

Applaud Solutions Product Installation

Whitepaper

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Contents

1.	INSTALLATION OVERVIEW	7
	Product Essentials	7
	Product Media	7
	Resource Requirements	8
	Deployment Steps	8
	Downtime	9
	Timing	9
	Pre-requisites	9
	Sizing.....	10
2.	PRODUCT ARCHITECTURE	11
	Patch Zip File	11
	Patch Readme	12
	Automated Installation.....	12
	Multiple Application Tier File Systems.....	12
	Patch Restart	12
	Log Files.....	13
	Patch Metadata	13

One-time Install	13
Applaud Metadata	13
Custom Schema	14
Applaud Solutions Product Top	14
Java Top	14
Other Product Tops.....	15
Custom Application.....	15
Copy-only Files.....	15
Tables	15
Synonyms	15
Views.....	15
SQL and PL/SQL	15
Data Files	16
OA Framework Pages and Regions.....	16
XML Publisher	16
HRMS API User Hooks.....	16
Manual Steps.....	17
Business Group Install.....	17

3. INSTALLATION PROCEDURES 18

Before you Start	18
Launching Installation.....	19
During Installation	19
Multiple Application Tier File Systems.....	20
Post-requisites.....	20
30-day Trial and Activation	21

Configuration..... 21

4. TROUBLESHOOTING 23

\$FNDNAM not set 23

No Write Permissions to \$APPL_TOP 23

Patch Log File Not Created..... 23

No Terminal Feedback after Quitting Installer When Prompted for Password..... 24

Preface

Intended Audience

Welcome to the *Applaud Solutions Product Installation Whitepaper*.

This whitepaper provides Database Administrators and Technical Experts with detailed information about Applaud Solution Products and how they integrate with your existing Oracle E-Business Suite environments.

This guide assumes you have a working knowledge of the following:

- Oracle Applications database administration
- The principles and customary practices of your business area
- Computer desktop application usage and terminology
- The Oracle E-Business Suite user interfaces
- Setting up menus, functions, request sets and other common Oracle E-Business Suite features

To learn more about the above, read the Oracle Applications User's Guide. If you have never used Oracle Applications or are not comfortable with the above concepts, we suggest you engage your consultancy partner to assist you in your implementation.

See Related Guides for more product information.

Related Guides

[Applaud Solutions Installation Guide](#)

This guide gives a step by step guide to your Database Administration team, which will allow them to install any Applaud Solutions product on your Oracle Application installations.

1. Installation Overview

Product Essentials

Applaud Solution Products integrate seamlessly with your existing Oracle E-Business environment, allowing you to protect your existing investment whilst delivering value-added solutions.

All our products are subject to strict standards, extensive testing and controlled release. This allows our products to integrate seamlessly without the risk of impacting your existing Oracle E-Business Suite implementation.

All of our products:

- Comply with Oracle's recommendations on extending Oracle Applications and delivering Custom Applications. Particularly, they follow the guidelines provided in the *Oracle Applications Developer's Guide*.
- Use extensions, not customizations.
- Use Oracle-provided APIs to load data into standard Oracle E-Business Suite tables.
- Persist following the application of Oracle patches and upgrades.
- Automate most of the installation and configuration, enabling rapid deployment.
- Come with a 30-day fully functional trial and built-in product activation.

Our products **do not**:

- Change Oracle-delivered code, or any existing customer code
- Violate your existing support agreement with Oracle

Product Media

All products and updates are delivered in the form of a software download. These are bundled into an Applaud Solutions "Patch", which is a zip file that may deliver any combination of new products, bug-fixes, updates and upgrades.

Patches are made available to you for download directly from our website and installation can take place once you are in receipt of an Applaud Solutions Patch.

Resource Requirements

To deploy an Applaud Solutions product, you are likely to require the following resources:

- **Database Administrator.** Required to install the patch, perform any manual steps and engage functional resources with any stated post-requisites steps.
- **Functional or Super User.** Functional or Super User resources will perform any configuration steps. They may, if needed, perform advanced configuration such as Fast Formula. Typically a basic configuration is adequate and for this the resource just needs to be proficient in Oracle Applications. The configuration steps are detailed clearly in each product's Implementation Guide.
- **Technical.** Some Applaud Solution products deliver published APIs and some are extensible through other means; if you wish to expand the delivered functionality you may require functional and technical resources to design, build and integrate.
- **Other.** Depending on your internal structures, you may require other ad hoc resources to perform additional tasks such as project planning, coordination with 3rd parties, change management, communications, documentation or training.

Deployment Steps

Once you are in receipt of an Applaud Solutions patch, you are able to deploy it following the 3 steps below. In addition to these steps, you will usually perform other tasks in parallel such as project management and internal communications.

1. **Patch Installation.** Patch Installation is automated and is typically performed by your Database Administrator. Some post-requisites may be performed by your Functional Super Users.
2. **Activation (only required for new products).** Applaud Products require one-time activation. The activation process is designed to be as simple and easy as possible and takes just a few minutes. Once an Applaud product is purchased and installed, you supply our Activation Team with your serial numbers (one for each database) and our Activation Team will then provide you with Activation Codes. Activation is typically performed by a Database Administrator or Functional Super User.
3. **Configuration (only required for new products and some updates).** Much of the configuration is automated during installation. Most products have an 'enabler' configuration step so that you can control when Applaud products are enabled. Configuration is typically performed by a Functional Super User.

These steps will be repeated for each database. For example, if you have a DEV, TEST and PROD environment you will repeat these steps 3 times.

Downtime

Installation has been built to reduce downtime to a minimum by:

- Automating as much of the installation as possible
- Allowing patch installation without bringing down any Database or Application Tier services (see note below)
- Only requiring a restart of the Application Tier services when necessary (eg. when delivering new java objects)
- Automatically recompiling invalid objects at the end of installation
- Moving some installation tasks to online installation tasks that are executed by concurrent programs

Note: whilst patching can be performed without bringing down any services, you should prevent your users from using existing live Applaud Solution products when applying new Applaud Solution products, bug-fixes, updates and upgrades. Failing to do this is likely to result in your users receiving errors during product usage.

Timing

Applaud Products are designed to allow rapid deployment. The actual time taken to deploy each product will vary according to the size of the patch and the complexity of your chosen configuration.

The follow metrics are designed to give you a feel for timings on one UNIX or Linux system with basic configuration and all pre-requisites satisfied. These are guidelines only; the actual time it takes may vary substantially.

Step	Includes	Timing
Installation	Downloading of patch zip file, installation, manual steps and post-install steps	< 30 minutes effort
Activation	Extracting and sending a serial number to the Applaud Activation Team; receiving an Activation Code for the one product.	< 30 minutes effort (elapsed time around 1 day)
Configuration	Up to 3 simple configuration steps performed by a user that already has the required responsibilities	< 30 minutes effort

Pre-requisites

Applaud Solution Products integrate seamlessly with your existing Oracle E-Business Suite implementation and do not have any additional pre-requisites other than those already stipulated by Oracle. Oracle E-Business Suite pre-requisites are documented in relevant Oracle Applications Installation and Upgrade Guides and supported update notes.

To install an Applaud Solution Product, you must have the Oracle E-Business Suite correctly installed on an Oracle-supported platform. The minimum supported releases are:

- Release 11.5.10.2 + 11i.HR_PF.K (patch 3500000) or above
- Release 12.0.0 (including 12.1.1) or above

Please check the Pre-requisites section of the corresponding product Installation Guide for additional Oracle patch pre-requisites.

The ORACLE database must be at 9i Release 2 or above.

Sizing

Applaud Solution products use the same technology and architecture as standard Oracle E-Business Suite applications, such as PL/SQL and the Oracle Applications Framework (OAF). This allows you to enjoy Applaud Solution products without any substantial investment on extra hardware or network infrastructure.

An Applaud Solution patch zip file is typically small in size, often around 1Mb or less. The files in the patch zip will be copied (uncompressed) to each of your Application Tier file systems on each environment. For example, if you have a DEV, TEST and PROD environment and each environment uses a shared Application Tier file system, the files in the patch will be copied to 3 different locations. If your 3 environments each had 2 Application Tier file systems, the files would be copied to 6 different locations. The installation process will also copy the patch log files to each Application Tier file system.

Most products will deliver new tables. Some of these are setup tables, some are transactional and some are for temporary use. In general the setup tables will remain small in size. The size of transactional and temporary tables will vary according to your existing setup and volume of transactions. Some may grow large in size (millions of rows) so it is recommended you consider additional disk allowances where this may apply. If unsure, consult your local Applaud Solutions Support representative or who can advice on likely volumes.

Other objects are also loaded into the database, such as PL/SQL objects, FNDLOAD seed data and MDS OA Framework components. These will consume few resources, typically equivalent to a small to medium-sized Oracle E-Business Suite patch.

2. Product Architecture

This section explains the architecture of Applaud Solution Products and how they integrate into your existing Oracle E-Business Suite environment.

Patch Zip File

The patch zip file, which may contain any combination of new products, bug-fixes, updates or upgrades, will be named as follows:

```
xxas<product-code>-v<version-number>.zip
```

For example:

```
xxasabc-v000001.zip
```

When unzipped, the patch will contain a structure similar to the following fictional example:

```
xxasabc-v000001\  
  
  README.txt  
  install.sh  
  
  metadata\  
    xxas_com_manifest.txt  
    xxas_com_prereq.txt  
  
  XXAS_TOP\  
    bin\  
      abc.sh  
      xyz.sh  
      <etc>  
    sql\  
      xxas_com_abc.sql  
      xxas_com_pkg.pkh  
      xxas_com_pkg.pkb  
      <etc>  
    import\  
      xxas_com_abc.ldt  
      xxas_com_xyz.ldt  
      <etc>  
    txt\  
      xxas_com_abc.txt  
      <etc>  
    mds\abc\webui\  
      OaFrameworkPG.xml  
      <etc>
```

```
<etc>\  
  
JAVA_TOP\  
    xxas\oracle\apps\xxas\  
<etc>
```

The patch zip file can be unloaded into a directory of your choice, so long as it has access to your Oracle E-Business Suite Application Tier file system.

Patch Readme

The Patch Readme contains installation instructions for each patch. The README file is located directly under the patch directory and is called **README.txt**.

Automated Installation

For UNIX and Linux-based systems, a shell script (/bin/sh) is provided that will automate installation. The script is located directly under the patch directory and is called **install.sh**.

This shell script uses a combination of other shell scripts (located in the patch's XXAS_TOP/bin directory) and SQL scripts (located in the patch's XXAS_TOP/sql directory) to automate installation. The shell scripts use the same utilities that are specified as pre-requisites to installing Oracle E-Business Suite (such as unzip and awk).

During installation, you will be prompted for any additional information as required, such as the APPS password. **Any passwords that you enter are only used during that install session and are not stored anywhere or written to log files.**

Windows installations are performed manually; exact steps are provided in each Product's Installation Guide.

Multiple Application Tier File Systems

If your Application Tier has several nodes with their own file system, rather than a single file system shared across all nodes, you will need to repeat installation on each file system. The files will not be reapplied to the database; they will simply be copied to the relevant Product Tops.

To achieve this you simply re-run the install.sh on each file system. You will be informed that the patch has already been installed and will be offered the choice of continuing or cancelling.

Patch Restart

Applaud Solution patches have built in restart capabilities in the event of patch failure, such as a file that failed to apply or a power cut. The next time you launch

installation for that patch it will automatically continue with installation from the point of failure.

Log Files

Each patch session will create a log file in your current directory. As described in the README for each patch, it is recommended that you change to the directory of the install.sh script before launching installation so that the patch log files are all contained in one place. Any log files created by Oracle processes, such as FNDLOAD, will also be created in the current directory.

You are alerted to the log file for each patch session. In the event of failure of installation problems, Applaud Solutions may request the patch log files to help diagnose any problems.

Upon successful installation, all patch log files will be copied to the patch directory of the XXAS_TOP Product Top.

Patch Metadata

The patch's metadata directory contains files that describe the contents of the patch. The **xxas_com_manifest.txt** file lists most files in the patch (there are some exceptions, such as one-time install files) and the **xxas_com_prereq.txt** file describes any pre-requisite Oracle E-Business or Applaud Solution patches.

One-time Install

"One-time Installation" will launch the first time any Applaud Solutions patch is installed onto an Oracle E-Business Suite database. The process only needs to be completed once per database.

One-time installation will:

- Create a new custom schema (strongly recommended) or alternatively use an existing custom schema
- Setup the Applaud Solutions custom Product Top
- Create and populate the custom metadata tables into the custom schema
- Register the Applaud Solutions Custom Application
- Load the 'Applaud Administrator' responsibility, menu and concurrent programs

Applaud Metadata

Similar to Oracle's adpatch utility, Applaud loads patch and file version information into a number of custom metadata tables. This improves patch application time, enables restart capabilities, improves support diagnostic and prevents subsequent patches from applying older versions of files.

Custom Schema

One-time Installation strongly recommends that a new XXAS custom schema is created. This:

- Segregates Applaud Solution products from any existing Oracle and custom objects
- Helps preserve Applaud Solution products during upgrades
- Reduces the risk of accidental damage to Applaud Solution products

You will be prompted to enter a new password for the XXAS schema. It is strongly recommended that you use a secure password and change the password regularly. You will also be prompted for the existing SYSTEM password, which will be needed to create the custom schema.

The XXAS schema will be created using the Oracle Applications Tablespace Model (OATM), which radically improves tablespace management.

If you opt to use your own existing custom schema, you will be prompted for the name and password of the existing custom schema. In line with Oracle Application Development Recommendations, you cannot use a delivered ORACLE schema (such as HR, or GL); the name of the existing custom schema must start with XX.

Applaud Solutions Product Top

During One-time Installation, Applaud Solutions will create a new custom Product Top. The Product Top is called XXAS_TOP and the physical directory is located as follows:

```
$APPL_TOP/xxas/1.0.1
```

Installation will guide you through the manual steps to add the \$XXAS_TOP environment variable to a custom environment file.

During installation, many of the patch files will be copied to directories under the XXAS_TOP Product Top, such as SQL and PL/SQL scripts. It will also copy the patch manifest file (xxas_com_manifest.txt) and any generated log files to the patch directory.

Java Top

In accordance with Oracle Application Development Guides, java classes and XML files for Oracle Applications Framework (OAF) components will be copied to an xxas directory under JAVA_TOP. For example:

```
$JAVA_TOP/xxas/oracle/apps/xxas/abc/server/ModuleAbcAM.xml  
$JAVA_TOP/xxas/oracle/apps/xxas/abc/server/ModuleAbcAMImpl.class
```

Other Product Tops

Some products may copy files to other product tops. For example, the Self Service Absence Calendar creates xxas_absscal.xss in \$OA_HTML/cabo/styles/

Custom Application

'Applaud Solutions' (XXAS) will be registered as a Custom Application. In accordance with Oracle Applications Development Standards, this custom application will own all Applaud Solutions seed data such as concurrent programs, messages and lookups.

Copy-only Files

Some files do not need to be applied to the database, such as installation-only files and Java classes. These are simply copied to the required Product Top directory.

Tables

New tables are delivered in SQLPlus scripts and are installed in the selected Custom Schema (typically XXAS). Installation will request the Custom Schema password, which is required to login and create the tables.

The APPS account is granted all privileges (GRANT ALL) to each table.

Synonyms

Synonyms are delivered in SQLPlus scripts and are created in the APPS schema for each custom table. The synonyms have the same name as the table.

Views

As per Oracle Application Development Guidelines, views are created in the APPS schema. Views are delivered in SQLPlus scripts.

SQL and PL/SQL

SQL and PL/SQL scripts might perform any combination of the following:

- Load PL/SQL package specifications
- Load PL/SQL package bodies
- Run PL/SQL anonymous blocks that might call package procedures, functions or APIs
- Run SQL DML statements

These scripts run as the APPS user.

Data Files

Data files are loader files (typically with a .ldt file extension) that are loaded into Oracle E-Business Suite using the FNDLOAD executable. These load various types of Applaud Solutions seed data, the most common of which are:

- Custom Applications
- Concurrent Programs
- Descriptive and Key Flexfields
- Forms Personalization
- Lookups
- Menus and Functions
- Messages
- Profile Options
- Request Groups
- Request Sets
- Responsibilities
- XML Publisher Definitions

Log files are created in the current working directory for each Data File loaded.

OA Framework Pages and Regions

Applaud Solution products deliver XML files built using OA Framework. These files must be loaded into Oracle's MetaData Services (MDS) repository using the Java utility `oracle.jrad.tools.xml.importer.XMLImporter`.

XML Publisher

XML Publisher files, which include both Data Definitions and Data Templates, are loaded using the Java utility `oracle.apps.xdo.oa.util.XDOLoader`.

HRMS API User Hooks

Applaud Solutions uses Oracle-provided APIs to load data into standard Oracle tables. It also makes use of HRMS API User Hooks to add additional functionality.

API User Hooks are delivered in SQL Scripts and follow Oracle HRMS API Guidelines when delivering new User Hooks.

Manual Steps

A small number of installation steps cannot be automated and must be completed as manual steps. For example, One-time Install will prompt you to set the \$XXAS_TOP environment variable in your custom environment file.

At the appropriate point during installation, you will be prompted to complete any manual steps. These will be a detailed set of on-screen instructions that must be completed before continuing with patch installation.

Do not interrupt the current patch session; these steps should be performed in a separate session.

Business Group Install

Many of Applaud Solution Products integrate with Oracle HRMS applications and other applications that use the Business Group concept. These products automate as much of the configuration as possible, which allows for rapid deployment.

Business Group-specific installation and configuration is performed by launching a concurrent request. The concurrent request is called 'Install Business Group Data' and is available from the 'Applaud Administrator' responsibility.

When running this concurrent request, you specify the Patch to install and the Business Group into which the configuration will be loaded. This gives you complete flexibility to roll out each Business Group as and when required. This also reduces downtime, by bringing this part of installation online.

3. Installation Procedures

This section describes how to install an Applaud Solutions patch and describes the patch installation process in more detail.

Before you Start

Before installation is started, please ensure that you have reviewed the *Pre-requisites* section of *Chapter 1*.

To start installation, you will need Database Administrator privileges, including:

- Access to your APPLMGR user
- Access to the Application Tier file systems
- SYSTEM password (this is required only once)
- APPS password
- Custom Schema password (if it already exists)

You will also need the Patch zip file, which you should copy to a location of your choice. This is typically a staging area such as /d01/patch. This location must have access to the Application Tier file system onto which you wish to install.

Launching Installation

To start installation on a UNIX or Linux system you can follow the steps provided in the Patch Readme, which contain specific instructions for that patch (see *Patch Readme* in *Chapter 2* for information about Readmes). Alternatively, you can follow the below generic instructions.

Note: To install on a Windows system, following the installation steps provided in the Product's Installation Guide.

1. As the APPLMGR user, login to the Application Tier (APPL_TOP) by sourcing the environment file. If you have multiple Application Tier file systems, apply this patch to the primary node first.
2. If the Database Tier is not already running, start it. The Application Tier can continue to run, although you should review the advice provided in the *Downtime* section of *Chapter 1*.
3. Unzip the patch to your chosen location:

```
$ unzip <patch zip file>
```

This will create a subdirectory called <patch name>.

4. 3. Start the Installer:

```
$ cd <patch name>  
$ ./install.sh
```

The Installer will collect any additional information, such as the APPS password, and guide you through patch installation. Follow any instructions exactly as provided and do not skip any steps.

If instructed to perform manual steps, perform them when stated rather than deferring to a later point.

Patch installation typically takes several minutes to complete. Please be patient and do not interrupt or close the patch session.

During Installation

Applaud Solution products install automatically using the Applaud Installer. The Installer:

- Checks the Application Tier environment for key variables such as \$APPL_TOP and \$FNDNAM.
- Requests the APPS password and verifies the logon
- Sets patch session environment variables
- Creates a patch session log file
- Verifies write permissions to the \$APPL_TOP

- Confirms that FNDLOAD is available
- Verifies the ORACLE Database version is at least 9i Release 2
- Verifies any Oracle E-Business Suite Patch Pre-requisites
- Sets the JDBC Connect String for Java utilities
- Determines the current installation status and confirms installation with the user
- Retrieves the custom schema or, if this is the first installation, prompts the user for their choice of custom schema
- Performs One-time Installation (first installation only)
- Checks that the patch source files exist and identifies any post-requisite steps
- Registers that the patch has started
- Applies each file in the patch:
 - Copies each file to the appropriate Product Top directory
 - Applies each file to the database (if needed)
 - Updates the database with the Applaud Solutions metadata
- Prompts the user to perform any manual steps
- Recompiles invalid objects
- Copies the patch log files to the XXAS_TOP Product Top patch directory
- Registers that the patch has completed
- Confirms successful patch installation
- Alerts the user to any required post-requisite steps

Multiple Application Tier File Systems

If your Application Tier has multiple file systems (rather than one shared file system across all nodes), you should apply the patch to each file system before you run the post-requisite steps.

The post-requisites are only displayed after the first installation, so take note of any post-requisite steps that you defer.

Post-requisites

After successful patch completion, the Applaud Installer will alert you to any required post-requisite steps. The post-requisite steps are only displayed if they are appropriate to your installation so it is important that they are always completed.

The two most common examples are:

- Restarting the Application Tier services
- Running the 'Install Business Group Data' concurrent program into one or more business groups

30-day Trial and Activation

All products are installed with a fully functional 30-day trial. If you are evaluating the product you have installed, you can continue to enjoy the product for 30 full days from the date of installation. After 30 days, the product will automatically become deactivated and will no longer work until it is activated.

Once you have purchased an Applaud Solutions Product you are able to activate it. Products need to be activated on all databases they are installed.

To activate a product, follow these steps:

1. Run the **Product Administration** concurrent program with the **View Product Information** action and select the product you plan to activate. This concurrent program is available from the **Applaud Administrator** responsibility.
2. View the Output of the concurrent request. This will provide you with the product's Serial Number, which is unique to your installation on that particular database.
3. Email activation@applaudsolutions.com and send the Serial Number together with your details and the product you wish to activate. If you prefer, you can send several Serial Numbers (one for each database) all at once.
4. You will receive an email from the Applaud Activation Team with an Activation Code for each Serial number.
5. Run the **Product Administration** concurrent program again but this time with the **Activate Product** action. Select the product you wish to activate and enter or paste in the Activation Code exactly as you received it.
6. Submit the concurrent program to activate the product. If you wish to confirm that activation has been successful, you can repeat step 1 and 2; the concurrent request Output will show the Product Status as **Activated**.
7. Repeat steps 1-6 for each environment you need to activate.

Once a product has been activated, it will remain activated even after an environment has been cloned.

Configuration

Most products have a small number of configuration steps that must be completed before the product is functional. The configuration step is typically a simple step that enables the product's functionality, so that you can control when to switch it on.

Please follow the instructions provided in the Implementation Guide for your product.

The majority of bug-fixes and product updates do not require any additional configuration and will take affect immediately following installation (including

post-requisites). If a bug-fix or product update does have any additional configuration steps, they will be clearly documented in supporting documentation.

4. Troubleshooting

The product has been designed and rigorously tested to install in a trouble free manner. In the event that you do encounter an error, please review this section for answers to common problems before you contact the Applaud Support Team.

If you are still unable to resolve your issue, please contact the Applaud Support Team at www.applaudsolutions.com.

\$FNDNAM not set

When starting the installing by running `./install.sh` in the patch directory, I receive the following error message:

```
ERROR: The value of $FNDNAM is not set. Please initialize your
Application environment before running this install.
```

Check if the variable `$FNDNAM` is set by issuing:

```
$ echo $FNDNAM
```

The error typically means that you have not sourced your Application Tier environment file. Please follow Step 1 of *Launching Installation* as described in *Chapter 3*.

No Write Permissions to \$APPL_TOP

When starting the installing by running `./install.sh` in the patch directory, I receive the following error message:

```
ERROR: You do not have write permissions to the $APPL_TOP directory.
```

This usually means that you are not logged in as the owner of the Application Tier file system. Please check the owner of the Application Tier and log in as that user before starting installation.

Patch Log File Not Created

When starting the installing by running `./install.sh` in the patch directory, I receive the following error message:

```
ERROR: The following patch log file could not be created:  
<log file name>
```

Please check that you have changed to the patch directory before starting installation and that you have write permissions.

No Terminal Feedback after Quitting Installer When Prompted for Password

You are not recommended to forcibly quit installation at any point. If you do quit installation when prompted for a password, you will not receive any terminal feedback. This is because the installer switches off terminal feedback so that any passwords you enter are not displayed on screen.

To switch terminal feedback back on, issue the following command:

```
$ stty echo
```