NetApp Solutions for IBM Rational ClearCase Administrators' Pain Points

CCA Activity	CCA Pain Point	NetApp Solution
Ensuring data availability	Ensuring almost uninterrupted ClearCase data availability to the user community.	Robust and highly available data service with NetApp Clustered Failover (active-active controller configuration) high-availability solution, delivering up to 99.999% data availability.
Performing reliable and quick backups	Long backup windows, typically extending to several hours. Extended VOB lock periods, resulting in loss of productivity. Because of the overhead involved, backups are not generated frequently, resulting in long recovery times when a ClearCase data environment must be restored.	Use NetApp storage architecture with Data ONTAP® operating system and Snapshot™ technology for: • Quick and reliable backups and restorations • Drastically reduced time required to take backups • Reduced backup windows and associated VOB lock periods—from several hours to less than a minute • More frequent backups enabled In seconds, NetApp SnapRestore® software can recover anything from an individual file to a multiterabyte volume so that operations can be quickly resumed. Securely retain backup images for long periods of time to meet compliance requirements with NetApp SnapVault® technology.
Capacity analysis and planning	Accurately estimating storage requirements for VOB and Views is difficult. It is often hard to predict what is coming, resulting in running out of space, overallocation, and data corruption issues.	NetApp storage solutions are based on Data ONTAP, a highly optimized, scalable, and flexible operating system that can handle fast-growing data environments. Seamlessly spread VOB and View storage volumes across multiple disk spindles, resulting in optimum performance. NetApp FlexVol® technology enables easy allocation, expansion, and contraction of storage volumes. Reallocation by using FlexVol does not require migrating data and won't interrupt the user community.
Multiplatform support	The need to support a mix of Windows®, UNIX®, and Linux® environments increases cost and complexity.	NetApp NAS systems provide native CIFS and NFS data access, eliminating the need for emulation software such as Samba, Hummingbird NFS Maestro, and Microsoft® Service for UNIX, while improving performance and storage utilization, reducing complexity, and lowering administrative overhead.
Optimizing ClearCase performance	The complexities of the ClearCase environment (VOB server, View server, registry server, license server) make it difficult to figure out where performance bottlenecks are occurring. How to optimize VOB database performance. Latency issues caused by ClearCase processing one file at a time using RPC protocol.	Data performance bottlenecks can be easily identified and acted upon with NetApp performance analysis tools. Performance of VOB database, source, derived objects, and cleartext containers can be individually optimized by storing them on separate volumes, each optimally tuned to the specific I/O characteristics, resulting in optimum overall performance. In extreme cases, for example a single very large VOB requiring lots of random reads, NetApp multiprotocol support allows you to utilize iSCSI or FC protocol for the VOB database, while the other storage pools can be accessed over NFS—all on the same NetApp storage system. NetApp CIFS support eliminates the need for Samba on the server so that more CPU cycles can be dedicated to ClearCase server processes handling RPC requests. One customer reported an average 30% overall performance improvement when going from Samba to CIFS.

Ready for

IBM® | Rational®

software

CCA Activity	CCA Pain Point	NetApp Solution
Disaster recovery planning	Planning for a multitier disaster recovery strategy.	Create a mirrored image of the ClearCase VOBs on a separate networked storage system that can be stored offsite with NetApp SnapMirror® technology. By synchronizing this mirrored copy with the primary data volumes at regular intervals, the mirror copy can be used if the original ClearCase environment is destroyed or severely damaged.
Protecting View private data	View data is often stored on the end user's local disk and is not backed up. Some users keep source files checked out for extended periods of time, risking loss of weeks of work in the event of system failure or accidental deletion. Recovering lost data places a heavy administrative burden on the IT organization.	Store all View data on a NetApp networked storage system with performance that is equal to or better than local disk performance. Virtually eliminate the potential for data loss from disk failure with NetApp RAID-DP™ technology. Snapshot technology facilitates frequent, low-impact, user-recoverable backups of all View private data. User-initiated recovery of accidentally deleted files is easy and fast and can be performed without the storage administrator's intervention. SnapVault allows fast and efficient backup of all View data to NetApp NearStore® systems and provides superior data protection by efficiently keeping days' and potentially weeks' worth of backups online.
Copying data sets	Need to create copies of data sets for testing ClearCase upgrades, patches, running diagnostics, fine-tuning, etc. in a test environment.	Easy and relatively inexpensive way to make copies of a production environment without consuming valuable storage space or affecting the VOB or View data. Easy and space efficient way to make copies of the ClearCase data environment for testing, running diagnostics, and analyzing performance issues. The key feature that facilitates this is NetApp FlexClone® software. FlexClone volumes are the most reliable and fastest way to copy volumes containing the VOB and View data, enabling you to work with actual data and achieve accurate results without affecting the production environment.

Primary Development Site

UNIX and Windows Desktop Clients

VOB Server

Registry Server

Build Farm

FlexCache
Build Acceleration

Network

NearStore
Online Backup Data

FAS Series
Uninterrupted Data Availability

FlexVol
Easy Storage Reallocation

FlexClone
Instant Copies for Testing

VOB and View Data

SnapVault
Archives Snapshots

Snapshot
Instant VOB and View Backups

Admin

SnapRestore
Self-service Recovery

ClearCase MultiSite
VOB Data Replication

WAN

Remote Development Site

VOB Server

FAS Series
Stores Replicated Data

Network

SnapMirror
DR replication

WAN/MAN

Remote "Warm" Site

NearStore
Stores Replicated Data

www.netapp.com

NetApp™