioned, guaranteeing balanced loads across the newly-allocated hardware. This level of integration eliminates the need to manually update network and load balancer configurations when new hardware is brought on/off line in real-time.

Challenges

IT environments managed with policy-based provisioning and workload management systems have unique requirements. In response to changing demand levels, physical and virtual servers can be created on-the-fly (on-demand hardware and software provisioning) usually within minutes. In situations where these servers are part of scale-out architectures, VLANs and load balancers must simultaneously be updated to reflect the presence of new servers and IP addresses. The old model of manually updating IP or VIP tables is too slow and labor-intensive to keep-up with the changing IT compute fabrics.

Solution

Cassatt's Active Response software is for customers looking to manage their data centers in a more efficient, dynamic and responsive manner, and to make better use of all hardware and software assets. At its core, Active Response software provides real-time workload, server and network repurposing. All actions are policy-based (i.e. time, events, capacity, and demand). The software is capable of managing multi-vendor hardware & software, and without use of any additional software layers. Use of Active Response provides a number of possible implementations, including: Power efficiency improvements; Application resiliency to failures; Workload management; capacity additions on-demand; Physical & virtual application management; Utility computing infrastructures

As IT Operations personnel leverage Cassatt Active Response to manage compute infrastructure in one or more server farms, it can be configured to communicate directly with the F5 BIG-IP LTM iControl® API to dynamically manage VIPs for server pools.

For example, when server demand rises, Cassatt Active Response will allocate new server nodes which are first powered-up, assigned an IP address, provisioned with software, and booted into each "tier". Each IP address is also dynamically added to the server pool associated with the new VIP by communicating via the BIG-IP LTM's iControl API. When demand falls, the server is deactivated and the IP address is removed from the VIP pool. As nodes are moved between tiers, the BIG-IP LTMs can be dynamically updated to place nodes in the appropriate server pools.

The advantages of this approach are threefold: (1) immediate, automatic control of the BIG-IP LTM VIPs permits the system to maintain balanced loads, even as new hardware is allocated and assigned in real-time; (2) automatic updates of VIPs eliminates manual re-configurations– saving time and eliminating errors; (3) automatically re-configuring VLANs makes better use of shared capital equipment between networks.

About Cassatt

Cassatt helps companies run a green data center with innovative technologies and software solutions to improve resource, operational, and energy efficiencies. Cassatt products are based on patent-pending Active Power Management technology that safely and intelligently powers servers off and on, based on demand, cutting an organization's energy usage by as much as 50 percent. Cassatt is based in San Jose, California. To learn more, visit <http://www.cassatt.com>