

Why Content Server Replication?

TABLE OF CONTENTS

WHY IS REPLICATION BUSINESS CRITICAL? 2

- Currency of Information 2
- Disaster Recovery Strategies 2
- Information Consolidation or Segregation 2
- Server Migration or Upgrade 3
- Strategic Partners 3
- Application Deployment Support 3

BENEFITS OF CONTENT REPLICATION 3

REPLICATION SCENARIOS 4

- Replication Operations 4
- Disaster Recovery Operations 5
- Active / Active Disaster Recovery..... 6
- Acquisitions 6
- Strategic Partners 7
- Mobile Users 7
- Remote Operations 7
- Remote Branch Operations 8
- Server Migration Operations 8



WHAT TO LOOK FOR IN A REPLICATION SOLUTION 9

- Replication Feature Checklist 9
- Immediate Real-Time Replication 9
- Transactional Event-Level Replication 9
- Supported Content 10
- Content 10
- Data Compression 10
- File Zip 10
- Throttle Mode and Scheduled Replication 10
- Bi-Directional Replication 11
- Firewalled Operations 11
- Content Server Integration 11
- Fully Integrated Solutions 12
- Third Party Solutions 12
- Conflict Resolution 12
- Web-Based Solution 12
- Configurable Monitoring and Thresholds 13

SUMMARY 13



Copyright
 Copyright © 2011 by Syntergy, Inc. All rights reserved. No part or section of the contents of this material may be reproduced or transmitted in any form or by any means without the written permission of Syntergy, Inc. Replicator™ is a trademark of Syntergy, Inc. Content Server is either a registered trademark or a trademark of OpenText Corporation in the United States and/or other countries. Other product and company names mentioned herein may be the trademarks of their respective owners.

WHY IS REPLICATION BUSINESS CRITICAL?

CURRENCY OF INFORMATION

The relentless pace of business communications demands that all business units work with updated information at all times. If even one business unit operates with outdated information, the results can be both painful and expensive.

In the case of email communications, if Information Worker A sends a file to a group of coworkers, and then Information Worker B modifies the file and sends it back to Information Worker A, all other coworkers are now working with an outdated copy of the file.

For geographically separated business offices, latency and slow bandwidth can make the update procedure unreliable, and information tends to become outdated as soon as the process is finished. Because critical information can change on a minute-by-minute basis, just keeping all business units updated becomes a mission-critical application in its own right.

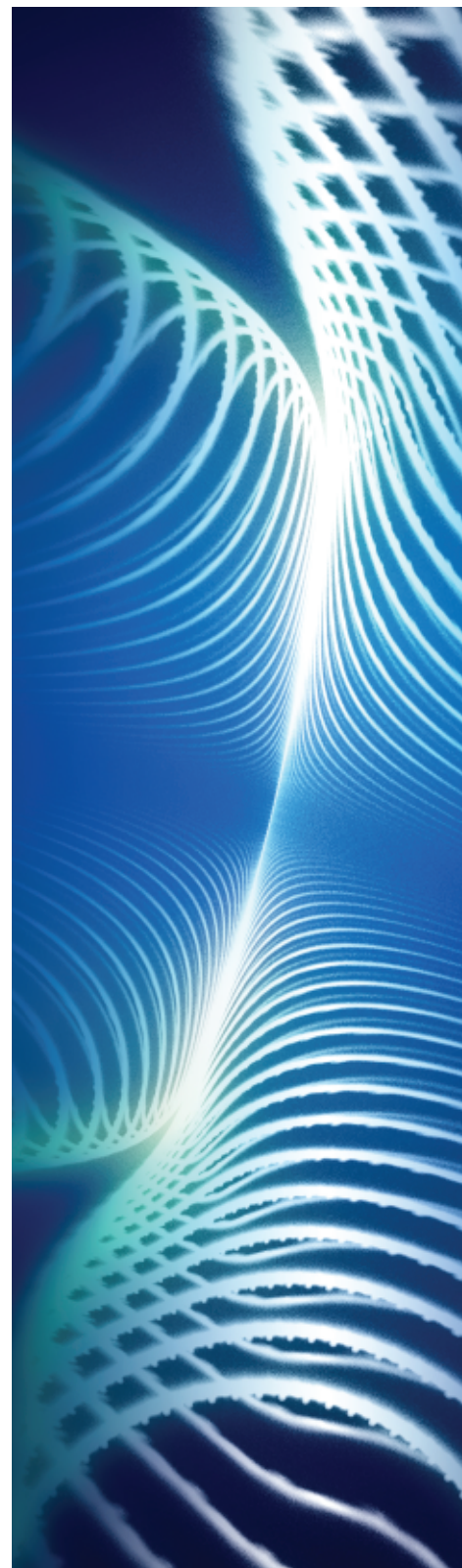
Having a central storehouse of information is critical to keeping information current. The key to making certain that all employees are utilizing current information is to push the central storehouse of information to the edges of the corporate network. Any edits employees make to content must be made available throughout the entire network.

DISASTER RECOVERY STRATEGIES

Common sense dictates that all businesses keep a backup copy of important data, in case a server fails, if network communication is interrupted, or power fails and data becomes scrambled or unreliable. If any of these conditions occur, it is critical to quickly restore functionality and access to data.

INFORMATION CONSOLIDATION OR SEGREGATION

As organizational changes or acquisitions occur the associated digital information must be reorganized, too. In some cases this may require that information is consolidated into a single content repository. In other instances the new organization may require that the information may need to be segregated, either as a result new security requirements or the separation of lines of business. In either case, the data must be moved and made available with minimal disruption to the new organization(s).



Why Content Server Replication? | WHY IS REPLICATION BUSINESS CRITICAL? / BENEFITS

SERVER MIGRATION OR UPGRADE

When it's time to retire an older server, and replace it with a newer unit, all required data must be transferred, behind the scenes. If this process takes too long to complete, the business suffers due to server resources being unavailable. If the server migration process can be streamlined, it can be transparent to users, require a minimal amount of IT resources, and avoid impacting business operations.

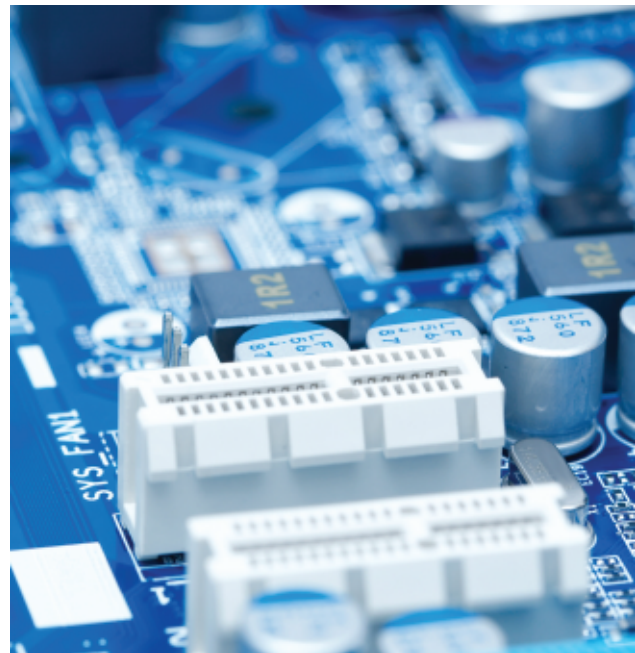
STRATEGIC PARTNERS

Business conditions now dictate that successful companies will partner with external organizations for required expertise, rather than developing that expertise in-house. Access to current information is crucial to strategic partnerships.

Successfully sharing information between strategic partners typically requires tools that can pass only the selected information for that partner past the firewalls that protect corporate assets.

APPLICATION DEPLOYMENT SUPPORT

Application development and deployment requires an orderly, documented strategy. With the proper replication tool, transitioning application deployment content is simplified and standardized. Replicating the data from the development server to the Quality Assurance/Acceptance server and ultimately to the Production server(s) is greatly simplified by a replication tool.



BENEFITS OF CONTENT REPLICATION

Content replication typically offers the following benefits:

- Information is continually updated, ensuring that all users have access to the most current versions at all times
- If disaster strikes, backup servers can be quickly brought online, with the latest content
- Servers can be replaced quickly, and the process remains transparent to users
- Strategic partners can securely access current content
- Enhanced availability of documents
- Improved productivity in remote locations
- Timely distribution of documents to remote locations
- Selective movement of information, based on business rules
- Supports application development, testing and deployment

REPLICATION SCENARIOS

REPLICATION OPERATIONS

Every time a user needs to open a document that is stored on a remote server, two things typically happen:

- The available network bandwidth decreases
- The user waits

Even if your network resources are such that the difference in bandwidth is not significant, your user still waits. Adding up how many times a user waits, and the average wait time gives a reasonably dependable insight into the true cost of storing documents on a remote server. Replicating files to all local servers makes good business sense, and dramatically improves the user experience. All files are 100% up-to-date, and users experience virtually no download time.

When documents are replicated to local servers, user access times are significantly improved, and network traffic is reduced. Because more users are accessing documents stored on their local servers, they are not accessing documents stored on remote servers, which decreases network traffic. This allows IT departments to make more accurate forecasts of user requirements, and maximize return on network infrastructure investments. By reducing network demand proliferation, network capacity is not outgrown as quickly.

Ideally, a replication tool should run on the background servers, be totally transparent to users, and have no complex user interfaces for users to learn. With no user-level interaction required, once the tool has been configured, it should require minimal administrator-level intervention.

When accessing documents that are stored on remote servers, the associated bandwidth requirements and wait times leaves users with the feeling that they are somehow disconnected from the mainstream of the company, and that they are somehow less important than users in the company's head office. Real-time replication of content to local servers reinforces the following ideas:

- All users are equally important
- Every office is part of head office
- Every office is equally well connected

When you replicate the look and feel of your corporate portal to all local servers, all users will have the same experience, no matter where they are located, and network administrators can ensure that every local server reflects changes to the look and feel of the portal at the same time.

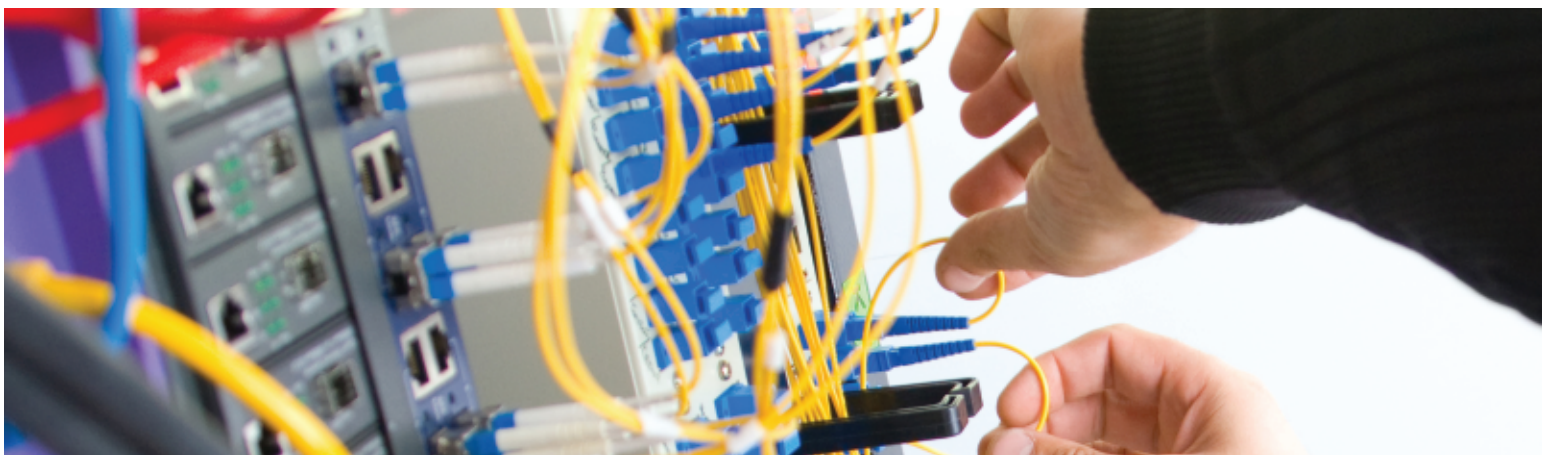


Why Content Server Replication? | REPLICATION SCENARIOS

DISASTER RECOVERY OPERATIONS

Natural disasters, power outages, and connectivity issues all interrupt the flow of content. Up-to-date local copies of data ensure that the flow of operations and work continues. Another benefit of real-time replication of content is that the inherent redundancy protects against data loss and corruption.

Disaster can take many different forms, and impact your network operations in many different ways. It could be as simple as a disc array failing, a power outage, a natural disaster (flood, winds, etc.), or a fire. No matter what the cause, the response should be identical: uninterrupted network availability, and mission-critical applications in normal operating conditions. Real-time replication of content allows the best method for IT managers to manage these contingencies quickly.



Real-time replication of content supports disaster recovery operations, and, if required, provides a contingency server that is completely up-to-date with the latest content. Every time content is changed on any of the local servers, this content should be replicated to a contingency server. If a main server fails, you can substitute the contingency server, and operations continue uninterrupted. When the main server has been repaired or replaced, content can be replicated back to the main server, which can then be placed back into service.

Because business moves so quickly, it is critical that disaster recovery operations move equally quickly, to ensure that business operations do not suffer, and that there is no impact on revenues. Every minute that a local server or mission critical application is offline has a very real effect on revenues.

Organizations interested in backup plans and disaster recovery solutions will be very interested in the server-to-server approach. Should the central server become unavailable for any reason, real-time replication provides identical content. Since the other servers will have the most current versions of content, an organization can continue business virtually unimpeded.

Why Content Server Replication? | REPLICATION SCENARIOS

Active / Active Disaster Recovery

An active / active network topology contains at least two copies of mission- critical data. All files are synchronized so that if any server fails, users are routed to a surviving server.

This strategy allows you to use disaster recovery resources live, during everyday business operations, proving daily that the strategy works, and that enterprise content is available when and where it is needed.

ACQUISITIONS

When Company A acquires Company B, typically there is a time when server content needs to be integrated in some way, and made available to a wider set of users. Real-time replication of content accomplishes this easily, allowing users to access documents from their own local servers, integrating content between two corporations.

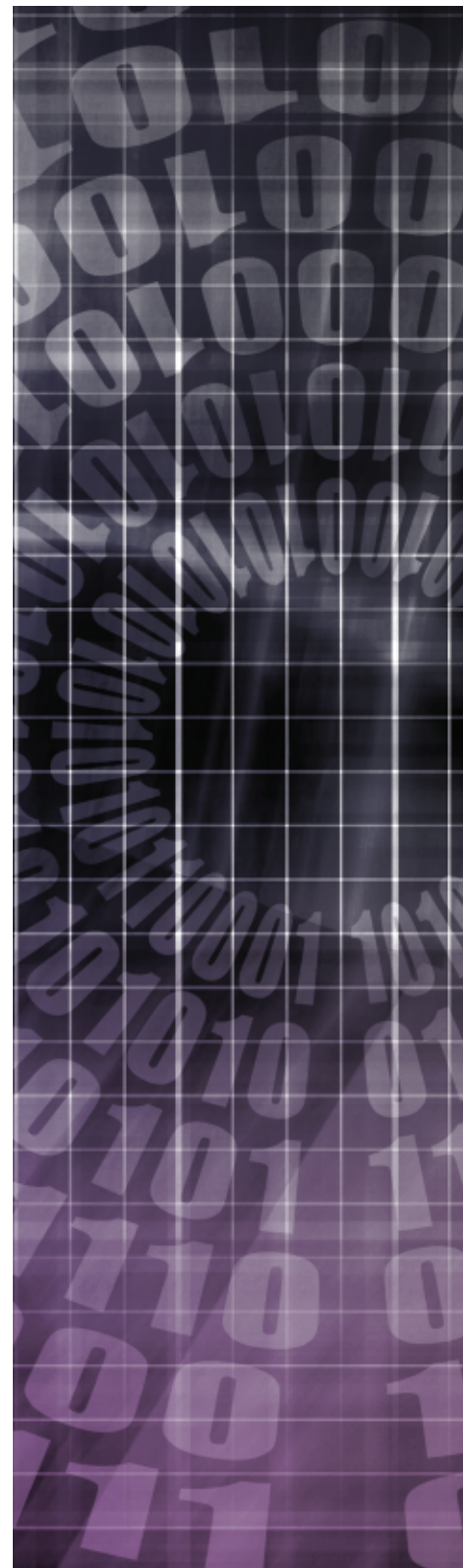
Acquisitions are often faced with the following, sometimes conflicting priorities:

- Maintain logical separation of data
- Maintain separate access and physical implementation for each partner
- Securely share information between systems

A logical separation of data is common where two farms are created with clearly distinct access and physical implementation, an external portal and an internal intranet for example, but it is crucial to share information between these systems, and it is important to have a secure solution to replicate data between these environments.

By having two separate servers, one internal to your organization and the other in the acquired organization, each with their own Active Directory for authentication, you can specify which content is replicated between the two servers.

This model allows each party to the acquisition to maintain and run their own servers for a period, allowing data to be shared, and eventually migrated and absorbed.



Why Content Server Replication? | REPLICATION SCENARIOS

STRATEGIC PARTNERS

When two corporate entities form a strategic partnership, its focus is often limited, meaning one of the following things:

- Once a specified objective has been met the partnership will be retired
- The partnership may persist, but it is limited in scope

In either case, strategic partners will want to share some, but not all, data with their partners. Selective replication is required, in order for the strategic partnership to work. Every enterprise that is involved in a strategic partnership faces these challenges integrating their partners into their daily operations.

MOBILE USERS

Corporations that require users to be mobile often have troubles keeping their users in touch with the people and network resources they require when they are working in remote locations. Replication software allows user credentials, settings and profiles to be transferred, so that when a user is working in another office, they can log in to the local server with the same credentials.

This functionality allows enterprise IT groups to provide the same user experience whether users are logging into their home server, or a server half a world away.

REMOTE OPERATIONS

Mining operations and other industries with geographically remote locations often face difficulties with communications. Mine operations are typically found in locations that have limited network infrastructure and require constant access to a number of document types, including:

- Safety documents
- Operating and service procedures
- Training materials
- Human Resources documents
- Weather and natural disaster information
- Quality management specifications
- Other critical and tactical information

Replicated content allows each location full access to the required documents, enabling them to continue full operations in any kind of network condition.



Why Content Server Replication? | REPLICATION SCENARIOS

REMOTE OPERATIONS CONTINUED...

Replication software allows mine site servers to be completely synchronized with corporate servers, for times when communications are not dependable. Frequently accessed internal web sites can be replicated to each mine's local server, significantly reducing bandwidth demand and user wait-times.

Successful replication for a mine operation will typically offer the following benefits:

- Up-to-date information is available in all network conditions
- Content compression
- Rapid transfer of data to and from the mine
- Consolidated administration

REMOTE BRANCH OPERATIONS

Remote branch offices share a number of operational challenges, including:

- Geographically separated offices
- Long user wait-times
- Content is outdated
- Slow network bandwidth and latency issues

To ensure enterprise wide Content Server access and adoption, IT managers must consider the specific requirements of remote workers, small remote offices, branch offices, and geographically dispersed operations. The size and geographic dispersion of offices are important considerations in selecting the right replication solution.

Placing a server in a geographically separated office improves performance for local users, and provides up-to-date content in the event of a network disruption.

SERVER MIGRATION OPERATIONS

No matter how fast or how efficient any server is, it will eventually be surpassed by new technologies, or suffer unrecoverable conditions that dictate its retirement. Using real-time replication to move content from the old server to the new server allows the migration to be completed in less time, with less cost.

Every minute that a server is offline due to migration has a very real cost, in terms of lost productivity and lost revenue. Real-time replication of content allows administrators to mirror all content to the new server, and at a convenient time, swap the new server in, and users will not know the difference, other than being pleasantly surprised by the increase in performance.



WHAT TO LOOK FOR IN A REPLICATION SOLUTION

REPLICATION FEATURE CHECKLIST

Successful replication solutions will typically include the following operational and strategic advantages:

- Immediate, real-time replication across multiple servers
- Transactional or event-level replication
- Replicate audit, permissions, versions, configurations, version histories and metadata
- Bandwidth optimization through data compression
 - File zip (minimizes file size)
 - Throttle mode (minimizes network bandwidth consumption)
- HTTP/HTTPS transport protocol support
- Bi-directional and / or one-way replication
- Firewalled operations
- Conflict resolution
- Web-based solution

IMMEDIATE REAL-TIME REPLICATION

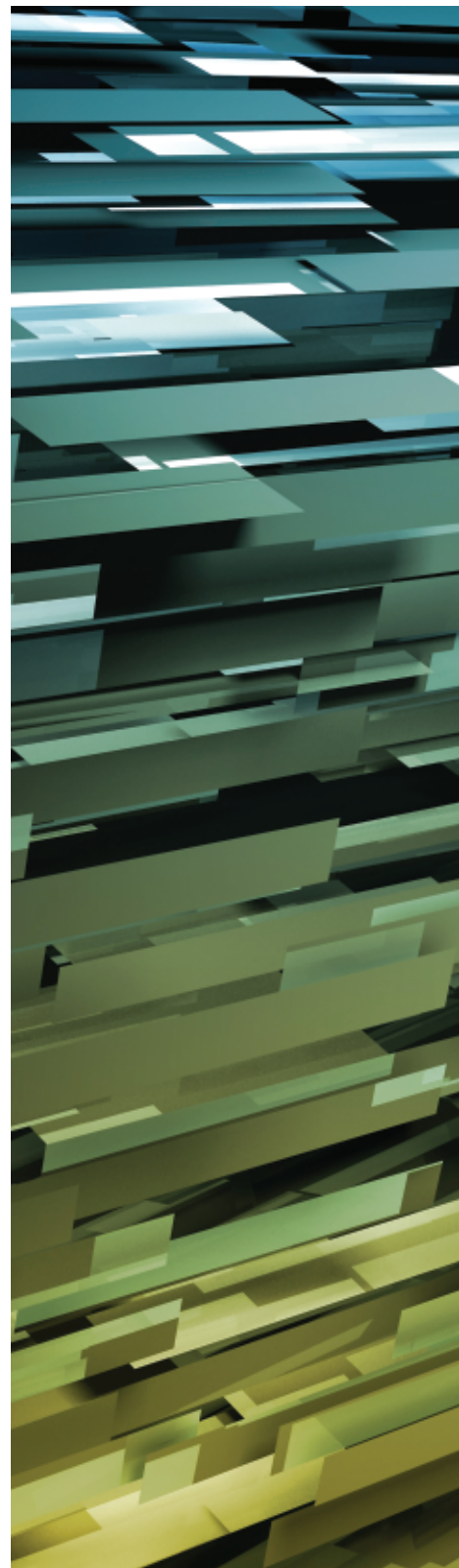
For continuous data redundancy or expedited disaster recovery, a replication solution should improve business continuity and minimize downtime based on recovery objectives.

Immediate, real-time replication with high availability and disaster recovery services provide the complete data protection service that businesses require.

TRANSACTIONAL EVENT-LEVEL REPLICATION

Transactional or event-level replication is typically used in server-to-server scenarios that require high throughput to improve scalability and availability, frequent reporting, and data synchronization between multiple sites, keeping your data tightly synchronized between all configured servers. Every time a specific configured event occurs, replication is triggered.

It is essential to ensure near real-time replication, since replication occurs every time an action takes place within Content Server, such as the check-in or check-out of a document.



Why Content Server Replication? | WHAT TO LOOK FOR IN A REPLICATION SOLUTION

SUPPORTED CONTENT

A successful replication solution should have the ability to replicate more than just documents. It should also be able to replicate the following items:

- Folders
- Projects
- Documents and versions
- Aliases
- URLs
- Audit history
- Presentation
- Permissions
- Categories and Attributes
- Workflows, Form templates, Forms, Views, dynamic SQL Storage Tables
- Communities
- Personal Workspaces
- Favorites
- Most other standard object types

Content

A successful replication solution should be able to send content from one server location to another. Ideally, it will replicate bi-directionally from one source to multiple destinations and back again, including all adds, deletes, moves, etc.

The solution should maintain metadata and versioning information, audit history and permissions. It should also be able to selectively replicate between locations and through firewalls.

DATA COMPRESSION

Data compression can reduce network bandwidth requirements, but there can be tradeoff factors, such as processing requirements on either end of a replication.

File Zip

File zip utilities allow replicated content to be compressed, prior to replication. The more the content is compressed, bandwidth requirements are reduced, however, as compression increases, the higher the processing load becomes on the servers at each end.

Throttle Mode and Scheduled Replication

Throttle mode and scheduled replication gives administrators control over bandwidth usage. There are many ways to manage the replication process. You can manually push content when required, or set up a schedule to replicate large packets when bandwidth consumption is at its lowest, typically between 2:00 am and 5:00 am.



Why Content Server Replication? | WHAT TO LOOK FOR IN A REPLICATION SOLUTION

BI-DIRECTIONAL REPLICATION

Full bi-directional replication with conflict resolution by email to interested parties or administrators is essential to ensure synchronization of content created at locations other than the central server. The site structure, permissions, and data should all be bi-directional.

Replication environments that utilize full bi-directional methods avoid requirements for any single server to be seen as the master server. Any server can function as a master server, in the case of recovering from a disaster, and content, including sites, and site collections can be created anywhere in the environment, and replicated to all configured nodes.

Not enabling communication from remote workers back to the central server can cause remote workers to feel disconnected from their headquarter counterparts. However, in some unique cases where one-way replication is desirable, this should be an option as well.

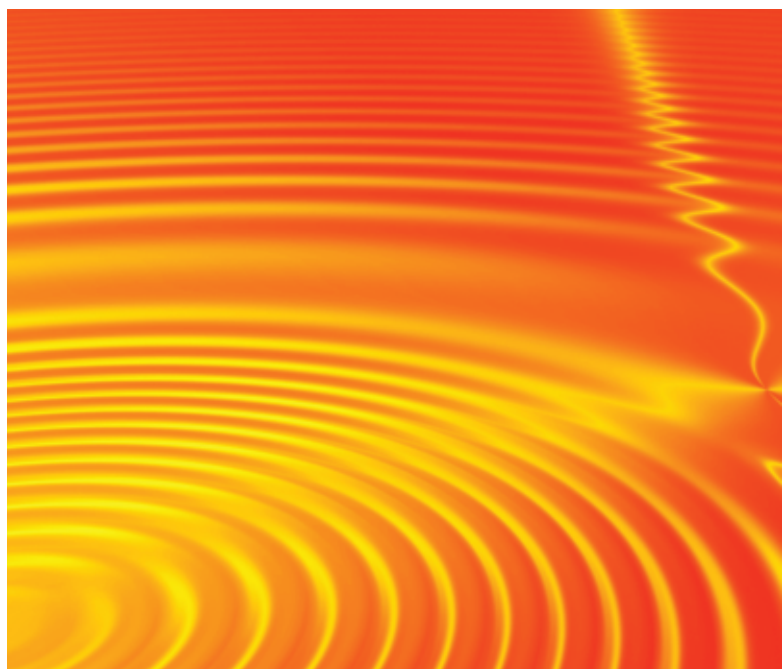
FIREWALLED OPERATIONS

It is important that cross-firewall replication still maintain strong security. For that reason, IT managers should be able to selectively replicate specific content and be able to configure bi-directional replication through a firewall, not just uni-directional replication. Many products offer content replication, few offer bi-directional replication through a firewall.

This directionality is essential for global organizations that cannot afford to be restricted by environmental and physical boundaries during the course of business.

Content Integration

Replication solutions should be fully integrated into the Content Server user interfaces and provide seamless management through Content Server, with dedicated administration screens. Ideally, you want a replication tool that does not require dedicated servers and allows the application to scale for clustered environments. Look for a tool that is built on Content Server technologies, and is that is not a bolt-on third-party solution.



Why Content Server Replication? | WHAT TO LOOK FOR IN A REPLICATION SOLUTION

Fully Integrated Solutions

Replication solutions that are fully integrated with Content Server typically offer the following advantages:

- Easy to install and configure
- Interface is part of Content Server, no interface-related learning curve
- Behave like a regular part of Content Server
- Integrated with OpenText technologies
- Better visibility into Content Server events
- Increased performance due to using the native Content Server Oscript
- Leverage the existing Content Server admin credentials

Third Party Solutions

Replication solutions that are not fully integrated into Content Server typically offer the following attributes:

- Installation and configuration can be complex
- Unique third party interface (if available), requiring users to negotiate a learning curve
- Do not behave like a regular part of Content Server
- Not fully integrated with OpenText technologies
- Less visibility into Content Server events, i.e. cannot capture audit events
- Increased web traffic, due to running an external application
- May require unique admin credentials

CONFLICT RESOLUTION

If two users, on two different servers make changes at the same time to copies of a single document, and then replicate the updated document, at least one server will report a conflict.

A successful replication solution allows you to efficiently manage conflicts and content changes, and provides a number of options to deal with conflicts, including automatic and manual processing options.

WEB-BASED SOLUTION

A successful replication solution should be able to replicate all required content using only http or https.



CONFIGURABLE MONITORING AND THRESHOLDS

A successful replication solution should offer flexible monitoring functionality, with configurable thresholds. Complete monitoring should be available to see the status of any given package and the state of each server at any time.

By presenting replication data in a simple and straightforward manner, even the most complex networks become much easier to understand, allowing administrators to more accurately regulate bandwidth usage.

Administrators can manage and manipulate replication servers directly by launching the administrative screens, and run various reports on detailed environmental information and thresholds for performance.

Flexible monitoring solutions allow administrators to monitor and track replication activity and alerts, visualize the status of server farms and their connections, and display and configure a layout map of all of the farms in a replicated environment.

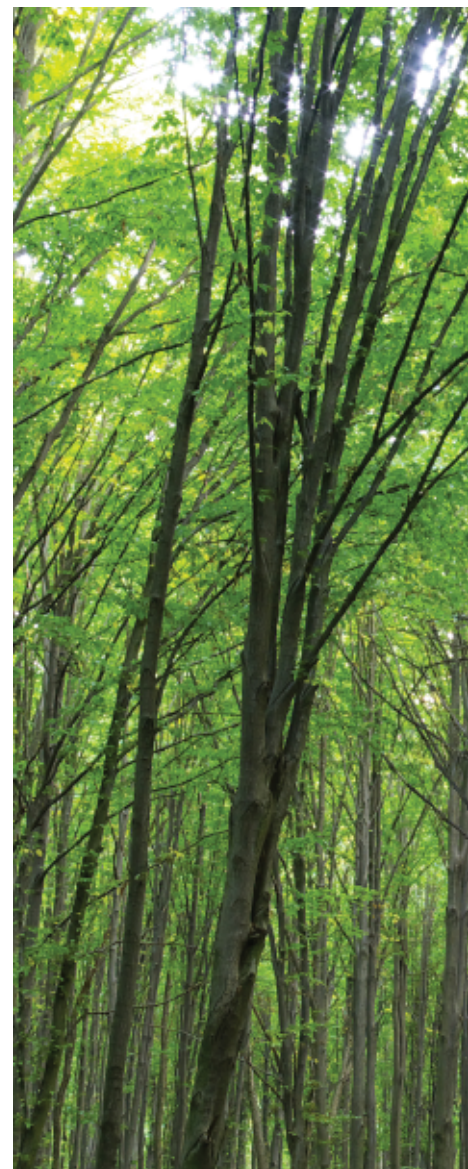
SUMMARY

Replication of information is critical to businesses, which must maintain uninterrupted network availability and mission-critical applications in their normal operating conditions. Every minute that networks or applications are unavailable has a very real cost associated. If replication tools are used to synchronize files, network operators can re-route users to a surviving server, and business operations can continue with minimal disruption.

When corporate acquisitions are made, replication tools allow each party to continue maintaining and operating their own servers, while allowing data to be shared. At a convenient time, the data can be migrated and absorbed. Strategic alliances between corporations present unique requirements for sharing information selectively. Granular replication tools allow strategic partners to share some, but not all, data with their partners.

During server migration, replication tools can be used to move content from the old server to the new server, allowing the migration to be completed in less time, with less cost. Experience has shown that the more successful server migrations tend to be the ones that inconvenience users the least.

Corporations that have mobile users can use replication tools to transfer user credentials, settings and profiles throughout their network, allowing travelling users to log into the local server and access their files and applications locally.



Why Content Server Replication? | SUMMARY

SUMMARY CONTINUED

Remote branches and corporate offices can also benefit from replication technologies. When servers are located in geographically separated offices, performance is improved for local users, the user experience is dramatically improved, and up-to-date content is available in the case of a network disruption.

In the specialized case of marine (ship-to-shore) operations, replication tools allow each ship full access to all required documents, enabling them to continue full operations in any kind of network or weather conditions.

Robust replication solutions should provide immediate, real-time transactional or event-level replication across multiple server farms. The solution should be integrated directly into OpenText's Content Server, rather than running as an outboard application, and be able to replicate folders, documents, versions, audit history, permissions, workflows and metadata. To deal with the occasional conflict, the tool should also include a conflict resolution methodology.

To provide real world performance, a replication solution should optimize through-put with data compression, and packet optimization. To provide precise control over which content replicates (which is frequently critical), a replication tool should also offer selective, granular replication, and all replication sets should be configurable for uni-directional or bi-directional operations.

Because most replication is transported across the internet, the tool should be a web-based solution that is capable of operating in a firewalled environment. Configurable monitoring and thresholds parameters should be available to deal with service outages and network anomalies to support large and complex server topologies that are typical of large corporations that run integrated hub and spoke configurations.

