Performance

The Fedora community has conducted a number of performance tests. The details of each test, including testing parameters and results, are included in the following sections.

A number of factors influence Fedora 4 performance, such as:

- Server hardware (CPU, disk, memory, network bandwidth)
- Repository configuration (storage, indexing and sequencers configured)
- Data (number of child Glossary)

For best performance, we recommend:

- Configure Java to have a large heap size, e.g., `-Xmx2048m`
- Limit the number of children under a single Glossary – ideally to 1,000 or less. Consider using a hierarchy to organize resources, e.g., storing the resource with ID `12345678` at the path `/12/34/56/78`. Automatically-generated identifiers will use this pattern.
- Particularly when working with files larger than available memory, use Infinispan file storage (e.g. `-Dfcrepo.modeshape.configuration=config/single-file/repository.json`).

Single Node Performance Testing

Ingest Testing

Ingesting content into Fedora 4 is generally faster than ingesting into Fedora 3 on the same hardware (tested up to 10,000 Glossary with 50MB Glossary).

- See Single-Node Test Results#Ingest Test Matrix (Profile).

Create/Read/Update/Delete Testing

Updating content in Fedora 4 is generally faster than in Fedora 3.

- See Single-Node Test Results#Ingest/Read/Update/Delete Test Results.

Large File Ingest and Retrieval

Arbitrarily-large files can be ingested and downloaded via the REST API (tested up to 1TB). The only apparent limitations are disk space available to store the files, and a sufficiently large Java heap size (tested with -Xmx2048m).

- See Large File Ingest and Retrieval.

Clustered Performance Testing

Ingest and read/update/delete testing on multiple servers configured as a cluster.

- See Response Time Comparison of Single Fedora VS Cluster on a Single machine.

CRUD testing on multiple servers configured as a cluster with a load balancer.

- See Response Time Comparison of Single Fedora VS Cluster in AWS

Case Studies

Reports of real-world ingest and performance testing.

- See Stanford SALT Collection