

# BROCADE AND VMWARE WITH SAP BOE SOLUTIONS



## APPLICATION DELIVERY

## Automating Resource Provisioning in vCenter Orchestrator for SAP BusinessObjects Enterprise

### HIGHLIGHTS

- Brocade® ServerIron® ADX with Application Resource Broker (ARB) automates on-demand resource provisioning for SAP BOE with application traffic and load-level visibility.
- The SAP Co-Innovation Lab has validated SAP BusinessObjects Enterprise running on VMware vSphere, to maintain SLAs while serving variable client demand loads using Brocade ADX and ARB to automatically provision SAP BOE web and application tier resources.
- Customers benefit from simplified orchestration and managability, reduced infrastructure capital and operating costs, without compromising application service levels.

IT organizations are virtualizing the servers in their data centers because virtualization enables consolidation, and a more flexible server infrastructure. A virtual machine encapsulates all the software required to provide specific services. However, unlike traditional applications running on operating systems dedicated to specific server hardware, VMs decouple hardware from software so that services can run on any available hardware that provides a hypervisor to run the VM. And when demand on a VM-based service increases, additional VMs can be flexibly deployed onto any generic server in the data center, to be quickly assimilated into the virtual application pool for that service, adding processing capacity, and helping to maintain service levels.

### CHALLENGES

As SAP BusinessObjects Enterprise (BOE) usage increases, maintaining application performance while trying to meet varying levels of demand has become more challenging. In a virtualized data center or a private cloud, SAP BOE shares, and often competes for system resources with many enterprise applications, while the demand on BOE can vary considerably.

The traditional approach to addressing varying demand on the application is to reserve significant hardware resources, and over-provision the infrastructure to cater to anticipated demand spikes. However, that approach not only requires additional capital for hardware, as well as increased maintenance cost and energy consumption, the accurate prediction of system loading over time remains a challenge, and an over-provisioning strategy can frequently fail to meet changes in demand.

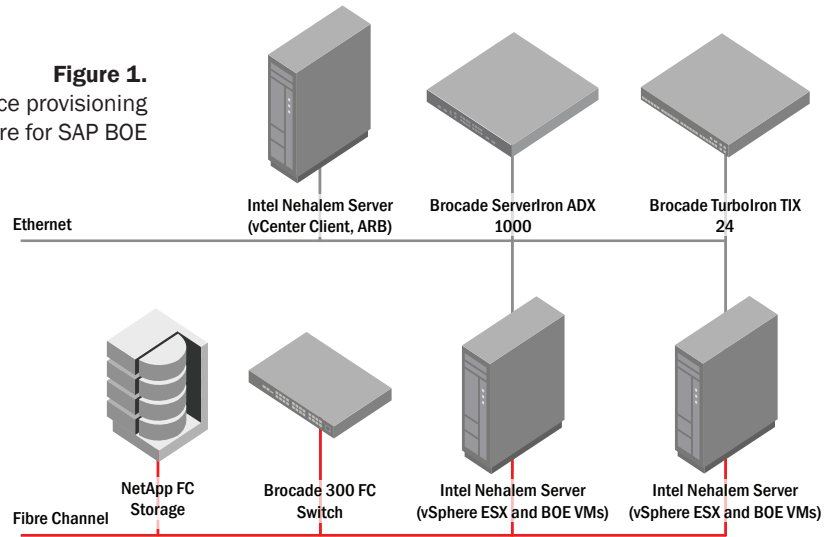
To maintain service level agreements (SLAs), the system should instead adapt dynamically to load changes by providing accurate load monitoring and an on-demand resource provisioning service to the application. SAP BOE software, with its modular tiered architecture and support for virtualization is an excellent candidate for such an on-demand resource provisioning service.

### A RESOURCE PROVISIONING AUTOMATION SOLUTION

Brocade's ServerIron ADX with Application Resource Broker (ARB) automates on-demand resource provisioning with application traffic and load-level visibility. ARB connects to VMware vCenter through a VMware vSphere client plug-in,



**Figure 1.**  
The on-demand resource provisioning reference architecture for SAP BOE



performing on-demand provisioning and de-provisioning of virtual machines (VM) based on performance metrics from the ServerIron ADX and VMware vCenter. If a load metric reaches a predefined threshold, ARB communicates with vCenter and with ServerIron ADX to initiate appropriate actions, such as powering on a virtual machine (VM) and adding the VM to the load balancing pool. ARB provides application performance monitoring, dynamic, automated services to IT virtual infrastructure, optimized IT resource usage, and consistently sustainable SLAs. To demonstrate the on-demand computing services provided by ARB, Brocade, SAP and VMware have jointly defined a virtualized BOE application reference architecture that closely models the customer deployment environment. A proof-of-concept (POC) testing of this reference architecture was performed at SAP Co-Innovation Lab (COIL) in Palo Alto, California, using test workloads that closely resemble typical customer use cases.

**BENEFITS**

The tests showed that ARB automatically provisioned SAP BOE VMs running in a VMware virtualization environment. The tests also revealed that ARB is simultaneously able to provision VMs across multiple tiers that may or may not include load-balanced traffic flows. The application deployment resulting from this solution adapts readily to load changes, maintaining customer SLAs, while reducing the inefficiency and energy cost of over-provisioning to meet infrequent or intermittent demand.

ADX, in conjunction with Brocade Application Resource Broker (ARB) can enhance the visibility and scalability of any virtualized application environment by automating the provisioning and de-provisioning of application resources as end user demand increases or decreases, reducing operational costs in highly virtualized server environments. In addition to resource provisioning for SAP BOE, ADX can support multi-purpose deployments for any applications or infrastructure that can benefit from enhanced scalability, availability and protection through Layer 4 or Layer 7 traffic management and load balancing.

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