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1 Introduction

DIVAprotect is an Oracle DIVArchive option that constantly monitors the digital storage infrastructure and warns about media or tape drive degradation before it results in reduced performance or even data loss.

DIVAprotect provides long-term content protection, management and security to DIVArchive.

If using DIVAprotectWS, refer to the *Oracle DIVArchive DIVAprotect WS API User Guide* in the DIVArchive API Documentation library.

DIVAprotect Features

- Continuous monitoring of tape drives and media to preempt equipment failure and performance degradation.
- Complete history of drive and media performance.
- Full integration with DIVArchive Content Storage Management System.

Performance Analysis

DIVAprotect presents the System Administrator with information regarding current and past performance numbers of various system components. Armed with this information, System Administrators can draw projections based on various premises and plan for appropriate system evolutions.

Identify Potential Issues Ahead Of Time

DIVAprotect collects quality and performance data in real-time within the archive environment. This information can be used as an aid to perform selective migration of content, recycling of defective media, and preventative maintenance of hardware devices. With DIVAprotect, System Administrators can better deal with integrity issues in their network and storage systems, and have increased confidence that their digital assets are available and safe.

1.1 Document Conventions

The following conventions are used with respect to text:

Normal	Standard Text.
Italic	Used to emphasize a term or variable.
Bold	Used to emphasize critical information.
6.1	Refers to a section or sub-section in the document.
`Courier New`	Used for system screen output and system commands.

The following conventions are used with respect to figures and drawings:

Red outlined boxes pointing to specific areas in a figure indicate procedural steps, or point out specific parameters being discussed in the section text.

Red outlined boxes that surround specific areas in a figure indicate specific areas of the figure being discussed in the section text.

1.2 Definitions, Acronyms, and Special Terms

Table 1: Definitions, Acronyms, and Special Terms

Term	Definition
Action	A pre-determined reaction of a *Metric* surpassing a *Threshold* value by one of the variables from its *internal state*.
Event	A data element containing all facts (*names, IDs, parameters, numbers, etc.*) related to one occurrence of an operation inside the DIVArchive system. **Examples:** • Tape Read Completed • Tape Eject Completed
Journal	A self-maintained, automated, and configurable storage for *Events*.
Measurement	A reading of specific information from an *Event* or a *Resource*. **Examples:** • Duration of a Disk Write. • Occurrence of a read error on a tape drive.
Metric	An instance of one *Metric Definition* for a specific *Resource*. Each *Metric* is associated with a specific *Resource* and can receive a flow of *Measurements* from that attached *Resource*. A metric has an *internal state* that consists of a number of numeric values that it updates on its own when given new *Measurements* while providing read access to this logically consistent *state*. Each *Metric* can be used as a *Measurement* value for the *state* of another *Metric*. The *internal state* can be reset at any time. A metric may be *enabled* or *disabled*.
Metric Definition	Defines how a *Metric* is calculated by specifying which *Events* are examined, which *Measurements* are extracted, how they are aggregated (*Collection Type*), and which *Resource* the aggregation is based on. See the Metrics Definition Table in the Appendix for predefined Metrics in the system.

Term	Definition
Metric Type	The Metric Types are: • Hourly: Calculated every hour for the associated Resource. • Daily: Calculated every day for the associated Resource. • Monthly: Calculated every month for the associated Resource. • Yearly: Calculated every year for the associated Resource. • Lifetime: Calculated throughout the lifetime of the associated Resource.
Notification	A method for notifying users about important DIVAprotect Events.
Resource	A uniquely identified element of the DIVArchive system made available to DIVAprotect that can be referenced by *Events* and *Metrics*. **Examples:** • Tape with Barcode ABE6785 • Oracle DIVArchive Actor Actor01 • Tape Drive Serial Number 134001021
Resource Type	A generic type of resource. **Examples:** • Tape • Tape Drive • Oracle DIVArchive Manager Request • DIVArchive Object

1.3 Checksum Retry after Failure (New)

New features (*and metrics*) have been introduced into the Checksum verification process. The checksum failure date is now recorded in the DIVArchive Database; however it is not currently displayed on the GUI.

Whenever there is a checksum failure for particular instance, the timestamp is stored against the instance in the Database Instance Table. If a checksum failure occurs for an instance, the corresponding object's checksum status will be updated.

Example:

An object has 2 instances and the current object checksum status is Fully Verified. If a checksum failure occurs for one of the instances, the timestamp is recorded and the object status will be updated to Partially Verified.

- Instance A is on Tape 1 and verified.
- A restore of Instance A is made; however the checksum verification fails.
- The time of the failure is recorded in the DIVArchive Database and the Checksum Status in the Control GUI is updated to Partially Verified.
    - This is because there is one fully verified instance, and one instance that failed verification.
    - The first instance of the object is still verified.

The following new DIVAprotect Daily Metrics for checksum failure have been added:

- **`TAPE_CHECKSUM_FAILURE_COUNT_DAY`**
    - Checksum Failure Operations Count
- **`DISK_CHECKSUM_FAILURE_COUNT_DAY`**
    - Checksum Failure Operations Count
- **`SD_CHECKSUM_FAILURE_COUNT_DAY`**
    - Checksum Failure Operations Count

2 DIVAprotect Operations

The DIVAprotect System is an analytical and monitoring option integrated into the DIVArchive Solution bringing long-term content protection, management, and security to DIVArchive Systems. DIVAprotect includes reporting through the Journal using various metrics as described in the following sections.

DIVAprotect Features and Components

- Performance Analysis
- Preventative and corrective maintenance aid
- Journal
- Metrics

DIVAprotect Tasks

- Gather operational facts from the following sources:
  - DIVArchive System (*software components and equipment*)
  - Platforms (*Servers and OS*)
  - Exchanged Data
- Process operational facts into metrics by sampling, filtering, normalizing, counting, and aggregating data.
- Maintain a view of the system's current and past performance.
- Collect and verify Checksum Data in order to expose disk and tape errors and report Disk/Tape and Source/Destination failures.
- Assist in managing large volumes of data.
- Provide billing data for customers offering DIVArchive as a service to other customers.
- Predict operational conditions of interest (*e.g. end of life of a tape, a drive*).
- Provide low-level diagnostic information to assist Support Staff investigations.
- Answer a broad range of questions about:
  - Optimal performance (*what can the system deliver in an optimal context?*).
  - Current performance (*is the system performing at its best?*).
  - Causes of the current state (*what led to the current state, e.g. how did we consume that many tapes in the last month*).
  - History (*e.g. evolution of the capacity, throughput, activity, etc.*).
  - Possible solutions/adjustments (*what needs fixing/relocation, what should be replaced, what should be reconfigured, etc.*).

- "What If" scenarios (*what will be the impact of a proposed change in the system, capacity planning, etc.*).
- Usage of the system at various levels (*DIVArchive System, DIVArchive Component, Request Type, Tape, Library, Tape Drive, Disk, Category, etc.*) as a basis for billing (*who, what, when, how much, how many, how long*).

Principles of Operation

The primary purpose of DIVAprotect is to collect operational data generated by activity in the archive system (*Archive, Restore, Copy, Insert Tapes, etc.*). Each activity generates **Events** like a **`TAPE READ`** or a **`DELETE INSTANCE`**. Events are collected in real-time and stored in the database.

Each event has various information attached to it (*e.g. the size of a transfer, its duration, the Oracle DIVArchive Actor used, etc.*) referred to as **Event Parameters**.

Metrics are generated and updated by processing event parameters using background jobs scheduled every hour. Event data can be broken down (*aggregated*) by various resources or attributes (*e.g. Object Name, Tape Barcode, storage device*), and per hour, day, week, month, or year interval (*or no interval for a lifetime metric*). Various aggregation functions are provided; e.g. count, sum, average.

For example the **`TAPE_DRIVE_READ_WRITE_DAY`** built-in metric sums the transfer sizes of **`TAPE READ`** and **`TAPE WRITE`** events and breaks down the values per device and day.

DIVAprotect supports additional data retrieval like the *DIVArchive Resource Statistics* and *Quick Response Data (QRD)*, detailed in the next sections. This data is processed separately and isn't available in *Metric Definitions*.

2.1 Collecting Operations Events

Operations events are the primary events collected by DIVAprotect. The table below shows which data is attached to the various event types. Event Types are listed at the top of the table, and Event Parameters on the left.

Table 2: System Operations Events and Associated Data

	TAPE INSERT	TAPE INSERT ERR	TAPE MOUNT	TAPE MOUNT ERR	TAPE POSITION	TAPE POSITION ERR	TAPE READ	TAPE READ ERR	TAPE WRITE	TAPE WRITE ERR	DISK READ (2)	DISK READ ERROR (2)	DISK WRITE (2)	DISK WRITE ERROR (2)	SD READ	SD READ ERROR	SD WRITE	SD WRITE ERROR	TAPE UNLOAD	TAPE UNLOAD ERR	TAPE DISMOUNT	TAPE DISMOUNT ERR	TAPE EJECT	TAPE EJECT ERR	END OF TAPE	TAPE REPACK	ARCHIVE REQUEST	COPY REQUEST	COPY A S (to new) REQUEST	CREATE INSTANCE	RESTORE	DELETE OBJECT	DELETE INSTANCE	TRANSCODE END	TRANSCODE ERR	ANALYZE END	ANALYZE ERR	STOPPED ON CANCEL	CHECKSUM_ERROR_TAPE	CHECKSUM_ERROR_DISK	CHECKSUM_ERROR_SD	TAPE IMPORT	TAPE EXPORT
Event Type	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tape Type	X		X	X	X	X	X	X	X	X									X	X	X	X	X	X	X														X				
Tape Barcode	X		X	X	X	X	X	X	X	X									X	X	X	X	X	X	X														X			X	X
Drive Type			X	X	X	X	X	X	X	X									X	X	X	X			X														X				
Drive Name			X	X	X	X	X	X	X	X									X	X	X	X			X														X				
Disk Name											X	X	X	X																										X			
Drive Serial Number			X	X	X	X	X	X	X	X									X	X	X	X			X														X				
Library Serial Number	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X	X	X	X													X				
SD Name															X	X	X	X									X				X										X		
Actor Name			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X									X	X	X	X		X	X	X		
Object Name (1)					X	X	X	X	X	X	X	X	X	X	X	X	X	X							X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Object Category (1)					X	X	X	X	X	X	X	X	X	X	X	X	X	X							X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Object Instance (1)					Y	Y	X	X	X		Y	Y	Y		Y	Y	Y								Y					X	X		X	X	X	X	X		Y	Y	Y		
Media (group/array name)			X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X			X		X	X	X	X	X		X						X	X		X	X
Request Id					X	X	X	X	X	X	X	X	X	X	X	X	X	X							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Event End Time	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Event Duration	X		X		X		X		X		X		X		X		X		X		X		X											X		X							
Transfer Size							X	X	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X		X	X		X							
Transfer Rate							X		X		X		X		X		X																	X		X							
Transfer Error Rate							X		X																																		
Error Code		X		X		X		X		X		X		X		X		X		X		X		X											X		X						
Error Message		X		X		X		X		X		X		X		X		X		X		X		X											X		X						
Transcoder/Analyzer Name																																		X	X	X	X						
No of Active Operations																											X	X	X		X												
Data Size																																										X	X

Notes:

X – Available

Y – Optional: New Instance IDs only get generated after the final write to the destination media. Instance ID is not available in the following cases:

- Temporary instances created in cache disk by an Archive Request.
- **`SD READ`** or **`SD WRITE`** during the transcode phase of an archive when transferring to or from the transcoder work directory.
- Cache **`DISK READ`** or **`DISK WRITE`** when performing a tape to tape Copy Request.
- Tape positioning before a tape write (*Archive Request*)
- End Of Tape (*EOT exception*) encountered during an Archive Request.

1. Object information isn't provided for Repack Requests.

2. The transcoder work directory is not a DIVArchive *Disk*. No **`DISK READ`** or **`DISK WRITE`** events are created when accessing this directory.

2.2 Collecting System Hardware Information (DIVArchive Resource Statistics)

DIVAprotect collects hardware information from the tape drives and direct-attached libraries (*library information is unavailable if a library server is used*) sent by the Actors. This information is referred to as *DIVArchive Resource Statistics* because it is updated in real-time in DIVAprotect. It is used to populate the **Drive Alert** and **Library Alert** logs, and to update the tape drive's firmware information in the DIVArchive Database. These special events are not available for use in Metric Definitions.

The table below lists the data sent by the Actors for each **Quick Response Event Type**.

Table 3: DIVArchive Resource Statistics

	Clean Alert(*3*)	Tension Alert (*4*)	Drive Alert	Drive Firmware	Library Alert
Time-stamp	X	X	X	X	X
Event ID	X	X	X	X	X
Request ID			X		
Drive Serial Num	X	X	X		
Library Serial Num					X
Tape Name (*Barcode*)		X	X		
Tape Type		X			
Alert Log List (*1*)			X		X
Drive List (*2*)				X	

Notes:

1. The Alert log list is a variable length list of tape drive or library alerts. Each alert object contains:
   - A parameter
   - A severity
   - A text message
2. The Drive List is a variable length list of drive information objects. Each information object contains:
   - Serial Number
   - Drive Name
   - Firmware Version
     - The firmware version is saved in the database.

3. Clean Alerts are issued by the Actor when a drive indicates it needs cleaning. These alerts are typically trapped by the Library, or the Library Server, and the cleaning process handled by these components. For this reason, DIVArchive doesn't include a drive cleaning mechanism.
4. Tension Alerts are issued by the Actor when a drive indicates it needs re-tensioning.

2.3 Collecting Quick Response Data (QRD)

DIVAprotect maintains a set of statistics about the archive system's resources called **Quick Response Data** (*QRD*). QRD isn't based on events it is calculated from information available in the DIVArchive Database and updated every hour through an automated database job.

The following table lists the QRD available:

Table 4: Quick Response Data (QRD) Collected

Resource	Collected QRD
Actors, Transcoders, Analyzers	• First Utilization Date
Arrays	• Total used space (*exact sum of used space across all disks in the array – online and offline*) • Total online object used space • Total externalized (*offline*) object used space
Disks	• First Utilization Date (*date of first access*) • Last Access/Read/Write Dates
Groups	• Total used space (*exact sum of used space across all tapes in the group – online and offline*) • Total online object used space • Total externalized (*offline*) object used space

Resource	Collected QRD
Libraries	• First Utilization Date (*date of first mount*) • Total number of tapes • Total number of Nearline (*online*) tapes • Total number of offline tapes • Total number of blank tapes • Total number of non-writable (*write-protected*) tapes • Total data stored in library • Total data stored Nearline (*online*) • Total data stored offline • Total storage capacity (*online and offline total*) • Total Nearline (*online*) capacity • Total offline capacity • Total free space capacity (*online and offline total*) • Total number of objects archived to the tapes in the associated library • Total number of objects Nearline (*online*) • Total number of objects offline **Note: All offline values mentioned here have been added for future versions and are not currently supported. Currently, a tape is considered offline only when it is ejected. Once a tape is ejected it will not be considered part of the Library.**
Media	• First Utilization Date • Last Utilization Date • Used Space (*sum of online and offline instance sizes*)
Objects	• Last Read Date
Object Instances	• Last Verify Date
System	• First Use Date
Source/Destinations	• First Utilization Date

Resource	Collected QRD
Tapes	• First Insertion Date (*date it appeared in the system*) • First Utilization Date (*date of first mount*)

2.4 Collecting Drive and Library Alert Logs Information

Drive and Library Alert Logs hold a history of the codes that have been generated by the hardware. These codes are read by the Actors during normal operation. The information is saved to the database whenever reported by the hardware.

The example below is an extract of the Sony SAIT-1 Tape Drive Specification. For your particular hardware refer to your manufacturer's manual.

Table 5: Example Manufacturer Codes

Code	Flag	Type	Client Message
01h	Read Warning	Warning	The drive is having problems reading data. No data has been lost, but there has been a reduction in the performance of the medium.
02h	Write Warning	Warning	The drive is having problems writing data. No data has been lost, but there has been a reduction in the capacity of the volume.
03h	Hard Error	Warning	The operation has stopped because an error has occurred while reading or writing data, which the drive cannot correct.
04h	Media	Critical	Your data is at risk: 1. Copy any data you required from this cartridge. 2. Do not use this tape again. 3. Restart the operation with a different cartridge.

2.5 Collecting Metrics

2.5.1 Calculating Metrics Based on Operations Events

Metrics are calculated and updated every hour by an automated database job running in the background. Each metric's calculation is based on a selection of *Event Types* (*e.g.* ***SD READ***, ***SD WRITE***) from which a common *Event Parameter* is extracted (*e.g. Transfer Size*), and processed by a statistical operation (*e.g. Sum*). The metric will take into account events collected over a particular interval that depend on the Metric Type:

- Hourly
- Daily
- Monthly
- Yearly
- Lifetime

A Metric is calculated based on associated events that occurred within the previous hour. If none of the associated events occurred, the metric is not calculated nor updated. If some of the associated events occurred, the metric is calculated or updated. All of the Metric Types are based upon these hourly calculations.

Example:

If an associated event occurs at 10:00 AM on November 1st, 2011 the following Metrics (*if they are defined*) will be calculated or updated:

- 10:00 AM Hourly Metric
- 11/1/2011 Daily Metric
- November 2011 Monthly Metric
- 2011 Yearly Metric
- Lifetime Metric

After the events have been selected for calculation, DIVAprotect extracts the values of the event parameter specified in the Metric Definition (*e.g. Transfer Size*) and operates a statistical operation based on the Collection Type. The different Collection Types are described in this section.

2.5.1.1 Sum Collection Type

This Collection Type calculates a Metric by adding event parameter values.

2.5.1.2 Count Collection Type

This Collection Type calculates a Metric by counting event parameter values.

2.5.1.3 Minimum Collection Type

This Collection Type calculates a Metric by taking the minimum event parameter value.

2.5.1.4 Maximum Collection Type

This Collection Type calculates a Metric by taking the maximum event parameter value.

2.5.1.5 Average Collection Type

This Collection Type calculates a Metric by averaging the event parameter values.

2.5.1.6 Weight-Based Average Collection Type

This Collection Type calculates a Metric by dividing the sum of the event parameter values by a weight factor (*whereas the standard Average calculation will be divided by the count of event parameter values*). Metrics configured with this Collection Type must specify a weight factor otherwise the following error will be generated:

ORA-20200 Weight Factor to calculate Weight based average is not mentioned.

Example of Weight-Based Average calculation:

Metric Name: **`DIVARCHIVE_SYSTEM_AVG_READ_WRITE_DAY`**

Collection Type: Weight Based Average

Collection Field: Transfer Size

Weight Factor: Duration

For Hour Metrics:

SIZE (*SUM of Transfer Size*) / TIME (*SUM of Transfer Duration*) = V (*Velocity*)

For Day, Month, Year and Lifetime Metrics:

SUM (*Velocity* * *Time*) / SUM (*Time*)

2.5.2 Calculating DIVArchive Built-in Metrics

DIVAprotect comes with built-in Metrics that don't appear in the Configuration Utility nor can be edited, but are available in the Control GUI along the standard ones. Built-in Metrics Names all start with **DIVAPROTECT**. Here are a few of them:

- How many times was DIVAprotect executed?

  The Metrics below count how many times DIVAprotect has been executed. They are updated each time DIVAprotect runs the hourly database job.

  DIVAPROTECT_EXECUTION_COUNT_DAY (*daily*)

  DIVAPROTECT_EXECUTION_COUNT (*lifetime*)

- How many events were processed by DIVAprotect?

  The Metrics below count how many events DIVAprotect has processed while calculating metrics. They are updated each time DIVAprotect processes an event.

  DIVAPROTECT_EVENTS_PROCESSED_DAY (*daily*)

  DIVAPROTECT_EVENTS_PROCESSED (*lifetime*)

- How many metrics were processed by DIVAprotect?

  This defines how many metrics DIVAprotect has calculated or updated. These metric values are updated each time a metric is calculated or updated in the DIVAprotect System.

  DIVAPROTECT_METRIC_PROCESSED_DAY (*daily*)

  DIVAPROTECT_METRIC_PROCESSED (*lifetime*)

- Number of DIVAprotect internal errors?

  The Metrics below count the total number of DIVAprotect errors that have occurred while calculating or updating a metric. They are updated each time an error occurs.

  DIVAPROTECT_INTERNAL_ERROR_DAY (*daily*)

  DIVAPROTECT_INTERNAL_ERROR_DAY (*lifetime*)

2.6 Using the DIVArchive GUI to Monitor Usage and Status

DIVAprotect **Journal** and **Metrics** can be examined through the Control GUI. To view the **Journal Panel** or **Metrics Panel**, click on the appropriate icon in the **Analytics Tab** on the Icon Bar as shown in the figures below.

Figure 1: Control GUI Journal Screen

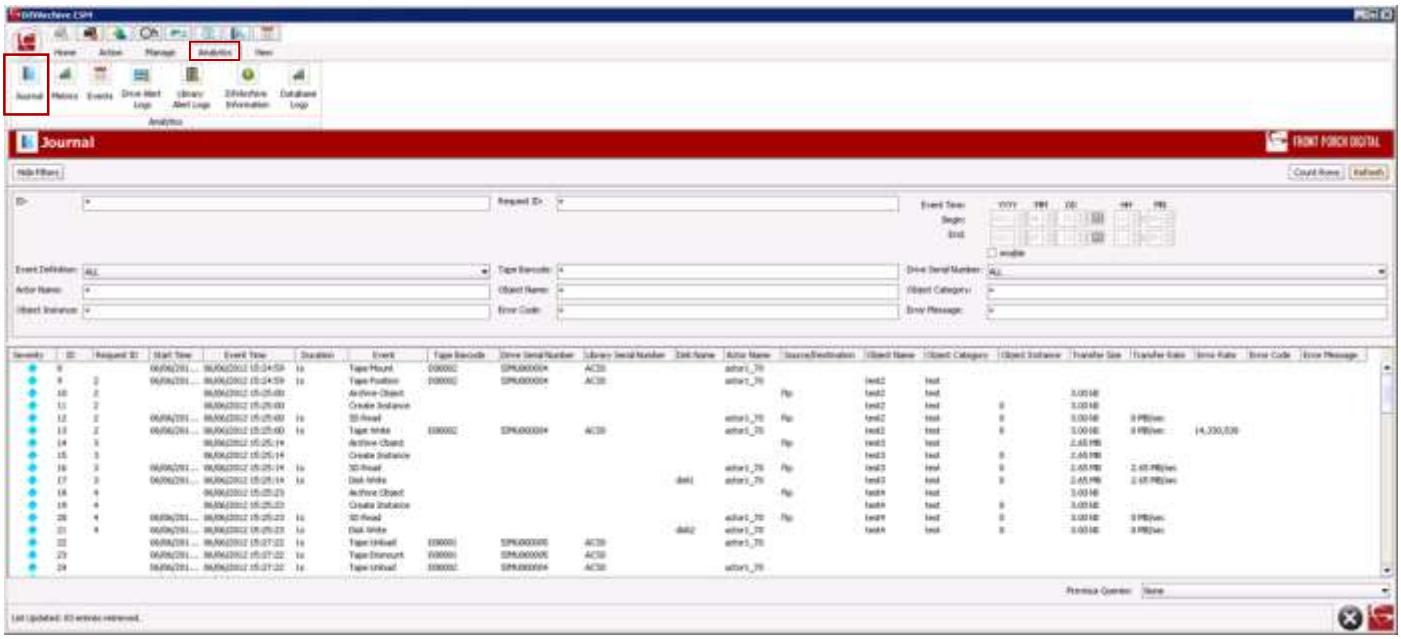
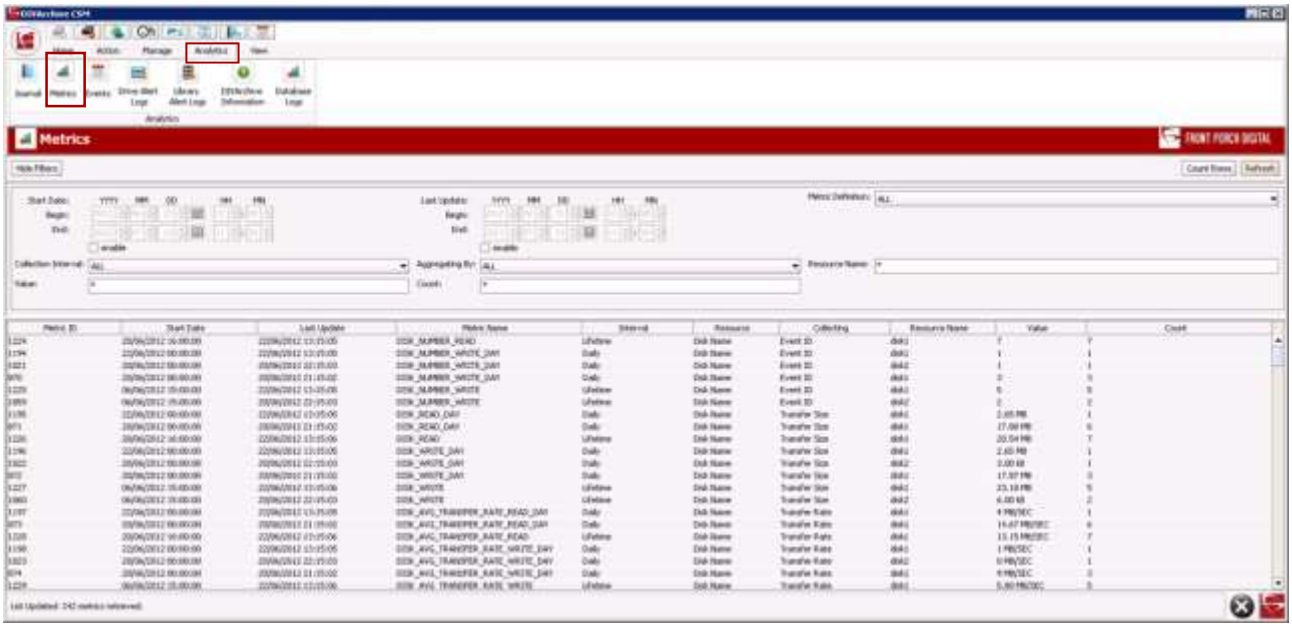


Figure 2: Control GUI Metrics Screen



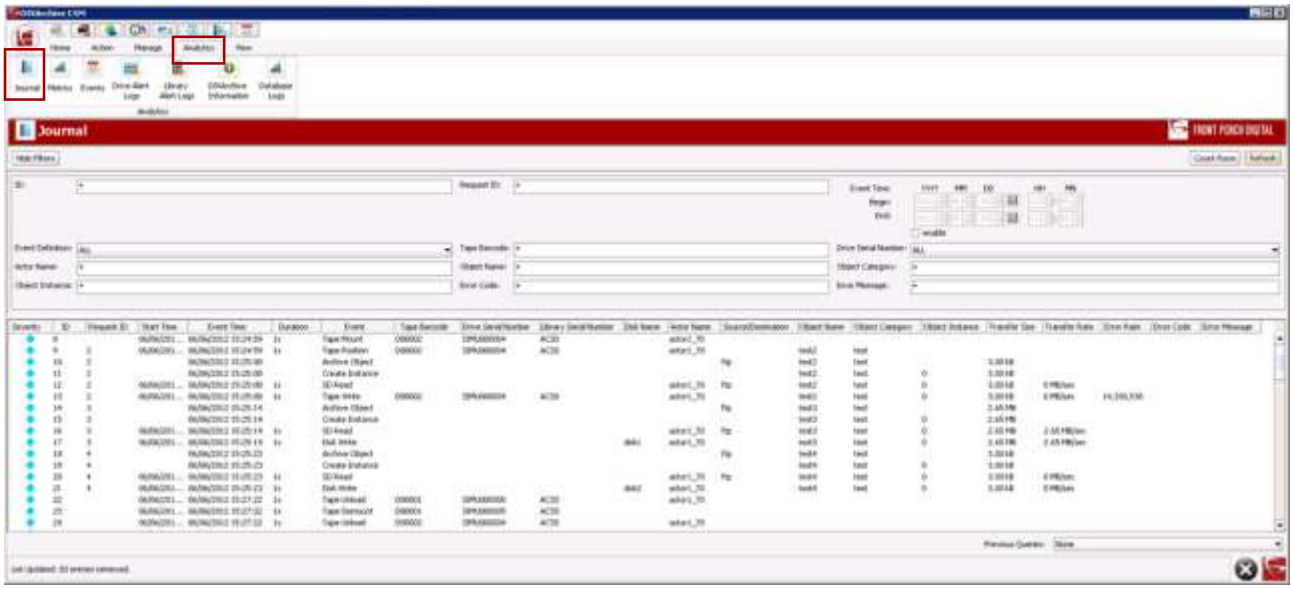
2.6.1 System Events (Journal)

DIVAprotect Metrics are gathered on an ongoing basis. They are written to a temporary table within the database and then once per hour, removed from the temporary table and committed to a permanent table.

The **DIVAprotect Journal** is browsed via the **Journal View** of the Control GUI, available in the **Analytics Tab** in the Icon Bar.

The figure below is a sample **Journal View**:

Figure 3: DIVAprotect Journal View



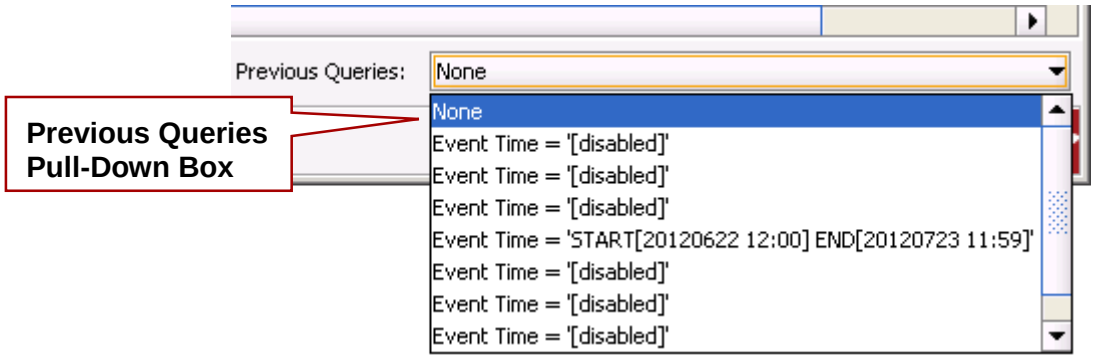
The **Journal View** provides a set of filters to narrow down data retrieval and a list view for the information retrieved.

You can filter by **Event Definition** and **Drive Serial Number** in the drop-down lists, **Begin** and **End Dates** and **Times**, and enter text into the appropriate fields to search for a particular **Barcode**, **Actor Name**, **Source/Destination**, **Object Category**, **Object Instance Number**, **Error Code** (*Warning, Errors, etc.*) and **Error Message**.

To disable a filter, enter the "*****" wildcard character for a text field, select the "**ALL**" value in a drop-down list, or check off the "**enable**" check mark to disable date and time filtering.

The **Previous Queries** drop-down list (*located in the lower right corner of the Journal View*) allows user to recall a previously used set of filters.

Figure 4: Previous Queries Drop-Down List



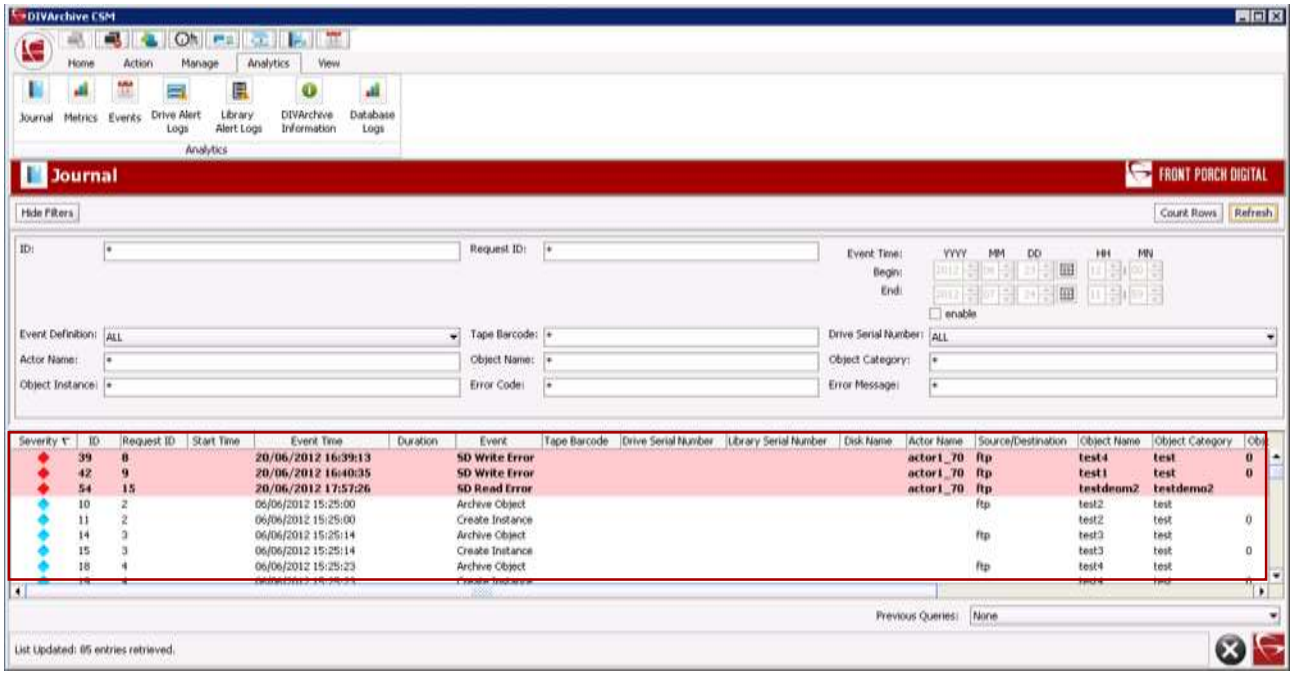
The drop-down list remembers the last 10 used sets of filters.

The Journal View uses a color chart to identify the severity of each event:

- **Blue** – Informational
- **Orange** – Warning
- **Red** – Error

Below is a sample view with *Informational* and *Error* severity levels:

Figure 5: Event Severities

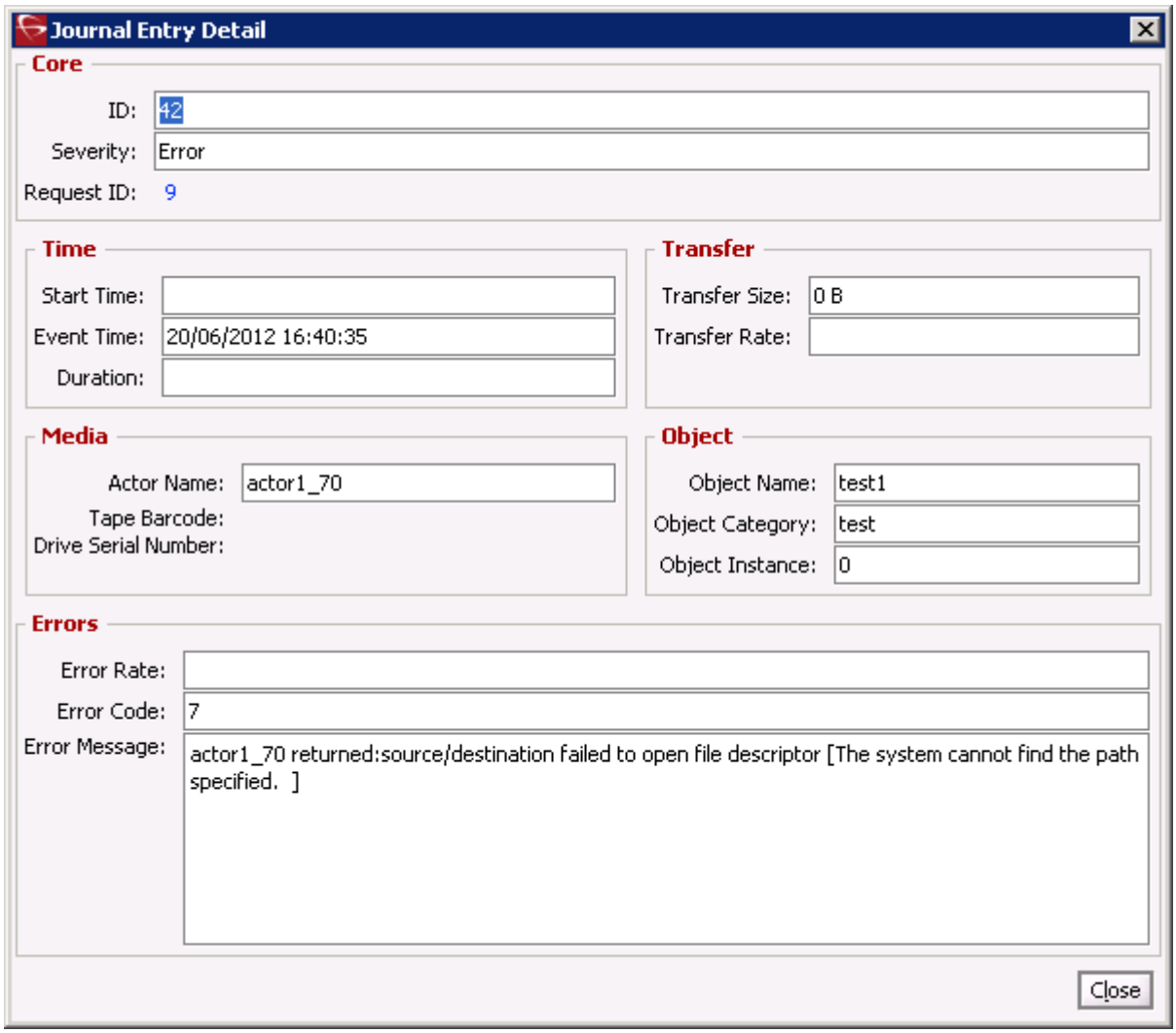


The columns displayed in the Journal View are:

- **Severity** – the severity of the event.
- **ID** – the ID being used to internally identify the event.
- **Request ID** – the DIVArchive Request ID that the event concerns.
- **Start Time** – the time the event started.
- **Event Time** – the time the event occurred.
- **Duration** – the total duration of the event (*in seconds*).
- **Event** – the type of event.
- **Tape Barcode** – the barcode of the Tape that the event concerns.
- **Drive Serial Number** – the serial number of the Drive that the event concerns.
- **Library Serial Number** – the serial number of the Library that the event concerns.
- **Disk Name** – the name of the Disk that the event concerns.
- **Actor Name** – the name of the Actor that the event concerns.
- **Source/Destination** – the name of the Source/Destination that the event concerns.
- **Object Name** – the name of the Object that the event concerns.
- **Object Category** – the category of the Object that the event concerns.
- **Object Instance** – the instance number of the Object that the event concerns.
- **Transfer Size** – the total data transfer size (*in bytes*) for the event.
- **Transfer Rate** – the rate of transfer (*in bytes*) for the event.
- **Error Rate** – the number of Errors per Gigabyte of data transferred. These errors are recovered automatically b the tape drive.
- **Error Code** – the internal code of the error (*when applicable*) for the event.
- **Error Message** – a standardized error message (*when applicable*) for the event.

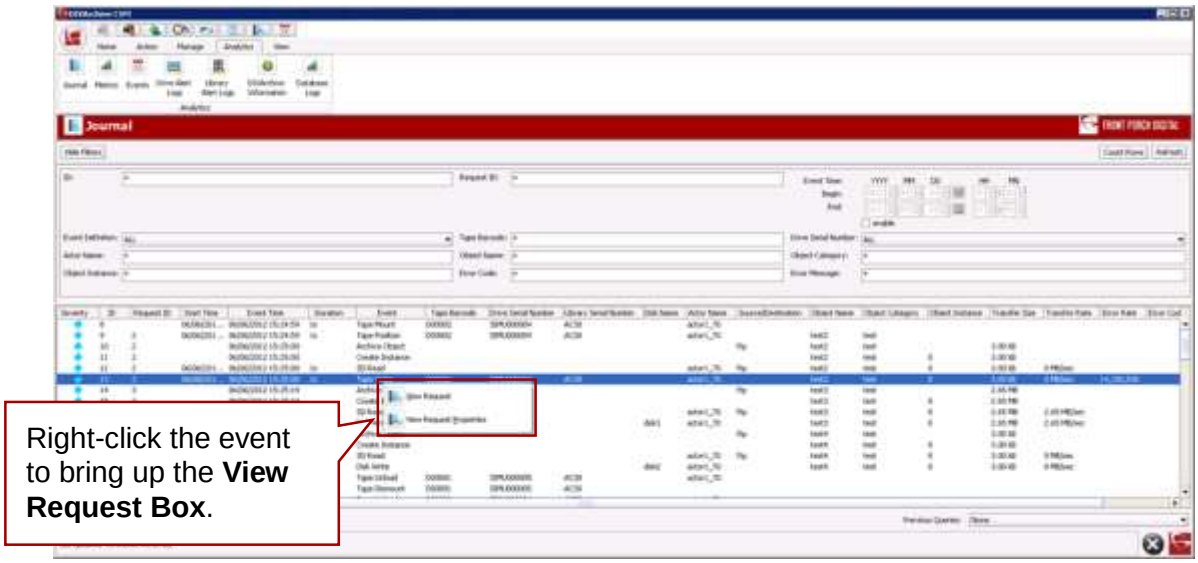
The user can double-click an entry in the list to display its properties, as in the illustration below:

Figure 6: Journal Entry Properties View



For events related to a DIVArchive Request, a contextual menu (*accessible through a right-click on an entry in the Journal View*) allows the user to quickly navigate to the corresponding **Logged Requests View** or **Request Properties** window:

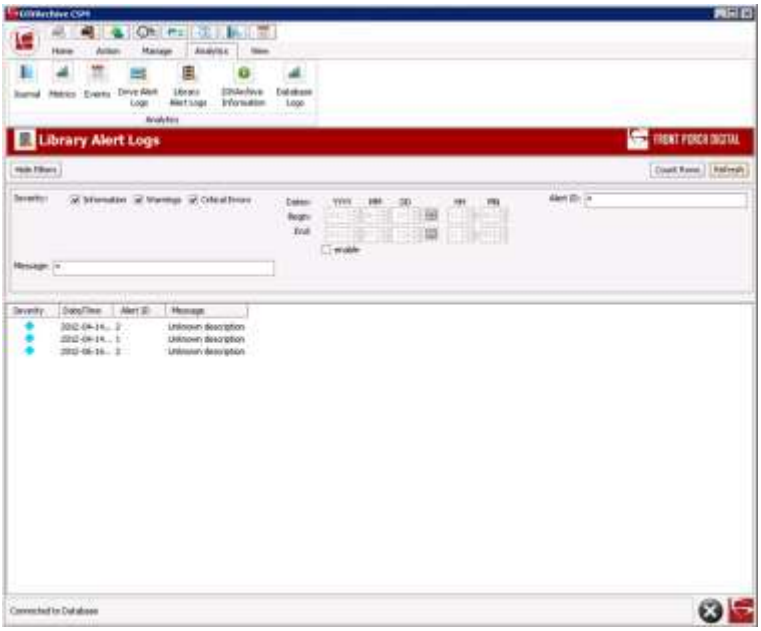
Figure 7: Journal View Request Shortcuts



2.6.2 Library Alert Logs Information

The **Library Alert Logs View** lists errors reported by directly-attached, SCSI-protocol libraries. This information is vendor-specific and may vary depending on the make and model. A set of filters is available to narrow down searches.

Figure 8: Library Alert Logs View



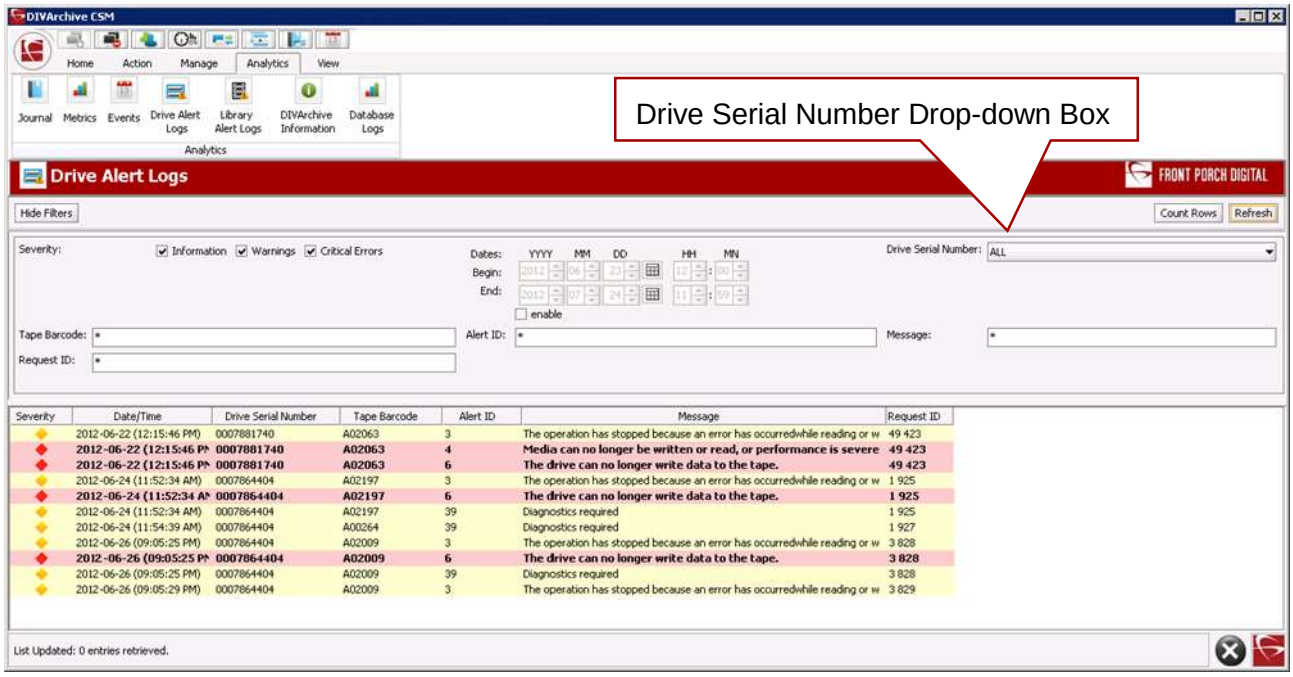
The Library Alert Logs View displays the following fields:

- **Severity** of the alert (*Informational, Warning, Error*).
- **Date** and **Time** of occurrence.
- **Alert ID** as reported by the library (*vendor-specific*).
- **Message** field as reported by the library (*vendor-specific*).

2.6.3 Drive Alert Logs

The **Drive Alert Logs View** lists errors reported by tape drives. This information is vendor-specific and may vary depending on the make and model. A set of filters is available to narrow down searches, for instance errors are viewable related to a particular tape.

Figure 9: Drive Alert Logs View



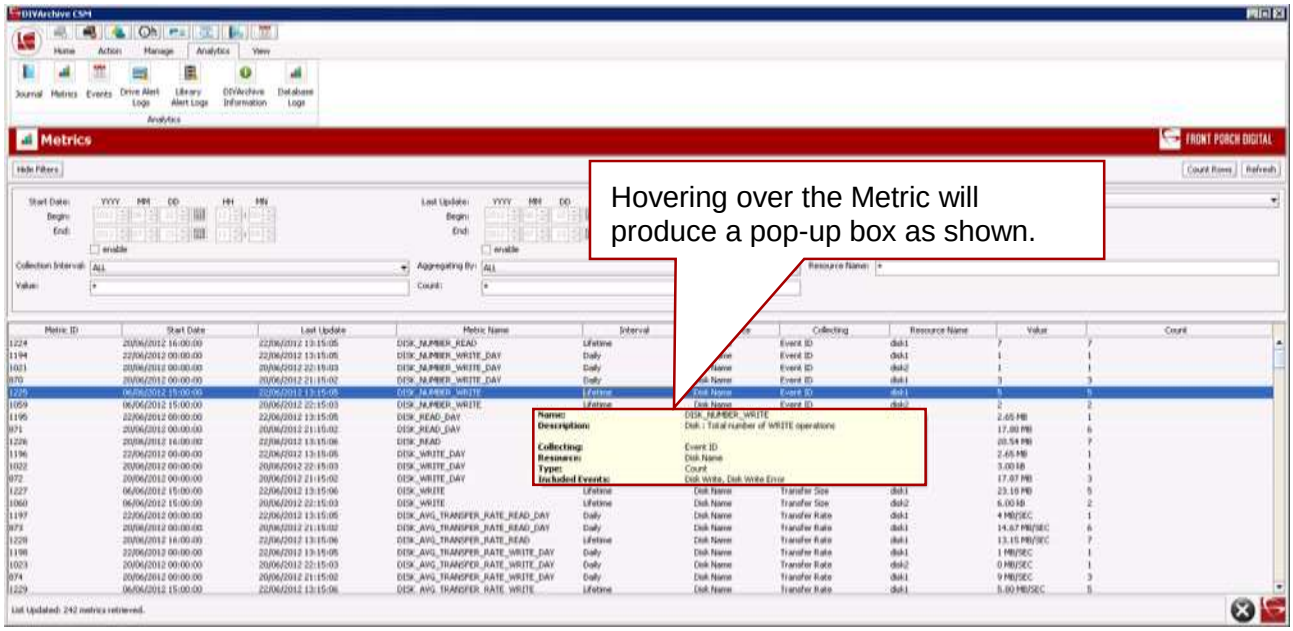
The Drive Alert Logs View displays the following fields:

- **Severity** of the alert (*Informational, Warning, Error*).
- **Date** and **Time** of occurrence.
- **Drive Serial Number** identifying the drive that reported the alert.
- **Tape Barcode** mounted when the alert was reported.
- **Alert ID** as reported by the library (*vendor-specific*).
- **Message** field as reported by the library (*vendor-specific*).
- **DIVArchive Request ID** related to the alert, if applicable.

2.6.4 System Analytics (Metrics)

DIVAprotect Metrics can be examined via the **Metrics View** of the Control GUI. Below is a sample **Metrics View**:

Figure 10: Metrics View



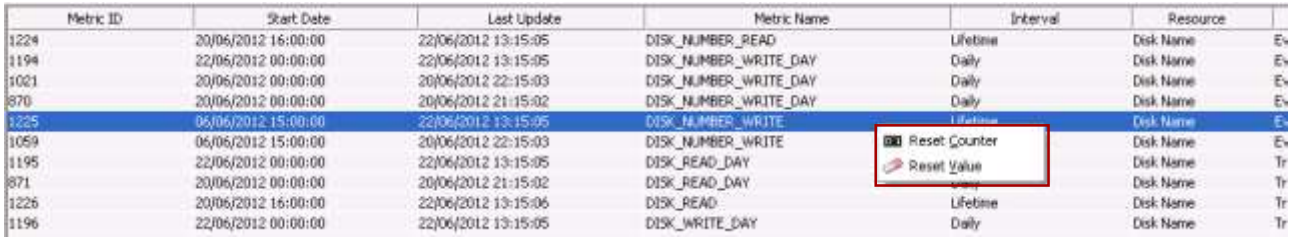
The **Metrics View** provides a set of filters to narrow down searches. Information can be filtered by **Metric Definition**, **Interval**, **Aggregation Item**, **Resource Name**, **Value**, **Count**, **Start Date** and **Last Update Date**.

The **Metric Definition** drop-down list contains the metrics defined in the Configuration Utility plus the built-in ones (***DIVAPROTECT****).

The columns of the Metrics View list are:

- **Metric ID** – ID being used to internally identify the metric.
- **Start Date** – date the collection of this metric began.
- **Last Update** – date the collection of this data was last updated.
- **Metric Name** – name of the Metric Definition.
- **Interval** – collection interval of the metric.
- **Resource** – the type of resource involved in the events this metric is based on.
- **Collecting** – the event parameter the metric is collecting.
- **Resource Name** – the name of the resource involved in the events this metric is based on.
- **Value** – current value of the metric.
- **Count** – number of times the metric was calculated/updated.

Figure 11: Metric Reset Contextual Menu

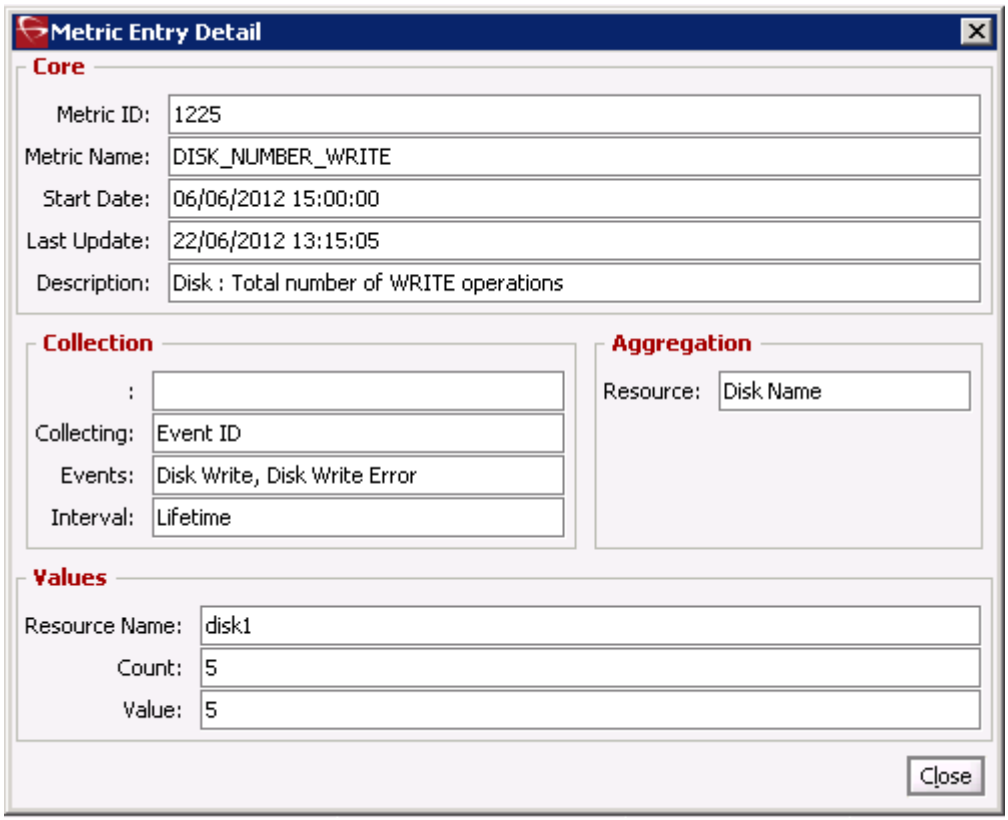


Metric ID	Start Date	Last Update	Metric Name	Interval	Resource
1224	20/06/2012 16:00:00	22/06/2012 13:15:05	DISK_NUMBER_READ	Lifetime	Disk Name
1194	22/06/2012 00:00:00	22/06/2012 13:15:05	DISK_NUMBER_WRITE_DAY	Daily	Disk Name
1021	20/06/2012 00:00:00	20/06/2012 22:15:03	DISK_NUMBER_WRITE_DAY	Daily	Disk Name
870	20/06/2012 00:00:00	20/06/2012 21:15:02	DISK_NUMBER_WRITE_DAY	Daily	Disk Name
1225	06/06/2012 15:00:00	22/06/2012 13:15:05	DISK_NUMBER_WRITE	Lifetime	Disk Name
1059	06/06/2012 15:00:00	20/06/2012 22:15:03	DISK_NUMBER_WRITE		Disk Name
1195	22/06/2012 00:00:00	22/06/2012 13:15:05	DISK_READ_DAY		Disk Name
871	20/06/2012 00:00:00	20/06/2012 21:15:02	DISK_READ_DAY		Disk Name
1226	20/06/2012 16:00:00	22/06/2012 13:15:06	DISK_READ	Lifetime	Disk Name
1196	22/06/2012 00:00:00	22/06/2012 13:15:05	DISK_WRITE_DAY	Daily	Disk Name

Right-clicking on an entry will display a contextual menu allowing the user to reset the current value or hit count of the metric to zero. The user must be logged in the Control GUI as **Administrator** for these options to be enabled.

Double-clicking an entry in the list will display its properties as in the illustration below:

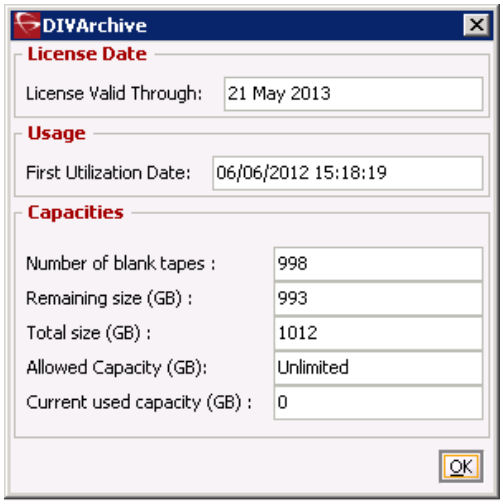
Figure 12: Metrics Entry Properties View



2.6.5 System Information

System Quick Response Data consists of the **First Utilization Date** and is displayed in the **DIVArchive Information Dialog** as shown below:

Figure 13: DIVArchive Information Dialog

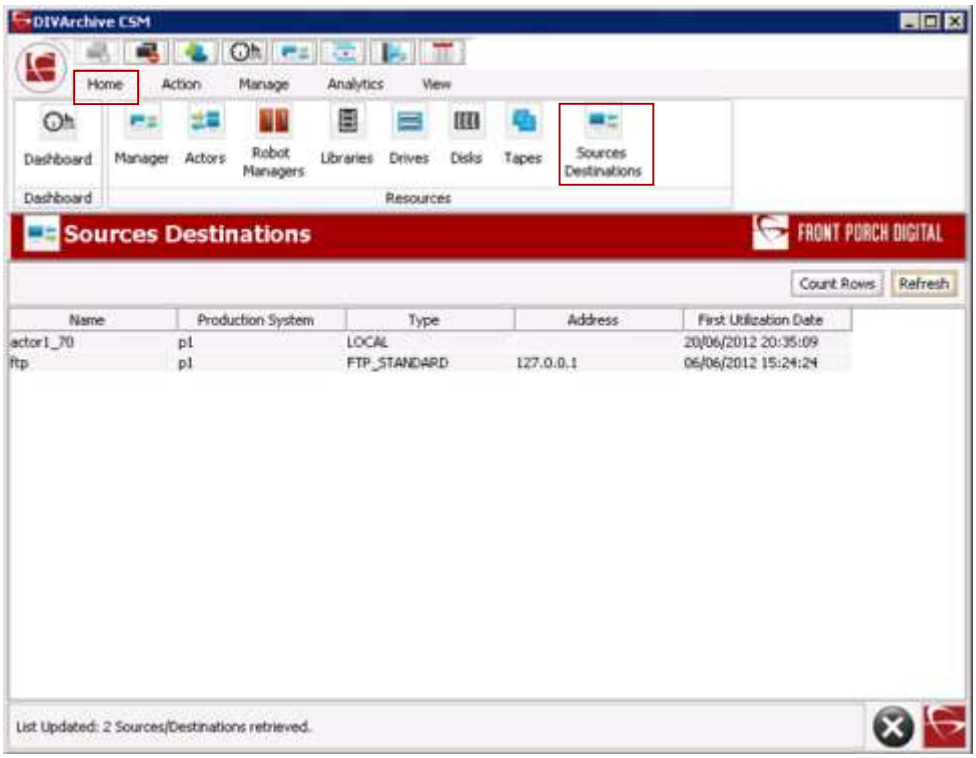


This information is accessed by selecting **Analytics Tab**, then the **DIVArchive Information** from the Icon Bar of the Control GUI.

2.6.6 Source and Destination Information

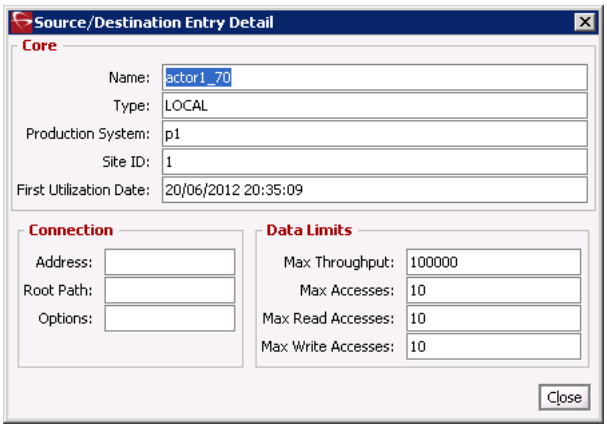
Source/Destinations Quick Response Data consists of the **First Utilization Date** and is displayed in the **Source/Destinations View** of the Control GUI as shown below:

Figure 14: Source/Destination Information



Double-clicking an entry in the list will display additional information:

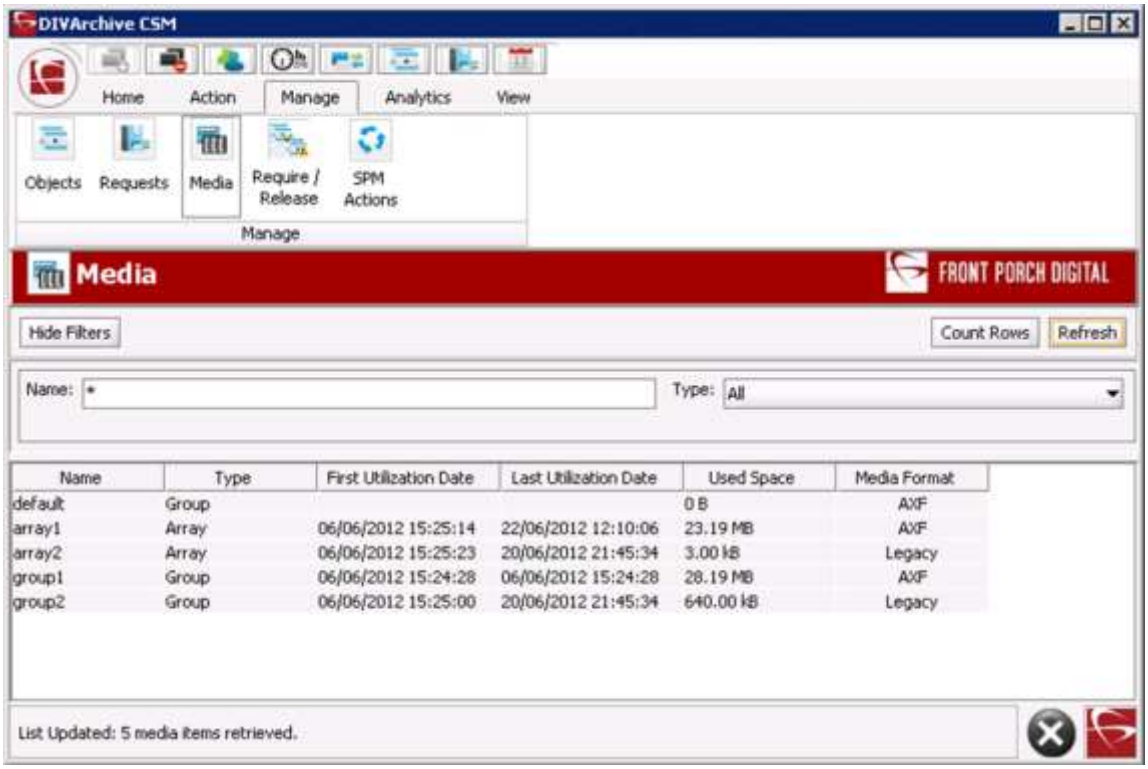
Figure 15: Source/Destination Entry Detail Window



2.6.7 Media Information

Media Quick Response Data is displayed in the **Media View** of the Control GUI:

Figure 16: Media View



The QRD columns are:

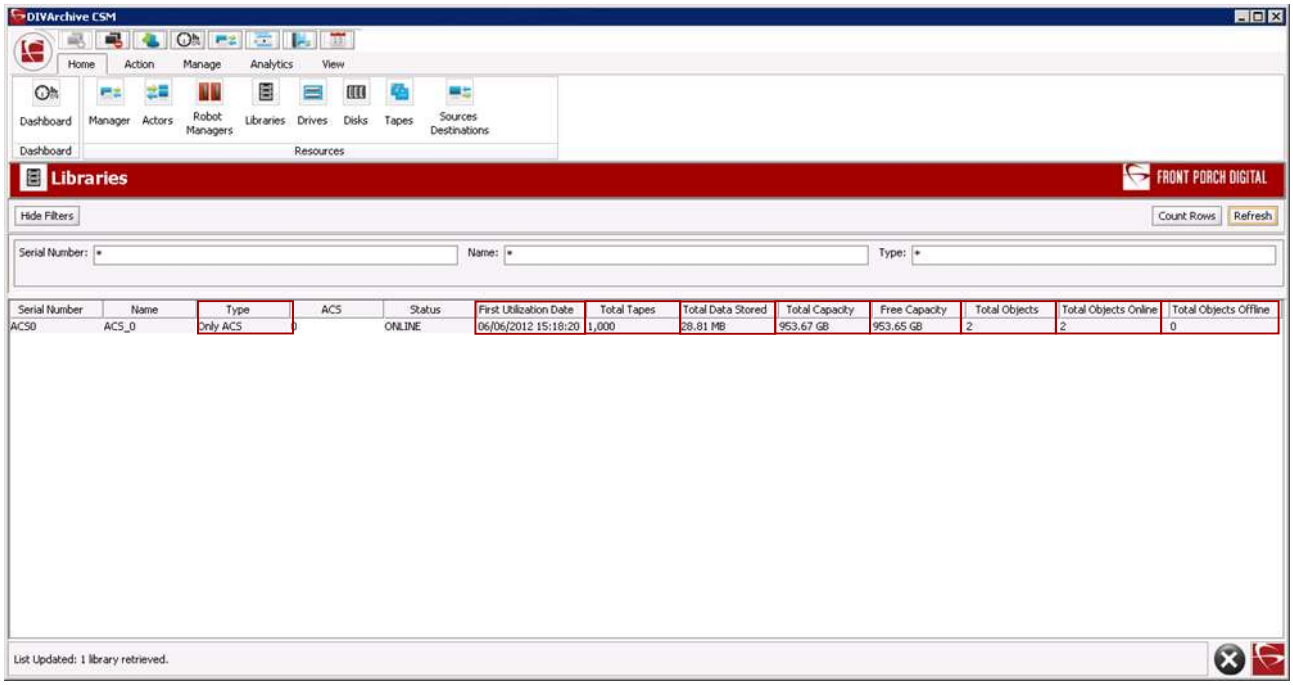
- **First Utilization Date**
- **Last Utilization Date**
- **Used Space**

Refer to Section 2.3 for a description of each column.

2.6.8 Library Information

Library Quick Response Data and **Serial Numbers** are displayed in the **Libraries View** of the Control GUI:

Figure 17: Libraries Information Panel



The QRD columns are:

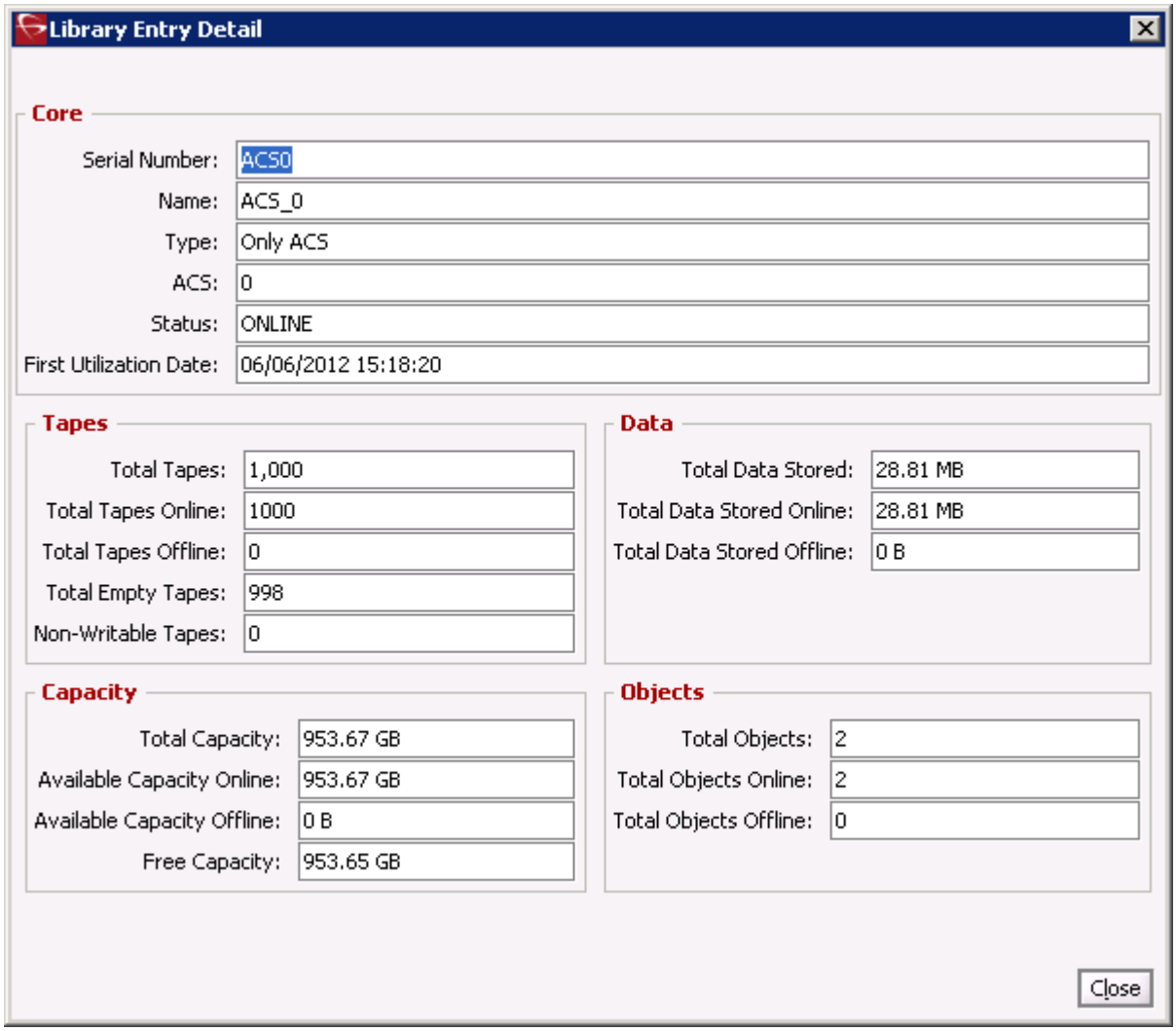
- **Type**
- **First Utilization Date**
- **Total Tapes**
- **Total Data Stored**
- **Total Capacity**
- **Free Capacity**
- **Total Objects**
- **Total Objects Online**
- **Total Objects Offline**

Note: All offline values mentioned here have been added for future versions and are not currently supported. Currently, a tape is considered offline only when it is ejected. Once a tape is ejected it will not be considered part of the Library.

Refer to Section 2.3 for a description of each column.

Double-clicking an entry in the list will display additional information:

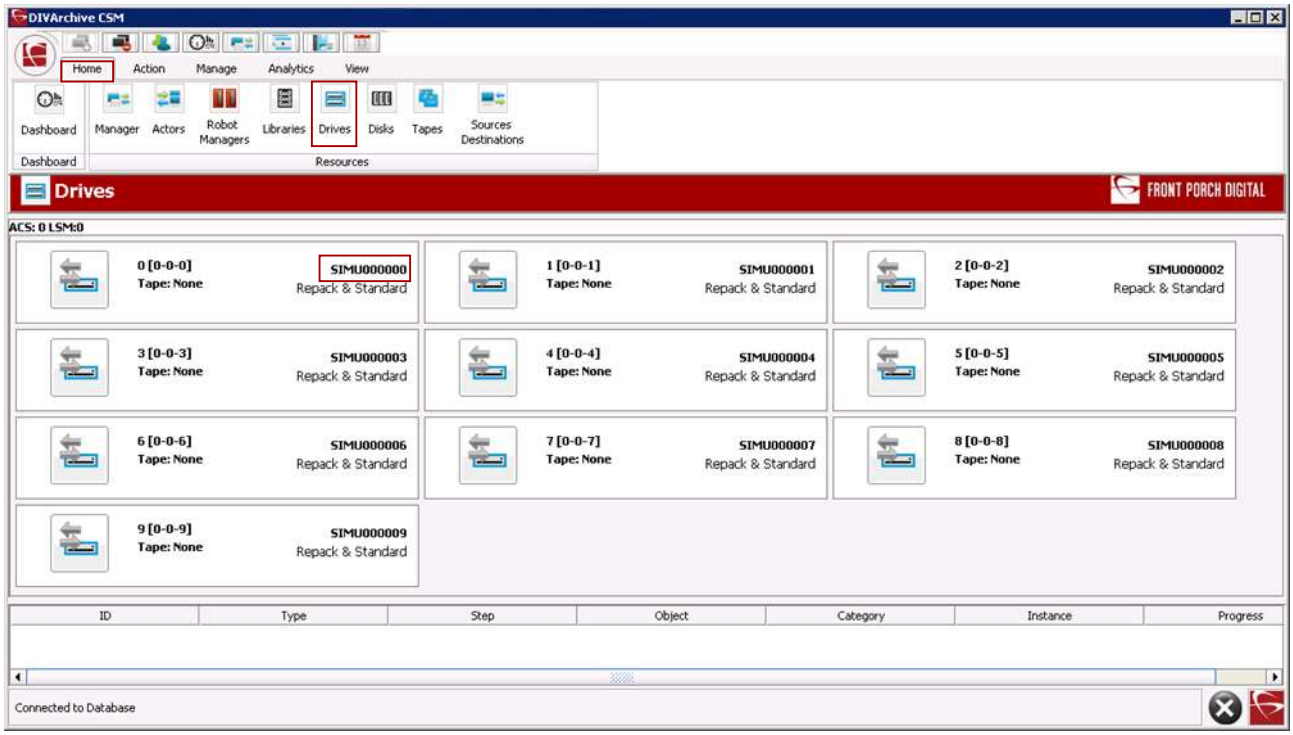
Figure 18: Library Entry Detail Window



2.6.9 Extended Tape Drive Information

Tape Drive Quick Response Data, **Serial Numbers** and **Firmware Level** are available from the **Drives View** of the Control GUI. **Serial Numbers** are displayed in the **Main View**:

Figure 19: Drives View



Right-clicking a drive will display additional information.

The **Properties Tab** displays basic information about the drive, including its serial number and firmware level.

The **Usage Tab** displays the following Quick Response Data columns:

- **Installation Date**
- **First Utilization Date**
- **Last Upgrade Date**
- **Last Cleaning Date**

Refer to Section 2.3 for a description of each column.

Figure 20: Drive Details Dialog – Properties Tab

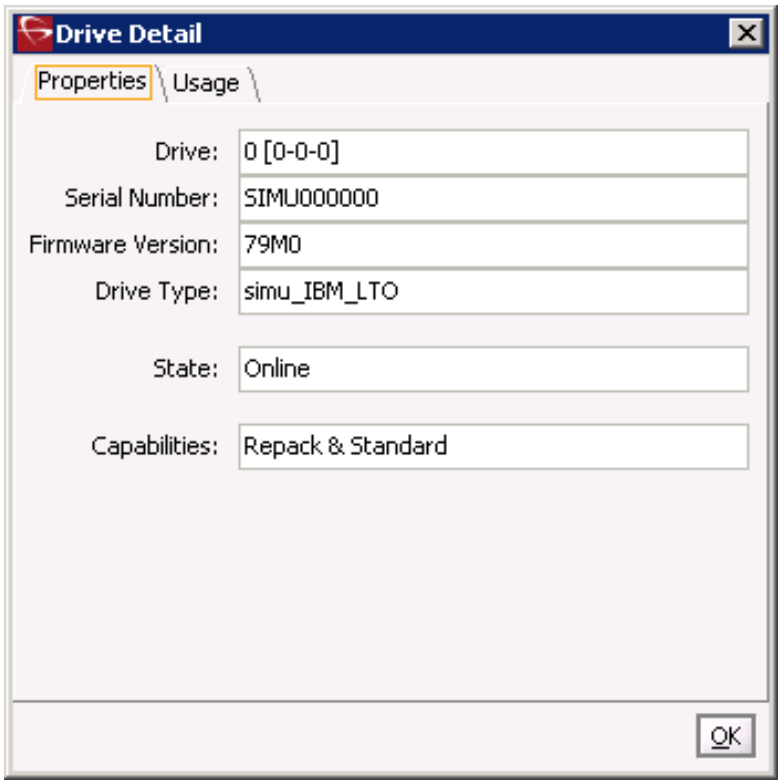
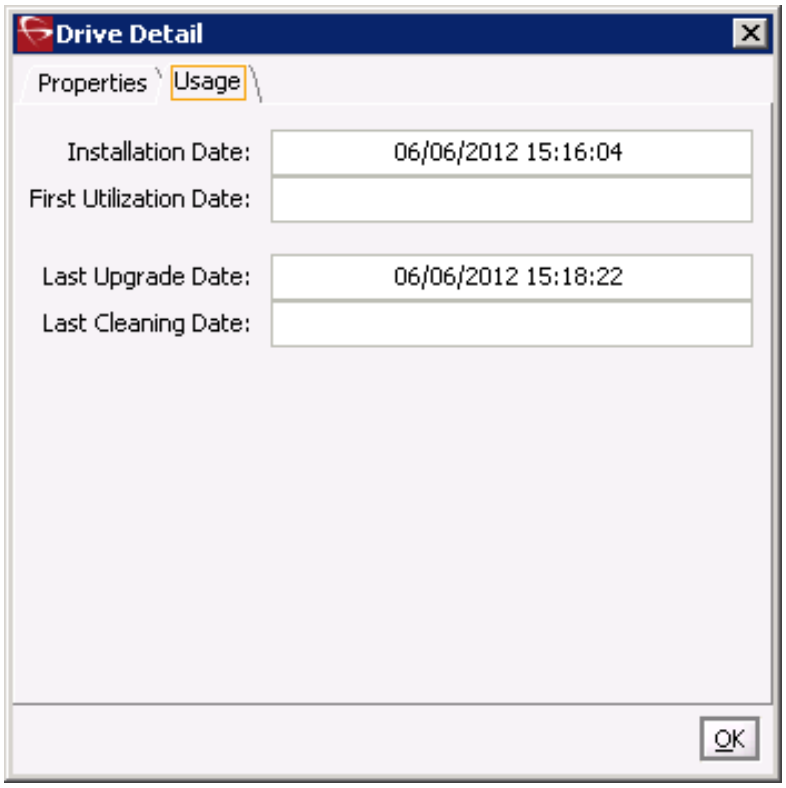


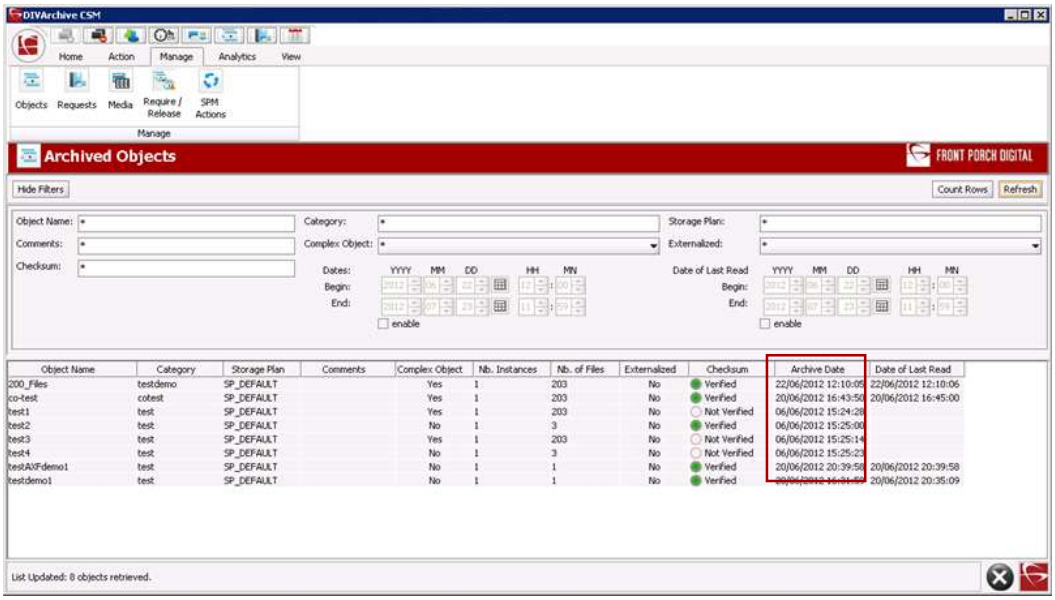
Figure 21: Drive Details Dialog – Usage Tab



2.6.10 Extended Object Information

An **Object's Last Read Date** is displayed in the **Archived Objects View** of the Control GUI:

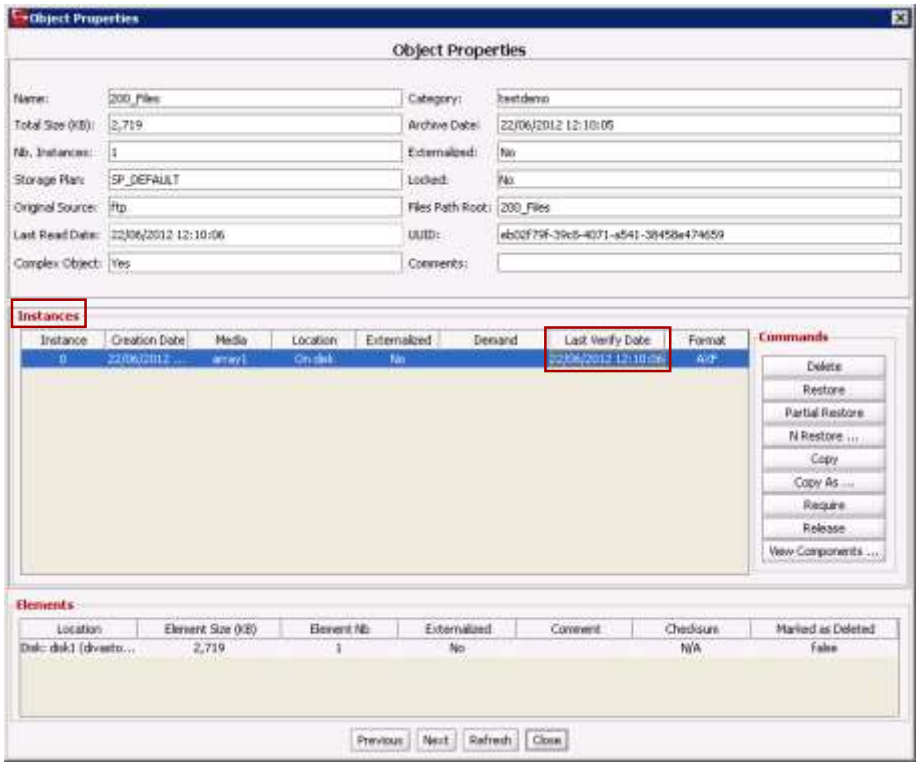
Figure 22: Archived Objects View



2.6.11 Extended Object Instance Information

An **Object Instance's Last Verify Date** is displayed in the **Object Properties View**, in the **Instances** subpanel. Open to the **Object Properties Window** by double-clicking on the desired object in the **Archived Objects** list.

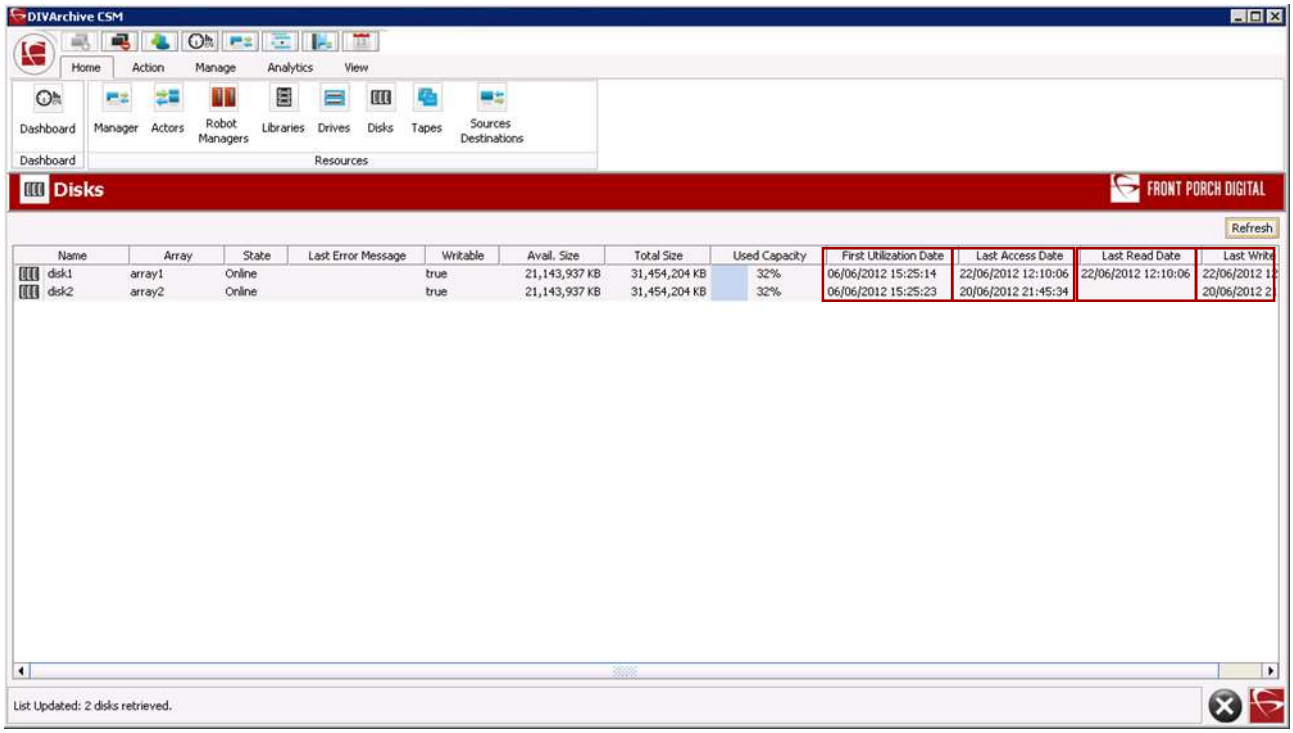
Figure 23: Object Properties Window



2.6.12 Extended Disk Information

A **Disk's Quick Response Data** is displayed in the **Disks View** of the Control GUI:

Figure 24: Disks View



The QRD columns are:

- **First Utilization Date**
- **Last Access Date**
- **Last Read Date**
- **Last Write Date**

Refer to Section 2.3 for a description of each column.

2.6.13 Extended Actor Information

The **Actor's Extended Information** is available in the **Usage**, **Transcoders** and **Analyzer** tabs of the **Actor Properties Dialog** of the Control GUI (*the Actor Properties Dialog is displayed by right-clicking an Actor in the Actors View*):

Figure 25: Actor Properties Dialog – Usage Tab

The fields listed in the **Usage Tab** are:

- **First Utilization Date**

Figure 26: Actor Properties Dialog - Transcoders Tab

The columns listed in the **Transcoders Tab** are:

- **Name** – the name of the Transcoder.
- **Version** – the version of the Transcoder.
- **Type** – the type of the Transcoder.
- **First Utilization Date**

Figure 27: Actor Properties Dialog - Analyzer Tab

The fields listed in the **Analyzer Tab** are:

- **Version** – the version of the Analyzer.
- **First Utilization Date**

2.6.14 Extended Tape Information

The **Tapes Quick Response Data** is displayed in the **Tapes View** and the **Tape Properties View** of the Control GUI:

Figure 28: List View of Tapes in the System

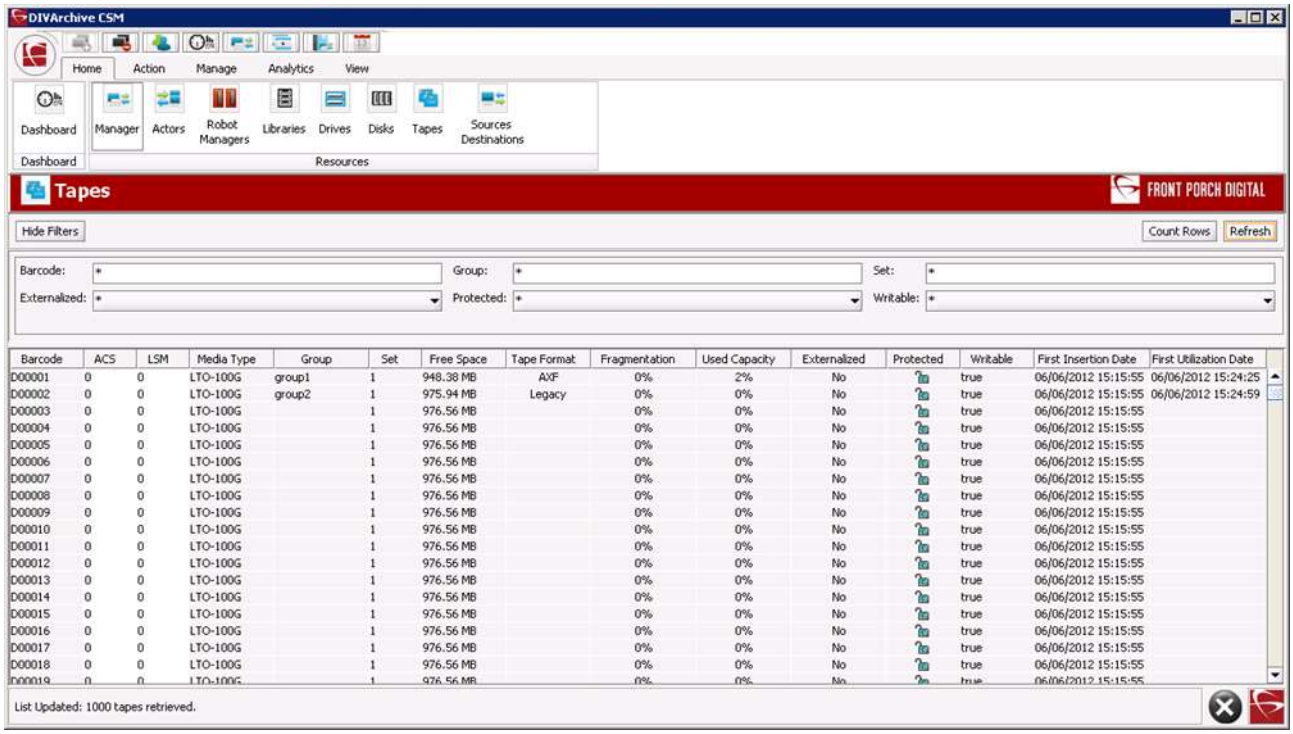
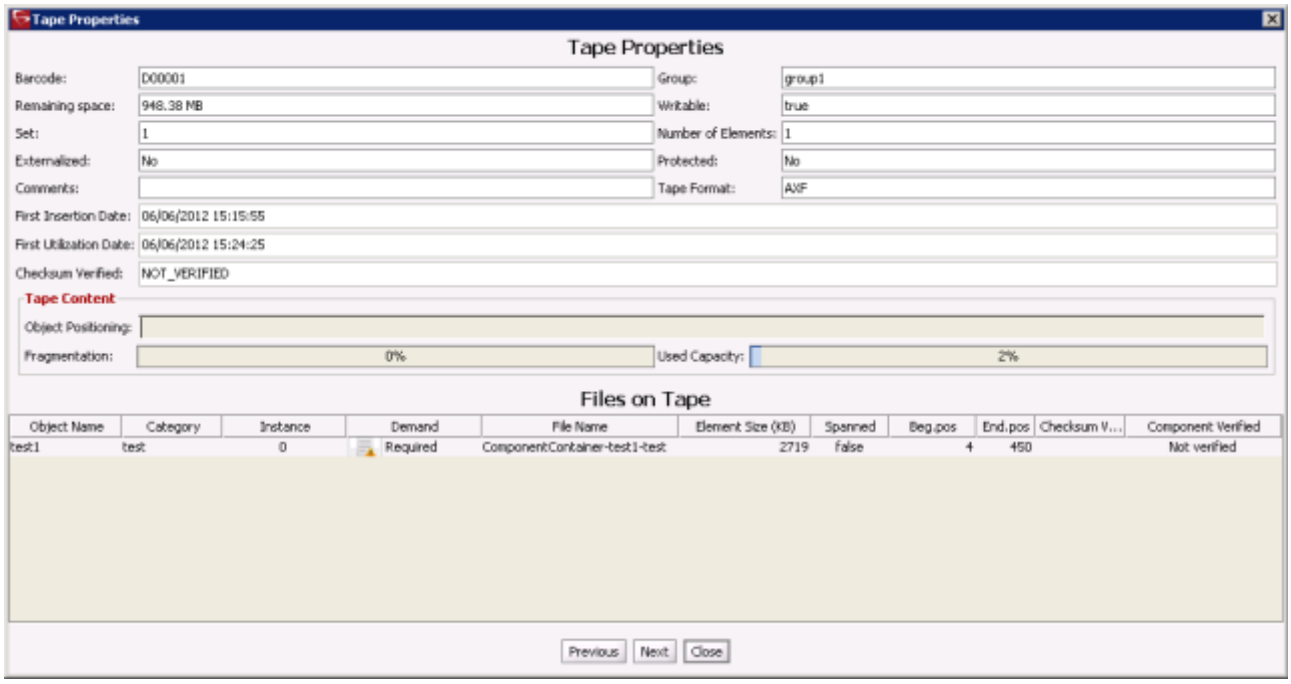


Figure 29: Tape Properties Dialog Window



The QRD columns are:

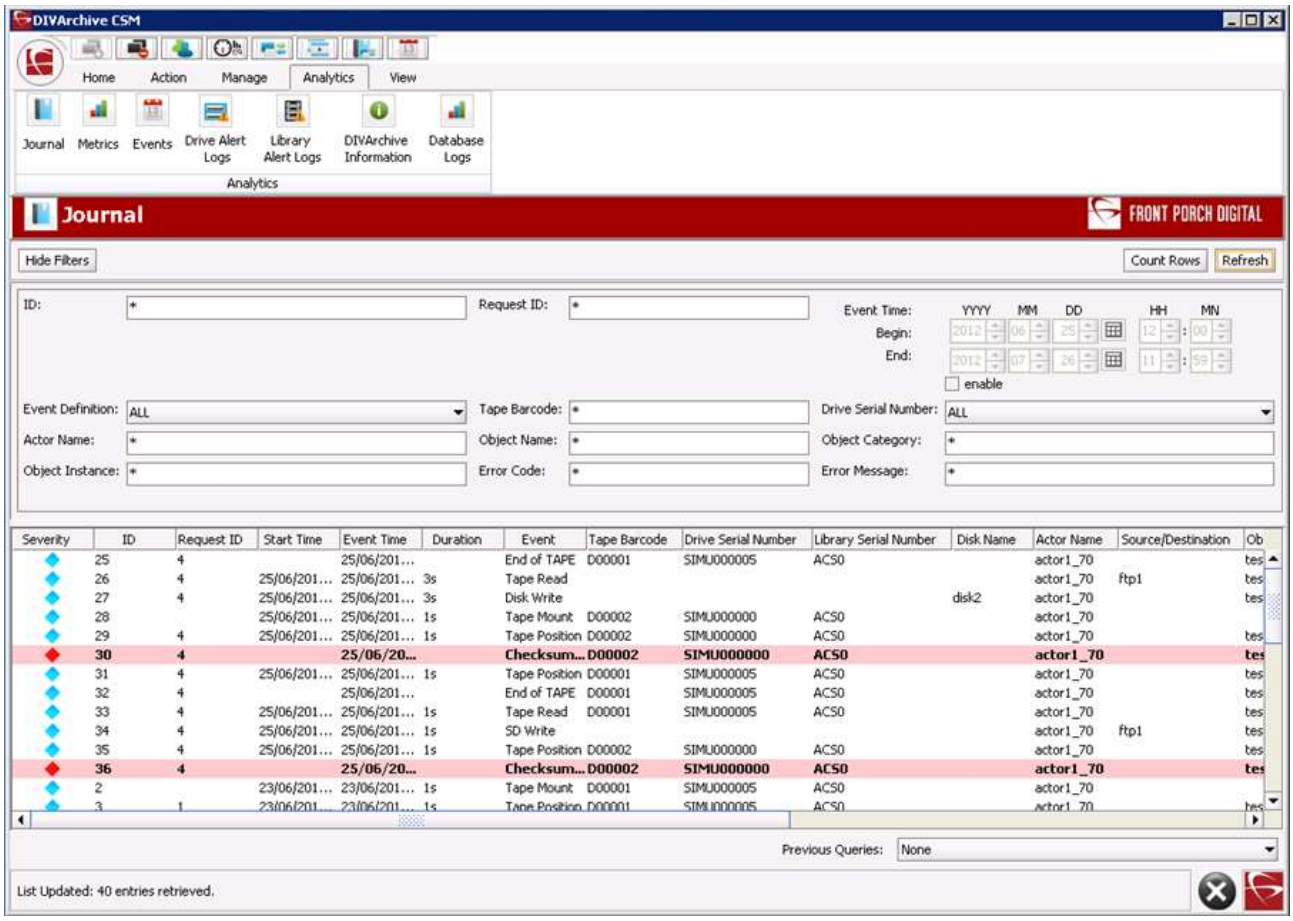
- **First Insertion Date**
- **First Utilization Date**

Refer to Section 2.3 for a description of each column.

2.7 Tracking Checksum Errors in DIVAprotect Journal

Checksum Error Events are displayed in the **DIVAprotect Journal** as shown below:

Figure 30: DIVAprotect Journal - Errors Generated By Failed Checksum Verification



The table below lists the Checksum Event Types:

Table 6: Checksum Events

Event ID	Event Name	Event Description	Severity
180	`CHECKSUM_ERROR_TAPE`	Checksum Verification Error Reading From Tape	2
181	`CHECKSUM_ERROR_DISK`	Checksum Verification Error Reading From Disk	2
182	`CHECKSUM_ERROR_SD`	Checksum Verification Error Reading From S/D	2

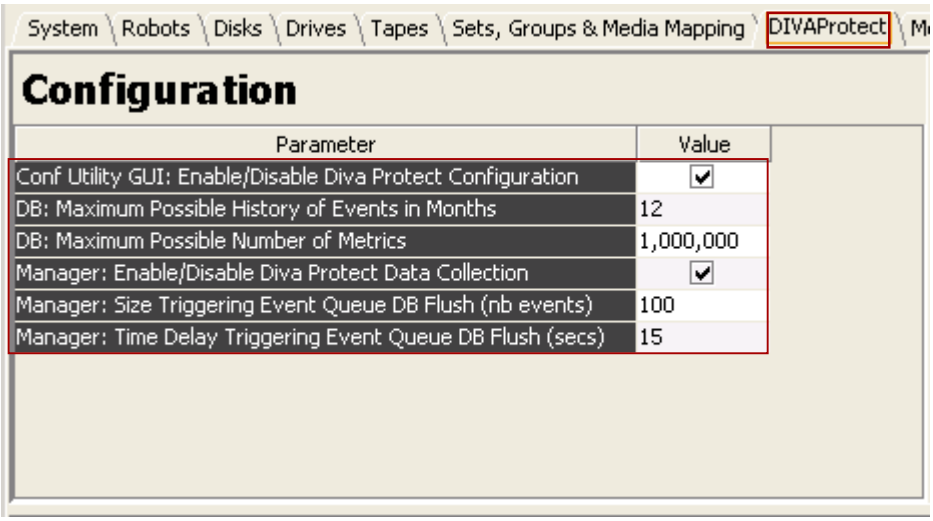
Refer to Table 2 for a list of data elements associated to Checksum Events.

3 DIVAprotect Configuration

3.1 DIVAprotect Main Configuration

The figure below represents the **DIVAprotect Main Configuration Area** in the **DIVAprotect Tab** of the Configuration Utility.

Figure 31: DIVAprotect Tab in the DIVArchive Configuration Utility



3.1.1 Configuration Utility GUI: Enable/Disable DIVAprotect Configuration

Enabling this option will allow the user to view the **DIVAprotect Panel** in the Configuration Utility. The user must log in as **Engineer** in order to modify this parameter.

Note: The Engineer login is reserved for ORACLE Support personnel.

3.1.2 DB: Maximum Possible History of Events in Months

Maximum number of events the system will store. Once this number is exceeded, DIVAprotect will remove the oldest entries. This is done through an automated database job that executes every hour.

3.1.3 DB: Maximum Possible Number of Metrics

Maximum number of metrics the system will store. Once this number is exceeded, DIVAprotect will remove the oldest entries. This is done through an automated database job that executes once per day, every day.

3.1.4 Manager: Enable/Disable DIVAprotect Data Collection

Enables or disables **DIVAprotect Data Collection**. **This parameter is only available in Engineering Mode**.

3.1.5 Manager: Size Triggering Event Queue DB flush (nb events)

Number of events collected in memory before saving them to the database.

3.1.6 Manager: Time Delay Triggering Event Queue DB flush (seconds)

This is the maximum interval for saving events to the database. If this interval is reached before the **Size Triggering** parameter is reached, the events will be saved to the database no matter how many have been collected.

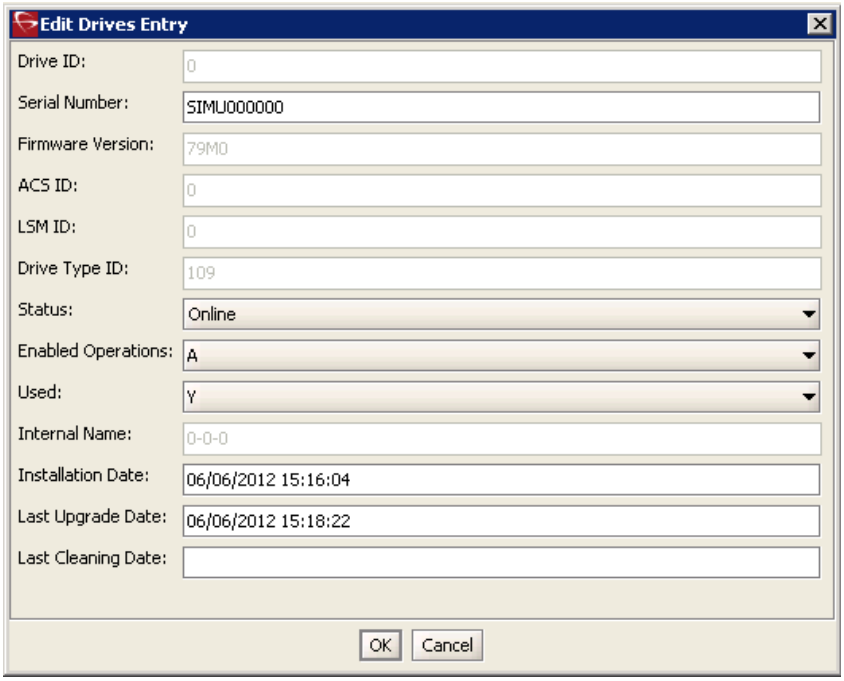
3.1.7 Configuration Utility DIVAprotect Items

The DIVArchive Configuration Utility includes configuration elements specific to DIVAprotect. They are detailed in the following sections.

3.1.8 Tape Drives

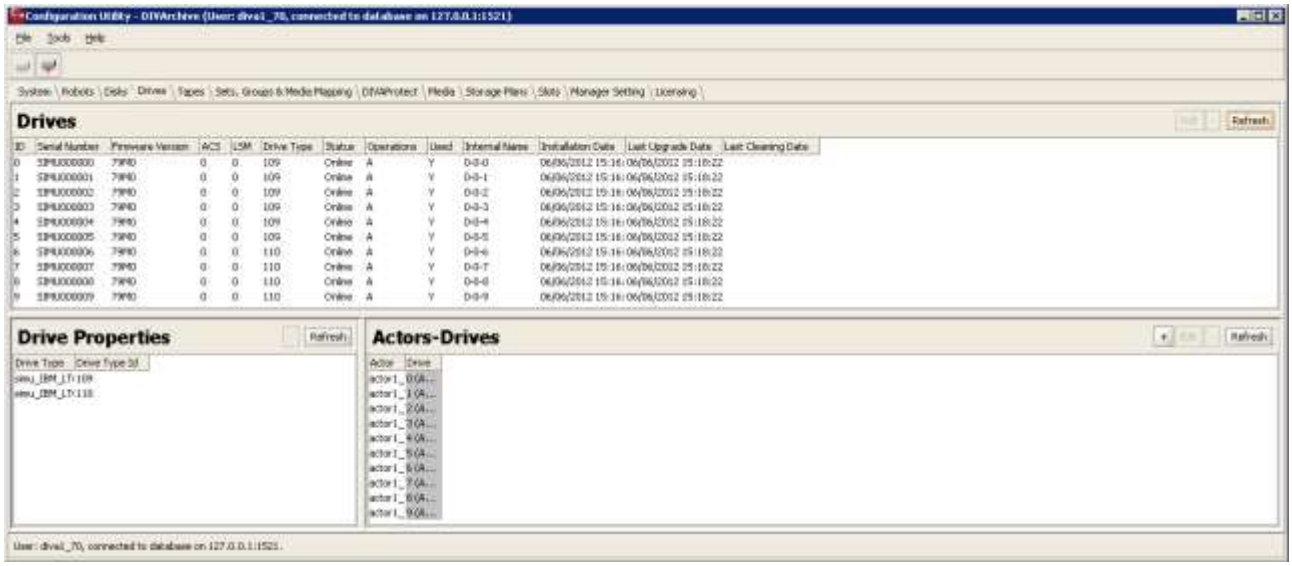
The **Drive Edit Dialog** allows the user to edit the serial number of a drive. This is useful if this information wasn't retrieved, or entered improperly, during a Sync DB process. The firmware of the drive is also displayed in a non-editable field (*this information is obtained from the Actors when they scan for tape drive devices*).

Figure 32: Edit Drives Entry Dialog



This information is visible in the **Drives** panel as shown below:

Figure 33: Configuration Utility Drives Panel



3.1.9 Actors

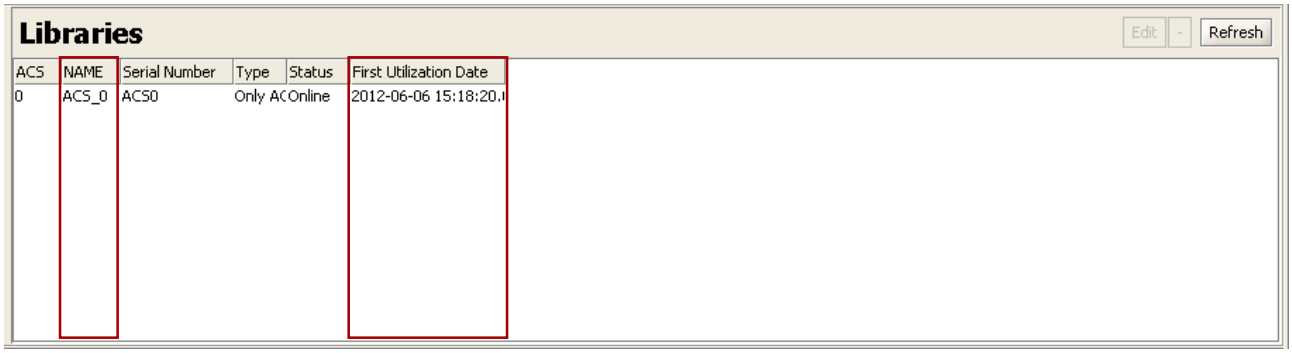
The *Actors* panel displays the **First Utilization Date** in a non-editable field.

Figure 34: Configuration Utility System Tab - Actors Panel

3.1.10 Libraries

The **Libraries Panel** provides a **Name** field to edit a library's description, and a non-editable **First Utilization Date** field.

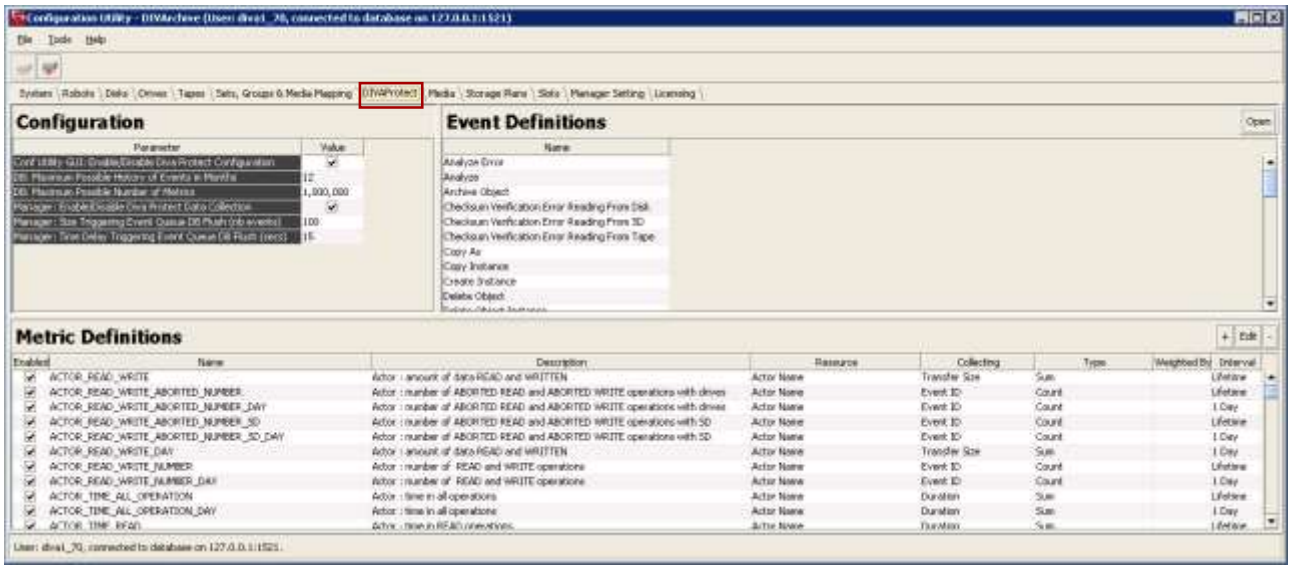
Figure 35: Configuration Utility Robots Tab - Libraries Panel



3.2 DIVAprotect Events and Metrics Configuration

3.2.1 Viewing DIVAprotect Events and Metrics

Figure 36: Configuration Utility DIVAprotect Tab



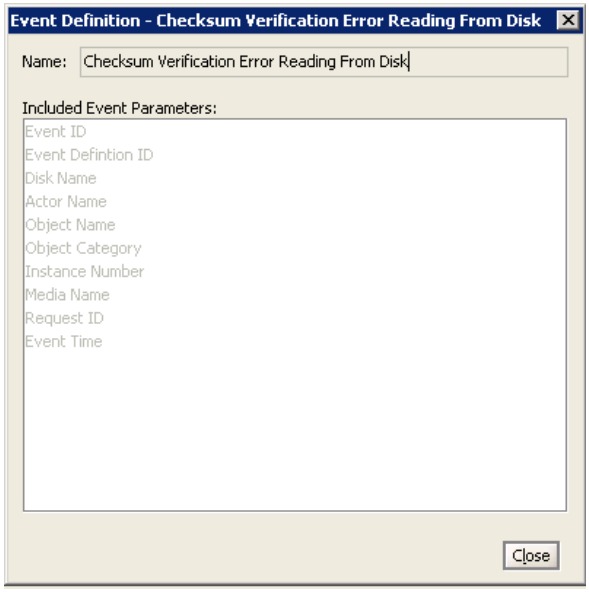
The **Event Definitions** panel displays the list of **Event Definitions** available for use in the metrics. **Event Definitions** are factory set and can't be modified.

The **Metric Definitions** panel lists the available metrics.

Note: Built-in metrics (*DIVAPROTECT* metrics*) can't be edited and therefore don't appear in the Metric Definitions panel.

Double-clicking on an **Event Definition** will display a window listing its associated parameters:

Figure 37: Event Definition Properties Dialog

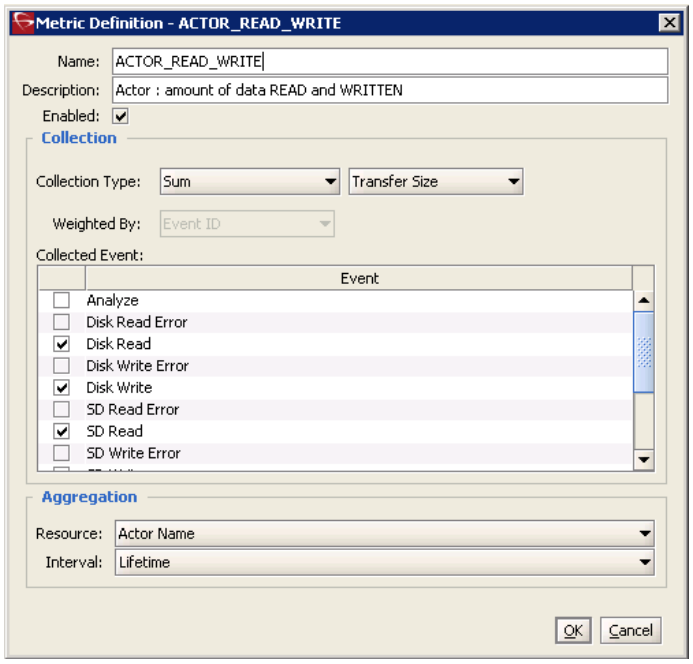


Double-clicking on a **Metric Definition** will display an edit dialog where the metric can be examined or modified. This has the same effect as selecting a metric in the list and clicking the **Edit** button.

The "+" (*plus*) and "-" (*minus*) buttons allow adding or deleting of a metric.

Below is a sample metric definition edit dialog:

Figure 38: Metric Definition Editor



The **Description** field allows the user to enter a description of the metric that will be shown next to the **Metric Name** in the **Metric Definitions Panel**, and in the Control GUI when hovering the mouse over an entry of the **Metric Definition Drop-down List**.

The **Enabled** check box enables or disables data collection for the metric.

The **Collection Type** fields specify which event parameter (*e.g. Transfer Size*) is collected as the data and the statistical computation operated on it (*e.g. Sum*).

Available statistics are:

- **Average**
- **Count**
- **Maximum**
- **Minimum**
- **Sum**
- **Weight-Based Average**

The **Weighted By** field specifies the divider parameter for Weight-Based Average collection (*e.g. Duration*).

The **Collected Event** list specifies the events from which the collected event parameter is retrieved. The list will only display event types suitable for the parameter specified in the **Collection Type** second field. **Event Types** that have no such parameter attached will be absent from the listing.

The **Resource Pull-down Box** specifies which resource is used to break down the data. For instance, if **Drive Serial Number** is selected, separate metrics will be generated for each drive.

The **Interval** specifies the interval for metric calculation. For instance, selecting "1 Day" will generate a metric each day (*if corresponding data is available*). The metric calculation will be based on the associated events that occurred in the last 24 hours.

3.2.2 Default Events and Metrics Configuration

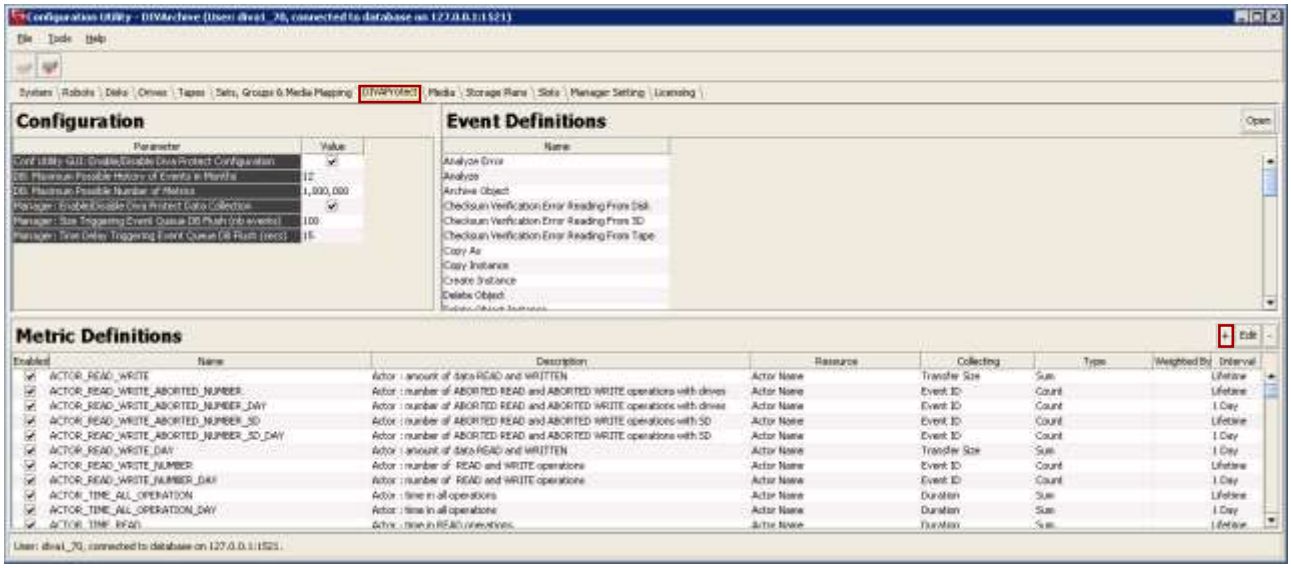
Refer to the APPENDIX for factory-set **Events** and **Metrics**.

3.2.3 Sample Metric Configuration

Use case: a user wants to create their own metric and is looking for average duration of read and write operations on a tape in a DIVArchive System.

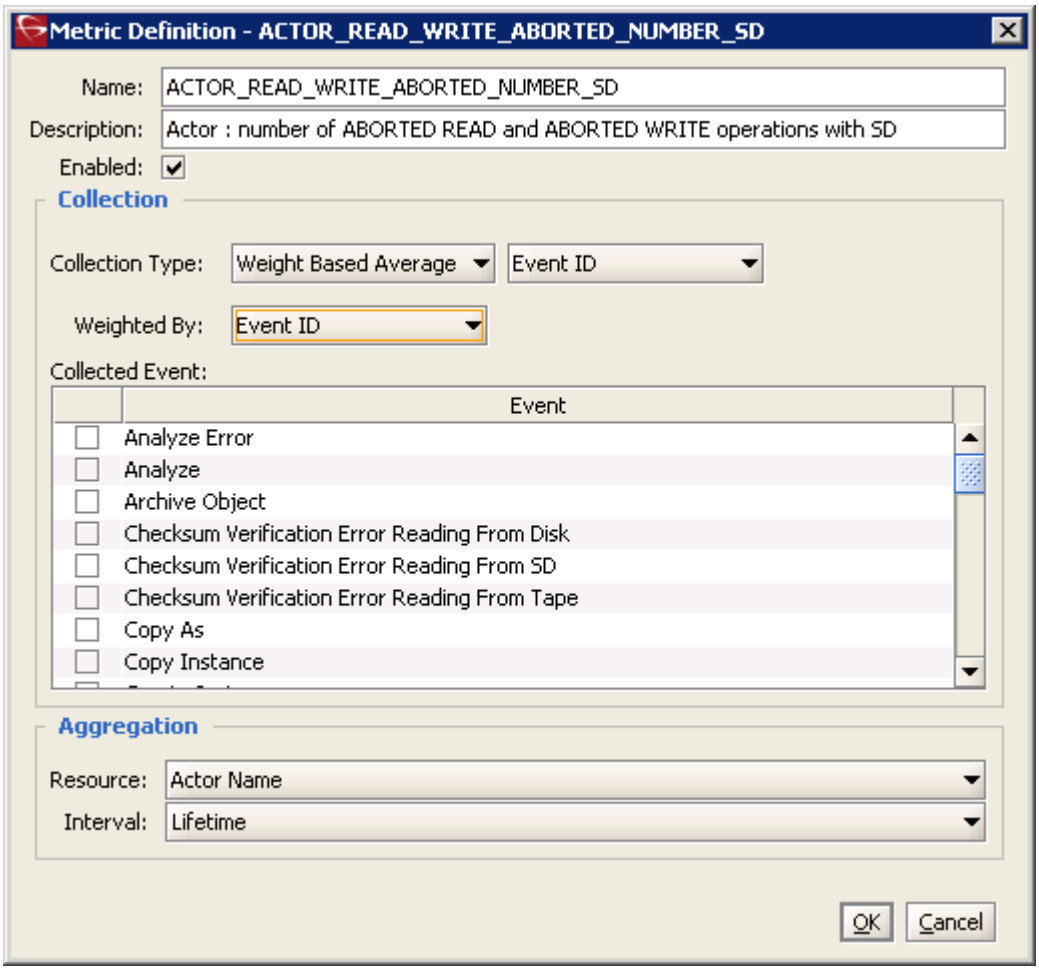
1. To create the metric go to the **DIVAprotect Tab** of the Configuration Utility, locate the **Metric Definitions Pane**, and click the "+" (*plus*) button:

Figure 39: DIVAprotect Tab on the Configuration Utility and the "+" Button



2. The **Metric Definition Dialog Window** will open.

Figure 40: Metric Definition Window



3. Choose a unique name for your new metric. In this example it is set to **`ACTOR_READ_WRITE_ABORTED_NUMBER_SD`**.
4. Add a description and enable it using the checkbox.
5. Set the **Collection Type** and **Weighted By** fields as appropriate.

   In the example the **Collection Type** chosen is **Weight-Based Average**. This **Collection Type** enables the **Weighted By** field and the user will be required to select a value to weight the **Metric Definition** by. The values for the **Weighted By** field will be identical to those in the second **Collection Type** field (*"Event ID" in the example*).
6. Using the checkboxes, select the **Events** to collect.
7. Select the **Aggregation Resource Type**.
8. The **Aggregation Interval** can be left as the default (*one hour*).
9. Click the **OK Button** to complete the process.

4 Frequently Asked Questions and Troubleshooting

4.1 How often are metrics updated?

Data Metrics are calculated and updated every hour through an automated database job that runs in the background.

4.2 How do I install DIVAprotect with my fresh installation of DIVArchive?

It is installed automatically with DIVArchive.

4.3 Can I choose NOT to install DIVAprotect?

No. DIVAprotect is a mandatory subsystem built into DIVArchive. However, you can disable DIVAprotect data collection and computation after the system has been installed.

4.4 Can I disable DIVAprotect?

Yes. It is possible to disable DIVAprotect functionality by proper configuration. See 3.1.4 for more details.

4.5 How do I access the system in Engineering Mode?

Please contact Oracle Support to access the system in Engineering Mode. Engineering Mode is accessible for Oracle Support Personnel only to avoid accidental misconfiguration of the system, which could possibly result in degradation of DIVArchive operations.

APPENDIX

A1 Event Field Definitions

Event Field ID	Displayed Name	Is Aggregatable? *(Is Resource?)*	Is Collectable?	Date / Number	Quantifier
1	Event Id	N	Y	Number	--
2	Event Definition ID	Y	N	Number	--
3	Tape Type	Y	N	String	--
4	Tape Barcode	Y	N	String	--
5	Drive Type	Y	N	String	--
6	Drive Name	Y	N	String	--
7	Drive Serial Number	Y	N	String	--
8	Actor Name	Y	N	String	--
9	Object Name	Y	N	String	--
10	Object Category	Y	N	String	--
11	Object Instance	N	N	Number	--
12	Media	Y	N	String	--
13	Request Id	N	N	Number	--
14	Event End Time	N	N	Date	--
15	Event Duration	N	Y	Number	Seconds
16	Transfer Size	N	Y	Number	Bytes
17	Transfer Rate	N	Y	Number	MB/Second
18	Transfer Error Rate	N	Y	Number	Errors/GB
19	Error Code	Y	N	Number	--
20	Error Message	N	N	String	--
21	Disk Name	Y	N	String	--

Event Field ID	Displayed Name	Is Aggregatable? (*Is Resource?*)	Is Collectable?	Date / Number	Quantifier
22	Library Serial Number	Y	N	String	--
23	SD Name	Y	N	String	--
24	Transcoder Name / Analyzer Name	Y	N	String	--
25	Local DIVArchive System	Y	N	String	--
26	Number of Operations	N	Y	Number	--
27	**`EV_SIZE`**	N	Y	Number	Bytes

A2 Event Definitions

Event ID	Event Name	Event Description	Severity
1	TAPE_INSERT	Tape Insert Event	3
2	TAPE_INSERT_ERR	Tape Insert Error Event	2
10	TAPE_MOUNT	Tape Mount Event	4
11	TAPE_MOUNT_ERR	Tape Mount Error Event	2
20	TAPE_POSITION	Tape Position Event	4
21	TAPE_POSITION_ERR	Tape Position Error Event	2
30	TAPE_READ	Tape Read Event	4
31	TAPE_READ_ERR	Tape Read Error Event	2
40	TAPE_WRITE	Tape Write Event	4
41	TAPE_WRITE_ERR	Tape Write Error Event	2
70	TAPE_UNLOAD	Tape Unload Event	4
71	TAPE_UNLOAD_ERR	Tape Unload Error Event	2
72	TAPE_IMPORT	Tape Import Event	3
73	TAPE_EXPORT	Tape Export Event	3
50	TAPE_DISMOUNT	Tape Dismount Event	4
51	TAPE_DISMOUNT_ERR	Tape Dismount Error Event	2
60	TAPE_EJECT	Tape Eject Event	3
61	TAPE_EJECT_ERR	Tape Eject Error Event	2
80	TAPE_DRIVE_CLEAN_ALERT	Tape Drive Clean Event	3
81	TAPE_DRIVE_TENSION_NOTIFY	Tape Drive Tension Notify Event	2
82	TAPE_DRIVE_LOG_ALERT	Tape Drive Log Alert Event	4
83	TAPE_DRIVE_LIST	Tape Drive List Event	4
84	TAPE_END_OF_TAPE	End of Tape Event	4

Event ID	Event Name	Event Description	Severity
90	TAPE_REPACK	Tape Repack Event	3
91	TAPE_REPACK_ERR	Tape Repack Error Event	2
103	DISK_READ	Disk Read Event	4
104	DISK_READ_ERR	Disk Read Error Event	2
105	DISK_WRITE	Disk Write Event	4
106	DISK_WRITE_ERR	Disk Write Error Event	2
110	SD_READ	SD Read Event	4
111	SD_READ_ERR	SD Read Error Event	2
112	SD_WRITE	SD Write Event	4
113	SD_WRITE_ERR	SD Write Error Event	2
120	ARCHIVE_REQUEST	Archive Object Event	4
122	COPY_REQUEST	Copy Instance Event	4
124	COPY_AS_REQUEST	Copy As Event	4
126	RESTORE	Restore Object Event	4
130	DELETE_OBJECT	Delete Object Event	4
132	CREATE_INSTANCE	Create Instance Event	4
134	DELETE_INSTANCE	Delete Object Instance Event	4
141	TRANSCODE_END	Transcode Event	4
142	TRANSCODE_ERR	Transcode Error Event	2
151	ANALYZE_END	Analyze Event	4
152	ANALYZE_ERR	Analyze Error Event	2
160	REQUEST_STOP_ON_CANCEL	Request Cancel Event	4
161	REQUEST_STOP_ON_INTERRUPT	Request Interrupt Event	4
170	LIBRARY_LOG_ALERT	Library Log Alert Event	4

Event ID	Event Name	Event Description	Severity
180	`CHECKSUM_ERROR_TAPE`	Checksum Verification Error Reading From Tape	2
181	`CHECKSUM_ERROR_DISK`	Checksum Verification Error Reading From Disk	2
182	`CHECKSUM_ERROR_SD`	Checksum Verification Error Reading From SD	2
190	`PARTIAL_RESTORE`	Oracle DIVArchive Partial File Restore Event	4

A3 Metrics Definitions

Metric Name	Metric Description	Events	Aggregate By	Collect Field	Operation	Collection Interval	Enabled
TAPE_DRIVE_DATA_RATE	Tape Drive: data rate	TAPE READ TAPE WRITE	Drive Serial Number	Transfer Rate	Average	1 day	Yes
TAPE_DRIVE_ERROR_RATE	Tape Drive: internal error rate	TAPE READ TAPE WRITE	Drive Serial Number	Transfer Error Rate	Average	1 day	Yes
TAPE_DRIVE_TIME_ALL_OPERATION_DAY	Tape Drive: time in ALL operation	TAPE INSERT TAPE MOUNT TAPE POSITION TAPE READ TAPE WRITE TAPE UNLOAD TAPE DISMOUNT TAPE EJECT	Drive Serial Number	Event Duration	SUM	1 day	Yes
TAPE_DRIVE_TIME_ALL_OPERATION	Tape Drive: time in ALL operation	TAPE INSERT TAPE MOUNT TAPE POSITION TAPE READ TAPE WRITE TAPE UNLOAD TAPE DISMOUNT TAPE EJECT	Drive Serial Number	Event Duration	SUM	Lifetime	Yes
TAPE_DRIVE_TIME_READ_DAY	Tape Drive: time in READ operation	TAPE READ	Drive Serial Number	Event Duration	SUM	1 day	Yes
TAPE_DRIVE_TIME_READ	Tape Drive: time in READ operation	TAPE READ	Drive Serial Number	Event Duration	SUM	Lifetime	Yes
TAPE_DRIVE_TIME_WRITE_DAY	Tape Drive: time in WRITE operation	TAPE WRITE	Drive Serial Number	Event Duration	SUM	1 day	Yes
TAPE_DRIVE_TIME_WRITE	Tape Drive: time in WRITE operation	TAPE WRITE	Drive Serial Number	Event Duration	SUM	Lifetime	Yes
TAPE_DRIVE_LAST_OPERATION_DATE	Tape Drive: date of last MOUNT, DISMOUNT, READ or WRITE	TAPE MOUNT TAPE READ TAPE WRITE TAPE DISMOUNT	Drive Serial Number	Event End Time	MAX	Lifetime	Yes
TAPE_DRIVE_NUMBER_MOUNTS	Tape Drive: number of mounts	TAPE MOUNT	Drive Serial Number	Drive Serial Number	Count	Lifetime	Yes
TAPE_DRIVE_READ_WRITE_NUMBER	Tape Drive: number of READ and WRITE operations (together)	TAPE READ TAPE WRITE	Drive Serial Number	Drive Serial Number	Count	Lifetime	Yes
TAPE_DRIVE_READ_WRITE_NUMBER_DAY	Tape Drive: number of READ and WRITE operations (together)	TAPE READ TAPE WRITE	Drive Serial Number	Drive Serial Number	Count	1 day	Yes
TAPE_DRIVE_READ_WRITE	Tape Drive: amount of data READ and WRITTEN (together)	TAPE READ TAPE WRITE	Drive Serial Number	Transfer Size	SUM	Lifetime	Yes
TAPE_DRIVE_READ_WRITE_DAY	Tape Drive: amount of data READ and WRITTEN (together)	TAPE READ TAPE WRITE	Drive Serial Number	Transfer Size	SUM	1 day	Yes
TAPE_DRIVE_NUMBER_READ_WRITE_ABORTED	Tape Drive: number of aborted READ and WRITE operations (together)	TAPE READ ERR TAPE WRITE ERR	Drive Serial Number	Drive Serial Number	Count	Lifetime	Yes
TAPE_DRIVE_NUMBER_READ_WRITE_ABORTED_DAY	Tape Drive: number of aborted READ and WRITE operations (together)	TAPE READ ERR TAPE WRITE ERR	Drive Serial Number	Drive Serial Number	Count	1 day	Yes
TAPE_DRIVE_NUMBER_MOUNT_DISMOUNT_ABORTED	Tape Drive: number of aborted MOUNT and DISMOUNT operations (together)	TAPE MOUNT ERR TAPE DISMOUNT ERR	Drive Serial Number	Drive Serial Number	Count	Lifetime	Yes
TAPE_DRIVE_OPERATION_TOTAL_TIME_DAY	Tape Drive: total time of drive operation	TAPE READ TAPE WRITE	Drive Serial Number	Event Duration	SUM	1 day	Yes
TAPE_DRIVE_OPERATION_TOTAL_TIME	Tape Drive: total time of drive operation	TAPE READ TAPE WRITE	Drive Serial Number	Event Duration	SUM	Lifetime	Yes
TAPE_LIBRARY_NUMBER_MOUNT_DAY	Tape Library : total number of MOUNT operation	TAPE MOUNT	Library Serial Number	Event Id	Count	1 day	Yes
TAPE_LIBRARY_NUMBER_MOUNT	Tape Library : total number of MOUNT operation	TAPE MOUNT	Library Serial Number	Event Id	Count	Lifetime	Yes
TAPE_LIBRARY_NUMBER_MOUNT_ABORTED_DAY	Tape Library : total number of ABORTED MOUNT operation	TAPE MOUNT ERR	Library Serial Number	Event Id	Count	1 day	Yes
TAPE_LIBRARY_NUMBER_MOUNT_ABORTED	Tape Library : total number of ABORTED MOUNT operation	TAPE MOUNT ERR	Library Serial Number	Event Id	Count	Lifetime	Yes
TAPE_LIBRARY_NUMBER_DISMOUNT_ABORTED_DAY	Tape Library : total number of ABORTED DISMOUNT operation	TAPE DISMOUNT ERR	Library Serial Number	Event Id	Count	1 day	Yes
TAPE_LIBRARY_NUMBER_DISMOUNT_ABORTED	Tape Library : total number of ABORTED DISMOUNT operation	TAPE DISMOUNT ERR	Library Serial Number	Event Id	Count	Lifetime	Yes
TAPE_LIBRARY_NUMBER_READ_DAY	Tape Library : total number of READ operation	TAPE READ TAPE READ ERR	Library Serial Number	Event Id	Count	1 day	Yes
TAPE_LIBRARY_NUMBER_READ	Tape Library : total number of READ operation	TAPE READ TAPE READ ERR	Library Serial Number	Event Id	Count	Lifetime	Yes
TAPE_LIBRARY_NUMBER_WRITE_DAY	Tape Library : total number of WRITE operation	TAPE WRITE TAPE WRITE ERR	Library Serial Number	Event Id	Count	1 day	Yes
TAPE_LIBRARY_NUMBER_WRITE	Tape Library : total number of WRITE operation	TAPE WRITE TAPE WRITE ERR	Library Serial Number	Event Id	Count	Lifetime	Yes
TAPE_LIBRARY_READ_DAY	Tape Library : total amount of data READ	TAPE READ	Library Serial Number	Transfer Size	SUM	1 day	Yes
TAPE_LIBRARY_READ	Tape Library : total amount of data READ	TAPE READ	Library Serial Number	Transfer Size	SUM	Lifetime	Yes
TAPE_LIBRARY_WRITE_DAY	Tape Library : total amount of data WRITE	TAPE WRITE	Library Serial Number	Transfer Size	SUM	1 day	Yes

Metric Name	Metric Description	Events	Aggregate By	Collect Field	Operation	Collection Interval	Enabled
TAPE_LIBRARY_WRITE	Tape Library : total amount of data WRITE	TAPE WRITE	Library Serial Number	Transfer Size	SUM	Lifetime	Yes
TAPE_LAST_MOUNT_DATE	Tape: date of last MOUNT	TAPE MOUNT	Tape Barcode	Event End Time	MAX	Lifetime	Yes
TAPE_LAST_DISMOUNT	Tape: date of last DISMOUNT	TAPE DISMOUNT	Tape Barcode	Event End Time	MAX	Lifetime	Yes
TAPE_LAST_READ	Tape: date of last READ	TAPE READ	Tape Barcode	Event End Time	MAX	Lifetime	Yes
TAPE_LAST_WRITE	Tape: date of last WRITE	TAPE WRITE	Tape Barcode	Event End Time	MAX	Lifetime	Yes
TAPE_LAST_EVENT_ID	Tape: DIVAprotect Event ID of the last Tape/Drive operation	TAPE MOUNT TAPE MOUNT ERR TAPE POSITION TAPE POSITION ERR TAPE READ TAPE READ ERR TAPE WRITE TAPE WRITE ERR TAPE UNLOAD TAPE UNLOAD ERR TAPE DISMOUNT TAPE DISMOUNT	Tape Barcode	Event Id	MAX	Lifetime	Yes
TAPE_EXTERNALIZATION_NUMBER	Tape: number of externalizations	TAPE EJECT	Tape	Tape	Count	Lifetime	Yes
TAPE_REPACK_NUMBER	Tape: number of REPACK, REUSE and REFORMAT operations (together)	TAPE REPACK	Tape Barcode	Tape Barcode	Count	Lifetime	Yes
TAPE_MOUNT_NUMBER	Tape: number of MOUNT operations	TAPE MOUNT	Tape	Tape	Count	Lifetime	Yes
TAPE_READ_WRITE_NUMBER	Tape: number of READ and WRITE operations (together)	TAPE READ TAPE WRITE	Tape Barcode	Tape Barcode	Count	Lifetime	Yes
TAPE_READ_WRITE_NUMBER_DAY	Tape: number of READ and WRITE operations (together)	TAPE READ TAPE WRITE	Tape Barcode	Tape Barcode	Count	1 day	Yes
TAPE_READ_WRITE_ABORTED_NUMBER	Tape: number of aborted READ and WRITE operations (together)	TAPE READ ERR TAPE WRITE ERR	Tape Barcode	Tape Barcode	Count	Lifetime	Yes
TAPE_READ_WRITE_ABORTED_NUMBER_DAY	Tape: number of aborted READ and WRITE operations (together)	TAPE READ ERR TAPE WRITE ERR	Tape Barcode	Tape Barcode	Count	1 day	Yes
TAPE_MOUNT_DISMOUNT_ABORTED_NUMBER	Tape: number of aborted MOUNT and DISMOUNT operations (together)	TAPE MOUNT ERR TAPE DISMOUNT	Tape Barcode	Tape Barcode	Count	Lifetime	Yes
DISK_NUMBER_READ_DAY	Disk : Total number of READ operations	DISK READ DISK READ ERR	DISK NAME	Event Id	Count	1 day	Yes
DISK_NUMBER_READ	Disk : Total number of READ operations	DISK READ DISK READ ERR	DISK NAME	Event Id	Count	Lifetime	Yes
DISK_NUMBER_WRITE_DAY	Disk : Total number of WRITE operations	DISK WRITE DISK WRITE ERR	DISK NAME	Event Id	Count	1 day	Yes
DISK_NUMBER_WRITE	Disk : Total number of WRITE operations	DISK WRITE DISK WRITE ERR	DISK NAME	Event Id	Count	Lifetime	Yes
DISK_NUMBER_READ_ABORTED_DAY	Disk : Total number of ABORTED READ operations	DISK READ ERR	DISK NAME	Event Id	Count	1 day	Yes
DISK_NUMBER_READ_ABORTED	Disk : Total number of ABORTED READ operations	DISK READ ERR	DISK NAME	Event Id	Count	Lifetime	Yes
DISK_NUMBER_WRITE_ABORTED_DAY	Disk : Total number of ABORTED WRITE operations	DISK WRITE ERR	DISK NAME	Event Id	Count	1 day	Yes
DISK_NUMBER_WRITE_ABORTED	Disk : Total number of ABORTED WRITE operations	DISK WRITE ERR	DISK NAME	Event Id	Count	Lifetime	Yes
DISK_READ_DAY	DISK : total amount of data READ	DISK READ	DISK NAME	Transfer Size	SUM	1 day	Yes
DISK_READ	DISK : total amount of data READ	DISK READ	DISK NAME	Transfer Size	SUM	Lifetime	Yes
DISK_WRITE_DAY	DISK : total amount of data WRITE	DISK WRITE	DISK NAME	Transfer Size	SUM	1 day	Yes
DISK_WRITE	DISK : total amount of data WRITE	DISK WRITE	DISK NAME	Transfer Size	SUM	Lifetime	Yes
DISK_AVG_TRANSFER_RATE_READ_DAY	DISK : average transfer rate of READ	DISK READ	DISK NAME	Transfer Rate	Average	1 day	Yes
DISK_AVG_TRANSFER_RATE_READ	DISK : average transfer rate of READ	DISK READ	DISK NAME	Transfer Rate	Average	Lifetime	Yes
DISK_AVG_TRANSFER_RATE_WRITE_DAY	DISK : average transfer rate of WRITE	DISK WRITE	DISK NAME	Transfer Rate	Average	1 day	Yes
DISK_AVG_TRANSFER_RATE_WRITE	DISK : average transfer rate of WRITE	DISK WRITE	DISK NAME	Transfer Rate	Average	Lifetime	Yes
DISK_TIME_ALL_OPERATION_DAY	DISK : total time of ALL operations	DISK READ DISK WRITE	DISK NAME	Event Duration	SUM	1 day	Yes
DISK_TIME_ALL_OPERATION	DISK : total time of ALL operations	DISK READ DISK WRITE	DISK NAME	Event Duration	SUM	Lifetime	Yes
DISK_TIME_READ_DAY	DISK : total time of READ operations	DISK READ	DISK NAME	Event Duration	SUM	1 day	Yes
DISK_TIME_READ	DISK : total time of READ operations	DISK READ	DISK NAME	Event Duration	SUM	Lifetime	Yes
DISK_TIME_WRITE_DAY	DISK : total time of WRITE operations	DISK WRITE	DISK NAME	Event Duration	SUM	1 day	Yes
DISK_TIME_WRITE	DISK : total time of WRITE operations	DISK WRITE	DISK NAME	Event Duration	SUM	Lifetime	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_CREATED_DAY	DivArchive System : number of objects created	ARCHIVE REQUEST TRANSCODE END COPY AS REQUEST	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_CREATED	DivArchive System : number of objects created	ARCHIVE REQUEST TRANSCODE END COPY AS REQUEST	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_DELETED_DAY	DivArchive System : number of objects deleted	DELETE OBJECT	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_DELETED	DivArchive System : number of objects deleted	DELETE OBJECT	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_ARCHIVE_DAY	DivArchive System : number of objects archived	ARCHIVE REQUEST	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_ARCHIVE	DivArchive System : number of objects archived	ARCHIVE REQUEST	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_RESTORE_DAY	DivArchive System : number of objects restored	RESTORE	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_RESTORE	DivArchive System : number of objects restored	RESTORE	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_INSTANCE_CREATED_DAY	DivArchive System : number of objects instance created	CREATE INSTANCE	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_INSTANCE_CREATED	DivArchive System : number of objects instance created	CREATE INSTANCE	Local Diva System	Event Id	Count	Lifetime	Yes

Metric Name	Metric Description	Events	Aggregate By	Collect Field	Operation	Collection Interval	Enabled
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_INSTANCE_DELETED_DAY	DivArchive System : number of objects instance deleted	DELETE INSTANCE	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_INSTANCE_DELETED	DivArchive System : number of objects instance deleted	DELETE INSTANCE	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_INSTANCE_COPY_DAY	DivArchive System : number of objects instance copied	COPY REQUEST	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_NUMBER_OBJECT_INSTANCE_COPY	DivArchive System : number of objects instance copied	COPY REQUEST	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_READ_WRITE_NUMBER_DAY	DivArchive System : number of READ and WRITE operations	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_READ_WRITE_NUMBER	DivArchive System : number of READ and WRITE operations	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_READ_WRITE_DAY	DivArchive System : amount of data READ and WRITTEN	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	Local Diva System	Transfer Size	SUM	1 day	Yes
DIVARCHIVE_SYSTEM_READ_WRITE	DivArchive System : amount of data READ and WRITTEN	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	Local Diva System	Transfer Size	SUM	Lifetime	Yes
DIVARCHIVE_SYSTEM_AVG_READ_WRITE_DAY	DivArchive System : Average amount of data READ and WRITTEN	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	Local Diva System	Transfer Size	Weight Average	1 day	Yes
DIVARCHIVE_SYSTEM_AVG_READ_WRITE	DivArchive System : Average amount of data READ and WRITTEN	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	Local Diva System	Transfer Size	Weight Average	Lifetime	Yes
DIVARCHIVE_SYSTEM_READ_WRITE_ABORTED_NUMBER_DAY	DivArchive System : number of ABORTED READ and ABORTED WRITE operations	DISK READ ERR TAPE READ ERR SD READ ERR DISK WRITE ERR TAPE WRITE ERR SD WRITE ERR	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_READ_WRITE_ABORTED_NUMBER	DivArchive System : number of ABORTED READ and ABORTED WRITE operations	DISK READ ERR TAPE READ ERR SD READ ERR DISK WRITE ERR TAPE WRITE ERR SD WRITE ERR	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_ACTIVE_ARCHIVE_NUMBER_DAY	DivArchive System : number of active archive request	ARCHIVE REQUEST	Local Diva System	Number of Operations	MAX	1 day	Yes
DIVARCHIVE_SYSTEM_ACTIVE_ARCHIVE_NUMBER	DivArchive System : number of active archive request	ARCHIVE REQUEST	Local Diva System	Number of Operations	MAX	Lifetime	Yes
DIVARCHIVE_SYSTEM_ACTIVE_RESTORE_NUMBER_DAY	DivArchive System : number of active restore request	RESTORE	Local Diva System	Number of Operations	MAX	1 day	Yes
DIVARCHIVE_SYSTEM_ACTIVE_RESTORE_NUMBER	DivArchive System : number of active restore request	RESTORE	Local Diva System	Number of Operations	MAX	Lifetime	Yes
DIVARCHIVE_SYSTEM_ACTIVE_COPY_NUMBER_DAY	DivArchive System : number of active copy request	COPY REQUEST	Local Diva System	Number of Operations	MAX	1 day	Yes
DIVARCHIVE_SYSTEM_ACTIVE_COPY_NUMBER	DivArchive System : number of active copy request	COPY REQUEST	Local Diva System	Number of Operations	MAX	Lifetime	Yes
DIVARCHIVE_SYSTEM_ACTIVE_COPY_AS_NUMBER_DAY	DivArchive System : number of active copy as new object request	COPY AS REQUEST	Local Diva System	Number of Operations	MAX	1 day	Yes
DIVARCHIVE_SYSTEM_ACTIVE_COPY_AS_NUMBER	DivArchive System : number of active copy as new object request	COPY AS REQUEST	Local Diva System	Number of Operations	MAX	Lifetime	Yes
DIVARCHIVE_SYSTEM_OBJECT_EXPORT_NUMBER_DAY	DivArchive System : number of OBJECTS Exported	Not calculated in Phase 2	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_OBJECT_EXPORT_NUMBER	DivArchive System : number of OBJECTS Exported	Not calculated in Phase 2	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_OBJECT_INSTANCE_EXPORT_NUMBER_DAY	DivArchive System : number of INSTANCE Exported	Not calculated in Phase 2	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_OBJECT_INSTANCE_EXPORT_NUMBER	DivArchive System : number of INSTANCE Exported	Not calculated in Phase 2	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_OBJECT_IMPORT_NUMBER_DAY	DivArchive System : number of OBJECTS Imported	Not calculated in Phase 2	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_OBJECT_IMPORT_NUMBER	DivArchive System : number of OBJECTS Imported	Not calculated in Phase 2	Local Diva System	Event Id	Count	Lifetime	Yes
DIVARCHIVE_SYSTEM_OBJECT_INSTANCE_IMPORT_NUMBER_DAY	DivArchive System : number of INSTANCE Imported	Not calculated in Phase 2	Local Diva System	Event Id	Count	1 day	Yes
DIVARCHIVE_SYSTEM_OBJECT_INSTANCE_IMPORT_NUMBER	DivArchive System : number of INSTANCE Imported	Not calculated in Phase 2	Local Diva System	Event Id	Count	Lifetime	Yes
MEDIA_READ_WRITE_NUMBER_DAY	Media : number of READ and WRITE operations	DISK READ TAPE READ DISK WRITE TAPE WRITE	Media	Event Id	Count	1 day	Yes

Metric Name	Metric Description	Events	Aggregate By	Collect Field	Operation	Collection Interval	Enabled
MEDIA_READ_WRITE_NUMBER	Media : number of READ and WRITE operations	DISK READ TAPE READ DISK WRITE TAPE WRITE	**Media**	**Event Id**	Count	Lifetime	Yes
MEDIA_READ_WRITE_DAY	Media : amount of data READ and WRITTEN	DISK READ TAPE READ DISK WRITE TAPE WRITE	**Media**	**Transfer Size**	SUM	1 day	Yes
MEDIA_READ_WRITE	Media : amount of data READ and WRITTEN	DISK READ TAPE READ DISK WRITE TAPE WRITE	**Media**	**Transfer Size**	SUM	Lifetime	Yes
MEDIA_OBJECT_INSTANCE_CREATE_DELETE_DAY	Media : number of object instance CREATED and DELETED	CREATE INSTANCE DELETE INSTANCE	**Media**	**Event Id**	Count	1 day	Yes
MEDIA_OBJECT_INSTANCE_CREATE_DELETE	Media : number of object instance CREATED and DELETED	CREATE INSTANCE DELETE INSTANCE	**Media**	**Event Id**	Count	Lifetime	Yes
MEDIA_OBJECT_INSTANCE_ONLINE_DAY	Media : number of object instance ONLINE	Not Calculated Based on Events	**Media**	**Event Id**	Count	1 day	Yes
MEDIA_OBJECT_INSTANCE_EXTERN_DAY	Media : number of object instance Externalized	Not Calculated Based on Events	**Media**	**Event Id**	Count	1 day	Yes
ACTOR_READ_WRITE_NUMBER_DAY	Actor : number of READ and WRITE operations	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	**Actor Name**	**Event Id**	Count	1 day	Yes
ACTOR_READ_WRITE_NUMBER	Actor : number of READ and WRITE operations	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	**Actor Name**	**Event Id**	Count	Lifetime	Yes
ACTOR_READ_WRITE_DAY	Actor : amount of data READ and WRITTEN	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	**Actor Name**	**Transfer Size**	SUM	1 day	Yes
ACTOR_READ_WRITE	Actor : amount of data READ and WRITTEN	DISK READ TAPE READ SD_READ DISK WRITE TAPE WRITE SD_WRITE	**Actor Name**	**Transfer Size**	SUM	Lifetime	Yes
ACTOR_TIME_ALL_OPERATION_DAY	Actor : time in all operations	TAPE MOUNT TAPE MOUNT ERR TAPE POSITION TAPE POSITION ERR DISK READ DISK READ ERR TAPE READ TAPE READ ERR DISK WRITE DISK WRITE ERR TAPE WRITE TAPE WRITE ERR SD READ SD READ ERR SD WRITE SD WRITE ERR TAPE UNLOAD TAPE UNLOAD ERR END OF TAPE	**Actor Name**	**Event Duration**	SUM	1 day	Yes
ACTOR_TIME_ALL_OPERATION	Actor : time in all operations	TAPE MOUNT TAPE MOUNT ERR TAPE POSITION TAPE POSITION ERR DISK READ DISK READ ERR TAPE READ TAPE READ ERR DISK WRITE DISK WRITE ERR TAPE WRITE TAPE WRITE ERR SD READ SD READ ERR SD WRITE SD WRITE ERR TAPE UNLOAD TAPE UNLOAD ERR END OF TAPE	**Actor Name**	**Event Duration**	SUM	Lifetime	Yes
ACTOR_TIME_READ_DAY	Actor : time in READ operations	DISK READ TAPE READ SD READ	**Actor Name**	**Event Duration**	SUM	1 day	Yes
ACTOR_TIME_READ	Actor : time in READ operations	DISK READ TAPE READ SD READ	**Actor Name**	**Event Duration**	SUM	Lifetime	Yes

Metric Name	Metric Description	Events	Aggregate By	Collect Field	Operation	Collection Interval	Enabled
ACTOR_TIME_WRITE_DAY	Actor : time in WRITE operations	DISK WRITE TAPE WRITE SD WRITE	Actor Name	Event Duration	SUM	1 day	Yes
ACTOR_TIME_WRITE	Actor : time in WRITE operations	DISK WRITE TAPE WRITE SD WRITE	Actor Name	Event Duration	SUM	Lifetime	Yes
ACTOR_READ_WRITE_ABORTED_NUMBER_DAY	Actor : number of ABORTED READ and ABORTED WRITE operations with drives	TAPE READ ERR TAPE WRITE ERR	Actor Name	Event Id	Count	1 day	Yes
ACTOR_READ_WRITE_ABORTED_NUMBER	Actor : number of ABORTED READ and ABORTED WRITE operations with drives	TAPE READ ERR TAPE WRITE ERR	Actor Name	Event Id	Count	Lifetime	Yes
ACTOR_READ_WRITE_ABORTED_NUMBER_SD_DAY	Actor : number of ABORTED READ and ABORTED WRITE operations with SD	SD READ ERR SD WRITE ERR	Actor Name	Event Id	Count	1 day	Yes
ACTOR_READ_WRITE_ABORTED_NUMBER_SD	Actor : number of ABORTED READ and ABORTED WRITE operations with SD	SD READ ERR SD WRITE ERR	Actor Name	Event Id	Count	Lifetime	Yes
TRANSCODE_NUMBER_DAY	Transcoder : number TRANSCODE operations	TRANSCODE END	Transcoder Name	Event Id	Count	1 day	Yes
TRANSCODE_NUMBER	Transcoder : number TRANSCODE operations	TRANSCODE END	Transcoder Name	Event Id	Count	Lifetime	Yes
TRANSCODE_ABORTED_NUMBER_DAY	Transcoder : number ABORTED TRANSCODE operations	TRANSCODE ERR	Transcoder Name	Event Id	Count	1 day	Yes
TRANSCODE_ABORTED_NUMBER	Transcoder : number ABORTED TRANSCODE operations	TRANSCODE ERR	Transcoder Name	Event Id	Count	Lifetime	Yes
TRANSCODE_DATA_DAY	Transcoder : amount of data TRANSCODED	TRANSCODE END	Transcoder Name	Transfer Size	SUM	1 day	Yes
TRANSCODE_DATA	Transcoder : amount of data TRANSCODED	TRANSCODE END	Transcoder Name	Transfer Size	SUM	Lifetime	Yes
TRANSCODE_AVG_DATA_DAY	Transcoder : Average amount of data TRANSCODED	TRANSCODE END	Transcoder Name	Transfer Size	Weight Average	1 day	Yes
TRANSCODE_AVG_DATA	Transcoder : Average amount of data TRANSCODED	TRANSCODE END	Transcoder Name	Transfer Size	Weight Average	Lifetime	Yes
TRANSCODE_AVG_THROUGHPUT_DAY	Transcoder: Average transcoding throughput	TRANSCODE END	Transcoder Name	Transfer Rate	Average	1 day	Yes
TRANSCODE_AVG_THROUGHPUT	Transcoder: Average transcoding throughput	TRANSCODE END	Transcoder Name	Transfer Rate	Average	Lifetime	Yes
TRANSCODE_MIN_THROUGHPUT_DAY	Transcoder: MIN transcoding throughput	TRANSCODE END	Transcoder Name	Transfer Rate	MIN	1 day	Yes
TRANSCODE_MIN_THROUGHPUT	Transcoder: MIN transcoding throughput	TRANSCODE END	Transcoder Name	Transfer Rate	MIN	Lifetime	Yes
TRANSCODE_MAX_THROUGHPUT_DAY	Transcoder: MAX transcoding throughput	TRANSCODE END	Transcoder Name	Transfer Rate	MAX	1 day	Yes
TRANSCODE_MAX_THROUGHPUT	Transcoder: MAX transcoding throughput	TRANSCODE END	Transcoder Name	Transfer Rate	MAX	Lifetime	Yes
TRANSCODE_TIME_DAY	Transcoder : time in TRANSCODING operation	TRANSCODE END	Transcoder Name	Event Duration	SUM	1 day	Yes
TRANSCODE_TIME	Transcoder : time in TRANSCODING operation	TRANSCODE END	Transcoder Name	Event Duration	SUM	Lifetime	Yes
ANALYZE_NUMBER_DAY	Analyzer : number ANALYZER operations	ANALYZER END	Analyzer Name	Event Id	Count	1 day	Yes
ANALYZE_NUMBER	Analyzer : number ANALYZER operations	ANALYZER END	Analyzer Name	Event Id	Count	Lifetime	Yes
ANALYZE_ABORTED_NUMBER_DAY	Analyzer : number ABORTED ANALYZER operations	ANALYZER ERR	Analyzer Name	Event Id	Count	1 day	Yes
ANALYZE_ABORTED_NUMBER	Analyzer : number ABORTED ANALYZER operations	ANALYZER ERR	Analyzer Name	Event Id	Count	Lifetime	Yes
ANALYZE_DATA_DAY	Analyzer : amount of data ANALYZED	ANALYZER END	Analyzer Name	Transfer Size	SUM	1 day	Yes
ANALYZE_DATA	Analyzer : amount of data ANALYZED	ANALYZER END	Analyzer Name	Transfer Size	SUM	Lifetime	Yes
ANALYZE_AVG_THROUGHPUT_DAY	Analyzer : Average analyzed throughput	ANALYZER END	Analyzer Name	Transfer Rate	Average	1 day	Yes
ANALYZE_AVG_THROUGHPUT	Analyzer : Average analyzed throughput	ANALYZER END	Analyzer Name	Transfer Rate	Average	Lifetime	Yes
ANALYZE_MIN_THROUGHPUT_DAY	Analyzer : MIN analyzed throughput	ANALYZER END	Analyzer Name	Transfer Rate	MIN	1 day	Yes
ANALYZE_MIN_THROUGHPUT	Analyzer : MIN analyzed throughput	ANALYZER END	Analyzer Name	Transfer Rate	MIN	Lifetime	Yes
ANALYZE_MAX_THROUGHPUT_DAY	Analyzer : MAX analyzed throughput	ANALYZER END	Analyzer Name	Transfer Rate	MAX	1 day	Yes
ANALYZE_MAX_THROUGHPUT	Analyzer : MAX analyzed throughput	ANALYZER END	Analyzer Name	Transfer Rate	MAX	Lifetime	Yes
ANALYZE_TIME_DAY	Analyzer : time in ANALYZER operations	ANALYZER END	Analyzer Name	Event Duration	SUM	1 day	Yes
ANALYZE_TIME	Analyzer : time in ANALYZER operations	ANALYZER END	Analyzer Name	Event Duration	SUM	Lifetime	Yes
SD_READ_NUMBER_DAY	SD : number of READ operations	SD READ	SD Name	Event Id	Count	1 day	Yes
SD_READ_NUMBER	SD : number of READ operations	SD READ	SD Name	Event Id	Count	Lifetime	Yes
SD_WRITE_NUMBER_DAY	SD : number of WRITE operations	SD WRITE	SD Name	Event Id	Count	1 day	Yes
SD_WRITE_NUMBER	SD : number of WRITE operations	SD WRITE	SD Name	Event Id	Count	Lifetime	Yes
SD_READ_DAY	SD : amount of data READ	SD READ	SD Name	Transfer Size	SUM	1 day	Yes
SD_READ	SD : amount of data READ	SD READ	SD Name	Transfer Size	SUM	Lifetime	Yes
SD_WRITE_DAY	SD : amount of data WRITTEN	SD WRITE	SD Name	Transfer Size	SUM	1 day	Yes
SD_WRITE	SD : amount of data WRITTEN	SD WRITE	SD Name	Transfer Size	SUM	Lifetime	Yes
SD_TIME_DAY	SD : time in operation	SD READ SD WRITE	SD Name	Event Duration	SUM	1 day	Yes
SD_TIME	SD : time in operation	SD READ SD WRITE	SD Name	Event Duration	SUM	Lifetime	Yes
DIVAPROTECT_EXECUTION_COUNT_DAY	DIVAPROTECT : number of times DivaProtect was executed	Built In Metrics	Local Diva System	Number of Operations	Count	1 day	Yes

Metric Name	Metric Description	Events	Aggregate By	Collect Field	Operation	Collection Interval	Enabled
DIVAPROTECT_EXECUTION_COUNT_DAY	DIVAPROTECT : number of times DivaProtect was executed	Built In Metrics	Local Diva System	Number of Operations	Count	1 day	Yes
DIVAPROTECT_EXECUTION_COUNT	DIVAPROTECT : number of times DivaProtect was executed	Built In Metrics	Local Diva System	Number of Operations	Count	Lifetime	Yes
DIVAPROTECT_EVENTS_PROCESSED_DAY	DIVAPROTECT : Number of EVENTS DivaProtect Processed	Built In Metrics	Local Diva System	Number of Operations	Count	1 day	Yes
DIVAPROTECT_EVENTS_PROCESSED	DIVAPROTECT : Number of EVENTS DivaProtect Processed	Built In Metrics	Local Diva System	Number of Operations	Count	Lifetime	Yes
DIVAPROTECT_METRIC_PROCESSED_DAY	DIVAPROTECT : Number of METRICS DivaProtect Processed	Built In Metrics	Local Diva System	Number of Operations	Count	1 day	Yes
DIVAPROTECT_METRIC_PROCESSED	DIVAPROTECT : Number of METRICS DivaProtect Processed	Built In Metrics	Local Diva System	Number of Operations	Count	Lifetime	Yes
DIVAPROTECT_INTERNAL_ERROR_DAY	DIVAPROTECT : Number of DivaProtect Internal Errors	Built In Metrics	Local Diva System	Number of Operations	Count	1 day	Yes
DIVAPROTECT_INTERNAL_ERROR	DIVAPROTECT : Number of DivaProtect Internal Errors	Built In Metrics	Local Diva System	Number of Operations	Count	Lifetime	Yes
MEDIA_TAPE_IMPORT_NUMBER_DAY	Media : Number of tapes IMPORTED	TAPE_IMPORT	Media	Event Id	Count	1 day	Yes
MEDIA_TAPE_EXPORT_NUMBER_DAY	Media : Number of tapes EXPORTED	TAPE_EXPORT	Media	Event Id	Count	1 day	Yes
MEDIA_DATA_SIZE_HOUR	Media : Total size of all objects	Not Calculated Based on Events	Media	Data Size	SUM	1 Hour	Yes
MEDIA_ARCHIVED_OBJECT_DATASIZE_DAY	Media : Data Size of all objects archived	ARCHIVE_REQUEST	Media	Transfer Size	SUM	1 day	Yes
MEDIA_RESTORE_OBJECT_DATASIZE_DAY	Media : Data Size of all objects restored	RESTORE	Media	Transfer Size	SUM	1 day	Yes
SD_RESTORE_OBJECT_DATASIZE_DAY	SD : Data Size odf all objects restored	RESTORE	SD Name	Transfer Size	SUM	1 day	Yes

A4 Default Configuration

Configuration Parameter	Default	Values
Manager: Enable/Disable DIVAprotect Data Collection	1	0 or 1
Manager: Size of the event batch download (*number of events*)	100	Integer
Manager: Max timeout in the event there are not events to fill the above batch (*seconds*)	15	Integer
Conf Utility GUI: Enable/Disable DIVAprotect Configuration	0	0 or 1
DB: Maximum possible number of Events in DB	1,000,000	Integer
DB: Maximum possible number of Metrics in DB	1,000,000	Integer

A5 Supported Tape Libraries and Drives

The table below lists the **Tape Libraries** currently supported by DIVArchive:

Manufacturer	Library
ADIC	Scalar 100 Scalar 1K Scalar 10K Scalar 12K Scalar i2000 Scalar i500 Scalar i6000
StorageTek	9310 5500 L180 L700 SL8500 SL3000 SL24 SL500 L80/L40/L20 L1400M
HP	ESL e-series EML e-series MSL-2024 MSL-8096
Sony Petasite	S60 S100 S200
IBM	TS3500 (*3584*) TS3310 TS3100
Dell	TL2000 ML6010

Manufacturer	Library
Qualstar	TLS-5000
Spectralogic	T-50 / T-50e T-380 T-120 T-950
BreeceHill	iStorA

Notes:

- **Library Alert Logs collection is only supported for libraries connected via a SCSI interface.**
- **Tape Drive Serial Number collection support is limited to directly-attached libraries interfaced via SCSI protocol and libraries controlled by an ACSLS Library Server System.**

The table below lists the **Tape Drives** currently supported by DIVArchive:

Manufacturer	Drive
IBM	LTO-1 LTO-2 LTO-3 LTO-4 LTO-5 3592 TS1120
HP	LTO-3 LTO-4 LTO-5 LTO-6

Manufacturer	Drive
STK	9840A,B,C 9940A,B Titanium 10000-A Titanium 10000-B
Sony	SAIT SAIT2 AIT3 ODS-D55U ODS-D77F
Quantum	DLT
Matsushita	LFD30xx