InfoWatch Lotus Adapter. Installation and Configuration Guide.

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Table of Contents

1 Introduction 3

2 Lotus Domino Adapter overview 4

2.1 Lotus Domino Adapter functions 4

2.2 Lotus Domino Adapter structure 4

2.3 Hardware and software requirements for Infowatch Lotus Adapter 6

3 Installing Lotus Domino Adapter 7

3.1 Installing plugin for InfoWatch Traffic Monitor 7

3.2 Lotus Domino Adapter installation order 8

3.3 Changes to the system during the adapter installation 12

3.4 Uninstalling Infowatch Lotus Adapter 13

4 Lotus Domino Adapter administration 14

4.1 Lotus Adapter parameters 14

4.2 Disabling Lotus Adapter manually 15

4.3 Diagnostic information 15

5 Configuring Integration platform and InfoWatch Lotus Adapter 17

5.1 Common settings of InfoWatch Integration Adapter 17

5.2 Configuring Infowatch Lotus Adapter 19

6 Glossary 21

1 Introduction

This guide contains information on installation, configuration and administration of InfoWatch Integration Adapter and Infowatch Lotus Adapter.

Who should read this guide

Information in this guide is intended for IBM Lotus Domino server administrators who will install and administrate InfoWatch Integration Adapter and Lotus Domino Adapter Plugin as well as configure integration with InfoWatch Traffic Monitor.

The guide is intended for users familiar with the basics of the Microsoft Windows and Linux OS environment with skills in administering IBM Lotus Domino servers and InfoWatch Traffic Monitor servers.

2 Lotus Domino Adapter overview

This chapter contains:

- Lotus Domino Adapter functions
- Lotus Domino Adapter structure
- Hardware and software requirements for Infowatch Lotus Adapter

2.1 Lotus Domino Adapter functions

Lotus Domino Adapter is an additional module of InfoWatch Traffic Monitor intended to provide interoperability between InfoWatch Traffic Monitor and IBM Lotus Domino.

It allows you to intercept all incoming and outgoing email messages which pass through IBM Lotus Domino server using the NRPC protocol and then send them to InfoWatch Traffic Monitor for analysis.

Limitations:

1. The System does not support extracting data from cryptographically encrypted messages.
2. Lotus Adapter operates only in the copy mode. The feature of blocking message delivery (depending on results of the content analysis) is not supported.
3. The System does not display images from the body of Lotus emails. This is due to the fact that Lotus DB contains links to database objects instead of images.

2.2 Lotus Domino Adapter structure

Infowatch Integration Adapter includes the following modules:

- Windows service
- Configurator. This is an application with a GUI for configuring the adapter
- Plugin for transferring Lotus Domino Adapter contexts. This module is responsible for intercepting emails which pass through IBM Lotus Domino server using the NRPC protocol and sending them to InfoWatch Traffic Monitor for analysis
- Filter for Lotus Domino (for MS Windows)

The Windows service and Configurator include the following components:

Component	Description	File name
Plugin Contract	Library which provides interaction with plugins	InfoWatch.PluginPlatform.Contract.dll
Configuration library	Library which describes the service configuration structure	InfoWatch.PluginPlatform.Service.Configiration.dll
InfoWatch Traffic Monitor Connector	Enables interaction with InfoWatch Traffic Monitor via pushApi protocol	InfoWatch.PluginPlatform.Service.Connector.dll

Component	Description	File name
Common components	Common components for interaction between the service and Configurator	InfoWatch.PluginPlatform.Service.Core.dll InfoWatch.PluginPlatform.Service.Core.Contract.dll InfoWatch.PluginPlatform.Service.Core.Logger.dll
Plugin manifest	Description of the plugin manifest in JSON format	InfoWatch.PluginPlatform.Service.Core.PluginHost.JsonPluginManifest.dll
Event context	Description of event contexts from plugins	InfoWatch.PluginPlatform.Service.FileQueue.JsonContext.dll
Microsoft Enterprise Libraries	Microsoft Developer Library used for logging	Microsoft.Practices.EnterpriseLibrary.Common.dll Microsoft.Practices.EnterpriseLibrary.Logging.dll Microsoft.Practices.ServiceLocation.dll Microsoft.Practices.Unity.dll Microsoft.Practices.Unity.Interception.dll
PushApi thrift protocol	Description of pushApi thrift protocol	Thrift.dll pushapi-thrift.dll
Ionic Zip	Ionic zip library for ZIP support	Ionic.Zip.dll
Newtonsoft Json	Library which provides serialization and deserialization in JSON	Newtonsoft.Json.dll
Ru resources	Additional resources	InfoWatch.PluginPlatform.Service.Core.resources.dll InfoWatch.PluginPlatform.Service.Configurator.resources.dll
Service	Executable file of Windows service	InfoWatch.PluginPlatform.exe
Service configuration file	Configuration file of the service	InfoWatch.PluginPlatform.exe.config
Configurator	Executable file of Configurator	InfoWatch.PluginPlatform.Service.Configurator.exe
Configurator configuration file	Configuration file of Configurator	InfoWatch.PluginPlatform.Service.Configurator.exe.config

2.3 Hardware and software requirements for Infowatch Lotus Adapter

Hardware requirements:

Hardware	Minimum requirements
Processor	Pentium 4 with a frequency of 3 GHz
RAM	1 GB
Network card	100/1000 Mbit/s

Software requirements:

- Operating systems:
  - Microsoft Windows 2008 Server Service Pack 2 (x64) and later;
  - Microsoft Windows Server 2016;
  - Microsoft Windows Server 2019.
- InfoWatch Traffic Monitor 6.10 or later;
- IBM Lotus Domino 7 (x86/x64) or later;
- Microsoft .NET Framework 4.5.1 or later.

3 Installing Lotus Domino Adapter

InfoWatch Integration Adapter is installed automatically when you install Infowatch Lotus Domino Adapter. To enable correct operation of the integration platform, please take the following steps:

1. Generate a license for InfoWatch Traffic Monitor.
2. Install a plugin for InfoWatch Traffic Monitor.
3. On the server where the adapter will operate, install Microsoft .Net Framework 4.5.1 (if not installed).
4. Install Infowatch Lotus Adapter.
5. Run InfoWatch Integration Adapter Configurator and change its settings.

Once the plugin is installed, you can see it in the list of installed plugins. For the system to load it, select the plugin and click **Save**. InfoWatch Integration Adapter service will restart.

Once the service is restarted, the configurator will display a tab with plugin settings.

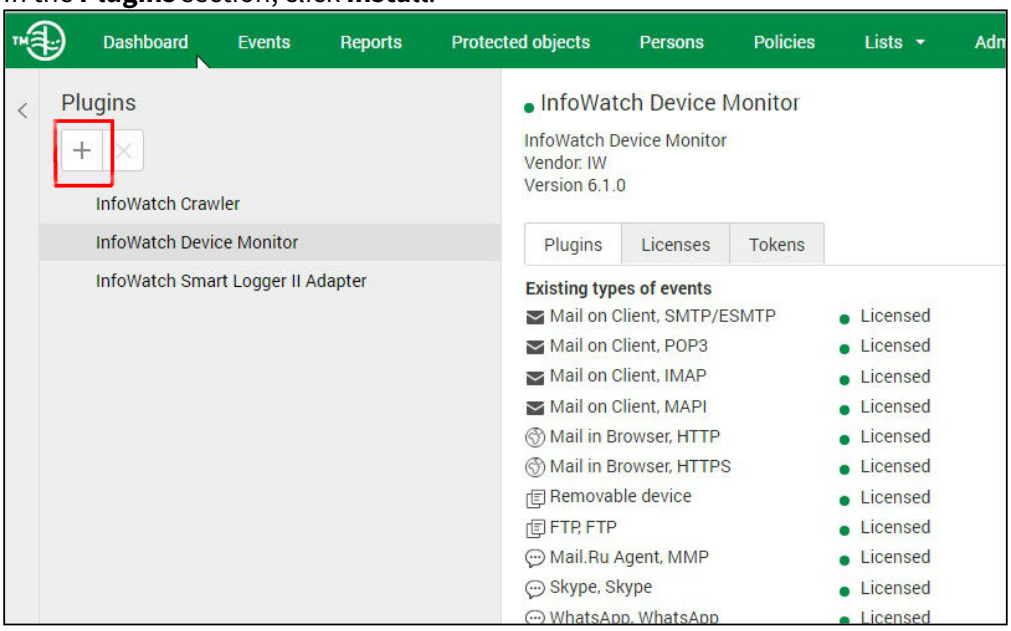
On this tab:

1. Enter a token to access InfoWatch Traffic Monitor (you can find it on the page of an earlier installed plugin for InfoWatch Traffic Monitor).
2. Enter connection parameters.
3. Click **Save**. The plugin will restart automatically.

3.1 Installing plugin for InfoWatch Traffic Monitor

To install InfoWatch Traffic Monitor plugin:

1. In the **Plugins** section, click **Install**.



2. In the window that opens, click **Upload**.
3. Choose the plugin file (`.zip`). In case opposite the plugin you see the status *not licensed,* you should do the following:
   a. ensure the plugin file (`.zip`) contains **manifest.json** and license file (`.license`).
   b. open **manifest.json** to edit and specify the path to required license file within the parameter `LICENSE`. The path should be specified in accordance with **manifest.json** file. in case license file and **manifest.json** are stored in the same directory, then:

```
"LICENSE": [
       { "PATH" : "tm_license.license" }
   ]
```

4. Make sure the *Licensed* status is specified opposite the plugin and the correct license for events types interception has beeen installed.
5. To complete the installation, click **Install**.

3.2 Lotus Domino Adapter installation order

Lotus Domino Adapter is installed on IBM Lotus Domino server by using the installation package.

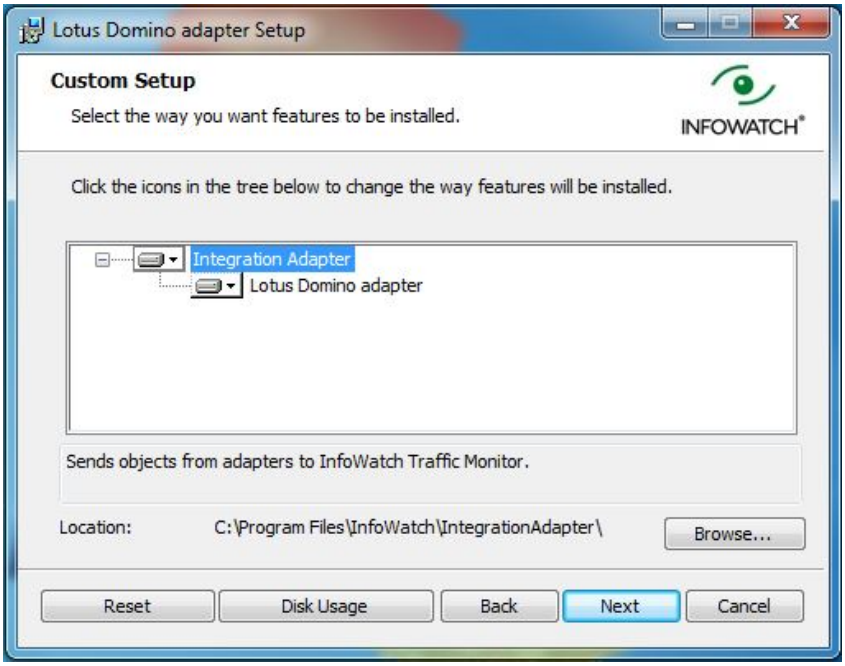
> **Important!**
>
> To install the adapter, you need local administrator rights on the computer.

> **Important!**
>
> Before the installation, make sure that **iw_xapi_xapi** and **iw_xapi_puppy** services are running on InfoWatch Traffic Monitor server.

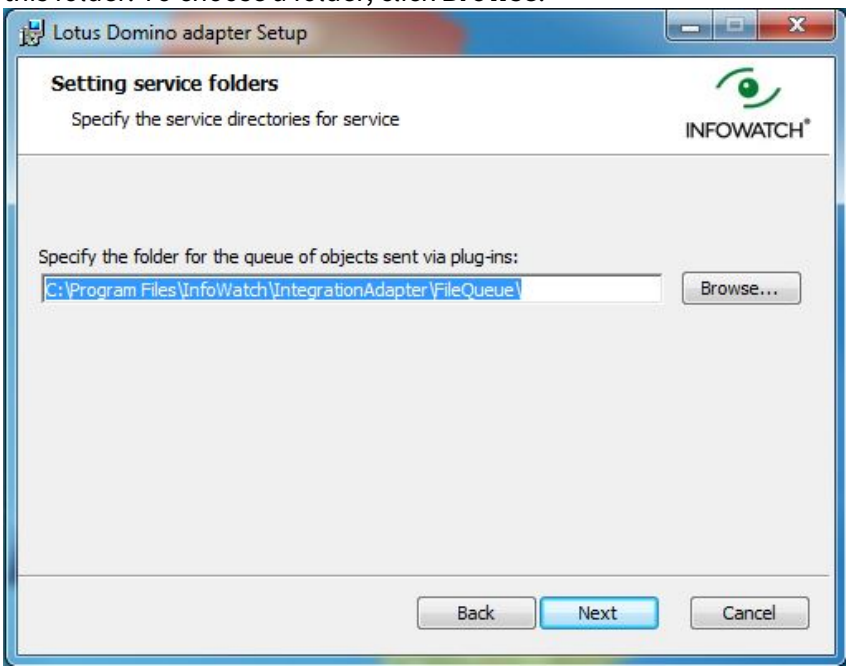
Installation steps:

1. On the disk with the distribution kit, run one of the following files:
   - `pluginplatform.3.0.0.x.Lotus.x64.ru.msi` (to run the installation on a 64-bit version of Lotus Domino Server with Russian interface language)
   - `pluginplatform.3.0.0.x.Lotus.x64.en.msi` (to run the installation on a 64-bit version of Lotus Domino Server with English interface language)
   - `pluginplatform.3.0.0.x.Lotus.x86.ru.msi` (to run the installation on a 32-bit version of Lotus Domino Server with Russian interface language)
   - `pluginplatform.3.0.0.x.Lotus.x86.en.msi` (to run the installation on a 32-bit version of Lotus Domino Server with English interface language)

   The Installation Wizard welcome screen will appear.
2. Click **Next**.
3. Read the license agreement and click **Next** to accept it.
4. InfoWatch Integration Adapter is implemented as a Windows service. It is installed to a common folder available to all users. Installation for individual users is not supported. Click **Next**.
5. The plugin is installed together with the Integration Platform. Choose Lotus Domino plugin for sending contexts and then select **Will be installed on the local hard drive** option for this plugin.
6. If necessary, choose a different installation folder. For this, select **Integration Adapter** and click **Browse**.
   By default, the adapter is installed to: `C:\Program Files\InfoWatch\IntegrationAdapter`.

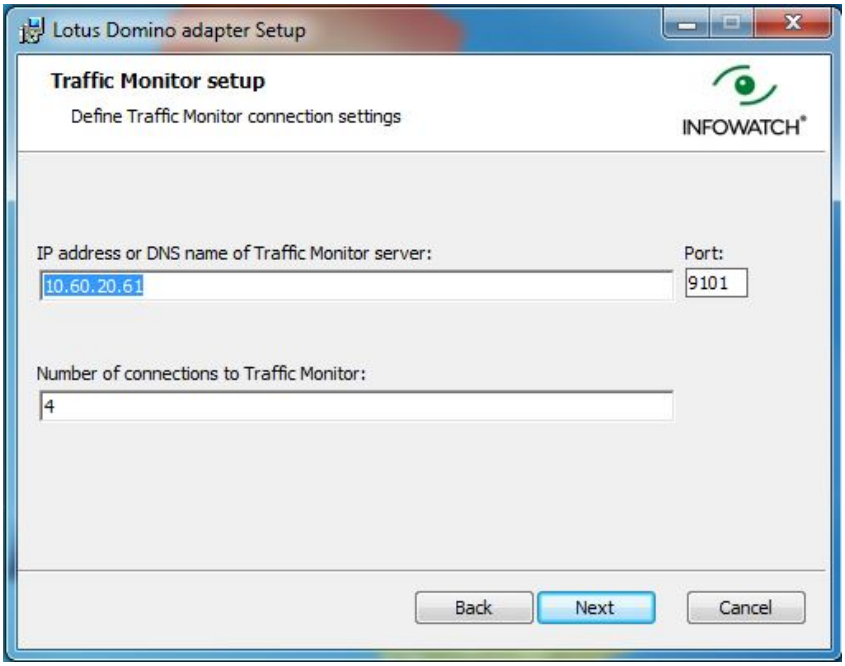


7. Click **Next**.
8. Specify a folder for object queues. File queues of events the adapter sends to TM will be created in this folder. To choose a folder, click **Browse**.

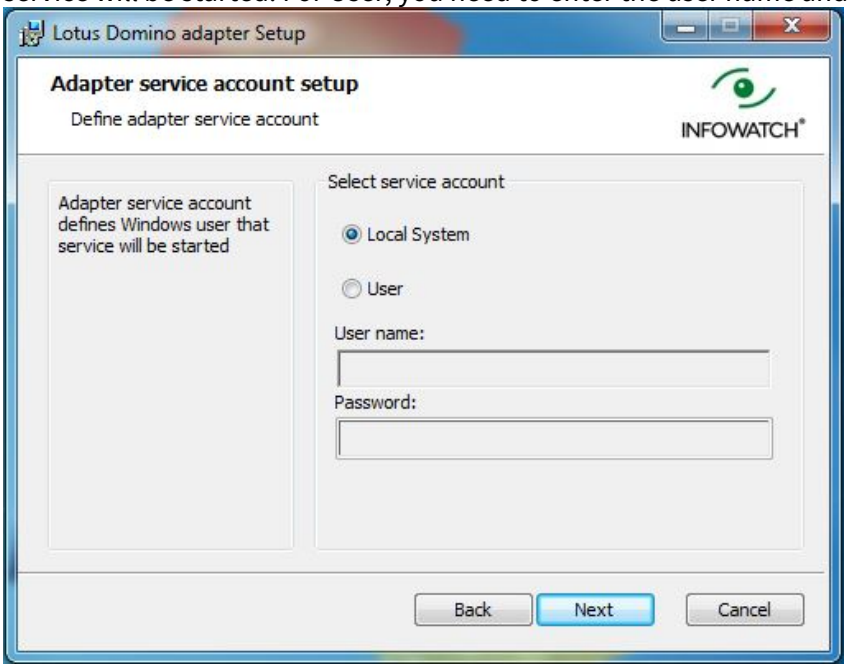


9. Click **Next**.
10. Configure the connection with InfoWatch Traffic Monitor server. Specify:
    - An IP address or DNS name of InfoWatch Traffic Monitor server
    - InfoWatch Traffic Monitor server port through which events will be delivered (by default, 9101)

- The number of connections to InfoWatch Traffic Monitor server. Can be in the range from 1 to 32. The default value is 4.

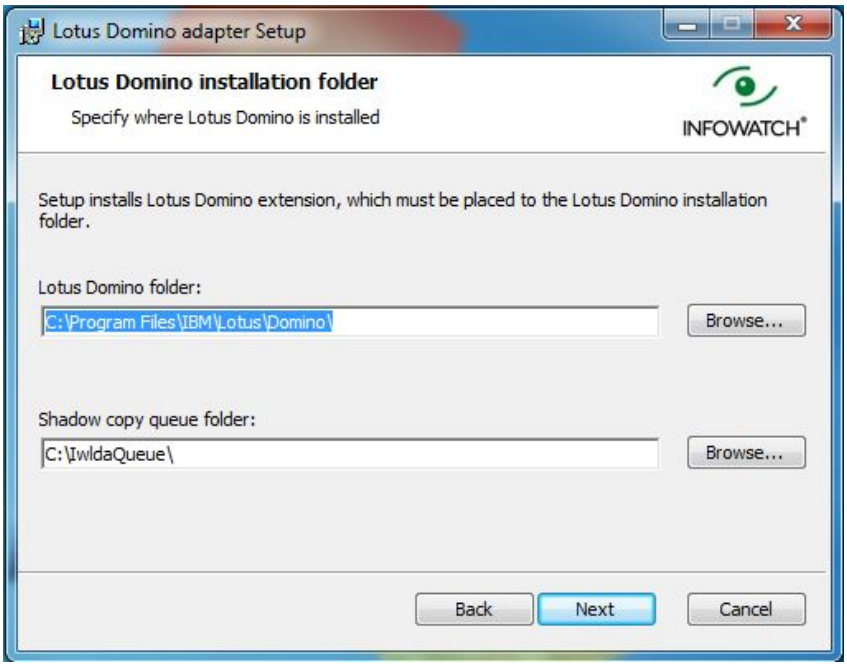


11. Click **Next**.
12. Choose an account of the adapter service: Local System or User on whose behalf the adapter service will be started. For User, you need to enter the user name and password.



13. Click **Next**.

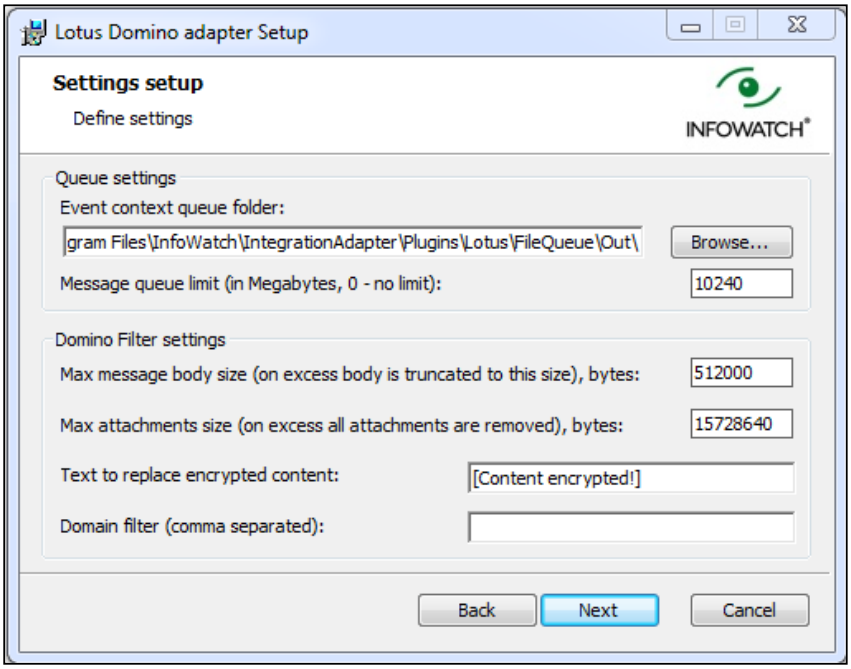
14. Choose the installation folder for Lotus Domino server and a shadow copy queue folder.



15. Click **Next**.
16. Specify parameters of the interceptor:
    - In the **Event context queue folder** field, specify a folder that will store email bodies and attachments of messages received from Lotus Domino.
    - In the **Max message body size** field, specify the maximum size (in bytes) of intercepted email (excluding attachments). Messages of larger size will also be intercepted and sent to InfoWatch Traffic Monitor, but their size will be reduced to the specified value (attachments will remain).
    - In the **Max attachments size** field, specify the maximum total size (in bytes) of message attachments. Attachments of larger size will be deleted and the message will be delivered with attachment(s) of zero size.
    - In the **Text to replace encrypted content** field, specify a string to replace encrypted parts of mail messages.
    - In the **Domain filter** field, specify domains of senders whose messages should be sent to InfoWatch Traffic Monitor. Domains should be separated by commas.

      ⚠ **Example:**

      If you need to intercept messages from senders who belong to *a_test.com*, *b_test.com*, and *best.com* domains, you can list these domains separated by commas. Or you can specify *est.com* domain, but in this case messages from users of *test.com* or *brest.com* domains will also be intercepted.



Note:

If the **Domain filter** field is empty, the System will intercept all mail messages that are sent through NRPC.

17. Make sure that all settings are correct and click **Install**.
18. When the installation is complete, the Installation Wizard will display a notification window. Click **Ready**.
19. Restart IBM Lotus Domino server.

3.3 Changes to the system during the adapter installation

Changes:

1. On IBM Lotus Domino server, the `nIWLDFilter.dll` file is copied to the directory specified during the installation.
2. The `notes.ini` file is modified as follows:
   - The `IWLDFilter` value is added to the `EXTMGR_ADDINS` parameter separated by a comma
   - the following parameters are added: `IWLDA_FROM_DOMAIN_FILTER`, `IWLDA_MAX_ATTACH_SIZE`, `IWLDA_MAX_MAIL_SIZE`, `IWLDA_OUTPUT_DIR`, `IWLDA_CONTENT_ENCRYPTED_MESSAGE`
3. A file queue folder and error message folder specified during the installation are created.

3.4 Uninstalling Infowatch Lotus Adapter

You can remove the Adapter either by means of Windows OS from the Control Panel or by means of the installation package.

Before the removal, stop IBM Lotus Domino server.

When you remove the adapter, you should also delete file queue folders and error message folders manually.

To remove InfoWatch Integration Adapter:

1. Run the installer file you used during the installation: pluginplatform.3.2.0.x.Lotus.x64.en.msi (for 64 bit OS).



2. Click **Next**.
3. Make sure that Lotus Domino is not running and click **Next.**
4. In the confirmation window, click **Uninstall**. All files of InfoWatch Integration Adapter will be deleted from the computer as well as folders created during the installation.

4 Lotus Domino Adapter administration

In this chapter, you can find information on administering the System:

- Lotus Adapter parameters
- Disabling Lotus Adapter manually
- Diagnostic information

4.1 Lotus Adapter parameters

To configure the Lotus Domino Adapter module, use the notes.ini file which is located in the IBM Lotus Domino server directory.

Important!

To apply changes, restart the IBM Lotus Domino server.

Parameter	Description
`IWLDA_CONTENT_ENCRYPTED_MESSAGE`	A string that replaces encrypted parts of the mail message. Encrypted mail messages and their attachments are not decrypted, and InfoWatch Traffic Monitor receives mail messages with the specified string instead of encrypted parts. The default value: `[Content encrypted!]`
`IWLDA_FROM_DOMAIN_FILTER`	The list of senders' domains whose mail messages should be sent to InfoWatch Traffic Monitor. Regular expressions and wildcards are not supported. The filter applies to all domains that end with the specified value (for example, the **mail.ru** filter will apply to **mail.ru**, e-**mail.ru**, and my**mail.ru** domains). If the value is empty, all mail messages sent via the NRPC protocol will be intercepted. **Note:** IWLDA_FROM_DOMAIN_FILTER=mail.ru,yandex.ru The default value is absent.
`IWLDA_IGNORE_ATTACHMENTS`	To ignore e-mail attachments when sending into InfoWatch Traffic Monitor. Possible values: `1` or `true` – not to send the attachments; `0` or `false` – send the attachments. The default value: `false`
`IWLDA_IGNORED_SENDERS`	The list of user emails, whose emails should not be sent into InfoWatch Traffic Monitor. The domain part of email may be ignored. Regular expressions and wildcards are not supported. Default value: <empty> -email messages sent via the NRPC protocol contains no filtration by senders. Example: IWLDA_FROM_DOMAIN_FILTER=IIvanov, APetrov@mail.ru

IWLDA_LOG_LEVEL	Message logging level within Windows events log. Possible values: 0 – only errors; 1 – errors and warnings; 2 – errors, warnings and notifications; 3 – information on debugging Default value: 2
IWLDA_LOG_PROCESSING_INFO	To report the module work statistics into the file. The file is being created within the file queue catalogue and has the name as follows: <pid process nserver>_info.log Possible values: 1 or true – report; 0 or false – no to report. Default value: false
IWLDA_MAX_ATTACH_SIZE	The maximum total size of the message attachments (in bytes). If the total size of attachments is larger than the specified value, the message is sent to InfoWatch Traffic Monitor without attachments. Possible values: from 0 to 2147483647 Default value: 15728640
IWLDA_MAX_MAIL_SIZE	The maximum total size of an intercepted message (excluding attachments) in bytes. Possible values: from 0 to 2147483647 Default value: 512000
IWLDA_OUTPUT_DIR	Path to the file queue directory
IWLDA_QUEUE_SIZE_QUOTA	The maximum size of disk space (in megabytes) occupied by a file queue. **Note:** The actual size may sometimes exceed the specified value by the size of one message. Possible values: from 0 to 2147483647; -1 – no restrictions. Default value: 10240

4.2 Disabling Lotus Adapter manually

To disable Lotus Domino Adapter manually:

1. In the IBM Lotus Domino server directory, open the **notes.ini** file.
2. In this file, find the **EXTMGR_ADDINS** parameter and delete the IWLDFilter value.
3. Save changes.
4. Restart the Domino server.

4.3 Diagnostic information

Information about errors and warnings in Lotus Domino Adapter operation is logged to **eventvwr.msc ► Windows Logs ► Application**.

If you have encountered serious problems while using Lotus Domino Adapter, please provide us the following files from the server where the adapter is installed::

1. Windows Application and System event logs.
   For this, run the **eventvwr.msc** application and from the context menu of each log, choose **Save all events as…**
2. The **notes.ini** file with IBM Lotus Domino server settings and Lotus Domino Adapter settings.
   You can find this file in the directory where IBM Lotus Domino is installed (by default, `C:\Program Files\IBM\Lotus\Domino`).
3. Contents of the file queue with messages to be sent and the error message queue.

   > **Important!**
   >
   > These queues contain intercepted messages which may include sensitive data.

4. IBM Lotus Domino diagnostic information files.
   You can find these files in the data\IBM_TECHNICAL_SUPPORT\ subfolder of the folder where IBM Lotus Domino is installed (by default, `C:\Program Files\IBM\Lotus\Domino\data\IBM_TECHNICAL_SUPPORT`).

5 Configuring Integration platform and InfoWatch Lotus Adapter

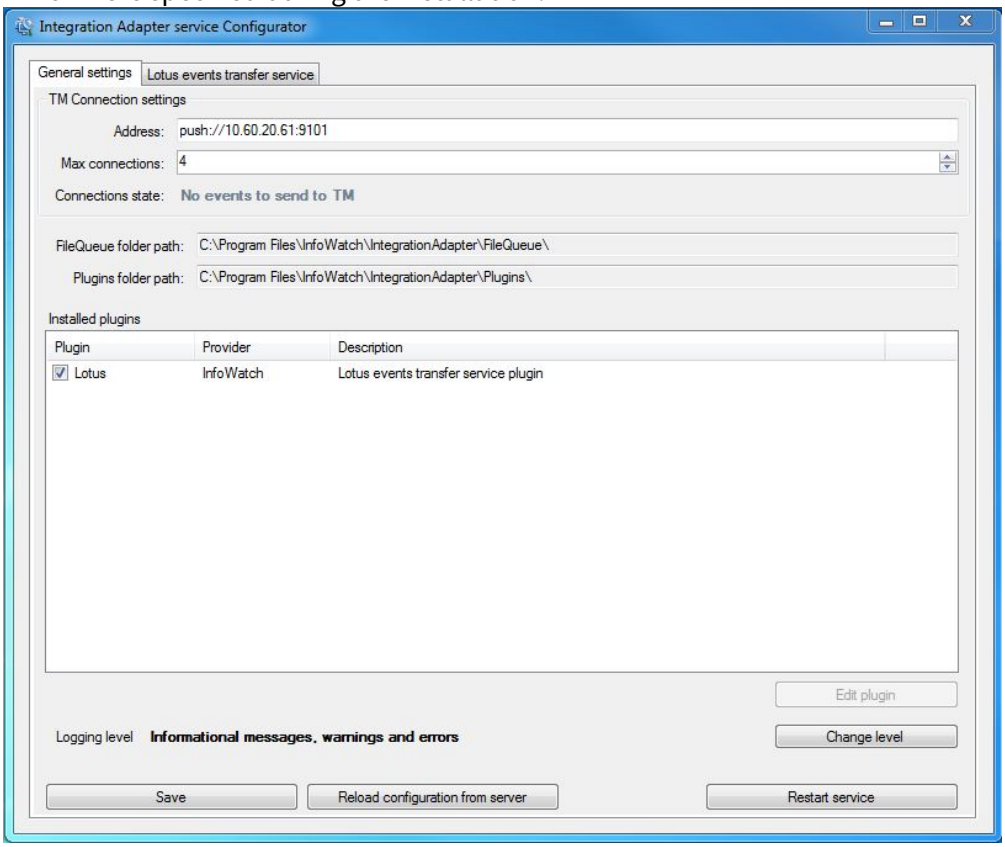
This chapter contains:

- Common settings of InfoWatch Integration Adapter
- Configuring Infowatch Lotus Adapter

5.1 Common settings of InfoWatch Integration Adapter

The integration adapter provides GUI to the plugin and stores binary data of settings which are passed to the plugin when it is started or when the data is modified. The plugin control required for graphical configuration is added to a tab in the Configurator.

1. Run the Configurator of Integration Adapter Service from:
    - a shortcut on the desktop
    - a shortcut in the **Start** menu
    - `InfoWatch.PluginPlatform.Service.Configurator.exe` application inf the folder where InfoWatch Integration Adapter is installed
2. On the **General settings** tab, you can view parameters of InfoWatch Integration Adapter service which were specified during the installation.



3. In the **Installed plugins** list, plugins loaded to the platform are ticked. In the **TM Connection settings** area, specify the following options:
    - **Address** - InfoWatch Traffic Monitor server address. Should be in the following format: `push://host:port`, where *host* is a domain name or IP address of

InfoWatch Traffic Monitor, and *port* is InfoWatch Traffic Monitor server port through which events are delivered. By default, port 9101 is used.

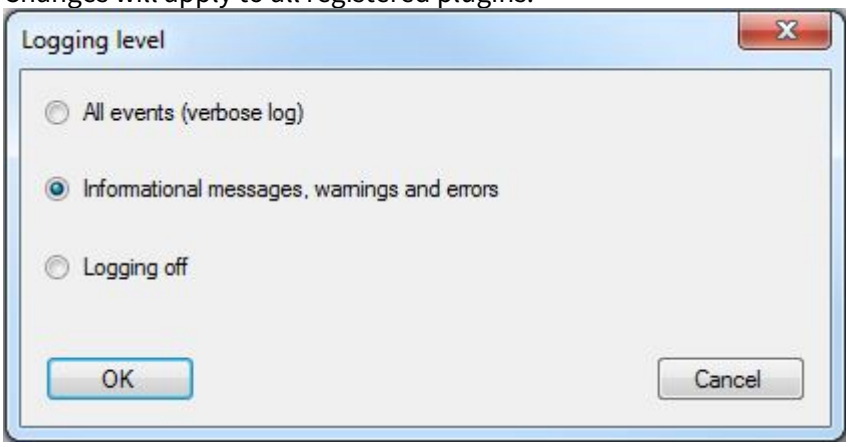
- **Max connections** – the maximum number of connections to InfoWatch Traffic Monitor server.

4. Specify the following system folders:
   - A file queue folder with file queues of events from all running plugins
   - A folder for plugins which stores plugins and their settings

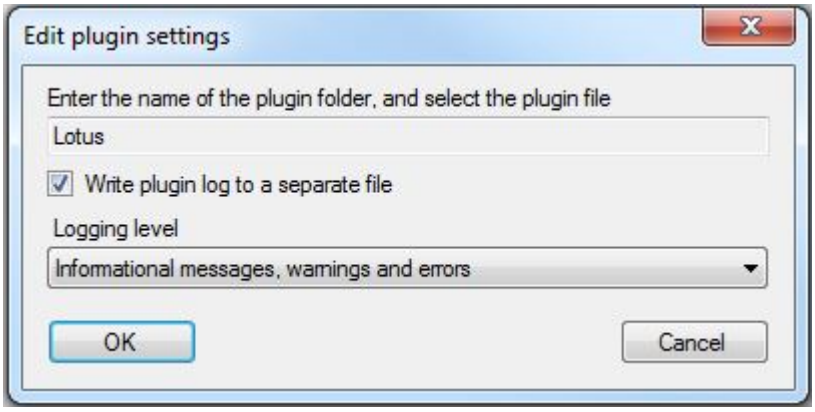
> **Important!**
>
> InfoWatch Integration Adapter Windows service operates as NETWORK SERVICE user, so please make sure that this user can access specified folders.

5. In the **Logging level** parameter, choose what operations of InfoWatch Integration Adapter should be logged. The following options are available:
   - All events (verbose log)
   - Informational messages, warnings and errors
   - Logging off

   To change the logging level, click **Change level**, choose the required level and click **OK**. Changes will apply to all registered plugins.

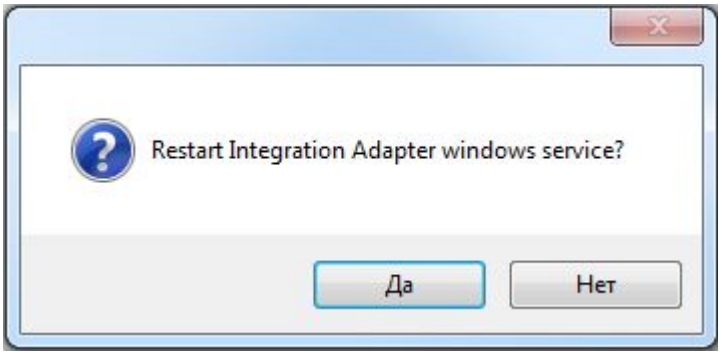


   To edit the selected plugin:
   a) Select the required plugin in the list.
   b) Click **Edit plugin**.
   c) Specify if you want to write the plugin log to a separate file and choose the logging level.



d Click **OK**.

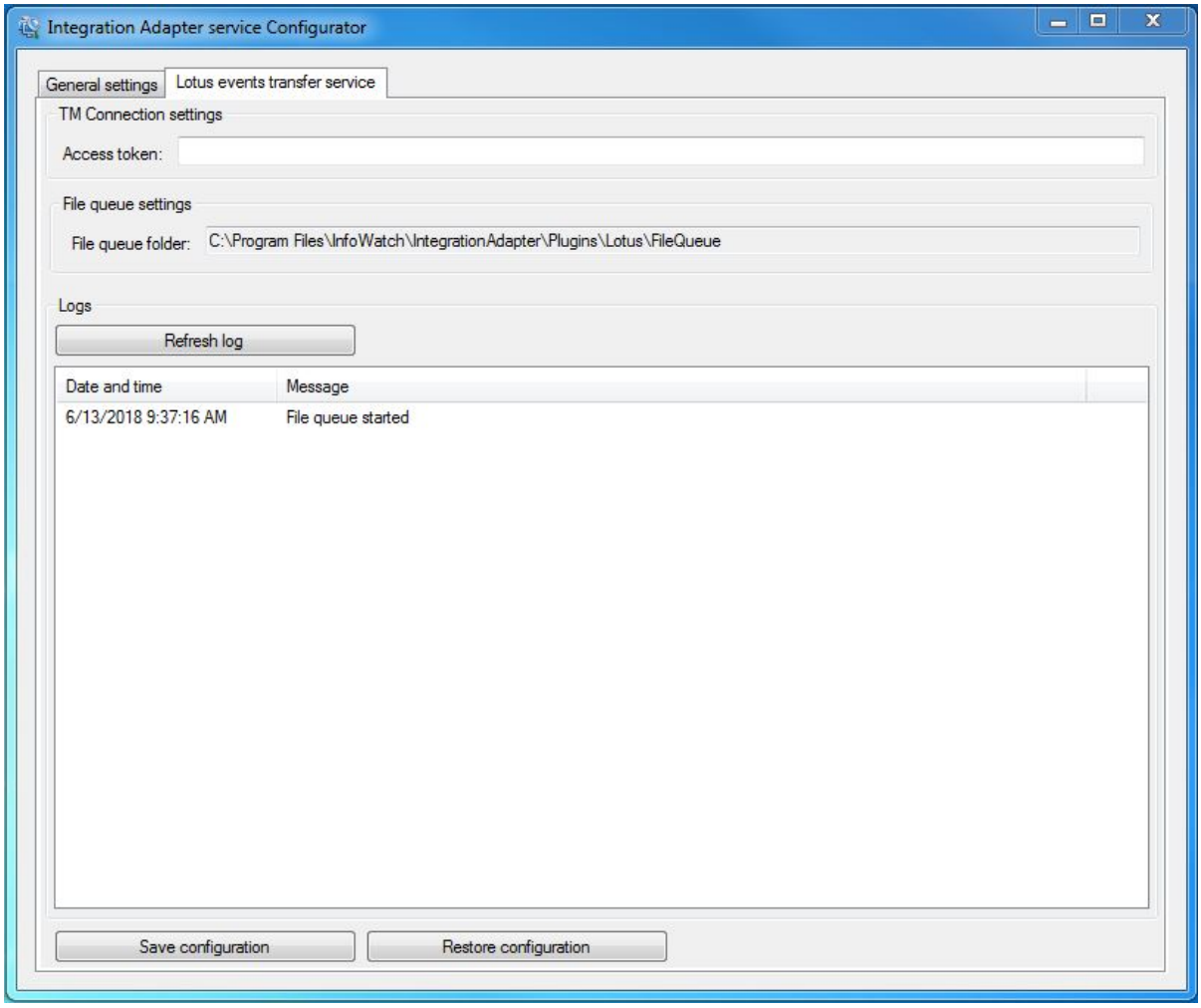
6. When you have changed the required settings, click **Save**. You will be prompted to restart the Windows service.



7. Click **Yes**. The Configurator window will close and then open again with the new settings.

5.2 Configuring Infowatch Lotus Adapter

To configure the Adapter, run the **Integration Adapter service Configurator** application and open the **Lotus events transfer service** tab.



For plugin operation, an access token is required. The Access token field is displayed only for plugins and InfoWatch Traffic Monitor. You can get an access token to TM on the **Plugins** tab of InfoWatch Traffic Monitor Web Console (for **IW_ADAPTERS** editor).

The plugin events are saved in a **Log** which is automatically updated every ten seconds and displays the last 100 events. To update data manually, click **Refresh log**.

To undo changes that are not yet saved, click **Restore configuration**.

If you have changed any settings, click **Save configuration**. The specified settings will be saved to a permanent storage of InfoWatch Integration Adapter, and the plugin will be restarted.

6 Glossary

InfoWatch Traffic Monitor, TM A system for intercepting, filtering and analyzing information flows of a computer system
DB Database