

---

# Migration Guide for Allegro® X Platform Products

**Product Version 23.1**  
**September 2023**

© 2023 Cadence Design Systems, Inc. All rights reserved.

Portions © Apache Software Foundation, Sun Microsystems, Free Software Foundation, Inc., Regents of the University of California, Massachusetts Institute of Technology, University of Florida. Used by permission. Printed in the United States of America.

Cadence Design Systems, Inc. (Cadence), 2655 Seely Ave., San Jose, CA 95134, USA.

Allegro X Platform Products contain technology licensed from, and copyrighted by: Apache Software Foundation, 1901 Munsey Drive Forest Hill, MD 21050, USA © 2000-2005, Apache Software Foundation. Sun Microsystems, 4150 Network Circle, Santa Clara, CA 95054 USA © 1994-2007, Sun Microsystems, Inc. Free Software Foundation, 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA © 1989, 1991, Free Software Foundation, Inc. Regents of the University of California, Sun Microsystems, Inc., Scriptics Corporation, © 2001, Regents of the University of California. Daniel Stenberg, © 1996 - 2006, Daniel Stenberg. UMFPACK © 2005, Timothy A. Davis, University of Florida, (davis@cise.ulf.edu). Ken Martin, Will Schroeder, Bill Lorensen © 1993-2002, Ken Martin, Will Schroeder, Bill Lorensen. Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, Massachusetts, USA © 2003, the Board of Trustees of Massachusetts Institute of Technology. vtkQt, © 2000-2005, Matthias Koenig. All rights reserved.

**Trademarks:** Trademarks and service marks of Cadence Design Systems, Inc. contained in this document are attributed to Cadence with the appropriate symbol. For queries regarding Cadence's trademarks, contact the corporate legal department at the address shown above or call 800.862.4522.

Open SystemC, Open SystemC Initiative, OSCI, SystemC, and SystemC Initiative are trademarks or registered trademarks of Open SystemC Initiative, Inc. in the United States and other countries and are used with permission. All other trademarks are the property of their respective holders.

**Restricted Permission:** This publication is protected by copyright law and international treaties and contains trade secrets and proprietary information owned by Cadence. Unauthorized reproduction or distribution of this publication, or any portion of it, may result in civil and criminal penalties. Except as specified in this permission statement, this publication may not be copied, reproduced, modified, published, uploaded, posted, transmitted, or distributed in any way, without prior written permission from Cadence. Unless otherwise agreed to by Cadence in writing, this statement grants Cadence customers permission to print one (1) hard copy of this publication subject to the following conditions:

1. The publication may be used only in accordance with a written agreement between Cadence and its customer.
2. The publication may not be modified in any way.
3. Any authorized copy of the publication or portion thereof must include all original copyright, trademark, and other proprietary notices and this permission statement.
4. The information contained in this document cannot be used in the development of like products or software, whether for internal or external use, and shall not be used for the benefit of any other party, whether or not for consideration.

**Disclaimer:** Information in this publication is subject to change without notice and does not represent a commitment on the part of Cadence. Except as may be explicitly set forth in such agreement, Cadence does not make, and expressly disclaims, any representations or warranties as to the completeness, accuracy or usefulness of the information contained in this document. Cadence does not warrant that use of such information will not infringe any third party rights, nor does Cadence assume any liability for damages or costs of any kind that may result from use of such information. Cadence is committed to using respectful language in our code and communications. We are also active in the removal and/or replacement of inappropriate language from existing content. This product documentation may however contain material that is no longer considered appropriate but still reflects long-standing industry terminology. Such content will be addressed at a time when the related software can be updated without end-user impact.

**Restricted Rights:** Use, duplication, or disclosure by the Government is subject to restrictions as set forth in FAR52.227-14 and DFAR252.227-7013 et seq. or its successor.

---

# Contents

---

## 1

|  |   |
|--|---|
| <u>Allegro Platform Front-End Products</u> ..... | 5 |
|--|---|

## 2

|  |   |
|--|---|
| <u>Allegro X Platform Core Back-End Products</u> ..... | 7 |
|--|---|

|   |   |
|---|---|
| <u>Migration Impact on Database Compatibility</u> ..... | 7 |
|---|---|

|  |   |
|--|---|
| <u>Design Database Compatibility</u> ..... | 7 |
|--|---|

|   |   |
|---|---|
| <u>Library Database Compatibility</u> ..... | 9 |
|---|---|

|  |    |
|--|----|
| <u>17.2 Compatibility Mode Removed</u> ..... | 10 |
|--|----|

|  |    |
|--|----|
| <u>Migration Impact on Padstack Editor</u> ..... | 10 |
|--|----|

|  |    |
|--|----|
| <u>Importing Padstack Data from XML File</u> ..... | 10 |
|--|----|

|  |    |
|--|----|
| <u>Pad Renamed to Regular Pad in Design Layer of Padstack Editor</u> ..... | 10 |
|--|----|

## 3

|   |    |
|---|----|
| <u>Allegro Platform High-Speed Products</u> ..... | 11 |
|---|----|

## 4

|  |    |
|--|----|
| <u>Allegro Pulse and Allegro EDM</u> ..... | 13 |
|--|----|

|                                  |    |
|----------------------------------|----|
| <u>Workflows Migration</u> ..... | 13 |
|----------------------------------|----|

|  |    |
|--|----|
| <u>Changes in Library Synchronization User Interface</u> ..... | 14 |
|--|----|

|  |    |
|--|----|
| <u>Migrating to Release 23.1</u> ..... | 14 |
|--|----|

|   |    |
|---|----|
| <u>Migrating Pulse Server Cluster</u> ..... | 14 |
|---|----|

|   |    |
|---|----|
| <u>Migrating Unmanaged Libraries Indexed by Pulse</u> ..... | 18 |
|---|----|

|   |    |
|---|----|
| <u>Migrating Multi-Library Release Server</u> ..... | 20 |
|---|----|

# Migration Guide for Allegro X Platform Products

---

---

# Allegro Platform Front-End Products

---

Designs created using the following products in release 22.1 are fully compatible with release 23.1 and no changes or upgrades are required:

- Allegro System Capture
- Allegro Design Entry HDL
- System Connectivity Manager
- Design Entry CIS
- Allegro PSpice Simulator

If you plan to migrate from an earlier release, refer to *Migration Guide for Allegro Platform Products - Release 17.4-2019*.

# **Migration Guide for Allegro X Platform Products**

## **Allegro Platform Front-End Products**

---

---

## Allegro X Platform Core Back-End Products

---

The following sections describe new or modified functionalities that impact existing designs or workflows for all the Allegro X layout and substrate products: Allegro X PCB Editor, Allegro X Advanced Package Designer (APD), and PCB SI. It contains the following topics:

- [Migration Impact on Database Compatibility](#)
- [Migration Impact on Padstack Editor](#)

### Migration Impact on Database Compatibility

The following topics explain how database compatibility is impacted when migrating Allegro X layout editors to 23.1:

- [Design Database Compatibility](#)
- [Library Database Compatibility](#)
- [17.2 Compatibility Mode Removed](#)

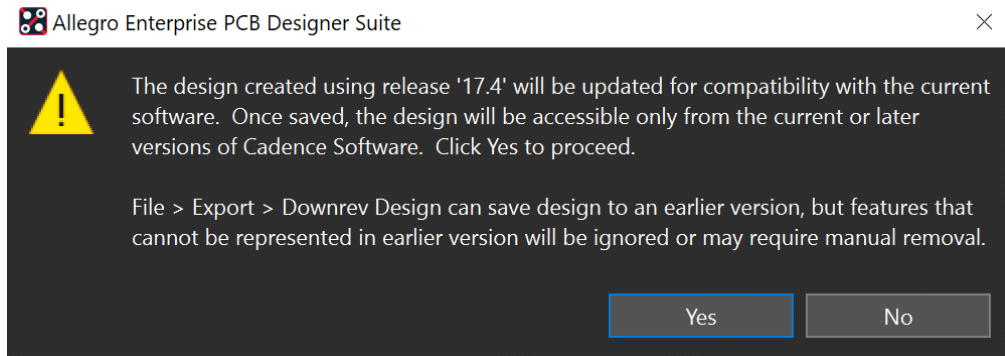
### Design Database Compatibility

A layout design created in release 17.2 or later, when opened in release 23.1, is automatically upgraded to release 23.1 and saved in the 23.1 database format.

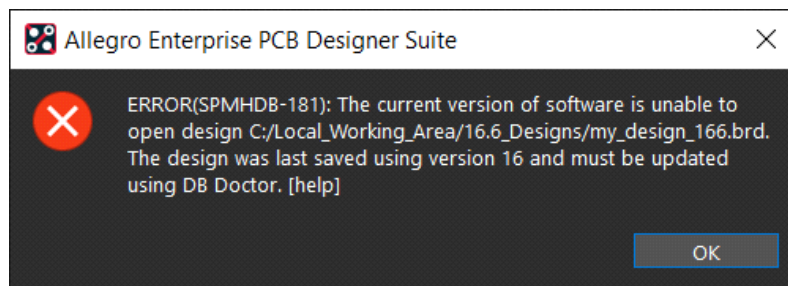
## Migration Guide for Allegro X Platform Products

### Allegro X Platform Core Back-End Products

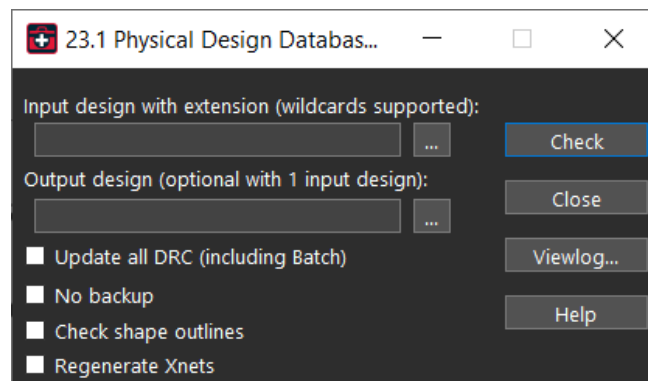
---



A design created in release 16.6 first needs to be upgraded before it can be opened in release 23.1.



Use the PCB DB Doctor utility (`dbdoctor_ui.exe`) to upgrade the design to the 23.1 database format.



To roll back a 23.1 design database to an earlier version, use the `downrev` command or choose *File – Export – Downrev Design* from the main menu.

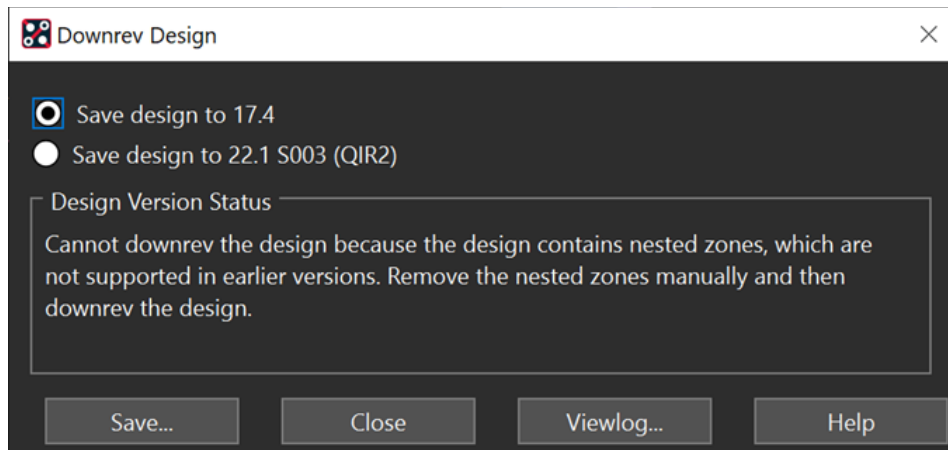
By default, the rollback operation saves the design to the 17.4 database format but if the design contains nested zones, it can only be saved to the 22.1 S003 (QIR2) database format.



## Migration Guide for Allegro X Platform Products

### Allegro X Platform Core Back-End Products

---



## Library Database Compatibility

Libraries created in release 17.2 or later can be used in 23.1 without any updates.

However, to use Allegro libraries created in release 16.6, you need to upgrade them to the 23.1 format using the PCB DB Doctor utility (`dbdoctor_ui.exe`).

To determine the database version of any symbol and padstack used in the library, use the batch DBSTAT command:

```
C:\My_EDA_Libraries\> dbstat  soic48w.dra
soic48w.dra:  17.2 NT
```

Additionally, you can use the following batch DB Doctor commands to update libraries with a large number of symbols:

```
dbdoctor <wildcard> (Linux)
dbdoctor <file name> (Windows)
```

By default, the library symbols and padstacks saved in release 23.1 are saved in the 17.2 database format to maintain compatibility with earlier releases. However, in the following scenarios, the symbols and padstack will be saved in higher database formats:

- *Secondary Side Countersink/Counterbore* and *Actual Drilled Hole* values are 23.1 features. When a padstack with these features is saved, it is saved in the 23.1 database format. If these padstacks are used in a symbol, it is also saved in the 23.1 database format.

## Migration Guide for Allegro X Platform Products

### Allegro X Platform Core Back-End Products

---

- *Hierarchical Route and Via Keepout shapes* defined on the *Outer\_Layer*, *Inner\_Signal\_Layers* and *Inner\_Plane\_Layers* layers are 17.4 features. A symbol using these features is saved in the 17.4 database format.

Removing these features from symbols and padstacks will automatically save the library to the 17.2 database format.

## 17.2 Compatibility Mode Removed

The 17.2 compatibility mode is removed from release 23.1. The following environment variables are also removed from the current release:

- `database_compatibility_mode`
- `database_compatibility_new_design`

## Migration Impact on Padstack Editor

The migration impact on Padstack Editor includes the following:

- Importing Padstack Data from XML File
- Pad Renamed to Regular Pad in Design Layer of Padstack Editor

### Importing Padstack Data from XML File

An XML file with padstack version 1.1 or later can be imported only in release 23.1.

### Pad Renamed to Regular Pad in Design Layer of Padstack Editor

The column name, *Pad* is renamed as *Regular Pad* in the *Design Layers* tab to be consistent with other instances in Padstack Editor. Update any script that refers to the old column name to use the new column name.

For example, in your scripts, you need to change:

```
QtSignal GuidedMaskLayersTab LayersTable itemSelectionChanged 1 Pad
```

to:

```
QtSignal GuidedMaskLayersTab LayersTable itemSelectionChanged 1 "Regular Pad"
```

---

## Allegro Platform High-Speed Products

---

This section is valid for all Allegro-based high-speed products.

Designs created in release 22.1, 17.4-2019, or 17.2-2016 are fully compatible with release 23.1 and no migration tasks are required for the Allegro® high-speed products.

Read the [Allegro X Platform Core Back-End Products](#) chapter for changes that apply to the Allegro layout and substrate editors.

# **Migration Guide for Allegro X Platform Products**

## **Allegro Platform High-Speed Products**

---

---

## Allegro Pulse and Allegro EDM

---

This section describes the impact of changed functionality in release 23.1 on existing sites, databases, flows, and designs for Allegro Pulse and EDM, and all the other Pulse and EDM-based products.

- [Workflows Migration](#)
- [Changes in Library Synchronization User Interface](#)
- [Migrating to Release 23.1](#)

### Workflows Migration

This release has a new documentation viewer, Cadence® Doc Assistant, which replaces Cadence Help. When migrating to this release, or if your organization uses customized workflows in Allegro X EDM Flow Manager, replace the name of the old help viewer executable, `cdnshelp`, with the name of the new viewer, `cda`. For example:

| Old Command                              | New Command                              |
|--|--|
| <code>cdnshelp -openpage</code>          | <code>cda -openpage</code>               |
| <code>adwuidoc:adwuidoc_firstpage</code> | <code>adwuidoc:adwuidoc_firstpage</code> |
| <code>cdnshelp -search "dbadmin"</code>  | <code>cda -search "dbadmin"</code>       |

### ***Related Documentation***

#### [Customizing Flow Steps and Buttons](#)

## Changes in Library Synchronization User Interface

---

### 22.10 Library Synchronization for PTC Windchill

No *Preferences* page

*Container* and *Soft Type* fields were in the *Connection* page

New Part Request-related settings for PTC Windchill were in the *Update PLM* page.

### 23.10 Library Synchronization for PTC Windchill

*Preferences* page available

The fields have moved to the *Preferences* page. The *Container* Field name is now *Default PLM Container*.

The *Soft Type* field name is now *Default PLM Part Type*.

New Part Request-related settings are now in the *Preferences* page for PTC Windchill.

The *Update PLM* and *Update Pulse* pages now have only task configuration options.

---

## Migrating to Release 23.1

If you work in a single-user Allegro System Capture environment, no migration tasks are required to move from release 22.1 to release 23.1.

If your company has a setup where designers connect to a remote Pulse server, ECAD or IT administrators need to migrate the Pulse server cluster. See [Migrating Pulse Server Cluster](#) for details.

Depending on your configuration, you need to perform the following, additional migration tasks:

- ☐ [Migrating Unmanaged Libraries Indexed by Pulse](#)
- ☐ [Migrating Multi-Library Release Server](#)

## Migrating Pulse Server Cluster

When migrating to 23.1, Pulse runs a service that extracts all the System Capture designs stored in the Pulse server. This enables design data indexing.

## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

This task might take some time, which depends on the amount of data to be extracted. During the extraction process, the PDFs of newly saved and committed designs might be unavailable to designers in *Version Control*. To ensure smooth operations, it is recommended that Pulse administrators migrate the cluster during a scheduled downtime.

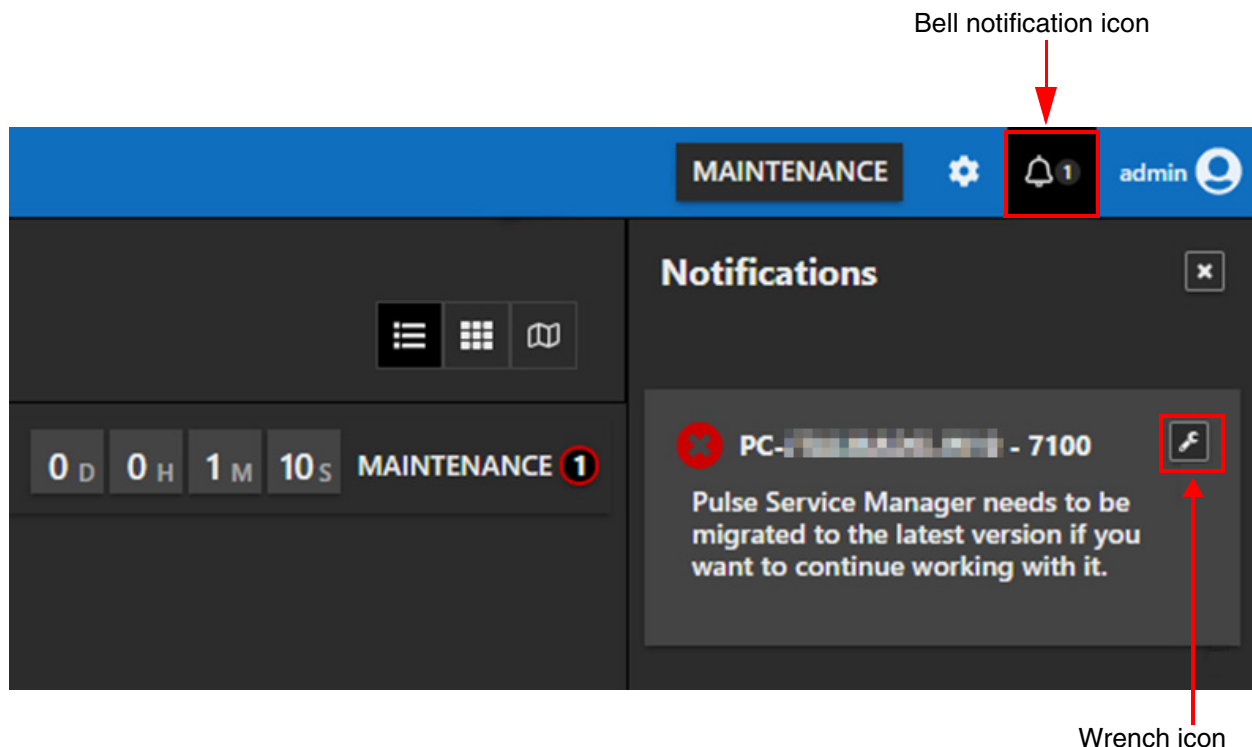
To migrate the Pulse server cluster, do the following:

1. Shut down the 22.1 Pulse primary node, if it is running.
2. Install release 23.1.
3. Start the 23.1 Pulse primary node.

To avoid migrating each node individually, start Pulse Service Manager on all nodes before you begin migrating to release 23.1.

When the Pulse primary node starts, the Pulse Service Manager web page is displayed.

4. Log in to Pulse.
5. Click the bell notification icon.



A message is displayed prompting you to migrate to the latest version.

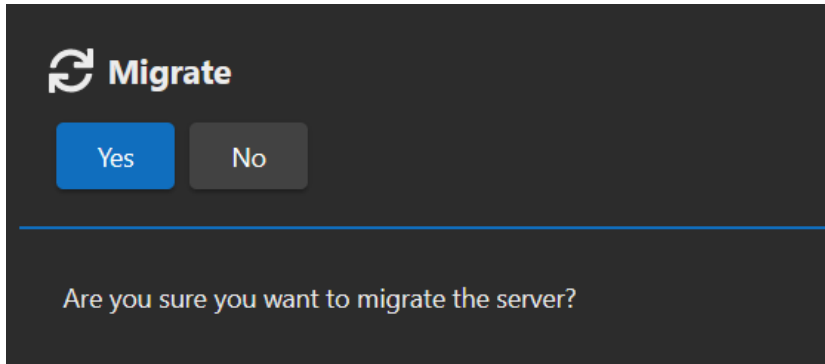
6. Click the wrench icon.

## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

---

You are prompted to migrate.



7. Click *Yes* to migrate to the latest version.
8. Complete the following tasks to carry over any custom scripts or flows:
  - a. Copy the 22.1 *<Allegro EDM Conf Root>* directory to the 23.1 setup.
  - b. Modify custom scripts and flows as required.

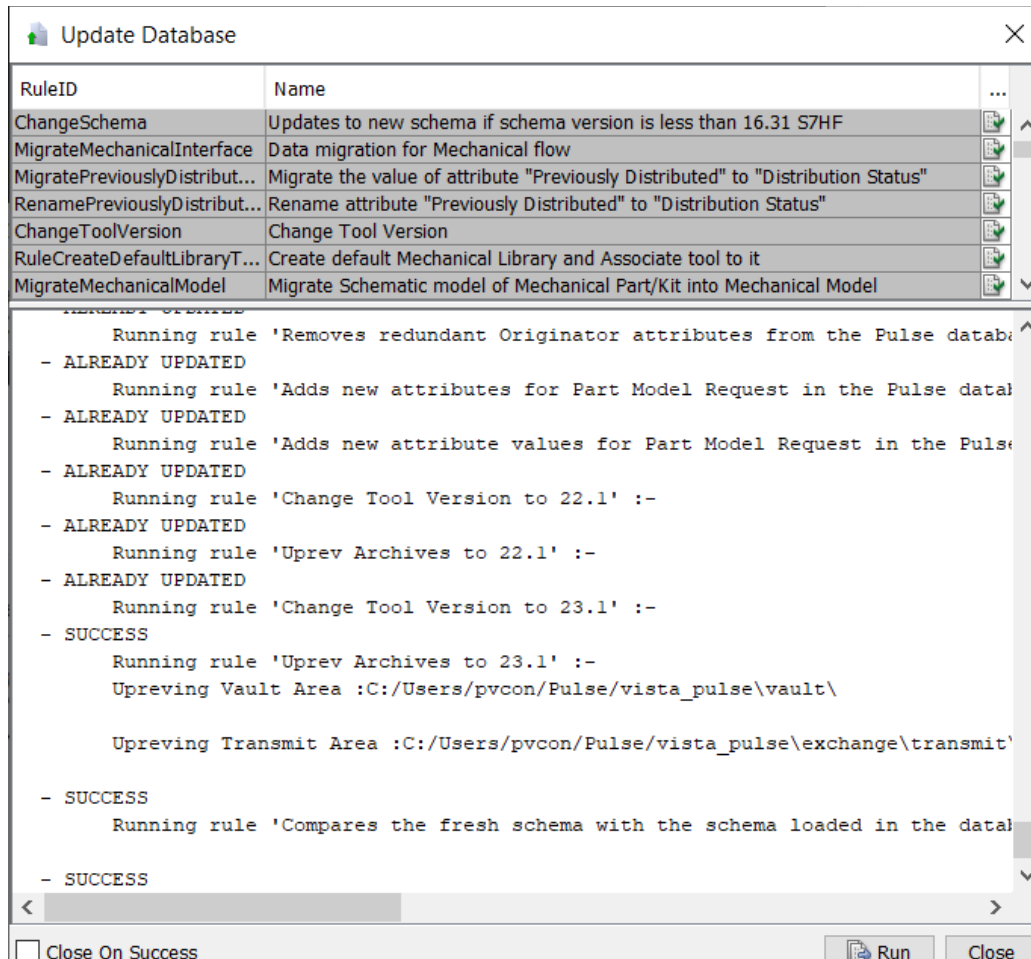
For example, the *<company>\_flow.env* file might have references to release 22.1. Modify these to 23.1.
9. Navigate to the location of the 23.1 *<startworkbench>.bat* file and open a Command Prompt window.
10. Run the batch file with the *adw\_uprev* argument to ensure that the database schema is up to date with the latest release.



## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

The `adw_uprev` utility indicates whether the process is successful. A further indication of a successful update is that there will be no uprev prompt when you launch Allegro EDM Database Editor or Allegro EDM Database Administration.

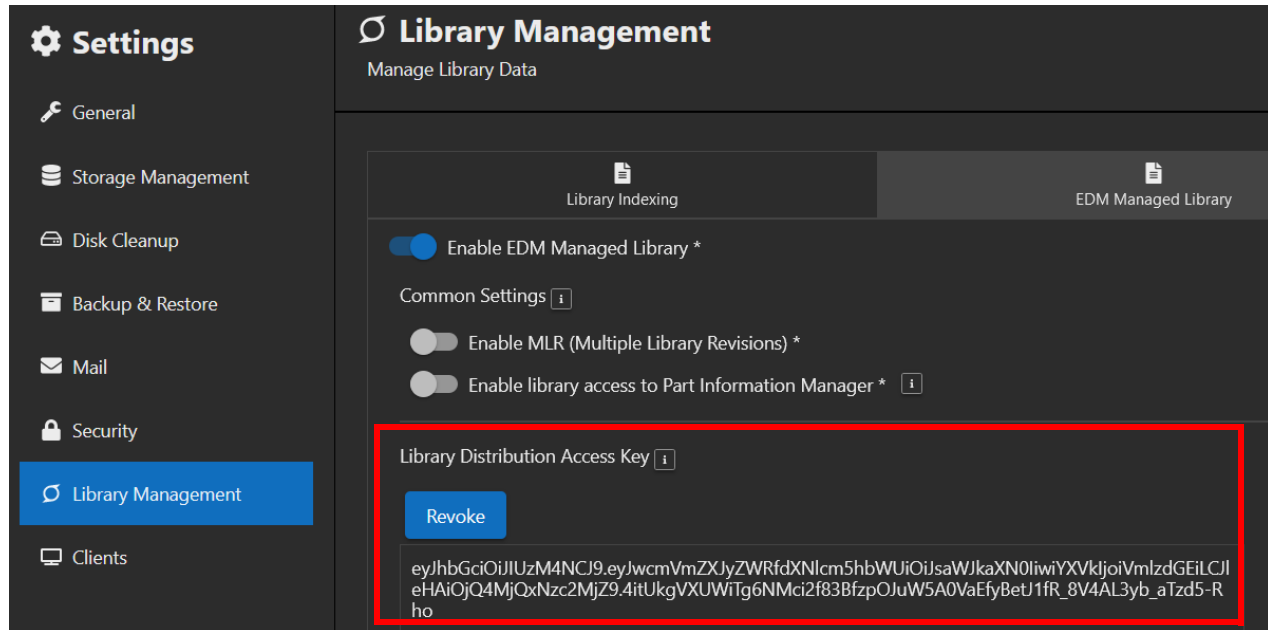


11. If you revoke an existing library distribution access key and generate a new access key, provide the regenerated key to all the designers who connect to the Pulse server.

## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

Copy the value of the library distribution access key from the *Library Management* pane of the Pulse Service Manager page.



## Migrating Unmanaged Libraries Indexed by Pulse

If you work with Design Entry HDL (DE-HDL) libraries that are not managed but indexed by Pulse in 22.1, no migration tasks are required to move to 23.1.

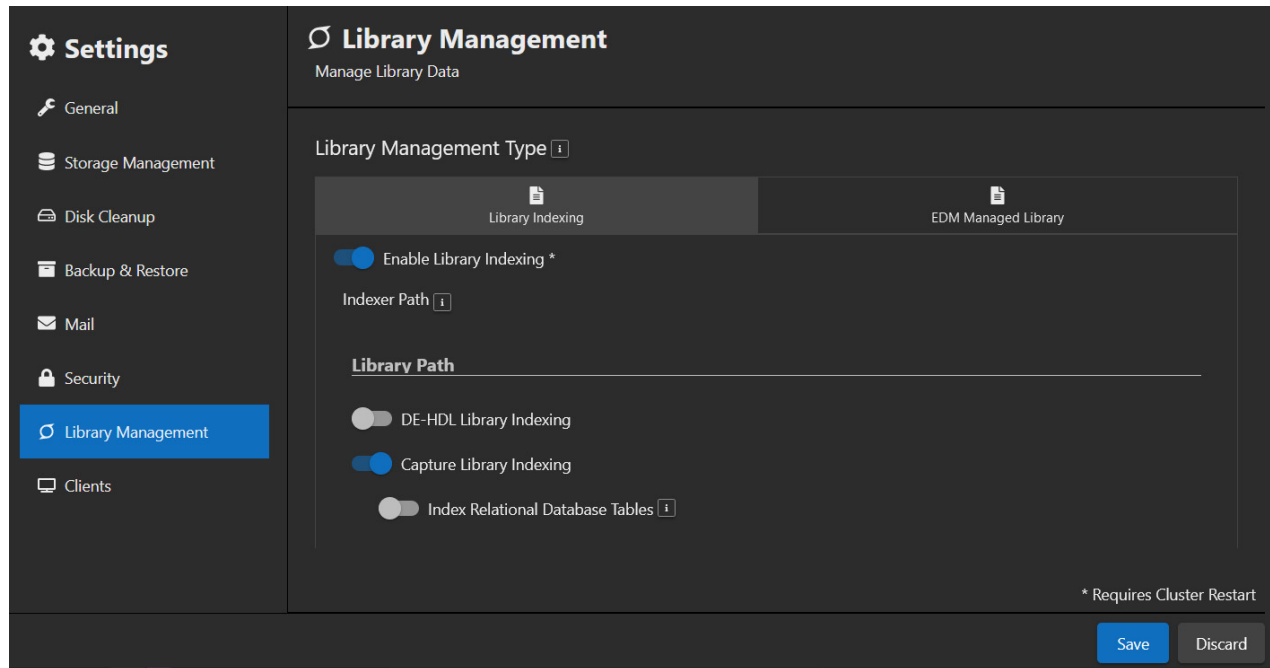
However, to migrate OrCAD® X Capture CIS libraries that are not managed but indexed by Pulse, do the following:

1. Navigate to `$CDS_SITE/cdssetup/OrCAD_Capture`.
2. Rename the 22.1.0 folder as 23.1.0.
3. From the 23.1.0 folder, open `capture.ini` in a text editor.
4. Change `Version=22.1-2022` to `Version=23.1-2023`.
5. Access the Pulse Service Manager Settings page.

## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

6. Select *Library Management* in the left pane.



7. Select *Enable Library Indexing*.

8. Specify *Library Path* as `$CDS_SITE`.

The sub-directory that contains `capture.ini` must be under the `$CDS_SITE` directory.

**Note:** It is recommended that you run OrCAD® X Capture CIS on the Pulse server, configure the libraries and ODBC connection to the CIS database, and then specify the resulting `capture.ini` in the Pulse server settings.

#### Important

OrCAD X library indexing is only supported on Windows.

Pulse uses the library location path to index and access all the configured libraries for parts.

9. Click *Save*.

# Migration Guide for Allegro X Platform Products

## Allegro Pulse and Allegro EDM

---

### Migrating Multi-Library Release Server

If all designers in your setup use Allegro System Capture, you can skip this section. It is expected that all System Capture designers point to the same Pulse remote server, which should ideally be on the latest release.

Read this section if your setup includes designers working on Design Entry HDL, and you have a multi-library release (MLR) server. In such a case, you can either:

- continue working with the MLR server, or
- migrate the MLR server to the latest release

The following tables list the possible MLR server setups, and the `client` in the tables refers to Design Entry HDL:

#### Possible MLR Server Setups

| Existing Setup for Librarians              | Existing Setup for Designers                              | Migration Tasks for Librarians   | Migration Tasks for Designers                             | See...  |
|--|---|--|---|---|
| 17.4 library server                        | The client is on 22.1 and points to a 17.4 library server | Migrate the 17.4 library server to a 22.1 library server                               | The client is on 23.1 and points to a 22.1 library server | <a href="#"><u>Migration Guide for Allegro Platform Products - Release 17.4 - 2019.</u></a> |
| 22.1 library server with 22.1 library data | The client is on release 22.1                             | Migrate the 22.1 library server to the 23.1 library server and update the data to 23.1 | The client points to the 23.1 library server              | <a href="#"><u>Moving to the Latest Release</u></a>   |
| 22.1 MLR server with 17.4 library data     | The client points to the 22.1 MLR server                  | Migrate the 22.1 MLR server to 23.1 and update the library data to 23.1                | The client points to the 23.1 MLR server                  |   |

## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

---

#### Possible MLR Server Setups

|  |  |   |  |  |
|--|--|---|--|--|
| 22.1 MLR server with 17.4 library data | The client points to the 22.1 MLR server | Migrate the 22.1 MLR server to 23.1 and retain the library data on 17.4 | The client points to the 23.1 MLR server |  |
|--|--|---|--|--|

#### Moving to the Latest Release

To migrate from the MLR server to a library server setup with the latest version, do the following:

1. On the Pulse data nodes, set the remote URL value and point the data nodes to the Pulse primary node.
2. From the current primary library server, copy the contents of `$PCBDW_LIB_MLR/vault/model_*` to `$PCBDW_LIB/vault/model_*` of the 23.1 Pulse primary node.
3. From the current primary library server, copy the contents of `$PCBDW_LIB_MLR/exchange/transmit/model_*` to `$PCBDW_LIB/exchange/transmit/model_*` of the 23.1 Pulse primary node.
4. Edit `$PCBDW_LIB/distribution/env/lib_dist.ini` and ensure that the following values are set:
  - ☐ `genmodelhtml = on`
  - ☐ `mkdump = on`
  - ☐ `adwserver_install = off`
5. Edit `$PCBDW_LIB/distribution/env/fetch_dump.ini` and modify:

```
urlRoot = file:///$(env($PCBDW_LIB_MLR)/distribution/html/index.html
```

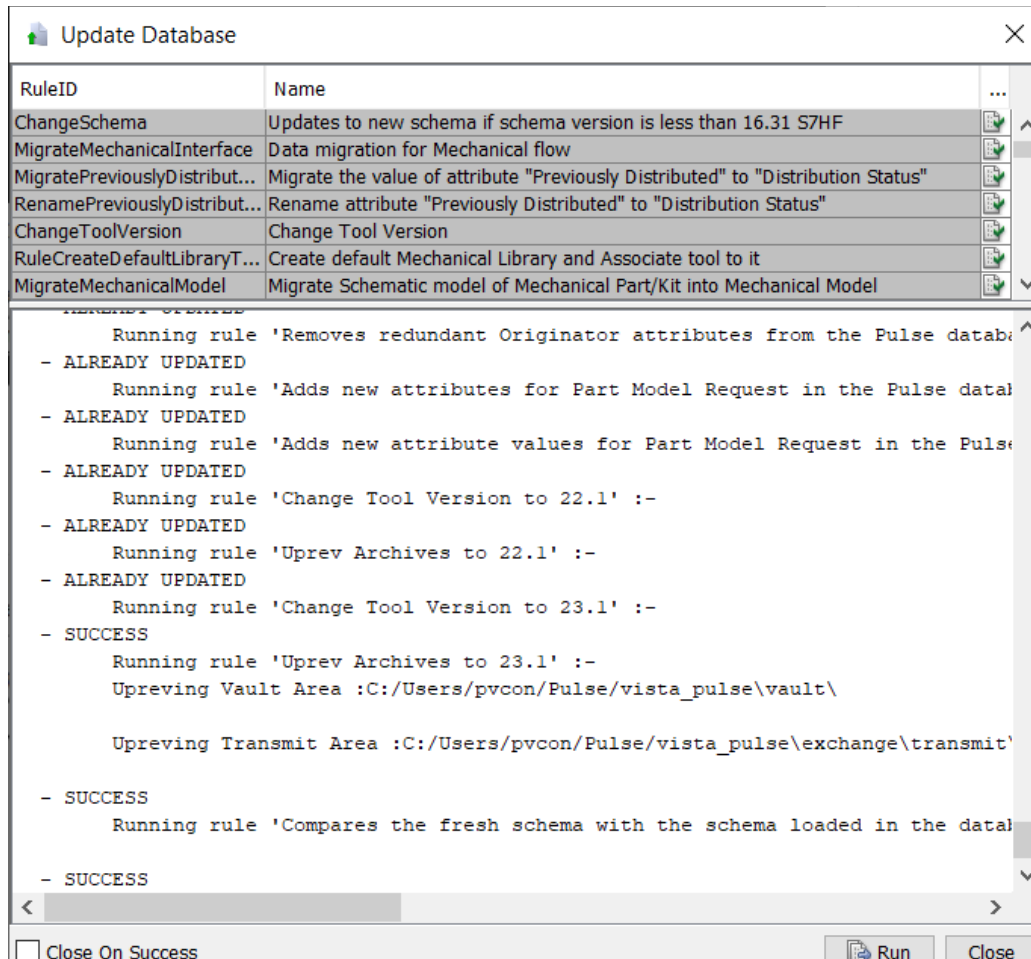
to

```
urlRoot = file:///$(env(PCBDW_LIB)/distribution/html/index.html
```
6. Navigate to the location of the 23.1 `<startworkbench>.bat` file and open a Command Prompt window.
7. Run the batch file with the `adw_uprev` argument to ensure that the database schema is up to date with the latest release.

## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

The `adw_uprev` utility indicates whether the process is successful. A further indication of a successful update is that there will be no uprev prompt when you launch Allegro EDM Database Editor or Allegro EDM Database Administration.



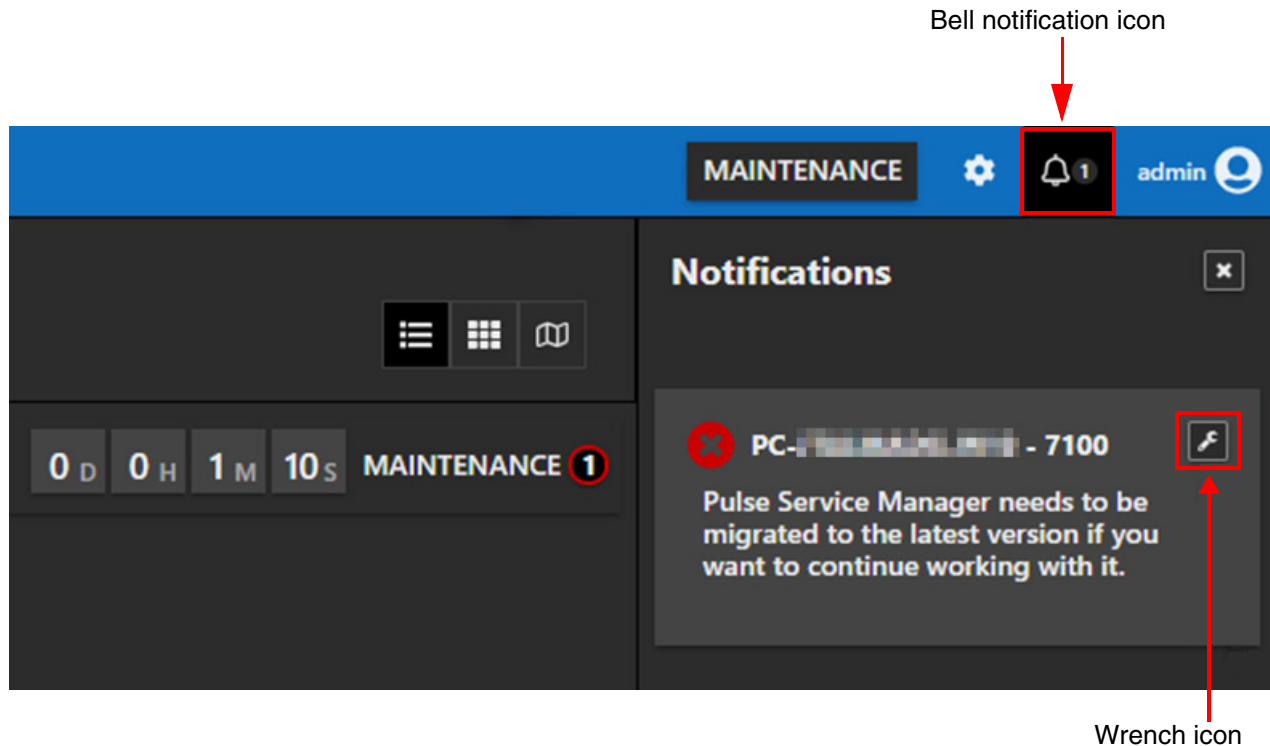
8. Open the Pulse Service Manager page.

## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

---

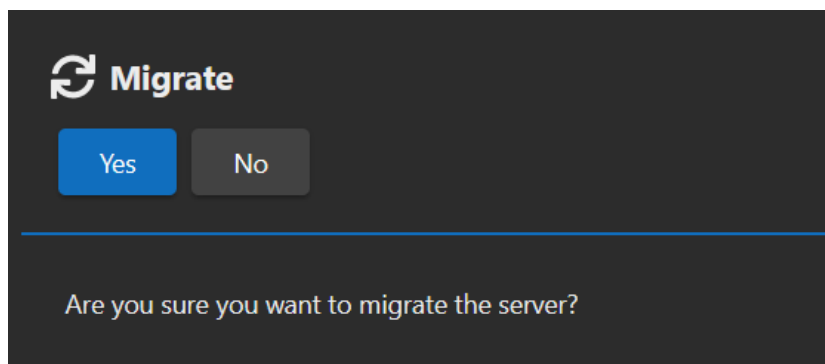
9. Click the bell notification icon.



A message is displayed prompting you to migrate to the latest version.

10. Click the wrench icon.

You are prompted to migrate.



11. Click **Yes** to migrate to the latest version.

12. Open the Pulse Service Manage *Settings* page.

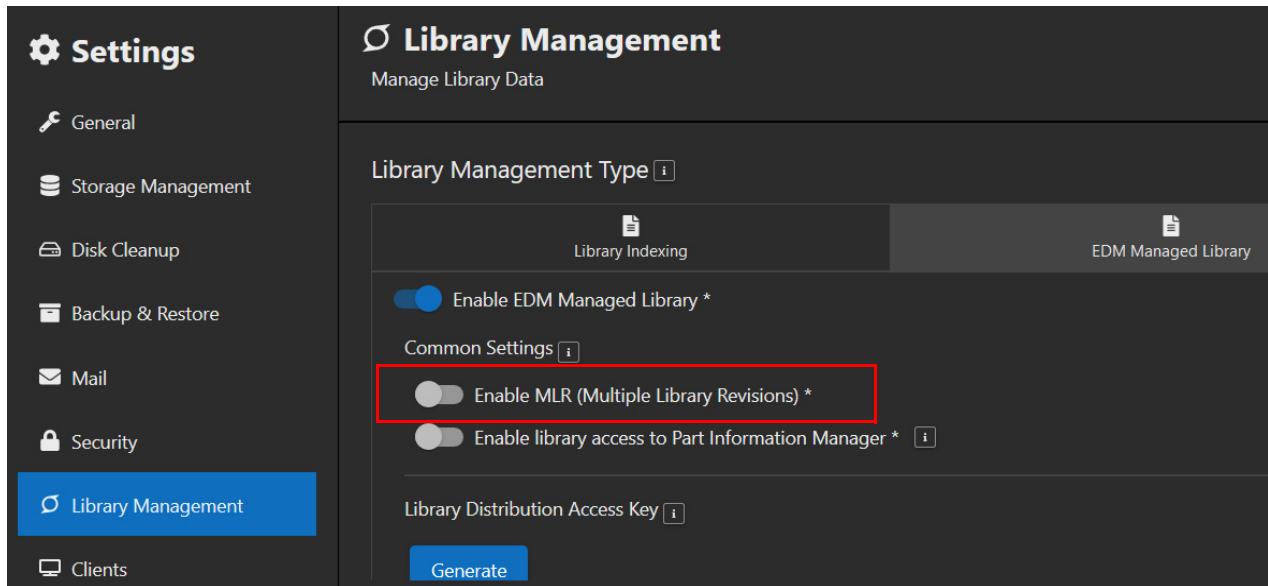
## Migration Guide for Allegro X Platform Products

### Allegro Pulse and Allegro EDM

---

13. Click *Library Management*.

14. Ensure that *Enable MLR (Multiple Library Revisions)* is deselected.



15. Navigate to the location of the 23.1 `<startworkbench>.bat` file and run the batch file.

The Allegro EDM prompt is displayed.

16. Enter the `lib_dist` command at the Allegro EDM prompt.

The PCB Editor models are re-installed and updated to the 23.1 model version on the 23.1 Pulse primary node.