CREATIVITY THROUGH EFFICIENCY

An automated predictive datamining tool

TIMi Deployment & Configuration$_{v1.20}$

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CREATIVITY THROUGH EFFICIENCY

1. Introduction

This is a technical document. Please review the content of this section with the proper IT technician.

This document covers the different configurations steps required to deploy TIMi on a new machine.

You can install TIMi practically on any windows-based machine: i.e. The minimum system Requirements for TIMi installation on a server or workstation are:

OS: Win10, Win 11, or above ; Windows Server 2012 or above

About Virtual machines: By default, TIMi won't run in a VMWare virtual Machine or equivalent software. If you need to run TIMi in a VMWare virtual Machine, you should request either:

1. …a "special" Serial Number that authorizes a Virtual Machine.
2. …a Network License (the Network License is free when you buy a TIMi license). This is the preferred solution.

RAM: Minimum 2GB per simultaneous user. Large data-transformations require more RAM.

Video Card: To use StarDust, you need a 3D-hardware-accelerated-graphical card that supports OpenGL2.0 (any computer produced after 2007 will do the trick). The specific OpenGL drivers from you video card manufacturer must be installed (do not use "generic" OpenGL drivers installed with Windows).

If you want to buy a new server dedicated to running TIMi, please refer to the document "TIMi_infrastructure.pdf" for more information about the ***optimal*** hardware infrastructure to deploy TIMi.

The installation of TIMI on any machine (server or desktop) is performed using the same user-friendly software. It is not required to have any administrator rights to install TIMi.

You don't need any administrative rights to be able to use 99% of the functionalities offered by TIMi.

On a desktop, the TIMi Suite installation usually takes less than 5 minutes.

On a server, the installation might take more time due to the extra *optional* third-party tools that are usually installed. On a server, we encourage you to install these additional optional components:

1. Jenkins (scheduler: see section 6.1 below for more information)
2. GitHub Desktop (or TortoiseSVN, TortoiseGIT) (code versioning: see section 6.2 below for more information)

The TIMi installation procedure (without the extra optional third-party tools) is documented using a Youtube video here:

- in English: https://www.youtube.com/watch?v=F06DANLvaks
- in French: https://www.youtube.com/watch?v=uAw7xdovp5A

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2. TIMi installation

Before starting the installation, you should download all the required installation files.

	32 Bit	64 Bit
TIMi Maximal Install (offline or portable install: the preferred way to install TIMi on a server)	These 3 files: unzip.exe unzip_TIMi32_Portable_in_C_SOFT.bat TIMiPortableFull_win32.zip	These 3 files: unzip.exe unzip_TIMi64_Portable_in_C_SOFT.bat TIMiPortableFull_x64.zip
TIMi Maximum Install (setup.exe)	https://download.timi.eu/TIMi_Full/TIMiSetup_Full.exe	
ODBC driver: Oracle	https://download.timi.eu/ODBC/ODBC_drivers_Oracle/	
ODBC driver: MySQL	https://download.timi.eu/ODBC/ODBC_drivers_MySQL/	
ODBC driver: Teradata	https://download.timi.eu/ODBC/ODBC_drivers_Teradata/	
ODBC driver: Ms-Access	https://download.timi.eu/ODBC/ODBC_drivers_Access/	
ODBC driver: Ms-SQLServer	https://download.timi.eu/ODBC/ODBC_drivers_SQLServer/	
ODBC driver: SQlite	https://download.timi.eu/ODBC/ODBC_drivers_SQLite/	
ODBC driver: DB2	https://download.timi.eu/ODBC/ODBC_drivers_IBM_DB2/	
ODBC driver: Sybase	https://download.timi.eu/ODBC/ODBC_drivers_Sybase/	
ODBC driver: PostgreSQL	https://download.timi.eu/ODBC/ODBC_drivers_PostgreSQL/	
ODBC driver: Redshift	https://download.timi.eu/ODBC/ODBC_drivers_Redshift/	
ODBC driver: Snowflake	https://download.timi.eu/ODBC/ODBC_drivers_SnowFlake/	
OleDB driver: Ms-SQLServer	https://download.timi.eu/OleDB/OleDB_drivers_SQLServer/	
OleDB driver: Oracle	https://download.timi.eu/OleDB/OleDB_drivers_Oracle/	
Jenkins (see section 6.1 below for more information)	https://www.jenkins.io/download/ or https://download.timi.eu/Jenkins/	
Kibella (see section 6.4 below for more information)	https://download.timi.eu/Kibella/Kibella_UwAmp.zip	
Disk-level encryption tool (see section 6.11 below for more information)	We suggest Bitlocker (included in MS-Windows) or TrueCrypt. Here is a local copy of TrueCrypt: https://download.timi.eu/ThirdParty/TrueCrypt_Setup_7.1a.exe	
Versioning System (see section 6.2 below for more information)	We suggest (but TIMi will work with any versioning tool): SVN (Subversion): https://tortoisesvn.net/downloads.html GitHub https://desktop.github.com/	
IoT Broker	Any MQTT-compatible broker is ok. We suggest: Mosquitto (already included inside the TIMi distribution), Kafka, RabbitMQ.	
OleDB driver for SAS dataset (see section 6.16 below for more information)	https://download.timi.eu/ThirdParty/sasoledb_64bit_and_32bit.zip	

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2.1. Maximal install using the Off-line/portable installer.

The "maximum TIMi installation" contains all the "base" files plus:

- R&Python engines + extra R&Python libraries (see section 4.4 below for more information)
- Tableau .hyper Data File creator (see section 6.12 below for more information)
- GIS extention - Spatialite (see section 6.14.1 below for more information)
- Oracle OCI drivers (see section 6.17. below for more information)
- SAP ABAP drivers (see section 6.18. below for more information)
- PostGreSQL native drivers (see section 6.10. below for more information)

The installation procedure is:

1. Download the 3 files from:
   - For a 64-bit PC:
     - http://download.timi.eu/TIMi_Full/unzip.exe
     - http://download.timi.eu/TIMi_Full/unzip_TIMi64_Full_Portable_in_C_SOFT.bat
     - http://download.timi.eu/TIMi_Full/TIMiPortable_Full_x64.zip
   - For a 32-bit PC:
     - http://download.timi.eu/TIMi_Full/unzip.exe
     - http://download.timi.eu/TIMi_Full/unzip_TIMi32_Full_Portable_in_C_SOFT.bat
     - http://download.timi.eu/TIMi_Full/TIMiPortable_Full_win32.zip
2. Place the 3 downloaded files inside the same directory and execute (double-click) the file "unzip_TIMi??_Portable_in_C_SOFT.bat". This will install TIMi inside the (default) directory:
   C:\soft\TIMi
3. **Optional (admin required):** Run the executable:
   "<root_of_install_dir>\Add_TIMi_ShortCut_On_**All**_Desktops.exe"
   This will add 2 shortcuts (one shortcut to run TIMi and one shortcut to run Anatella) on **all** the desktops from all the users from the server.
4. Follow the procedure described in the document TIMi_License_Guide_en.pdf to get the Serial Number for TIMi
5. Install and configure the required additional components (see the sections 3, 4 and 5 below). In particular, you should still decide if you want to install the additional components:
   5.1. This is strongly encouraged:
      5.1.1. Jenkins (scheduler: see section 6.1. below for more information)
      5.1.2. GitHub Desktop, (or TortoiseSVN, TortoiseGIT) (code versioning: see section 6.2. below for more information)
   5.2. This is more optional:
      5.2.1. Kibella (dashboarding: see section 6.4. below for more information)
      5.2.2. Disk-level Encryption (see section 6.11. below for more information)
      5.2.3. A IoT broker (Kafka, RabitMQ, etc.) (see section 6.15. below for more information)

2.2. Maximal installation with the Wizard-based Installation tool.

Admin Privileges Required to run the installation software.

The automated installation wizard is Self-explanatory. You can download it from:
https://update.timi.eu/64/TIMi_Downloader.exe

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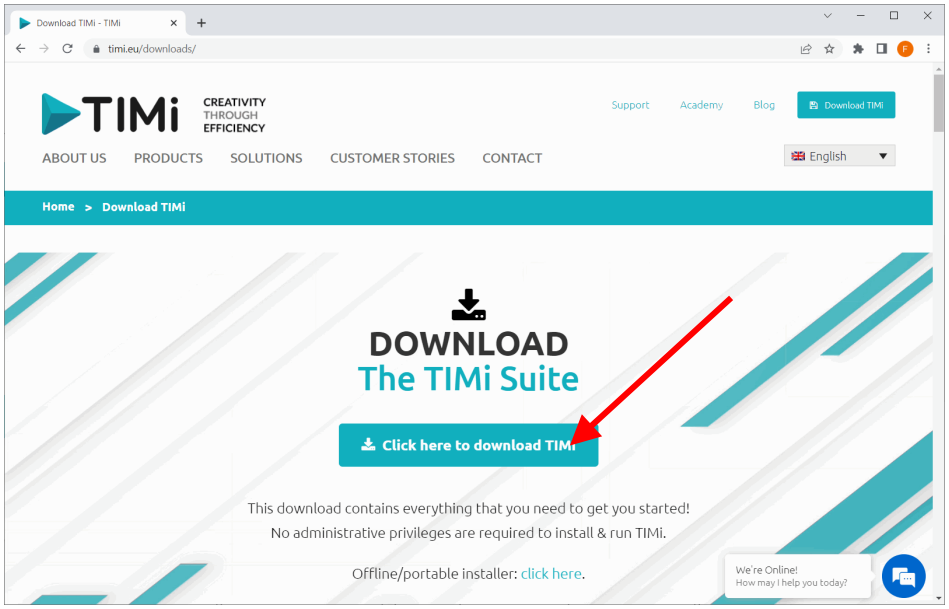
Alternatively, click the big blue button in the middle of this page to download the wizard:



Follow the procedure described in the document TIMi_License_Guide_en.pdf to get the Serial Number for TIMi

Finally, install and configure the required additional components (see the sections 3, 4 and 5 below). In particular, you should still decide if you want to install the additional components:

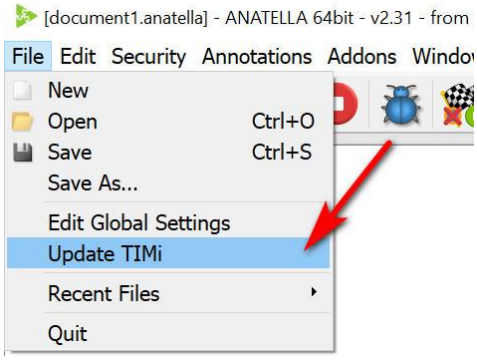
1. This is strongly encouraged:
   1.1. Jenkins (scheduler: see section 6.1. below for more information)
   1.2. GitHub Desktop, (or TortoiseSVN, TortoiseGIT) (code versioning: see section 6.2. below for more information)
2. This is more optional:
   2.1. Kibella (dashboarding: see section 6.4. below for more information)
   2.2. Disk-level Encryption (see section 6.11. below for more information)
   2.3. A IoT broker (Kafka, RabitMQ, etc.) (see section 6.15. below for more information)

3. TIMi update

3.1. Update when a live internet connection is available

This is the preferred way to update TIMi.

To run the automated TIMi updater tool, open Anatella and click the "Update TIMi" button inside the "File" drop-down menu:



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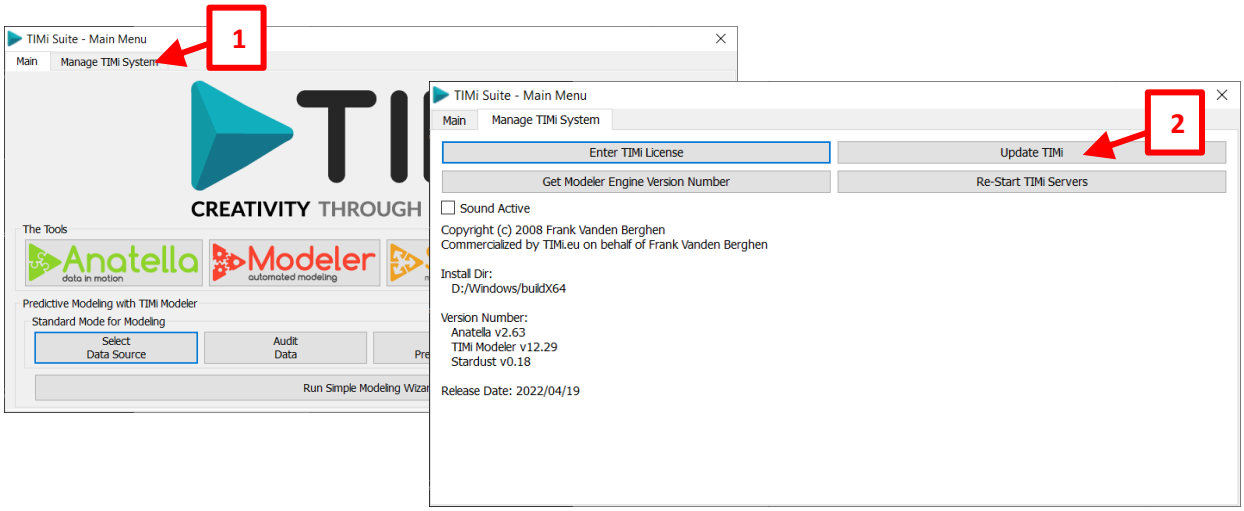
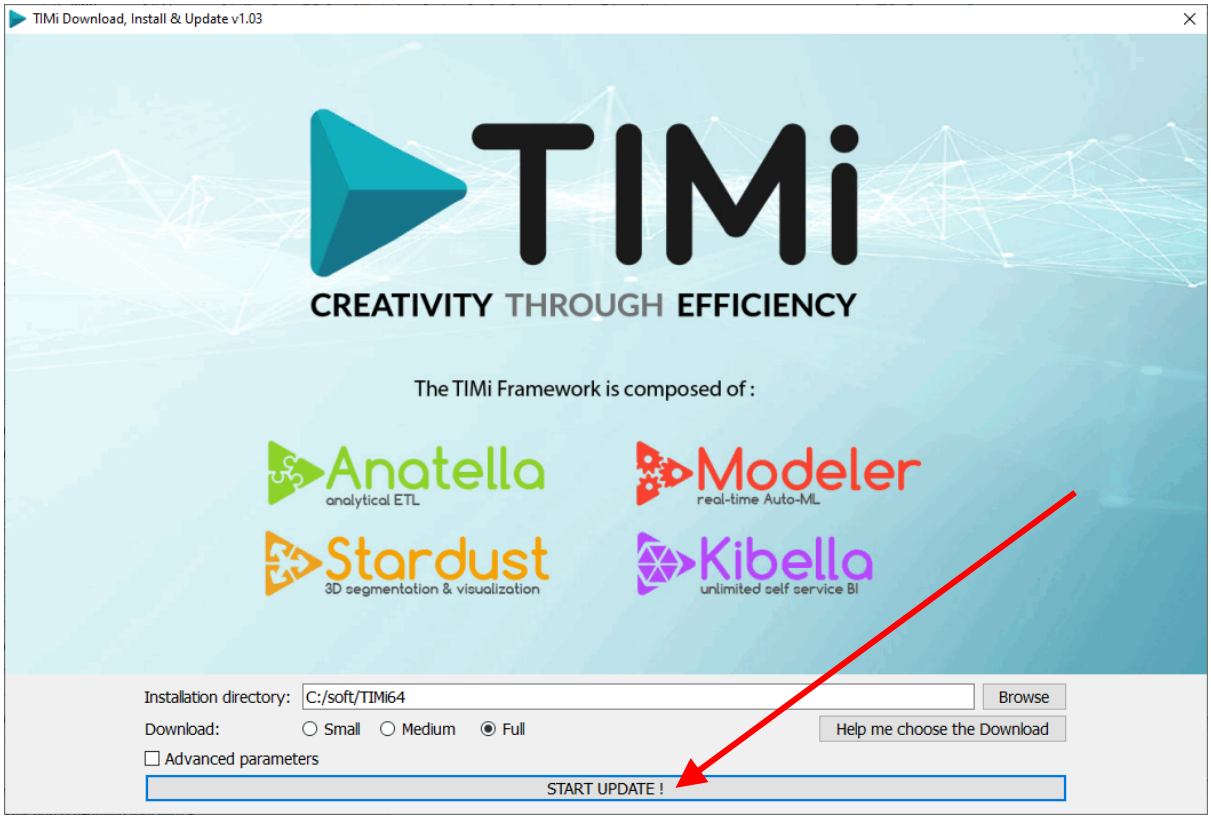
Alternatively, to run the TIMi updater tool, open the TIMi main menu, go to the second panel named "Manage TIMi System" and click the "Update TIMi" button:



Then, inside the TIMi updater tool, click the "START UPDATE !" button:



Alternatively, you can also directly run the TIMi updater tool by double-clicking the file:
C:\soft\TIMi\TIMi_Downloader.exe
(we assumed that TIMi was installed inside "C:\soft\TIMi")

The TIMi updater tool is clever and will only download the files that have changed between your current installation and the new update. If the update fails at some point (e.g. because your internet connection went down), you can safely re-run several times the TIMi updater: the updater will recheck all the files and download & update only the required files.

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At the end of the update procedure, you should see:

Here, you'll see the number of updated files (if some update happened). …Or the message "*TIMi was already at the latest version.*" if no update were required.

3.2. Update without any internet connection

The update procedure is:

1. Download the 3 files from:
   - For a 64-bit PC:
     - https://download.timi.eu/TIMi_Full/unzip.exe
     - https://download.timi.eu/TIMi_Full/unzip_TIMi64_Full_Portable_in_C_SOFT.bat
     - https://download.timi.eu/TIMi_Full/TIMiPortable_Full_x64.zip
   - For a 32-bit PC:
     - https://download.timi.eu/TIMi_Full/unzip.exe
     - https://download.timi.eu/TIMi_Full/unzip_TIMi32_Full_Portable_in_C_SOFT.bat
     - https://download.timi.eu/TIMi_Full/TIMiPortable_Full_win32.zip

2. Place the 3 downloaded files inside the same directory and execute (double-click) the file "unzip_TIMi??_Portable_in_C_SOFT.bat".
   This will:
   - Stop all TIMi-related processes on the server.
   - Move the old TIMi installation from "C:\soft\TIMi" to "C:\soft\TIMi_old"
     (this is done just in case you'd like to go back to the previous installation)
   - Install the new TIMi version inside the (default) directory: C:\soft\TIMi
   - Add 2 shortcuts to run TIMi&Anatella on your desktop

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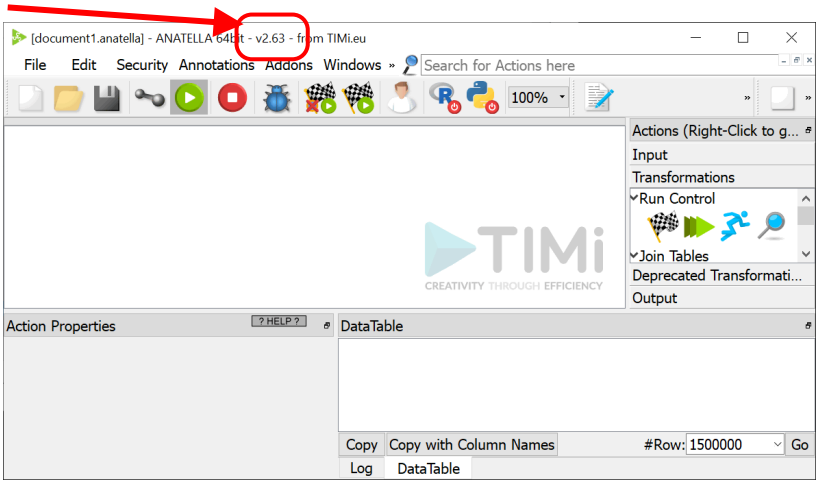
To check if the update is successful, just run Anatella and verify that the version number visible here is at the latest version:



4. Minimum Configuration tasks to perform when installing TIMi

When installing TIMi on a new machine, your IT department has to perform the following configuration tasks.

4.1. Installation of MS-Office

Admin Privileges Required to install MS-Office

Ensure that Microsoft Office 2010 (or a later version) is installed. The MSWord and MSExcel software are required to view (and not to generate) the reports created by TIMi Modeler and Anatella.

It's strongly suggested to avoid using any Free Office solutions like "OpenOffice" because these free solutions are usually not able to open the large reports generated by TIMi (and, anyway, the text formatting is terrible).

To use the Outlook connectors, to send/receive emails through Outlook, you need to install Outlook on the TIMi server (see the sections 5.2.24 and 5.25.22 of the "AnatellaQuickGuide.pdf" for more details about the Anatella connectors to Outlook). However, the preferred method to send/receive emails with Anatella remains to use:

- a connection to a classical IMAP/POP/SMTP server (see the sections 5.2.28. and 5.25.7. of the "AnatellaQuickGuide.pdf" about the Anatella connectors to IMAP/POP/SMTP servers).
- a connection to an Office 365 account (see the sections 5.22.53 and 5.22.54 of the "AnatellaQuickGuide.pdf")
- a connection to a Gmail account (see the sections 5.22.64 and 5.22.65 of the "AnatellaQuickGuide.pdf")

Upon request, we can provide you with any number of Microsoft Office 2019 licenses and perform the installation.

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4.2. Installation of the ODBC & OleDB drivers

Admin Privileges Required to install the required ODBC/OleDB drivers to connect to your databases.

The ODBC or OleDB drivers must be installed since they are required by Anatella/TIMi to connect to your databases.

If you want to use the 64 bit version of TIMi Anatella or Stardust (this is the default version), you must install the 64-bit version of your ODBC & OleDB drivers (i.e. 32 bit ODBC/OleDB drivers cannot be used inside a 64 bit application).

Typically, you won't install simultaneously the ODBC drivers and the OleDB drivers to connect to your database: it's either one or the other. If you have the choice, **you should favor the installation of the ODBC drivers** (rather than the OleDB drivers) since, for almost all databases, they are much faster (around 3 times to 20 times faster) than the equivalent OleDB drivers.

Here are some common ODBC & OleDB drivers that are known to work perfectly with TIMi/Anatella:

- *MS-SQL Server ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_SQLServer/
- *MS-SQL Server OleDB drivers:*
  https://download.timi.eu/OleDB/OleDB_drivers_SQLServer/
- *Oracle ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_Oracle/
- *Oracle OleDB drivers:*
  https://download.timi.eu/OleDB/OleDB_drivers_Oracle/
- *My SQL ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_MySQL/
- *Teradata ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_Teradata/
- *MS-Access ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_Access/
- *SQLite ODBC drivers (it's always a good idea to install these):*
  https://download.timi.eu/ODBC/ODBC_drivers_SQLite/
- *IBM-DB2 ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_IBM_DB2/
- *Sybase ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_Sybase/
- *PostgreSQL ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_PostgreSQL/
- *Redshift ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_Redshift/
- *Snowflake ODBC drivers:*
  https://download.timi.eu/ODBC/ODBC_drivers_SnowFlake/

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4.3. Configuration of the ODBC & OleDB links

Admin Privileges Required to configure the required ODBC links to connect to your databases (in some uncommon situations, this can also be configured by a "standard user without any privileges").

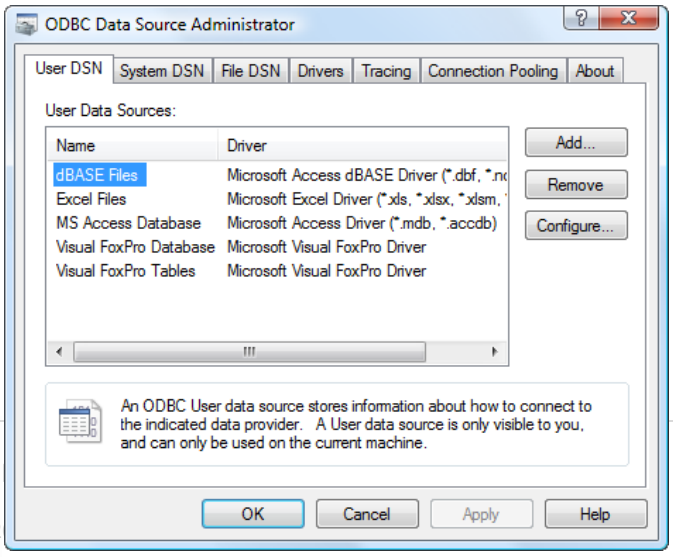
The ODBC/OleDB links or "DSN" must be configured since they are required by Anatella/TIMi to connect to your databases.

Each user can have different ODBC/OleDB connections that allow different access privileges to the database. The type-1 ODBC links are the most common: they are configured using the software "Microsoft ODBC Data Source Administrator" available in the Windows Control Panel (see the sections 5.1.6., 5.1.6.1. and 5.1.6.2. of the "AnatellaQuickGuide.pdf" to know more about type-1 and type-2 ODBC connections).

For more information, please refer to:

- the MS-Windows documentation about ODBC & OleDB links
- the documentation about the ODBC & OleDB drivers of your specific database.
- the section 5.1.6. (named "ODBC Connections") of the AnatellaQuickGuide.pdf (press F1 inside Anatella to read this PDF). This section includes documentation on:
    - how to open the correct "Microsoft ODBC Data Source Administrator" (there are two of them)
    - how to properly configure the Oracle ODBC driver (see section 5.1.6.4)
    - how to properly configure the Teradata ODBC driver (see section 5.1.6.3)
    - how to properly configure the MySQL ODBC driver (see section 5.1.6.6)
    - how to properly configure the Sybase ODBC driver (see section 5.1.6.5)
    - how to properly configure the IBM-DB2 ODBC driver (see section 5.1.6.7)
    - how to properly configure the Ms-SQLServer ODBC driver (see section 5.1.6.8)
    - how to properly configure the Postgre ODBC driver (see section 5.1.6.9)
- the section 5.1.7. (named "OleDB Connections") of the AnatellaQuickGuide.pdf (press F1 inside Anatella to read this PDF). This section includes documentation on:
    - how to properly configure the MS-SQLServer OleDB driver (see section 5.1.7.1)
    - how to properly configure the Oracle OleDB driver (see section 5.1.7.2)
- to test your ODBC connection with Anatella, please refer to the section 5.1.6. and 5.2.2. of the AnatellaQuickGuide.pdf (press F1 inside Anatella to read this PDF).
- to test your OleDB connection with Anatella, please refer to the section 5.1.7. and 5.2.3. of the AnatellaQuickGuide.pdf (press F1 inside Anatella to read this PDF).

Here is a screenshot of the "Microsoft ODBC Data Source Administrator":



4.4. To use the R&Python engine inside Anatella

This is required if you want to use all the R-based Actions available inside Anatella.

If you selected to install the "TIMi Full Install", you can safely skip this section. The "TIMi Full Install" now already directly contains the required R&Python engines with all the required extra libraries already pre-installed. This means that, if you already installed the "TIMi Full Install", you don't have anything extra to do.

If you want to benefit from the integration of the R&Python Language inside Anatella, you must install a standard R/Python engine. There are now many R-based-actions included inside Anatella and the installation of an R engine is strongly encouraged.

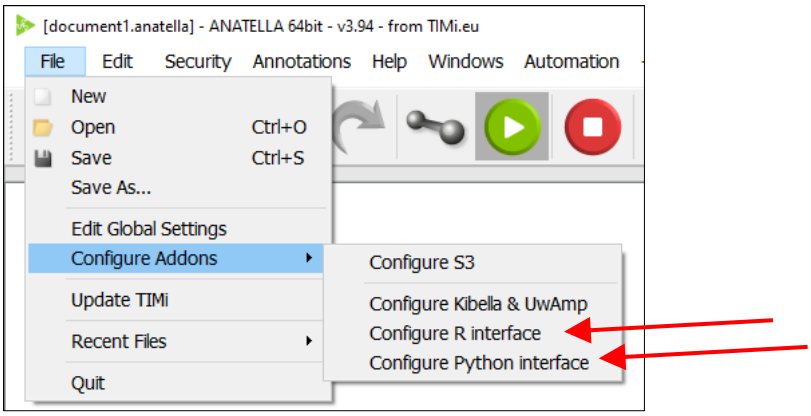
Just in case, you'll find here:

- the complete ("R"+Libraries) package:
  https://download.timi.eu/R/R_Full.zip
- the complete ("Python"+Libraries) package:
  - 64 bit : https://download.timi.eu/Python/Python_Full_x64.zip
  - 32 bit : https://download.timi.eu/Python/Python_Full_w32.zip

You are not forced to use the R/Python engine provided by default with Anatella. You can use any compatible version of the R/Python engine. Currently, Anatella is compatible with:

- Any version of the R engine starting at version v3.6.1. You can download it from here:
  https://cran.r-project.org/bin/windows/base/
- The Official Python engine v3.9.x and any Python engine with a version newer or equal to version v3.13.1. You can download it from here:
  https://www.python.org/downloads/
  (Anatella will not run with the Python engine downloaded from Anaconda.com: You should only use the Official version from python.org)

By default, Anatella will use the default R/Python engines provided with Anatella. You can change the default R/Pyhon engine used to run all R/Python boxes here:



You can also manually set, for each different box/Action inside an Anatella graph, which R/Python engine to use. This means that, inside a single graph, you can have multiple different versions of the R/Python engines running.

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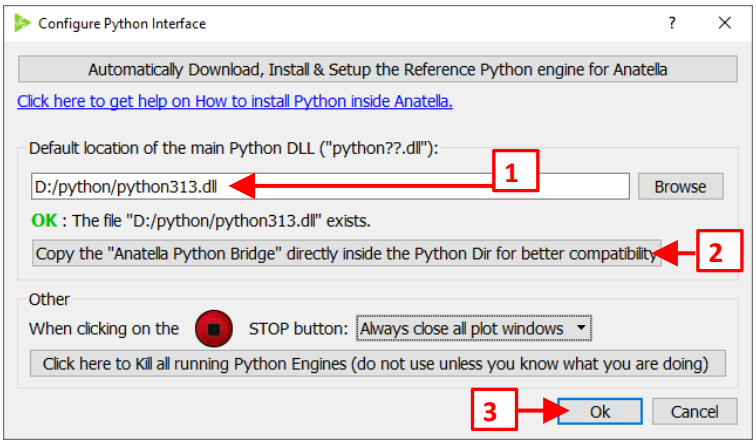
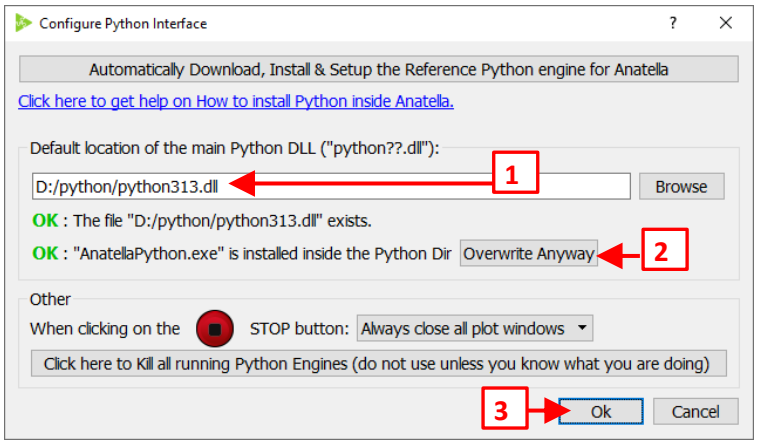
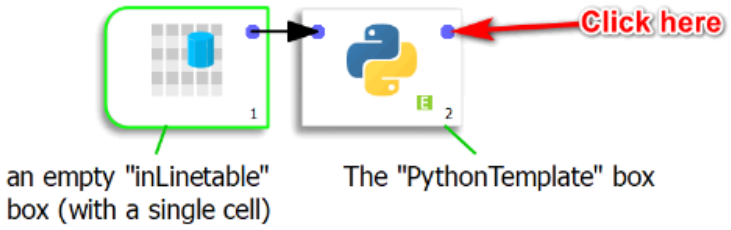
For example, here is how to configure Anatella to use the Python engine located in “d:\python”:





1. Set the right parameter for the filepath towards the Python DLL that you want to use,
2. Click either on the "Overwrite Anyway" button, or the “Copy” button.
3. Click on the "Ok" button:

To test Python inside Anatella: Make&run this graph:



As output of this run, you should see a single-cell table inside the Anatella-data-preview window. This first run of the Python box might take up to 1 minute to execute because python is initializing lots of stuffs. Afterwards, it's much faster.

4.5. Firewall configuration: Data Access (1/4)

This is required if you want to access data located on remote computers.

Admin Privileges Required to configure the firewall(s) to allow the functionalities listed below to work properly.

During normal operation, Anatella does not access the web (or any remote servers): There are however some exceptions such as the actions listed below. For these actions, you need to open you firewall (or you can also add some additional rules in your firewall) to allow these Actions to work properly. These exceptions are:

- When Anatella accesses a remote database (such as Oracle, Teradata, SQLServer, etc.). It’s actually not Anatella in itself that access the computer network but it’s the database ODBC/OleDB driver (or the “OCI” driver for Oracle, or the FastLoad driver for Teradata, or the libPQ.dll for PostegreSQL).

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When the database driver starts the communication with the database, you will see a new network connection initiated by the “Anatella.exe” process. Thus, you must change your firewall configuration to allow the “Anatella.exe” process to access your database.

As the developers from Anatella, we have no control (or information) on how the database drivers communicates with the remote databases. Please, consult your database manual to have more information about this subject (e.g. to know which TCP/IP port to open).

For added security, you can create rules inside your firewall such that only the communications between the Anatella server(s) and the database server(s) are allowed.

- When Anatella is used to automatically download (or upload) every day some files from some data provider (this is a very common scenario when working with “open data” or external data providers).

  For all download/upload tasks, Anatella uses one tool named “CURL”. This tool is a well-known, famous, open source tool without any security vulnerability. You’ll find more information about this tool here: https://curl.haxx.se/
  For added security, you can replace the default “curl.exe” executable (installed by default with Anatella) with some equivalent executables verified by your local security expert.

  You must allow the “curl.exe” process (the “curl.exe” tool is automatically installed with Anatella) to access internet when using these Actions:

Extract information about companies from their VAT code

and
: To download/upload files automatically through the HTTP/HTTPS/FTP/SFTP/SCP protocol.

To unlock all Google Services.

To access Google Analytics

To access Google Ads statistics

To upload dataset files to PowerBI

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To send/receive emails using your office 365 subscription

To send/receive emails using your gmail subscription

To download/upload files automatically from/to a Google Drive

To download/upload files automatically from/to a Google Cloud Storage

To upload datasets files automatically to Google Big Query

To run SQL queries on Google Big Query and download the query results

to run the Google Speech-to-Text engine

to call any generic REST API located on a HTTP,HTTPS server

To publish datasets to Microsoft PowerBI on Azure

To publish datasets to a Local Tableau Server or to Tableau online

To download/upload data from/to Salesforce

To download/upload data from/to SharePoint on Azure

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To download/upload data from/to MS-Dynamics CRM on Azure

To download/upload data from Odoo

Geocoding postal addresses (using the “Bing” engine)

Travelling-Time estimation (using the “Bing” engine)

To download/upload files from/to the OVH Cloud blob storage.

To download/upload files from/to the Amazon S3 Storage

to upload data to Redshift through a S3 bucket

to upload data to Snowflake through a S3 bucket

To download/upload files from/to the Azure Blob Storage

to upload data to Snowflake through a Azure Blob Storage

To download/upload files from/to the Huawei Blob Storage

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To download data from LinkedIn

To download data from Facebook

To download data from Twitter

To execute text translations using the DeepL engine

To extract text topics (Text mining)

A cloud service to check for plagiarisms in scientific publications

to list jobs, upload data and run UiPath jobs

to connect to Nominatim

to connect to your ElasticSearch server

to connect to your mailbox drive

to connect to your Splunk server

to send/receive SMS using OVH services

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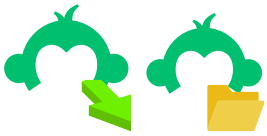
to extract data from your Neo4J server

to connect to your Jira server

to connect to your Jenkins server

to connect to your SuiteCRM server

to connect to your SuperMetrics account


to connect to SurveyMonkey

to download data from ZohoCRM

- When Anatella accesses servers through the SSH protocol: You must allow the “plink.exe” process to access internet when using this Action:

  run a SSH command on a remote server.

  "plink" is part of the well-known & famous "putty" package. You'll find more documentation about plink here.

- When Anatella accesses web-based services such as the following services (…but this is quite obvious that an access to the web is required to use these functionalities):

  - You must allow the “Anatella.exe” process to access internet when using these Actions:

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and to get/send email from POP, IMAP, SMTP servers

Rosette API (text mining)

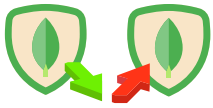
Extract info from IP (for web intrusion detection techniques)

, and : to send/receive SMS

Geocoding (from “Google” or from “geocode farm”)

Google translate

- You must allow the “Anatella.exe” process to access your MongoDB server when using this Action:

   to connect to your MongoDB server

- You must allow the “Anatella.exe” process to access your SAP server when using this Action:

  SAP Netweaver/Hana ABAP connector

- You must allow the “Anatella.exe” process to access other PCs inside your LAN when using these Actions:

  and : for map-reduce capabilities inside Anatella

  and : to create a real-time web-services using Anatella (see section 10.8. of the “AnatellaQuickGuide.pdf” for more information about this subject).

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- You must allow the “Anatella.exe” process to access your local MQTT Broker (IoT protocol) when using these Actions:

and and : for “Internet Of Things” or MQTT messaging inside Anatella.

4.6. Firewall configuration: Remote Desktop (2/4)

Admin Privileges Required to configure the firewall(s) to allow a Remote desktop connection to a TIMi server.

If you installed TIMi on a central server, you need to configure your firewall to allow a “Remote Desktop Connection” between your central server and the data scientists machines/laptops (see also the section 7. from this document for more details about the RDP server configuration).

4.7. Firewall configuration: TIMi Automatic update (3/4)

Admin Privileges Required to configure the firewall(s) to allow a connection to the TIMi update server.

The automatic update tool for TIMi (that is named “TIMi_Downloader.exe”) connects to the TIMi update server to download the updates. This server is: https://update.timi.eu (connection on port 443). Your firewall should be configured to allow access to this server.

The automatic update tool for TIMi is clever and only downloads the few files that needs to be updated (usually, it downloads only a few MB): i.e. it does not download the whole package – 850MB – contrary to the off-line installer.

If the connection to the TIMi update server remains closed, you can still update TIMi using the off-line/portable installer (see section 2.1 for more details about the off-line installer).

4.8. Firewall configuration: Network License (4/4)

Admin Privileges Required to configure the firewall(s) to allow a connection to the TIMi Licensing servers.

When you are using a Network License (rather than a normal serial number), TIMi connects once a day to a “License server” using the HTTPS (port 445) protocol. If the connection fails, you cannot use TIMi (since it’s impossible to verify that your license is “in order”). There are currently two TIMi Licensing servers:

- business-insight.com
- actionalytics.com

If one Licensing Server is down, TIMi automatically switches to the other one.

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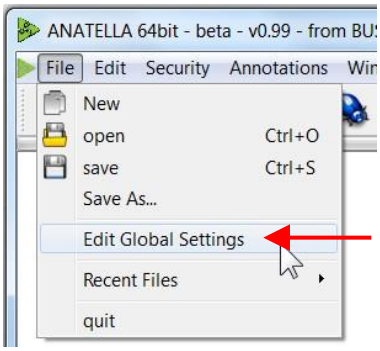
You'll find more information about the configuration of Network Licenses here:
https://download.timi.eu/docs/TIMi_network_license.pdf

5. Optional, but strongly encouraged, configuration tasks to perform when installing TIMi

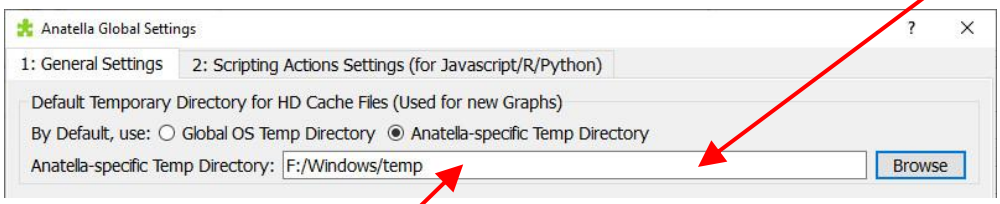
5.1. Configure the temporary directory

TIMi Modeler, Stardust and Kibella do not create big temporary files. However, it can happen that Anatella produces large files (that are named "HD Cache" files). By default, these temporary files are saved in the standard "temporary directory" of each MS-Windows user. It's a good idea to change the default location of this temporary directory to a drive with plenty of space (…and it's a good idea to do that even if you are not using the "TIMi Suite"!).

To set the location of the Anatella "*Temporary directory for cache files*", click the "*Edit Global Settings*" option inside the "*File*" drop-down menu:

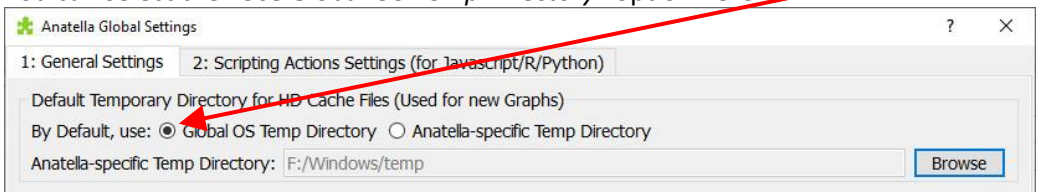


By default, the location of the "*Temporary directory for cache files*" is the location visible here:



There are two different ways to change the location of the "*Temporary directory for cache files*":

1. You can simply edit this text field
2. You can select the "*Use Global OS Temp Directory*" option here:



When using the "*Global OS Temp Directory*" option, the location of the "*Temporary directory for cache files*" parameter is contained inside the "%TEMP%" MS-Windows Environment Variable

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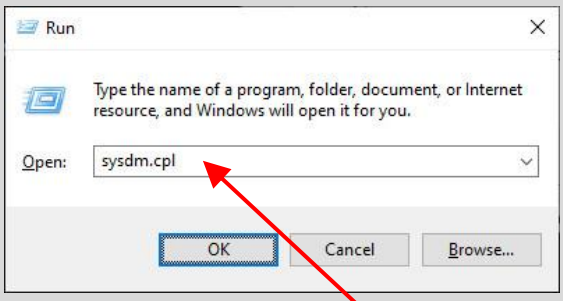
Admin Privileges Required : To be able to change the content of the "%TEMP%" MS-Windows Environment Variable.

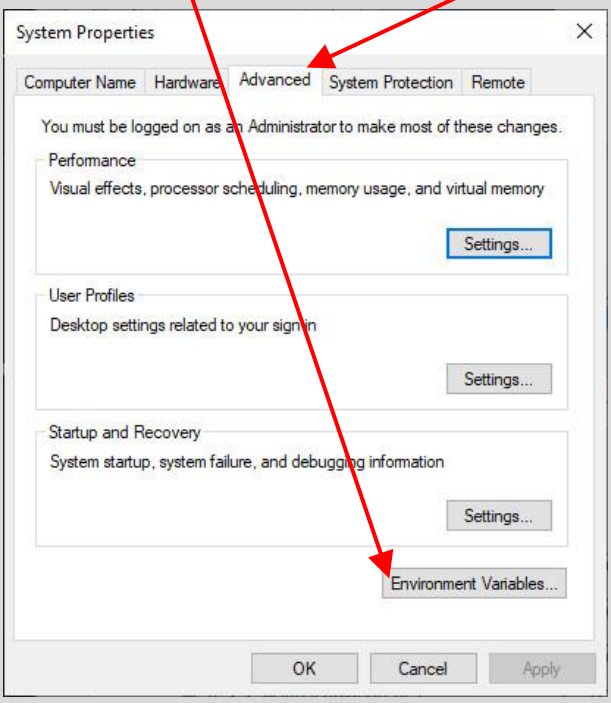
Here is the procedure to change the "%TEMP%" Environment Variable inside MS-Window:

1. Press the [Win]+[R] keys simultaneously. This opens the "Run" window:



2. Inside the "Run" window, enter sysdm.cpl here: and press [Enter].
At the UAC prompt, respond "ok".

3. Inside the "System properties" window, inside the "Advanced" panel , click on the "Environment Variable" button



4. Inside the "Environment Variable" window, edit both the "TEMP" and the "TMP" variables to set the default value for the "*Temporary directory for cache files*".

For example: Currently, my "Cache files" are stored inside the "F:\Windows\temp" directory:

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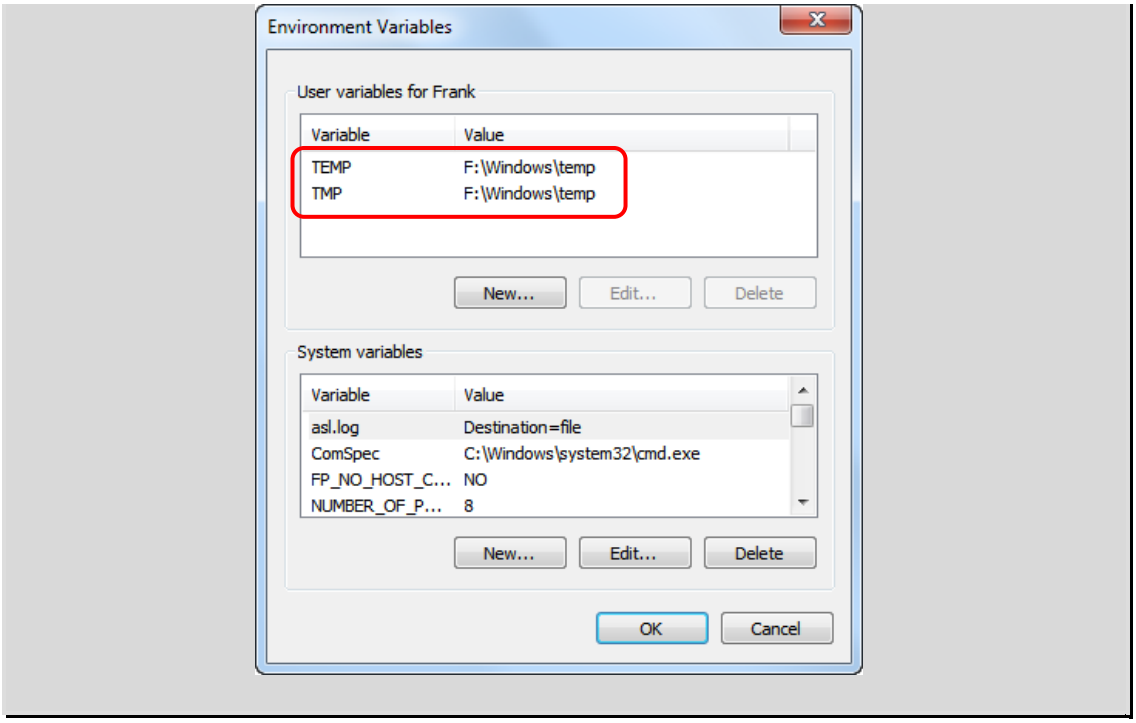
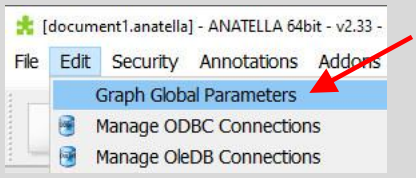
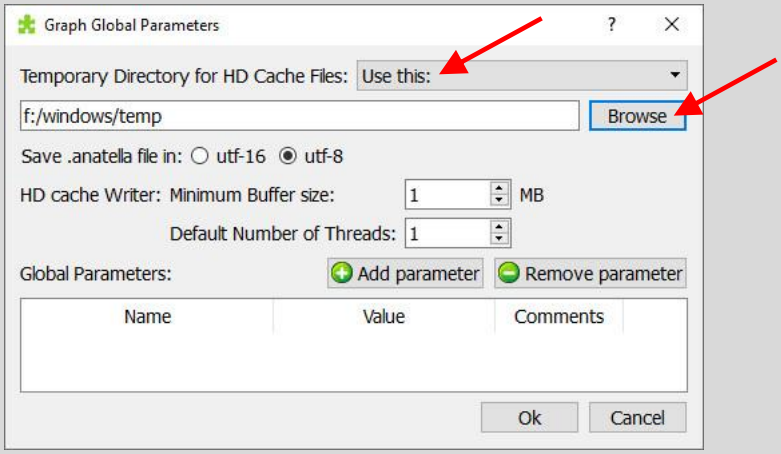


You'll find more information and details about the configuration of the "*Temporary directory for cache files*" inside the sections 4.5, 4.5.1., 4.5.6., 7.1., 7.1.1. inside the AnatellaQuickGuide.pdf (press F1 inside Anatella to read this PDF).

Please note that the Anatella users can still freely select a different location for the "HD Cache" directory for each of their Anatella-graph by opening the "*Graph Global Parameters*" window that is accessible from the "*Edit*" drop-down menu:



Then, the user selects the "*Use This*" option and browse for the location of the "HD Cache" directory:



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5.1.1. Using a RAM-Drive

For some time-critical applications, using a high-performance RAM-drive to store the "*Temporary directory for cache files*" might slightly improve the speed of some Anatella graphs. **The usage of a RAM drive for TIMi is an uncommon situation: Please search advices to us before setting up a RAM drive from TIMi**.

RAM-drives have some nice properties that are greatly improving Anatella's speed:

- Extremely fast Read&Write operations: Common speeds on common hardware are around 10 GigaByte/Sec.
- Extremely fast Append&Seek operations on files.
- When your "*Temporary directory for cache files*" is located inside one your "standard" drive (HDD or SSD), this drive can become "fragmented" and its performance might degrade over time (see here for more details on this subject). Using a RAM drive to store your "*Temporary directory for cache files*" avoids this degradation and your HDD/SSD always remains at peak efficiency.

Unfortunately, Anatella tends to create very large cache files inside the "*Temporary directory for cache files*". These cache files can rapidly completely fill-in the RAM-drive (because the capacity a RAM-drive is always relatively small: typically around 10GB). When this happens, all attempts to write more data inside the RAM-drive will fail and the Anatella execution will stop with an error message about a "*Disk Full*".

Because of the relatively small capacity of the RAM-drives, there is always the risk of getting a "*Disk Full*" error message. This is why, despite the numerous advantages of using a RAM drive**, it's still something that we can actually only recommend in a very small number of situations**: Please, ask for our recommendations before using a RAM-drive.

Here are two RAM-drive software that are reliable:
Dataram RAMDisk http://memory.dataram.com/products-and-services/software/ramdisk
SoftPerfect RAM Disk https://www.softperfect.com/products/ramdisk/

More configuration details about RAM-drives:

- Always format your RAM-Drive in NTFS.
  In particular, never use the FAT32 or exFAT file systems because these file-systems have a strong limitation on the maximum number of files that one directory can contains.
  This means, for example, that, if you use the FAT32 or exFAT file system, your "*Temporary directory for cache files*" in your RAM-drive won't be able to contain more than 10,000 cache files. This is a very annoying limitation that might lead to "*Error writing into disk*" error messages inside Anatella.
- Increase the quantity of Virtual RAM memory to the double of the size of the RAM Drive
  For example, let's say that we have a server with 32GB of physical RAM memory and a 5GB RAM-Drive. In this situation, your "swap" file or "paging" file should have a minimum size around 32x3+5x2=106GB. See the section 5.3. for more information about the Virtual RAM memory.

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5.2. Schedule a job to clear the Temporary HD cache files

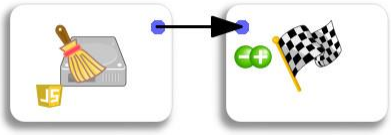
Admin Privileges Required to add a job to the scheduler (i.e. to add a job to the "MS-Windows Task Scheduler" or to install Jenkins).

When you use Anatella, you typically create many HD Cache files. Over a long period of time, these HD Cache files accumulate and can eventually consume a large amount of disk space. To prevent to run "out-of-disk-space", you should run at regular interval the cleanTempDir Action to clean your temporary directory of all the old .gel_anatella that might still be there. Please refer to:

- the section 4.8.4. or the section 4.8.10. from the "AnatellaQuickGuide.pdf" (press F1 inside Anatella to read this PDF) to learn how to schedule Anatella graphs to run the cleanTempDir Action at regular intervals (e.g. once every day).
- the sections 4.5.1., 4.5.6. and 7.1. from the "AnatellaQuickGuide.pdf" for more information about the "*Temporary Directory for HD Cache files*".

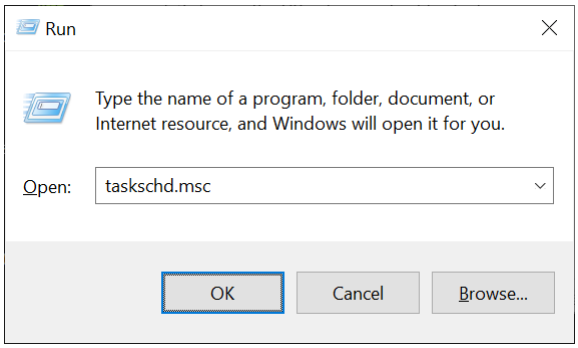
Let's give an example. Let's schedule the daily execution of the cleanTempDir Action using the "MS-Windows Task Scheduler". Here is the procedure:

1. Create an Anatella graph that contains just these 2 boxes:

   For your comfort, such a graph is directly available inside the directory "c:\soft\TIMi\AnatellaDemo": It's the file named "cleanTemp.anatella".

2. Add a task inside the "MS-Windows Task Scheduler".
   1.1. Press [Win]+[R], write **`taskschd.msc`** inside the text-box and press [Enter]:

   1.2. Inside the tree on the left, right-click the "*Task Scheduler Library*" item and select "*New Folder…*" inside the context menu:

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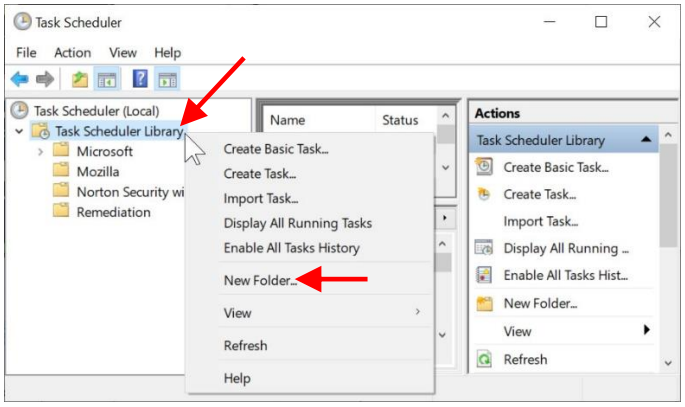
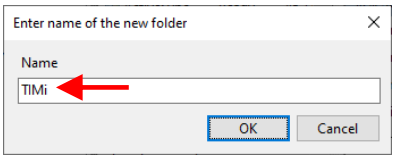
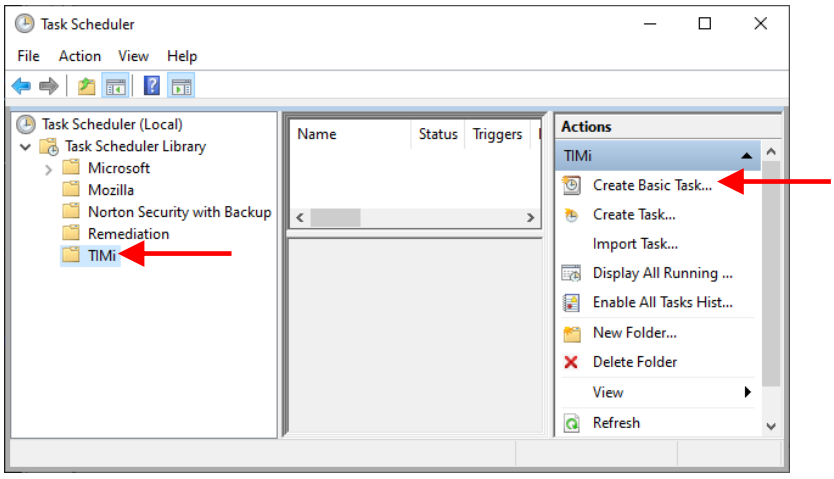


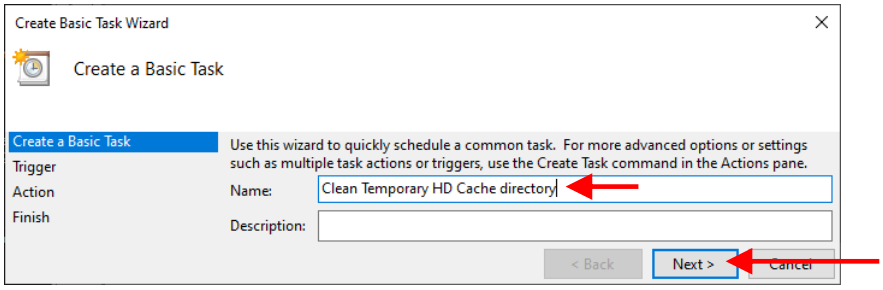
1.3. Write **`TIMi`** and press [Enter]:



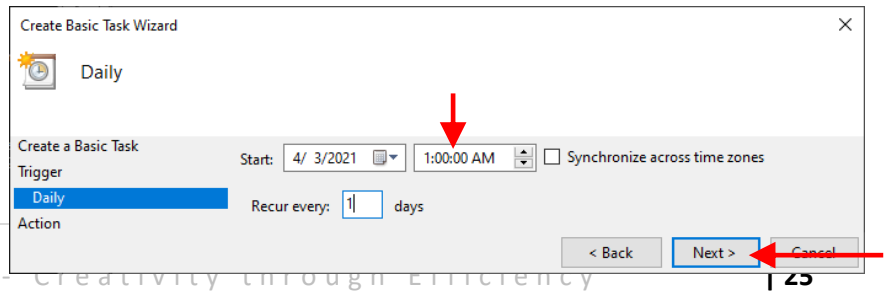
1.4. Inside the tree on the left, click on the new "*TIMi*" item. Inside the "Actions" list on the right, click on the "*Create Basic Task…*" item.



1.5. Give a name to the new task: For example: "Clean Temporary HD Cache directory". Thereafter, click the "*Next*" button.



1.6. Select when the task will run. In the screenshot here below, the task will run everyday at 1 o'clock in the morning. Thereafter, click the "*Next*" button.



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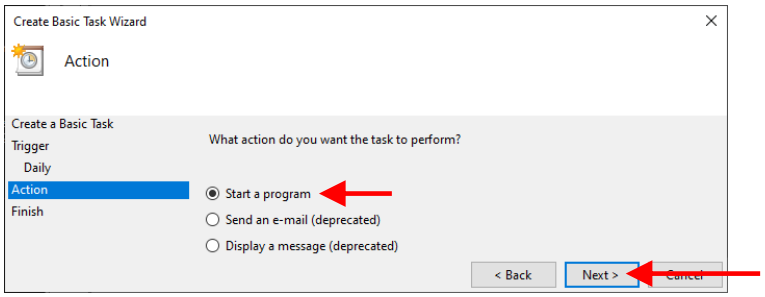
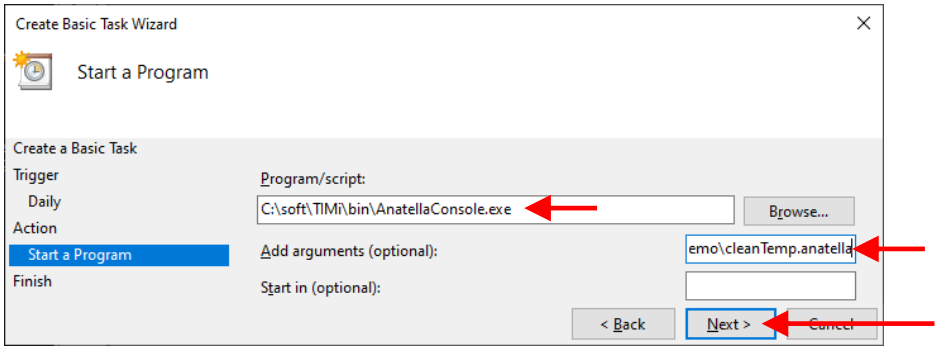
1.7. Click the “Next” button.



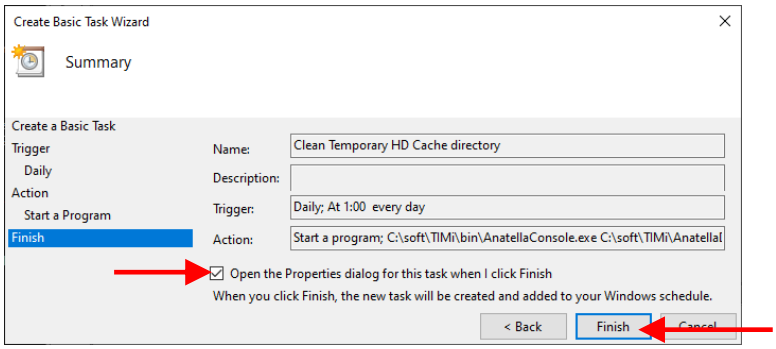
1.8. In the next screen, enter the following:

- The program to run is:
  `c:\soft\TIMi\bin\AnatellaConsole.exe`
- The argument is the filename of the Anatella graph to run. In our case, it’s:
  `c:\soft\TIMi\AnatellaDemo\cleanTemp.anatella`

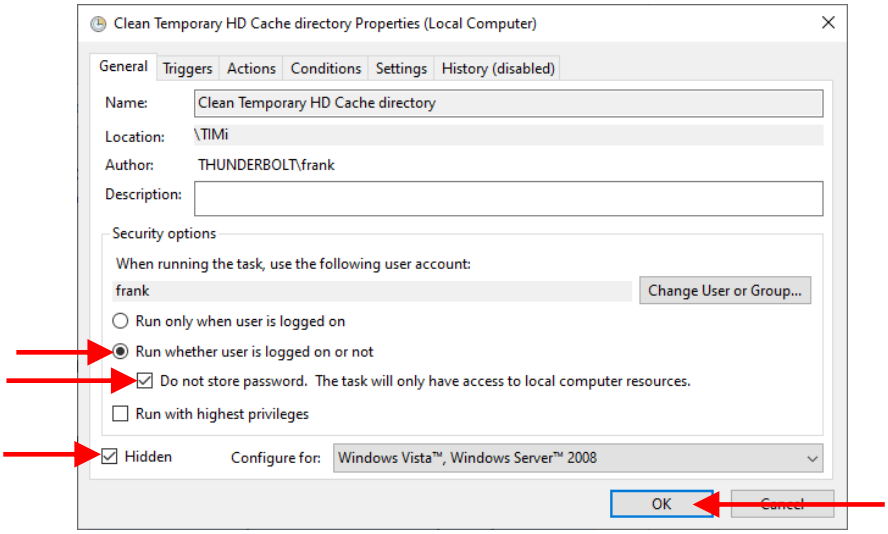
Thereafter, click the “Next” button.



1.9. Check the checkbox named “*Open the Properties dialog for this task…*” and click the “*Finish*” button:



1.10. Select the radio button named “*Run whether user is logged on or not*”. Check the checkbox named “*Do not Store password...*”. Check the checkbox named “*Hidden*”. Click the “*OK*” button.



5.3. Configure the quantity of Virtual RAM memory on the Server

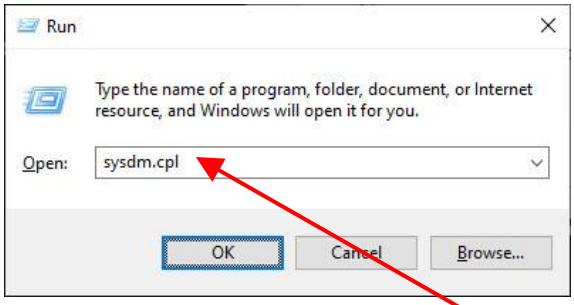
Admin Privileges Required to configure Virtual RAM memory

Please ensure that your swap/paging file on your server is at least three times the size of the physical memory. Follow the procedure described here below to check (and optionally change) this setting inside Window.

For example, for a machine with 16 GB of RAM, your “swap” file or “paging” file should have a minimum size around 16x3=48GB.

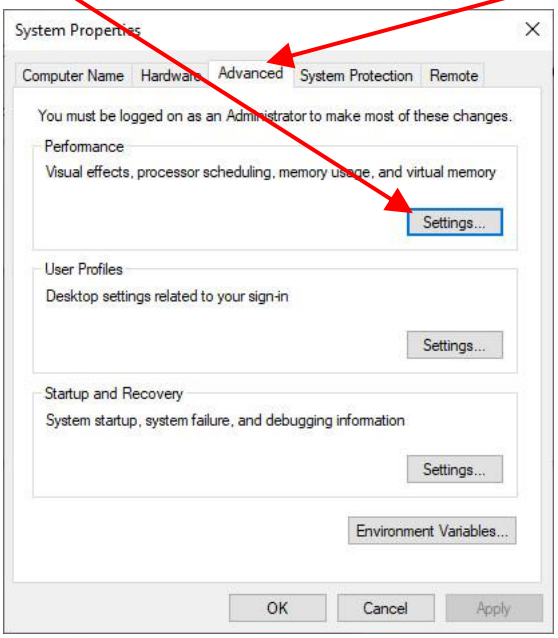
How to change the size of your swap/paging file on your machine?

1. Press the [Win]+[R] keys simultaneously. This opens the “Run” window:



2. Inside the “Run” window, enter sysdm.cpl here: and press [Enter].
   At the UAC prompt, respond “ok”.

3. Inside the “Advanced system settings” window, open the “advanced” panel and click on the “Settings” button:



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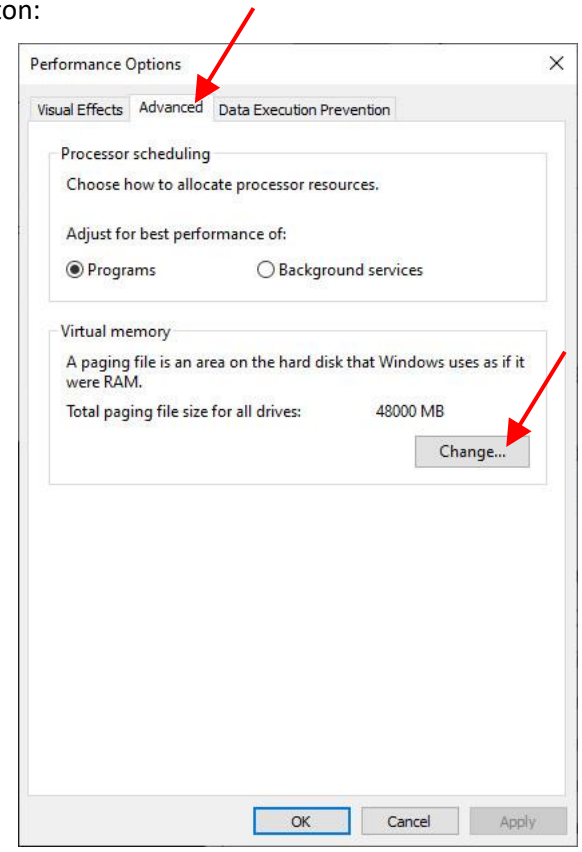
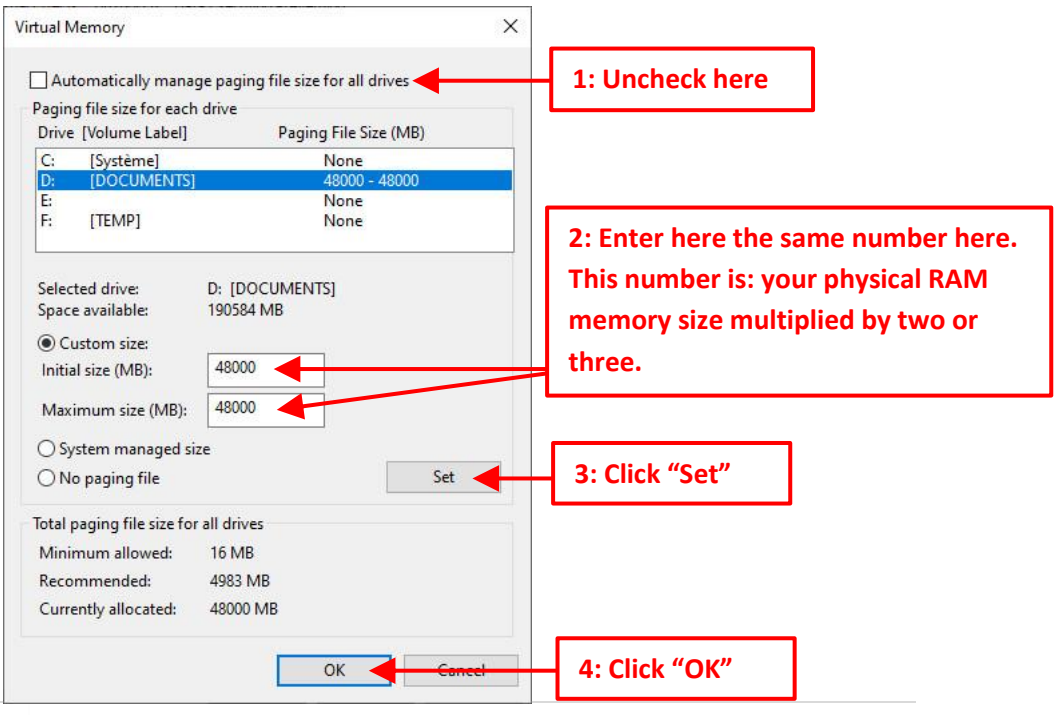
4. Inside the “Performance options” windows, open the “Advanced” panel and click on the “Change” button:



5. Inside the “Virtual Memory” window, you have two options: You can either:
    2. Check the “*Automatically manage paging file size for all drives*” checkbox.
    3. Uncheck the “*Automatically manage paging file size for all drives*” checkbox and configure a “fixed” swap/paging file size, as illustrated in the screenshot below.

The second option (the one illustrated here below) is the best option because it reduces the fragmentation of the swap/paging file and this always leads to a faster server.



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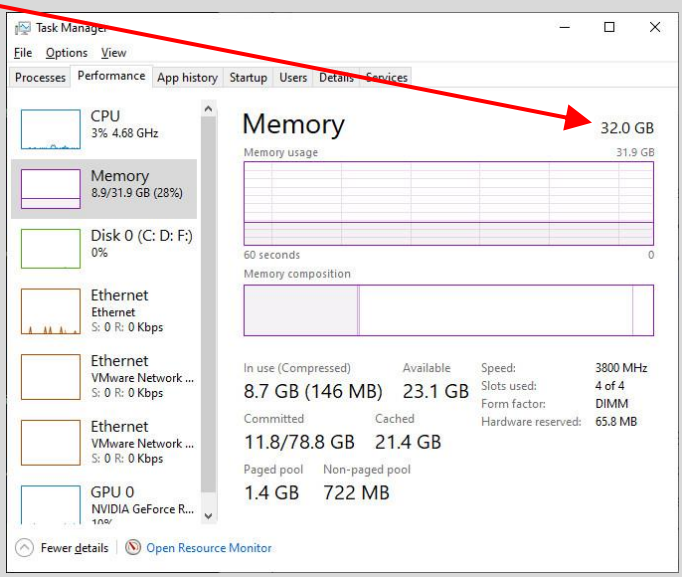
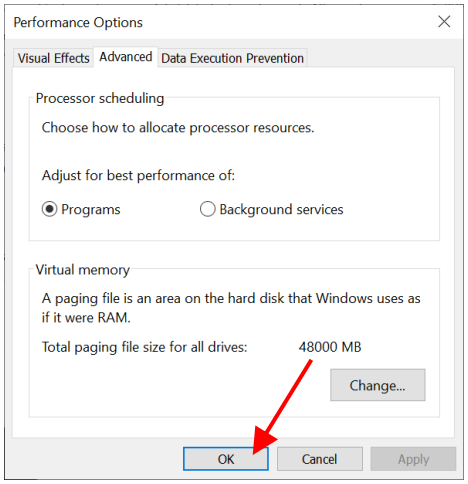
The amount of physical RAM memory in your server is visible inside the "MS-Window Task Manager" window here:



6. Inside the "Performance options" windows, click the "OK" button:



5.3.1. More Details about Virtual Memory

This section is an optional lecture: You don't need to read it: You can safely skip it.

The amount of Virtual memory on your machine is the sum of: (1) the size of the physical memory and (2) the size of the swap/paging file.

First, a small word of caution: The explanations given inside this section (that are related to the RAM memory management in Windows) are simplified so that these explanations remain comprehensible for an everyday Windows user. These are, by no means, complete and precise.

A program (that is executing on a Windows machine) has, basically, two types of RAM memory:

(1) committed memory (visible under the label "*commit size*" in the "MS-Windows Task Manager")
(2) used memory (also named "*active private working set*" memory)

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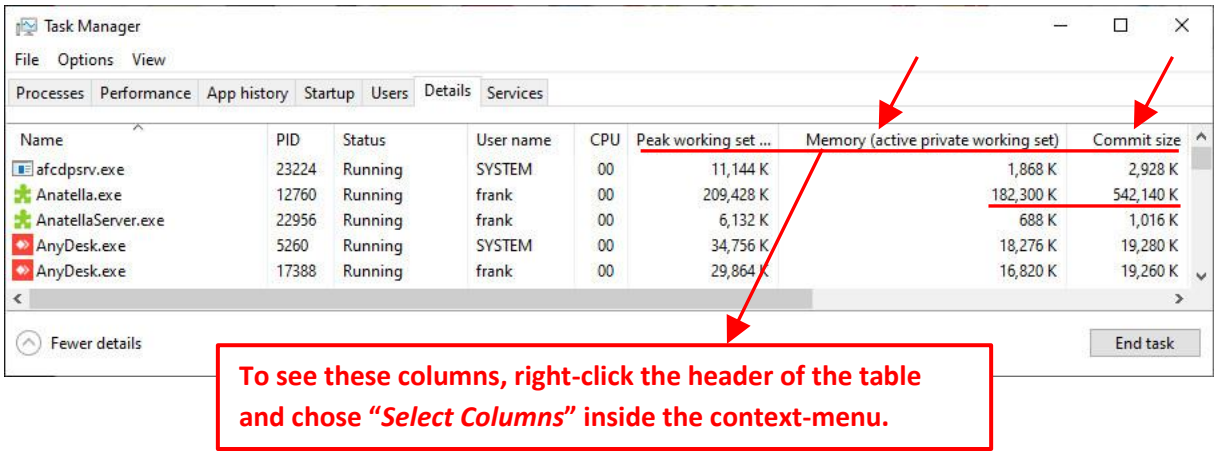
You can see these 2 types of memory in the “Details” panel, inside the “MS-Windows Task Manager”:



In the screenshot above, we see that the “Anatella.exe” program (i.e. the Anatella GUI editor) has 182MB of “used” memory and 542MB of “committed” memory. Please note that the amount of “committed” memory is around 3 times the amount of “used” memory.

The “AnatellaConsole.exe” program is optimized to run with the smallest amount of memory possible: It’s very common that it executes completely requesting only 15MB of “used” RAM memory.

A chunk of RAM memory can be in one of these 4 different types (or states):

1. **Free:** This memory is available for any program that might request it
2. (**Reserved:** Transitional: Just before the “committed” state.)
3. **Committed:** This chunk of memory has been given to a specific program but the program did not write any data in it yet.
4. **Used:** This chunk of memory contains data that is actually really used by a program.

Typically, a chunk of RAM goes through the states 1,2,3,4, 1,2,3,4, 1,2,3,4, 1,2,3,4, etc.

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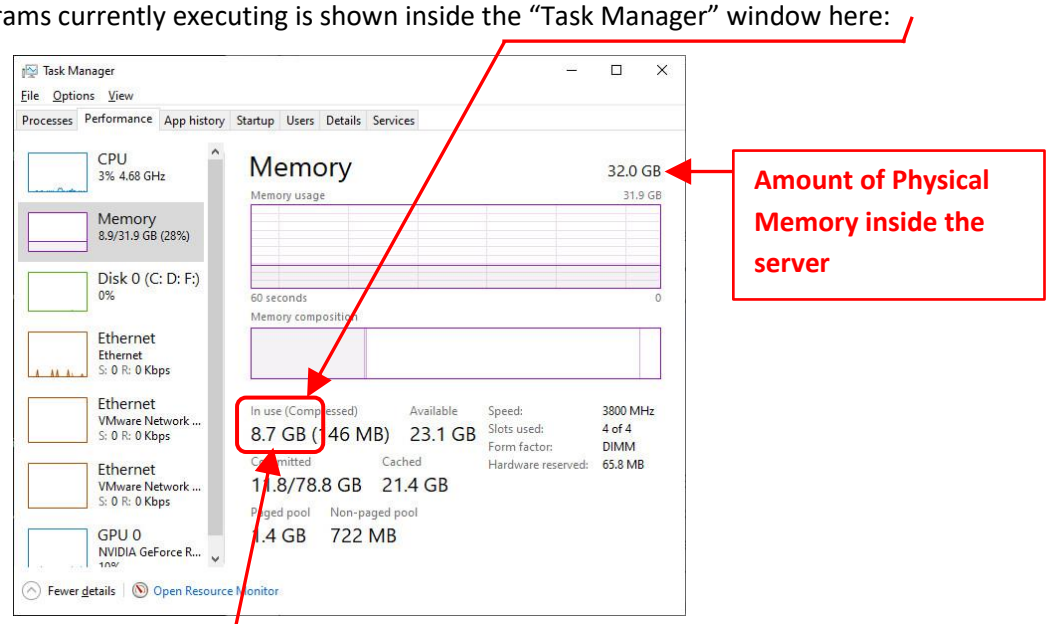
The “used” type of memory is the most important type of memory. The sum of all the “used” memory for all the programs currently executing is shown inside the “Task Manager” window here:



If the sum of all the “used” memory for all the programs currently executing (in the screenshot above: 8.7GB) exceeds the amount of Physical Memory inside the server (in the screenshot above: 32GB), then it’s horrible: The server becomes irresponsive and extremely slow. Everything almost completely freezes. **This should never happen**. This is why **TIMi is optimized to request the smallest amount of “used” memory as possible**. For example, most data transformation operations inside TIMi are performed in streaming. TIMi also uses extensive pointer arithmetic’s to avoid keeping multiple copies of the same data in RAM memory, reducing the amount of “used” memory to the minimum. TIMi also offer many settings that allows you to still reduce even more the quantity of “used” memory (unfortunately at the detriment of the execution speed: See for example the section 5.5.2.3. of the “AnatellaQuickGuide.pdf” – press F1 inside Anatella to read this PDF).

It’s difficult to control exactly the amount of “committed” memory that a program is using: This amount is mostly controlled by some unknown heuristics whose objective is to get the best speed when a program requests a new chunk of memory (i.e. this heuristic requests pro-actively some “commit” memory so that, when a process asks for some more memory, the requested memory is “already there” in the pool of “committed” memory and it can be served immediately. More details on this subject here). **In a 64-bit OS, the amount of “committed” memory is irrelevant: it has no impact on the stability or on the speed of the programs & OS: only the “used” memory is relevant**. (i.e. the total amount of “used” memory must be smaller than the amount of physical memory). In a 32-bit OS, this sentence is also almost true (you can still run out of address-space, but this is really uncommon for well-written applications such as TIMi).

There is still a “catch”: it was not 100% true when we wrote hereabove that the total amount of “committed” memory is irrelevant for the speed and stability of the O.S.: **The total amount of “committed” memory must still be lower than the total amount of “Virtual” Memory inside the server.** If this is not the case (i.e. if the total amount “committed” memory is approaching near the amount of “Virtual Memory”), then all your running applications will fail with messages such as “*No more memory*”, “*Out of Memory*”, “*Memory exception 0x13*”, “*Error attempting to write at address 0x0000*”, etc. Hopefully, you can change some MS-Windows parameters to have any quantity of Virtual Memory that you want (for the exact procedure: See the steps given in the beginning of the section 5.1. here above), so that, in the end, with the proper settings for the quantity of “Virtual

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Memory", the amount of "committed" memory always stays within acceptable limits and it has finally no impact on the stability or on the speed of the programs & OS.

For example, in a machine with 16GB of physical memory, the total amount of "used" memory cannot be higher than 16 GB (since the "used" memory must always stay below the physical memory). Typically, within Anatella, the amount of "committed" memory is around three times the amount of "used" memory (for an example: see the "Task Manager" screenshot, two pages ago). This means that we can expect Anatella to use a maximum of "committed" memory of approximatively 16x3=48GB. The amount of Virtual Memory is the sum of: (1) the size of the physical memory and (2) the size of the swap/paging file. If we set the swap/paging file to 50GB (following the procedure given in the section 5.1. above), then the amount of virtual memory is 50+16=66GB. Since 66GB is much higher than the maximum amount of "committed" memory requested by Anatella (approximatively 48GB), we have a perfectly stable server and no application will ever run out of RAM memory.

6. Really optional configuration tasks to perform when installing TIMi

6.1. To use Jenkins (job scheduling tool with a web interface)

This is required if you want an easy-to-use job scheduling tool with a web interface

to install Jenkins

To run Anatella graphs automatically (e.g. at regular intervals), you can use any scheduling software: i.e. you can use, for example, the simple "Windows Task Scheduler" or Jenkins. Jenkins is a good (and free) solution. **Jenkins is the preferred solution to schedule Anatella jobs**.

To install Jenkins, you need to:

1. Follow the installation instructions given inside the section 4.8.2. of the AnatellaQuickGuide.pdf (press F1 inside Anatella to read this PDF). Alternatively, you'll find the same procedure detailed in this webpage:
   https://timi.eu/docs/anatella/4_8_2_installing_jenkins.html
2. Configure your firewall: see the section 6.6.

6.2. Versioning System

to install GitHubDesktop, TortoiseGIT, TortoiseSVN.

To manage the different versions of your Anatella graphs and of your Anatella Actions/Boxes, you can use a *versioning system*. A *versioning system* is mainly useful when there are several analysts that works together with Anatella: For more details on this subject, see the section 8.9. about "collaborative work" inside the "AnatellaQuickGuide.pdf". Anatella is compatible with nearly all versioning systems.

Some common versioning system that you can use with Anatella are:

- SVN (Subversion):
  To use SVN to manage your Anatella files, you should install TortoiseSVN:
  https://tortoisesvn.net/downloads.html

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SVN (Subversion) was one of the most commonly used versioning system (before the age of GIT). **It's very easy to use and it's my own personal choice**.

Please follow this video for instructions on how to use&install TortoiseSVN:
https://youtu.be/eKC6njKYb4o?t=349

- GIT:
  To use GIT to manage your Anatella files, you can install:
  - TortoiseGIT:
    https://tortoisegit.org/download/
  - GitHub desktop:
    https://desktop.github.com/

  GIT is currently the most commonly used versioning system.
  It's very flexible but also quite complex to use.

6.3. To use Stardust

Admin Privileges Required to install the updated drivers for your video card or Virtual Reality Headset.

Stardust uses OpenGL to display some complex 3D scenes with *many* polygons. The "generic" OpenGL drivers automatically installed with Windows are now quite good and they should work properly in 99% of the cases.

However, if you have some display issues with Stardust (i.e. the display 3D rendering is extremely slow), then it's recommended to install the specific OpenGL drivers from your video-card manufacturer.

6.4. Local Kibella installation

Kibella is the web-based dashboarding tool included inside TIMi. You can install Kibella on any machine supporting Apache (and PHP). Usually, to install Kibella, the best option is a Linux-based server.

A local Kibella installation is required if you want to use and create Kibella dashboards using the locally installed Kibella Server (instead of, classically, a remote Linux server)

By default, to create a new Kibella dashboards, you simply open (using a standard internet browser) a webpage on a live Kibella server installed on your private LAN or installed on an Internet server. If you want to create new dashboards with Kibella without any live internet connection, you need to install Kibella on your local machine.

To install Kibella locally on a Windows Machine:

1. Download Kibella : http://download.timi.eu/Kibella/Kibella_UwAmp.zip
2. Unzip the downloaded zip file inside "c:\soft\uwamp".
3. Run "c:\soft\uwamp\UwAmp.exe"
4. Configure your firewall: see section 6.5.

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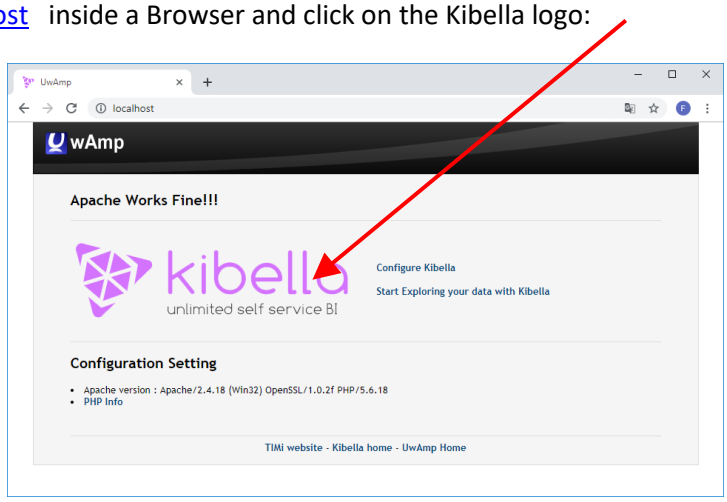
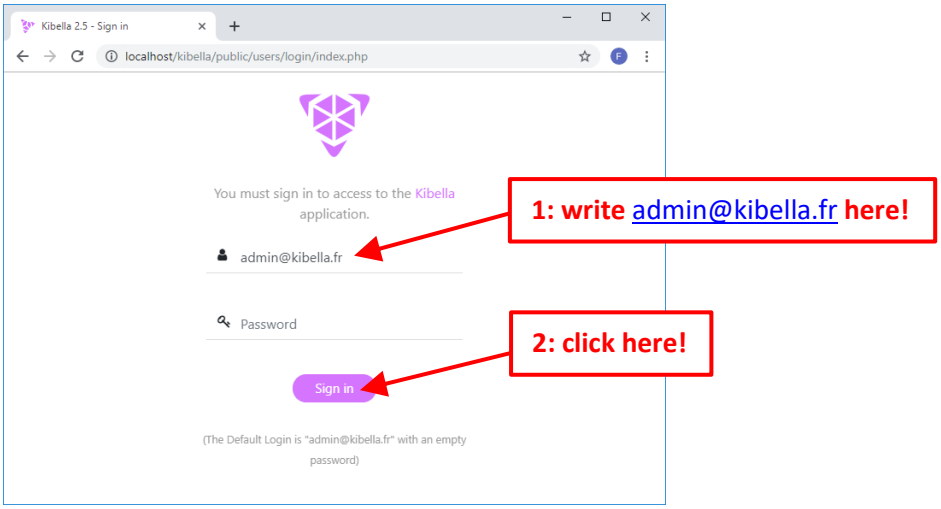
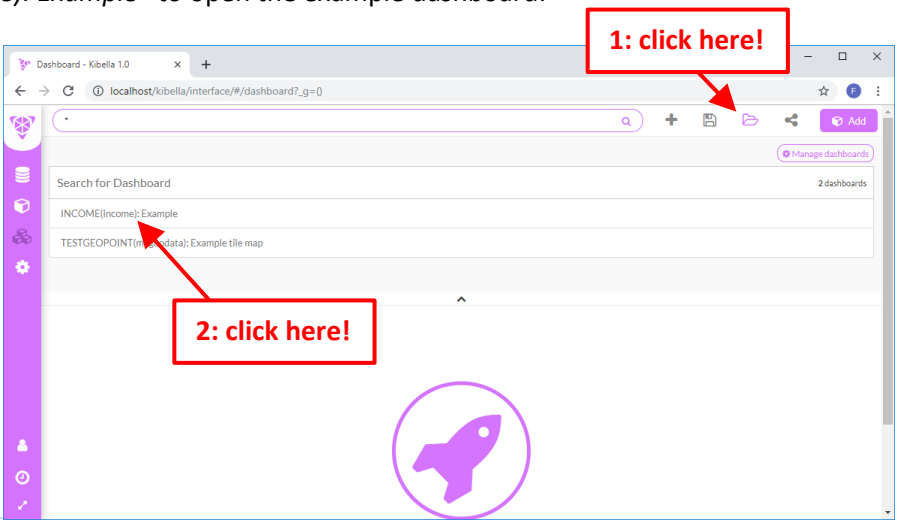
5. Optional: Check that Kibella is properly installed : There is already a small "demo" dashboard directly available for checking the installation : To see the demo dashboard, follow these steps:
    - Open http://localhost inside a Browser and click on the Kibella logo:



    - Enter as your login admin@kibella.fr (leave the password field empty) and click on the "Sign in" button:



    - Click on the icon in the top-right corner of the browser window, and click on "*INCOME(income): Example*" to open the example dashboard:



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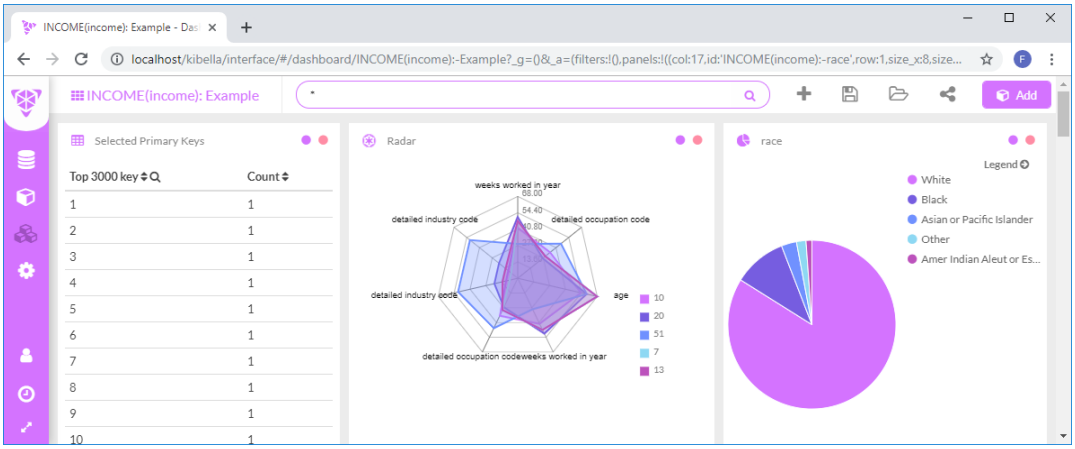
- After a short computing time, you should see:



6.5. Firewall configuration: Kibella (1/5)

Admin Privileges Required to configure the firewall(s) to allow a connection to the Apache/Kibella server.

Kibella is the web-based dashboarding tool included inside TIMi. It's an optional component: see the section 6.4. above. Kibella is a webserver (based on the famous Apache webserver).

All the users that requires editing or simply viewing the Kibella dashboards must be allowed to access the Kibella webserver. To enable the users to access Kibella, you should open the port 80 (by default: you can change the port inside the Apache configuration files) to the Kibella server.

6.6. Firewall configuration: Jenkins (2/5)

Admin Privileges Required to configure the firewall(s) to allow a connection to the Jenkins server.

Jenkins is the default scheduling software that is suggested when using TIMi. See the section 6.1. above to know how to install Jenkins. Jenkins is accessed and configured via a web server (the default port is: 8080). All the users that requires viewing the status of their recurrent TIMi jobs (and/or running jobs manually) must be allowed to access the Jenkins webserver.

6.7. Firewall configuration: "TIMi Notifier for Jenkins" (Android app) (3/5)

Admin Privileges Required to configure the firewall(s) to allow a connection to the Jenkins server.

The "TIMi Notifier for Jenkins" is an Android application (optimized for Smartwatch users) that automatically checks the status of your Jenkins jobs and automatically reports to you (with an Android Notification) if there has been a problem. In case of problem, you can (in one click of a button) re-run the jobs that did not executed properly, directly from your android device or Smartwatch.

All the users that are using the "TIMi Notifier for Jenkins" (e.g. to view the status of their recurrent TIMi jobs or to re-run jobs on-demand) must be allowed to access the Jenkins webserver (default port: 8080) from their Android device.

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6.8. Firewall configuration: IoT broker (4/5)

Admin Privileges Required to configure the firewall(s) to allow a connection to the IoT broker.

See the section 6.15 below for more details.

6.9. Firewall configuration: S3 Drive (5/5)

Admin Privileges Required to configure the firewall(s) to allow a connection to the S3 servers. See the section 6.1. of the "AnatellaQuickGuide.pdf" (press F1 inside Anatella to read this PDF) to know more about this subject.

Anatella directly connects to the S3-compatible drive (e.g. MinIO), so you need to open the firewall accordingly.

6.10. To use the direct native connection to PostGreSQL

The PostgreSQL extension is directly included inside the "TIMi Full Install".
If you selected to install the "TIMi Full Install", you can safely skip this section.

To install the PostgreSQL extension:

1. Download the PostgreSQL extensions:
   - 32 bit:
     http://download.timi.eu/ODBC/ODBC_drivers_PostgreSQL/libpq/PostgreSQL_w32.zip
   - 64 bit:
     http://download.timi.eu/ODBC/ODBC_drivers_PostgreSQL/libpq/PostgreSQL_x64.zip

2. Unzip the downloaded zip file inside the subdirectory "bin" inside the TIMi installation dir. Very often, you'll unzip the zip file here:
   C:\Program Files\TIMi\bin
   C:\soft\TIMi\bin
3. **Optional:** Run the "vcredist_*.exe" executable located inside the downloaded zip file.

6.11. Disk-level encryption

Admin Privileges Required to install & configure Bitlocker.

Alternatively, you can also use TrueCrypt instead of Bitlocker (You don't need any Administrative privileges to install and run TrueCrypt).

Anatella is a data transformation engine. Each different data transformation is saved inside a different ".anatella" file. The data manipulated with Anatella are typically stored inside a proprietary "flat" file-format with the extension ".gel_anatella" (Each ".gel_anatella" file contains one data-table).

All these files (".anatella" files or ".gel_anatella" files) are stored inside a drive (typically the "C:" or the "D:" drive). When working with sensitive data on your local computer/laptop, it's quite common to store all your files inside an encrypted drive. There exist now many different tools to create and manage encrypted drives. TIMi is compatible with all these tools.

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Here are two famous tools that provides encrypted drives:

- **Bitlocker:** It's a free tool with the Professional version of MS-Windows.
  https://en.wikipedia.org/wiki/BitLocker

- **TrueCrypt:** It's a free & very secure tool. No vulnerabilities or "backdoor" are known.
  https://en.wikipedia.org/wiki/TrueCrypt
  For you comfort, you can download TrueCrypt from here:
  http://download.timi.eu/ThirdParty/TrueCrypt_Setup_7.1a.exe

  Please note that the usage of Truecrypt is forbidden inside the USA: **Please, do not use Truecrypt if you live in the USA** (Truecrypt is forbidden in the USA because of the very strong encryption of TrueCrypt that does not allow the NSA to look into the encrypted containers).

6.12. To create .Hyper or .TDE files (for Tableau) directly from Anatella

The Tableau extensions are directly included inside the "TIMi Full Install".
If you chose to install the "TIMi Full Install", you can safely skip this section.

Tableau is a third-party tool used to create dashboards.

Anatella can generate natively Tableau Hyper files or Tableau Data Extract files (TDE Files) at very high speed. This allows you to get easy connectivity between your data lake and your (Tableau) dashboards.

To install the Tableau extensions:

1. Download the Tableau extensions:
   - 32 bit:
     https://download.timi.eu/Tableau/TableauServer_w32.zip
     Unzip the downloaded zip file inside the subdirectory "Tableau" inside the TIMi installation dir. Very often, you'll unzip the zip file here:
     C:\soft\TIMi\tableau

   - 64 bit:
     https://download.timi.eu/Tableau/TableauHyper.zip
     Unzip the downloaded zip file inside the subdirectory "Tableau2" inside the TIMi installation dir. Very often, you'll unzip the zip file here:
     C:\soft\TIMi\tableau2

2. **Optional:** Run the "vcredist_*.exe" executable located inside the downloaded zip file.

6.13. To use the VR extension for Stardust

If you want to use the VR Extension (Virtual Reality Extension) for Stardust, you must have a DirectX 10 compliant video card. To install the VR extentions:

1. Download: https://download.timi.eu/StardustVR.zip
2. Unzip the zip file inside the TIMi installation directory.

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6.14. GIS System

6.14.1. To run advanced GIS queries

The GIS extensions are directly included inside the "TIMi Full Install".
If you selected to install the "TIMi Full Install", you can safely skip this section.

Anatella supports the Spatialite Exentions to do advanced GIS queries on your GIS databases. The Spatialite library offers mostly the same set of GIS functionalities that are available in PostgreSQL + PostGIS (but faster), Oracle Spatialite or SQL Server. The spatialite library is mostly OGC-SFS compliant (i.e. it's compliant with the "Open Geospatial Consortium" standard).

To install the GIS extentions :

- Download Spatialite:
  - 32 bit version:
    https://download.timi.eu/gis/spatialite-w32.zip
  - 64 bit version:
    https://download.timi.eu/gis/spatialite-x64.zip
- Unzip the downloaded zip file inside the TIMi installation dir.
  Very often the TIMi installation dir is:
  C:\soft\TIMi

6.14.2. To visualize graphically the results of your GIS queries

Admin Privileges Required to install QGIS

If you want to visualize graphically the results of you GIS queries, you can:

- Preferred solution: Use the "Quantum GIS" (also named "QGIS") tool. QGIS is one of the best tool to graphically display the results of your GIS queries. QGIS is a really popular and widespread desktop GIS app: You can download the latest QGIS from: http://www.qgis.org/
- Use the "Spatialite-GUI" tool included inside the Anatella Spatialite Exentions. This is a small tool, that helps you to design&create your GIS queries but the visualization capabilities of the tool are somewhat limited.
- Use the Kibella "Tile Map" visualization. This is quite limited compared to QGIS or compared to the Spatialite-GUI but it's very easy to deploy.

6.15. "Internet of Things" support

This required if you want to use a MQTT Broker - "Internet Of Things" protocol.

Admin Privileges Required to configure the firewall(s) to allow the MQTT broker to access the internet: see section 6.8.

Admin Privileges Required to install a MQTT broker that is different from "Mosquitto".

These Actions: and and : allows Anatella to connect to a MQTT broker. A MQTT broker is a webserver that manages small messages using a publish/subscribe type of protocol.

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Anatella is compatible with any MQTT broker: Mosquitto, Kafka, RabbitMQ, etc. For more comfort, the small MQTT broker "Mosquitto" is now directly included inside the TIMi distribution.

6.16. To read SAS datasets (to read .sas7bdat files)

Admin Privileges Required to install the SAS OleDB drivers (if it's really needed, which is unlikely)

Anatella and TIMi are now able to read 99% of the datasets produced by SAS (.sas7bdat files) ***without*** requiring the installation of any SAS driver. However, if you are using compressed or encrypted SAS files (these kind of SAS files are exceptionally rare), then the OleDB driver created by SAS has to be installed. You can download these OleDB drivers directly on the SAS website here:

http://support.sas.com/demosdownloads/setupcat.jsp?cat=SAS+Providers+for+OLE+DB

For your comfort, a local copy of these drivers is also available here:

https://download.timi.eu/ThirdParty/sasoledb_64bit_and_32bit.zip

6.17. To use the OCI Oracle connector

The Oracle OCI extension is directly included inside the "TIMi Full Install".
If you selected to install the "TIMi Full Install", you can safely skip this section.

In addition to the ODBC & OleDB protocols, Anatella can also access Oracle databases using the OCI protocol. For Oracle, the OCI protocol is more robust and more stable than the other protocols, so it can be useful when you need to extract from Oracle large amounts of data (several TB).
To install the Oracle OCI extension:

1. Download the OCI extensions:
   - 32 bit: https://download.timi.eu/ODBC/ODBC_drivers_Oracle/OCI/oracle_oci_w32.zip
   - 64 bit: https://download.timi.eu/ODBC/ODBC_drivers_Oracle/OCI/oracle_oci_x64.zip
2. Unzip the downloaded zip file inside the subdirectory "oracle" inside the TIMi installation dir. Very often, you'll unzip the zip file here:
   C:\Program Files\TIMi\oracle
   C:\soft\TIMi\oracle
3. **Optional:** Run the "vcredist_*.exe" executable located inside the downloaded zip file.

6.18. To use the SAP Netweaver/Hana ABAP connector

The SAP extension is directly included inside the "TIMi Full Install".
If you selected to install the "TIMi Full Install", you can safely skip this section.

Anatella can directly extract from SAP the tables that are normally only visible to the internal ABAP functions from SAP.

To install the SAP extension:

1. Download the SAP extensions:
   - 32 bit: https://download.timi.eu/ODBC/ODBC_drivers_SAP/RFC/sapnwrfc_w32.zip

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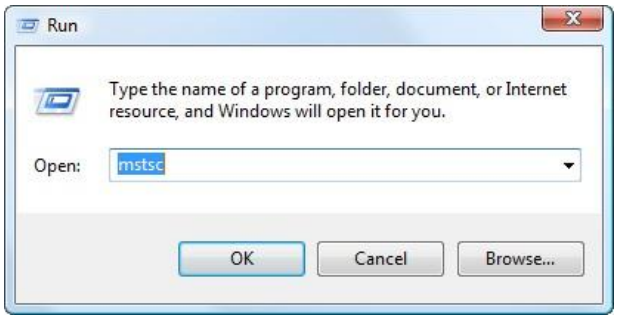
- 64 bit:
  https://download.timi.eu/ODBC/ODBC_drivers_SAP/RFC/sapnwrfc_x64.zip

2. Unzip the downloaded zip file inside the subdirectory “bin” inside the TIMi installation dir. Very often, you’ll unzip the zip file here:
   C:\Program Files\TIMi\bin
   C:\soft\TIMi\bin
3. **Optional:** Run the “vcredist_*.exe” executable located inside the downloaded zip file.

7. Configuration tasks for the Remote Servers containing TIMi

I’m personally not a big fan of “Server Installation” but some companies prefer, for internal management reasons, to deploy all their software on servers. In general, it’s more profitable and more efficient to have one copy of TIMi installed on the laptop of each DataMiner. If your IT department allows it, I think, it’s the best solution. For more information about the advantages and the disadvantages of installing TIMi on one unique server, please refer to the section 2 (“Common infrastructures to run TIMi/Anatella”) of the document “TIMi_infrastructure.pdf”.

Typically, you access your remote server (where TIMi is installed) using the "Remote Desktop" functionality in MS-Windows. On the client desktop, open the "start menu", select "Run" and type "mstsc":



The "Remote Desktop" client of MS-Windows is starting:

Once the connection to the server is correctly configured, you can save all the connection parameters in a small file with the.rdp extension (that is typically saved on the desktop). From now on, to connect to the server, simply double-click the .rdp file for direct access to the server. To create the .rdp file:

1. Click the "Options>>" button

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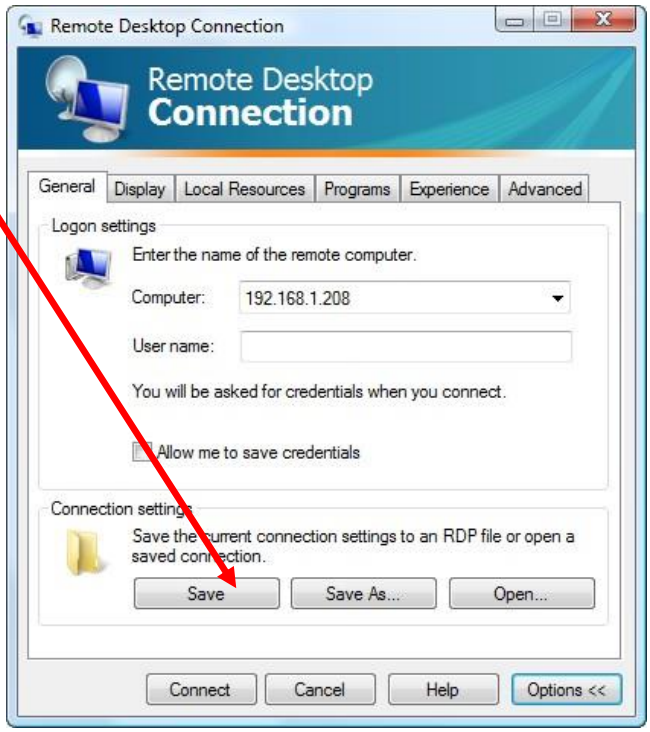
2. Configure the connection

3. Click the "Save" button:



For more information on how to configure and manage the "Remote Desktop" connections on the server, please refer to the Microsoft documentation.

By default, "Remote Desktop" connections allows you to easily copy files from the server to the client: To do this, simply turn on the option "*remotely share my local devices (disk)*" on the client PC. It is located in the clients Remote Desktop control panel on the "Local Resources" panel, click the button "more", click on "Drives".

This feature is handy but it can be a "security hole" as it is possible to copy to the remote client some files from the server. Therefore, it is possible to disable this feature on the server: For more information on this topic:
http://technet.microsoft.com/fr-fr/library/cc775863%28WS.10%29.aspx (in French)
http://technet.microsoft.com/en-us/library/cc775863%28WS.10%29.aspx (in English)

Firewalls located between the client and the server must allow the passage of the RDP Protocol (RDP = "Remote Desktop Protocol"). Please contact the network manager for the required changes to the firewalls (see also section 4.6 from this document).

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