

Lifecycle Management for z/OS

z/OS Phases Catalog

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BlueBridge

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INTRODUCTION

IKAN ALM provides Life Cycle Management Solutions for z/OS Mainframe using specific Solution Phases. The Solution Phases include Phases for compiling sources (in several languages) and maps on the z/OS platform, and Phases for managing object deployments on PDSs, Db2 binds, DCF or QMF files, Datacom plans or Debuggers and more. These deployments may be completed by generated Jobs executed later on. No started task is necessary as the Phases use the z/OS FTP protocol.

This guide describes the different parameters used by each of those Phases.

1.1. Assumed Knowledge

To be able to use the Phases, we assume that IKAN ALM is up and running, that the connection with the versioning components is set up and that the z/OS Solution Phases have been imported in IKAN ALM.

1.2. General

Most of the z/OS Solution Phases generate a JCL to be executed.

To generate that JCL, the Phases use the parameters and properties specified in the following types of files:

- Object-type properties files
For each object type you use, you need to specify the different parameters needed for the scripts and models.
- Language properties file
This file contains the properties of the different z/OS programming languages used (only needed for the Build process)
- Resources and environment properties files
These files contain the properties for the different Environments
- Model files
These files contain the JCL models and other useful types.

Note: Before using the Phases, you should carefully check all the settings in the different files. If you need any assistance, you can always contact IKAN ALM Support (recommended if you are new to using the z/OS Solution Phases).

For more detailed information, refer to the Technical *IKAN ALM_Zos_Phases_Usage* Guide.

Overview of the Phases

The following z/OS Phases can be used for the z/OS Build and Deploy processes (M = Mandatory, O = Optional).

Click the name of one of the Phases in the table below to display all detailed information concerning the characteristics and usage of the Phase.

Build Phase	M/O	Environment	Explanation
Build Property Files	O	Build	Used to generate property files. This phase is only used for non-compiled source files needing specific property files.
Build QMF Files	O	Build	Used to generate the property file for the QMF DB2 files.
Cics Load-modules activation	O	Deploy	Used to generate PHASEIN CICS commands and to submit them for activating CICS load module files (maps and programs).
Collect Idms Components	O	Build	Used to collect IDMS components.
Copy from Source to Target	M	Build and Deploy	Selects the files that need to be copied, using predefined filters and include/exclude masks. Next, the selected files are copied from the Source location to the Target location on the IKAN ALM Agent.
Copy PDS Members to PDS	O	Deploy	Used to copy objects between PDSs, for example, for back-up and restore purposes.
Copy Sources to PDS for compilation	M	Build	Copies the object types (specified in the properties file) from the Target location on the IKAN ALM Agent into temporary PDSs on the z/OS Platform.
DB2 Binds transfer and activation	O	Deploy	Completes the promotion of the DBRM files with environment data, to transfer and to submit generated JCL(s) for activating DB2 Bind Package and Plan Files.
DCF Files Deployment	O	Deploy	Used to copy DCF files to the corresponding PDS.
Delete Sources and their associated objects	O	Deploy	Used to delete the z/OS files selected using the ".to_be_deleted" suffix in their respective z/OS PDSs. The associated files (Load-modules, listing, dbrm, bind files) will also be deleted in the corresponding PDS(s).

Build Phase	M/O	Environment	Explanation
Demote components and load-modules	O	Deploy	Used to delete the z/OS files in the PDSs of the Target environment using the Un-deployment option after a bad Promotion.
Jman Jmodels Control	O	Build	Used to copy and generate the JCL execution file to validate the Jmodel file in the z/OS environments using the JMAN generator.
Jman Jmodels Deployment	O	Deploy	Used to copy and generate JCL execution file to deploy the Jmodels in the z/OS environments from logical JMAN targets.
List Files from location to CSV or Excel file	O	Build and Deploy	Generates a .csv or Excel file listing the files in the target environment.
Maps and Programs compilation	M	Build	Creates the compile JCL, submits the job and runs the actual compilation on z/OS. After the compile, the Phase will control the result, collect all the files generated by the compile job (listing, load modules, generated DB2 bind files, ...) and put the results, in zipped format, in the IKAN ALM Archive.
PDSs Allocation or Deletion	O	Build and Deploy	This phase is used to create or delete work PDS(s) as package PDS(s) for compiling. This is done per object type based on the Environment parameters, e.g., the first qualifiers, the prefixes, ... defined in the environment properties file.
Promote Datacom components	O	Deploy	Used to submit a JCL for importing Datacom Plans in a Datacom environment.
Promote Debugger components	O	Deploy	Used to submit a JCL for moving (if asked) components from Source to Target Debugger files in a z/OS Environment.
Promote Endeavor components	O	Deploy	Used to submit a JCL for moving components from Stage to Target Endeavor Environment.
Promote Idms components	O	Deploy	Used to transfer component files to z/OS and to update the target dictionary with the different types of IDMS components loaded with the generated JCL. i.e., Idmsddd, Rhdcmap, Schema and Subschema. Next, the JCL runs the DCMT statements for new copies.
Promotion of components and load-modules	M	Deploy	Copies the z/OS files selected from the Environment Target to their respective z/OS PDSs. The load-modules are copied to temporary sequential files and the script creates and submits a JCL for receiving them in their PDSs.
QMF Files Deployment	O	Deploy	Used to import QMF DB2 files in the z/OS environment.

Build Phase	M/O	Environment	Explanation
SQL DB2 files Execution	O	Deploy	Used to complete SQL DB2 files with environment DB2 parameters with variable replacements and to submit them, first for executing the DDL (data definition language) Files and next for executing the SQL (standard) Files on the DB2 Database.
Unix Files Conversion	O	Deploy	Used to generate the required JCL files for converting EBCDIC into ASCII.

z/OS Build Phases

The following z/OS Phases can be used for the z/OS Build process (M = Mandatory, O = Optional). The table indicates which other Phase they are dependent on. If there is no dependency, the Phase is working from the Source Environment location.

Click the name of one of the Phases in the table below to display all detailed information concerning the characteristics and usage of the Phase.

M/O	Build Phase	Dependent on
M	Copy from Source to Target	/
M	Copy Sources to PDS for compilation	Copy from Source to Target
M	Maps and Programs compilation	Copy Sources to PDS for compilation
O	Build Property Files	Copy from Source to Target
O	Build QMF Files	Copy from Source to Target
O	Collect Idms Components	/
O	Jman Jmodels Control	Copy from Source to Target
O	List Files from location to CSV or Excel file	Copy from Source to Target
O	PDSs Allocation or Deletion	Copy from Source to Target

3.1. Mandatory Phases

There are three basic, mandatory, z/OS Build Phases.

They complement two IKAN ALM core Phases, i.e., the *Retrieve Code* Phase (retrieving the content from the VCR into IKAN ALM) and the *Transport Source* Phase (transferring the Source files to the IKAN ALM Source location).

Sequence	Solution Phase	Usage
1	Copy from Source to Target	This Phase selects the files that need to be copied, using predefined filters and include/exclude masks. Next, the selected files are copied from the Source location on the IKAN ALM Agent to the Target location on the IKAN ALM Agent. The following Phases in the sequence will only use the copied files from this Target location.

Sequence	Solution Phase	Usage
2	Copy Sources to PDS for compilation	This Phase copies the files (object types specified in the properties files) from the Target location on the IKAN ALM Agent into temporary PDSs on the z/OS Platform. Before the file transfers, temporary PDSs will be created before, as well as the PDSs necessary for compiling the files selected in the next Phase.
3	Maps and Programs compilation	This Phase creates the compile JCL, submits the job and runs the actual compilation on z/OS. After the compilation, the Phase will control the result and collect all files generated by the compile job (listing, load modules, generated DB2 dbrm files, ...) and put the results, in zipped format, in the IKAN ALM Archive.

IMPORTANT:

The following sequence rules must be followed.

- The mandatory Phases must be used in the sequence order specified in the table above.
- The other (optional) Build Phases may be inserted in between or after the mandatory Phases, in any order required.

Exception: The optional *Collect Idms Components* Phase starts from the Source location and only copies and controls IDMS components. It is not dependent on any of the other Phases and, if required, it may be executed before the *Copy from Source to Target* Phase.

3.2. Optional Phases

The other Build Phases are for specific usage and can be inserted wherever they are needed in the lifecycle.

z/OS Deploy Phases

The following z/OS Phases can be used for the z/OS Deploy process (M = Mandatory, O = Optional). The table indicates which other Phase they are dependent on. If there is no dependency, the Phase is working from the Source Environment location.

Click the name of one of the Phases in the table below to display all detailed information concerning the characteristics and usage of the Phase.

M/O	Deploy Phase	Dependent on
M	Copy from Source to Target	/
M	Promotion of components and load-modules	Copy from Source to Target
O	Cics Load-modules activation	Promotion of components and load-modules
O	Copy PDS Members to PDS	Copy from Source to Target
O	DB2 Binds transfer and activation	Promotion of components and load-modules
O	DCF Files Deployment	Copy from Source to Target
O	Delete Sources and their associated objects	/
O	Demote components and load-modules	Copy from Source to Target
O	Jman Jmodels Deployment	Copy from Source to Target
O	List Files from location to CSV or Excel file	Copy from Source to Target
O	Promote Datacom components	Promotion of components and load-modules
O	Promote Debugger components	Copy from Source to Target
O	Promote Endeavor components	Copy from Source to Target
O	Promote Idms components	/
O	PDSs Allocation or Deletion	Copy from Source to Target
O	QMF Files Deployment	Promotion of components and load-modules
O	SQL DB2 files Execution	Copy from Source to Target
O	Unix Files Conversion	Promotion of components and load-modules

4.1. Mandatory Phases

There are two basic, mandatory, z/OS Deploy Phases.

They complement two IKAN ALM core Phases, i.e., the *Transport Build Result* Phase (retrieving the content from the Build Archive into IKAN ALM) and the *Decompress Build Result* Phase (unzipping the Archive files to the IKAN ALM Source location).

Sequence	Solution Phase	Usage
1	Copy from Source to Target	This Phase selects the files that need to be copied, using predefined filters and include/exclude masks. Next, the selected files are copied from the Source location on the IKAN ALM Agent to the Target location on the IKAN ALM Agent. The following Phases in the sequence will only use the copied files from this Target location.
2	Promotion of components and load-modules	This Phase copies the z/OS files selected from the Environment Target to their respective z/OS PDSs. The load-modules are copied to temporary sequential files and a JCL is created and submitted for receiving them in their PDSs.

IMPORTANT:

The following sequence rules must be followed.

- The mandatory Phases must be used in the sequence order specified in the table above.
- The other (optional) Deploy Phases may be inserted in between or after the mandatory Phases, respecting the dependency rules.

4.2. Optional Phases

The other Deploy Phases are for specific usage and can be inserted wherever they are needed in the sequence of Phases for the Environment's Lifecycle.

z/OS PHASES

Build Property Files

5.1. Purpose

This is an optional z/OS Phase.

This phase is used to generate property files. This phase is only used for non-compiled source files needing specific property files.

Note: Except for QMF. See also the [Build QMF Files](#) (page 18) Phase.

5.2. Usage

The *Build Property Files* Phase can be used on the Build Environment.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

5.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Property Files Build	zosPropertyBuild.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
option.active	M	Option activated for now (i.e. \${dcf.active} in environment)	true
option.code	M	Code of option (i.e. DCF:YES) in object-type to select	XXX
option.function	O	Function of object-type to select	FILE
project.objtypes	O	List of Object Types to select	ALL

Parameter	Mandatory /Optional	Description	Default Value
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties
subtool.model	O	Model of Properties	property.model

Build QMF Files

6.1. Purpose

This is an optional z/OS Phase.

Used to generate the property file for the QMF DB2 files, mainly about the QMF owner to be used for deployments.

6.2. Usage

The *Build QMF Files* Phase can be used on Build Environments.

This Phase is dependent on the [Promotion of components and load-modules](#) Phase.

6.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS QMF Files Build	zosQmfBuild.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
project.objtypes	O	List of Object Types to select	ALL
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.pro perties

Cics Load-modules activation

7.1. Purpose

This is an optional z/OS Phase.

The phase is used to generate PHASEIN CICS commands and to submit them for immediately activating CICS load module files (maps and programs).

The Phase selects the CICS Load-module Files from the IKAN ALM Target Environment for generating a JCL using PHASEIN commands and runs the JCL on z/OS. There is no control of the actions as there are no results for the commands.

Note: The *Promotion of components and load-modules* Phase assumes the action of copy from the target, and transfers them to z/OS PDSs, before in the Environment Phase sequence.

7.2. Usage

The *Cics Load-modules activation* Phase can be used on Deploy Environments.

This Phase is dependent on the [Promotion of components and load-modules](#) (page 54) Phase.

7.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Cics Load-modules activation	zosUpdateCics.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties

Parameter	Mandatory /Optional	Description	Default Value
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Collect Idms Components

8.1. Purpose

This is an optional z/OS Phase.

This Phase is used to collect IDMS components.

In case of a Build level, this phase is used to manage and collect information of the different IDMS components for the IDMS development dictionary.

In case of a Test (or Production) level, the Phase is executed a second time to control the correlation between the components and the target dictionary, and to load the generated files that will be transmitted to the Target dictionary for deployment. The different types loaded are specified in the *idmsObjtypes.properties* file (*propsfile.objtypes* parameter).

Note: To collect other necessary non-IDMS sources, the [Copy from Source to Target](#) Phase can be used.

8.2. Usage

The *Collect Idms Components* Phase can be used on a Build Environment.

8.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	Collect and Check Idms Data components	zosCollectIdms.xml
controlCorrelation	O	Option for executing Correlation (true or false)	false
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL

Parameter	Mandatory /Optional	Description	Default Value
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Idms Object Types file to use	./resources/ idmsObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Copy PDS Members to PDS

9.1. Purpose

This is an optional z/OS Phase.

This phase is used to copy objects between PDSs, for example, for back-up and restore purposes.

9.2. Usage

The *Copy PDS Members to PDS* Phase can be used on Deploy Environments and, if required, it can also be used on the Build Environment.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

9.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Copy PDS Members to other PDS or Unix Files	zosCopyPdsMembers.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/parmsFTP.properties

Parameter	Mandatory /Optional	Description	Default Value
stopOnError	O	Option for stopping on error with z/OS activity.	false

Copy Sources to PDS for compilation

10.1. Purpose

This is a mandatory z/OS Phase.

This Phase copies the object types (specified in the properties files) from the Target location on the IKAN ALM Agent into temporary PDSs on the z/OS Platform. Before the file transfers, temporary PDSs will be created, as well as the PDSs necessary for compiling the files selected in the next Phase.

10.2. Usage

The *Copy Sources Before Compilation* Phase can be used on Build and Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

- On the **Build Environment**, this Phase is mandatory. This phase is used in combination with the two other two mandatory Build phases. It must follow the *Copy from Source to Target* Phase and precede the *Maps and Programs compilation* Phase.
- On the **Deploy Environment**, this Phase is optional.

10.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
allocPDS	O	Option for creating PDS used on z/OS	true
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	Copy Source before Compilation	zosCopyForCompilation.xml
analyze.source	O	Option for analyzing sources	true
archives.location	O	Path for IKAN ALM System Settings Build Archive Location. If linked Packages are used.	[ALM_HOME]/system/buildArchive
dir.zosModels	O	Models Location	./models

Parameter	Mandatory /Optional	Description	Default Value
dir.zosResources	<input type="radio"/>	Property files Location	./resources
ftp.active	<input type="radio"/>	Option for transmitting to z/OS (true or false)	true
packageBuildGroup	<input type="radio"/>	Package Build Group file (package oids)	
project.objtypes	<input type="radio"/>	List of Object Types to select	ALL
propsfile.environment	<input type="radio"/>	Property File of z/OS environment	./resources/ environment.properties
propsfile.ikanalm	<input type="radio"/>	Property File of IKAN ALM Database Access	./resources/ ikanalm.properties
propsfile.objtypes	<input type="radio"/>	Global Object Types file to use	./resources/ globalObjtypes.properties
propsfile.parmsFTP	<input type="radio"/>	Property File of z/OS FTP system	./resources/ parmsFTP.properties
recvend.model	<input type="radio"/>	End JCL model to use after the receive command	recvend_jcl.model
usePreviousArchive	<input type="radio"/>	Option for compiling using Previous Package Archive Files	false

Copy from Source to Target

11.1. Purpose

This is a mandatory z/OS Phase. However, if the Sources have already been made available in the target location in another way (which is not recommended), this Phase is not required.

This Phase selects the files that need to be copied, using predefined filters and include/exclude masks. Next, the selected files are copied from the Source location on the IKAN ALM Agent to the Target location on the IKAN ALM Agent. It may be used for copying FROM and TO other locations if required.

Note: For IDMS objects, the [Collect Idms Components](#) Phase may be used on the Build process and the [Promote Idms components](#) Phase on the Deploy Process instead of this Phase.

11.2. Usage

The *Copy from Source to Target* Phase can be used on Build and Deploy Environments. This Phase is mandatory.

- On the **Build Environment**, this phase must precede the two other mandatory Build Phases: *Copy Sources Before Compilation* and *Maps and Programs compilation*.
- On the **Deploy Environment**, this Phase can be inserted wherever required in the lifecycle.

11.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Copy from Source to Target	zosCopySourceToTarget.xml
cleanTarget	O	Clean the Target folder before copying.	false
customPhases	O	Customer Phase prefix(es) to ignore	
dir.zosResources	O	Property files Location	./resources
excludedFiles	O	excludes criteria	

Parameter	Mandatory /Optional	Description	Default Value
flattenCopy	<input type="radio"/>	Components are copied to targetProject.dir without sub-directory	false
includedFiles	<input type="radio"/>	includes criteria	**/*.*
packageOidInTarget	<input type="radio"/>	Copy Components to Target completed by package Oid (initZosInfos)	true
project.objtypes	<input type="radio"/>	List of Object Types to select	ALL
propsfile.objtypes	<input type="radio"/>	Global Object Types file to use	./resources/globalObjtypes.properties
setAllComponents	<input type="radio"/>	Copy Components to Target	false
setDBscriptsComponents	<input type="radio"/>	Copy DataBase Sources object types (i.e. sql, ddl + bat, sh, ini)	false
setDeleteComponents	<input type="radio"/>	Copy "to_be_deleted" components	false
setListsComponents	<input type="radio"/>	Copy Listings object types	false
setObjectsComponents	<input type="radio"/>	Copy all Objects object types (i.e. setObjectsZos, setObjectsIdms)	false
setObjectsIdms	<input type="radio"/>	Copy IDMS Objects object types	false
setObjectsZos	<input type="radio"/>	Copy z/OS Objects object types	false
setPropertyFiles	<input type="radio"/>	Copy Property Files	false
setSourcesComponents	<input type="radio"/>	Copy all Sources object types (i.e. setSourcesZos, setSourcesIdms)	false
setSourcesIdms	<input type="radio"/>	Copy IDMS Sources object types	false
setSourcesZos	<input type="radio"/>	Copy z/OS Sources object types (i.e. copy, source, jcl, sysin, etc..)	false
sourceProject.dir	<input type="radio"/>	Source directory	\${source}
targetProject.dir	<input type="radio"/>	Target directory	\${target}

DB2 Binds transfer and activation

12.1. Purpose

This is an optional z/OS Phase.

This phase is used to complete the promotion of the DBRM files with environment data, to transfer and to submit generated JCL(s) for activating DB2 Bind Package and/or Plan Files.

It is possible to copy generated Binds in dedicated PDS(s) for each logical DB2 environment.

The Phase copies the Bind Db2 Files from the ALM Environment Target ([target]/bind folder) to z/OS PDSs, or, if that is not the case, gets Bind DB2 members from the PDS environment for completing the generated JCL with Binds to execute, or generates Binds from Models. The Phase applies one more logical DB2 substitution for the DB2 SSID of the environment.

12.2. Usage

The *DB2 Binds transfer and activation* Phase can be used on Deploy Environments.

This Phase is dependent on the [Promotion of components and load-modules](#) Phase.

12.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS DB2 Binds transfer and activation	zosBindDb2.xml
createBindSysin	O	Option for creating Bind Sysin files with models (true or false)	true
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.db2Rules	O	Property File for DB2 rules	./resources/ db2Rules.properties

Parameter	Mandatory /Optional	Description	Default Value
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

DCF Files Deployment

13.1. Purpose

This is an optional z/OS Phase.

This phase is used to copy DCF files to the corresponding special PDS.

13.2. Usage

The *DCF Files Deployment* Phase can be used on Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

13.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS DCF Files Deployment	zosDcfDeploy.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Delete Sources and their associated objects

14.1. Purpose

This is an optional z/OS Phase.

This phase is used to delete the z/OS files selected using the “.to_be_deleted” suffix in their respective z/OS PDSs. The associated files (Load-modules, listing, dbrm, bind files) will also be deleted in the corresponding PDS(s).

This Phase is also used for deleting components of the previous Level of Environment after the Promotion in the normal Environment for the cascade of environments in the Lifecycle. In that case the option *Deletion* should be used.

14.2. Usage

The *Delete Sources and their associated objects* Phase can be used on Deploy Environments.

14.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	Delete Sources and associated objects	zosDeleteObsolete Files.xml
delete_suffix	O	Suffix used for files to delete.	to_be_deleted
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties

Parameter	Mandatory /Optional	Description	Default Value
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Demote components and load-modules

15.1. Purpose

This is an optional z/OS Phase.

This phase is used to demote a previous Promotion of the Package. The Package Archive files are deleted from the PDSs of the Environment using the *undoDeployment* option.

15.2. Usage

The *Demotion of components and load-modules* Phase can be used on Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

15.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	Demote components and load-modules to z/OS environment	zosDemotion.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.properties

Parameter	Mandatory /Optional	Description	Default Value
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Jman Jmodels Control

16.1. Purpose

This is an optional z/OS Phase.

This phase is used to copy and generate the JCL execution file to validate the Jmodel file in the z/OS environments using the JMAN generator.

16.2. Usage

The *Jman Jmodels control* Phase can be used on Build Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

16.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
allocPDS	O	Option for creating/deleting PDS used on z/OS	true
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Jman Jmodels Control	zosJmodelControl.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties

Parameter	Mandatory /Optional	Description	Default Value
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnErrorControl	O	Option for stopping on error with z/OS activity.	false

Jman Jmodels Deployment

17.1. Purpose

This is an optional z/OS Phase.

This phase is used to copy and generate JCL execution file to deploy the Jmodels in the z/OS environments from logical JMAN targets. If logical JMAN Models are completed with the JMAN generator, they are copied in the Environment PDSs of the JCLs.

17.2. Usage

The *Jman Jmodels Deployment* Phase can be used on Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

17.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Jman Jmodels Deployment	zosJmodelDeploy.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties

Parameter	Mandatory /Optional	Description	Default Value
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnErrorDeploy	O	Option for stopping on error with z/OS activity.	false

List Files from location to CSV or Excel file

18.1. Purpose

This is an optional z/OS Phase.

Generates a .csv or Excel file listing the files in the target environment (by default). This can be useful to get an overview of the files (and their dependent objects) that have been transferred.

Generates a .csv file or an Excel file listing the files in the target environment (by default). This can be useful to get an overview of the files (and their dependent objects) that have been transferred at a specific moment. The final objective is to load this result list in a table to provide a report on the file deployments. It can be completed by the *Register environment Files Activity* Phase, which is not a “z/OS” but a “Tools” Phase, and the *File Environment Activity* project for reporting with the extra “fileEnvironmentActivity” Report installed with ALM_Reports.

18.2. Usage

The *List Files from location to CSV or Excel file* Phase can be used on Build and Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase of you want to list the Target location files. If required, this Phase may also be used for other locations.

18.3. Parameters

Parameter	Mandatory/ Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS List Files from location	zosEnvironmentFilesList.xml
baseLocation	O	Location where the files to list are	\${targetProject.dir}
customPhases	O	Customer Phase prefix(es) to ignore	

Parameter	Mandatory/ Optional	Description	Default Value
project.objtypes	O	List of Object Types to select	ALL
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
excel.fileName	O	Excel File of results	\${baseLocation}/ listFiles.xls
ignore.headline	O	If true, the headline is ignored in the csv file. Useful for concatenating lists in same CSV file	false
lastdate.pattern	O	File Date format used in the Report	yyyy/MM/dd HH:mm:ss
list.excludes	O	Typically Files not selected	**/*.tmp,**/ *.zip,log*.xml,{listN ame},**/*.properties
list.fileName	O	CSV File of results	\${baseLocation}/ listFiles.csv
list.headline	O	Headline of resulting CSV file	projectName,stream Type,projectStream, packageName,level Name,actionType,re questOid,vcrTag,ma chine,environment,re questDate,requester, filePath,fileName,file Action,fileSize,fileLas tdate
list.includes	O	Files selected	**/*.*
packageOidInTarget	O	List Components from Target completed by package Oid (initZosInfos)	true
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.prop erties
setAllComponents	O	Copy Components to Target	false
setDBscriptsComponent s	O	Copy DataBase Sources object types (i.e. sql, ddl + bat, sh, ini)	false
setDeleteComponents	O	Copy "to_be_deleted" components	false
setListsComponents	O	Copy Listings object types	false
setObjectsComponents	O	Copy all Objects object types (i.e. setObjectsZos, setObjectsIdms)	false
setObjectsIdms	O	Copy IDMS Objects object types	false

Parameter	Mandatory/ Optional	Description	Default Value
setObjectsZos	O	Copy z/OS Objects object types	false
setPropertyFiles	O	Copy Property Files	false
setSourcesComponents	O	Copy all Sources object types (i.e. setSourcesZos, setSourcesIdms)	false
setSourcesIdms	O	Copy IDMS Sources object types	false
setSourcesZos	O	Copy z/OS Sources object types (i.e. copy, source, jcl, sysin, etc..)	false
sqlMain.template	O	sqlMain template properties for SQLPlus Oracle	*_main
targetProject.dir	O	Target directory	\${target}

Maps and Programs compilation

19.1. Purpose

This is a mandatory z/OS Phase.

This Phase creates the compile JCL, submits the job and runs the actual compilation on z/OS.

After the compile, the Phase will control the result, collect all the files generated by the compile job (listing, load modules, generated DB2 bind files, ...) and put the results, in zipped format, in the IKAN ALM Archive.

19.2. Usage

The *Maps and Programs Compilation* Phase can be used on the Build Environment.

This phase must follow the two other mandatory Build phases *Copy from Source to Target* and *Copy Sources to PDS for compilation* Phases.

19.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
allocPDS	O	Option for deleting PDS used on z/OS	true
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	All program types Compilation	zosCompilation.xml
analyze.source	O	Option for analyzing sources	false
compileEnd.model	O	End JCL model to use after the compilation steps	compileEnd_jcl.model
dir.jeslogs	O	Jes log location if error	\${target}/logs
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL

Parameter	Mandatory /Optional	Description	Default Value
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.languages	O	Property File of z/OS languages	./resources/ languages.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
script.syslin	O	linkEdit script location	./common/ linkEditSyslin.xml
stopOnErrorCompile	O	Option for stopping at the end of compiles.	false

PDSs Allocation or Deletion

20.1. Purpose

This is an optional z/OS Phase.

This phase is used to create or delete work PDS(s) as package PDS(s) for compiling for example. This is done per object type based on the Environment parameters, e.g., the first qualifiers, the prefixes, ... defined in the environment properties file.

The functionality to allocate or delete PDSs is included by default in the [Copy Sources to PDS for compilation](#) (page 25) and [Maps and Programs compilation](#) (page 43) Phases. Therefore, the *PDSs Allocation or Deletion* phase may be used to complement the standard allocation/deletion of PDSs.

Example of usage: XMIT PDS to load PDS members of a different type as the compilation type (PDS, PDSE) and, next, to copy the members to real PDSs on the environment.

20.2. Usage

The *PDSs Allocation or Deletion* Phase can be used on Build and Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

20.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alloc.command	M	Command for creating/deleting PDSs	Create
alloc.xmit	M	Option for allocating PDS with xmit qualifier instead of llq qualifier	false
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS PDSs Allocation or Deletion	zosAllocatePds.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	false
functions_list	O	List of Object Type Functions to select	ALL

Parameter	Mandatory /Optional	Description	Default Value
objtypes_list	O	List of Object Types to select	\${project.objtypes}
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Promote Datacom components

21.1. Purpose

This is an optional z/OS Phase.

This phase is used to submit a JCL for importing Datacom Plans in a Datacom environment.

The Phase does not copy the Datacom Plan Files from the ALM Environment Target to z/OS PDSs.

Therefore, the *Promotion of components and load-modules* Phase must be used previously in the phase sequence.

21.2. Usage

The *Promote Datacom components* Phase can be used on Deploy Environments.

This Phase is dependent on the [Promotion of components and load-modules](#) Phase.

21.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Datacom components Promotion	zosUpdateDatacom.xml
datacom.merge.list	O	Option for merging lists (true or false)	false
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties

Parameter	Mandatory /Optional	Description	Default Value
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Promote Debugger components

22.1. Purpose

This is an optional z/OS Phase.

This phase is used to submit a JCL for moving (if asked) components from Source to Target Debugger files in a z/OS Environment.

The Phase does not copy the files from the ALM Environment Target to z/OS PDSs.

This Phase supposes to have a Debugger as AbendAid, SmartTest or Xpediter installed in the z/OS Environment.

22.2. Usage

The *Promote Debugger components* Phase can be used on Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

22.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Debugger Update	zosUpdateDebugger.xml
debugAction	O	Action to use for updating the debugger (COPY,IMPORT)	COPY
debugType	O	Type of debugger (ABENDAID,SMARTTEST,XPEDITER)	XPEDITER
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL

Parameter	Mandatory /Optional	Description	Default Value
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Promote Endeavor components

23.1. Purpose

This is an optional z/OS Phase.

This phase is used to submit a JCL for moving components from Stage to Target Endeavor Environment.

The Phase does not copy the Files from the ALM Environment Target to z/OS PDSs.

23.2. Usage

The *Promote Endeavor components* Phase can be used on Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

23.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Endeavor components Promotion	zosUpdateEndeavor.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/parmsFTP.properties

Parameter	Mandatory /Optional	Description	Default Value
stopOnError	O	Option for stopping on error with z/OS activity.	false

Promote Idms components

24.1. Purpose

This is an optional z/OS Phase.

Used to transfer component files to z/OS and to update the target dictionary with the different types of IDMS components loaded with the generated JCL. i.e., Idmsdddl, Rhdcmap, Schema and Subschema. Next, the JCL runs the DCMT statements for new copies.

24.2. Usage

The *Promote Idms components* Phase can be used on Deploy Environments.

24.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Idms components Promotion	zosUpdateIdms.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Idms Object Types file to use	./resources/ idmsObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Promotion of components and load-modules

25.1. Purpose

This is a mandatory z/OS Phase.

This Phase copies the z/OS files selected from the Environment Target to their respective z/OS PDSs. The load-modules are copied to temporary sequential files and the script creates and submits a JCL for receiving them in their PDSs.

BIND DB2 files and SQL files may be transferred to z/OS PDSs without variable replacements. For these variable replacements see the dedicated DB2 Phases.

Note: Additionally, for IDMS objects, the *Idms Components Promotion* Phase ([Promote Idms components](#) (page 53)) may be used.

25.2. Usage

The *Promotion of components and load-modules* Phase can be used on Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) Phase.

25.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	Promote components and load-modules to z/OS environment	zosPromotion.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
project.objtypes	O	List of Object Types to select	ALL

Parameter	Mandatory /Optional	Description	Default Value
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
recvend.model	O	End JCL model to use after the receive command	recvend_jcl.model
stopOnError	O	Option for stopping on error with z/OS activity.	false

QMF Files Deployment

26.1. Purpose

This is an optional z/OS Phase.

Used to import QMF DB2 files in the z/OS environment.

26.2. Usage

The *QMF Files Deployment* Phase can be used on Deploy Environments.

This Phase is dependent on the [Promotion of components and load-modules](#) Phase.

26.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS QMF Files Deployment	zosQmfDeploy.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true
propsfile.db2Rules	O	Property File for DB2 rules	./resources/ db2Rules.properties
project.objtypes	O	List of Object Types to select	ALL
propsfile.db2Rules	O	Property File for db2 rules	./resources/ db2Rules.properties
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties

Parameter	Mandatory /Optional	Description	Default Value
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

SQL DB2 files Execution

27.1. Purpose

This is an optional z/OS Phase.

This phase is used to complete SQL DB2 files with environment DB2 parameters **with** variable replacements and to submit them, first for executing the DDL (data definition language) Files and next for executing the SQL (standard) Files on the DB2 Database.

The Phase does not copy the DDL/SQL DB2 Files from the ALM Environment Target to z/OS PDSs if the *db2.copyfiles* parameter is not set to true.

The files are concatenated without order in a global SYSIN for each logical DB2 environment for the DB2 ssid of the environment.

Note: The *Copy from Source to Target* Phase may assume a previous copy action to the target in the Environment Phase sequence without variable replacements. The *Promotion of components and load-modules* Phase may transfer its to z/OS PDSs without variable replacements.

27.2. Usage

The *SQL DB2 files Execution* Phase can be used on Deploy Environments.

This Phase is dependent on the [Copy from Source to Target](#) (page 27) Phase.

27.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS SQL DB2 updates	zosSqlDb2.xml
db2.copyfiles	O	Option for transferring SQL Files to z/OS PDS (true or false)	false
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
ftp.active	O	Option for transmitting to z/OS (true or false)	true

Parameter	Mandatory /Optional	Description	Default Value
project.objtypes	O	List of Object Types to select	ALL
propsfile.environment	O	Property File of z/OS environment	./resources/ environment.properties
propsfile.objtypes	O	Global Object Types file to use	./resources/ globalObjtypes.properties
propsfile.parmsFTP	O	Property File of z/OS FTP system	./resources/ parmsFTP.properties
stopOnError	O	Option for stopping on error with z/OS activity.	false

Unix Files Conversion

28.1. Purpose

This is an optional z/OS Phase.

This phase is used to generate the required JCL files for converting EBCDIC files into ASCII.

28.2. Usage

The *Unix Files Conversion* Phase can be used on Deploy Environments.

This Phase is dependent on the [Promotion of components and load-modules](#) Phase.

28.3. Parameters

Parameter	Mandatory /Optional	Description	Default Value
alm.phase.builder	M		
alm.phase.extractBundle	M		true
alm.phase.mainScript	M	z/OS Unix Files Conversion	zosConvertUnixFile.xml
dir.zosModels	O	Models Location	./models
dir.zosResources	O	Property files Location	./resources
env.lib.service	M	PDS work Prefix for copying files	\${env.lib}.serv
env.path.from	O	Location of files to convert	\${env.path}
env.path.to	M	Location of converted files	
option.active	M	Option activated for now (i.e. \${service.active} in environment)	true
option.code	M	Code of option (i.e. SERVICE:YES) in object-type to select	XXX
option.function	O	Function of object-type to select	GENERATE
option_jcl.model	O	Model of JCL Step	zosConvertFile_jcl.model

Parameter	Mandatory /Optional	Description	Default Value
option_sysin.model	O	Model of Sysin line(s)	zosConvertFile_sysin.model
project.objtypes	O	List of Object Types to select	ALL
propsfile.objtypes	O	Global Object Types file to use	./resources/globalObjtypes.properties