Avatar/Virtualization

The release of VMware and other virtualization software has opened the doors to many data centers allowing them to consolidate server environments, optimize technical resources, lower power consumption and costs, and reduce their environmental footprint. Server virtualization has also allowed users to establish redundant failover solutions without the hassles and overhead of clustering servers. Virtualization, however, has also shown to create performance issues within some environments where multiple resource intense servers are virtualized on the same physical server machine. Netsmart will support our customers using virtualization software though we still strongly recommend the client utilize a dedicated database server environment. Netsmart cannot make any performance guarantees or warrantees in environments using multiple virtual servers on a single physical server.

Avatar Middleware

The Avatar Middleware tier lends itself to the use of virtualization. One or more middleware servers can be established on virtual servers, as they require a low amount of memory, CPU, and storage to efficiently operate and server client requests. Netsmart supports the use of virtualization software with the Middleware tier of the Avatar application.

Avatar ECP

In medium or larger environments, an ECP reporting tier is often implemented. This tier allows the production database server to distribute memory and CPU intense report processing off to one or multiple ECP servers, freeing your production database server for transaction processing, generally increasing database performance. While this specific database tier can be virtualized, several considerations should be addressed. The ECP tier relies on memory and CPU to efficiently process the reporting requests coming into the environment. To optimize report processing, the ECP server caches as much of the physical database environment to memory as the free memory space allows. This caching allows ECP to rapidly process report requests and return the requested dataset back to the requesting Avatar RADplus workstation. ECP utilizes a large portion of memory and CPU on any machine which it is installed. Within a virtualized setting, clients should statically allocate memory and CPUs to ECP, insuring adequate resources are configured and optimized to effectively utilize this application. Dynamic CPU and memory allocation will result in Caché configuring and optimizing itself for a fraction of the resources available, creating performance bottlenecks and significant slowdowns.
Avatar Database Server

The database tier of the Avatar application is the core environment processing all transactions and data requests for reports within the client environment. Caché database systems characteristically utilize heavy CPU and memory resources to optimize transaction and reporting processing. In addition, many environments also see significant disk I/O, depending upon the transaction volume and the amount of available system memory. Within a virtualized environment, a co-partnered Avatar/Caché environment with other resource intense virtual servers can lead to significant performance degradation.

To insure adequate performance, Netsmart recommends using a dedicated server for the Cache application. If virtualization is a requirement, Netsmart would strongly recommend the use of dedicated memory, CPU, and disks for the Avatar/Caché application. Netsmart does not recommend dynamic memory and CPU allocation as Caché configures and optimizes itself based upon the available system resources at the time of installation. Netsmart does not recommend physical disk sharing with other servers that heavily utilize or swap data onto physical disks, as performance bottlenecks will likely occur.

While VMware and other software based virtualization technologies have valid merit in evolving data center environments, Netsmart cannot make any performance guarantees or warranties in environments using multiple virtual servers on a single physical server due to the unknown performance characteristics of the other virtual servers running on the same physical hardware.