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MAXPRO® VMS R410 SQL Permissions And Recommendations Notes

Overview

This document provides information about the SQL user permissions required to access MAXPRO® VMS R410 and also various recommendations to install/use the SQL Express or Standard/Enterprise versions.

Product Version

MAXPRO® VMS R410 Build 424.

Pre installation

The following are the access privileges that is required before installing MAXPRO® VMS:

- User should have Administrator rights to Install VMS.
- Master Database is required before installing MAXPRO® VMS and the Installation User needs to have access to Master DB.
- MAXPRO® VMS can be installed either using Windows based authentication or SQL login Authentication.
- For all the Trinity services user should be part of:
  - Local machine and
  - Local administrator group
- The Setup user account requires the following default user rights for the Setup to be completed successfully. User need to add the following rights to the local administrator account.

Local Policy Object Display Name	User Right
Backup files and directories	SeBackupPrivilege
Debug Programs	SeDebugPrivilege
Manage auditing and security log	SeSecurityPrivilege

To add the rights to the local administrator account, perform the below steps:

1. Log on to the computer as a user who has administrative credentials.
2. Click **Start** > **Run**, type **Control admintools**, and then click **OK**.
3. Double-click **Local Security Policy**.
4. In the **Local Security Settings** dialog box, navigate to **Security Settings** > **Local Policies** >**User Rights Assignment**. Double-click **Backup Files** and **Directories** in the right pane.
5. In the **Backup Files and Directories Properties** dialog box, click the **Add User or Group** button. The **Select Users, Computers, Service Accounts, or Groups** dialog appears.

6. In the **Select Users, Computers, Service Accounts, or Groups** dialog box, type the user account that is being used for setup, and then click **OK.**
7. Repeat the procedure for the other two policies **Debug Programs** and **Manage auditing and security log**.
8. On the **File** menu, click **Exit** to close the **Local Security Settings** dialog box

Post installation

The following are the access privileges that is required after installing MAXPRO® VMS:

Windows Authentication:

- MAXPRO® VMS services evaluate windows user login credentials which has (sysadmin) role for connecting to Trinity Database. The sysadmin role is also required to execute few system related stored procedures in master database and checking the SQL Server service status.
- In VMS database the **Installation User** entry should be available in **Logins** node and the Installation User should have the following permissions:
  - Server Roles
    - Sysadmin
    - Public
  - User Mapping
    - Public

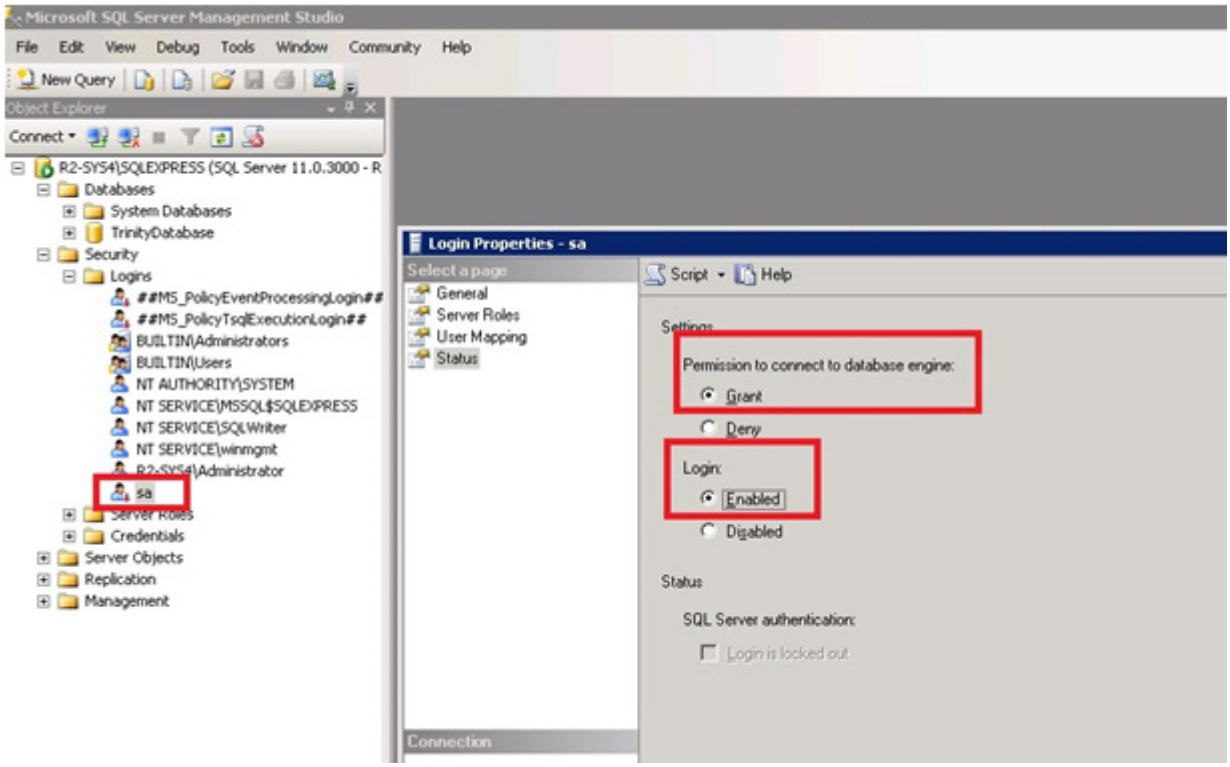
SQL Authentication:

To enable SQL authentication, perform the below steps:

1. In the **Object Explorer** pane, navigate to **Security** > **Logins** > **sa** node. The **Login Properties-sa** dialog box is displayed.

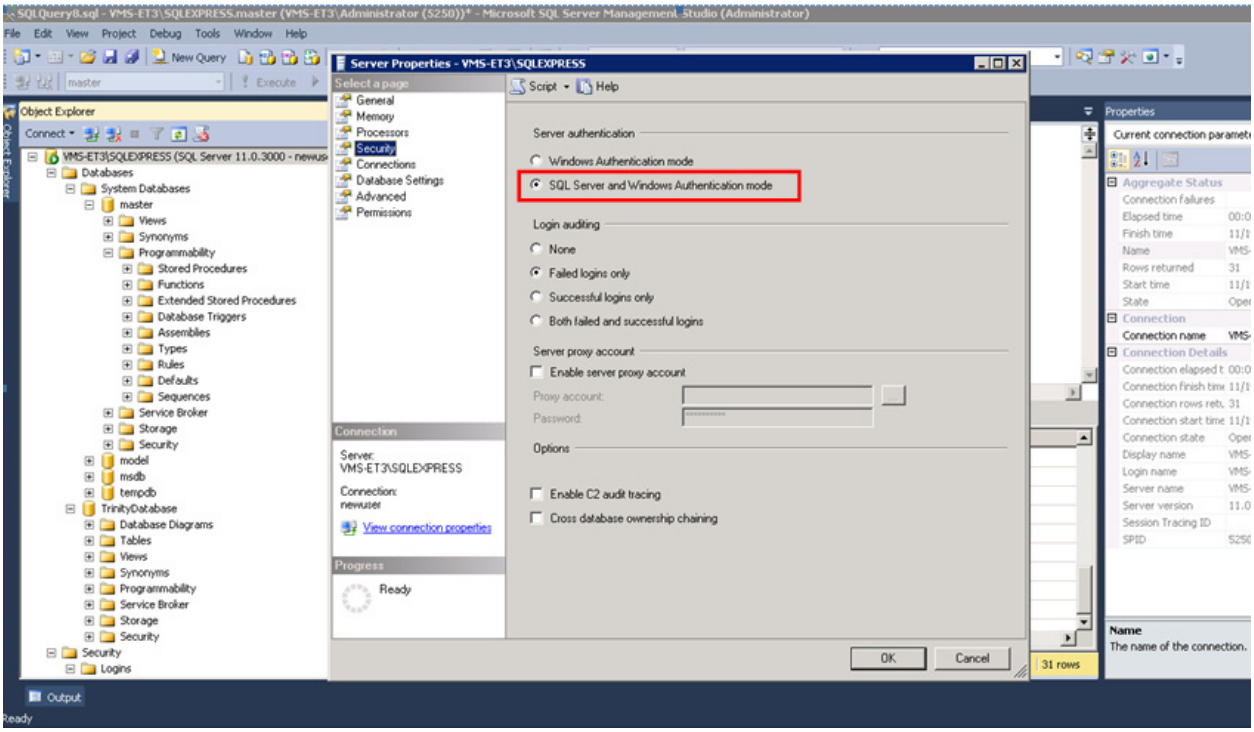
Note: The **sa** accounts mentioned here is for an example. Its is not mandatory to use **sa** account

2. In the **Select a Page** pane click **Status** node.
3. Under **Settings** > **Permission to connect to database engine**, click **Grant** option**.**
4. Under **Logins** click **Enabled** option to enable the SQL authentication as highlighted in the below screen.



To enable Server Authentication mode, perform the following steps:

1. Navigate to **Server** > **Properties** > **Security** node.
2. Under **Server Authentication**, click **SQL Server and Windows Authentication mode** option as highlighted in the below screen.



3. Restart the SQL services.

Note: For SQL authentication, you can use either "sa" - default SQL or other new SQL user with **sysdmin** role.
For Connecting Trinity Database (Sysadmin) role is required to execute few system related stored procedure in master database.

- In VMS database the **SQL Authenticated user** entry should be available in **Logins** node and the SQL Authenticated user should have the following login permissions:
  - Server Roles
    - Sysadmin
    - Public
  - User Mapping
    - Public

- In VMS database user should have the following permissions (DB_Owner) to:
  - Drop/Create/Alter all the VMS tables
  - Delete/Insert/Update/References/Select/Update all the VMS tables, views and cursors
  - Execute all VMS Database Stored procedures
  - Execute all VMS Database scalar functions
  - Delete/Insert/Update/Select/References all VMS database in line functions

All VMS client requires:

- Access to VMS directory on the users' local machine with permission to:
  - Read
  - Write
  - Execute
  - List folder contents

Note: The above permissions are required for the current logged in windows user.

Remote SQL

VMS supports Remote SQL Connections in the following scenarios:

- For Remote SQL connection, user need to specify SQL Instance name while installing.
- Ensure that SQL Server service is started or running in remote machine.
- In case of Remote SQLConnection:

  SQL Authentication mode:

  - Server Roles
    - Public
  - User Mapping
    - Public
    - DB-Owner

Connection String:

To change the Connection string information, perform the below steps:

1. Navigate to VMS Installed Path >bin > Trinity.SystemServices.exe.config file
2. Right click and then select **Edit** to open the config file.
3. In the config file, go to ConnectionStrings section to change DBConnectionString. The Windows Authentication Connection String should be similar as shown below:

```
<connectionStrings>
   <add name="DBConnectionString" connectionString="Database=Database-
name;Server=.\SQLEXPRESS;Integrated Security=SSPI;" providerName="Sys-
tem.Data.SqlClient" />
  </connectionStrings>
```

4. SQL Authentication Connection String should be similar as shown below:

```
<connectionStrings>
   <add name="DBConnectionString" connectionString="Persist Security
Info=False;User ID=UserID;Password=UserPassword;Initial Catalog=Database-
name;Data Source=.\SQLEXPRESS" providerName="System.Data.SqlClient" />
```

```
</connectionStrings>
```

Note: User need to provide the **Databasename,UserID,Password** details.

5. Modify the Connection String and then Restart the Trinity Server Service.

DataBase Registry Settings:

- If you change the database location manually before/after Upgrading the DataBase then the following Registry Entries need to be updated.

To access the DataBase Registry, perform the below steps:

1. Click **Start** > **Run** and then type **Regedit'** command in the **Run** command box.
2. Click **OK**.

Following are the list of machines and the path to access the Database details.

Path for 32 bit machine:

- HKEY_LOCAL_MACHINE\SOFTWARE\Honeywell\TrinityFramework\DatabaseDetails

Path for 64 bit machine:

- HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Honeywell\TrinityFramework\DatabaseDetails

The screenshot of the Database Registry Entries is shown below:

(Default)	REG_SZ	(value not set)
CONNECTIONSTRING	REG_SZ	"Database=TrinityDatabase;Server=.\SQLEXPRESS;Integrated Security=SSPI;"
DATABASEPATH	REG_SZ	C:\Program Files (x86)
DATAFILEPATH	REG_SZ	
INSTANCENAME	REG_SZ	SQLEXPRESS
PASSWORD	REG_SZ	
PCNAME	REG_SZ	.
SQLMODE	REG_SZ	0
TRINITYDATABASEPATH	REG_SZ	C:\Program Files (x86)
TRINITYDBSERVER	REG_SZ	.\SQLEXPRESS
USER	REG_SZ	

Update the following entries in the direction as mentioned in the below table:

String/Entry	Description
CONNECTIONSTRING	Any changes in the connection string must be updated here.
DATABASEPATH	If MDF/LDF files are moved to different location, then the same path needs to be updated here. The current installed instance path is: **C:\Program Files (x86)**.
SQLMODE	SQLMODE is "0" for WindowsAuthentication and "1" for SQL Authentication. If Authentication mode is changed after installation of VMS product then this registry needs to be updated accordingly. This registry plays a crucial role in NPDF and Upgrade scenario.
TRINITYDATABASEPATH	Same as DATABASEPATH

Recommendations for SQL Installation

By default MAXPRO VMS R410 B424 installs the SQL Express 2012 Version in your PC. Following are the recommended criteria to use SQL Express version.

- Ensure that you maintain:
  - The recorder range from 40 to 60
  - Alarm Rate range from 3 to 5 per second
  - Concurrent MAXPRO client connections from 30 to 40
  - Camera count range from 2000 to 2500

Note: If any one of the above recommendations are not met, user is suggested to install SQL Standard Edition.

- To enhance the MAXPRO VMS system performance and to use Redundancy features, it is recommended to install Standard/Express edition of SQL (2008/2012/2014)

SQL Memory Limit Recommendations

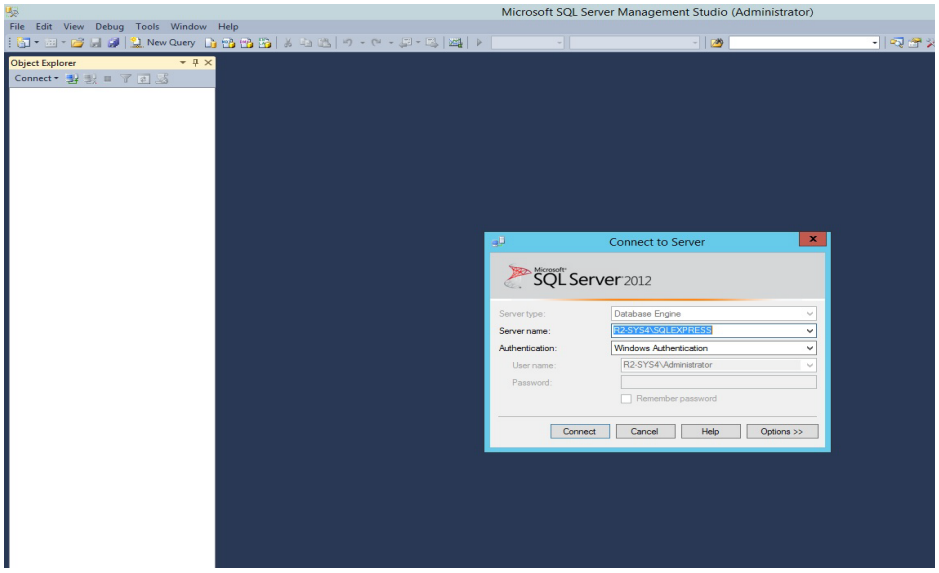
To enhance the MAXPRO VMS system performance over a long period it is recommended to:

- Set the Limit of SQL Server process memory to 1GB for SQL Express.
- MAXPRO® VMS server with SQL 2008/2012/2014 Standard/Enterprise Edition
- Set the Limit of SQL Server process memory to 2 GB for 16 GB RAM MAXPRO Servers.
- Set the Limit of SQL Server process memory to 8 GB for 32 GB RAM MAXPRO Servers
- MAXPRO®VMS Server with Remote SQL 2008/2012/ 2014 standard/ Enterprise edition
- a. 8 GB limit for 16 RAM Remote SQL installation
- b. 16 Galbanum for 32 GB RAM Remote SQL installation

How to set the limit of SQL Server process Memory

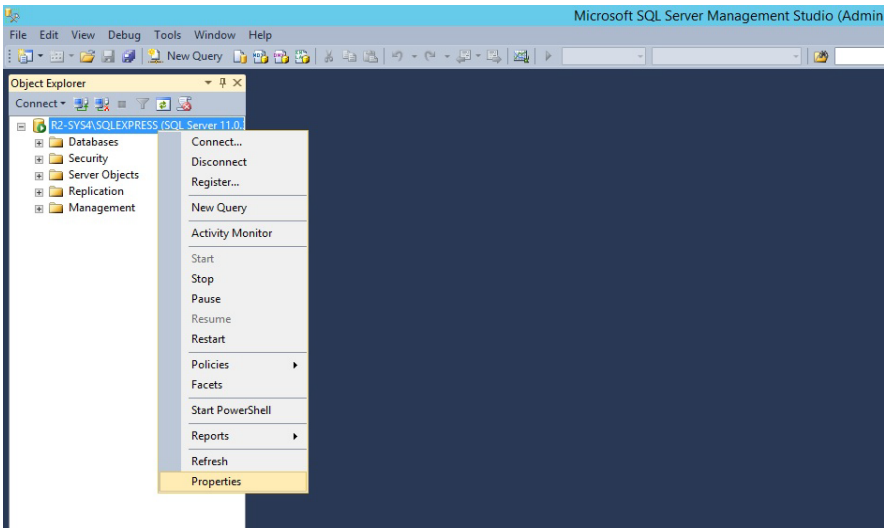
To set the limit of SQL Server process memory:

1. Launch the **Microsoft SQL Server Management Studio**
2. Click **Connect**, the **Connect to Server** dialog box appears as shown in the below screen.

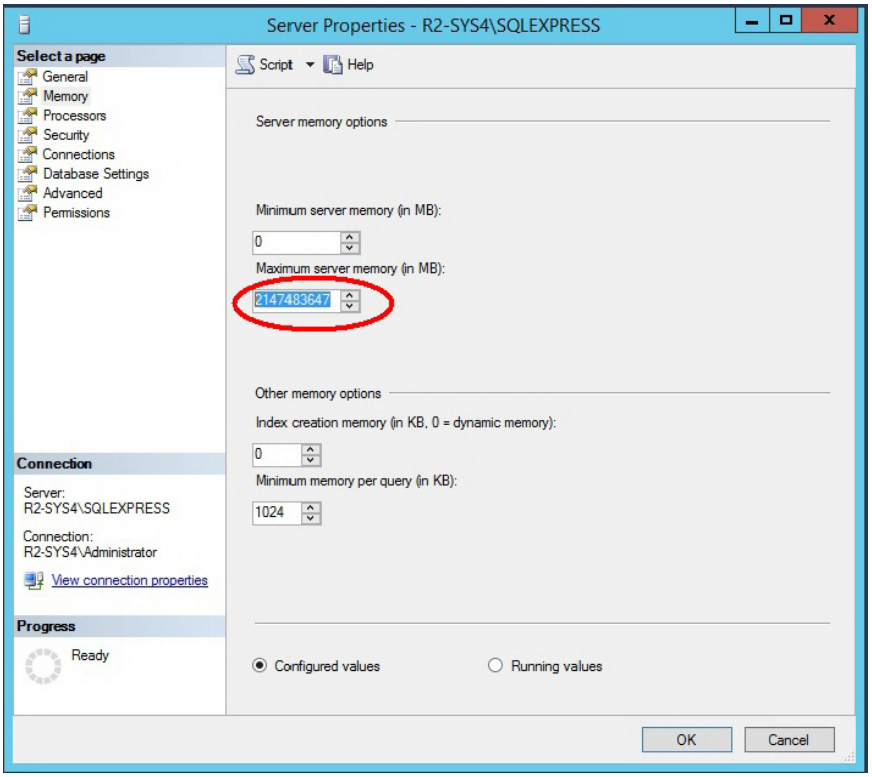


3. In the **Connect to Server**, Enter the following details:
   - Server Type
   - Server Name
   - Authentication

4. Click **Connect**. The **Object Explorer** pane is displayed as shown in the below screen



5. Right-click the **Instance** node and then click **Properties**. The S**erver Properties** dialog box appears.
6. In the **Select a Page** pane, click the **Memory** node. The memory details are displayed on the right-pane as shown below.



7. In the **Maximum server memory (in MB)** box, select or type **1024** and then click **OK** to complete the settings.
8. Restart the SQL and Trinity services.

Note: The limit settings is only applicable for this release. In future releases, this settings is automated by the installer.

Configuring the Config File After SQl Upgrade

After upgrading the SQL Express to SQL Standard or Higher SQL Versions you need to change the connection strings in the config file.

How to change the connection string

To change the Connection string information, perform the below steps:

1. Navigate to VMS Installed Path >**bin > Trinity.SystemServices.exe.config file**.
2. Right click and then select **Edit** > **With Notepad** to open the config file.
3. In the config file, go to ConnectionStrings section to change DBConnectionString. The Windows Authentication

Connection String should be similar as shown below:

<connectionStrings>

<add name="DBConnectionString" connectionString="Database=Databasename;

Server=**(local)**;Integrated Security=SSPI;" providerName="System.

Data.SqlClient" />

</connectionStrings>

4. SQL Authentication Connection String should be similar as shown below:

<connectionStrings>

<add name="DBConnectionString" connectionString="Persist Security

Info=False;User ID=UserID;Password=UserPassword;Initial Catalog=Databasename;

Data Source=(**local**)" providerName="System.Data.SqlClient" />

</connectionStrings>

5. If the SQL is remotely configured and upgraded to a higher versions then Connection String should be similar as shown below:

<connectionStrings>

<add name="DBConnectionString" connectionString="Persist Security

Info=False;User ID=UserID;Password=UserPassword;Initial Catalog=Databasename;

Data Source=**Instance Name**" providerName="System.Data.SqlClient" />

</connectionStrings>

Note: You need to provide the same **SQL Instance Name** and login credentials which is used during SQL login in the remote machine.

6. Modify the necessary Connection String settings and then **Restart** the Trinity Server Service.

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