



## CSM 10.0.0 Performance Testing

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# Test Results for Large Exports

In CSM version 9.7.0, a change was made to the Cherwell REST API that removes the limits on exporting search results. In previous releases, exported search results were limited to 100,000 rows of data. Now, search results and exports will allow multiple pages of records with each page being limited to a maximum of 100,000 rows of data. In a similar manner, version two of the Get Results of a Saved Search operation can return all rows of data.

Also in CSM version 9.7.0, the grid CSV export operation in the Desktop Client exports all rows of data. In previous releases, the number of rows was limited. In CSM version 10.0.0, the Browser Client includes the same enhancement.

This topic outlines the performance testing conducted and the results of those tests with this change to the Cherwell REST API, Desktop Client, and Browser Client. The test demonstrates that a large export operation does not impact perceived performance of connected clients.



**Note:** This is not considered a rigorous performance evaluation. The results presented here do not represent expected results on any given production installation. They are meant to demonstrate little or no deviation of operation during a large export versus baseline.

## Coordinated Performance Test Scenarios

Four scenarios were tested. Among all scenarios an identical suite of CSM activities were performed concurrently by various clients. The activities performed include actions such as creating and saving an Incident, cloning an Incident, running a sample report, executing a stored search from Search Manager, and returning search results from the Cherwell REST API. These operations were performed for the duration of an export of one million rows of data. The time required for the export operation to complete depended on client type, but generally ranged between 9 minutes and 15 minutes. The following scenarios were tested:

- Baseline; no active export running
- Large data export executing from Desktop Client
- Large data export executing from Browser Client
- Large data export executing from REST API

## Environment

The following table outlines the server specifications that were set up for the four baseline tests. The server was created in AWS. This was a single server install of CSM hosting the Cherwell Application Server, Browser Client, and Cherwell REST API components. SQL Server was also hosted on this instance loaded with the Cherwell Demo czar.

Description	Details
Instance Name	c5n.2xlarge
OS	2012 R2 Version 6.3 (Build 9600)

Description	Details
CPU	Intel Xeon Platinum 8124M @ 3.00 Ghz
vCPUs	8
Architecture	x64
Memory	21 GB

Client tests were hosted on Cherwell's Virtual Machine's connecting to an Application Server hosted in AWS. In total, four Desktop Clients and four Browser Clients were connected during the tests, including a Cherwell REST API client connection. The tests were performed by users running scenarios repeatedly during the export operation and recording the response times.

## Test Results

### Baseline

	Desktop Client	Browser Client
Combined Operations	2.7	2.9
Clone Incident	2.5	2.7
Save Clone Incident	1.3	2.6

### Export from Desktop Client

	Desktop Client	Browser Client
Combined Operations	2.5	2.4
Clone Incident	2.6	2.2
Save Clone Incident	1.4	2.6

### Export from Browser Client

	Desktop Client	Browser Client
Combined Operations	2.7	1.8
Clone Incident	2.5	1.8
Save Clone Incident	1.2	1.6

### Export from Rest API

	Desktop Client	Browser Client
Combined Operations	2.5	2.0
Clone Incident	2.7	2.2
Save Clone Incident	1.2	1.6

## Explanation of Test Methodology

Timings are taken from a client connecting via three-tier connection to the server. The scenarios outlined in this document are occurring on other clients at the same time.

- Baseline - Actions performed while no large export is being processed.
- Export from Desktop Client - Actions performed while a large export is being processed from a Desktop Client.
- Export from Browser Client - Actions performed while a large export is being processed from a Browser Client.
- Export from Rest API - Actions performed while a large export is being processed from the Cherwell REST API.
- Timings - All timings are represented in seconds.
- Open New Incident - The time it took to load the Incident form directly after logging in for the first time.
- Save New Incident - The time it took for the save icon to become disabled after selecting **Save** on a valid new Incident.
- Clone Incident - The time it took to load the Incident form after running the Clone One-Step™ Action from a valid Incident.
- Save Cloned Incident - The time it took for the save icon to become disabled after selecting **Save** on a valid, cloned incident.

## Conclusion

Tests showed no significant increase in client operations between the baseline and export scenarios, either in the timing measurement or perceived performance.

The data sometimes shows an export scenario completing faster than the baseline. These tests were not driven by automation nor performed in an isolated environment. For example, all clients were running Windows virtual machines in a shared vSphere system accessed from remote locations. Variations in shared system load, network traffic, and other factors likely contributed to variations. No degradations (example, slow memory leaks) were observed on the AWS server.