

Oracle® DIVArchive
Local Delete User's Guide
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Preface

This guide describes the installation, configuration, and use of the Oracle DIVArchive Local Delete functionality for the Oracle DIVArchive 7.6 system.

Audience

This document guides System Administrators through Local Delete configuration, and users through Local Delete operational processes and functionality.

Documentation Accessibility

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Related Documents

For more information, see the Oracle DIVArchive documentation set for this release located at <https://docs.oracle.com/en/storage/#csm>.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Emphasizes critical meaning.
<i>italic</i>	Emphasizes a term or variable.
monospace	Used for system screen output and system commands.
%DIVA_HOME%	The convention used for file paths or variables. The example shows the root path on the file system where DIVArchive is installed.

System Overview

The DIVA Local Delete application monitors Oracle DIVAnet archived objects and deletes them only when various criteria have been met. Local Delete must be used with Oracle DIVAnet for proper operation.

See [Appendix B Oracle DIVArchive options and licensing information](#).

You can run Local Delete on demand using a batch file (see [Running Local Delete on Demand](#)), or automatically as a Windows Service (see [Installing Local Delete as a Service](#)).

DIVA Local Delete is supported on 64-bit Microsoft Windows platforms and Oracle Linux 7 (x86_64, 64-bit) environments. Refer to the Linux installation instructions in the *Oracle DIVArchive Installation and Configuration Guide* in the *Oracle DIVArchive Core Documentation* library for Linux-specific directions concerning running DIVArchive components as services under Linux.

Local Delete enables two different types of delete operations:

- Watermarked Disk Purge
- Site Purge

Site Verification Criteria

Before objects can be deleted by Local Delete, they must meet the site verification criteria defined in the Local Delete configuration file. Each verification criteria is a constraint that must be met before objects are eligible for deletion. For example, you can create site verification criteria stating that an object must have one tape instance on a remote site before it can be deleted on the local site.

Watermarked Disk Purge

Watermarked Disk Purge deletes content from an DIVA-managed disk array when the disk reaches the high watermark. It only deletes content that fulfills the site verification criteria. Matching objects are deleted in the order they were archived on the site being purged, unless the `purgeMostRecent` flag is set. When deletes occur from the array, some matching objects may not be purged if the low watermark is reached before they can be processed.

Watermarked Disk Purge mode uses the configuration file `lynxLocalDelete.conf.watermarked.ini` (see [Appendix A for a sample configuration file](#)).

Setting the Watermark

You must set the high and low watermarks to specify how full the disk must become before Local Delete deletes from a watermarked disk array. When the DIVArchive array becomes x% full (x being the high watermark), object instances are deleted from the array until the disk reaches y% full (y being the low watermark).

Site Purge

A Site Purge will delete all instances of a qualifying object on a particular site. It will begin to schedule deletes as soon as the site verification criteria has been fulfilled. Objects are deleted (by default) in the order they were archived on the site being purged.

Sample Local Delete Workflow

As the user of Local Delete, suppose that you have a DIVAnet system with two sites, a local site and a remote site. You want to delete objects from the local site when they become archived to the remote site. To achieve this you can configure Local Delete in Site Purge mode and add site verification criteria for the remote site. The criteria is satisfied when the number of tape instances on the remote site becomes one or greater. The Local Delete configuration file for this would have the following parameters:

```
SiteToVerify.numSites=1
SiteToVerify.1.sitename=remote
SiteToVerify.1.numTapeInstances=1
```

```
SiteToPurge.1.sitename=local
SiteToPurge.1.purgeType=site
```

Installation

- [Prerequisites for Installation](#)
- [Installing Local Delete as a Service](#)
- [Running Local Delete on Demand](#)

Prerequisites for Installation

To install Local Delete, upgrade all components of the DIVArchive System to the proper release. See [Appendix B Oracle DIVArchive options and licensing information](#).

- At least two (one local and one remote) DIVArchive Managers (release 7.3.1 or later) must be installed and properly configured.
- DIVAnet 2.1 or later is required. Queries on the number of instances (tape or total instances) require DIVAnet 2.2 or later.

Installing Local Delete as a Service

Oracle recommends installing Local Delete as a service. `lynxLocalDelete.bat` supports the installation and uninstallation of the Local Delete service using the `-i` and `-u` options, respectively.

Refer to the Linux installation instructions in the *Oracle DIVArchive Installation and Configuration Guide* in the *Oracle DIVArchive Core Documentation* library for Linux-specific directions concerning running DIVArchive components as services under Linux.

Note: The Local Delete service will be installed using the configuration file found in the `%DIVA_HOME%\conf\lynxlocaldelete\` folder in Windows, or in the `/home/diva/DIVA/conf/lynxlocaldelete/` directory in Linux.

If you use a configuration file other than the default, specify the file with the `-conf` or `-f` options.

Windows Service Installation

Use the following procedure to install Local Delete as a service in Windows:

1. Open a Windows command prompt.
2. Change to the following folder:

```
cd %DIVA_HOME%\Program\Utilities\bin
```

3. Execute the following batch file with the **-i** option (to install) or **-u** option (to uninstall):

```
lynxLocalDelete.bat -i
```

Linux Service Installation

Use the following procedure to install Local Delete as a service in Linux:

1. Open a Linux terminal.
2. Change to the following folder:

```
cd /home/diva/DIVA/Program/Utilities/bin
```

3. Execute the following script file with the **-i** option (to install) or **-u** option (to uninstall).

```
lynxLocalDelete.sh -i
```

Running Local Delete on Demand

Local Delete can be run on-demand by executing a script. You must substitute Windows paths with Linux paths when operating on Linux. For example, the Windows path `C:\DIVA\Program` will be `/home/diva/DIVA/Program` when running under Linux.

Note: Linux commands, paths and file names are case-sensitive.

The command line console must remain open while Local Delete is running. Closing the window will stop Local Delete.

1. Open a Windows command prompt or Linux terminal.
2. Change to the following folder:

```
cd %DIVA_HOME%\Program\Utilities\bin (in Windows)
```

```
cd /home/diva/DIVA/Program/Utilities/bin (in Linux)
```

3. Execute the following script without any command line parameters to start Local Delete.

```
lynxLocalDelete.bat (Windows)
```

```
lynxLocalDelete.sh (Linux)
```

Configuration

This chapter describes Local Delete configuration parameters.

Configuring Local Delete

Use the following procedure to configure Local Delete:

1. Rename `lynxLocalDelete.conf.watermarked.ini` or the `lynxLocalDelete.conf.sitePurge.ini` (use the watermarked version if you plan to use watermarking) to `lynxLocalDelete.conf`.
2. Open the `lynxLocalDelete.conf` file and enter the correct values for each of the configuration parameters.

Note: The parameter names for this mode are not case-sensitive, but the values are case-sensitive.

3. Restart the Local Delete service.

Local Delete Configuration Parameters

The following tables describe the Local Delete configuration parameters. See [Appendix A](#) for a sample configuration file.

Top Level Configuration Parameters

Top Level Parameter	Description	Default Value	Required
<code>DeleteRequestPriority=Num</code>	<i>Num</i> is an integer (1 to 100), which indicates the DIVArchive delete request priority.	50	No
<code>SimultaneousDeleteOperations=Num</code>	<i>Num</i> is an integer, which indicates the number of simultaneous deletes that can be processed by the application.	none	Yes
<code>allowDeleteLastInstance=true/false</code>	Set this to <code>true</code> for Local Delete to remove the last remaining instance of an object on any site in the DIVAnet network.	false	No
<code>purgeMostRecentFirst=true/false</code>	Set this to <code>true</code> for Local Delete to remove the most recently archived matching objects first. By default, the utility purges the oldest matching objects.	false	No

Site Verification Criteria Configuration Parameters

Site verification is optional. The parameters specify what to verify before purging. You can provide multiple criteria by creating criteria groups.

Note: You can only specify one of the following per criteria group: *media*, *numTapeInstance*, *numInstances*, or *olderThanOnSiteHours*.

Creating a Criteria Group:

The criteria group number distinguishes one group of related parameters from another. For instance:

```
SiteToVerify.1.sitename=lynxDR
SiteToVerify.1.numTapeInstances=1
```

```
SiteToVerify.2.sitename=local
SiteToVerify.2.media=remoteArray
```

In the previous example, the *SiteToVerify.1* parameters are in a criteria group, while the *SiteToVerify.2* parameters are in another group. Local Delete will verify there is one tape instance on the disaster recovery site and one instance on a local array called *remoteArray*.

Site Verification Parameter	Description	Default Value	Required
SiteToVerify.#.sitename= <i>Site</i>	# is the criteria group number <i>Site</i> is a string, which indicates the DIVArchive sitename. This is DIVAnet sitename of a remote DIVA site or local to indicate the local site.	None	No
SiteToVerify.#.media= <i>MediaType</i>	# is the criteria group number <i>MediaType</i> is a string. If specified, an instance with this media must be present on the site.	None	No
SiteToVerify.#.numTapeInstances= <i>Num</i>	# is the criteria group number <i>Num</i> is an integer (1 to 100). If specified, the site must contain at least this many tape instances of the object.	None	No
SiteToVerify.#.numInstances= <i>Num</i>	# is the criteria group number <i>Num</i> is an integer (1 to 100). If specified, the site must contain at least this many total instances of the object.	None	No
SiteToVerify.#.olderThanOnSiteHours= <i>Num</i>	# is the criteria group number. <i>Num</i> is a positive floating point number. If specified, objects at this site must be older than the value provided here (in fractional hours).	none	No

Site to Purge Configuration Parameters

You must specify the site name and indicate whether watermarked deletes must be performed. The purge group number distinguishes one group of related parameters from another. In DIVArchive 7.6, multiple purge groups may appear. Each purge group number identifies a site to delete from. The purge group number can also identify the array to delete from if watermarking is selected for the purge group.

Caution: Each purge group uses the same verification criteria (aside from the watermark) to determine if deletes should be performed. This can cause unforeseen issues (especially) when watermarked deletes are combined with site deletes.

Site to Purge Parameter	Description	Default Value	Required
SiteToPurge.#.sitename= <i>Site</i>	# is the purge group number <i>Site</i> is a string, which indicates the DIVAnet sitename of the local DIVArchive system.	none	Yes
SiteToPurge.#.purgeType= <i>purgeType</i>	# is the site number The type of purge chosen (<i>watermark</i> for watermarked disk array deletes, or <i>site</i> for deleting all object instances on a site).	watermark	No
SiteToPurge.#.watermarkedArrayName= <i>ArrayName</i>	# is the site number <i>ArrayName</i> is a string, which indicates the name of the array to monitor and purge from.	none	Yes
SiteToPurge.#.highWatermark= <i>Num</i>	# is the site number <i>Num</i> is an integer (1 to 100), which indicates the percentage an array must be full to start the purge process.	none	Yes
SiteToPurge.#.lowWatermark= <i>Num</i>	# is the site number <i>Num</i> is an integer (1 to 100), which indicates the percentage an array must be full to stop a purge process that is already active.	none	Yes
SiteToPurge.#.excludedMedia= <i>MediaList</i>	# is the site number <i>MediaList</i> is a comma-delimited list of media names. If an object to be deleted has an instance on any media listed here, that instance <i>will not</i> be deleted. This parameter has no effect when deleting from a watermarked array.		

Categories Configuration Parameters

Specifying categories is optional. This parameter specifies the categories of objects to consider for deletion. If not specified, the default is all categories.

Categories Parameter	Description	Default Value	Required
CategoryIncludeFilter.#= <i>Category</i>	# is an integer, which starts at 1 and increments by 1 for each additional filter. <i>Category</i> is a string. Any purged object must match one of these categories. Wildcards (asterisks *) are allowed.	All	Yes

DIVAnet Configuration Parameters

This information is required to connect to DIVAnet.

DIVAnet Parameter	Description	Default Value	Required
Divanet.address= <i>Address</i>	<i>Address</i> is the IP address of the DIVAnet server.	none	Yes
Divanet.port= <i>Num</i>	<i>Num</i> is a positive integer, which indicates the port of the DIVAnet server.	none	Yes
Divanet.user= <i>UserName</i>	<i>UserName</i> is the user name for the DIVAnet API connection.,	none	Yes
Divanet.password= <i>Password</i>	<i>Password</i> is the password for the DIVAnet API connection.	none	Yes

DIVAnet Database Configuration Parameters

This information is required to connect to the DIVAnet database.

DIVAnet Database Parameter	Description	Default Value	Required
DivanetDb.address= <i>Address</i>	<i>Address</i> is the IP address of the DIVAnet database.	none	Yes

DIVAnet Database Parameter	Description	Default Value	Required
<i>DivanetDb.port=Num</i>	<i>Num</i> is a positive integer, which indicates the port of the DIVAnet database.	1521	No
<i>DivanetDb.user=UserName</i>	<i>UserName</i> is the user name for the DIVAnet database.	none	Yes
<i>DivanetDb.password=Password</i>	<i>Password</i> is the password for the DIVAnet database.	none	Yes
<i>DivanetDb.sid=Database_sid</i>	<i>Database_sid</i> is the SID of the DIVAnet database.	lib5	No

Troubleshooting

Scenario	Description
Local Delete cannot connect to DIVAnet on start.	An error message will be written to the log file and a reconnection attempt will be made after the period specified in the <code>Check_Interval</code> parameter in configuration file.
Connection to DIVAnet is lost.	An error message will be written to the log file and a reconnection attempt will be made after the period specified in the <code>Check_Interval</code> parameter in configuration file.
DIVAnet returns a <code>DIVA_ERROR</code> as a response to a <code>getObjectDetailsList</code> request.	The error is logged and the current processing cycle is interrupted by Local Delete. After the configured amount of time specified in the <code>Check_Interval</code> parameter in configuration file has passed, a new processing cycle is started using the <code>initialTime</code> parameter value for the last cleaned object (this time is stored in a separate file each time when an object is cleaned).
Delete request failed.	Local Delete will wait for the delete operation to finish. In case the delete request fails, the error will be logged and Local Delete will not attempt to retry the failed delete request.
Power Failure, Operational System Crash, and so on.	The customer is responsible for configuring the Windows Scheduled Task for Local Delete that will restart the application.
Local Delete cannot read from, or write to, the file that stores the creation date of last cleaned object.	The error is logged and Local Delete will periodically try to repeat the I/O operation.
The configuration file is not accessible.	The error is logged and Local Delete is stopped.
The configuration file is not valid.	The error is logged and Local Delete is stopped.

Sample Configuration File

The following sample configuration file demonstrates a watermark delete. The deletion criteria is defined for when the DR site has a tape instance, and the local site has the object stored on a media named `tapeGroup3`. The utility will only consider deleting objects having categories of either **AVID** or **MOVIE***. If all are true, and the used capacity on `localArray1` array reaches seventy percent, the instance on that array is deleted.

```
# The parameters at the very bottom of the file are to control the
# service and logging. The parameters are set to their recommended
# values, and should not be changed without consulting an Oracle
# representative.
```

```
#
DeleteRequestPriority=70
SimultaneousDeleteOperations=25
```

```
# 2. Site Verify Criteria (here, we must have 1 tape instance on
# the DR site, and one instance on a local array called
# "remoteArray".)
```

```
SiteToVerify.1.sitename=lynxDR
SiteToVerify.1.numTapeInstances=1
SiteToVerify.2.sitename=local
SiteToVerify.2.media=tapeGroup3
```

```
# 3. Site to Purge parameters:
```

```
SiteToPurge.1.sitename=local
SiteToPurge.1.purgeType=watermark
SiteToPurge.1.watermarkedArrayName=localArray1
SiteToPurge.1.highWatermark=70
SiteToPurge.1.lowWatermark=50
```

```
# 4. Category Include Filter parameters:
```

```
CategoryIncludeFilter.1= MOVIE*
CategoryIncludeFilter.2= AVID
```

```
# 5. DIVAnet Connection parameters:
```

```
Divanet.address=127.0.0.1
Divanet.port=9500
Divanet.username=diva
Divanet.password=diva
```

```
# 6. DIVAnet Database parameters:
```

```
DivanetDb.address=127.0.0.1
DivanetDb.port=1521
DivanetDb.user=diva
DivanetDb.password=diva
```

DivanetDb.sid=lib5

```
*****
# The rest of the parameters are to control the service and
# logging.
# These parameters are set to the recommended default values and
# should not be changed without consulting with a Front Porch
# Digital representative.
#
*****

# Java Application
wrapper.java.command=$JAVA_HOME/bin/java

# Java Main class. This class must implement the WrapperListener
# interface or guarantee that the WrapperManager class is
# initialized. Helper classes are provided to do this for you. See
# the Integration section of the documentation for details.
wrapper.java.mainclass=com.storagetek.diva lynxLocalDelete.control.TanukiLauncher

# Java Classpath (include wrapper.jar) Add class path elements as
# needed starting from 1
wrapper.java.classpath.1=../../Program/Utilities/lib/*.jar

#Wrapper application parameters
wrapper.java.app.parameter.1=
wrapper.java.app.parameter.2=
wrapper.java.app.parameter.3=
wrapper.java.app.parameter.4=

# Java Library Path (location of Wrapper.DLL or libwrapper.so)
wrapper.java.library.path.1=

# Java Additional Parameters

# Initial Java Heap Size (in MB)
wrapper.java.initmemory=256

# Maximum Java Heap Size (in MB)
wrapper.java.maxmemory=256
*****
# Wrapper Logging Properties
*****

# Format of output for the console. (See docs for formats)
wrapper.console.format=PM

# Log Level for console output. (See docs for log levels)
wrapper.console.loglevel=INFO

# Log file to use for wrapper output logging.
wrapper.logfile=

# Format of output for the log file. (See docs for formats)
wrapper.logfile.format=LPTM

# Log Level for log file output. (See docs for log levels)
wrapper.logfile.loglevel=INFO
```

```
# Maximum size that the log file will be allowed to grow to before
# the log is rolled. Size is specified in bytes. The default value
# of 0, disables log rolling. May abbreviate with the 'k' (kb) or
# 'm' (mb) suffix. For example: 10m = 10 megabytes.
wrapper.logfile.maxsize=10m

# Maximum number of rolled log files which will be allowed before
# old files are deleted. The default value of 0 implies no limit.
wrapper.logfile.maxfiles=4

# Log Level for sys/event log output. (See docs for log levels)
wrapper.syslog.loglevel=NONE

*****
# Wrapper Windows Properties
*****
# Title to use when running as a console
wrapper.console.title=DIVArchive LocalDelete

*****
# Wrapper Windows NT/2000/XP Service Properties
*****

# WARNING - Do not modify any of these properties when an
# application using this configuration file has been installed as a
# service.
# Please uninstall the service before modifying this section. The
# service can then be reinstalled.

# Name of the service
wrapper.ntservice.name=DivaLld

# Display name of the service
wrapper.ntservice.displayname=DIVArchive LocalDelete Service

# Description of the service
wrapper.ntservice.description=DIVArchive Local Delete provides cleaning service
for local environment from objects which are stored on remote environments

# Service dependencies. Add dependencies as needed starting from 1
wrapper.ntservice.dependency.1=

# Mode in which the service is installed. AUTO_START or
# DEMAND_START
wrapper.ntservice.starttype=AUTO_START

# Allow the service to interact with the desktop.
wrapper.ntservice.interactive=false
```

DIVArchive Options and Licensing

The following table identifies DIVArchive options and licensing metrics.

Part Number	Description	Licensing Metric
L101163	Oracle DIVArchive Nearline Capacity	Per TB
L101164	Oracle DIVArchive Archive Capacity	Per Slot
L101165	Oracle DIVArchive Actor	Per Server
L101166	Oracle DIVArchive Manager	Per Server
L101167	Oracle DIVArchive Partial File Restore	Per Wrapper
L101168	Oracle DIVArchive Avid Connectivity	Per Server
L101169	Oracle DIVArchive Application Filtering	Per Server
L101170	Oracle DIVArchive Storage Plan Manager (2 storage plans are included with a DIVArchive Manager License)	Per Server
L101171	Oracle DIVAnet	Per Server
L101172	Oracle DIVAdirector	Per User
L101918	Oracle DIVArchive Export / Import	Per Server
L101919	Oracle DIVArchive Additional Archive Robotic System	Per Tape Library
L101920	Oracle DIVArchive Automatic Data Migration	Per Server

