

Sakai

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1.0

A database conversion is typically required in order to upgrade from one Sakai version to another. Database conversion scripts - in distinct versions for MySQL and Oracle, respectively - are found in the `reference/docs/conversion` folder of the release or in our SVN repository.

In the same directory you will also find conversion scripts for earlier Sakai releases. Migration from an earlier version will require the **sucessive** application of all intermediate scripts (see the following table). You cannot, for example, move from 2.6.1 to 2.9.0 by applying a single script. You will need to run 6 or 7 scripts all in a row.

! Note for oracle, some of the scripts will leave your indexes in an invalid state because of LONG->CLOB conversion. You will need to run this script to find the invalid/unusable indexes, THEN run the result of this script to alter these indexes.

```
select 'alter index '||index_name||' rebuild online;' from user_indexes where status = 'INVALID' or status = 'UNUSABLE';
```

-- Run the resulting SQL commands this script generates if any)

! As a general rule, be sure to read through the conversion scripts before applying them. The conversion scripts are generic in the sense that they do not take into account any special customizations you may have made - such as new roles, or the deployment of additional tools or if you are migrating from 2.4.x - and they may complicate your migration with unintended consequences if you execute them blindly.

- For conversions prior to 2.6 please see the [2.8 install guide](#). Conversions from much older are not very well supported or tested but should still work.

Upgrade Step	MySQL	Oracle	Notes
2.6.0	sakai_2_6_0_mysql_conversion.sql	sakai_2_6_0_oracle_conversion.sql	Use scripts updated in 2.6.x branch (r65964+). Include fixes for <input type="checkbox"/> SAK-16751 - Comment out site.add.course backfill SQL CLOSED , <input checked="" type="checkbox"/> SAK-16753 - new 2.6 asn.share.drafts permission should be added into conversion script CLOSED and <input type="checkbox"/> SAK-16809 - 2.6.0 upgrade script has index, column add in wrong order, related to SAK-16554 CLOSED . If you are upgrading from 2.5 please review <input type="checkbox"/> SAK-15597 - Setting schedule: tool property always causes an exception. CLOSED for an important property setting issue (not a database conversion issue).
2.6.0 to 2.6.x	sakai_2_6_0-2_6_x_mysql_conversion001_SAK-16668.sql	sakai_2_6_0-2_6_x_oracle_conversion001_SAK-16668.sql	<input type="checkbox"/> SAK-16668 - assignments / private notes and model answers does not display proper error message for text over 255 characters CLOSED : if you upgraded to Sakai 2.6.0 PRIOR to 1 Sept 2009 you must run this conversion to update data types in ASN_MA_ITEM_T and ASN_NOTE_ITEM_T.
2.6.0 to 2.6.x	sakai_2_6_0-2_6_x_mysql_conversion002_SAK-16548.sql	sakai_2_6_0-2_6_x_oracle_conversion002_SAK-16548.sql	<input checked="" type="checkbox"/> SAK-17219 - Conversion script for 2.6.1 is slow to run on large assignment data sets and should be improved CLOSED <input type="checkbox"/> SAK-16548 - Incorrect internationalization showing the grade NO GRADE CLOSED : Matt Jones (UMich) reports that the original 2.6.0 to 2.6.1 conversion script for the <code>assignment_content</code> table "is inefficient, potentially locks tables and performs too many scans, especially if there are hundreds of thousands of rows." Matt has revised both the MySQL and Oracle conversion scripts to improve their performance.
2.6.0 to 2.6.x	sakai_2_6_0-2_6_x_mysql_conversion003_SAK-16847.sql	sakai_2_6_0-2_6_x_oracle_conversion003_SAK-16847.sql	<input type="checkbox"/> SAK-16847 - asn.share.drafts permission should be added into 2.6.1 conversion script CLOSED : adds a <code>asn.share.drafts</code> to <code>SAKAI_REALM_FUNCTION</code> .
2.6.0 to 2.6.x	sakai_2_6_0-2_6_x_mysql_conversion004_SAK-10512.sql	sakai_2_6_0-2_6_x_oracle_conversion004_SAK-10512.sql	<input checked="" type="checkbox"/> SAK-10512 - Ability to lock profiles CLOSED : updates existing entries in <code>SAKAI_PERSON_T</code> setting the field <code>locked</code> to false if currently NULL.

2.6.0 to 2.6.1	sakai_2_6_0-2_6_1_mysql_conversion.sql	sakai_2_6_0-2_6_1_oracle_conversion.sql	Rollup of 2.6.0-2.6.x conversion scripts 001-004 above.
2.6.1 to 2.6.2			no schema changes
2.6.0 to 2.6.x	sakai_2_6_0-2_6_x_mysql_conversion005_SAK-14482.sql	sakai_2_6_0-2_6_x_oracle_conversion005_SAK-14482.sql	 SAK-14482 - Mercury site has old assignments tool  : replace the "mercury" site's sakai.assignment tool (deprecated since 2.5.0) with the sakai.assignment.grades tool.
2.6.2-2.7.0	sakai_2_7_0_mysql_conversion.sql	sakai_2_7_0_oracle_conversion.sql	
2.7.0-2.7.1	sakai_2_7_0-2_7_1_mysql_conversion.sql	sakai_2_7_0-2_7_1_oracle_conversion.sql	
2.7.1-2.7.2	sakai_2_7_1-2_7_2_mysql_conversion.sql	sakai_2_7_1-2_7_2_oracle_conversion.sql	
2.8.0	sakai_2_8_0_mysql_conversion.sql	sakai_2_8_0_oracle_conversion.sql	2.7.1 to 2.8.0 database conversion.
2.8.0	sakai_2_8_0_mysql_hibernate_indexes.sql	sakai_2_8_0_oracle_hibernate_indexes.sql	Starting up sakai-2.8.0 in order to populate an empty database (auto.ddl=true) can result in certain tools relying on Hibernate 3.2.7.ga to generate indexes to fail to do so. Check database and then run this script to add missing indexes.
2.8.1	sakai_2_8_0-2_8_1_mysql_conversion.sql	sakai_2_8_0-2_8_1_oracle_conversion.sql	Conversion from 2.8.0 to 2.8.1 can result in lost mail messages. See  SAK-21305 - 2.8.0 to 2.8.1 conversion loses mail messages  for details on how to fix. This should only affect cases for which 2.8.0 was actually RUN in production, not if 2.8.0 is just one step in your upgrade process.
2.8.2	sakai_2_8_1-2_8_2_mysql_conversion.sql	sakai_2_8_1-2_8_2_oracle_conversion.sql	
2.8.3	sakai_2_8_2-2_8_3_mysql_conversion.sql	sakai_2_8_2-2_8_3_oracle_conversion.sql	
2.9.0	sakai_2_9_0_mysql_conversion.sql	sakai_2_9_0_oracle_conversion.sql	For languages other than English, Catalan and Spanish please see  SAK-36147 - Incorrect internationalization in survey questions  .
2.9.1	sakai_2_9_1_mysql_conversion.sql	sakai_2_9_1_oracle_conversion.sql	
2.9.2	sakai_2_9_2_mysql.sql LTI_2_1_0_mysql_conversion.sql	sakai_2_9_2_oracle.sql LTI_2_1_0_oracle_conversion.sql	

2.9.3	sakai_2_9_3_mysql.sql	sakai_2_9_3_oracle.sql	
10.0	sakai_10_mysql.sql	sakai_10_oracle.sql	Please note, the Oracle conversion scripts should be taken from trunk at the moment, including for the conversion to 10.0 - Neal Caidin - 14-October-2014
10.1	sakai_10_0-10_1_mysql_conversion.sql	sakai_10_0-10_1_oracle_conversion.sql	
10.2	no conversion needed for MySql	sakai_10_1-10_2_oracle_conversion.sql	
10.3	no conversion needed for MySql	sakai_10_2-10_3_oracle_conversion.sql	
10.4	no conversion needed for MySql	no conversion needed for Oracle	
10.5	sakai_10_1-10_5_mysql_conversion.sql	sakai_10_3-10_5_oracle_conversion.sql	

2.0

Sakai

2.1 (2.5 -> 2.6)

[SAK-13584](#) - Further Improve the Performance of the Email Archive and Message API CLOSED ,

[SAK-16554](#) - Email archive conversion script is difficult to use and requires a maven source repository CLOSED : Sakai 2.6


improvements to the Message API require that implementers upgrading from a pre-2.6 version of Sakai run both the 2.6.0 conversion scripts and a second `mailarchive-runconversion.sh` script that can be found in the mailarchive module in order to update your existing mail archive data to take advantage of the 2.6 Email Archive performance improvements.

```
-- SAK-13584 Further Improve the Performance of the Email Archive and Message API. Note you have to run a bash
-- conversion script on your old mail archive data for it to
-- appear in the new mail archive. The script is in the source as mailarchive-runconversion.sh. Please see the
-- SAK for more information on this script or SAK-16554 for
-- updates to this script.
```

```
CREATE INDEX IE_MAILARC_SUBJECT ON MAILARCHIVE_MESSAGE
(
    SUBJECT          ASC
);
ALTER TABLE MAILARCHIVE_MESSAGE ADD COLUMN (
    SUBJECT          VARCHAR (255) NULL,
    BODY             LONGTEXT NULL
);
```

2.2 (2.4

⚠ This conversion was a part of the post-2.4 assignments branch so those migrating from a version already running this can disregard this step.

 **SAK-11821** - AssignmentService allows creation of duplicate submission objects, need to separate submitter_id out to form unique constraint, and improve tool performance by using new db columns CLOSED

: The assignment service previously permitted the creation of duplicate submission objects (i.e. two or more submissions for the same student and assignment). While the UI should prevent this from happening, at various stages in the evolution of the Assignments code, bugs, race conditions or other failures have led to duplicate objects being created. This conversion seeks to reconcile those duplicates and add database constraints to prevent this in the future.

In summary, the conversion script is necessary to

1. Remove existing duplicate submission records, if any
2. Prevent future submission duplicates by applying unique constraint on the ASSIGNMENT_SUBMISSION table
3. Improve performance of the Assignment tool

The conversion script does the following to the existing ASSIGNMENT_SUBMISSION table in Sakai database:

1. read in all tuples as AssignmentSubmission object, parse out data such as submitter_id, submit_time, submitted, and graded, and stores those attributes as separate columns in the ASSIGNMENT_SUBMISSION table;
2. Runs through the table, combine and remove submission duplicates (tuples with same "context" and "submitter_id" combination);
3. apply the unique constraint of "context" + "submitter_id" to ASSIGNMENT_SUBMISSION table.

There is a README file with detailed instructions on this process at https://source.sakaiproject.org/svn/assignment/tags/sakai_2-7-0.

2.3 2.4 -> 2.5)

Migrating from 2.4 to 2.5 requires adding several columns to the database tables used by the Content Hosting Service (the service used by the Resources tool, Dropbox, filepicker and WebDAV). The conversion scripts contain DDL statements to accomplish those changes. You need to run these conversion scripts (or perform the equivalent operations manually) and then convert your existing Resources via one of the methods outlined below, before you will gain the performance improvements Sakai 2.5 offers.

The new columns added to the database tables support a switch from XML serialization to "binary-entity" serialization, and enable Resources to perform faster and use less memory. One of the key areas this impacts is improving the performance of quota calculations.

There are two methods for converting existing Resources, with the first being the recommended option, as it enables all performance improvements when completed:


1. Run the conversion utility, which can be run on a live system. (See [readme](#) for more details.)
 - ⚠ Systems running Oracle should read the email threads copied to the comments section below.
2. Let the code convert each Resource as it is accessed.
 - ⚠ This is only recommended for implementations with small datasets, such as pilot deployments; otherwise you should use the above conversion utility.
 - ⚠ While some performance benefits from the binary-entity serialization can be realized immediately using this method, others, such as the quota calculation improvements will not be available until all Resources have been accessed and converted.

Based on the state of the data in the Content Hosting Service tables, it will start up in one of two modes:

1. Binary only - If the code detects on start-up that all of the XML fields are null – as would be the case after running the conversion utility – it will run in binary mode. This means the system will only read and write using binary-entity serialization, and you will be able to fully realize all the performance enhancements that it offers.
2. Dual mode - If the code detects there is still data in the XML fields – as would be the case if the conversion utility has not been run – it will run in dual mode. This means the system will be capable of reading both XML-serialized and binary-entity-serialized resources, but will write using only binary, and will convert any XML data it encounters into binary data. This gives you some of the performance benefits of binary-entity serialization without running the conversion utility, but you will never get the quota-calculation improvements unless all Resources end up converted.

3.0 (OSP) (2.5)

OSP was turned off by default in Sakai 10 and removed entirely in Sakai 11.

 **SAK-13205** - Permissions for CIG Participant are empty for 2.5 upgrade CLOSED : if you are upgrading from a pre-2.5.0 version of Sakai, then you need to force conversion of the OSP permissions by setting `osp.upgrade25=true` in your `sakai.properties` file. (See also [discussion](#).)

4.0 Sakai 10

5.0 Sakai

TBD