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Oracle Data Pump

Oracle Database 21c – *What's new in Oracle Data Pump for Cloud*

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Why Data Pump Important for Autonomous Database?

It's the recommended way to migrate to ADW and ATP

What's New in Data Pump 21c?

- Export dumpfiles into an object store for ADB
- Network Mode import into ATP Dedicated using DB Links
- Validate a dumpfile by checksum before using it
- Include and exclude objects in the same export or import operation
- Control index compression during import



Export Cloud Dumpfiles to Object Store

Export into object store from Autonomous Database & on-premises databases



- Export `CREDENTIAL` parameter specifies your object store authentication
- Export `DUMPFILE` parameter specifies the URL path to dumpfiles in the object store
- Example:

```
expdp hr DEFAULT_DIRECTORY=dir1 DUMPFILE= https://objectstorage.us-ashburn-1.oraclecloud.com/n/namespace-string/b/bucketname/o/exp%u.dmp  
CREDENTIAL=user-credential schemas=schema_name, exclude=cluster, db_link  
parallel=# encryption_pwd_prompt=yes
```

- Details:
 - `CREDENTIAL` expects `DUMPFILE` list of URIs as a comma-delimited string
 - `DEFAULT_DIRECTORY` parameter specifies the location of the local log files
 - `LOGFILE` allows directory object names as part of the file names
- Documentation: Utilities Guide > [Export CLI](#) > `CREDENTIAL` & `DUMPFILE`

Import from OOS Dumpfiles to ADW, ATP-Shared, ATP-Dedicated

Differences in recommended parameters for ADB Services

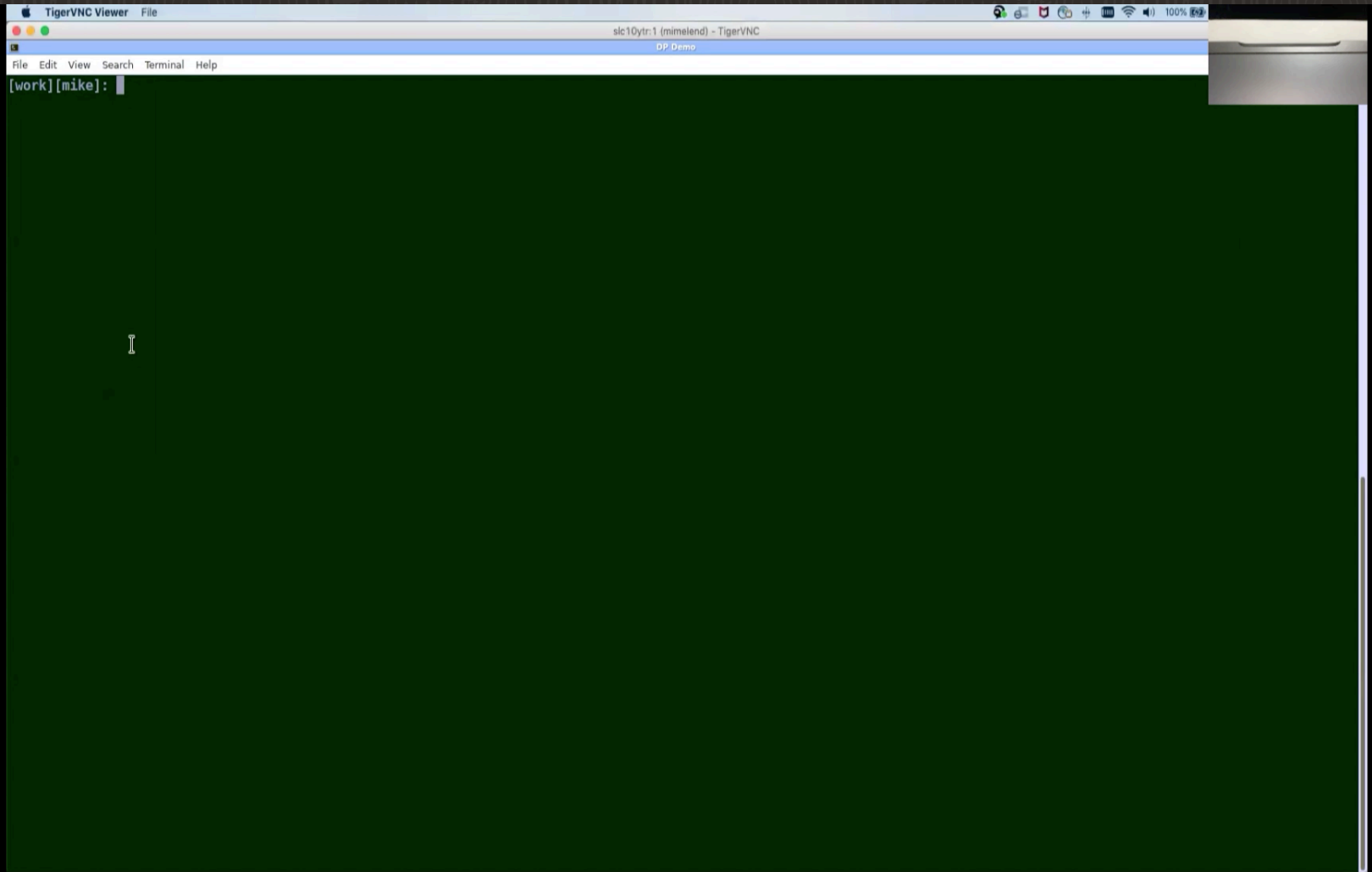


Red text = ADW, ATP-Shared only parameters, Blue text = ATP-Dedicated only

- `impdp admin/password@ADWC1_high`
 `directory=data_pump_dir`
 `credential=def_cred_name`
 `dumpfile= https://objectstorage.us-ashburn-1.oraclecloud.com`
 `/n/namespace-string/b/bucketname/o/export%u.dmp`
 `parallel=16`
 `encryption_pwd_prompt=yes`
 `transform=segment_attributes:n`
 `transform=dwcs_cvt_iots:y`
 `transform=constraint_use_default_index:y`
 `exclude=cluster, indextype, db_link`
 `nologfile=yes`

Documentation [ADW](#), [ATP-Shared](#), [ATP-Dedicated](#)

DEMO:
Export
to the
Oracle
Object
Store



Import into ATP-Dedicated using Network Mode import

Oracle Database 19c capability

- Export and import in one step w/o referencing the object store and dumpfiles
- Format:

```
impdp user/pwd@host_name:port_#/service_name
  schema=schema_name
  network_link=link_name
  parallel=#
  transform=segment_attributes:n
  exclude=cluster
  nologfile=yes
```

Documentation [ATP-Dedicated](#)



DEMO:
Network
Mode
import
into
Oracle
ATP-D



21c Validate a Dumpfile with a Checksum

Confirm dumpfile is valid after a object store transfer and has no malicious changes



- Export `CHECKSUM` & `CHECKSUM_ALGORITHM` parameters generate SHA or CRC
- Import `VERIFY_CHECKSUM` parameter uses the checksum to validate dumpfile(s)
- Example:

```
expdp hr DIRECTORY=dpump_dir1 DUMPFILE=hr.dmp CHECKSUM_ALGORITHM=SHA384  
impdp hr DIRECTORY=dpump_dir1 DUMPFILE=hr.dmp VERIFY_CHECKSUM=YES
```

- Details:
 - `CHECKSUM_ALGORITHM` = [CRC32 | SHA256 | SHA384 | SHA512]
 - If only `CHECKSUM=YES` is specified then `CHECKSUM_ALGORITHM` = SHA256
 - Must have `COMPATIBLE` = 21.0 or higher
 - `VERIFY_CHECKSUM` and `VERIFY_ONLY` parameters are mutually exclusive
- Documentation: Utilities Guide > Export / Import CLI >

21c Include & Exclude objects in Same Job

Easier to migrate to Oracle Cloud / on-premises by being more specific



- Include and exclude objects within the same export or import job
- Example:

```
expdp hr DIRECTORY=dpump_dir1 DUMPFILE=exp%u.dmp SCHEMAS=hr,oe  
include=table exclude=statistics
```

- Details:
 - `INCLUDE` parameter processed first, include all objects identified by the parameter
 - `EXCLUDE` parameter(s) processed next. It removes any objects in the list of include objects
- Documentation: [Utilities Guide > Import CLI >](#)

21c Control Import Index Compression

Take control of index compression on import and specify index compression for ADB



- Compress indexes during import with `INDEX_COMPRESSION_CLAUSE` transform

- Example:

```
impdp hr DIRECTORY=dpump_dir1 DUMPFILE=hr.dmp SCHEMAS=hr  
TRANSFORM=INDEX_COMPRESSION_CLAUSE:COMPRESS ADVANCED LOW;
```

- Details:

- `INDEX_COMPRESSION_CLAUSE [NONE | compression_clause]`

- Documentation: [Utilities Guide > Import CLI >](#)

What's New in Oracle Data Pump 21c for Enterprise DBs?

More performance and ease of use

- Parallelize TTS metadata operations for VLDB
- Resume stopped transportable tablespace jobs
- Export and import native JSON datatype



What's New in Oracle SQL*Loader 21c

More performance and ease of use

- Load JSON data into the native datatype in Oracle Database
- Load from the object store with user-defined credentials



Review: What's New in Data Pump 19c?

- Suppress Encrypted Columns Clause
- Set Max Data Pump Jobs & Parallelism
- Explicitly Enable Authenticated Roles
- Use Any Object Store Credentials
- Wildcards in Object Store Dumpfile Name
- Transportable Tablespaces Test Mode
- Transportable Tablespaces Import Read-Only Tablespaces





Thank you!

Visit Oracle LiveLabs (<https://livelabs.oracle.com>) for hands-on workshops to learn more about Oracle Database 21c

