# dbrecover for oracle user guide

DBRECOVER for Oracle user guide 0.5

## **Overview**

DBRECOVER for Oracle is an enterprise-level Oracle data disaster recovery software. It can directly extract and recover data from the data files (datafile) of Oracle 8i to 21c databases, without needing to execute SQL through Oracle database instances to retrieve data. DBRECOVER, developed based on Java, requires no additional installation, and can be used directly after download and unzipping.

DBRECOVER features an intuitive GUI interface for easy and convenient operation. Users don't need to learn an additional set of commands, nor do they need to understand the underlying principles of Oracle's data structure, as they can easily recover data in the database through the Recovery Wizard.

DBRecover for Oracle email: service@parnassu	data.com wv	vw.dbrecover.co	om Prof	essional Oracle Database Disa	ster Red	covery Ve	rsion 2009		×
Start Options									
Database	: PD.EMP t	his view only	/ shov	vs some sample data					
19MB	O ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO		
<ul> <li>Database</li> <li>7369</li> </ul>	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
DB_20230529140659 7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
* 🐸 Users 7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		F
GSMROOTUSER 7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
* 📥 PD ///82	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
Tables 7/88 7000 7000 7000 7000 7000 7000 7000	SCOTT	ANALYST	1500	19-APR-1987 00:00:00 AD	3000		20		
T839	KING	PRESIDENT	7600	17-NOV-1981 00:00:00 AD	4500	0	10		
V & SCOTT 7976	TURNER	CLERK	7098	08-SEP-1981 00.00.00 AD	1100	0	30		
Tables 7000	IAMES	CLERK	7608	03-DEC-1981 00:00:00 AD	950		30		
TUDIOS 7900	FORD	ANAL VST	7566	03-DEC-1981 00:00:00 AD	3000		20		
BONUS 7932	MILLER	CLERK	7782	23- JAN-1982 00:00:00 AD	1300		10		
DEP1 7521	WARD	SALESMAN	7698	22-EEB-1981 00:00:00 AD	1250	500	30		
EMP 7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975	500	20		
SALGRADE 7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
SYS 7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
► SYSTEM 7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
7844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
7876	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
7900	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
7902	FORD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
7934	MILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
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7839	KING	PRESIDENT	7000	17-NOV-1981 00:00:00 AD	5000		10		
/844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
/8/0	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
	JAMES	GLERK	7698	03-DEC-1981 00.00.00 AD	950		30		
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https://www.dbrecover.com									

## Why choose DBRECOVER?

You might be wondering, isn't the traditional Oracle Recovery Manager (RMAN) backup recovery sufficient? Why do we need to choose DBRECOVER? Let me answer your doubts.

With the rapid growth of enterprise IT systems, data capacity is increasing geometrically. Oracle DBAs often face issues such as the existing disk storage system not having enough capacity to store full backups, and the average repair time required for tape-based data backups during data recovery far exceeds expectations.

"Backup is paramount for databases" is a maxim that all DBAs keep in mind. However, the real world is full of disparities: lack of data backup space in the company's database environment, storage devices that cannot be delivered in the short term, and even finding that backups are actually unavailable during the data recovery process, are all common scenarios.

To solve these common data recovery dilemmas in the real world, DBRECOVER software fully utilizes its understanding of Oracle database's internal data structure, core startup process, and other internal principles. It can handle situations where the database cannot be smoothly opened due to issues like loss of SYSTEM tablespace, misoperation of Oracle data dictionary tables, and inconsistency of data dictionary caused by power outages, even in completely backup-free situations. It can remedy human errors such as truncation, deletion, or dropping of business data tables, and calmly recover data.

Even non-DBA personnel who have only been exposed to Oracle databases for a few days can easily use DBRECOVER. This is due to DBRECOVER's simple installation and fully graphical human-computer interaction interface. The person implementing the recovery does not need professional database knowledge, does not need to learn any commands, and does not need to understand the underlying storage structure of the database. Just a few clicks of the mouse can calmly recover data. DBRECOVER breaks the limitation that only a few professionals can carry out database recovery tasks, greatly shortening the time from database failure to complete data recovery, and reducing the total cost of enterprise data recovery.

The data recoverable by DBRECOVER can be divided into two forms. The traditional extraction method extracts data from the data file and writes it into a flat text file, which is then imported into the database using tools like SQLLDR. This method is simple and intuitive, but requires space equivalent to twice the existing data capacity: one for the space occupied by the flat text data, and the other for the space required to import the text data into the database; it also takes twice as long, as the original data needs to be extracted from the data file before it can be imported into the new database.

We strongly recommend another method, namely, DBRECOVER's innovative Data Bridge method. This method directly loads the extracted data into a new or other available database through DBRECOVER, avoiding data landing storage. Compared with the traditional method, it effectively saves the space and time cost required for data recovery.

Oracle's ASM (Automatic Storage Management) technology is being adopted by more and more enterprises. Compared with traditional file systems, databases using ASM storage have high performance, support clusters, and offer convenient management. However, the problem with ASM is that its storage structure is too complex and difficult to understand for ordinary users. Once the internal data structure of a Disk Group in ASM is damaged and cannot be successfully MOUNTED, the user's important data will be "locked" in this ASM "black box". In this case, it usually requires Oracle's senior engineers who are familiar with the internal data structure of ASM to arrive at the user site to manually repair the internal structure of ASM; and purchasing Oracle's on-site service is often both expensive and time-consuming for ordinary users.

Because the developers of DBRECOVER have a deep understanding of the internal data structure of Oracle ASM, DBRECOVER has added a data recovery function specifically for ASM.

Currently, the ASM data recovery functions supported by DBRECOVER include:

Even when the Disk Group cannot be normally MOUNTED, DBRECOVER can directly read the available metadata on the ASM disk and copy the ASM files in the Disk Group based on this metadata.

Even when the Disk Group cannot be normally MOUNTED, DBRECOVER can directly read the data files on ASM and extract data from them, supporting both traditional extraction methods and Data Bridge methods.

### Introduction to DBRECOVER For Oracle Software

DBRECOVER For Oracle is developed based on JAVA, which ensures that it can run across platforms, whether it's on Unix platforms like AIX, Solaris, HPUX, Linux platforms like Redhat, Oracle Linux, SUSE, or even on the Windows platform.

Operating system platforms supported by DBRECOVER:

Platform Name	Support
Windows	YES

AIX	YES
Solaris Sparc/X86	YES
Linux x86/64	YES
HPUX	YES
MacOS	YES

Database versions currently supported by DBRECOVER: 8i ~ 21C

DBRECOVER comes with the JAVA environment needed for operation, so there is no need to install JAVA software separately on Windows/Linux.

On Windows, double-click to run start\_dbrecover\_windows\_local\_java.bat

On Linux, execute: sh start\_dbrecover\_linux\_local\_java.sh

For UNIX-like environments such as AIX/HPUX/Solaris, users need to install the JAVA 8 environment themselves.

Database character sets supported by DBRECOVER:

Language	Character	Coding
Chinese	ZHS16GBK	GBK
Chinese	ZHS16DBCS	CP935
Chinese	ZHT16BIG5	BIG5
Chinese	ZHT16DBCS	CP937
Chinese	ZHT16HKSCS	CP950
Chinese	ZHS16CGB231280	GB2312
Chinese	ZHS32GB18030	GB18030
Japanese	JA16SJIS	SJIS
Japanese	JA16EUC	EUC_JP
Japanese	JA16DBCS	CP939

Korean	KO16MSWIN949	MS649
Korean	KO16KSC5601	EUC_KR
Korean	KO16DBCS	CP933
French	WE8MSWIN1252	CP1252
French	WE8ISO8859P15	ISO8859_15
French	WE8PC850	CP850
French	WE8EBCDIC1148	CP1148
French	WE8ISO8859P1	ISO8859_1
French	WE8PC863	CP863
French	WE8EBCDIC1047	CP1047
French	WE8EBCDIC1147	CP1147
German	WE8MSWIN1252	CP1252
German	WE8ISO8859P15	ISO8859_15
German	WE8PC850	CP850
German	WE8EBCDIC1141	CP1141
German	WE8ISO8859P1	ISO8859_1
German	WE8EBCDIC1148	CP1148
Italian	WE8MSWIN1252	CP1252
Italian	WE8ISO8859P15	ISO8859_15
Italian	WE8PC850	CP850
Italian	WE8EBCDIC1144	CP1144
Thai	TH8TISASCII	CP874
Thai	TH8TISEBCDIC	TIS620
Arabic	AR8MSWIN1256	CP1256
Arabic	AR8ISO8859P6	ISO8859_6
Arabic	AR8ADOS720	CP864
Spanish	WE8MSWIN1252	CP1252
Spanish	WE8ISO8859P1	ISO8859_1
Spanish	WE8PC850	CP850
Spanish	WE8EBCDIC1047	CP1047
Portuguese	WE8MSWIN1252	CP1252
Portuguese	WE8ISO8859P1	ISO8859_1
Portuguese	WE8PC850	CP850

Portuguese	WE8EBCDIC1047	CP1047
Portuguese	WE8ISO8859P15	ISO8859_15
Portuguese	WE8PC860	CP860

Table storage types supported by DBRECOVER:

Table Storage Type	Supported
Cluster Table	YES
Indexed Organized Table, Partitioned or Non-Partitioned	NO
Heap-Organized Table, Partitioned or Non-Partitioned	YES
Heap-Organized Table with Basic Compression	NO
Heap-Organized Table with Advanced Compression	NO
Heap-Organized Table with Hybrid Columnar Compression	NO
Heap-Organized Table with Encryption	NO
Table with Virtual Columns	NO
Chained Rows, Migrated Rows	YES

Points to Note: For virtual column and 11g optimized default column, data extraction might proceed without issues, but the corresponding fields will be lost. Both of these are new features introduced after 11g and are less commonly used.

Column field data types supported by DBRECOVER:

Data Type	Supported
BFILE	No
Binary XML	No
BINARY_DOUBLE	Yes
BINARY_FLOAT	Yes
BLOB	Yes
CHAR	Yes
CLOB and NCLOB	Yes

Collections (including VARRAYS and nested tables)	No
Date	Yes
INTERVAL DAY TO SECOND	Yes
INTERVAL YEAR TO MONTH	Yes
LOBs stored as SecureFiles	Yes
LONG	Yes
LONG RAW	Yes
Multimedia data types (including Spatial, Image, and Oracle Text)	No
NCHAR	Yes
Number	Yes
NVARCHAR2	Yes
RAW	Yes
ROWID, UROWID	Yes
TIMESTAMP	Yes
TIMESTAMP WITH LOCAL TIMEZONE	Yes
TIMESTAMP WITH TIMEZONE	Yes
User-defined types	No
VARCHAR2 and VARCHAR	Yes
XMLType stored as CLOB	No
XMLType stored as Object Relational	No

DBRECOVER's support for ASM:

Function	Supported
Supports direct data extraction from ASM, no need to copy to the file system	YES
Supports copying data files from ASM	YES

## **DBRECOVER** Installation and Startup

DBRECOVER is a Java-based software, which means it's a portable application that doesn't require additional installation. Users can use the software to recover data after unzipping the

downloaded software ZIP package.

To start DBRECOVER:

- On Windows: Double-click to run start\_dbrecover\_windows\_local\_java.bat
- On Linux: You can use the software on your local machine with a graphical interface, or you can use remote graphical tools like Xmanager or VNC. Before running the software, make sure you can open the xclock graphical clock application. Then, in the directory where the software has been unzipped, execute: sh start\_dbrecover\_linux\_local\_java.sh

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Start Options		
Start Options  Database  Database  Database		
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https://www.dbrecover.com		

For AIX/HPUX/Solaris environments, DBRECOVER can be used on a local machine with a graphical interface or through remote graphical tools like Xmanager or VNC. Here are the steps to start DBRECOVER:

- 1. Make sure the Java 8 environment for the corresponding platform is installed. You can use the command java -version to confirm this.
- 2. Make sure you can open the xclock graphical clock application.
- 3. In the directory where the software has been unzipped, execute: sh start\_dbrecover.sh

## register the DBRECOVER license

DBRECOVER For Oracle is commercial software. A community edition of DBRECOVER is available for users to test and learn from.

Currently, only one type of license is offered, which is the enterprise license. You can visit the website <u>https://www.dbrecover.com/</u> to get purchase information.

After obtaining the License Key, users can register it in the software themselves. The specific method of use is:

DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Versio — 🔲 🗙
t Options
Atabase Database Register X
DB name: Register key: Register key: Register
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yright © 2012 - 2020 ParnassusData Software, Inc.
s://www.dbrecover.com

To register your license for DBRECOVER, follow these steps:

- 1. Go to "Help" on the menu bar and then select "Register".
- 2. Using the information provided to you after purchase, enter your DB NAME and key, then click the "Register" button.
- 3. Once registration is complete, whenever you restart DBRECOVER, it will automatically check the license registration information, so you don't need to register again.

You can find your successful registration information by going to "Help" => "About".

About		×		
P	Version 2009 - Enterprise Edition - 2020.09.25 Copyright © 2012 - 2020 ParnassusData Software, Inc. https://www.dbrecover.com			
The product	is licenced to:			
Corpora	tion: dbrecover.com			
DB Nam	e: ORCL(Enterprise edition)			
Mail add	r.: admin@dbrecover.com			
Issue da	ite:			
For Enterprise Edition, there is no row limitation. If you need to recover more data, please contact service@parnassusdata.com				
Kev		Value		
os.name		Windows Server 2019		
java.vm.na	me	OpenJDK 64-Bit Server VM		
java.runtime.version 1.8.0_232-b09				
os.arch		amd64		

## Introduction to Using DBRECOVER Based on Different Oracle Database Recovery Scenarios

Recovery Scenario 1: Oracle data file corruption causing the database to be unopenable

Company A's production database operates in non-archive mode year-round, occasionally making EXP logical backups, but never physical backups. One day, after a server power outage and reboot, the database cannot be opened normally for use. Upon inspection, it was found that the SYSTEM table space was severely damaged. At this point, DBRECOVER can be used to quickly transfer data from the damaged database to a newly created database, thereby quickly restoring business operations.

In scenarios similar to this one, if you encounter errors like ORA-01194, ORA-01110, ORA-01033, ORA-01115, ORA-00368, ORA-00600 kcbzib\_kcrsds\_1, ORA-00333, ORA-01113, ORA-01122, ORA-27027, etc., which cause the database to be unable to open, you can attempt to recover the data using the methods employed in this recovery scenario.

The brief steps are as follows:

- 1. Use dbca to create a new ORACLE database, making sure the character set matches the damaged database
- Create corresponding database users and table spaces in the new database, it is recommended to temporarily grant the DBA role to these users
- 3. Start the listener program (LISTENER), ensuring that the database service is registered with the listener
- 4. Start DBRECOVER in dictionary mode and load all data files from the original damaged database
- 5. In DBRECOVER, select the username to be recovered, right-click and select data bridging
- 6. In the data bridging interface, click the plus icon to add the connection information of the new database (Connection)
- 7. Click Data Bridge to start the transmission job, waiting for all tables under SCHEMA to be transferred to the target SCHEMA of the target database
- Select the corresponding SCHEMA, right-click and select EXPORTDDL export DDL function, select the object type to be recovered and click EXPORT
- 9. Based on the DDL SQL file generated by EXPORTDDL, manually execute in the target SCHEMA of the target database

🕌 Database Configuration Assistar	nt - Application - Step 1 of 14	- 🗆 ×
Select Database Operation		19° ORACLE Database
Database Operation	Select the operation that you want to perform.	
<u>Creation Mode</u>	● <u>C</u> reate a database	
Deployment Type	Configure an existing database	
<ul> <li>Database Identification</li> </ul>	○ Delete database	
Storage Option	O Manage templates	
Past Recovery Option     Database Options	Manage Pluggable databases	
Configuration Options		
<ul> <li>Management Options</li> </ul>		
User Credentials		
Creation Option		
U Summary		
Progress Page		
O Finish		
Help		< Back Next > Einish Cancel

🕌 Database Configuration Assist	ant - Create a database - Step 2 of 14	_	
Select Database Creation	Mode	<b>19<sup>c</sup></b> Data	PACLE.
Patabase Operation     Database Operation     Creation Mode     Deployment Type     Database Identification     Storage Option     Fast Recovery Option     Database Options     Configuration Options     Management Options     User Credentials     Creation Option     Summary		orcl         File System         {ORACLE_BASE}\oradata\{DB_UNIQUE_NAME}         {ORACLE_BASE}\fast_recovery_area\{DB_UNIQUE_NAME}         {AL32UTF8 - Unicode UTF-8 Universal character set	Browse Browse
Finish <u>H</u> elp	Adyanced configuration	< <u>B</u> ack <u>N</u> ext > <u>Finish</u>	Cancel

🕌 Database Configuration Assistant	- Create 'orcl2' database - Step 9 of 15	- 🗆 X
Specify Configuration Option	s	19° DRACLE
<ul> <li>Database Operation</li> <li>Creation Mode</li> <li>Deployment Type</li> <li>Database Identification</li> <li>Storage Option</li> <li>Fast Recovery Option</li> <li>Network Configuration</li> <li>Data Vault Option</li> <li>Configuration Options</li> <li>User Credentials</li> <li>Creation Option</li> <li>Summary</li> <li>Progress Page</li> <li>Finish</li> </ul>	Memory       Sizing       Character sets       Connection mode         The database character set determines how character data       Use Unicode (AL32UTF8)       Setting character set to Unicode (AL32UTF8) enables you         Use OS character set to Unicode (AL32UTF8) enables you       Use OS character set (WE8MSWIN1252)         Character set is based on the language setting of this op         Image:       AL32UTF8 - Unicode UTF-8         AL32UTF8 - Unicode UTF-8         AL32UTF8 - Unicode UTF-8         AR8ISO8859P6 - ISO 8859-6         National character set:         AL16         BLT8ISO8859P5 - ISO 8859-5         Default language:         Amer         Classo859P5 - ISO 8859-2         Default territory:         United States	Sample schemas is stored in the database. In to store multiple language groups. Derating system. Universal character set Universal character set Latin/Arabic ws Code Page 1256 8-Bit Latin/Arabic L-13 Baltic Dws Code Page 1257 8-bit Baltic Latin/Cyrillic ws Code Page 1251 8-bit Latin/Cyrillic East European
Help		< <u>Back</u> <u>Next</u> > <u>Finish</u> Cancel

//Start the listener program (LISTENER) to ensure that the database service is registered with the listener.

C:\Users\testenv>lsnrctl status

LSNRCTL for 64-bit Windows: Version 11.2.0.1.0 - Production on 12-MAY-2023 10:01:48

Copyright (c) 1991, 2010, Oracle. All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=DESKTOP-testenv)(PORT=1521)))

STATUS of the LISTENER

-----

Alias LISTENER

Version TNSLSNR for 64-bit Windows: Version 11.2.0.1.0 - Production

Start Date 12-MAY-2023 10:00:49

Uptime 0 days 0 hr. 0 min. 59 sec

Trace Level off

Security ON: Local OS Authentication

SNMP OFF

Listener Parameter File D:\app\testenv\product\11.2.0\dbhome\_2\network\admin\listener.ora

Listener Log File d:\app\testenv\diag\tnslsnr\DESKTOP-testenv\listener\alert\log.xml

Listening Endpoints Summary...

(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=DESKTOP-testenv)(PORT=1521)))

(DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(PIPENAME=\\.\pipe\EXTPROC1521ipc)))

Services Summary...

Service "CLRExtProc" has 1 instance(s).

Instance "CLRExtProc", status UNKNOWN, has 1 handler(s) for this service...

Service "ORCL1XDB" has 1 instance(s).

Instance "orcl1", status READY, has 1 handler(s) for this service...

Service "ORCLXDB" has 1 instance(s).

Instance "orcl", status READY, has 1 handler(s) for this service...

Service "orcl" has 1 instance(s).

Instance "orcl", status READY, has 1 handler(s) for this service...

Service "orcl1" has 1 instance(s).

Instance "orcl1", status READY, has 1 handler(s) for this service...

The command completed successfully

//Create corresponding database users and tablespaces in the new database, it is recommended to temporarily grant DBA roles to these users.

set ORACLE\_SID=ORCL1
sqlplus / as sysdba
SQL> create user pd identified by oracle;
User created.
SQL> grant dba to pd;
Grant succeeded.
SQL> create tablespace pdtbs datafile size 500M autoextend on next 100M;
Tablespace created.
SQL> alter user pd default tablespace pdtbs;
User altered.

#### Start DBRECOVER, and select Tools => Recovery Wizard

Click Next.

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Start Options			
Recovery Wizard ASM File(s) Clone			
Database			
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P Recovery Wizard		-		$\times$
Please ch	oose recovery mode:			
	DNARY MODE			
O NON-E	DICTIONARY MODE			
0				
	NARY MODE(ASM)			
O NON-E	DICTIONARY MODE(ASM)			
Load fr	om exist dicts			
·				
Cancel Help	< Back		Next >	

The next step is to choose the correct ENDIAN byte order. Oracle data files adopt different Endian byte formats on different operating system platforms.

Endian is the storage method of multi-byte data types in memory. It determines the byte order of the data. There are two kinds of endian, Little and Big. In Little Endian, the data is stored little end first. That is, the first byte is the biggest. In Big Endian, the data is stored big end first. That is, the first byte is the smallest<u>1</u>.

In Oracle databases, the endian format is determined by the endian information in the environment in which it works. The endian format in the databases tells us which environments the related database can be moved to. It is not possible to move the database with normal methods between different endian environments. For example, you cannot transfer a database with Data Guard to a system with Big Endian from a Little Endian system<u>1</u>.

You can see the current endian format in your database with the following query:

sql code	
SQL> select name,platform_id,platform_name	from v\$database;

The result will give you the endian format of your current database.

For Big Endian format, platforms include IBM AIX, Apple Mac OS, HP-UX (64-bit), HP-UX IA (64-bit), IBM Power Based Linux, IBM zSeries Based Linux, and Solaris OE (both 32-bit and 64-bit).

For Little Endian format, platforms include Linux x86 64-bit, Apple Mac OS (x86-64), HP IA Open VMS, HP Open VMS, HP Tru64 UNIX, Linux IA (32-bit), Linux IA (64-bit), Microsoft Windows IA (32-bit), Microsoft Windows IA (64-bit), Microsoft Windows x86 64-bit, and Solaris Operating System (x86 and x86-64).

The byte order corresponds to the platform as follows:

platform	endian
Solaris[tm] OE (32-bit)	Big
Solaris[tm] OE (64-bit)	Big
Microsoft Windows IA (32-bit)	Little
Linux IA (32-bit)	Little
AIX-Based Systems (64-bit)	Big
HP-UX (64-bit)	Big
HP Tru64 UNIX	Little
HP-UX IA (64-bit)	Big
Linux IA (64-bit)	Little
HP Open VMS	Little
Microsoft Windows IA (64-bit)	Little
IBM zSeries Based Linux	Big
Linux x86 64-bit	Little

Apple Mac OS	Big
Microsoft Windows x86 64-bit	Little
Solaris Operating System (x86)	Little
IBM Power Based Linux	Big
HP IA Open VMS	Little
Solaris Operating System (x86-64)	Little
Apple Mac OS (x86-64)	Little

We only need to note that the most commonly used platforms, Windows and Linux, are both Little Endian, so there is no need to make any settings and we can keep the default.

On the small machine platform, including AIX-Based Systems (64-bit) and HP-UX (64-bit), Big Endian is used, so here you should select Big Endian.

Please note: If your data file was generated on AIX (i.e., Big Endian), and you copied these data files to a Windows server for convenience and used DBRECOVER to recover the data, you should still choose its original Big Endian format.

Here, since we are recovering Oracle database files from the Linux x86-64 platform, we choose Little Endian for the Endian.

Click Next

P Recovery Wizard		□ ×
Endian: Little Endian		
DB Character Set From dictionary		
DB National Character Set From dictionary		
Block Size: 8192		
Offset: 0		
DB Version: auto detect		
	< Back	ext >

P Recovery Wizard					_	
	Data File	Block Size	Offset	TS#	rFile#	
Advanced mode				Choose F	iles Load	
Scan base tables						
Cancel Help					< Back	ext >

Click on 'Choose Files'. We generally recommend that if the database is not large, then select all the data files of that database. If your database is very large, and you know which data files your data table is on, then you can only select the data files of the SYSTEM tablespace (a must!) and the data files where the data is located.

Recovery Wizard					- 🗆 X
	Data File	Block Size	Offset	TS#	rFile#
	Open Look In: O1_MF_EXA O1_MF_SYS O1_MF_SYS O1_MF_TEN O1_MF_TEN O1_MF_UNI O1_MF_USI File Name: I Eiles of Type:	ATAFILE MPLE_L5RZQY7L_DBF SAUX_L5RZP6L5_DBF STEM_L5RZP6JP_DBF MP_L5RZQV0B_TMP DOTBS1_L5RZP6LL_DB ERS_L5RZP6M6_DBF MF_UNDOTBS1_L5RZP6I	F LL_DBF" "01_MF_USERS	X	
Advanced mode				pen Cancel	se Files Load
Scan base tables					
Cancel Help					< Back Next >

Note that the Choose interface supports Ctrl + A and Shift keyboard operations.

P Recovery Wizard					-		×
	Data File	Block Size	Offset	TS#	rFile#		
	F:\oradata\ORCL\DATAFILE\O1 MF EXAMPLE L5RZQY7L .DBF	8192	0				
	F:\oradata\ORCL\DATAFILE\01_MF_SYSAUX_L5RZP6L5DBF	8192	0				
	F:\oradata\ORCL\DATAFILE\O1_MF_SYSTEM_L5RZP6JPDBF	8192	0				
	F:\oradata\ORCL\DATAFILE\O1_MF_TEMP_L5RZQV0BTMP	8192	0				
	F:\oradata\ORCL\DATAFILE\O1_MF_UNDOTBS1_L5RZP6LLDBF	8192	0				
	F:\oradata\ORCL\DATAFILE\O1_MF_USERS_L5RZP6M6DBF	8192	0				
Advanced mode			Choose	Files	Load		
Scan base tables							
Cancel Help				< Back		ext >	

Note: After adding all data files, if you don't understand the other parameters on this interface, then keep them all default, no need to modify!

Then you need to specify the Block Size for the specified data file, that is, the size of the ORACLE data block. Here you can modify it according to the actual situation. For example, if your DB\_BLOCK\_SIZE is 8K, but some tablespaces specify 16K as the data block size, you only need to modify the BLOCK\_SIZE for those data files that are not 8k.

In the case of using a regular file system, there is no need to specify OFFSET here. The OFFSET parameter is mainly for scenarios where raw devices are used to store data files. For example, on AIX, if a normal VG's LV is used as the data file, there is a 4k OFFSET that needs to be specified here.

If you happen to be using raw device data files and don't know how much the OFFSET is, you can use the dbfsize tool that comes with \$ORACLE\_HOME/bin to check. The following example

shows that this raw device does not have a 4K OFFSET:

\$ dbfsize /dev/lv\_control\_01
Database file: /dev/lv\_control\_01
Database file type: raw device without 4K starting offset
Database file size: 334 16384 byte blocks

Since all data files in this scenario have an 8K BLOCK SIZE and are based on a file system, none have an OFFSET, click 'Load'.

During the Load stage, DBRECOVER will read the ORACLE data dictionary information from the SYSTEM tablespace and build a data dictionary in its built-in Derby. This gives DBRECOVER the ability to analyze various data in the ORACLE database.

After the Load is complete, the DBRECOVER interface shows a tree-shaped diagram grouped by database users on the left:

DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Versio	_		×					
Start Options								
Start Options       Database            DB_20230511144754								
Version 2009 - Enterprise Edition - 2020.09.25								
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https://www.dbrecover.com								

Select a table you want to recover, and double-click to view the data:

P DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Versio D 🗙										
Start Options										
Database	TABLE: F	D.EMP t	his view only	/ shov	vs some sample data					
•	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO		
V Catabase	7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
	7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
DB_20230511144754	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
	7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
V 🛎 Users	7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
🕨 🎽 BI	7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
🕨 🎽 HR	7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
🕨 🕨 📥 IX	7020	KINC	ANALYST	/500	19-APR-1987 00:00:00 AD	3000		20		
▶ 🔔 0E	7839			7609	09-SED-1091-00:00:00 AD	1500	0	20		
🔻 📥 PD	7876	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100	0	20		
Tables	7900	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
E EMP	7902	FORD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
	7934	MILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
► 🎽 SH										
► 🍝 SYS										
SYSMAN										
► 📥 SYSTEM										
Version 2009 - Enterprise Edition - 2020.09.25										
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copyright © 2012 - 2020 Futhussussautu svitiffata, int.										
https://www.dbrecover.com										

Without purchasing a software license, we can assess whether DBRECOVER can recover enough data by viewing data tables, extracting at least 10,000 rows of data, and checking the number of recoverable rows.

DBRecover for Oracle email: service@parnassusdata	a.com www	.dbrecover	.com Professio	nal Ora	cle Database Disaster Recover	y Versio	n 2009			
Start Options										
Database	TABLE: P	D.EMP th	nis view only	y show	vs some sample data					
	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO		
V G Database	7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
	7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
DB 20230519120858	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
	7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
🔻 📥 Users	7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
GSMROOTUSER	7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
V 🚨 PD	7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
Tables	7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
	7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
	44	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
SCOT View	76	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
SYS Data Bridge	00	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
SYSTE Unload	02	FORD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
Unload Truncated Data	34	MILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
Scan Data Based on Object	ID 21	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
Upland Data Dated on Object	66	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
Unidad Deleted Data	54	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
Examine Records Count	98	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
	7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
	7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
	7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
	7844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
	7876	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
	7900	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
	7902	FORD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
	7934	MILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
	7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
	7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
	7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975	4 4 9 9	20		
	7604	MARTIN	SALESMAN	7098	28-SEP-1981 00:00:00 AD	1250	1400	30		
	7098	OLADK	MANAGER	7039	01-MAT-1981 00:00:00 AD	2650		30		
	7700	CLARK		7639	10 APR 1087 00:00:00 AD	2450		10		
	7020	KINC	ANALISI	7500	17 NOV 1981 00:00:00 AD	5000		20		
	7039	TIDNED		7609	00 SED 1001 00:00:00 AD	1600	0	20		
	7044	TORNER	SALESWAN	7050	00-3EF-1981 00.00.00 AD	1300	0	50		
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After selecting the table, right-click UNLOAD, which will export the table data to text format:



Without a registered software license, a single table can extract up to 10,000 rows of data.

For tables storing more than 10,000 rows of data, the functionality of checking the number of recoverable rows can be used for further verification. Select the table you want to check, right-click EXAMINE RECORDS COUNT:

E	DBRecover for Oracle er	mail: service@parnassu	usdata.com	www.dbred	cover.com Prof	essiona	l Oracle Database Disaster Rec	overy V	ersion 20	09	-	×
8	Start Options											
	Database		TABLE: F	D.EMP t	his view only	/ shov	vs some sample data					
			EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO		
	Database		7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
			7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
	V B 2023051	9122351	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
			7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
	🔻 📥 Users		7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
	🕨 📥 GSMROOT	USER	7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
	🔻 📥 PD		7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
	Tables		7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
			7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
		10		URNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
	r 🚔 scorr	view		DAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
	🕨 🃥 SYS	Data Bridge		AMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
	🕨 🍐 SYSTEM	Unload		PRD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
		Unload Truncated (	Data	ILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
		Scan Data Based o	n Object ID	ARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
		Unload Deleted Da	ta	DNES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
		Evergine Decorde (	Count	ARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
		Examine Records (	Jouni		MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
			7700	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
			7020	KING	ANALIST	1000	17 NOV 1081 00:00:00 AD	5000		20		
			7044		PRESIDENT	7600	00 SED 1001 00:00:00 AD	1500	0	20		
			7044	ADAMS	CLEDK	7700	22 MAX-1997 00:00:00 AD	1100	0	20		
			7000		CLERK	7609	03-DEC-1981 00:00:00 AD	950		20		
			7902	FORD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
			7934	MILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
			7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
			7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
			7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
			7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
			7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
			7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
			7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
			7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
			7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
			7844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
	A ¥					_						

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https://www.dbrecover.com



Starting from Oracle 10g, a feature of automatically collecting statistical information jobs has been introduced. With this feature, we can view the historical statistical information of the table, including the number of rows. In dictionary mode, some information about the table will be recorded in the software log log\_dbrecover.txt each time we perform operations like viewing, extracting, checking, etc. on a table. The log file is stored in the software directory:

File Home S	cover-	for-oracle2009						_		×
$\leftarrow \rightarrow \land \uparrow$	dbr	ecover-for-oracle2009				~	ū	Search dbrecover-for-	oracle2	٩
		Name	Date modified	Туре	Size					
🖈 Quick access		config	5/19/2023 12:23 PM	File folder						
E Desktop	*	dbinfo	5/19/2023 12:24 PM	File folder						
👆 Downloads	*	dump	5/19/2023 12:09 PM	File folder						
Documents	*	ire .	11/29/2019 4:16 PM	File folder						
Pictures	*	lib	1/19/2019 5:48 PM	File folder						
T : DC		prmdata	5/19/2023 12:24 PM	File folder						
Inis PC		Template	5/19/2023 12:21 PM	File folder						
💣 Network		All Line I:	11/29/2019 5:12 PM	Text Document	4 KB					
		🕌 dbrecover-for-oracle	9/25/2020 1:29 PM	Executable Jar File	559 KB					
		derby	5/19/2023 12:41 PM	Text Document	2 KB					
		log_dbrecover	5/19/2023 12:41 PM	Text Document	111 KB					
		README	4/4/2019 6:17 PM	lext Document	4 KB					
		start_dbrecover.sh	9/25/2020 1:38 PM	SH File	1 KB					
		start_dbrecover_linux_local_java.sh	9/25/2020 1:38 PM	SH File	2 KB					
		start_dbrecover_windows	9/25/2020 1:38 PM	Windows Batch File	1 KB					
		start_dbrecover_windows_local_java	9/25/2020 1:38 PM	Windows Batch File	1 KB					
16 items										==

ing_dbrecover - Notepad			-	×
File Edit Format View Help				
TABLE SYS.TYPE\$ 5889 rows unloaded				^
TABLE SYS.COLLECTION\$ 1385 rows unloaded				
TABLE SYS.ATTRIBUTE\$ 15376 rows unloaded				
TABLE SYS.LOBFRAG\$ 25 rows unloaded				
TABLE SYS.LOBCOMPPART\$ 0 rows unloaded				
TABLE SYS.TS\$ 6 rows unloaded				
Warning can be ignored: insert prm_tables_collection rows number is 2206				
Warning can be ignored: delete SYS_NC000\$ & SYS_C00 & Virtual Column for col\$ rows number is 1178				
Warning can be ignored: delete SYS_STU SYS_STS Column for col\$ rows number is 0				
Warning can be ignored: delete BIN\$ recyclebin object for obj\$ rows number is 0				
created view pd_tab_col				
the manual path for tabpart\$ is ./manual/sys.tabpart\$.dat				
the manual load tabpart\$.dat not exists, using default :./prmdata/parnassus_dbinfo_DB_20230519125028/./sys.tabpart\$.dat				
the manual path for tabsubpart\$ is ./manual/sys.tabsubpart\$.dat				
the manual load tabsubpart\$.dat not exists, using default :./prmdata/parnassus_dbinfo_DB_20030519125028/./sys.tabsubpart\$.dat				
the manual path for lob\$ is ./manual/sys.lob\$.dat				
the manual load lob\$.dat not exists, using default :./prmdata/parnassus_dbinfo_DB_20230519125028/./sys.lob\$.dat				
the manual path for ind\$ is ./manual/sys.ind\$.dat				
the manual load ind\$.dat not exists, using default :./prmdata/parnassus_dbinfo_DB_20230519125028/./sys.ind\$.dat				
the manual path for lobfrag\$ is ./manual/sys.lobfrag\$.dat				
the manual load lobfrag\$.dat not exists, using default :/prmdata/parnassus_dbinto_DB_20230519125028/./sys.lobfrag\$.dat				
Use default path to load sys.indpart\$.dat				
Use default path to load sys.indsubpart\$.dat				
Database character set 1s AL32011-8				
Database national character set is ALIBUIFID				
Current character set for decoding 15 UIF8				
current national character set for decoding is 01+10				
For Community Edition. row limitation is 10.000.				
If you need to recover more data, please contact service@parnassusdata.com				
object information user#:106 object_name: EMP object_id:74042 data_object_id:74042 object_type:2				
table information object_id:74042 data_object_id:74042 ts#:4 rfile#:7 block#:386 rowcnt:114688 blkcnt:751 analyzetime:2023-05-19 12:41:29.0				
ABLE PD.EMP 666 rows unloaded				
				~
<				>
Ln 4. Col 295	100%	Windows (CRLF)	UTF-8	
	_			

### check the log file:

object information user#:106 object\_name: EMP object\_id:74042 data\_object\_id:74042 object\_type:2
table information object\_id:74042 data\_object\_id:74042 ts#:4 rfile#:7 block#:386 rowcnt:114688
blkcnt:751 analyzetime:2023-05-19 12:41:29.0

TABLE PD.EMP 666 rows unloaded

### A lot of useful information appears in the log:

object_id	74042
data_object_id	74042
ts#	4
rfile#	7
block#	386
rowcnt	114688
blkcnt	751

### analyzetime 2023-05-19 12:41:29.0

Generally, the error of statistical information does not exceed 10%, so we can compare the results of checking the number of rows based on the rowcnt here. For example, the rowcnt here is 114688 (the error of statistical information is very small for tables with less than 1 million rows), and the result of EXAMINE is 114688 rows, which can verify the authenticity of this result.

Users can carry out the above checks on each important data table based on their own needs. We suggest users to fully check the integrity of recoverable data before purchasing software licenses.

After completing the above checks, we start the data bridge transfer at the SCHEMA user level. Right-click Data Bridge on the username to be recovered.

P) DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009 - 🗆 🗙										
Start Options										
Database	TABLE: F	D.EMP t	his view only	y shov	vs some sample data					
1	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO		
V Database	7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
	7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
V B 20230519125028	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
	7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
🔻 📥 Users	7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
GSMROOTUSER	7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
🔻 📥 PD	7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
T Data Bridge	7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
Expert DDI	7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
	7844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
	/8/6	ADAMS	CLERK	//88	23-MAY-1987 00:00:00 AD	1100		20		
SYS	7900	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
SYSTEM	7902	FURD	ANALYST	7500	03-DEC-1981 00:00:00 AD	3000		20		
	7934	MILLER	CLERK	7600	23-JAN-1982 00:00:00 AD	1300	500	10		
	7566	IONES	MANACED	7090	22-PEB-1981 00:00:00 AD	2075	500	20		
in in	7500			7600	22 SEP 1021 00:00:00 AD	1250	1400	20		
U	7698	BLAKE	MANAGER	7830	01-MAY-1981 00:00:00 AD	2850	1400	30		
	7782	CLARK	MANAGER	7830	09- II IN-1981 00:00:00 AD	2450		10		
	7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
	7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
	7844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
	7876	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
	7900	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
	7902	FORD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
	7934	MILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
	7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
	7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
	7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
	7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
	7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
	7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
	7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
	7839	KING	PRESIDENT	7000	17-NOV-1981 00:00:00 AD	5000		10		
	/844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		 
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Industrie WWW.ubjecover.com										

In the SCHEMA-level data bridge interface, click the "+" button to add target database link information:

Data Bridge for Schema		×
Tables	Selected?	
EMP		
	DB Connection	✓ Select all
If need to add suffix for tables?		_
Suffix for tables:		Based on Lob index
	Tablespace	
	Da	ta Bridge Cancel

Enter the link information of the newly created instance, here using the PD user.

Note: The DBRECOVER software will only transfer data to the user in the database link information, i.e., if you enter PD here, the data will be transferred to PD. Customers should follow the simple one-to-one principle here, i.e., if there is a database user to be recovered, such as EAS, then create an EAS user and its tablespace in the target database and grant necessary permissions (DBA role), and enter EAS in this database link to ensure data is transferred to EAS. The PD here is just an example. If a customer wants to recover multiple database users, such as EAS, MES, NC001, etc., they need to correspondingly create these accounts and their tablespaces in the target database and grant necessary permissions (DBA role), and then create multiple database link information (DB Connection) in DBRECOVER, specifying corresponding database link information (DB Connection) when transmitting specific user SCHEMA.

Click TEST to test the availability of the target database link:

٢	New Database Connection			×
	Connection Name Connecti	Connection Name	orcl1-conn	
		Username	pd	
		Password	****	
		Hostname	localhost	
		Port	1521	
		<ul> <li>Service name</li> </ul>	ORCL1	
		Save	Test Cancel	

New Database Connection		×
Connection Name Connecti	Connection Name	orcl1-conn
	Username	pd
-	Passwor DBRecover for	oracle X
	Hostnam 🚺 C	connect to db server successfully!
	Port	ОК
	⊖ SID	
	• Service name	ORCL1
	Save	Test Cancel
If successful, click SAVE to save:

N	New Database Connection X						
	Connection Name Connecti	Connection Name	orcl1-conn	1			
		Username	pd				
		Password	*****				
		Hostname	localhost				
		Port	1521				
				I			
		<ul> <li>Service name</li> </ul>	ORCL1				
		Save	Test Cancel				

Data Bridge for Schema		×
Tables	Selected?	
EMP	'	V
If need to add suffix for tables?	DB Connection	Select all
Suffix for tables:	<b></b>	
Cullin for tables.		Based on Lob Index
	orci 1-conn	
		ata Bridge Cancel

Data Bridge for Schema			×
Tables	Selected?		
EMP	1	$\checkmark$	
	DB Connection		Select all
If need to add suffix for tables?			
Suffix for tables:	orci1-conn		Based on Lob index
	Tablespace		
	PDTBS		
	EXAMPLE		
	PDTBS		
	SYSAUX		
	SYSTEM	Data Dri tar	
	USERS	Data Bridge	Cancer

Data Bridge for Schema		×
Tables	Selected?	
EMP		
If need to add suffix for tables?	DB Connection	Select all
Suffix for tables:	Tablespace	Based on Lob index 🔻
		Data Bridge Cancel



### check the data

SQL> show parameter db_name
NAME TYPE VALUE
db_name string ORCL1
SQL> select count(*) from pd.emp;
COUNT(*)

14		

### Introduction to WIDE TABLE mode

Note: The above data bridge uses the wide table mode by default to transfer data, i.e., it converts all CHAR, NCHAR, VARCHAR, NVARCHAR field types to their longest length by default, which is 2000 or 4000. The purpose of this is to avoid the potential problem of not being able to smoothly insert the recovered string due to the field being too short.

If you do not want to use wide table mode, you can click on the menu bar Options => Preferences.

DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009					
Start Options					
Active 2000 Compute Edition 2020 0 2 E					
Version 2009 - Community Edución - 2020.03.20					
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https://www.dbrecover.com					

Preferences		$\times$				
Change it after you have booted the recovery						
NLS_CHARACTERSET	AL32UTF8					
NLS_NCHAR_CHARACTERSET	AL16UTF16					
Create table in restricted mode	No No Yes					
Confirm						

In the above, selecting 'Yes' in the dropdown box for 'Create table in restricted mode' will prevent the use of wide table mode to create data tables.

## Introduction to the EXPORT DDL function

The above recovery operation was performed for individual SCHEMA data tables. The objects recovered include: creating corresponding data tables and inserting recoverable data.

For the recovery of indexes, constraints, views, triggers, and other objects, the EXPORT DDL function can be used.

Select the SCHEMA you want to recover, right click and select the EXPORT DDL function:

P) DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009	-	×
Start Options		
Database         DB_20230516115336         Strate         Strate		
Convicte © 2010 Democrate Data Software Inc.		
Copyright © 2012 - 2020 ParnassusData Software, Inc.		
https://www.dbrecover.com		

Export DDL	Х
Table	
🔲 Index	
Constraint	
Uiew	
Package & Stored procedure & Function	
Sequence	
Trigger	
Synonym	
DBLink	
DB Connection	
Tablespace	
Export Cancel	

The types of objects that can be recovered include:

- Create table statement (note that it does not include partition information)
- Create index statement (note that it does not include partition information)
- Constraint
- View
- Package & Stored Procedure & Function
- Sequence
- Trigger
- Synonym
- DBlink

Here, select the previously entered database link information for temporary processing of DDL information.

	Export DDL X	
	Table	
	✓ Index	
	Constraint	
	✓ View	
	Package & Stored procedure & Function	
	Sequence	
	Trigger	
	Synonym	
	DBLink	
	DB Connection	
	orcl1-conn	
	Tablespace	
	PDTBS	
	Export	
		-
PRM		×
Export successfully C:\Users\Administra	y. DDL file path: ator/Desktop/dbrecover-for-oracle2009/prmdata/parnassus_dbinfo_DB_20230516115336/export	ddiiddi PD 20230516121422.sal
	· · · · · · · · · · · · · · · · · · ·	
		ОК

A pop-up window will display the path of the DDL SQL file. Check this file:

File Edit Seach View Encoding Language Settings Tools Marro Run Plugins Window ?	📔 C:\Use	📓 C:\Users\Administrator\Desktop\dbrecover-for-oracle2009\prmdata\parnassus_dbinfo_DB_20230516115336\exportddl\ddl_PD_20230516121422.sql - Notepa 🛛 🗙										
Control	File Edit	Search View	Encoding Language Setti	ngs Tools Ma	ro Run Plugins	Window	?				+	▼ ×
■ dd.PD_2020516121422ad 33	🕞 📑 🗄	🖻 🗟 🕞 🚔	khhjod m 4	- - -	🖬 🛼 1 📕 🖉	I 🔝 🕼 .	A) 🖿 🔇	Image:				
Image: State in the state of the state	🔚 ddl PD 🕄	20230516121422.sq	X									
Dot.具出力挑結業要在解決(使用1・可证后使用、解決联系、13744045430         Primary key constraints will be included in this file , but other type constraints pls check pd_constraint_details in target         If you have old exp or speep backup , you should import the metadata from dmp file(imp romeno for exp, impd) content=metadata from dmp file(imp romeno, impd)@Heontent=metadata_only可仅导入结构信息), expc         alter session set current_schema=ED;	1	EXPORT DDL	will not work until vo	ou have a val	id license kev	contac	t serv	vice@parnassusdat	a.com			_
3       Primary Key constraints will be included in this file, but other type constraints jts check pd_constraint_details         3       Primary Key constraints will be included in this file, but other type constraint_details         3       if you have old exp or expdp backup, you should import the metadata from dmp file(imp rows=no for exp, impdp content=metadat from dmp file(imp rows=no for exp, impdp content=metadata_only dxp3d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$d\$	2	DDL导出功能	需要 <b>在购</b> 买使 <b>用</b> 许可证后例	吏 <b>用,购</b> 买联系	13764045638							
Life:J#:18.0 [JADB12exported1alE数があ、発他を受け入れていたいます。     Life:J#:18.0 [JADB12exported1alE数があ、発他を受け、State usport     Life:J#:18.0 [JADB12exported1alE数があ、発他を受け、State usport     Life:J#:18.0 [JADB12exported1alE数があ、発他を受け、State usport     Life:J#:18.0 [JADB12exported1alE数があ、All TableSpace DDL     Life:J#:18.0 [JADB12exported1alE数があ、Japanet DDL     Life:J#:18.0 [JADB12exported1alE355]     create USER ANONYMOUS IDENTIFIED BY VALUES '::12.0 [JADB12exported1alE3555]     create USER ANONYMOUS IDENTIFIED BY VALUES '::12.0 [JADB12exported1alE3555]     create USER XSIEM IDENTIFIED BY VALUES '::12.0 [JADB12exported1alE3555]     create USER XSIEM IDENTIFIED BY VALUES '::10.0 [JADB12exported1alE3555]     create USER SYSEM LIDENTIFIED BY VALUES '::10.0 [JADB12exported1alE3555]     create USER SYSEM LIDENTIFIED BY VALUES '::10.0 [JADB12exported1alE355]     create USER SYSEM LIDENTIFIED BY VALUES '::10.0 [JADB12exported1alE355]     create USER SYSEM LIDENTIFIED BY VALUES '::10.0 [JADB12exported1alE355]     create USER SYSEM LIDENTIFIED BY VALUES '::00000000000000000000000000000000000	3	Primary key	constraints will be i	included in t	his file , but	other t	ype co	nstraints pls ch	eck pd_constraint	details	in targ	et
<pre>in you have one which makes and you which you and you which the metadate from mpdp(mpdp(montent=metadate_only)(mpdp/thdm(m), expr alter session set current_schema=PD; </pre>	4	土罐到米信局	3可以通过exportdd1直接新 old orm or owndr back	犬侍,具1也类空新	J米頃参考日怀奴 uld import the	周年 中 り	pd_con:	straint_details伙 dmp_file(imp_pg	)图	odn conto	nt-moto	dat
alter session set current_schema=PD; 	6	若你有老的	m或expdp的dmp文件,则建	ŧ议从dmp文件中	导入元数据信息(	imp使用	rows=no	.impdp使用conten	t=metadata only	□ 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	l信息),€	expc
alter session set current_schema=D; 	7							/		DC 10 7 10 H 11		
9	8	alter sess	ion set current_schema	a=PD;								
<pre>10 11 12 create USER ANONYMOUS IDENTIFIED BY VALUES ' '; 13 create USER ANONYMOUS IDENTIFIED BY VALUES 'S:29373C71D0D61C3544C6AE771EC989D52DED1F673F4205C37EDFCD094D1;T;5B113CACDE3336EE5F9E75 14 create USER SYSIDENTIFIED BY VALUES 'S:2000000000000000000000000000000000000</pre>	9		Start u	usertablespac	e DDL							
create USER ANONYMOUS IDENTIFIED BY VALUES ' ;; create USER ANONYMOUS IDENTIFIED BY VALUES ' ::0000000000000000000000000000000000	10											
<pre>create USER SYS IDENTIFIED BY VALUES '5:29373CC71D0D61C29A4C6AF771BC989D92DFD1F673F4205C37FDFCD094D1;T;5B113CACDB2336BE5F9E75 create USER XUDSYS IDENTIFIED BY VALUES '5:000000000000000000000000000000000000</pre>	12	create USER	ANONYMOUS IDENTIFIED	BY VALUES		1.						
14       create USER AUDSYS IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	13	create USER	SYS IDENTIFIED BY VAL	LUES 'S:29373	CC71D0D61C29A4	, C6AE771E	3C989D9	2DFD1F673F4205C3	7FDFCD094D1;T:5B1	13CACDB23	36BE5F9	E75
15       create USER SYSTEM IDENTIFIED BY VALUES 'S:ESEE494ABDF42DC11055F9F17CEE295BF678359576ECCBB632C352BA2;T:02AEFC2F572643493         16       create USER SYSBACKUP IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	14	create USER	AUDSYS IDENTIFIED BY	VALUES 'S:00	000000000000000000000	0000000	000000	0000000000E081C1	476C022211C6A9;T:	000000000	0000000	000
16       create USER SYSBACKUP IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	15	create USER	SYSTEM IDENTIFIED BY	VALUES 'S:E3	EE494A5DF42DC1	L055F9F1	7CEE29	9BF6C789A59576EE	C6BB623C352BA2;T:	02AAEFCE2	F572643	493
17       create USER SYSDE IDENTIFIED BY VALUES 's:000000000000000000000000000000000000	16	create USER	SYSBACKUP IDENTIFIED	BY VALUES 'S	:000000000000000	00000000	000000	000000000000000000000000000000000000000	34BD9BD09A9B47700	;T:000000	0000000	000
<pre>19 create USER SYSRA IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000</pre>	17	create USER	SYSDG IDENTIFIED BY	VALUES 'S:000	000000000000000000	00000000	000000	000000000532A1FD	D6D92A641D46F;T:0	000000000	0000000	000
19 Create USER OTINI IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	18	create USER	SYSEM IDENTIFIED BY	VALUES 'S:000	000000000000000000000000000000000000000		0000000	0000000000584BCB8	2B333B2E9163E;T:0	000000000	0000000	000
<pre>create USER XS\$NULL IDENTIFIED BY VALUES '5:000000000000000000000000000000000000</pre>	20	create USER	OUTIN IDENTIFIED BY	VALUES 'S:000			0000000	000000000005368D3	91692FDA57162:T:0	0000000000	00000000	000
22       create USER GSMADMIN_INTERNAL IDENTIFIED BY VALUES '5:000000000000000000000000000000000000	21	create USER	XS\$NULL IDENTIFIED BY	VALUES 'S:0	000000000000000000000000000000000000000	00000000	0000000	000000000000000000000000000000000000000	000000000000000000000;'	;		
23       create       USER GSMUSER IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	22	create USER	GSMADMIN INTERNAL ID	ENTIFIED BY V	ALUES 'S:00000	0000000	000000	000000000000000000000000000000000000000	00000E59EC3CD68BA	CB22E3C5;	T:00000	000
24       create       USER GSMROOTUSER IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	23	create USER	GSMUSER IDENTIFIED BY	Y VALUES 'S:0	000000000000000000000000000000000000000	0000000	000000	00000000000E2D74	77F2E3E95C05887;T	:00000000	0000000	000
25       create USER DIP IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	24	create USER	GSMROOTUSER IDENTIFIE	ED BY VALUES	'S:00000000000	00000000	000000	A00000000000000000	673868AABF7F26419	6C;T:0000	0000000	000
26       Greate USER ORACLE OCM IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	25	create USER	DIP IDENTIFIED BY VAL	LUES 'S:00000	000000000000000000000000000000000000000	00000000	000000	0000000632207C92	6ECBC6D97D7;T:000	000000000	0000000	000
27 Greate USER SYSSUMF IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	26	create USER	DESTWUSER IDENTIFIED	BY VALUES 'S	:000000000000000		0000000	000000000000000000E41	82ED26BD7A14DED92	;T:000000	0000000	000
Create USER DESNMP IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	28	create USER	SYSSIME DENTIFIED BY	VALUES STO			0000000	000000000000000000000000000000000000000	41277F80BB44C5C•T	.0000000	00000000	000
<pre>30 create USER APPQOSSYS IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000</pre>	29	create USER	DBSNMP IDENTIFIED BY	VALUES 'S:00	000000000000000000000000000000000000000	00000000	0000000	000000000000F36657	EC996477AFFA42:T:	0000000000	0000000	000
31       create USER GSMCATUSER IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	30	create USER	APPQOSSYS IDENTIFIED	BY VALUES 'S	:00000000000000	00000000	0000000	0000000000000CFC	E3BFCFC946615BF59	;T:000000	0000000	000
32       create USER GSYS IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	31	create USER	GSMCATUSER IDENTIFIE	BY VALUES '	5:000000000000	0000000	000000	0000000000000007E	72CFB85C19FF15146	F;T:00000	0000000	000
33       create USER NDB IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	32	create USER	GGSYS IDENTIFIED BY	VALUES 'S:000	000000000000000000000000000000000000000	0000000	000000	00000000060D93E5	E7129BE8BB02A;T:0	000000000	0000000	000
34 create USER MUSIS IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	33	create USER	XDB IDENTIFIED BY VAL	LUES 'S:00000	000000000000000000000000000000000000000	00000000	000000	00000004184ED22D	77218E3E9E8;T:000	000000000	0000000	000
36 create USER CDUBALA IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	34	create USER	WMSYS IDENTIFIED BY	VALUES 'S:000	0000000000000000000	00000000	0000000	000000000490F421	B6CF2CEC98272;T:0	0000000000	0000000	000
<pre>37 create USER CTXSYS IDENTIFIED BY VALUES 'S:08FF0ADB3343B715375375375533186667538536667537757757757757757757757757757757757757</pre>	35	create USER	CRUDATA IDENTIFIED BY	VALUES '5:00			0000000	0000000000005A9AFD	91094FAALL1356;T: 4977D9762D97F0F.T	1000000000	0000000	000
38 create USER ORDSYS IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	37	create USER	CTXSYS IDENTIFIED BY	VALUES 'S:C8	FF0ADB3343B713	3FD77466	5E33E4E	615893318668FAB9	H377D3A62D37E3F;1 B3BBBB9C68CC201:T:	93DABE43D	29FDF41	512
39 create USER ORDDATA IDENTIFIED BY VALUES 'S:00000000000000000000000000000000000	38	create USER	ORDSYS IDENTIFIED BY	VALUES 'S:00	000000000000000000000000000000000000000	00000000	0000000	00000000000C29883	9F86F3B6DE3A27;T:	000000000	0000000	000
	39	create USER	ORDDATA IDENTIFIED BY	VALUES 'S:0	000000000000000000000000000000000000000	0000000	000000	0000000000095157	D6AC06EC4B8EB3A;T	:00000000	0000000	000 🗸
S	<											<u>````</u>
Structured Query Language file Langth - 11 159 Lines - 83 Ln - 1 Col - 1 Pos - 1 Windows (CR LD LITE-8 LINS	Structured	Ouery Language	file	length : 11 169	lines + 83	In:1	Col. 1	Pos : 1	Windows (CR LE)	LITE-8		INS

Note: The EXPORTDDL function can only be used normally after a valid enterprise edition license (LICENSE KEY) has been registered!

The statements in the above DDL SQL file for creating indexes, views, and other objects need to be copied by the user and executed under the corresponding database user.

If the user has old exp or expdp dmp files, it is recommended to import metadata information from the dmp file (use rows=no for imp, content=metadata\_only for impdp to only import structure information). The exportddl function lacks a small amount of metadata information, such as object authorization and foreign keys, etc.

## Introduction to the LOAD FROM EXIST DICTS function:

In the actual recovery process, if you encounter situations where the program is unresponsive, stuck, or reports an error, you can use the LOAD FROM EXIST DICTS function to directly load the previous recovery status after restarting DBRECOVER.

P Recovery Wizard	– 🗆	×
Please choose	recovery mode:	
	YMODE	
	ONARY MODE	
	Y MODE(ASM)	
	DNARY MODE(ASM)	
Load from exi	st dicts	
Cancel Help	< Back Next >	

DBRecover for Oracle	×
parnassus_dbinfo_DB_20230529122412 🔻	
parnassus_dbinfo_DB_20230529122412	
parnassus_dbinfo_DB_20230529122608	
parnassus_dbinfo_DB_20230529123253	
parnassus_dbinfo_DB_20230529140659	
parnassus_dbinfo_DB_20230529165933	
Cancel Load	

The recovery status is sorted by time. After selecting appropriately, click the LOAD button to load. Both dictionary mode (DICTIONARY-MODE) and non-dictionary mode (NON-DICTIONARY MODE) can use this fast loading function to avoid repetitive operations.

# Recovery scenario 2: Accidental deletion or complete loss of the SYSTEM tablespace

The SA system administrator of Company D accidentally deleted the data file where the SYSTEM tablespace of a certain database is located, which caused the database to be completely unable to open and data could not be taken out. In the absence of backup, DBRECOVER can be used to mine data.

In this scenario, after starting DBRECOVER and entering the Recovery Wizard, select 'Non-Dictionary mode':

P Recovery Wizard		_		×
	Please choose recovery mode:			
	O DICTIONARY MODE			
	● NON-DICTIONARY MODE			
	O DICTIONARY MODE(ASM)			
	○ NON-DICTIONARY MODE(ASM)			
	Load from exist dicts			
Cancel Help	< Ba	ack	Next >	

D Recovery Wizard		_		×
				~
Endian: Little Endian				
DB Character Set: AL32UTF8				
DB National Character Set: AL16UTF16				
Block Size: 8192				
Offset: 0				
DB Version: auto detect				
Cancel Help	< Back		vext >	
		_		_

Then you need to choose the correct character set, otherwise the subsequent data will be garbled.

In NoN-dictionary mode, users need to specify the character set and national character set. This is because after the SYSTEM tablespace is lost, the character set information of the database cannot be obtained normally, so user input is needed. Only by entering the correct character set settings and installing the necessary language packages can multiple languages be normally extracted in No-Dictionary mode.

Similar to scenario demonstration 1, enter all available data files currently available to the user (excluding temporary files), and set the correct Block Size and OFFSET:

Recovery Wizard					-		×
	Data File	Block Si	Offset	TS#	rFile#		
	C:\app\oradata\ORCL\DATAFILE\O1_MF_DBRECOVE_L6G7B1Q3DBF	8192	0			_	
	C:\app\oradata\ORCL\DATAFILE\O1_MF_USERS_L5VP67TJ_DBF	8192	0				
		C	Ohaaaa Eil		0		
Advanced mode		L	Choose Fil	es _	Scan		
Scan base tables							
					_		
Cancel Help			l	< Back		ext >	

Then click SCAN. The function of SCAN is to scan data information on all data files.



Then right-click the database node in the tree diagram on the left to SCAN EXTENT. Use SCAN TABLE FROM SEGMENTS mode only when it can be confirmed that all data files (except SYSTEM01.DBF) are available. The advantage of this mode is that it is slightly faster, but its degree of recovery is lower than that of SCAN EXTENT mode in case of incomplete or damaged data files.

Stat Options	P DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009 - 🗆 🗙
Database DB_202305231 con Cob segment Scan Tables from Segments Scan Tables from Extents Scan Tables from Extents Comparison of the segment of the seg	Start Options
	Start Options
Version 2000 Community Edition 2020 00 25	
rension zoos - Community Eulaon - zozo.os.zo	Version 2009 - Community Edition - 2020.09.25
Jopynynt © 2012 - 2020 Mainassusvata soltWate, INC.	Copyright © 2012 - 2020 Parhassusbata SoftWafe, Inc.
ittps://www.dbrecover.com	https://www.dbrecover.com

After Scan Tables From Extents is completed, you can open the tree diagram on the left side of the main interface:

DBRecover for Oracle email: service@parnassu	isdata.co	m www.d	brecover.com	Profes	sional Oracle	Databa	se Disa	ster Red	overy \	/ersion 2009	_	- [	x í
Start Options													
Database	obj740	46 :											
V Dotobaca	Col#	Seen Cou	unt Max Size	NULL	PCT Strin	g NStri	ng N	umber	Date	Timestamp	Timestamp Z	one Clo	b Blot
	1	1500	3	0	0	0	1	500	0	0	0	0	0
DB_20230523113028	2	1500	6	0	1500	644	0		0	0	0	0	0
	4	1500	3	7	0	428	1	393	0	0	0	0	0
Extents				<u> </u>					<u> </u>	·	·		<b>J</b>
	Sample	e data anal	lysis:										
🔚 obj63336	col1	col2	col3	col4	col5			cole	colī	7 col8			
🖽 obj63338	7369	SMITH	CLERK	7902	17-DEC-19	80 00:0	0:00 A	D 800	)	20			
ei obj63341	7499	ALLEN	SALESMAN	7698	20-FEB-19	31 00:0	0:00 A	D 160	0 300	30			
ei obj63352	7521	WARD		7698	22-FEB-19 02-APR-10	31 00:00 81 00:0	0:00 A 0:00 ∆	D 125	0 500	20			
ei obj63378	7654	MARTIN	SALESMAN	7698	28-SEP-19	81 00:0	0:00 A	D 125	0 140	0 30			
ebi63380													
eti objo3388													
obj63391													
esjecce i	Try to a	nalyze UN	KNOWN colu	mn type	9:								
🗐 obj74038	Colur	ana Data	Number 9	tripa()/			Timoo	tomn -	Fimoct	o no n with time	Zono Netring		
🔚 obj74041	Colui	IIIS Date	Number 3	unig(v/	ARCHAR2[C	HAR)	nines	tamp	mesu	amp with time	zone Noung	INVARC	
ei obj74042													
📑 obj74046													
Lob segment													
	Unload	statemen	t										
	col1 N	UMBER, c	012 VARCHAR	2, col3	VARCHAR2	, col4 N	IUMBE	ER, col5	DATE,	col6 NUMBE	R, col7 NUMBE	R, col8 N	NUMBER )
Version 2009 - Community Edition - 2020.09.25	i												
Copyright © 2012 - 2020 ParnassusData Softw	are, Inc.												
https://www.dbrecover.com													

Each node on the tree diagram represents a data segment of a regular heap table or partition, and its name is obj + DATA OBJECT ID recorded on the data segment.

Click on a node and observe the sidebar on the right side of the main interface:

DBRecover for Oracle email: service@parnassusc	lata.com	www.db	recover.com P	rofessio	onal Oracle Da	tabase Dis	aster Reco	very Ver	sion 2009			-		×
Start Options														
Database	obj7404	46 :												
▼ Catabase	Col#	Seen Co	unt Max Size	NULL	PCT String	NString	Number	Date	Timestamp	Timestamp Zone	Clob	Blob		
	2	1500	6	0	1500	0 644	0	0	0	0	0	0		5
• DB_20230523113028	3	1500	9	0	1500	428	0	0	0	0	0	0		4
Extents	4 5	1500	3	0	0	0	0	0 1500	0 1500	0	0	0		
<ul> <li>(□) obj63328</li> <li>(□) obj63330</li> <li>(□) obj63332</li> </ul>	Sample	e data ana	lysis:											
📶 obj63336	col1	col2	col3	col4	col5		cole	6 col7	col8					
🖬 obj63338	7369	SMITH	CLERK	7902	17-DEC-198	0 00:00:0	0 AD 800	)	20					
ebi63341	7499	WARD	SALESMAN	7698	20-FEB-198 22-FEB-198	1 00:00:00 1 00:00:00	AD 160	00 300 50 500	30 30					
a obj63378	7566	JONES	MANAGER	7839	02-APR-198	1 00:00:00	AD 297	75	20					
Obj63380	7654	MARTIN	SALESMAN	7698	28-SEP-198	1 00:00:00	AD 125	50 140	0 30					
🗐 obj63388														
🔠 obj63389														
🗐 obj63391	Try to a	nalyze UN	KNOWN colur	mn type	9:									
e obj74036														
ebj74038	Colun	nns Date	Number St	tring(V/	ARCHAR2 CH	IAR) Tim	estamp <sup>-</sup>	Timesta	amp with time	zone NString(NVA	RCHA	R2INCH	AR)	
ebj74041														
🖬 obj74046														
Exp segment														
	Unload	statemen	t											
	able ot	oj74046 se	egobjno 7404	6 ( col1	I NUMBER, co	012 VARCH	IAR2, col3	3 VARCI	HAR2, col4 N	UMBER, col5 DATE,	col6 N	UMBER	, col7 NUN	IBER,
A V					_									
Version 2009 - Community Edition - 2020.09.25														
Copyright © 2012 - 2020 ParnassusData Softwar	e, Inc.													
https://www.dbrecover.com														

Field type analysis

Due to the loss of the SYSTEM tablespace, the Non-Dictionary mode lacks the structure information of the data table. This structure information includes the field names and field types on the table, and in ORACLE, this information is only saved as dictionary information, not stored on the data table. When the user only has the tablespace where the application data is located, it is necessary to guess the type of each field based on the ROW row data on the data segment. Here, we can parse more than 10 mainstream data types:

- String: includes char, varchar
- NString national language string: nchar, nvarchar
- Number numerical type

- Date type
- TimeStamp type
- TimeStamp Zone type with time zone
- CLOB
- BLOB

## Sample Data Analysis:"

P DBRecover for Oracle email: service@parnassus	data.com	www.dbreco	ver.com Pr	ofessional C	racle Da	tabase Dis	aster Reco	verv Ve	rsion 2009			_		×
Start Options								,						
Database	obj740	46 :												
V C Database	Col#	Seen Count	Max Size	NULL PCT	String	NString	Number	Date	Timestamp	Timestamp Zone	Clob	Blob		Ţ
▼ 20230523113028	2	1500 1500 1500	3 6 9	0	1500	644 428	0	0	0	0	0	0		Ď
Extents	4	1500 1500	3 7	7 0	0	0	1393 0	0 1500	0 1500	0	0	0		
한 00163328 한 00163320 한 00163330 한 00163332	Sample	e data analysi	s:											
Image: Constraint of the second state of the second sta	col1 7369 7499 7521 7566 7654 Try to a Colur	col2 co SMITH CL ALLEN SA WARD SA JONES MA MARTIN SA	I3 LERK LESMAN LESMAN INAGER LESMAN	col4 col5 7902 17-C 7698 20-F 7698 22-F 7698 28-S 7698 28-S ring(VARCH	EE-198 EB-198 EB-198 PR-198 EP-198	0 00:00:0 0 00:00:00 1 00:00:00 1 00:00:00 1 00:00:00 AR) Tim	colid 0 AD 800 AD 160 AD 125 0 AD 297 0 AD 125	6 col7 00 300 50 500 75 50 140	7 col8 20 30 20 0 30 0 30	zone NString(NV/	ARCHA	R2 NC	HAR)	
Lob segment	Unload able of	statement. Dj74046 sego	bjno 74046	δ ( col1 NUM	IBER, co	12 VARCH	IAR2, col3	3 VARCI	HAR2, col4 N	UMBER, col5 DATE	, col6 1	NUMBE	R, col7 N	UMBER,
A Y														
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https://www.dbrecover.com														

This part parses 10 pieces of data based on the results of field type analysis and displays the parsing results. The sample data can help users understand the actual data stored in this data segment. If there are fewer than 10 records recorded on the data segment, all records will be displayed.

	data com	www.dbrecov	er com P	ofersional O	racle Dat	abace Dice	eter Paca	ven v	rrion 2000				r		~
Start Ontions	auto.com	- www.ubrecov	cheomra	oressional of		00030 0130	ister need	very ve	131011 2005						~
Database	obj633	89 :													
T Databasa	Col#	Seen Count	Max Size	NULL PCT	String	NString	Number	Date	Timestam	p Timestamp Zone	Clob	Blob			
Database	1	7 .	16	0	0	0	0	0	0	0	0	0			
▼ DB_20230523113028	2	7 .	14	0	7	6	0	0	0	0	0	0			
Extents															
ebj63328 ebj63330 ebj63332	Sample	e data analysis:													
🗐 obj63336	col1				col2										
🔚 obj63338	3BA5	392CFC6B40B	69F6A73	12E9F591B0	MISS	NG ATTR	2								
🔠 obj63341	3BA5	392CFC6B40B	69F6A73	12E9F591B0	) INVAL	ID_LENG	TH								
🔠 obj63352	3BA5I	392CFC6B40B	69F6A73	12E9F591B0	) MISSI	NG_MAGI	C								
e obj63378	38A5	392CFC6B40B	69F6A73	12E9F591B0 12E9E591B0	) MISSI ) INIVAI	ID VR	JER								
ei obj63380	00/101			12201 00 100											
obj63388															
eii obj63389															_
eij63391	Try to a	nalyze UNKNO	WN colur	nn type:											
ei obj74036															
et i74038	Colun	nns Date	Nu	mber	String(V	ARCHAR	2 CHAR)	Times	stamp T	imestamp with time z	one	NString	(NVARC	HAR2	IN I
00j/4041	1	3BA5B92	CFC 3B	A5B92CFC	;00,0k	@00js 0	000	3BA5	392CFC 3	BA5B92CFC		樯렔□碑	11211日間	Ş.	
00J74042	1	3BA5B92	CFC 3B	A5B92CFC	;00,0k	@00js 0	000	3BA5E	392CFC 3	BA5B92CFC		檜렔□瑚	馗跟猒□配	5	
0bj/4046	1	3BA5B92	CFC 3B	A5B92CFC	;00,0k	@00js 0	000	3BA5E	392CFC 3	BA5B92CFC		樯렔□碑	馗足猒□館 ++□□×−和	2	
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				Alliazorta					137676 .1	UPSILIZZER G		100 311 116			
	Unload	statement:													
	unioa	d table obj6338	39 segob	jno 63389 ( o	ol1 UN	(NOWN, d	ol2 VARC	HAR2	)						
					_										_
Version 2009 - Community Edition - 2020.09.25															
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## TRY TO ANALYZE UNKNOWN column type:

This part is for fields that the field parsing function cannot fully confirm the type of. It tries to parse with various field types and presents them to the user so that the user can judge what type it actually is.

Fields whose type cannot be confirmed are roughly in the following situations:

- 1. RAW or LONG RAW
- Unsupported data types, including: XDB.XDB\$RAW\_LIST\_T, XMLTYPE, user-defined types, etc.
- 3. The data block itself is severely damaged

In this "Non-Dictionary Mode", conventional and data bridging modes can also be adopted. Compared with dictionary mode, the main difference is that in non-dictionary mode, users can decide the type of field themselves when data bridging. As shown in the figure below, some field types are UNKNOWN, that is, unknown.

If the user knows the structure of the table when it was designed (it can also come from the documents of the application developer), they can fill in the correct Column Type type by themselves, in order to successfully bridge the table data to the target database.

Data Bridge		×
Column Name	Column Type	
col1	UNKNOWN	
col2	BLOB	A
	CLOB	
	NCLOB	
	LONG	
	RAW	
	LONG RAW	
	IGNORE	
	UNKNOWN	· · · · · · · · · · · · · · · · · · ·
<u> </u>	DB Connection	Deleted data only?
If need to remap table?		
Target table name		If need to scan data?
	Tablesnace	Plz specify data object id:
	<b></b>	
		Basad an Lab soon
		Based on Lob Scall
	Data Bric	ige Cancel

## Recovery Scenario 3: Ransomware malware encrypts and damages data files

Ransomware malware encrypts part or all of the content of ORACLE data files. As ORACLE data files are generally large, encrypting the entire file may take a long time, so some ransomware malware may choose to encrypt only continuous or random space in the header of the ORACLE data file.

For this kind of local encryption damage, we can try to use DBRECOVER to recover the data in it.

Since the data file header is damaged, we need to figure out the tablespace number (TS#) and relative file number (RFILE#) of each data file by observing the contents of SYSTEM01.DBF.

Below is a list of data files:

👞 Administra	tor: Command Pro	mpt		_	×
SQL> exit Disconnecte Version 19.	d from Oracl 3.0.0.0	e Database 19c I	Enterprise Edition Release 19.0.0.0.0 - Production		^
C:\Users\Ad	ministrator≻	cd C:\Users\Adm	inistrator\Desktop\DATAFILE		
C:\Users\Ad Volume in Volume Ser Directory	ministrator∖ drive C is S ∵ial Number i of C:\Users\	Desktop\DATAFILI ystem Drive s 5EB5-5EB4 Administrator\De	E>dir esktop\DATAFILE		
05 (00 (0000					
05/29/2023	11:35 AM	<dir></dir>			
05/29/2023	11:22 AM	<dir></dir>	••		
05/29/2023	11:22 AM	524,296,192	01_MF_APP01_L782YY4YDBF.eking		
05/29/2023	11:22 AM	104,865,792	O1_MF_APP01_L782ZBM3DBF.eking		
05/29/2023	11:22 AM	104,865,792	O1_MF_APP01_L782ZCP1DBF.eking		
05/29/2023	11:22 AM	524,296,192	O1_MF_APP02_L782ZO7WDBF.eking		
05/29/2023	11:22 AM	104,865,792	O1_MF_APP02_L7830DTGDBF.eking		
05/29/2023	11:22 AM	104,865,792	O1_MF_APP02_L7830FJ6DBF.eking		
05/29/2023	11:22 AM	524,296,192	O1_MF_DBRECOVE_L6G7B1Q3DBF.eking		
05/29/2023	11:22 AM	1,069,555,712	O1_MF_SYSAUX_L5VP5QJ8DBF.eking		
05/29/2023	11:22 AM	964,698,112	O1_MF_SYSTEM_L5VP4N7YDBF.eking		
05/29/2023	07:03 AM	135,274,496	O1_MF_TEMP_L5VPCQGOTMP.eking		
05/29/2023	11:22 AM	68,165,632	O1_MF_UNDOTBS1_L5VP66PMDBF.eking		
05/29/2023	11:22 AM	10,493,952	01_MF_USERS_L5VP67TJDBF.eking		
	12 File(s	) 4,240,539,64	3 bytes		
	2 Dir(s)	6,546,952,192	2 bytes free		
C:\Users\Ad	ministrator\	Desktop\DATAFIL			~

01\_MF\_APP01\_L782YY4Y\_.DBF.eking 01\_MF\_APP01\_L782ZBM3\_.DBF.eking 01\_MF\_APP01\_L782ZCP1\_.DBF.eking 01\_MF\_APP02\_L782Z07W\_.DBF.eking 01\_MF\_APP02\_L7830DTG\_.DBF.eking 01\_MF\_APP02\_L7830FJ6\_.DBF.eking 01\_MF\_DBRECOVE\_L6G7B1Q3\_.DBF.eking 01\_MF\_SYSAUX\_L5VP5QJ8\_.DBF.eking 01\_MF\_SYSTEM\_L5VP4N7Y\_.DBF.eking 01\_MF\_TEMP\_L5VPCQG0\_.TMP.eking 01\_MF\_UND0TBS1\_L5VP66PM\_.DBF.eking

The example above has the encrypted suffix eking.

Note that TEMP, UNDOTBS1, and SYSAUX are irrelevant to our recovery job, so you can ignore these files.

We first launch DBRECOVER, using dictionary mode DICT-MODE.

P Recovery Wizard			×
Please choose recovery mode:			
<ul> <li>DICTIONARY MODE</li> </ul>			
○ NON-DICTIONARY MODE			
○ DICTIONARY MODE(ASM)			
○ NON-DICTIONARY MODE(ASM)			
Load from exist dicts			
Cancel Help	< Back	Next >	

P Recovery Wizard	- 0	×
Endian: Little	tle Endian	
DB Character Set: From	om dictionary	
DB National Character Set	om dictionary	
Block Size: 819	92 🔻	
Offset: 0		
DB Version: auto auto 8 9 10 11 12	to detect	
Cancel Help	< Back Next	>

Choose the DB VERSION according to the actual situation. For instances higher than version 12c, such as 18c, 19c, etc., choose 12.

Recovery Wizard		-		×
Endian:	Little Endian			
DB Character Set:	From dictionary			
DB National Character Set.	From dictionary			
Block Size:	8192			
Offset	0			
DB Version:	12 •			
Cancel Help	< Back	1	Vext >	

Only add SYSTEM01.DBF and specify its TS# = 0 rFILE# = 1 (note this is fixed).

P Recovery Wizard		_	□ ×
	Data File	Bloc Offset TS# rEile#	#
	C:\Users\Administrator\Desktop\DATAFILE\01_MF_SYSTEM_L5VP4N7YDBF.eking	8192 0 0 1	
Advanced mode		Chasse Files	
🗹 Scan base tables			
Cancel Help		< Back N	ext >

Checking the "SCAN BASE TABLES" option above can more powerfully deal with damage situations.

After clicking the LOAD button, DBRECOVER will scan SYSTEM01.DBF as a whole and find the data dictionary base table data in it.

E	Recovery Wizard -	×
E	Recover for Oracle v2009     Copyright (c) 2012 - 2020 ParnassusData Software, Inc.     Preparing for scanning     Scanning tablespace 0, data file 1     2026 segment header and 95422 data blocks     tablespace 0, data file 1: 117761 blocks scanned     Extent scanning, please waiting     Unload data for system tables	×
		*

We open the SYS user node and look for the TS\$ and FILE\$ two basic tables:

P DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009 -									- 0	×		
Start Options												
Database TABLE: SYS.TS\$ this view only shows some sample data												
	1 TS	# NAME	OWNER#	ONLINE\$	CONTENTS\$	UNDOFILE#	UNDOBLOCK#	BLOCKSIZE	INC#	SCNWRP	SCNBAS	DFLMINE
V G Database	0	SYSTEM	0	1	0	0	0	8192	1	0	0	1
	1	SYSAUX	0	1	0	0	0	8192	1	0	0	1
▼ DB_20230529123253	2	TEMP	0	1	1	0	0	8192	2	0	0	1
🔻 📥 Users	4	USERS	0	1	0	0	0	8192	1	0	0	1
	5	UNDOTBS2	0	3	0	0	0	8192	1	0	0	1
Tables	6	DBRECOVER_TEST	0	1	0	0	0	8192	1	0	0	1
► 🍐 PD	8	APP02	0	1	0	0	0	8192	1	0	0	1
SCOTT												
SYS												
ACCESS\$												
ACLMV5_REFLUG												
APPLYS CONF HDLR COLUM												
APPLYS CONSTRAINT COLUM												
A V												
Version 2009 - Community Edition - 2020.09.25												
Copyright © 2012 - 2020 ParnassusData Software, Inc.												
https://www.dbrecover.com												
1												

DBRecover f	DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009								— C	]	×			
Start Options	art Options													
Database	TABLE: SYS.TS\$ this view only shows some sample data													
		TS#	NAME	OWNER#	ONLINES	CONTENTS\$	UNDOFILE#	UNDOBLOCK#	BLOCKSIZE	INC#	SCNWRP	SCNBAS	DELI	MINE
	SYS_MFBA_NROW	0	SYSTEM	0	1	0	0	0	8192	1	0	0	1	_
	SYS_MFBA_NTCRV	1	SYSAUX	0	1	0	0	0	8192	1	0	0	1	
	SYS_MFBA_STAGE_RID	2	UNDOTBS1	0	1	0	0	0	8192	2	0	0	1	_
	SYS_MFBA_TRACKED_TXN	3	TEMP	0	1	1	0	0	8192	1	0	0	1	
	S_PROPS_TAB	4	USERS UNDOTRS2	0	3	0	0	0	8192	1	0	0	1	
	TAB\$	6	DBRECOVER TEST	0	1	0	ő	0	8192	1	0	0	1	
	TABCOMPART\$	7	APP01	0	1	0	0	0	8192	1	0	0	1	
	TABLE_PRIVILEGE_MAP	8	APP02	0	1	0	0	0	8192	1	0	0	1	_
	TABPART\$													
	TABSUBPART\$													
	TAB_STATS\$													
	TRANSACTION_BACKOUT_REF													
	TRANSACTION_BACKOUT_STA													
	TRANSFORMATIONS\$													
	TRANSIENT_IOT\$													
	TRIGGER\$													
	TRIGGERCOL\$													
	TRIGGERDEP\$													
	TRIGGERJAVAC\$													
	TRIGGERJAVAF\$													
	TRIGGERJAVAM\$													
	TRIGGERJAVAS\$													
	TRUSTED_LIST\$													
	TS\$													
	TSDP_ASSOCIATION\$													
	TSDP_CONDITION\$													
	TSDP_ERROR\$													
	TSDP_FEATURE_POLICY\$													
	TSDP_PARAMETER\$													
4	TSDP POLICYS													
														_
Version 2009 -	Community Edition - 2020.09.25													
Convright © 20	13 3030 DemoceusDate Software Inc.													
Copyright © 20	rz - zuzu Parnassusuata sontware, INC.													
nttps://www.db	recover.com													

The TS\$ table stores tablespace information, the TS# column is the tablespace number, and we can get the following information:

TS#	NAME
0	SYSTEM
1	SYSAUX
2	UNDOTBS1
3	TEMP
4	USERS
5	UNDOTBS2
6	DBRECOVER_TEST
7	APP01

8 APP02	
---------	--

That is, the TS# of the APP01 tablespace is 7, and the TS# of the APP02 tablespace is 8.

The FILE\$ table stores data file information:

DBRecover f	or Oracle email: service@parnassusdata.com	www.dbre	cover.com P	rofessional	Oracle	Database D	saster Recover	y Versio	n 2009			-	- 🗆	×
Start Options														
Database		TABLE	SYS.FILE	this viev	v onl	y shows so	ome sample	data						
		FILE#	STATUS\$	BLOCKS	TS#	RELFILE#	MAXEXTEND	INC	CRSCNWRP	CRSCNBAS	OWNERINSTANCE	SPARE1	SPARE2	SPARE
	FED\$APP\$STATUS	1	2	64000	0	1	4194302	1280	0	8		4194306	0	
	TEDSAPPS	3	2	51200	1		4194302	1280	0	6336		12582914	0	
	FED\$BINDS	5	2	64000	6	5	0	0	0	2447818		20971522	0	_
	FED\$DEPENDENCY	7	2	640	4		4194302	160	0	37099		29360130	0	
	ED\$EDITIONS	2	2	64000	6		0	0	0	3207824		8388610	0	_
	FED\$PATCHES	4	2	3200	2	4	4194302	040	0	1928280		22664424	0	
	ED\$STATEMENTSERRORS	0	2	12800	7	0 0	0	0	0	3207855		377/8738	0	
	FED\$VERSIONS	10	2	64000	8	10	0	ő	0	3207900		41943042	0	_
	FETS	11	2	12800	8	11	0	0	0	3207935		46137346	0	
	EGAS	12	2	12800	8	12	0	õ	õ	3207955		50331650	0	
	FGA_LOG\$FOR_EXPORT_TBL													
	FGR\$_FILE_GROUPS													
	<pre>FGR\$_FILE_GROUP_EXPORT_I</pre>													
	EGR\$_FILE_GROUP_FILES													
	FGR\$_FILE_GROUP_VERSIONS													
	FGR\$_TABLESPACE_INFO													
	FGR\$ TABLE INFO													
	EILES													
	HIXED_OBJ\$													
	GG\$_PACKAGE_MAPPING													
	GG\$_PROCEDURE_ANNOTATIO													
	GG\$_PROC_OBJECT_EXCLUSI													
	GG\$_SUPPORTED_PACKAGES													
	GOLDENGATE\$_CONTAINER_R													
	GOLDENGATES PRIVILEGES													
	HANG MANAGER PARAMETER													
	HCS ANALYTIC VIEWS													
4														
A ¥						_								
Version 2009 -	Community Edition - 2020.09.25													
Copyright © 20	12 - 2020 ParnassusData Software, Inc.													
https://www.db	precover.com													
	<u></u>													

What we need are the TS# and RELFILE# columns.

TS#	RELFILE#
0	1
1	3
6	5

4	7
7	2
2	4
7	8
7	9
8	10
8	11
8	12

By mapping and merging the data of the two tables, we can get:

TS#	RELFILE#	Tablespace Name
0	1	SYSTEM
1	3	SYSAUX
6	5	DBRECOVER_TEST
4	7	USERS
7	2	APP01
2	4	UNDOTBS1
7	8	APP01
7	9	APP01
8	10	APP02
8	11	APP02
8	12	APP02

After deleting the unnecessary SYSAUX, UNDOTBS1, and the known SYSTEM tablespace, only the following are left:

TS#	RELFILE#	Tablespace Name
6	5	DBRECOVER_TEST
4	7	USERS
7	2	APP01

7	8	APP01
7	9	APP01
8	10	APP02
8	11	APP02
8	12	APP02

Corresponding data file name list:

O1_MF_APP01_L782YY4YDBF.eking
01_MF_APP01_L782ZBM3DBF.eking
01_MF_APP01_L782ZCP1DBF.eking
01_MF_APP02_L782Z07WDBF.eking
01_MF_APP02_L7830DTGDBF.eking
01_MF_APP02_L7830FJ6DBF.eking
01_MF_DBRECOVE_L6G7B1Q3DBF.eking
01_MF_USERS_L5VP67TJDBF.eking

By comparing the above two tables, it is not difficult to find the corresponding relationship. For data files managed by db\_create\_file\_dest OMF file, multiple data files under a tablespace can be sorted by their file names, and the order is consistent with RELFILE#. For file names managed by users themselves (that is, without using OMF), they generally use the naming method of APP01{XX} (such as APP0101, APP0102) for easier management, and their corresponding relationship can also be obtained.

Above, we obtained a complete information table through guessing:

TS#	RFILE#	Tablespace Name	FILE NAME
6	5	DBRECOVER_TEST	O1_MF_DBRECOVE_L6G7B1Q3DBF.eking
4	7	USERS	O1_MF_USERS_L5VP67TJDBF.eking
7	2	APP01	O1_MF_APP01_L782YY4YDBF.eking
7	8	APP01	O1_MF_APP01_L782ZBM3DBF.eking
7	9	APP01	O1_MF_APP01_L782ZCP1DBF.eking

8	10	APP02	O1_MF_APP02_L782ZO7WDBF.eking
8	11	APP02	O1_MF_APP02_L7830DTGDBF.eking
8	12	APP02	O1_MF_APP02_L7830FJ6DBF.eking

Reopen DBRECOVER and switch to dictionary mode:

Recovery Wizard	_		×
			~
	Please choose recovery mode:		
	<ul> <li>DICTIONARY MODE</li> </ul>		
	O NON-DICTIONARY MODE		
	O NON-DICTIONARY MODE(ASM)		
	Load from exist dicts		
Canaal		Novt 5	
Cancer Heip	< Back	ivext >	

You still need to select the database version (DB VERSION).
Recovery Wizard		-		×
Endian:	Little Endian			
DB Character Set:	From dictionary			
DB National Character Set:	From dictionary			
Block Size:	8192			
Biock Size.				
Offset	0			
DB Version:	12			
Cancel Help	< Back		Next >	ך
				_

P Recovery Wizard				-	-	×
	Data File	Bloc	Offset	TS#	rFile#	1
	Cill Isare\AdministratedDeckton\DATAEll E\01_ME_APP01_L782VV4V_DPE_eking	0102	0			
	C:\Users\AdministratorDesktopDATAFILE\01_MF_AFF01_2702T141_DDF.eking	8102	0			
	C:\Users\Administrator\Desktop\DATAFILE\01_MF_APP01_L7827CP1_DBE_eking	8192	ő			
	C'Users\Administrator\Desktop\DATAFILE\01_MF_APP02_L782707W_DBE_eking	8192	0			
	C:\Users\Administrator\Desktop\DATAFILE\O1 MF APP02 L7830DTG .DBF.eking	8192	0			
	C:\Users\Administrator\Desktop\DATAFILE\O1 MF APP02 L7830FJ6 .DBF.eking	8192	0			
	C:\Users\Administrator\Desktop\DATAFILE\O1 MF DBRECOVE L6G7B1Q3 .DBF.eking	8192	0			
	C:\Users\Administrator\Desktop\DATAFILE\O1 MF SYSTEM L5VP4N7Y .DBF.eking	8192	0	0	1	
	C:\Users\Administrator\Desktop\DATAFILE\O1_MF_USERS_L5VP67TJDBF.eking	8192	0			
Advanced mode	(	Choose F	Files	L	ad	)
Scan base tables						
Cancel Help			< B;	ack	Next	>

Add all necessary data files (all files that might store user data, UNDOTBS1, TEMP, SYSAUX don't need to be added), and make sure not to omit SYSTEM01.DBF (it must be added).

Fill in the TS# and RFILE# information according to the table you compiled earlier:

P Recovery Wizard				-	_	×
			ſ			<b>_</b>
Data	File	Bloc	Offse	TS#	rFile#	
C:\Us	sers\Administrator\Desktop\DATAFILE\O1 MF APP01 L782YY4Y .DBF.eking	8192	0	7	2	
C:\Us	sers\Administrator\Desktop\DATAFILE\O1_MF_APP01_L782ZBM3DBF.eking	8192	0	7	8	
C:\Us	sers\Administrator\Desktop\DATAFILE\O1_MF_APP01_L782ZCP1DBF.eking	8192	0	7	9	
C:\Us	ers\Administrator\Desktop\DATAFILE\O1_MF_APP02_L782ZO7WDBF.eking	8192	0	8	10	
C:\Us	ers\Administrator\Desktop\DATAFILE\O1_MF_APP02_L7830DTGDBF.eking	8192	0	8	11	
C:\Us	ers\Administrator\Desktop\DATAFILE\O1_MF_APP02_L7830FJ6DBF.eking	8192	0	8	12	
C:\Us	ers\Administrator\Desktop\DATAFILE\O1_MF_DBRECOVE_L6G7B1Q3DBF.eking	8192	0	6	5	
C:\Us	ers\Administrator\Desktop\DATAFILE\O1_MF_SYSTEM_L5VP4N7YDBF.eking	8192	0	0	1	
C:\Us	ers\Administrator\Desktop\DATAFILE\O1_MF_USERS_L5VP67TJDBF.eking	8192	0	4	7	
						_
Advanced mode		Choose	Files	L LO	bad	
			— L			
Scan base tables						
Canaal				lack	Maste	
Cancel Help			<	заск	Next >	·

If the relevant information is correctly filled in and the degree of encryption damage isn't high, you can directly read the data:

DBRecover for Oracle email: service	@parnassusc	lata.com w	ww.dbrecover.	com Pr	ofessional Oracle Database Di	saster R	ecovery \	/ersion 2009	- 0	>
Start Options										
Database	TABLE: F	D.EMP th	nis view only	y shov	vs some sample data					
	M EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO		
V Database	7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
	7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
DB 20230529140659	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
	7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
🔻 📥 Users	7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
GSMROOTUSER	7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
v 🖲 PD	7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
Tables	7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
	7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
	7844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
SCOTT	7876	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
🕨 📥 SYS	7900	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
SYSTEM	7902	FORD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
	7934	MILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
	7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
	7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
	7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
	7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
	7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
	7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
	7844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
	7876	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
	7900	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
	7902	FORD	ANALYST	7566	03-DEC-1981 00:00:00 AD	3000		20		
	7934	MILLER	CLERK	7782	23-JAN-1982 00:00:00 AD	1300		10		
	7369	SMITH	CLERK	7902	17-DEC-1980 00:00:00 AD	800		20		
	7499	ALLEN	SALESMAN	7698	20-FEB-1981 00:00:00 AD	1600	300	30		
	7521	WARD	SALESMAN	7698	22-FEB-1981 00:00:00 AD	1250	500	30		
	7566	JONES	MANAGER	7839	02-APR-1981 00:00:00 AD	2975		20		
	7654	MARTIN	SALESMAN	7698	28-SEP-1981 00:00:00 AD	1250	1400	30		
	7698	BLAKE	MANAGER	7839	01-MAY-1981 00:00:00 AD	2850		30		
	7782	CLARK	MANAGER	7839	09-JUN-1981 00:00:00 AD	2450		10		
	7788	SCOTT	ANALYST	7566	19-APR-1987 00:00:00 AD	3000		20		
	7839	KING	PRESIDENT		17-NOV-1981 00:00:00 AD	5000		10		
	7844	TURNER	SALESMAN	7698	08-SEP-1981 00:00:00 AD	1500	0	30		
	7876	ADAMS	CLERK	7788	23-MAY-1987 00:00:00 AD	1100		20		
	7900	JAMES	CLERK	7698	03-DEC-1981 00:00:00 AD	950		30		
A V					_					
Version 2009 - Community Edition - 2	2020.09.25									
Copyright © 2012 - 2020 ParnassusE	Data Softwar	e, Inc.								
https://www.dbrecover.com										

Because the characteristics of encryption viruses vary, there may be more problems that need to be addressed in actual operation. Please feel free to communicate with us via email: <u>service@parnassusdata.com</u>.

## Recovery Scenario 4: Recovery of data rows deleted by an erroneous DELETE FROM TABLE operation

A developer at Company D executed a script to delete data in the testing environment but mistakenly connected it to the production environment (PROD DATABASE), thereby deleting all data from a certain table.

In the above scenario, we can use DBRECOVER to retrieve the rows that have been deleted.

However, users need to perform the following operations first to protect the data from being overwritten as much as possible:

- 1. Set the tablespace containing the table to READ ONLY. The command is: ALTER TABLESPACE {TABLESPACE\_NAME} READ ONLY
- 2. Shut down the database instance: SHUTDOWN IMMEDIATE

Users can choose one of the two solutions above.

Reproducing the scenario:

```
SQL> select count(*) from pd.emp;
COUNT(*)
114688
```

```
SQL> delete from pd.emp;
114688 rows deleted.
```

```
SQL> commit;
Commit complete.
```

```
SQL> alter system checkpoint;
System altered.
```

```
SQL> select count(*) from pd.emp;
COUNT(*)
0
```

Before starting the recovery, we first set the tablespace to read-only to protect the recovery environment:

SQL> select tablespace\_name from dba\_segments where owner='PD' and segment\_name='EMP';
TABLESPACE\_NAME
.....
DBRECOVER\_TEST
SQL> alter tablespace DBRECOVER\_TEST read only;
Tablespace altered.

Launch DBRECOVER, choose dictionary mode, and add all available data files:

DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009 -	×
Start Options	
Database TABLE: PD.EMP this view only shows some sample data	
Database     EMPNO     ENAME     JOB     MGR     HIREDATE     SAL     COMM     DEPTNO       PB_20230529165933     V     GSMROOTUSER     PO     V     Tables       P     SOTT     SS     SYS     SYSTEM	
Version 2009 - Community Edition - 2020.09.25	
Copyright © 2012 - 2020 ParnassusData Software, Inc.	
https://www.dbrecover.com	

The data in the example table appears to be empty. Right-click on the table and select Unload Deleted Data.

Bate Options       TABLE PD.EMP this view only shows some sample data         Image: DB_20202020165933       Image: DB_20202020165933         Image: DB_20202020165933       Image: DB_2020205291659333         Image: DB_20202017       Image: DB_202005291659333         Image: DB_202002017       Image: DB_202005291659333         Image: DB_202002017       Image: DB_202005291659333         Image: DB_202005291659333       Image: DB_2020052916593333         Image: DB_2020052	DBRecover for Oracle email: service@parnassusd	lata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009	_		×
TABLE: PD.EMP this view only shows some sample data         Image: Database         Image: Database <td>Start Options</td> <td></td> <td>_</td> <td></td> <td></td>	Start Options		_		
Version 2009 - Community Edition - 2020.09.25         Copyright 2 2012 - 2020 Panasassabilits Software, Inc.         Mbs://www.dbrecover.com	Database	ABLE: PD.EMP this view only shows some sample data			
Version 2009 - Community Edition - 2020.09.25         Copyright © 2012 - 2020 ParnassusData Software, Inc.         https://www.dbrecover.com         DBRecover for Oracle         Vinload successfully!         File path: C:\dbrecover.for-oracle2009\prmdata\parnassus_dbinfo_DB_20230529165933\deleted\pd.emp.dat         Unloaded row count: 100         Elapsed time(seconds): 0.0         To recover deleted records for Community Edition, row limitation is 100.         For Enterprise Edition, there is no row limitation.	Database     DB_20230529165933     DB_20230529165933     Osers     GSMROOTUSER     Osers     Osers	EMPNO ENAME JOB MGR HIREDATE SAL COMM DEPTNO			
https://www.dbrecover.com         DBRecover for Oracle         Image: State of the state of	Version 2009 - Community Edition - 2020.09.25 Copyright © 2012 - 2020 ParnassusData Softwar	re, Inc.			
DBRecover for Oracle       ×         Image: Display the second					
DBRecover for Oracle × Unload successfully! File path: C:\dbrecover-for-oracle2009\prmdata\parnassus_dbinfo_DB_20230529165933\deleted\pd.emp.dat Unloaded row count: 100 Elapsed time(seconds): 0.0 To recover deleted records for Community Edition, row limitation is 100. For Enterprise Edition, there is no row limitation.	https://www.dbrecover.com				
DBRecover for Oracle X Unload successfully! File path: C:\dbrecover-for-oracle2009\prmdata\parnassus_dbinfo_DB_20230529165933\deleted\pd.emp.dat Unloaded row count: 100 Elapsed time(seconds): 0.0 To recover deleted records for Community Edition, row limitation is 100. For Enterprise Edition, there is no row limitation.					
DBRecover for Oracle       X         Unload successfully!       File path: C:\dbrecover-for-oracle2009\prmdata\parnassus_dbinfo_DB_20230529165933\deleted\pd.emp.dat         Unloaded row count: 100       Elapsed time(seconds): 0.0         To recover deleted records for Community Edition, row limitation is 100.       For Enterprise Edition, there is no row limitation.					
Unload successfully! File path: C:\dbrecover-for-oracle2009\prmdata\parnassus_dbinfo_DB_20230529165933\deleted\pd.emp.dat Unloaded row count: 100 Elapsed time(seconds): 0.0 To recover deleted records for Community Edition, row limitation is 100. For Enterprise Edition, there is no row limitation.	DBRecover for Oracle				×
If you need to recover more data, please contact service@parnassusdata.com	Unload successfully! File path: C:\dbrecover- Unloaded row count: 1 Elapsed time(seconds) To recover deleter For Enterprise Edi If you need to reco	for-oracle2009\prmdata\parnassus_dbinfo_DB_20230529165933\delet 00 ): 0.0 d records for Community Edition, row limitation is 100. tion, there is no row limitation. over more data, please contact service@parnassusdata.co	ed\pd. om	.emp.d	lat

Without a valid enterprise license, the limitation of the UNLOAD DELETED DATA function is 100 rows of data per table.

The retrieved data is stored in the path shown in the pop-up window:

📔 C:\dł	brecover-fo	vr-oracle2009\prmdata\parnassus_dbinfo_DB_20230529165933\deleted\pd.emp.dat - Notepad++ [Administrator] —		×
File Edi	it Search	View Encoding Language Settings Tools Macro Run Plugins Window ?	+	▼ ×
📄 pd.emp	o.dat 🔀			
1	"7369"	"SMITH" "CLERK" "7902" "17-DEC-1980 00:00:00 AD" "800" "" "20"		^
2	"7499"	"ALLEN" "SALESMAN" "7698" "20-FEB-1981 00:00:00 AD" "1600" "300" "30"		
3	"7521"	"WARD" "SALESMAN" "7698" "22-FEB-1981 00:00:00 AD" "1250" "500" "30"		
4	"7566"	"JONES" "MANAGER" "7839" "02-APR-1981 00:00:00 AD" "2975" "" "20"		
5	"7654"	"MARTIN" "SALESMAN" "7698" "28-SEP-1981 00:00:00 AD" "1250" "1400" "30"		
6	"7698"	"BLAKE" "MANAGER" "7839" "01-MAY-1981 00:00:00 AD" "2850" "" "30"		
7	"7782"	"CLARK" "MANAGER" "7839" (09-JUN-1981 00:00:00 AD" "2450" "10"		
8		"SCOIL" "ANALISI" (S66" "19-APK-1957)00:00 AD" "S000" "20"		
10	"7844"	"AING" "FRESIDENT" "" "1/-NOV-1961 00:00:00 AD" "5000" "" 10"		
11	"7876"	TORNER "CLERK" "7388" "23-M4V-1987 00:00:00 AD" "1100" "" "20"		
12	"7900"	"JAMES" "CLERK" "7698" "03-DEC-1981 00:00:00 AD" "950" "" "30"		
13	"7902"	"FORD" "ANALYST" "7566" "03-DEC-1981 00:00:00 AD" "3000" "" "20"		
14	"7934"	"MILLER" "CLERK" "7782" "23-JAN-1982 00:00:00 AD" "1300" "" "10"		
15	"7521"	"WARD" "SALESMAN" "7698" "22-FEB-1981 00:00:00 AD" "1250" "500" "30"		
16	"7566"	"JONES" "MANAGER" "7839" "02-APR-1981 00:00:00 AD" "2975" "" "20"		
17	"7654"	"MARTIN" "SALESMAN" "7698" "28-SEP-1981 00:00:00 AD" "1250" "1400" "30"		
18	"7698"	"BLAKE" "MANAGER" "7839" "01-MAY-1981 00:00:00 AD" "2850" "" "30"		
19	"7782"	"CLARK" "MANAGER" "7839" "09-JUN-1981 00:00:00 AD" "2450" "" "10"		
20	"7788"	"SCOTT" "ANALYST" "7566" "19-APR-1987 00:00:00 AD" "3000" "" "20"		
21	"7839"	"KING" "PRESIDENT" "" "17-NOV-1981 00:00:00 AD" "5000" "" "10"		
22	"7844"	"TURNER" "SALESMAN" "7698" "08-SEP-1981 00:00:00 AD" "1500" "0" "30"		
23	"7876"	"ADAMS" "CLERK" "7788" "23-MAY-1987 00:00:00 AD" "1100" "" "20"		
24	.7900.	"JAMES" (LLERK" "/055" (JS-DEL-1951 00:00:00 AD "950" "" 30"		
20	17024	"FORD" "ANALISI" "/356" "03-DEC-1961 00:00:00 AD" #3000" "20"		
20	"7369"	"MILLER" "CLERR" "762" "25"04W-1962 00:00:00 AD "1000" "" 100"		
28	"7499"	DILIEN "SALESMAN" "7698" "20-FFB-1981 00:00 AD "01600" "300" "30"		
29	"7521"	WARD" "SALESMAN" "7698" "22-FEB-1981 00:00:00 AD" "1250" "500" "30"		
30	"7566"	"JONES" "MANAGER" "7839" "02-APR-1981 00:00:00 AD" "2975" "" "20"		
31	"7654"	"MARTIN" "SALESMAN" "7698" "28-SEP-1981 00:00:00 AD" "1250" "1400" "30"		
32	"7698"	"BLAKE" "MANAGER" "7839" "01-MAY-1981 00:00:00 AD" "2850" "" "30"		
33	"7782"	"CLARK" "MANAGER" "7839" "09-JUN-1981 00:00:00 AD" "2450" "" "10"		
34	"7788"	"SCOTT" "ANALYST" "7566" "19-APR-1987 00:00:00 AD" "3000" "" "20"		
35	"7839"	"KING" "PRESIDENT" "" "17-NOV-1981 00:00:00 AD" "5000" "" "10"		
36	"7844"	"TURNER" "SALESMAN" "7698" "08-SEP-1981 00:00:00 AD" "1500" "0" "30"		
37	"7876"	"ADAMS" "CLERK" "7788" "23-MAY-1987 00:00:00 AD" "1100" "" "20"		
38	"7900"	"JAMES" "CLERK" "7698" "03-DEC-1981 00:00:00 AD" "950" "" "30"		
39	"7902"	"YCKU" "ANALYST" "/566" "03-DEC-1981 00:00:00 AD" "3000" "" "20"		
40	"7934"	"MILLER" "CLERK" "//52" "23-JAN-1952 00:00:00 AD "13000" "" 10"		¥
Normal te	xt file	length : 7.529 lines : 101 Ln : 1. Col : 1. Pos : 1. Windows (CR LF) UTF-8		INS .
		initiation and an and a second		

Users need to check the recovery results themselves and use tools such as SQLLDR or SQLDEVELOPER to insert the text data back into the database.

## **Recovery Scenario 5: Recovery from a Truncate Table Operation Mistake**

The business maintenance personnel at D company mistakenly used the production database as the test environment database, erroneously truncating all data from a table. The DBA attempted to recover but found the most recent backup to be unusable, making it impossible to restore the records from the backup data on that table. At this point, the DBA decided to use DBRECOVER to recover the data that had been truncated.

In this environment, all database files are available and healthy. The user only needs to load the data files of the SYSTEM tablespace and the truncated table in dictionary mode. For example:

Θ

In this TRUNCATE scenario, ASM storage was not used, so only the "Dictionary Mode" needs to be selected:

P Recovery Wizard		—		$\times$
Please choose recovery mode:				
UCTIONART MODE				
○ NON-DICTIONARY MODE				
<ul> <li>DICTIONARY MODE(ASM)</li> </ul>				
○ NON-DICTIONARY MODE(ASM)				
Load from exist dicts				
				_
Cancel Help	< Back		Vext >	
				_

In most cases, no parameters need to be changed:

Recovery Wizard		_		×
Endian:	Little Endian			
DB Character Set:	From dictionary			
DB National Character Set.	From dictionary			
Block Size:	8192			
Offset:				
DB Version:	auto detect			
				_
Cancel Help	< Back		Vext >	

Add all available data files:

P Recovery Wizard					- 0	×
	Data File	Block Size	Offset	TS#	rFile#	1
	C:\app\oradata\ORCL\DATAFILE\O1 MF APP01 L782YY4Y .DBF	8192	0			-
	C:\app\oradata\ORCL\DATAFILE\O1_MF_APP01_L782ZBM3_DBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1 MF APP01 L782ZCP1 .DBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_APP01_L78CVHVVDBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_APP01_L78CVJPZDBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_APP01_L78CVKBRDBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_APP01_L78CVKWTDBF	8192	0			
1	C:\app\oradata\ORCL\DATAFILE\O1_MF_APP02_L782ZO7WDBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_APP02_L7830DTGDBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_APP02_L7830FJ6DBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_DBRECOVE_L6G7B1Q3DBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_SYSAUX_L5VP5QJ8DBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_SYSTEM_L5VP4N7YDBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_TEMP_L5VPCQGOTMP	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_UNDOTBS1_L5VP66PMDBF	8192	0			
	C:\app\oradata\ORCL\DATAFILE\O1_MF_USERS_L5VP67TJDBF	8192	0			
Advanced mode			Choose	e Files	Load	)
Scan base tables						
Cancel Help				< Back	Nex	t >

Open USERS, you can see multiple usernames. If the user needs to recover a table under the PD SCHEMA, open PD and double-click the table name:

DBRecover for Oracle email: service@parnassusdata	.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009	-	×
Start Options			
Database	TABLE: PD.SALGRADE this view only shows some sample data		
▼       Database         ▼       DB_20230530111130         ▼       Users         ►       GSMROOTUSER         ▼       PD         ▼       Tables         EMP       SIGRADE         ►       SCOTT         ►       SYS         ►       SYSTEM	SRADE LOSAL HISAL		
Version 2009 - Community Edition - 2020.09.25			
Copyright © 2012 - 2020 ParnassusData Software,	nc.		
https://www.dbrecover.com			

Since this table has been truncated, double-clicking does not display any data. At this point, rightclick on the table and select "Unload truncated data":

DBRecover for Oracle email: service	e@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009	-		×
Start Options				
Database	TABLE: PD.SALGRADE this view only shows some sample data			
Database     DB_20230530111130     V    DB_20230530111130     V    DB_20230530111130     V    Q    DB_2023053011130     V    Q    DB_20230530111130     V    Q    DB_202301     V    Q    DB_20230     V    DB_20230     V    Q    DB_20230     V    DB_2023     V    DB_20230     V    DB_20230	Iew       Image: State of the			
Version 2009 - Community Edition - Copyright © 2012 - 2020 Parnassus <u>https://www.dbrecover.com</u>	2020.09.25 Data Software, Inc.			
DBRecover for Oracle				_
Durceover for Oracle				ì
Unload suc File path: C Unloaded r Elapsed tin For Com For Ente If you ne	ccessfully! :\dbrecover-for-oracle2009\prmdata\parnassus_dbinfo_DB_20230530111130\pd.salgrade.o ow count: 655360 ne(seconds): 1.016 munity Edition, row limitation is 10,000. rprise Edition, there is no row limitation. ed to recover more data, please contact service@parnassusdata.com	lat.trun	icated	
		ſ	ок	

DBRECOVER will try to scan the tablespace where the table resides and extract the truncated data. As shown in the figure above, a complete 655,360 records are extracted from the table that

has been truncated, and stored in the specified path.

The user can check the DAT file to confirm the recovery result.

The key to recovering truncated data is to confirm the DATA\_OBJECT\_ID before the table was truncated. In this case:

SQL> select object\_id ,data\_object\_id from dba\_objects where owner='PD' and object\_name='SALGRADE';
OBJECT\_ID DATA\_OBJECT\_ID
-----76112 76113

Before the TRUNCATE operation, the OBJECT\_ID and DATA\_OBJECT\_ID of the table were both 76612. After the TRUNCATE operation, the DATA\_OBJECT\_ID changed.

So the original DATA\_OBJECT\_ID here is 76612; but if a table itself has been truncated many times and you need to recover the data before the last TRUNCATE, you cannot simply guess the original DATA\_OBJECT\_ID based on the OBJECT\_ID.

You can use techniques such as flashback queries, dictionary retrieval, and log mining to determine the DATA\_OBJECT\_ID; here is an example of a flashback query:



The original DATAOBJ#, that is, DATA\_OBJECT\_ID, is obtained using the flashback query above.

Next, we need to use the Data Bridge feature to insert the data to be recovered into the target database. Precautions when using Data Bridge to recover from a truncate: Be aware that when recovering truncated data from the source database, if you use the Data Bridge option to transfer data back to your source database (if the data is not transferred back to the source database, there is no such problem), make sure that the location of the newly created table where Data Bridge is inserted is not the tablespace where the truncated data is located in the source database, and avoid inserting it into the source table, otherwise the problem of the data we need to recover being overwritten by new data while recovering the truncated data may occur, which may lead to the complete impossibility of recover data to the source database, never use the tablespace where the data to be recovered is located when specifying the tablespace in Data Bridge!!!!!!

So here we first create a new tablespace to store the recovered data table:

SQL> create tablespace pd\_recover\_data datafile size 600M; Tablespace created.

DBRecover for Oracle email: service@parnassusdata.	com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009	-		×			
Start Options							
Database	TABLE: PD.SALGRADE this view only shows some sample data						
Database         ▼       Database         ▼       DB_20230530111130         ▼       DB_20230530111130         ▼       GSMROOTUSER         ♥       SALGRADE         ▶       SYS         Data Bridge         ▶       SYS         Unload Truncated Data         Scan Data Based on Object ID         Unload Deleted Data         Examine Records Count	TABLE: PD.SALGRADE this view only shows some sample data           GRADE         LOSAL         HISAL						
Version 2009 - Community Edition - 2020.09.25	Version 2009 - Community Edition - 2020.09.25						
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https://www.dbrecover.com							

New Database Connection	×	2	
Connection Name Connecti	Connection Name	orcl	
U	Username	pd	]
F	Password	*****	]
	Hostname	localhost	]
F	Port	1521	
	Service name	orcl	]
	Save	Test Cancel	

Create the necessary login information, note that the database user should have the necessary permissions (it is recommended to grant the DBA role).

DBRecover for Oracle						
i	Connect to db server successfully!					
	ОК					

After testing successfully, click SAVE to save.

Data Bridge			×
Column Name	Column Typ	e	
GRADE	NUMBER		
LOSAL	NUMBER		
HISAL	NUMBER		
If need to remap table?	DB Connection	)	Deleted data only?
Target table name	orcl		If need to scan data?
	Tablaspasa		Plz specify data object id:
	Tablespace		
	APP01		
	APP01		
	APP02		Based on Lob index
	PD_RECOVER_DATA		
	SYSAUX		
	SYSTEM	Data Bridge	Cancel
	USERS		

Above, select the tablespace to store the recovered TRUNCATE data table.

Data Bridge		×
Column Name GRADE LOSAL	Column Type NUMBER NUMBER	
HISAL	DB Connection	Deleted data only?
Target table name salgrade_recover	Tablespace	If need to scan data? Plz specify data object id: 76112 Based on Lob scan
	Data Bridg	e Cancel

Here we need to check "if need to scan data" and fill in the original DATA\_OBJECT\_ID obtained earlier. This way, DBRECOVER will specifically scan the data corresponding to this ID for us.

At the same time, we need to check "if need to remap table", and enter a new table name. In order to allow the data to be inserted into the new table (under the new tablespace), exclude any possibility of overwriting data.

Note:

 For the situation where the corresponding table name already exists in the target instance, DBRECOVER will not rebuild the table but will insert the necessary recovery data on the basis of the existing table. Since the table has been established, the specified tablespace will be invalid. 2. For the situation where the corresponding table name does not exist in the target database-SCHEMA, DBRECOVER will try to build a table on the specified tablespace and insert recovery data.

After completing the above steps, click the Data Bridge button.



Confirm the number of rows recovered:

SQL> select	<pre>count(*)</pre>	from	<pre>pd.salgrade_recover;</pre>
COUNT(*)			
655360			

The basic principle of Truncate data is that when Truncate occurs, ORACLE only updates the Data Object ID of the table in the data dictionary and Segment Header, and the actual data part of the block is not modified. Since the DATA\_OBJECT\_ID in the data dictionary and segment header does not match with those in the subsequent data blocks, the ORACLE service process will not read the data that has been TRUNCATED but is actually still not covered when reading the full table data. Therefore, DBRECOVER can recover the data in it through the data disk area (Data Extent) that has not been modified or covered.

## **Recovery Scenario 6: Recovery from Accidental Drop Table**

The application developers of Company D dropped a core application table in the system without any backup. At this point, DBRECOVER can be used to recover most of the data from the dropped table. After 10g, the recycle bin feature is provided, which can first be queried through the DBA\_RECYCLEBINS view to determine whether the dropped table is in the recycle bin. If it is, preferentially flashback to before drop through the recycle bin. If it is not in the recycle bin, use DBRECOVER to recover immediately.

Similar to the recovery of TRUNCATE, the recovery of the DROP table needs to determine the original DATA\_OBJECT\_ID.

The brief recovery process is as follows:

- First, set the tablespace where the dropped table is located to read-only mode (ALTER TABLESPACE {TABLESPACE\_NAME} READ ONLY; or copy all data files in the entire tablespace immediately.
- 2. Find the DATA\_OBJECT\_ID of the dropped table by querying the data dictionary or LOGMINER.
- Start DBRECOVER in NON-DICT non-dictionary mode, and add all data files in the tablespace where the dropped table is located, then SCAN DATABASE + SCAN TABLE from Extent MAP.
- 4. Locate the corresponding table in the expanded object tree diagram through DATA\_OBJECT\_ID, and insert it back into the source database in Data Bridge mode.

You can get a rough DATA\_OBJECT\_ID through log miner , and the rough script for using LOGMINER is as follows:

EXECUTE DBMS\_LOGMNR.ADD\_LOGFILE( LOGFILENAME => '/oracle/logs/log1.f', OPTIONS => DBMS\_LOGMNR.NEW);
EXECUTE DBMS\_LOGMNR.ADD\_LOGFILE( LOGFILENAME => '/oracle/logs/log2.f', OPTIONS =>
DBMS\_LOGMNR.ADDFILE);

Execute

DBMS\_LOGMNR.START\_LOGMNR(DBMS\_LOGMNR.DICT\_FROM\_ONLINE\_CATALOG+DBMS\_LOGMNR.COMMITTED\_DATA\_ONLY); SELECT \* FROM V\$LOGMNR\_CONTENTS ; EXECUTE DBMS\_LOGMNR.END\_LOGMNR;

You can also try to dig out DATA\_OBJECT\_ID by mining AWR data:

Select \* from
(select object\_name,object# from DBA\_HIST\_SQL\_PLAN
UNION select object\_name,object# from GV\$SQL\_PLAN) V1 where V1.0BJECT# IS
NOT NULL minus select name,obj# from sys.obj\$;

select obj#,dataobj#, object\_name from WRH\$\_SEG\_STAT\_OBJ where object\_name not in (select name from sys.obJ\$) order by object\_name desc;

SELECT tab1.SQL\_ID, current\_obj#, tab2.sql\_text FROM DBA\_HIST\_ACTIVE\_SESS\_HISTORY tab1, dba\_hist\_sqltext tab2 WHERE tab1.current\_obj# NOT IN (SELECT obj# FROM sys.obj\$ ) AND current\_obj#!=-1 AND tab1.sql\_id =tab2.sql\_id(+);

// The above three queries compare AWR data with the OBJ\$ dictionary base table to find the dropped table.

Let's demonstrate it in practice:

SQL> create table dropit as select \* from dba\_objects; Table created. SQL> select count(\*) from pd.dropit; COUNT(\*) -----73095 SQL> select tablespace\_name from dba\_segments where owner='PD' and segment\_name='DROPIT'; TABLESPACE\_NAME -----USERS SQL> select object\_id ,data\_object\_id from dba\_objects where owner='PD' and object\_name='DROPIT'; OBJECT\_ID DATA\_OBJECT\_ID -----76116 76116 SQL> drop table dropit; Table dropped. SQL> alter system checkpoint; System altered.

We start DBRECOVER in dictionary mode (DICTIONARY-MODE), here we only need to add SYSTEM01.DBF and the table in the USERS tablespace:

P Recovery Wizard					_		×
	Data File	Block Size	Offset	TS#	rFile#		
	C:\app\oradata\ORCL\DATAFILE\O1_MF_SYSTEM_L5VP4N7YDBF	8192	0				
	C:\app\oradata\ORCL\DATAFILE\O1_MF_USERS_L5VP67TJDBF	8192	0				
	L						
						_	
Advanced mode			Choos	e Files	Load		
Scan base tables							
Cancel Help				< Back	. N	ext >	

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Start Options	
Start Options	
Version 2009 - Enterprise Edition - 2020.09.25	
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https://www.dbrecover.com	

After loading is complete, we can find that there is no table we want to recover under the PD SCHEMA, which is normal.

Select the database node, right-click SCAN Data

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Start Options		
Database Database Database DB_20220550133737 Users Scan Data Scan Data		
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Copyright © 2012 - 2020 ParnassusData Software, Inc.		
https://www.dbrecover.com		
L		 

DBRecover for Oracle v2009 Copyright (c) 2012 - 2020 ParnassusData Software, Inc. Scanning tablespace 0, data file 1 ... 2027 segment header and 96919 data blocks tablespace 0, data file 1: 119041 blocks scanned Scanning tablespace 4, data file 7 ... 33 segment header and 1515 data blocks tablespace 4, data file 7: 1921 blocks scanned Extent scanning, please waiting...

DBRecover for Oracle email: service@parnassusdata.com www.dbrecover.com Professional Oracle Database Disaster Recovery Version 2009	-	×
Start Options		
Database		
Extents		
🗐 obj2		
di obj2_3		
I obj2_11		
🗐 obj6		
🛃 obj6_1		
bj6_2		
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Then an EXTENTS node will appear, look for the OBJ76116 node:

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Start Options																		
Database		obj761	16 :															
ebj59443	*	Col#	Seen Count	Max S	Size 1		ост	String	NStrin	ng Number	Date	Times	tamp	Timesta	amp Zo	ne Cl	ob Blo	ot
🗐 obj59447		1	1500	6	(	)		1500	71	0	0	0		0		0	0	
e obj59449		2	1500	30	(	)		1500	1112	1	0	0		0		0	0	
🗐 obj59457		3	1500	0	1	100		0	0	0	0	0		0		0	0	
🗐 obj61557		4	1500	3	(	)		0	0	1500	0	0		0		0	0	
🔠 obj63328		-																
🔠 obj63330																		
🔠 obj63332		Sampl	e data analysi	S:														
🔠 obj63336																		
🔠 obj63338		col1	col2		col3	col4	col5	col6		col7			col8				col9	_
🔠 obj63341		SYS	TS\$			16	6	TABL	E	30-MAY-201	9 03:10	:10 AD	30-M	AY-2019	04:39:	53 AD	2019-	05-3
🔠 obj63352		eve	C EILE# DI	00/		20	2		E .	30-MAY-201	9.03:10	10 AD	30-M	AY-2019	04:39:	53 AD	2019-	05-3
🔠 obj63378		SYS	I OBJ2	UCR#		37	37	INDE	X	30-MAY-201	9 03:10	:10 AD	30-M	AY-2019	03:10:	10 AD	2019-	05-3
🔠 obj63380		SYS	USER\$			22	10	TABL	E	30-MAY-201	9 03:10	:10 AD	30-M	AY-2019	03:10:	10 AD	2019-	05-3
🔠 obj63388																		
🔠 obj63389																		
🔠 obj63391																		
🔠 obj71907		Try to a	nalyze UNKN	OWN o	olumi	n type:												
🔠 obj71908																		
🔠 obj71932		Colu	mns Date N	lumbe	r Stri	ng(VAF	RCHA	R2 CH	AR) Ti	imestamp 1	Fimest	amp wit	h time	zone N	String(	NVARO	HAR2	NCF
🔠 obj71941																		
🔠 obj72793																		
🔠 obj73011																		
🔠 obj74036																		
🔠 obj74038																		•
🔠 obj74041																		
🔠 obj76115																		
🗐 obj76116		Unload	i statement:															
Lob segment		RCHA	R2, col17 VAF	RCHAR	R2, col	18 VAF	RCHA	R2, co	19 VAR	RCHAR2, col	20 VAR	CHAR2	, col21	1 VARCH	AR2, c	ol22 V/	RCHA	R2)
						_	-											
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After that, we can use the Data Bridge feature to insert it back into the source database.

## **Recovery Scenario 7: Accidental DROP TABLESPACE**

At Company D, an employee needed to delete a useless tablespace through a DROP TABLESPACE INCLUDING CONTENTS operation. However, after the DROP TABLESPACE operation, the development department reported that there was actually important data from a SCHEMA on the dropped tablespace. Now, the tablespace has been dropped and there are no backups. At this point, we can use DBRECOVER's non-dictionary mode to extract data from all data files corresponding to the dropped tablespace. Using this method, most of the data can be recovered. However, because it is a non-dictionary mode, the recovered tables need to be matched with the application data tables one by one. Usually, application development and maintenance personnel need to intervene and manually identify which data belongs to which table. Since the DROP TABLESPACE operation modifies the data dictionary and deletes the objects on the corresponding tablespace in OBJ\$, we cannot get the correspondence between DATA\_OBJECT\_ID and OBJECT\_NAME from OBJ\$. At this time, we can use the method introduced in the DROP TABLE scenario to get as much correspondence between DATA\_OBJECT\_ID and OBJECT\_NAME as possible.

The general process is as follows:

If the data files were also physically deleted during the DROP TABLESPACE operation, they need to be restored first. We can try using file system level recovery software, or use PRMSCAN software to scan and reorganize the data files at the Oracle data block level.

PRMSCAN is an Oracle data block fragment scanning and merging tool, which is suitable for the following scenarios:

- 1. Accidentally manually deleted data files on the file system (any file system NTFS, FAT, EXT, UFS, JFS etc.) or ASM.
- 2. The file system is damaged, causing the data file size to become 0 bytes, that is, the data file is cleared.
- 3. The file system is damaged, causing the file system to be unable to MOUNT load.
- 4. ASM storage metadata is damaged, causing the diskgroup to be unable to mount and load.
- 5. The LV or PV of the file system or ASM is physically damaged or lost.
- 6. In the above scenarios, prmscan can directly scan the residual Oracle blocks that have not been overwritten in the PV and LV of the file system or ASM, to achieve the merger and reorganization of these Oracle blocks, with the aim of data recovery.

PRMSCAN is developed based on JAVA language and can cross all operating systems that support JDK 1.6 and later, including Windows, Linux, Solaris, AIX, HP-UX.

This product is currently not available for retail, you can contact us to provide recovery services.

In the example below, /dev/sdb1 is a partition of the ext4 file system, but due to the damage of the ext4 file system, SDB1 cannot be mounted. However, a set of Oracle database data files is stored on this file system. If the file system cannot be mounted, the Oracle database will also be unusable.

Here we use prmscan's Oracle data block scanning and merging function to directly reorganize the data files from the damaged file system.

Scan the entire disk

```
[oracle@dbdao01 ~]$ java -jar PRMScan.jar -scan /dev/sdb1 -guess 8k
```

The -scan option represents scanning the /dev/sdb1 device and specifying the Oracle blocksize as 8k.

```
[oracle@dbdao01 ~]$ java -jar PRMScan.jar -outputsh ./8kfull.txt
The -outputsh option means writing out a SHELL file that can merge the scanned information, in this
case 8kfull.txt.
```

[oracle@dbdao01 ~]\$ sh 8kfull.txt
Executing 8kfull.txt can generate all the data files that need to be merged in the current directory.

For example:

[oracle@db	dao01 ~	-]\$ ls -l1	l PD*
rw-r-r- 1	oracle	oinstall	295428096 Jul 28 00:37 PD_DBF1.dbf
rw-r-r- 1	oracle	oinstall	83427328 Jul 28 00:37 PD_DBF2.dbf
rw-r-r- 1	oracle	oinstall	220266496 Jul 28 00:37 PD_DBF3.dbf
rw-r-r- 1	oracle	oinstall	1324482560 Jul 28 00:38 PD_DBF4.dbf

If the data files have not been physically deleted, they can be directly added to DBRECOVER and the data within them can be scanned in NON-DICTIONARY MODE.

The subsequent steps can refer to the operation of DROP TABLE mentioned earlier, the difference being that the recovery object for DROP TABLESPACE will be many tables.