

# Performing Application Maintenance Tasks

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# Objectives

By the end of this lecture, you should be able to:

- Describe the Application Maintenance tasks
- Perform application installation, upgrade, applying patches, and uninstallation.



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# About Application Maintenance

- Application maintenance: installing, upgrading, patching, or uninstalling an application.

1. Execute:

```
ALTER PLUGGABLE DATABASE APPLICATION  
BEGIN INSTALL | UPGRADE | PATCH | UNINSTALL
```

2. Execute statements to alter the application

3. End the process:

```
ALTER PLUGGABLE DATABASE APPLICATION  
END INSTALL | UPGRADE | PATCH | UNINSTALL
```



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# About Application Installation

- Initial creation of a master application definition
- When you create an application:
  - Application name
  - Application version



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# Application Installation Example

1. Connect to the application root
2. Create the application:

```
ALTER PLUGGABLE DATABASE APPLICATION sales_app  
  BEGIN INSTALL '1.0';
```

3. Create the common objects
4. End the application installation

```
ALTER PLUGGABLE DATABASE APPLICATION sales_app  
  END INSTALL '1.0';
```



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# About Application Upgrade

- Is a major change to an installed application
- Some PDB might still operate using the old version



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# Application Upgrade Example

1. Connect to the application root
2. Begin the upgrade in the application:

```
ALTER PLUGGABLE DATABASE APPLICATION sales_app  
  BEGIN UPGRADE '1.0' to '2.0';
```

3. Create or alter the common objects
4. End the application installation

```
ALTER PLUGGABLE DATABASE APPLICATION sales_app  
  END UPGRADE TO '2.0';
```

5. Synchronize the application PDBs



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# About Application Patch

- Is a minor change to an application
- Destructive operations are not permitted



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# Applying an Application Patch Example

1. Connect to the application root
2. Begin the patch in the application:

```
ALTER PLUGGABLE DATABASE APPLICATION sales_app  
  BEGIN PATCH 101 MINIMUM VERSION '2.0';
```

3. Apply the patch modifications
4. End the application patch

```
ALTER PLUGGABLE DATABASE APPLICATION sales_app  
  END PATCH 101;
```



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# About Uninstalling Applications

- An application can be uninstalled only from application root
- Associated PDBs get affected only after synchronization
- No object will be removed
- Destructive operations allowed
- The application will be marked as “UNINSTALLED”
- An application root clone will be created



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# Uninstalling an Application Example

1. Connect to the application root
2. Begin uninstalling the application:

```
ALTER PLUGGABLE DATABASE APPLICATION sales_app  
BEGIN UNINSTALL;
```

3. Drop the application objects
4. End the application patch

```
ALTER PLUGGABLE DATABASE APPLICATION sales_app  
END UNINSTALL;
```



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# Obtain Information about the Applications

View	Description
<b>DBA_APPLICATIONS</b>	Shows the name, the latest version, and the status of each user-created application in the application container.
<b>DBA_APP_PDB_STATUS</b>	Views information about applications in all of the application PDBs in the current application container.
<b>DBA_APP_STATEMENTS</b>	Provides information about SQL statements issued during application installation, upgrade, and patch operations.
<b>DBA_APP_VERSIONS</b>	Provides information about the versions for applications in an application container.
<b>DBA_APP_PATCHES</b>	Provides information about the patches for applications in an application container.
<b>DBA_APP_ERRORS</b>	provides the errors raised when an application PDB synchronizes with an application in the application root.

# An opinion about using Application Containers

- An important development in Oracle multitenant architecture for the next-generation database cloud
- Not mature enough at this stage to utilize it for a production system



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# Summary

In this lecture, you should have learnt how to:

- Describe the Application Maintenance tasks
- Perform application installation, upgrade, applying patches, and uninstallation.



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