

# CONTENT REPLICATION

## OBJECTIVE

**Content Replication** allows a customer to deploy file servers closer to end users for improved file upload and download performance in a global, multi-site implementation.

## OVERVIEW

**Content Replication** provides companies with a mechanism to deploy file servers across the enterprise for efficient handling of file operations with the **3DEXPERIENCE®** platform. End users manage files by performing check-in and check-out operations. Files can dramatically vary in size for different use models. For larger files, performance is greatly impacted by the user proximity to a file server. With **Content Replication**, file collaboration servers (FCS) are placed closer to the end users working at remote sites throughout the world. As a result, file transfers to and from the server are optimized for performance.

**Content Replication** provides the following advantages:

- Enables file servers to be physically located closer to end users for optimal performance.
- Facilitates file replication for sharing of data across other enterprise users.
- Allows administrators to locally control and manage file data.

**Content Replication** also complies with typical IT standards:

- Communication between the **3DEXPERIENCE** platform system and the file server is done through HTTP(s); no wide area network (WAN) database connections are required.
- Communication between the user (browser) and the file servers is also through HTTP(s).
- Communication between multiple file servers to support replication is done through HTTP(s).
- Access to local file servers does not require **3DEXPERIENCE** platform re-authentication.
- Support for secured network configurations uses reverse/forward proxy and network authentication.
- Simplified deployment requires minimal installation files.

## HIGHLIGHTS

**Content Replication** enables administrators to distribute file data across the enterprise for optimal upload and download performance. Key features and capabilities include:

### Distributed File Servers

As users access file data managed by the **3DEXPERIENCE** platform, the files can be stored and retrieved from local file servers. This provides optimal performance versus retrieving file data from centralized file servers across the wide area network.

### FCS Proxy Support and Network Authentication

**Content Replication** can be deployed with secure and network-friendly configurations. It supports reverse/forward proxy server configurations as well as network authentication.

### Automatic File Replication

With distributed file servers, file replication is necessary to facilitate local file transfers for every user. File replication allows files to be stored in multiple file servers. **Content Replication** automatically replicates files across file servers if the file at a local server is stale. This replication occurs on the fly as a user performs a download operation or can also be proactively initiated using background scripts. To overcome network bandwidth and latency, **Content Replication** automatically compresses certain file types during synchronization to optimize replication performance. Administrators can define rules to synchronize recently checked in files to the locations where its previous revision have been replicated.

### Local File Management

In certain environments, customers may require files to be locally managed versus centrally administered. With **Content Replication**, customers can enable distributed file servers to manage file data locally. In this scenario, file replication is turned off so that the file content is not copied to remote locations.

## Soft Links to Non-3DEXPERIENCE Data

The **3DEXPERIENCE** platform supports the ability to reference files managed by another software system through the use of soft links. When **Content Replication** accesses these files, standard replication rules are then applied to the foreign files. Use of this capability requires careful consideration of master/slave data modification rules to ensure file integrity between the two systems.

## Simplified Setup

**Content Replication** installation requires minimal setup. The FCS architecture uses standard protocols such as HTTP(s) for secured communication and file transfers. For added flexibility, the remote **Content Replication** servers can be one major release prior to the **3DEXPERIENCE** platform. This enables deployments to first upgrade the central server to install the latest product capabilities before upgrading remote **Content Replication** sites.

## Customization

**Content Replication** capabilities are implemented using Java APIs that are leveraged by the ENOVIA® applications. These APIs are fully documented to enable integration of custom add-on modules and/or third-party add-on modules for managing files within the **3DEXPERIENCE** platform.

## Key Benefits:

- Distribute file servers to improve file download and upload performance for a better user experience.
- Replicate file data across distributed file servers for local access by all enterprise users.
- Add custom extensions to support additional services such as DRM.

**Content Replication** supports file download and upload filters. This functionality enables implementers to provide custom code to manipulate the file content as the file data moves to and from **Content Replication**. With this capability, implementers can satisfy various use cases based on customer requirements. Some customization examples are:

- Address Digital Rights Management (DRM) requirements by encrypting the file data as it is being transferred to the user for decryption by the browser or decrypt the file content as it is being stored with **Content Replication**.
- Virus check files before they are uploaded and stored.
- Watermark the file with metadata so the user is aware of its status.
- Compress files as they are stored. However, this should only be done if there are no rules that are based on the original file size.

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