

# Durability

Fedora 4 supports several modes of maintaining and verifying durability of its digital objects.

## Ingest

When uploading binary content, clients may also provide a SHA-1 checksum digest with their request. Fedora will validate the uploaded content against the SHA-1 hash to ensure the data was correctly transferred. In any case, Fedora 4 will calculate and store that information to ensure it has something to run fixity checks against later.

Example

```
$ curl -i --upload-file image.png -X PUT -H"Content-Type: image/jpeg" "http://localhost:8080/rest?checksum=urn:sha1:5441456941dd8b3ee0832b991ee93ba0c0a558f7"
-> 201 Created

$ curl -i --upload-file image.png -X PUT -H"Content-Type: image/jpeg" "http://localhost:8080/rest/fcr:new/fcr:content?checksum=urn:sha1:bad-checksum"
-> 409 Conflict
urn:sha1:bad-checksum did not match urn:sha1:5441456941dd8b3ee0832b991ee93ba0c0a558f7
```

## Durable storage

Fedora 4 can also be clustered, and replicate or distribute the content across members of the cluster.

## Fixity

Requesting on-demand fixity checks of objects is baked into the core HTTP API.

## Export

Fedora 4 comes with an optional [external component](#) that supports several forms of export serializations. This component listens for repository events that are emitted on all modification actions, retrieves the modified resources and serializes them to disk in addition to the native storage of the repository. Serializations include RDF (text/turtle) or JCR/XML.