



Primo V4 Upgrade Package Preparations and Highlights

Version 4.0

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Introduction

The Primo upgrade process is the process of replacing an older version of Primo with a newer version of Primo. This document focuses on the highlights and preparations needed to be done at the customer site prior to the upgrade.

This section includes:

- **Why Do I Need to Upgrade?** on page 3
- **The Primo Upgrade Package** on page 4
- **Restrictions** on page 4
- **Related Documents** on page 5

Why Do I Need to Upgrade?

Primo is constantly under development in order to accommodate ongoing changes in the market's requirements, to respond to Primo customers' development requests, and to adopt and integrate new hardware and software technologies. See the *Primo Version 4.0 Highlights* document for more information.

Primo customers must upgrade their Primo system from time to time in order to comply with these ongoing changes in technologies and to benefit from the new and enhanced functionality.

This document and the following documents should be read prior to the upgrade and used during the upgrade to Primo Version 4.

- **Primo Version 4 Release and Implementation Notes**
- *Primo Version 4.0 Highlights*

The Primo Upgrade Package

New Primo developments often require changes in the structure of the Primo data or the structure and content of the configuration tables and files (setup hereinafter). Hence, the upgrade process is not just a process of installing the new Primo system, but also a process of converting and upgrading the Primo data and setup from the previous version.

The Primo V3 to Primo V4 Upgrade Package provides a fast and reliable mechanism for upgrading to next release without losing any customer data and configuration.

The Primo Upgrade Package includes the following upgrade kits:

- **New Oracle version kit** – Upgrades the version of your Oracle database. Ex Libris recommends that the Oracle version upgrade be performed by a local System Administrator or DBA.
- **Primo Upgrade Express Kit** – Upgrades the software and the customer's data and configuration on the current installation, and does not require the Installation Team to create a new installation. The Primo System Librarian is best suited for running Primo Upgrade Express.

At the end of the upgrade process, you will have a new p4_x slot and a new Oracle database that has a new SID installed on your machine.

NOTES:

- The execution of the Oracle version upgrade requires Oracle and root permissions.
- Because Primo V.3 and Primo V.4 use the same ports, both cannot be up and running at the same time.

If you want to install Primo V4 on an environment that is different from your Primo V3 environment, you will need to contact Ex Libris to schedule a "copy installation" to configure the new environment for the upgrade.

This document focuses on the highlights and preparations needed to be done at customer site prior to executing the upgrade process.

Restrictions

The following restrictions apply for upgrades to Primo 4.0:

- 1 The upgrade can be done only for SP 3.1.2 and later SPs.
- 2 The upgrade process should be run between equal topologies.

IMPORTANT:

Customers that want to upgrade to V4 and also change the topology, must first upgrade to V4 and then change the topology. The topology change requires downtime and should be scheduled separately.

- 3 Prior to the start of the upgrade process, you should set the date and time and not make any changes to the local institutional setup after the date and time have been set.
- 4 In a consortium, all the member institutions must be upgraded together and need to switch to production at the same time.
- 5 The following table lists the version dependencies between Primo products:

Table 1. Product Interoperability

Product	Version
Aleph (to allow OvP)	Aleph 18 with Service Pack of April 2010 OR Aleph 20.1 with Service Pack of February 2010 or Aleph 21
Voyager (to allow OvP)	Version 7.2 and higher * Ex Libris recommends Voyager 7.2.5 as a minimum Voyager version for Primo interoperability. While integration with lower versions of Voyager is supported, it is not recommended due to known issues that were addressed in a later version.
MetaLib (to allow Find Database)	Version 4.3.3
SFX	March 2010 revision or higher
bX	Current version
Alma	Current version

- 6 The upgrade package includes the conversion and upgrade of the existing setup to ensure that the new Primo version retains the existing functionality in the new version.

Related Documents

The following documents should be read before the upgrade and used in the upgrade process.

- Primo Version 4 Highlights
- Primo Upgrade Express 3.1.x to 4.0x User Guide
- Oracle Installation Kit

- Requirements for Primo 4 Installation
- Operating System Requirements

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Hardware Preparations

Primo version 4 should be installed on the same server as your current Primo version.

This section includes:

- [Requirements for the V4 Installation](#) on page 7
- [Requirements for the Upgrade](#) on page 11

Requirements for the V4 Installation

For details concerning installation requirements, refer to the *Requirements for Primo 4 Installation* document. However, there are two features that may have an impact on the memory consumed by the SE. Most customers will not be impacted by these changes.

This section describes the sizing impact and how to validate whether your current Primo V3 hardware meets the requirements for Primo V4.

The following optional features have been added to Primo and may impact sizing:

- Facet cache
- Left-hand truncation

Facet Cache

Facet cache improves the functionality and internal mechanism of faceting. During the upgrade, a check is performed to ensure that there is sufficient RAM to activate the new Facet Cache feature.

If there is enough RAM, the upgrade will switch the new feature on. Otherwise, the upgrade kit will switch the feature off and display a message to the customer indicating that the feature was not activated. The message will be saved in the log file, and the upgrade process will continue.

If your SE is configured to work in memory and you want to enable Facet Cache feature, please contact Ex Libris Support

If your SE is configured to work on disk, verify that your index size does not exceed the index size indicated in the following table:

Table 2. Disk Size for Facet Cache

Primo Topology	16 GB RAM on machine with SE role	24 GB RAM on machine with SE role	32 GB RAM on machine with SE role
All-in-one	2 GB index size	4.4 GB index size	6.6 GB index size
2-Tier Topology (SE/FE)	3.65 GB index size	6.4 GB index size	8.7 GB index size
N+1 Topology (SE)	8.4 GB index size per slice	11.7 GB index size per slice	17.6 GB index size per slice

NOTE:

It is recommended to add five to ten percent more memory to your index size for future growth.

To use the above table, find the row that contains your Primo topology. Cross reference it with the column representing the amount of RAM allocated to the SE machine. If your index file size exceeds the value in the table, contact Ex Libris Support for assistance.

Examples:

- An All-in-one topology with 16 GB of RAM can support index sizes up to 2 GB.
- An N+1 topology with 24 GB of RAM on each SE can support index sizes up to 11.7 GB per slice.

To check the index size:

- 1 Log on to the FE server.
- 2 Enter the following commands to display the `search_schema.xml` file:

```
se_conf  
less search_schema.xml
```

- 3 Perform the following searches:

- Search for the `<load2ram>` tag.

If the value is false, the index is on disk. If the value is true, the index is in memory.

- Search for the <path> tag to find the full path of the /indexes directory.

```
<slices slice_count="1" name="main" active="true">
  <slice id="1">
    <path>/exlibris1/primo/indexes/p3_3/
inst_1_index</path>
    <load2ram>>false</load2ram>
  </slice>
</slices>
</agent>
</agents>
```

- 4 Enter the following commands to display the file information for the /indexes directory. Note that the largest file is the index file.

```
cd <value of the path tag>
ll -rth
```

```
primo@il-qalab01(p3_3):...p3_3/inst_1_index$ll -rth
total 995M
-rw-rw-r-- 1 primo exlibris 61 Dec 9 02:27 segments_33fc
-rw-rw-r-- 1 primo exlibris 20 Dec 9 02:27 segments.gen
-rw-rw-r-- 1 primo exlibris 994M Dec 9 02:27 _3goz.cfs
```

Left-Hand Truncation

Left-hand truncation (which is performed by placing the wildcard character to the left of the search term) is now supported. To support this feature, the system must index every word several times, each time removing another character from the beginning. For example, the word **world** is indexed as **world**, **orld**, **rld**, and **ld**. The additional indexes are used only when left-hand truncation is invoked.

Because this functionality increases the size of the index, you can limit its size by limiting left-hand truncation to specific fields in the PNX search section. The list of PNX fields is defined on the Advanced Configuration > Search Engine Configuration > Left wildcard support page. Any change to this configuration requires you to deploy the Search Engine Configuration and perform a re-index from scratch.

It is recommended not to include the Full text field for left-hand truncation. Also note that left-hand truncation of the ISBN and ISSN fields using the new normalization option (see defect #10575) is not supported.

Because this feature is not enabled by default, customers who do not intend to enable this feature will not have a sizing impact for this feature.

NOTES:

- Left-hand truncation (and also right-hand truncation) does not work for the Additional title and Alternative title fields when users only search the

title index by selecting in the title in the search box's drop-down list. This will be fixed in a future service pack.

- If you do not want to enable this feature, you can skip the rest of this section.

If your SE is configured to work in memory and you want to enable Left-hand truncation, please contact Ex Libris Support for assistance.

If your SE is configured to work on disk, add RAM as indicated in the table below. Note that the table supports up to three additional fields. For sizing information on additional fields, please contact Ex Libris support or your account manager.

Table 3. Disk Size for Left-Hand Truncation

# of records per slice	Additional RAM (1 Field)	Additional RAM (2 Fields)	Additional RAM (3 Fields)
Up to 2.5 M	No need	0.5GB	0.5GB
2.5M - 4.5M	1GB	1GB	1GB
4.5M - 6M	1GB	2GB	2GB
6M - 8M	No need	1GB	2GB
8M - 10M	No need	1GB	2GB

NOTES:

- For the N+1 Topology, the numbers listed in the above table are per slice and the additional RAM is per SE.
- It is recommended to add five to ten percent more memory to your actual record count for future growth.

To use the above table, select the row that matches the number of records that you have in your slice. In the All-in-one and 2-Tier topologies, this is the total number of PNX records in your Primo database. In the N+1 topology, you should divide the number of PNX records by N (the number of slices you have in your topology). After you have determined the row, cross reference it with the column that represents the number of fields that you want to configure for left-hand truncation. This value is the amount of RAM you need to add to the SE machine.

Requirements for the Upgrade

The disk space necessary for the Primo V3 to Primo V4 upgrade should be twice the current disk space used in V3. For example, if the current disk space used for V3 is 100 GB:

- 10 GB for V3 and Oracle software on disk `/exlibris`
- 10 GB for `primo_indexing`
- 80 GB for the DB files (utilized table space of customer data and system tables)

The Disk space needed for the upgrade should be 200 GB, which also includes the following.

- 20 GB for the temporary installation files, upgrade scratch, and log files on disk `/exlibris`
- 80 GB for DB temporary dump files

In summary, the disk space required for the V3 to V4 upgrade is 200 GB. After the upgrade is complete, only 100 GB of disk space is required for V4:

- 10 GB for V4 and Oracle software on disk `/exlibris`
- 10 GB for `primo_indexing`
- 80 GB for the DB files (utilized table space of customer data and system tables)

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Upgrade Process Flow and Administration and Summary

This section includes:

- [Upgrade Process Flow](#) on page 13
- [Upgrade Process Administration](#) on page 16
- [Summary](#) on page 17

Upgrade Process Flow

The methodology of the Primo V3 Upgrade consists of two major parts:

- The upgrade of the staging server and localization allows the localization of V4 without affecting the V3 production instance.
- The upgrade of the production server and the switch to production (STP) is performed after all localization of the staging server is completed and the customer to move to Primo V4.

The upgrade process should be run in the staging environment first. The upgraded staging environment should be tested. Once the testing phase has been completed, the upgrade process should be scheduled to run in the production environment.

Any configuration changes (such as changes in the CSS, HTML files, and so forth) should be prepared in the staging environment and then moved to the production environment to reduce downtime on the production server during the upgrade.

NOTES:

- When executing the upgrade in the production environment, it is mandatory to start the procedure from scratch by downloading the

package again and running the entire upgrade process in the production environment.

- For more information on the upgrade kits mentioned below, see the *Primo Upgrade Express 3.1.2 (and Higher) to 4.0x User Guide*.

The main stages of the upgrade process should be performed in the following order:

- 1 Execute the Primo Pre-Upgrade Kit (PPUK) on all servers in the environment. The servers should be run in the following order: BE, FE, and then SE. This stage includes the following operations:
 - a **Check disk space**
 - b **Change Primo V3 to read-only mode**

NOTE:

While the upgrade process is running, the Primo V3 production instance can continue to function in parallel. However, to ensure data integrity, the Primo V.3 instance must be in read-only mode. Read-only mode does not allow customers to use user-generated features (such as eShelf and Tags & Reviews). In addition, the Back Office stays offline to avoid any scheduled pipes and indexing jobs.

-
- 2 Execute Primo Oracle Installation Kit Extender (POIKE).

NOTE:

Ex Libris provides an automated Primo Oracle Installation Kit extended (POIKE) for self-installations. Ex Libris recommends that the installation be performed by a local System Administrator or DBA. This installation takes a few hours, depending on the server. Ex Libris offers installation services at a cost to interested customers. Please contact your local office to obtain a quote.

This kit includes the following components:

- Installation package (scripts and init files)
- Oracle RDBMS v.11.2.0.3 Enterprise edition
- Oracle database for Oracle RDBMS v.11.2.0.3
- Export and import files

This stage includes the following tasks:

- a Update installation parameters
- b Download POIKE from FTP server

- c Execute pre-installation tasks, which include pre-installation checks, the creation of necessary users and groups, creation of startup/shutdown scripts, and so forth.
- d Migrate data – exports the data from the current Primo V3 database and imports the data to the Primo V4 database.

IMPORTANT:

- The upgrade for the Oracle software and databases that are installed by the customer's DBA are the responsibility of the customer's DBA.
 - POIKE can't be used for the upgrade of databases that are installed using the Oracle RAC technology.
-

- 3 Execute Upgrade Express from Primo V3 to Primo V4 on all Primo servers in the environment. The servers should be run in the following order: BE, FE, and then SE.

This stage includes the following operations:

- a Add/change user parameters.
- b Perform upgrade checks to make sure that the Upgrade Express Kit will run smoothly.
- c Download and extract the Primo V4 software.
- d Move configuration files from Primo V3 to Primo V4, which includes the following tasks:
 - Copy the predefined set of customized configuration files
 - Copy the index files from the SE machines to the defined indexing path for Primo V4.
 - Add memory to slice allocation on SE machines only.
 - Add a new p4_<slot> user to the Primo menu.
 - Add Primo V4 default crontab tasks.

NOTE:

Any customized crontab jobs on Primo V3 should be copied manually by the customers to Primo V4.

- e Upgrade the database, which includes backing up the current configuration tables and running implementation scripts.
- 4 Execute the following post-upgrade steps to complete the upgrade process:
- a Shut down the Primo V3 application including Oracle.
 - b Start up the Primo V4 application including Oracle.
 - c Access the Back Office UI and execute Deploy All.

- d** Perform sanity checks on the Primo V4 application. Check the system overall functionality in order to determine that Primo is functional after the upgrade process.
- e** Update the Oracle memory parameters.
- f** Shut down the Primo V4 application.
- g** Start up the Primo V4 application.

NOTES:

- In the upgrade process flow, there is a testing period during which the staging environment is upgraded to Primo V4 while the production environment is still running Primo V3.
- The upgrade process has a menu-driven wizard that guides you step by step as you move from one stage to another. Steps should be run in the order they are presented in the upgrade menus. The system will display a message if you attempt to run a step out of sequence.

IMPORTANT:

The upgrade process overwrites all Primo-owned data and copies the customer-owned data from Primo V3 to Primo V4. If any Primo-owned files (such as jsp files) were customized in Primo V3, it is the responsibility of the customer to back them up and integrate them into Primo V4.

Upgrade Process Administration

The Ex Libris Primo Global Support Organization (Primo-GSO) will oversee the process of upgrading Primo sites to Primo V.4. Primo support is well trained in the upgrade process. Primo-GSO will be in charge of upgrading all Total Care and Direct (hosted) customers. Primo-GSO will be ready to assist you and answer your questions at any stage of the upgrade process.

In order for Primo-GSO to be prepared to assist you during the upgrade period, refer to the following process:

- 1** Access the FTP server and download the pre-installation checks kit.
- 2** Execute Pre-Upgrade Express Kit (PPUK) to check disk space and to check memory steps. Credentials for downloading the upgrade kit will be provided to you after the PPUK checks pass successfully and you receive notification e-mail from the Primo-GSO team. If PPUK checks fail, you are welcome to ask Primo-GSO for assistance by submitting an SI via CRM.
- 3** Primo-GSO will send you the login information for the Ex Libris FTP server, where you can download the Primo Oracle Installation Kit and the Primo Upgrade Express Kit.

- a Primo-GSO submits SI and registers your Primo V4 installation as one of your products in our CRM system. The registration will be for "evaluation" in parallel with your "production" Primo registration.
 - b The registration will allow you to open SI under Primo V4.
 - c If you have questions or encounter problems in the upgrade process, please open separate SI.
- 4 Once you are done with the upgrade in the production environment, open a step (W4P) to Primo-GSO. Upon receiving this step, Primo-GSO will do the following:
 - a For production servers, we will change the registration of Primo V4 to be the active version.
 - b Primo-GSO will close the SI.
 - 5 If you need Primo V3 removed, please submit a new SI to have this task performed.

Summary

The following table summarizes the upgrade activities and responsibilities:

Table 4. Upgrade Activities and Responsibilities

Step	Activity	(Short) Description	Responsibility
1	Primo V4 Release	Version Highlights	Ex Libris
2	Upgrade Planning	The main planning activities are: <ul style="list-style-type: none"> ■ Evaluation of the new version functions and upgrade requirements. ■ Budget and resource allocation. ■ Setting a project plan and target dates for the upgrade . 	Customer
3	Staging Environment Setting	<ul style="list-style-type: none"> ■ Disk space allocation check ■ Install and run PPUK checks and receive credentials for downloading the Upgrade kit after the PPUK checks pass successfully by mail from Primo-GSO team. 	Customer
4	Install Upgrade Express Kit	Install and run the Upgrade Package on the staging environments.	Customer

Table 4. Upgrade Activities and Responsibilities

Step	Activity	(Short) Description	Responsibility
5	Work in the Test Environment	<ul style="list-style-type: none"> ■ Implementation of new functionality and final tuning of the setup ■ Customization of the front end configuration, normalization rules if required. ■ Testing 	Customer
6	Confirmation of the Test Phase.		Customer
7	Production Environment Setting	<ul style="list-style-type: none"> ■ Disk space allocation check ■ Install and run PPUK checks and receive credentials for downloading the Upgrade kit after the PPUK checks pass successfully by mail from Primo-GSO team. 	Customer
8	Install Upgrade Express Kit	<ul style="list-style-type: none"> ■ Install and run the Upgrade Package on the production environments. ■ Copy updated configuration from staging ■ Testing 	Customer
9	Switch to Production with the new version		Ex Libris