

Workshop

Upgrade para Oracle Database 19c

DBA Brasil - 2023

Diamante



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A satellite map of South America is the central focus, with several company logos overlaid. Lines connect these logos to a man in the inset window. The logos include:

- Ipiranga**: A yellow box with a blue stylized 'I' logo and the word 'Ipiranga' in blue.
- IBM**: The classic blue and white striped logo.
- Capgemini**: The word 'Capgemini' in a blue, cursive font with a blue water drop icon.
- Oracle**: The word 'ORACLE' in a large, red, bold, sans-serif font.
- amdocs**: The word 'amdocs' in a grey, lowercase, sans-serif font, with the tagline 'embrace challenge e*perience success' in orange and green below it.
- enkitec**: The word 'enkitec' in a blue, lowercase, sans-serif font, with a stylized blue wave logo above it.
- accenture**: The word 'accenture' in a white, lowercase, sans-serif font, with a blue square background and the tagline 'High performance. Delivered.' below it.

A white information box is open over the Rio de Janeiro area, showing a small image of a beach and the text: 'Rio de Janeiro', 'State of Rio de Janeiro', and '22.91°S, 43.17°W'. The map interface includes a 'Google BR' logo at the bottom, a camera height of 8,740 km, and coordinates 27°07'40"S 22°19'02"W. Navigation controls like zoom in (+) and zoom out (-) are visible.

AGENDA

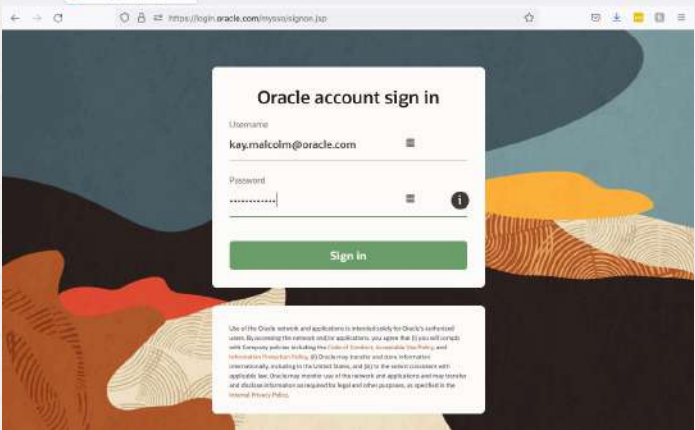
13:20	Intro and labs provisioning
13:35	Upgrade to Oracle Database 19c
14:05	Labs - part 1 & part 2
15:05	Wrap-up



Requirements for running this HOL



Laptop / Tablet



Oracle Account



Lab Provisioning

➔ Open a web browser

➔ Type in this link below to get access to the workshop page

<https://tinyurl.com/dbabrasil23hol>

Lab Provisioning

Click on the Green Button "Start"

LiveLabs Search Workshops and Sprints... Event Code mike.dietrich@oracle.com

Database World 2023 - London - HOL03

Share Start

Upgrading to Oracle Database 19c Copy link

Watch on YouTube

The Run on LiveLabs button will dynamically create resources in an Oracle-owned tenancy for you to use for free!
[Oracle account help](#) | [Oracle account signup](#)

Run on LiveLabs Sandbox

- Setup your Upgrade Compute Instance in the Cloud
- Load the database
- Capture and Preserve SQL
- Perform Auto Upgrade tasks
- Run an AWR Diff Report
- Analyze SQL
- Tune and manage SQL Plans
- Perform upgrades using the plugin method

Prerequisites

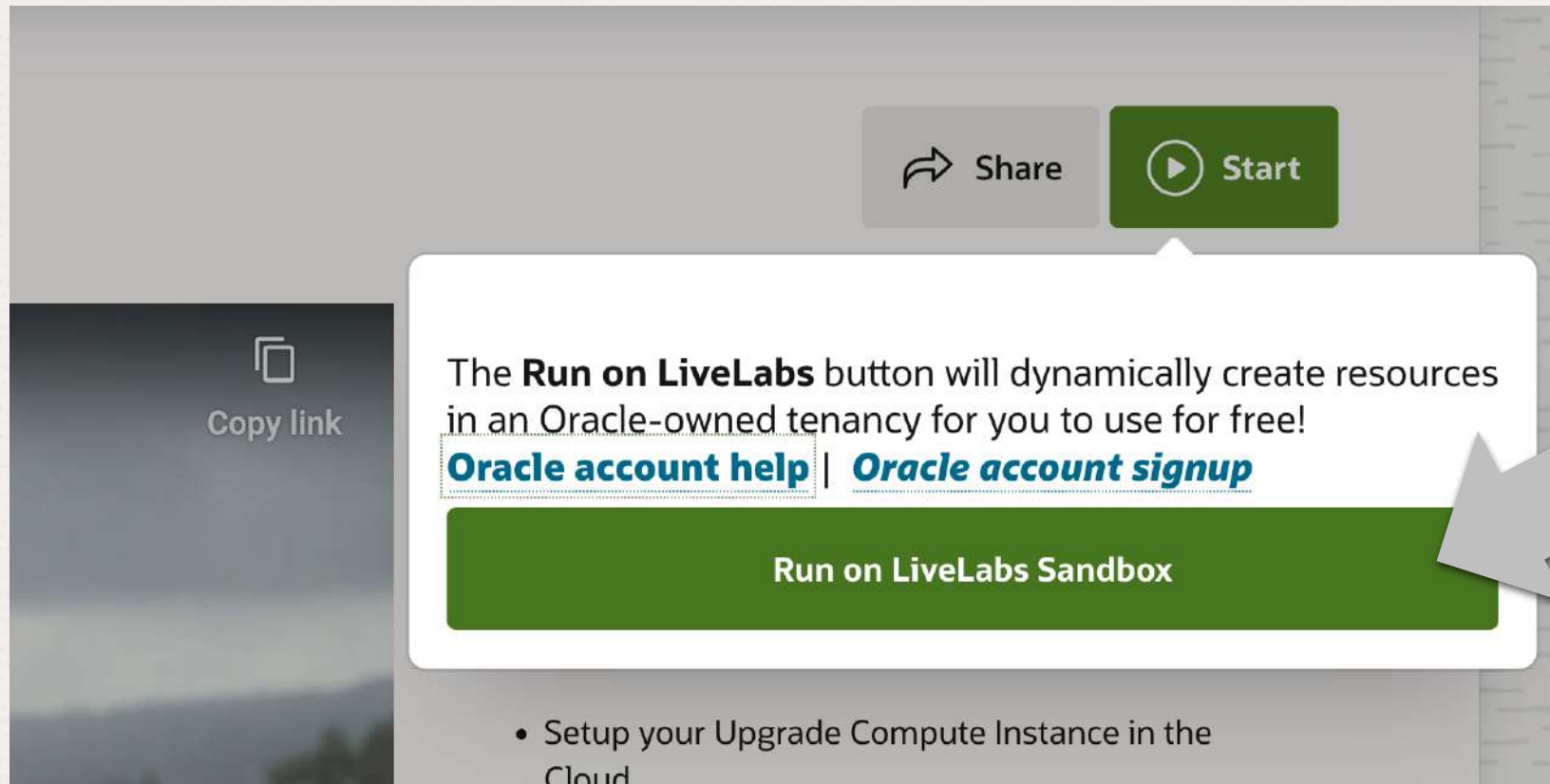
- Familiarity with Database is required
- Some understanding of cloud and database terms is helpful

Hitchhiker's Guide for Upgrading to Oracle Database 19c



Lab Provisioning

Click on the next Green Button "Run on LiveLabs Sandbox"



The screenshot shows a user interface for lab provisioning. At the top right, there are two buttons: a grey "Share" button with a right-pointing arrow icon and a green "Start" button with a play icon. Below these is a white callout box with a green border. The callout box contains the text: "The **Run on LiveLabs** button will dynamically create resources in an Oracle-owned tenancy for you to use for free!" followed by two links: "[Oracle account help](#) | [Oracle account signup](#)". Below the callout box is a large green button with the text "Run on LiveLabs Sandbox". A large grey arrow points from the right side of the image towards this green button. To the left of the callout box, there is a dark grey area with a copy icon and the text "Copy link". Below the callout box, there is a list item: "• Setup your Upgrade Compute Instance in the Cloud".

Copy link

Share Start

The **Run on LiveLabs** button will dynamically create resources in an Oracle-owned tenancy for you to use for free!
[Oracle account help](#) | [Oracle account signup](#)

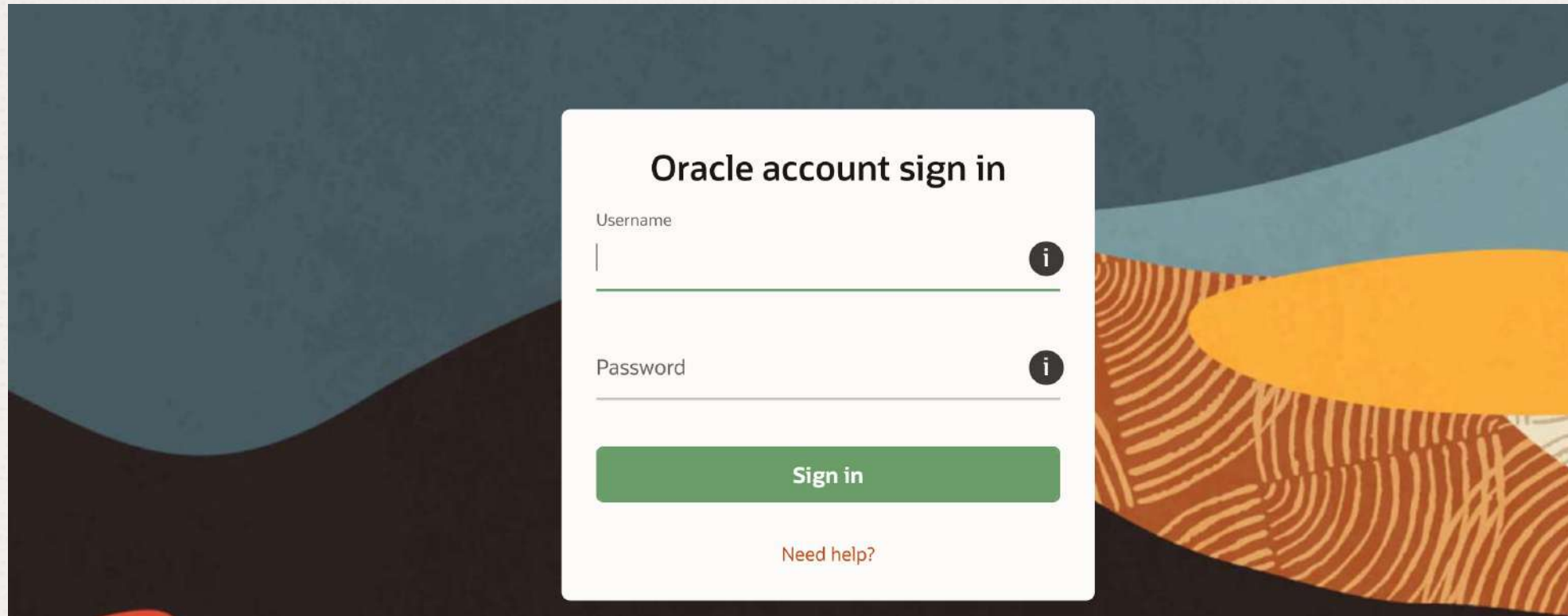
Run on LiveLabs Sandbox

- Setup your Upgrade Compute Instance in the Cloud



Lab Provisioning

Logon with your Oracle SSO user

A screenshot of the Oracle account sign in form. The form is white and centered on a dark blue background with abstract orange and yellow shapes. The form has a title "Oracle account sign in" in bold black text. Below the title are two input fields: "Username" and "Password". Each field has a small circular icon with the letter "i" to its right. Below the input fields is a green "Sign in" button. At the bottom of the form is a link that says "Need help?".

Oracle account sign in

Username i

Password i

Sign in

[Need help?](#)

- If you don't have an Oracle SSO User yet, please create one: <https://tinyurl.com/OracleSSO>



Lab Provisioning

Click on "Start Workshop Now", on the CONSENT checkbox, and then "Submit Reservation"

Reserve Workshop ✕

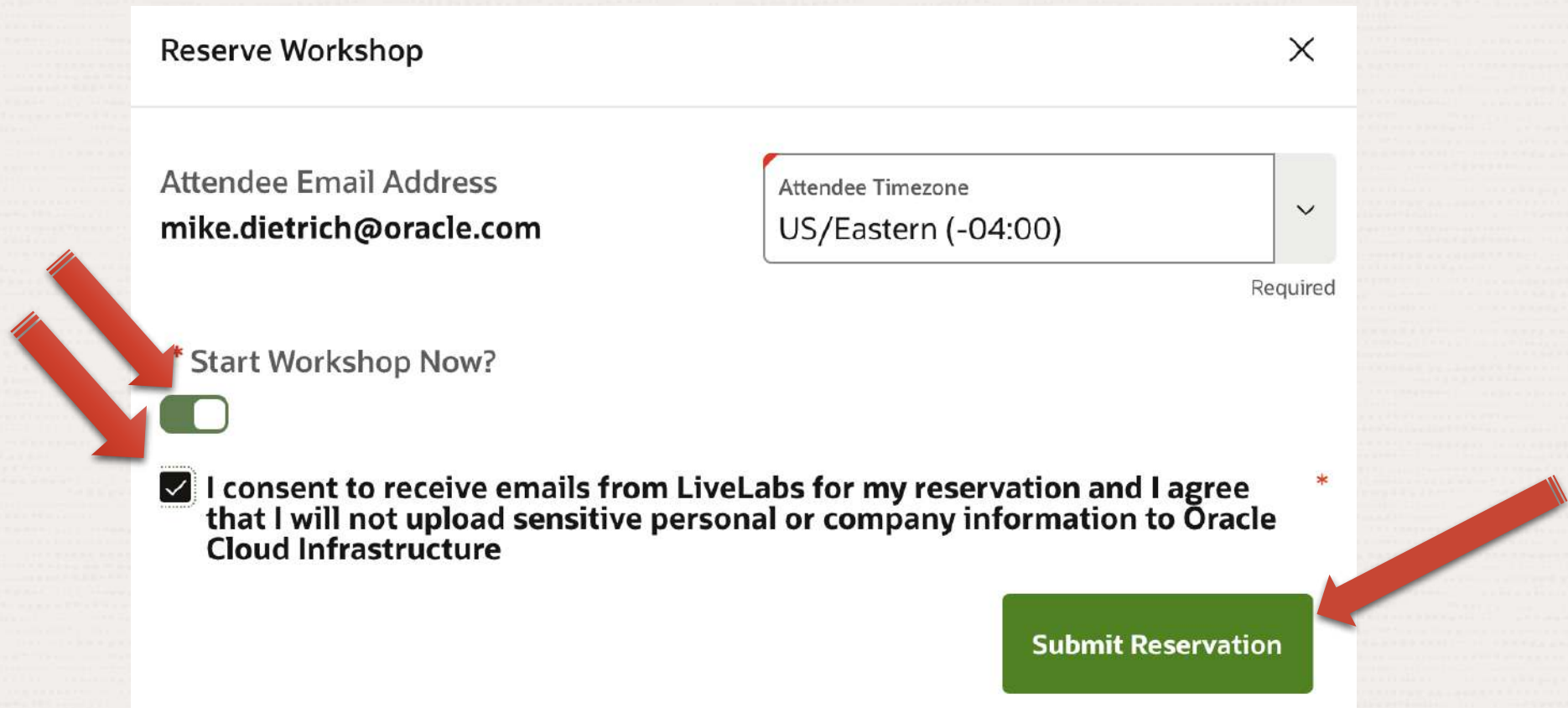
Attendee Email Address
mike.dietrich@oracle.com

Attendee Timezone
US/Eastern (-04:00) ▾
Required

*** Start Workshop Now?**

I consent to receive emails from LiveLabs for my reservation and I agree that I will not upload sensitive personal or company information to Oracle Cloud Infrastructure *

Submit Reservation



Lab Provisioning

This will take you to "My Reservations" – now we have 11 mins to explain the exercises

My Reservations

All your current workshop reservations are shown below. You can edit active or pending reservations, view workshop details, attend an available workshop, or delete a reservation.

Note: The status of your reservations will be emailed to you. Check your mail for any status updates.



Hitchhiker's Guide for Upgrading to Oracle Database 19c

Friday August 19th, 8:44am (08:44) US/Eastern

To access this page again click the user dropdown in the top right corner and select **My Reservations**



Status: Estimated remaining setup time: 10m 10s

1 - 1










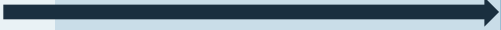





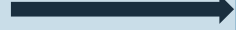

- You have completed:
 - 1. Lab Prepara Setup
 - 2. Lab Environment Setup
 - 3. Lab Initial Environment

Introduction into the Lab: Hitchhikers Guide to Oracle Database 19c

Upgrade to Oracle Database 19c and ensure performance stability



Lab Overview

	Database 11.2.0.4	Database 12.2	Database 19c
Upgrade to 19c AutoUpgrade	 UPGR 		
Convert to PDB AutoUpgrade			 UPGR     CDB2
Migrate to 19c Full transportable export/import	 FTEx 		 CDB2 / PDB2
Unplug-plug upgrade AutoUpgrade		 PDB3 	 CDB2
Upgrade to 19c AutoUpgrade		 DB12 	

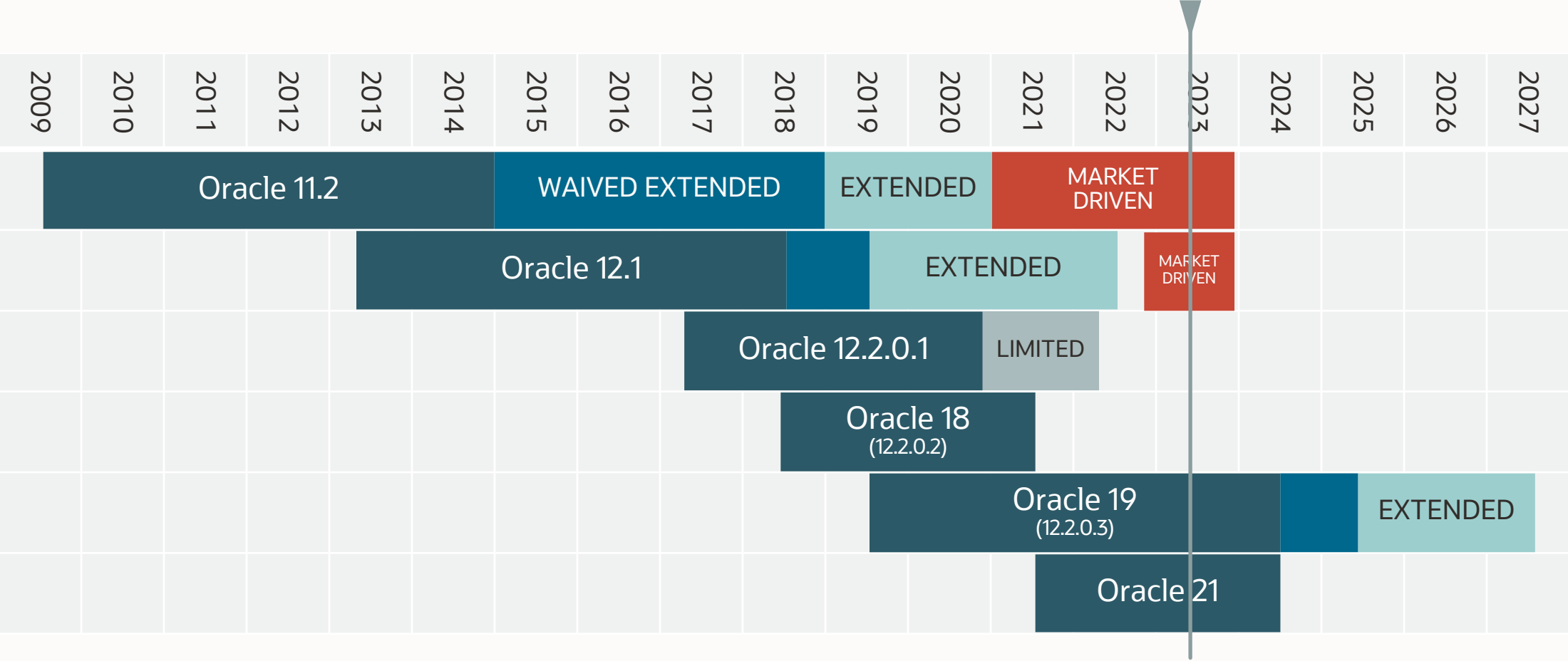


AutoUpgrade

Upgrade to Oracle Database 19c and ensure performance stability



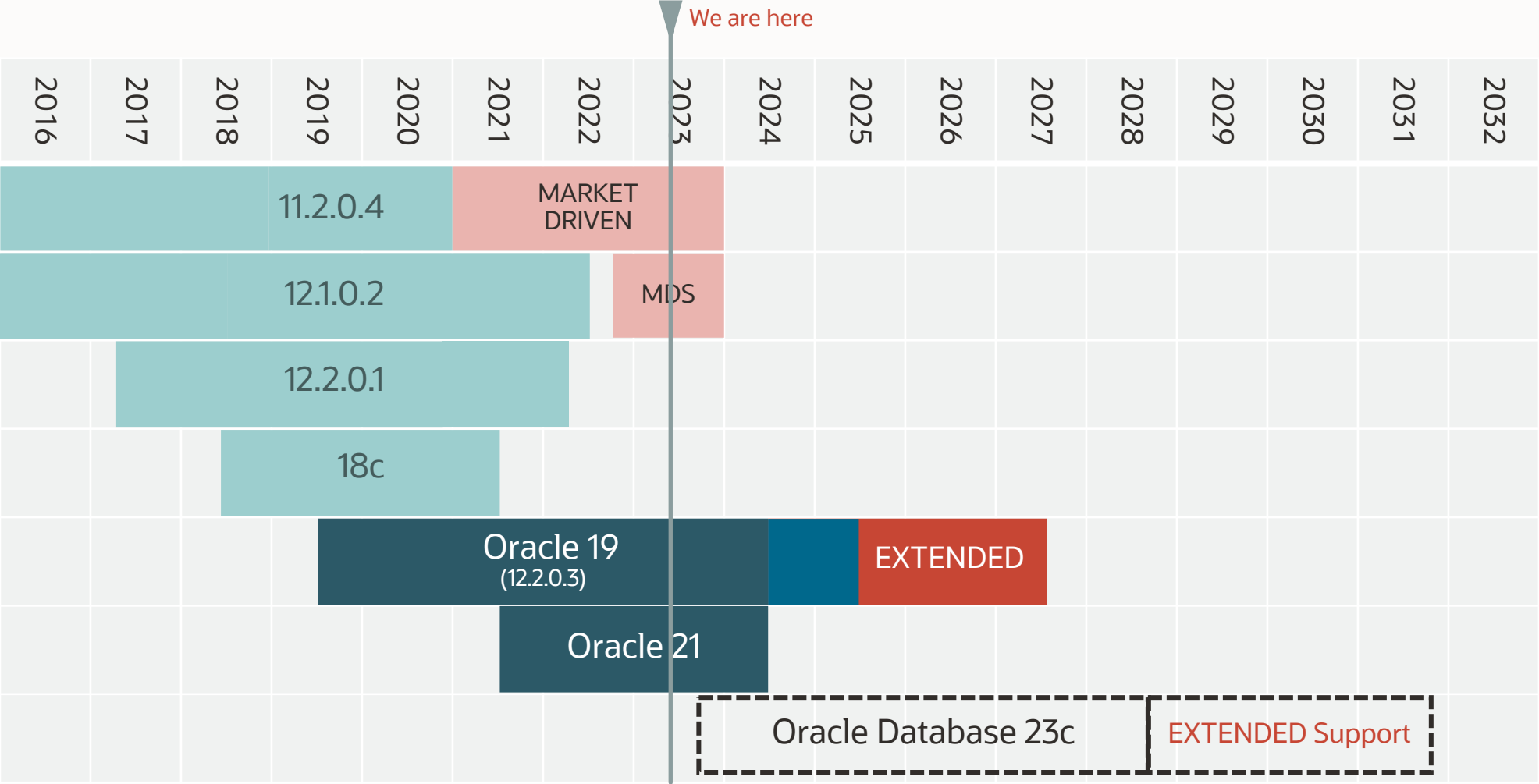
Lifetime Support Policy



Premier Support
 Waived Extended Support
 Paid Extended Support
 Market Driven Support
 Limited Error Correction



Release Strategy | Make Your Plan



Release Types



LONG TERM SUPPORT

5+ years of Premier Support followed by
3+ years of Extended Support



INNOVATION

2 years of Premier Support
No Extended Support

Innovation

Long Term Support

Extended

Innovation

Long Term Support

Extended



Move production databases from one
Long Term Support release to the next

Next Long Term Support release

Oracle Database 23c

Upgrade possible only from:

- Oracle Database 19c
- Oracle Database 21c

Do you want to upgrade?

Oracle Database 11.2.0.4

Oracle Database 12.1.0.2

Oracle Database 12.2.0.1

Oracle Database 18c

Oracle Database 11.2.0.4
Oracle Database 12.1.0.2
Oracle Database 12.2.0.1
Oracle Database 18c



Oracle Database 19c



Oracle Database 23c



Everybody must upgrade to Oracle Database 19c

- With or without Multitenant

--As of Oracle Database 19c you can create up to 3 PDBs without
--having the multitenant license. Applies to SE2 as well

```
SQL> alter system set max_pdb=3;
```




Have at least a few environments in Oracle Database 19c using Oracle Multitenant

Your path to successful database upgrades

1

Install Oracle Home including RU and MRP

MOS Note: 2118136.2

MOS Note: 555.1

MOS Note: 2781612.2

2

Download and deploy the most recent AutoUpgrade

MOS Note: 2485457.1

3

Collect performance information from current source and test thoroughly



AutoUpgrade | Overview



AutoUpgrade Overview



Supported source releases

- 11.2.0.4
- 12.1.0.2
- 12.2.0.1
- 18
- 19

All architectures (CDB and non-CDB)
All supported operating systems
All editions (SE2, EE)
All types (single instance and RAC)

AutoUpgrade Overview

START

1. DOWNLOAD

2. CONFIG

3. DEPLOY

SUCCESS

Always download the newest edition from [MOS Note: 2485457.1](#)

AutoUpgrade Overview



Shortest possible config text file

```
upg1.source_home=/u01/app/oracle/product/12.2.0.1  
upg1.target_home=/u01/app/oracle/product/19  
upg1.sid=CDB1
```



AutoUpgrade Overview

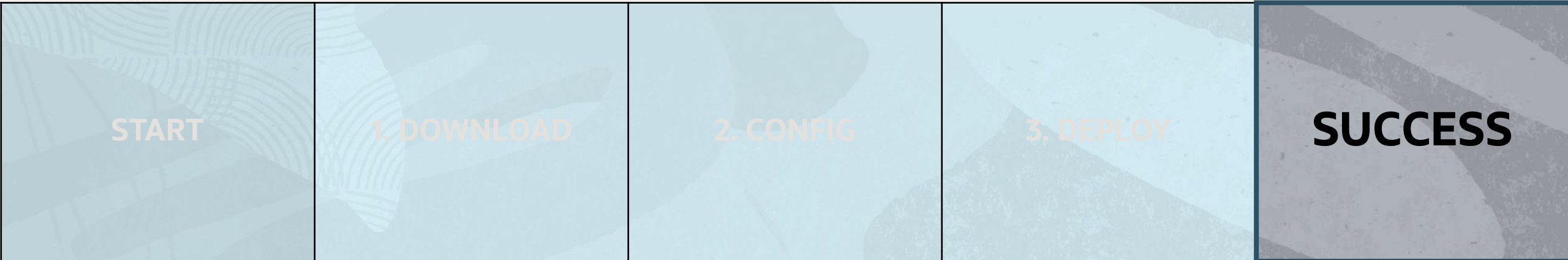


One command

```
$ java -jar autoupgrade.jar -config cdb1.cfg -mode deploy
```

Advanced monitoring and logging

AutoUpgrade Overview



Supported target releases

- 12.2.0.1
- 18
- 19
- 21
- Any future release



- You have completed
 - Lab Program Setup
 - Lab Environment Setup
 - Lab Initial Environment

Lab Exercises

Task 2: Generate an AWR snapshot

Lab Exercises

Upgrade to Oracle Database 19c and ensure performance stability

```
cd /home/oracle/19c
sqlplus / as sysdba
startup
```

```
SQL> select * from v$instance;
INSTANCE_NAME          Oracle Database 19c Enterprise Edition Release 19.0.0.0.0
                       Production
STARTUP TIME           2022-01-01 10:00:00.00
STATUS                 OPEN

```



Lab Exercises

Eleven units covering multiple use cases

1. Initialize Environment
2. Pre-upgrade: Generate AWR Snapshot
3. Pre-upgrade: Capture and Preserve SQL
4. Upgrade: AutoUpgrade
5. Post-Upgrade: AWR Compare Report
6. Post-Upgrade: SQL Performance Analyzer
7. Post-Upgrade: SQL Plan Management
8. Post-Upgrade: SQL Tuning Advisor
9. Use Case: Plugin UPGR into CDB2
10. Alternative: Transportable Export/Import
11. Use Case: Unplug Plug Upgrade



Let's get started

Upgrade to Oracle Database 19c and ensure performance stability

Lab Provisioning

Now you start - click "Launch Workshop"

My Reservations

All your current workshop reservations are shown below. You can edit active or pending reservations, view workshop details, attend an available workshop, or delete a reservation.

To access this page again click the user dropdown in the top right corner and select **My Reservations**

Note: The status of your reservations will be emailed to you. Check your mail for any status updates.



Hitchhiker's Guide for Upgrading to Oracle Database 19c

Friday August 19th, 8:44am (08:44) US/Eastern

Status: Available



Launch Workshop



Details



Remove

1-1

Lab Provisioning

Click on "View Login Info"

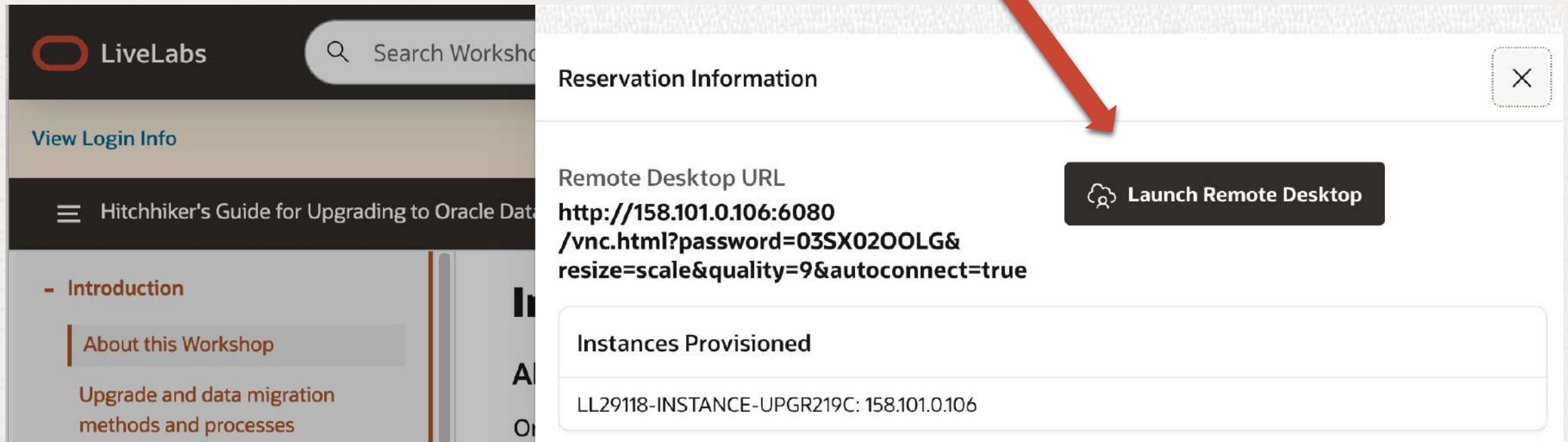


The screenshot shows the LiveLabs interface. At the top, there is a dark navigation bar with the LiveLabs logo, a search bar containing "Search Workshops and Sprints...", and user information for "mike.dietrich@oracle.com". Below this is a light-colored navigation bar with the "View Login Info" link highlighted in blue. To the right of this bar, a timer shows "Time Remaining: 33m 14s" and a link to "Extend Workshop Reservation". The main content area has a dark header with the title "Hitchhiker's Guide for Upgrading to Oracle Database 19c > Introduction" and a help icon. On the left, a sidebar lists navigation items: "Introduction", "About this Workshop" (highlighted), "Upgrade and data migration methods and processes", "Learn More", and "Acknowledgements". The main content area displays the "Introduction" section, starting with "About this Workshop" and a paragraph about Oracle Database 19c being a Long Term Support Release.



Lab Provisioning

Click on "Launch Remote Desktop"



The screenshot shows the LiveLabs interface. On the left, there is a navigation menu with the LiveLabs logo, a search bar, and a list of items including 'View Login Info', 'Hitchhiker's Guide for Upgrading to Oracle Data', and 'Introduction'. The 'Introduction' section is expanded, showing 'About this Workshop' and 'Upgrade and data migration methods and processes'. On the right, a 'Reservation Information' modal is open, displaying the 'Remote Desktop URL' as `http://158.101.0.106:6080/vnc.html?password=03SX02OOLG&resize=scale&quality=9&autoconnect=true`. Below the URL, it shows 'Instances Provisioned' as 'LL29118-INSTANCE-UPGR219C: 158.101.0.106'. A red arrow points to a black button labeled 'Launch Remote Desktop' with a cloud icon.



Lab Provisioning

Start with LAB #2 "Generate AWR Snapshot"

The screenshot displays the Oracle SQL Developer environment. On the left, a sidebar contains a list of lab steps for upgrading to Oracle Database 19c. A red arrow points to the second step, "Lab 2: Generate AWR Snapshot". The main window is split into two panes. The left pane shows the "Introduction" page for the "Upgrade to 19c" workshop, which includes a table of upgrade paths and a video thumbnail. The right pane shows the "Welcome Page" of Oracle SQL Developer, featuring a "Database Connection" section with a list of recent connections (FTEX, DB12, CDB2, UPGR) and a "Getting Started" section with links to tutorials and training resources.

Source Version	Target Version
11.2.0.4	19c
12.1.0.2	19c
12.2.0.1	19c
18c	19c



Lab Provisioning

You may want to close SQL Developer – then you have more space to work

The screenshot shows the Oracle Cloud Workshop interface. The title bar reads "Upgrade to 19c | Lab 2: Generate AWR Snapshot". The breadcrumb navigation shows "Upgrade to 19c > Generate AWR Snapshot".

Left Sidebar (Navigation):

- Get Started with your Workshop
- Google Chrome
- HammerDB
- Home
- sqldev
- Terminal
- Trash

Main Content Area:

- Lab 2: Generate AWR Snapshot**
 - Introduction
 - Task 1: Generate an AWR snapshot** (highlighted)
 - Task 2: Load driver script and start virtual Users
 - Task 3: Capture SQL, run workload and monitor
 - Task 4: Generate another AWR snapshot
 - Appendix 1: Additional information on HammerDB
 - Learn More
 - Acknowledgements
- Lab 3: Capture and Preserve SQL**
- Lab 4: AutoUpgrade**
- Lab 5: AWR Compare Report**

Task 1: Generate an AWR snapshot

You have completed:

- Lab: Prepare Setup
- Lab: Environment Setup
- Lab: Initialize Environment

Collapse All Tasks

1. Open a terminal session and set the environment to UPGR using `. upgr`, change directory to `/home/oracle/scripts` and startup the database in SQL*Plus:

```
. upgr
cd /home/oracle/scripts
sqlplus / as sysdba
startup
```

Copy

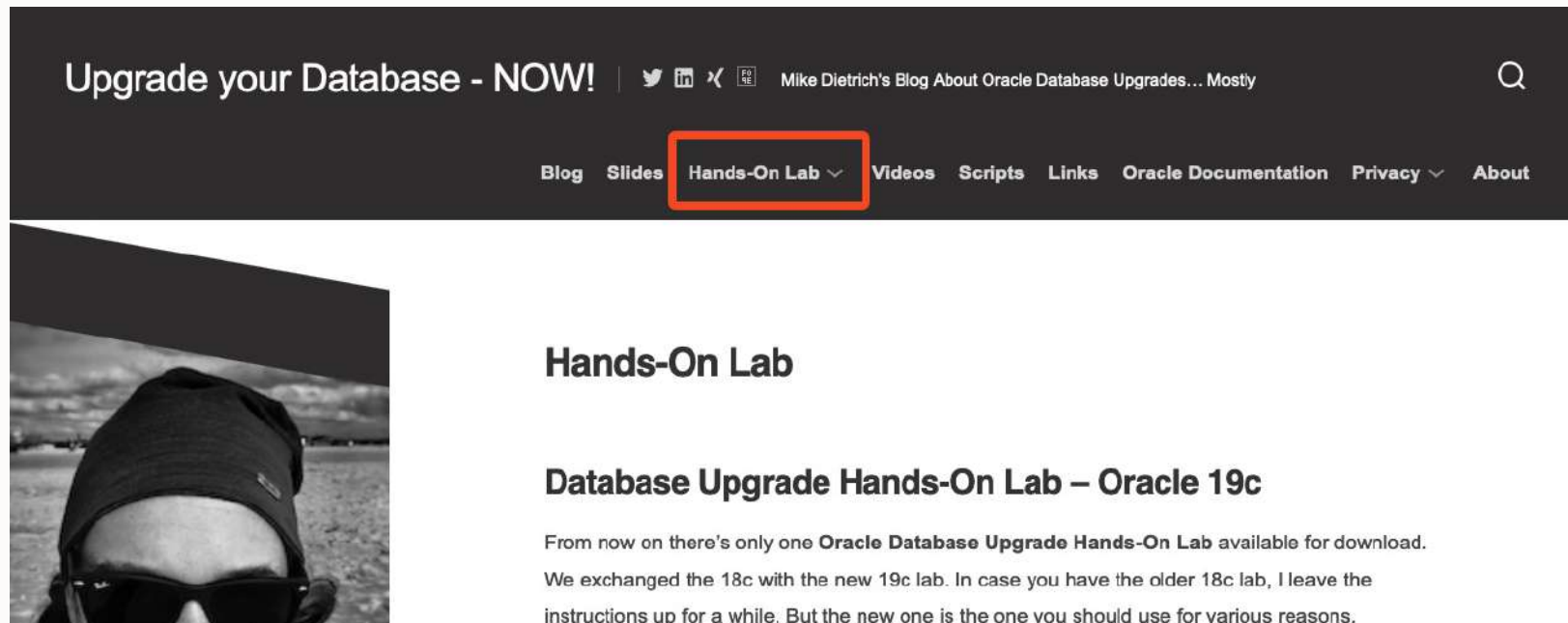
```
[oracle@hol ~]$ . upgr
[UPGR] oracle@hol:~
$ cd /home/oracle/scripts
[UPGR] oracle@hol:~/scripts
$ sqlplus / as sysdba
```



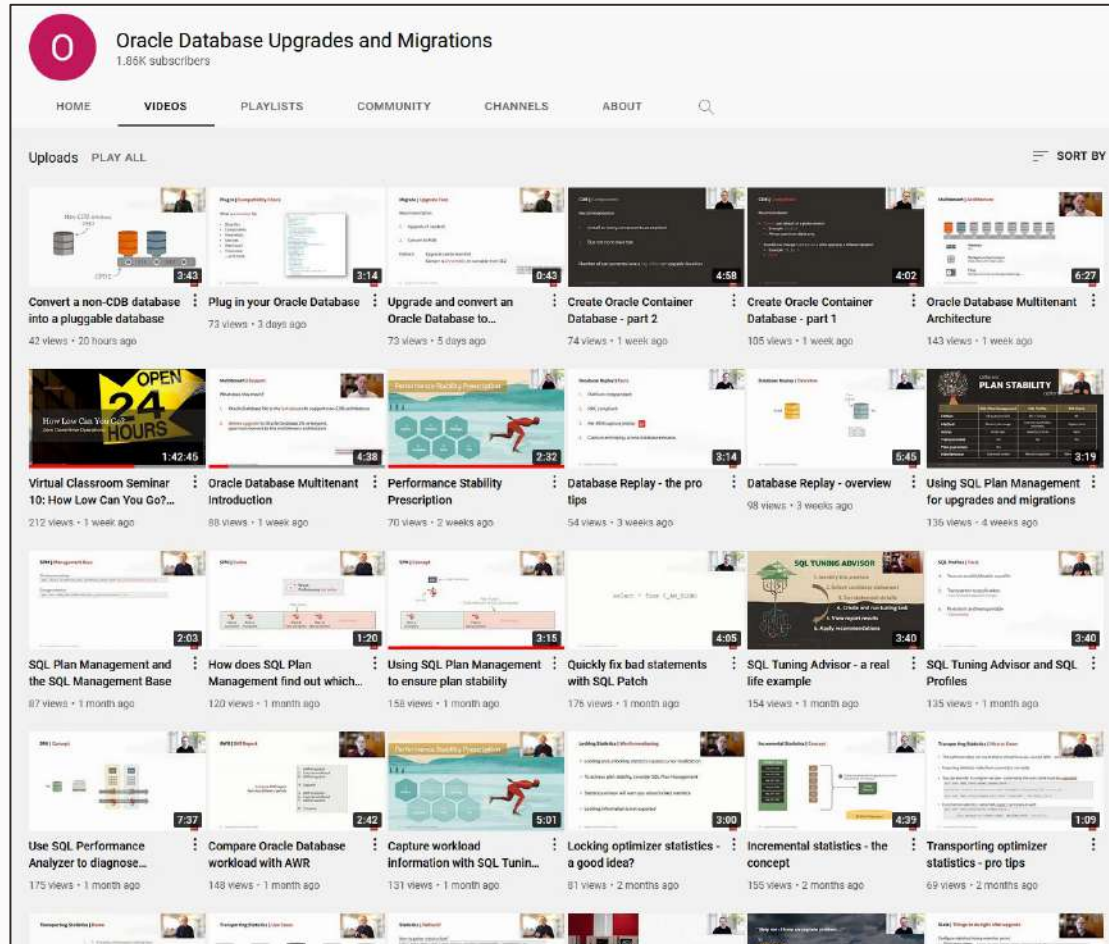
Hands-On Lab | Create Your Lab

On Mike's blog (<https://mikedietchde.com>) get

- the lab as Virtual Box image
- the instructions



YouTube | Oracle Database Upgrades and Migrations



[Link](#)

- 300+ videos
- New videos every week
- No marketing
- No buzzword
- All tech





From SR to Patch

Insights into the Oracle Database Development Process

June 22, 2023 – 16:00 CEST



THANK
YOU

