# Other issue or 'How To' - questions

Last updated by | Akio Hose | Apr 13, 2022 at 2:45 AM PDT

**Contents**

## Self-help content presented in Azure Portal

### Learn about Machine Learning Services for SQL Managed Instance

### How to enable Machine Learning Services

You can enable Machine Learning Services in Azure SQL Managed Instance by enabling extensibility with the following SQL commands (SQL Managed Instance will restart and be unavailable for a few seconds):

```
sp_configure 'external scripts enabled', 1;
RECONFIGURE WITH OVERRIDE;
```

### Enable Machine Learning Services in a failover group

In a failover group ⧉, system databases are not replicated to the secondary instance (see Limitations of failover groups ⧉ for more information).

If the Managed Instance you're using is part of a failover group:

- Run the sp_configure and RECONFIGURE commands on each instance of the failover group to enable Machine Learning Services.

- Install the R/Python libraries on a user database rather than the master database.

### How to install Python/R packages

- See Install Python packages with sqlmlutils ⧉

- See [Install R packages with sqlmlutils](#) ↗

# Resource governance

### How is Resource Governance managed when we enable Machine Learning Services for Azure SQL Managed Instance?

It is not possible to limit R resources through Resource Governor and external resource pools are not supported.

By default, R resources are set to a maximum of 20% of the SQL Managed Instance resources, and depend on which service tier you choose. You can create a support ticket to change the default percentage. For more information on service tiers, see [Choose between the vCore and DTU purchasing models](#) ↗.

### What if I get message "External script execution for 'R' script ran out of resources" or "A R' script error occurred during execution of 'sp_execute_external_script"?

If there is insufficient memory available for R, you will get an error message. Common error messages are:

- Unable to communicate with the runtime for 'R' script for request id: *******. Please check the requirements of 'R' runtime

- 'R' script error occurred during execution of 'sp_execute_external_script' with HRESULT 0x80004004. ...an external script error occurred: "..could not allocate memory (0 Mb) in C function 'R_AllocStringBuffer'"

- An external script error occurred: Error: cannot allocate vector of size.>

Memory usage depends on how much is used in your R scripts and the number of parallel queries being executed. If you receive any of these errors, consider scaling up to a higher service tier to resolve your issue.

## Key differences between Machine Learning Services in Azure SQL Managed Instance and SQL Server

The functionality of Machine Learning Services in Azure SQL Managed Instance is nearly identical to SQL Server Machine Learning Services; however, there are severral differences:

- Language Support: Only Python and R are supported. External languages such as Java can't be added.

- Python and R Packages: There is no support in SQL Managed Instance for packages that depend on external runtime (like Java) or need access to OS APIs for installation or usage.

For other key differences, see [Key differences](#) ↗.

# Common tasks

### Using sp_execute_external_script stored procedure

sp_execute_external_script stored procedure executes a script provided as an input argument to the procedure, and is used with Machine Learning Services and Language Extensions. For Azure SQL Managed Instance, only Python and R are supported. External languages such as Java cannot be added. For more info on usage see [sp_execute_external_script](#) ↗.

**How do I install a new Package?**

Most common open-source R packages are pre-installed in Machine Learning Services. In addition to the pre-installed packages, you can also install additional packages.

- [Install new R packages with sqlmlutils](#) ⧉.
- [Install Python packages with sqlmlutils](#) ⧉.

**Can I use the Open Neural Network Exchange (ONNX) Runtime model in SQL Managed Instance?**

You can use ONNX Runtime in SQL Managed Instance. See [ONNX and Azure Machine Learning: Create and accelerate ML models](#) ⧉

## Quick Starts & Tutorials

- [Quickstart: Run simple R scripts with SQL machine learning](#) ⧉

- [Quickstart: Run simple Python scripts with SQL machine learning](#) ⧉

- [R tutorials for SQL machine learning](#) ⧉

- [Python tutorials for SQL machine learning](#) ⧉

- [How Azure Machine Learning works: Architecture and concepts](#) ⧉

**How good have you found this content?**

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