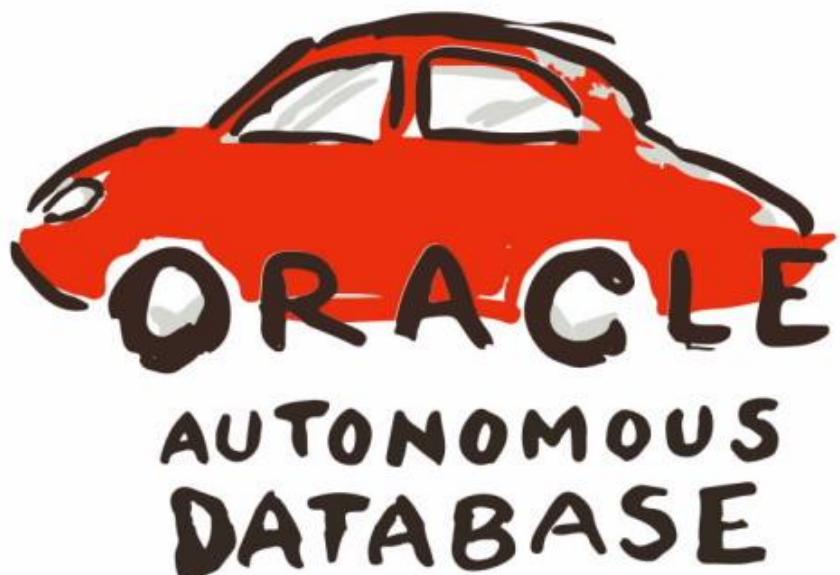

ORACLE DATABASE & AUTONOMOUS

FAST TRACK

GUIDE: HANDS ON



Cloud Knowledge Team – Brazil
Oracle Public Sector Brazil



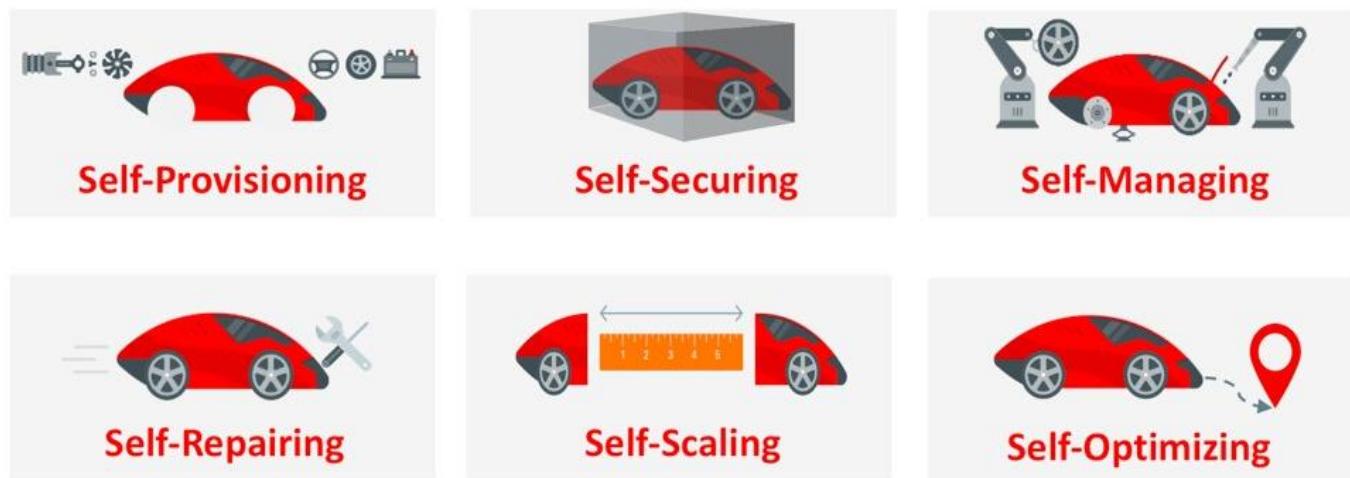
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1 INTRODUCTION

O Oracle Autonomous Database é um banco de dados convergente multimodelo e possui automação baseada em machine learning para o gerenciamento completo do seu ciclo de vida. É executado de forma nativa na Oracle Cloud Infrastructure, fornecendo serviços em nuvem otimizados para cargas de trabalho com processamento de transações, data warehousing e json.

Autonomous Vision:



1.1 Objective

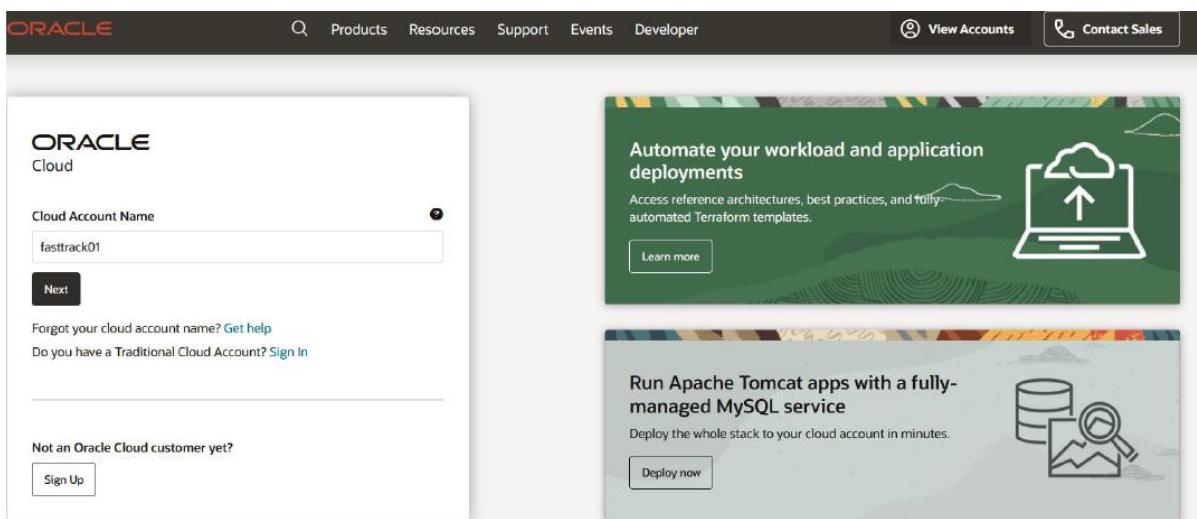
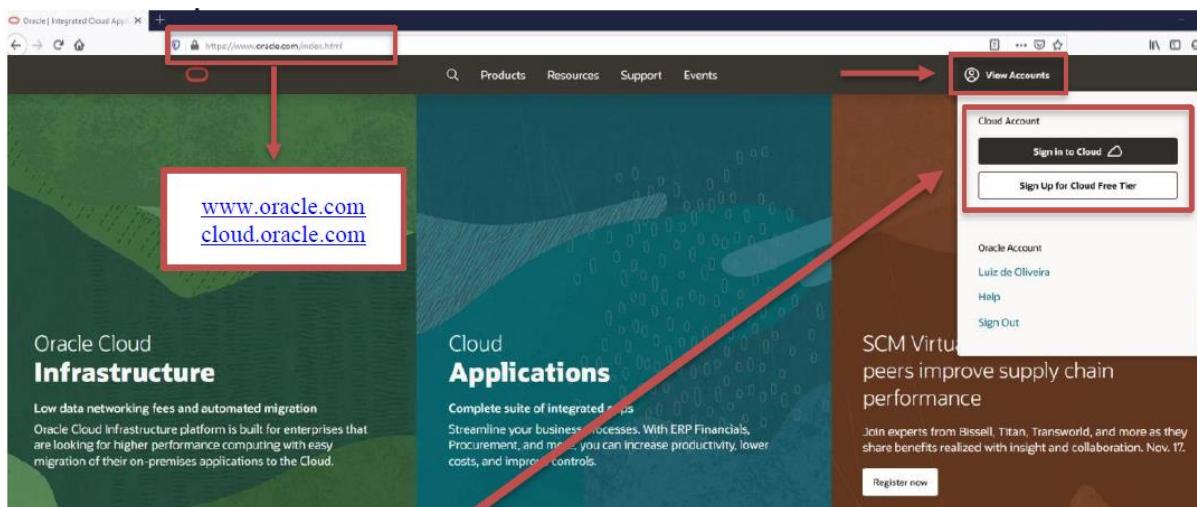
O propósito deste guia é auxiliar na execução dos labs no workshop, servindo como um apoio no passo a passo das atividades.

2 LAB 1: ACESSING ORACLE CLOUD

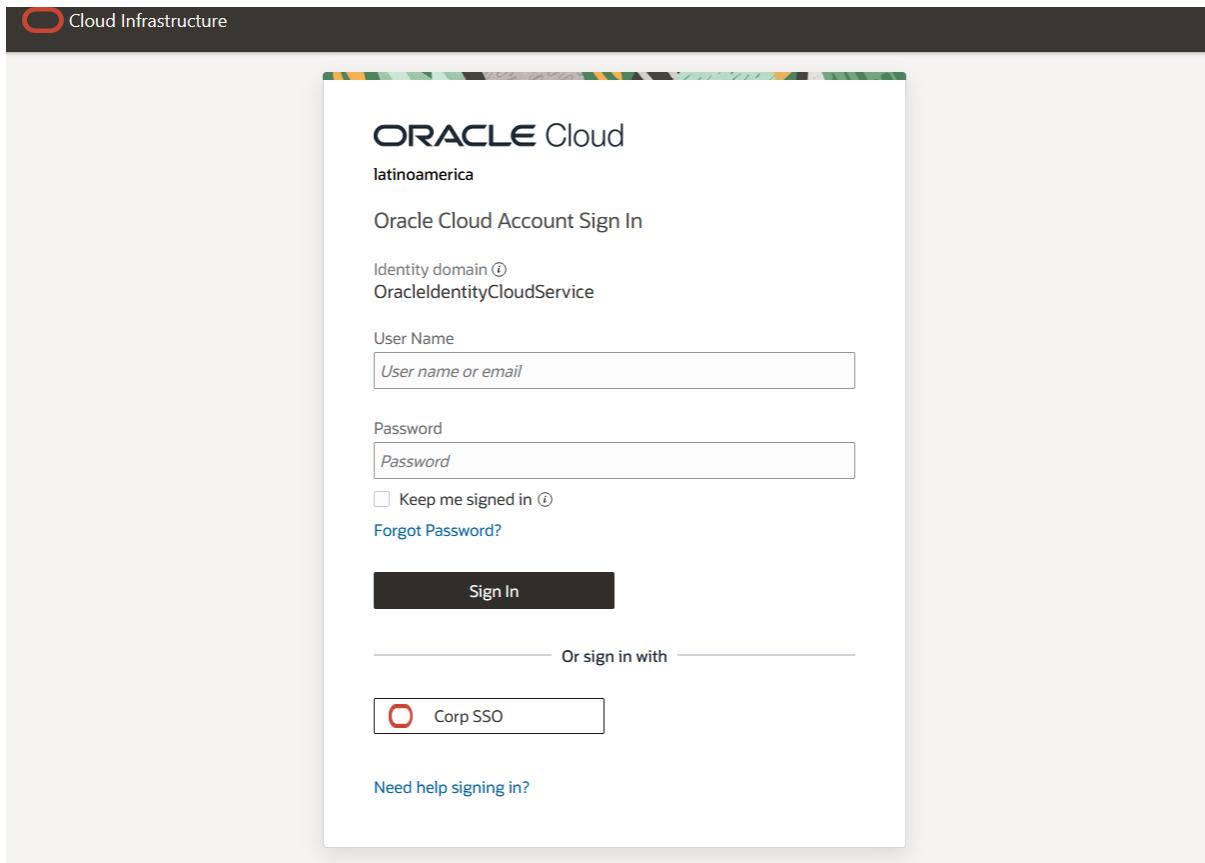
2.1 Acessing Oracle Cloud

- Oracle Cloud Console
- Serviços IaaS e PaaS conhecidos
- Familiarize-se com a interface OCI

PASSO 1 – Acesse pelo navegador: cloud.oracle.com ou www.oracle.com. Clique no link “Sign in to Cloud” e você será redirecionado para a tela Cloud Connection.



PASSO 2 - Para ambientes implementados mais recentemente, o login deve ser feito por meio da “Identity Cloud Service Account”, onde será necessário inserir “Nome da conta” (que é o nome definido para a Tenant).



Depois de identificado, você chegará à tela principal do Oracle Cloud, de onde poderá acessar todos os serviços disponíveis. Sua tela principal padrão será semelhante a esta.

The image shows the Oracle Cloud Home page for the "latinoamerica" tenancy. The top navigation bar includes "Cloud", a search bar, and "US West (Phoenix)" location information. On the left, there's a sidebar with "Home" and "Tenancy: latinoamerica". The main area is titled "Resources" and shows a table of recently viewed resources. The table has columns for "Name", "Type", "Status", and "Viewed". The resources listed are: "Clone-of-atpsource" (AutonomousDatabase, Available, 3 hours ago), "atpsource" (AutonomousDatabase, Available, 3 hours ago), "oracleidentitycloudservice/E..." (User, Active, 3 hours ago), "SensitiveDataModel_2025012..." (DataSafeSensitiveDataModel, Active, 3 hours ago), "atpsource" (DataSafeTargetDatabase, Active, 3 hours ago), and "oracleidentitycloudservice/A..." (User, Active, 4 hours ago). A "Resource Explorer" button is at the bottom left of the sidebar.

A partir do “Action Menu” (canto superior esquerdo), você pode acessar os serviços disponíveis em nosso console

2.1.1 OCI Concepts

- Regiões
- Compartimentos

Nesta seção, você aprenderá sobre a arquitetura de alta disponibilidade da OCI.

Regiões

O Oracle Cloud Infrastructure é hospedado em regiões e domínios de disponibilidade. Uma região é uma área geográfica localizada. Uma região é composta por um ou mais domínios de disponibilidade. A maioria dos recursos do Oracle Cloud Infrastructure são específicos da região, como uma rede de nuvem virtual (VCN), ou específicos do domínio de disponibilidade, como uma instância de computação.

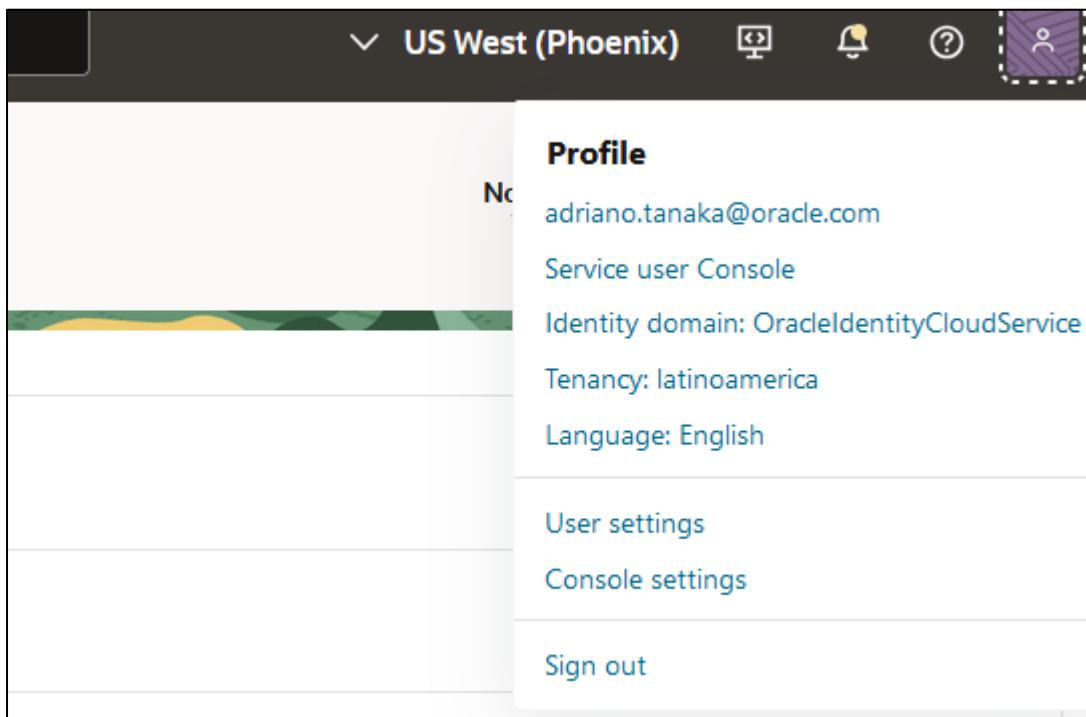
As regiões são completamente independentes de outras regiões e podem ser separadas por grandes distâncias - entre países ou mesmo continentes. Geralmente, você implantaria um aplicativo na região onde ele é mais usado, uma vez que usar recursos próximos é mais rápido do que usar recursos distantes. No entanto, você também pode implantar aplicativos em diferentes regiões para:

Mitigar o risco de eventos em toda a região, como grandes sistemas climáticos ou terremotos

Atender a diversos requisitos para jurisdições legais, domínios fiscais e outros critérios comerciais ou sociais

Após acessar o ambiente, é possível alterar sua região com apenas um clique:

E você tem sua configuração de perfil no canto superior direito da página principal



Compartimentos

Ao começar a trabalhar com o Oracle Cloud Infrastructure , você precisa pensar cuidadosamente sobre como deseja usar os compartimentos para organizar e isolar seus recursos de nuvem. Os compartimentos são fundamentais para esse processo. A maioria dos recursos pode ser movida entre compartimentos. No entanto, é importante pensar no design do compartimento para a sua organização com antecedência, antes de implementar qualquer coisa.

Ao criar um compartimento, você deve fornecer um nome para ele (máximo de 100 caracteres, incluindo letras, números, pontos, hifens e sublinhados) que seja exclusivo em seu compartimento pai. Você também deve fornecer uma descrição , que é uma descrição não única e mutável para o compartimento, de 1 a 400 caracteres. A Oracle também atribuirá ao compartimento um ID exclusivo denominado Oracle Cloud ID.

O Console é projetado para exibir seus recursos por compartimento na região atual. Ao trabalhar com seus recursos no Console , você deve escolher em qual compartimento trabalhar a partir de uma lista na página. Essa lista é filtrada para mostrar apenas os compartimentos na locação que você tem permissão para acessar. Se você for um administrador, terá permissão para visualizar todos os compartimentos e trabalhar com os recursos de qualquer compartimento, mas se for um usuário com acesso limitado, provavelmente não terá. Os compartimentos são globais, em todas as regiões, quando você cria um compartimento, ele está disponível em todas as regiões em que o seu aluguel está inscrito.

3 LAB 2: COMPARTMENT, NETWORK

3.1 Create a compartment

Primeiro você precisa criar o compartimento. Para criar seu compartimento, clique no menu -> identity -> Compartment

The screenshot shows the Oracle Cloud Identity & Security dashboard. On the left, there's a sidebar with various service links like Home, Compute, Storage, Networking, Oracle Database, Databases, Analytics & AI, Developer Services, and Identity & Security. The Identity & Security link is highlighted with a dashed box. The main content area is titled 'Identity & Security' and contains sections for Identity, Access Governance, and Cloud Guard. Under Identity, the 'Compartments' tab is selected and highlighted with a grey bar. Below it are tabs for Federation and Compartments. The Compartments section shows a table of existing compartments with columns for Name, Parent Compartment, Created, and Actions.

Em seguida, clique em Create Compartment

Coloque as informações sobre seu Compartment e no final clique em Create Compartment

The screenshot shows the 'Create Compartment' dialog box. In the 'Identity' section of the sidebar, the 'Compartments' link is selected and highlighted with a blue box. The main form has fields for Name ('autonomousFT'), Description ('Fast Track Autonomous'), and Parent Compartment ('iadcloudengineeringhub (root)'). There's a note about tagging and a 'Learn more about tagging' link. Below that is a table for adding tags with columns for TAG NAMESPACE, TAG KEY, and VALUE. At the bottom are 'Create Compartment' and 'Cancel' buttons. To the right of the dialog is a list of recently created compartments.

4 LAB 3: PROVISIONING AUTONOMOUS TRANSACTION PROCESSING (ATP)

4.1 Link para documentação oficial

<https://docs.oracle.com/en/cloud/paas/autonomous-database/serverless/adbsb/autonomous-provision.html>

4.2 Create an ATP

Nesta sessão, será provisionado um Autonomous Transaction Processing Database. Este banco de dados é projetado para OLTP.

vá para o menu -> Databases -> Autonomous Transaction Processing

The screenshot shows the Oracle Cloud interface. In the top navigation bar, there is a search bar with placeholder text "Search resources, services, documentation, and Marketplace". Below the search bar, the main content area has a title "Oracle Database" with a database icon. On the left, there is a sidebar with links: Home, Compute, Storage, Networking, and Oracle Database, which is highlighted with a dashed box. The main content area has sections: "Overview", "Autonomous Database", "Autonomous Data Warehouse", "Autonomous JSON Database", and "Autonomous Transaction Processing", which is also highlighted with a dashed box. At the bottom, there is a section titled "Globally Distributed Autonomous Database".

Verifique se está no Compartiment certo e clique em Create Autonomous Database

The screenshot shows the "Autonomous Database" creation page. The URL is "console.us-ashburn-1.oraclecloud.com/db/adb/atp". The page title is "Autonomous Database". A red box highlights the "Create Autonomous Database" button. To the left, there is a sidebar with links: Autonomous Database (selected), Dedicated Infrastructure, Autonomous Container Database, and Autonomous Exadata Infrastructure. Below the sidebar, there are filters for "List Scope", "Compartment" (set to "autonomousFT"), "Filters", "Workload Type" (set to "Transaction Processing"), and "State". The main content area shows a table with columns: Display Name, State, Dedicated, OCPUs, Storage (TB), Workload Type, and Created. The table is currently empty, showing "No items". At the bottom right, it says "Displaying 0 Autonomous Databases < Page 1 >".

Insira as informações abaixo:

Compartment: autonomousFT

Display name: atpf

Database name: atpf

Choose the workload type: Transaction Processing

Choose deployment type: Shared infrasctructure

Create Autonomous Database

Provide basic information for the Autonomous Database

Compartment: autonomousFT

Display name: atpf

Database name: atpf

Choose a workload type

Data Warehouse
Built for decision support and data warehouse workloads. Fast queries over large volumes of data.

Transaction Processing
Built for transactional workloads. High concurrency for short-running queries and transactions.

JSON
Built for JSON-centric application development. Developer-friendly document APIs and native JSON storage.

APEX
Built for Oracle APEX application development. Creation and deployment of low-code applications, with database included.

Choose a deployment type

Shared Infrastructure
Run Autonomous Database on shared Exadata infrastructure.

Dedicated Infrastructure
Run Autonomous Database on dedicated Exadata infrastructure.

Configure the database

Choose database version: 19c

OCPUs: 1

Storage (TB): 50

Create Autonomous Database Cancel

Choose database version: 19c ECPU Count:2

Storage: 50GB

No auto scaling

Escolha a admin Password que você deseja

Configure the database

Always Free ⓘ
 Show only Always Free configuration options

Choose database version: 19c

OCPUs: 1

Storage (TB): 1

OCPUs auto scaling
Allows system to use up to three times the number of cores specified by the OCPUs count as the workload increases. [Learn more](#)

Storage auto scaling
Allows system to expand up to three times the reserved storage.

Create administrator credentials ⓘ

Username: Read-Only
ADMIN

ADMIN username cannot be edited.

Password

Confirm password

Allow Secure access from everywhere

Choose licensing type: Byol

E depois clique em "Create autonomous database":

Oracle Cloud Infrastructure

ORACLE Cloud Search for resources, services, and documentation US West (Phoenix) Help

Create Autonomous Database

ATP username cannot be edited.

Access Type

- Secure access from everywhere** (selected) Restrict access to specified IP addresses and VCNs.
- Private endpoint access only** Restrict access to a private endpoint within an OCI VCN.

Configure access control rules [?](#)

Choose a license type

- Bring Your Own License (BYOL)** Bring my organization's Oracle Database software licenses to the Database service. [Learn more](#)
- License Included** Subscribe to new Oracle Database software licenses and the Database service.

Provide up to 10 maintenance contacts

[Add Contact](#)

[Show Advanced Options](#)

[Create Autonomous Database](#) [Cancel](#)

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Durante o tempo do processo de criação, você verá a cor laranja da palavra "ATP"

Oracle Cloud Infrastructure

ORACLE Cloud Applications > Search for resources, services, and documentation US East (Ashburn) Help

Overview » Autonomous Database » Autonomous Database Details

atpt

[DB Connection](#) [Performance Hub](#) [Service Console](#) [Scale Up/Down](#) [More Actions](#)

Autonomous Database Information		Tools	Tags
General Information		Infrastructure	
Database Name: atpt Workload Type: Transaction Processing Compartment: Erika_Nagamine/autonomousFT OCID: ...ia76pq Show Copy Created: Sun, Mar 7, 2021, 06:17:13 UTC OCPU Count: 1 Storage: 1 TB License Type: Bring Your Own License (BYOL) Database Version: 19c Auto Scaling: Enabled ? Lifecycle State: Provisioning Instance Type: Paid Mode: Read/Write Edit		Dedicated Infrastructure: No Autonomous Data Guard: ? Status: Disabled Enable	
Operations Insights ?		Backup	
Status: Not Enabled Enable		Last Automatic Backup: No active backups exist for this database. Manual Backup Store: Not Configured	
Network		Data Safe ?	
Access Type: Allow secure access from everywhere Access Control List: Disabled Edit		Status: Not Registered Register	

Resources **Metrics**

	Start time	End time	Quick Selects
I			

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Quando o processo terminar, ficará na cor verde.

Oracle Cloud Infrastructure - console.us-ashburn-1.oraclecloud.com/db/adb/ocid1.autonomousdatabase.oc1.iad.abuwcdjsult3p5afqs5sqfygt5rpmzw7zawrf3dr7cn5zmvodnrr23u5tnq

ORACLE Cloud Search for resources and services US East (Ashburn) More Actions

Autonomous Database > Autonomous Database Details

atp

DB Connection Performance Hub Service Console Scale Up/Down More Actions

Autonomous Database Information Tools Tags

General Information

Database Name: atp
Workload Type: Transaction Processing
Compartment: erikanagamine202004 (root)/autonomousFT
OCID: ...3u5tnq Show Copy
Created: Tue, Apr 28, 2020, 04:27:41 UTC
OCPU Count: 1
Storage: 1 TB
License Type: Bring Your Own License (BYOL)
Database Version: 18c
Auto Scaling: Disabled

Infrastructure

Dedicated Infrastructure: No
Backup

Last Automatic Backup: No active backups exist for this database.

Network

Access Type: Allow secure access from everywhere
Access Control List: Disabled

Maintenance

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Connect to your autonomous

Usando a opção Database Actions, conecte-se no Database e explore suas opções:

Overview > Autonomous Database > Autonomous Database details

Clone-of-atpsource • Primary

Database actions ▾ Database connection Performance Hub Manage resource allocation More actions ▾

SQL REST Database Users Data Load View all database actions Disaster recovery

Formation Tool configuration Security attributes Tags

Processing

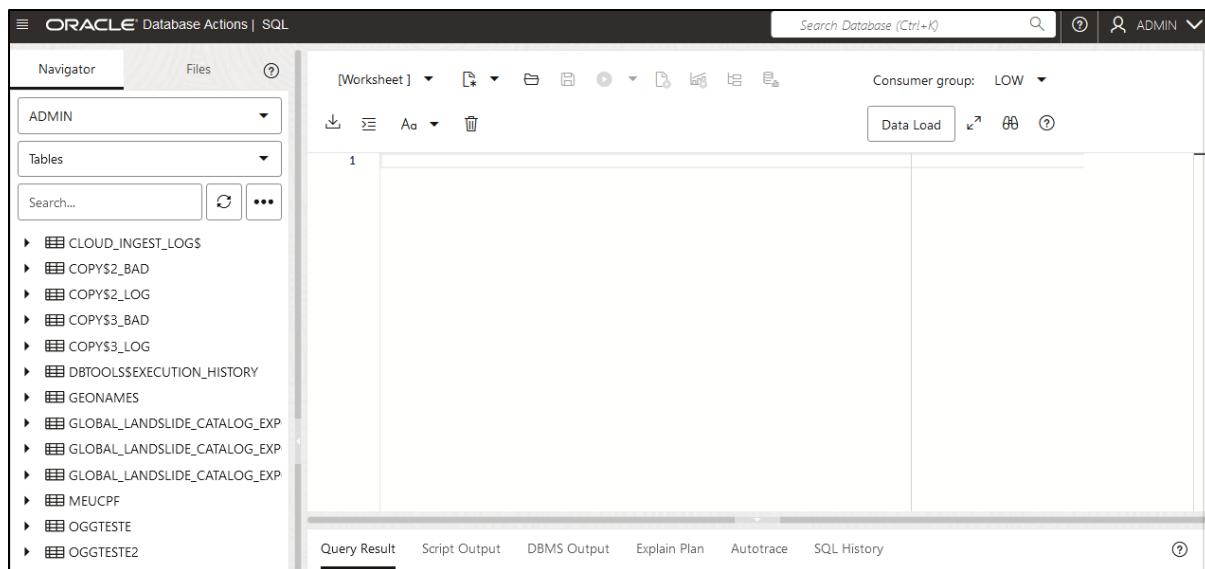
Role: Primary Local: Backup-based Upgrade to Autonomous Data Guard S Cross-region: Not enabled

Compartiment: latinoamerica (root)/ENG_INFRA_CN/ENG_CS_LAD/

Fixo e Visitado Recente, Desenvolvimento, Data Studio, Administração, Downloads, Monitoramento, Serviços Relacionados

SQL Data Modeler REST Liquibase JSON Gráficos Programando Oracle Machine Learning APEX Graph Studio Documentação Carregando Dados Executando Instruções SQL

Exercício prático Abrir



5 LAB 4: HANDS-ON – ORACLE BANCO DE DADOS CONVERGENTE

5.1 Link para documentação oficial

<https://blogs.oracle.com/database/post/what-is-a-converged-database>

```
// ///////////////////////////////
// CRIANDO UMA TABELA PARA ARMAZENAR DOCUMENTOS JSON
// ///////////////////////////////

CREATE TABLE DEPARTMENTS_JSON (
    DEPARTMENT_ID   INTEGER NOT NULL PRIMARY KEY,
    DEPARTMENT_DATA BLOB NOT NULL
);

// ///////////////////////////////
// PARA TER CERTEZA QUE O TIPO DE DADOS ARMAZENADO EH JSON, PODEMOS CRIAR UMA
// CONSTRAINT PARA VERIFICACAO
// ///////////////////////////////


ALTER TABLE DEPARTMENTS_JSON
ADD CONSTRAINT DEPT_DATA_JSON
CHECK ( DEPARTMENT_DATA IS JSON );

// ///////////////////////////////
// INSERINDO DADOS EM UMA TABELA JSON
// ///////////////////////////////


INSERT INTO DEPARTMENTS_JSON
VALUES ( 110, UTL_RAW.CAST_TO_RAW ( '{
    "DEPARTMENT": "ACCOUNTING",
    "EMPLOYEES": [
        {
            "NAME": "HIGGINS, SHELLEY",
            "JOB": "ACCOUNTING MANAGER",
            "HIREDATE": "2002-06-07T00:00:00"
        },
        {
            "NAME": "GIETZ, WILLIAM",
            "JOB": "PUBLIC ACCOUNTANT",
            "HIREDATE": "2002-06-07T00:00:00"
        }
    ]
}' ) );
COMMIT;

// ///////////////////////////////
// TESTANDO A CONSTRAINT CHECK "IS JSON"
// ///////////////////////////////


INSERT INTO DEPARTMENTS_JSON
VALUES ( 100, UTL_RAW.CAST_TO_RAW ( 'RANDOM JUNK' ) );
```

Nesse ponto é esperado a mensagem: ORA-02290, que valida a eficácia da constraint

```
// ///////////////////////////////
// ATUALIZANDO UMA TABELA JSON
// ///////////////////////////////


UPDATE DEPARTMENTS_JSON
SET    DEPARTMENT_DATA = UTL_RAW.CAST_TO_RAW (
'(
    "DEPARTMENT": "FINANCE AND ACCOUNTING",
    "EMPLOYEES": [
        {
            "NAME": "HIGGINS, SHELLEY",
            "JOB": "ACCOUNTING MANAGER",
            "HIREDATE": "2002-06-07T00:00:00"
        },
        {
            "NAME": "GIETZ, WILLIAM",
            "JOB": "PUBLIC ACCOUNTANT",
            "HIREDATE": "2002-06-07T00:00:00"
        }
    ]
)
) WHERE DEPARTMENT_ID = 110;
COMMIT;
```

Nesse ponto temos a atualização full do documento json

```

// /////////////////////////////////
// ATUALIZACAO PARCIAL DO JSON
// /////////////////////////////////

UPDATE DEPARTMENTS_JSON
SET   DEPARTMENT_DATA = JSON_MERGEPATCH (
    DEPARTMENT_DATA,
    [
        {
            "DEPARTMENT" : "FINANCE AND ACCOUNTING"
        }
    ]
)
WHERE DEPARTMENT_ID = 110 ;

```

Nesse ponto temos somente a atualização de parte do documento json

```

// /////////////////////////////////
// CONSULTAS
// /////////////////////////////////

SELECT D.DEPARTMENT_DATA.DEPARTMENT
FROM   DEPARTMENTS_JSON D;

SELECT D.DEPARTMENT_DATA.EMPLOYEES[0].NAME
FROM   DEPARTMENTS_JSON D
WHERE  DEPARTMENT_ID = 110;

SELECT D.DEPARTMENT_DATA.EMPLOYEES[*].NAME
FROM   DEPARTMENTS_JSON D
WHERE  DEPARTMENT_ID = 110;

```

```

// /////////////////////////////////
// RETORNANDO UM DOCUMENTO OU ARRAY COM JSON_QUERY
// USADO PARA SELECIONAR UM OU MAIS VALORES DE ALGUM DADO JSON COMO UMA STRING.
// UTILIZADO ESPECIFICAMENTE RECUPERAR FRAGMENTOS DE UM DOCUMENTO JSON
// /////////////////////////////////

```

```

CREATE TABLE EMPLOYEES
(
    ID NUMBER,
    PERSON CLOB
        CONSTRAINT PERSON_ENSURE_JSON
        CHECK (PERSON IS JSON (STRICT WITH UNIQUE KEYS)));

```

```

INSERT INTO EMPLOYEES VALUES(1,'{"NAME":"BOB","CITY":"SF"}');
INSERT INTO EMPLOYEES VALUES(2,'{"NAME":"JAKE","CITY":"PA"}');
INSERT INTO EMPLOYEES VALUES(3,'{"NAME":"ALICE","CITY":"NYC"}');
INSERT INTO EMPLOYEES VALUES(4,'{"NAME":"JENN","CITY": {"NAME": "TOKYO"} }');
INSERT INTO EMPLOYEES VALUES(5,'{"NAME":"JENN","CITY": ["TOKYO"] }');
INSERT INTO EMPLOYEES VALUES(6,'{"NAME":"JENN","CITY":66}' );
COMMIT;

SELECT JSON_QUERY (
    DEPARTMENT_DATA,
    '$.EMPLOYEES[*]'
        RETURNING VARCHAR2 PRETTY
        WITH WRAPPER
    ) EMPLOYEES
FROM   DEPARTMENTS_JSON D
WHERE  DEPARTMENT_ID = 110;

```

```

// /////////////////////////////////
// CONVERTENDO O JSON PARA RELACIONAL COM JSON_TABLE
// O JSON_TABLE POSSIBILITA A CONVERSÃO DE UM ARRAY JSON PARA LINHAS SQL
// /////////////////////////////////

```

```

SELECT J.*
FROM   DEPARTMENTS_JSON D, JSON_TABLE (
    D.DEPARTMENT_DATA, '$' COLUMNS (
        DEPARTMENT,
        NESTED EMPLOYEES[*]
        COLUMNS (
            NAME,
            JOB,
            HIRE_DATE DATE PATH '$.HIREDATE'
        ) ) J
WHERE  D.DEPARTMENT_ID = 110;

```

```

// /////////////////////////////////
// CRIAÇÃO DE INDICES COM JSON
// /////////////////////////////////

```

```

CREATE INDEX DEPT_DEPARTMENT_NAME_I ON DEPARTMENTS_JSON
(
    JSON_VALUE (
        DEPARTMENT_DATA, '$.DEPARTMENT'
        ERROR ON ERROR
        NULL ON EMPTY
    )
);

```

```

// ///////////////////////////////////////////////////////////////////
// JSON SEARCH INDEX PARA FAST AD-HOC SQL (ORACLE TEXT INDEX OVER JSON)
// ///////////////////////////////////////////////////////////////////

CREATE SEARCH INDEX DEPT_JSON_I ON DEPARTMENTS_JSON ( DEPARTMENT_DATA ) FOR JSON;

ALTER INDEX DEPT_JSON_I REBUILD PARAMETERS ( 'DATAGUIDE ON' );

EXEC DBMS_JSON.ADD_VIRTUAL_COLUMNS ( 'DEPARTMENTS_JSON', 'DEPARTMENT_DATA' );

BEGIN
    DBMS_JSON.RENAME_COLUMN(
        'DEPARTMENTS_JSON', 'DEPARTMENT_DATA',
        '$.DEPARTMENT', DBMS_JSON.TYPE_STRING,
        'DEPARTMENT_NAME'
    );
);

DBMS_JSON.ADD_VIRTUAL_COLUMNS (
    'DEPARTMENTS_JSON', 'DEPARTMENT_DATA'
);
END;
/

select A.INDEX_NAME
      , B.INDEX_TYPE
      , A.TABLE_NAME
      , A.TABLE_OWNER
      , A.COLUMN_NAME
      , A.COLUMN_POSITION COLPOS
      , B.BLEVEL
      , B.LEAF_BLOCKS
      , B.STATUS
      , B.NUM_ROWS
      , B.DEGREE
      , TO_CHAR(B.LAST_ANALYZED,'DD-MM-YYYY HH24:MI:SS') LA
  from dba_ind_columns A
     , dba_indexes B
 where a.index_name = b.index_name
   and a.INDEX_OWNER = b.OWNER
   and upper(A.TABLE_NAME)  = upper('DEPARTMENTS_JSON')
   and upper(A.TABLE_OWNER) = upper('ADMIN')
order by A.INDEX_NAME
      , A.COLUMN_POSITION
      , A.COLUMN_NAME;

// ///////////////////////////////////////////////////////////////////
// CRIANDO VIEWS DE BANCO DE DADOS COM JSON DATA GUIDE
// O JSON DATA GUIDE POSSIBILITA QUE VOCE ADICIONE COLUNAS A UMA TABELA
// RETORNANDO VALORES DE UM DOCUMENTO JSON. INTERNAMENTE SAO CRIADOS COLUNAS
// VIRTUAIS CHAMANDO JSON.VALUE COM A PACKAGE DBMS_JSON EH POSSIVEL
// INCLUIR E RENOMEAR COLUNAS.
// ///////////////////////////////////////////////////////////////////

BEGIN
    DBMS_JSON.CREATE_VIEW ( 'DEPARTMENT_EMPLOYEES', 'DEPARTMENTS_JSON', 'DEPARTMENT_DATA',
    DBMS_JSON.GET_INDEX_DATAGUIDE ('DEPARTMENTS_JSON', 'DEPARTMENT_DATA', DBMS_JSON.FORMAT_HIERARCHICAL));
END;
/

SELECT * FROM DEPARTMENT_EMPLOYEES WHERE DEPARTMENT_ID = 110;

// ///////////////////////////////////////////////////////////////////
// JSON_OBJECT - GERANDO JSON COM SQL
// ///////////////////////////////////////////////////////////////////

SELECT * FROM DEPARTMENTS_JSON WHERE DEPARTMENT_ID = 110;

SELECT JSON_OBJECT ( * ) JDOC FROM DEPARTMENTS_JSON WHERE DEPARTMENT_ID = 110;

// ///////////////////////////////////////////////////////////////////
// CRIANDO MATERIALIZED VIEW COM JSON
// ///////////////////////////////////////////////////////////////////

CREATE TABLE JSON_DOCUMENTS (
    ID RAW(16) NOT NULL,
    DATA CLOB,
    CONSTRAINT JSON_DOCUMENTS_PK PRIMARY KEY (ID),
    CONSTRAINT JSON_DOCUMENTS_JSON_CHK CHECK (DATA IS JSON)
);

INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":1, "FIRSTNAME":"RICARDO", "LASTNAME":"MAEDA", "ITEM_ID":101, "ITEM_QTY":1 }');
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":2, "FIRSTNAME":"ALBERTO", "LASTNAME":"EGAMI", "ITEM_ID":101, "ITEM_QTY":1 }');
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":3, "FIRSTNAME":"ARISTOTELES", "LASTNAME":"SERRA", "ITEM_ID":102, "ITEM_QTY":3 }');
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":4, "FIRSTNAME":"BRENO", "LASTNAME":"TOZO", "ITEM_ID":101, "ITEM_QTY":1 }');
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":5, "FIRSTNAME":"CEDEIA", "LASTNAME":"ARAUJO", "ITEM_ID":102, "ITEM_QTY":3 }');
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":6, "FIRSTNAME":"DANIEL", "LASTNAME":"PANIZZO", "ITEM_ID":103, "ITEM_QTY":1 }');
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":7, "FIRSTNAME":"FABIO", "LASTNAME":"JESUS", "ITEM_ID":101, "ITEM_QTY":1 }');


```

```

INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":8, "FIRSTNAME":"FERNANDA", "LASTNAME":"MARTINS", "ITEM_ID":102, "ITEM_QTY":6 });
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":9, "FIRSTNAME":"ILAN", "LASTNAME":"SALVIANO", "ITEM_ID":102, "ITEM_QTY":6 });
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":10, "FIRSTNAME":"INTI", "LASTNAME":"RODRIGUES", "ITEM_ID":102, "ITEM_QTY":6 });
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":11, "FIRSTNAME":"LUCAS", "LASTNAME":"AZEVEDO", "ITEM_ID":102, "ITEM_QTY":6 });
INSERT INTO JSON_DOCUMENTS (ID, DATA) VALUES (SYS_GUID(), '{"CUSTOMERID":12, "FIRSTNAME":"MIGUEL", "LASTNAME":"ORNELAS", "ITEM_ID":102, "ITEM_QTY":6 });
COMMIT;

CREATE MATERIALIZED VIEW JSON_DOCUMENTS_MV
REFRESH FAST ON STATEMENT
ENABLE QUERY REWRITE AS
SELECT J.ID,
       JT.CUSTOMERID,
       JT.FIRSTNAME,
       JT.LASTNAME,
       JT.ITEM_ID,
       JT.ITEM_QTY
FROM   JSON_DOCUMENTS J,
       JSON_TABLE(DATA, '$'
                   COLUMNS (
                           CUSTOMERID NUMBER      PATH '$.CUSTOMERID' ERROR ON ERROR NULL ON EMPTY,
                           FIRSTNAME  VARCHAR2(20)  PATH '$.FIRSTNAME'  ERROR ON ERROR NULL ON EMPTY,
                           LASTNAME   VARCHAR2(20)  PATH '$.LASTNAME'   ERROR ON ERROR NULL ON EMPTY,
                           ITEM_ID    NUMBER        PATH '$.ITEM_ID'    ERROR ON ERROR NULL ON EMPTY,
                           ITEM_QTY   NUMBER        PATH '$.ITEM_QTY'   ERROR ON ERROR NULL ON EMPTY
                     )
       ) JT;

```

```
SELECT * FROM JSON_DOCUMENTS_MV;
```

```
// ///////////////////////////////////////////////////////////////////
// IN-MEMORY COLUMN STORE E JSON
// ///////////////////////////////////////////////////////////////////
```

```
ALTER TABLE JSON_DOCUMENTS INMEMORY;
ALTER TABLE JSON_DOCUMENTS NO INMEMORY;
```

Esse exemplo acima mostra a mesma facilidade de implementação da tecnologia in-memory com dados não estruturados.

```
// ///////////////////////////////////////////////////////////////////
// JSON + GEOJSON
// EXEMPLO DE DETECCAO DE FRAUDES COM JSON E GEO PROCESSAMENTO
// ///////////////////////////////////////////////////////////////////
// O OBJETIVO DO EXERCÍCIO É ENCONTRAR TRANSFERÊNCIAS DE DINHEIRO SUSPEITAS
// DENTRO DE UMA SÉRIE DE CONTAS DEFINIMOS UM PADRÃO SUSPEITO DE COMPRAS
// ///////////////////////////////////////////////////////////////////
```

```

CREATE TABLE JSON_TRANSACTIONS
(TRANSACTION_DOC CLOB,
 CONSTRAINT "VALID_JSON" CHECK (TRANSACTION_DOC IS JSON) ENABLE
);

INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"01-JAN-17","USER_ID":"JOHN","EVENT_ID":"DEPOSIT","TRANS_AMOUNT":1000000}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"25-JAN-17","USER_ID":"JOHN","EVENT_ID":"DEPOSIT","TRANS_AMOUNT":1200000}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"02-FEB-17","USER_ID":"JOHN","EVENT_ID":"DEPOSIT","TRANS_AMOUNT":500000}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"02-JAN-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"JOHN","TRANS_AMOUNT":100}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"02-JAN-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"BOB","TRANS_AMOUNT":1000}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"10-JAN-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"ALLEN","TRANS_AMOUNT":1500}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"20-JAN-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"TIM","TRANS_AMOUNT":1200}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"27-JAN-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"TIM","TRANS_AMOUNT":1000000}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"02-FEB-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"JOHN","TRANS_AMOUNT":1000}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"27-MAR-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"ALLEN","TRANS_AMOUNT":1200500}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"20-FEB-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"ALLEN","TRANS_AMOUNT":1200}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"10-FEB-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"JOHN","TRANS_AMOUNT":1500}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"02-APR-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"TIM","TRANS_AMOUNT":1000}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"27-APR-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"JOHN","TRANS_AMOUNT":3100400}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"20-APR-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"TIM","TRANS_AMOUNT":1200}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"10-APR-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"JOHN","TRANS_AMOUNT":1500}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"15-APR-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"TIM","TRANS_AMOUNT":1500}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"16-APR-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"BOB","TRANS_AMOUNT":1500}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"17-APR-17","USER_ID":"JOHN","EVENT_ID":"TRANSFER","TRANSFER_ID":"JOHN","TRANS_AMOUNT":1500}');
INSERT INTO JSON_TRANSACTIONS VALUES ('{"TIME_ID":"05-JAN-17","USER_ID":"JOHN","EVENT_ID":"WITHDRAWAL","TRANS_AMOUNT":2000}');

COMMIT;

```

```

CREATE TABLE JSON_TRANSACTIONS_GEO
(TRANS_GEO_DOC CLOB,
 CONSTRAINT "VALID_GEO_JSON" CHECK (TRANS_GEO_DOC IS JSON) ENABLE
);

```

```

):;

INSERT INTO JSON_TRANSACTIONS_GEO VALUES ('{"TIME_ID":"25-JAN-17 08:30:23","USER_ID":"JOHN","MERCHANT_ID":"BASKIN ROBINS",
"ITEM_REF":"ICE CREAM","TRANS_AMOUNT":10.00, "X":-71.48923,"Y":42.72347,"L_X":-71.48923,"L_Y":42.72347}');
INSERT INTO JSON_TRANSACTIONS_GEO VALUES ('{"TIME_ID":"25-JAN-17 09:35:10","USER_ID":"JOHN","MERCHANT_ID":"COSTCO","ITEM_REF":"GROCERIES","TRANS_AMOUNT":55.00,"X":-71.48923,"Y":42.72347,"L_X":-71.48923,"L_Y":42.72347}');
INSERT INTO JSON_TRANSACTIONS_GEO VALUES ('{"TIME_ID":"25-JAN-17 10:40:10","USER_ID":"JOHN","MERCHANT_ID":"STARBUCKS","ITEM_REF":"COFFEE","TRANS_AMOUNT":5.00,"X":-71.48923,"Y":42.72347,"L_X":-71.48854,"L_Y":42.72347, }');
INSERT INTO JSON_TRANSACTIONS_GEO VALUES ('{"TIME_ID":"25-JAN-17 16:36:10","USER_ID":"JOHN","MERCHANT_ID":"BESTBUY","ITEM_REF":"APPLE MAC PRO","TRANS_AMOUNT":4150.00,"X":-91.48923,"Y":42.72347,"L_X":-71.48923,"L_Y":42.72347}');
COMMIT;

CREATE OR REPLACE VIEW VW_JSON_CC_TRANS AS
SELECT
    TO_DATE(J.TRANS_GEO_DOC.TIME_ID, 'DD-MON-YYYY, HH24:MI:SS') AS DAY_ID,
    TO_CHAR(TO_TIMESTAMP(J.TRANS_GEO_DOC.TIME_ID, 'DD-MON-YYYY, HH24:MI:SS'), 'HH24:MI:SS') AS TIME_ID,
    TRUNC((TO_DATE(J.TRANS_GEO_DOC.TIME_ID, 'DD-MON-RR, HH24:MI:SS')) -
    (TO_DATE(LAG(J.TRANS_GEO_DOC.TIME_ID,1) OVER (ORDER BY J.TRANS_GEO_DOC.TIME_ID), 'DD-MON-RR, HH24:MI:SS'))) * 24, 0) AS
LAG_TIME,
    J.TRANS_GEO_DOC.USER_ID AS USER_ID,
    J.TRANS_GEO_DOC.MERCHANT_ID AS MERCHANT_ID,
    J.TRANS_GEO_DOC.ITEM_REF AS ITEM_REF,
    TO_NUMBER(J.TRANS_GEO_DOC.TRANS_AMOUNT) AS TRANS_AMOUNT,
    TO_NUMBER(J.TRANS_GEO_DOC.X) AS GEO_X,
    TO_NUMBER(J.TRANS_GEO_DOC.Y) AS GEO_Y,
    TO_NUMBER(J.TRANS_GEO_DOC.L_X) AS GEO_LAG_X,
    TO_NUMBER(J.TRANS_GEO_DOC.L_Y) AS GEO_LAG_Y
FROM JSON_TRANSACTIONS_GEO J;

SELECT
    L.DAY_ID AS DAY_ID,
    L.TIME_ID AS TIME_ID,
    L.LAG_TIME AS MINS,
    L.USER_ID,
    L.MERCHANT_ID,
    L.ITEM_REF,
    L.TRANS_AMOUNT,
    SDO_Geom.SDO_DISTANCE(SDO_Geometry(2001,8307,SDO_Point_Type(L.GEO_X, L.GEO_Y, NULL),NULL,NULL),
    SDO_Geometry(2001,8307,SDO_Point_Type(L.GEO_LAG_X, L.GEO_LAG_Y, NULL),NULL,NULL),
    0.0001,'UNIT=KM') AS DISTANCE_BETWEEN_TRANS
FROM VW_JSON_CC_TRANS L
ORDER BY L.DAY_ID, TIME_ID;

```

6 LAB 5: LOADING DATA TO ADB USING DATABASE ACTIONS: DATABASE

6.1 Link para documentação oficial

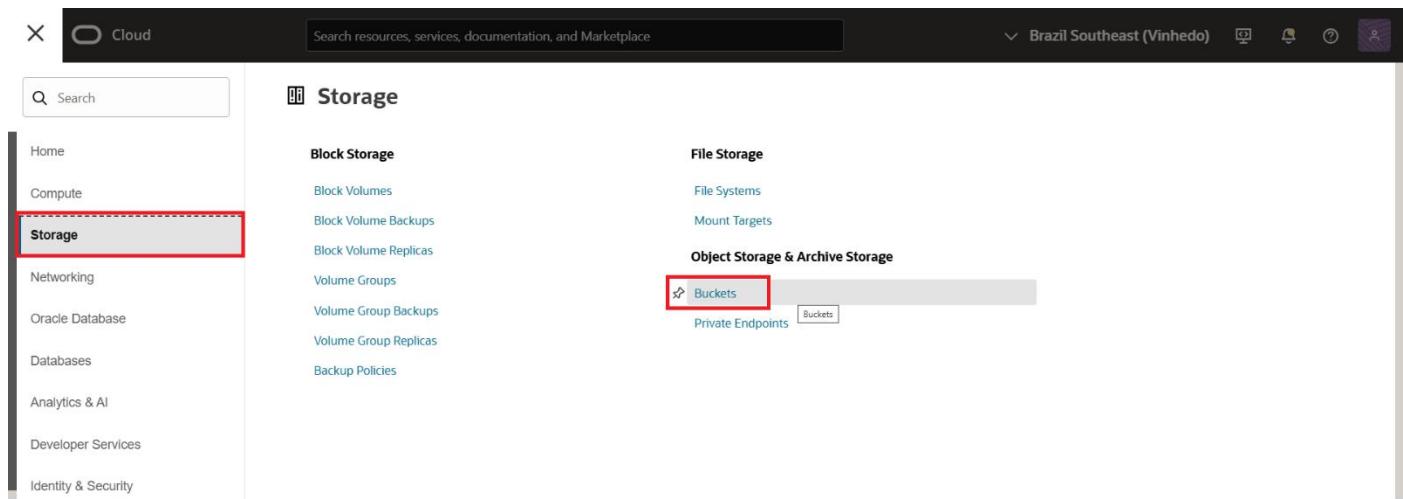
<https://docs.oracle.com/en-us/iaas/autonomous-database-serverless/doc/gs-autonomous-database-tutorials-load-autonomous-database-data-studio.html>

Supported file types for loading locally include:

- **.csv** (Comma-separated values) or **.tsv** (Tab-separated values) files; **.xls** or **.xlsx** files (Excel spreadsheets); **.txt** files with delimited text; **.avro** (AVRO) files; **.json** (JSON) files; **.xml** (XML) files

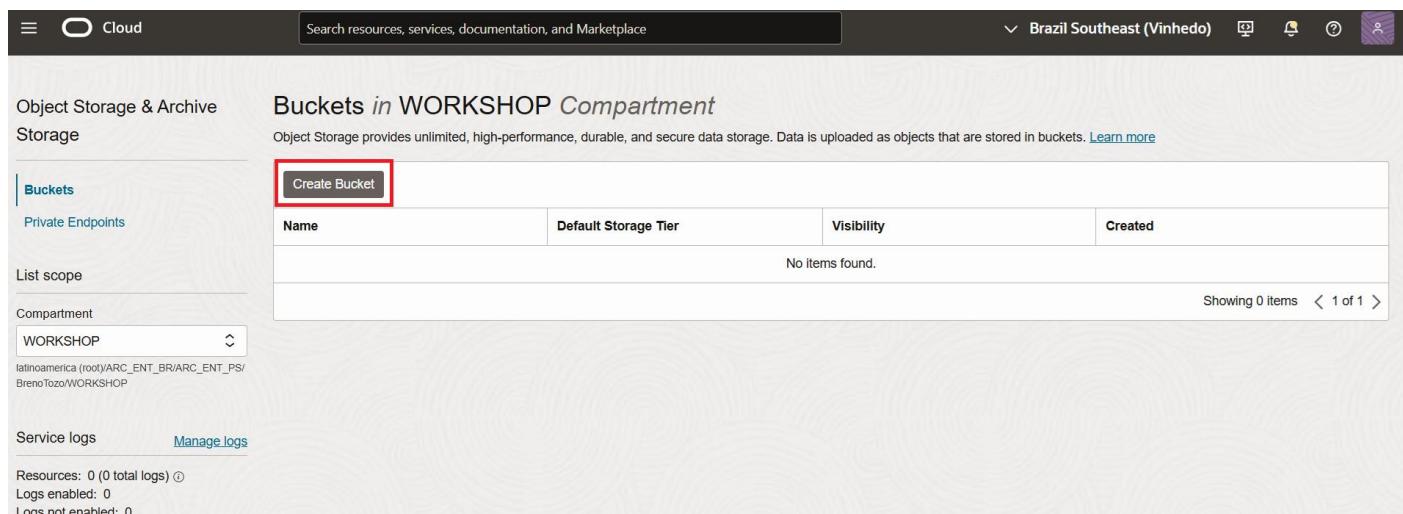
6.2 Create a bucket and Upload Files

Para criar um bucket de object storage, clique no menu -> Object Storage -> Object storage



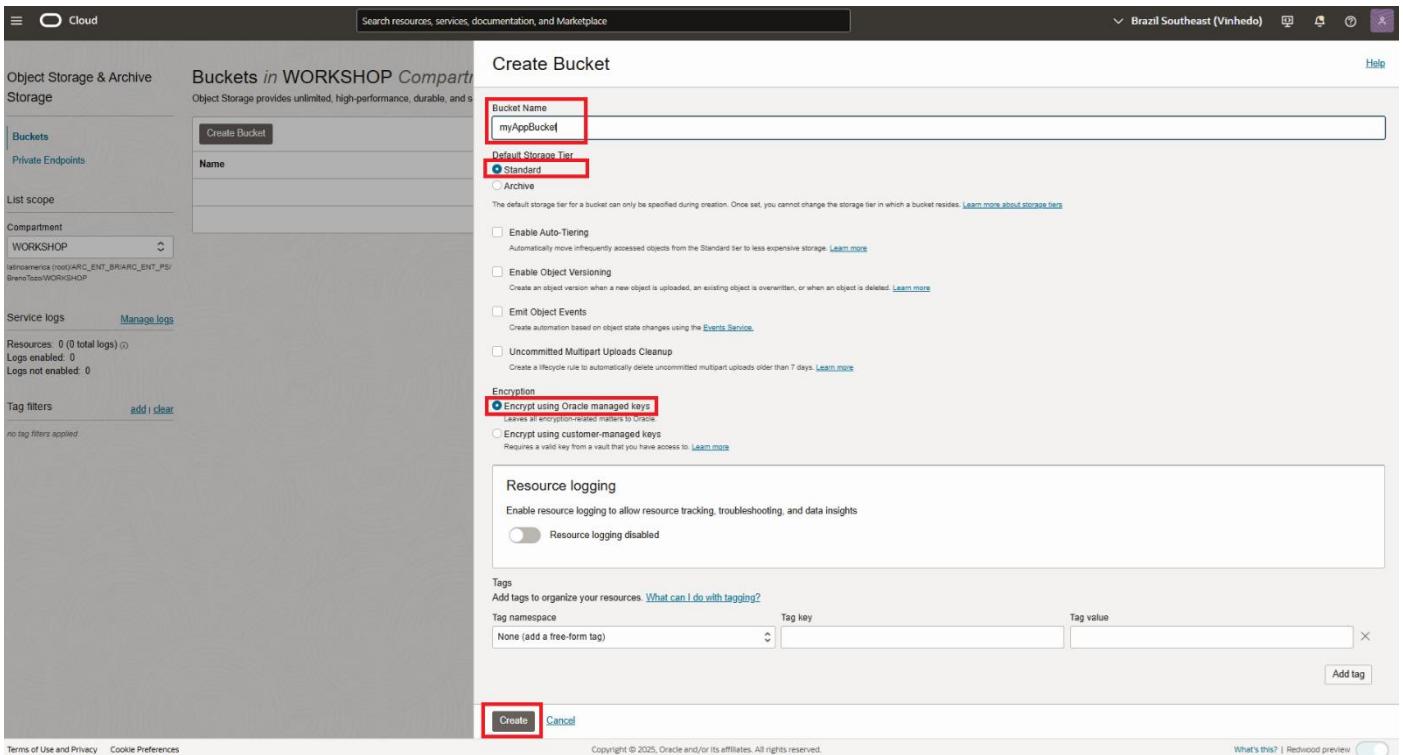
The screenshot shows the Oracle Cloud Infrastructure (OCI) console. The top navigation bar includes 'Cloud', a search bar, and a location dropdown set to 'Brazil Southeast (Vinhedo)'. The left sidebar has a 'Storage' section with various options like Home, Compute, Storage, Networking, Oracle Database, Databases, Analytics & AI, Developer Services, and Identity & Security. The 'Storage' option is highlighted with a red box. The main content area is titled 'Storage' and contains sections for 'Block Storage' (Block Volumes, Block Volume Backups, Block Volume Replicas), 'File Storage' (File Systems, Mount Targets), and 'Object Storage & Archive Storage' (Buckets, Private Endpoints). The 'Buckets' link is highlighted with a red box.

Verifique se você está no Compartimento certo.

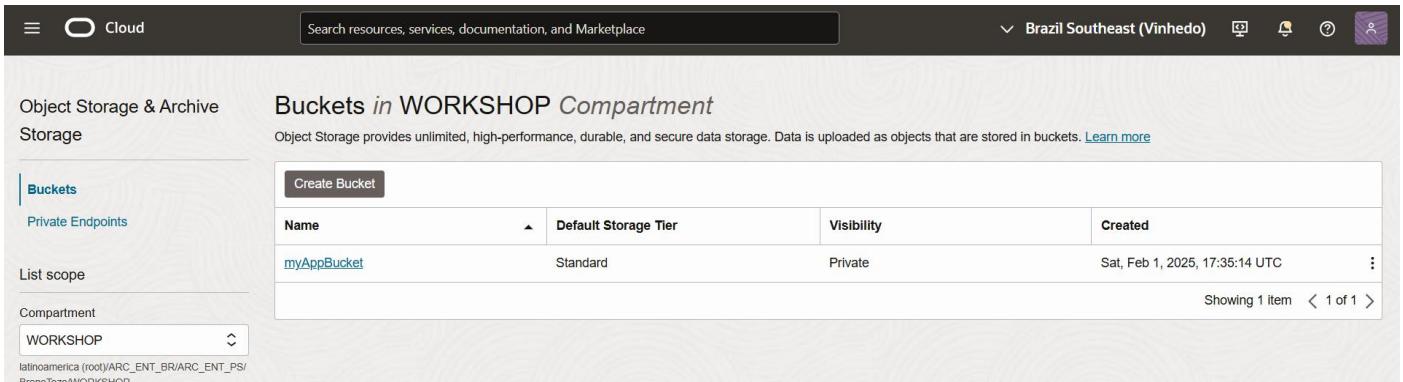


The screenshot shows the 'Buckets in WORKSHOP Compartiment' page. The left sidebar shows 'Object Storage & Archive Storage' with 'Buckets' selected and highlighted with a red box. Below it are 'Private Endpoints', 'List scope', 'Compartment' (set to 'WORKSHOP'), and 'Service logs' (Manage logs). The main content area displays a table for managing buckets. The 'Create Bucket' button is highlighted with a red box. The table has columns for 'Name', 'Default Storage Tier', 'Visibility', and 'Created'. A message at the bottom says 'No items found.' and 'Showing 0 items < 1 of 1 >'.

Clique em Create Bucket e insira o nome **myAppBucket** e clique em Create Bucket



Após ter criado o Bucket sua tela ficará assim. Clique no nome do bucket que foi criado.



Clique no bucket **myAppBucket** para iniciarmos o upload de dados para o storage object.

Object Storage > Bucket Details

myAppBucket

Edit Visibility Move Resource Re-encrypt Add tags Delete

Bucket Information Tags

General

- Namespace: id100a010nx
- Compartment: WORKSHOP
- Created: Fri, Jan 31, 2025, 13:20:50 UTC
- ETag: 734e8e19-4a75-4bfa-b3d8-e11dfb31592d
- OCID: ...4kq5reva Show Copy

Usage

- Approximate Object Count: 2 objects
- Approximate Size: 4.68 MB
- Uncommitted Multipart Uploads Approximate Count: 0 uploads
- Uncommitted Multipart Uploads Approximate Size: 0 bytes

Features

- Default Storage Tier: Standard
- Visibility: Private
- Encryption Key: Oracle managed key Assign
- Auto-Tiering: Disabled Edit
- Emit Object Events: Disabled Edit
- Object Versioning: Disabled Edit

Resources

Objects

Upload More Actions ▾ Search by prefix

Name	Last Modified	Size	Storage Tier
No items found.			

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Fazer upload do arquivo abaixo:

- Devices.xlsx



Object Storage > Bucket Details

myAppBucket

Edit Visibility Move Resource Re-encrypt A

Bucket Information Tags

General

- Namespace: id100a010nx
- Compartment: WORKSHOP
- Created: Fri, Jan 31, 2025, 13:20:50 UTC
- ETag: 734e8e19-4a75-4bfa-b3d8-e11dfb31592d
- OCID: ...4kq5reva Show Copy

Usage

- Approximate Object Count: 3 objects
- Approximate Size: 20.78 KB
- Uncommitted Multipart Uploads Approximate Count: 0
- Uncommitted Multipart Uploads Approximate Size: 0 bytes

Resources

Objects

Upload More Actions ▾

Object Name Prefix: Optional

Storage Tier: Standard

Additional checksum: Optional

None

Choose Files from your Computer

Drop files here or select files

Devices.xlsx / 0.13 KB

Show Optional Response Headers and Metadata

1

2

3

Upload Cancel

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Após o final do upload (ítem 5), clicar em **CLOSE**

Agora iremos criar uma solicitação pré-autorizada para cada arquivo na lista.

The screenshot shows the 'Bucket Details' page for 'myAppBucket'. On the left, there's a large green circular icon with a white letter 'B'. The main content area has tabs for 'Bucket Information' and 'Tags'. Under 'General', it shows the Namespace (id100a010nx), Compartment (WORKSHOP), and various creation details. Under 'Usage', it shows an approximate object count of 3 objects, an approximate size of 20.78 KiB, and uncommitted multipart upload details. On the right, there's a 'Features' section with options like Default Storage Tier (Standard), Visibility (Private), and Encryption Key (Oracle managed key). A sidebar on the right contains buttons for 'View Object Details', 'Download', 'Copy', 'Update Storage Tier', 'Create Pre-Authenticated Request' (highlighted with a red box labeled '2'), 'Re-encrypt', 'Rename', and 'Delete' (highlighted with a red box labeled '1').

This screenshot shows the 'Create Pre-Authenticated Request' dialog overlaid on the 'Bucket Details' page for 'myAppBucket'. The dialog has a 'Name' field containing 'par-Devices' (highlighted with a red box). The 'Pre-Authenticated Request Target' section has two options: 'Bucket' (highlighted with a red box) and 'Object' (highlighted with a red box). The 'Bucket' option is selected and describes creating a request for all objects in the bucket. The 'Object' option is described as creating a request for a specific object. Other fields include 'Object Name' (Devices.xlsx), 'Access Type' (radio button selected for 'Permit object reads'), and 'Expiration' (set to Feb 8, 2025, 16:53 UTC). At the bottom of the dialog are 'Create Pre-Authenticated Request' and 'Cancel' buttons (highlighted with a red box).

Crie um arquivo texto para copiar nome do PAR e a URL do arquivo no bucket.

The screenshot shows the Oracle Cloud Object Storage interface. On the left, there's a large green circular icon with a white letter 'B'. The main area displays a bucket named 'myAppBucket' with various details like Namespace, Compartment, and Usage. A modal window titled 'Pre-Authenticated Request Details' is open. Inside the modal, step 1 highlights the 'Name' field containing 'par-Devices'. Step 2 highlights the 'Pre-Authenticated Request URL' field, which contains a long URL starting with 'https://objectstorage.sa-vinhedo-1.oraclecloud.com/p/W...'. Step 3 highlights the 'Close' button at the bottom of the modal. Below the modal, the 'Objects' section is visible, showing a table with columns for Name, Last Modified, Size, and Storage Tier.

Ao final da criação da pre-autorização (PAR) para cada arquivo no object storage, seu arquivo texto deve estar da seguinte forma:

```

1 par-Devices
2 https://objectstorage.sa-vinhedo-1.oraclecloud.com/p/W...
3 https://objectstorage.sa-vinhedo-1.oraclecloud.com/p/W...
4 https://objectstorage.sa-vinhedo-1.oraclecloud.com/p/W...
5 https://objectstorage.sa-vinhedo-1.oraclecloud.com/p/W...

```

OU

par-Devices

<https://objectstorage.sa-vinhedo-1.oraclecloud.com/p/W...>

Retorne a página principal do Autonomous Database, menu “Database actions” e “View all database actions”:

The screenshot shows the Oracle Autonomous Database details page. At the top, there's a navigation bar with 'Cloud', a search bar, and account information for 'Brazil East (Sao Paulo)'. Below the navigation, the database name 'atptf' is shown as 'Primary'. The main content area has tabs for 'Database actions', 'Database connection', 'Performance Hub', 'Manage resource allocation', and 'More actions'. The 'Database actions' tab is selected, and a sub-menu is open with 'SQL' highlighted. Other options in the sub-menu include 'REST', 'Formation', 'Tool configuration', 'Security attributes', and 'Tags'. A large green banner on the left says 'ADW'. On the right, there's a 'Disaster recovery' section with details about the database's role, compartment, OCID, creation date, lifecycle state, instance type, character set, and backup settings.

Em Data Studio, selecione Carga de Dados

The screenshot shows the Oracle Data Studio Launchpad. At the top, there's a navigation bar with 'ORACLE Database Actions | Launchpad', a search bar, and an 'ADMIN' dropdown. The 'Data Studio' tab is selected, indicated by a red box and the number '1'. In the sidebar, there are several icons: 'Visão Geral do Data Studio' (selected), 'Data Marketplace', 'Assistente de IA da Tabela', 'Catálogo', 'Insights de Dados', 'Transformações de Dados', 'Análise de Dados', and 'Compartilhamento de Dados'. A red box highlights the 'Carga de Dados' icon, which is labeled '2'. The main content area shows a 'Visão Geral do Data Studio' section with four cards: 'Get Started' (Data Load, Data Analysis, Insights), 'Recent Objects', 'Getting Started' (User Data Studio to understand your data better), and 'Need Help?' (links to User Guide, Analytics Documentation, Insights Documentation, Data Studio Configuration, Data Warehouse Master Blog). At the bottom right, there's a 'Abrir' button.

Caso ocorra qualquer intercorrência, por favor repita o processo de abertura do “View all database actions”

Selecione Carregar Dados

The screenshot shows the Oracle Database Actions interface with the 'Carga de Dados' (Load Data) section selected. A red box highlights the 'CARREGAR DADOS' (Load Data) button. Below it, there are sections for 'DADOS DO LINK' (Data from Link), 'DADOS DE FEED' (Data from Feed), and 'CONEXÕES' (Connections). A message at the bottom states 'Não Foram Encontrados a Credencial e o Perfil de IA' (No credential or AI profile found) with options to 'Configurar Controlador de Recursos ou Credenciais' (Configure Resource Controller or Credentials) and 'Configurar Perfil de IA' (Configure AI Profile). The main area below is titled 'Cargas de View e Tabela' (View and Table Loads) and displays a message 'Não há itens para exibição.' (No items to display).

Selecione Cloud Storage

The screenshot shows the Oracle Database Actions interface with the 'Carga de Dados' (Load Data) section selected. A red box highlights the 'Cloud Store' tab. Below it, a message 'Não Foi Encontrada uma credencial' (No credential found) is shown with a link to 'Configurar Controlador de Recursos ou Credenciais'. The main area is titled 'Selecionar o Local do Cloud Store ou insira a URL pública' (Select Cloud Store location or enter public URL) and contains a text input field with a URL. A red box highlights the URL input field. Numbered steps 1 through 4 are overlaid on the interface: 1 points to the 'Cloud Store' tab, 2 points to the URL input field, 3 points to the 'Devices.xlsx' file listed in the preview pane, and 4 points to the 'Início' (Start) button.

3
Arrastar e soltar

The screenshot shows a confirmation dialog titled 'Iniciar Carregamento do Cloud Store' (Start Cloud Store Load). It asks 'Deseja iniciar o carregamento com base no Cloud Store?' (Do you want to start the load based on the Cloud Store?). Two buttons are at the bottom: 'Executar' (Execute) and 'Cancelar' (Cancel). A red box highlights the 'Executar' button.

Clique em Consulta

The screenshot shows the Oracle Database Actions interface with the 'Cargas de View e Tabela' (Load View and Table) page selected. The top navigation bar includes 'Pesquisar Banco de Dados (Ctrl+K)', a search icon, a help icon, and 'ADMIN'. On the left, a sidebar lists 'Visão Geral', 'Carga de Dados', 'Análise', 'Insights', 'Catálogo', 'Marketplace', and 'Compartilhamento de Dados'. The main area displays a table named 'ADMIN.DEVICES' with 3 columns. A message at the top states 'Não Foram Encontrados a Credencial e o Perfil de IA' (No Credential or AI Profile was found). Below the table, there are buttons for 'Atualizar' (Update), 'Desativado' (Disabled), 'Relatório' (Report), and 'Recarregar' (Reload). The 'Consulta' (Query) button is highlighted with a red box.

É possível verificar que os dados foram carregados e já estão disponíveis para análises

The screenshot shows the Oracle Database Actions interface with the 'My Report_Report-0' report page selected. The top navigation bar includes 'Pesquisar Banco de Dados', a search icon, a help icon, and 'ADMIN'. On the left, a sidebar lists 'Visão Geral', 'Carga de Dados', 'Análise', 'Insights', 'Catálogo', 'Marketplace', and 'Compartilhamento de Dados'. The main area shows a report titled 'My Report_Report-0' with a query: 'SELECT * FROM "ADMIN"."DEVICES"'. The results table shows the following data:

DEVICE	FORM_FACTOR	SALES
phone x1	Smartphone	1000
phone h56	Smartphone	900
phone a75d8	Smartphone	800
Comp b94p	Computer	700
phone 455BP	Smartphone	600
Comp 99ai	Computer	500

The right side of the screen shows visualizations for 'DEVICE', 'FORM_FACTOR', and 'SALES'. The 'Run' button is highlighted with a red box.

Agora podemos por exemplo criar um gráfico a partir das informações que foram carregadas a partir do **Storage Object**.

Vamos clicando com o botão direito do mouse sobre a coluna **DEVICE**, vamos atribuí-la ao **eixo X** do nosso gráfico

1

2

3

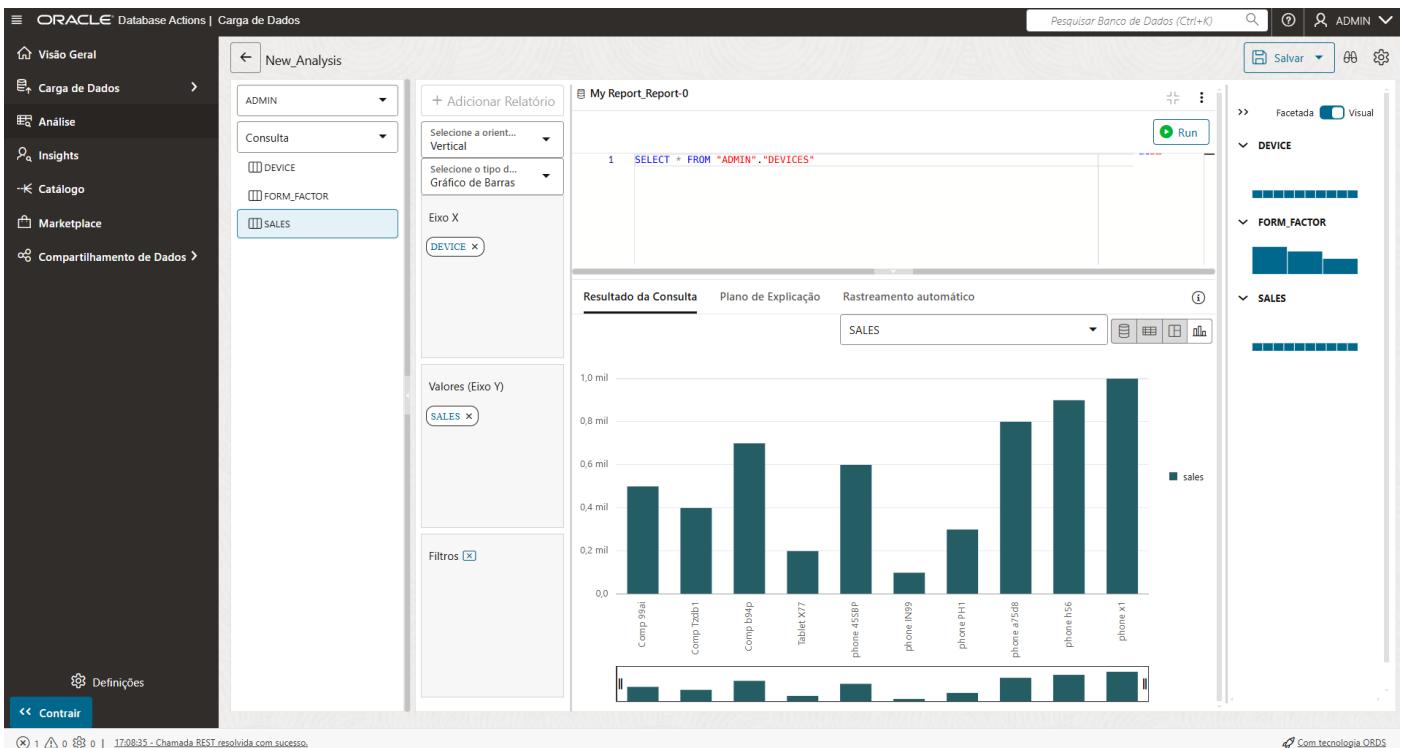
E a coluna **SALES** como o eixo Y do nosso gráfico

1

2

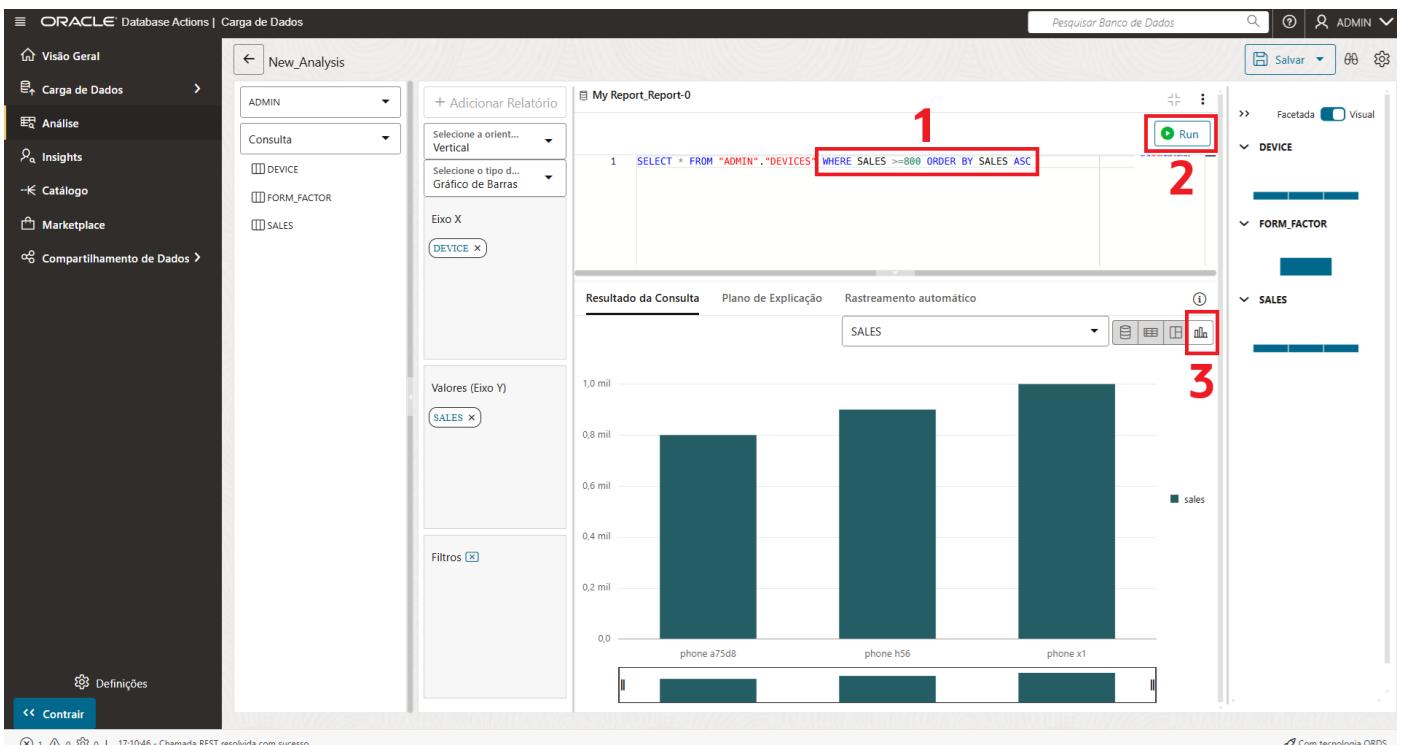
3

Clique no botão RUN para ver o resultado no gráfico



Também é possível modificar a consulta, por exemplo:

```
SELECT * FROM "ADMIN"."DEVICES" WHERE SALES >=800 ORDER BY SALES ASC
```



E podemos observar a mudança no gráfico.

7 LAB 6: CREATE A CLONE AUTONOMOUS DATABASE

Nesta etapa iremos fazer o clone do database “adwft” já criado anteriormente.

7.1 Link para documentação oficial

<https://docs.oracle.com/en/cloud/paas/autonomous-database/serverless/adbsb/autonomous-clone.html>

7.2 Full Clone

Na página inicial do banco de dados “adwft” clique em “More Actions” e depois em “Create Clone”:

The screenshot shows the Oracle Cloud interface for an Autonomous Database named 'atpsource'. The database is listed as 'AVAILABLE'. In the 'More actions' dropdown, the 'Create clone' option is highlighted. Other options shown include 'Stop', 'Restart', 'Switchover', and 'Administrator password'.

Depois escolha “Full Clone”, em Clone Source escolha “Clone from database instance”.

The screenshot shows the 'Create Autonomous Database Clone' wizard. Under 'Choose a clone type', 'Full Clone' is selected. Under 'Clone source', 'Clone from database instance' is selected. Under 'Provide basic information for the Autonomous Database clone', the compartment is set to 'autonomousFT'.

Compartment: autonomousFT

Display name: cloneadwft

Database name: cloneadwft

Choose database version: 19c ECPU Count: 2

Storage: 50GB

No auto scaling

Escolha a admin Password que você deseja

Create Autonomous Database Clone

Provide basic information for the Autonomous Database clone

Create in compartment
AutonomousFT
iadcloudengineeringhub (root)/DataManagement/acbarros/AutonomousFT

Source database name **Read-Only**
adwft

Display name
Clone of adw_ft
A user-friendly name to help you easily identify the resource.

Database name
cloneadwft
The name must contain only letters and numbers, starting with a letter. 14 characters max.

Configure the database

Choose database version



Create Autonomous Database Clone

Configure the database

Choose database version
19c
Cloned databases must use an Oracle Database version that is the same or higher than the source database.

OCPU count
1
The number of OCPU cores to enable. Available cores are subject to your tenancy's service limits.

Storage (TB)
1
The amount of storage to allocate.

Patch level
Regular
Your database will be patched on a regular schedule. The region selected does not currently support early patching.



Create Autonomous Database Clone

Create administrator credentials [?](#)

Username **Read-Only**
ADMIN
ADMIN username cannot be edited.

Password

Confirm password

Choose network access

Access Type

Secure access from everywhere
Allow users with database credentials to access the database from the internet.

Require mutual TLS (mTLS) authentication [?](#)

Secure access from allowed IPs and VCNs only
Restrict access to specified IP addresses and VCNs.

Private endpoint access only
Restrict access to a private endpoint within an OCI VCN.

Create Autonomous Database Clone **Cancel**



Allow Secure access from everywhere

Choose licensing type: Byol

Informe um email de contato

ORACLE Cloud Applications > Search for resources, services, and documentation Brazil East (Sao Paulo) Help

Create Autonomous Database Clone

Require mutual TLS (mTLS) authentication ⓘ If you select this option, mTLS will be required to authenticate connections to your Autonomous Database.

Choose a license type

Bring Your Own License (BYOL) Bring my organization's Oracle Database software licenses to the Database service. [Learn more](#)

License Included Subscribe to new Oracle Database software licenses and the Database service.

Provide contacts for operational notifications and announcements ⓘ

Contact Email: joao da silva@email.com [x](#) [Add Contact](#)

[Show Advanced Options](#)

[Create Autonomous Database Clone](#) [Cancel](#)

E depois clique em "Create Autonomous Database Clone":

ORACLE Cloud Applications > Search for resources, services, and documentation Brazil East (Sao Paulo) Help

Overview » Autonomous Database » Autonomous Database Details

Clone of adw_ft

DB Connection Performance Hub Service Console Scale Up/Down More Actions ▾

Autonomous Database Information		Tools	Tags
General Information	Infrastructure		
Database Name: cloneadwft Workload Type: Data Warehouse Compartment: iadcloudeengineeringhub (root)/DataManagement/acbarros/AutonomousFT OCID: ...fyrikxa Show Copy Created: Wed, Aug 4, 2021, 18:38:01 UTC OCPU Count: 1 Auto Scaling: Disabled ⓘ Storage: 1 TB License Type: Bring Your Own License (BYOL) Database Version: 19c Lifecycle State: Provisioning	Dedicated Infrastructure: No Autonomous Data Guard ⓘ Status: Disabled Enable Backup <i>Last Automatic Backup:</i> No active backups exist for this database. <i>Manual Backup Store:</i> Not Configured	Network	
Access Type: Allow secure access from everywhere		View Network	Edit

Quando estiver concluído o nome do banco aparecerá com um fundo verde:

ORACLE Cloud Applications > Search for resources, services, and documentation Brazil East (Sao Paulo) Help

Overview » Autonomous Database » Autonomous Database Details

Clone of adw_ft

DB Connection Performance Hub Service Console Scale Up/Down More Actions ▾

Autonomous Database Information		Tools	Tags
General Information	Infrastructure		
Database Name: cloneadwft Workload Type: Data Warehouse Compartment: iadcloudeengineeringhub (root)/DataManagement/acbarros/AutonomousFT OCID: ...fyrikxa Show Copy Created: Wed, Aug 4, 2021, 18:38:01 UTC OCPU Count: 1 Auto Scaling: Disabled ⓘ Storage: 1 TB License Type: Bring Your Own License (BYOL) Database Version: 19c Lifecycle State: Available	Dedicated Infrastructure: No Autonomous Data Guard ⓘ Status: Disabled Enable Backup <i>Last Automatic Backup:</i> No active backups exist for this database. <i>Manual Backup Store:</i> Not Configured	Network	Edit

EXECUTE A CONSULTA NO BANCO DE DADOS CLONADO

```
SELECT
    L.DAY_ID AS DAY_ID,
    L.TIME_ID AS TIME_ID,
    L.LAG_TIME AS MINS,
    L.USER_ID,
    L.MERCHANT_ID,
    L.ITEM_REF,
    L.TRANS_AMOUNT,
    SDO_GEOEM.SDO_DISTANCE(SDO_GEOMETRY(2001,8307,SDO_POINT_TYPE(L.GEO_X, L.GEO_Y, NULL),NULL,NULL),
                            SDO_GEOGRAPHY(2001,8307,SDO_POINT_TYPE(L.GEO_LAG_X, L.GEO_LAG_Y, NULL),NULL,NULL),
                            0.0001,'UNIT=KM') AS DISTANCE_BETWEEN_TRANS
FROM VW_JSON_CC_TRANS L
ORDER BY L.DAY_ID, TIME_ID;
```

Apague o banco de dados clonado (Full Clone).

The screenshot shows the Oracle Cloud Infrastructure (OCI) Autonomous Database details page for a database named 'Clone-of-ADBBT'. The database is listed as Primary. The main interface includes tabs for 'Autonomous Database information', 'Tool configuration', 'Security attributes', and 'Tags'. Under 'General information', details such as Database name (XU0TJK1XF7I4WW9), Workload type (Transaction Processing), Compartment (latinoamerica (root)/ARC_ENT_BR/ARC_ENT_PS/BrenoTozo/WORKSHOP), OCID (...uzvlla), and creation date (Mon, Feb 3, 2025, 11:46:16 UTC) are displayed. The 'More actions' dropdown menu is open, showing options like 'Administrator password', 'Update license and Oracle Database edition', 'Auto start/stop schedule', 'Manage encryption key', 'Rename database', 'Update display name', 'Move resource', 'Add security attributes', and 'Add tags'. The 'Terminate' option is highlighted with a red box.

Terminate Autonomous Database

Are you sure you want to terminate Autonomous Database **Clone-of-ADBBT**? Terminating the Autonomous Database **Clone-of-ADBBT** permanently deletes the database and **all its backups**. You cannot recover a terminated Autonomous Database.

To confirm, enter the name of the database that you want to terminate:

Terminate Autonomous Database [Cancel](#)

7.3 Metadata Clone

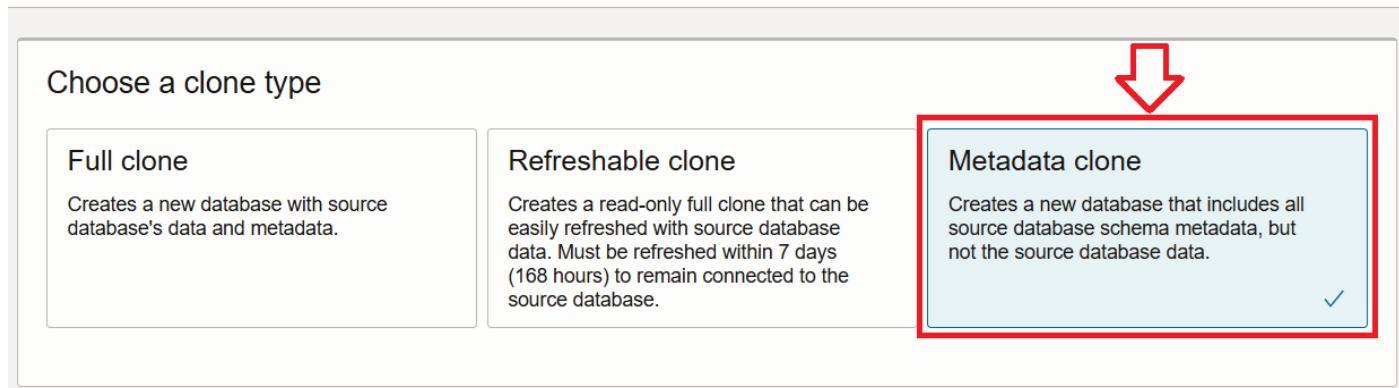
Repita os passos de clonagem de banco de dados, mas agora criando um **METADATA CLONE**, conforme abaixo:

Compartment: autonomousFT

Display name: cloneadwftMDO

Database name: cloneadwftMDO

Create Autonomous Database clone



EXECUTE A CONSULTA NO BANCO DE DADOS CLONADO

```
SELECT
    L.DAY_ID AS DAY_ID,
    L.TIME_ID AS TIME_ID,
    L.LAG_TIME AS MINS,
    L.USER_ID,
    L.MERCHANT_ID,
    L.ITEM_REF,
    L.TRANS_AMOUNT,
    SDO_GEOGRAPHY.SDO_DISTANCE(SDO_GEOGRAPHY(2001,8307,SDO_POINT_TYPE(L.GEO_X, L.GEO_Y, NULL),NULL,NULL),
                                SDO_GEOGRAPHY(2001,8307,SDO_POINT_TYPE(L.GEO_LAG_X, L.GEO_LAG_Y, NULL),NULL,NULL),
                                0.0001,'UNIT=KM') AS DISTANCE_BETWEEN_TRANS
FROM VW_JSON_CC_TRANS L
ORDER BY L.DAY_ID, TIME_ID;
```

Após o teste da consulta, apague o banco de dados clonado “metadata clone”.

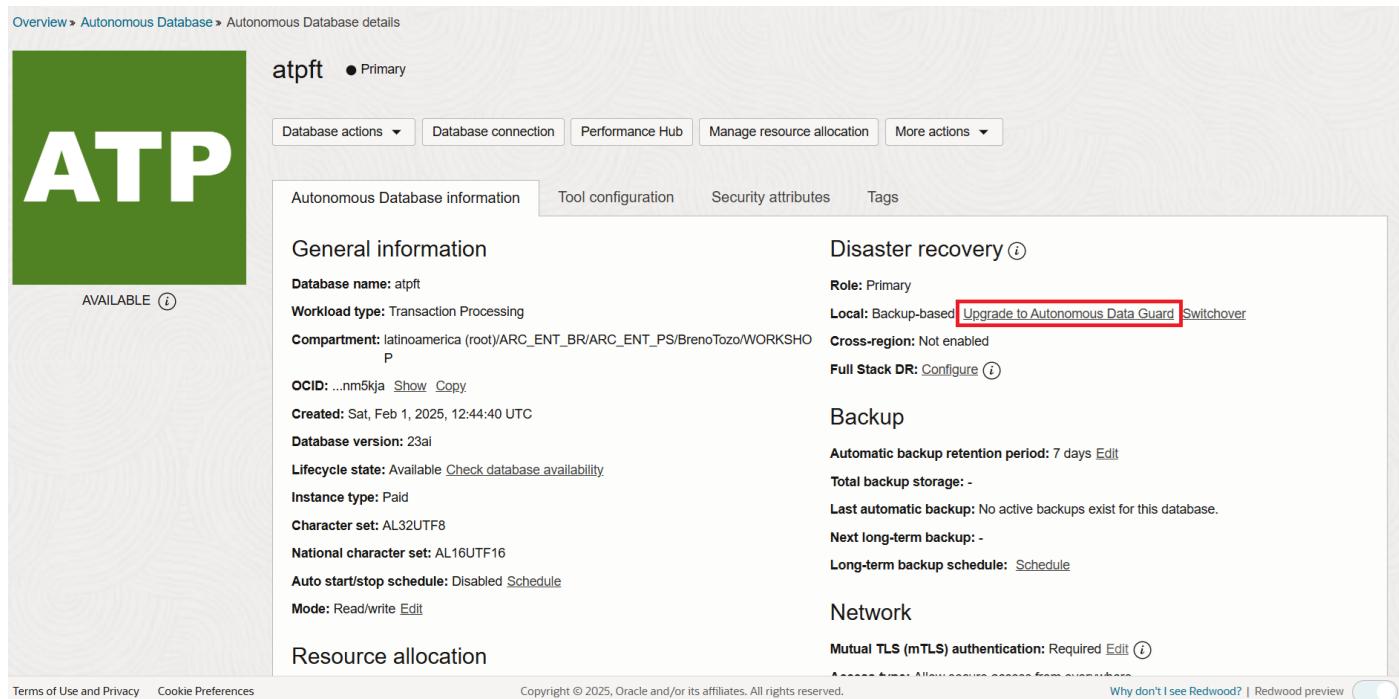
8 LAB 7: CREATE A AUTONOMOUS DATA GUARD

8.1 Link para documentação oficial

<https://docs.oracle.com/en-us/iaas/autonomous-database-serverless/doc/autonomous-data-guard-update-type.html#GUID-967ED737-4A05-4D6E-A7CA-C3F21ACF9BFO>

8.2 Oracle Autonomous Data Guard

Nesta etapa iremos criar um data guard a partir do ADB “adwft”.



Overview > Autonomous Database > Autonomous Database details

atpf • Primary

Database actions ▾ Database connection Performance Hub Manage resource allocation More actions ▾

Autonomous Database information Tool configuration Security attributes Tags

General information

Database name: atpf
Workload type: Transaction Processing
Compartment: latinoamerica (root)/ARC_ENT_BR/ARC_ENT_PS/BrenoTozo/WORKSHOP
P
OCID: ...nm5kja Show Copy
Created: Sat, Feb 1, 2025, 12:44:40 UTC
Database version: 23ai
Lifecycle state: Available [Check database availability](#)
Instance type: Paid
Character set: AL32UTF8
National character set: AL16UTF16
Auto start/stop schedule: Disabled [Schedule](#)
Mode: Read/write [Edit](#)

Resource allocation

Disaster recovery ⓘ

Role: Primary
Local: Backup-based [Upgrade to Autonomous Data Guard](#) Switchover
Cross-region: Not enabled
Full Stack DR: [Configure](#) ⓘ

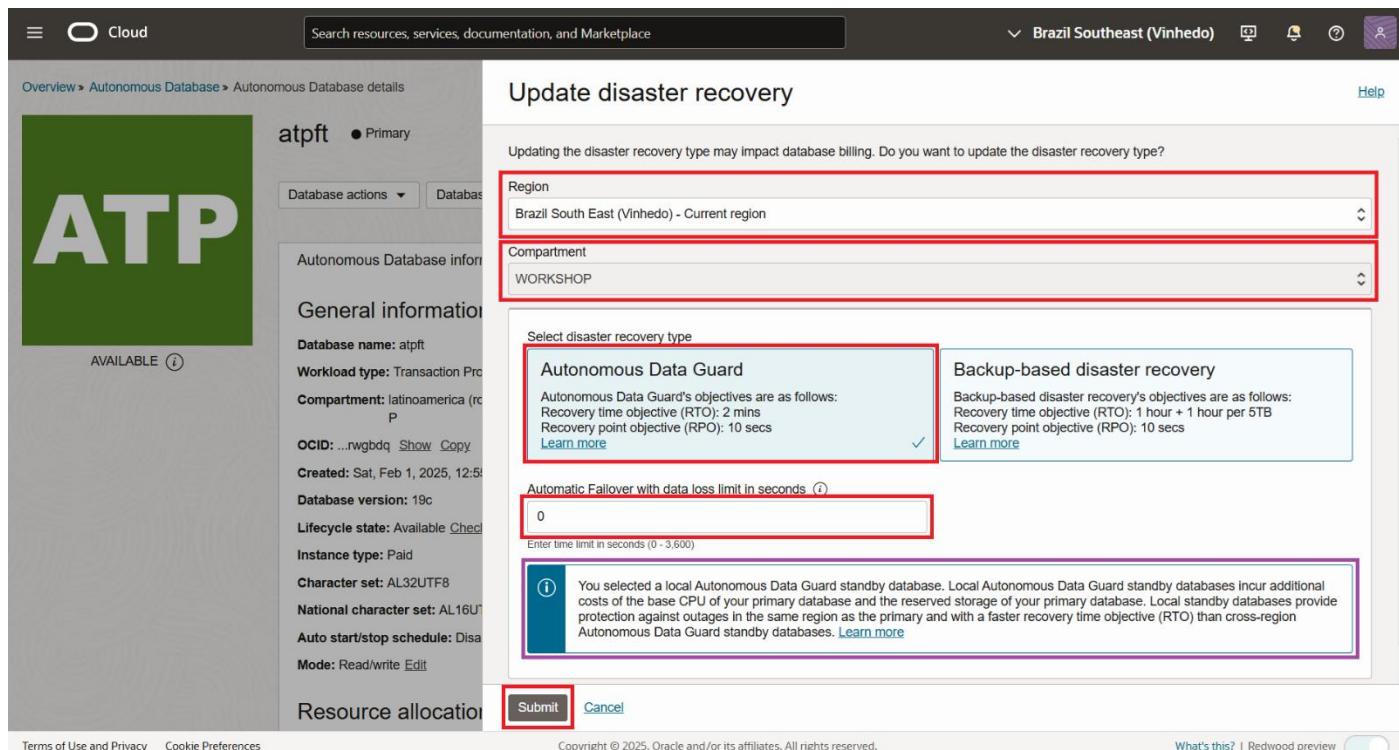
Backup

Automatic backup retention period: 7 days [Edit](#)
Total backup storage: -
Last automatic backup: No active backups exist for this database.
Next long-term backup: -
Long-term backup schedule: [Schedule](#)

Network

Mutual TLS (mTLS) authentication: Required [Edit](#) ⓘ

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Cloud Search resources, services, documentation, and Marketplace Brazil Southeast (Vinhedo) Help

Overview > Autonomous Database > Autonomous Database details

atpf • Primary

Database actions ▾ Database

Autonomous Database information

General information

Database name: atpf
Workload type: Transaction Proc
Compartment: latinoamerica (root)/ARC_ENT_BR/ARC_ENT_PS/BrenoTozo/WORKSHOP
P
OCID: ...rwgbdq Show Copy
Created: Sat, Feb 1, 2025, 12:51:55 UTC
Database version: 19c
Lifecycle state: Available [Check database availability](#)
Instance type: Paid
Character set: AL32UTF8
National character set: AL16UTF16
Auto start/stop schedule: Disabled [Schedule](#)
Mode: Read/write [Edit](#)

Resource allocation

Update disaster recovery

Updating the disaster recovery type may impact database billing. Do you want to update the disaster recovery type?

Region: Brazil South East (Vinhedo) - Current region

Compartment: WORKSHOP

Select disaster recovery type

Autonomous Data Guard Autonomous Data Guard's objectives are as follows:
Recovery time objective (RTO): 2 mins
Recovery point objective (RPO): 10 secs [Learn more](#)

Backup-based disaster recovery Backup-based disaster recovery's objectives are as follows:
Recovery time objective (RTO): 1 hour + 1 hour per 5TB
Recovery point objective (RPO): 10 secs [Learn more](#)

Automatic Failover with data loss limit in seconds: 0 [Edit](#)
Enter time limit in seconds (0 - 3,600)

You selected a local Autonomous Data Guard standby database. Local Autonomous Data Guard standby databases incur additional costs of the base CPU of your primary database and the reserved storage of your primary database. Local standby databases provide protection against outages in the same region as the primary and with a faster recovery time objective (RTO) than cross-region Autonomous Data Guard standby databases. [Learn more](#)

Submit [Cancel](#)

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Cloud Search resources, services, documentation, and Marketplace Brazil Southeast (Vinhedo) Overview > Autonomous Database > Autonomous Database details

atpf ● Primary

Database actions ▾ Database connection Performance Hub Manage resource allocation More actions ▾

Autonomous Database information Tool configuration Security attributes Tags

General information

Database name: atpf
Workload type: Transaction Processing
Compartment: latinoamerica (root)/ARC_ENT_BR/ARC_ENT_PS/BrenoTozo/WORKSHOP
P
OCID: ...rwgbdq [Show](#) [Copy](#)
Created: Sat, Feb 1, 2025, 12:55:29 UTC
Database version: 19c
Lifecycle state: Updating [Check database availability](#)
Instance type: Paid
Character set: AL32UTF8
National character set: AL16UTF16
Auto start/stop schedule: Disabled [Schedule](#)
Mode: Read/write [Edit](#)

Resource allocation

Disaster recovery ⓘ

Role: Primary
Local: Backup-based [Upgrade to Autonomous Data Guard](#) [Switchover](#)
Cross-region: Not enabled
Full Stack DR: Configure ⓘ

Backup

Automatic backup retention period: 60 days [Edit](#)
Total backup storage: -
Last automatic backup: No active backups exist for this database.
Next long-term backup: -
Long-term backup schedule: [Schedule](#)

Network

Mutual TLS (mTLS) authentication: Required [Edit](#) ⓘ

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Cloud Search resources, services, documentation, and Marketplace Brazil Southeast (Vinhedo) Overview > Autonomous Database > Autonomous Database details

atpf ● Primary

Database actions ▾ Database connection Performance Hub Manage resource allocation More actions ▾

Autonomous Database information Tool configuration Security attributes Tags

General information

Database name: atpf
Workload type: Transaction Processing
Compartment: latinoamerica (root)/ARC_ENT_BR/ARC_ENT_PS/BrenoTozo/WORKSHOP
P
OCID: ...rwgbdq [Show](#) [Copy](#)
Created: Sat, Feb 1, 2025, 12:55:29 UTC
Database version: 19c
Lifecycle state: Available [Check database availability](#)
Instance type: Paid
Character set: AL32UTF8
National character set: AL16UTF16
Auto start/stop schedule: Disabled [Schedule](#)
Mode: Read/write [Edit](#)

Resource allocation

Disaster recovery ⓘ

Role: Primary
Local: Autonomous Data Guard [Switchover](#)
Cross-region: Not enabled
Full Stack DR: Configure ⓘ

Backup

Automatic backup retention period: 60 days [Edit](#)
Total backup storage: -
Last automatic backup: No active backups exist for this database.
Next long-term backup: -
Long-term backup schedule: [Schedule](#)

Network

Mutual TLS (mTLS) authentication: Required [Edit](#) ⓘ

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Resource allocation

- ECPU count: 2
- Compute auto scaling: Enabled 
- Storage: 100 GB
- Storage auto scaling: Disabled 

Associated services

- Database Management: Not enabled  
- Operation Insights: Not enabled  

APEX instance

- Instance name: atptf

Network

- Mutual TLS (mTLS) authentication: Required  
- Access type: Allow secure access from everywhere
- Access control list: Disabled 
- Availability domain: IAA-SA-VINHEDO-1-AD-1
- Availability domain (local peer): IAA-SA-VINHEDO-1-AD-1

Maintenance 

- Patch level: Regular 
- Next maintenance: Sat, Feb 8, 2025, 06:00:00 UTC - 08:00:00 UTC 
- Target component: Database
- Next maintenance (local peer): Sat, Feb 8, 2025, 06:00:00 UTC - 08:00:00 UTC 
- Target component (local peer): Database
- Customer contacts: None 

Data Safe 

- Status: Not registered 

Encryption

- Encryption key: Oracle-managed key

Resources

Disaster recovery

Local peer : 1, Cross-region peer : 0, You may create up to 1 local peer and 1 cross-region peer for every remote paired region that your tenancy is subscribed to.

Add peer database							
Peer Autonomous Database	Peer role	State	Region	DR type	Remote backup replication	Automatic Failover data loss limit	Role changed on
atptf	Standby	 Standby	Brazil Southeast (Vinhedo)	Autonomous Data Guard	Disabled	300 seconds	-

1 
2 

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Cloud Search resources, services, documentation, and Marketplace Brazil Southeast (Vinhedo) 

Storage auto scaling: Disabled 

Maintenance 

Associated services

- Database Management
- Operation Insights

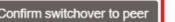
APEX instance

- Instance name: atptf

Confirm switchover to peer

Do you want to switchover to local disaster recovery peer atptf now?

Confirm the switchover to the peer database 

2 

Encryption

- Encryption key: Oracle-managed key

Resources

Disaster recovery

Local peer : 1, Cross-region peer : 0, You may create up to 1 local peer and 1 cross-region peer for every remote paired region that your tenancy is subscribed to.

Add peer database							
Peer role	State	Region	DR type	Remote backup replication	Automatic Failover data loss limit	Role changed on	Created
Standby	 Standby	Brazil Southeast (Vinhedo)	Autonomous Data Guard	Disabled	300 seconds	-	Sa

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Disaster recovery

Local peer : 1, Cross-region peer : 0, You may create up to 1 local peer and 1 cross-region peer for every remote paired region that your tenancy is subscribed to.

Add peer database

Peer Autonomous Database	Peer role	State	Region	DR type
atptf	Standby	 Role change in progress	Brazil Southeast (Vinhedo)	Autonomous Data Guard

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Overview > Autonomous Database > Autonomous Database details

atpt • Standby

Database actions Database connection Performance Hub Manage resource allocation More actions ▾

Autonomous Database information Tool configuration Security attributes Tags

General information

Database name: atpt
Workload type: Transaction Processing
Compartment: Latinoamerica (root)/ARC_ENT_BR/ARC_ENT_PS/BrenoTozo/WORKSHOP
OCID: .rwgbdq Show Copy
Created: Sat, Feb 1, 2025, 12:55:29 UTC
Database version: 19c
Autonomous Data Guard role: Standby
Lifecycle state: Role change in progress [Check database availability](#)
Instance type: Paid
Character set: AL32UTF8

Disaster recovery

Role: Standby [Switchover](#) [Update disaster recovery](#) [Disconnect peer](#)
Cross-region backup replication: Not enabled
Full Stack DR: [Configure](#)

Backup

Automatic backup retention period: 60 days [Edit](#)
Total backup storage: -
Last automatic backup: Sat, Feb 1, 2025, 13:47:19 UTC
Next long-term backup: -
Long-term backup schedule: [Schedule](#)

ORACLE Database Actions | SQL Pesquisar Banco de Dados ADMIN

Navegador Arquivos ?

ADMIN Tabelas Pesquisar... DBTOOLS\$EXECUTION_HISTORY

[Planilha] * ↻ 🔍 📁 🗂️ 🚫 🗃️ 🗃️ 🗃️ 🗃️ 🗃️ 🗃️

2

1 `select instance_name, host_name, status, to_char(sysdate, 'dd/mm/yyyy hh24:mi:ss') data from gv$instance`

1

Resultado da Consulta Saída do Script Saída DBMS Plano de Explicação Rastreamento automático Histórico SQL

Fazer Download Tempo de execução: 0,002 segundos

	INSTANCE_NAME	HOST_NAME	STATUS	DATA
1	eem1pod2	(nulo)	OPEN	01/02/2025 13:59:01

13 0 0 | 14:12:42 - Falha na execução de código. Com tecnologia ORDS

```
select instance_name, host_name, status, to_char(sysdate, 'dd/mm/yyyy hh24:mi:ss') data from gv$instance
```

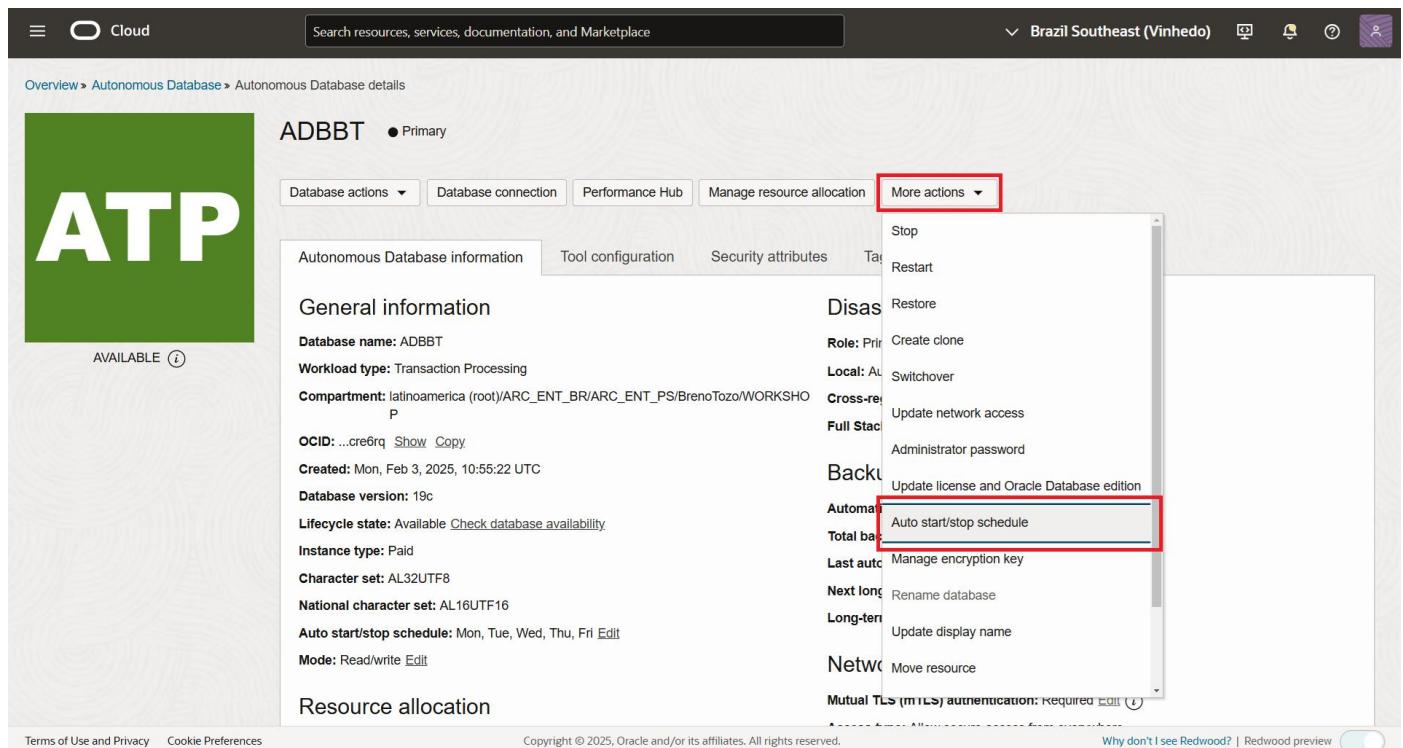
9 LAB 8: AUTO START/STOP SCHEDULE

9.1 Link para documentação oficial

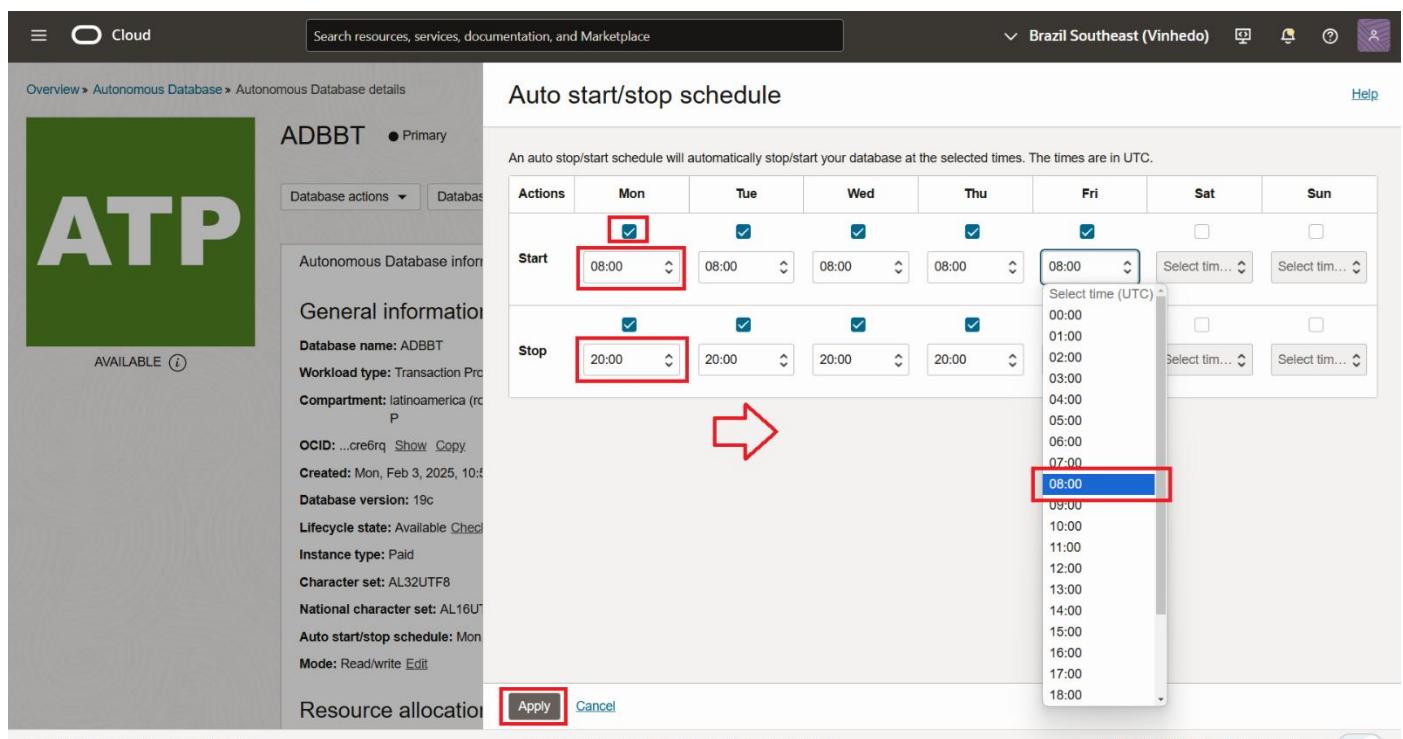
<https://docs.oracle.com/en-us/iaas/autonomous-database-serverless/doc/autonomous-auto-stop-start.html#:~:text=When%20you%20enable%20Auto%20Start,system%20is%20not%20in%20use.>

9.2 Schedule Start and Stop Times for an Autonomous Database Instance

Com o Autonomous Database Serverless você pode controlar o tempo de inicialização e parada do banco de dados.



The screenshot shows the Oracle Cloud interface for managing an Autonomous Database. The database name is ADBBT. In the top right corner, there is a 'More actions' dropdown menu. The 'Auto start/stop schedule' option is highlighted with a red box. Other options in the menu include Stop, Restart, Disassemble, Role: Primary, Local: Auto, Cross-region, Full Stack, Create clone, Switchover, Update network access, Administrator password, Update license and Oracle Database edition, Auto start/stop schedule, Total bandwidth, Last auto, Manage encryption key, Next long, Rename database, Long-term, Update display name, Network, Move resource, and Mutual TLS (mTLS) authentication: Required.



The screenshot shows the 'Auto start/stop schedule' configuration page for the ADBBT database. The 'Start' times for Monday through Friday are set to 08:00 UTC. The 'Stop' times are set to 20:00 UTC. An arrow points from the 'Start' row to a dropdown menu where '08:00' is selected. The 'Apply' button is highlighted with a red box. The configuration table has columns for Actions, Mon, Tue, Wed, Thu, Fri, Sat, and Sun. The 'Start' row shows checked boxes for Mon-Fri and an unchecked box for Saturday. The 'Stop' row shows checked boxes for Mon-Fri and an unchecked box for Saturday. The dropdown menu for the 'Start' time shows options from 00:00 to 07:00 UTC, with '08:00' highlighted.



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