



Auditing User Access in Virtual DataPort

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Goal

This document describes how to set up auditing connection information to the Virtual DataPort Server such as user login names, origin of the connection, connection times, etc. There are two ways to keep a record of this information: using the Denodo Monitor Tool or an external JMX (Java Management Extensions) client. This document will use Java™ VisualVM as an example JMX client.

Denodo Monitor Tool

The [Denodo Monitor](#) is a tool included in the Denodo Platform that logs several parameters of the Denodo servers. One of these logs information on connections to the VDP server.

This log contains information such as the server name, host, port, client IP address, login and logout time, the interface used to access the server, login name, the database and web service accessed.

The Denodo Monitor must be started in order for the logs to start recording the connection information. The following Virtual DataPort Administration Guide provides steps to start the Denodo monitor.

- [Configuring the Denodo Monitor](#)
- [Launching the Denodo Monitor](#)
- It can also be configured as a system service ([Linux](#), [Windows](#)) (Optional step)

Once the Denodo Monitor is started, the connection information including user access to the VDP server can be found in the vdp-connections.log file located in <DENODO_HOME>/tools/monitor/denodo-monitor/denodo-monitor/logs

This file can also be used as a data source to create a base view in order to easily search through the information.

To do this, go to the Virtual DataPort Administration Tool or the Web Design Studio and create a new Delimited File data source.

- Go to File > New > Data Source > Delimited File
- Enter the following configuration:
 - Data Route: Local
(<DENODO_HOME>/tools/monitor/denodo-monitor/denodo-monitor/logs/vdp-connections.log)
 - Column Delimiter: \t
 - End of line delimiter: \n
 - Start of data zone delimiter: ServerName
 - Select Header

new_df_datasource

CONFIGURATION Save Clear Changes Test Connection

Connection Metadata

Name ds_connections

Data route Local

File path C:/Denodo8/DenodoPlatform8.0/tools/monitor/denodo-monitor/denodo-monitor/logs/vdp-connections.log

File name pattern

Autodetect encoding

Input filter

None

Decompress (zip format)

Decompress (gzip format)

Decrypt

Custom

Ignore route errors

Use column delimiter Use tuple pattern

Column delimiter t

Delimiter consists of multiple characters

End of line delimiter n

Start of data zone delimiter ServerName

Start delimiter from variable

Include start delimiter as data

End of data zone delimiter

Include end delimiter as data

Header

The following image is an example of the results you will see in after creating and executing a base view over the data source in the VDP:

admin.bv_connections

SUMMARY EDIT OPTIONS VDL Execution panel Used By Data Lineage Associations Publish Export Drop

Database admin View name bv_connections

Execute Query Results

RESULTS EXECUTION TRACE Refresh Save Copy Trace to Clipboard

T7 rows 18 columns received SELECT * FROM admin.bv_connections CONTEXT('cache_wait_for_load' = 'true') TRACE

id_0	host	port	notificationtype	connectionid	connectionstartt...	connectionendtl...	clientip	useragent	accessinterface	sessionid	sessionstarttime	sessionendtime	login	database
vdp	localhost	9999	closeSession	6	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	15	2020-05-15T16:2...	2020-05-15T16:2...	admin	delegator
vdp	localhost	9999	logout	6	2020-05-15T16:2...	2020-05-15T16:2...	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	14	2020-05-15T16:2...	2020-05-15T16:2...	admin	admin
vdp	localhost	9999	closeSession	8	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	21	2020-05-15T16:2...	2020-05-15T16:2...	admin	delegator
vdp	localhost	9999	logout	8	2020-05-15T16:2...	2020-05-15T16:2...	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	18	2020-05-15T16:2...	2020-05-15T16:2...	admin	admin
vdp	localhost	9999	closeSession	7	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	17	2020-05-15T16:2...	2020-05-15T16:2...	admin	delegator
vdp	localhost	9999	logout	7	2020-05-15T16:2...	2020-05-15T16:2...	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	16	2020-05-15T16:2...	2020-05-15T16:2...	admin	admin
vdp	localhost	9999	closeSession	9	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	22	2020-05-15T16:2...	2020-05-15T16:2...	admin	delegator
vdp	localhost	9999	logout	9	2020-05-15T16:2...	2020-05-15T16:2...	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	20	2020-05-15T16:2...	2020-05-15T16:2...	admin	admin
vdp	localhost	9999	logout	10	2020-05-15T16:2...	2020-05-15T16:2...	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	19	2020-05-15T16:2...	2020-05-15T16:2...	admin	admin
vdp	localhost	9999	loginOk	11	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	23	2020-05-15T16:2...	-	admin	admin
vdp	localhost	9999	openSession	11	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	24	2020-05-15T16:2...	-	admin	delegator
vdp	localhost	9999	loginOk	12	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	25	2020-05-15T16:2...	-	admin	admin
vdp	localhost	9999	openSession	12	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	26	2020-05-15T16:2...	-	admin	delegator
vdp	localhost	9999	loginOk	13	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	27	2020-05-15T16:2...	-	admin	admin
vdp	localhost	9999	loginOk	14	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	28	2020-05-15T16:2...	-	admin	admin
vdp	localhost	9999	openSession	13	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	29	2020-05-15T16:2...	-	admin	delegator
vdp	localhost	9999	openSession	14	2020-05-15T16:2...	-	10.0.75.1	Denodo-VDP-Ad...	VDP-AdminTool	30	2020-05-15T16:2...	-	admin	delegator

Note that if the Denodo Monitor is restarted more than once a day, a selection view over the base view with the condition "bv_connections.id_0 <> 'ServerName'" will have to be created to skip the header that is generated every time the Denodo Monitor is restarted.

To access the connection records for several day, configure the data source without header and without start of data zone delimiter. The Local Data Route will have the file path: <DENODO_HOME>\tools\monitor\denodo-monitor\denodo-monitor\logs and then the File Name Pattern: "vdp-connections.log(.*)". This configuration will allow to read all the connection logs in the selected path.

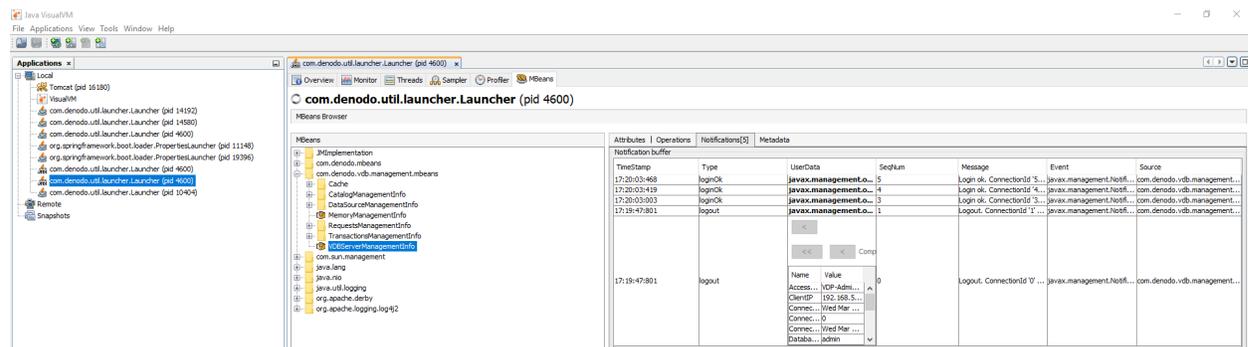
Furthermore, like any other view, it is possible to publish the connections view as a web service and assign access privileges to users as another access method.

JMX Client (example with Java Visual VM)

You may also use a JMX Client instead of the Denodo Monitor to find out information about users who have accessed the VDP server. To monitor the server connections using Java Visual VM execute the following steps:

1. Run Java Visual VM and Start `jvisualvm` located in `<JAVA_HOME>/jdkx.x/bin`
2. Add new JMX Connection
 - File > Add JMX Connection
 - Connection: `<hostname>:<port>`
 - Select 'Use Security Credentials'
3. Go to MBeans VDBServerManagementInfo
 - If you do not already have the MBeans Plugin installed go to Tools > Plugins > Available Plugins.
 - Select and install 'VisualVM-MBeans'
 - Click into the JMX connection node and go to the MBeans tab
 - Expand `com.denodo.vdb.management.mbeans`
 - Click into `VDBServerManagementInfo`
4. Subscribe to Notifications: in `VDBServerManagementInfo`, click on the Notifications tab and click 'Subscribe'
5. Log into the VDP Administration Tool or the Web Design Studio and check that the information is recorded in Visual VM

After logging in and out of the Denodo VDP Administration Tool or the Web Design Studio, you will have notifications in the JMX client. To obtain information about the user access of a session, double-click on any cell in the 'User Data' column



The screenshot shows the Java Visual VM interface. The left pane displays the MBeans tree with `com.denodo.vdb.management.mbeans.VDBServerManagementInfo` selected. The right pane shows the Notifications tab for this MBean, displaying a table of events:

Timestamp	Type	UserData	SeqNum	Message	Event	Source
17:20:03:468	loginOk	javax.management...	5	Login Ok, ConnectorId 5...	javax.management.ho86...	com.denodo.vdb.management...
17:20:03:419	loginOk	javax.management...	4	Login Ok, ConnectorId 4...	javax.management.ho86...	com.denodo.vdb.management...
17:20:03:003	loginOk	javax.management...	3	Login Ok, ConnectorId 3...	javax.management.ho86...	com.denodo.vdb.management...
17:19:47:801	logout	javax.management...	1	Logout, ConnectorId 1...	javax.management.ho86...	com.denodo.vdb.management...

Below the table, the 'User Data' column is expanded for the 'logout' event, showing details such as Access, ClientIP, and Database.

These steps are explained in more detail in the Virtual DataPort Administration Guide in the section [Monitoring with a Java Management Extensions \(JMX\) Agent](#).

References

Virtual DataPort Administration Guide: [Monitoring the Virtual DataPort Server](#)

Virtual DataPort Administration Guide: [Using Java™ VisualVM](#)
Virtual DataPort Administration Guide: [Denodo Monitor](#)