Oracle Financial Services Profitability Management

Migration Guide from v6.1.x.x.x to 8.2.x.x.x.x

Release 8.0.2.x.x

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Oracle Financial Services Profitability Management

Document Control

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1.0	Aug 2021	Document contents have been reviewed and updated in the appropriate sections.

Executive Summary

This document details the process for migration of assumptions and rules from OFS PFT v6.1.x.x.x to 8.0.2. Other than the application-specific data, the Migration Kit will automatically migrate the relevant OFSAA (that is Infrastructure) metadata.

Table of Contents

1   Preface

This document describes the procedural execution of the Oracle Financial Services Migration Tool to migrate the Application Metadata from OFSAA v6.1.x.x.x to OFSAA v8.0.2.0.0. It includes detailed information about the migration process, Source and Target Data Models, and acceptable testing of the Target System.

1.1   Abbreviations

The following table lists the abbreviations used in this document:

Abbreviation	Meaning
OFSAA	Oracle Financial Services Analytical Applications
OFSAAI	Oracle Financial Services Analytical Applications Infrastructure
FTP	Oracle Financial Services Funds Transfer Pricing
PFT	Oracle Financial Services Profitability Management
Infodom	Information Domain

1.2   Terminologies

- **Source**: The OFSAA environment from which metadata needs to be migrated.

- **Target**: The OFSAA environment into which metadata needs to be imported.

- **Database Schemas**:

    - **Config Schema**: Refers to the configuration schema used by OFSAA. OFSAA stores various information like users, user privileges, ICC batches, and so on in this schema.

    - **Atomic Schema**: Refers to the schema corresponding to each information domain in OFSAA. This schema stores information like staging, processing, and result data. A few applications also store their metadata within various tables in this schema.

2 Overview of Migration Tool

The Migration Tool is designed to allow you to easily carry forward as much metadata as possible to the Oracle Financial Services v8.0.2.0.0 instance. The procedure described in this guide is a general approach that you should follow during the migration. Other than the Application-specific Metadata, this tool automatically migrates the relevant OFSAA (Infrastructure) Metadata.

For example, the application migration kits do not migrate objects like Data Quality Rules and Groups, ICC Batches, Data Entries, Form, and Queries (DEFQ) Objects, Security Management System Objects (Users, Groups, and so on), which are covered in the OFSAAI Migration Kit. They should refer to the OFSAAI Migration Guide for further details.

Dependent objects for EPM Applications will be migrated automatically when their Parent is migrated. For example, when a Hierarchy Filter is migrated, the associated Hierarchy will also be migrated.

Additionally, if the Source OFSAA instance contains multiple applications, you must migrate each of these applications separately using the respective Application's Migration Kit. If any of the applications share object types, the Migration Kit will re-migrate and overwrite such artifacts.

| **NOTE** | As with any major release, there are functional differences that result in difficulty or the inability to migrate certain data. In these cases, this guide will try to recommend the best approach to either manually migrate or re-implement using the new application. |
| | For more information, refer to "Appendix C: Objects not Migrated". |

3   Preparing a Migration Plan

Before you execute any Migration Scripts, the following steps should be taken:

- Become Familiar with New Release
- Understand the Prerequisites
- Upgrade Method
- Prepare a Backup Strategy
- Prepare a Testing Plan
- Test Your Migration Plan on a Test Environment

3.1   Become Familiar with New Release

To execute acceptance tests, users involved in the Migration Process will need to be familiar with the architecture, tools, and user interface of the new release. For more information, see OFSAA User Guides. In particular, users will want to become skilled at accessing similar objects such as Business Rules, Dimensions, Users, Folders, and hierarchies in both Source and Target Installations.

3.2   Understand the Prerequisites

Following are the prerequisites to Run the Migration Utility.

- Software Versions on Source
  - OFSAAI version must be v7.3.5.1.1 or a later 7.3.5.x version.
  - PFT must be 6.1.x
- Software Versions on Target
  - PFT Pack v8.0.2.0.0 must be installed.

    The Migration Kit expects that the Data Model customizations made on the Source are already present in the Target. For example, customizations could include User-defined Dimensions, Dimension Attributes, Instrument and Transaction Tables and Columns, Lookup Tables, and so on.

3.3   Upgrade Method

The existing Upgrade Method uses a manual script-driven process for the Migration Tool, followed by some manual post-migration steps. This process is described in this guide.

As an alternative to using the Migration Tool, you could also choose to manually reconfigure all of the metadata on a fresh instance of Profitability Management Pack v8.0.2.0.0.

3.4   Prepare a Backup Strategy

The success of your migration depends heavily on the design and execution of an appropriate Backup Strategy. To develop a Backup Strategy, consider the following questions:

- How long can the production database remain inoperable before business consequences become intolerable?

- What backup strategy should be used to meet your availability requirements?

- Are backups archived in a safe, offsite location?

- How quickly can backups be restored (including backups in offsite storage)?

- Have recovery procedures been tested successfully?

3.4.1 Backup Procedure

At a minimum take a backup of the CONFIG and ATOMIC Schemas. Ensure that the folder has the necessary permissions to create dump and log files.

You can use the below command to create a backup:

```
exp <schema name>/<password>@<database sid> file=<export filename> log=<log
filename> full=N
```

3.5 Prepare a Testing Plan

You need a series of carefully designed tests to validate all stages of the upgrade process. Executed rigorously and completed successfully, these tests ensure that the process of upgrading the production database is well understood, predictable, and successful. Perform as much testing as possible before upgrading the production database. Do not underestimate the importance of a Test Program.

The testing plan must include the following types of tests:

- **Minimal Testing**: Entails moving an application from the current database to the new database and running the application without enabling any new features. Minimal Testing is a very limited type of testing that may not reveal potential issues that may appear in a "real-world" production environment. However, Minimal Testing will immediately reveal any application startup or invocation problems.

- **Functional Testing**: Includes a set of tests in which new and existing functionality of the system are tested after the migration. Functional testing includes all database, networking, and business/application components. The objective of functional testing is to verify that each component in common between the Source and Target Systems behaves properly, as well as confirming that new features are working.

- **Performance Testing**: Compares the performance of various business functions on both the Source and Target Systems. Unlike volume or load stress testing, base performance testing is meant to provide a real-world comparison of common usage without the setup and long run times. Successful completion of base performance testing should be considered a prerequisite to Volume or Load Stress Testing.

3.6 Test Your Migration Plan on a Test Environment

Create a test environment that will not interfere with the current production environment. Practice migration of the Application Metadata using the test environment. The best test, if possible, is performed on an exact copy of the database to be migrated, rather than on a downsized copy or test data. This will familiarize you with the Migration Process and minimize unexpected issues.

4   Pre-Migration Activities

4.1   Steps in Pre-Migration

Before executing the Migration Tool Scripts for specific object types, read the latest release notes to identify any infrastructure and application issues that may impact migration, then follow these steps:

- The Migration Kit may modify the structure of some of the objects present on the Source Schemas. Therefore, you should consider cloning the Source Environment and then Run the migration scripts against the clones.

- Profitability Management is part of the Profitability Management Pack from version 8.0.2.0.0 onwards. Therefore, if you have the following other applications on different instances on the Source, you should consider cloning / merging them into a single information domain using either the Object Migration or Archive Restore Module.

    Other applications present in this pack are:

    - FTP: Financial Services Funds Transfer Pricing

    - IPA: Financial Services Institutional Performance Analytics

    - RPA: Financial Services Retail Performance Analytics

    - EFPA: Financial Services Enterprise Financial Performance Analytics

- You should also consider cleaning up the clone of Source (remove any old/obsolete objects you do not wish to migrate) and taking backups of the Source Config and Atomic Schema clones. This is required if you need to restore the Source Config and Atomic Schemas from the backup and restart the migration.

    For more information regarding backup strategy and backup procedure, refer to the Prepare a Backup Strategy Section.

- During the migration process, no metadata changes should be done on the Source OFSAA Environment. Complete the migration of all of your applications before changes to any Assumption Data or running any application processes. Ensure that you are NOT triggering multiple application migrations, simultaneously.

- If any metadata is shared across applications, then the metadata belonging to the application that is migrated the last will take precedence.

- OFSAA Folders (Segments), Groups, Users and their access privileges: OFSAA 8.0 Infrastructure 7.3.5 and Applications (e.g. PFT) introduce considerable changes to the User Security Model, as well as introduce the framework for supporting object security. You should therefore reassess your User-Security Configuration and reconfigure the same on OFSAA 8.0 before metadata migration is initiated.

> **NOTE**   Alternatively, you can configure user security on 7.3.5.x Source, then use the AI Migration Kit to migrate the security objects (Users, etc.) to the target.

- Ensure that you have sufficient free disk space available to store the migration artifacts.

  Typically, they will not require more than about 40 to 50 MB.

Any custom LOOKUP_TEMPLATE_TABLE created by the customer has to be merged with the 8.0.2 Data Model and process followed to register them in the 8.0.2 environment.

- If customers have the same application installed on Multiple Infodoms in the source, possibly for catering to different User-Groups / Lines of Businesses or Development/Testing Environments, and so on. Then the following additional prerequisite steps may be required depending on the installation option:

  a. **Installation option #1**: Separate instances of OFSAA v8.0.2 – one for each Source Infodom

     No additional prerequisite steps are required.

  b. **Installation option #2**: Cater to the same User-groups/LOBs from a Single OFSAA instance, by leveraging the 'legal-entity' + object-security capability of OFSAA v8.0.2.0.0.

     — Ensure that the Segment (i.e. folder) codes and names are unique across the Source-Infodoms.

     — Perform object migration on the source OFSAA Setup to merge these different source-Infodoms into a Single Infodom on the Source. This final Merged Infodom will serve as the "Source" for the migration to OFSAA v8.0.2.

  c. **Installation option #3**: Choose to migrate only the Primary Infodom and exclude the Alternate Infodoms from the Migration Process.

5   Metadata Migration Process

This section outlines the Migration Process for the PFT-specific Metadata.

Metadata Migration is classified into three broad steps:

- Preparing the Source

- Metadata Extraction (From the Source)

- Metadata Import (Into the Target)

> **NOTE**   During the Import, if any metadata exists with the same Unique System Identifier as in the Source, it will get overwritten. For example, if two applications have a shared object type, the common object will be overwritten when data for the second application is migrated.

This Migration Kit includes various scripts to perform each of the above three steps. Usage of these scripts is explained later in this document.

5.1   Preparing for Migration

Preparing for migration includes activities on the Source and Target Environments.

5.1.1   Activities on the Source

Perform the following activities on the Source.

- Upgrade the Cloned/Merged Environment to OFSAAI v7.3.5.0.0 and above versions, and apply the following patches:

  - Patch 20527601 (AAI 7.3.5.1.0)

  - Patch 20567446 (AAI 7.3.5.1.7)

- Ensure that the PFT version is a 6.1.x release

- Download the PFT Migration Kit (patch 23037571) and extract the archive into any folder under UNIX-profile where OFSAAI is installed.

- Backup the Config and the Atomic Schema(s).

5.1.2   Activities on the Target

- Install Profitability Management Pack version 8.0.2.0.0.

- Identify the Data Model customizations that are performed on the Source. Repeat the customizations on the v8.0.2.0.0 Data Models and upload the same in Sliced Model Upload Mode.

- If the customization involves new AMHM Dimensions, complete Leaf Registration for the same.

NOTE	Leaf-Registration will assign a unique Dimension ID that may or may not be the same as that assigned to it on the Source. If the dimension IDs are not the same, the Migration Kit will synchronize the Dimension IDs. That is, the Dimension IDs on the Target will be changed to reflect the IDs on the Source.

- Ensure that the required OFSAA-Users are already created on the Target with the same ID as in the source.

- Ensure that the required Infodom folders (or segments) are created on the Target – the segments should be the same as in the Source. Map the created folders in the Target Environment to the user group IDENTITYMGMTADMIN in the User Group Domain Map.

- Backup the Config and the Atomic Schemas.

- Download the PFT Migration Kit (patch 23037571) and extract the archive into any folder under the UNIX profile where OFSAAI 8.0.2.0.0 is installed.

Note on Localization: Regardless of how many Language Packs are available on Source, all of the specified metadata will be migrated to the Target. If you do not install Language Packs on Target, some of the metadata may not be visible.

5.2 Performing the Migration

On the Source OFSAA instance, log into the UNIX Shell and navigate to the (23037571) Migration-Kit folder on the command-line terminal, provide execute permissions, and perform the following steps:

1. To provide execute permissions, use the following command:

   ```
   chmod –R 775
   ```

   Since the scripts will overwrite log files from any prior migrations, consider making copies of any existing logs that are `prepare_source.log`, `extract_from_source.log`, and `import_from_source.log`.

2. Run the script for **Prepare Source**.

   For example, run the script where EPMINFO is the Infodom name, as follows:

   ```
   ./prepare_source.sh EPMINFO
   ```

   This step introduces structural changes to the metadata tables in the Config and/or Atomic Schemas. This ensures that the tables are in a state from where the metadata can be extracted. See Appendix: A for the list of mandatory columns that will be altered by this step Review the log file for any errors. See `prepare_source.log`.

3. Run the script for **Extracting the application metadata from the source**. If there are no errors encountered, this step will generate a file `PFT_metadata.tar.gz` in the same folder.

   Example:

   ```
   ./extract_from_source.sh EPMINFO
   ```

   Review the log file for any errors. See `extract_from_source.log`.

4. Copy this archive into the corresponding 23037571 (migration-kit) folder on the Target OFSAA instance.

5. On the Target OFSAA instance, log into the UNIX Shell and navigate to the migration-kit folder on the command-line terminal and provide execute permissions.

    ```
    chmod -R 755
    ```

6. Run the script for importing the Application Metadata into the Target.

    Example:

    ```
    ./import_into_target.sh EPMLPINFO
    ```

7. Review the log file for any errors. See import_from_target.log.

6   Post Migration Activities

You should perform the following activities after the executing the Migration Script.

1. This Migration Kit does not migrate the Modifications Mode to the Metadata that comes packaged with the Application Installers. For example, OFSAA Installers of Applications seed many AAI Artifacts such as T2Ts, Data Transformation Rules, ICC Batches, and so on. This migration kit does not migrate such artifacts. After the Migration Kit completes the migration activity, you can use the OFSAAI's Archive-Restore functionality to migrate such customizations.

2. Below list a list of tables that need to be migrated manually.

   - Any customized LOOKUP_TEMPLATE_TABLE created by the customer has to be merged with the 8.0.2 Data Model and process followed to register them in the 8.0.2 environment. The data of such Customized Lookup Tables need to be exported/imported manually.

   - LOOKUP_TEMPLATE_TABLE

   - FSI_IRC_RATE_HIST

   - FSI_IRC_VOLATILITY_RATE_HIST

   - FSI_EXCHANGE_RATE_HIST

   - FSI_ECO_IND_HIST_RATES

   - FSI_EXCHNG_RATE_DIRECT_ACCESS

   > **NOTE**   To populate FSI_EXCHNG_RATE_DIRECT_ACCESS FSI_EXCHNG_RATE_CONV_FORMULA, execute the Currency Rates Validation Button on Currency Rates UI in the Target.

   — FSI_IRC_TS_PARAM_HIST

       You can populate this table using the Excel Export/Import Option.

   — FSI_FIXED_CURRENCIES

       Fixed currencies are part of the Migration Kit, but you can migrate the floating currencies from the UI.

3. Review Application Preferences.

4. After successfully running the Migration Scripts, Run tests in your Target Environment.

5. Migration of Static Table Driver will pick up definitions that satisfy the following query:

```
SELECT DISTINCT SYS_ID_NUM A

FROM FSI_M_ALLOC_TABLE_DETAILS D,

(SELECT DISTINCT TABLE_SYS_ID FROM FSI_M_ALLOC_TABLE_ID) M

WHERE D.SYS_ID_NUM = M.TABLE_SYS_ID
```

6. Delete the entries in FSI_M_ALLOC_TABLE_DETAILS after the Table IDs are successfully migrated, after taking the backup of the records.

7. After the migration is successful, you can clear the Migration Kit folder from where the export is generated/imported.

7   Appendix A: Limitations/ Known Issues

7.1   Restricted Characters

The following are the restricted characters as per OFSAAI 7.3.5 for member maintenance and rendering:

- Hierarchy Browser Rendering
    - Member Name: Single quote, Double Quotes, forward slash, Carriage Return, ampersand
- Member maintenance in AMHM
    - Member Name: Single Quotes, double quotes, ampersand, carriage Return (Respective ASCII Codes are 39, 34, 38, and 13).
    - Member Alphanumeric Code also gets displayed in Hierarchy Tree.
    - Current list of characters not allowed in Member Alphanumeric Code: single quotes , double quotes, ampersand, carriage Return, @, ~, + (Respective ASCII Code are 39, 34, 38, 13, 126, 64, and 43).
- Member Maintenance in UMM
    - Member Name: ~, `, !, @, #, $, %, ^, &, *, (,), -, +, =, [,], {, }, |, \, :, ;, ", ', <, >, ?, /, comma
    - Apart from this, impact would be in all the UIs where platform Hierarchy Browser is consumed, and ALM Application specific UIs and utilities around this.

7.2   List of Object Types supported by the Migration Kit

NOTE	Dependent Objects for EPM Applications will be migrated automatically when their Parent is migrated. For example, when a Hierarchy Filter is migrated, the associated Hierarchy will also be migrated.

Table 1: Object Type supported by the Migration Kit

Object Type * *(asterisk indicates object types also migrated via the OFSAAI Migration Kit)	Tables Excluded
AMHM Attributes *	None
AMHM Members *	None
AMHM Hierarchies *	None
Expressions *	None
Filters *	None

NONE

Object Type * *(asterisk indicates object types also migrated via the OFSAAI Migration Kit)	Tables Excluded
Interest Rate Codes	FSI_IRC_RATE_HIST FSI_IRC_TS_PARAM_HIST FSI_IRC_VOLATILITY_RATE_HIST
Allocation Specification	None
Allocation Model	None
Lookup Table Driver	LOOKUP_TEMPLATE_TABLE and any custom lookup table
Static Table Driver	None
Allocation History	None
Simplified Batches	None
Application Preferences	None
Global Preferences	None

Defaults for NOT-NULL Columns, added in v8.0

Table 2: Defaults for Not-NULL Columns

Table Name	Column Name	Default Value	Notes
REV_APP_USER_PREFERENCES	SHOW_RUN_EXE_PARAM	N	Run time execution parameters prompt would not appear by default.
REV_APP_USER_PREFERENCES	SECURITY_MAP	-1	Security Map is introduced in 8.0 and set to -1 as default (meaning no Security Map)
REV_APP_PREFERENCES_METADATA	SHOW_TEMPLATE_DIMENSIONS	N	Legal Entity dimension will be seeded as a Run time dimension in 8.0 and therefore the value of this will be Y.

7.3   List of Scripts

The following table list the scripts:

Table 3: List of Scripts

Step	Script File Name	Parameters (if any)	Log Files Created by this Script	Example
Prepare Source	prepare_source.sh	Name of the Source Information Domain	prepare_source.log	/prepare_source.sh EPMINFO
Metadata Extraction (from the Source)	extract_from_source.sh	Name of the Source Information Domain	extract_from_source.log	./extract_from_source.sh EPMINFO
Metadata Import (into the Target)	import_into_target.sh	Name of the Target Information Domain	import_from_target.log	./import_into_target.sh EPMINFO

8   Appendix B: Trouble Shooting and Logging

This section describes the various error messages written to the log files, and the recommended corrective action for resolving the same. In most cases, the error messages should be self-explanatory.

NOTE	The logs files will be overwritten every time you execute the Migration Scripts, so you might want to make a copy before rerunning the scripts.

Table 4: prepare_source.log

Error Message	Meaning	Corrective Action
Cannot change access permissions for xxxxxxxx. Exiting…	Unable to set execute permissions for xxxxxx	Ensure that the Unix user executing the migration kit has privileges to change the file permissions under the Migration-Kit-Home Directory.
==No xxxxxx.sql file found. Skipping step.	There were no pre-scripts found for executing on the Configuration or Atomic Schema.	None
Unable to determine TNS Name for xxxxxx Schema. Please contact your System Administrator. (or) Unable to determine TNS Name for specified Information-Domain. Please contact your System Administrator. (or) Credentials not available for connecting to Config Schema. Skipping	The kit was unable to get the login credentials for connecting to the Configuration or Atomic Schema.	The migration kit determines the versions via the file scripts/version/version.sql. Any errors while executing this script will also be captured in this log. Resolve any errors and try to execute prepare_source.sh again. Alternately, execute the SELECT statements included in this file via SQL*Plus on the configuration schema to review the errors. Please replace the following placeholders while executing the scripts: • - ##appid## with the ID of the application. You can get the application-ID from the file conf/application.ID • - ##infodom## with the name of the information domain; this would have been passed as a parameter to the prepare_source.sh script.

Error Message	Meaning	Corrective Action
Version Mismatch: AAI version [xxxxxx] should be >= yyyyyy (or) Version Mismatch: Application version [xxxxx] should be >= yyyyy	There is a version mismatch between the expected and actual versions of OFSAAI and/or the application.	Please apply the required patches to bring your Source environment to the required state, and then restart the migration.
Cannot change access-permissions for xxxxxxxx. Exiting...	Unable to set execute-permissions for xxxxxx.	Ensure that the Unix-User executing the Migration Kit has privileges to change the file-permissions under the Migration-Kit-Home Directory.

9   Appendix C: Objects Not Migrated

- For modifications made to the metadata that comes packaged with the Application Installers, you can use the OFSAA Archive-Restore Functionality to migrate such customizations.

   For example, applications seed many AAI Artifacts such as T2Ts, Data Transformation Rules, ICC Batches, and so on. Such artifacts will not be migrated. If you have customized them in your Source Environment, you should make similar customizations in the Target Environment. You can perform these as a Post-Migration activity.

- The OFSAA Infrastructure Migration Kit will migrate OFSAA Folders (Segments), Groups, Users and their access privileges; these object types are not migrated by the Application Migration Kits.

   Note that OFSAA Infrastructure 7.3.5 and Applications (e.g. PFT) introduce considerable changes to the User Security Model, as well as the framework for supporting object-security. You should therefore reassess your user-security configuration and reconfigure the same on OFSAAI 8.0 before metadata-migration is initiated.

NOTE	Alternatively, you can configure user security on the 7.3.5.x Source, then use the OSAAI Migration Kit to migrate the security objects (Users, etc.) to the target.

- Rate Management Historical Data:

   - Interest Rates History (FSI_IRC_TS_PARAM_HIST, FSI_IRC_RATE_HIST, and FSI_IRC_VOLATILITY_RATE_HIST)

   - Exchange Rate History FSI_EXCHANGE_RATE_HIST, and FSI_FIXED_CURRENCIES, along with FSI_EXCHNG_RATE_DIRECT_ACCESS and FSI_EXCHNG_RATE_CONV_FORMULA

   - Economic Index Historical Rates (FSI_ECO_IND_HIST_RATES).

- Object Migration Rules

- Data from the staging, processing, and results tables. The scope of this document is restricted to Metadata Migration, and does not include Data Migration. It is recommended that you migrate the data after Metadata-Migration is completed.

Table 5: Object Type supported by the Migration Kit

Table Classification	Tables Names
Ledger	Ledger_stat
Transaction Tables	fsi_d_*_txns
Instrument Tables	fsi_d_*
Stage Tables	Stg_*
History tables	*_hist

Table Classification	Tables Names
Results tables	This is recommended to not retain the results/audit data, consider audit tables such as: • FSI_O_PROCESS_CASH_FLOWS, • FSI_FIXED_CURRENCIES_AUDIT, • FSI_EXCHANGE_RATE_HIST_AUDIT, • FSI_PROCESS_ERRORS

10 Appendix D: Documentation

You can access the following related documents from http://docs.oracle.com

- User-guides for OFSAAI v7.3 / EPM v6.1.x

  http://docs.oracle.com/cd/E28033_01/homepage.htm

- Migration Utility Guide for OFSAA Infrastructure 7.3.5.0.0 to 8.0.0.0.0

  http://docs.oracle.com/cd/E61555_01/homepage.htm

- User guides for OFSAA v8.0 / EPM v8.0

  http://docs.oracle.com/cd/E54637_01/homepage.htm

- Steps to clone an OFSAAI 7.3.x instance

  http://docs.oracle.com/cd/E28070_01/books/Infrastructure/7.3.3.X.0/Full%20Installer/OFSAA_Environment_Cloning.pdf

OFSAA Support

Raise a Service Request (SR) in My Oracle Support (MOS) for queries related to the OFSAA Applications.

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