



ibaPDA-Data-Store-Oracle

Data streaming into Oracle DB

Manual Issue 1.0

> Measurement Systems for Industry and Energy www.iba-ag.com

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The current version is available for download on our web site www.iba-ag.com.

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1 About this manual

This documentation describes the function and application of the data store *ibaPDA-Data-Store-Oracle*.

This documentation is a supplement to the *ibaPDA* manual. Information about all the other characteristics and functions of *ibaPDA* may be found in the *ibaPDA* manual or in the online help.

You will find basic information about data storage in *ibaPDA* in the *ibaPDA* manual part 5.

1.1 Target group and previous knowledge

This documentation addresses qualified professionals, who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded as professional if he/she is capable of assessing the work assigned to him/her and recognizing possible risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

This documentation in particular addresses persons, who are concerned with the configuration, test, commissioning or maintenance of the supported database, cloud or cluster storage technology. For the handling of *ibaPDA-Data-Store-Oracle* the following basic knowledge is required and/or useful:

- Windows operating system
- Basic knowledge of *ibaPDA*
- Basic knowledge of databases, cloud or cluster storage technology

1.2 Notations

In this manual, the following notations are used:

Action	Notation
Menu command	Menu <i>Logic diagram</i>
Calling the menu command	Step 1 – Step 2 – Step 3 – Step x
	Example:
	Select the menu <i>Logic diagram - Add - New function block</i> .
Кеуѕ	<key name=""></key>
	Example: <alt>; <f1></f1></alt>
Press the keys simultaneously	<key name=""> + <key name=""></key></key>
	Example: <alt> + <ctrl></ctrl></alt>
Buttons	<key name=""></key>
	Example: <ok>; <cancel></cancel></ok>
File names, paths	"Filename", "Path"
	Example: "Test.doc"

1.3 Used symbols

If safety instructions or other notes are used in this manual, they mean:

Danger!



The non-observance of this safety information may result in an imminent risk of death or severe injury:

Observe the specified measures.

Warning!



The non-observance of this safety information may result in a potential risk of death or severe injury!

• Observe the specified measures.

Caution!



The non-observance of this safety information may result in a potential risk of injury or material damage!

Observe the specified measures

Note



A note specifies special requirements or actions to be observed.

Тір



Tip or example as a helpful note or insider tip to make the work a little bit easier.

Other documentation



Reference to additional documentation or further reading.



2 Introduction

Different types of data stores are available in *ibaPDA* for different purposes and methods of data storage. Depending on the licenses registered in the dongle, different types of data stores are available for configuration in the dialog.

This documentation describes the "DB/Cloud timebased data store" type of recording. This recording type writes timebased data to a database, such as SAP HANA, SQL Server, Oracle, MySQL or PostgreSQL.

No measurement files are generated, but the data is written to a table in the database. You define the table structure using the storage profile, see chapter **7** Storage profiles, page 14

Chapter **7** Signal selection, page 17 describes the selection of the signals that are to be recorded.

The data can be continuously recorded or recorded by trigger, see chapter **7** *Trigger mode*, page 18.

2.1 System requirements

The following system requirements are necessary when using data storage in an Oracle database:

- *ibaPDA* v7.2.0 or higher
- License for *ibaPDA-Data-Store-Oracle*
- Oracle client installation (32 bit)

The licenses are staggered according to the number of signals that should be written in a database. The number of used data stores is unlimited.

Order no.	Product name	Description
30.671020	ibaPDA-Data-Store-Oracle-64	Data streaming into Oracle DB/ cloud, max. 64 signals
30.671021	ibaPDA-Data-Store-Oracle-256	Data streaming into Oracle DB/ cloud, max. 256 signals
30.671022	ibaPDA-Data-Store-Oracle-1024	Data streaming into Oracle DB/ cloud, max. 1024 signals
30.671025	upgrade-ibaPDA-Data-Store- Oracle-64 to 256	License for extension from 64 to 256 signals
30.671026	upgrade-ibaPDA-Data-Store- Oracle-256 to 1024	License for extension from 256 to 1024 signals

 Table 1: Available licenses for the data storage in Oracle databases

3 Data store configuration

3.1 Add a data store

The dialog for data storage configuration can be opened in the *Configure – Data storage* main menu or by clicking on the button in the main toolbar.

In order to add a new data store, click on the blue link *Add data store* in the tree structure. You can also right-click on the data store node in the tree structure and choose *Add data store* from the context menu.

Select *DB/Cloud timebased data store* for the recording of timebased data into a database or cloud.

ata store type : Timebased data store	
baHD timebased data store	
ibaHD event data store	
ibaHD lengthbased data store	
DB/Cloud timebased data store	
🖞 Kafka cluster timebased data store	
	a time series database or cloud like e.g. SQL Server,

Fig. 1: Add a data store

3.2 Database type Oracle

First select the database type *Oracle* and then configure the other necessary settings.

🔏 Data storage					— —	×	
i 🗅 💕 🎬 🖬 🕆 🎚							
Profiles Stop prevention	DB/Cloud tim	ebased	data store 1				
Diagnostics Data Store 1 DB/Cloud timebased data store 1 DB/Cloud timebased data store 1 Tigger Mode Signal selection Add data store	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database connecti Basic TNS TNS name or content: Either TNS settings must	50 🔅 M	ased data store 1 B Configured maximum buffer size: he oracle client or the full TNS content mu				
	User name: Oracle client:	Use OS auth	nentication e. Net Framework-Datenprovider ka	Password:	Test connection		
	Table						
	Table name:					~	
	Timebase:	1,000 🜲	s		Check table		
	Write data every:	100 🜩	samples				
	0			0 ок	Apply Can	icel	

Fig. 2: Configuration database type Oracle

General

Locked

A data store can be locked in order to prevent an accidental or unauthorized change of settings.

Active

A data store must be enabled in order to work. However, you can configure various data stores and disable data stores that are not required.

Data store name

You can enter a name for the data store here.

Maximum buffer size

The maximum buffer size determines how much data is buffered in *ibaPDA* in the event of a temporary connection loss with the database. The buffer is kept in the RAM. When the acquisition is restarted, the buffer memory is deleted.

Configured maximum buffer size

This field indicates the time span that can be temporarily stored in the buffer with the configured settings. Specification in d.hh:mm:ss.



Database

Database type

Select your database type from the drop-down menu, here Oracle.

There are two ways to configure the connection to the Oracle database. The difference is the way the connection to the Oracle server or cluster is established.

- TNS configuration, details see chapter **7** TNS configuration, page 12
- Basic configuration, details see chapter **7** Basic configuration, page 13

In both cases you have to authenticate yourself:

User name/password

Enter user name and password as login. This option must be configured accordingly in the database.

Use OS authentication

The user account the *ibaPDA* server is running on is used to make a connection to the Oracle server or cluster.

Oracle client

To be able to connect *ibaPDA* to an Oracle database, the Oracle client must be installed on *ibaPDA* server PC. If the client has been installed successfully, the version number is displayed here for information.

Detailed notes on the installation of different versions of the Oracle client can be found in the appendix in chapter **7** Notes on Oracle client installation, page 24.

<Test connection>

Use the <Test connection> button to test the connection to the database. When testing the connection *ibaPDA* tries to retrieve the current list of tables and fills in the drop-down list *Table name* in the *Table* area. If the connection is successful, the version of the database is also displayed.

Table

Table name

Select an existing table from the drop-down menu or enter the name of a new table. The table name can be a full table name consisting of schema name and table name separated by a dot, for example "iba.test". If the table name does not include the schema name then the table will be created in the default schema of the configured user.

Timebase

Enter a timebase for the table. All data in the table are equidistant. All timestamps will be aligned to the timebase.

Write data every x samples

Instead of inserting 1 row at a time into the database it is much more efficient to insert multiple rows at once. This can be controlled via the "Write data every x samples" option.

<Check table>

The <Check table> button can be used to check if the table exists and if all required columns exist and have the correct data type. The required columns depend on the selected signals and their storage profile. Therefore, before checking the table, you should configure the storage profile, see **7** *Storage profiles*, page 14 and select the signals, see **7** *Signal selection*, page 17.

If you check the table after configuring the storage profile and selecting the signals, the table will be created automatically in the database by *ibaPDA*.

In case the table already exists in the database and the structure is compliant with the configuration, you will just see a confirmation message.

If a table already exists in the database and the structure is not compliant with the configuration, the following dialog is shown listing the differences:

Column	Data type	Status	Fix		
	datetime2	OK			
S LOCAL_TIME	datetime2	Column is not available			
[SP_Speed]	real	ок			
[SP_Tension]	real	ок	1		
[AV_Tension]	real	Column is not available			
[AV_Temperature]	real	Column is not available			
[Product_Cycle_Cnt]	real	ок			
[Product_Ident]	nvarchar	ок			
[Customer]	nvarchar	OK			
[Product_Start]	bit	Column is not available			
] [Tension_high]	bit	ок			
[Temperature_high]	bit	ок	2		
SP_Temperature	real	Column is no longer required			
AV_Speed	real	Column is no longer required			
Av_Speed	real	Column is no longer required			

Fig. 3: Check table

Each line corresponds to one column. The first column shows the message type: Info, warning or error. The second column shows the column name, the third column shows the data type and the fourth column shows the current message. In the last column you can select which columns you want to correct. The faulty columns are always selected and cannot be deselected. If you click on <Fix columns> *ibaPDA* tries to correct the selected columns.

In case the changes that have to be done to an existing table according to your configuration are too profound, the existing table has to be deleted and a new one will be created. This will lead to the loss of the data in the existing table.

3.2.1 TNS configuration

Oracle database connection	
Basic TNS	
TNS name or content:	\sim
Either TNS settings must be configured in the oracle client or the full TNS content must be provided above in a single line.	

Fig. 4: TNS configuration

Configuration with TNS allows the use of a failover cluster instead of a single server configuration for the Oracle database.

There are 2 possibilities for the TNS configuration:

1. Enter the name of a connection that is stored in the "tnsnames.ora" file in the Oracle client directory.

Note that the client directory is the directory where the Oracle client dll that is configured in *machine.config* is located.

ODP.NET searches for the file *tnsnames.ora* in the following order:

- First in the Oracle client directory. That is a parent directory of the directory where the *Oracle.ManagedDataAccess.dll* is located. Multiple clients can be installed, but only one ODP.NET installation can be configured machine wide, in *machine.config*.
- Then in the directory from where the application is started. For example in the *ibaPDA* server directory (C:\Program Files (x86)\iba\ibaPDA\Server).

2. Enter a complete section like it can be found in a *tnsnames.ora* file. Example:

(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=192.168.99.101) (PORT=1521)))(CONNECT_DATA=(SERVER=DEDICATED)(SERVICE_NAME=xe)))

Enter the complete section in one line. This entry has the advantage that *ibaPDA* can run while an upgrade of the Oracle server is being performed. ODP.NET will read *tnsnames.ora* only once. If the content of the file changes, you only need to add the part of the file that has changed to the Oracle configuration in the *ibaPDA* client and apply the new configuration.



3.2.2 Basic configuration

Oracle database connection		
Basic TNS		
Server address:	Port:	1521
Service name/SID:	Use SID instead	d of Service Name

Fig. 5: Basic configuration

When using basic configuration, *ibaPDA* can connect to one Oracle server. A failover cluster can not be configured with these settings.

The following settings are necessary:

Server address

IP address or DNS name of the Oracle server

Port

TCP port through which the Oracle server communicates

Service name/SID

Name of the Oracle service, as configured in the Oracle server

Use SID instead of Service Name

In some rare cases SID might need to be used. Please refer to the Oracle documentation for the difference between SID and service name.

4 Storage profiles

There is a special storage profile for the *DB/Cloud timebased data store*. In the storage profile you define which value from the signals is written to the table per timebase.

4.1 Add profile

To add a DB profile, select the *Profiles* branch in the tree structure of the data storage configuration dialog. Click the drop-down list icon on the <Add> button in the right pane and select *Time*, *DB/Cloud* from the drop-down list.



Fig. 6: Add profile

4.2 Profile Time, DB/Cloud

Profiles Stop prevention	Profiles									
Diagnostics Data store 1	Profiles									
 	As is	\$	Add 👌 🔹							
		4	Profile properties	s						
		×	Type:	Time, DB/	/Cloud					
		ELCO.	and the second	Time, DB/	Cloud 1				_	
			L	100,00					-	
			Filtering : None		O Min					
			 Average 							
			O Average							
			ID column value	e:	None	~				
			ID column size:		16	characters				
			Value column n	ame:	Signal nar	ne v				
		Value column si	78'	-	characters					
						Characters				
			Add column	tor local ti	ime					
			Preview							
	Data store 1 : No signals linked	1	I_TIME	LOCAL_		Signal O name	Signal 1 name	Signal 2 na	ILL	
	DB/Cloud timebased data store 1 : No signals linked		16:15:24.000	18:15:2	and the second sec	,6	text 604	68726		
			16:15:25.000 16:15:26.000	18:15:2	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	i,8 7,7	text 780 text 750	60076 26748	_	
			16:15:26.000	18:15:2	A CONTRACT OF	,/ 2,6	text 766	32359	_	
			16:15:28.000	18:15:2		,0 I,0	text 164	76257	_	
			16:15:29.000	18:15:2	CODAGE V	,s ,5	text 987	17769	-	

Fig. 7: Profile Time, DB/Cloud

Profile properties

Туре

Displays the profile type (information only)

Name

Enter a name for the profile.

Filtering

Select here which value from the signal will be written into the table every timebase. The following values can be selected:

- None: The signal value at the time at which the timebase expires is taken. All other values in the time range are ignored.
- Min: The smallest signal value within the timebase.
- Average: The average value of the signal in the timebase.
- Max: The largest signal value within the timebase.

Configure columns of the table

The table into which data is written using the data store always has a timestamp column with the unchangeable name *I_TIME*. The timestamp is always generated in UTC time.

In addition to the *I_TIME* column, a second time stamp column *LOCAL_TIME* with the local time of the *ibaPDA* server PC can be added optionally. To do this, the option *Add column for local time* must be enabled.

In the table, you can optionally specify an ID column that can be used as a key. The default name is *I_ID*. You can choose whether to use the ID column, and if so, which value should be inserted. The ID column value drop-down menu provides the following options:

- *None*: No ID column will be used.
- Fixed: A fixed text will be written into the ID column. This could be used for example when multiple *ibaPDA* systems are writing to the same table as an identification of the *ibaPDA* system. Enter the desired text in the input field to the right.
- Text signal: The value of a text signal. Select the desired text signal in the selection field to the right.
- Signal ID: The ID of the signal this profile is applied to. Example:
 A_0_1 means analog signal (A) with the signal ID in *ibaPDA* [0:1]
 D_0_1 means digital signal (D) with the signal ID in *ibaPDA* [0.1]
- Signal name: The name of the signal this profile is applied to.
- Signal comment 1: The first comment of the signal this profile is applied to.
- Signal comment 2: The second comment of the signal this profile is applied to.

ID column size

Here you can specify a character length for the ID column.

Value column name

The *Value column name* option determines the name of a column in which a signal value is written. You can choose between:

- Fixed: Fixed column name means, that the data of each signal will be written to a separate row. It is recommended to use the ID column to determine to which signal the data belongs.
- Signal ID: The colum name is the signal ID. Example:
 A_0_1 means analog signal (A) with the signal ID in ibaPDA [0:1].
 D_0_1 means digital signal (D) with the signal ID in ibaPDA [0.1].
- Signal name: The column name is the signal name. Characters that are not allowed in column names in the respective database type are replaced by underscores.
- Signal comment 1: The column name is derived from the first comment of the signal.
- Signal comment 2: The column name is derived from the second comment of the signal.

For all settings except "fixed", a row contains the data from multiple signals.

You specify the maximum character length in the Value column size field.

The preview shows a general example how a table with the current settings will look like.

Note



Additional information about the storage profiles can be found in the manual *ibaPDA*, part 5.

5 Signal selection

To enable signals to be recorded, they must be assigned to a storage profile of type *Time*, *DB*/*Cloud*. Select the signal selection node below your *DB*/*Cloud timebased data store* to open the signal selection dialog.

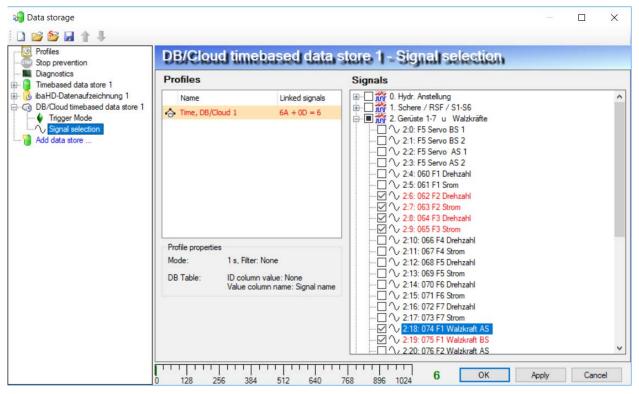


Fig. 8: Signal selection

In the profile list, select the storage profile to which you want to assign certain signals. Set a check mark in the selection fields next to the signals which you would like to assign to this profile.

A signal can only be assigned to one profile per data store.

The *Profile properties* section displays some information about the configured timebase, filtering and column naming of the selected profile.

DB/Cloud data stores are licensed for each database type separately, e. g. SAP HANA, Oracle, SQL Server etc. These licenses are staggered according to the number of signals written to the database. The current number of selected signals in all DB/Cloud data stores of one database type is shown at the bottom of the dialog, similar to the number of configured signals in the I/O Manager.

The licensed number of signals is indicated by the length of the signal strip. In the above example, it is possible to write up to 1,024 signals in several data stores of the same DB type. Currently 6 signals are enabled.

When you have configured all signals you want to write to the database, go back to the main node of the data store. There you can check the table with the <Check table> button.

6 Trigger mode

The description applies to the following types of data stores:

- Database/cloud timebased
- Kafka cluster timebased
- Mindsphere timebased
- MQTT timebased.

In the *Trigger Mode* node, you determine when data is recorded.

刹 Data storage						×
i 🗅 💕 🎬 🖬 🕆 🎚						
Profiles Stop prevention	DB/Cloud timebased data store 1 - Trigger Mode					
Stop prevention Diagnostics Trigger Mode Signal selection Big Alf Cloud timebased data store 1 Signal selection Add data store	Start Trigger Trigger type: ○ Unconditional ● Trigger on signal ○ 0:30: 20/2 V-1st ○ Trigger on signal ○ 0:30: 20/2 V-1st ○ Trigger every 60 ÷ ● Trigger every 60 ÷ ● One sample on change of ▲ Unassigned ● One sample on change of ▲ Unassigned ● Pre-trigger time: 0.000 ÷ ● One sample on change of ▲ Unassigned ● Pre-trigger time: 0.000 ÷ ● Ignore it ● ● Extend recording time Maximum number of extensions: Stop Trigger Trigger after recording ● Trigger on signal ● 5.0: neueProduktnummerKommt ✓ ● Trigger on signal ● 5.0: neueProduktnummerKommt Falling edge	>	0.000	•	m/s	
	0 128 256 384 512 640 768 896 1024 О ОК		Apply	С	ancel	~

Fig. 9: Trigger mode, Database/cloud example

Start trigger

You initially choose whether you would like to continuously record or it should be fired by a trigger.

Unconditional

The data is continuously recorded with this selection. In this case, the recording will start immediately at the start of the measurement or when pressing the "GO" button.

Trigger on signal

If you want the trigger to fire on a measured signal or a virtual signal, you need to check *Trigger* on signal in the option field. In the fields next to this, define the properties of the trigger signal.

- Field 1: Drop-down list for signal selection (available analog and digital signals)
- Field 2: Drop-down list for selecting edges or levels
- Field 3: Drop-down list for selecting the trigger level value given in the specific physical unit (field 3 is only enabled in case of analog trigger signals)

Both analog and digital signals can serve as triggers. The signal to trigger on is to be selected from the drop-down lists (see picture below, field 1). In the drop-down list, you will find the well-known signal tree containing available signals. Select the signal you want to use as trigger signal.

Start Trigger Trigger type:							
O Unconditional	field 1		field 2		field 3		
Trigger on signal	1 0:30: 030 ZW2 V-Ist	~	rising edge	~	0.540		m/s
Trigger every 60		^					
Pre-trigger time: 0.000 Trigger dead time: 0.000 If start trigger occurs again while a If start trigger occurs again while a			sition				
O Extend recording time			nber o <mark>f</mark> extensions:		3 🔹		
Stop Trigger Trigger type: Trigger after recording Trigger on signal	fright 2. Gerüste 1-7 u Walzkräfte fright 3. IBA-Logic fright 4. Schere fright 5. meine Berechnungen		falling edge	~			
	⊞ 👬 10. 16 bit decoder	~	raming coge	-			

Fig. 10: Configuring "Trigger on signal"

Depending on whether a digital or an analog signal was selected, the fields 2 or 3, respectively, are offered allowing the trigger event to be defined more specifically.

As for analog signals, you can choose between level or edge triggers including a predefined level (field 3).

it Trigger gger type:						
O Unconditional						
Trigger on signal	1 0:30: 030 ZW2 V-Ist	~	rising edge V	0,540	-	m/s
O Trigger every 60 €	minutes starting at 00:00		rising edge falling edge			
One sample on change of	A Unassigned	\sim	above level below level			

Fig. 11: Configuring "Trigger on signal", analog signal, edge or level

As for digital signals, you can choose between level or edge triggers including the 2 levels logical 0 (FALSE) and logical 1 (TRUE).

Trigger gger type:				
O Unconditional				
Trigger on signal	∬ 0.0: Triggerrelais	~	rising edge \sim	
O Trigger every 60 €	minutes starting at 00:00		rising edge falling edge	
One sample on change of	🛕 Unassigned	\sim	Logical 1 Logical 0	

Fig. 12: Configuring "Trigger on signal", digital signal

Trigger every ...

If you want to use a start trigger always at a certain time regularly, you can check the "Trigger every ... minutes starting at ..." option. Enter the period given in minutes, or select it from the



input field. Value range is from 0 to 1440, which equals one day. Then enter or select the start time for the first trigger. Value range is from 00:00 to 23:59, which equals one day.

One sample on change of

When the value of the selected signal changes, a sample is recorded. The recording will stop after one sample, until the next signal change is detected. A deadtime can be configured to determine a minimum amount of time between samples. Before the deadtime has elapsed, no new sample will be recorded.

Pre-trigger time

You can configure a pre-trigger time and then the recording begins by the pre-trigger time before the trigger event. If the trigger condition is met, the incoming data is added to the data buffered during the pre-trigger time.

Trigger dead time

This property is available for the start triggers "Trigger on signal", "Trigger every ..." and "One sample on change of". The trigger dead time determines the time of suppressing subsequent triggers after a trigger occurred.

If the dead time, for instance, is set to 5 seconds, all other triggers are ignored for the duration of 5 seconds after the first trigger occurrence.

Trigger at the start of the acquisition

If you want the recording to start immediately at acquisition start or as soon as you apply a new data storage configuration, you also need to check the *Trigger on acquisition start* option. If you do not enable this option, the recording first starts once the trigger is fired.

If start trigger occurs again while file is already recording, then:

You can determine here what should happen if a new start trigger occurs while a recording is already running.

Ignore it:

Selecting this option will cause the system to ignore any new start trigger during a running recording for as long as the stop trigger occurs

• Extend recording time:

If this option is enabled, it extends the duration of the running recording upon occurrence of another start trigger during an ongoing recording. This occurs as often as set in the "Maximum number of extensions on single file" field. If the max. number of extensions is reached, all subsequent start triggers will be ignored. Of course, the recording is stopped immediately by any stop trigger.

Stop trigger

The settings for the stop trigger are made in the same way as those for the start trigger. Here, both analog and digital signals can also be used as triggers.

Trigger after recording of x hours x minutes x seconds

Here you can configure a time span according to which the recording is ended - after the occurrence of the start trigger.



Trigger on signal

See explanation for start trigger above.

Post trigger time

You can configure a post trigger time and then the recording ends by the post trigger time after the stop trigger event.

7 Diagnostics

7.1 Data storage status

The data storage status window shows the current status of the data stores.

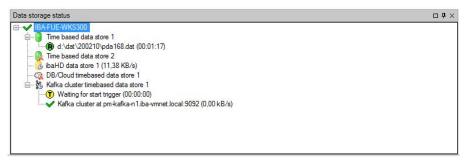


Fig. 13: Example of data storage status window

All defined data stores and their respective status are displayed here, depending on the data store, with server address, acquisition duration, write speed, etc.

The icon in front of the name indicates the current status of the storage:

Wait for the start trigger (only for triggered recording)

Recording in progress

Post-trigger phase; stop trigger occurred, but acquisition continues until the post-trigger time is over

Disabled or faulty data store is indicated by a red cross in the data store icon.

Right-clicking on this node allows you to manually send a start or stop trigger.

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7.2 Diagnostics of data stores

The *Diagnostics* node in the data storage tree offers information about the system load by the data stores. The measurement must be running.

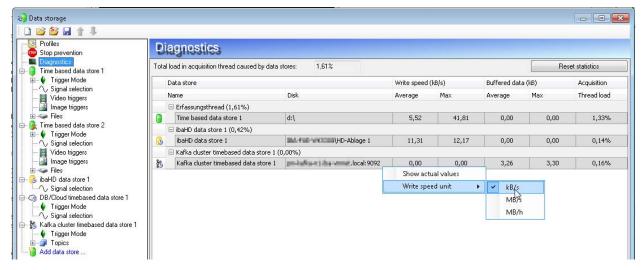


Fig. 14: Diagnostics of data stores

The performance values of all data stores are shown in the table. There is one row per data store. The rows are grouped according to the threads that write the data.

In each group row is the name of the thread and (in brackets) its share of the load. The load average is displayed by default. But, you can switch between the average and actual value using the context menu.

The *Disk* column indicates the respective target to which the data is written, for example a hard disk partition, the address of the database, the address of the Kafka cluster, etc. The *Write speed* indicates how fast the data is written. The *Memory buffer (kB)* columns indicate how much data is buffered in *ibaPDA*.

The Acquisition Thread load column indicates various information depending on the data stores. For timebased data stores, the Acquisition Thread load column indicates the amount of time needed for the run length encoding and writing to a disk or in a Kafka cluster. For database/ cloud, MQTT and MindSphere data stores, the column indicates the load caused by the analysis of the triggers and creation of the row data.

For HD data stores, the partial processing time will be displayed, that is used for the creation of the data to be written on the HD server. These values already contain the run length encoding for time-based stores, event trigger calculation for event-based stores and the calculation of the length-based data for length-based stores.

Additional information about diagnostics can be found in the *ibaPDA* manual, part 5.

8 Appendix

8.1 Notes on Oracle client installation

To connect to an Oracle database, it is necessary to install the Oracle client component (32 bit) "Oracle Data Provider for .NET (ODP.NET)" on the *ibaPDA* server PC and to configure it machine wide.

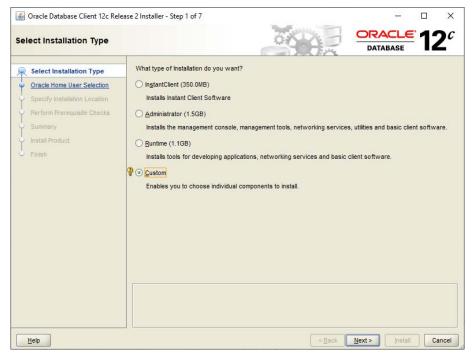
The following chapters describe how to do this with different Oracle versions.

8.1.1 Oracle Database Client 12c

1. Start the installation program and wait until the installation wizard starts.

🗱 Oracle Universal Installer	-	×
Checking monitor: must be configured to display at least 256 colors Higher Actual 4294967296 Passed Preparing to launch Oracle Universal Installer from C:\Users\\AppDa OraInstall2020-07-09_03-25-19PM. Please wait		

2. Select the installation type "Custom" and click on <Next>:



3. Select the "Windows Built-in Account" and click on <Next>:

ecify Oracle Home User	
Select Installation Type	Use Windows Built-in Account or specify a standard Windows User Account (not an Administrator account) to install and configure the Oracle Home. This account is used for running the Windows Services for the Oracle
Oracle Home User Selection	Home. Do not log in using this account to perform administrative tasks.
Specify Installation Location	O Use Existing Windows User
Perform Prerequisite Checks Summary	User Name:
Install Product	Password:
Finish	O Create New Windows User
	Uger Name:
	Password:
	Confirm Password:
	The newly created user is denied Windows logon privileges.
	⊙ Use Windows Buitt-in Account

4. Enter an Oracle base path and click on <Next>:

Oracle Database Client 12c Release	se 2 Installer - Step 3 of 7 -	
pecify Installation Location		12
<u>Select Installation Type</u> <u>Oracle Home User Selection</u>	Specify an Oracle base path to place all Oracle software and configuration-related files. This locat Oracle base directory.	on is the
Specify Installation Location	Oracle base D:\app\client\user	Browse.
Perform Prerequisite Checks Summary	Specify a location for storing Oracle software files. This location is the Oracle home directory.	
Finish	Software location: D:\app\client\user\product\12.2.0\client_1	Bro <u>w</u> se.
Help	< Back Next > Install	Canc

5. Select "Oracle Data Provider for .NET" as a component and click on <Next>:

iba

Select Installation Type	Component Name
Oracle Home User Selection	Oracle JDBC/THIN Interfaces
Oracle Home User Selection	Oracle Internet Directory Client Oracle Call Interface (OCI)
Specify Installation Location	Oracle Programmer
Available Product Components	
Available Product components	Oracle Advanced Security
Perform Prerequisite Checks	OLAP Analytic Workspace Manager and Worksheet
Summary	Oracle Net
	Oracle Connection Manager
Install Product	Oracle Net Listener
Finish	Oracle Multimedia Client Option
	Oracle ODBC Driver
	Oracle Clusterware High Availability API
	Oracle SQL Developer
	Oracle Scheduler Agent
	Oracle Services For Microsoft Transaction Server
	Oracle Administration Assistant for Windows
	Oracle Provider for OLE DB
	Oracle Data Provider for .NET
	Oracle Providers for ASP.NET
	Reset Defaults Select all De-Sele

6. Confirm your installation settings by clicking on <Install>:

Gracle Database Client 12c Release Summary	see 2 Installer - Step 6 of 8
Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Components Perform Prerequisite Checks Summary Install Product Finish	Oracle Database Client 12c Release 2 Installer Global Settings Source Location: D:_downloads\Oracle\win32_12201_client\client32\install.\stage\products.xml InstallType: Custom [Edit] Oracle Base: D:\app\client\user\product12.2.0\client_1 [Edit] Oracle Home User Selection: NT AUTHORITY\LOCAL SERVICE [Edit]
<u>H</u> elp	< <u>B</u> ack <u>N</u> ext> Install Cancel

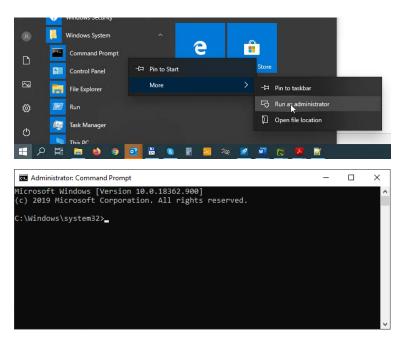
7. The installation starts.

Oracle Database Client 12c Releanstall Product		
Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Components Perform Prerequisite Checks Summary Install Product Finish	Progress 32% Extracting files to 'D:\app\client\user\product\12.2.0\client_1'. Status	In Progress Succeded In Progress Pending Pending
Help	ORACLE 12C	Details Retry Skip

8. Confirm the successful installation with <Close>:

🕌 Oracle Database Client 12c Relea	ise 2 Installer - Step 8 of 8	<u></u>	
Finish	of the second	DATABASE	12 ^c
Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Components Perform Prerequisite Checks Summary Install Product Finish	The installation of Oracle Client was successful.		
Help	< <u>B</u> ack	Next > Instal	Close

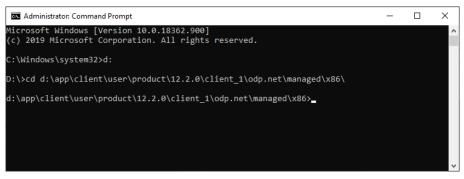
- 9. The installation program does not include the option to automatically perform the machine-wide configuration for Oracle Data Provider for .NET. Placing the provider assembly in the Global Assembly Cache (GAC) and updating the *machine.config* file with configuration section handler and DbProviderFactory must be done manually.
- 10. Open a command prompt with the option "Run as administrator".



11. Navigate to the subdirectory

.\product\12.2.0\client_1\odp.net\managed\x86\

of your Oracle base directory, as specified in step 4 of the client installation.



12. Run the batch file configure.bat by typing "configure.bat" in the command shell prompt. This will execute the necessary commands to prepare the machine-wide configuration.

3 Administrator: Command Prompt	-		×
Microsoft Windows [Version 10.0.18362.900] (c) 2019 Microsoft Corporation. All rights reserved.			í
C:\Windows\system32>d:			
D:\>cd d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86\			
d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86>configure.bat			
OraProvCfg /action:config /product:odpm /frameworkversion:v4.0.30319 /providerpath:"d:\app\client\user\product\12.2.0\client_1\odp.net\ common\Oracle.ManagedDataAccess.dll" /set:settings\TNS_AOMIN:"d:\app\client\user\product\12.2.0\client_1\odp.net\managed\X86\\.\.\			١
INFO: The following section has been added. Ksection name="oracle.manageddataaccess.client" type="OracleInternal.Common.ODPMSectionHandler, Oracle.ManagedDataAccess, Version=4.122 eutral, PublicKeyToken=89b483f429c47342" />	1.0, Cu	ulture=	n
INFO: The following element added under DbProviderFactories. Kadd name="ODP.NET, Managed Driver" invariant="Oracle.ManagedDataAccess.Client" description="Oracle Data Provider for .NET, Managed Dri le.ManagedDataAccess.Client.OracleClientFactory, Oracle.ManagedDataAccess, Version=4.122.1.0, Culture=neutral, PublicKeyToken=89b483f42			c
INFO: <oracle.manageddataccess.client> section has been successfully added/modified</oracle.manageddataccess.client>			
OraProvCfg /action:gac /providerpath:"d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86\\common\Oracle.ManagedDataAccess INFO: d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86\\common\oracle.manageddataaccess.dll is registered successfully			
OraProvCfg /action:gac /providerpath:"d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86\\PublisherPolicy\4\Policy.4.121. ataAccess.dll" INFO: d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86\\publisherpolicy\4\policy.4.121.oracle.manageddataaccess.dll is essfully in GAC.			
OraProvCfg /action:gac /providerpath:"d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86\\PublisherPolicy\4\Policy.4.122. ataAccess.dll" INFO: d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86\\publisherpolicy\4\policy.4.122.oracle.manageddataaccess.dll is essfully in GAC.			
reg add "HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\Application\Oracle Data Provider for .NET, Managed Driver" /v Ev /t REG_EXXAND_52 /d C:\Windows\Microsoft.NET\Framework\v4.8.30319\EventLogMessages.dll /f The operation completed successfully.	ntMessa	ageFile	
reg query HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\.NETFramework\v4.0.30319\AssemblyFoldersEx\odp.net.managed\			
reg add "HKEY_LCCAL_MACHINE\SOFTWARE\Wow6432Node\Wicrosoft\.NETFramework\v4.0.30319\AssemblyFoldersEx\Oracle.ManagedDataAccess" /ve /t p\client\user\product\12.2.0\client_l\odp.net\managed\X86\\common /f The operation completed successfully.	EG_SZ /	/d d:\a	р
reg add "HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Wicrosoft\.NETFramework\v4.0.30319\AssemblyFoldersEx\Oracle.ManagedDataAccess.EntityFr t REG_5Z /d d`\app\Client\user\product122.2.0\client_1\odp.net\managed\x86\\common\EF6 /f The operation completed successfully.	meworke		/
d:\app\client\user\product\12.2.0\client_1\odp.net\managed\x86>_			
			-

13. Check the success of the configuration by opening the configuration file *machine.config* e.g. with the editor Notepad. You can find this file here:

.\product\12.2.0\client_1\odp.net\managed\x86\

14. The file should now have an entry for "ODP.NET, Managed Driver" under the node "<DbProviderFactories>".

```
<system.data>
   <DbProviderFactories>
        <add name="ODP.NET, Managed Driver" invariant="Oracle.ManagedDataAccess.Client"
        description="Oracle Data Provider for .NET, Managed Driver" type=
        "Oracle.ManagedDataAccess.Client.OracleClientFactory, Oracle.ManagedDataAccess,
        Version=4.122.1.0, Culture=neutral, PublicKeyToken=89b483f429c47342" />
        </DbProviderFactories>
        </system.data>
```

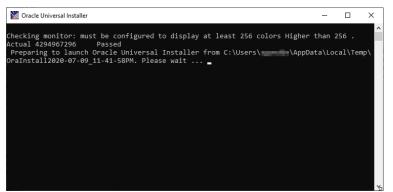
15. The *ibaPDA* service must now be restarted. In the configuration of the database connection of the *ibaPDA* client (SQL interface and DB/Cloud data store) you should now see a version number for the Oracle client after restarting the service.



🔛 iba I/O Manager	
i 🗅 💕 🎬 🖬 🌒 🕩 • 🖡	lardware Groups Outputs 📳 🏨
⊕ - 🎲 General ⊕ 🔢 ibaFOB-2io-Dexp	SQL database
🕀 🔢 ibaFOB-io-Dexp	Set all values to zero when the connection to a database is lost
ibaCapture ibaCapture ibaCaf1850 Client 	Start acquisition even if a database is not accessible
	DB connections
SQL database	DB type DB name
Ag Text interface	SQL database connection X
	Database type: Oracle Timeout (s): 2 Connection name: @
	Connection name: @
	Oracle database connection
	Basic TNS
	M Server address: Port: 1521
	Service name/SID:
	User name: Password:
	Use OS authentication Test connection
	Oracle client: 4.122.1.0
	Add Cancel
l	
🔏 Data storage	- D X
0 💕 🚰 🖬 🕆 🌲	
Profiles Stop prevention	DB/Cloud timebased data store 1
Diagnostics	General
🗄 🔶 Trigger Mode	Locked Data store index: 0
Signal selection 📕 Video triggers	Active Data store name: DB/Cloud timebased data store 1
···· · · · · · · · · · · · · · · · · ·	Maximum buffer size: 50 ♦ MB Configured maximum buffer size: ?
OB/Cloud timebased data stor OB/Cloud timebased data stor OF Trigger Mode	e 1 Database
Add data store	Database type: Oracle V
	Oracle database connection
	Basic TNS
	TNS name or content:
	Either TNS settings must be configured in the oracle client or the full TNS content must be provided above in a single line.
	User name: Password:
	Use OS authentication Test connection
	Oracle client: 4.122.1.0
	Table
	Table name:
	Timebase: 1,000 🔹 s Check table
	Write data every: 100 🖨 samples
	0 8 16 24 32 40 48 56 64 0 OK Apply Cancel

8.1.2 Oracle Database Client 18c

1. Start the installation program and wait until the installation wizard starts.



2. Select the installation type "Custom" and click on <Next>:

Oracle Database Client 18c Inst	
elect Installation Type	18° CRACLI Database
Select Installation Type Oracle Home User Selection Specify Installation Location Perform Prerequisite Checks Summary Install Product Finish	What type of Installation do you want? Administrator (1.5GB) Installs the management console, management tools, networking services, utilities and basic client software. Runtime (1.1GB) Installs tools for developing applications, networking services and basic client software. Ingtant Client (350.0MB) Installs Instant Client Software Qustom Enables you to choose individual components to install.

3. Select the "Windows Built-in Account" and click on <Next>:

iba

🕌 Oracle Database Client 18c Instal	
Specify Oracle Home User	18° DRACLE Database
Select Installation Type	Use Windows Built-in Account or specify a standard Windows User Account (not an Administrator account) to install and configure the Oracle Home. This account is used for running the Windows Services for the Oracle Home. Do not log in using this account to perform administrative tasks.
Specify Installation Location Perform Prerequisite Checks Summary Install Product Finish	Use Existing Windows User User Name: Bassword: Cgreate New Windows User Uger Name: Pgssword: Cgnfirm Password: The newly created user is denied Windows logon privileges. Use Windows Bult-in Account
Help	<back next=""> Install Cancel</back>

4. Enter an Oracle base path and click on <Next>:

Oracle Database Client 18c Install	er - Step 3 of 7		
ecify Installation Location	1	8° OR Data	base
<u>Select Installation Type</u> <u>Oracle Home User Selection</u>	Specify an Oracle base path to place all Oracle software and configuration-related Oracle base directory.	files. This locat	ion is the
Specify Installation Location	Oracle base D:\app\client\user	•	Browse
Perform Prerequisite Checks Summary Install Product	Specify a location for storing Oracle software files. This location is the Oracle hom	ne directory.	
Finish	Software location: D:\app\client\user\product\18.0.0\client_1		Bro <u>w</u> se
Help	< Back Next	> Install	Canc

5. Select "Oracle Data Provider for .NET" as a component and click on <Next>:

ailable Product Componen	ts 18 ° ORACL Database
Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Component Perform Prerequisite Checks Summary Install Product Finish	Component Name SQL*Plus Oracle JDBC/THIN Interfaces Oracle Call Interface (OCI) Oracle Call Interface (OCI) Oracle Call Interface (OCI) Oracle Programmer Oracle Advanced Security OLAP Analytic Workspace Manager and Worksheet Oracle Nutl Development Kit Oracle Connection Manager Oracle Rut Listener Oracle Connection Manager Oracle Nutlimedia Client Option Oracle SQL Developer Oracle SQL Developer Oracle Scheduler Agent Oracle Provider for UE DB Voracle Provider for JLET Reset Defaults Select all

6. Confirm your installation settings by clicking on <Install>:

Oracle Database Client 18c Instal	
Summary	18° ORACLE Database
Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Components Perform Prerequisite Checks which are a selected by the se	Oracle Database Client 18c Installer Global Settings Source Location: D_downloads\Oracle\Client\NT_180000_client\client32\instalk.\stage\products.xml Install Type: Custom [Edit] Oracle Base: D\app\client\user [Edit] Oracle Home location: D_app\client\user\product18.0.0\client_1 [Edit] Oracle Home User Selection: NT AUTHORITY\LOCAL SERVICE [Edit]
	Save Response File
Help	< Back Mexit > Install Cancel

7. The installation starts.

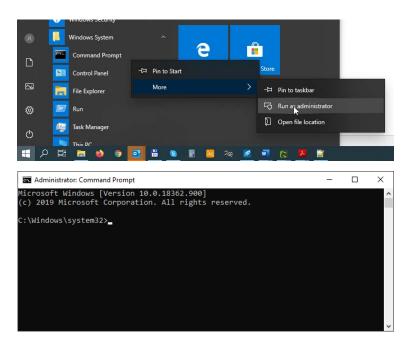
iba

Oracle Database Client 18c Instal	er - Step 7 of 8	:
stall Product		18° ORACLE Database
Select Installation Type Oracle Home User Selection Specify installation Location	Progress 44% 44% updating registry key 'HKEY_LOCAL_MACHINE/SOFTWARE/ORACLE/KEY_O	raClient18Home1 32biť
Available Product Components Perform Prerequisite Checks Summary	Status	
	Oracle Client Installation Prepare	In Progress Succeeded
Install Product	• Copy files	In Progress
Finish	Setup	Pending
	Setup Oracle Base	Pending
	Oracle Client Configuration	Pending
	Details Reyert	Al] (Revert) (Retry) (Skip
	18° ORACLE Database	
Help	< Back 1	Next > Install Cance

8. Confirm the successful installation with <Close>:

🕌 Oracle Database Client 18c Instal	ler - Step 8 of 8		-		×
Finish		18°	OR/ Databa	ase	E
Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Components Perform Prerequisite Checks Summary Install Product Finish	The installation of Oracle Client was successful.				
Help		< Back	ļnstall	<u>C</u> los	se

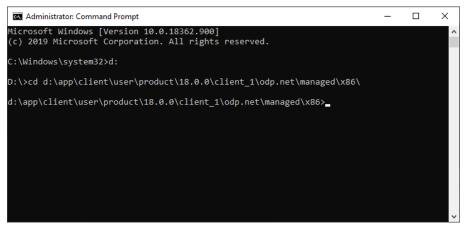
- 9. The installation program does not include the option to automatically perform the machine-wide configuration for Oracle Data Provider for .NET. Placing the provider assembly in the Global Assembly Cache (GAC) and updating the *machine.config* file with configuration section handler and DbProviderFactory must be done manually.
- 10. Open a command prompt with the option "Run as administrator".



11. Navigate to the subdirectory

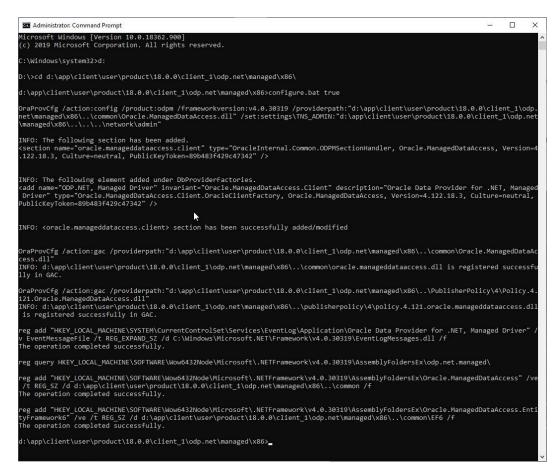
.\product\18.0.0\client_1\odp.net\managed\x86

of your Oracle base directory, as specified in step 4 of the client installation.



12. Execute the batch file *configure.bat* with the parameter *true* by typing "configure.bat true" in the command shell prompt. This will execute the necessary commands to prepare the machine-wide configuration.

iba



13. Check the success of the configuration by opening the configuration file *machine.config* e.g. with the editor Notepad. You can find this file here:

%windir%\Microsoft.NET\Framework\v4.0.30319\Config

14. The file should now have an entry for "ODP.NET, Managed Driver" under the node "<DbProviderFactories>".

```
<system.data>
   <DbProviderFactories>
        <add name="ODP.NET, Managed Driver" invariant="Oracle.ManagedDataAccess.Client"
        description="Oracle Data Provider for .NET, Managed Driver" type=
        "Oracle.ManagedDataAccess.Client.OracleClientFactory, Oracle.ManagedDataAccess,
        Version=4.122.18.3, Culture=neutral, PublicKeyToken=89b483f429c47342" />
        </DbProviderFactories>
    </system.data>
```

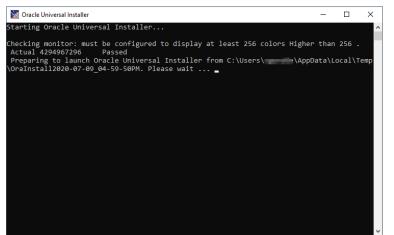
15. The *ibaPDA* service must now be restarted. In the configuration of the database connection of the *ibaPDA* client (SQL interface and DB/Cloud data store) you should now see a version number for the Oracle client after restarting the service.

paFOB-2io-Dexp paFOB-io-Dexp	SQL database	-					
aCapture		n the connection to a database is	s lost				
	Start acquisition even if a	database is not accessible					
layback 7-Xplorer	DB connections						
QL database Click to add module	DB type	DB name					
ext interface	SQL database con	nection				>	<
Inmapped	Database type:	Oracle	~	Timeout (s):	2	÷	
	Connection name:	@					
	Oracle database connec	tion					
	Basic TNS	2001					
							5
	M Server address:		Port:	152	1		Last
	Service name/SID:		Use Use	SID instead of Se	ervice Name		Lust
	User name:	[Password:			1
		Use OS authentication		(decine a	Test	connection	
		-			lest	connection	-
	Oracle client:	4.122.1.0					
a storage					Add	Cancel	
a storage : 🎯 💂 🏠 🦊					Add		
	DB/Cloud ti	mebased data st	ଥାର 1		Add		
rofiles rop prevention ragnostics	General	mebased data st	RIFE 1			- [
i in the second	General	mebased data st	<u>श्रारः 1</u>		Add Data store	- [
image: state state image: state state image: state i	General Locked Active					- [
image triggers	General Locked Active Data store name:	DB/Cloud timebased data sto	re 1			- [
See a section Section Section Section Section Section	General Locked Active Data store name: Maximum buffer size:	DB/Cloud timebased data sto		fer size: ?		- [
See See See See See See See See See	General Locked Active Data store name: Maximum buffer size:	DB/Cloud timebased data sto	re 1	fer size: ?		- [
See a start of the second	General Locked Active Data store name: Maximum buffer size:	DB/Cloud timebased data sto	re 1	fer size: ?		- [
See See See See See See See See See	General Locked Active Data store name: Maximum buffer size: Database	DB/Cloud timebased data sto 50 € MB Config Oracle	re 1	fer size: ?		- [
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type:	DB/Cloud timebased data sto 50 € MB Config Oracle	re 1	fer size: ?		- [
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conner	DB/Cloud timebased data sto 50 💽 MB Config Oracle	re 1	fer size: ?		- [
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conne Basic TNS TNS name or content	DB/Cloud timebased data sto 50 💽 MB Config Oracle	re 1 ured maximum buff		Data store	index: 0	
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conne Basic TNS TNS name or content Either TNS settings m	DB/Cloud timebased data sto 50 🐳 MB Config Oracle Institution	re 1 ured maximum buff	content must be pr	Data store i ovided above in a	index: 0	
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conne Basic TNS TNS name or content	DB/Cloud timebased data sto 50 MB Config Oracle section ust be configured in the oracle clie	re 1 ured maximum buff	content must be pr	Data store	index:	
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conne Basic TNS TNS name or content Ether TNS settings m User name:	DB/Cloud timebased data sto 50 MB Config Oracle .ction : ust be configured in the oracle clie	re 1 ured maximum buff	content must be pr	Data store i ovided above in a	index: 0	
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conne Basic TNS TNS name or content Ether TNS settings m User name: Oracle client:	DB/Cloud timebased data sto 50 MB Config Oracle section ust be configured in the oracle clie	re 1 ured maximum buff	content must be pr	Data store i ovided above in a	index:	
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conne Basic TNS TNS name or content Ether TNS settings m User name: Oracle client: Table	DB/Cloud timebased data sto 50 MB Config Oracle .ction : ust be configured in the oracle clie	re 1 ured maximum buff	content must be pr	Data store i ovided above in a	index:	
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conne Basic TNS TNS name or content Ether TNS settings m User name: Oracle client: Table Table Table name:	DB/Cloud timebased data sto 50 MB Config Oracle 	re 1 ured maximum buff	content must be pr	Data store i ovided above in a	index:	
See a start of the second	General Locked Active Data store name: Maximum buffer size: Database Database type: Oracle database conne Basic TNS TNS name or content Ether TNS settings m User name: Oracle client: Table	DB/Cloud timebased data sto 50 MB Config Oracle .ction : ust be configured in the oracle clie	re 1 ured maximum buff	content must be pr	Data store i ovided above in a	index:	ction

iba

8.1.3 Oracle Database Client 19c

1. Start the installation program and wait until the installation wizard starts.



2. Select the installation type "Custom" and click on <Next>:



3. Select the "Windows Built-in Account" and click on <Next>:

cify Oracle Home User	19 ^C Database
Select Installation Type Oracle Home User Selection	Use Windows Built-in Account or specify a standard Windows User Account (not an Administrator account) to instal and configure the Oracle Home. This account is used for running the Windows Services for the Oracle
Specify Installation Location	Home. Do not log in using this account to perform administrative tasks.
Perform Prerequisite Checks Summary	Use Existing Windows User User Name: Password:
Install Product Finish	Create New Windows User
	Uger Name: Password: Cgnfirm Password: The newly created user is denied Windows logon privileges. V Use Windows Built-in Account

4. Enter an Oracle base path and click on <Next>:

Oracle Database Client 19c Install	er - Step 3 of 7	
ecify Installation Location		
Select Installation Type Oracle Home User Selection	Specify an Oracle base path to place all Oracle software and configuration-related files. This locat Oracle base directory.	ion is the
Specify Installation Location	<u>Q</u> racle base	Browse
Install Product Finish	Software location: D:\app\client\user\product\19.0.0\client_1	Browse
Help	< Back Next > Install	Cance

5. Select "Oracle Data Provider for .NET" as a component and click on <Next>:

iba

ilable Product Component	s 19° ORACL
Select Installation Type	Component Name
On the University of the West	SQL*Plus
Oracle Home User Selection	Oracle JDBC/THIN Interfaces
Specify Installation Location	Oracle Internet Directory Client
Available Product Component	Oracle Call Interface (OCI)
Available Product Components	Oracle Programmer
Perform Prerequisite Checks	Oracle XML Development Kit
Common and a second	Oracle Advanced Security
Summary	OLAP Analytic Workspace Manager and Worksheet Oracle Net
Install Product	
Finish	Oracle Connection Manager
riniso	
	Oracle Multimedia Client Option
	Oracle Clusterware High Availability API
	Oracle SQL Developer
	Oracle Scheduler Agent Oracle Services For Microsoft Transaction Server
	Oracle Provider for OLE DB
	Oracle Data Provider for .NET
	Oracle Providers for ASP.NET
	Reset Defaults Select all Deselect

6. Confirm your installation settings by clicking on <Install>:

🙆 Oracle Database Client 19c Instal	
Summary	19 ^c ORACLE Database
Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Components Perform Prerequisite Checks Summary Install Product Finish	Oracle Database Client 19c Installer Global Settings Source Location: D_downloads\OracleWT_193000_client\client32\install.\stage\products.xml Install Type: Custom [Edit] Oracle Base: D\app\client\user [Edit] Oracle Home location: D_app\client\user\product\19.0.0\client_1 [Edit] Oracle Home User Selection: NT AUTHORITY\LOCAL SERVICE [Edit]
	Save Response File
Help	< <u>Back</u> <u>Next</u> > Install Cancel

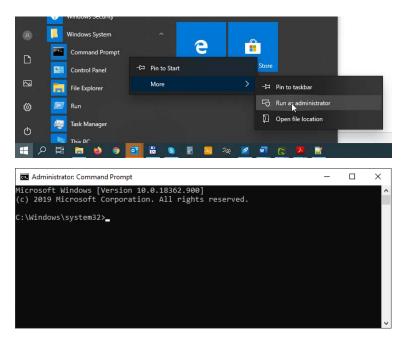
7. The installation starts.

Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Components	29%
Control Installation Type Oracle Home User Selection Specify Installation Location Extracting files to 'D/app/clientlus Available Product Components	
 A second s	
Perform Prerequisite Checks Summary Summary Oracle Client Installation	In Progress
Install Product · Prepare	Succeeded
Finish Fi	in Progress Pending Pending Pending
19° ORAC Database	Details) Revert All Revert Retry S

8. Confirm the successful installation with <Close>:

🕌 Oracle Database Client 19c Insta	ller - Step 8 of 8		×
Finish			CLE [®]
Select Installation Type Oracle Home User Selection Specify Installation Location Available Product Components Perform Prerequisite Checks Summary Install Product Finish	The installation of Oracle Client was successful.		
Help		< <u>Back</u> Next > Install	Close

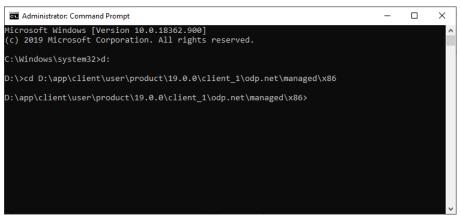
- 9. The installation program does not include the option to automatically perform the machine-wide configuration for Oracle Data Provider for .NET. Placing the provider assembly in the Global Assembly Cache (GAC) and updating the *machine.config* file with configuration section handler and DbProviderFactory must be done manually.
- 10. Open a command prompt with the option "Run as administrator".



11. Navigate to the subdirectory

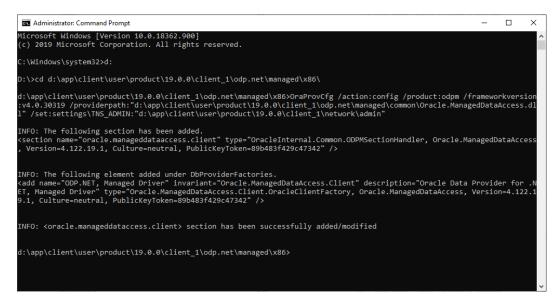
.\product\19.0.0\client_1\odp.net\managed\x86

of your Oracle base directory, as specified in step 4 of the client installation.

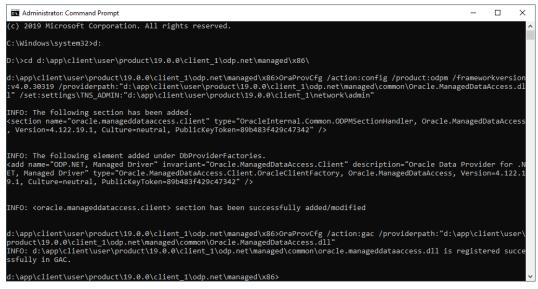


12. Two commands to configure the *machine.config* file and to place the ODP.NET modules in the GAC must now be executed. **The paths used in the commands shown below must be adjusted according to your Oracle base directory!**

```
OraProvCfg /action:config /product:odpm /frameworkver-
sion:v4.0.30319
/providerpath:"d:\app\client\user\product\19.0.0\client_1\odp.
net\managed\common\Oracle.ManagedDataAccess.dll"
/set:settings\TNS_ADMIN:"d:\app\client\user\product\19.0.0\
client_1\network\admin"
```



OraProvCfg /action:gac /providerpath:"d:\app\client\user\product\19.0.0\client_1\odp. net\managed\common\Oracle.ManagedDataAccess.dll"



13. Check the success of the configuration by opening the configuration file *machine.config* e.g. with the editor Notepad. You can find this file here:

%windir%\Microsoft.NET\Framework\v4.0.30319\Config

14. The file should now have an entry for "ODP.NET, Managed Driver" under the node "<DbProviderFactories>".

```
<system.data>

<DbProviderFactories>

<add name="ODP.NET, Managed Driver" invariant="Oracle.ManagedDataAccess.Client"

description="Oracle Data Provider for .NET, Managed Driver" type=

"Oracle.ManagedDataAccess.Client.OracleClientFactory, Oracle.ManagedDataAccess,

Version=4.122.19.1, Culture=neutral, PublicKeyToken=89b483f429c47342" />

</DbProviderFactories>

</system.data>
```

iba

15. The *ibaPDA* service must now be restarted. In the configuration of the database connection of the *ibaPDA* client (SQL interface and DB/Cloud data store) you should now see a version number for the Oracle client after restarting the service.

are a sub-	SQL database	9	
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	Start acquisition even if a	a database is not accessible	
ok orer D	B connections		
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Click to add module	🧧 SQL database con	nnection	×
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	Oracle database conne	action	
	Basic TNS		-
м	Server address:	Port: 1521	
	Service name/SID:	Use SID instead of Service Name	Las
	User name:	Password:	
		Use OS authentication Test connection	
	Oracle client:	4.122.1.0	
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9 Support and contact

Support

Fax: +49 911 97282-33

Email: support@iba-ag.com

Note



If you require support, indicate the serial number (iba-S/N) of the product or the license number.

Contact

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