Media Management and Automation System for Broadcast

Installation and Basic Configuration

USER MANUAL

January 2012, Version 2.15

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1 Minimal system requirements

DIGISPOT® II Media Management and Radio Automation System can be installed on a PC with the following configuration.

- Hardware:
  - processor – Pentium 4 or higher (for editing stations and loggers it is recommended to choose processor with higher parameters);
  - RAM – OS requirements + 512 MB;
  - HDD – 200 MB for installation and getting started (total capacity necessary for operation depends on the final configuration of DIGISPOT® II Media Management and Automation System);
  - screen resolution – not less than 1024x768 pixels;
  - USB port;
  - keyboard, mouse;
  - LPT port or a dedicated device (such as TP-312) to connect to remote control (such as the mixing board).
  - network capacity – no less than 100 Mbps.
- Software:
  - OS – Microsoft Windows XP Professional/Windows 7;
  - Windows Installer v 3.1 or higher;
  - Internet Explorer v 6.0 or higher;
  - Microsoft Visual C++ 2008 SP1 Redistributable Package (x86);
  - Microsoft .Net 3.5 Framework 3.5 SP1;
  - drivers for sound devices used.

2 System installation – a quick start

To install the system from the installation disc please do the following:

- Install the DIGISPOT® II software (DJin, BCS Editor, Mag, Logger and others) from the folder Distribs\.

Further actions depend on the final system configuration and some other factors.

- The program currently comes with a HaspHL protection key (earlier versions came with a HardLock key) (figs. 2.1 and 2.2), so you need to install the protection key driver. To do this, please launch the installation command:
- for HaspHL: \#Utils\HaspHLDrivers\HaspUserSetup.exe
- for Hardlock: \#Utils\HLDriver\hldrv32.exe

Fig. 2.1. HaspHL protection key

Fig. 2.2. HardLock protection key

- In case of using remote control system (fader start/stop, PFL and so on) please install the GPI device driver. If connecting via LPT port install GPI driver for LPT port. The driver comes with the package; to install it please launch Utils\GPI_DRV_LPT\Install.bat.

NOTE. The driver was only tested with Windows 2000/XP and standard, built-in LPT port.

- For work with integrated distributed database, Microsoft SQL Server 2008 must be installed on server computer (also supported are MS SQL Server 2000/2005 and the free version SQL Server 2008 Express). There are some recommendations concerning SQL Server that you can find in *sect. 3.11. Basic configuration of programs for working with MDB*.

If the program is not installed from disc, all HardLock and GPI drivers can be found at the wesbite of TRACT-SOFT, LLC: *http://digispot.ru/digispot/drivers.html*.

2.1 Installation of updates

To update your DIGISPOT® II software version (including when passing on to new generation) please perform everything that's described in the following sections.

This will require re-starting your software several times, sometimes probably more than once.

Free update is available within one generation of versions. This means that if you have DIGISPOT® II DJin with a nucleus (displayed in the header) 2.14.138, then you have the 138th version of generation 2.14 and you will be able to update freely within this generation of versions. To update to a version of newer generation, for example, 2.15.xx, you will need to replace registration libraries. This service is available for a fee. Direct and reverse compatibility of versions is provided over the length of a limited period of time. It is allowed to use two different versions simultaneously in the process of update that can last for several hours. If you continue to use two versions of different generations, we can't guarantee the integrity of your data or correctness of DIGISPOT® II software operation.

2.2 Creation of backup copies

- Create a backup copy of installation folder of a program on each workplace (<System disk>:\Program Files\Digispot II\<Program name>).

Note. Do not include the contents of SS8 folder to the backup.

- Create a backup copy of ROOT folder. The path to ROOT folder can be seen in the following menu: **Service\Workstation settings\Base settings\Root path (ROOT)**.

When creating a backup copy of ROOT folder you can omit several folders:

  - SND – main musical storage, usually occupies a lot of disk space, but it is unlikely that these files will be damaged during update;
  - SND_TMP – the path for temporary files;
  - SS8 – folder for waveform files.

- If you use DIGISPOT® II MDB (Media Database) be sure to make a backup copy of it. This is done by means MS SQL Server (MS SSMSE).
- Connect to the server, find the needed database and create a backup copy using a context menu command. When creating a backup copy, specify backup type: full, re-writing all previous data sets.

Some preventive procedures are also recommended:

- permanently delete items deleted from MDB (emptying of recycle bin);
- delete unused audio;
- execute MDB cleaning script mdb_clean.sql.

These procedures are described in *sect. 3.13. Service operations*. A link to the MDB cleaning script is attached.

2.3 MDB structure update

When updating with passing on to new generation of software it is usually required to also update a Media Database (MDB) version. For this, you need to connect to SQL Server and perform update script mdb_update.sql for the needed database (*see Appendix F. MDB creation and update*).

If versions differ greatly (more than two generations) it is recommended to try and first make a test update with an unused MDB. For this, a new, empty database is created, to which an actual backup of used MDB is restored and then an MDB update script is performed. The integrity of data is checked with the help of the DIGISPOT® II software of the new version, installed separately for test purposes (and with its own ROOT folder).

2.4 License update

When updating the software from one generation to another (for example, *version 2.14.xx* to *version 2.15.xx.xx*) it is required to update the license file keydll_*.dll

(for generation 2.14 – keydll_4.dll, for generation 2.15 – keydll_5.dll). For this, you need to copy the keydll_*.dll file, usually received via email, to program's installation folder (the folder where the program's executable file is located, i.e. djin.exe). If more than one workplace is updated, select keydll_*.dll file in accordance with the hardware protection key number (written on the yellow sticker on the key body). Starting from generation 2.15 information about license contents is stored in the additional file License.info.

2.5 Installing new version

- Download the distributive package for the generation you want to update your software to.

Currently, there is a possibility to update for up to v. 2.15.*xx.xx*, if not stated otherwise. You can update independently (without developing company assistance) within one generation of versions, so you can update v. 2.14.*xx* up to the latest version of generation 2.14 for example. All updates that require a transition to a new generation are done for additional fee and require updating license files.

- Close the application and install the new version.

When updating several workplaces launch respective distributive package on each workplace, installing the new version on top of an old one. If there are more than 10 workplaces it is recommended to use the DIGISPOT® II automatic update system. This system allows updating the software version automatically upon application launch. This requires the update package to be stored in a easily available part of local network and the parameters of update system operation must be specified in global settings.

2.6 Checking basic settings, availability and data integrity

1. Launch the application.
2. Check connection to ROOT folder.
3. Check connection to MDB.
4. Check the general availability of MDB items.
5. Check the administration system settings.
6. Check the schedule structure, main storage structure, item synchronization with MDB system settings, default audio format and other general settings.
7. Check the schedule for current day, the next day and the day after the next day. Check the availability of schedule items.
8. Check the integrity of broadcasting grids and schedule skeletons.
9. Check the integrity of data and the functionality of rotation system in DIGISPOT® II Mag.
10. Check the settings and functionality of rotated items.
11. Check the integrity of data and all main functions of the media planning component, as well as the commercial schedule import to broadcasting schedule function.
12. Check the system of broadcast data backup to local disk.

2.7 Checking functionality of connection to hardware and third-party software

1. Check the functionality of PFL system.
2. On broadcasting stations: check the settings of audio devices.
3. On broadcasting stations: check remote control (fader-start).
4. Check the functionality of schedule import from text file module.
5. Check remote control system: processing and execution of commands by cut-in stations, sending of schedule and data by the DDB module and so on.

2.8 Rollback in case of failure

1. Restore the base from backup copy.
2. Restore the ROOT folder.
3. Restore the application, installing it from backup copy of software installation folder (*see sect. 2.2. Creation of backup copies*).

3 System configuration

3.1 OS configuration

For normal operation of software it is required that all users of a certain computer who work with programs of the software package would have a complete access to folders where the programs are installed to (such as <System disk>:\Program Files\Digispot II\, for example, if DIGISPOT® II DJin and DIGISPOT® II BCS Editor were installed in that folder), as well as the ROOT folder. To ensure stable operation, it is also recommended:

- On broadcasting station: not to install antivirus and office packages, or, alternatively, to configure these programs with great attention. A suddenly “woken up” antivirus can block access of automation software to hard disk drive, network resource and so on. This may lead to malfunctions during broadcasting.
- To make planned antivirus checks during off-air time. When doing this, it is recommended that antivirus software be installed on the server, and the checking is performed via network. It is also important to configure the antivirus software to skip files *.blk, *.wav, *.mp3, etc. when checking.
- Before doing an update to perform backup copying of installed software (including SYSTEM and ROOT folders).
- To make sure most OS subsystems and drivers work correctly. This is especially true for “bottlenecks” in terms of performance: DMA, BusMastering and so on.

Before specifying and configuring concrete parameters, do describe the structure of configuration system as a whole.

Parameters that define the operation of software can be divided in three groups:

- Parameters common for all workplaces (or the software complex) of DIGISPOT® II system – the menu **Service\Global settings**;
- Parameters common for different software installed on one workstation (such as DIGISPOT® II DJin, BCS Editor, Logger and others),– the menu **Service\Workstation settings**;
- Parameters specific to current program only,– the menu **Service\Settings**.

This division helps to simplify configuration of the whole system and avoid errors connected to faulty configuration of separate workplaces. Starting from version 2.12 configuration is possible in both manual mode and with the help of Configuration wizard.

3.2 Creation and configuration of the complex

Workplaces of DIGISPOT® II complex are formed on the basis of different configurations of DIGISPOT® II DJin, BCS Editor, Mag, Logger and other softwares. Therefore, it is vital to combine all workplaces into one single complex (connect each separate workplace to it). This combination is achieved via using common informational and configuration files, available from all workplaces. For this, a folder available for reading, writing and editing from all workplaces is created. This folder is the so-called ROOT folder and the path to it is specified in the settings for each copy of programs included in the complex. Apart from that, all workplaces of the complex work with a common media database (MDB), with the parameters of connection to this folder being identical for all workplaces and stored in a file containing all common settings located in the root folder.

The complex can be configured both with the help of Configuration wizard and manually. The wizard is opened automatically upon first launch of DIGISPOT® II system or with the help of the **Configuration wizard** command from the **Service** menu (fig. 3.1).

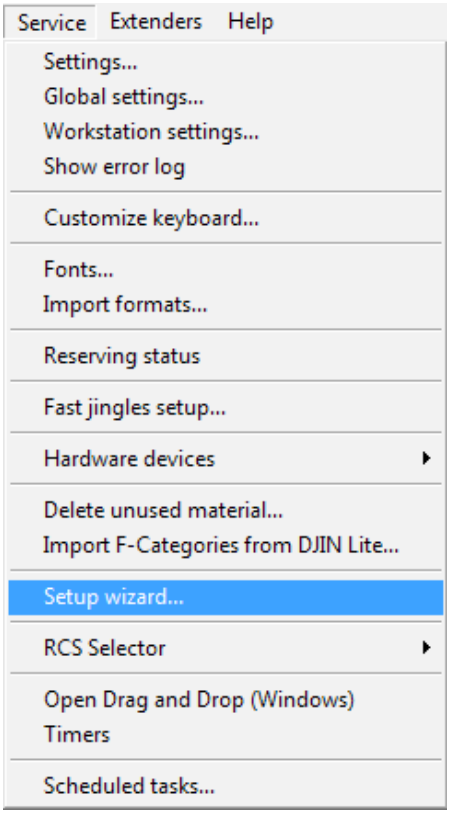

Fig. 3.1. Configuration wizard command of the Service menu

To create and configure a complex, select **Global settings wizard** on the first page (fig. 3.2) and then press **Next**.

The path to root folder is specified in the following format: <System disk>:\Folder\Subfolder1\...\ROOT, if the folder is on a local machine (fig. 3.3), or UNC: \\Computer-Name\RootShare\ROOT. The configuration wizard allows creating a folder (**Create** button) or selecting one (**Browse**). Using the **Check** button you can check the availability and accessibility of selected path. After specifying the path to root folder, press **Next** to go to the next step.

If Configuration wizard is not used, you can set the path to root folder using the program's main menu: **Service\Workstation settings\base settings\Root path (ROOT)** (fig. 3.4).

After the first copy of the program gets access to this folder, all necessary files will be created automatically.

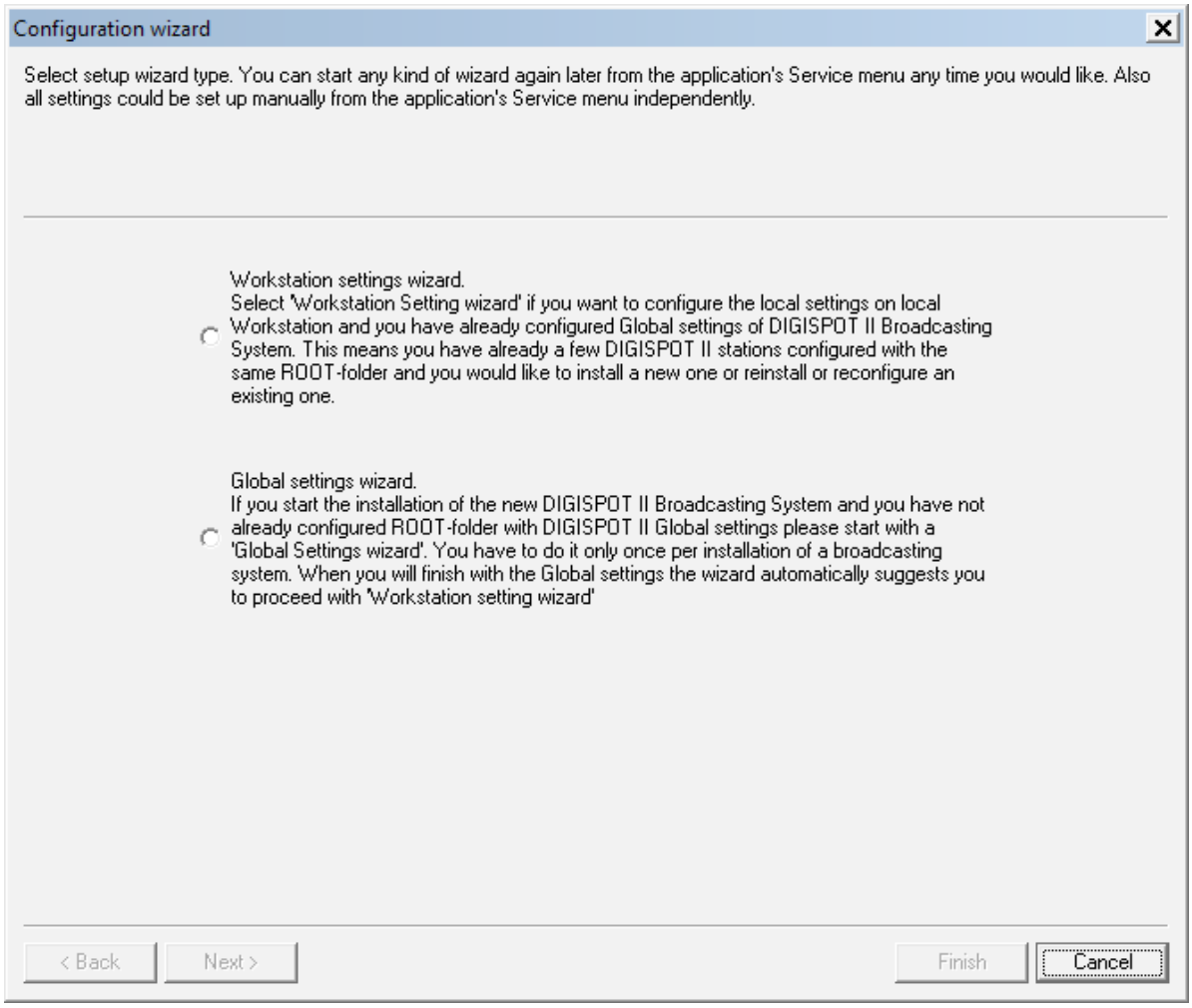

Fig. 3.2. Selecting the Configuration wizard type

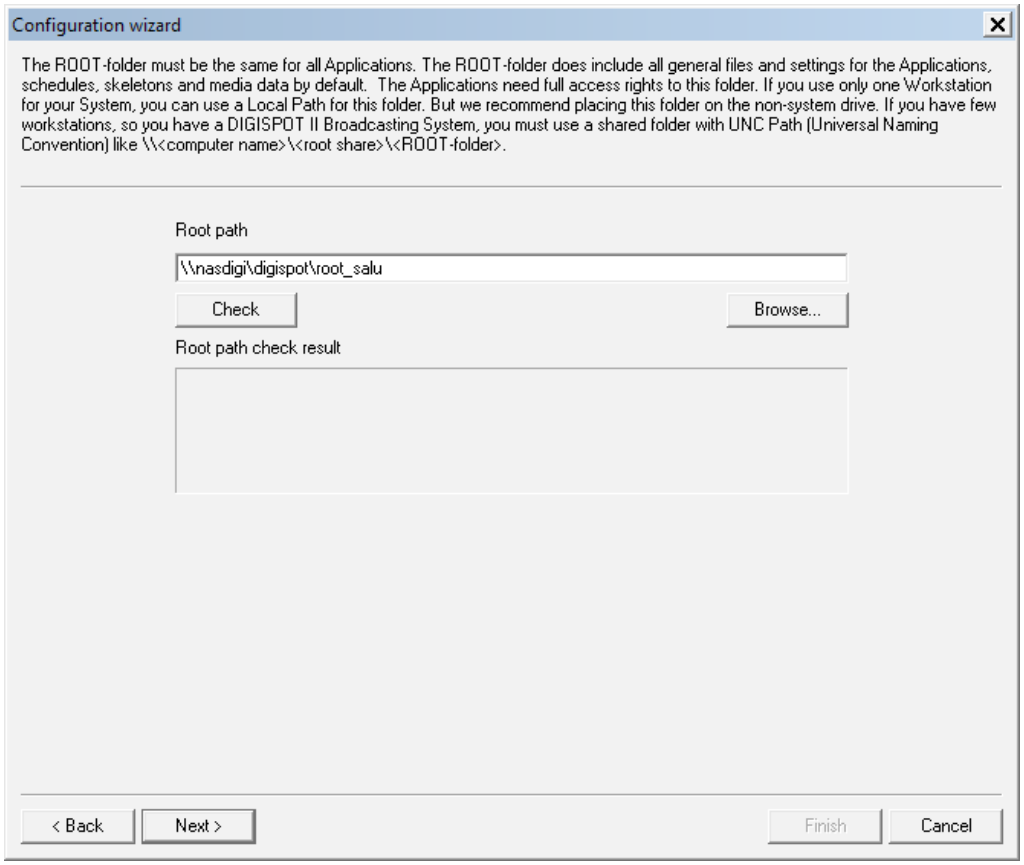

Fig. 3.3. Path to root folder

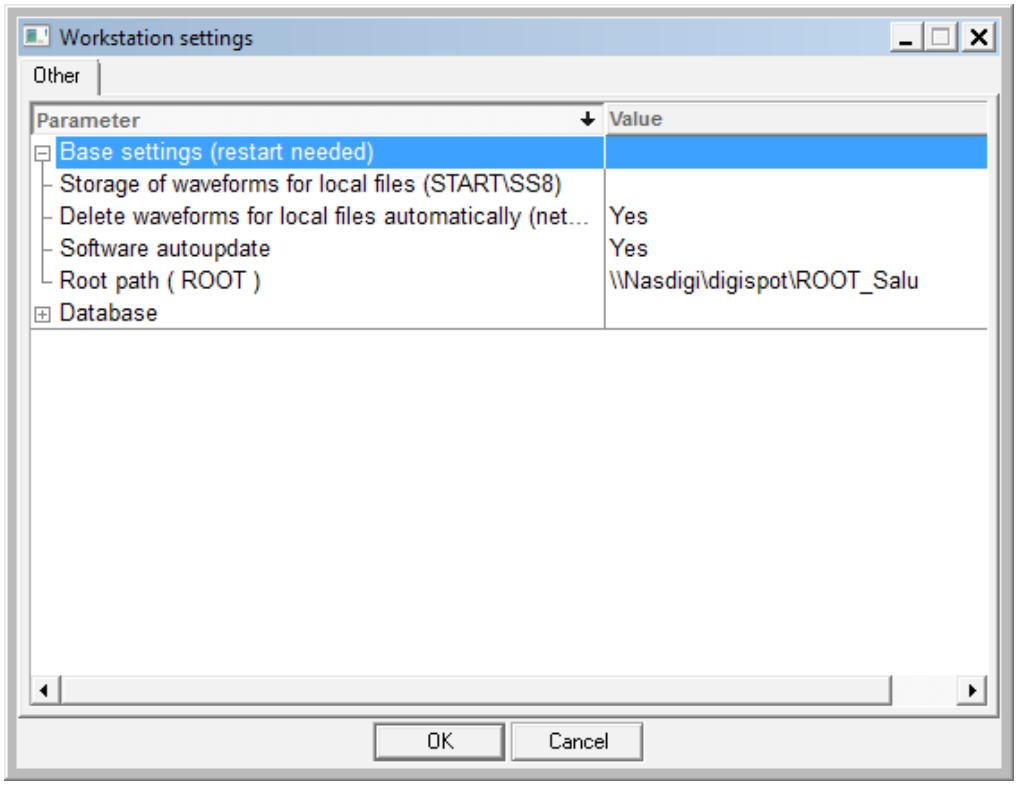

Fig. 3.4. Setting the root path manually

During the next step you must specify whether MDB is included in the complex and if it is (select **Yes**), specify parameters for database server access (figs. 3.5 and 3.6). The use of media database is described in detail in *sect. 3.11. Basic configuration of programs for working with MDB*.

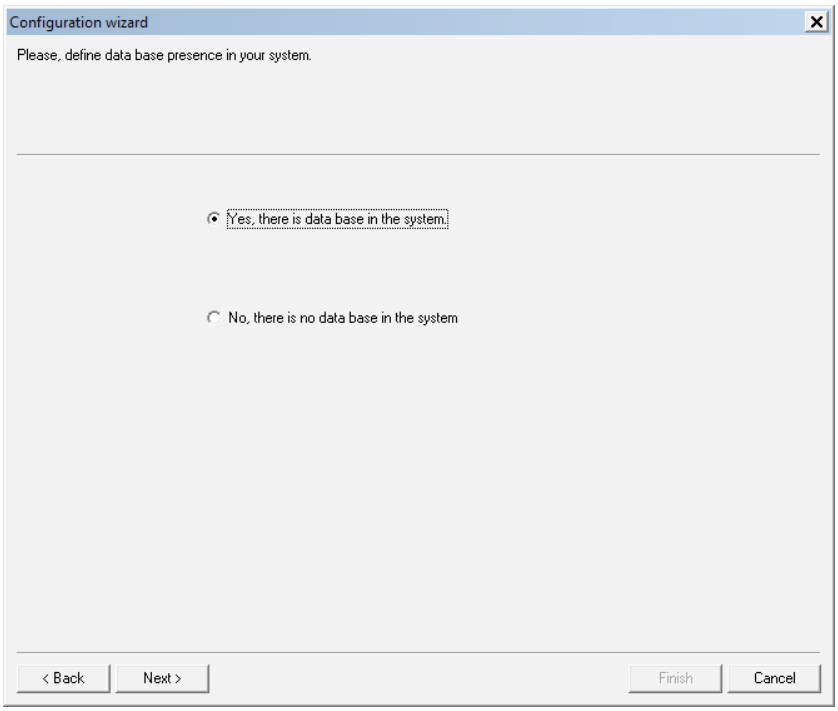

Fig. 3.5. MDB is used in the complex

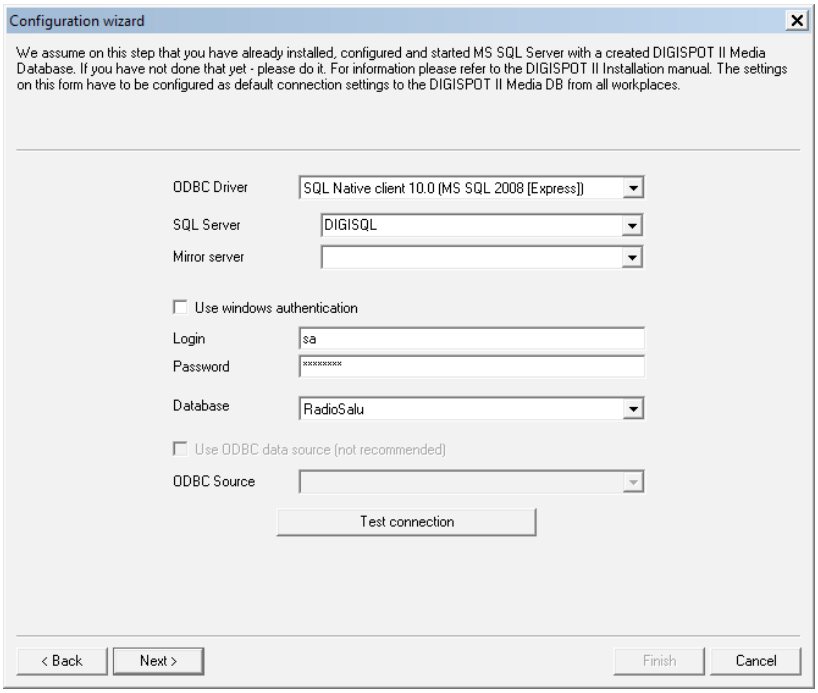

Fig. 3.6. Configuring connection to MDB

If MDB is used, you can specify a separate storage folder for each section and each MDB category (you can also do it manually using the main menu: **Service\Global settings**).

Then the wizard will let you select default formats that will be used in the DIGISPOT® II complex for recording and storing the audio (fig. 3.7).

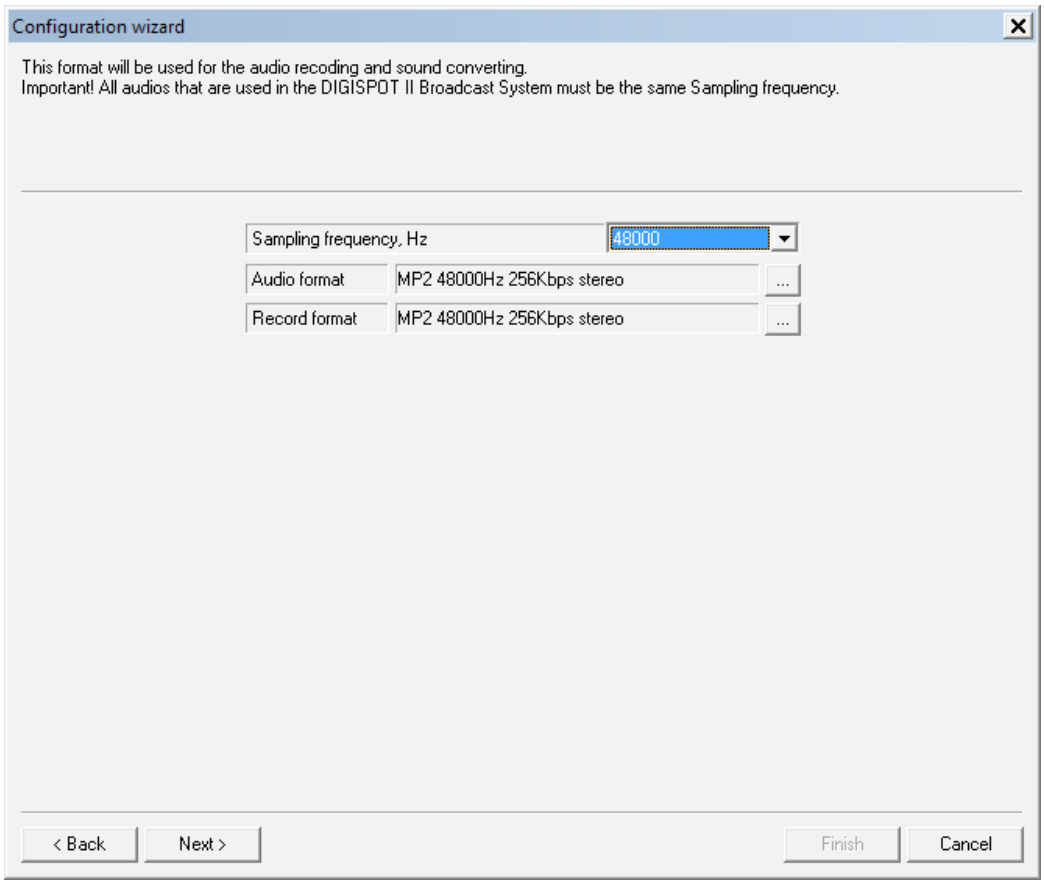

Fig. 3.7. Selecting audio storage formats

This concludes configuration of global parameters with the help of Configuration wizard. You can press **Finish** to re-load the application and continue configuring parameters for your workstation by pressing **Next** (configuration of workstation settings will be done in a cut down variant, without specifying root path and MDB connection parameters, as these have already been specified). Workstation settings are described in detail in *sect. 3.5. DIGISPOT® II Djin configuration* and *sect. 3.6. DIGISPOT® II BCS Editor basic configuration*.

It is recommended to additionally set the storage of workstation files. Part of audio material used on a workstation will bear an individual, local character. To store it, you need to specify respective paths: **Storage for editor temporary files** and **Fragments store folder**. To set these paths, use main menu: **Service\Settings\Other\Base settings** (fig. 3.8).

Reserve schedule path is a local path where a copy of schedule for the number of days specified in backup system settings (**Parameters of the audio reserving system\Trace schedules beforehand for (days [2;10])**) is stored.

In case of loss of access to main schedule the program will keep on working, switching to reserve copy of the schedule. However, this will impede schedule editing.

The rest of the parameters serve for more flexible administration and have default settings.

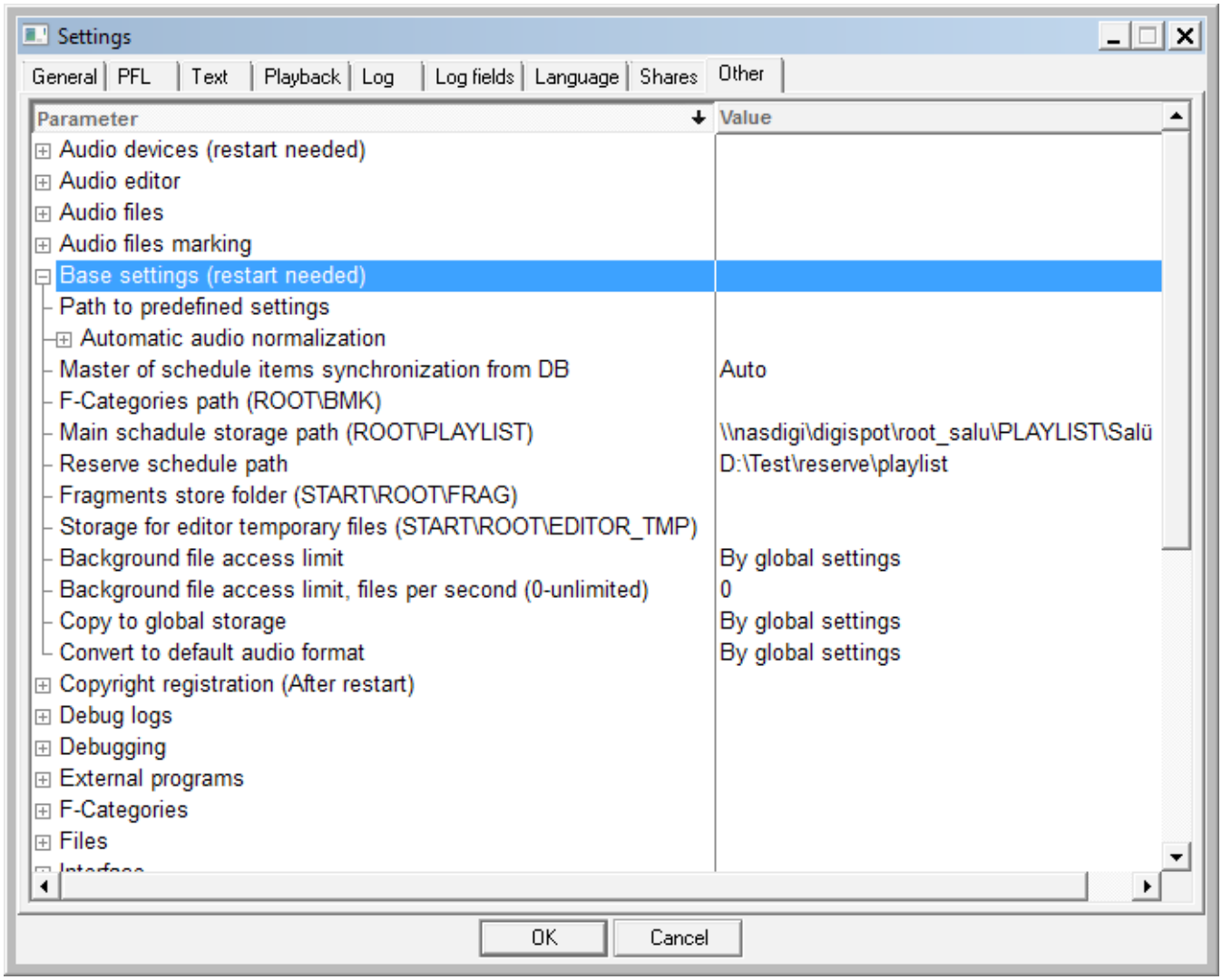

Fig. 3.8. Specifying paths for storing temporary files and fragments

3.3 Configuring multiple schedules

DIGISPOT® II software complex supports work with several schedules. To configure these schedules, open the **Service** menu and select **Global settings**. Then go to the **Schedules** tab (fig. 3.9).

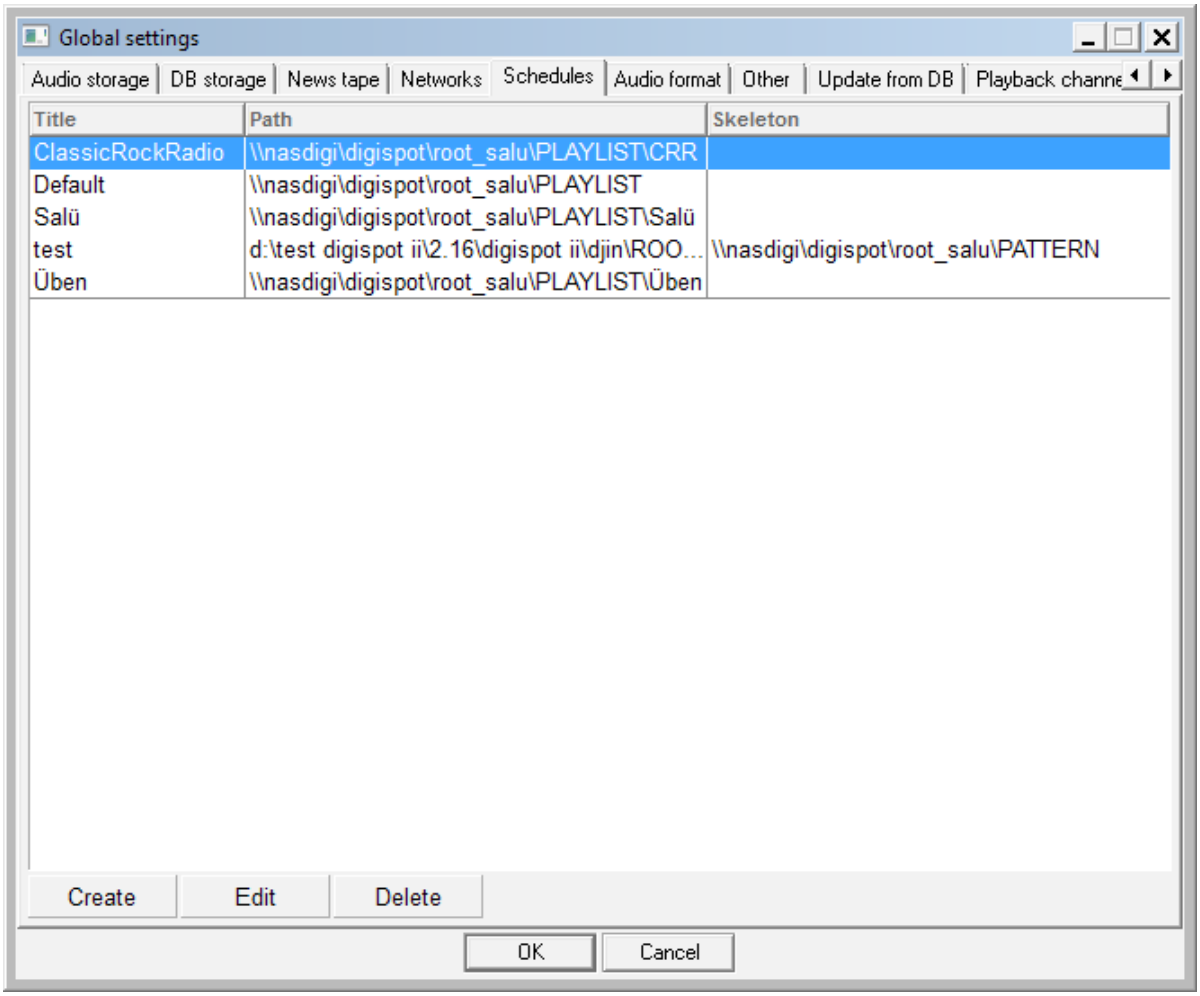

Fig. 3.9. Specifying paths for storing schedules

Here, the names of schedules are given, along with their paths and skeletons. To create new schedule (such as a regional broadcasting schedule for example) click on **Create** and enter the path to the schedule. If the folder with the new schedule is on the local machine, the path should look like this: <System disk>:\Folder\Subfolder1\...\ROOT\PLAYLIST2. If the folder is on the server, specify path in UNC format: \\ComputerName\RootShare\ROOT\PLAYLIST2.

The schedule will be stored in PLAYLIST2 folder.

3.4 Administration settings

The flexible and multi-functional administration system implemented in DIGISPOT® II software allows the solution of many access right tasks for using working in the system. For example, you can restrict access to different schedules (the main and regional ones), schedule block types (musical, commercial, news, etc.), schedule skeletons, administration and changes to system settings, commercial management, file system and database. Administration system deactivated by default and all users have access to all functions of the system.

3.4.1 Administration using DIGISPOT® II internal groups

To activate the administration system, select the command **File\Administration** and in the **Administration** window (fig. 3.10) create groups of users as well as users who are members of these groups. All users who are members of a group have equal rights. The list of actions available to a user is specified for a group by means of permitting / prohibiting certain actions listed in the right part of the window.

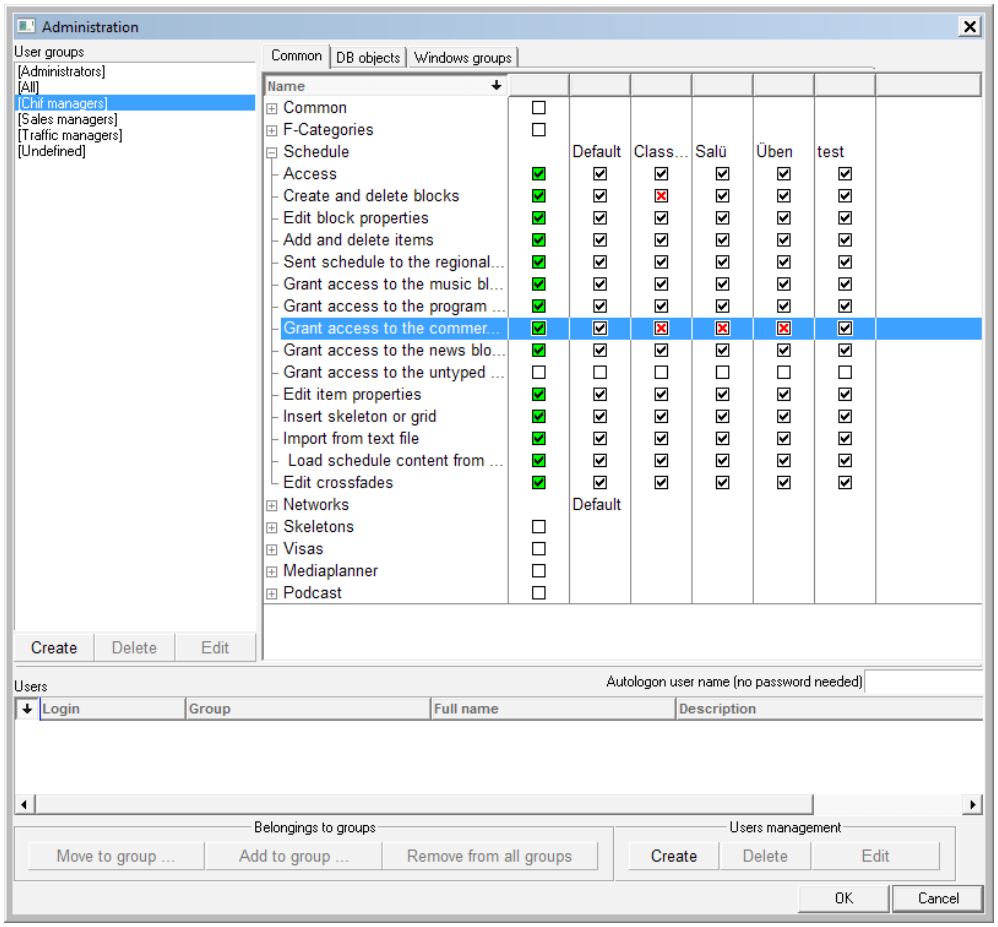

Fig. 3.10. Administration system settings

Each user is given a name (login) and password. Login and password for administrator are specified separately. Administrator is the user who has unlimited access to all functions of the system, including the administration system itself. You can restrict access of a user for working with MDB specifying which type of materials and which categories thereof the user will have access to. MDB access rights configuration is done in the **Administration** window on the **DB objects** tab. Settings of the administration system are active for all workplaces having a common ROOT folder. In other words, these are global settings. After creating users a typical registration window will appear where a user must enter his login and password. It is possible to switch current user by using the command **File\Login**.

3.4.2 Administration using Windows groups

It is possible to integrate DIGISPOT® II administration system with the MS Active Directory service. In this case, user groups in the internal administration system that have their restrictions and permissions will be matched with those from MS Active Directory. If such integration has been configured, the application will automatically recognize the user in MS Active Directory service upon launch and will define current user rights using that data. No login / password window appears in this case.

To do this, create user groups based on their responsibilities in Windows settings (**Control panel\Administration\Computer management\Local users and groups**), for example: **DJinAdministrators** (program administrators), **DJinDirectors** (subdivision managers), **DJinEditors** (schedule planners), **DJinSalesManagers** (commercial managers), **DJinTrafficManagers** (traffic editors). Include these groups into one of the standard Windows groups, such as **Users**. Add profiles of program users to these groups. Then in the **Service** menu select **Global settings** and go to **Other tab** where in the **Base settings** menu set **Yes** for **Windows authentication** parameter. Then open the **Administration** window (**File\Administration**) and go to **Windows groups** tab. Match the newly created **Windows groups** with those of DIGISPOT® II. For example, in the left part of the **Administration** window select **Administrators** group and press **Add**. Then, in the next window (**Select windows group(s)**) select the Windows group you want to include in **Administrators**. In our example this group is called **DJinAdministrators**. Select it and click on **OK**, then click on **OK** again in the **Administration** window.

NOTE. DIGISPOT® II software allows assigning unique rights for a group but not for a separate user. Therefore, if you have a user whose rights must be different from other members of his group you must create another group, specify special rights for it and include only this user in the group.

3.5 DIGISPOT® II DJin configuration

Basic configuration of programs included in DIGISPOT® II system, as well as configuration of the whole complex can be performed with the help of the Configuration wizard (For this, select **Workstation settings** on the first page of the wizard (fig. 3.11).

3.5.1 Basic configuration

To create workstation settings please specify system root path (the path to the folder specified during configuration of the complex). You can check the availability of the folder using the **Check** button, also verify if the folder is actually the root folder of the system (fig. 3.12).

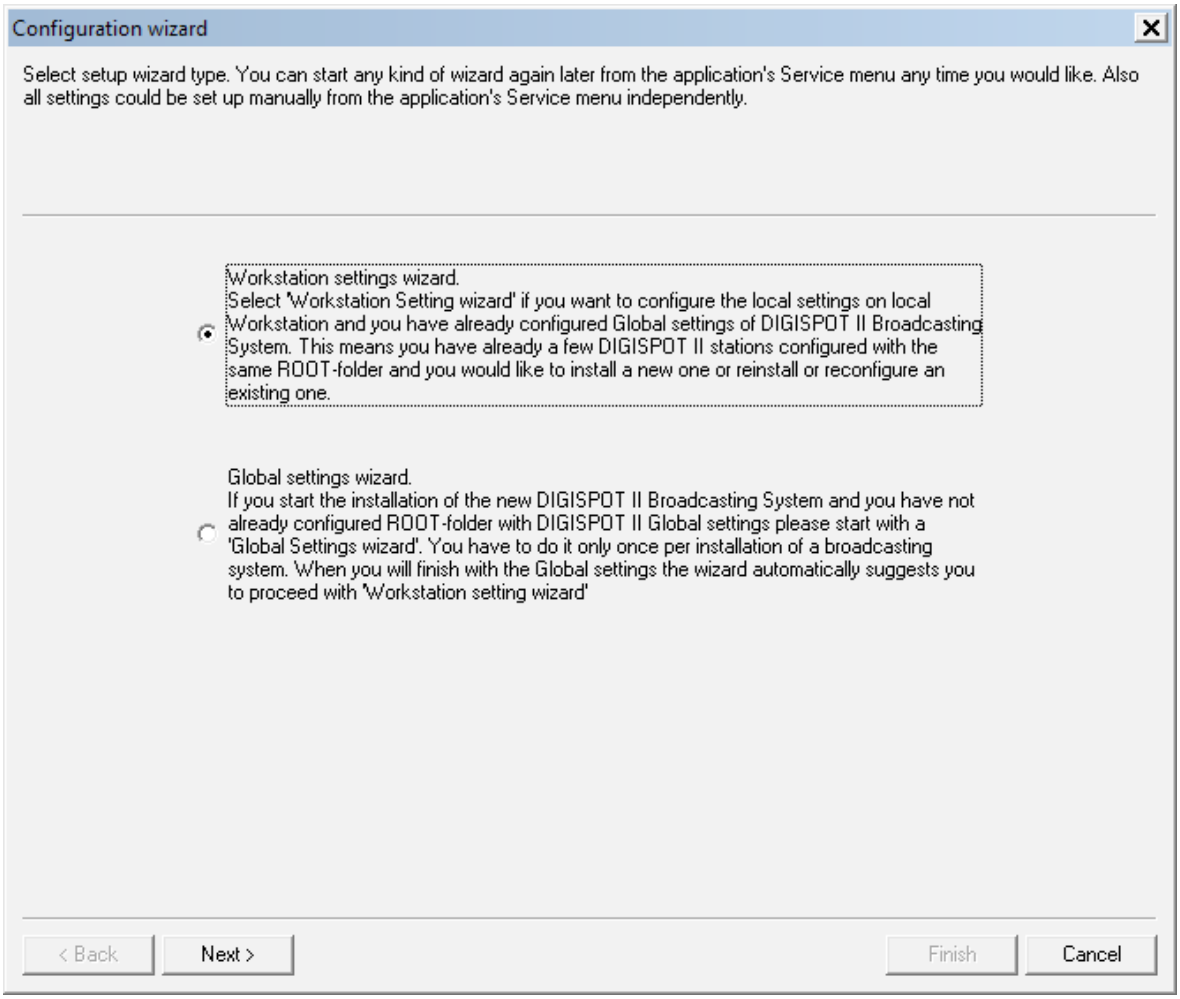

Fig. 3.11. Setting the parameters of a certain workstation

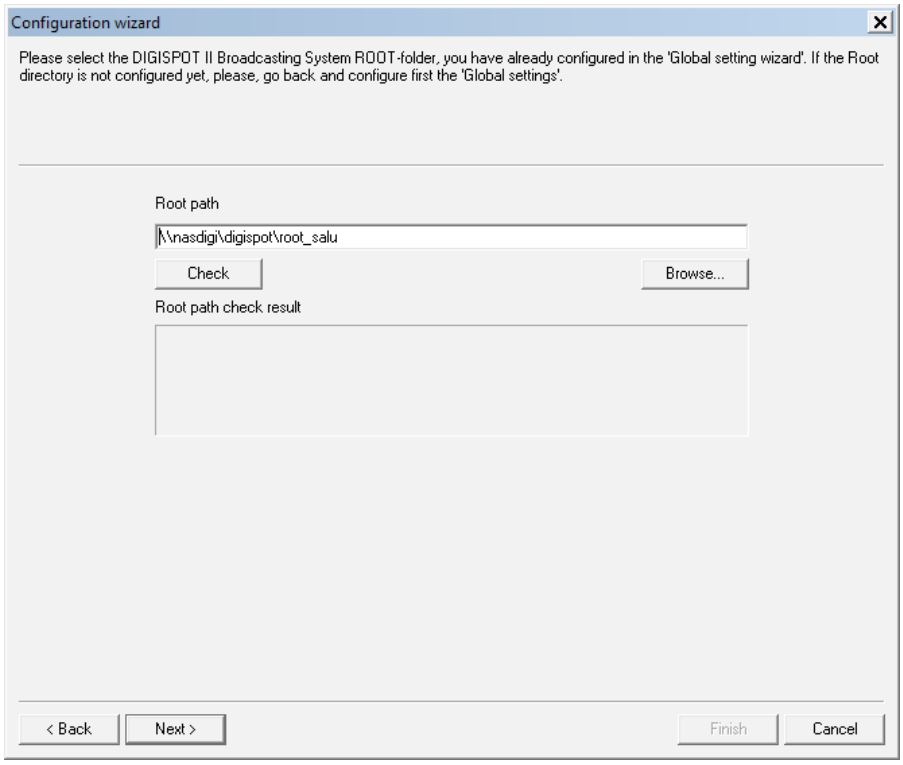

Fig. 3.12. Setting the root path with Configuration wizard

That done, the wizard will let you select used connection to MDB: **Standard connection to DB**, **Custom connection to DB**, **No DB connection** (fig. 3.13).

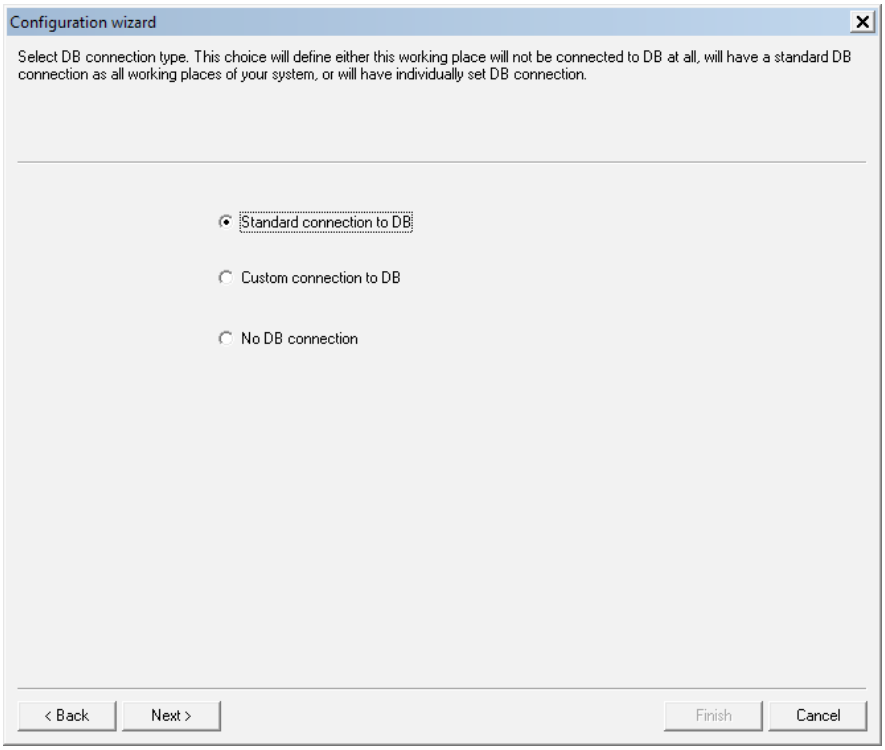

Fig. 3.13. Selecting MDB connection type

Standard connection to DB is the common choice. In this case the program will work with the database that is specified during configuration of global settings (*see sect. 3.2. Creation and configuration of the complex*). If you need the software to work with another database, select **Custom connection to DB**.

Depending on your choice the wizard may request information about MDB connection parameters (fig. 3.14) or will proceed to the next step. Connection to MDB is described in detail in *sect. 3.11. Basic configuration of programs to work with MDB*.

The next step is selection of the working configuration (layout) of the program (fig. 3.15). You can do this without the help of the Configuration wizard using the main menu: **File\Select configuration**. If you change configuration the program will offer a restart.

For changes to take effect it is required to restart the program. The wizard will automatically restart the application before proceeding to the next step. The program can be restarted manually using respective command of the **File** menu (restart can be postponed).

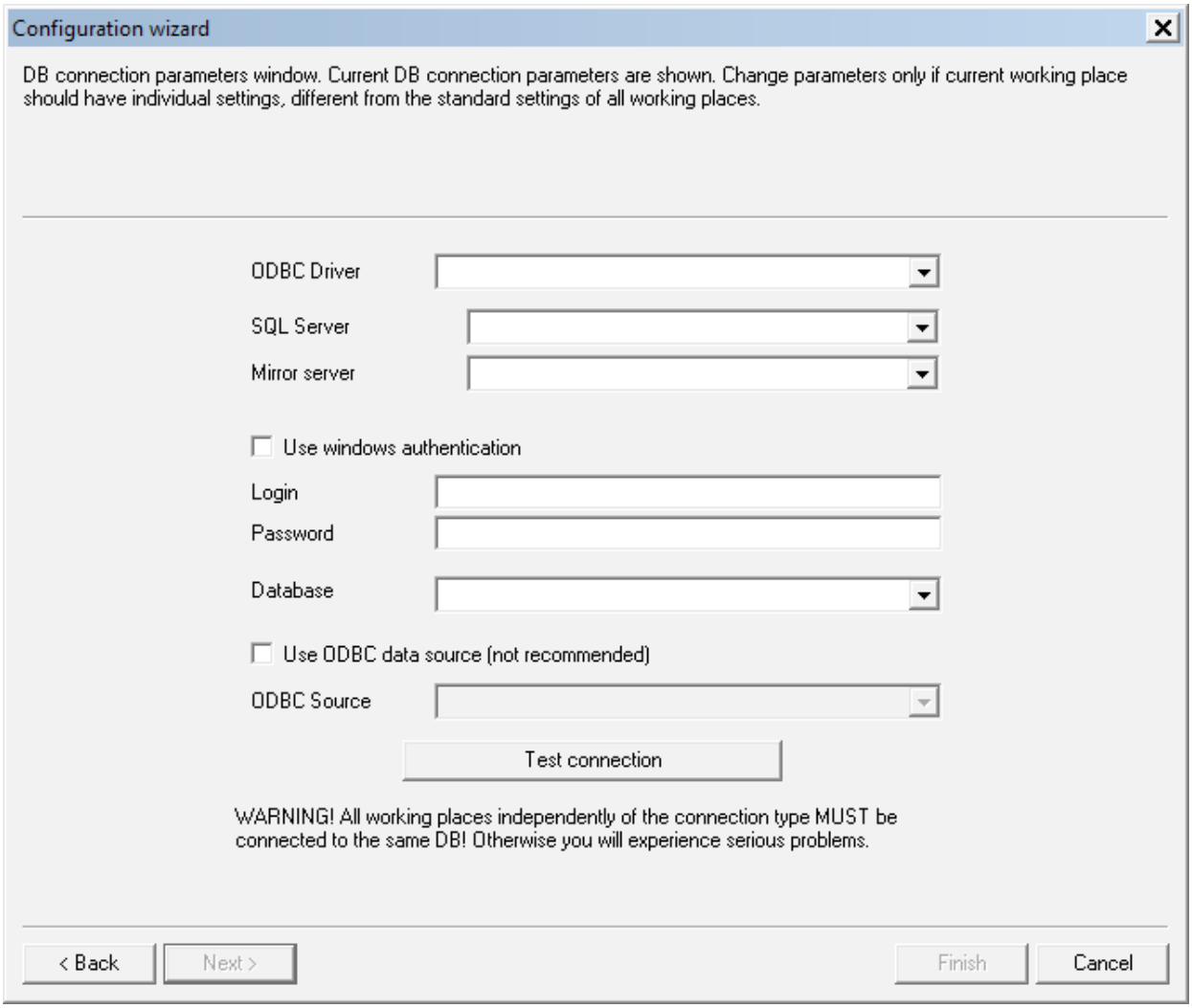

Fig. 3.14. Configuring the MDB connection parameters

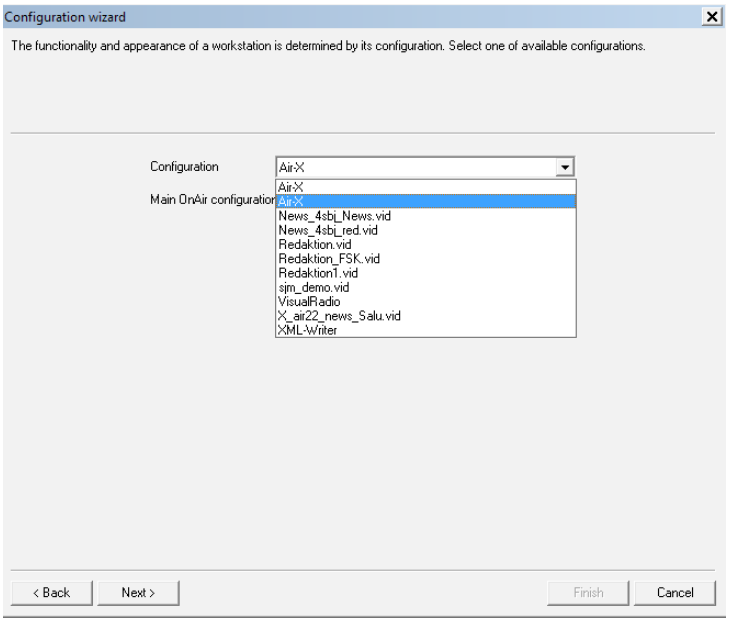

Fig. 3.15. Selecting configuration

3.5.2 Configuring audio playback devices

When launched for the first time, the program will select playback device for each player. If there are several playback devices, it is possible that the program selects wrong device (conflicts will appear). In this case, it is required to verify the correctness of settings. This can be done both manually and with the help of the Configuration wizard. After restart, the wizard will automatically continue working on the **Configuring audio playback devices step** (fig. 3.16).

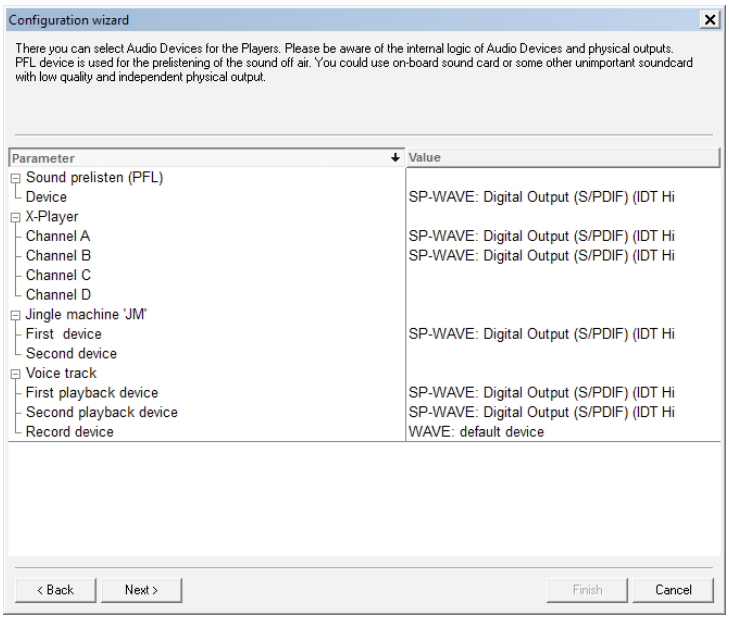

Fig. 3.16. Configuring audio playback devices with the help of the Configuration wizard

Configuration of audio playback devices depends greatly on DIGISPOT® II DJin configuration. Here is a list of blocks that make use of playback devices:

- main system players (X-Player or Double Player);
- additional (block) players;
- jingle machine (one device);
- 777 Rebroadcasting Block (three devices);
- PFL listening system (one device);
- subject player in Moderator Screen;
- clock (one device);
- Logger (one device per channel).

You need to specify a device from the list of available devices for each of the above mentioned objects. This is done inside a configuration dialog box, specific for each object and accessed via right-clicking on the header or body of an object.

It is important to take into consideration that sometimes a single device can be used by several program blocks (players). Playback device is usually paired with respective recording device and if one of these is already in use, the other one can't be used. On the other hand, it is unlikely that you will ever have to use all players at once. Besides, audio is usually broadcast from not more than three or four players at a time. Thus, it is usually enough to have four available playback devices.

NOTE. Apart from normal devices you can discover available devices with ASIO- or SP- prefix. The former appear if the ASIO driver has been installed in the system. It may be wise to use these devices if your ASIO driver give you better functionality and sound quality. However, if you use ASIO drivers for your sound card, make sure that WAVE devices are not used. It is not allowed to use ASIO and WAVE for one sound card at the same time. SP devices are identical to ASIO devices (they use a method of small buffers to work with the card) but they, on one hand, do not depend on driver version and on the other hand, give less functionality and are known to have much longer lags.

You can specify devices manually (without the help of the wizard) in **Audio devices on the Other tab** (**Service\Settings**) and on the **Service\Settings\PFL** tab.

3.5.3 Additional settings

After specifying audio playback devices the Configuration wizard (if used) will finish its work. Apart from settings already specified it is recommended to specify folders for storing the phonograms. To do this, select **Global settings** from **Service** menu and then on the **Audio**

storage tab set the **Storage directories** parameter. Here, paths for main global storage are specified – all phonograms will be copied here when added to MDB or Folders module.

It probably makes sense to set the **External storage directories** parameter (**Service – Global Settings – Other – Base settings**). These are folders whose contents are under operator's responsibility. The automation system does not use audio files stored in these folders (it does not copy, rename or delete them). In other words, if you add audio files to MDB from these folders, the files themselves would not be copied. Only links to the files will be used.

The **Copy to global storage** flag in the same group of parameters permits or prohibits moving the files to global storage when adding them to the system.

After specifying all of the above mentioned parameters, re-launch the program.

3.5.4 Configuring remote control

Usually remote control configuration is performed by the commissioning team or comes with the distributive package. However, some situations require intervention to these settings on part of the user.

To set remote control parameters, open the player properties window by clicking on a three-dot button on player's panel. Select **Remote control setup**. In the **GPI bits configuration** dialog box (fig. 3.17) double-click on **Action**, select remote control device and configure GPI bits (fig. 3.18).

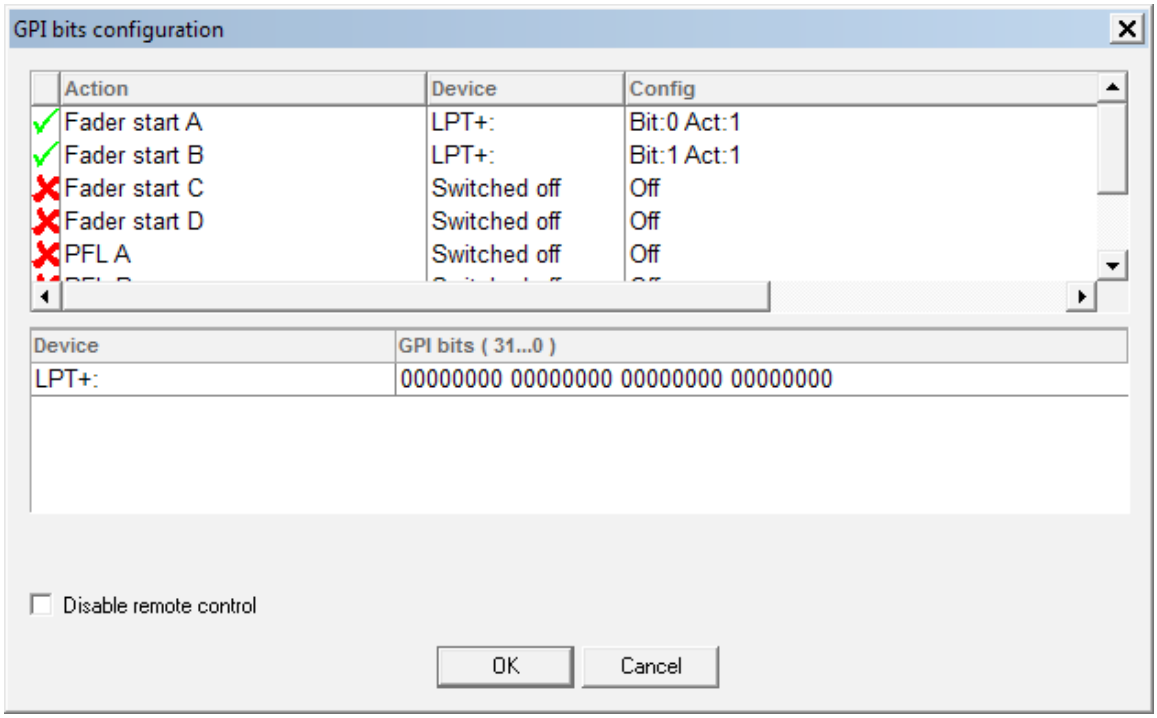

Fig. 3.17. Configuring GPI bits

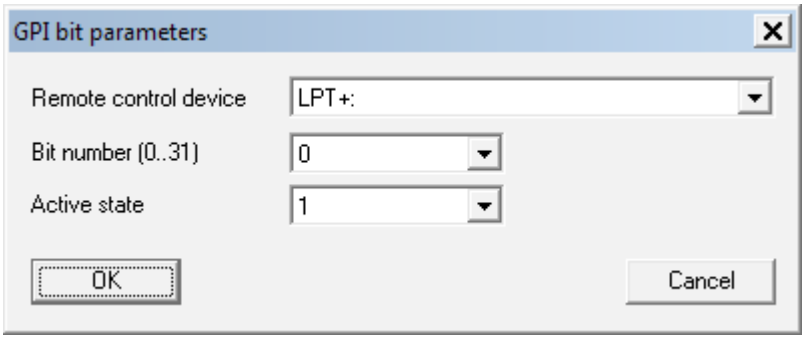

Fig. 3.18. GPI bits parameters

Starting from version 2.4.0 there is a window interface of GPI signal control configuration in DIGISPOT® II DJin, available directly from the player properties window. If using remote control with older versions or connecting remote control by means of special devices (TP-314, TP-315, TP-318), special configuration files for these devices will be needed (such as usb.cdu). Configuration files are described in detail in *Appendix C. CDU configuration files*.

3.6 Basic configuration of DIGISPOT® II BCS Editor

Basic configuration of DIGISPOT® II BCS Editor software means, first and foremost, connecting and setting it as a workplace within the DIGISPOT® II complex. This procedure is identical for all workstations of the complex and is described in *sect. 3.5.1. Basic configuration*. After that, it is recommended to manually specify folders for storing fragments (**Service\Settings\Other\Base settings\Fragments store folder**).

3.7 Basic configuration of DIGISPOT® II Mag

When starting you work, launch the Configuration wizard. If current workstation is the first one in the system, set common parameters. Then set local parameters (*see sect. 3.2. Creation and configuration of the complex*). If current workstation is to be included in the already existing DIGISPOT® II complex, set local parameters only.

DIGISPOT® II Mag supports work with multiple schedules (*see sect. 3.3. Configuring multiple schedules*). To perform schedule planning with DIGISPOT® II Mag, switch off skeletons for the schedule you are going to work with. On the same **Schedule** tab (see fig. 3.9), select the needed schedule and click on **Change**. Delete the skeleton path and click **OK**.

After that, you will need to configure PFL. Select **Settings** from the **Service** menu.

Go to the **PFL** tab (fig. 3.19). Here, you will see the following switches:

- **Disabled** – no PFL;

- **Autoselection** – a free audio channel is selected automatically for PFL. It is usually the channel that is currently used for audio broadcasting (this option is activated only after consulting our specialists);
- **To selected channel** – during PFL the audio will be played back via selected device. When selecting a device, make sure that the signal from it is not being broadcast.

Select the To selected channel switch.

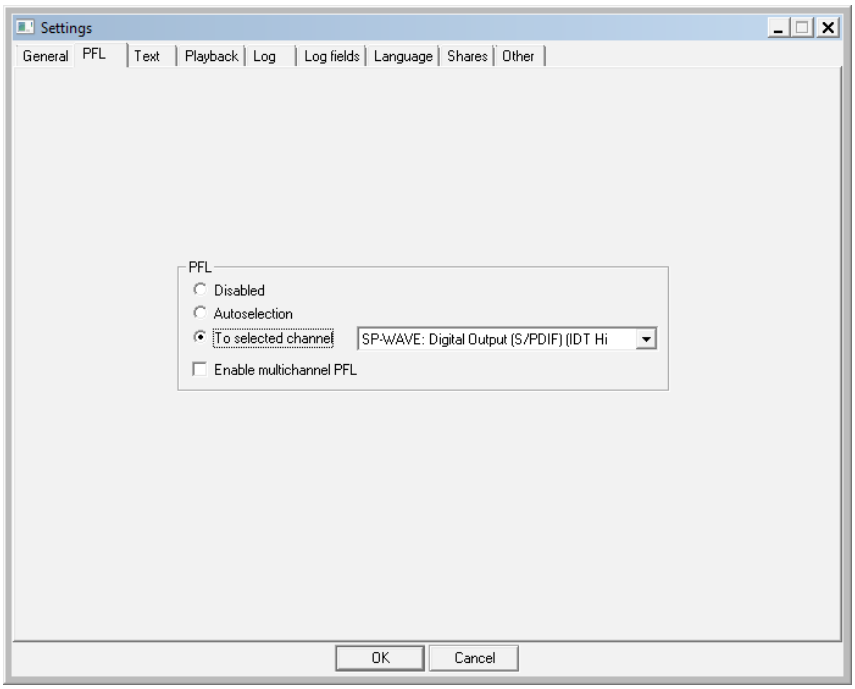

Fig. 3.19. configuring PFL

In order to secure actual broadcasting of audio provided by the schedule, please configure the log. In the **Service** menu select **Settings**, then go to the **Log** tab and select **Log all files** switch. Then specify log folder in the **Path** window.

3.8 Basic configuration of DIGISPOT® II Logger

When starting your work, launch the Configuration wizard. If current workstation is the first one in the system, set common parameters. Then set local parameters (*see sect. 3.2. Creation and configuration of the complex*). If current workstation is to be included in the already existing DIGISPOT® II complex, set local parameters only.

In the **Service** menu, select **Settings**, and then go to the **PFL** tab. Select PFL device (described in previous section). In needed, specify interface language on the **Language** tab (Russian/ English).

If you are planning to use notifications of input signal loss / occurrence events, set the parameters of connection with SMTP server using **Mail notifications** tab of the **Settings** window.

NOTE. This work is best performed by a system administrator.

On the **Logger** tab of the **Settings** window you can specify the type and number of recording channels:

- **Number of channels Video (4)** – number of video recording channels (up to 4);
- **Number of channels Audio** – number of audio recording channels;
- **Number of channels in row** – show number of channel rows on screen.

To select an audio device whose signal will be captured by the Logger, click on the button with the hammer icon in the lower part of needed channel. The **Logger settings** window will open. Select the needed device from the **Recording audio device** list. In the list below select sampling rate and, if needed, set the **Record left and right channels separately** flag.

Choose the folder the logger will record files to. For this, click on a three-dot button in the lower part of the needed channel. In the **Properties window** specify **Channel name** and **Destination path** (the path for storing recorded audio). Click on **OK**.

3.9 Basic configuration of DIGISPOT® II Media Planner Sales

When starting your work, launch the Configuration wizard. If current workstation is the first one in the system, set common parameters. Then set local parameters (*see sect. 3.2. Creation and configuration of the complex*). If current workstation is to be included in the already existing DIGISPOT® II complex, set local parameters only.

DIGISPOT® II Media Planner Sales allows opening multiple schedules (up to 10), each one in its own window. In the **Service** menu select **Settings** and go to the **Media Planner** tab. In the **Number of playlists** blank specify the number of schedules you want to be displayed in the left part of the main window. Then re-start the program. The schedules you wish to view must be registered in the system now. You can check this on the **Schedules** tab (**Service\Global settings**, *see sect. 3.5. DIGISPOT® II Djin configuration*).

Set PFL on the **PFL** tab (**Service\Global settings**, *see sect. 3.5.2. Configuring audio playback devices*). To log all actions concerning media plans, you should use media plan's menu: go to **Media** tab and then press the three-dot button. Select **Common options** and then select necessary options on the **Log list** tab.

3.10 Basic configuration of DIGISPOT® II DDB Agent

Distributed Database (DDB) is a means of organizing network-wide broadcasting. The DDB technology allows autonomous DIGISPOT® II broadcasting stations receive files by IP networks skipping the import and export operations. Building a distributed database will provide automatic administrated information exchange between different DIGISPOT® II MDB databases. For example, if you have multiple distant MDB installations combined into a single TCP/IP network (or connected to a global network such as the Internet), then, using the DDB technology and dedicated DIGISPOT® II DDB Agent software you can organize an automatic data exchange between different databases that will follow certain rules.

For DIGISPOT® II system to work with DDB correctly, you will need DDB agents that synchronize different MDB copies. DDB supports cascade data transfer. Thus, the system may function within networks of any scale, transmitting data to subregions via regional centers.

DIGISPOT® II DDB Agent can only be used of the complex includes DIGISPOT® Media DB Engine or DIGISPOT® Media DB Advanced Engine.

With the help of DIGISPOT® II DDB Agent server and client connections are created.

Server connection allows sending the schedule and MDB items from central station to regional ones where client connections are configured to accept the data.

3.10.1 Creating a server connection

To create a server connection do the following:

1. *Create a server socket*.

To do this, click on a three-dot tool bar button in the left part of the DDB module window. The **Properties** window will open. On the **General** tab specify IP address of the server and port number (fig. 3.20).

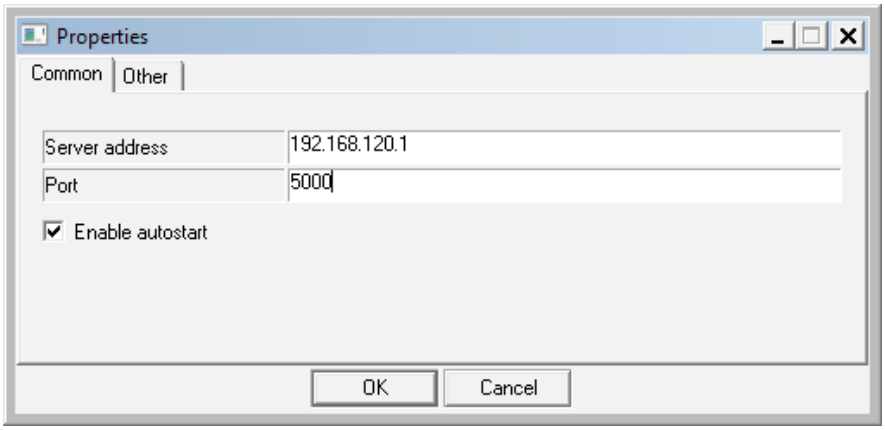

Fig. 3.20. Configuring a server socket

2. *Create server connection*.

On DDB module tool bar click on Add. Enter connection name, login and password, then in the Type list select Server (fig. 3.21).

3. *Go to the Send DB tab and check all items and MDB categories that you need to transfer*.

If current workstation is a subserver, which means that it does not only transfer its own data to regional stations but also receives data from the central station, check **Rebroadcast material received via other connections**. In the same window below, check **On** for those schedules you need to send to regional station. Then press **OK**.

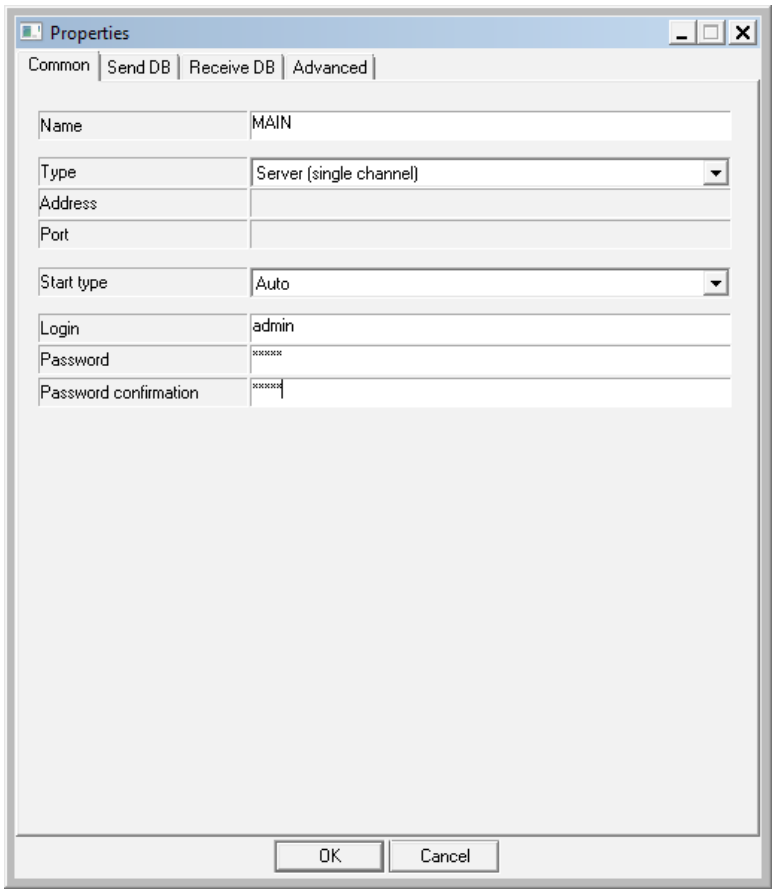

Fig. 3.21. Server connection properties

3.10.2 Creating a client connection

1. Create client connection. On the DDB module tool bar press **Add**. **Enter connection name, login and password**, **then in the Type** list select Client. Enter IP address and port of the server you need to connect to (fig. 3.22).
2. Go to **Receive DB** tab and check **Receive** material. To receive schedules click on **Add** and in the **Src sch name** field enter full name of the schedule that you need to receive. In the

Dst sch name field enter the name that will be displayed for this schedule on a regional station, then press **OK** to return to previous window. Press **OK** again.

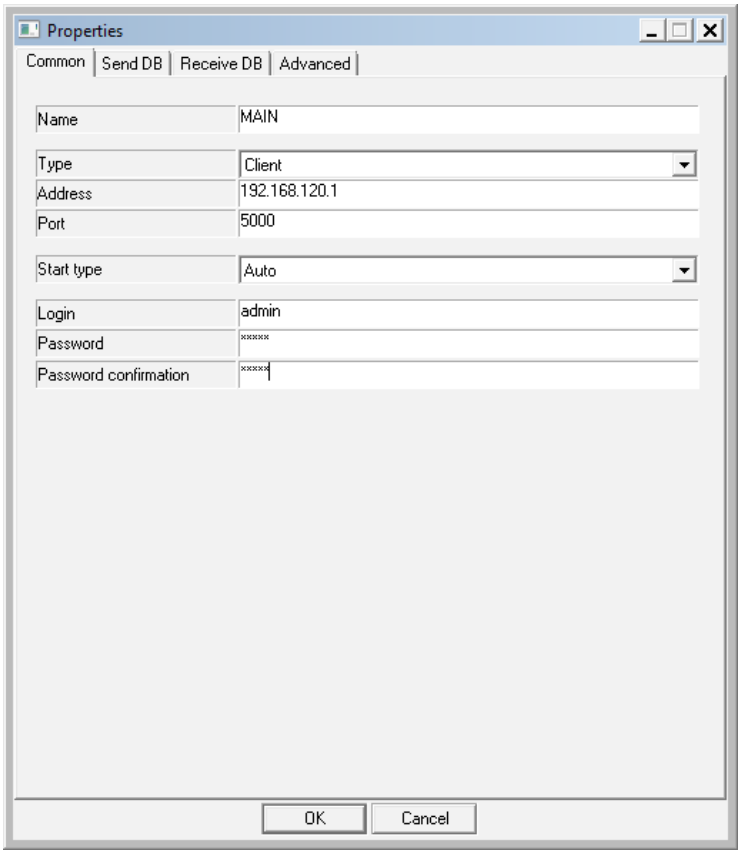

Fig. 3.22. Configuring client connection

3.11 Basic configuration of programs to operate with MDB

To configure programs of the complex to work with with MDB, please do the following.

1. Install and configure Microsoft SQL Server 2000/2005/2008 on one of the workstations of the complex or on the server (*see Appendix E. Microsoft SQL Server installation*).

IMPORTANT: when configuring SQL Server with Configuration Manager you need to deactivate all other protocols except TCP/IP.

2. Create a new, blank media database (MDB) with the help of Enterprise Manager (for Microsoft SQL Server 2000) or Microsoft SQL Server Management Studio (for Microsoft SQL Server 2005/2008).
3. For the newly create base execute creation script (mdb_create.sql) and DB structure update script (mdb_update.sql).

The scripts can be found on installation disk in the folder \#Utils\SQL. The scripts are executed with the help of SQL Query Analyzer (for Microsoft SQL Server 2000) or SQL Server Management Studio (for Microsoft SQL Server 2005/2008).

4. Provide access for users to the new MDB.
5. In program settings specify MDB server, connection parameters (with respective login and password for MDB access) and MDB name.

You can configure parameters of MDB access with the help of Configuration wizard in standard parameters for MDB access window (*see sect. 3.2. Creation and configuration of the complex*).

3.12 Basic configuration of backup system

The backup system serves two purposes: providing stable, crash-free broadcasting in case of network failure (LAN, VPN) and delivering audio files to playback machine. The backup system works as follows: all audio files included in the schedule are copied to the local disk of broadcasting machine automatically, in background mode. As the player plays back a file, the system checks if there is a local version for this file. If there is, the system turns to the copy instead of the remote original. If the original is updated or changed, the local copy is also updated automatically.

Configuration of backup system is performed in the **File reserving system info** window (**Service\Reserving status**, fig. 3.23). (To perform backup click on the three-dot button in the **Schedule** window and in the window that opens select **Reserve**).

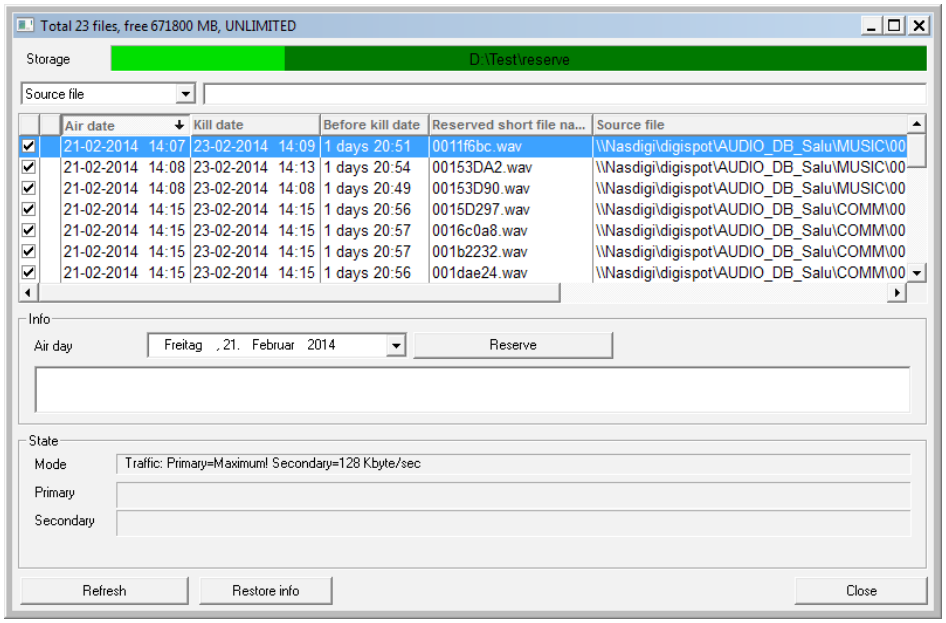

Fig. 3.23. Reserving system status

For system to perform backups specify the path for storing local copies of files. Select **Settings** in the **Service** menu and then go to **Other** tab. In the **Parameters of the audio reserving system** select **Archive path (restart needed)** and then specify the needed path. In the same menu, set **Yes** for **Enable to reserve schedules** option. Then specify schedule reserving path (select successively **Service\Settings\Other\Base settings (restart needed)\ Reserve schedule path**).

3.13 Service operations

For stable operation of DIGISPOT® II it is recommended to perform service operations described in the following chapters.

3.13.1 MDB cleaning

Perform the mdb_clean.sql script regularly, preferably in the form of a job task (job) of SQL Server Agent. This can be also done manually at least once a month. During this operation:

- deleted DB items are permanently removed from the system (emptying of recycle bin);
- old News Browser items are marked as deleted;
- old items in various “growing” tables are deleted (in MDB items not found in file storage are deleted; values of items, attributes and categories deleted earlier; unused News Browser items; old items and schedule blocks deleted earlier).

3.13.2 Cleaning main storage and local temporary files

1. *Deletion of unused audio*, performed with the help of respective menu command (**Service\Delete unused material**), should be done at least once a month. During this operation the following gets deleted:

- Unreferenced files from DIGISPOT® II DJin storage that are not linked from MDB, Schedule, Folders, Skeletons or Grids. Schedules are scanned for a predefined period of time (2 days by default). This value can be viewed and edited using the following menu: **Service\Global settings\Other\Delete unused material\Scan old schedules (days)**.
- Old schedules (folder contents). The number of days is specified by a global settings parameter: **Service\Global settings\Other\Delete unused material\Delete schedules in how many days (0 – do not delete)**, 0 is default value (i.e. schedules are not deleted).

- Contents of temporary audio files folder's subfolders (ROOT\SND_TMP\<date>). Deletion depends on a global settings parameter: **Service\Global settings\Other\Delete unused material\Delete temporary files in how many days (0 — do not delete)**, 0 is default value (i.e. files are not deleted).
- Waveform files (contents of SS8folder) opened by UNC names (\\ComputerName\ RootShare). At the same time, "lost" waveforms are deleted that have no original files. If a user has no right to delete unused material, only this last action will be performed.

2. *Deletion of debug logs* is performed during creation of a new log file (usually once a day). It is specified by the following parameter: **Service\Settings\Other\Debug logs\Delete files older than (days)**. Default value is 30.

The size of the log file is specified with the parameter **Service\Settings\Other\Debug logs\ Total size of log files should be less than (Mb)**. Default value is 1 GB.

The system can be configured so that it will not delete logs, instead copying them to common storage right after completion of recording. In other words, the logs will not accumulate on the machine (no files are ever deleted from this folder!):

Service\Settings\Other\Debug logs\Path to store debug log files (empty by default, i.e. switched off).

3. *Deletion of Windows temporary files*. These files, created during copying from DIGISPOT® II to Windows clipboard are deleted upon application shutdown. Intense use of this operation without closing DIGISPOT® II DJin can occupy a lot of space. These files are stored in a standard user temporary files folder (<System disk>:\Documents and Settings\<User name>\Local Settings\Temp\Digispot II). You can try to delete them from Windows environment. If they are not used by anybody, they will be deleted.
4. *Deletion of local waveforms* for files opened by names of C:\my_snd\... type (deleted upon application shutdown).

NOTE. Text playback logs are never deleted.

4 Using debug logs and crash dumps

The data from debug logs and crash dumps allows establishing exactly what happened in the system – for example which error appeared and what caused it.

To know what material appeared on-air and when it appeared, or what changes were done to broadcasting schedule and what was the reason for these changes, for a certain period of time, refer to air logs and schedule editing logs.

The data from debug logs and crash dumps allows establishing exactly what happened in the system – for example which error appeared and what caused it.

To know what material appeared on-air and when it appeared, or what changes were done to broadcasting schedule and what was the reason for these changes, for a certain period of time, refer to air logs and schedule editing logs.

4.1 Logs and crash dumps

The logs contain data about errors of various types and other events. First and foremost, the analysis of logs allows the software team and technical service staff to define the exact reason of system malfunction. Usually, logs are stored in DBG_LOG folder (<System disk>:\<Installation folder>\Digispot II\<Program (i.e. DJin)>\DBG_LOG). Here is the format of log filename:

program_*date*_ _*time*.txt

Example: djin_2011-06-24_ _13-48-19.txt.

Crash dumps are created by the system if DIGISPOT® II was shut down unexpectedly and are saved in <Installation folder>\DMP. Here is the format of dump filename:

program.exe-*date*_ _*time*.dmp

Example: djin.exe-2010-12-02_ _10-31-37.dmp.

Unfortunately, sometimes dumps fail to record successfully. A dump files is only recorded successfully if there is an eponymous *.ver file near the dump file. This *.ver file is only created by the program in case of successful creation of a dump. If there is no such file, the dump file is useless.

Log and crash dump files are requested to be sent to technical support service for expert analysis.

4.2 Configuring playback log

The playback log contains information about items that were actually played back by the player. It helps to define whether the file was played back from a local copy or downloaded from a network. Usually, the playback log is stored in PlaybackLog folder (<System disk>:\<Installation folder>\Digispot II\<Program (i.e. Djin)>\PlaybackLog).

Here is the format of playback log filename: date.log. Example: 2011-06-21.log.

You can configure the log on the **Log** tab of the settings window (**Service\Settings**, fig. 4.1). You can specify another folder for storing the log. To do this, click on the three-dot button and specify a path.

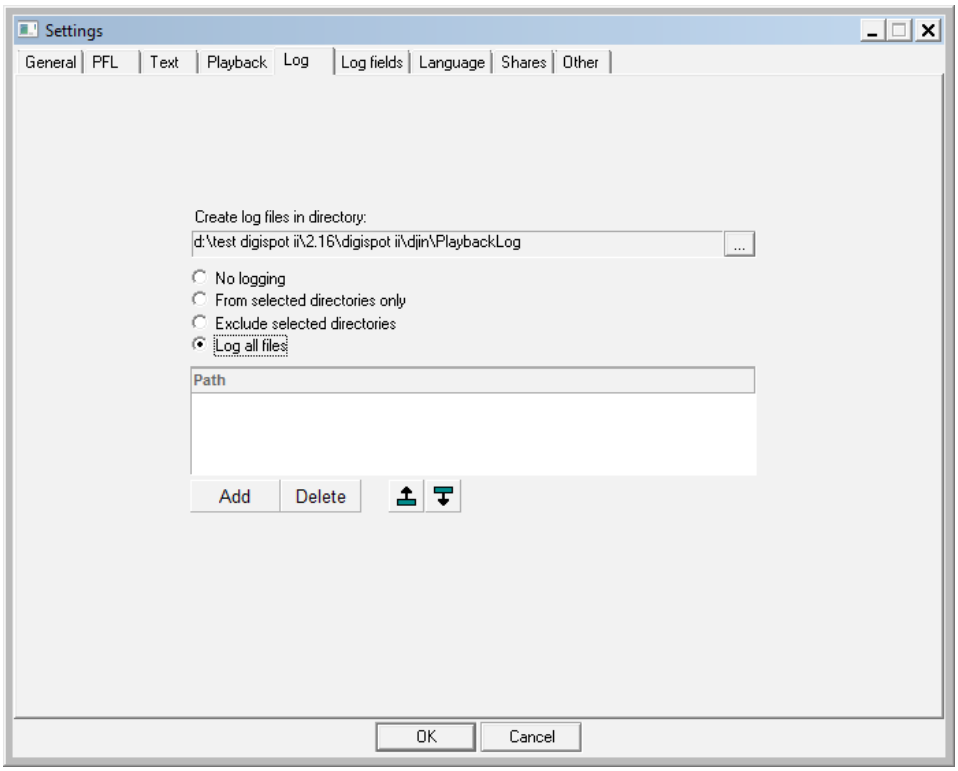

Fig. 4.1. Configuring playback log

4.3 Schedule editing log

This log contains information about changes in the schedule. It is stored in ROOT folder, in the subfolder that contains schedule for current date, for example: <System disk>:\Program Files\Digispot II\DJin\ROOT\PLAYLIST\2010-05-21\EDIT_LOG.txt.

4.4 DDB Agent log

In this log, information about transfer of database items from DIGISPOT® II DDB Agent to other databases is stored. The log can be found in the DDB_LOGS folder (<System disk>:\Program Files\Digispot II\DDB\DDB_LOGS).

Here is the format of log filename: *date*.log. Example: 2011_06_06.log.

4.5 Media Planner Sales log

Media Planner Sales log records events connected to media plan operations. To configure the log, select **Media** in the left part of DIGISPOT® II Media Planner Sales and then, pressing the three-dot button, select **Common options** and go to **Log list** tab (fig. 4.2).

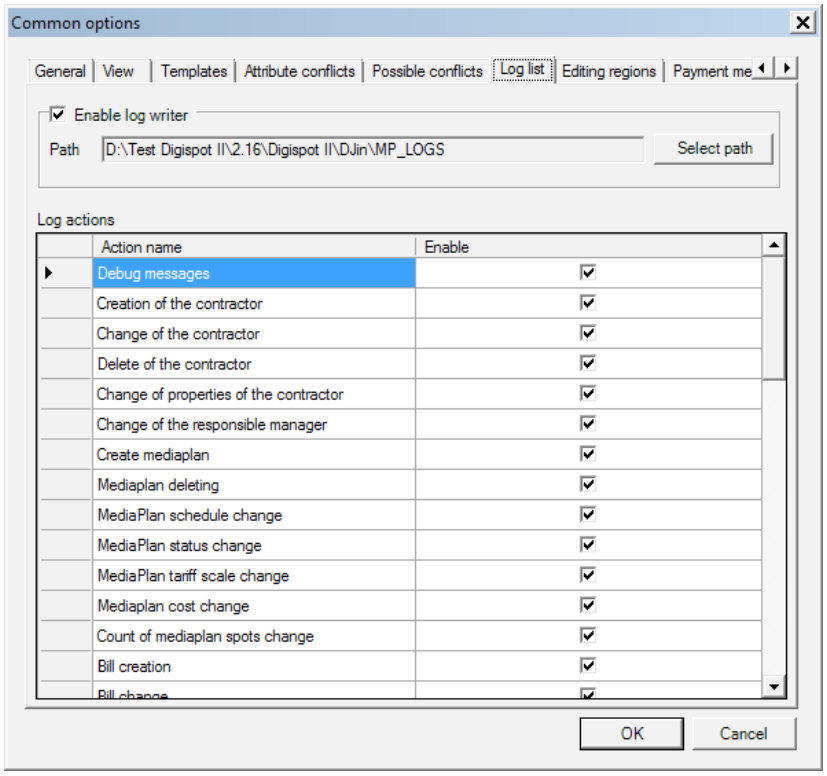

Fig. 4.2. Configuring Media Planner log

Set the flag **Enable log writer** and then set flags for options you want to include in your log. If needed, change log path with the help of **Select path** button. Press **OK**.

Usual path of the log is: <System disk>:\Program Files\Digispot II\MediaPlanner\MP_LOGS. Here is the format of Media Planner log filename:

MediaPlanner_21.06.2011.txt

APPENDIXES

Appendix A. Storing the settings

A.1. Configuration files

All settings are stored in *.ini files. Each executable module (exe file) has its own ini file where it stores its settings. There is also an additional ini file where common settings from all exe files contained in the same folder are stored (this file defines workstation settings). All ini files, as well as ProfileName.cfg are stored in the SYSTEM subfolder, where exe files are located.

A profile is a collection of ini files of applications plus their common ini file. Each profile has a name. The name of the active profile (Profile_name) is stored in ProfileName.cfg. The names of ini files are formed in the following manner:

- ini file corresponding to exe file: Profile_name.*Name of exe file*.ini;
- ini file with workstation settings: Profile_name.ini.

The file Profile_name_Version.par serves for distribution of access to workstation settings file between applications and contains settings shared by all applications that are stored in binary code. This file can't be edited. It is not recommended to edit ini files.

Some settings are common for all computers of the network (global settings). They are stored in ShPar*.ini and ShPar*NNN*.par (where *NNN* is the version number), found in the ROOT folder (this folder is used for storage of data common for all workstations in the network; the location of ROOT folder is part of the workstation settings).

A.2. Transferable profiles

DIGISPOT® II system allows saving all user settings in a file with a certain name. By default, a user works with the profile named **Base**. What situations may require creation of new profiles? For example, when the same workstation is used by multiple users, all of them solving different tasks, working with different system configurations or different system complexes, each with his / her own custom user interface.

1. To create a profile, open the **Profiles** window (**File\Setup profile**) and then select profile whose settings will be copied, click on **Copy** and enter the name of the new profile (fig. A.1).
2. To always load selected profile by default select **Load default profile** switch. If you prefer to select a profile upon program launch, set **Select profile manually** option.
3. Click on **Apply**.

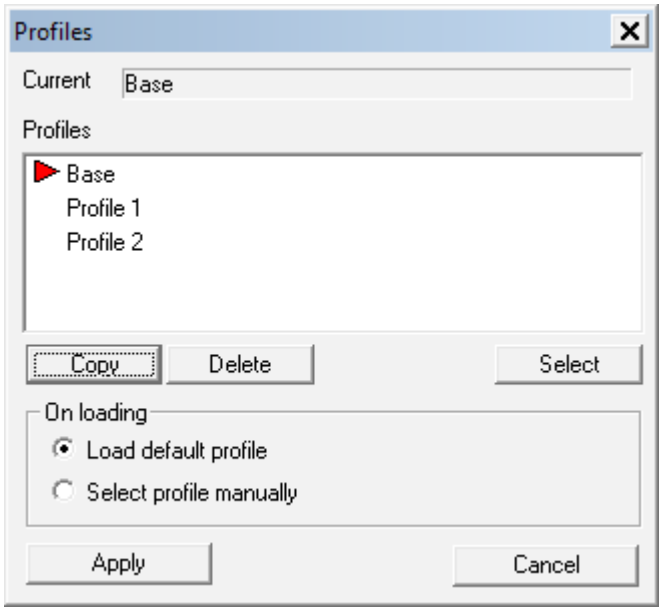

Fig. A.1. Configuring profiles

Appendix B. Root folder (ROOT) structure

The root folder contains global setting files and common data used by all workstations of the complex, as well as administration system parameters.

- BMK – metadata of Folders internal module;
- CASSETE – not used (reserved for the future);
- EDITOR_TMP – audio editor temporary files;
- FRAG – fragments;
- IMP_FORMATS – formats of schedule import from text file;
- PATTERN – default schedule skeleton;
- PLAYLIST – default schedule;
- SND – main audio storage;
- SND_TMP – main storage of editable schedule items;
- SS8 – main waveform storage.

Appendix C. Configuration files with *.cdu extension

DIGISPOT® II requires a cdu file to work with any external devices. The file describes the file sharing routine between the system and the device: command transmission medium, multiple indicators connected to this device (output data), multiple commands generated by this device (input data) and a lot more.

Let us say, for example, that the system uses a TP-312 device that is designed to connect outboard equipment controlled by varying the resistance of input / output network (“dry contact” type). This device accepts 8 signals for software processing of events and transmits 2 software control signals to an outboard device.

To make use of this equipment you need to place the TR-312.cdu file to SYSTEM folder of application the TP-312 is currently connected to. For example, in case of DIGISPOT® II DJIn the path to this folder would be: <System disk>:\Program Files\Digispot II\DJin\SYSTEM.

Appendix D. Connector wiring of remote control parallel port

Two Fader start + two CUE	
Contact	**Signal**
10	Fader start A (+)
22 (GND)	Fader start A (–)
13	Fader start B (+)
25 (GND)	Fader start B (–)
12	CUE A (+)
24 (GND)	CUE A (–)
15	CUE B (+)
18 (GND)	CUE B (–)

Four Fader start	
Contact	**Signal**
10	Fader start 1 (+)
22 (GND)	Fader start 1 (–)
13	Fader start 2 (+)
25 (GND)	Fader start 2 (–)
12	Fader start 3 (+)
24 (GND)	Fader start 3 (–)
15	Fader start 4 (+)
18 (GND)	Fader start 4 (–)

Appendix E. Microsoft SQL Server installation

If configuring SQL Server with the help of Configuration Manager you need to prohibit all protocols except TCP/IP. If installing SQL Server manually you need to successively install SQL Server Express Edition, SQL Server Management Studio Express and SQL Server Native Client.

Appendix F. MDB creation and update

Media Database (MDB) is a dedicated database working under Microsoft SQL Server 2005/2008/2012. MDB contains descriptions of items, a set of user-created categories and attributes as well as other information.

Using MDB allows:

- solving the problem of distribution of items among categories with the possibility of one item pertaining to more than one category;
- creating an hierarchic structure of categories with unlimited nesting;
- receiving prompt information about items with equal value of certain attribute, for example, viewing all songs of a certain author or all news subjects prepared by a certain journalist.

F.1. Creating MDB

If MDB is created automatically, you need to execute the installmdb.cmd script that includes the following:

1. Creation of a blank MDB (execution of CREATE DATABASE digispot2mdb request).
2. Creation of MDB structure (execution of mdb_create.sql script).
3. Update of MDB structure up to the latest version (execution of mdb_update.sql script).
4. Execution of mdb_media_reports.sql script (if DIGISPOT® II Media Planner Sales is used in the system).

If creating MDB manually, do the following:

1. Launch Microsoft SQL Server Management Studio.
2. Create a blank DB.
3. Create MDB structure (execute the mdb_create.sql script).
4. Update MDB structure up to the latest version (execute the mdb_update.sql script)
5. Execute the mdb_media_reports.sql script (if DIGISPOT® II Media Planner Sales is used in the system)
6. Execute the mdb_mp_updates.sql script (for version 2.15.37.x).

F.2. MDB update

Preparation for update

Before updating create a reserve copy of MDB. Before starting backup copying make sure that all DIGISPOT® II applications that interact with the updated MDB have been shut down on all workstations. After that, connect to server, find the needed base and perform the backup creation operation from the context menu. You will have to specify the type of backup: full, re-writing previous data sets.

It is also recommended to perform a number of preventive procedures:

- permanently remove “deleted” DB items (this can be done from the **DB settings\Deleted items** menu of any program connected to DB);
- perform the **Delete unused material** operation (*see sect. 3.13.Service operations*);
- perform the mdb_clean.sql script to clean the MDB.

Performing the update

Connect to Microsoft SQL Server and perform the mdb_update.sql update script for the needed database. If there is a large gap between version numbers (more than two generations) it is recommended to perform a test update of an unused MDB. For this, create a new, blank DB and restore the actual reserve DB copy to it. The integrity of data is checked by DIGISPOT® II software of new version, installed separately for test purposes (with its own ROOT folder).

Validating the update

To check the correctness of the update perform operations described in *sect. 2.6. Checking basic settings, availability and data integrity*.

Appendix G. Software version automatic update system

The system allows to automatically update your software by copying files from a specified folder to the installation folder, replacing existing files. Automatic creation of copies for replaced files is not provided. Also, the results of such copying can’t be undone. To specify the folder from which the copying will be performed select

Service\Global settings\Other\Base settings\Auto update source path.

The contents of update folder is formed by the TARCT-SOFT, LLC staff or a specially trained employee. Usually, this folder contains copies of files from software installation folder, except protection key files (keydll_x.dll and Licence.info) that are tied to computers with respective keys.

Appendix H. Mdb_modify system

The mdb_modify service is designed for receiving information about changes to MDB and sending this information to active copies of DIGISPOT® II software. The use of mdb_modify is obligatory if the number of active DIGISPOT® II copies (DJIn, BCS Editor and others) exceeds 20. This service is **part** of DIGISPOT® II Media DB Advanced Engine and **is not part** of DIGISPOT® II Media DB Engine. If you do not use the service, SQL Server will get overloaded with auxiliary requests about recent changes. These request are periodically sent by **all** workplaces. If mdb_modify service is used, it is the only one to send requests about changes and then records

received information to files, from which it is read by all applications. The service's executable file is: mdb_modyfy_x.exe, where x is generation number.

H.1. Installation and configuration

Connection to DB

The service uses a pre-configured ODBC source to connect to DB. Therefore, it is necessary to create an ODBC source first, specifying parameters necessary for connection to SQL database used by the complex. This can be done in Windows: **Control panel\Administrative tools\ Datasources (ODBC)**. You may need additional installation of respective **Native Sql Client ODBC** driver to connect to Microsoft SQL Server 2005 and 2008.

Preliminary configuration of DB and exchange file folder

The service saves data about changes in 0.dat and 1.dat files, that are then read by other workstations. The folder in which these files are located is specified directly in DB. Before installing the service you need to select folder for storing these files. The service saves changes in 0.dat and 1.dat files alternately, passing on to the other file as the first one reaches the size limit of 100 megabytes. Transition between 0.dat and 1.dat is done not more often than once every 30 minutes. During this period of time, provided that the work with DB has been very active (more than 100 active connections), the file may exceed the set limit for up to several times.

The folder in which these files will be stored must be available from all workplaces with rights enough to read files, while the service (i.e. the account whose rights it works with) must have rights to create and edit files in this folder.

The path to this folder is stored directly in DB. Let us suppose that the path is \\server\share\ folder. Then to add it to DB you must perform a special request (with the help of Microsoft SQL Server Management Studio):

```
DELETE FROM [dbo].[PARAMETERS] where Name='MODIFY _ EXCHANGE _ PATH _ 2'
INSERT INTO [dbo].[PARAMETERS] (Name, Value, Type) VALUES
('MODIFY _ EXCHANGE _ PATH _ 2','\\server\share\folder', 1)
```

This should be done once, after creation of DB. To change the storing path, repeat the request specifying the new folder for storing files. The folder must have over 500 megabytes (1 GB recommended) of free space.

Installing the service

The executable file serves also as an installation program. When you launch mdb_modify_4.exe a window requesting service installation on current machine appears.

To successfully install the service you must launch mdb_modify_4.exe with local administrator rights. The name of the installed service is mdb_modify.

On installation, the service is configured to be launched from the folder that mdb_modify_4.exe was launched from. Therefore, you need to copy the file to the needed folder first. During operation, the program creates in this folder another subfolder called LOGS where it will store its log files. Please make sure that the profile the service works with has sufficient rights. The program stores 500 megabytes of logs by default. Therefore, there should be no less than 500 MB of free space in this folder. At the end of the installation process, the configuration window of the service will open (fig. H.1):

For minimal configuration perform the following:

1. In the **Startup type** field set parameter as **AUTOMATIC** and click on **Apply**.
2. Click on **Configure** and in the window that will open specify ODBC source for connection to DB and, if needed, login and password.

You can additionally specify server scan timeout and maximum size of stored logs. This would be enough if you decide to use minimal configuration.

You can launch the service (**Start** button) and terminate the installation program (**Exit**). The following parameters will be saved in respective registry branch:

```
HKEY _ LOCAL _ MACHINE\SYSTEM\CurrentControlSet\Services\mdb _ modify
```

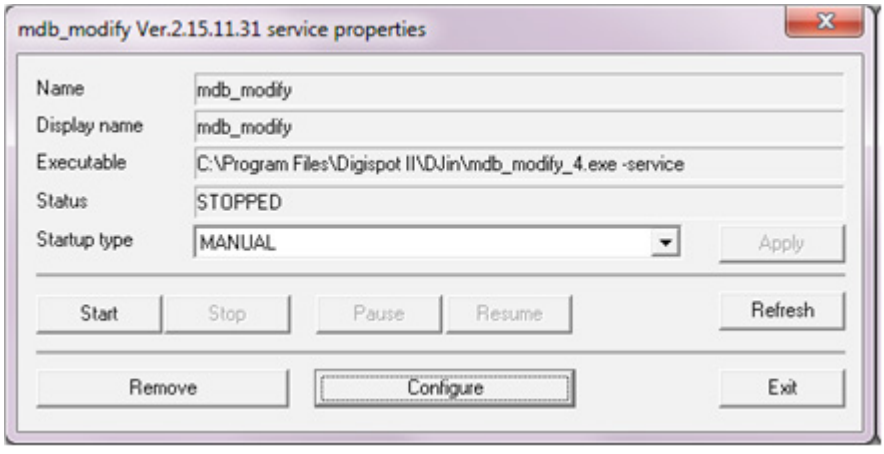

Fig. H.1. Configuring the mdb_modify server

H.2. Account

You can set the account that the service will work with in the mdb_modify service properties window in snap-in service configuration (fig. H.2).

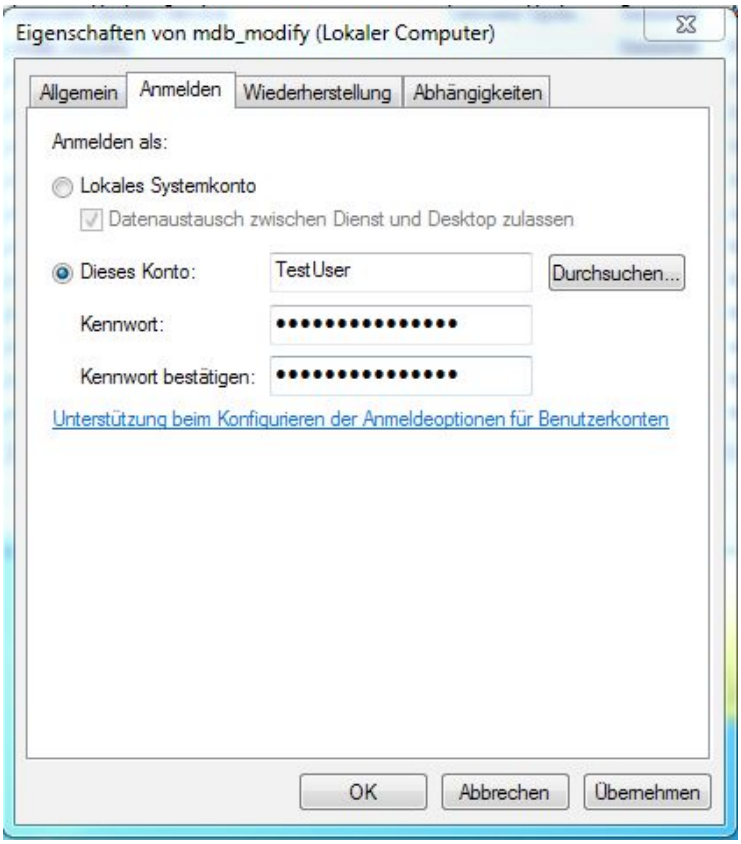

Fig. H.2. Configuring account for mdb_modify service

H.3. Requested rights

The user whose rights the service will work with, must have the following rights:

- **Log on as a service** – added automatically to user rights during configuration process in the service properties window (see fig. H.2); it is unlikely that you will need to specify it manually;
- reading and editing of registry branch

```
HKEY _ LOCAL _ MACHINE\SYSTEM\CurrentControlSet\Services\mdb _ modify
```

- reading, creation and deletion of files in file exchange folder;
- reading, creation and deletion of files in <path to mdb_modify_4.exe>\LOGS folder;

- if Windows authorization system is used during configuration of connection to SQL Server, the user must have privileges necessary to work with the database.

H.4. Installation in cluster

Here is the installation sequence:

1. An ODBC source is created on a node.
2. The service is installed according to the notes from *sect. H.1. Installation and configuration* on the first node of the cluster. Usually, the service is located on a local cluster carrier (disc) that has the same symbolic name on all nodes. This is more convenient because in this case the logs will be stored in one place.
3. A cluster resource (service) is created in the node's resources. (All necessary parameters are given in *sect. H.1. Installation and configuration*.)
4. The procedure is repeated on other nodes.
5. In the dependencies (resources current resource depends on) of current resource specify:

- SQL Server resource;
- resources of carriers on which the service itself or file exchange folder are located.

6. The account from which the service will be launched is checked attentively (all necessary rights are described in *sect. H.1. Installation and configuration*).

H.5. Performance monitoring

The service itself must be launched (Running). It is best to make sure it is running by checking the contents of log files that the program records to LOGS folder. Watch the latest file in that folder that has the name mdb_modify_4.exe_ _*date_time*.log. Each 5 seconds a new record must appear in this file, for example:

```
01-05 17:04:42 Nothing has changed
01-05 17:04:47 Nothing has changed
01-05 17:04:53 Nothing has changed
01-05 17:04:58 Nothing has changed
```

The records must not contain error messages. If after several minutes no new records appeared in the log file and the program did not create a new log file (it usually breaks logs into parts of 1 MB each), it means that the service does not function.

Apart from that, some error messages that may appear on DIGISPOT® II workplaces (in error window and logs) also provide evidence of service malfunction. The messages can include the following lines:

```
TDB _ SERVICE _ EXCHANGE::GetChanges
Can’t lock file to exchange
Can’t get modifications from exchange agent
Modify file sync
Bad modify file format
```

```
05-16 00:27:54 WARNING!: Create file = 14 sec
05-16 00:27:54 Nothing has changed
05-16 00:27:54 WARNING!: Save modifications to file = 14 sec
```

```
05-16 08:40:32 Begin of file switch attempt. Time to switch file, because
size 100010915 is greater than limit 100000000
```

```
05-16 08:40:32 Begin of file switch attempt. Time to switch file, because
size 100010915 is greater than limit 100000000
```

```
05-16 10:28:07 10 sec. Waiting for request complete...
05-16 10:28:17 20 sec. Waiting for request complete...
05-16 10:28:27 30 sec. Waiting for request complete...
05-16 10:28:37 40 sec. Waiting for request complete...
05-16 10:28:47 50 sec. Waiting for request complete...
05-16 10:28:57 60 sec. Waiting for request complete...
05-16 10:29:07 70 sec. Waiting for request complete...
05-16 10:29:17 80 sec. Waiting for request complete...
05-16 10:29:27 90 sec. Waiting for request complete...
05-16 10:29:37 100 sec. Waiting for request complete...
05-16 10:29:37 WARNING!: SQLExecDirect = 100 sec
```

Service malfunction or shutdown will lead to MDB changes (new or deleted items, renamed items, changes in duration and so on) ceasing to be displayed on all workplaces. (Please note that this is only true for background display. If you change category and / or the type of material displayed in MDB window, or alternatively, if you click on **Refresh**, the changes will be displayed.)

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