ICMLIVE
Innovyze Data Loader Administration

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Overview

Note: This document is a guide for systems administrators of the Innovyze Data Loader Server. The Innovyze Data Loader Server must be configured when installing either the Innovyze Web Service or Innovyze Live Server.

The Innovyze Data Loader is a component that provides the following functions:

- Initiates the automatic loading of telemetry data into a Times Series Database on a scheduled basis.
- Monitors external triggers and initiates the loading of telemetry data into a Time Series Database when an external trigger is invoked.
- Manages the Data Loader submitted jobs of the local InfoWorks Agent job queue.

The Innovyze Data Loader never performs the actual loading or updating of the Time Series Database, it is simply a process that manages and initiates the scheduled and triggered update of the database. The actual Time Series Database update is performed by the TSDB Update Engine, which is initiated after the Data Loader submits a TSDB Update Job to the local InfoWorks Agent.

In order for the server to carry out these functions, it requires connectivity to a database (usually a WorkGroup Data Server, but the database can also be standalone) and an InfoWorks Agent.

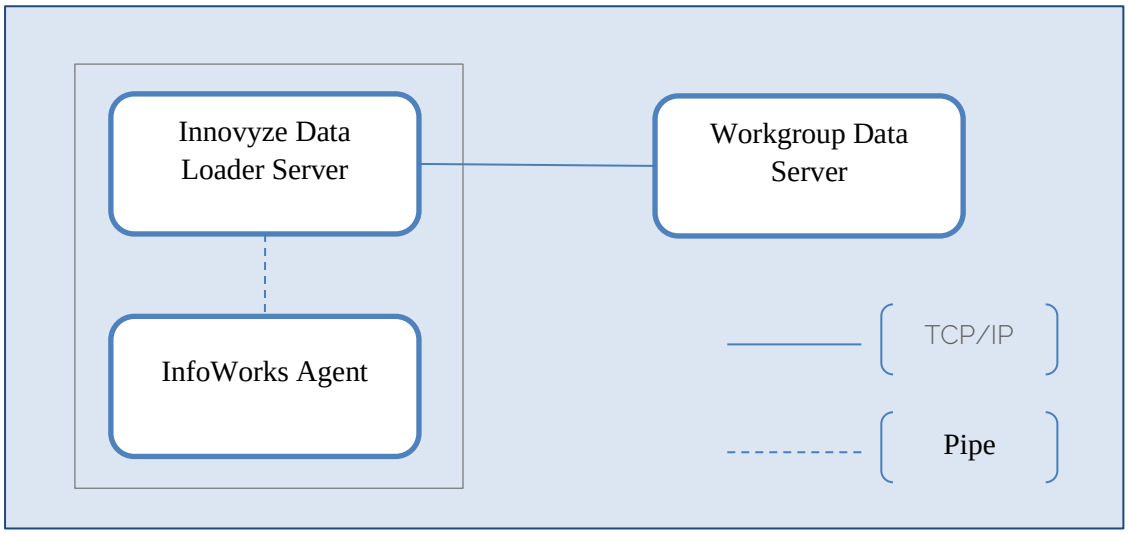


Figure 1Typical server configuration

The Innovyze Data Loader is a utility service that provides application services to the Innovyze Live Server and the Innovyze Web Service. It supports multiple databases, so it is possible for a single instance to support both the Innovyze Live Server and the Innovyze Web Service, each referencing a different database.

Installing the server

Innovyze Data Loader can only be installed on a Windows x64 platform.

The server is installed on the same computer as either the Innovyze Live Server or the Innovyze Web Service. Once the server is installed it must be configured and the service started before use.

Multiple version of the Data Loader may be installed on one system. However, only one Data Loader instance from a version older than Innovyze Data Loader 6.0 may be installed concurrently.

Configuring the server

When installing the Innovyze Data Loader for the first time, the server must be configured using the **Server Configuration Manager**, which is installed with the server. The Data Loader configuration may be changed at any time using the **Server Configuration Manager**, which is the recommended method for making all configuration changes to the server.

The configuration file

There are several parameters that may be configured for the server. These options are set in a simple text file named **dataloader.cfg**.

The configuration file is stored in the following location:

```
%ProgramData%/Innovyze/DataLoaderData/<versionMajor.versionMinor>


where versionMajor = The major release version number.
      versionMinor = The minor release version number.


example: C:/ProgramData/Innovyze/DataLoaderData/7.0
```

Manual editing of the configuration file should not be performed without advice from the Innovyze Support team. If the configuration file must be manually edited, the following constraints apply:

Any user editing the configuration file must have administrator permissions on the local machine and the file must be edited using a text editor that has been run as an administrator.

The file should use UTF-8 encoding if it contains non-ASCII characters.

All parameters have the format keyword=value, but must be located in the correct section. Any line that starts with # in the first column is a *comment* line and is ignored.

For example:

```
# comment

[Section1]

Keyword1=value
```

```
Keyword2=value

[Section2]

Keyword1=value
```

Parameters

The following parameters may be configured to meet specific user requirements. Each parameter has a default value that will be used when the user does not provide the keyword value pair.

Some parameter values are restricted to a given range, using the following rules: 1) If the configured value is less than the lower bound value in the range, then the parameter value is clamped to the lower bound value; 2) If the configured value is greater than the upper bound value in the range, then the parameter value is clamped to the upper bound value. For example, assume the given range is 1 to 365 (#range: 1..365). If the configured value is 0, then the value is clamped to 1. If the configured value is 400, then the value is clamped to 365.

Section	Keyword	Value
Database	AdditionalConnectString	Additional database connect strings. Each connect string is separated by a comma character. #default:AdditionalConnectString=
JobControl	Hostname	Job agent configuration for the server local agent when running on a remote computer. Hostname = the name of the computer that will perform TSDB updates on behalf of the server #default: Hostname=
JobControl	Port	Job server configuration for the server local agent when running on a remote computer. Port = the port that the job agent is listening to run TSDB updates on behalf of the server. #default: Port=40001 #range: 1..65535

JobControl	UseLocalPipe	Job agent configuration for the server local agent when running on the local host. The value, either 0 or 1, indicates whether or not to use the sim agent running on the local machine. UseLocalPipe=1 - ignores Hostname and Port and the server connects to the job agent running on the localhost using pipes. UseLocalPipe=0 - Hostname and Port must be configured to a valid remote host / port and the server connects to the job agent running on the remote host using TCP/IP. #default: UseLocalPipe=1
Log	EventSourceLevel	Event source logging level. 2 = general information about what is going on 3 = status events such as initialization, shutdown etc. 4 = warnings 5 = errors #default: EventSourceLevel=3
Log	LogFileEnabled	Enable the application file log. When the log is enabled, the file will be written to %LocalAppData%/Innovyze/DataLoaderrData/DataLoader.log. #default:LogFileEnabled=0
Log	LogFileLevel	Log file logging level. 1 = debug information (everything) 2 = general information about what is going on 3 = status events such as initialization, shutdown etc. 4 = warnings 5 = errors #default: LogFileLevel=1
Log	LogFileLocalTime	Use local time in the log file. If false or not defined, then UTC time is used in the log (only applies to the file log). #default: LogFileLocalTime=1

Log	LogFilePath	Log file path. Specifies a directory that will be written to as the server log. The log file is <LogFilePath>/DataLoader.log. #default: LogFilePath=
Monitor	ScanFrequencyMinutes	How often to scan the database for changes. #default: ScanFrequencyMinutes=6 #range: 1..43800
Monitor	ConnectFrequencyMinutes	How often to retry database connections. #default: ConnectFrequencyMinutes=15 #range: 1..1440
Scheduler	NumLateMinutes	Do not initiate late TSDB updates if the next scheduled update starts within the specified time period. #default: NumLateMinutes=30 #range: 1..1440
Sentinel	LastFileWriteToleranceSeconds	Do not initiate late TSDB updates if the last file write has occurred within the tolerance specified since the last file write. #default: LastFileWriteToleranceSeconds=0 #range: 0..299
Initiator	RetryFrequencyMinutes	For purposes of creating and dispatching TSDB updates, the frequency to retry database and job agent connections when previous connection attempts failed. #default: RetryFrequencyMinutes=10 #range: 1..60
Initiator	CleanupFrequencyMinutes	How often to release TSDB update jobs, and any other internal clean-up activities. #default: CleanupFrequencyMinutes=60 #range: 1..1440

Initiator	ReleaseCompletedJobsHours	The number of hours that must elapse before a completed TSDB update job is released from the job queue; these jobs are usually failed jobs because successful jobs are released immediately upon completion. #default: ReleaseCompletedJobsHours=24 #range: 1..720

Starting the server

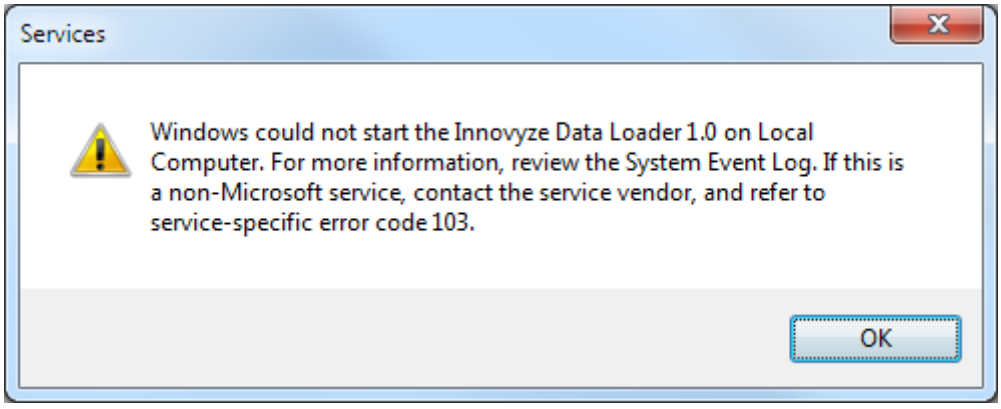
Before starting the server for the first time, or following an upgrade, it is recommended that dependencies on other required services be established. See Appendix A: Innovyze Data Loader dependencies for information on how to establish service dependencies for Innovyze Data Loader.

Another consideration to take before running the server for the first time, or following an upgrade, it to determine whether or not the Data Loader can run under the Local system account, or must run under a suitably privileged user account. See Appendix B: Data Loader user account for information about configuring the Data Loader user account.

The service is started by opening the Control Panel and browsing to Local Services and starting the **Innovyze Data Loader** service.

Troubleshooting when the server fails to start

If the service fails to start due to a **service-specific** error, a dialog similar to the following will be displayed along with an error code. Additional detailed information may exist in the event log. This information can be found by starting opening the Control Panel and browsing to the Event Viewer. When the Event Viewer is open look for errors under Application logs with a source name of InnovyzeDataLoader.



The following table describes the service-specific error codes.

Error code	Description	Possible resolution
100	An internal program error has occurred.	Contact the Innovyze support team. Detailed information about the internal error should exist in the event log.
101	The data loader is not configured with at least one database.	The data loader can handle multiple databases, either as an additional database or a database synchronised from a supported server such as the Live Server or Innovyze Web Service. Run the Server Configuration Manager to configure a database for the server.

Server data

The server produces data that is for internal server use, but some of the data may indirectly be shared with other application clients installed on the same machine. To maintain correct operational behaviour, this server data should not be edited or deleted.

Data location

The configuration file is stored in the following directory:

```
%ProgramData%/Innovyze/DataLoaderData/<versionMajor.versionMinor>/<databaseGuid>


where versionMajor = The major release version number.
      versionMinor = The minor release version number.
      databaseGuid = the server database guid.


example: C:/ProgramData/Innovyze/DataLoaderData/7.0/EF736CC3-73EC-F031-0952-
C4E38E3E1AD2
```

Data anatomy

The data for each master database exists at a separate location, as shown by the data location directory. Within each of these directories are local working directories for internal use by various server thread components.

The SERVER service may produce daily text log files for each day that the server is run, but only when the text log file is enabled per the Log.LogFileEnabled parameter. These files are stored in the server_logs directory. It is OK to manually delete these files, but it is recommended to allow the server to maintain these files per the Log.LogFilePurgeDays parameter.

Also stored at the parent directory level is the sub-folder **job-logs**, which contains log files from Data Loader generated TSDB update jobs. These files are shared with other application clients installed on the same machine and will be cleaned-up automatically either by the Data Loader or client application and should not be deleted without advice from the Innovyze support team.

Upgrading the server

The existing older Innovyze Data Loader service should be stopped before attempting to install a newer version. The service is stopped by opening the Control Panel and browsing to Local Services and stopping the **Innovyze Data Loader** service.

Appendix A: Innovyze Data Loader dependencies

If an **InfoWorks ICM Agent** service (infoworksagent) or an **Innovyze Workgroup Data Server** (snumbat) service used by **Innovyze Data Loader** is running on the local machine, then a dependency should be created so that these services start before the Data Loader server. It is recommended that dependencies be set through the **Server Configuration Manager**, but dependencies may also be set manually.

Manual configuration of service dependencies

Dependencies may be manually configured from a command prompt with administrator privileges:

```
sc config innovyzedataloader depend= <services-string-slash-seperated>
```

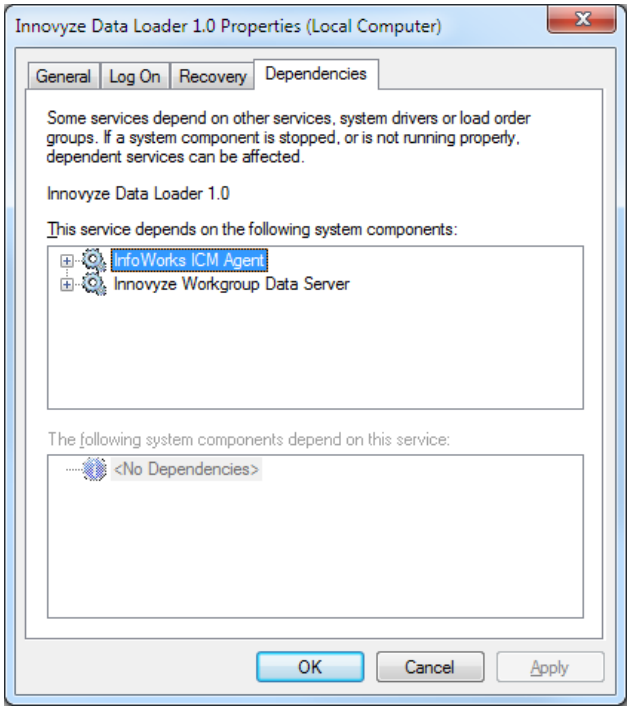
*Note: the space character following the **depend=** parameter is required. If more than one service dependency is required, then each dependent service name is separated by a slash ('/') character.*

Example: Set dependency for the InfoWorks ICM Agent and Workgroup Data Server services.

From a command prompt with administrator privileges, enter the following:

```
sc config innovyzedataloader depend= infoworksagent/snumbat
```

Go to the Control Panel Services window and verify that the dependencies have been added.

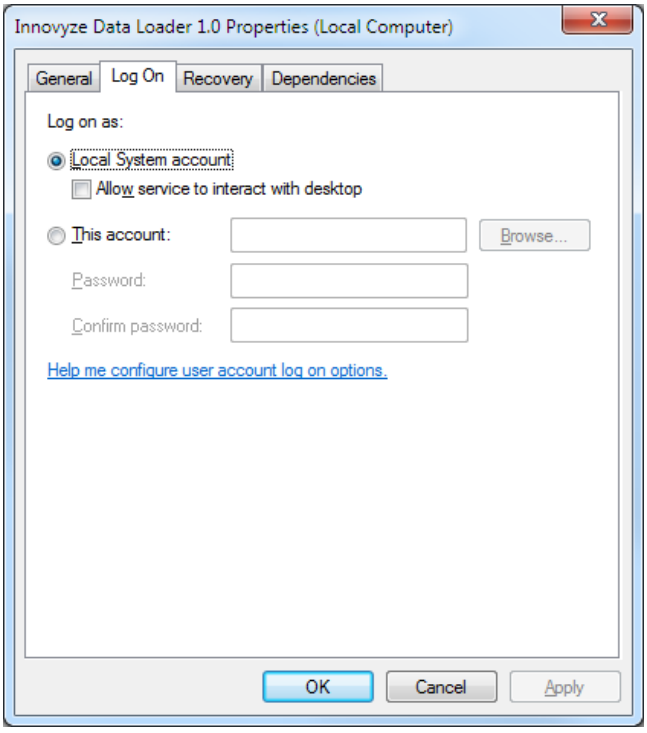


Appendix B: Data Loader user account

The **Innovyze Data Loader** service must run under a suitably privileged account, so that it has access to the telemetry data defined in the Time Series Database objects within each database.

Service runs under the local system account

By default, the Data Loader is configured to run under the Local System account, as follows:

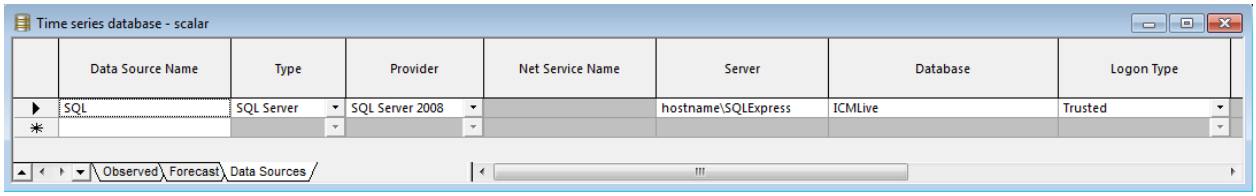


If the local system account has access to all sources of telemetry data defined by the Time Series Database datasources, then it is sufficient for the Data Loader to run under the Local System account.

Service runs under a named user account

If special privileges are desired or Windows authentication is being used to access telemetry data defined in the Time Series Database data sources, then it will be necessary to configure the Data Loader service to run under a suitably privileged user account.

For example, if Windows authentication is being used to access telemetry data from a SQL Server database, as shown below, it will be necessary to run the service under a user name that can be authenticated by Windows.



A named user account is configured by browsing to the Control Panel and opening the Services window. Navigate to the Innovyze Data Loader service and open its properties. Select the Log On tab and configure the named user account as demonstrated below.