

## **Framework architecture on High Data Availability Server Virtualization for Disaster Recovery**

### **ABSTRACT**

This paper presents a design and tested framework architecture on High Data Availability Server Virtualization for Disaster Recovery at one campus network centre. Today's data information and knowledge are becoming most valuable commodity in business exchange and transactions where data need to be secured from cyber attackers and information security is a crucial needed. A propose architecture using server virtualization to provide high availability of data, through fast and high data through fast and high data recovery on virtual infrastructure for disaster recovery is done. The architecture uses multi side network RAID to achieve return of time objectives (RTO) and return of point objectives (RPO) of the application in the organization. Method presents servers consolidation and multiple physical server applications are deployed onto the virtual machines (VM), which then run on a single (many real server apps usually are started on top of this exclusive products (VM), which then function using one) or fewer real high-end servers to achieve better performances compared to utilizing several or even hundreds of traditional servers. Security perimeters are used in the proposed architecture to maximize the data protection in the organization. The setup experiments of virtualization technologies using VMWare, Ranger Pro for backup and Trend Micro Deep Security tools. Three architecture framework are tested which presents automated data replication simulations from production site to disaster recovery site that creates an active-active environment. Results presented that Recovery Point Objective (RPO), Recovery Time Objective (RTO), data loss and data availability at 99.91 % of data are recovered during recovery process using multi side network RAID. Thus this technique protects a larger share of disaster recovery workloads in terms of high availability and data protection.

**Keyword:** Disaster recovery; High data availability; Network framework architecture; Security; Virtual machine (Wms); Virtualization

