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White Paper

Distributed Content Configuration and Troubleshooting Guide

This document provides guidance on the configuration, monitoring and troubleshooting of the Distributed Content products including ACS (Accelerated Content Server), BOCS (Branch Office Caching Server) and DMS (Documentum Messaging Server).

September 2007

Part Number

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1. Overview

1.1. Distributed Content before D6

For many years, Documentum has provided Distributed Content Services to bring content closer to the users. Content servers could be installed at remote locations, and distributed filestores were used to manage the storage and serving of content to users at those sites.

While this feature worked well for the Desktop Client, a centralized WDK-based application such as Webtop was not aware of where users were located, and all content was written to and read from the content server the WDK server was closest to.

In 5.3 SP1 the Accelerated Content Server was introduced. Installed with every content server, it allows content to be directly provided to end-users without being transferred through the application server first. The Network Location provided by users on login is used to determine the closest ACS server to provide the content. If the content is not already at that content server, a surrogate get may be performed to pull it to the content server prior to delivering it to the end user.

In 5.3 SP1, Branch Office Caching Services was also introduced. The BOCS provided a way to cache content close to users where there was limited administrative support. The BOCS cache was populated with a lazy pull mechanism, meaning content was added to the cache with the first request.

In the 5.3 releases, all content was still uploaded through the UCF server on the application server at the central data center, so while reads were optimized based on users' network locations, writes still had to cross the WAN.

1.2. Distributed Content in D6

In Documentum 6.0, write capabilities were added to the ACS and BOCS servers. DFC on the application server determines the closest location to write the content based on the each user's network locations.

In the case of ACS write, content is directly written to the filestore wherever possible. This allows direct write to the local ACS in a distributed environment, and avoids the double-write from client to application server to content server.

BOCS servers can now be written to as well. Content may be uploaded to BOCS servers in one of two ways – synchronous and asynchronous.

When synchronous BOCS write is selected, the content is uploaded from the UCF client to the BOCS server, then immediately uploaded to the closest ACS and stored in the repository. This means that all users will have immediate access to the content, regardless of their network location. The content is guaranteed to be in the repository, and is available for post-processing such as fulltext indexing.

Although this does not provide any performance benefits during upload, as the user must wait until both writes are done, it does ensure that users at the same network location have local access to the new content, as it is already in the cache.

The asynchronous mode means that the UCF client uploads the content to the BOCS server, but does not wait for the upload to the ACS server. The local writes to the BOCS server are very fast, and control returns back to the user quickly. The content is considered "parked" and is available for viewing by anyone in a network location that is served by that BOCS. Users in other network locations that try to view the content will get a message saying that the content is temporarily unavailable, until the upload from BOCS to ACS has occurred.

Asynchronous writes depend on a new component added in D6, the Documentum Messaging Server. After the write to the BOCS has completed, DFC on the application server sends a message to the DMS indicating that the parked content needs to be moved to the ACS. The DMS

forwards the message to the BOCS, which then uploads its content to the ACS and reports back to the DMS that it has completed its task. At that point, the content is available to all users authorized to see that content.

2. Distributed Content Architecture Components

The distributed content architecture is composed of a number of components and services which together allow for intelligent content transfer to and from the available systems. This section provides a brief description of those components. For more detailed information, please reference the D6 Distributed Content Configuration Guide, available on EMC Powerlink.

2.1. Documentum Content Server (CS)

The Documentum Content Server is the suite of programs responsible for managing the content and metadata in a Documentum repository.

When users connect to a repository through applications such as Webtop, the content server manages the security and access control to the objects, their attributes and content.

2.2. Remote Content Server (RCS)

A remote content server can be installed on a server in a remote location to provide local access to content. RCS servers are generally installed in a remote data center with good administrative support, due to the complexity of configuration and administration.

2.3. Accelerated Content Server (ACS)

Accelerated Content Servers are installed with each content server installation (CS and RCS) and provide direct access to content on the content server machine. ACS is installed as a webapp in the embedded application server on each CS.

2.4. Branch Office Caching Server (BOCS)

Branch Office Caching Servers are light-weight cache servers that allow remote users to read and write content from servers local to them. They are unaware of repositories or connection brokers, and require very little administration beyond the initial configuration.

2.5. Documentum Messaging Server (DMS)

The Documentum Messaging Server receives and delivers messages between applications, such as requests for action from DFC on the application server to the BOCS. The DMS is installed with an embedded BEA application server to process the message routing, and Sybase ASA database to persistently store the messages until they are expired or deleted by the administrator.

Messages can be sent automatically to the BOCS server if the DMS can reach it directly. If not, the BOCS needs to be configured in “Pull mode” to force it to poll the DMS for messages on its own.

2.6. Unified Client Facilities (UCF)

UCF is the utility used to transfer content between servers and clients. The UCF server runs in the WDK application server (such as the Webtop server) and the UCF client runs as a java applet on the end-user’s machine.

When content transfer operations are requested, the UCF server intelligently determines which URLs the UCF client should use to read or write content.

2.7. Global Registry (GR)

The Global Registry is a repository that has been defined to store and manage objects that will be used by applications in multiple repositories. Many of the configuration objects for distributed deployments are created and managed in the GR, such as network locations and BOCS server configurations.

2.8. Connection Broker

The Connection Broker is a program that provides information to clients about the location and availability of content servers and ACS servers. This information is used by DFC to determine which ACS servers should be used to serve client requests.

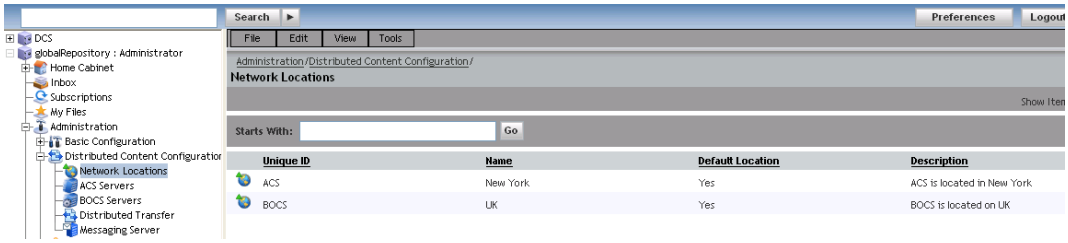
3. Configuration

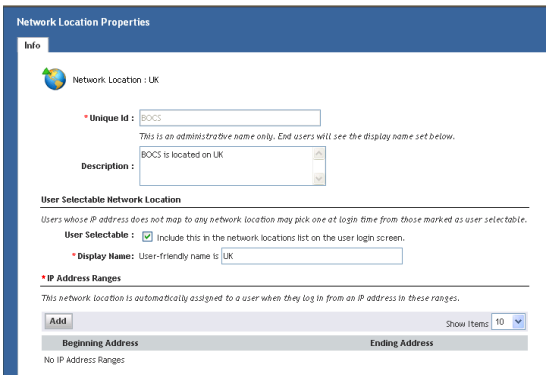
This chapter will discuss the configuration steps for each of the components in a Distributed environment.

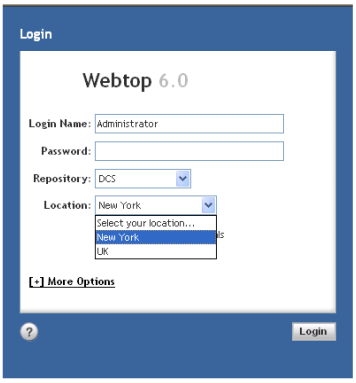
3.1. Network Locations

Network locations are created in the Global Registry using Documentum Administrator. They are logical representations of the geographical locations of the users, and are used by DFC to identify the best location for users to read and write content.

Network locations are created in the Global Registry so that they are available to all repositories, and are saved as type “dm_network_location_map”.







Network locations can be configured to use the end users’ IP address to identify the correct location, or they can be configured as “user selectable”, in which case the user is provided with a list of Network Locations upon login to the WDK application.

If a forward proxy server is used to provide internet access to a network of clients, the forward proxy host IP address should be specified in the IP Address Ranges section. Additionally, modify the app.xml file on the Webtop host to specify the appropriate value for the proxyclientipheader parameter. Refer to the WDK documentation for additional information on app.xml

Once the network location objects have been configured, the content server or ACS configuration objects must be made aware of the locations, and their proximity to the content server or ACS.

3.2. ACS

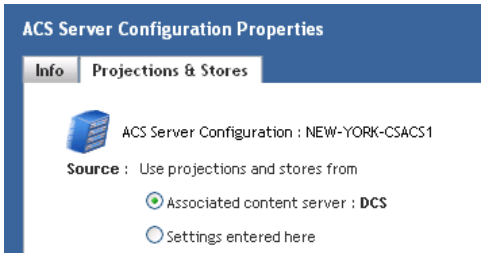
ACS servers are configured through two components: the ACS server servlet on the content server machines, and the dm_acs_config objects in each repository.

The ACS servlet is installed with the content server, and as repositories are created, they are associated with an ACS config object through the acs.properties file.

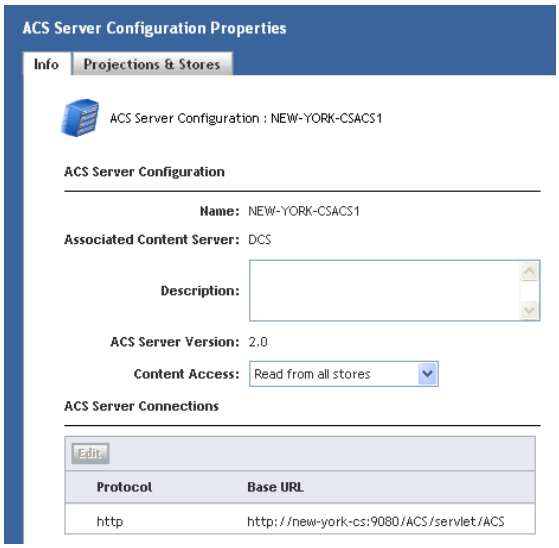
1.1.1. ACS Server Configuration using Documentum Administrator

Although ACS server config objects (dm_acs_config) are managed through Documentum Administrator, they cannot be created in DA. However, many of the properties can be modified.

The ACS can get its configuration information from the content server with which it is associated, or it can override them and store the configuration in the dm_acs_config object. In most cases, it's easiest to configure the ACS to use the information from the dm_server_config object.



The ACS server URL must be defined in the dm_acs_config object as seen below. Ensure that the ACS URL is reachable by all users of that repository. If the hostname is not resolvable due to DNS issues, or a firewall or proxy lies between the end users and the ACS server, the URL will need to be modified.



1.1.2. ACS Servlet Configuration

In D6, ACS runs in the embedded BEA Weblogic application server. On Windows, it is located at C:\Documentum\bea9.2 by default, and on UNIX it is located at $DOCUMENTUM_SHARED/bea9.2

The ACS webapp is located at C:\Documentum\bea9.2\domains\DctmDomain\upload\MethodServer\acs.ear in Windows

$DOCUMENTUM_SHARED/bea9.2/domains/DctmDomain/upload/MethodServer/acs.ear on UNIX.

The configuration file, acs.properties, is located at C:\Documentum\bea9.2\domains\DctmDomain\upload\MethodServer\acs.ear\APP-INF\classes\config.

There is very little you need to change in this file, but the key properties are the ones that define the repositories and content servers that are served by the ACS.

These are defined as:

```
Repository.name=<server_config>.<docbase>
Repository.login=<install_owner>
Repository.password=(usually blank)
Repository.acsconfig=<acs_config object name>
```

If more than one repository is served by that ACS, entries repository.name.1, repository.name.2 etc will be generated. For example, this ACS server is accessible through two repositories: globalRepostory and DCS.

```
#Thu Jul 12 01:08:49 PDT 2007
bocs.pulling.interval=10
repository.password=
primary.content.store.quota=1000M
repository.acsconfig.1=NEW-YORK-CSACS1
repository.password.1=
mode.cachestoreonly=false
jms.queue.name=jms/acsQueue
bocs.keystore=
mode.debug=false
repository.acsconfig=NEW-YORK-CSACS1
repository.name=globalRepository.globalRepository
bocs.pulling.mode.enabled=
repository.login=Administrator
proxy.port=
jms.url=t3\://NEW-YORK-CS\:9080
repository.login.1=Administrator
proxy.host=
dms.pulling.url=
primary.content.store.root=C\:\\Documentum\\acsCache
bocs.configuration.name=
jms.connection.factory=jms/MethodServerQueueConnectionFactory
tracing.enabled=false
repository.name.1=DCS.DCS
jndi.factory=weblogic.jndi.WLInitialContextFactory
```

A full list of properties and their meanings is provided in the acsfull.properties file, located in the same folder.

Proximities of ACS Servers to Network Locations are also defined in Documentum Administrator for each content server.

The proximities may be defined in the server configuration page if the ACS server inherits its properties from the server, or in the ACS configuration page if they are manually overridden.

1.1.3. Starting the ACS Server

As the ACS server runs in the same application server instance as the Java Method Server, it is started and stopped using either the Windows service “Documentum Java Method Server” or manually by running the scripts located at the root of the BEA domain.

UNIX	$DOCUMENTUM_SHARED/bea9.2/domains/DctmDomain/startWeblogic.sh

	$DOCUMENTUM_SHARED/bea9.2/domains/DctmDomain/startMethodServer.sh
Windows	C:\Documentum\bea9.2\domains\DctmDomain\startWeblogic.cmd C:\Documentum\bea9.2\domains\DctmDomain\startMethodServer.cmd

1.1.4. Enabling ACS Access From Behind a Firewall

In the case where users will access the ACS through a firewall and reverse proxy, some additional configuration will be required.

After configuring the reverse proxy server, modify the base URL of the ACS server to reflect the hostname of the proxy server instead of the ACS server.

For example, if the ACS server is running on host "dctm_cs01", the ACS URL is set to http://dctm_cs01:9080/ACS/servlet/ACS.

If the users must access the server through a proxy server configured on host "proxy01", the acs_base_url attribute will need to be modified as follows:

http://proxy01/ACS/servlet/ACS

The ACS URL can be modified using Documentum Administrator.

Once the base URL has been modified, the repository and ACS server should be restarted to activate the new settings.

1.1.5. Administration

In Documentum 6.0, a JMX administration feature has been added to DA to enable users to manage the ACS Server from a central location. Using DA, a resource agent can be created in the Resource Management node. The JMX Service URL to create the ACS Resource agent is: service:jmx:rmi:///jndi/iiop://<ACS Server host>:<ACS Server port>/acs

Ex. service:jmx:rmi:///jndi/iiop://plesys103-vm3:9080/acs

The user will be prompted for the username and password that was input during ACS Server installation. The ACS Administration username is acsAdmin and the password is the password that was specified during installation.

The resource agent includes the following MBeans to administer ACS.

AcsServerConfigMBean	Use to modify the acs.properties of the ACS server or add/remove repositories that are to be served by the current ACS server.
AcsServerLoggerMBean	Use to modify the log4j.properties and display the log file.
AcsServerMonitorMBean	Use to view statistics/status of the ACS Server.
JmxUserManagementMBean	Use to change the JMX Administrator password

3.3. BOCS

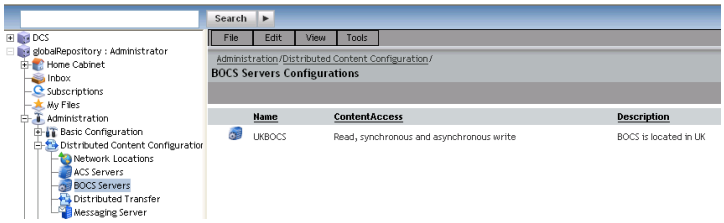
BOCS servers are configured through two components: the servlet configuration on the BOCS server machines, and the dm_bocs_config objects in each repository.

Many of the BOCS configuration properties are set at installation time, so little additional work must be done to make it operational. However, in order for the BOCS to be considered as a source for content, an associated dm_bocs_config object must be created in the Global Registry repository.

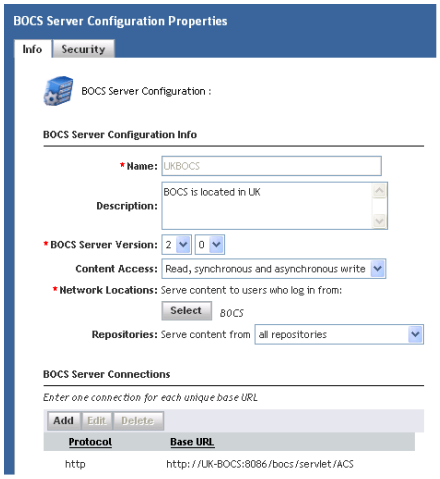
In D6, the BOCS configuration has been moved from the individual repositories to the global repository to avoid duplication and facilitate maintenance. One BOCS configuration defined in the Global Registry can now serve multiple repositories.

3.3.1. BOCS Configuration Using Documentum Administrator

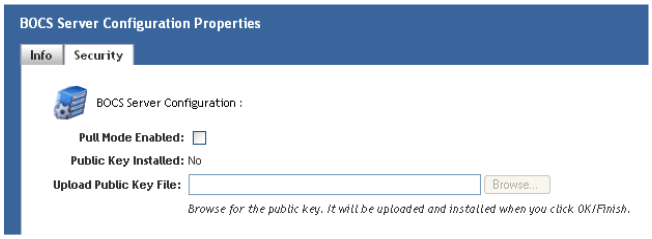
BOCS Servers are created in the Global Registry repository.



The BOCS properties include the URL used to access the BOCS server, as well as the network locations and repositories that it can service.



In addition, if the BOCS server is behind a firewall and cannot be reached by the DMS, it must be configured in “Pull Mode”. This means that the BOCS will periodically poll the DMS for any messages, such as pre-cache requests and asynchronous write requests.



3.3.2. BOCS Servlet Configuration

BOCS is installed as a separate product. It includes the BEA Weblogic instance, and deploys as bocs.ear.

During installation, you specify the location of the first cache area (by default, c:\Documentum\acsCache), the location of the prime storage area for parked content (by default, c:\Documentum\primeStore), and how much space each area is allowed to consume. As with ACS, the configuration parameters are stored in the acs.properties file, located at

C:\Documentum\bea9.2\domains\DctmDomain\upload\BOCS\bocs.ear\APP-INF\classes\config

Sample acs.properties

```
mode.cachestoreonly=true
tracing.enabled=false
mode.debug=false
jms.url=t3\://OTT2PERF01\:8086
jndi.factory=weblogic.jndi.WLInitialContextFactory
jms.connection.factory=jms/BOCSQueueConnectionFactory
jms.queue.name=jms/bocsQueue

bocs.keystore=C\:/Documentum/bocs/config/bocs.keystore
bocs.configuration.name=
bocs.pulling.mode.enabled=FALSE
dms.pulling.url=
bocs.pulling.interval=10
cache.store.root=C\:\\Documentum\\acsCache
cache.store.quota=10000M
primary.content.store.root=C\:\\Documentum\\primeStore
primary.content.store.quota=10000M
```

Changes to these properties require a restart of the BOCS server.

1.1.6. Administration

In Documentum 6.0, a JMX administration feature has been added to DA to enable users to manage the BOCS Server from a central location. Using DA, a resource agent can be created in the Resource Management node. The JMX Service URL to create the BOCS Resource agent is: service:jmx:rmi:///jndi/iiop://<BOCS Server host>:<BOCS Server port>/bocs

Ex. service:jmx:rmi:///jndi/iiop://plesys105-vm2:8086/bocs

The user will be prompted for the username and password that was input during BOCS Server installation. The BOCS Administration username is bocsAdmin and the password is the password that was specified during installation.

The resource agent includes the following MBeans to administer BOCS.

BocsServerConfigMBean	Use to modify the acs.properties of the BOCS server or to add/remove a cache store.
BocsServerLoggerMBean	Use to modify the log4j.properties and display the log file.
BocsServerMonitorMBean	Use to view statistics/status of the BOCS Server.
JmxUserManagementMBean	Use to change the JMX Administrator password.

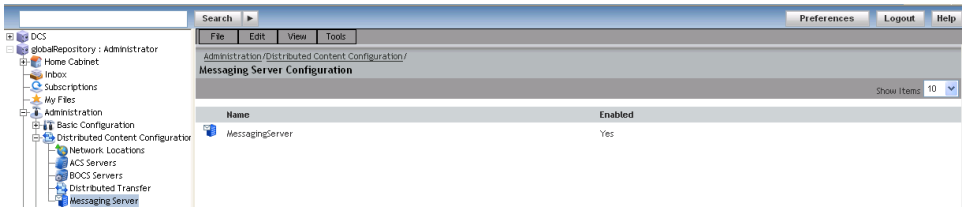
3.4. DMS

DMS servers are configured through two components: the servlet configuration on the DMS server machines, and the dm_dms_config objects in each repository.

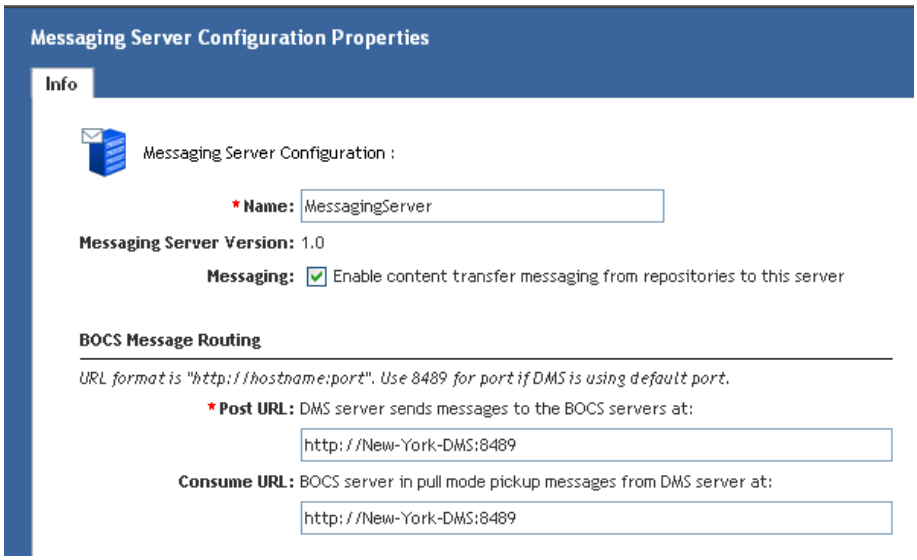
DMS servers are only required if asynchronous write or BOCS pre-caching will be used.

3.4.1. DMS Configuration Using Documentum Administrator

In order for a DMS server to be used, the dm_dms_config object must be created in DA.



The important properties to configure include the Post and Consume URLs, and the checkbox enabling the DMS for use.
Ensure that the Consume URL is resolvable by remote BOCS servers if operating in Pull mode.



3.4.2. Configuration

The Documentum Messaging Server is installed with an embedded BEA Weblogic 9.2 Server, and Sybase ASA 10 database.

During installation, the DBA password is defined, as well as the port that the server should listen to.

These settings are stored in the dms.properties file, located at C:\Documentum\bea9.2\domains\DctmDomain\upload\DMS\DMS.ear\APP-INF\classes

```
dms.jdbc.data.source.name=jndi/dmsASA
```

```
dms.jdbc.message.body.max.length=32767
dms.jdbc.destination.error.max.length=32767
dms.jdbc.message.id.batch.size=20
dms.jdbc.object.prefix=dms.DBA.

dms.jndi.factory.name=weblogic.jndi.WLInitialContextFactory
dms.jms.connection.factory.name=jms/DMSQueueConnectionFactory
dms.jms.module.name=dms-jms
dms.push.queue=jms/push
dms.push.retry=jms/pushRetry

dms.service.return.url=http://OTT2PERF02:8489/

# time in seconds
dms.destination.unavailable.interval=60

dms.schedule.pool.size=5
dms.push.task.count=1
# time in seconds
dms.schedule.start.time=1
# time in seconds
dms.schedule.interval=60
# time in seconds
dms.push.sleep.time=60

# time unit in day
dms.cleanup.schedule.interval=1

# time unit in day
dms.cleanup.period=180
```

1.1.7. Administration

In Documentum 6.0, a JMX administration feature has been added to DA to enable users to manage the DMS Server from a central location. Using DA, a resource agent can be created in the Resource Management node. The JMX Service URL to create the DMS Resource agent is: service:jmx:rmi:///jndi/iiop://<DMS Server host>:<DMS Server port>/dms

Ex. service:jmx:rmi:///jndi/iiop://plesys105-vm3:8489/dms

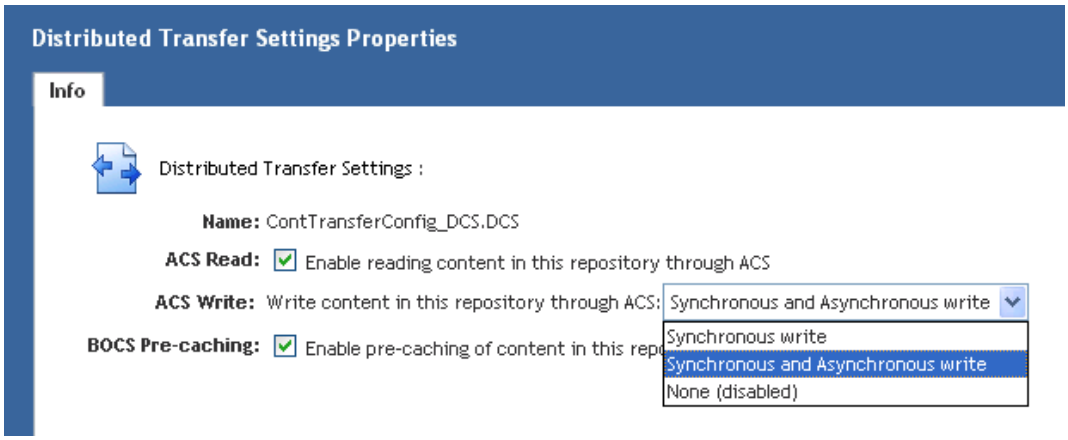
The user will be prompted for the username and password that was input during DMS Server installation. The DMS Administration username is dmsAdmin and the password is the password that was specified during installation.

The resource agent includes the following MBeans to administer DMS.

DmsMessageListMBean	Use to retrieve and display messages.
DmsMessageModifyMBean	Use to delete messages.
DmsMessageStatisticsMBean	Use to get message statistics.
DmsServerConfigMBean	Use to modify the dms.properties file.
DmsServerLoggerMBean	Use to modify the log4j.properties file and display the logs..
DmsServerMonitorMBean	Use to get status/statistics on the DMS Server.
JmxUserManagementMBean	Use to change the JMX Administrator password.

3.5. Content Server:

For D6, ACS Write is by default turned off. To enable ACS Write for a repository using Documentum Administrator simply log in, and modify the Distributed Transfer settings under the Distributed Content Configuration area :



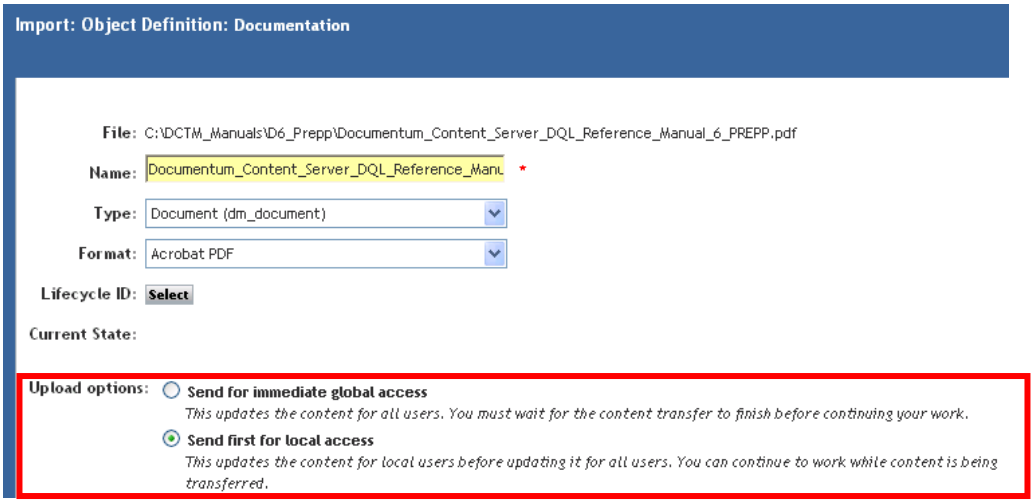
3.6. WDK

ACS and BOCS read and write capabilities are defined on a per-application basis in the wdk/app.xml file.

By default read is enabled and write is disabled. Also, write is disabled at Content Server level.

```
            <accelerated-read>
               <!-- when set to be "true", enables ACS, and, when optimal, BOCS read
operations -->
               <enabled>true</enabled>
               <!-- the followings are the existing options under the 5.3.x "acs" tag -->
               <attemptsurrogateget>true</attemptsurrogateget>
               <maintainvirtuallinks>true</maintainvirtuallinks>
            </accelerated-read>

            <!-- <accelerated-write> :
                  A separate configuration block for accelerated Write
            -->
            <accelerated-write>
               <!-- when set to be "true", enables ACS, and, when optimal, BOCS write
operations -->
               <enabled>true</enabled>
               <!-- when set to:
                     1. "prohibit-async" - application doesn't allow BOCS write
asynchronously
                     2. "default-sync" - application should see content written from BOCS
to ACS synchronously by default
                     3. "default-async" - application should see content written from
BOCS to ACS asynchronously by default
                  -->
               <bocs-write-mode>default-async</bocs-write-mode>
               <!-- when set to "true", allows override of default BOCS write mode by
users
                     (in general, it should be scoped with <filter> tag, e.g. role-based)
-->
               <allow-override-bocs-write-mode>true</allow-override-bocs-write-mode>
            </accelerated-write>
            <!--  End {D6 accelerated (ACS) content transfer settings}  -->
```

If the “allow override-bocs-write-mode” is set to true, then users will be prompted to select an upload option during checkin or import as shown below:



3.7. Proxy Servers

Proxy servers can be integrated into the distributed content architecture to provide additional security to customer deployments. They can also provide caching benefits and traffic monitoring. There are two types of proxy servers.

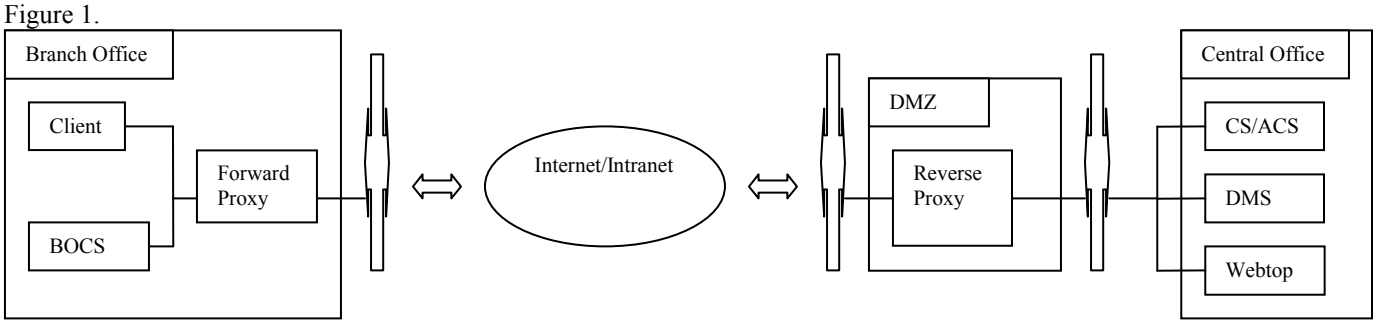
A forward proxy server acts as an intermediary between browsers in a client subnet and the outside world. HTTP requests from the client are redirected through the forward proxy so that outside of the client subnet, all requests are seen as coming from the proxy.

Reverse proxy servers provide protection to the back end environments. They work in parallel with firewall configurations so that only the reverse proxy host has access to the back end environment. HTTP requests from the outside world are intercepted by the reverse proxy server and passed to the back end servers.

This chapter will walk through the configuration steps required to implement the following topology in which proxy servers are implemented with ACS, BOCS, and DMS. The Apache 2.0 Web Server will act as the forward and reverse proxy server.

Please note that the following are sample configurations. Refer to the appropriate third party vendors for additional information.

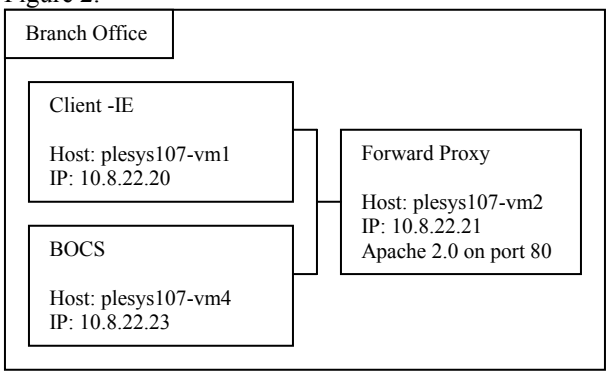
Figure 1.



3.7.1. Branch Office

For simplification purposes, there will be one client and a BOCS server in the branch office using a forward proxy. The BOCS and the client need to be configured to send requests to the backend servers via the forward proxy.

Figure 2.



3.7.1.1. Configure Apache 2.0 Web Server as a Forward Proxy

Modify Apache's httpd.conf file and specify the clients allowed to use this proxy:

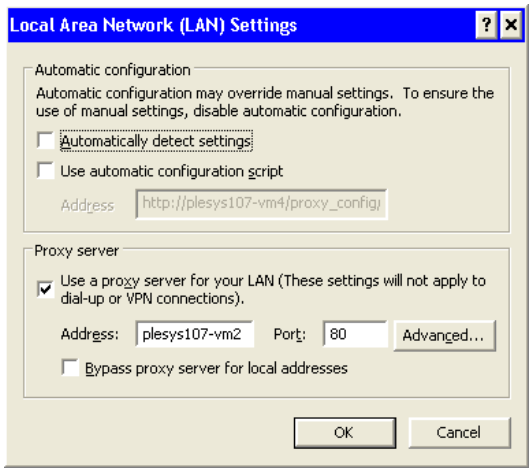
```
ProxyRequests On
ProxyVia On

<Proxy *>
Order deny,allow
Deny from all
Allow from 10.8.22
</Proxy>
```

Restart the Apache web server.

3.7.1.2. Configure the client to access the proxy:

In Internet Explorer, go to Tools > Internet Options > Connections tab > LAN Settings. Enter the address and port of the Apache forward proxy.

Below, Apache running on plesys107-vm2 port 80 is set to be the forward proxy to be used by this client.



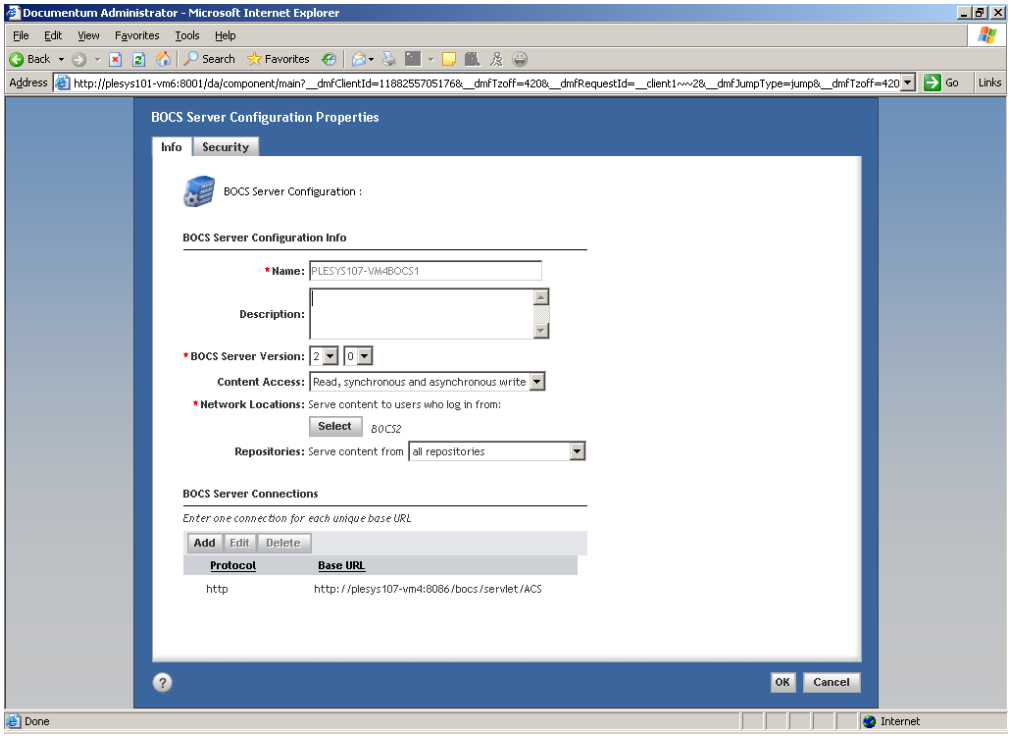
3.7.1.3. Configure BOCS to use forward proxy:

If DMS can directly access BOCS, push or pull mode can be used. Otherwise, BOCS must be configured to work in pull mode. In our case, BOCS must be configured in pull to poll the DMS server periodically for any messages.

If BOCS is using a forward proxy, the forward proxy server host and port should be specified. The values are stored in the BOCS acs.properties as:

```
proxy.host=<forward proxy host>
proxy.port=<forward proxy port>
```

The BOCS installer will present options to install in pull mode and also specify the proxy host and port. The corresponding BOCS configuration object is defined in DA as:



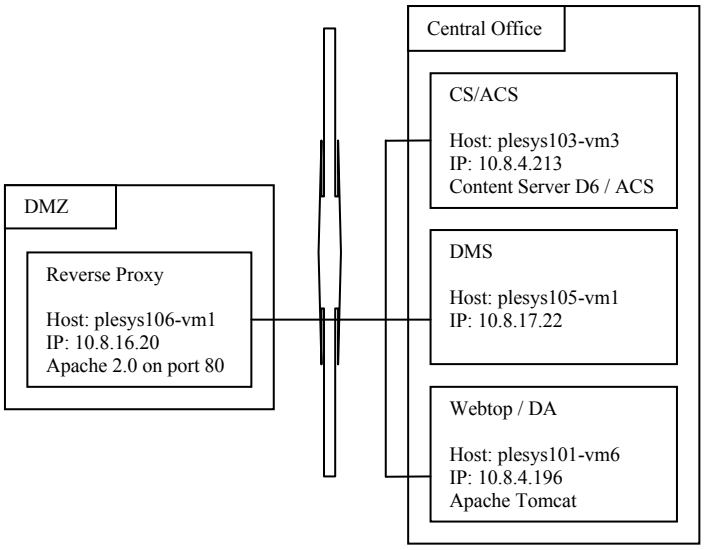
View the apache access logs to see if the proxy is being properly used. A snippet of the HTTP Post method with BOCS URL is shown below for a BOCS read operation.

```
10.8.22.20 - - [15/Aug/2007:14:55:22 -0700] "POST http://plesys107-
vm4:8086/bocs/servlet/ACS?command=read&version=2.0&basepath=...
```

3.7.2. Central Office

In the central office, we have Content Server/Accelerated Content Server, Documentum Messaging Server, Webtop, and Documentum Administrator. DMS should always be installed in a location with direct access to the primary CS/ACS.

In this scenario, ACS, DMS, and Webtop are configured with supported reverse proxy servers so that client requests will be redirected through the proxy server to the ACS, DMS, or Webtop servers. This involves 1) configuring the reverse proxy for redirection and 2) modifying the base URLs of the ACS Server config object to use the proxy URL.



3.7.2.1. Configure the Apache web server as a reverse proxy to ACS and DMS and WDK Application:

The UCF client needs to send requests to the back-end servers via the proxy. Modify the apache configuration file (httpd.conf) on the proxy server to specify redirect rules:

1. Enable all appropriate LoadModule directives for proxies.
2. Setup proxy rules.

Add the following directives to map http://<reverse proxy host>/ACS1 to http://<ACS server host>:9080/ACS.

```
ProxyRequests Off
ProxyPass /ACS1 http://plesys103-vm3:9080/ACS
ProxyPassReverse /ACS1 http://plesys103-vm3:9080/ACS
```

Add the following directives to map http://<reverse proxy host>/webtop to http://<Webtop host>:8001/webtop.

```
ProxyPass /webtop http://plesys101-vm6:8001/webtop
ProxyPassReverse /webtop http://plesys101-vm6:8001/webtop
```

Add the following directives to map http://<reverse proxy host>/DMS to http://<DMS server host>:8489.

```
ProxyPass /DMS http://plesys105-vm3:8489
ProxyPassReverse /DMS http://plesys105-vm3:8489
```

3.7.2.2. Configure the ACS and DMS servers:

To the UCF client, the ACS is hidden behind a proxy. The ACS base URL must be modified since DFC will use this info to construct the URL that the UCF client will use to perform the content transfer. The constructed URL must be accessible from the UCF client and thus should be accessed via the proxy. Use Documentum Administrator to modify the base URL (acs_base_url) of the ACS server config object.

1. Login to each repository associated with the ACS server using DA.
2. Navigate to Administration > Distributed Content Configuration > ACS Servers.
3. Go to Properties page of the ACS server.
4. Select the ACS Server Connection URL and Edit.
5. Modify the ACS Base URL to specify proxy URL. For example:
   Original ACS URL - http://<ACS server host>:9080/ACS/servlet/ACS
   Proxy ACS URL - http://<reverse proxy host>/ACS1/servlet/ACS
6. Restart the repository and the ACS server (Java Method Server).

In the case of DMS, since BOCS is periodically polling DMS for messages, BOCS needs to know what URL to use for the polling. This is defined in the BOCS acs.properties.

```
bocs.pulling.mode.enabled=TRUE
dms.pulling.url=http\://plesys106-vm4/DMS
bocs.pulling.interval=10
```

Note above that the dms.pulling.url is set to http\://<reverse proxy host>/DMS which was mapped to http://<DMS server host>:8489 in the httpd.conf.

On the DMS host, the dms.service.return.url defined in the DMS dms.properties should contain the proxy URL.

```
dms.service.return.url=http://<reverse proxy host>/DMS/
```

To verify that proxy is being properly used check the ACS log on the application server. The URL that is built by DFC that will be passed to the UCF client to use for the content transfer contains the proxy host.

The following is a URL from an ACS Write operation:

```
[2007-08-28 11:09:32,890[DFC_ACS_LOG_URL]
userName="dmadmin"storeName="dcst_distributed"
command=AcsUrlCommandImpl{name='write'} docbaseId=2158142 storeId=2c20ee3e80000146
objectId=0920ee3e80004d17 objectName= pageNumber=0 pageModifier=
URL=http://plesys106-vm1/ACS1/servlet/ACS?command=write

…                    Proxy

[2007-08-28 11:09:39,750[DFC_ACS_CONTENT_IS_STORED] Client file C:\Documents and
Settings\dmadmin\Desktop\cab_import.txt is stored in repository
]
```

The access logs on the reverse proxy host will also show a POST method.

```
10.8.22.21 - - [28/Aug/2007:11:10:35 -0700] "POST
/ACS1/servlet/ACS?command=write&…
```

3.8. Configuring ACS or BOCS over SSL

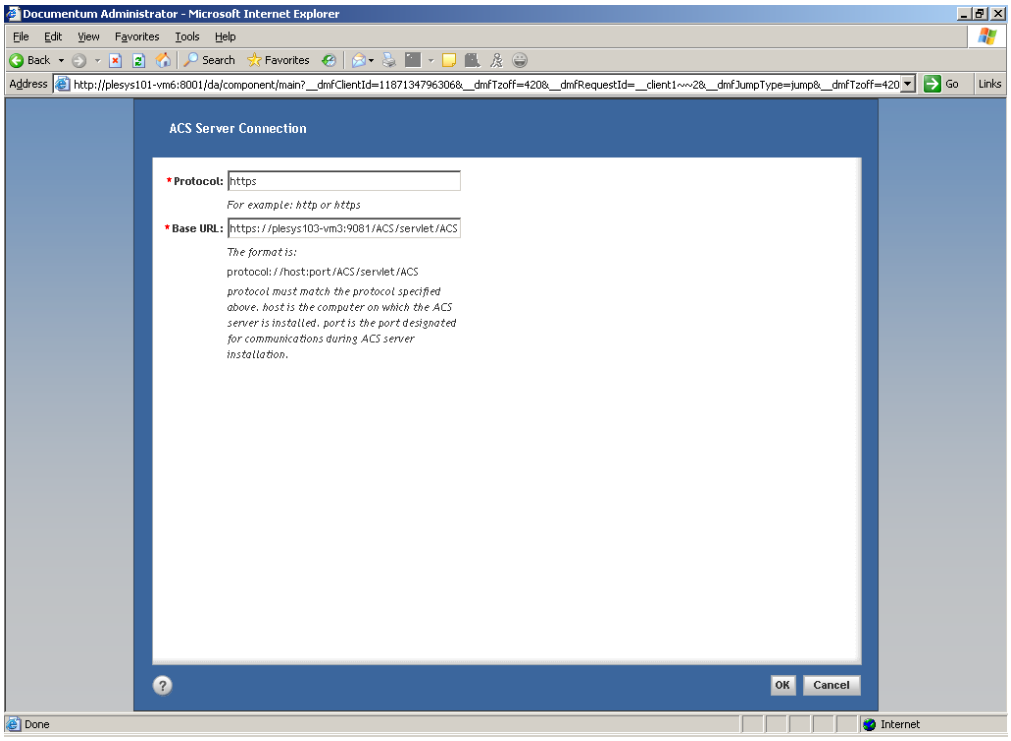
HTTP and HTTPS protocols are supported for communication between UCF, ACS, and BOCS. This will require certain ports to be open in the firewall. The table below lists the default ports configured during ACS and BOCS installation.

Source	Destination	Network Port	Protocol
Client UCF	ACS	9080/9081	HTTP/HTTPS
Client UCF	BOCS	8086/8087	HTTP/HTTPS

The SSL protocol can be used to ensure secure transactions between the UCF client and the ACS or BOCS server. Since ACS/BOCS are servers running on the embedded WebLogic application server, SSL configuration requires enabling the ACS or BOCS server to accept SSL connections. Use the WebLogic Server Administration Console on the ACS or BOCS host (Default URL is http://<acs or bocs host>:7001/console). Refer to the WebLogic Server documentation on enabling SSL.

Documentum Administrator can be used to modify the ACS or BOCS connection protocol and base URL.

1. Login to repository using Documentum Administrator.
2. Navigate to Administration > Distributed Content Configuration > ACS Servers (or BOCS Servers).
3. View properties of ACS or BOCS server
4. Select the protocol and base URL you would like to modify and click Edit.
5. Enter https for Protocol field.
6. Enter https URL for Base URL field. The port specified in the Base URL should be the SSL enabled port in the WebLogic Server.
7. Save the changes.

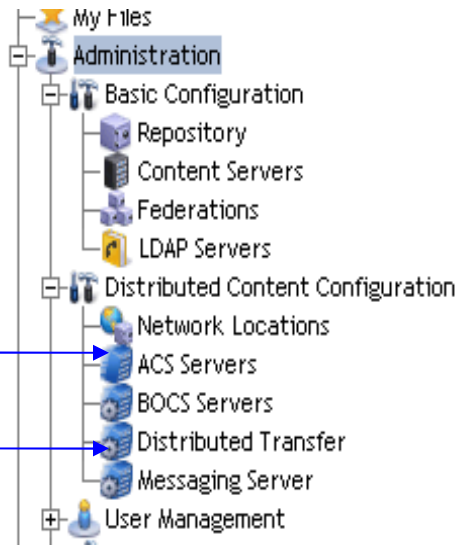


3.9. *Quick Configuration Guide*

The following steps will guide you through the operations you need to perform to configure the components in a distributed configuration.

Note the difference of configuration objects on Repository and Global Repository.

- Configuration Objects on Repository
  - ACS Servers
  - Distributed Transfer
- Configuration Objects on Global Registry
  - Network Locations
  - BOCS Servers
  - Messaging Servers



To enable/disable each distributed content features, there are few steps involved after installation.

- ACS Read:
  - ACS Read is enabled out of the box at repository and as well as at application level
  - At repository level: Distributed Transfer ➔ ACS Read
  - At application level:

```
<accelerated-read>
        <enabled>true</enabled>
        ……..
</accelerated-read>
```

- ACS Write:
  - ACS Write is enabled out of the box at repository and as well as at application level
  - At repository level: Distributed Transfer ➔ ACS Write ➔ Synchronous Write
  - At application level:

```
<accelerated-write>
        <enabled>true</enabled>
        ……..
</accelerated-write>
```

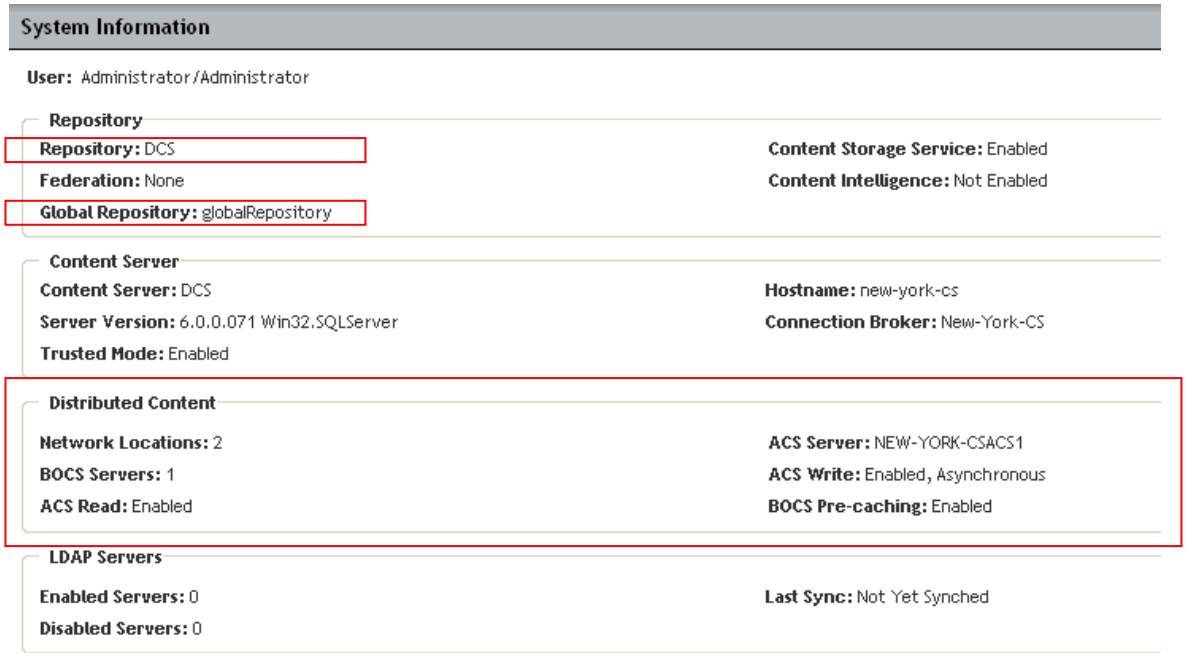
- BOCS Synchronous Write:
  To enable BOCS Synchronous Write:
  - From Global Repository:
    1. Create Network Location Object for ACS – e.g. “ACS” is used to refer to location closest to primary data center.
    2. Create Network Location Object for BOCS – e.g. “BOCS” is used to refer to location closed to BOCS Server.
    3. Create BOCS Config Object

- From Repository:
    4. Update Content Transfer Config Object
- From Application level
    5. Update app.xml.

- BOCS Asynchronous Write:
  To enable BOCS Asynchronous Write:
    - From Global Repository:
        1. Create Network Location Object for ACS – e.g. “ACS” is used to refer to location closest to primary data center.
        2. Create Network Location Object for BOCS – e.g. “BOCS” is used to refer to location closed to BOCS Server.
        3. Create BOCS Config Object
        4. Create DMS Config Object
    - From Repository:
        5. Update Content Transfer Config Object
    - From Application level
        6. Update app.xml.

- Predictive Caching:
  Predictive Caching is enabled out of the box.
  At repository level: Distributed Transfer ➔ BOCS Pre-Cache

Once complete, you will be able to verify that the repository has been successfully configured by clicking on the Administration link in Documentum Administrator.



Once the repository has been configured properly, enable logging on the WDK and UCF client and perform content download and upload operations to verify that the configuration is working as expected.

4. Monitoring and Troubleshooting

Depending on the complexity of the distributed deployment, a number of logs may be required to get to the source of the problem when content transfers do not work as expected. This section will discuss how to enable logs on each of the various tiers, and provide examples of what the log entries might look like in successful and unsuccessful attempts.

4.1. UCF Client logging

UCF Client logs are extremely useful when diagnosing ACS and BOCS content transfer issues. They can be used to confirm that the requests are being directed to the appropriate ACS or BOCS depending on the users' network location, highlight connectivity issues from the client, and verify that failover is occurring as expected in the case that a particular server is not available.

UCF client logging is enabled on the end user's machine.

Edit the ucf.client.logging.properties file, located at:
C:\Documents and Settings\<username>\Documentum\ucf\<hostname>\shared\config

For best results, set the log level to FINEST, as shown below.

```
handlers=java.util.logging.FileHandler, java.util.logging.ConsoleHandler
.level=FINEST
#-------------------
java.util.logging.FileHandler.pattern=C:/Documentum/logs/ucf.client%u.log
java.util.logging.FileHandler.limit=10485760
java.util.logging.FileHandler.count=10
java.util.logging.FileHandler.formatter=java.util.logging.SimpleFormatter
java.util.logging.FileHandler.encoding=UTF-8
#-------------------
java.util.logging.ConsoleHandler.level=OFF
java.util.logging.ConsoleHandler.formatter=java.util.logging.SimpleFormatter
```

In addition, to prevent the UCF client log from overwriting itself each time, change the value of java.util.logging.FileHandler.count to a number greater than 1. As each new client initializes, the old logs will be renamed and preserved for further analysis.

4.2. WDK Logs

Another key area to monitor is the WDK server or application server. That is because the DFC that determines the proper content location (ACS or BOCS) resides there. If it does not have the right information, or believes that the ACS or BOCS server is unavailable, then content will always be transferred through the application server, crossing across the WAN, and affecting end-user performance.

Sample log4j.properties:

```
log4j.logger.com.documentum.acs=DEBUG, ACS_LOG
log4j.logger.com.documentum.fc.client.impl.acs=DEBUG, ACS_LOG
log4j.appender.ACS_LOG=org.apache.log4j.RollingFileAppender
log4j.appender.ACS_LOG.File=C\:/Documentum/logs/AcsServer.log
log4j.appender.ACS_LOG.MaxFileSize=10MB
log4j.appender.ACS_LOG.layout=org.apache.log4j.PatternLayout
log4j.appender.ACS_LOG.layout.ConversionPattern=%d{ABSOLUTE} %5p [%t] %c - %m%n
```

4.3. ACS Logs

Logging is managed using the standard log4j.properties file, located at C:\Documentum\bea9.2\domains\DctmDomain\upload\MethodServer\acs.ear\APP-INF\classes\log4j.properties.

By default, the log level is set to WARN for the ACS log.

Valid log levels from least verbose to most verbose include FATAL, ERROR, WARN, INFO, DEBUG.

For troubleshooting purposes, it is recommended to change the log level to INFO.

```
#------------------- ACS --------------------------
log4j.category.acs=INFO, ACS_LOG
log4j.appender.ACS_LOG=org.apache.log4j.RollingFileAppender
log4j.appender.ACS_LOG.File=C:/Documentum/bea9.2/domains/DctmDomain/servers/DctmSe
rver_MethodServer_OTT2PERF04/data/MethodServer/logs/AcsServer.log
log4j.appender.ACS_LOG.MaxFileSize=100MB
log4j.appender.ACS_LOG.layout=org.apache.log4j.PatternLayout
log4j.appender.ACS_LOG.layout.ConversionPattern=%d{ABSOLUTE} %5p [%t] %m%n
```

4.4. BOCS Logs

BOCS logs are located at C:\Documentum\bea9.2\domains\DctmDomain\servers\DctmServer_BOCS_OTT2PERF01\data\BOCS\logs. By default, the log level is WARN, but should be increased to INFO for better diagnostic capabilities. Unless the BOCS server is under extremely heavy load, the additional logging will have very little effect on performance, and will provide crucial information for diagnostic purposes.

```
#------------------- ACS --------------------------
log4j.category.acs=INFO, ACS_LOG
log4j.appender.ACS_LOG=org.apache.log4j.RollingFileAppender
log4j.appender.ACS_LOG.File=C:/Documentum/bea9.2/domains/DctmDomain/servers/DctmSe
rver_BOCS_UK-BOCS/data/BOCS/logs/AcsServer.log
log4j.appender.ACS_LOG.MaxFileSize=100KB
log4j.appender.ACS_LOG.layout=org.apache.log4j.PatternLayout
log4j.appender.ACS_LOG.layout.ConversionPattern=%d{ABSOLUTE} %5p [%t] %m%n
```

Access log:

C:\Documentum\bea9.2\domains\DctmDomain\servers\DctmServer_BOCS_OTT2PERF01\logs\access.log

4.5. DMS

DMS logs are located at:

C:\Documentum\bea9.2\domains\DctmDomain\servers\DctmServer_DMS_<HOSTNAME>\logs. By default, the log level is WARN, but should be increased to DEBUG for better diagnostic capabilities.

```
#-----------DMS-------------
log4j.category.dms=DEBUG,DMS_LOG
log4j.appender.DMS_LOG=org.apache.log4j.RollingFileAppender
```

```
log4j.appender.DMS_LOG.File=C:/Documentum/bea9.2/domains/DctmDomain/servers/DctmSe
rver_DMS_NEW-YORK-DMS/logs/DMS.log
log4j.appender.DMS_LOG.MaxFileSize=10MB
log4j.appender.DMS_LOG.MaxBackupIndex=10
log4j.appender.DMS_LOG.Append=false
log4j.appender.DMS_LOG.layout=org.apache.log4j.PatternLayout
log4j.appender.DMS_LOG.layout.ConversionPattern=%d{ABSOLUTE} %5p [%t] %c - %m%n
```

Access log:

C:\Documentum\bea9.2\domains\DctmDomain\servers\DctmServer_DMS_PLESYS104-VM6\logs\access.log

4.6. WDK

Add the following lines to the log4j.properties file for the web application (located in WEB-INF/classes).

```
log4j.logger.com.documentum.acs=DEBUG, ACS_LOG
log4j.logger.com.documentum.fc.client.impl.acs=DEBUG, ACS_LOG
log4j.appender.ACS_LOG=org.apache.log4j.RollingFileAppender
log4j.appender.ACS_LOG.File=C\:/Documentum/logs/AcsServer.log
log4j.appender.ACS_LOG.MaxFileSize=10MB
log4j.appender.ACS_LOG.layout=org.apache.log4j.PatternLayout
log4j.appender.ACS_LOG.layout.ConversionPattern=%d{ABSOLUTE} %5p [%t] %c - %m%n
```

5. Using Logs to Investigate Distributed Content Transfer

This chapter shows examples of successful and failed content transfer operations, and highlights the meaning of entries in each of the pertinent logs.

In all cases, log levels were set to INFO, and UCF client log level was set to FINEST.

Comments in <<blue>> are not actually part of the logs, but are provided for explanatory purposes only.

5.1. Successful ACS Read operation

A successful ACS read operation can be monitored through a number of log entries.

The UCF client logs would show that the "PutFile" request was successfully handled by the ACS servlet as shown below:

```
Aug 29, 2007 3:06:35 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 1; Logging request: PutFile
Aug 29, 2007 3:06:35 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Provided URL : http://new-york-cs:9080/ACS/servlet/ACS?command=read&version
=2.0&basepath=C%3A%5CDCTMServer%5Cdata%5CDCS%5Ccontent_storage_01%5C000519fb&filep
ath=80%5C00%5C14%5Ce8.pdf&objectid=090519fb800031fc&cacheid=dAAEAgA%3D%3D6BQAgA%3D
%3D&format=pdf&pagenum=0&signature=jGC%2FHlu5phHheNMxIFbq6cSoSABUr%2FdXc0H2uXKGPZL
2OR1T3XTpKcmAXQlqEb5algrC2v3GwrCr5rSeo1x08FfTVvW4GK1AuuUmifhVQxPmUlYVfcvFo2K%2Bad9
0L9EH%2FdLja1UhGz0bV3k1PewpT9aVGPe4%2BhrDYir3rOAqq2I%3D&servername=NEW-YORK-
CSACS1&mode=1&timestamp=1188414390&compression=true&length=348542&mime_type=applic
ation%2Fpdf
Aug 29, 2007 3:06:35 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Attempting to open connection to http%3A%2F%2Fnew-york-cs%3A9080%2F%2FACS
%2Fservlet%2FACS
Aug 29, 2007 3:06:35 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2Fnew-york-cs%3A9080%2F%2FACS%2Fservlet
%2FACS
Aug 29, 2007 3:06:35 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Connected to new-york-cs
Aug 29, 2007 3:06:37 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 1; Handled request: PutFile
```

The decision that DFC makes when determining where the content should be read from will be shown in the WDK:

```
<<The object was requested by user Joe Tucci who is logged in from network
location ACS>>
15:06:30,593  INFO [Timer-26] com.documentum.acs.dfc - [DFC_ACS_LOG_OBJECT_INFO]
userName=Joe Tucci objectId=090519fb800031fc
objectName='DFC_6_installation_Guide.pdf' format=pdf pageNumber=0
pageModifier=null networkLocationId="ACS"
<<DFC has determined that the content can be best retrieved from the ACS server
NEW-YORK-CSACS1>>
15:06:30,671  INFO [Timer-26] com.documentum.acs.dfc - [DFC_ACS_LOG_OBJECT_ACS]
userName=Joe Tucci objectId=090519fb800031fc
objectName='DFC_6_installation_Guide.pdf', acsName=NEW-YORK-CSACS1 proximity=9001
<<DFC generates the URL and sends it to the UCF client for content retrieval>>
15:06:34,984  INFO [Timer-26] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName=Joe Tucci objectId=090519fb800031fc
objectName='DFC_6_installation_Guide.pdf' URL=http://new-york-
cs:9080/ACS/servlet/ACS?command=read&version=2.0&basepath=C%3A%5CDCTMServer%5Cdata
%5CDCS%5Ccontent_storage_01%5C000519fb&filepath=80%5C00%5C14%5Ce8.pdf&objectid=090
519fb800031fc&cacheid=dAAEAgA%3D%3D6BQAgA%3D%3D&format=pdf&pagenum=0&signature=jGC
%2FHlu5phHheNMxIFbq6cSoSABUr%2FdXc0H2uXKGPZL2OR1T3XTpKcmAXQlqEb5algrC2v3GwrCr5rSeo
1x08FfTVvW4GK1AuuUmifhVQxPmUlYVfcvFo2K%2Bad90L9EH%2FdLja1UhGz0bV3k1PewpT9aVGPe4%2B
hrDYir3rOAqq2I%3D&servername=NEW-YORK-
CSACS1&mode=1&timestamp=1188414390&compression=true&length=348542&mime_type=applic
ation%2Fpdf
```

In addition, the content access can be seen in the ACS server access logs, as shown below. Note that the first field shows the IP address of the user who requested the content, second last field (200) indicates a successful transfer, and the final field is the size of the content that was transferred. If the content is a compressible format, it will NOT match the original content size.

```
10.4.9.220 - - [29/Aug/2007:15:06:35 -0400] "POST /ACS/servlet/ACS HTTP/1.1" 200
245195
```

5.2. ACS Write

In the case of ACS write, the URL will have “command=write”, indicating a direct write to the ACS server. If the connection is successfully opened to the ACS server, and it was able to process the request, the UCF client log will look similar to the following:

```
Aug 29, 2007 3:30:10 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 5; Logging request: GetFile
Aug 29, 2007 3:30:10 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=1375, offset=0,
origDataLength=0
Aug 29, 2007 3:30:10 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Provided URL : http://new-york-cs:9080/ACS/servlet/ACS?command=write&
version=2.0&docbaseid=0519fb&content_objid=060519fb80005b50&formatid=270519fb80000
19f&storeid=280519fb80000100&signature=CLEPNxXfEucB0DPlz8kR6zfUUVjIlbmrMnIecsd2PJi
19NfEI8TNXW0Op03CySlqv0pN6pE9C%2Bl%2BYi%2BbKFPMYZ5I8Pj7vkJWvf8U199vSK5os0%2FhqC16v
rr07D2asDj4HlPHNHN5%2B%2BAS1iNEBKa9Gq1m79WZVvD6DheAMInZW4c%3D&store_data=rO0ABXNyA
Dxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURh
dGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5
EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC
5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5
jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMD
AwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50e
XBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW
50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhb
mcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAA
eHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATa
mF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&par
tition=0&servername=NEW-YORK-CSACS1&mode=2&timestamp=1188415810&length=715471

Aug 29, 2007 3:30:10 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Attempting to open connection to http%3A%2F%2Fnew-york-cs%3A9080%2F%2FACS
%2Fservlet%2FACS
Aug 29, 2007 3:30:10 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2Fnew-york-cs%3A9080%2F%2FACS%2F
servlet%2FACS
Aug 29, 2007 3:30:17 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=1898, offset=0,
origDataLength=0
Aug 29, 2007 3:30:17 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 5; Handled request: GetFile
```

The WDK server logs will show the decision process when identifying the correct location to write to based on the user’s network location and the available ACS servers.

```
15:30:09,109  INFO [Timer-57] com.documentum.acs.dfc - [DFC_ACS_WRITE_LOG_INFO]
userName="Joe Tucci"storeName= command=AcsUrlCommandImpl{name='park'}
networkLocationId="ACS"
15:30:09,125  INFO [Timer-57] com.documentum.acs.dfc -
[DFC_ACS_WRITE_LOG_STORE_ACS] userName="Joe Tucci"storeName=
command=AcsUrlCommandImpl{name='park'}, acsName=NEW-YORK-CSACS1 proximity=9001
<<There is no BOCS associated with this network location>>
15:30:09,171  INFO [Timer-57] com.documentum.acs.dfc - [DFC_ACS_PARKING_NO_BOCS]
No Bocs to park the content on. Client file
C:\DCTM_Manuals\D6_Prepp\Documentum_System_Migration_Guide_6.0.pdf
15:30:10,296  INFO [Timer-57] com.documentum.acs.dfc - [DFC_ACS_WRITE_LOG_INFO]
userName="Joe Tucci"storeName="filestore_01"
command=AcsUrlCommandImpl{name='write'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb80003216 objectName= pageNumber=0 pageModifier=
networkLocationId="ACS"
<<DFC has identified ACS NEW-YORK-CSACS1 as a candidate location>>
15:30:10,296  INFO [Timer-57] com.documentum.acs.dfc -
[DFC_ACS_WRITE_LOG_STORE_ACS] userName="Joe Tucci"storeName="filestore_01"
command=AcsUrlCommandImpl{name='write'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb80003216 objectName= pageNumber=0 pageModifier=, acsName=NEW-
YORK-CSACS1 proximity=9001
```

```
<<DFC generates the ACS write URL and sends it to the UCF client>>
15:30:10,343  INFO [Timer-57] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName="Joe Tucci"storeName="filestore_01"
command=AcsUrlCommandImpl{name='write'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb80003216 objectName= pageNumber=0 pageModifier= URL=http://new-
york-
cs:9080/ACS/servlet/ACS?command=write&version=2.0&docbaseid=0519fb&content_objid=0
60519fb80005b50&formatid=270519fb8000019f&storeid=280519fb80000100&signature=CLEPN
xXfEucB0DPlz8kR6zfUUVjIlbmrMnIecsd2PJi19NfEI8TNXW0Op03CySlqv0pN6pE9C%2Bl%2BYi%2BbK
FPMYZ5I8Pj7vkJWvf8U199vSK5os0%2FhqC16vrr07D2asDj4HlPHNHN5%2B%2BAS1iNEBKa9Gq1m79WZV
vD6DheAMInZW4c%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVud
C5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVt
LmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHI
AMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR3
2QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXB
lZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZG
9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXI
ANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE8
1SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQa
mF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy
%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%
0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partition=0&servername=NEW-YORK-
CSACS1&mode=2&timestamp=1188415810&length=715471
<<The content has been successfully stored in the repository through the ACS
server>>
15:30:17,453  INFO [Timer-57] com.documentum.acs.dfc - [DFC_ACS_CONTENT_IS_STORED]
Client file C:\DCTM_Manuals\D6_Prepp\Documentum_System_Migration_Guide_6.0.pdf is
stored in repository
```

The ACS server logs will show that the data has been successfully written to the filestores:

```
15:30:11,890  INFO [Thread-52] Session{id=1, iid=4, docbase=DCS,
user=Administrator} created
15:30:11,953  INFO [Thread-52] Object protocol version 2
15:30:17,390  INFO [Thread-52] Data written into repository
15:30:17,406  INFO [Thread-52] Session{id=1, iid=4, docbase=DCS,
user=Administrator} has no more references
15:30:17,406  INFO [Thread-52] Session{id=1, iid=4, docbase=DCS,
user=Administrator} returned to pool
```

The access logs for the ACS server also show the incoming request from the end user's machine.

```
10.4.9.220 - - [29/Aug/2007:15:30:11 -0400] "GET /ACS/servlet/Handshake HTTP/1.1"
200 19
10.4.9.220 - - [29/Aug/2007:15:30:11 -0400] "POST /ACS/servlet/ACS HTTP/1.1" 200
1900
```

5.3. BOCS Read Request

In this example, we see the processing involved when requesting content from a BOCS server, and the subsequent request to retrieve the content from an ACS as it was not already in the cache.

The UCF client logs show the read request URL being provided by the application server. The first choice is to read from the BOCS server, but if it fails, the second URL is provided to directly read from the nearest ACS.

```
Aug 29, 2007 3:38:12 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 6; Logging request: PutFile
Aug 29, 2007 3:38:12 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
<<Try first to retrieve the content from the UK-BOCS server, and if the BOCS
server does not already have the content, retrieve it from the NEW-YORK-CSACS1 ACS
server>>
FINE: Provided URL : http://UK-BOCS:8086/bocs/servlet/ACS?command=read&version=2.0
&basepath=C%3A%5CDCTMServer%5Cdata%5CDCS%5Ccontent_storage_01%5C000519fb&filepath=
80%5C00%5C14%5Ce8.pdf&objectid=090519fb800031fc&cacheid=dAAEAgA%3D%3D6BQAgA%3D%3D&
format=pdf&pagenum=0&signature=d4HrCyLANwi8ZpSFE65FTmsg6mNBG0PLQGCDQ70amjOrjd6mlbt
cZvuEmaoO3sQwr%2FooFI1E3ziB02P8CegfYYL4MKMVvA%2BX2BnMNdo8GkZfUv6UeJCtbR4sbBOuyRW00
p3I4Iv1L2Z%2BldgAWhOViXcjyIm2Hi244ihi7%2F7cOUc%3D&servername=UKBOCS&mode=1&timesta
mp=1188416290&compression=true&length=348542&mime_type=application%2Fpdf&acs_serve
rname=NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-york-cs%3A9080%2FACS%2Fservlet
%2FACS
Aug 29, 2007 3:38:12 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
<<If the BOCS server can't be reached, then try going to the ACS server directly>>
FINE: Provided URL : http://new-york-cs:9080/ACS/servlet/ACS?command=read&
version=2.0&basepath=C%3A%5CDCTMServer%5Cdata%5CDCS%5Ccontent_storage_01%5C000519f
b&filepath=80%5C00%5C14%5Ce8.pdf&objectid=090519fb800031fc&cacheid=dAAEAgA%3D%3D6B
QAgA%3D%3D&format=pdf&pagenum=0&signature=d4HrCyLANwi8ZpSFE65FTmsg6mNBG0PLQGCDQ70a
mjOrjd6mlbtcZvuEmaoO3sQwr%2FooFI1E3ziB02P8CegfYYL4MKMVvA%2BX2BnMNdo8GkZfUv6UeJCtbR
4sbBOuyRW00p3I4Iv1L2Z%2BldgAWhOViXcjyIm2Hi244ihi7%2F7cOUc%3D&servername=NEW-YORK-
CSACS1&mode=1&timestamp=1188416290&compression=true&length=348542&mime_type=applic
ation%2Fpdf
Aug 29, 2007 3:38:12 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Attempting to open connection to http%3A%2F%2FUK-BOCS%3A8086%2F%2Fbocs%2F
servlet%2FACS
Aug 29, 2007 3:38:12 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2FUK-BOCS%3A8086%2F%2Fbocs%2Fservlet%2FACS
Aug 29, 2007 3:38:12 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Connected to UK-BOCS
Aug 29, 2007 3:38:27 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 6; Handled request: PutFile
```

The WDK logs show the decisions being made as to where the client should go to read the content

```
15:38:10,906  INFO [Timer-67] com.documentum.acs.dfc - [DFC_ACS_LOG_OBJECT_INFO]
userName=J.K. Rowling objectId=090519fb800031fc
objectName='DFC_6_installation_Guide.pdf' format=pdf pageNumber=0
pageModifier=null networkLocationId="BOCS"
15:38:10,984  INFO [Timer-67] com.documentum.acs.dfc - [DFC_ACS_LOG_OBJECT_ACS]
userName=J.K. Rowling objectId=090519fb800031fc
objectName='DFC_6_installation_Guide.pdf', acsName=NEW-YORK-CSACS1 proximity=9001
15:38:12,250  INFO [Timer-67] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName=J.K. Rowling objectId=090519fb800031fc
objectName='DFC_6_installation_Guide.pdf' URL=http://UK-
BOCS:8086/bocs/servlet/ACS?command=read&version=2.0&basepath=C%3A%5CDCTMServer%5Cd
ata%5CDCS%5Ccontent_storage_01%5C000519fb&filepath=80%5C00%5C14%5Ce8.pdf&objectid=
090519fb800031fc&cacheid=dAAEAgA%3D%3D6BQAgA%3D%3D&format=pdf&pagenum=0&signature=
d4HrCyLANwi8ZpSFE65FTmsg6mNBG0PLQGCDQ70amjOrjd6mlbtcZvuEmaoO3sQwr%2FooFI1E3ziB02P8
CegfYYL4MKMVvA%2BX2BnMNdo8GkZfUv6UeJCtbR4sbBOuyRW00p3I4Iv1L2Z%2BldgAWhOViXcjyIm2Hi
244ihi7%2F7cOUc%3D&servername=UKBOCS&mode=1&timestamp=1188416290&compression=true&
length=348542&mime_type=application%2Fpdf&acs_servername=NEW-YORK-
CSACS1&acs_url=http%3A%2F%2Fnew-york-cs%3A9080%2FACS%2Fservlet%2FACS
15:38:12,250  INFO [Timer-67] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName=J.K. Rowling objectId=090519fb800031fc
objectName='DFC_6_installation_Guide.pdf' URL=http://new-york-
cs:9080/ACS/servlet/ACS?command=read&version=2.0&basepath=C%3A%5CDCTMServer%5Cdata
```

```
%5CDCS%5Ccontent_storage_01%5C000519fb&filepath=80%5C00%5C14%5Ce8.pdf&objectid=090
519fb800031fc&cacheid=dAAEAgA%3D%3D6BQAgA%3D%3D&format=pdf&pagenum=0&signature=d4H
rCyLANwi8ZpSFE65FTmsg6mNBG0PLQGCDQ70amjOrjd6mlbtcZvuEmaoO3sQwr%2FooFI1E3ziB02P8Ceg
fYYL4MKMVvA%2BX2BnMNdo8GkZfUv6UeJCtbR4sbBOuyRW00p3I4Iv1L2Z%2BldgAWhOViXcjyIm2Hi244
ihi7%2F7cOUc%3D&servername=NEW-YORK-
CSACS1&mode=1&timestamp=1188416290&compression=true&length=348542&mime_type=applic
ation%2Fpdf
```

Because the BOCS server did not already have the content in the cache, we see the details in the BOCS logs indicating the pull from the remote ACS.

```
15:38:25,265  INFO [[ACTIVE] ExecuteThread: '16' for queue:
'weblogic.kernel.Default (self-tuning)'] [DFC_ACS_LOG_URL]
objectId=090519fb800031fc serverName='NEW-YORK-CSACS1' URL=http://new-york-
cs:9080/ACS/servlet/ACS?command=read&version=2.0&basepath=C%3A%5CDCTMServer%5Cdata
%5CDCS%5Ccontent_storage_01%5C000519fb&filepath=80%5C00%5C14%5Ce8.pdf&objectid=090
519fb800031fc&cacheid=dAAEAgA%3D%3D6BQAgA%3D%3D&format=pdf&pagenum=0&signature=d4H
rCyLANwi8ZpSFE65FTmsg6mNBG0PLQGCDQ70amjOrjd6mlbtcZvuEmaoO3sQwr%2FooFI1E3ziB02P8Ceg
fYYL4MKMVvA%2BX2BnMNdo8GkZfUv6UeJCtbR4sbBOuyRW00p3I4Iv1L2Z%2BldgAWhOViXcjyIm2Hi244
ihi7%2F7cOUc%3D&servername=NEW-YORK-
CSACS1&mode=1&timestamp=1188416290&compression=true&length=348542&mime_type=applic
ation%2Fpdf
```

The ACS server access log show the access from the BOCS server as it pulls the content to the local cache.

```
192.168.20.30 - - [29/Aug/2007:15:38:13 -0400] "GET /ACS/servlet/Validation
HTTP/1.1" 200 1642
192.168.20.30 - - [29/Aug/2007:15:38:14 -0400] "GET /ACS/servlet/Validation
HTTP/1.1" 200 732
192.168.20.30 - - [29/Aug/2007:15:38:25 -0400] "POST /ACS/servlet/ACS HTTP/1.1"
200 245195
```

In the case of a cache hit, the BOCS logs and ACS server logs would not show any entries as the request was entirely handled by the BOCS server.

5.4. BOCS Synchronous Write

In a BOCS synchronous write, we expect to see the write activity being recorded in both the BOCS and ACS server logs.

The UCF client has been given the directive to write to the BOCS server if it is available, and if not, try the ACS server.

```
Aug 29, 2007 3:49:30 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 10; Logging request: GetFile
Aug 29, 2007 3:49:30 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=2837, offset=0,
origDataLength=0
Aug 29, 2007 3:49:30 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Provided URL : http://UK-BOCS:8086/bocs/servlet/ACS?command=write&version
=2.0&docbaseid=0519fb&content_objid=060519fb80005b51&formatid=270519fb8000019f&sto
reid=280519fb80000100&signature=dp4yvNnJs1gF9OLUZqamQgqn1V2ab3B66KLxvowtCfZ0z%2B%2
FK%2FeopyK%2Bl9TLkCGzX02mSu%2FWEC%2BaFrYfqxfsIIbdPzfpgaCo%2ByV3CvaLdTD6mrfDwcdJ9eJ
1fEJ%2Bn0yRSYDBiV5RLxOPUG7TQtiG5g93Z69rqqfmU6IQAO7Jk0g8%3D&store_data=rO0ABXNyADxj
b20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH
79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW
5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pb
XBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbG
llbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwM
DAwMDAwMDAwMHcKAAAAAAAAAAAAAAXNyADBjb20uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBl
ZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50L
mltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcu
SW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHA
AAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2
YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partit
ion=0&servername=UKBOCS&mode=2&timestamp=1188416970&length=3340213&acs_servername=
NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-york-cs%3A9080%2FACS%2Fservlet%2FACS

Aug 29, 2007 3:49:30 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Provided URL : http://new-york-cs:9080/ACS/servlet/ACS?command=write&
version=2.0&docbaseid=0519fb&content_objid=060519fb80005b51&formatid=270519fb80000
19f&storeid=280519fb80000100&signature=dp4yvNnJs1gF9OLUZqamQgqn1V2ab3B66KLxvowtCfZ
0z%2B%2FK%2FeopyK%2Bl9TLkCGzX02mSu%2FWEC%2BaFrYfqxfsIIbdPzfpgaCo%2ByV3CvaLdTD6mrfD
wcdJ9eJ1fEJ%2Bn0yRSYDBiV5RLxOPUG7TQtiG5g93Z69rqqfmU6IQAO7Jk0g8%3D&store_data=rO0AB
XNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRy
YURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF
0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaW
VudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5
mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMD
AwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wb
C50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2
xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhL
mxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCL
AgAAeHAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzc
gATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D
&partition=0&servername=NEW-YORK-CSACS1&mode=2&timestamp=1188416970&length=3340213

Aug 29, 2007 3:49:30 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Attempting to open connection to http%3A%2F%2FUK-BOCS%3A8086%2F%2Fbocs%2F
servlet%2FACS
Aug 29, 2007 3:49:30 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2FUK-BOCS%3A8086%2F%2Fbocs%2Fservlet%2FACS
Aug 29, 2007 3:49:57 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=1899, offset=0,
origDataLength=0
Aug 29, 2007 3:49:57 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 10; Handled request: GetFile
```

The BOCS server logs show the synchronous upload operation to the ACS server to complete the write operation.

```
15:49:55,968  INFO [Thread-13] [DFC_ACS_LOG_URL] userName=storeName=
command=AcsUrlCommandImpl{name='write'} docbaseId=334331 storeId=280519fb80000100
objectId=null objectName= pageNumber=0 pageModifier= URL=http://new-york-
cs:9080/ACS/servlet/ACS?command=write&version=2.0&docbaseid=0519fb&content_objid=0
60519fb80005b51&formatid=270519fb8000019f&storeid=280519fb80000100&signature=dp4yv
NnJs1gF9OLUZqamQgqn1V2ab3B66KLxvowtCfZ0z%2B%2FK%2FeopyK%2Bl9TLkCGzX02mSu%2FWEC%2Ba
FrYfqxfsIIbdPzfpgaCo%2ByV3CvaLdTD6mrfDwcdJ9eJ1fEJ%2Bn0yRSYDBiV5RLxOPUG7TQtiG5g93Z6
9rqqfmU6IQAO7Jk0g8%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29ud
GVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVu
dHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAA
AeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtN
FLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3R
UeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb2
0uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHh
wdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORM
uIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4c
gAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFu
zSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABS
QAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partition=0&servername=NEW-YORK-
CSACS1&mode=2&timestamp=1188416970&compression=true&length=3340213
```

The WDK logs show the decision process to write to the BOCS based on the user's network location and the write capability of the BOCS server. In addition, they show the successful storage of the content in the repository. Once it has been stored successfully, the "move" command is used to move it to the BOCS cache area.

```
15:49:30,250  INFO [Timer-90] com.documentum.acs.dfc - [DFC_ACS_WRITE_LOG_INFO]
userName="J.K. Rowling"storeName="filestore_01"
command=AcsUrlCommandImpl{name='write'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb80003217 objectName= pageNumber=0 pageModifier=
networkLocationId="BOCS"
15:49:30,250  INFO [Timer-90] com.documentum.acs.dfc -
[DFC_ACS_WRITE_LOG_STORE_ACS] userName="J.K. Rowling"storeName="filestore_01"
command=AcsUrlCommandImpl{name='write'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb80003217 objectName= pageNumber=0 pageModifier=, acsName=NEW-
YORK-CSACS1 proximity=9001
15:49:30,265  INFO [Timer-90] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName="J.K. Rowling"storeName="filestore_01"
command=AcsUrlCommandImpl{name='write'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb80003217 objectName= pageNumber=0 pageModifier= URL=http://UK-
BOCS:8086/bocs/servlet/ACS?command=write&version=2.0&docbaseid=0519fb&content_objid
=060519fb80005b51&formatid=270519fb8000019f&storeid=280519fb80000100&signature=dp
4yvNnJs1gF9OLUZqamQgqn1V2ab3B66KLxvowtCfZ0z%2B%2FK%2FeopyK%2Bl9TLkCGzX02mSu%2FWEC%
2BaFrYfqxfsIIbdPzfpgaCo%2ByV3CvaLdTD6mrfDwcdJ9eJ1fEJ%2Bn0yRSYDBiV5RLxOPUG7TQtiG5g9
3Z69rqqfmU6IQAO7Jk0g8%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY2
9udGVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1b
WVudHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7Iz
DAAAeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2B
JtNFLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJh
Y3RUeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADB
jb20uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwA
AHhwdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTt
ORMuIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdW
V4cgAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZ
WFuzSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAw
ABSQAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partition=0&servername=UKBOCS&mode=2&tim
estamp=1188416970&length=3340213&acs_servername=NEW-YORK-
CSACS1&acs_url=http%3A%2F%2Fnew-york-cs%3A9080%2FACS%2Fservlet%2FACS
15:49:30,265  INFO [Timer-90] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName="J.K. Rowling"storeName="filestore_01"
command=AcsUrlCommandImpl{name='write'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb80003217 objectName= pageNumber=0 pageModifier= URL=http://new-
york-
cs:9080/ACS/servlet/ACS?command=write&version=2.0&docbaseid=0519fb&content_objid=0
60519fb80005b51&formatid=270519fb8000019f&storeid=280519fb80000100&signature=dp4yv
NnJs1gF9OLUZqamQgqn1V2ab3B66KLxvowtCfZ0z%2B%2FK%2FeopyK%2Bl9TLkCGzX02mSu%2FWEC%2Ba
FrYfqxfsIIbdPzfpgaCo%2ByV3CvaLdTD6mrfDwcdJ9eJ1fEJ%2Bn0yRSYDBiV5RLxOPUG7TQtiG5g93Z6
9rqqfmU6IQAO7Jk0g8%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29ud
```

```
GVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVu
dHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAA
AeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtN
FLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3R
UeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb2
0uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHh
wdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORM
uIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4c
gAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFu
zSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABS
QAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partition=0&servername=NEW-YORK-
CSACS1&mode=2&timestamp=1188416970&length=3340213
15:49:57,234  INFO [Timer-90] com.documentum.acs.dfc - [DFC_ACS_CONTENT_IS_STORED]
Client file
C:\DCTM_Manuals\D6_Prepp\Documentum_Content_Server_DQL_Reference_Manual_6_PREPP.pd
f is stored in repository
15:49:57,609  INFO [Timer-90] com.documentum.acs.dfc - [DFC_ACS_LOG_OBJECT_INFO]
userName=J.K. Rowling objectId=090519fb80003217
objectName='Documentum_Content_Server_DQL_Reference_Manual_6_PREPP.pdf' format=pdf
pageNumber=0 pageModifier= networkLocationId="BOCS"
15:49:57,625  INFO [Timer-90] com.documentum.acs.dfc - [DFC_ACS_LOG_OBJECT_ACS]
userName=J.K. Rowling objectId=090519fb80003217
objectName='Documentum_Content_Server_DQL_Reference_Manual_6_PREPP.pdf',
acsName=NEW-YORK-CSACS1 proximity=9001
15:49:57,640  INFO [Timer-90] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName=J.K. Rowling objectId=090519fb80003217
objectName='Documentum_Content_Server_DQL_Reference_Manual_6_PREPP.pdf'
URL=http://UK-BOCS:8086/bocs/servlet/ACS?command=move&version=2.0
&basepath=C%3A%5CDCTMServer%5Cdata%5CDCS%5Ccontent_storage_01%5C000519fb&filepath=
80%5C00%5C14%5Cfb.pdf&objectid=090519fb80003217&cacheid=dAAEAgA%3D%3D%2BxQAgA%3D%3
D&format=pdf&pagenum=0&signature=pE2%2F%2BCLSwWsbzGN2pmPm64udD3X2ZiWz97HpqGFFncaUQ
S42c2lnZds2OXN1am33C%2FJH%2Fx4Q1okWWjsOeBjfZFsC7wreAK0wTn1Tm%2FvxCz0YwHiOlPi%2Fem1
ImYi1uJEyVtaBT0J4fkPF0YzLzBVwnuaaFnYMkBK4n2z4HJNggmU%3D&servername=UKBOCS&mode=1&t
imestamp=1188416997&length=3340213&mime_type=application%2Fpdf&content_objid=06051
9fb80005b51&acs_servername=NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-york-
cs%3A9080%2FACS%2Fservlet%2FACS
```

The ACS server logs also show a corresponding entry indicating that the content was successfully written to the repository.

```
15:49:56,093  INFO [Thread-82] Session{id=1, iid=6, docbase=DCS,
user=Administrator} created
15:49:56,156  INFO [Thread-82] Object protocol version 2
15:49:57,312  INFO [Thread-82] Data written into repository
15:49:57,312  INFO [Thread-82] Session{id=1, iid=6, docbase=DCS,
user=Administrator} has no more references
15:49:57,312  INFO [Thread-82] Session{id=1, iid=6, docbase=DCS,
user=Administrator} returned to pool
```

5.5. Failed Transfer - BOCS Synchronous Write – ACS is Unavailable

In the case where a user tries to perform an BOCS synchronous write, but the single ACS server it is directed to is unavailable, the content transfer will eventually occur through the UCF server on the application server.

Here is an example of what might appear in the various log files:

```
Aug 29, 2007 4:02:29 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 13; Logging request: GetFile
Aug 29, 2007 4:02:29 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=2833, offset=0,
origDataLength=0
Aug 29, 2007 4:02:29 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
<<URLS are provided to the BOCS server and the backup ACS server by the DFC on the
application server>>
FINE: Provided URL : http://UK-
BOCS:8086/bocs/servlet/ACS?command=write&version=2.0&docbaseid=0519fb&content_objid=060519fb80005b52&formatid=270519fb8000019f&storeid=280519fb80000100&signature=VITNNNTY8iPGH0TP4XMYxJH7QLk9FQbhyb3ypBNdUj6SgAvJIATOPxXndyF%2F0qst34oRf501C%2FCsgB9SIGa%2FKDVUB5OIt7zhxQPE7h%2BtBi6kMm1j2blovtzFyCg%2F%2FbO4NxqI44Pn0qQa5GphA9TJItQFxdX3K12TGdzjr8qh%2FLI%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAAXNyADBjb20uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partition=0&servername=UKBOCS&mode=2&timestamp=1188417699&length=5778259&acs_servername=NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-york-cs%3A9080%2FACS%2Fservlet%2FACS

Aug 29, 2007 4:02:29 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Provided URL : http://new-york-
cs:9080/ACS/servlet/ACS?command=write&version=2.0&docbaseid=0519fb&content_objid=060519fb80005b52&formatid=270519fb8000019f&storeid=280519fb80000100&signature=VITNNNTY8iPGH0TP4XMYxJH7QLk9FQbhyb3ypBNdUj6SgAvJIATOPxXndyF%2F0qst34oRf501C%2FCsgB9SIGa%2FKDVUB5OIt7zhxQPE7h%2BtBi6kMm1j2blovtzFyCg%2F%2FbO4NxqI44Pn0qQa5GphA9TJItQFxdX3K12TGdzjr8qh%2FLI%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAAXNyADBjb20uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partition=0&servername=NEW-YORK-CSACS1&mode=2&timestamp=1188417699&length=5778259
<<The UCF client attempts to open a connection to the BOCS and succeeds, but
subsequently fails when trying to write to the remote ACS>>
Aug 29, 2007 4:02:29 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Attempting to open connection to http%3A%2F%2FUK-BOCS%3A8086%2F%2Fbocs%2Fservlet%2FACS
Aug 29, 2007 4:02:29 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2FUK-BOCS%3A8086%2F%2Fbocs%2Fservlet%2FACS
Aug 29, 2007 4:03:07 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: Failed connection to remote content upload device due to null
java.io.EOFException
```

```
        at java.io.DataInputStream.readInt(Unknown Source)
        at
com.documentum.ucf.common.transport.spi.StreamHelper.readInt(StreamHelper.java:19)
        at
com.documentum.ucf.common.transport.impl.ClientRemoteAttachment.serialize(ClientRe
moteAttachment.java:74)
        at
com.documentum.ucf.client.transport.requesthandlers.impl.GetFileHandler.processDis
tributedTransfer(GetFileHandler.java:141)
        at
com.documentum.ucf.client.transport.requesthandlers.impl.GetFileHandler.process(Ge
tFileHandler.java:68)
        at
com.documentum.ucf.client.transport.impl.RequestProcessor.handleRequest(RequestPro
cessor.java:89)
        at
com.documentum.ucf.client.transport.impl.ClientSession.run(ClientSession.java:255)
Aug 29, 2007 4:03:08 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
<<The UCF server then attempts to connect directly to the ACS server as per the
second directive and fails>>
FINE: Attempting to open connection to http%3A%2F%2Fnew-york-cs%3A9080%2F%2FACS
%2Fservlet%2FACS
Aug 29, 2007 4:03:08 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2Fnew-york-cs%3A9080%2F%2FACS%2F
servlet%2FACS
Aug 29, 2007 4:03:09 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: Failed connection to remote content upload device due to Connection refused:
connect
java.net.ConnectException: Connection refused: connect
        at java.net.PlainSocketImpl.socketConnect(Native Method)
        at java.net.PlainSocketImpl.doConnect(Unknown Source)
        at java.net.PlainSocketImpl.connectToAddress(Unknown Source)
        at java.net.PlainSocketImpl.connect(Unknown Source)
        at java.net.Socket.connect(Unknown Source)
        at java.net.Socket.connect(Unknown Source)
        at sun.net.NetworkClient.doConnect(Unknown Source)
        at sun.net.www.http.HttpClient.openServer(Unknown Source)
        at sun.net.www.http.HttpClient.openServer(Unknown Source)
        at sun.net.www.http.HttpClient.<init>(Unknown Source)
        at sun.net.www.http.HttpClient.New(Unknown Source)
        at sun.net.www.http.HttpClient.New(Unknown Source)
        at sun.net.www.protocol.http.HttpURLConnection.getNewHttpClient(Unknown
Source)
        at sun.net.www.protocol.http.HttpURLConnection.plainConnect(Unknown
Source)
        at sun.net.www.protocol.http.HttpURLConnection.connect(Unknown Source)
        at sun.net.www.protocol.http.HttpURLConnection.getOutputStream(Unknown
Source)
        at
com.documentum.ucf.common.transport.impl.HTTPRemoteContentNativeConnector.getOutpu
tStream(HTTPRemoteContentNativeConnector.java:251)
        at
com.documentum.ucf.common.transport.impl.ClientRemoteAttachment.serialize(ClientRe
moteAttachment.java:48)
        at
com.documentum.ucf.client.transport.requesthandlers.impl.GetFileHandler.processDis
tributedTransfer(GetFileHandler.java:141)
        at
com.documentum.ucf.client.transport.requesthandlers.impl.GetFileHandler.process(Ge
tFileHandler.java:68)
        at
com.documentum.ucf.client.transport.impl.RequestProcessor.handleRequest(RequestPro
cessor.java:89)
        at
com.documentum.ucf.client.transport.impl.ClientSession.run(ClientSession.java:255)
Aug 29, 2007 4:03:09 PM com.documentum.ucf.client.logging.impl.UCFLogger error
SEVERE: An exception occured in request handler
java.net.ConnectException: Connection refused: connect
        at java.net.PlainSocketImpl.socketConnect(Native Method)
        at java.net.PlainSocketImpl.doConnect(Unknown Source)
        at java.net.PlainSocketImpl.connectToAddress(Unknown Source)
```

```
        at java.net.PlainSocketImpl.connect(Unknown Source)
        at java.net.Socket.connect(Unknown Source)
        at java.net.Socket.connect(Unknown Source)
        at sun.net.NetworkClient.doConnect(Unknown Source)
        at sun.net.www.http.HttpClient.openServer(Unknown Source)
        at sun.net.www.http.HttpClient.openServer(Unknown Source)
        at sun.net.www.http.HttpClient.<init>(Unknown Source)
        at sun.net.www.http.HttpClient.New(Unknown Source)
        at sun.net.www.http.HttpClient.New(Unknown Source)
        at sun.net.www.protocol.http.HttpURLConnection.getNewHttpClient(Unknown
Source)
        at sun.net.www.protocol.http.HttpURLConnection.plainConnect(Unknown
Source)
        at sun.net.www.protocol.http.HttpURLConnection.connect(Unknown Source)
        at sun.net.www.protocol.http.HttpURLConnection.getOutputStream(Unknown
Source)
        at
com.documentum.ucf.common.transport.impl.HTTPRemoteContentNativeConnector.getOutpu
tStream(HTTPRemoteContentNativeConnector.java:251)
        at
com.documentum.ucf.common.transport.impl.ClientRemoteAttachment.serialize(ClientRe
moteAttachment.java:48)
        at
com.documentum.ucf.client.transport.requesthandlers.impl.GetFileHandler.processDis
tributedTransfer(GetFileHandler.java:141)
        at
com.documentum.ucf.client.transport.requesthandlers.impl.GetFileHandler.process(Ge
tFileHandler.java:68)
        at
com.documentum.ucf.client.transport.impl.RequestProcessor.handleRequest(RequestPro
cessor.java:89)
        at
com.documentum.ucf.client.transport.impl.ClientSession.run(ClientSession.java:255)
<<The content is then uploaded directly to the application server>>
Aug 29, 2007 4:03:09 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=, dataLength=5778259, offset=0,
origDataLength=5778259
Aug 29, 2007 4:03:09 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 13; Handled request: GetFile
```

The WDK logs show that the content was finally uploaded through the application server as all other options were unavailable. In addition, the BOCS server was marked as "unavailable" to prevent other users from attempting to access it until it became available again.

```
16:03:08,234  INFO [http-8080-Processor25] com.documentum.acs.dfc -
[DFC_ACS_LOG_SET_UNAVAILABLE] docbaseId=334331 BOCS server name=UKBOCS protocol
http is reported to be unavailable URL=http://UK-BOCS:8086/bocs/servlet/ACS
?command=write&version=2.0&docbaseid=0519fb&content_objid=060519fb80005b52&formati
d=270519fb8000019f&storeid=280519fb80000100&signature=VITNNNTY8iPGH0TP4XMYxJH7QLk9
FQbhyb3ypBNdUj6SgAvJIATOPxXndyF%2F0qst34oRf501C%2FCsgB9SIGa%2FKDVUB5OIt7zhxQPE7h%2
BtBi6kMm1j2blovtzFyCg%2F%2FbO4NxqI44Pn0qQa5GphA9TJItQFxdX3K12TGdzjr8qh%2FLI%3D&sto
re_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5pbXBsLkNvbnRlbnRTdG
9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLmZjLmNsaWVudC5pbXBs%
0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAMWNvbS5kb2N1bWVu%0Ad
HVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32QwAAHhyADljb20u%0AZG
9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZERhdGHPXWpF%0AKoIAX
QwAAHhwdAAQMDAwMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZG9jdW1lbnR1%0AbS5mYy5j
bGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIANFtMY29t%0ALmRvY3VtZ
W50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81SggIA%0AAHhwAAAAAHQA
AHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQamF2%0AYS5sYW5nLk51bWJ
lcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy%0AgNWc%2Bu4CAAFaAAV2
YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%0Ac2l6ZXhwAAAAAHcEAAA
AAHh4eA%3D%3D&partition=0&servername=UKBOCS&mode=2&timestamp=1188417699&length=577
8259&acs_servername=NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-york-
cs%3A9080%2FACS%2Fservlet%2FACS&compression=true
16:03:46,156  INFO [Timer-100] com.documentum.acs.dfc -
[DFC_ACS_CONTENT_MADE_LOCAL] Content is brought locally. Client file
C:\DCTM_Manuals\D6_Prepp\Documentum_Content_Server_Fundamentals_6_PREPP.pdf, local
```

```
file C:\Documentum\contentXfer\New-York-WebTop-2007.08.29-
1455h.37s_17492\1dea0284a1q114b2fa8be11q1d7ff8\srv17546.pdf
```

5.6. Synchronous Write to BOCS with Failover to ACS

In this example, the BOCS server is unavailable, so the content is redirected to the ACS server directly.

```
Aug 29, 2007 4:24:09 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 16; Logging request: GetFile
Aug 29, 2007 4:24:09 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=2823, offset=0,
origDataLength=0
Aug 29, 2007 4:24:09 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
<<URL shows BOCS server is preferred choice for write>>
FINE: Provided URL : http://UK-BOCS:8086/bocs/servlet/ACS?command=write&
version=2.0&docbaseid=0519fb&content_objid=060519fb80005b53&formatid=270519fb80000
19f&storeid=280519fb80000100&signature=iv9PmYrv2tiO2EEJtCeZxtXvF0nTzzLmeoLmF51OTaa
NzN86dZKvr%2FIGky1HZXUoqyA%2BfXPXuS1pzxg6%2BbvPOMxKEldTsLwFHCv4spZYQd4MWpateEdlCcd
bcHFnioe6sUI4ux4t7UrW0Oci8BhB%2BdZk%2BSAY9toDcj342qwR9xM%3D&store_data=rO0ABXNyADx
jb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdG
H79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5Ee
W5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5p
bXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jb
GllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAw
MDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXB
lZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50
LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmc
uSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeH
AAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF
2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&parti
tion=0&servername=UKBOCS&mode=2&timestamp=1188419048&length=894427&acs_servername=
NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-york-cs%3A9080%2FACS%2Fservlet%2FACS
<<ACS server is second choice if BOCS write fails>>
Aug 29, 2007 4:24:09 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Provided URL : http://new-york-cs:9080/ACS/servlet/ACS?command=write&
version=2.0&docbaseid=0519fb&content_objid=060519fb80005b53&formatid=270519fb80000
19f&storeid=280519fb80000100&signature=iv9PmYrv2tiO2EEJtCeZxtXvF0nTzzLmeoLmF51OTaa
NzN86dZKvr%2FIGky1HZXUoqyA%2BfXPXuS1pzxg6%2BbvPOMxKEldTsLwFHCv4spZYQd4MWpateEdlCcd
bcHFnioe6sUI4ux4t7UrW0Oci8BhB%2BdZk%2BSAY9toDcj342qwR9xM%3D&store_data=rO0ABXNyADx
jb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdG
H79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5Ee
W5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5p
bXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jb
GllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAw
MDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZG9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXB
lZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50
LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmc
uSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQamF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeH
AAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSBy%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF
2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&parti
tion=0&servername=NEW-YORK-CSACS1&mode=2&timestamp=1188419048&length=894427
<<Attempt to connect to BOCS server fails>>
Aug 29, 2007 4:24:09 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Attempting to open connection to http%3A%2F%2FUK-
BOCS%3A8086%2F%2Fbocs%2Fservlet%2FACS
Aug 29, 2007 4:24:09 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2FUK-BOCS%3A8086%2F%2Fbocs%2Fservlet%2FACS
Aug 29, 2007 4:24:10 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: Failed connection to remote content upload device due to Connection refused:
connect
java.net.ConnectException: Connection refused: connect
        at java.net.PlainSocketImpl.socketConnect(Native Method)
        at java.net.PlainSocketImpl.doConnect(Unknown Source)
        at java.net.PlainSocketImpl.connectToAddress(Unknown Source)
        at java.net.PlainSocketImpl.connect(Unknown Source)
        at java.net.Socket.connect(Unknown Source)
        at java.net.Socket.connect(Unknown Source)
        at sun.net.NetworkClient.doConnect(Unknown Source)
        at sun.net.www.http.HttpClient.openServer(Unknown Source)
```

```
        at sun.net.www.http.HttpClient.openServer(Unknown Source)
        at sun.net.www.http.HttpClient.<init>(Unknown Source)
        at sun.net.www.http.HttpClient.New(Unknown Source)
        at sun.net.www.http.HttpClient.New(Unknown Source)
        at sun.net.www.protocol.http.HttpURLConnection.getNewHttpClient(Unknown
Source)
        at sun.net.www.protocol.http.HttpURLConnection.plainConnect(Unknown
Source)
        at sun.net.www.protocol.http.HttpURLConnection.connect(Unknown Source)
        at sun.net.www.protocol.http.HttpURLConnection.getOutputStream(Unknown
Source)
        at
com.documentum.ucf.common.transport.impl.HTTPRemoteContentNativeConnector.getOutpu
tStream(HTTPRemoteContentNativeConnector.java:251)
        at
com.documentum.ucf.common.transport.impl.ClientRemoteAttachment.serialize(ClientRe
moteAttachment.java:48)
        at
com.documentum.ucf.client.transport.requesthandlers.impl.GetFileHandler.processDis
tributedTransfer(GetFileHandler.java:141)
        at
com.documentum.ucf.client.transport.requesthandlers.impl.GetFileHandler.process(Ge
tFileHandler.java:68)
        at
com.documentum.ucf.client.transport.impl.RequestProcessor.handleRequest(RequestPro
cessor.java:89)
        at
com.documentum.ucf.client.transport.impl.ClientSession.run(ClientSession.java:255)
Aug 29, 2007 4:24:12 PM com.documentum.ucf.client.logging.impl.UCFLogger error
SEVERE: Failed recover connection to http://UK-
BOCS:8086/bocs/servlet/ACS?command=write&version=2.0&docbaseid=0519fb&content_objid
=060519fb80005b53&formatid=270519fb8000019f&storeid=280519fb80000100&signature=iv
9PmYrv2tiO2EEJtCeZxtXvF0nTzzLmeoLmF51OTaaNzN86dZKvr%2FIGky1HZXUoqyA%2BfXPXuS1pzxg6
%2BbvPOMxKEldTsLwFHCv4spZYQd4MWpateEdlCcdbcHFnioe6sUI4ux4t7UrW0Oci8BhB%2BdZk%2BSAY
9toDcj342qwR9xM%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVu
dC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHV
tLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeH
IAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR
32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeX
BlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZ
G9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdX
IANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE
81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQ
amF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSB
y%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE
%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partition=0&servername=UKBOCS&mode=2&timestamp
=1188419048&length=894427&acs_servername=NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-
york-cs%3A9080%2FACS%2Fservlet%2FACS&compression=true
Aug 29, 2007 4:24:12 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
<<UCF client attempts to connect to ACS as failover option>>
FINE: Attempting to open connection to http%3A%2F%2Fnew-york-
cs%3A9080%2F%2FACS%2Fservlet%2FACS
Aug 29, 2007 4:24:12 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2Fnew-york-
cs%3A9080%2F%2FACS%2Fservlet%2FACS
Aug 29, 2007 4:24:23 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=1898, offset=0,
origDataLength=0
Aug 29, 2007 4:24:23 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 16; Handled request: GetFile
```

The WDK logs show that the BOCS is marked as unavailable and content is written directly to the ACS.

```
16:24:11,734  INFO [http-8080-Processor23] com.documentum.acs.dfc -
[DFC_ACS_LOG_SET_UNAVAILABLE] docbaseId=334331 BOCS server name=UKBOCS protocol
http is reported to be unavailable URL=http://UK-
BOCS:8086/bocs/servlet/ACS?command=write&version=2.0&docbaseid=0519fb&content_objid
=060519fb80005b53&formatid=270519fb8000019f&storeid=280519fb80000100&signature=iv
```

```
9PmYrv2tiO2EEJtCeZxtXvF0nTzzLmeoLmF51OTaaNzN86dZKvr%2FIGky1HZXUoqyA%2BfXPXuS1pzxg6
%2BbvPOMxKEldTsLwFHCv4spZYQd4MWpateEdlCcdbcHFnioe6sUI4ux4t7UrW0Oci8BhB%2BdZk%2BSAY
9toDcj342qwR9xM%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVu
dC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHV
tLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeH
IAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR
32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeX
BlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZ
G9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdX
IANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE
81SggIA%0AAHhwAAAAAHQAAHNyABFqYXZhLmxhbmcuSW50ZWdlchLioKT3gYc4AgABSQAFdmFsdWV4cgAQ
amF2%0AYS5sYW5nLk51bWJlcoaslR0LlOCLAgAAeHAAAAAAcHBwc3IAEWphdmEubGFuZy5Cb29sZWFuzSB
y%0AgNWc%2Bu4CAAFaAAV2YWx1ZXhwAHhzcgATamF2YS51dGlsLkFycmF5TGlzdHiB0h2Zx2GdAwABSQAE
%0Ac2l6ZXhwAAAAAHcEAAAAAHh4eA%3D%3D&partition=0&servername=UKBOCS&mode=2&timestamp
=1188419048&length=894427&acs_servername=NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-
york-cs%3A9080%2FACS%2Fservlet%2FACS&compression=true
16:24:23,671  INFO [Timer-112] com.documentum.acs.dfc -
[DFC_ACS_CONTENT_IS_STORED] Client file C:\DCTM_Manuals\D6_Prepp\Documentum
Administrator Deployment Guide PREPP.pdf is stored in repository
```

5.7. BOCS Asynchronous Write

In the case of an asynchronous BOCS write, the content is first "parked" on the BOCS, then uploaded to the ACS once the message has been received from the DMS.

```
Aug 29, 2007 4:40:17 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 22; Logging request: GetFile
Aug 29, 2007 4:40:17 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=484, offset=0,
origDataLength=0
Aug 29, 2007 4:40:17 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
<<URL shows command=park, meaning an asynchronous write will be performed>>
FINE: Provided URL : http://UK-BOCS:8086/bocs/servlet/ACS?command=park&
version=2.0&docbaseid=0519fb&calc_hash=false&signature=gwmMn3n5seM1XB2PFmcZQ%2Fjxa
u2ynqMyo5gBaBicme2LHysEHFKePZlId07TL%2BsZpL7g%2B8pbi7WbhMU%2Fkhrz9oY2hoqVuRA%2B%2F
1PIg5T7tHJyTmjyW1Ls4nBnQxuAaKHp66RtrcZaSPFy%2BCV330LQbnrFdwpGwEt3IKIUYw0aD5Q%3D&st
ore_data=&partition=0&servername=UKBOCS&mode=3&timestamp=1188420016&length=712642&
acs_servername=NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-york-
cs%3A9080%2FACS%2Fservlet%2FACS

Aug 29, 2007 4:40:17 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Attempting to open connection to http%3A%2F%2FUK-
BOCS%3A8086%2F%2Fbocs%2Fservlet%2FACS
Aug 29, 2007 4:40:17 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2FUK-BOCS%3A8086%2F%2Fbocs%2Fservlet%2FACS
<<Content is written to BOCS and control is returned back to user>>
Aug 29, 2007 4:40:26 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: <init> contentLocation=same, compression=NONE, dataLength=54, offset=0,
origDataLength=0
Aug 29, 2007 4:40:26 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 22; Handled request: GetFile
```

The WDK logs show the content successfully being parked on the BOCS server, and the message being sent to the DMS.

```
16:40:16,406  INFO [Timer-131] com.documentum.acs.dfc - [DFC_ACS_WRITE_LOG_INFO]
userName="J.K. Rowling"storeName= command=AcsUrlCommandImpl{name='park'}
networkLocationId="BOCS"
16:40:16,468  INFO [Timer-131] com.documentum.acs.dfc -
[DFC_ACS_WRITE_LOG_STORE_ACS] userName="J.K. Rowling"storeName=
command=AcsUrlCommandImpl{name='park'}, acsName=NEW-YORK-CSACS1 proximity=9001
16:40:16,578  INFO [Timer-131] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName="J.K. Rowling"storeName= command=AcsUrlCommandImpl{name='park'}
URL=http://UK-
BOCS:8086/bocs/servlet/ACS?command=park&version=2.0&docbaseid=0519fb&calc_hash=fal
se&signature=gwmMn3n5seM1XB2PFmcZQ%2Fjxau2ynqMyo5gBaBicme2LHysEHFKePZlId07TL%2BsZp
L7g%2B8pbi7WbhMU%2Fkhrz9oY2hoqVuRA%2B%2F1PIg5T7tHJyTmjyW1Ls4nBnQxuAaKHp66RtrcZaSPF
y%2BCV330LQbnrFdwpGwEt3IKIUYw0aD5Q%3D&store_data=&partition=0&servername=UKBOCS&mo
de=3&timestamp=1188420016&length=712642&acs_servername=NEW-YORK-
CSACS1&acs_url=http%3A%2F%2Fnew-york-cs%3A9080%2FACS%2Fservlet%2FACS
<<Content has been written to BOCS primeStore area>>
16:40:26,406  INFO [Timer-131] com.documentum.acs.dfc -
[DFC_ACS_CONTENT_IS_PARKED] Client file C:\DCTM_Manuals\D6_Prepp\Process
Integrator Development Guide.pdf is parked on BOCS UKBOCS
16:40:26,765  INFO [Timer-131] com.documentum.acs.dfc - [DFC_ACS_WRITE_LOG_INFO]
userName="J.K. Rowling"storeName="filestore_01"
command=AcsUrlCommandImpl{name='store'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb8000321b objectName="Process Integrator Development Guide.pdf"
pageNumber=0 pageModifier= networkLocationId="null"
16:40:26,765  INFO [Timer-131] com.documentum.acs.dfc -
[DFC_ACS_WRITE_LOG_STORE_ACS] userName="J.K. Rowling"storeName="filestore_01"
command=AcsUrlCommandImpl{name='store'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb8000321b objectName="Process Integrator Development Guide.pdf"
pageNumber=0 pageModifier=, acsName=NEW-YORK-CSACS1 proximity=9001
```

```
<<DFC generates "store" URL for the message that will be sent to the DMS and
forwarded to the BOCS>>
16:40:26,859  INFO [Timer-131] com.documentum.acs.dfc - [DFC_ACS_LOG_URL]
userName="J.K. Rowling"storeName="filestore_01"
command=AcsUrlCommandImpl{name='store'} docbaseId=334331 storeId=280519fb80000100
objectId=090519fb8000321b objectName="Process Integrator Development Guide.pdf"
pageNumber=0 pageModifier= URL=http://UK-
BOCS:8086/bocs/servlet/ACS?command=store&version=2.0&docbaseid=0519fb&content_obji
d=060519fb80005b55&formatid=270519fb8000019f&storeid=280519fb80000100&signature=aW
1WQmrj7TwbSB4bYBi7tlP%2Foh9Ya42DLYG3O0a1eFY2DmUUOrNnt6KV8J82sUZ0yE%2Fe4Il88XzOPA01
CRwALwZkVjZpHatyqjgmd9UgqF%2BqwZWwk5KdaD9nHYwEPm86XrdcZd09L9g0U24pVERFmV5%2FJp%2Bs
Fq2K14rdU3mHxkQ%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVu
dC5pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHV
tLmZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeH
IAMWNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR
32QwAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeX
BlZERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZ
G9jdW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdX
IANFtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE
81SggIA%0AAHhwAAAAAXNyADFjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQXR0
cmli%0AdXRlAv4G2dUfbDUMAAB4cHcMAAAAAAAAAAAAAAAAAdAAXX01JR1JBVElOR19GUk9NX1BBUktFRF9
3%0AAQBwdwUAAAAAHh0AABzcgARamF2YS5sYW5nLkludGVnZXI4qCk94GHOAIAAUkABXZhbHVleHIA%0
AEGphdmEubGFuZy5OdW1iZXKGrJUdC5TgiwIAAHhwAAAAHBwcHNyABFqYXZhLmxhbmcuQm9vbGVh%0Abs
0gcoDVnPruAgABWgAFdmFsdWV4cAB4c3IAE2phdmEudXRpbC5BcnJheUxpc3R4gdIdmcdhnQMA%0AAUkAB
HNpemV4cAAAAAF3BAAAAAFzcgAzY29tLmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlw%0AZWRkYXRh
LlZhbHVlSG9sZGVyNkGIKF2KP8UMAAB4cHQAAVR4eHh4&partition=0&servername=UKBOCS&mode=2&
timestamp=1188420026&length=712642&parked_data_token=compressed%5C0519fb%5Ccont_38
312.tmp&acs_servername=NEW-YORK-CSACS1&acs_url=http%3A%2F%2Fnew-york-
cs%3A9080%2FACS%2Fservlet%2FACS
<<Message has been sent to the DMS successfully>>
16:40:58,375  INFO [Timer-131] com.documentum.acs.dfc - [DFC_ACS_DMS_MESSAGE_SENT]
distributed_write_store message seq. number=0 id=20 is sent
```

The BOCS logs show the content file "cont_38312.tmp" was sent to the ACS, completing the asynchronous write.

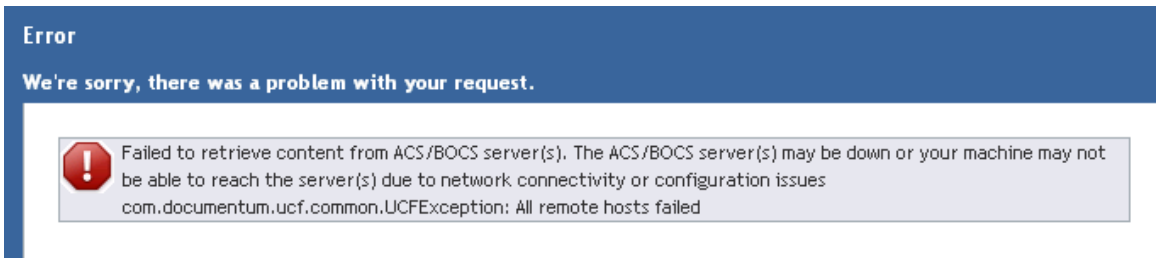
```
16:41:11,046  INFO [pool-1-thread-1] [DFC_ACS_LOG_URL] userName=storeName=
command=AcsUrlCommandImpl{name='store'} docbaseId=334331 storeId=280519fb80000100
objectId=null objectName= pageNumber=0 pageModifier= URL=http://new-york-
cs:9080/ACS/servlet/ACS?command=store&version=2.0&docbaseid=0519fb&content_objid=0
60519fb80005b55&formatid=270519fb8000019f&storeid=280519fb80000100&signature=aW1WQ
mrj7TwbSB4bYBi7tlP%2Foh9Ya42DLYG3O0a1eFY2DmUUOrNnt6KV8J82sUZ0yE%2Fe4Il88XzOPA01CRw
ALwZkVjZpHatyqjgmd9UgqF%2BqwZWwk5KdaD9nHYwEPm86XrdcZd09L9g0U24pVERFmV5%2FJp%2BsFq2
K14rdU3mHxkQ%3D&store_data=rO0ABXNyADxjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuY29udGVudC5
pbXBsLkNvbnRlbnRTdG9y%0AZXJFeHRyYURhdGH79InsRDaodAwAAHhwc3IAPGNvbS5kb2N1bWVudHVtLm
ZjLmNsaWVudC5pbXBs%0ALnR5cGVkZGF0YS5EeW5hbWljYWxseVR5cGVkRGF0YQ2yOjPtw7IzDAAAeHIAM
WNvbS5kb2N1bWVu%0AdHVtLmZjLmNsaWVudC5pbXBsLnR5cGVkZGF0YS5UeXBlZERhdGFS%2BJtNFLR32Q
wAAHhyADljb20u%0AZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQWJzdHJhY3RUeXBlZ
ERhdGHPXWpF%0AKoIAXQwAAHhwdAAQMDAwMDAwMDAwMDAwMHcKAAAAAAAAAAAAAXNyADBjb20uZG9j
dW1lbnR1%0AbS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuTGl0ZVR5cGVv8Ld%2FWu0npgwAAHhwdXIAN
FtMY29t%0ALmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlwZWRkYXRhLkF0dHJpYnV0ZTtORMuIE81S
ggIA%0AAHhwAAAAAXNyADFjb20uZG9jdW1lbnR1bS5mYy5jbGllbnQuaW1wbC50eXBlZGRhdGEuQXR0cml
i%0AdXRlAv4G2dUfbDUMAAB4cHcMAAAAAAAAAAAAAAAAAdAAXX01JR1JBVElOR19GUk9NX1BBUktFRF93%0
AAQBwdwUAAAAAHh0AABzcgARamF2YS5sYW5nLkludGVnZXI4qCk94GHOAIAAUkABXZhbHVleHIA%0AEG
phdmEubGFuZy5OdW1iZXKGrJUdC5TgiwIAAHhwAAAAHBwcHNyABFqYXZhLmxhbmcuQm9vbGVh%0Abs0gc
oDVnPruAgABWgAFdmFsdWV4cAB4c3IAE2phdmEudXRpbC5BcnJheUxpc3R4gdIdmcdhnQMA%0AAUkABHNp
emV4cAAAAAF3BAAAAAFzcgAzY29tLmRvY3VtZW50dW0uZmMuY2xpZW50LmltcGwudHlw%0AZWRkYXRhLlZ
hbHVlSG9sZGVyNkGIKF2KP8UMAAB4cHQAAVR4eHh4&partition=0&servername=NEW-YORK-
CSACS1&mode=2&timestamp=1188420026&length=712642&parked_data_token=compressed%5C05
19fb%5Ccont_38312.tmp
```

The access log for the DMS shows the message being received and processed.

```
192.168.20.40 - - [29/Aug/2007:16:40:30 -0400] "GET /dms-
ws/DmsContentMessageReceiverService HTTP/1.1" 200 2850
192.168.20.40 - - [29/Aug/2007:16:40:33 -0400] "POST /dms-
ws/DmsContentMessageReceiverService HTTP/1.1" 200 577
```

```
192.168.20.30 - - [29/Aug/2007:16:41:15 -0400] "GET /dms-ws/DmsStatusService
HTTP/1.1" 200 2466
192.168.20.30 - - [29/Aug/2007:16:41:16 -0400] "POST /dms-ws/DmsStatusService
HTTP/1.1" 200 534
```

5.8. Error – ACS or BOCS is not Reachable



If users receive the above error when trying to read or write content from an ACS or BOCS, there could be a number of causes:

1. The ACS or BOCS might not be running
2. The ACS or BOCS is running, but the user cannot access it as directed by the URL

Here is an example of the case where an ACS server is up and running, but the end user is not able to resolve the host name for the ACS server due to host name lookup failure. Similar behavior might be seen if the ACS or BOCS was behind a firewall.

The UCF client logs show the following entries.

```
Aug 29, 2007 2:32:05 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 3; Logging request: PutFile
Aug 29, 2007 2:32:05 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Provided URL : http://new-york-
cs:9080/ACS/servlet/ACS?command=read&version=2.0&basepath=C%3A%5CDCTMServer%5Cdata
%5CDCS%5Ccontent_storage_01%5C000519fb&filepath=80%5C00%5C14%5Ce8.pdf&objectid=090
519fb800031fc&cacheid=dAAEAgA%3D%3D6BQAgA%3D%3D&format=pdf&pagenum=0&signature=Ci%
2BVcSqExjG4dIawo2Yub37rdKDROsdtO1IJS%2B%2BBKnyUpyjRmV%2BbPevGf0Lid3C59DmRGyPjF8lH6
8%2FW%2BDwhYGSzBT1UFbAHJYQsVSXAgd50yYKYIdhaLSfjZ%2BV902aHrZV9od80zJ%2Fj8nAsI2zaj4H
GhA7MD01qU0vxA5JRuFc%3D&servername=NEW-YORK-
CSACS1&mode=1&timestamp=1188412323&compression=true&length=348542&mime_type=applic
ation%2Fpdf
Aug 29, 2007 2:32:05 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Attempting to open connection to http%3A%2F%2Fnew-york-
cs%3A9080%2F%2FACS%2Fservlet%2FACS
Aug 29, 2007 2:32:05 PM com.documentum.ucf.client.logging.impl.UCFLogger debug
FINE: Opened connection to http%3A%2F%2Fnew-york-
cs%3A9080%2F%2FACS%2Fservlet%2FACS
Aug 29, 2007 2:32:23 PM com.documentum.ucf.client.logging.impl.UCFLogger error
SEVERE: An exception occured in request handler
com.documentum.ucf.common.transport.TransportStreamException: All remote hosts
failed
        at
com.documentum.ucf.client.transport.requesthandlers.impl.PutFileHandler.process(Pu
tFileHandler.java:97)
        at
com.documentum.ucf.client.transport.impl.RequestProcessor.handleRequest(RequestPro
cessor.java:89)
        at
com.documentum.ucf.client.transport.impl.ClientSession.run(ClientSession.java:255)
Aug 29, 2007 2:32:23 PM com.documentum.ucf.client.logging.impl.UCFLogger info
INFO: UID: 3; Handled request: PutFile
```

Note how the UCF client was unable to reach the ACS server host at “new-york-cs”.

Using “ping” will show whether or not the client can resolve the name or reach the server.

```
C:\>ping new-york-cs
Ping request could not find host new-york-cs. Please check the name and try again
```

This usually means that the ACS URL needs to have a fully qualified domain name so that all users can locate the machine.

After the name resolution issue or transport path issues have been resolved, and the WDK server has been restarted, the client should be able to retrieve content from the ACS or BOCS server.

```
C:\>ping new-york-cs

Pinging new-york-cs [10.8.7.156] with 32 bytes of data:

Reply from 10.8.7.156: bytes=32 time=136ms TTL=116
Reply from 10.8.7.156: bytes=32 time=133ms TTL=116
Reply from 10.8.7.156: bytes=32 time=136ms TTL=116
Reply from 10.8.7.156: bytes=32 time=136ms TTL=116

Ping statistics for 10.8.7.156:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 133ms, Maximum = 136ms, Average = 135ms
```

6. BOCS Management Jobs

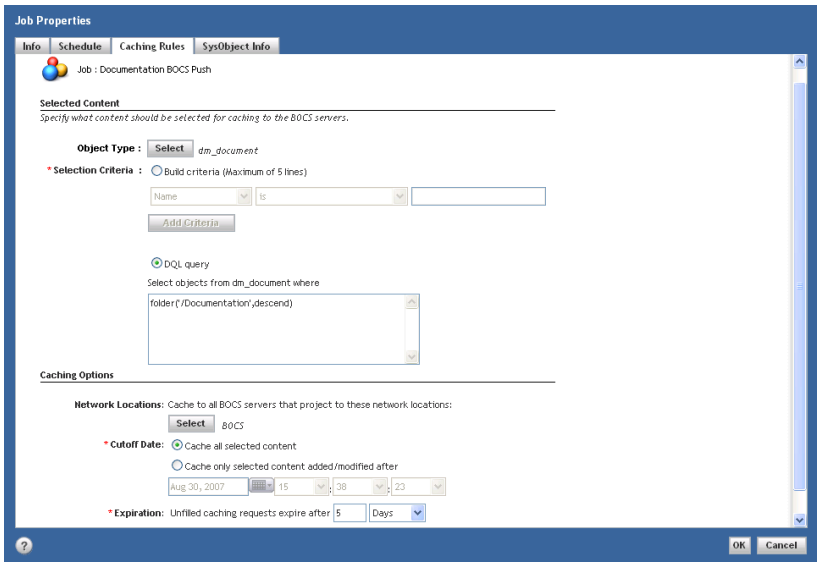
6.1. BOCS Pre-Caching Job

BOCS pre-caching jobs can be created to generate messages for BOCS servers requesting that they retrieve content from repository and store it in their local cache. This allows administrators to ensure that content that is needed by remote users is sent to their local BOCS before they actually request it.

These jobs are created and managed for each repository through Documentum Administrator.

6.1.1. Configuration

In DA Select Jobs and Methods → Jobs and do File → New → BOCS Caching Job.



Simply specify the object type, caching criteria and the network locations that should receive the content.

The first time the job runs, the Cutoff Date should be set to “Cache all selected content”. After each successful run, the Cutoff Date will reflect the latest modification date of the last batch of content, ensuring that only new content will be included in the next run.

The default execution time is once per minute, which may be too frequent for your environment. Be sure to set it appropriately to meet your business needs.

Once the job has run, you can view the report which will identify the content objects that met the criteria and the successful generation of messages for the DMS to pass along to the BOCS servers.

```
Documentation BOCS Push Report For DocBase DCS.DCS As Of 2007/08/30 15:41:36

---------------------------------------


Predicative Caching Job

This sends request to cache content on BOCS.


Job Arguments:

(StandardJobArgs: docbase_name=DCS.DCS userName=Administrator
jobId=080519fb800031e7 methodTraceLevel=0)
query_type=dm_document
query_predicate=folder('/Documentation',descend)
network_locations=BOCS
cutoff_time=nulldate
expiration=432000
batch_size=50


---------------------------------------



2007/08/30 15:41:44:609 Content selected for caching:


2007/08/30 15:41:50:140 Cache content for object 090519fb800031fb at page 0
2007/08/30 15:41:50:390 Cache content for object 090519fb800031fc at page 0
2007/08/30 15:41:50:875 Cache content for object 090519fb800031fd at page 0
2007/08/30 15:41:50:984 Cache content for object 090519fb800031fe at page 0
2007/08/30 15:41:51:328 Cache content for object 090519fb800031ff at page 0
2007/08/30 15:41:51:453 Cache content for object 090519fb80003200 at page 0
2007/08/30 15:41:51:531 Cache content for object 090519fb80003201 at page 0
2007/08/30 15:41:51:765 Cache content for object 090519fb80003216 at page 0
2007/08/30 15:41:51:953 Cache content for object 090519fb80003217 at page 0
2007/08/30 15:41:51:984 Cache content for object 090519fb80003218 at page 0
2007/08/30 15:41:52:031 Cache content for object 090519fb80003219 at page 0
2007/08/30 15:41:52:187 Cache content for object 090519fb8000321a at page 0
2007/08/30 15:41:52:218 Cache content for object 090519fb8000321b at page 0
2007/08/30 15:41:52:359 Cache content for object 090519fb8000321c at page 0



Report End 2007/08/30 15:42:01
```

6.2. dm_AsynchronousWrite

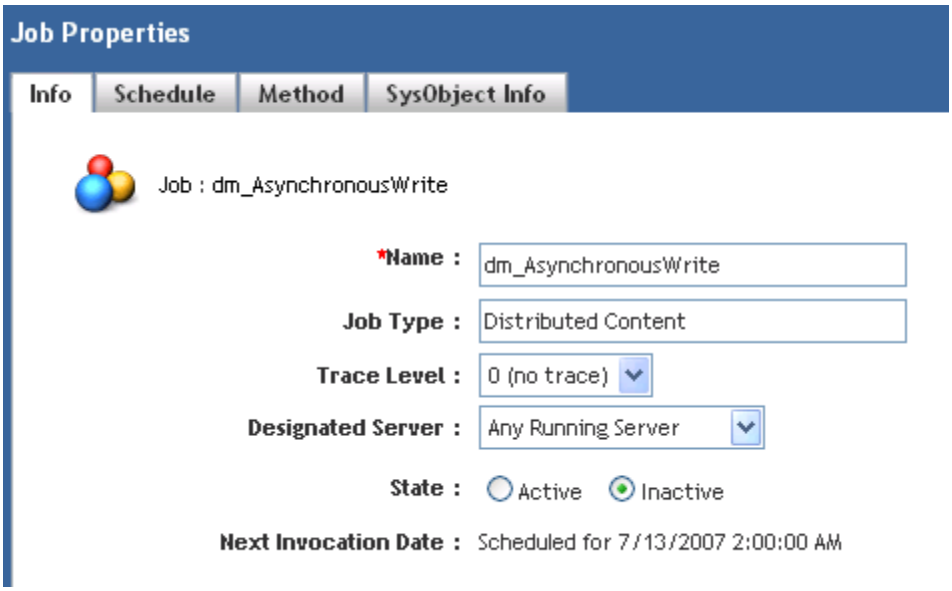
When user import documents in Asynchronous mode, there may be instance where some/all content may not be immediately replicated from BOCS to ACS.

This might happen if the DMS was not available, or there network issues between the BOCS, DMS and/or ACS.

The dm_AsynchronousWrite job was added in D6 to poll for any content still in a parked state, and to generate new messages for the DMS to pass along to the BOCS requesting the upload of parked content.

This job is inactive by default. It is recommended that this job be enabled whenever Asynchronous mode is allowed.

It is scheduled to run daily at 2am by default, but the frequency can be increased with little performance overhead.



After execution, the job report lists all content objects that had yet to be moved from the parked state and for which messages were sent to the DMS.

```
AsynchronousWrite Report For DocBase DCS.DCS As Of 2007/08/30 15:26:14

---------------------------------------


dm_AsynchronousWrite Job

This sends request to migrate parked content to Content Server storage.


Job Arguments:

(StandardJobArgs: docbase_name=DCS.DCS userName=Administrator
jobId=080519fb8000048b methodTraceLevel=0)
expiration=86400000


---------------------------------------



2007/08/30 15:26:16:593 Parked content to be migrated:


2007/08/30 15:26:17:000 Migrate content for object 060519fb80005b56




Report End 2007/08/30 15:27:00
```

If a BOCS server receives a request to migrate content that it has already processed, it will simply ignore the request.

7. Troubleshooting Checklists

The following chart highlights some of the more common problems with distributed environments, how the cause can be identified and what can be done to resolve them.

Failed Operation	Possible Cause	How to Check	Solution
ACS Read	ACS URL unreachable	ping hostname in ACS URL from client machine.	Fix DNS or make hostname a fully qualified domain name in ACS URL in DA. If a proxy is used, ensure that the proxy address is used instead of the ACS server machine and verify that <proxyclientipaddr> is set properly in the wdk/app.xml file.
	ACS server is not running	Check that http://hostname:9080/ACS/servlet/ACS returns "ACS is running" and there are no errors in the log files during startup	Start ACS server in BEA
	dm_acs_config not configured for read	In DA, check whether the content access field shows that ACS read is enabled.	Ensure read is enabled.
	ACS not configured with correct dm_server_config ID	Dump the dm_acs_config and dm_server_config objects and verify that the values match	Update the svr_config_id attribute of the dm_acs_config to match the correct r_object_id of the dm_server_config
	Repository not configured to allow ACS read	Check the dm_cont_transfer_config object through DA to ensure ACS read is enabled	Enable ACS read in dm_cont_transfer_config.
	Remote ACS cannot do surrogate get	Confirm that surrogate get is working from the remote content server	Resolve surrogate get issues using API tests.
	ACS read is not enabled in WDK application	Check the wdk/app.xml file for the application and ensure that "accelerated read" is enabled	Enable ACS read in wdk/app.xml
ACS Write	ACS URL unreachable	ping hostname in ACS URL from client machine.	Fix DNS or make hostname a fully qualified domain name in ACS URL in DA. If a proxy is used, ensure that the proxy address is used instead of the ACS server machine and verify that <proxyclientipaddr> is set properly in the wdk/app.xml file.
	ACS server is not running	Check that http://hostname:9080/ACS/servlet/ACS returns "ACS is running" and there are no errors in the log files during startup	Start ACS server in BEA
	ACS not configured with correct dm_server_config ID	Dump the dm_acs_config and dm_server_config objects and verify that the values match	Update the svr_config_id attribute of the dm_acs_config to match the correct r_object_id of the dm_server_config
	Repository not configured to allow ACS write	Check the dm_cont_transfer_config object through DA to ensure ACS write is enabled	Enable ACS write in dm_cont_transfer_config.
	Distributed filestore at Remote Content Server is not configured correctly.	Check that the remote filestore is part of the distributed filestore, and that it is accessible by the ACS.	Correct the configuration problems in the filestore, server config or ACS config areas in DA.
	Client and server clocks are not synchronized.	Check that clients and servers do not have clock times that are more than 5 minutes apart using UTC time.	Synchronize the clocks on the systems.
	ACS write is not enabled in WDK application	Check the wdk/app.xml file for the application and ensure that ACS write is enabled	Enable accelerated write in wdk/app.xml

Failed Operation	Possible Cause	How to Check	Solution
BOCS Read	BOCS URL unreachable	ping hostname in BOCS URL from client machine.	Fix DNS or make hostname a fully qualified domain name in BOCS URL in DA. If a proxy is used, ensure that the proxy address is used instead of the BOCS server machine and verify that <proxyclientipaddr> is set properly in the wdk/app.xml file.
	BOCS server is not running	Check that http://hostname:8086/bocs/servlet/ACS returns "ACS is running" and there are no errors in the log files during startup	Start BOCS server in BEA
	dm_bocs_config not configured for read	In DA, check whether the content access field shows that BOCS read is enabled.	Ensure read is enabled.
	Repository not configured to allow BOCS read	Check the dm_cont_transfer_config object through DA to ensure ACS read is enabled	Enable ACS read in dm_cont_transfer_config.
	BOCS read is not enabled in WDK application	Check the wdk/app.xml file for the application and ensure that "accelerated read" is enabled	Enable accelerated read in wdk/app.xml
	BOCS can not access ACS to pull content	Verify that the BOCS can reach the ACS server URL	Modify ACS URL to be a fully qualified hostname, fix DNS settings, or resolve network/firewall issues.
	BOCS not configured to serve user's Network Location	Check that the BOCS is configured to serve users from that Network Location	Use DA to add the Network Location to the BOCS config object
BOCS Write (Synchronous)	BOCS URL unreachable	ping hostname in BOCS URL from client machine.	Fix DNS or make hostname a fully qualified domain name in BOCS URL in DA. If a proxy is used, ensure that the proxy address is used instead of the BOCS server machine and verify that <proxyclientipaddr> is set properly in the wdk/app.xml file.
	BOCS server is not running	Check that http://hostname:8086/bocs/servlet/ACS returns "ACS is running" and there are no errors in the log files during startup	Start BOCS server in BEA
	dm_bocs_config not configured for write	In DA, check whether the content access field shows that BOCS write is enabled.	Ensure write is enabled.
	Repository not configured to allow BOCS write	Check the dm_cont_transfer_config object through DA to ensure BOCS write is enabled	Enable BOCS write in dm_cont_transfer_config.
	BOCS write is not enabled in WDK application	Check the wdk/app.xml file for the application and ensure that "accelerated write" is enabled	Enable accelerated write in wdk/app.xml
	BOCS can not access ACS to write content	Verify that the BOCS can reach the ACS server URL	Modify ACS URL to be a fully qualified hostname, fix DNS settings, or resolve network/firewall issues.
	BOCS not configured to serve user's Network Location	Check that the BOCS is configured to serve users from that Network Location	Use DA to add the Network Location to the BOCS config object

Failed Operation	Possible Cause	How to Check	Solution
BOCS Write (Asynchronous)	BOCS URL unreachable	ping hostname in BOCS URL from client machine.	Fix DNS or make hostname a fully qualified domain name in BOCS URL in DA. If a proxy is used, ensure that the proxy address is used instead of the BOCS server machine and verify that <proxyclientipaddr> is set properly in the wdk/app.xml file.
	BOCS server is not running	Check that http://hostname:8086/bocs/servlet/ACS returns "ACS is running" and there are no errors in the log files during startup	Start BOCS server in BEA
	dm_bocs_config not configured for asynchronous write	In DA, check whether the content access field shows that BOCS asynchronous write is enabled.	Ensure asynchronous write is enabled.
	Repository not configured to allow BOCS write	Check the dm_cont_transfer_config object through DA to ensure BOCS asynchronous write is enabled	Enable BOCS asynchronous write in dm_cont_transfer_config.
	BOCS write is not enabled in WDK application	Check the wdk/app.xml file for the application and ensure that "accelerated write" and asynchronous write is enabled	Enable accelerated asynchronous write in wdk/app.xml
	BOCS not configured to serve user's Network Location	Check that the BOCS is configured to serve users from that Network Location	Use DA to add the Network Location to the BOCS config object
	In "Pull Mode" BOCS public key has not been imported to the GR	Check the DMS configuration to ensure that the public key has been imported.	Import the key using DA.
	DMS does not have the correct Global Registry settings	Ensure that the DMS settings for the GR repository, username and password are valid.	Set them to match the valid values.
Content is cached on BOCS but does not transfer to ACS	DMS is not available	Verify that the DMS server is running and the DMS server can be reached by the WDK server	Resolve connectivity issues and/or restart DMS.
	dms_config_object is not configured properly in Global Registry	Ensure that the Messaging Server property values are correct in DA.	Modify as necessary.
	BOCS Cache has reached maximum capacity	Check logs to see whether size has reached default limit of 100,000 objects.	Increase cache size through cache.paging.page_size Or cache.paging.max_count
Network Locations do not appear in dropdown list on Login.	IP address mapping for network locations is not accurate.	Verify IP address of client, and that it fits into the expected range defined for the Network Location.	Add or modify the IP address ranges.

8. Additional Deployment Considerations

8.1. Asynchronous vs. Synchronous Write

It is not always appropriate to use asynchronous write when uploading content. For example, for security reasons some content should not be stored on an unsecured cache server. Other content must be immediately available at the content server for post-processing, and the delay between write to BOCS and upload to ACS is unacceptable. Careful consideration should be taken when designing the application to ensure that asynchronous write is appropriate for any given operation.

8.2. Full text indexing and parked content

When content is first uploaded to a BOCS server, and has yet to be uploaded to the ACS and filestore, it is not available for fulltext indexing. The metadata is searchable immediately, but the content is not searchable until it is no longer parked.

8.3. Push vs. Pull Mode

The default mode is "push" mode, in which the DMS initiates the communication with the BOCS server, and provides requests for predictive caching, or completing the asynchronous write operation by uploading content to the ACS. However, in the case where the DMS cannot see the BOCS server as it is behind the firewall, the BOCS server must initiate the communication to the DMS to request any messages for processing.

8.4. BOCS Cache sizes and housekeeping

The BOCS cache can be configured to be as large as needed. Configuration parameters are available for configuring the size of the cache, in bytes as well as number of files.

A BOCS server can have multiple cache areas as well, if additional storage is required.

8.5. Network topology

When BOCS servers request content that does not already exist in the cache, it will try to pull the content from the ACS server that can provide it. Be aware that in the case of a hub-and-spoke architecture, it's possible that the content will first be pulled to the hub from a remote ACS server, prior to reaching the BOCS server.

If BOCS is located in multiple branch offices and attempting to access the same ACS Server, they must all be able to use the same ACS base URL to communicate with ACS. In other words, one BOCS cannot specify a proxy URL for the ACS base URL whereas another BOCS specifies the internal URL. This is due to the fact that multiple URLs for the BOCS config objects are not yet supported. This feature will be addressed in future releases.

8.6. Application Support of BOCS as of Documentum 6.0

In general, BOCS is only supported with WDK-based applications and applications built using the new Documentum Foundation Services (DFS)

- WDK/UCF
- Webtop
- TaskSpace
- Digital Asset Manager
- File Share Services
- Documentum Collaboration Edition

- Application Connectors
- CS for Lotus Notes
- DFS

Not all applications, including some WDK apps, are supported at this time.

- Web Publisher
- FTP Services
- WebDAV
- Desktop Client

8.7. 5.3 SPx vs D6 Compatibility

Below is the expected behavior when mixing and matching 5.x and D6 BOCS.

Note: ACS and BOCS read was not available until 5.3 SP1. Thus, 5.3SPx will refer to any 5.3 Service Packs.

Global Registry	Content Server	Webtop	BOCS	Read from ACS Location	Write from ACS Location	Read from BOCS Location	Write from BOCS Location
5.3 SPx	5.3 SPx	5.3 SPx	5.3 SPx	Content is served from ACS	Content transferred through application server	Content is served from BOCS	Content transferred through application server
D6	5.3 SPx	D6	5.3 SPx	Content is served from ACS	Content transferred through application server	Content is served from BOCS	Content transferred through application server
D6	5.3 SPx	D6	D6	Content is served from ACS	Content transferred through application server	Content is served from BOCS	Content transferred through application server
D6	D6	D6	D6	Content is served from ACS	Content transferred through ACS	Content is served from BOCS	Content transferred through BOCS
5.3 SPx	5.3 SPx	5.3 SPx	D6	Content is served from ACS	Content transferred through application server	Content is served from BOCS	Content transferred through application server

9. Appendix

9.1. Distributed Content Error Message Quick Reference

The following table lists distributed content-related messages, their meaning, and what troubleshooting steps to follow when an error is encountered.

MESSAGE	TYPE	MEANING	ACTION
DFC_ACS_NO_ACS_FOR_DOCBASE	INFO	The connection broker does not know of any ACS servers for the current docbase.	Use dmqdocbroker to query the connection broker ACS map.
DFC_COULDNT_CONNECT_TO_DOCBASE	INFO	The docbase is not available for DFC operations.	Check that docbase is running If using RCS, verify that the time on RCS and the primary CS are synchronized.
DFC_ACS_LOG_NL	INFO	Lists the network location associated with the current user session.	
DFC_ACS_LOG_NO_NL	INFO	No network location found that was associated with the current user session.	The user will be given a choice of Network Location to select from the list of locations that are marked as default.
DFC_ACS_LOG_SET_UNAVAILABLE	INFO	The UCF client has reported that the ACS server was not accessible and should be taken out of the ACS server map on the connection broker.	Use dmqdocbroker to query the connection broker ACS map Check ACS server is available. Check that client can reach URL identified in UCF server logs. Ensure ACS URL hostname is fully qualified or resolvable by DNS. Ensure firewall ports between UCF client and ACS server are open.
DFC_ACS_LOG_OBJECT_INFO	INFO	Information about network location id, format and page number for document being transferred,	
DFC_ACS_LOG_OBJECT_ACS	INFO	Information includes acs and proximity used. The proximity number 9001 represent that no proximity was set.	

DFC_ACS_LOG_UNAVAILABLE		The ACS server normally preferred for the current user session has been marked unavailable during a previously failed attempt.	Use dmqdocbroker to query the connection broker ACS map. Check ACS server is available. Check that client can reach URL identified in UCF server logs. Ensure ACS URL hostname is fully qualified or resolvable by DNS. Ensure firewall ports between UCF client and ACS server are open.
DFC_ACS_LOG_URL	INFO	The URL used for import/export of a document.	
DFC_ACS_LOG_CACHE_LOAD_GR	INFO	The network location information loaded from Global Registry repository.	
DFC_ACS_LOG_CACHE_LOAD_NO_GR		Global registry is not defined and cache objects of are not loaded	The global registry is must for Distributed Content feature. Define Global Registry for a docbase
DFC_ACS_LOG_CACHE_LOAD_DOCBASE_CONFIG	INFO	The docbase from which ACS config is loaded	
DFC_ACS_LOG_GR_VSTAMP		Failed to check global registry config vstamp for docbase	
DFC_ACS_NO_TX	ERROR	Update of network locations or ACS/BOCS/DMS/CONT_TRANSFER configurations must be performed in a transaction.	To create/change/update ACS/BOCS config object open transaction, perform action and close the transaction.
DFC_ACS_BOCS_CONFIG_IN_ACS	INFO	BOCS configuration found in ACS config object	If using D6 client then BOCS will not be used if declared as ACS Config object in repository. For D6 BOCS configuration needs to be done in global registry to use BOCS.
DFC_ACS_WRITE_LOG_INFO	INFO	List information for content being imported. It includes network location, repository id and document id.	
DFC_ACS_WRITE_LOG_STORE_ACS	INFO	The information for ACS used for transferring content file.	
DFC_ACS_PARKING_NO_BOCS		No Bocs to park the content on.	Check BOCS server is available.

DFC_ACS_ASYNCH_WRITE_NOT_ENABLED	INFO	Asynchronous write is not enabled in a repository. Parking is not executed.	From DA ➔ Distributed Content Configuration ➔ Distributed transfer ➔ set ACS Write option as "Synchronous and Asynchronous Write."
DFC_ACS_CONFIG_OBJECT_NOT_FOUND		ACS Config object not found	
DFC_ACS_CONFIG_OBJECT_MULT_FOUND		Multi ACS Config object found	
DFC_ACS_CONTENT_IS_PARKED	INFO	Information about BOCS where the content file is parked.	
DFC_ACS_CONTENT_NOT_PARKED	INFO	Unable to park content file.	
DFC_ACS_CONTENT_NOT_TRANSFERRED	INFO	Unable to store content in a repository or to bring content locally	
DFC_ACS_CONTENT_MADE_LOCAL	INFO	Content is brought locally. ACS is not used.	
DFC_ACS_CONTENT_IS_STORED	INFO	Client file is stored in repository	
DFC_ACS_DMS_MESSAGE_SEND_SUCCESS	INFO	Message was sent successfully to DMS	
DFC_ACS_DMS_MESSAGE_SEND_ERROR	ERROR	Error sending DMS message	Check DMS server is available. You do not need to resend the message again. Run AsynchronousWrite job from DA on after starting DMS.
DFC_ACS_DMS_MESSAGE_TRANSFER_ERROR		Error transferring message to DMS	
DFC_ACS_DMS_MESSAGE_SENT	INFO	Message id for the message sent to the DMS.	
DFC_ACS_DMS_MESSAGE_INFO	INFO	Full information on the message being sent to DMS.	
DFC_ACS_PRECACHING_BAD_NL_ID		Incorrect Network Location Id	Make sure that network location id specified in pre-caching job is valid BOCS network location id.
DFC_ACS_PRECACHING_NO_URLS		Predictive Caching Message for the object is not generated as there is no ACS URLs found	
DFC_ACS_PRECACHING_NO_BOCS		Predictive Caching Message for object is not generated as there is no BOCS to precache on	Check BOCS server is available. Check that client can reach URL identified in UCF server logs. Ensure ACS URL hostname is fully qualified or resolvable by DNS. Ensure firewall ports between UCF client and ACS server are open.

DFC_ACS_EMPTY_CERTIFICATE_NAME		When importing certificate from DA or through DFC program, the public key certificate name is empty. The error usually happens when certificate file is not correct.	Check that right certificate file is used. Get certificate from BOCS host. Generate certificate again on BOCS host.
DMS_LOG_MSG_PROCESSED	INFO	Indicates message was successfully received and processed by message destination (BOCS).	
DMS_LOG_WS_PULL_MSG_INFO	DEBUG	Information regarding a pull request from the specified destination (BOCS).	