

IBM Rational ClearCase Core 7.0.1 Single User Performance Report (RedHat)

This report compares IBM Rational ClearCase Core performance test results between the 7.0.0 and 7.0.1 releases

The following is one in a series of reports that compares IBM Rational ClearCase performance for the 7.0.0 and 7.0.1 releases. The following is the Single User Benchmark (SUB) report for the RedHat Enterprise Linux OS.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Users of this document should verify the applicable data for their specific environment.

Test Environment and Configuration

Two tests were conducted to measure performance of Rational ClearCase Client as a single user benchmark. These benchmark performance tests were run to measure system response times under a single-user load in a large VOB scenario and a small VOB scenario.

The configuration used for this test consisted of three test machines, one acted as a VOB server, one as a Rational Clear Case Client, and one as a test driver to simulate commands run by a user.

These tests were performed in a test network environment with a full 100 Mbps fast-Ethernet bandwidth with no latency between all the machines on the network.

This configuration is shown below in figure 1.

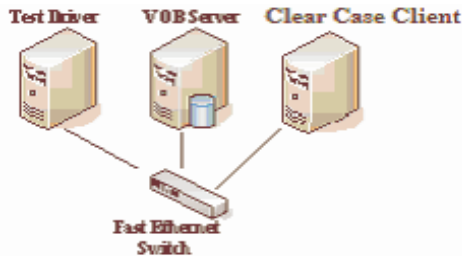


Figure 1: Test Configuration

The test hardware used for testing was as follows:

ClearCase Client: IBM xSeries 336 with two Intel Xeon 3.4 GHz CPUs, 2 GB memory running RedHat Enterprise Linux 4.

VOB Server: An IBM System x3850 with four Intel Xeon 3.66 GHz CPUs, 8 GB memory running RedHat Enterprise Linux 4.

An in-house testing tool was used to perform this benchmark test. This tool invoked a test script that executed a number of cleartool commands and gathered response times from the Rational ClearCase Client regarding the transactions.

Transactions

Figure 2 describes the relative distribution of the above transactions used.

cifldr:: check-in a directory folder

- cifile:** check-in an existing file; file sizes were 1K (1024 bytes)
- cofldr::** check-out a directory folder
- cofile:** check-out an existing file
- mkview:** create a dynamic view
- des:** describe an object
- diff:** compare a checked-in file with its predecessor
- endview:** deactivate a view
- find:** use a pattern, query, or expression to search for objects
- lsco:** list names of checked out objects
- ls-d:** list VOB-resident objects, and view-private objects in a directory
- lsh:** list the version history of a file
- lstype:** list the VOB type objects
- lsvob:** list VOB's registry entries
- lsvtree:** list the version tree of an element
- mkattr:** attach an attribute to an element
- mkatype:** create or updates an attribute type object
- mkbranch:** create a new branch in the version tree of an element
- mkbrtype:** create/updates a branch type object
- mkbrtype:** create/updates a branch type object
- mkdir:** create a new directory folder and add it to source control
- mkelem:** create a file or directory element
- mklabel -r:** attach version labels to versions of elements recursively from VOB root
- mklbltype:** create or updates a label type object
- rmview:** remove a dynamic view
- unco:** undo the checkout of a file

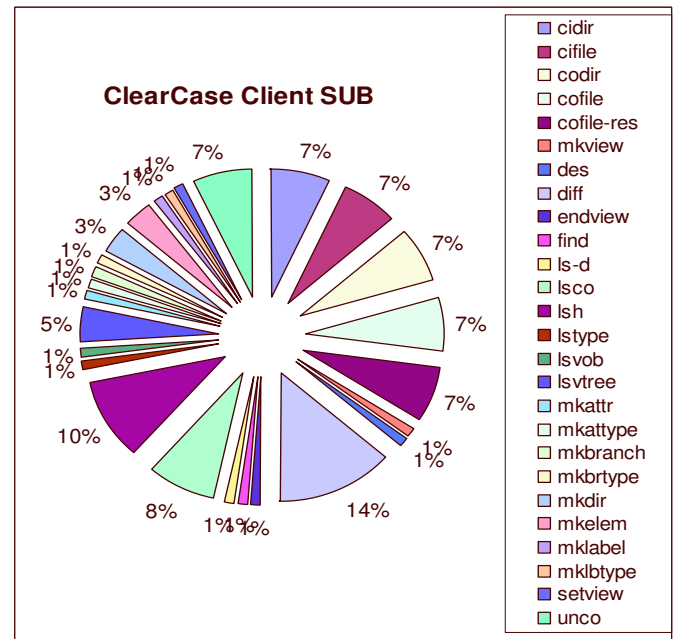


Figure 2: Rational ClearCase Single User Benchmark Work-load Transaction Mix

Small VOB

The following is the configuration of the Small VOB :
The maximum sub directory depth of this VOB was 6 levels.
This VOB contained 1445 directories that contained a total of 5576 files. The file sizes of these files were between 64 bytes

and 5075847 bytes with the average file size being 24466 bytes. The maximum number of files within one specific directory was 382.

Large VOB

The following is the configuration of the Large VOB: The maximum sub directory depth of this VOB was 10 levels. This VOB contained 8041 directories that contained a total of 54112 files. The file sizes of these files were between 329 bytes and 14363027 bytes, with the average file size being 20068 bytes. The maximum number of files within one specific directory was 1652.

Findings

These test results are preliminary, and specific to the product software, test configuration, workload and environment that were used. Product performance in other environments or conditions will be different compared to the data reported in this document.

Single-User Performance

The data gathered indicates that there was no major degradation of performance in the Rational Clear Case Client between 7.0.0 and 7.0.1

The single-user Rational Clear Case response times for 7.0.0 and 7.0.1 are displayed in **Figure 3** and **Figure 4**.

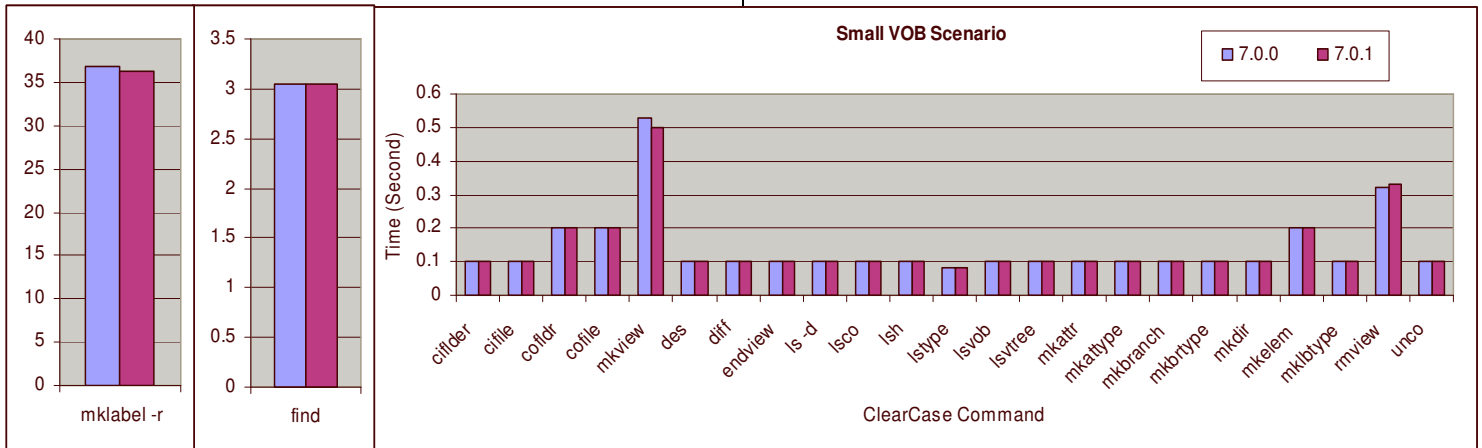


Figure 3: Rational ClearCase SUB Small VOB Scenario

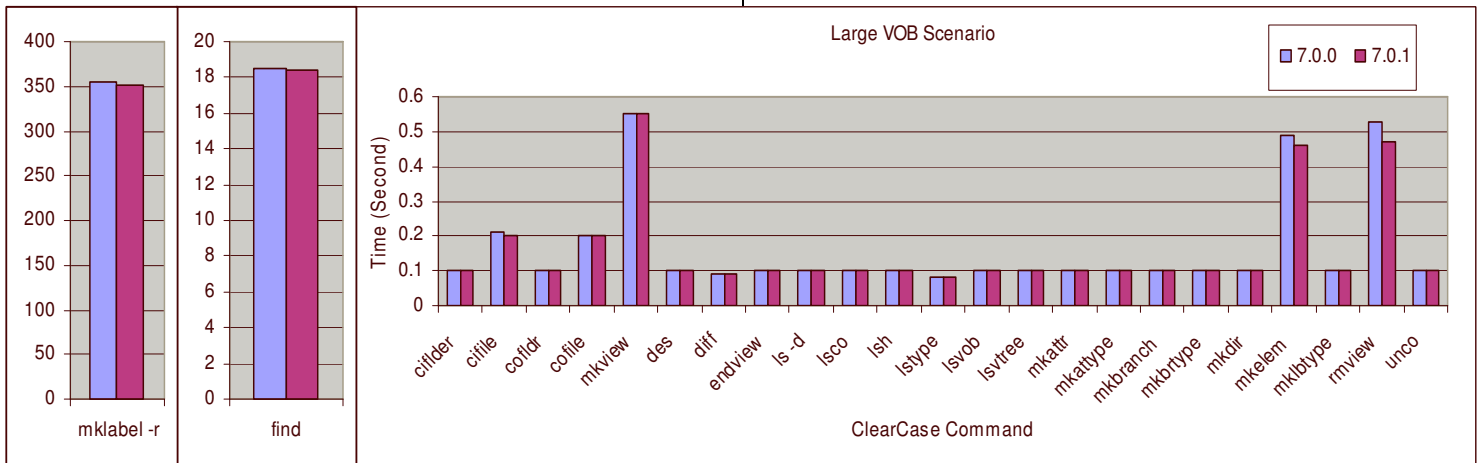


Figure 4: Rational ClearCase SUB Large VOB Scenario

Overall, Rational ClearCase 7.0.1 performance has stayed stable relative to release 7.0.0, with 100% of the transactions measured having comparable response times for both large and small VOB scenarios as seen in **Figure 3** and **Figure 4**.

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