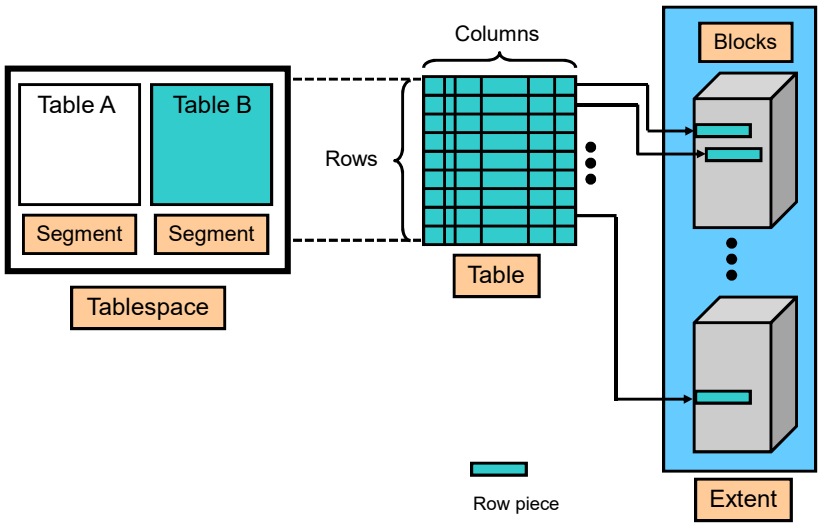
Managing Database Storage Structures

Objectives

After completing this lesson, you should be able to:

- Describe the storage of table row data in blocks
- Create and manage tablespaces
- Obtain tablespace information

How Table Data Is Stored



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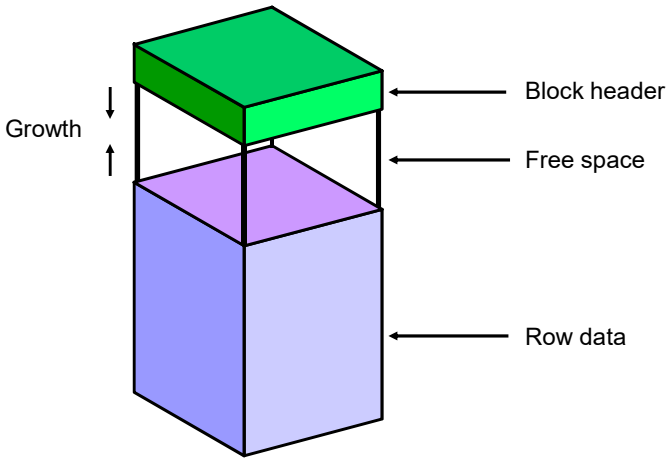
Database Block: Contents



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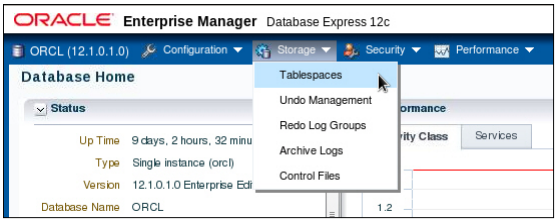
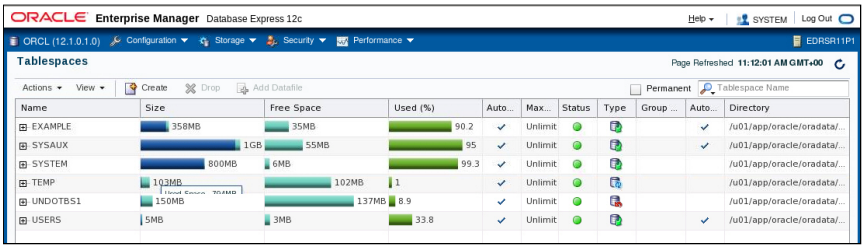
Exploring the Storage Structure





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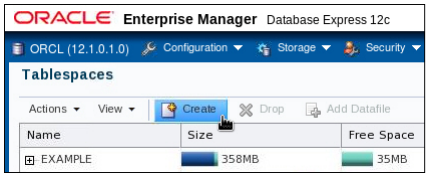
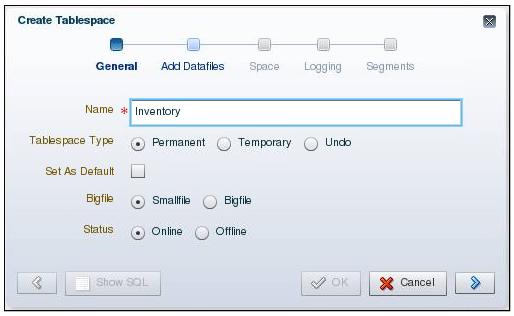
Creating a New Tablespace





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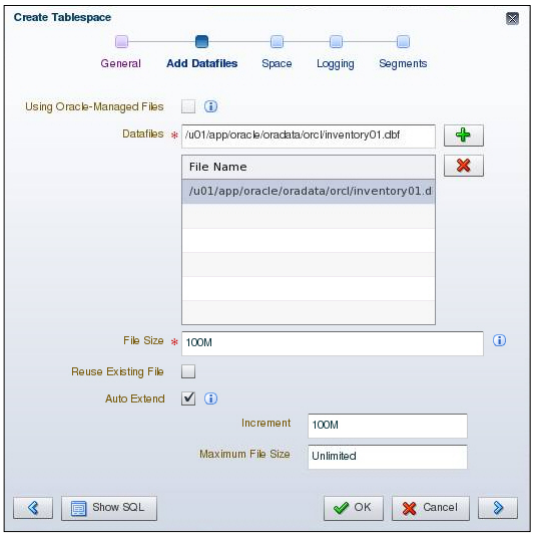
Creating a New Tablespace



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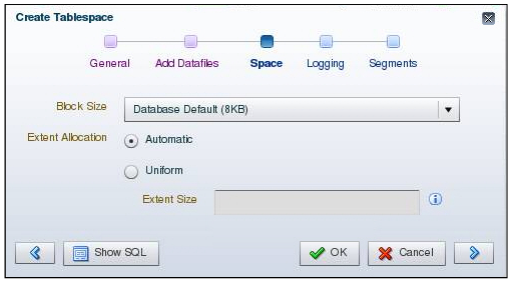
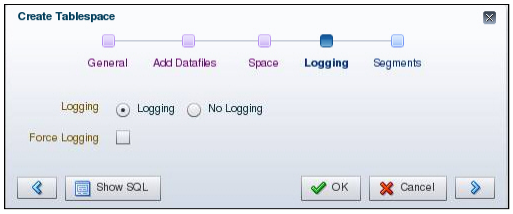
Creating a New Tablespace



8

Creating a New Tablespace



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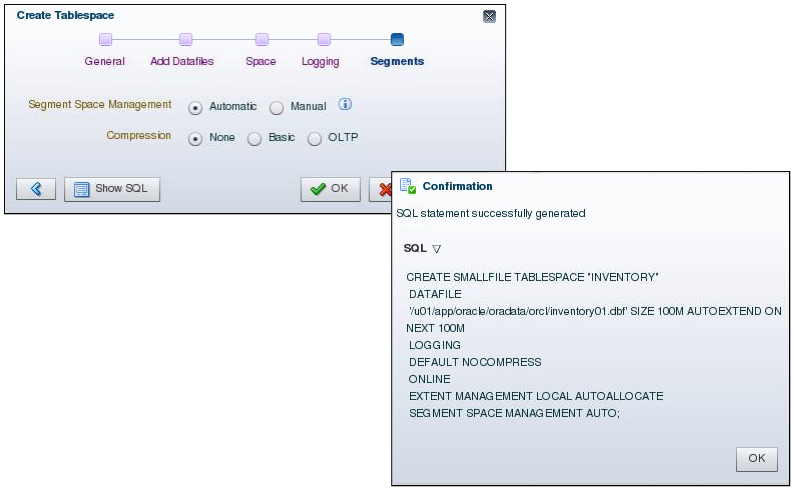
Creating a New Tablespace



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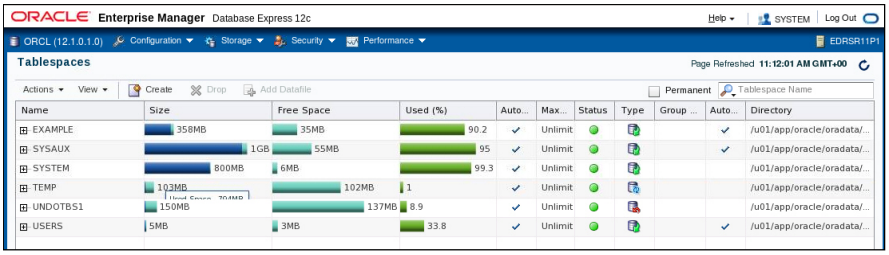
Overview of Tablespaces Created by Default

- EXAMPLE (optional)
- SYSAUX
- SYSTEM
- TEMP
- UNDOTBS1
- USERS



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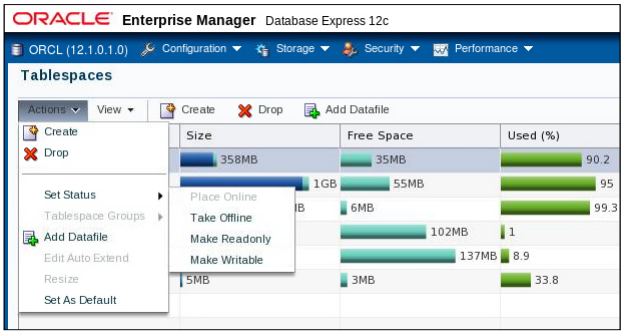
Altering a Tablespace



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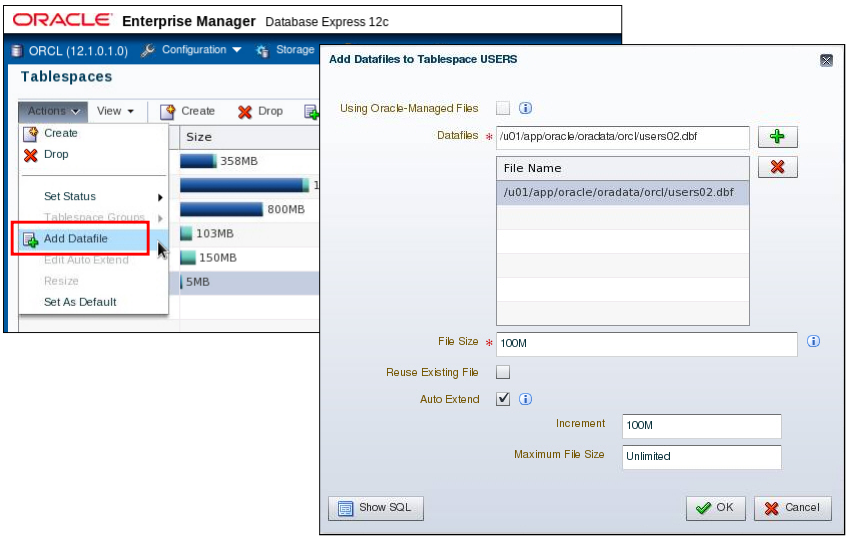
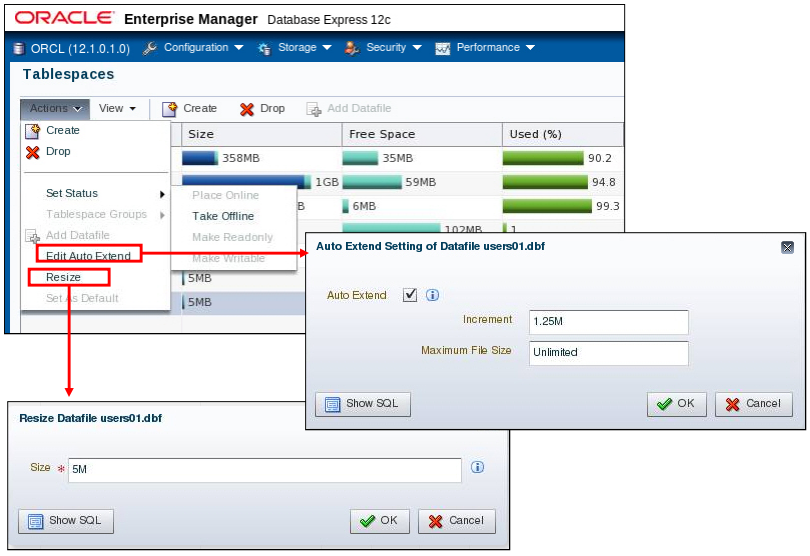
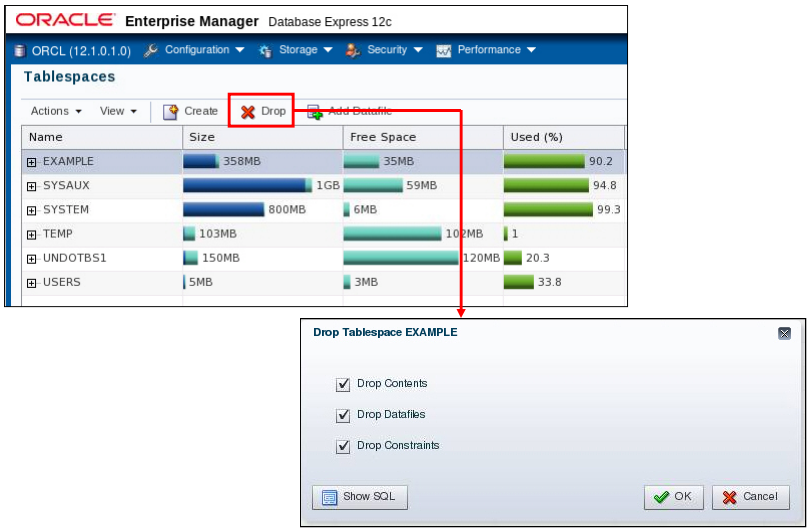
Adding a Data File to a Tablespace



Making Changes to a Data File



Dropping Tablespaces



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Viewing Tablespace Information

```
SQL> SELECT tablespace_name, status, contents, logging,
  2  extent_management, allocation_type,
  3  segment_space_management
  4  FROM dba_tablespaces;

TABLESPACE_NAME STATUS  CONTENTS  LOGGING  EXTENT_MAN ALLOCATIO SEGMEN
--------------- ------- --------- -------- ---------- --------- -----
SYSTEM          ONLINE  PERMANENT LOGGING   LOCAL      SYSTEM    MANUAL
SYSAUX          ONLINE  PERMANENT LOGGING   LOCAL      SYSTEM    AUTO
UNDOTBS1        ONLINE  UNDO      LOGGING   LOCAL      SYSTEM    MANUAL
TEMP            ONLINE  TEMPORARY NOLOGGING LOCAL      UNIFORM   MANUAL
USERS           ONLINE  PERMANENT LOGGING   LOCAL      SYSTEM    AUTO
EXAMPLE         ONLINE  PERMANENT NOLOGGING LOCAL      SYSTEM    AUTO

SQL> SELECT file_name, file_id, tablespace_name
  2  FROM dba_data_files;
FILE_NAME                                     FILE_ID    TABLESPACE_NAME
--------------------------------------------- ---------- ----------------
/u01/app/oracle/oradata/orcl/system01.dbf              1 SYSTEM
/u01/app/oracle/oradata/orcl/sysaux01.dbf              3 SYSAUX
/u01/app/oracle/oradata/orcl/users01.dbf               6 USERS
/u01/app/oracle/oradata/orcl/example01.dbf             2 EXAMPLE
/u01/app/oracle/oradata/orcl/undotbs01.dbf             4 UNDOTBS1
```

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Oracle Managed Files (OMF)

Specify file operations in terms of database objects rather than file names.

Parameter	Description
DB_CREATE_FILE_DEST	Defines the location of the default file system directory for data files and temporary files
DB_CREATE_ONLINE_LOG_DEST_n	Defines the location for redo log files and control file creation
DB_RECOVERY_FILE_DEST	Default location for the fast recovery area

Example:

```
SQL> ALTER SYSTEM
  2  SET DB_CREATE_FILE_DEST='/u01/app/oracle/oradata';
SQL> CREATE TABLESPACE tbs_1;
```

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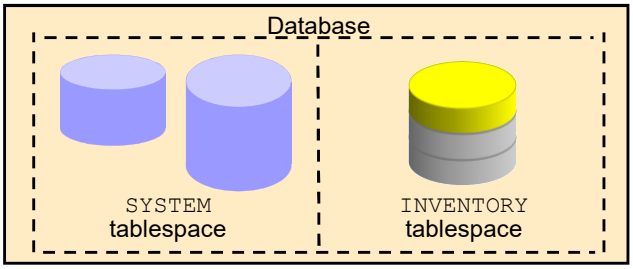
Enlarging the Database

You can enlarge the database in the following ways:

- Create a new tablespace.
- Add a data file to an existing smallfile tablespace.
- Increase the size of a data file.
- Provide for the dynamic growth of a data file.



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Summary

In this lesson, you should have learned how to:

- Describe the storage of table row data in blocks
- Create and manage tablespaces
- Obtain tablespace information

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