MIKOHN®

Progressive Systen for
Slot with SAS

Mikohn Progressive System Installation Manual

This manual is for the use of technical personnel in charge of installing and configuring the Mikohn Progressive System in the customer's game room.

System Components

The system consists of the following hardware components:

- 01 computer (minimum characteristics)
    - 2GHz Intel Celeron processor (or AMD equivalent)
    - 4GB RAM
    - Internal Storage Unit 120GB SSD
    - A Serial COM port (internal or with a USB-RS232 converter cable)
    - HDMI video output with HDMI cable

- 01 USB to RS485 converter

- SAS Interface Card v2.0 (one for each slot machine connected to the system)

- T568A or T568B LAN cables (one for each SAS Interface Card v2.0)
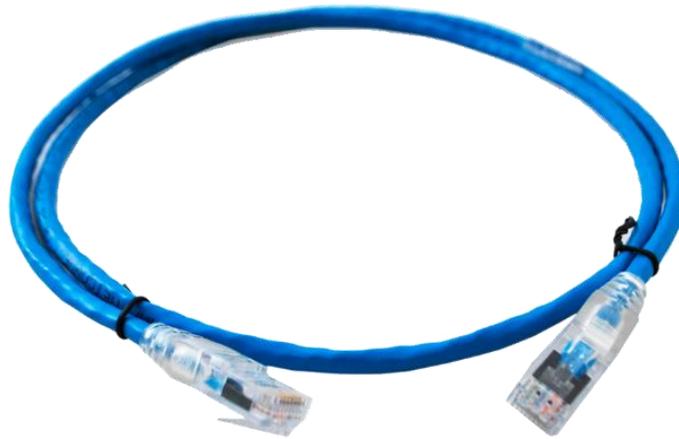
- 01 DB9 (RS485) cable to RJ45 connector (T568B)

TIA-568B

DB 9
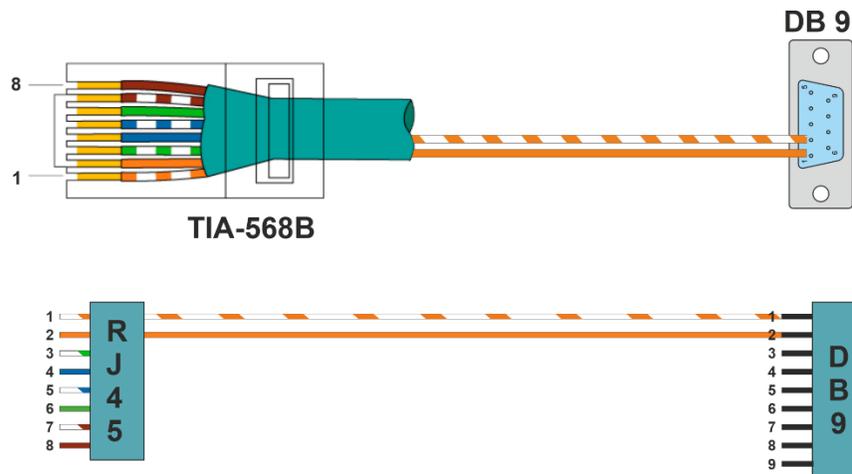
- SAS connection cables (one for each SAS Interface Card v2.0)

- 12V, 2Amp PoE source

- Optional
  - HDMI Splitter (Only in case the progressive is shown on several monitors)

o HDMI cables (Number and length depending on the number of monitors to connect and their location)

System software requirements are:

- Microsoft .NET Framework 4.0 (included in Windows 10)
- Microsoft SQL Express 2008 R2
- Mikohn Software Package
  - o Jackpot Progressive – Admin
  - o Progressive Odometer

Hardware Installation
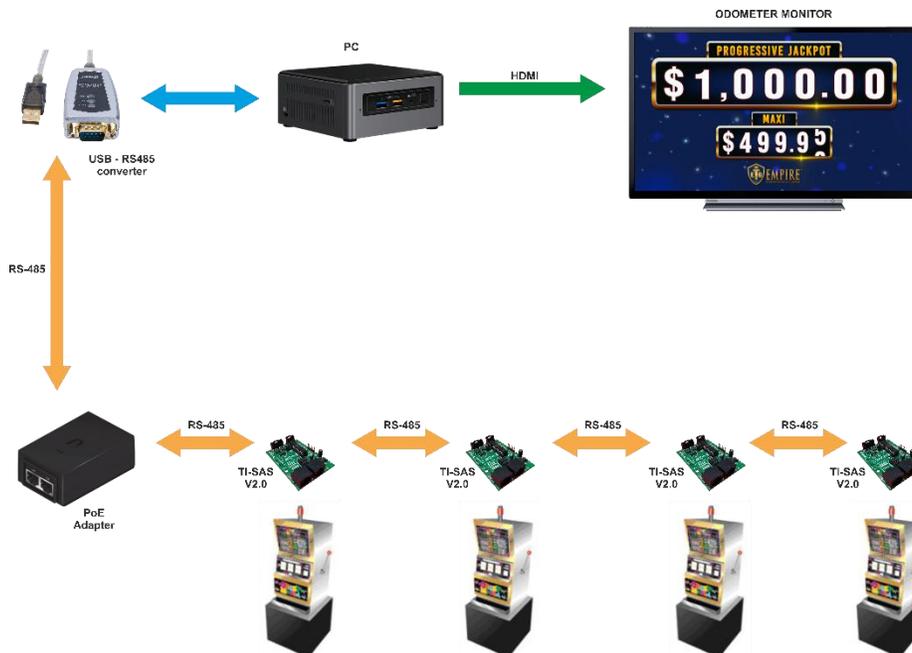
- To connect the various hardware components, you must first determine where the computer will be located; it is recommended to place it inside the slot machine that is in the middle of the group of slot machines that will be connected to the system.

- Connect through the HDMI port a Full HD monitor (provided by the game room) that will show the progressive well of the system. If it is shown on more than one monitor, an HDMI Splitter will be connected with the necessary ports for the number of monitors that the room wants to use.
- The USB to RS485 converter is connected to the computer and through an DB9 (RS485) cable to RJ45 connector (T568B) it is connected to a PoE adapter that provides 12v, 2Amp DC power for the SAS Interface Cards v2.0.
- If connecting more than 16 SAS Interface Cards v2.0, it is recommended to use a 12V PoE source for the additional cards.
- The SAS Interface Cards v2.0 are connected between them and the Mikohn Concentrator by means of T568A or T568B LAN cables, preferably, these cables should have a length of 2mts to 3mts and should not exceed 15 meters, if it is necessary to use a cable of longer, it may be necessary to include a 12V PoE source, to improve the 485 signals.
- SAS Interface Cards v2.0 are installed one in each slot machine and through the SAS connection cable, these cards are connected to the slot machine's SAS port.
- Slot machines must have a SAS communication card installed and enabled (minimum version 5.0). You must have the Bonus payment enabled for the system to transfer the prizes won.

Software configuration

Mikohn Progressive System requires a connection to a SQL database, where you will find the configuration data, data of plays, jackpots and prizes that are made in the system. Therefore, it is a prerequisite to install Microsoft SQL Server Express 2008 R2; download from http://www.microsoft.com/en-US/download/details.aspx?id=30438, the file SQLEXPWT_X ## _ ZZZ, (X ## can be X86 for 32-bit systems and X64 for 64-bit systems ; ZZZ represents the language of the program to install).

Before installing, make sure that the Windows region settings correspond to the language of the SQL installer you downloaded; usually if this does not apply, installer shows an error and does not allow installation.
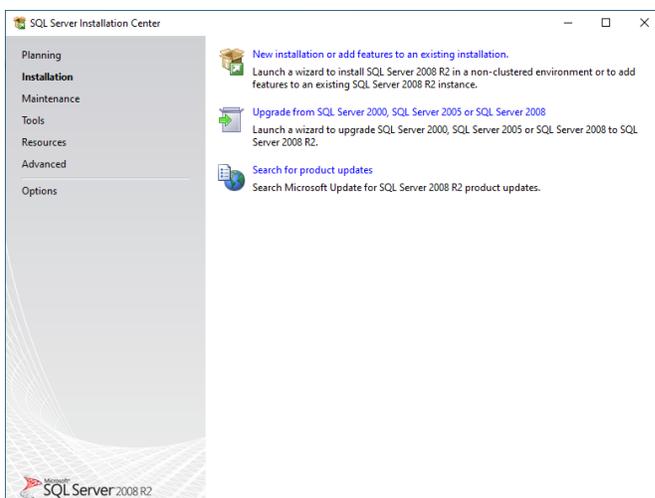
When you open this program, the database installation process and its administrator begins; On the first screen select *"New installation or add features to an existing installation".*

On the next screen accept the license terms, it is not necessary to select the box to send data to Microsoft.
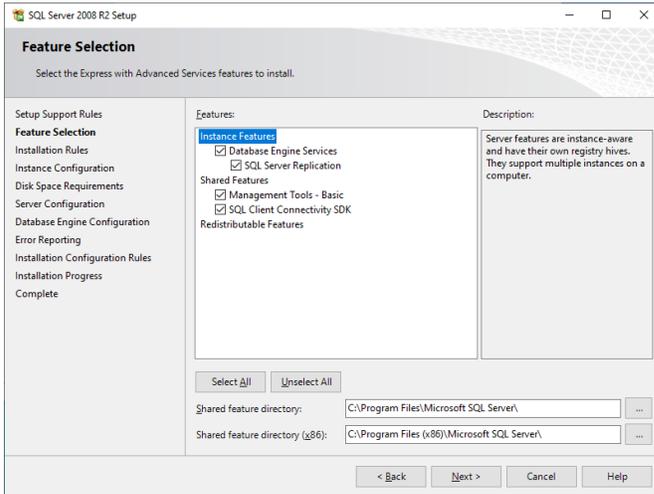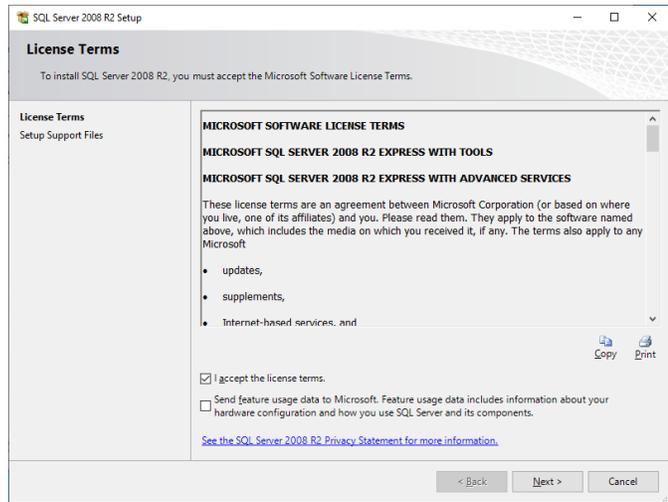
In the next screen select all the options so that after installing Microsoft SQL it also includes the SQL administration tool.

In the next screen assign an instance name (example, SQLSERVER2008R2), you can also select a different location than the default for the instance, where the database will be stored.
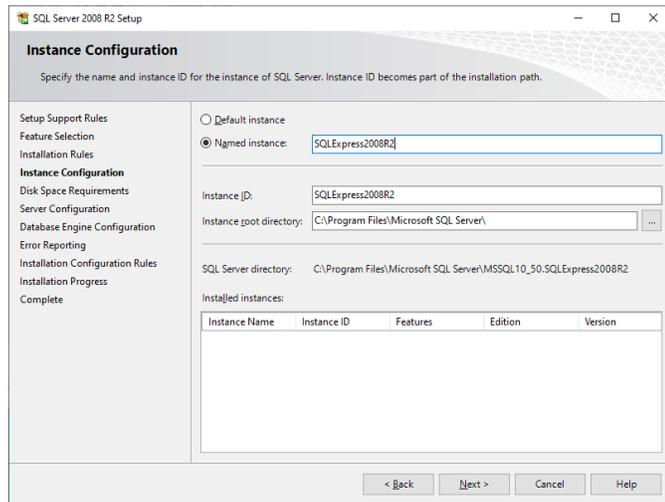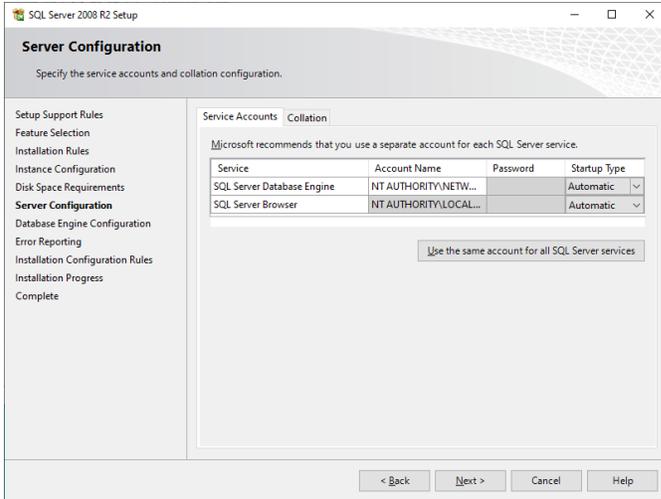
In the screen below make sure that the "SQL Server Database Engine" is related to the "NETWORK SERVICE" and all the "Startup Type" in "Automatic"

On the next screen, check the box "Mixed mode (SQL Server and Windows authentication)", then assign a password to access the database (example, "123456789" or another that you do not forget) and also add the current user as "SQL Server" administrator.
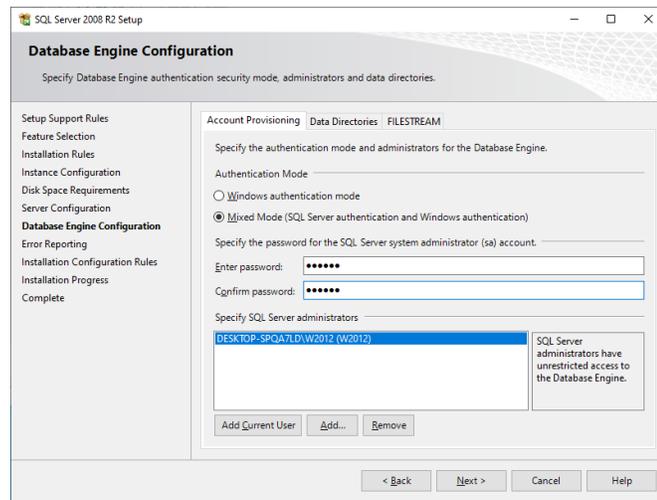
Remember it is not necessary to send reports of any kind to Microsoft since the program is not being debugged.
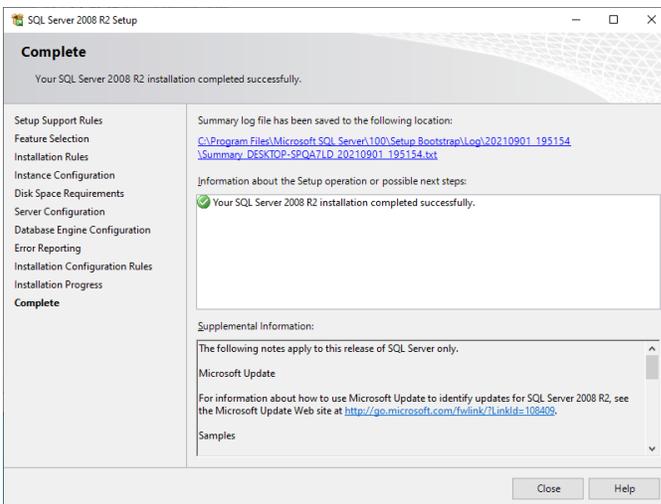
Wait for the installation process to finish, this may take a few minutes.

After the installation process is complete, close the SQL Server installer window.

To install the system programs, there are 2 installation files which are:

- Install Admin&DB_MPS.exe
- Install Odo_MPS.exe

Install Admin&DB_MPS.exe: Contains the progressive system configuration and administration program installer.
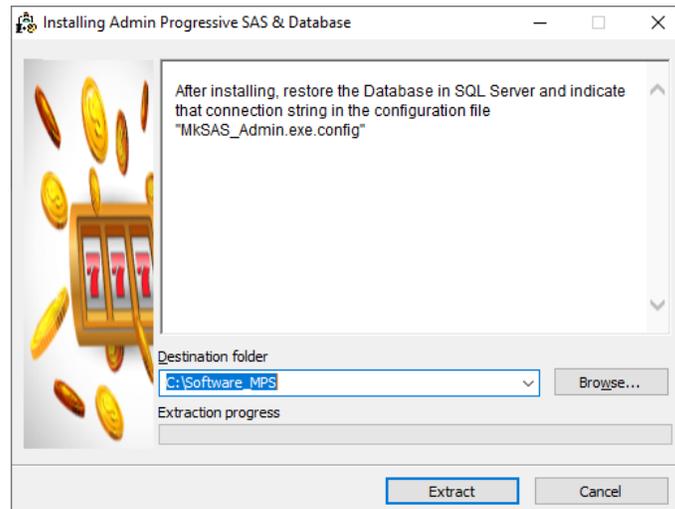
The program is installed in *C:\Software_MPS* and inside it creates the *Admin* and *DB* folders as well as a progressive administrator shortcut on the **Windows** desktop.

The DB folder contains the system database restore script file.

After installing this program, the **SQL Server Management Studio** program (previously installed with SQL Express 2008 R2) will open and load the file *C:\Software_MPS\DB\Backup\script_DB_MPS.sql* copied with the installer.

A window will appear indicating that the file has too long lines, check the "Yes" button.
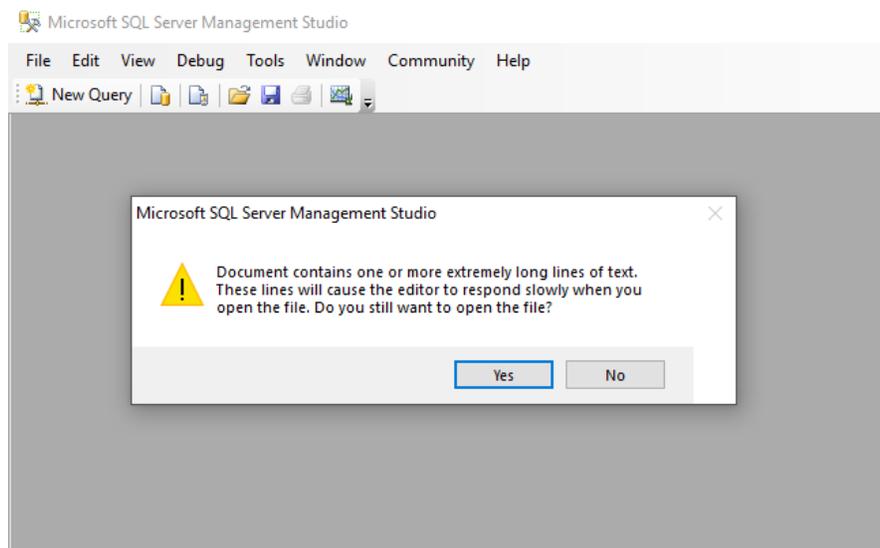
Then the SQL login window will be displayed, where you must enter with the user and the password with which you installed the SQL Express.
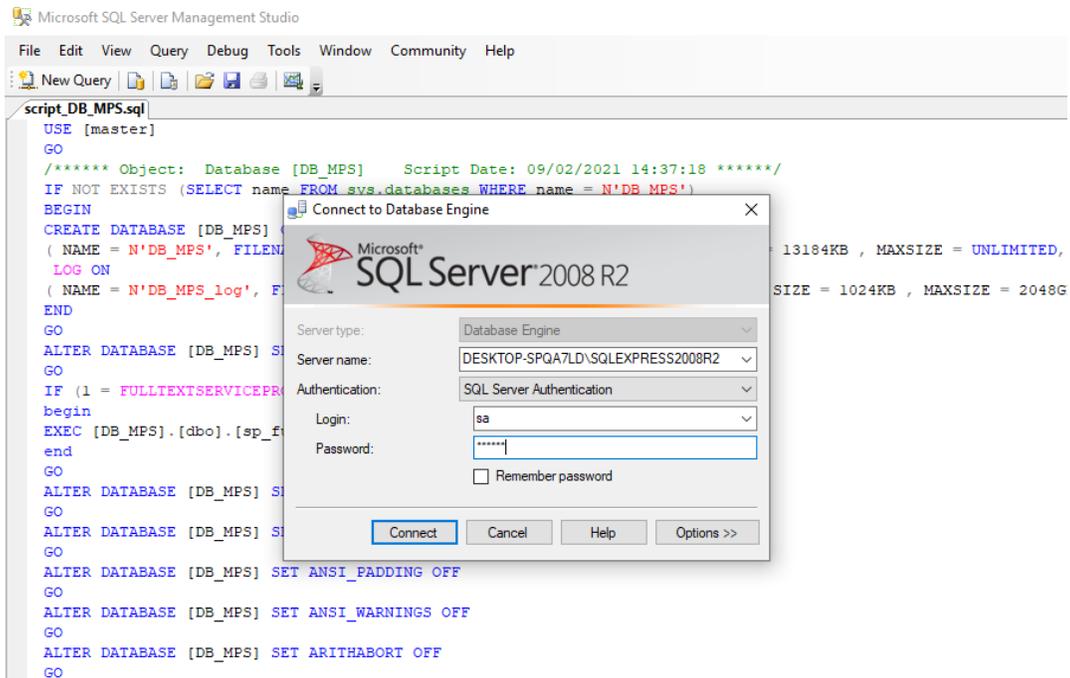
The **SQL Server Management Studio** will show the information of the script file that is being opened, it is recommended not to modify its content.
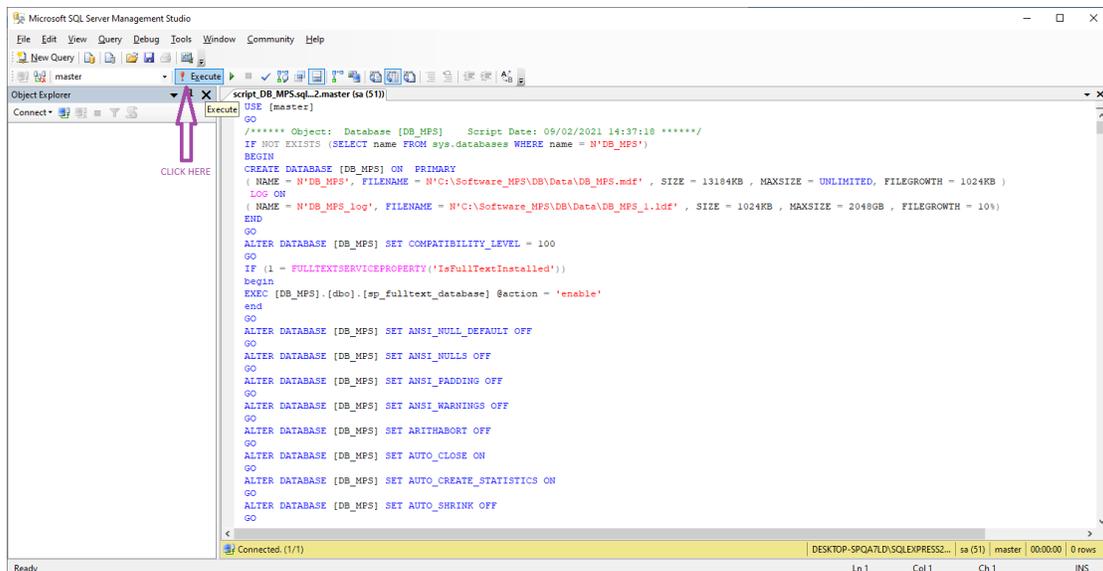
Click on the "Execute" button, marked on the graph.
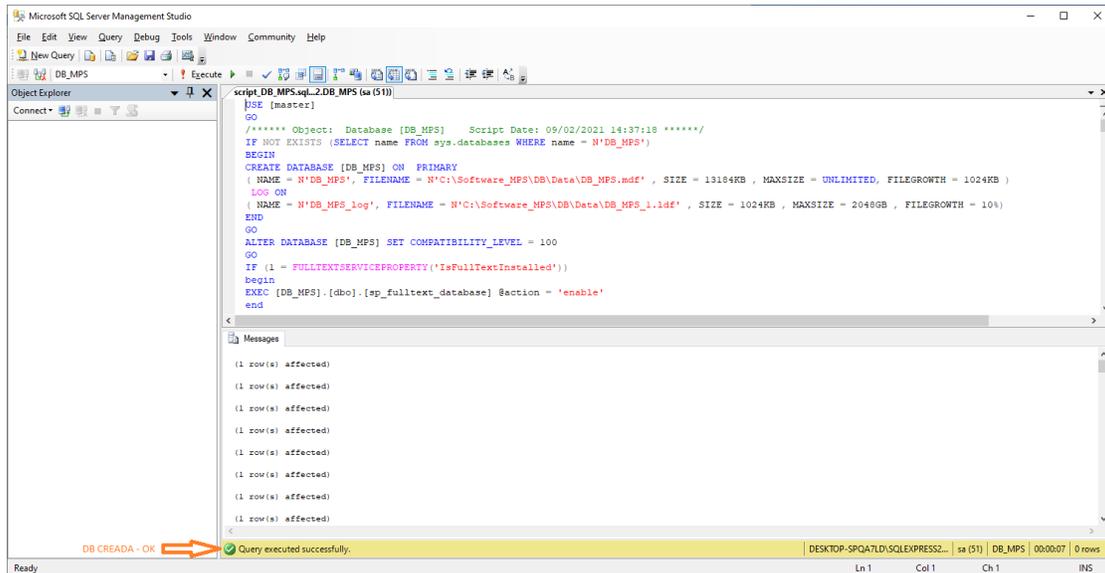
Wait for the Database to be restored and finally it will show the message "Query executed correctly", indicating that the Database was restored correctly.

To finish with the installation of this program, open the file *C:\Software_MPS\Admin\MkSAS_Admin.exe.config* with **Notepad.exe**.
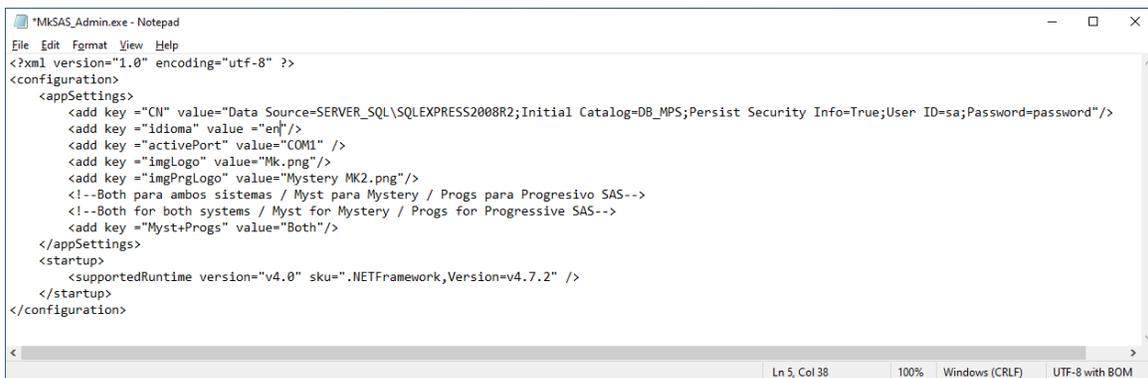
Where the values of the lines are configured:

- CN: The value of this line configures the connection string to the SQL server Database (it is recommended not to use blank spaces)
  o Data Source = SQL_Server_name\SQL_Instance_name
  o Initial Catalog = Database_name
  o User ID = User_SQL (with access to the System Database)
  o Password = Key_SQL (user with access to the system database)
- Idioma: The value of this line indicates in which language this program will be displayed
  o "es", indicates that the language will be displayed in Spanish.
  o "en", indicates that the language will be displayed in English.

- activePort: The value of this line indicates the serial port through which the PC communicates with the system hardware.
  - "COMx", x indicates the port number to use (eg x = 1 for port 1 or x = 2 for port 2, etc)
- imgLogo: The value of this line selects the image of the logo that will be displayed at the program's login. This file must be ***.png** type and located in the folder *C:\Software_MPS\Admin\Images\Icons* (a representative file of the game room can be added)
- imgPrgLogo: The value of this line selects the image of the logo that will be displayed in the program. This file must be ***.png** type and located in the folder *C:\Software_MPS\Admin\Images\Icons* (a representative file of the game room can be added)
- Myst+Progs: The value of this line indicates if the system will work only with Mystery, Progressive or both.
  - Both, both systems
  - Mystery, only progressive mystery
  - Progs, only Progressive SAS

Install Odo_MPS.exe: Contains the installer for the program to view the wells of the progressive system, creates a shortcut on the **Windows** desktop; also this program shows a message when there is a winner and how much is their prize.
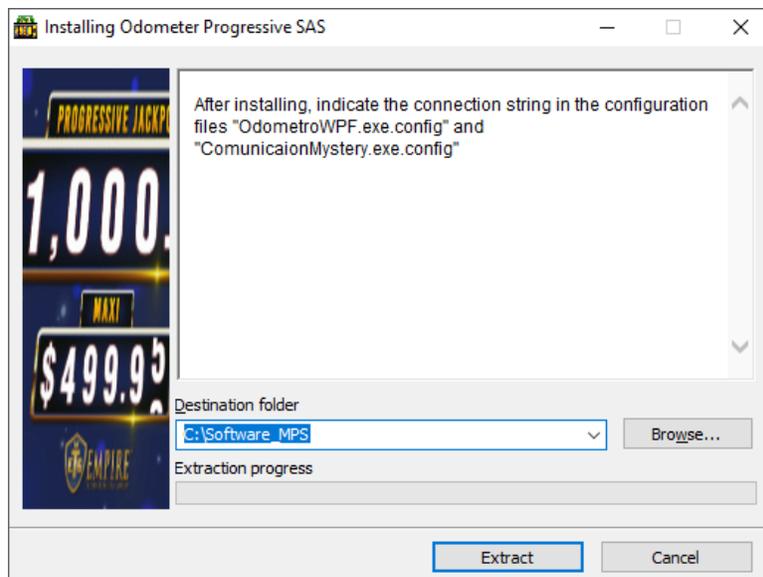
After installing this program, it is necessary to open the configuration files:

C:\Software_MPS\Odometer\OdometroWPF.exe.config : To configure the odometer program connection; and

C:\Software_MPS\Odometer\PlugIns\ComunicacionMystery.exe.config : To configure the connection of the **ComunicacionMystery** program.

In the file **OdometroWPF.exe.config** you must configure the values of:

- connectionString and CN: The value of these lines configures the connection strings to the SQL server Database (it is recommended not to use blank spaces)
  - Data Source = SQL_Server_name\SQL_Instance_name
  - Initial Catalog = Database_name
  - User ID = User_SQL (with access to the System Database)
  - Password = Key_SQL (user with access to the system database)
- "time_odo": The value of this line indicates how long the animation will be shown with the progressive jackpot before displaying the advertising animations.

In the **ComunicacionMystery.exe.config** file you must configure the values of:

- connectionString: The value of this line configures the connection string to the SQL server Database (it is recommended not to use blank spaces)
    - Data Source = SQL_Server_name\SQL_Instance_name
    - Initial Catalog = Database_name
    - User ID = User_SQL (with access to the System Database)
    - Password = Key_SQL (user with access to the system database)
- activePort: The value of this line indicates the serial port through which the PC communicates with the system hardware.
    - "COMx", ", x indicates the port number to use (eg x = 1 for port 1 or x = 2 for port 2, etc)

Progressive Jackpot Administration

To configure the parameters of the Mikohn Progressive System, open the system administration program "Jackpot Progressive – Admin", which allows you to indicate what denomination the slot machines are operating at, indicate a description of them; configure the parameters of the jackpots to be paid (base value, percentage increase, among others), even carry out a test to verify the machines that are connected to the system and review a history of the last 25 jackpots paid by the system.
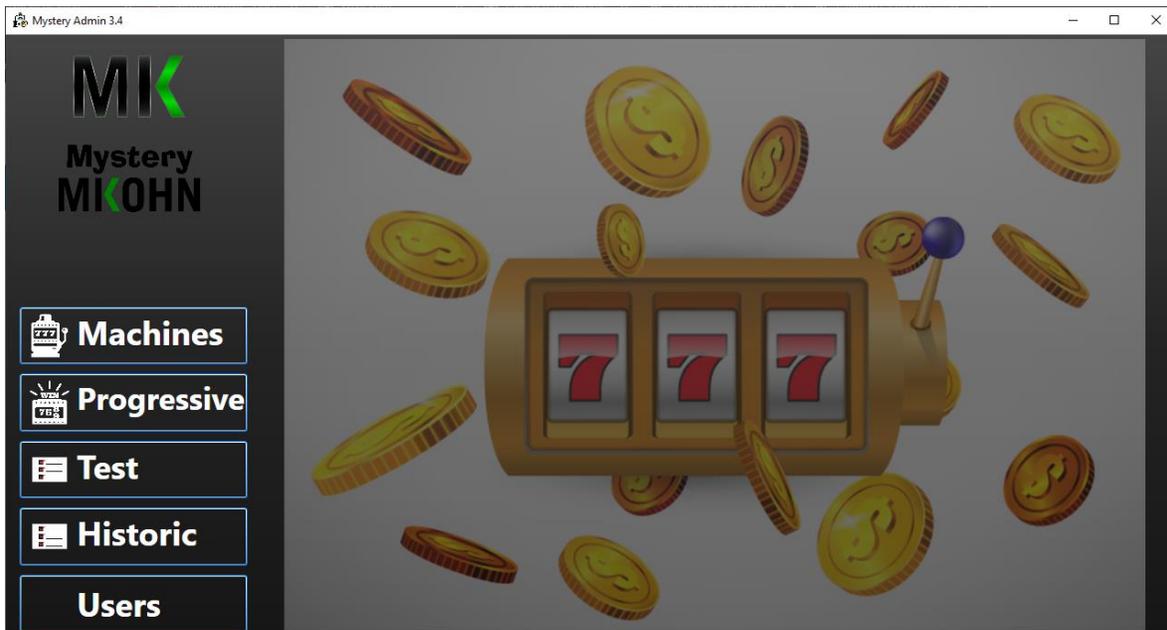
Machines: Selecting this button shows the 32 machines that can be connected to the same progressive system; On this screen there are 3 columns to highlight:

Nº	Denom	Description	Nº	Denom	Description	Nº	Denom	Description
1	0.01 ˅	Mach_1a	16	0.01 ˅	Mach_16	31	0.01 ˅	Mach_31
2	0.01 ˅	Mach_2	17	0.01 ˅	Mach_17	32	0.01 ˅	Mach_32
3	0.01 ˅	Mach_3	18	0.01 ˅	Mach_18			
4	0.01 ˅	Mach_4	19	0.01 ˅	Mach_19			
5	0.01 ˅	Mach_5	20	0.01 ˅	Mach_20			
6	0.01 ˅	Mach_6	21	0.01 ˅	Mach_21			
7	0.01 ˅	Mach_7	22	0.01 ˅	Mach_22			
8	0.01 ˅	Mach_8	23	0.01 ˅	Mach_23			
9	0.01 ˅	Mach_9	24	0.01 ˅	Mach_24			
10	0.01 ˅	Mach_10	25	0.01 ˅	Mach_25			
11	0.01 ˅	Mach_11	26	0.01 ˅	Mach_26	All	˅	Machine
12	0.01 ˅	Mach_12	27	0.01 ˅	Mach_27	**Total Active Machines:**		9
13	0.01 ˅	Mach_13	28	0.01 ˅	Mach_28	CHANGE ALL		
14	0.01 ˅	Mach_14	29	0.01 ˅	Mach_29	SAVE		EXIT
15	0.01 ˅	Mach_15	30	0.01 ˅	Mach_30			

Nº : This column represents the SAS interface card number and when selected with the mouse they are enabled to participate in the progressive system (the orange ones with the green number indicate "Active", the pale pink ones with the black number indicate "Inactive").

Denom: This column indicates the denomination of the slot machine, this value must match the value that the slot machine has configured.

Description: This column allows you to define a descriptive name of the machine connected to the system for identification more in line with how the casino has identified it in the room.

Additionally, if all the machines have the same denomination or the description is the same, only changing in a consecutive numbering (eg Maq1, Maq2 ... Maq32), select the denomination and/or indicate the description in the boxes next to the "All" button. and then check the "Change All" button to change the name and/or description of the 32 machines in the system.

If you only want to change the name, but not the description, leave the description box blank or vice versa if you only want to change the description, but not the name.

"Total Active Machine" indicates the number of active machines in the system.

The "Save" button saves the changes made.

This screen is closed with the "Exit" button. If the changes were not saved before, they are not recorded when this button is pressed.

Progressive: Selecting this button shows the 4 Jackpots that the system can pay out and the configuration options for each one.

	JACKPOT 1	JACKPOT 2	JACKPOT 3	JACKPOT 4
Base Value	111.11	222.22	333.00	444.00
Current Value	1,266.00	1,252.22	1,253.33	1,254.44
% Increment 1	100.000000	1.000000	3.000000	0.000000
% Increment 2	50.000000	3.000000	3.000000	0.000000
Change Increment	1,250.00	9,999,999,999.00	9,999,999,999.00	9,999,999,999.00
% Hidden Increment	25.000000	0.000000	3.000000	0.000000
Hidden Value	12.75	1.20	1.30	1.40
Limit Value	1,260.00	10,002.00	10,003.00	10,004.00
Overflow Value	0.00	22.00	33.00	44.00
Add Overflow when reset	No ⌄	No ⌄	No ⌄	No ⌄

JP Enable	4 ⌄		SAVE	EXIT

The system can pay from 1 to 4 Jackpot, selectable in "JP Enable".

For each active jackpot you can configure:

Base Value: It is the value with which the Jackpot well begins.

Current Value: It is the current value of the jackpot, which is the value to be paid when a jackpot with a progressive prize occurs.

% Increment 1: It is the percentage increase to the progressive for each credit played in the slot machine.

% Increment 2: It is the percentage increase to the progressive for each credit played after the value configured in "Change Increment" has been exceeded.

Change Increment: It is the value defined by the gaming room in which the increment of the progressive jackpot varies after exceeding this value.

% Hidden Increment: It is the percentage for each credit played used to accumulate a pot that will be added to the base value after the progressive jackpot has been paid.

Hidden Value: Shows the value accumulated by "% Hidden Increment".

Limit Value: Indicates the limit value that the progressive jackpot pot can reach to activate or not the overflow of the progressive jackpot.

Overflow Value: Shows the value of how much the well overflowed after reaching the "Limit Value", provided that "Add Overflow when reset" has been activated.

Add Overflow when reset: Activate or not the "Limit Value", this option is valid after the current progressive jackpot has been paid (eg, if this option is activated, it will not be applied until after paying the jackpot that you have at that moment, it does not matter if the value of the pot is higher than "Limit Value", but the next pot will only go up to the value indicated in "Limit Value").

The "Save" button saves the changes made.

This screen is closed with the "Exit" button. If the changes were not saved before, they are not recorded when this button is pressed.

Test: Selecting this button shows the 32 machines that can be connected to the progressive system with the configured name and the connection status of each connected machine.

N°	Den	Conn. Status	N°	Den	Conn. Status	N°	Den	Conn. Status
1	0.01	Machine Ok	16	0.01	Disconnected	31	0.01	Disconnected
2	0.01	Machine Ok	17	0.01	Disconnected	32	0.01	Disconnected
3	0.01	Machine Ok	18	0.01	Disconnected			
4	0.01	Board Ok	19	0.01	Disconnected			
5	0.01	Board Ok	20	0.01	Disconnected			
6	0.01	Disconnected	21	0.01	Disconnected			
7	0.01	Machine Ok	22	0.01	Disconnected			
8	0.01	Machine Ok	23	0.01	Disconnected			
9	0.01	Disconnected	24	0.01	Disconnected			
10	0.01	Board Ok	25	0.01	Disconnected			
11	0.01	Disconnected	26	0.01	Disconnected			
12	0.01	Machine Ok	27	0.01	Disconnected			
13	0.01	Disconnected	28	0.01	Disconnected			EXIT
14	0.01	Disconnected	29	0.01	Disconnected			
15	0.01	Disconnected	30	0.01	Disconnected			

This screen shows 3 columns that indicate:

N°: Indicates the number of the SAS interface card connected to the progressive system. The ones in orange and the number in green indicate that they are active to participate in the progressive. The pale pink ones with black numbers are not active.

Den: Indicates the coin denomination configured for each slot machine.

Conn. Status: Indicates the connection status of the machine. Gray with black letters, for disconnected machines; orange with red letters indicate communication between PC and SAS interface card and green with white letters indicate communication between PC with SAS interface card and slot machine.

History: By selecting this button, a history of the last 25 jackpots paid is displayed, it also shows how many jackpots there were in each pot among others.

	Hits	Value	Maximun	Minimum
JP Level 1	104	S/ 117,453.06	S/ 1,565.01	S/ 1.23
JP Level 2	1588	S/ 47,541.42	S/ 602.08	S/ 3.96
JP Level 3	58	S/ 1,866.66	S/ 123.45	S/ 1.23
JP Level 4	0	S/ 0.00	S/ 0.00	S/ 0.00
Total	1750	S/ 166,861.14	S/ 1,565.01	S/ 1.23

Row#	Date	Machine	Jackpot	JackpotId
1	4/14/2021 8:43:08 PM	1	10.9900000000	1
2	4/14/2021 8:36:39 PM	1	5.7000000000	2
3	4/14/2021 4:00:30 PM	1	30.0300000000	3
4	4/14/2021 4:00:30 PM	1	30.0300000000	3
5	4/14/2021 4:00:30 PM	1	30.0300000000	3
6	4/14/2021 4:00:29 PM	1	30.0300000000	3
7	4/14/2021 4:00:29 PM	1	30.0300000000	3
8	4/14/2021 4:00:29 PM	1	30.0300000000	3
9	4/14/2021 4:00:28 PM	1	30.0300000000	3
10	4/14/2021 4:00:28 PM	1	30.0300000000	3
11	4/14/2021 4:00:28 PM	1	30.0300000000	3
12	4/14/2021 4:00:09 PM	1	30.0300000000	3

Clear   Exit

The columns shown in the first group of the 4 jackpots that the progressive system can pay out are:

Hits: Shows the number of times each jackpot was paid.

Value: Shows the sum of all jackpots paid for each jackpot level.

Maximum: Shows the highest value paid for each jackpot level.

Minimum: Shows the lowest value paid for each jackpot level.

The columns shown in the second data set are:

Row#: Lists the last 25 paid jackpots.

Date: Indicates the date and time of the jackpot paid.

Machine: Shows the machine that won the jackpot.

Jackpot: Shows the value of the jackpot paid.

JackpotId: Shows the level or well of the jackpot paid.

Users: Selecting this button displays the users and their assigned levels for those users.
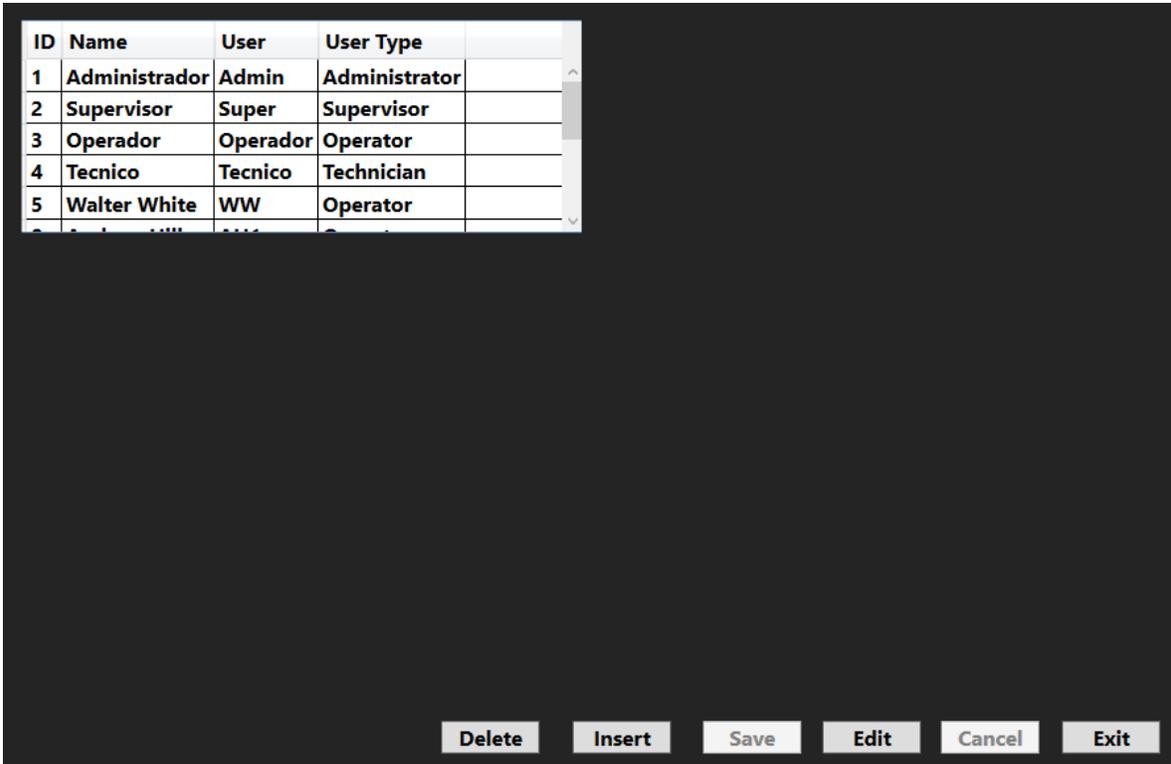
In addition, in this section you can delete users, add users or edit them to change the type of user or their password.