# Preconfigured Industry Solutions

## DELMIA Apriso 2020 Guide

**3D**EXPERIENCE®

**DS** **DASSAULT SYSTEMES** | The **3D**EXPERIENCE® Company

# Contents

# Figures

# 1 Introduction

A preconfigured industry solution is a prepared distribution of DELMIA Apriso designed to address and reflect specific needs of companies from a particular industry vertical in the domain of manufacturing execution. It can cover selected functional areas e.g., production order management, production order execution, quality, etc.

A preconfigured industry solution consists of defined roles (types of users for which the solution is designed). Each role can act through the set of assigned application offering functions required to execute the duties of particular role.

A preconfigured industry solution, as every other software distribution package, is subject to the processes of release, distribution, installation, implementation and support. The aim of this document is to describe the principles behind these processes.

## 1.1 Preconfigured Industry Solution Elements

Each preconfigured industry solution may consist of the following elements (grouped by element type):

- Platform elements:
  - Data model
  - Business Components
  - Business Controls
- Common objects (objects shared by many solutions and different implementations) and Solution objects (objects used by this particular solution):
  - Business Logic Methods:
    - Standard operations
    - Extension points
    - Action scripts
  - UI elements:
    - UI styles
    - Screen Flows
    - Screen Flow UI views
  - Interfaces/Reports/Labels
- Initial and configuration data:
  - System parameters
  - Determinations
  - Roles required by the solution
- Documentation:
  - Conceptual design (FAST template)
  - Set of detailed design documents (FAST template)
  - Data model description

All of the above items are available together with the main DELMIA Apriso distribution package.

Preconfigured Industry Solutions are available for installation from **DELMIA Apriso Start | Server Configuration | Preconfigured Solutions** page:
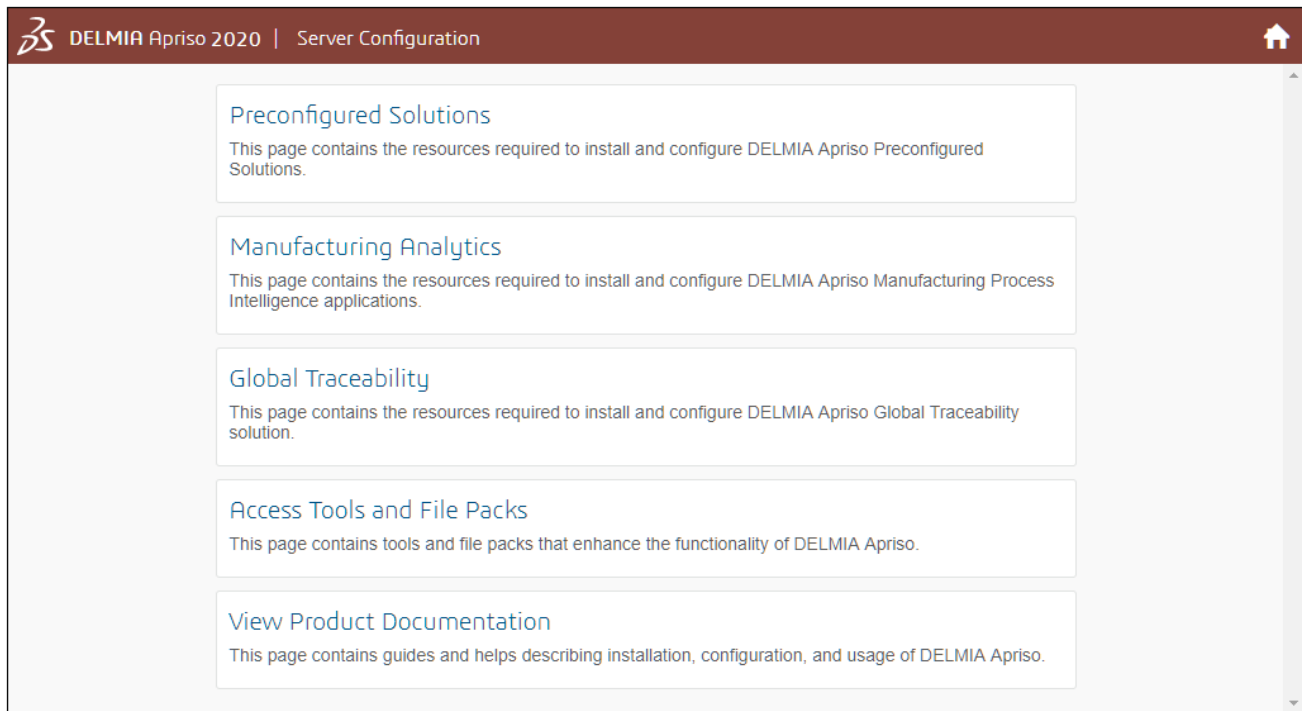


Figure 1  Server Configuration page

For each, there is a dedicated install page listing the installation components and documentation:

Figure 2 Preconfigured industry solution Install page

# 2 Installation and Upgrades

This section discusses the installation and upgrade steps for Preconfigured Industry Solutions.

## 2.1 Installation of Preconfigured Industry Solution Releases

The installation procedure for a preconfigured industry solution includes the following steps:

1.  Installation of the standard DELMIA Apriso release

    > ℹ️  For more information, refer to the DELMIA Apriso Installation Guide.

2.  Deployment of GPM packages with the given preconfigured industry solution on the DELMIA Apriso server.

    Required GPM packages can be downloaded from the dedicated Install Page, for details see Figure 2 Preconfigured industry solution Install page.

    For example, when installing the Complex Assembly preconfigured industry solution, the following deployment sequence must be observed:
    ▷ `CA_10_InitialData_3.0.gpm`
    ▷ `CA_20_DatabaseObject_3.0.gpm`
    ▷ `CA_30_Translation_3.0.gpm`
    ▷ `CA_40_OperationUI_3.0.gpm`
    ▷ `CA_50_DispatchingBoard_3.0.gpm`
    ▷ `CA_60_Interfaces_3.0.gpm`

> ✳️  The GPM packages comprising a prepackaged solution must be deployed in the alphabetical sequence.

> ℹ️  For information on installing DELMIA Apriso Global Process Manager, refer to the DELMIA Apriso Installation Guide.

> ℹ️  For information on deployment of GPM packages, refer to the Global Process Manager Help.

## 2.2 Installation of Upgrades to Preconfigured Industry Solutions

The upgrade procedure for existing deployments of Preconfigured Industry Solutions consists in the deployment of the latest GPM packages with the given preconfigured industry solution on the DELMIA Apriso server. There may also be additional update packages.

Required GPM packages can be downloaded from the dedicated Install Page, for details see Figure 2 Preconfigured industry solution Install page.

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For example, when upgrading the Complex Assembly preconfigured industry solution from a previous version, the following deployment sequence must be observed:

  ▷ `CA_10_InitialData_3.0.gpm`
  ▷ `CA_20_DatabaseObject_3.0.gpm`
  ▷ `CA_30_Translation_3.0.gpm`
  ▷ `CA_40_OperationUI_3.0.gpm`
  ▷ `CA_50_DispatchingBoard_3.0.gpm`
  ▷ `CA_60_Interfaces_3.0.gpm`
  ▷ `CA_65_UpdateFromPreviousVersions.gpm`

> ✳ The GPM packages comprising a preconfigured industry solution must be deployed in the alphabetical sequence.

> ℹ For information on installing DELMIA Apriso Global Process Manager, refer to the DELMIA Apriso Installation Guide.

> ℹ For information on deployment of GPM packages, refer to the Global Process Manager Help.

## 2.2.1 Post-Upgrade Activities

After an upgrade, it is strongly recommended that the following be verified:

▶ References between the upgraded elements and the revisions of those elements in customized operations
▶ References between the upgraded elements and the relevant extension point revisions
▶ References between the upgraded elements and the revisions of Views, Screens, and Layouts used in the upgraded elements
▶ Which revisions of the upgraded elements are set as default
▶ Any solution control settings where the default values have been changed
▶ That any custom changes to interfaces have been retained
▶ That any custom changes to styles have been retained

# 3 Implementation and Support for Changes

This section discusses the methodology for addressing gaps, as well as its consequences with respect to support for a preconfigured industry solution and its elements.

## 3.1 Types of Supported Elements

Depending on the element type, there are different support capabilities available (different support levels). Four such levels of support have been distinguished – corresponding to the types of elements that are being changed in order to address a particular gap.

### 3.1.1 Level 0 - Platform Changes

These changes involve the modification of the platform that are delivered with DELMIA Apriso installation folder and are automatically installed with the DELMIA Apriso version.

- ▶ **Component delivery**: DELMIA Apriso installation folder, GPM packages to be manually deployed on demand
- ▶ **Adjustability during implementation**: None
- ▶ **Support impact**: Not supported. Any dependencies of modified components are not supported.
- ▶ **Protection approach**: compiled C# code, non-accessible to end-user

### 3.1.2 Level 1 - Standard Operations

These changes involve the modification of Standard Operations that are available in DELMIA Apriso installation folder and are installed together with the DELMIA Apriso version or with a particular Preconfigured Industry Solution.

- ▶ **Component delivery**: DELMIA Apriso installation folder, GPM packages to be manually deployed on demand
- ▶ **Adjustability during implementation**: Standard Operations delivered with the default installation may not be changed
- ▶ **Support impact**: Changed Operations are not supported. Any dependencies of the changed Operations are not supported.
- ▶ **Protection approach**: Standard Operations are protected by a locked revision (APR.*) – the system prevents the usage of that revision code by the user

> ℹ Changing of any sub-operation will force a change of revision for all parent operations.

> ℹ Extension points are not covered by the above constraint.

### 3.1.3 Level 2 - Screen Flow Screens and Configuration

These changes involve the modification of Screen Flow UI elements. Modifications of screens and flows implemented using Screen Flows are included in this category.

- **Component delivery**: DELMIA Apriso installation folder, GPM packages to be manually deployed on demand
- **Adjustability during implementation**: These elements can be customized at the implementation stage by design
- **Support impact**: Varied:
  - ▷ There is a limited set of properties that can be changed without changing the revision and losing the support. For details refer to the **Entity Status Types** topic in the Process Builder Help.
  - ▷ Any other changes will require a new revision and are no longer supported.
- **Protection approach**: Screen Flow Screens and Flows are protected by a locked revision (APR.*) – the system prevents the usage of that revision code by the user. If there are any changes introduced, the system forces the use of a different revision prefix (such as CST.*)

#### Example

You want to change the layout of Order Cockpit, so that the 'Release' button is disabled in the Order Details screen, because the user would rather release Order Operations from the Operations Detail screen.

Procedure:

1. Create a new revision of the `OrderCockpit.OrderDetails.Editor` View in DELMIA Apriso Process Builder with appropriate prefix instead of APR.* (such as CST.*)
2. Open the newly created `OrderCockpit.OrderDetails.Editor` View
3. In Entity Explorer, choose Disable Action from the RELEASE action right-click menu
4. Save the changes and set the revision of the newly created View to default

> ⓘ As this example scenario requires a new revision to be created, the support for the revised View will be lost.

### 3.1.4 Level 3 - Extension Points

These changes involve the modification of Extension Points. Additions of customer specific business logic, validations, data manipulation and custom layout templates are included in this category.

For details on Extension Points, refer to the documentation for the given preconfigured industry solution.

- **Component delivery:** DELMIA Apriso installation folder, GPM packages to be manually deployed on demand

▶ **Adjustability during implementation:** These elements can be customized at the implementation stage by design
▶ **Support impact**: Modified Extension Point Operations are not supported. Modifications in Extension Points may affect the behavior of other unmodified entities (Operations, Views, Data, etc). Such changes in the behavior of unmodified entities are not supported. Elements rendered using customized or modified standard layout templates are not supported.
▶ **Protection approach:** No protection needed

## Example 1

> ✸  Changes introduced in this procedure do not affect the solution support.

You want to use barcode scanner to report consumption of lot tracked component. The confirmation barcode is scanned in Execution Cockpit and should be parsed in accordance with a defined structure.

Procedure:

▶ Create new revision of the extension point executed after barcode is scanned (BarcodeScan.After)
▶ Add business logic responsible for component reporting based on the contents of the scanned barcode (e.g.: component name, lot, and quantity)
▶ Save the changes and set the revision of the newly created Extension Point to default

## Example 2

> ✸  Changes introduced in this procedure may also change the behavior of unmodified entities. Elements rendered using customized or modified standard layout templates are not supported. Other elements whose behavior is affected by the changes are not supported as well.

You want to remove progress time information from the operation header in Execution Cockpit. To do so, you will create a custom layout template which will be applied on the Header.

Procedure:

▶ Create new revision of the extension point used to modify the default layout templates (TaskList.Content.Templates.After)
▶ Create a custom layout template for Operation Header based on the default one.
▶ Save the changes and set the revision of the newly created Extension Point to default.

## 3.1.5 Level 4 - Solution Control Settings

These changes involve the modification of Preconfigured Industry Solutions' parametrization (e.g. system parameters, determinations).

- ▶ **Component delivery**: DELMIA Apriso installation folder, GPM packages to be manually deployed on demand
- ▶ **Adjustability during implementation**: These elements can be customized at the implementation stage by design (different settings of the application)
- ▶ **Support impact**: Supported
- ▶ **Protection approach**: No protection needed

### Example

You want to modify the Execution Cockpit, so that the next step in a task is automatically started once the preceding step has been completed.

Procedure

- ▶ In DELMIA Apriso Process Builder, open the Advanced Determination Designer in Determination Manager
- ▶ Select the `APR_OPER_STEP_AUTOSTART` determination and open its properties
- ▶ In the Fields tab, change the default value of the `AutoStartNextStep` field to 'True'
- ▶ Save the changes

## 3.1.6 Support for Non-Revisioned Items

### Styles

These changes involve the modification of CSS styles that are delivered on DELMIA Apriso installation folder and are installed together with the DELMIA Apriso version or with a particular Preconfigured Industry Solution.

- ▶ **Component delivery**: DELMIA Apriso installation folder, GPM packages to be manually deployed on demand
- ▶ **Adjustability during implementation**: Primarily CSS styles files may not be changed. If changes are necessary, new CSS file should be created and linked.
- ▶ **Support impact**: Full, provided that no changes are made. Changes are not supported
- ▶ **Protection approach**: None

### Interfaces

These changes consider modifying interfaces that are delivered on DELMIA Apriso installation folder and are installed together with the DELMIA Apriso version or with a particular Preconfigured Industry Solution.

- ▶ **Component delivery**: DELMIA Apriso installation folder, GPM packages to be manually deployed on demand
- ▶ **Adjustability during implementation**: Interface files delivered with the default installation may not be changed. If any changes are necessary, new interface file must be created.
- ▶ **Support range**: Full, provided that no changes are made. Changes are not supported
- ▶ **Protection approach**: None

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### Reports

These changes involve the modification of reports that are delivered on DELMIA Apriso installation folder and are installed together with the DELMIA Apriso version or with a particular Preconfigured Industry Solution.

▶ **Component delivery**: DELMIA Apriso installation folder, GPM packages to be manually deployed on demand
▶ **Adjustability during implementation**: see 3.1.2 Level 1 - Standard Operations
▶ **Support range**: see 3.1.2 Level 1 - Standard Operations
▶ **Protection approach**: see 3.1.2 Level 1 - Standard Operations

### Labels

These changes involve the modification of label translations that are delivered on DELMIA Apriso installation folder and are installed together with the DELMIA Apriso version or with a particular Preconfigured Industry Solution.

▶ **Component delivery**: DELMIA Apriso installation folder
▶ **Adjustability during implementation**: Label translations can be modified on an 'as needed' basis
▶ **Support range**: Full
▶ **Protection approach**: No protection needed

## 3.2 Customization Guidelines

This section discusses how the existing gaps should be addressed, while preserving the maximum possible range of support (in terms of the set of supported elements and support level). The range of support depends on the selected implementation method. To work out an optimal implementation plan, follow the steps below:

1. Check if the required gap can be addressed by changing the Solution Control Settings (see 3.1.5 Level 4 - Solution Control Settings ):
   ▷ If yes, the solution maintains full support
2. Check if the required gap can be addressed by using the available Extension Points. Specialist knowledge will be necessary to modify the Extension Points (see 3.1.4 Level 3 - Extension Points):
   ▷ If yes, and provided that all Extension Points have been used in line with their design, the solution maintains support outside the set of modified Extension Points
3. Check if the required gap can be addressed by modifying the configuration of Screen Flows (see 3.1.3 Level 2 - Screen Flow Screens and Configuration):
   ▷ If yes, when such changes do not require new revisions, the modified elements maintain support
   ▷ If yes, when such changes necessitate new revisions, the modified elements are not supported
4. Check if the required gap can be addressed by exchanging the existing Standard Operations(see 3.1.2 Level 1 - Standard Operations):

▷   If yes, the exchanged Standard Operations, as well as all downstream operations, are not supported

If it is not possible to perform the required changes by following the above steps, and a thorough solution rebuild is necessary – the solution loses support. Nevertheless, the implementation team can work on top of the existing solution to minimize the cost of customized implementation.

## 3.3 Customization Recommendations

To minimize the required upgrade effort, follow the recommendations listed below:

### Naming Conventions

▶   Custom Standard Operations should be named using an appropriate project prefix (such as CST.*) and have a matching revision prefix
▶   Custom Screen Flow Screens and Flows should be named using an appropriate project prefix (such as CST.*) and have a matching revision prefix
▶   Names of Extension Point used should not be changed when creating a new revision and should have a revision prefix (such as CST.*) consistent with that of the project

### Other

▶   Custom styles should be stored in separate CSS files
▶   Custom configurations of interfaces should be stored in separate files

# 4 References

## Internal Documentation

1. ***DELMIA Apriso Upgrade Guide***

   A guide to the upgrade process of the DELMIA Apriso solution. It covers the most common scenarios and discusses known issues and configurations in detail. **Please note that this document is only available from the 3DS Support**.

2. ***DELMIA Apriso Installation Guide***

   Describes the installation of the DELMIA Apriso solution. The guide covers the software and hardware requirements as well as the installation procedure.

3. ***Global Process Manager Help***

   Describes the installation, configuration, and usage of DELMIA Apriso Global Process Manager (GPM). This application enables the full deployment of DELMIA Apriso solutions, regardless of their customization level, with support for both single- and multi-production server environments.

4. ***Process Builder Help***

   Provides an overview of DELMIA Apriso Process Builder (PB) and information on installing and using the application. This Help describes the user interface elements, entity maintenance, available Business Controls, and management of Processes, Operations, and Screen Flows.

## 3DS Support Knowledge Base

If you have any additional questions or doubts not addressed in our documentation, feel free to visit the **3DS Support Knowledge Base** at https://www.3ds.com/support/knowledge-base/.