



LISTSERV Maestro Admin Tech Doc 15

Test Bed Backups

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This document is a LISTSERV Maestro Admin Tech Doc. Each admin tech doc documents a certain facet of the LISTSERV Maestro administration on a technical level. This document is number 15 of the collection of admin tech docs and explains the topic "Test Bed Backups".

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1 Introduction

In certain situations it may seem useful to be able to make a copy of all data in a given LISTSERV Maestro installation and transfer it into a second installation. For example the second installation could be used for training purposes and is supposed to be “seeded” with real life data from the original production system, to make the training more lifelike. Or the second installation could be a test server on which the effects of a certain version upgrade are to be tested before the same upgrade is applied on the production server, and for this the test server is supposed to be initialized with a copy of the production server’s data.

The problem with this requirement is: How to get a copy of the original data into the test system?

The first idea that comes to mind would be, to simply trigger a backup on the original system, and then restore this backup into the test system.

However, this approach has several pitfalls which could, in a worst case scenario, even destroy some of the data in the original production system.

Some of the possible pitfalls are for example:

- If at the moment the backup is triggered the original system contains a mail job which is already in the outbox and scheduled for delivery, and then this backup is restored into the second system, and then the scheduled delivery time arrives, the second system would actually send out the job to the given recipients!

And since the job is a copy of a real job on the production server, with real recipients, this mailing from the test system would go out to these real recipients, which is usually not desired (and worse, since the same job also still exists on the production server, where it will be mailed out at the same time, the recipients will actually each get two copies of the same mail, i.e. the test server sends out duplicates of the mails which are already being mailed by the production server).

- If the production server installation actually consists of an installation where the LISTSERV Maestro components are distributed over several servers, for example where LUI is installed on one server and TRK is installed on another server, then this means that the information about how the components are distributed will be contained in the backup data too.

And you would then have to be very careful when restoring this backup into the test server, so that you do not accidentally end up for example with connecting the test server LUI with the TRK of the original production system (or vice versa).

- If the production server installation uses an external system databases, then the connection information for this external database is of course also stored in the data which is part of the backup. And during the backup restoration, the information will therefore also be restored into the test server. Which means that the test server will try to connect to the same external database (and use it as its system database) as the production server does. At worst, the test server could then delete or change data which actually belongs to the production system!

Because of these pitfalls, it is generally not advisable to restore a backup of an existing and running system into a different system. Therefore the idea of restoring a backup from the original server into the test server is not really a good idea either.

To solve this problem, LISTSERV Maestro offers the feature of a **test-bed backup**:

A test-bed backup is similar to a normal backup of a system in so far, that it contains all the system data (all user accounts, jobs, reports, tracking information, subscriber data etc.).

However, all the “dangerous” aspects of the data, like information about distributed components, connection information for external databases, scheduled jobs in the outbox, etc. have been changed by the system (when the data was written to the test-bed backup) so that they do no longer pose a risk when the test-bed backup is restored into a test server.

Or in other words: A test-bed backup is as close a copy to the data of the original system as possible, but with all risky information removed or changed.

Information that is removed or changed includes (among others):

- **Component distribution information.** If the original system was distributed over several servers, then the test-bed backup is not aware of this any longer and assumes, that all components are on the same server (the “localhost”).
- **External database information.** If the original system did use an external system databases, then the test-bed backup is not aware of this any longer and assumes, that the internal system database is used.
- **Instance-ID information.** The test-backup backup does not contain the original system’s instance ID, so that during the first start the test server will generate its own instance-IDs.
- **LISTSERV connection host information.** The test-bed backup does not contain information about which LISTSERV host to use, so this information needs to be added manually (via the Administration Hub) after the test-bed backup has been restored to a test server to connect the test server to a LISTSERV (probably to a different LISTSERV which is meant for testing).
- **Tracking host information.** The test-bed backup does not contain information about which tracking host name to use, so this information needs to be added manually (via the Administration Hub) after the test-bed backup has been restored to a test server to enable tracking.
- **Scheduled jobs.** The outbox send queue in the test-bed backup is set to “Sending is disabled”, so that any queued jobs in the outbox are not automatically delivered by the server into which the test-bed backup is restored. It is therefore necessary to re-open the outbox (via the Administration Hub) on the test server, if you need to actually send any jobs on the test server. However, before re-opening the outbox, make sure to check it for any production jobs still left in it, and delete or revoke those jobs, to stop them from being delivered when the outbox is re-opened.
- And more.

With the risky information being removed or reset to appropriate defaults, it is safe to restore the test-bed backup into a test server, without the risk of damaging or impacting the production server from which the backup was initially taken.

The following sections describe how such a test-bed backup can be created on an original system and how it must be restored into a test system.

2 Creating a Test-Bed Backup on the Original System

To create a test-bed backup on the original system, log into the Administration Hub of this original installation, then select “Global Settings” → “Administration Hub” → “General Administration” and click on “Create Test-Bed Backup”.

Once triggered, the test-bed backup proceeds just like a normal backup. The resulting backup ZIP-files are stored into the same backup folders as the normal backup files are, but are marked as “TestBedBackup” in the filename.

Just like with a normal backup, a test-bed backup consists of the backups of all three components, i.e. a complete test-bed backup encompasses all three backup ZIP-files.

For each test-bed backup that is created, a backup report is written to the log folder of the Administration Hub component (“[install_folder]/hub/logs”), just like for a normal backup. The content of this report is also very similar to a normal backup report, only that it clearly states that this backup is a test-bed backup (and thus contains data which has been changed slightly, in comparison to the original data, see above).

Similarly to a normal backup, a test-bed backup is only valid (i.e. contains complete and restorable data) if the last line of the report reads:

```
The test-bed-backup was completed successfully
```

(If you do not see this line, then the backup was not successful in some way and should not be used during the restore step described in the next section.)

3 Restoring a Test-Bed Backup into the Test System

A test-bed backup is restored exactly like a normal backup, so please see the section about restoring a backup for details.

Just like with a normal backup, it is important to restore **all three** components and also to make sure, that the backup data of the three components which are restored actually was written by the same backup (or test-bed backup in this case). As normally, this verification is done by verifying the backup ID (Test-Bed-Backup-ID) in the filenames of the three backup ZIP-files.

Of course the test-bed backup is restored not on the original system where it was created, but on a different system, the “test server” system. It is also important to know that a test-bed backup must only be restored into a test server which was installed on a single server, including the internal database, i.e. which meets the following requirements:

- All three components (HUB, LUI and TRK) are installed on the same server.
- The internal MySQL database is also installed, to be used as the system database.

These requirements are most easily met if you install a fresh installation of LISTSERV Maestro on the test server and simply select all three components plus the internal system database when running the setup wizard.

If you have such a test server system and have also identified the test-bed backup you want to restore, then restore it by simply following the normal backup restoration description.