



WebSphere Product Center, Version 5.3.2, Fix Pack 9

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WebSphere Product Center, Version 5.3.2, Fix Pack 9 is now available. This release notes document addresses system requirements, installation, and known problems for this fix pack.

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Description of this fix pack

WebSphere Product Center provides a highly scalable, enterprise Product Information Management (PIM) solution. WebSphere Product Center is the middleware that establishes a single, integrated, consistent view of products and services information inside and outside of an enterprise.

This fix pack addresses the following enhancements and fixes:

Product fixes discovered by users

The following fixes were included in this fix pack as a result of an Authorized Program Analysis Report (APAR). You can search for and view existing APARs here: www-306.ibm.com/software/data/masterdata/product-info/support/. You can also review the associated PMR (if one is identified) for the fix, with the ESR Web site: www-306.ibm.com/software/support/probsub.html.

- Error in releasenote for WPC532 FP8. (APAR JR29151)
- Multiple edit, 50X calls to category SQLs. (APAR JR28880)
- The date format defined in (Home > My Setting) page does not hold for viewable only (not editable) date type attributes. (APAR JR28817)
- Any updates made to a trigger script does not get picked up. (APAR JR28766)
- Provide more meaningful logging message for schedule detail viewer. (APAR JR28734)
- Rich search page cannot inhibit users from searching on non indexed attributes. (APAR JR28729)
- `setAccessControlGroupForRoleACGs()` does not allow deleting privileges that are set in system-wide access. (APAR JR28723)
- `getEntryAttrib()` results in null if attribute is not in view is insufficiently documented. (APAR JR28680)
- Harmless messages displayed in `appsrv/exception.log` file when trying to save an item. (APAR JR28679)
- Wrong report in the activity console. (APAR JR28675)
- `getNbColumns()` script operation returns incorrect max number columns. (APAR JR28673)

- Rich search is designed to work on only indexed attributes. (APAR JR28624)
- The privilege "clone items" is wrongly dictating in case of non-admin users (copy functionality is disabled in the left pane). (APAR JR28615)
- The catalog privilege "differences" allows you not to display the differences option in the context menu of the left nave pane. (APAR JR28601)
- Script operation `getEntryChangedDataSinceLastSave()`. (APAR JR28584)
- Script operation `genNewDate()` is swallowing an exception related to date format error. (APAR JR28574)
- A scroll bar shows up in the text area when it should not. (APAR JR28549)
- Attribute search in item edit window to locate attributes should exclude the specname part of the nodename from the search. (APAR JR28546)
- Missing indexes (DOA_0_UK and CTG_1_UK) on new imported database. (APAR JR28536)
- ORA-12899 error upon workflow checkin. (APAR JR28524)
- The definition of an "item hierarchy spec" for a category will be lost during an environment export and import. (APAR JR28500)
- Some methods in WPC can be executed on null objects without exception. (APAR JR28476)
- Multi-edit tab in workflow steps shows each attribute multiple times. (APAR JR28459)
- Improvements needed in release notes for delivery of updates to `common.properties` file. (APAR JR28420)
- `NumberFormatException` thrown when using full nodepath string as input in function `setContainerAttribute()` instead of node ID. (APAR JR28412)
- Provide more meaningful return value for function `addSubSpec()`. (APAR JR28378)
- The scrollbar display problem in GUI. (APAR JR27639)

Enhancements

The following enhancements were included in this fix pack as a result of a Problem Management Report (PMR). You can search for and view existing PMRs with the Electronic Service Request (ESR) Web site: www-306.ibm.com/software/support/probsub.html.

- You can use the **In Multi Edit on a Workflow Step, sets of checked entries must all leave together** setting of the **My Settings** panel to improve entry validation done in the **Multiple Edit** panel. (PMR 14925)

Product fixes and enhancements discovered internally

The following fixes were included in this fix pack as a result of an internal defect that was discovered by the development team. If you want to learn more about one of these fixes, you can use the internal defect number for reference when speaking to someone from IBM Support:

- Category changes are lost when a single script is used to make changes to a category that is checked out into a workflow and then moved to the next step. (WPC00037332)
- A multiple edit with string enum rules runs faster. (WPC00037040)

- The `moveEntriesToNextStep()` script for the **Multiple Edit** panel incorrectly allows unreserved entries to be moved out of the step and does not save of the entries before the validation process. (WPC00033721)
- The suppliers directory is now mapped onto the web server with a Virtual Directory Mapping for WebSphere Product Center instances built on BEA WebLogic Server version 9.2. (WPC00033680)
- The two new script operations `getInvocationCacheValue` and `putInvocationCacheValue` have been added to improve performance when making repeated fetches during a single request such as computing the string enumeration rule in a multi-edit panel. (WPC00033663)
- The performance when tabbing between attribute pages in item and category **Multiple Edit** panels has been improved. (WPC00033435)
- Attributes have been made an optional selection for the import environment. (WPC00033411)
- Migration steps for migrating from an earlier fix version has been consolidated into a single migration script. (WPC00033144)
- The LCK indexes in `create_schema.sh` script have been modified based on Oracle hints. (WPC00033395)
- Escape sequences for special characters were have been corrected in the lookup table drop-down in the multi-edit grid headers. (WPC00033243)
- The environment export and import is modified to disallow Collaboration area content. (WPC00032993)

You can review the release notes of previous Fix Packs for WebSphere Product Center, version 5.3.2 to see what enhancements or product fixes were included previously:

Fix Release	Release Date
Fix Pack 8	03/28/2008
Interim Fix 7	02/29/2008
Interim Fix 6	02/18/2008
Fix Pack 7	02/11/2008
Fix Pack 6	01/09/2008
Fix Pack 5	12/12/2007
Interim Fix 5	11/09/2007
Fix Pack 4	11/08/2007
Interim Fix 4	10/29/2007
Interim Fix 3	10/22/2007
Fix Pack 3	10/05/2007
Fix Pack 2	09/12/2007
Fix Pack 1	07/26/2007
Interim Fix 2	05/25/2007
Interim Fix 1	04/12/2007

System requirements

For information about hardware and software compatibility, see the detailed system requirements document at: www-306.ibm.com/software/data/masterdata/product-info/requirements/.

Installing Fix Pack 9

Before you install this fix pack, you must have installed WebSphere Product Center, version 5.3.2, or any previous fix packs for version 5.3.2. In particular, make sure that you have applied all configuration changes (for example, any schema changes and common.properties updates) as documented in the Requirements section of those release notes.

Recommendations:

- Apply the Fix Pack to a test system prior to applying it to your production system to identify any possible issues.
- Do not delete your previous version of WebSphere Product Center until you perform thorough testing of the new installation.

The steps for installing this fix pack include:

1. Preparing to install the fix pack
2. Installing the fix pack
3. Updating the property files
4. Modifying the database schema
5. Verifying the installation

Step 1. Preparing to install the fix pack

Before you install the fix pack, make sure to complete these steps:

1. Stop the WebSphere Product Center application on the local server.
 - a. Check the scheduler to make sure that no critical jobs are running or need to complete. If the queue is clear, stop the scheduler manually by running the following shell script:
`$TOP/bin/go/stop/stop_scheduler.sh`
 - b. Check the workflow engine to make sure no critical workflow events are running or need to complete by running the following shell script:
`$TOP/bin/go/workflow_status.sh`
Then, shut down the workflow engine manually by running the following shell script:
`$TOP/bin/go/stop/stop_workflowengine.sh`
 - c. For all applications deployed in a cluster environment, stop all specified application servers by running the `abort_local.sh` shell script, located in the `$TOP/bin/go/` directory:

Syntax

```
▶▶ abort_local.sh [ --appservernames=CSV_file ] ▶▶
```

Parameters

CSV_file is the fully qualified directory of the comma-separated

values (CSV) file. If you do not specify the `--appservernames` parameter, the `abort_local.sh` shell script will continue to abort the default application server which is specified in `init_ccd_vars.sh`.

Running the `abort_local.sh` shell script does not affect any of the other JVM services.

- d. Make sure that all processes have stopped using the `ps` command. Stop any rogue Java™ or RMI registry processes that remain after shutting down the WebSphere Product Center instance. It might take several attempts to stop all Java processes, but continue stopping Java processes until they are all stopped.
2. Backup your system:

The installation will overwrite your current files with updated versions from the Fix Pack. If any issues occurs when installing the Fix Pack you can use this backup copy to rollback the installation.

 - a. Create a full backup of all of your WebSphere Product Center directories.
 - b. Create a full backup of your database.

Step 2. Installing the fix pack

To install this fix pack, you must perform the following steps:

1. To extract and update any new installation files into the current working directory, perform the following steps:
 - a. Copy the WebSphere Product Center `.tar` file to the user or temporary directory.

For example: `{HOME_OF_WPC}/tarFileTemp`
 - b. Change the directory to `$TOP` (or the current working directory) then verify that the correct permissions exist for unpacking the `.tar` file by running the following commands:

```
cd $TOP
chmod -R 755 $TOP
```
 - c. Change the directory to `$TOP` (or the current working directory), and unpack the `.tar` file:

For example, when using the GNU `.tar` utility, the following command extracts and unzips the `.tar` file by using an absolute path:

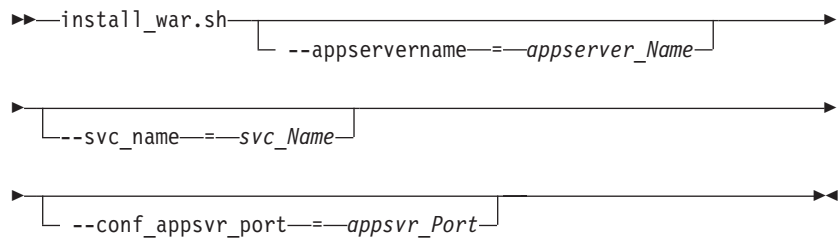
```
tar zxvf $TOP/5.3.2-WS-WPC-WS6_ORA-FP003-08_update_from_5320-53.tgz
```

Recommendation: Use the GNU `.tar` utility to unpack the WebSphere Product Center files.
2. Run the application server script:

The application server shell script, `install_war.sh`, installs WebSphere Product Center into the WebSphere® Application Server server.

 - a. Ensure that the default WebSphere Application Server (server1) is installed and running. You also need to verify that you can log into the server. For more information about the default WebSphere Application Server, see the administration information in the WebSphere Application Server information center at: <http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp>.
 - b. Run the application server shell script, `install_war.sh` with optional parameters, located in the `$TOP/bin/websphere/` directory:

Syntax



Parameters

appserver_Name is the application server name. The default application server is specified in `init_ccd_vars.sh`.

svc_Name is the RMI service name. The default is *appsvr_HOSTNAME*.

The RMI service name should contain a number to indicate which application server it is and a host name. For example, `appsvr2_hostName` is named after the second application server in the cluster.

appsvr_Port is the port that the application server uses. The default port is the value specified for the `appsvr_port` parameter in the `common.properties` file.

3. Run the `analyze_schema.sh` shell script:

This optimizer script uses the catalog tables from a database to obtain information about the database, including the amount of data within the database and other characteristics. The optimizer script then uses this information to determine how to access the data. If your database statistics are not available, the optimizer might choose an inefficient access plan based on the default statistics, which is inaccurate.

You should use the `analyze_schema.sh` shell script to collect your current statistics from within the tables and indexes, especially if significant update activity has occurred since the last time you ran the `analyze_schema.sh` shell script.

- To run the `analyze_schema.sh` shell script in DB2®, refer to the WebSphere Product Center technote: *Analyzing WebSphere Product Center schema and collecting statistics in Oracle* located at: <http://www-1.ibm.com/support/docview.wss?uid=swg21205939>
- To run the `analyze_schema.sh` shell script in Oracle, refer to the WebSphere Product Center technote: *Analyzing WebSphere Product Center schema and collecting statistics in Oracle* located at: <http://www-1.ibm.com/support/docview.wss?uid=swg21206376>

Recommendation: Run the `analyze_schema.sh` shell script on your WebSphere Product Center databases at least once a week or when there has been at least a twenty percent increase or change in data on the database.

4. Optional: If you are using the Script Workbench for WebSphere Product Center, when you install this Fix Pack, the Workbench communication `.jsp` and `.jar` files are removed from your server configuration. To regain communication you must reinstall the `docstore_tooling.jsp` and `docstore_tooling.jar` files. See the *Script Workbench for WebSphere Product Center Users guide* for installation instruction.

Step 3. Updating the property files

To successfully use the fixes and enhancements in this fix pack you must modify WebSphere Product Center configuration files.

Configurations files

common.properties

During system startup, the common.properties file is used to read in all system level parameters and is located in the \$TOP/etc/default directory.

admin_properties.xml

The admin_properties.xml file is used by the administrative utilities to configure clusters of the application and is located in the \$TOP/etc/default directory.

init_ccd_vars.sh

The initialization file, init_ccd_vars.sh, is the shell script that initializes the shell variables used by the system and is located in the \$TOP/setup directory.

WebSphere Product Center Fix version

The following table includes all WebSphere Product Center fix versions, both Fix Packs and Interim Fixes, along with their corresponding configuration file changes that you need to apply. Depending on the WebSphere Product Center fix version you are migrating from, use the table to determine which configuration file changes you need to apply, then view the list that follows for the specific details:

Example: If you migrate from fix version 5.3.2-FP005, you must apply the configuration file changes defined in 6 and 7 of the "List of configuration file changes".

Your fix version	List number of the configuration file change
5.3.2-FP008	7
5.3.2-IF007	7
5.3.2-FP007	7
5.3.2-IF006	7
5.3.2-FP006	7
5.3.2-FP005	6, 7
5.3.2-FP004	5, 6, 7
5.3.2-IF005	4, 5, 6, 7
5.3.2-IF004	4, 5, 6, 7
5.3.2-IF003	4, 5, 6, 7
5.3.2-FP003	4, 5, 6, 7
5.3.2-FP002	4, 5, 6, 7
5.3.2-FP001	3, 4, 5, 6, 7
5.3.2-IF002	2, 3, 4, 5, 6, 7
5.3.2-IF001	1, 2, 3, 4, 5, 6, 7

List of configuration file changes

1.

New Property introduced in 5.3.2-IF002:

Add the following property and description by copying and pasting the text to the end of your common.properties file:

```
# The following are needed for MQ version 6. They can be
# overridden by specifying a username and password when
# calling the jmsGetQueueConnection script operation
mq_username=
mq_password=
```

2.

New Properties introduced in 5.3.2-FP001:

Add the following properties and descriptions by copying and pasting the text to the end of your common.properties file:

```
# Can multiple ctg files (for image/binary attributes) exist
# with the same name? If false, will store files in ctg_files
# within the supplier base. If true, will store files in
# subdirectories within ctg_files with timestamps for names.
allow_multiple_files_with_same_name=false
```

```
# This property decides whether the Web Services would be
# session enabled or not. A true value will enable sessions
# for Web Services. A Web Service needs to be saved after
# changing the value of this property.
enable_webservice_session=true
```

```
# This property decides the session timeout period for the
# Web Services session. The value is in seconds.
webservice_session_timeout=300
```

```
# Key combination to trigger shortcuts. If more than one is
# set to true, then all set to true will be needed to trigger
# the shortcut. Default is CTRL-ALT, but if languages that
# use ALT GR for some characters, such as Polish, are in use
# then we advise that this should be changed, e.g. to always
# have the same functionality (except CTRL-SHIFT or ALT-SHIFT,
# since in Microsoft Windows, CTRL-ALT and ALT GR when used
# with DEL). We strongly advise against setting all of CTRL, ALT
# and SHIFT to false, since this would cause shortcuts to be
# triggered by normal typing! It is recommended that at least
# two of these be set to true.
use_ctrl_in_shortcuts=true
use_alt_in_shortcuts=true
use_shift_in_shortcuts=false
```

```
# The width of the popup window for Lookup table entry input
# widget. This will be set to default value which is 800 pixels
# if the width is either too high (greater than 1680) or too
# low (less than 800). The allowed value can be any integer
# between 800 and 1680.
lookup_table_entry_input_popup_width=900
```

```
# The height of the popup window for Lookup table entry input
# widget. The allowed value can be any integer between 400 to
# 1050. This will be set to default value which is 400 pixels
# if the height is either too high (greater than 1050) or too
# low (less than 400).
lookup_table_entry_input_popup_height=500
```

Properties modified in 5.3.2-FP001

Replace the `max_script_cache_timeout=60` property with:

```
max_script_cache_timeout_in_seconds=60
```

Remove the following description from the `category_item_count_disabled` property:

```
# This count shows up in different pages of the UI such as
# left navigation, basic selection, link attribute popup,
# and so on. Set to false to enable this count feature.
```

Properties removed in 5.3.2-FP001:

Remove the following properties and description by deleting the from your common.properties file:

```
# Rich search: maximum number of items allowed to be searched
# on in real time. If the number of items returned by the
# initial query estimate is greater than this number, the
# search will be scheduled as a background search.
max_number_items_for_realtime_search=1000
```

3.

New Property introduced in 5.3.2-FP002:

Add the following description by copying and pasting the text above the **category_item_count_disabled** property in your common.properties file:

```
# Set to true in order to disable the UI from producing a count
# of the items mapped under categories. With this property
# enabled the categories would not be expandable to show child
# items. However search and rich search will still work. This
# count shows up in different pages of the UI such as left nav,
# basic selection, link attribute popup, etc. Set to false to
# enable this count feature.
category_item_count_disabled=false
```

4.

New Property introduced in 5.3.2-FP004:

Add the following property and description by copying and pasting the text to the end of your common.properties file:

```
# Spec Cache flushing
# =====
# The standard behavior when saving a spec is to flush the
# entire spec cache. For installations with a large number
# of pre-cached specs, this can cause a reduction in system
# performance. Setting the parameter below to true will
# prevent the cache being flushed.
inhibit_spec_cache_flush_on_save=false
```

5.

New Property introduced in 5.3.2-FP005:

Add the following property and description by copying and pasting the text to the end of your common.properties file:

```
# Can users modify their own usernames via the My Profile
# page? Default value is true. If set to false, then
# Administrators and users whose roles allow them to modify
# other users will be able to modify their own usernames
# anyway.
allow_users_to_modify_own_username=true
```

6.

New Property introduced in 5.3.2-FP006:

Add the following property and description by copying and pasting the text to the end of your common.properties file:

```
# Controls if the entry edit page is refreshed after an
# entry preview popup is closed:
# true = refresh entry edit page when popup is closed
# false = do not refresh entry edit page
entrypreview_refresh_entries_post_run=false
```

7.

New Property introduced in 5.3.2-FP009:

Add the following property and description by copying and pasting the text to the end of your common.properties file:

```
# set to true in order to activate filtering of non
# indexed attributes from the rich search page default
# view. This will not affect custom templates.
rich_search_default_view_indexed_only=false
```

```
# Controls whether to use the new attribute filter for
# improved performance
# true = use the new filter
# false = use the old filter
medit_use_new_header_atr_filter=true
```

Step 4. Modifying the database schema

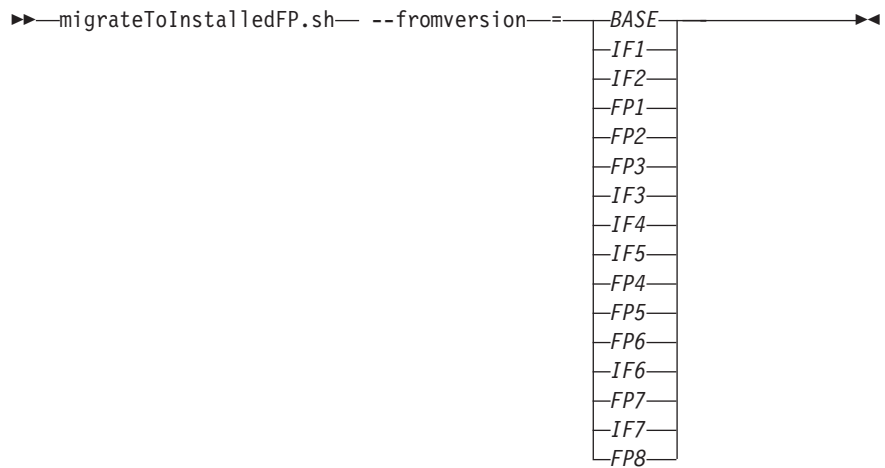
Several changes have been made to the database schema throughout each Fix Pack release of WebSphere Product Center, version 5.3.2, which require you to run a migration shell script to migrate to the database schema of WebSphere Product Center, version 5.3.2, Fix Pack 9.

Note: If you are migrating from WebSphere Product Center, version 5.3.2, Fix Pack 8 and use an Oracle database, you are not required to run the migration shell script. You can skip this section and continue with: Verifying the installation.

To migrate your database schema:

1. Ensure that you have stopped the WebSphere Product Center application on the local server.
2. Add execute permission for the migration shell script migrateToInstalledFP.sh:
cd \$TOP/bin/migration
chmod 777 migrateToInstalledFP.sh
3. Run the migration shell script migrateToInstalledFP.sh that is located in the \$TOP/bin/migration/ directory:

Syntax



Parameters

BASE, IF1, IF2, FP1, FP2, FP3, IF3, IF4, IF5, FP4, FP5, FP6, IF6, FP7, IF7, & FP8 correspond to the Fix Pack you are migrating from, where *BASE* is used if you have never installed a Fix Pack or Test Fix over the original WebSphere Product Center, version 5.3.2 installation.

- If you are migrating from a Test Fix version use the table below to determine which Fix Pack the Test Fix was built on. Use the Fix Pack version in the migration shell script that corresponds to the Test Fix version you are migrating from.

Test Fix Version	Fix Pack Version
TF1	BASE
TF2	IF1
TF3	IF1
TF4	IF2
TF5	FP3
TF6	FP7
TF7	FP1

Fix Pack migration example:

In this example the migration shell script will migrate from FP2.

```
$TOP/bin/migration/migrateToInstalledFP.sh --fromversion=FP2
```

Test Fix migration example:

In this example the migration shell script will migrate from TF3.

```
$TOP/bin/migration/migrateToInstalledFP.sh --fromversion=IF1
```

- If you are migrating from a Limited Availability Patch (LA), use the Fix Pack version that corresponds to the LA version you are migrating from:
 - For **LA1**, use *IF6*
 - For **LA2**, use *FP1*

LA migration example:

In this example the migration shell script will migrate from LA1.

\$TOP/bin/migration/migrateToInstalledFP.sh --fromversion=IF6

4. Verify that the database schema migration was successful:
 - a. Locate and open your verify.log file located in the \$TOP/logs directory.
 - b. Click on the log file in the table below to compare the content of your verify.log file against the log file that corresponds to the Fix Pack you migrated from.

The following log files include the expected log output for a successful migration based on both the Fix Pack you migrated from and the database you are using.

Example: If you migrate from IF6, then you compare your \$TOP/logs/verify.log file to the FP6_IF6_FP7.log file.

Fix Pack	The expected log file output for Oracle databases	The expected log file output for DB2 databases
BASE, IF1, IF2	BASE_IF1_IF2.log	BASE_IF1_IF2.log
FP1, FP2, FP3, IF3, IF4, IF5, FP4, FP5	FP1_FP2_FP3_IF3_IF4_IF5_FP4_FP5.log	FP1_FP2_FP3_IF3_IF4_IF5_FP4_FP5.log
FP6, IF6, FP7	FP6_IF6_FP7.log	FP6_IF6_FP7.log
IF7	IF7.log	IF7.log
FP8	Migration not required	FP8.log

5. OPTIONAL: If you have migrated from WebSphere Product Center version 5.3.0 or 5.3.1, run the Index Regeneration Capability utility, indexRegenerator.sh, from the \$TOP/bin directory, to correct or enable the new Rich Search Option feature of version 5.3.2.

For catalogs in a company

Syntax

```
▶▶—indexRegenerator.sh— --catalog—==—catalogName—————▶
▶— --company—==—companyName—————▶▶
```

Parameters

catalogName is the name of the catalog.

companyName is the name of the company.

For hierarchies in a company

Syntax

```
▶▶—indexRegenerator.sh— --hierarchy—==—hierarchyName—————▶
▶— --company—==—companyName—————▶▶
```

Parameters

hierarchyName is the name of the company.

companyName is the name of the company.

For items in a company

Syntax

```
▶▶—indexRegenerator.sh— --items—==—CSV_file—————▶▶  
▶— --company—==—companyName—————▶  
▶— [— --encoding—==—encoding—]—————▶▶
```

Parameters

CSV_file is the fully qualified directory of the CSV file.

companyName is the name of the company.

encoding is only for type items. If not specified, the value specified for the **charset_value** parameter in the common.properties file is used.

Example

In this example, the Index Regeneration Capability utility runs the items in the CSV file, \$TOP/item-list.csv in the company named test_Co, using the utf8 encoding.

```
$TOP/bin/indexRegenerator.sh --items=$TOP/item-list.csv  
--company=test_Co --encoding=utf8
```

Parameters that contain spaces and special characters must be enclosed between quote characters (") and special characters alone, should be escaped with a backslash (\).

A description of both the Index Regeneration Capability and Rich Search for Co-Occurrence of Multi-Occurrence Value facilities are described in the Release notes of the WebSphere Product Center Information Center under New Features at http://publib.boulder.ibm.com/infocenter/wpc/v5r3m2/topic/com.ibm.wpc.doc/rn/rn_2.0.html.

Step 5. Verifying the installation

To verify the installation of this Fix Pack, complete these steps:

1. Start WebSphere Product Center:

The shell script, start_local.sh, located in the \$TOP/bin/go/ directory, starts all the services that you need to run WebSphere Product Center.

a. Run the start_local.sh shell script:

- For the WAS platform, run:

```
▶▶—start_local.sh— --redeploy—==—yes—————▶▶
```

The parameter and value, --redeploy=yes, ensures that all Web Services are properly re-deployed.

- For the WebLogic platform, run:

```
▶▶—start_local.sh—————▶▶
```

You are not required to use the --redeploy=yes parameter and value for WebLogic.

b. Run the start_local.sh shell script to start your application servers:


```
$TOP/bin>./get_ccd_version.sh  
5.3.2-FP009#10
```

- View the installation version through the WebSphere Product Center user interface.
 - Go to Help -> About Current PageID

Installation verification should be done every time you upgrade or refresh your existing WebSphere Product Center installation.

Known problems

Known problems are documented in the form of individual technotes in the Support knowledge base at <http://www-306.ibm.com/software/data/masterdata/product-info/support/>. As problems are discovered and resolved, the IBM Support team updates the knowledge base. By searching the knowledge base, you can quickly find workarounds or solutions to problems.

The following link launches a customized query of the live Support knowledge base for all published technotes for WebSphere Product Center: [View all known problems for WebSphere Product Center](#)

You can search for keywords within this complete list of technotes.

Contacting IBM Support

Before contacting IBM Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. For information about the types of maintenance contracts available, see “Enhanced Support” in the *Software Support Handbook* at: techsupport.services.ibm.com/guides/services.html

After you define the problem gather background and diagnostic information, and determine the severity of the problem, you can submit your problem to IBM Support in one of the following ways:

- On the IBM Software Support site, www.ibm.com/software/support/probsub.html, click the **Report problems** tab.
- Call IBM Support. For the phone number to call in your country, go to the Contacts page of the *Software Support Handbook*: techsupport.services.ibm.com/guides/contacts.html.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software IBM Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM Support web site daily, so that other users who experience the same problem can benefit from the same resolution.

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