

Working with vRealize Log Insight Agents

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vRealize Log Insight 4.5

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About Working with vRealize Log Insight Agents

Working with vRealize Log Insight Agents describes how to install and configure vRealize™ Log Insight™ Windows and Linux agents. It also includes troubleshooting tips.

This information is intended for anyone who wants to install, configure, or troubleshoot Log Insight Agents. The information is written for experienced Windows or Linux system administrators who are familiar with virtual machine technology and datacenter operations.

For information about how to create configuration classes for agents with the vRealize Log Insight server, refer to *Administering vRealize Log Insight*.

Overview of vRealize Log Insight Agents

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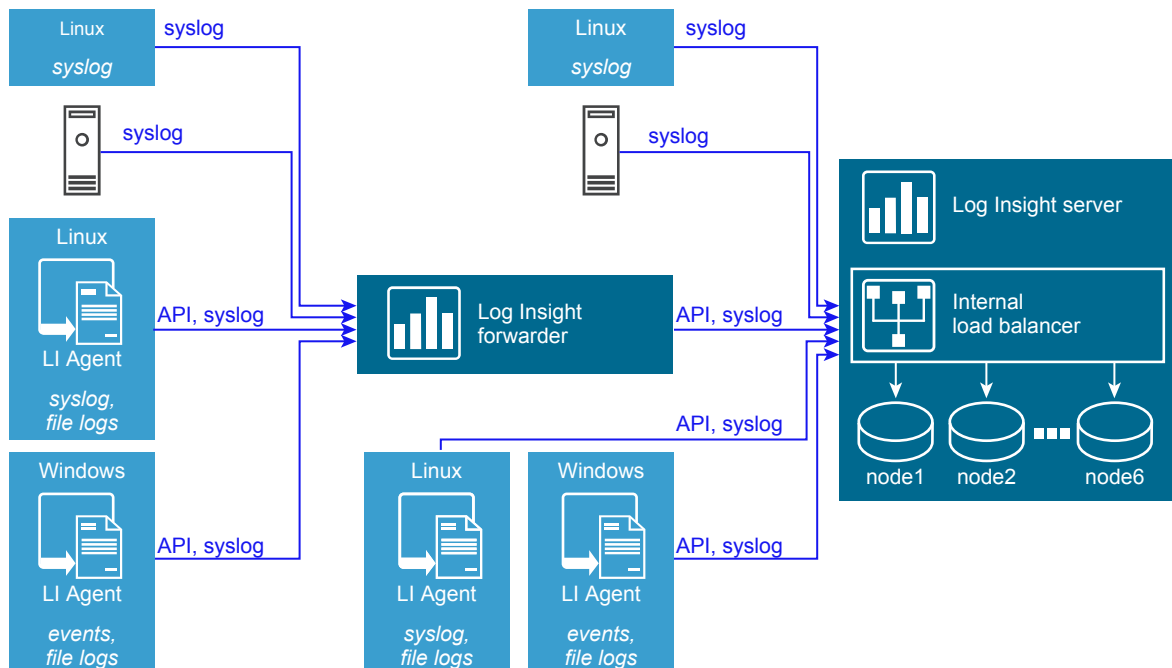
A vRealize Log Insight agent collects events from log files and forwards them to a vRealize Log Insight server.

Agents support syslog and the vRealize Log Insight ingestion API (cfapi protocol) and can be used with Linux or Windows platforms. You configure agents through the web interface, with the `liagent.ini` file on the server and client side, or as part of installation.

You can use the following features with agents:

- Single or group deployment
- Manual or automatic upgrade
- Centralized configuration management, including support for local and global configuration of agents during installation or through configuration files, the web interface, or the API
- Agent groups, which share a common configuration
- Use with the vRealize Log Insight forwarders. Forwarders function in a way similar to syslog aggregators and are identical to the primary vRealize Log Insight cluster nodes.

The following figure shows the elements of an agent deployment configuration.



Agents write their own operation logs. For Windows, these logs are located in the `C:\ProgramData\VMware\Log Insight Agent\logs` directory. For Linux, the path for the operation log is `/var/log/loginsight-agent/liagent_*.log`. Log files are rotated when an agent is restarted or when the file reaches a size of 10 MB. A combined limit of 50 MB of files is kept in rotation. Collecting agent logs using the vRealize Log Insight agent itself is not supported.

Separate agents for Windows and Linux operating systems are provided.

Windows Agents

The vRealize Log Insight Windows agent collects events from Windows event channels and log files, and forwards them to the vRealize Log Insight server. A Windows event channel is a pool for collecting related events in a Windows system. Applications can also store log data in flat text files on the file system. The vRealize Log Insight agent monitors event channels and directories and collects and forwards events from application log files.

The vRealize Log Insight Windows agent has a limit of 64 KB per request to the vRealize Log Insight server.

The vRealize Log Insight Windows agent runs as a Windows service and starts immediately after installation. During and after installation, you can configure the following options for the vRealize Log Insight Windows agent:

- The target vRealize Log Insight server to which the vRealize Log Insight Windows agent forwards events
- The communication protocol and port that the agent uses.
- Adding or removing Windows event channels.
- Selecting Windows directories to monitor or adding flat log files for collection.

Linux Agents

The vRealize Log Insight Linux agent collects events from log files on Linux machines and forwards them to the vRealize Log Insight server.

The Log Insight Linux Agent runs as a daemon and starts immediately after installation. After installation, you can configure the following options:

- The target vRealize Log Insight server to which the agent forwards events.
- The directories that the agent monitors.

Installing or Upgrading vRealize Log Insight Agents

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You install vRealize Log Insight agents on Windows or Linux machines, including those with third-party log management systems. Agents collect events and forward them to the vRealize Log Insight server. During installation, you can specify parameters for the server, port, and protocol settings or choose to keep the default settings.

You can upgrade agents using the same methods you use for installation, or you can use auto-upgrade. Auto-upgrade propagates upgrades to agents when you deploy a new version of vRealize Log Insight. See [“Automatic Update for vRealize Log Insight Agents,”](#) on page 21 for more information. Upgrade is not available for Linux binary packages.

Hardware Support

To install and run a vRealize Log Insight agent, your hardware must support the minimum parameters required for hosts/machines that support x86 and x86_64 architecture and MMX, SSE, SSE2, and SSE3 instruction sets.

Platform Support

Operating System	Processor Architecture
Windows 7, Windows 8, Windows 8.1, and Windows 10	x86_64, x86_32
Windows Server 2008, Windows Server 2008 R2,	x86_64, x86_32
Windows Server 2012, Windows Server 2012 R2, and Windows Server 2016	x86_64
RHEL 5, RHEL 6, and RHEL 7	x86_64, x86_32
SuSE Enterprise Linux (SLES) 11 SP3 and SLES 12 SP1	x86_64
Ubuntu 14.04 LTS and 16.04 LTS	x86_64
VMware Photon, version 1 revision 2	x86_64

If you implement a default installation of the Log Insight Linux Agent for a user without root privileges to use, the default configuration might create problems with the data collection. The agent does not log a warning that the subscription to the channel is unsuccessful, and files in the collection do not have read permissions. The message `Inaccessible log file ... will try later` is repeatedly added to the log. You can comment out the default configuration that is causing the problem or change the user permissions.

If you use an rpm or DEB package to install Linux agents, the `init.d` script named `liagentd` is installed as part of the package installation. The bin package adds the script, but does not register it. You can register the script manually.

You can verify that the installation was successful by running the `(/sbin/)service liagentd status` command.

This chapter includes the following topics:

- [“Download Agent Installation Files,”](#) on page 10
- [“Installing Windows Agents,”](#) on page 10
- [“Install or Update the vRealize Log Insight Linux Agent RPM package,”](#) on page 15
- [“Install or Update the vRealize Log Insight Linux Agent DEB package,”](#) on page 16
- [“Install the Log Insight Linux Agent Binary Package,”](#) on page 19
- [“Options for vRealize Log Insight Agents,”](#) on page 20
- [“Automatic Update for vRealize Log Insight Agents,”](#) on page 21

Download Agent Installation Files

Select and download an agent installation for your platform.

All packages downloaded from the vRealize Log Insight server agent page include the destination hostname appended to the package name. The server.hostname is applied during an initial installation for the MSI, RPM, and DEB agents. If a hostname already exists in the configuration file, or if you are running the package by the hostname parameter, the embedded server hostname is ignored.

Procedure

- 1 Navigate to the **Administration** page of the vRealize Log Insight web user interface.
- 2 In the Management section, click **Agents**.
- 3 Scroll to the bottom of the screen and click **Download Log Insight Agent**.
- 4 Download an installation package by selecting it from the pop-up menu and clicking **Save**.

Option	Description
Windows MSI	Installation package for a Windows platform (32-bit/64-bit)
Linux RPM	Installation package for a Linux Red Hat, openSUSE (32-bit/64-bit) or VMware Photon platform
Linux DEB	Installation package for a Linux Debian platform (32-bit/64-bit)
Linux BIN	Self-installing package for Linux (32-bit/64-bit). A package management system is not required.

What to do next

Use the downloaded files to deploy the vRealize Log Insight agent.

Installing Windows Agents

You can install an agent on a single machine through an installation wizard or through the command-line, or you can deploy multiple instances of an agent by using a script.

Upgrading Windows Agents

You can upgrade a Windows agent by applying an upgrade file using any of the methods you can use to install. You can also choose to use the auto-upgrade feature to upgrade your agents in the background.

Install or Update the vRealize Log Insight Windows Agent with the Installation Wizard

You can install or upgrade a Windows agent on a single machine with the installation wizard.

Prerequisites

- Verify that you have a copy of the vRealize Log Insight Windows agent .msi file. See [“Download Agent Installation Files,”](#) on page 10.
- Verify that you have permissions to perform installations and start services on the Windows machine.

Procedure

- 1 Log in to the Windows machine on which to install the vRealize Log Insight Windows agent.
- 2 Change to the directory where you have the vRealize Log Insight Windows agent .msi file.
- 3 Double-click the vRealize Log Insight Windows agent .msi file, accept the terms of the License Agreement, and click **Next**.
- 4 Enter the IP address or host name of the vRealize Log Insight server and click **Install**.

The wizard installs or updates the vRealize Log Insight Windows agent as an automatic Windows Service under the Local System service account.

- 5 Click **Finish**.

What to do next

Configure the vRealize Log Insight Windows agent by editing `liagent.ini` file. See [“Configure the Log Insight Windows Agent After Installation,”](#) on page 24.

Install or Update the vRealize Log Insight Windows Agent from the Command Line

You can install or update the Windows agent from the command line.

You can use the default or specify a service account, and use command-line parameters to specify server, port, and protocol information. For MSI command-line options, see the Microsoft Developer Network (MSDN) Library Web site and search for MSI command-line options.

Prerequisites

- Verify that you have a copy of the vRealize Log Insight Windows agent .msi file. See [“Download Agent Installation Files,”](#) on page 10.
- Verify that you have permissions to perform installations and start services on the Windows machine.
- If you use the silent installation options `/quiet` or `/qn`, verify that you run the installation as an administrator. If you are not an administrator and run silent installation, the installation does not prompt for administrator privileges and fails. Use the logging option and parameters `/lxv* file_name` for diagnostic purposes.

Procedure

- 1 Log in to the Windows machine on which to install or update the vRealize Log Insight Windows agent.
- 2 Open a Command Prompt window.
- 3 Change to the directory where you have the vRealize Log Insight Windows agent .msi file.

- Run the following command to install or update with default values. Replace *Version-Build_Number* with your version and build number.

The `/quiet` option runs the command silently, and the `/lxv` option creates a log file in the current directory.

```
Drive:\path-to-msi_file>VMware-Log-Insight-Agent-Version-Build_Number.msi
/quiet /lxv* li_install.log
```

- (Optional) Specify a user service account for the vRealize Log Insight Windows agent service to run under.

```
Drive:\path-to-msi_file>VMware-Log-Insight-Agent-*.msi SERVICEACCOUNT=domain\user
SERVICEPASSWORD=user_password
```

NOTE The account supplied in the `SERVICEACCOUNT` parameter is granted with the **Log On As a Service** right and full-write access to the `%ProgramData%\VMware\Log Insight Agent` directory. If the supplied account does not exist it is created. The username must not exceed 20 characters. If you do not specify a `SERVICEACCOUNT` parameter, the vRealize Log Insight Windows agent service is installed or updated under the `LocalSystem` service account.

- (Optional) You can specify values for the following command-line options as needed.

Option	Description
SERVERHOST=hostname	IP address or host name of the vRealize Log Insight virtual appliance.
SERVERPROTO=protocol=protocol	Protocol that the agent uses to send events to the vRealize Log Insight server. The possible values are <code>cfapi</code> and <code>syslog</code> . The default is <code>cfapi</code> .
SERVERPORT=portnumber	Communication port that the agent uses to send events to the vRealize Log Insight or third party server. By default the agent uses the appropriate port based on the options that are set for SSL and the protocol. See default port values provided in the list below. You need to specify the port option only if it's different from these defaults.
SERVICEACCOUNT=account-name	User service account under which the Log Insight Windows Agent service is run. NOTE The account supplied in the <code>SERVICEACCOUNT</code> parameter must have the Log On As a Service privilege and write access to <code>%ProgramData%\VMware\Log Insight Agent</code> directory so that the installer runs correctly. If you do not specify a <code>SERVICEACCOUNT</code> parameter, the vRealize Log Insight Windows agent service is installed under the <code>LocalSystem</code> service account.
SERVICEPASSWORD=password	Password for the user service account.
AUTOUPDATE={yes no}	Enable or disable auto-update for the agent. You must also enable auto-update from the vRealize Log Insight server to fully enable auto-update. The default is <code>yes</code> .
LIAGENT_SSL={yes no}	Enable secure connection. If SSL is enabled, the agent uses TLS 1.2 protocol to communicate to the server. The default is <code>yes</code> .

The command-line options correspond to `hostname`, `proto`, and `port` in the `[server]` section of the `liagent.ini` file.

The command installs or updates the vRealize Log Insight Windows agent as a Windows service. The vRealize Log Insight Windows agent service starts when you start the Windows machine.

What to do next

Verify that the command-line parameters you set are applied correctly in the `liagent.ini` file. See [“Configure the Log Insight Windows Agent After Installation,”](#) on page 24.

Deploy the Log Insight Windows Agent to Multiple Machines

You can perform a mass deployment of the Log Insight Windows Agent on target computers in a Windows domain.

- 1 [Create a Transform File to Deploy Multiple vRealize Log Insight Windows Agents](#) on page 13
To specify installation parameters to be used during deployment, you create an .mst transform file. You can configure the vRealize Log Insight Windows agent to send events to a vRealize Log Insight server, and to set the communication protocol, port, and user account for installing and starting the Log Insight agent service.
- 2 [Deploy Multiple Instances of the vRealize Log Insight Windows Agent](#) on page 14
You can deploy multiple instances of the vRealize Log Insight Windows agent on target computers in a Windows domain.

Create a Transform File to Deploy Multiple vRealize Log Insight Windows Agents

To specify installation parameters to be used during deployment, you create an .mst transform file. You can configure the vRealize Log Insight Windows agent to send events to a vRealize Log Insight server, and to set the communication protocol, port, and user account for installing and starting the Log Insight agent service.

Prerequisites

- Verify that you have a copy of the vRealize Log Insight Windows .msi file. See [“Download Agent Installation Files,”](#) on page 10.
- Download and install the Orca database editor. See <http://support.microsoft.com/kb/255905>.

Procedure

- 1 Open the vRealize Log Insight Windows agent .msi file in the Orca editor and select **Transform > New Transform**.
- 2 Edit the Property table and add necessary parameters and values for a customized installation or upgrade.
 - a Click **Property** to open the Property table.
 - b From the **Table** drop-down menu, select **Add Row**.
 - c Enter a property name and value in the Add Row dialog box.

Valid parameters are shown in the following table.

Parameter	Description
SERVERHOST	IP address or host name of the vRealize Log Insight virtual appliance. The default is loginsight .
SERVERPROTO	Protocol that the agent uses to send events to the vRealize Log Insight server. The possible values are cfapi and syslog . The default is cfapi .
SERVERPORT	Communication port that the agent uses to send events to the vRealize Log Insight or third party server. By default the agent uses the appropriate port based on the options that are set for SSL and the protocol. See default port values provided in the list below. You need to specify the port option only if it's different from these defaults.

Parameter	Description
SERVICEACCOUNT	User service account under which the Log Insight Windows Agent service is run. NOTE The account supplied in the SERVICEACCOUNT parameter must have the Log On As a Service privilege and write access to %ProgramData%\VMware\Log Insight Agent directory so that the installer runs correctly. If you do not specify a SERVICEACCOUNT parameter, the vRealize Log Insight Windows agent service is installed under the LocalSystem service account.
SERVICEPASSWORD	Password for the user service account.
AUTOUPDATE	Enable or disable auto-update for the agent. You must also enable auto-update from the vRealize Log Insight server to fully enable auto-update. The default is yes.
LIAGENT-SSL	Enable secure connection. If SSL is enabled, the agent uses TLS 1.2 protocol to communicate to the server. The default is yes.

- 3 Select **Transform > Generate Transform** and save the .mst file.

What to do next

Use the .msi and .mst files to deploy the vRealize Log Insight Windows agent.

Deploy Multiple Instances of the vRealize Log Insight Windows Agent

You can deploy multiple instances of the vRealize Log Insight Windows agent on target computers in a Windows domain.

For more information about why you need to reboot the client machine twice, see <http://support.microsoft.com/kb/305293>.

Prerequisites

- Verify that you have an administrator account or an account with administrative privileges on the domain controller.
- Verify that you have a copy of the vRealize Log Insight Windows agent .msi file. See “[Download Agent Installation Files](#),” on page 10.
- Familiarize yourself with the procedures described in <http://support.microsoft.com/kb/887405> and <http://support.microsoft.com/kb/816102>.

Procedure

- 1 Log in to the domain controller as an administrator or a user with administrative privileges.
- 2 Create a distribution point and copy the vRealize Log Insight Windows agent .msi file to the distribution point.
- 3 Open the Group Policy Management Console and create a Group Policy Object to deploy the vRealize Log Insight Windows agent .msi file.
- 4 Edit the Group Policy Object for software deployment and assign a package.
- 5 (Optional) If you generated an .mst file before deployment, select the .mst configuration file on the **Modifications** tab of the GPO Properties window. and use the Advanced method to edit a Group Policy Object to deploy the .msi package.

- 6 (Optional) Upgrade the vRealize Log Insight Windows agent.
 - a Copy the upgrade .msi file to the distribution point.
 - b Click the **Upgrade** tab on the Group Policy Object Properties window.
 - c Add the initially installed version of the .msi file in the Packages that this package will upgrade section.
- 7 Deploy the vRealize Log Insight Windows agent to specific security groups that include the domain users.
- 8 Close all Group Policy Management Console and Group Policy Management Editor windows on the domain controller and restart the client machines.

If Fast Login Optimization is enabled, reboot the client machines twice.
- 9 Verify that vRealize Log Insight Windows agent is installed on the client machines as a local service.

If you configured SERVICEACCOUNT and SERVICEPASSWORD parameters for using an .mst file to deploy multiple instances of vRealize Log Insight Windows agent, verify that vRealize Log Insight Windows agent is installed on the client machines under the user account that you specified.

What to do next

If the multiple instances of vRealize Log Insight Windows agent is not successful, see [“Mass Deployment of the Log Insight Windows Agent is Not Successful,”](#) on page 78.

Install or Update the vRealize Log Insight Linux Agent RPM package

You can install or update the vRealize Log Insight Linux agent as a root or non-root user and you can set configuration parameters during installation. After installation, you can verify the installed version.

Prerequisites

- Read about installation defaults and how to change them at [“Options for vRealize Log Insight Agents,”](#) on page 20.
- Log in as **root** or use `sudo` to run console commands.
- The vRealize Log Insight Linux agent needs access to syslog and networking services to function. Install and run the vRealize Log Insight Linux agent on runlevels 3 and 5. If you want the vRealize Log Insight Linux agent to work under other runlevels, configure the system appropriately.

Procedure

- 1 You can install or upgrade an agent from the console.
 - To install the vRealize Log Insight Linux agent with default configuration settings, open a console and run the following command.


```
rpm -i VMware-Log-Insight-Agent-<version-and-build-number>.rpm
```
 - To upgrade the agent without changing current configuration settings, open a console and run the following command.


```
rpm -Uhv VMware-Log-Insight-Agent-<version-and-build-number>.rpm
```
- 2 (Optional) You can override the default configuration values for installation or the current configuration values during an update. You do this by specifying options as part of the install or upgrade command.


```
sudo <OPTION=value> rpm -i <version-and-build-number>.rpm
```
- 3 (Optional) Verify the installed version by running the following command.


```
rpm -qa | grep Log-Insight-Agent
```

Example: Linux Agent Install and Update Examples

- The following command installs the vRealize Log Insight agent for a Linux RPM distribution. It installs the agent on a separate server, assigns a non-default port number, and creates a vRealize Log Insight agent user.

```
sudo SERVERHOST=myagentserver SERVERPORT=1234 LIAGENTUSER=liagent rpm -i VMware-Log-Insight-Agent-44.1234.rpm
```

- The following command updates the agent with the given rpm file. Current agent configuration is unchanged.

```
rpm -Uvh VMware-Log-Insight-Agent-44.1234.rpm
```

Install or Update the vRealize Log Insight Linux Agent DEB package

When you install or update the vRealize Log Insight Linux agent DEB package, you can set the target server during installation and keep or replace the liagent.ini configuration file. After installation, you can verify the installed version.

The agent DEB package installation can be installed or upgraded from the command line and modified with package options, or it can be configured through the debconf database. The following table shows supported options.

You can install the agent in two ways. You can specify additional parameters during installation

Prerequisites

- Read about installation defaults and how to change them at [“Options for vRealize Log Insight Agents,”](#) on page 20.
- Log in as **root** or use **sudo** to run console commands.
- Verify that the vRealize Log Insight Linux agent has access to syslog and networking services to function. By default, the vRealize Log Insight Linux agent runs on runlevels 2, 3, 4, and 5 and stops on runlevels 0, 1, and 6.

Procedure

- 1 Open a console and run the `dpkg -i package_name` command to install or update the vRealize Log InsightLinux agent.

Replace *package_name* with the vRealize Log Insight name **vmware-log-insight-agent-** and the appropriate version build number of your download version. This installs the package using all default values.

```
dpkg -i vmware-log-insight-agent-VERSION-BUILD_NUMBER_all.deb
```

- 2 (Optional) Verify the installed version by running the `dpkg -l | grep -i vmware-log-insight-agent` command.

Example: Customizing Configuration

Example: Debconf Database

Optionally, you can override the default configuration values for installation or the current configuration values during an update. You do this by specifying options as part of the install or upgrade command.

For a complete list of options, see [“Options for vRealize Log Insight Agents,”](#) on page 20

```
sudo <OPTION=value> dpkg -i vmware-log-insight-agent-<version-and-build-number>_all.deb
```

- Specify a target vRealize Log Insight server.

To set the target during installation, run the sudo command and replace hostname with the IP address or hostname of the vRealize Log Insight server as shown in the following example:

```
sudo SERVERHOST=hostname dpkg -iv mware-log-insight-agent-<version-and-build-number>_all.deb
```

Unless you enabled the `--force-confold` flag during installation, whenever you update to a newer version, the system prompts you to keep or replace the `liagent.ini` configuration file. The following system message appears:

```
Configuration file `/var/lib/loginsight-agent/liagent.ini'
==> Modified (by you or by a script) since installation.
==> Package distributor has shipped an updated version.
What would you like to do about it ? Your options are:
  Y or I : install the package maintainer's version
  N or O : keep your currently-installed version
  D      : show the differences between the versions
  Z      : start a shell to examine the situation
The default action is to keep your current version.
*** liagent.ini (Y/I/N/O/D/Z) [default=N] ?
```

To preserve the existing configuration, use `[default=N]`. The additional parameters passed from the command line are still applied.

- Configure the connection protocol.

To override the default connection protocol, use the `SERVERPROTO` variable as shown in the following example:

```
sudo SERVERPROTO=syslog dpkg -i vmware-log-insight-agent-<version-and-build-number>_all.deb
```

- Configure the connection port.

To override the default connection port provide a value for the `SERVERPORT` variable to the installer as shown in the following example:

```
sudo SERVERPORT=1234 dpkg -i vmware-log-insight-agent-<version-and-build-number>_all.deb
```

- Run the agent as a non-root user.

To run the vRealize Log Insight Linux agent as a **non-root** user run the sudo command.

```
sudo LIAGENTUSER=liagent dpkg -i vmware-log-insight-agent-<version-build-number>_all.deb
```

If the specified user does not exist, the vRealize Log Insight Linux agent creates the user account during the installation. The created account is not deleted after uninstallation. If you install the Linux agent with the `LIAGENTUSER=non_root_user` parameter and try to upgrade with the `LIAGENTUSER=non_root_user2` parameter, a conflict occurs and warnings appear because the `non_root_user2` user does not have the permissions of the `non_root_user` user.

vRealize Log Insight

Along with environment options, the agent DEB package also can be configured through the debconf database. The following table shows supported debconf options and corresponding vRealize Log Insight agent DEB installer options:

Command-line Options	Debconf Options	Description
<code>SERVERHOST=hostname</code>	<code>vmware-log-insight-agent/serverhost</code>	IP address or host name of the vRealize Log Insight virtual appliance. The default is loginsight .
<code>SERVERPROTO={cfapi syslog}</code>	<code>vmware-log-insight-agent/serverproto</code>	Protocol that the agent uses to send events to the vRealize Log Insight server. The possible values are <code>cfapi</code> and <code>syslog</code> . The default is <code>cfapi</code> .
<code>SERVERPORT=portnumber</code>	<code>vmware-log-insight-agent/serverport</code>	Communication port that the agent uses to send events to the vRealize Log Insight or third party server. By default the agent uses the appropriate port based on the options that are set for SSL and the protocol. See default port values provided in the list below. You need to specify the port option only if it's different from these defaults.
<code>LIAGENT_INITSYSTEM={init systemd}</code>	<code>log-insight-agent/init_system</code>	During install time, the agent automatically detects the type of init system for the machine you are installing the agent on. You can override this behavior by specifying the type of system value with this option. There are two types of supported init systems: <code>init</code> and <code>systemd</code> .
<code>LIAGENT_AUTOUPDATE={yes no}</code>	<code>vmware-log-insight-agent/auto_update</code>	Enable or disable auto-update for the agent. You must also enable auto-update from the vRealize Log Insight server to fully enable auto-update. The default is <code>yes</code> . Auto-update is not supported for Linux BIN packages.
<code>LI_AGENT_RUNSERVICES</code>	<code>vmware-log-insight-agent/init_system</code>	Immediately after the installation, the services <code>liagentd</code> (agent) and <code>liupdaterd</code> (updater) are started by default. You can prevent this by setting the <code>LIAGENT_RUNSERVICES</code> debconf parameter to no . The default is <code>yes</code> . Note that the only accepted values are yes and no . 1 or 0 are not supported values.
<code>LIAGENT_SSL</code>	<code>vmware-log-insight-agent/ssl</code>	Enable secure connection. If SSL is enabled, the agent uses TLS 1.2 protocol to communicate to the server. The default is <code>yes</code> .
<code>LIAGENTUSER=user-account-name</code>	<code>vmware-log-insight-agent/liagentuser</code>	Specifies an account under which the agent is run. If the user does not exist, the installer creates it as a regular user. If the specified user account does not exist, the vRealize Log Insight Linux agent creates the user account during the installation. The created account is not deleted after uninstallation. By default the agent is installed to run as a root user. Note that if you install the vRealize Log Insight Linux agent with the <code>LIAGENTUSER=non_root_user</code> parameter and try to upgrade with <code>LIAGENTUSER=non_root_user2</code> , a conflict occurs and warnings appear because <code>non_root_user2</code> user does not have the permissions of the user <code>non_root_user</code> . The created user is not removed during uninstall. It can be removed manually. This parameter is intended for the agent service only. The updater service is always running as a root user.

Install the Log Insight Linux Agent Binary Package

Installing the binary package includes changing the .bin file to an executable file and then installing the agent.

Upgrading the .bin package is not officially supported. If you used the .bin package to install an existing Log Insight Linux Agent, make a backup copy of the `liagent.ini` file located in `/var/lib/loginsight-agent` directory to keep the local configuration. After you have a backup copy, manually uninstall the Log Insight Linux Agent. See “Uninstall the Log Insight Linux Agent bin package,” on page 70.

If you use the .bin package to install Linux agents, the `init.d` script named `liagentd` is installed as part of the package installation, but the package does not register the script. You can register the script manually.

You can verify that the installation is successful by running `(/sbin/)service liagentd status` command.

Prerequisites

- Download and copy the Log Insight Linux Agent .bin package to the target Linux machine.
- Verify that the Log Insight Linux Agent has access to syslog and networking services.

Procedure

- 1 Open a console and run the `chmod` command to change the .bin file to an executable file.

Replace *filename-version* with the appropriate version.

```
chmod +x filename-version.bin
```

- 2 From a command prompt, run the `./filename-version.bin` command to install the agent.

Replace *filename-version* with the appropriate version.

```
./filename-version.bin
```

- 3 (Optional) To set the target vRealize Log Insight server during installation, run the `sudo SERVERHOST=hostname ./filename-version.bin` command.

Replace *hostname* with the IP address or hostname of the vRealize Log Insight server.

```
sudo SERVERHOST=hostname ./filename-version.bin
```

- 4 (Optional) To override the default connection protocol use the `SERVERPROTO` variable as shown in the following example:

```
sudo SERVERPROTO=syslog ./filename-version.htm
```

- 5 (Optional) To override the default connection port provide a value for the `SERVERPORT` variable to the installer as shown in the following example:

```
sudo SERVERPORT=1234 ./filename-version.htm
```

- 6 (Optional) To run the Log Insight Linux Agent as a **non-root** user run the `sudo` command.

```
sudo LIAGENTUSER=liagent ./filename-version.bin
```

If the specified user does not exist, the Log Insight Linux Agent creates the user account during the installation. The created account is not deleted after uninstallation. If you install the Log Insight Linux Agent with the `LIAGENTUSER=non_root_user` parameter and try to upgrade with the `LIAGENTUSER=non_root_user2` parameter, a conflict occurs and warnings appear because the `non_root_user2` user does not have the permissions of the `non_root_user` user.

Options for vRealize Log Insight Agents

When you install vRealize Log Insight agents from the command line, you can include options to configure your deployment during installation. These options correspond to settings in the `liagent.ini` file.

Common Linux Agent Options

The following options can be used during installation to configure vRealize Log Insight Linux agents.

Table 2-1. Installation Options for Linux Agents

Option	Description
<code>SERVERHOST=hostname</code>	IP address or host name of the vRealize Log Insight virtual appliance. The default is loginsight .
<code>SERVERPROTO={cfapi syslog}</code>	Protocol that the agent uses to send events to the vRealize Log Insight server. The possible values are <code>cfapi</code> and <code>syslog</code> . The default is <code>cfapi</code> .
<code>SERVERPORT=portnumber</code>	Communication port that the agent uses to send events to the vRealize Log Insight or third party server. By default the agent uses the appropriate port based on the options that are set for SSL and the protocol. See default port values provided in the list below. You need to specify the port option only if it's different from these defaults.
<code>LIAGENT_INITSYSTEM={init systemd}</code>	During install time, the agent automatically detects the type of init system for the machine you are installing the agent on. You can override this behavior by specifying the type of system value with this option. There are two types of supported init systems: <code>init</code> and <code>systemd</code> .
<code>LIAGENT_AUTOUPDATE={yes no}</code>	Enable or disable auto-update for the agent. You must also enable auto-update from the vRealize Log Insight server to fully enable auto-update. The default is <code>yes</code> . Auto-update is not supported for Linux BIN packages.
<code>LIAGENT_SSL={yes no}</code>	Enable secure connection. If SSL is enabled, the agent uses TLS 1.2 protocol to communicate to the server. The default is <code>yes</code> .
<code>LIAGENTUSER=user-account-name</code>	Specifies an account under which the agent is run. If the user does not exist, the installer creates it as a regular user. If the specified user account does not exist, the vRealize Log Insight Linux agent creates the user account during the installation. The created account is not deleted after uninstallation. By default the agent is installed to run as a root user. Note that if you install the vRealize Log Insight Linux agent with the <code>LIAGENTUSER=non_root_user</code> parameter and try to upgrade with <code>LIAGENTUSER=non_root_user2</code> , a conflict occurs and warnings appear because <code>non_root_user2</code> user does not have the permissions of the user <code>non_root_user</code> . The created user is not removed during uninstall. It can be removed manually. This parameter is intended for the agent service only. The updater service is always running as a root user.

Automatic Update for vRealize Log Insight Agents

The auto-update feature for vRealize Log Insight agents allows active agents to check, download, and automatically update based on the agent install packages from the vRealize Log Insight server.

You can enable auto-update from the server for all agents, or from clients for individual agent instances. Agents must have an active status and be version 4.3 or later.

Auto-update is not supported for Linux BIN packages.

Disable or Enable Auto-Update for Individual Agents

You can enable or disable auto-update for individual agents by editing the client-side configuration file for that agent.

By default, auto-update is enabled from the client side for an agent.

Prerequisites

Agents must be version 4.3 or later.

Procedure

- 1 Open the local `liagent.ini` file in an editor.
- 2 Locate the `[update]` section.

It will look similar to the following example.

```
[update]
; Do not change this parameter
package_type=msi
; Enable automatic update of the agent. If enabled:
; the agent will silently check for updates from the server and
; if available will automatically download and apply the update.
;auto_update=yes
```

- 3 Uncomment `auto_update=yes` to enable auto-update, or change the value for `auto_update` to "no" to disable auto-update.
- 4 Save and close the `liagent.ini` file.

Configuring a vRealize Log Insight Agent

3

After you have deployed an agent, you can configure it to send events to the vRealize Log Insight server that you select, specify communication protocols, and so on.

Use these instructions as required to configure your agents to your requirements.

- [Configure the Log Insight Windows Agent After Installation](#) on page 24
You can configure the Log Insight Windows Agent after you install it. Edit the `liagent.ini` file to configure Log Insight Windows Agent to send events to a vRealize Log Insight, set the communication protocol and port, add Windows event channels, and configure flat file log collection. The file is located in the `%ProgramData%\VMware\Log Insight Agent` directory.
- [Configure the Log Insight Linux Agent](#) on page 36
You can configure the Log Insight Linux Agent after you install it. Edit the `liagent.ini` file to configure the agent to send events to a vRealize Log Insight server, set the communication protocol and port, and configure flat file log collection. The `liagent.ini` file is located in the `/var/lib/loginsight-agent/` directory.
- [Centralized Configuration of vRealize Log Insight Agents](#) on page 43
You can configure multiple Windows or Linux vRealize Log Insight agents.
- [Using Common Values for Agent Configuration](#) on page 45
You can override the default values of the agent configuration file with common parameter values that apply for each agent configuration section for Windows or Linux agents.
- [Parsing Logs](#) on page 46
Agent-side log parsers extract structured data from raw logs before delivering to the vRealize Log Insight server. Using log parsers, vRealize Log Insight can analyze logs, extract information from them, and show those results on the server. Log parsers can be configured for both Windows and Linux vRealize Log Insight Agents.

Configure the Log Insight Windows Agent After Installation

You can configure the Log Insight Windows Agent after you install it. Edit the `liagent.ini` file to configure Log Insight Windows Agent to send events to a vRealize Log Insight, set the communication protocol and port, add Windows event channels, and configure flat file log collection. The file is located in the `%ProgramData%\VMware\Log Insight Agent` directory.

Default Configuration of the Log Insight Windows Agent

After installation, the `liagent.ini` file contains pre-configured default settings for the Log Insight Windows Agent.

Log Insight Windows Agent `liagent.ini` Default Configuration

If you use non-ASCII names and values, save the configuration as UTF-8.

The final configuration is this file joined with settings from the server to form the `liagent-effective.ini` file.

You may find it more efficient to configure the settings from the server's agents page.

; Client-side configuration of VMware Log Insight Agent.
; See `liagent-effective.ini` for the actual configuration used by VMware Log Insight Agent.

```
[server]
; Log Insight server hostname or ip address
; If omitted the default value is LOGINSIGHT
;hostname=LOGINSIGHT

; Set protocol to use:
; cfapi - Log Insight REST API
; syslog - Syslog protocol
; If omitted the default value is cfapi
;
;proto=cfapi

; Log Insight server port to connect to. If omitted the default value is:
; for syslog: 514
; for cfapi without ssl: 9000
; for cfapi with ssl: 9543
;port=9000

;ssl - enable/disable SSL. Applies to cfapi protocol only.
; Possible values are yes or no. If omitted the default value is no.
;ssl=no

; Time in minutes to force reconnection to the server
; If omitted the default value is 30
;reconnect=30
```

```
[storage]
;max_disk_buffer - max disk usage limit (data + logs) in MB:
; 100 - 2000 MB, default 200
;max_disk_buffer=200
```

```
[logging]
```



```

;debug_level – the level of debug messages to enable:
; 0 – no debug messages
; 1 – trace essential debug messages
; 2 – verbose debug messages (will have negative impact on performance)
;debug_level=0
;
;The interval in minutes to print statistics
;stats_period=15

[update]
; Do not change this parameter
package_type=msi

; Enable automatic update of the agent. If enabled:
; the agent will silently check for updates from the server and
; if available will automatically download and apply the update.
;auto_update=yes

[winlog|Application]
channel=Application
raw_syslog=no

[winlog|Security]
channel=Security

[winlog|System]
channel=System

```

Parameter	Default Value	Description
proto	cfapi	Protocol that the agent uses to send events to the vRealize Log Insight server. The possible values are <code>cfapi</code> and <code>syslog</code> . The default is <code>cfapi</code> .
hostname	LOGINSIGHT	IP address or host name of the vRealize Log Insight virtual appliance. The default is loginsight .
port	9543, 9000, 6514, and 514	Communication port that the agent uses to send events to the vRealize Log Insight or third party server. By default the agent uses the appropriate port based on the options that are set for SSL and the protocol. See default port values provided in the list below. You need to specify the port option only if it's different from these defaults.
ssl	yes	Enables or disables SSL. The default value is <code>yes</code> . When <code>ssl</code> is set to <code>yes</code> , if you do not set a value for the port, the port is automatically picked up as 9543.

Parameter	Default Value	Description
max_disk_buffer	200	The maximum disk space in MB that the Log Insight Windows Agent uses to buffer events and its own logs. When the specified max_disk_buffer is reached, the agent begins to drop new incoming events.
debug_level	0	Defines the log details level. See “Define Log Details Level in the Log Insight Agents,” on page 74.
channel	Application, Security, System	The Application, Security, and System Windows Event Log channels are commented by default; the Log Insight Windows Agent does not collect logs from these channels. See “Collect Events from Windows Events Channels,” on page 29.
raw_syslog	No	For agents that use the syslog protocol, allows the agent to collect and send raw syslog events. The default is no, which means collected events are transformed with user-specified syslog attributes. Enable this option to collect events without any syslog transformations. Accepted values are yes or 1 and no or 0.

Set Target vRealize Log Insight Server

You can set or change the target vRealize Log Insight server that the vRealize Log Insight Windows agent sends event to, if you have not set the values during the installation process. You can send events to one or more destinations.

Multiple destination connections are defined through the [server|<dest_id>] section of the li-agent.ini file, where <dest_id> is a unique per configuration connection id. You can use the same options for additional destinations as for the default [server] section. However, additional destinations should not be configured for auto-upgrade and the destination servers cannot be used for agent configuration. You can specify two additional destinations.

When you define additional [server] sections, you must specify a hostname. By default, the agent sends all collected events to all destinations. You can filter events to send different events to different destinations.

Prerequisites

- Log in to the Windows machine on which you installed the vRealize Log Insight Windows agent and start the Services manager to verify that the vRealize Log Insightagent service is installed.
- If you have a vRealize Log Insight cluster with an enabled Integrated Load Balancer, see [Enable Integrated Load Balancer](#) for custom SSL certificate specific requirements.

Procedure

- 1 Navigate to the program data folder of the vRealize Log Insight Windows agent.
%ProgramData%\VMware\Log Insight Agent
- 2 Open the liagent.ini file in any text editor.

- 3 Modify the following parameters and set the values for your environment.

Parameter	Description
proto	Protocol that the agent uses to send events to the vRealize Log Insight server. The possible values are <code>cfapi</code> and <code>syslog</code> . The default is <code>cfapi</code> .
hostname	IP address or host name of the vRealize Log Insight virtual appliance. You can specify an IPv4 or IPv6 address. An IPv6 address can be specified with or without square brackets. For example: <code>hostname = 2001:cdba::3257:9652</code> or <code>hostname = [2001:cdba::3257:9652]</code> If the host supports both IPv4 and IPv6 stacks and a domain name is specified as the hostname, then the agent will use the IP stack depending on the IP address that is returned by the name resolver. If the resolver returns both IPv4 and IPv6 addresses, then the agent will try to connect sequentially to both addresses in the given order.
port	Communication port that the agent uses to send events to the vRealize Log Insight or third party server. By default the agent uses the appropriate port based on the options that are set for SSL and the protocol. See default port values provided in the list below. You need to specify the port option only if it's different from these defaults.
ssl	Enables or disables SSL. The default value is yes. When <code>ssl</code> is set to yes, if you do not set a value for the port, the port is automatically picked up as 9543.
reconnect	The time in minutes to force reconnection to the server. The default value is 30.

```
[server]
hostname=LOGINSIGHT
; Hostname or IP address of your Log Insight server / cluster load balancer. Default:
;hostname=LOGINSIGHT

; Protocol can be cfapi (Log Insight REST API), syslog. Default:
;proto=cfapi

; Log Insight server port to connect to. Default ports for protocols (all TCP):
; syslog: 514; syslog with ssl: 6514; cfapi: 9000; cfapi with ssl: 9543. Default:
;port=9543

; SSL usage. Default:
;ssl=yes
```

- 4 Save and close the `liagent.ini` file.

The following configuration example sets a target vRealize Log Insight server that uses a trusted certificate authority.

```
[server]
proto=cfapi
hostname=LOGINSIGHT
port=9543
ssl=yes;
ssl_ca_path=/etc/pki/tls/certs/ca.pem
```

The following example shows a multi-destination configuration.

- The first (default) destination receives all collected events.

```
[server]
hostname=prod1.licf.vmware.com
```

- The second destination receives just syslog events through the plain syslog protocol.

```
[server|syslog-audit]
hostname=third_party_audit_management.eng.vmware.com
proto=syslog
ssl=no
filter= {filelog; syslog; }
```

- The third destination receives vRealize Operations Manager events if they have the level field equal to "error" or "warning" and they are collected by sections whose name begins with "vrops-"

```
[server|licf-prod1]
hostname=vrops-errors.licf.vmware.com
filter= {; vrops-.*; level == "error" || level == "warning"}
```

;Collecting syslog messages.

```
[filelog|syslog]
directory=/var/log
include=messages
```

;various vRops logs. Note that all section names begin with "vrops-" prefix, which is used in third destination filter.

```
[filelog|vrops-ANALYTICS-analytics]
directory=/data/vcops/log
include=analytics*.log*
exclude=analytics*-gc.log*
parser=auto
[filelog|vrops-COLLECTOR-collector]
directory=/data/vcops/log
include=collector.log*
event_marker=^\\d
{4}-\\d{2}-\\d{2}[\\s]\\d{2}:\\d{2}:\\d{2}\\,\\d{3}
parser=auto
```

```
[filelog|vrops-COLLECTOR-collector_wrapper]
directory=/data/vcops/log
include=collector-wrapper.log*
event_marker=^\\d{4}
-\\d
{2}-\\d{2}
[\\s]\\d
{2}:\\d{2}
:\\d
{2}
\\.\\d
{3}
parser=auto
```

What to do next

You can configure additional SSL options for the vRealize Log Insight Windows agent. See [Configure SSL Connection Between the Server and the Log Insight Agents](#).

Collect Events from Windows Events Channels

You can add a Windows event channel to the Log Insight Windows Agent configuration. The Log Insight Windows Agent will collect the events and send them to the vRealize Log Insight server.

Field names are restricted. The following field names are reserved and cannot be used as field names.

Prerequisites

Log in to the Windows machine on which you installed the vRealize Log Insight Windows agent and start the Services manager to verify that the vRealize Log Insight agent service is installed.

Procedure

- 1 Navigate to the program data folder of the vRealize Log Insight Windows agent.

```
%ProgramData%\VMware\Log Insight Agent
```

- 2 Open the liagent.ini file in any text editor.
- 3 Add the following parameters and set the values for your environment.

Parameter	Description
[winlog section_name]	A unique name for the configuration section.
channel	The full name of the event channel as shown in the Event Viewer built-in Windows application. To copy the correct channel name, right-click a channel in Event Viewer, select Properties and copy the contents of Full Name field.
enabled	An optional parameter to enable or disable the configuration section. The possible values are yes or no (case-insensitive). The default value is yes.
tags	Optional parameter to add custom tags to the fields of collected events. Define tags using JSON notation. Tag names can contain letters, numbers, and underscores. A tag name can only begin with a letter or an underscore and cannot exceed 64 characters. Tag names are not case sensitive. For example, if you use tags={"tag_name1" : "tag value 1", "Tag_Name1" : "tag value 2" }, Tag_Name1 will be ignored as a duplicate. You cannot use event_type and timestamp as tag names. Any duplicates within the same declaration are ignored. Tags can override the APP-NAME field, if the destination is a syslog server. For example, tags={"appname":"VROPS"}.
whitelist, blacklist	Optional parameters to explicitly include or exclude log events. NOTE The blacklist option only works for fields; it cannot be used to blacklist text.
exclude_fields	(Optional) A parameter to exclude individual fields from collection. You can provide multiple values as a semicolon separated list. For example, exclude_fields=EventId; ProviderName

```
[winlog|section_name]
channel=event_channel_name
enabled=yes_or_no
tags={"tag_name1" : "Tag value 1", "tag_name2" : "tag value 2" }
```

- 4 Save and close the liagent.ini file.

Example: Configurations

See the following [winlog] configuration examples.

```
[winlog]Events_Firewall ]
channel=Microsoft-Windows-Windows Firewall With Advanced Security/Firewall
enabled=no
```

```
[winlog]custom]
channel=Custom
tags={"ChannelDescription": "Events testing channel"}
```

Set up Filtering for Windows Event Channels

You can set up filters for Windows Event channels to explicitly include or exclude log events.

You use the `whitelist` and `blacklist` parameters to evaluate a filter expression. The filter expression is a Boolean expression that consists of event fields and operators.

NOTE The `blacklist` option only works for fields; it cannot be used to `blacklist` text.

- `whitelist` collects only log events for which the filter expression evaluates to non-zero. If you omit `whitelist`, the value is an implied 1.
- `blacklist` excludes log events for which the filter expression evaluates to non-zero. The default value is 0.

For a complete list of Windows event fields and operators see [“Event Fields and Operators,”](#) on page 31.

Prerequisites

Log in to the Windows machine on which you installed the vRealize Log Insight Windows agent and start the Services manager to verify that the vRealize Log Insight agent service is installed.

Procedure

- 1 Navigate to the program data folder of the vRealize Log Insight Windows agent.

```
%ProgramData%\VMware\Log Insight Agent
```

- 2 Open the `liagent.ini` file in any text editor.
- 3 Add a `whitelist` or `blacklist` parameter in the [winlog] section.

For example

```
[winlog]unique_section_name]
channel = event_channel_name
blacklist = filter_expression
```

- 4 Create a filter expression from Windows events fields and operators.

For example

```
whitelist = level > WINLOG_LEVEL_SUCCESS and level < WINLOG_LEVEL_INFO
```

- 5 Save and close the `liagent.ini` file.

Example: Filter Configurations

You can configure the agent to collect only error events, for example

```
[winlog]Security-Error]
channel = Security
whitelist = Level == WINLOG_LEVEL_CRITICAL or Level == WINLOG_LEVEL_ERROR
```

You can configure the agent to collect only VMware Network events from Application channel, for example

```
[winlog|VMwareNetwork]
channel = Application
whitelist = ProviderName == "VMnetAdapter" or ProviderName == "VMnetBridge" or ProviderName ==
"VMnetDHCP"
```

You can configure the agent to collect all events from Security channel except particular events, for example

```
[winlog|Security-Verbose]
channel = Security
blacklist = EventID == 4688 or EventID == 5447
```

Event Fields and Operators

Use the Windows event fields and operators to build filter expressions.

Filter Expression Operators

Operator	Description
==, !=	equal and not equal. Use with both numeric and string fields.
>=, >, <, <=	greater or equal, greater than, less than, less than or equal. Use with numeric fields only.
&, , ^, ~	Bitwise AND, OR, XOR and complement operators. Use with numeric fields only.
and, or	Logical AND and OR. Use to build complex expressions by combining simple expressions.
not	Unary logical NOT operator. Use to reverse the value of an expression.
()	Use parentheses in a logical expression to change the order of evaluation.

Windows Event Fields

You can use the following Windows event fields in a filter expression.

Field name	Field type
Hostname	string
Text	string
ProviderName	string
EventSourceName	string
EventID	numeric
EventRecordID	numeric
Channel	string
UserID	string
Level	numeric You can use the following predefined constants <ul style="list-style-type: none"> ■ WINLOG_LEVEL_SUCCESS = 0 ■ WINLOG_LEVEL_CRITICAL = 1 ■ WINLOG_LEVEL_ERROR = 2 ■ WINLOG_LEVEL_WARNING = 3 ■ WINLOG_LEVEL_INFO = 4 ■ WINLOG_LEVEL_VERBOSE = 5
Task	numeric

Field name	Field type
OpCode	numeric
Keywords	numeric You can use the following predefined bit masks <ul style="list-style-type: none"> ■ WINLOG_KEYWORD_RESPONSETIME = 0x0001000000000000; ■ WINLOG_KEYWORD_WDICONTEXT = 0x0002000000000000; ■ WINLOG_KEYWORD_WDIDIAGNOSTIC = 0x0004000000000000; ■ WINLOG_KEYWORD_SQM = 0x0008000000000000; ■ WINLOG_KEYWORD_AUDITFAILURE = 0x0010000000000000; ■ WINLOG_KEYWORD_AUDITSUCCESS = 0x0020000000000000; ■ WINLOG_KEYWORD_CORRELATIONHINT = 0x0040000000000000; ■ WINLOG_KEYWORD_CLASSIC = 0x0080000000000000;

Examples

Collect all critical, error and warning events

```
[winlog|app]
channel = Application
whitelist = level > WINLOG_LEVEL_SUCCESS and level < WINLOG_LEVEL_INFO
```

Collect only Audit Failure events from Security channel

```
[winlog|security]
channel = Security
whitelist = Keywords & WINLOG_KEYWORD_AUDITFAILURE
```

Collect Events from a Log File

You can configure the vRealize Log Insight Windows agent to collect events from one or more log files.

Collecting from Encrypted Folders

An agent is able to collect from encrypted folders. The Agent will collect from an encrypted folder only if it is run by the user who encrypted the folder.

Field names are restricted. The following field names are reserved and cannot be used as field names.

Prerequisites

Log in to the Windows machine on which you installed the vRealize Log Insight Windows agent and start the Services manager to verify that the vRealize Log Insight agent service is installed.

Procedure

- 1 Navigate to the program data folder of the vRealize Log Insight Windows agent.
`%ProgramData%\VMware\Log Insight Agent`
- 2 Open the `liagent.ini` file in any text editor.

3 Add configuration parameters and set the values for your environment.

Parameter	Description
<code>[filelog section_name]</code>	A unique name for the configuration section.
<code>directory</code>	<p>The full path to the log file directory. Glob patterns are supported. You can define the same directory under one or more different configuration sections, to collect logs from the same file multiple times. This process makes it possible to apply different tags and filters to the same source of events.</p> <p>NOTE If you use exactly the same configurations for these sections, duplicated events are observed on the server side.</p>
<code>include</code>	<p>(Optional) The name of a file name or a file mask (glob pattern) from which to collect data. You can provide values as a semicolon separated list. The default value is <code>*</code>, which means that all files are included. The parameter is case sensitive.</p> <p>NOTE By default <code>.zip</code> and <code>.gz</code> files are excluded from collection.</p> <p>IMPORTANT If you are collecting a rotated log file, use the <code>include</code> and <code>exclude</code> parameters to specify a glob pattern that matches both the primary and the rotated file. If the glob pattern matches only the primary log file, the vRealize Log Insight agents might miss events during rotation. The vRealize Log Insight agents automatically determine the correct order of rotated files and sends events to the vRealize Log Insight server in the right order. For example, if your primary log file is named <code>myapp.log</code> and rotated logs are <code>myapp.log.1</code> and <code>myapp.log.2</code> and so on, you can use the following <code>include</code> pattern:</p> <pre>include= myapp.log;myapp.log.*</pre>
<code>exclude</code>	<p>(Optional) A file name or file mask (glob pattern) to exclude from collection. You can provide values as a semicolon separated list. The default value is empty, which means that no file is excluded.</p>
<code>event_marker</code>	<p>(Optional) A regular expression that denotes the start of an event in the log file. If omitted defaults to newline. The expressions you type must use the Perl regular expressions syntax.</p> <p>NOTE Symbols, for example quotation marks (<code>" "</code>), are not treated as wrappers for regular expressions. They are treated as part of the pattern. Since the vRealize Log Insight agent is optimized for real-time collection, partial log messages written with an internal delay may be split into multiple events. If log file appending stops for more than 200ms without a new observed <code>event_marker</code>, the partial event is treated as complete, parsed, and delivered. This timing logic is non-configurable and has priority over the <code>event_marker</code> setting. Log file appenders should flush full events.</p>
<code>enabled</code>	<p>(Optional) A parameter to enable or disable the configuration section. The possible values are <code>yes</code> or <code>no</code>. The default value is <code>yes</code>.</p>
<code>charset</code>	<p>(Optional) The character encoding of the log files that the agent monitors. The possible values are <code>UTF-8</code>, <code>UTF-16LE</code>, and <code>UTF-16BE</code>. The default value is <code>UTF-8</code>.</p>
<code>tags</code>	<p>(Optional) A parameter to add custom tags to the fields of collected events. Define tags using JSON notation. Tag names can contain letters, numbers, and underscores. A tag name can only begin with a letter or an underscore and cannot exceed 64 characters. Tag names are not case sensitive. For example, if you use <code>tags={"tag_name1": "tag value 1", "Tag_Name1": "tag value 2" }</code>, <code>Tag_Name1</code> will be ignored as a duplicate. You cannot use <code>event_type</code> and <code>timestamp</code> as tag names. Any duplicates within the same declaration are ignored.</p> <p>Tags can override the <code>APP-NAME</code> field, if the destination is a syslog server. For example, <code>tags={"appname": "VROPS"}</code>.</p>

Parameter	Description
exclude_fields	(Optional) A parameter to exclude individual fields from collection. You can provide multiple values as a semicolon- or comma-separated list. For example, <ul style="list-style-type: none"> ■ exclude_fields=hostname; filepath ■ exclude_fields=type; size ■ exclude_fields=type, size
raw_syslog	For agents that use the syslog protocol, allows the agent to collect and send raw syslog events. The default is No, which means collected events are transformed with user-specified syslog attributes. Enable this option to collect events without any syslog transformations.

```
[filelog|section_name]
directory=path_to_log_directory
include=glob_pattern
```

Example: Configurations

```
[filelog|vCenterMain]
directory=C:\ProgramData\VMware\VMware VirtualCenter\Logs
include=vpxd-*.log
exclude=vpxd-alert-*.log;vpxd-profiler-*.log
event_marker=^\d{4}-\d{2}-\d{2}[A-Z]\d{2}:\d{2}:\d{2}\.\d{3}

[filelog|ApacheAccessLogs]
enabled=yes
directory=C:\Program Files (x86)\Apache Software Foundation\Apache2.2\logs
include=*.log
exclude=*_old.log
tags={"Provider" : "Apache"}

[filelog|MSSQL]
directory=C:\Program Files\Microsoft SQL Server\MSSQL10.MSSQLSERVER\MSSQL\Log
charset=UTF-16LE
event_marker=^[^\s]
```

Set up Windows Log File Channel Filtering

You can set up filters for Windows log files to explicitly include or exclude log events.

You use the `whitelist` and `blacklist` parameters to evaluate a filter expression. The filter expression is a Boolean expression that consists of event fields and operators.

NOTE The `blacklist` option only works for fields; it cannot be used to `blacklist` text.

- `whitelist` collects only log events for which the filter expression evaluates to non-zero. If you omit `whitelist`, the value is an implied 1.
- `blacklist` excludes log events for which the filter expression evaluates to non-zero. The default value is 0.

For a complete list of Windows event fields and operators see [“Event Fields and Operators,”](#) on page 31.

Prerequisites

Log in to the Windows machine on which you installed the vRealize Log Insight Windows agent and start the Services manager to verify that the vRealize Log Insight agent service is installed.

Procedure

- 1 Navigate to the program data folder of the vRealize Log Insight Windows agent.

`%ProgramData%\VMware\Log Insight Agent`

- 2 Open the `liagent.ini` file in any text editor.
- 3 Add a whitelist or blacklist parameter in the `[filelog]` section.

For example:

```
[filelog|apache]
directory = path_to_log_directory
include = glob_pattern
blacklist = filter_expression
```

- 4 Create a filter expression from Windows events fields and operators.

For example

```
whitelist = myServer
```

- 5 Save and close the `liagent.ini` file.

Example: Filter Configurations

You can configure the agent to collect only Apache logs where the `server_name` is

```
[filelog|apache]
directory=C:\Program Files\Apache Software Foundation\Apache2.4\logs
include=error.log
parser=clf
whitelist = server_name == "sample.com"
blacklist = remote_host == "127.0.0.1"
```

Forward Events to the Log Insight Windows Agent

You can forward events from Windows machines to a machine where the Log Insight Windows Agent is running.

You can use Windows Event Forwarding to forward events from multiple Windows machines to a machine on which the Log Insight Windows Agent is installed. You can then configure the Log Insight Windows Agent to collect all forwarded events and send them to a vRealize Log Insight server.

Get familiar with Windows Event Forwarding. See <http://technet.microsoft.com/en-us/library/cc748890.aspx> and [http://msdn.microsoft.com/en-us/library/windows/desktop/bb870973\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/bb870973(v=vs.85).aspx).

Prerequisites

See “[Collect Events from Windows Events Channels](#),” on page 29.

Procedure

- 1 Add a new section to the Log Insight Windows Agent configuration to collect events from the Windows event channel that receives forwarded events.

The default channel name is `ForwardedEvents`.

- 2 Set up Windows Event Forwarding.

What to do next

Go to the vRealize Log Insight Web user interface and verify that forwarded events are arriving.

Configure the Log Insight Linux Agent

You can configure the Log Insight Linux Agent after you install it. Edit the `liagent.ini` file to configure the agent to send events to a vRealize Log Insight server, set the communication protocol and port, and configure flat file log collection. The `liagent.ini` file is located in the `/var/lib/loginsight-agent/` directory.

Default Configuration of the vRealize Log Insight Linux Agent

After installation, the `liagent.ini` file contains preconfigured default settings for the Log Insight Windows Agent.

vRealize Log Insight Linux Agent `liagent.ini` Default Configuration

If you use non-ASCII names and values, save the configuration as UTF-8.

The final configuration is this file joined with settings from the server to form the `liagent-effective.ini` file.

You may find it more efficient to configure the settings from the server's agents page.

```
[server]
; Hostname or IP address of your Log Insight server / cluster load balancer. Default:
;hostname=LOGINSIGHT

; Protocol can be cfapi (Log Insight REST API), syslog. Default:
;proto=cfapi

; Log Insight server port to connect to. Default ports for protocols (all TCP):
; syslog: 514; syslog with ssl: 6514; cfapi: 9000; cfapi with ssl: 9543. Default:
;port=9543

; SSL usage. Default:
;ssl=yes
; Example of configuration with trusted CA:
;ssl=yes
;ssl_ca_path=/etc/pki/tls/certs/ca.pem

; Time in minutes to force reconnection to the server.
; This option mitigates imbalances caused by long-lived TCP connections. Default:
;reconnect=30

[logging]
; Logging verbosity: 0 (no debug messages), 1 (essentials), 2 (verbose with more impact on
performance).
; This option should always be 0 under normal operating conditions. Default:
;debug_level=0

[storage]
; Max local storage usage limit (data + logs) in MBs. Valid range: 100-2000 MB.
;max_disk_buffer=200

; Uncomment the appropriate section to collect system logs
; The recommended way is to enable the Linux content pack from LI server
;[filelog|syslog]
;directory=/var/log
;include=messages;messages.?.syslog;syslog.?
```

Parameter	Value	Description
proto	cfapi	Protocol that the agent uses to send events to the vRealize Log Insight server. The possible values are <code>cfapi</code> and <code>syslog</code> . The default is <code>cfapi</code> .
hostname	LOGINSIGHT	IP address or host name of the vRealize Log Insight virtual appliance. The default is loginsight .
port	9543, 9000, 6514, and 514	Communication port that the agent uses to send events to the vRealize Log Insight server. The default values are 9543 for <code>cfapi</code> with SSL enabled, 9000 for <code>cfapi</code> with SSL disabled, 6514 for <code>syslog</code> with SSL enabled and 514 for <code>syslog</code> with SSL disabled.
ssl	yes	Enables or disables SSL. The default value is <code>yes</code> . When <code>ssl</code> is set to <code>yes</code> , if you do not set a value for the port, the port is automatically picked up as 9543.
max_disk_buffer	200	The maximum disk space in MB that the Log Insight Windows Agent uses to buffer events and its own logs. When the specified <code>max_disk_buffer</code> is reached, the agent begins to drop new incoming events.
debug_level	0	Defines the log details level. See “Define Log Details Level in the Log Insight Agents,” on page 74.

Set Target vRealize Log Insight Server

You can set or change the target vRealize Log Insight server that the vRealize Log Insight Linux agent sends events to. You can send events to one or more destinations.

Multiple destination connections are defined through the `[server|<dest_id>]` section of the `li-agent.ini` file, where `<dest_id>` is a unique per configuration connection id. You can use the same options for additional destinations as for the default `[server]` section. However, additional destinations should not be configured for auto-upgrade and the destination servers cannot be used for agent configuration. You can specify two additional destinations.

When you define additional `[server]` sections, you must specify a hostname. By default, the agent sends all collected events to all destinations. You can filter events to send different events to different destinations.

Prerequisites

- Log in as **root** or use `sudo` to run console commands.
- Log in to the Linux machine on which you installed the vRealize Log Insight Linux agent, open a console and run `pgrep liagent` to verify that the vRealize Log Insight Linux agent is installed and running.
- If you have a vRealize Log Insight cluster with an enabled Integrated Load Balancer, see [Enable Integrated Load Balancer](#) for custom SSL certificate specific requirements.

Procedure

- 1 Open the `/var/lib/loginsight-agent/liagent.ini` file in any text editor.
- 2 Modify the following parameters and set the values for your environment.

Parameter	Description
proto	Protocol that the agent uses to send events to the vRealize Log Insight server. The possible values are <code>cfapi</code> and <code>syslog</code> . The default is <code>cfapi</code> .
hostname	IP address or host name of the vRealize Log Insight virtual appliance. You can specify an IPv4 or IPv6 address. An IPv6 address can be specified with or without square brackets. For example: <pre>hostname = 2001:cdba::3257:9652 or hostname = [2001:cdba::3257:9652]</pre> If the host supports both IPv4 and IPv6 stacks and a domain name is specified as the hostname, then the agent will use the IP stack depending on the IP address that is returned by the name resolver. If the resolver returns both IPv4 and IPv6 addresses, then the agent will try to connect sequentially to both addresses in the given order.
port	Communication port that the agent uses to send events to the vRealize Log Insight or third party server. By default the agent uses the appropriate port based on the options that are set for SSL and the protocol. See default port values provided in the list below. You need to specify the port option only if it's different from these defaults.
ssl	Enables or disables SSL. The default value is <code>yes</code> . When <code>ssl</code> is set to <code>yes</code> , if you do not set a value for the port, the port is automatically picked up as 9543.
reconnect	The time in minutes to force reconnection to the server. The default value is 30.

```
[server]
hostname=LOGINSIGHT
; Hostname or IP address of your Log Insight server / cluster load balancer. Default:
;hostname=LOGINSIGHT

; Protocol can be cfapi (Log Insight REST API), syslog. Default:
;proto=cfapi

; Log Insight server port to connect to. Default ports for protocols (all TCP):
; syslog: 514; syslog with ssl: 6514; cfapi: 9000; cfapi with ssl: 9543. Default:
;port=9543

; SSL usage. Default:
;ssl=yes
```

- 3 Save and close the `liagent.ini` file.

The following configuration example sets a target vRealize Log Insight server that uses a trusted certificate authority.

```
[server]
proto=cfapi
hostname=LOGINSIGHT
port=9543
ssl=yes;
ssl_ca_path=/etc/pki/tls/certs/ca.pem
```

The following example shows a multi-destination configuration.

- The first (default) destination receives all collected events.

```
[server]
hostname=prod1.licf.vmware.com
```

- The second destination receives just syslog events through the plain syslog protocol.

```
[server|syslog-audit]
hostname=third_party_audit_management.eng.vmware.com
proto=syslog
ssl=no
filter= {filelog; syslog; }
```

- The third destination receives vRealize Operations Manager events if they have the level field equal to "error" or "warning" and they are collected by sections whose name begins with "vrops-"

```
[server|licf-prod1]
hostname=vrops-errors.licf.vmware.com
filter= {; vrops-.*; level == "error" || level == "warning"}
```

;Collecting syslog messages.

```
[filelog|syslog]
directory=/var/log
include=messages
```

;various vRops logs. Note that all section names begin with "vrops-" prefix, which is used in third destination filter.

```
[filelog|vrops-ANALYTICS-analytics]
directory=/data/vcops/log
include=analytics*.log*
exclude=analytics*-gc.log*
parser=auto
[filelog|vrops-COLLECTOR-collector]
directory=/data/vcops/log
include=collector.log*
event_marker=^\\d
{4}-\\d{2}-\\d{2}[\\s]\\d{2}:\\d{2}:\\d{2}\\,\\d{3}
parser=auto
```

```
[filelog|vrops-COLLECTOR-collector_wrapper]
directory=/data/vcops/log
include=collector-wrapper.log*
event_marker=^\\d{4}
-\\d
{2}-\\d{2}
[\\s]\\d
{2}:\\d{2}
:\\d
{2}
\\.\\d
{3}
parser=auto
```

What to do next

You can configure additional SSL options for the vRealize Log Insight Linux agent. See [Configure SSL Connection Between the Server and the Log Insight Agents](#).

Collect Events from a Log File

You can configure the vRealize Log Insight Linux agent to collect events from one or more log files.

NOTE By default the vRealize Log Insight Linux agent collects hidden files created by programs or editors. The hidden file names start with a period. You can prevent the vRealize Log Insight Linux agent from collecting hidden files, by adding an exclude **exclude=.** * parameter.

Field names are restricted. The following field names are reserved and cannot be used as field names.

Prerequisites

- Log in as **root** or use **sudo** to run console commands.
- Log in to the Linux machine on which you installed the vRealize Log Insight Linux agent, open a console and run `pgrep liagent` to verify that the vRealize Log Insight Linux agent is installed and running.

Procedure

- 1 Open the `/var/lib/loginsight-agent/liagent.ini` file in any text editor.
- 2 Add configuration parameters and set the values for your environment.

Parameter	Description
[filelog section_name]	A unique name for the configuration section.
directory	The full path to the log file directory. Glob patterns are supported. You can define the same directory under one or more different configuration sections, to collect logs from the same file multiple times. This process makes it possible to apply different tags and filters to the same source of events. NOTE If you use exactly the same configurations for these sections, duplicated events are observed on the server side.
include	(Optional) The name of a file name or a file mask (glob pattern) from which to collect data. You can provide values as a semicolon separated list. The default value is *, which means that all files are included. The parameter is case sensitive. NOTE By default <code>.zip</code> and <code>.gz</code> files are excluded from collection. IMPORTANT If you are collecting a rotated log file, use the <code>include</code> and <code>exclude</code> parameters to specify a glob pattern that matches both the primary and the rotated file. If the glob pattern matches only the primary log file, the vRealize Log Insight agents might miss events during rotation. The vRealize Log Insight agents automatically determine the correct order of rotated files and sends events to the vRealize Log Insight server in the right order. For example, if your primary log file is named <code>myapp.log</code> and rotated logs are <code>myapp.log.1</code> and <code>myapp.log.2</code> and so on, you can use the following <code>include</code> pattern: <code>include= myapp.log;myapp.log.*</code>
exclude	(Optional) A file name or file mask (glob pattern) to exclude from collection. You can provide values as a semicolon separated list. The default value is empty, which means that no file is excluded.

Parameter	Description
event_marker	<p>(Optional) A regular expression that denotes the start of an event in the log file. If omitted defaults to newline. The expressions you type must use the Perl regular expressions syntax.</p> <p>NOTE Symbols, for example quotation marks (" "), are not treated as wrappers for regular expressions. They are treated as part of the pattern. Since the vRealize Log Insight agent is optimized for real-time collection, partial log messages written with an internal delay may be split into multiple events. If log file appending stops for more than 200ms without a new observed <code>event_marker</code>, the partial event is treated as complete, parsed, and delivered. This timing logic is non-configurable and has priority over the <code>event_marker</code> setting. Log file appenders should flush full events.</p>
enabled	(Optional) A parameter to enable or disable the configuration section. The possible values are <code>yes</code> or <code>no</code> . The default value is <code>yes</code> .
charset	(Optional) The character encoding of the log files that the agent monitors. The possible values are <code>UTF-8</code> , <code>UTF-16LE</code> , and <code>UTF-16BE</code> . The default value is <code>UTF-8</code> .
tags	<p>(Optional) A parameter to add custom tags to the fields of collected events. Define tags using JSON notation. Tag names can contain letters, numbers, and underscores. A tag name can only begin with a letter or an underscore and cannot exceed 64 characters. Tag names are not case sensitive. For example, if you use <code>tags={"tag_name1": "tag value 1", "Tag_Name1": "tag value 2" }</code>, <code>Tag_Name1</code> will be ignored as a duplicate. You cannot use <code>event_type</code> and <code>timestamp</code> as tag names. Any duplicates within the same declaration are ignored.</p> <p>Tags can override the <code>APP-NAME</code> field, if the destination is a syslog server. For example, <code>tags={"appname": "VROPS"}</code>.</p>
exclude_fields	<p>(Optional) A parameter to exclude individual fields from collection. You can provide multiple values as a semicolon- or comma-separated list. For example,</p> <ul style="list-style-type: none"> ■ <code>exclude_fields=hostname; filepath</code> ■ <code>exclude_fields=type; size</code> ■ <code>exclude_fields=type, size</code>
raw_syslog	For agents that use the syslog protocol, allows the agent to collect and send raw syslog events. The default is <code>No</code> , which means collected events are transformed with user-specified syslog attributes. Enable this option to collect events without any syslog transformations.

```
[filelog|section_name]
directory=path_to_log_directory
include=glob_pattern
```

- 3 Save and close the `liagent.ini` file.

Example: Configurations

```
[filelog|messages]
directory=/var/log
include=messages;messages.?
```

```
[filelog|syslog]
directory=/var/log
include=syslog;syslog.?
```

```
[filelog|Apache]
directory=/var/log/apache2
include=*
```

Set up Linux Log File Channel Filtering

You can set up filters for Linux log files to explicitly include or exclude log events.

NOTE By default the vRealize Log Insight Linux agent collects hidden files created by programs or editors. The hidden file names start with a period. You can prevent the vRealize Log Insight Linux agent from collecting hidden files, by adding an exclude `exclude=.*` parameter.

You use the `whitelist` and `blacklist` parameters to evaluate a filter expression. The filter expression is a Boolean expression that consists of event fields and operators.

NOTE The `blacklist` option only works for fields; it cannot be used to `blacklist` text.

- `whitelist` collects only log events for which the filter expression evaluates to non-zero. If you omit `whitelist`, the value is an implied 1.
- `blacklist` excludes log events for which the filter expression evaluates to non-zero. The default value is 0.

For a complete list of Linux event fields and operators see [“Collect Events from a Log File,”](#) on page 40.

Prerequisites

- Log in as **root** or use `sudo` to run console commands.
- Log in to the Linux machine on which you installed the vRealize Log Insight Linux agent, open a console and run `pgrep liagent` to verify that the vRealize Log Insight Linux agent is installed and running.

Procedure

- 1 Open the `/var/lib/loginsight-agent/liagent.ini` file in any text editor.
- 2 Add a `whitelist` or `blacklist` parameter in the `[filelog]` section.

For example

```
[filelog|apache]
directory = path_to_log_directory
include = glob_pattern
blacklist = filter_expression
```

- 3 Create a filter expression from Linux events fields and operators.

For example

```
whitelist = server_name
```

- 4 Save and close the `liagent.ini` file.

Example: Filter Configurations

You can configure the agent to collect only Apache logs where the `server_name` is `sample.com` and the `remote_host` is not equal to `127.0.0.1`, for example

```
[filelog|apache]
directory=/var/log/httpd
include=access_log
parser=clf
whitelist = server_name == "sample.com"
blacklist = remote_host == "127.0.0.1"
```

Centralized Configuration of vRealize Log Insight Agents

You can configure multiple Windows or Linux vRealize Log Insight agents.

Each vRealize Log Insight agent has a local configuration and a server-side configuration. The local configuration is stored in the `liagent.ini` file on the machine where the vRealize Log Insight agent is installed. The server-side configuration is accessible and editable, for example, in Windows from **Administration > Agents** in the Web user interface. The configuration of each vRealize Log Insight agent is composed of sections and keys. Keys have configurable values.

The vRealize Log Insight agents periodically poll the vRealize Log Insight server and receive the server-side configuration. The server-side configuration and the local configuration are merged and the result is the effective configuration. Each vRealize Log Insight agent uses the effective configuration as its operating configuration. Configurations merge section by section and key by key. The values in the server-side configuration override the values in the local configuration. The merging rules are the following:

- If a section is present only in the local configuration or only in the server-side configuration, this section and all its content become a part of the effective configuration.
- If a section is present in both the local and server-side configuration, the keys in the section are merged according to the following rules:
 - If a key is present only in the local configuration or only in the server-side configuration, the key and its value become a part of this section in the effective configuration.
 - If a key is present in both the local configuration and the server-side configuration, the key becomes a part of this section in the effective configuration, and the value in the server-side configuration is used.

An Admin vRealize Log Insight user can apply centralized configuration to all vRealize Log Insight agents. For example, in Windows, you can navigate to the Administration page, and in the Management section, click **Agents**. Enter the configuration settings in the **Agent Configuration** box and click **Save Configuration for All Agents**. The configuration is applied to all the connected agents during the next poll cycle.

NOTE You can apply centralized configuration only to vRealize Log Insight agents that use the cfapi protocol.

See [“Configure the Log Insight Windows Agent After Installation,”](#) on page 24.

An Example of Configuration Merging

An example of merging local and server-side configuration of the Log Insight Windows Agent.

Local Configuration

You can have the following local configuration of the Log Insight Windows Agent.

```
[server]
proto=cfapi
hostname=HOST
port=9000

[winlog|Application]
channel=Application

[winlog|Security]
channel=Security

[winlog|System]
```

```
channel=System

[filelog|ApacheAccessLogs]
enabled=yes
directory=C:\Program Files (x86)\Apache Software Foundation\Apache2.2\logs
include=*.log
exclude=*_old.log
event_marker=^\d{1,3}\.){3}\d{1,3} - -
```

Server-Side Configuration

You can use the **Administration > Agents** page of the Web user interface to apply centralized configuration to all agents. For example, you can exclude and add collection channels, and change the default reconnect setting.

```
[server]
reconnect=20

[winlog|Security]
channel=Security
enabled=no

[winlog|Microsoft-Windows-DeviceSetupManagerOperational]
channel=Microsoft-Windows-DeviceSetupManager/Operational
```

Effective Configuration

The effective configuration is a result of the merging of the local and the server-side configurations. The Log Insight Windows Agent is configured to :

- reconnect to the vRealize Log Insight server every 20 minutes
- continue to collect Application and System event channels
- stop collecting Security event channel
- start to collect Microsoft-Windows-DeviceSetupManager/Operational event channel
- continue to collect ApacheAccessLogs

```
[server]
proto=cfapi
hostname=HOST
port=9000
reconnect=20

[winlog|Application]
channel=Application

[winlog|Security]
channel=Security
enabled=no

[winlog|System]
channel=System

[winlog|Microsoft-Windows-DeviceSetupManagerOperational]
channel=Microsoft-Windows-DeviceSetupManager/Operational
```

```
[filelog|ApacheAccessLogs]
enabled=yes
directory=C:\Program Files (x86)\Apache Software Foundation\Apache2.2\logs
include=*.log
exclude=*_old.log
event_marker=^\d{1,3}\.){3}\d{1,3} - -
```

Using Common Values for Agent Configuration

You can override the default values of the agent configuration file with common parameter values that apply for each agent configuration section for Windows or Linux agents.

Common Options

Options specified in the `[common|global]` section of the `liagent.ini` configuration file are propagated to all sections, options specified in the `[common|filelog]` section are propagated to all and only filelog sections, and `[common|winlog]` options are propagated to all and only winlog sections.

You can define the following parameters in common sections: `tags`, `include`, `exclude`, `event_marker`, `charset`, `exclude_fields`, and `parser` as shown in the following example. The example is for a Windows agent:

```
[common|global]

tags = {"log_source_vm":"win-2008r2-64"}
exclude_fields = test_tag;some_other_tag
parser = auto

[common|filelog]
tags = {"collector_type":"filelog"}
exclude = *.trc

[filelog|channel_1]
directory = C:\app\log
include = *.log

...
```

This example specifies the following behavior:

- All logs from filelog sections have both `log_source_vm` and `collector_type` tags with their corresponding values.
- `test_tag` and `some_other_tag` tags are excluded from all logs sent.
- `auto` parser is applied to all collected logs.
- By default, all filelog collectors exclude `*.trc` files from monitoring.

Options in `[common|global]` are also applied to all winlog sections.

Merge and Override Criteria

If options are defined in more than one section, their values are merged or overridden and the section with a smaller scope has a higher priority when merging/overriding. That is, a value from `[common|global]` is merged with or overridden by a value from `[common|filelog]` which in turn is combined with or overridden by a value from `[filelog|sample_section]`.

Merge and override behavior conform to the following rules:

- Options whose values represent a list of values (`tags`, `include`, `exclude` and `exclude_fields`) are merged with values of that option from a section with a higher priority. And in case of `tags`, values of `tags` from sections with a higher priority override the value of that same tag from a section with a lower priority, as described previously.
- The value of options that can have single value (`event_marker`, `charset` and `parser`) are overridden by values of that option from sections with higher priority.

This means that the value of `charset=UTF-8` from `[filelog|sample_section]` overrides the global value of `charset= UTF-16LE` from `[common|global]`.

So, for example, if you have `tags={"app":"global-test"}` in `[common|filelog]` and `tags={"app":"local-test", "section":"flg_test_section"}` in `[filelog|flg_test_section]`, the value of the "app" tag from the `[filelog|flg_test_section]` section overrides the value from `[common|filelog]`. All logs collected through this filelog section will have an additional "app" tag with "local-test" value and "section" tag with "flg_test_section" value. For winlog sections, the chain of priority is the same, with any `[winlog|...]` section having the highest priority and `[common|global]` having the lowest priority.

When invalid values are specified in common sections, generally they are skipped and not merged with values from prior and corresponding filelog/winlog sections. In the case of invalid values in `tags` or `exclude_fields` options, the agent extracts as much valid data as possible and skips the rest of the file once invalid data is encountered. All anomalies are reported in the agent log file. Consult the log file if unexpected behavior is encountered and fix all errors reported by the agent.

If the agent detects an invalid value for an option in a filelog or winlog section, then it does not merge option values from that section with option values from common sections and does not enable that section. All errors are reported in an agent log file. Consult the log file if unexpected behavior is encountered and fix all reported errors by agent.

Parsing Logs

Agent-side log parsers extract structured data from raw logs before delivering to the vRealize Log Insight server. Using log parsers, vRealize Log Insight can analyze logs, extract information from them, and show those results on the server. Log parsers can be configured for both Windows and Linux vRealize Log Insight Agents.

If the syslog protocol is used, fields extracted by parsers are part of STRUCTURED-DATA according to RFC5424.

Configure Log Parsers

You can configure parsers for both FileLog and WinLog collectors.

Prerequisites

For the vRealize Log Insight Linux Agent:

- Log in as root or use `sudo` to run console commands.
- Log in to the Linux machine on which you installed the Log Insight Linux Agent, open a console and run `pgrep liagent` to verify that the Log Insight Linux Agent is installed and running.

For the vRealize Log Insight Windows Agent:

- Log in to the Windows machine on which you installed the Log Insight Windows Agent and start the Services manager to verify that the vRealize Log Insight service is installed.

Procedure

- 1 Navigate to the folder containing the `liagent.ini` file.

Operating System	Path
Linux	<code>/var/lib/loginsight-agent/</code>
Windows	<code>%ProgramData%\VMware\Log Insight Agent</code>

- 2 Open the `liagent.ini` file in any text editor.
- 3 To configure a specific parser, define a parser section. `[parser|myparser]`

Where `myparser` is an arbitrary name of the parser which can be referred from log sources. Parser section should refer to any built in (or any other defined) parser and configure that parser's mandatory options and non-required options if needed.

For example, `base_parser=csv` shows that `myparser` parser is derived from built-in parser `csv`. It expects that input logs consist of two fields which are separated with a semicolon.

```
[parser|myparser]
```

```
base_parser=csv
```

```
fields=field_name1,field_name2
```

```
delimiter=";"
```

- 4 After defining `myparser`, refer to it from log sources `winlog` or `filelog`.

```
[filelog|some_csv_logs]
```

```
directory=D:\Logs
```

```
include=*.txt;*.txt.*
```

```
parser=myparser
```

The logs collected from `some_csv_logs` sources, for example from the `D:\Logs` directory, are parsed by `myparser` and extracted events appear on the server as `field_name1` and `field_name2` respectively.

NOTE The static logs in the `D:\Logs` directory are not get pulled into vRealize Log Insight by the agent. However, new files that are created in the `D:\Logs` directory are available in vRealize Log Insight.

- 5 Save and close the `liagent.ini` file.

Common Options for Parsers

You can configure common options for all parsers that produce named fields.

Field names are restricted. The following field names are reserved and cannot be used as field names.

- `event_type`
- `hostname`
- `source`
- `text`

Common Option	Description
base_parser	The name of the base parser that this custom parser extends. It can be a built-in parser name or another customer parser name. This configuration key is mandatory.
field_decoder	Nested parsers specified as a JSON string where keys are the names of the field to apply the nested parser to and the value is the name of the parser to use for that field. Each nested parser is applied to the appropriate field decoded by the base parser. Field decoders are useful when the value of a field is a complex value, for example, a timestamp.
field_rename	Renames extracted fields. This is a JSON string where keys are the original names of the fields and values are the new desired names of the fields. The <code>field_decoder</code> option is always applied before <code>field_rename</code> . The order of these options in the INI file is not important. For clarity, specify <code>field_decoder</code> first.
next_parser	Name of the next parser to run. Allows multiple parsers to run sequentially on the same input. NOTE Parsers process all consequent parsers defined by the <code>next_parser</code> keyword and may replace a field value already extracted by a previous parser.
exclude_fields	A list of semicolon separated field names to remove from the event before it is delivered to the server. This is applied before event filtering is performed so that the field that you excluding during parsing cannot be used in the filter condition.
debug	Yes or No option that enables debugging of a particular parser. With debugging enabled, the parser performs detailed logging of input it receives, the operation it performed and the result it produced. The option applies per-section, that is, only to the parser that is defined by the particular section. The default value for debug is <code>debug=no</code> for parsers.

Comma-Separated Value Log Parsers

You can configure Comma-Separated Value (CSV) parsers for both FileLog and WinLog collectors.

The available options for the csv parser are `fields` and `delimiter`.

Comma-Separated Value Parser Options

Note the following information about the structure of the csv parser.

Option	Description
fields	<p>The <code>fields</code> option specifies the names of the fields that exist in the log. The total number of the listed field names must be equal to the total number of comma-separated fields in the logs.</p> <p>The <code>fields</code> option is mandatory for the CSV parser. If it is not specified, nothing is parsed. Double quotes surrounding the field value are optional, depending on the field content.</p> <p>Field names must be separated by commas, for example</p> <pre>fields = field_name1, field_name2, field_name3, field_name4</pre> <p>This definition assumes that the names <code>field_name1</code>, <code>field_name2</code>, <code>field_name3</code> and <code>field_name4</code> are assigned sequentially to the extracted fields.</p> <p>If some fields must be omitted by the CSV parser, their names can be omitted from the list. For example,</p> <pre>fields = field_name1, , field_name3, field_name4</pre> <p>In this case, the parser extracts only the first, third and fourth fields from the event and subsequently assigns the names <code>field_name1</code>, <code>field_name3</code> and <code>field_name4</code> to them.</p> <p>If the <code>fields</code> option does not specify a complete list of the fields in your logs, the parser returns an empty list. For example, if the log file contains <code>field1</code>, <code>field2</code>, <code>field3</code>, <code>field4</code>, and <code>field5</code>, but only <code>fields= field1,field2,field3</code> is specified, the parser returns an empty fields list.</p> <p>You cannot use <code>fields=*</code> for a CSV parser, because the parser returns an empty fields list. A complete list of fields must be specified, unless you need certain fields omitted as already described.</p>
delimiter	<p>The <code>delimiter</code> option specifies the delimiter for the parser to use. By default, the csv parser uses a comma as a delimiter; however, you can change the delimiter to a semicolon, a space, or other special character. The defined delimiter must be enclosed in double quotes.</p> <p>For example, <code>delimiter=","</code> and <code>delimiter=";"</code>.</p> <p>The csv parser supports any set of characters as delimiters that are enclosed in quotes, for example <code>" "</code> or <code>"asd"</code>. The field values' separators in the logs should exactly match the pattern defined by the delimiter parameter, otherwise the parser will fail.</p> <p>Special characters such as a space or a tab can be defined for as a delimiter for the csv parser as long as the escape character precedes the special character for (<code>\</code>, <code>\s</code>, <code>\t</code>). For example, <code>delimiter="\s"</code> or <code>delimiter=" "</code>.</p> <p>The <code>delimiter</code> option is optional.</p>

CSV Log Parser Configuration

To parse logs collected from either `winlog` or `filelog` sources, use the following configuration.

```
[filelog|some_csv_logs]
directory=D:\Logs
include=*.txt;*.txt.*
parser=myparser

[parser|myparser]
base_parser = csv
fields = timestamp,field_name1, field_name2, field_name3
delimiter = ";"
field_decoder={"timestamp": "tsp_parser"}
[parser|tsp_parser]
; timestamp is a built-in parser
base_parser=timestamp
; "format" is an option of timestamp parser
format=%Y-%m-%d %H:%M:%S
```

With this configuration, logs collected from `some_csv_logs` source (for example, from the `directory=D:\Logs` directory) are parsed by `myparser`. If the collected logs contain three values that are separated by a semicolon, the parsed events sequentially receive the `field_name1`, `field_name2` and `field_name3` names.

To parse the following CSV log:

```
"United States","USA","North America","High income: OECD","Fiscal year end: September 30;
reporting period for national accounts data: CY."
```

Define the CSV parser configuration:

```
[parser|csv_log_parser]
base_parser=csv
fields=country_name, country_code, region, income_group, special_notes
```

The CSV parser returns the following fields:

```
country_name=United States
country_code=USA
region=North America
income_group=High income: OECD
special_notes=Fiscal year end: September 30; reporting period for national accounts data: CY.
```

Common Log Format (Apache) Log Parser

You can configure the Common Log Format (CLF) Apache parser for both FileLog and WinLog collectors.

Common Log Format (Apache) Parser

The default CLF parser defines the following order and names of fields.

```
host ident authuser datetime request statuscode bytes
```

Parser name: clf

The CLF parser-specific option is `format`.

format Option

The `format` option specifies the format with which Apache logs are generated. The option is not mandatory.

If no `format` is specified, the following default common log format is used.

```
%h %l %u %t \"%r\" %s %b
```

The CLF parser format string does not accept regex expressions. For example, specify a space instead of the expression `\s+`.

To parse other log formats, specify that format in the agent's configuration. Parsed fields appear on the server side with the following names.

NOTE In the cases in which a variable is required, if `{VARNAME}` is not provided in the configuration, the fields are ignored.

Fields	Value
'%a' :	"remote_ip"
'%A' :	"local_ip"
'%B', '%b' :	"response_size"
'%C' :	depends on the name of variable specified in the format
'%c' :	depends on the name of variable specified in the format
'%D' :	"request_time_mcs"
'%E' :	"error_status"
'%e' :	depends on the name of variable specified in the format

Fields	Value
'%F', '%F':	"file_name"
'%h':	"remote_host"
'%H':	"request_protocol"
'%i':	depends on the name of variable specified in the format
'%k':	"keepalive_request_count"
'%l':	"remote_log_name"
'%L'	"request_log_id"
'%M':	"log_message" (parser stops parsing the input log after reaching this specifier)
'%m':	"request_method"
'%n':	depends on the name of variable specified in the format
'%o':	depends on the name of variable specified in the format
'%p':	"server_port" Additional formats can be used with this specifier: %{format}p. Supported formats are "canonical", "local", or "remote". When the "canonical" format is used, the field name remains as "server_port". When the "local" format is used, the field name will be "local_server_port", and when the "remote" format is used, the field name will be "remote_server_port".
'%P':	"process_id" Additional formats can be used with this specifier: %{format}P. Supported formats are "pid", "tid", and "hextid". If "pid" is used as a format, the field name will be "process_id". While "tid" and "hextid" formats generate fields with the name "thread_id"
'%q':	"query_string"
'%r':	"request"
'%R':	"response_handler"
'%s':	"status_code". which generates the final status of the request, is also supported. This appears on the server as "status_code".

Fields	Value
'%t' :	<p>"timestamp" will work as event timestamp on ingestion, engages timestamp parser. To override timestamp auto detection, date and time format can be specified in curly braces: %[%Y-%m-%d %H:%M:%S]t, see "Timestamp Parser," on page 60 for more details.</p> <p>The timestamp format for the CLF parser can start with "begin:" or "end:" prefixes. If the format starts with <code>begin:</code> (default), the time is taken at the beginning of the request processing. If it starts with <code>end:</code>, it is the time when the log entry gets written, close to the end of the request processing. For example, such formats such as the following are supported by CLF parser: <code>%h %l %u [%{begin:%d/%b/%Y %T}t.%{msec_frac}t] \"%r\" %s %b</code></p> <p>The following format tokens are also supported for the CLF parser's timestamp format specifier:</p> <p>sec number of seconds since the Epoch. This is equivalent to Timestamp parser's <code>%s</code> specifier.</p> <p>msec number of milliseconds since the Epoch</p> <p>usec number of microseconds since the Epoch</p> <p>msec_frac millisecond fraction (is equivalent to Timestamp parser's <code>%f</code> specifier)</p> <p>musec microsecond fraction (is equivalent to Timestamp parser's <code>%f</code> specifier)</p> <p>To parse logs where timestamp is represented with format tokens, the following formats can be used in the configuration:</p> <pre>format=%h %l %u %{sec}t \"%r\" %s %b format=%h %l %u %{msec}t \"%r\" %s %b format=%h %l %u %{usec}t \"%r\" %s %b</pre> <p>These tokens cannot be combined with each other or Timestamp parser formatting in the same format string. You can use multiple <code>{format}t</code> tokens instead. For example, to use Timestamp which includes milliseconds, except of using Timestamp parser's <code>%f</code> specifier, the following combined timestamp can be used: <code>%[%d/%b/%Y %T}t.%{msec_frac}t</code> .</p>
'%T' :	"request_time_sec"
'%u' :	"remote_auth_user"
'%U' :	"requested_url"
'%v' :	"server_name"
'%V' :	"self_referential_server_name"
'%X' :	"connection_status" depends on the name of variable specified in the format
'%x' :	depends on the name of variable specified in the format
'%I' :	"received_bytes"
'%O' :	"sent_bytes"
'%S' :	"transferred_size"

For example, to parse logs collected from either `winlog` or `filelog` sources with the CLF parser, specify the following configuration:

```
[filelog|clflogs]
directory=D:\Logs
include=*.txt
parser=myclf
```

```
[parser|myclf]
debug=yes ;Note: use this option only while debugging and set it to 'no' when used in production.
base_parser=clf
format=%h %l %u %b %t \"%r\" %s
```

Using this configuration, logs that are collected from the `clflogs` source, for example from the `directory=D:\Logs` directory, are parsed by `myclf`. The `myclf` parser only parses those logs that were generated with the format described in the configuration.

The default value for `debug` is `debug=no` for parsers.

Parsing Logs that were Generated Using CLF

To parse logs that were generated using CLF, you must define the corresponding format in the configuration. For example,

```
format=%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User_Agent}i\"
```

Fields that are not empty that use the specifiers `%{Referer}i` and `%{User_Agent}i` appear on the vRealize Log Insight server with the names `referer` and `user_agent` respectively.

Integrating the Timestamp Parser with the CLF Parser

You can parse Apache logs with a custom time format.

Access logs that have a custom time format as follows.

```
format = %h %l %u %a, %d %b %Y %H:%M:%S %t \"%r\" %>s %b
```

If a custom time is not specified, the CLF parser attempts to deduce the time format automatically by running the automatic timestamp parser, otherwise the custom time format is used.

The supported custom time formats that are supported for error logs are:

Custom Time Format	Description	Configuration Format
<code>%{u}t</code>	Current time including micro-seconds	<code>format=[%{u}t] [%l] [pid %P] [client %a] %M</code>
<code>%{cu}t</code>	Current time in compact ISO 8601 format, including micro-seconds	<code>format=[%{cu}t] [%l] [pid %P] [client %a] %M</code>

For a full list of supported timestamp specifiers, see [“Timestamp Parser,”](#) on page 60.

Example: Apache Default Access Logs Configuration for Windows

Example: Apache Default Error Logs Configuration for Windows

This example shows how you can format Apache v2.4 access log configurations for Windows.

```
;ACCESS LOG
;127.0.0.1 - - [13/May/2015:14:44:05 +0400] "GET /xampp/navi.php HTTP/1.1" 200 4023
"http://localhost/xampp/" "Mozilla/5.0 (Windows NT 6.1; WOW64; rv:37.0) Gecko/20100101
Firefox/37.0"
;format=%h %l %u %d/%b/%Y:%H:%M:%S %z %t \"%r\" %>s %b \"%{Referer}i\" \"%{User_agent}i\"
```

```
; Section to collect Apache ACCESS logs
```

```
[filelog|clflogs-access]
  directory=C:\xampp\apache\logs
  include=acc*
  parser=clfparsers_apache_access
  enabled=yes
```

```
;Parser to parse Apache ACCESS logs
```

```
[parser|clfparsers_apache_access]
  debug=yes
  base_parser=clf
  format=%h %l %u {%d/%b/%Y:%H:%M:%S %z}t \"%r\" %>s %b \"%{Referer}i\" \"%{User_agent}i\"
```

Define the access log format:

- 1 Configure Apache for the access log format (httpd.conf):

```
LogFormat "%h %l %u {%d-%b-%Y:%H:%M:%S}t \"%r\" %a %A %e %k %l %L %m %n %T %v %V %>s %b \"%{Referer}i\" \"%{User-Agent}i\" combined
```

- 2 Define the CLF parser configuration:

```
;ACCESS LOG
;127.0.0.1 unknown - 21-May-2015:13:59:35 "GET /xampp/navi.php HTTP/1.1" 127.0.0.1 127.0.0.1 - 0
unknown - GET - 1 localhost localhost 200 4023 "http://localhost/xampp/" "-"
```

```
[filelog|clflogs-access]
  directory=C:\xampp\apache\logs
  include=acc*;*myAcc*
  parser=clfparsers_apache_access
  enabled=yes
```

; Parser to parse Apache ACCESS logs

```
[parser|clfparsers_apache_access]
  debug=yes
  base_parser=clf
  format=%h %l %u {%d-%b-%Y:%H:%M:%S}t \"%r\" %a %A %e %k %l %L %m %n %T %v %V %>s %b \"%{Referer}i\" \"%{User-Agent}i\"
```

The CLF parser returns the following:

```
remote_host=127.0.0.1
timestamp=2015-05-13T10:44:05
request=GET /xampp/navi.php HTTP/1.1
status_code=200
response_size=4023
referer=http://localhost/xampp/
user_agent=Mozilla/5.0 (Windows NT 6.1; WOW64; rv:37.0) Gecko/20100101 Firefox/37.0
```

This example shows how you can format Apache v2.4 error log configurations for Windows.

```
;ERROR LOG
;[Wed May 13 14:37:17.042371 2015] [mpm_winnt:notice] [pid 4488:tid 272] AH00354: Child:
Starting 150 worker threads.
;[Wed May 13 14:37:27.042371 2015] [mpm_winnt:notice] [pid 5288] AH00418: Parent: Created child
process 3480
;format=[%a %b %d %H:%M:%S%f %Y}t] [%m:%{severity}i] [pid %P:tid %t] %E: %M
;format=[%a %b %d %H:%M:%S%f %Y}t] [%m:%{severity}i] [pid %P] %E: %M
```

; Section to collect Apache ERROR logs

```
[filelog|clflogs-error]
  directory=C:\xampp\apache\logs
  include=err*
  parser=clfparsers_apache_error
  enabled=yes
```

;Parser to parse Apache ERROR logs

```
[parser|clfparsers_apache_error]
  debug=yes
  base_parser=clf
```

```
format=[%{a %b %d %H:%M:%S%F %Y}t] [%m:%{severity}i] [pid %P:tid %{thread_id}i] %E: %M  
next_parser=clfparsed_apache_error2  
  
;Parser to parse Apache ERROR logs
```

```
[parser|clfparser_apache_error2]
  debug=yes
  base_parser=clf
  format=[%{a %b %d %H:%M:%S%f %Y}t] [%m:%{severity}i] [pid %P] %E: %M
```

NOTE The provided names correspond to the combined log format. Apache error logs are also described using the above formatting keys, not the Apache error log format.

Define the error log format:

- 1 Configure Apache for the error log format (httpd.conf):

```
LogFormat "%h %l %u %{d-%b-%Y:%H:%M:%S}t \"%r\" %a %A %e %k %l %L %m %n %T %v %V %>s %b \"%{Referer}i\" \"%{User-Agent}i\"" combined
```

- 2 Define the CLF parser configuration:

```
;Parser to parse Apache ERROR logs
[parser|clfparser_apache_error]
  debug=yes
  base_parser=clf
  format=[%{a %b %d %H:%M:%S%f %Y}t] [%m:%{severity}i] [pid %P] %E: %M
  next_parser=clfparser_apache_error2
```

```
;Parser to parse Apache ERROR logs
[parser|clfparser_apache_error2]
  debug=yes
  base_parser=clf
  format=[%{a %b %d %H:%M:%S%f %Y}t] [%m:%{severity}i] [pid %P:tid %{thread_id}i] %E: %M
```

Log entry:

```
[Wed May 13 14:37:17.042371 2015] [mpm_winnt:notice] [pid 4488:tid 272] AH00354: Child: Starting 150 worker threads.
```

The CLF parser returns the following fields for the log entry (If using a parser in a +0400 timezone):

```
timestamp=2015-05-13T10:37:17.042371
request_method=mpm_winnt
severity=notice
process_id=4488
thread_id=272
error_status=AH00354
log_message=Child: Starting 150 worker threads.
```

Log entry:

```
[Wed May 13 14:37:27.042371 2015] [mpm_winnt:notice] [pid 5288] AH00418: Parent: Created child process 3480
```

The CLF parser returns the following fields for the log entry (If using a parser in a +0400 timezone):

```
timestamp=2015-05-13T10:37:27.042371
request_method=mpm_winnt
severity=notice
process_id=5288
error_status=AH00418
log_message=Parent: Created child process 3480
```

Key/Value Pair Parser

You can configure the Key/Value Pair (KVP) parser for both FileLog and WinLog collectors.

Key/Value Pair (KVP) Parser

The `kvp` parser finds and extracts all `key=value` matches from an arbitrary log message text. The following example shows the `kvp` parser format.

```
[parser|kvp_parser]
base_parser=kvp
fields=*
```

For example, the key-value log can be in the following format: `scope=local; abstract=false; lazyInit=false; autowireMode=0; dependencyCheck=0;`

With the `kvp` parser, you must specify the fields from which the values are to be extracted. For example, if the definition `fields=name, lastname, country` exists in the configuration, only the values with the specified keys are parsed and sent to the server.

Both the key and the value can be optionally surrounded by double quotes “ ” to define white space or other special characters.

When double quotes are used for the key or value, the backslash character “ \ ” can be used as the escape character. Any character following the backslash character is defined literally, including a double quote character or a backslash character. For example: “ \ ”

Note the following considerations.

- If the key in a key/value pair is not followed by an equals sign and a VALUE is not provided, the option is skipped, as with free text.
- The key cannot be empty, the value can be empty.
- An equals sign that is not followed by a value is treated as free text and is skipped.
- A value can be a string of characters that are surrounded by double quote characters, or it can be empty. Use a backslash for escaping special characters that are part of the value.

KVP Parser Options

Note the following information about the structure of the `kvp` parser.

Option	Description
fields	<p>The information that you want to extract described as units of data. For example, <code>fields=name, lastname, country</code>.</p> <p>If specific field names are defined by the <code>fields</code> option, then each invalid char in a field name extracted from a log is replaced with an underscore. For example, if the <code>fields</code> option looks for fields "x-A" and "a*(X+Y)", then the parser extracts these fields from logs and renames them to "x_a" and "a_x_y" fields respectively. This makes it possible to extract fields with any chars in the name.</p> <p>If the <code>fields</code> option is specified as "*", which means the <code>kvp</code> parser recognizes field/value pairs automatically, then the parser looks for fields that have only "alphanumeric+underscore" chars (supported by LI server). All other invalid chars are dropped instead of being converted to underscores. This prevents the parser from extracting unnecessary information into static fields.</p>
delimiter	<p>Optional.</p> <p>Default delimiters are the space character, tab, newline characters, comma, and semicolon characters.</p> <p>If delimiters are not specified in the configuration, the <code>kvp</code> parser uses default delimiters for parsing.</p> <p>To change the default delimiters to specific delimiters, you must define them between double quotes. For example: <code>delimiter = "#^ "</code>. This definition means that each of the characters that are enclosed in the double quotes is used as a delimiter. For the <code>kvp</code> parser, any character can be considered as delimiter. You can include the default delimiters with other delimiters in the definition.</p> <p>For example, the <code>delimiter = "#^ \t\r\n\s"</code> statement includes the tab, newline characters, and the space as delimiters. If these characters are used, they must be preceded by the escape character. For example, to define the space character as a delimiter, enter the escape character " \ " before the space character when defining it as a delimiter, for example, <code>delimiter="\s"</code>.</p>
field_decoder	<p>Nested parsers are specified as a JSON string in which the keys are the names of the field to apply to the nested parser, and the value is the name of the parser to use for that field.</p> <p>Each nested parser is applied to the appropriate field, as decoded by the base parser.</p> <p>Field decoders are useful when the value of a key-value pair is a complex value such as a timestamp or a comma-separated list.</p>
debug =	<p>Optional. The <code>debug =</code> value can be <code>yes</code> or <code>no</code>. The default value for <code>debug</code> is <code>debug=no</code> for parsers.</p> <p>When the option is set to <code>yes</code>, you can view detailed logs of the parser ingestion in <code>liagent_<date>.log</code>.</p>

Additional Keys Value Options

Key	Definition
<code>KVP_MESSAGE = *(MESSAGE_ENTRY [WSPR])</code>	A list of message entries separated by optional white space
<code>MESSAGE_ENTRY = KVP / FREE_TEXT</code>	An entry is a key/value pair or just a free text
<code>KVP = KEY ["=" VALUE]</code>	Key/value pair. If <code>KEY</code> is not followed by an equal sign and <code>VALUE</code> , it is skipped like free text.
<code>KEY = BARE_KEY / QUOTED_KEY</code>	
<code>FREE_TEXT = "="</code>	A free standing equal sign is considered a free text and is skipped.
<code>BARE_KEY = *1BARE_KEY_CHAR</code>	At least one character
<code>BARE_KEY_CHAR = %0x00-08 / %0x10-19 / %0x21-3C / %3E-%FF</code>	Any character excluding equal sign, space, or TAB
<code>QUOTED_KEY = 0x22 *1(QUOTED_STRING_CHAR / "\" CHAR) 0x22</code>	At least one character surrounded by double quote characters. The backslash is used as an escape character.

Key	Definition
QUOTED_STRING_CHAR = %0x00-21 / %0x23-FF	Any character excluding double quote
VALUE = BARE_VALUE / QUOTED_VALUE	
BARE_VALUE = *BARE_VALUE_CHAR	Zero or more characters
BARE_VALUE_CHAR = %0x00-08 / %0x10-19 / %0x21-FF	Any character excluding space or TAB
QUOTED_VALUE = 0x22 *(QUOTED_STRING_CHAR / "\\") CHAR) 0x22	A string of characters surrounded by double quote characters. This can be empty. The backslash is used as an escape character.

KVP Parser Configuration Examples

You can use `fields=*` to parse all fields, if necessary.

```
[parser|simple_kvp]
base_parser =kvp
fields=*
```

This example shows how to specify the field decoder.

```
[parser|mykvp]
debug=no
base_parser=kvp
delimiter="#^|"
fields=*
;OR fields=scope,abstract,lazyInit,autowireMode,dependencyCheck
field_decoder={"field1":"field1_parser1"}
```

```
[parser|field1_parser1]
base_parser=clf
format=[%{value1}i]
field_decoder={"value1":"field_parser2"}
```

To parse the following KVP log:

```
Configuring transport... proto = cfapi server_hostname = LOCALHOST ssl = no port = 9000
reconnect = 30
```

Define the KVP parser configuration:

```
[parser|kvp_log_parser]
base_parser=kvp
fields=*
```

The KVP parser returns the following fields:

```
proto=cfapi
server_hostname=LOCALHOST
ssl=no
port=9000
reconnect=30
```

Example: Simple and Complex KVP Parser Examples

Simple KVP Parser Example

```
[filelog|MyLog]
directory=C:\<folder_name>\Parser_logs
include=*.log
parser=my_KVP_parser
```

```
[parser|my_KVP_parser]
base_parser=kvp
fields=*
```

Complex KVP Parser Example

```
[filelog|MyLog]
directory=C:\<folder_name>\Parser_logs
include=*.log
parser=my_KVP_parser
```

```
[parser|my_KVP_parser]
base_parser=kvp
fields=*
field_decoder={"field1":" field1_parser1"}
```

```
[parser| field1_parser1]
base_parser=clf
format=[%{value1}i]]
field_decoder={"value1":" field1_parser2"}
```

Timestamp Parser

The timestamp parser does not produce fields but instead transforms its input from a string to an internal timestamp format displayed in milliseconds from the UNIX epoch start, January 1, 1970 (midnight UTC/GMT).

The only supported configuration option is `format`. For example, `format=%Y-%m-%d %H:%M:%S`.

Unlike the CLF parser, the timestamp parser can parse time when there are no delimiters between time specifiers, for example `%A%B%d%H%M%S%Y%Z`.

Format specifiers that are used by the timestamp parser are:

- 'a': Abbreviated weekday name, for example: Thu
- 'A': Full weekday name, for example: Thursday
- 'b': Abbreviated month name, for example: Aug
- 'B': Full month name, for example: August
- 'd': Day of the month, for example: 23. `strftime()` expects zero-padded (01-31) digits for this specifier but Log Insight agents can parse space-padded and non-padded day numbers, too.
- 'e': Day of the month, for example: 13. `strftime()` expects space-padded (1-31) digits for this specifier but Log Insight agents can parse zero-padded and non-padded day numbers too.
- 'f': Fractional seconds of time, for example: .036 'f' specifier assumes that '.' or ',' character should exist before fractional seconds and there is no need to mention that character in the format. If none of these characters precedes fractional seconds, timestamp wouldn't be parsed.
- 'H': Hour in 24h format (00-23), for example: 14. Zero-padded, space-padded, and non-padded hours

are supported.

'%I': Hour in 12h format (01-12), for example: 02. Zero-padded, space-padded and non-padded hours are supported.

'%m': Month as a decimal number (01-12), for example: 08. Zero-padded, space-padded and non-padded month numbers are supported.

'%M': Minute (00-59), for example: 55

'%p': AM or PM designation, for example: PM

'%S': Second (00-61), for example: 02

'%s': Total number of seconds from the UNIX epoch start, for example 1457940799 (represents '2016-03-14T07:33:19' timestamp)

'%Y': Year, for example: 2001

'%z': ISO 8601 offset from UTC in timezone (1 minute=1, 1 hour=100)., for example: +100

Additional specifiers are accepted by the timestamp parser, but their values are ignored and do not affect the parsed time.

'%C': Year divided by 100 and truncated to integer (00-99), for example: 20

'%g': Week-based year, last two digits (00-99), for example, 01

'%G': Week-based year, for example, 2001

'%j': Day of the year (001-366), for example: 235

'%u': ISO 8601 weekday as number with Monday as 1 (1-7), for example: 4

'%U': Week number with the first Sunday as the first day of week one (00-53), for example: 33

'%V': ISO 8601 week number (00-53), for example: 34

'%w': Weekday as a decimal number with Sunday as 0 (0-6), for example: 4

'%W': Week number with the first Monday as the first day of week one (00-53), for example: 34

'%y': Year, last two digits (00-99), for example: 01

If a format parameter is not defined, the Timestamp parser parses the timestamps using the default formats.

Automatic Timestamp Parser

The automatic timestamp parser is called when no format is defined for the timestamp parser or the parser can be called directly without a timestamp parser definition by using `timestamp` in the `field_decoder`. For example:

```
[parser|mycsv]
base_parser=csv
debug=yes
fields=timestamp,action,source_id,dest
field_decoder={"timestamp": "timestamp"}
```

Example: A Timestamp Parser with the Default Configuration

This example shows a timestamp parser with a default configuration.

```
[parser|tsp_parser]
base_parser=timestamp
debug=no
format=%Y-%m-%d %H:%M:%S%f
```

To integrate a timestamp parser with other parsers, for example the CSV parser, specify the following configuration.

```
[parser|mycsv]
base_parser=csv
fields=timestamp,action,source_id,dest
field_decoder={"timestamp": "tsp_parser"}
```

When this configuration is defined, `mycsv` parser extracts the fields with the names that are specified in the configuration, and runs `tsp_parser` on the content of the `timestamp` field. If `tsp_parser` retrieves a valid timestamp, the server uses that timestamp for the log message.

Automatic Log Parser

The automatic parser automatically detects the timestamp within the first 200 characters of a line. The format of auto-detected time stamps are the same as for the `timestamp` parser.

The automatic parser does not have any options. In addition to the automatic detection of the timestamp, the Key/Value parser runs on the log entry and automatically detects any existing key/value pairs in the logs and extracts the fields accordingly. For example,

```
[filelog|some_logs]
directory=/var/log
include=*
parser=auto
```

As with other parsers, you can define a separate action for the automatic parser.

```
[filelog|kvplogs]
directory=C:\temp_logs\csv-itbm
include=*.txt
parser=myauto
[parser|myauto]
```

```
base_parser=auto
debug=yes
```

If you have `debug` enabled for the automatic parser, additional information about parsing is printed. For example, information about on which log the automatic parser was run, and which fields were extracted from the log.

The default value for `debug` is `debug=no` for parsers.

Syslog Parser

The syslog parser supports the `message_decoder` and `extract_sd` options and automatically detects two formats: RFC-5424 and RFC-3164.

Configuring the message_decoder Option

All common options and the `message_decoder` option are available for the syslog parser. By default, only the `timestamp` and `appname` fields are extracted. Enable the `message_decoder` option by setting configuration values in your `liagent.ini` file to be similar to the following example:

```
[filelog|data_logs]
directory=D:\Logs
include=*.txt
parser=mysyslog

[parser|mysyslog]
base_parser=syslog
message_decoder=syslog_message_decoder
debug=yes

[parser|syslog_message_decoder]
base_parser=kvp
fields=*
```

Example: Parsing with the message_decoder Option

The following example shows a sample event and the fields that are added to the event by a syslog parser configured to use the message_decoder option:

- Sample event:

```
2015-09-09 13:38:31.619407 +0400 smith01 john: Fri Dec 5 08:58:26 2014 [pid 26123]
[jsmith.net] status_code=FAIL oper_
ation=LOGIN: Client "176.31.17.46"
```

- Returned by a syslog parser to which the message_decoder option is applied to run a KVP parser:

```
timestamp=2015-09-09T09:38:31.619407 appname=john status_code=FAIL operation=LOGIN:
```

Configuring the extract_sd Option for Parsing Structured Data

To parse structured data, enable the extract_sd option by setting configuration values in your liagent.ini file to be similar to the following example:

```
[filelog|simple_logs]
directory=/var/log
include=*.txt
parser=syslog_parser
```

```
[parser|syslog_parser]
base_parser=syslog
extract_sd=yes
```

Example: Parsing with the extract_sd Option

The following example shows a sample event and the fields that are added to the event by a syslog parser configured to use the extract_sd option:

- The sample event: <165>1 2017-01-24T09:17:15.719Z localhost evntslog - ID47 [exampleSDID@32473 iut="3" eventSource="Application" eventID="1011"][examplePriority@32473 class="high"] Found entity IPSet, display name dummy ip set 1411

- The following fields are added to the event by the syslog parser:

```
timestamp=2017-01-24T09:17:15.719000
pri_facility=20
pri_severity=5
procid="-"
msgid="ID47"
iut="3"
eventsource="Application"
eventid="1011"
class="high"
appname="evntslog"
```

Fields Extracted By the Parser

The parser automatically extracts the following fields from an event:

RFC Classification	pri_facility	pri_severity	timestamp	appname	procid	msgid
Non-RFC			X	X		
RFC-3164	X	X	X	X		
RFC-5424	X	X	X	X	X	X

Syslog Parser Options

The following table describes available syslog options.

Option	Description
message_decoder	Defines an additional parser, which is used to parse the message body of an event. It can be a built-in parser, such as 'auto' or any custom-defined parser.
extract_sd	Parses structured data. Only yes or no values are supported for the extract_sd option. The option is disabled by default. When the extract_sd option is enabled, it simply extracts all key-value pairs from the structured data.

Example: Parsing for the RFC-5424 Standard

The following examples show two events parsed by a syslog instance configured shows the configuration used for the collector, a sample event, and the fields that the syslog parser adds to the event.

- Configuration:

```
[filelog|simple_logs]
directory=/var/log
include=*.txt
parser=syslog
```

- An event generated in the monitored file:

```
<165>1 2017-01-24T09:17:15.719Z router1 mgd 3046 UI_DBASE_LOGOUT_EVENT [junos@2636.1.1.1.2.18
username=\"regress\"] User 'regress' exiting configuration mode - Juniper format
```

- Fields that are added to the event by the syslog parser:

```
The following fields will be added to the event by Syslog parser:
timestamp=2017-01-24T09:17:15.719000
pri_facility = 20
pri_severity = 5
procid = 3046
msgid = UI_DBASE_LOGOUT_EVENT
appname = mgd
```

Example: Parsing for the RFC-3164 Standard

The following example shows the configuration used for the collector, a sample RFC-3164 event, and the fields that syslog adds to the event.

- Configuration:

```
[filelog|simple_logs]
directory=/var/log
include=*.txt
parser=syslog
```

- An RFC-3164 event generated in the monitored file:

```
<13>2017-01-24T09:17:15.719Z router1 mgd 3046 UI_DBASE_LOGOUT_EVENT User 'regress' exiting
configuration mode - Juniper format
```


- Fields that are added to the event by the syslog parser:

```
timestamp=2017-01-24T09:17:15.719000
pri_facility=1
pri_severity=5
appname="mgd"
```

Labeled Tab-separated Values Parser

The Labeled Tab-separated Values (LTSV) format is a variant of Tab-separated Values (TSV).

Each record in a LTSV file is represented as a single line. Each field is separated by <TAB> and has a label and a value. The label and the value are separated by :. With the LTSV format, you can parse each line by splitting the line with <TAB> (the same as the TSV format) and extend any fields with unique labels in no particular order. For more information about the LTSV definition and format, see <http://ltsv.org/>.

Example: LTSV Parser Configuration

Example: Sample LTSV Log

The LTSV parser does not require specific configuration options. To use the LTSV parser, specify the built-in ltsv parser name in the configuration.

```
[parser|myltsv]
base_parser=ltsv
```

An LTSV file must be a byte sequence that matches the LTSV production in the ABNF format.

```
ltsv = *(record NL) [record]
record = [field *(TAB field)]
field = label ":" field-value
label = 1*byte
field-value = *fbyte

TAB = %x09
NL = [%x0D] %x0A
lbyte = %x30-39 / %x41-5A / %x61-7A / "_" / "." / "-" ;; [0-9A-Za-z_.-]
fbyte = %x01-08 / %x0B / %x0C / %x0E-FF
```

```
host:127.0.0.1<TAB>ident:--<TAB>user:frank<TAB>time:[10/Oct/2000:13:55:36
-0700]<TAB>req:GET /apache_pb.gif HTTP/1.0<TAB>status:200<TAB>size:
2326<TAB>referer:http://www.example.com/start.html<TAB>ua:Mozilla/4.08 [en] (Win98; I ;Nav)
```

With the sample LTSV configuration, the log's parsing should return the following fields:

```
host=127.0.0.1
ident=--
user=frank
time=[10/Oct/2000:13:55:36 -0700]
req=GET /apache_pb.gif HTTP/1.0
status=200
size=2326
referer=http://www.example.com/start.html
ua=Mozilla/4.08 [en] (Win98; I ;Nav)
```

Debug Configuration

Additional debugging is also available for the LTSV parser. By default, LTSV debugging is disabled. To turn on LTSV debugging, enter `debug=yes`.

```
[parser|myltsv]
base_parser=ltsv
debug=yes
```

When debugging is turned on, the LTSV parser extracts values of all valid labels from the log. The LTSV parser requires that label names consist only of alpha-numeric characters, the underscore ('_'), dot('.') and dash('-') characters. If at least one invalid label name exists in the log, its parsing will fail. Even if the label name is valid, the agent will check the field name. If invalid names exist, the label name should be corrected to a valid field name.

Configuring the LTSV Parser from the filelog Section

You can also configure the LTSV parser from the `filelog` section directly.

```
[filelog|simple_logs]
directory=/var/log
include=*
parser=ltsv
```

Regex Parser

The `regex` parser enables the use of some regular expressions for collected data.

The `regex` parser can be defined by specifying a regular expression pattern that contains named capture groups. For example: `(?<field_1>\d{4})[-](?<field_2>\d{4})[-](?<field_3>\d{4})[-](?<field_4>\d{4})`

The names specified in the groups (for example: `field_1`, `field_2`, `field_3`, and `field_4`) become names of the corresponding extracted fields. Names have the following requirements:

- Names specified in the regular expression pattern must be valid field names for vRealize Log Insight.
- The names can contain only alphanumeric characters and the underscore “_” character.
- The name cannot start with a digital character.

If invalid names are provided, configuration fails.

Regex Parser Options

The only required option for the `regex` parser is the `format` option.

The `debug` option can be used when additional debugging information is needed.

Configuration

To create a `regex` parser, use `regex` as a `base_parser` and provide the `format` option.

Example: Regex Configuration Examples

Example: Parsing Apache Logs Example

The following example can be used to analyze 1234-5678-9123-4567:

```
[parser|regex_parser]
base_parser=regex
format=(?<tag1>\d{4})[-](?<tag2>\d{4})[-](?<tag3>\d{4})[-](?<tag4>\d{4})
[filelog|some_info]
directory=D:\Logs
include=*.txt
parser=regex_parser
```

The results show:

```
tag1=1234
tag2=5678
tag3=9123
tag4=4567
```

To parse Apache logs with the regex parser, provide the specific regex format for Apache logs:

```
[parser|regex_parser]
base_parser=regex
format=(?<remote_host>.*)(?<remote_log_name>.*)(?<remote_auth_user>.*)\[(?<log_timestamp>.*)\] "(?<request>.*)(?<status_code>.*)(?<response_size>.*)
```

The results show:

```
127.0.0.1 - admin [10/Oct/2000:13:55:36 -0700] "GET /apache_pb.gif HTTP/1.0" 200 2326
remote_host=127.0.0.1
remote_log_name=-
remote_auth_user=admin
log_timestamp=10/Oct/2000:13:55:36 -0700
request=GET /apache_pb.gif HTTP/1.0
status_code=200
response_size=2326
```

The following code shows another example of parsing Apache logs.

```
[parser|regex_parser]
base_parser=regex
format=(?<remote_host>.*(?<remote_log_name>.*))(?<remote_auth_user>.*)\[(?<log_timestamp>.*)\] "(?<request>.*(?<resource>.*)(?<protocol>.*))" (?<status_code>.*)(?<response_size>.*)
127.0.0.1 unknown - [17/Nov/2015:15:17:54 +0400] "\"GET /index.php HTTP/1.1\" 200 4868
remote_host=127.0.0.1 unknown
remote_log_name=unknown
remote_auth_user=-
log_timestamp=17/Nov/2015:15:17:54 +0400
request=GET /index.php HTTP/1.1
resource=/index.php
protocol=HTTP/1.1
status_code=200
response_size=4868
```

Performance Considerations

The regex parser consumes more resources than other parsers, such as the CLF parser. If you can parse logs with other parsers, consider using those parsers instead of the regex parser to achieve better performance.

If a parser is not provided and you use the regex parser, define formats as clear as possible. The following example shows a configuration that provides better performance results. This example specifies fields that have digital values.

```
(?<remote_host>\d+.\d+.\d+.\d+)(?<remote_log_name>.*)(?<remote_auth_user>.*)\[(?<log_timestamp>.*)\] "(?<request>.*)(?<status_code>\d+)(?<response_size>\d+)
```


Uninstalling vRealize Log Insight Agents

4

Should you need to uninstall a vRealize Log Insight agent, follow the instructions that are appropriate to the agent package that you installed.

This chapter includes the following topics:

- [“Uninstall the Log Insight Windows Agent,”](#) on page 69
- [“Uninstall the Log Insight Linux Agent RPM package,”](#) on page 69
- [“Uninstall the Log Insight Linux Agent DEB package,”](#) on page 70
- [“Uninstall the Log Insight Linux Agent bin package,”](#) on page 70

Uninstall the Log Insight Windows Agent

You can uninstall the Log Insight Windows Agent from the Programs and Feature screen of the Windows Control Panel.

Prerequisites

Log in to the Windows machine on which you installed the vRealize Log Insight Windows agent and start the Services manager to verify that the vRealize Log Insight agent service is installed.

Procedure

- 1 Go to **Control Panel > Programs and Features**.
- 2 Select the VMware vRealize Log Insight Windows Agent and click **Uninstall**.

The uninstaller stops the VMware vRealize Log Insight Windows Agent service and removes its files from the system.

Uninstall the Log Insight Linux Agent RPM package

You can uninstall the Log Insight Linux Agent RPM package.

Prerequisites

- Log in as **root** or use **sudo** to run console commands.
- Log in to the Linux machine on which you installed the Log Insight Linux Agent, open a terminal console and run `pgrep liagent` to verify that the VMware Log Insight Linux Agent is installed and running.

Procedure

- ◆ Run the following command replacing *VERSION* and *BUILD_NUMBER* with the version and build number of the installed agent.

```
rpm -e VMware-Log-Insight-Agent-VERSION-BUILD_NUMBER
```

The uninstaller stops the VMware Log Insight Linux Agent daemon and removes all its files except its own logs from the system.

Uninstall the Log Insight Linux Agent DEB package

You can uninstall the Log Insight Linux Agent DEB package.

Prerequisites

- Log in as **root** or use `sudo` to run console commands.
- Log in to the Linux machine on which you installed the Log Insight Linux Agent, open a terminal console and run `pgrep liagent` to verify that the VMware Log Insight Linux Agent is installed and running.

Procedure

- ◆ Run the following command

```
dpkg -P vmware-log-insight-agent
```

The uninstaller stops the VMware Log Insight Linux Agent daemon and removes all its files except its own logs from the system.

Uninstall the Log Insight Linux Agent bin package

You can uninstall the Log Insight Linux Agent .bin package.

Prerequisites

- Log in as **root** or use `sudo` to run console commands.
- Log in to the Linux machine on which you installed the Log Insight Linux Agent, open a terminal console and run `pgrep liagent` to verify that the VMware vRealize Log Insight Linux Agent is installed and running.

Procedure

- 1 Stop the Log Insight Linux Agent daemon by running the following command
`sudo service liagentd stop` or `sudo /sbin/service liagentd stop` for older Linux distributions.
- 2 Manually remove the Log Insight Linux Agent files
 - `/usr/lib/loginsight-agent` - Daemon binary and license files directory.
 - `/usr/bin/loginsight-agent-support` - Used to generate the support bundle for the Log Insight Linux Agent.
 - `/var/lib/loginsight-agent` - Configuration files and database storage directory.
 - `/var/log/loginsight-agent` - Log directory for the Log Insight Linux Agent.
 - `/var/run/liagent/liagent.pid` - Log Insight Linux Agent PID file. If it is not deleted automatically, remove the file manually.
 - `/etc/init.d/liagentd` - Script directory for the Log Insight Linux Agent daemon.

- `/usr/lib/systemd/system/liagentd.service`

Troubleshooting vRealize Log Insight Agents

5

Known troubleshooting information can help you diagnose and correct problems related to the operation of the vRealize Log Insight agents.

This chapter includes the following topics:

- [“Create a Support Bundle for the Log Insight Windows Agent,”](#) on page 73
- [“Create a Support Bundle for the Log Insight Linux Agent,”](#) on page 74
- [“Define Log Details Level in the Log Insight Agents,”](#) on page 74
- [“Administration UI Does Not Show Log Insight Agents,”](#) on page 75
- [“vRealize Log Insight Agents Do Not Send Events,”](#) on page 75
- [“Add an Outbound Exception Rule for the Log Insight Windows Agent,”](#) on page 76
- [“Allow Outbound Connections from the Log Insight Windows Agent in a Windows Firewall,”](#) on page 77
- [“Mass Deployment of the Log Insight Windows Agent is Not Successful,”](#) on page 78
- [“Log Insight Agents Reject Self-Signed Certificates,”](#) on page 78
- [“vRealize Log Insight Server Rejects the Connection for Non-Encrypted Traffic,”](#) on page 79

Create a Support Bundle for the Log Insight Windows Agent

If the Log Insight Windows Agent does not operate as expected because of a problem, you can send a copy of the log and configuration files to VMware Support Services.

Procedure

- 1 Log in to the target machine where you installed the Log Insight Windows Agent.
- 2 Click the Windows **Start** button and then click **VMware > Log Insight Agent - Collect support Bundle**.
- 3 (Optional) If the shortcut is not available, navigate to the installation directory of the Log Insight Windows Agent and double-click `loginsight-agent-support.exe`.

NOTE The default installation directory is `C:\Program Files (x86)\VMware\Log Insight Agent`

The bundle is generated and saved as a `.zip` file in My Documents.

What to do next

Forward the support bundle to VMware Support Services as requested.

Create a Support Bundle for the Log Insight Linux Agent

If the Log Insight Linux Agent does not operate as expected because of a problem, you can send a copy of the log and configuration files to VMware Support Services.

Procedure

- 1 Log in to the target machine where you installed the Log Insight Linux Agent.
- 2 Run the following command.

```
/usr/lib/loginsight-agent/bin/loginsight-agent-support
```

The bundle is generated and saved as a .zip file in the current directory.

What to do next

Forward the support bundle to VMware Support Services as requested.

Define Log Details Level in the Log Insight Agents

You can edit the configuration file of the vRealize Log Insight Agent to change the logging level.

Prerequisites

For the Log Insight Linux Agent:

- Log in as **root** or use **sudo** to run console commands.
- Log in to the Linux machine on which you installed the Log Insight Linux Agent, open a console and run `pgrep liagent` to verify that the VMware vRealize Log Insight Linux Agent is installed and running.

For the Log Insight Windows Agent:

- Log in to the Windows machine on which you installed the vRealize Log Insight Windows agent and start the Services manager to verify that the vRealize Log Insight agent service is installed.

Procedure

- 1 Navigate to the folder containing the `liagent.ini` file.

Operating system	Path
Linux	<code>/var/lib/loginsight-agent/</code>
Windows	<code>%ProgramData%\VMware\Log Insight Agent</code>

- 2 Open the `liagent.ini` file in any text editor.
- 3 Change the log debug level in the `[logging]` section of the `liagent.ini` file.

NOTE The higher the debug level, the higher the impact it has on the vRealize Log Insight Agent. The default and recommended value is 0. Debug level 1 provides more information and is recommended for troubleshooting of most issues. Debug level 2 provides detailed information. Use levels 1 and 2 only when requested by VMware Support.

```
[logging]
; The level of debug messages to enable: 0..2
debug_level=1
```

- 4 Save and close the `liagent.ini` file.

The log debug level is changed.

Administration UI Does Not Show Log Insight Agents

Information about the Log Insight Agents instances does not appear on the Agents page of the Administration UI.

Problem

After you install the Log Insight Agents you do not see the Log Insight Agents in the Agents page of the Administration UI.

Cause

The most common causes are network connectivity problems or incorrect configuration of the Log Insight Agents in the `liagent.ini` file.

Solution

- Verify that the Windows or Linux system that the Log Insight Agents are installed on has connectivity to the vRealize Log Insight server.
- Verify that the Log Insight Agents use the `cfapi` protocol.

When using the `syslog` protocol the UI does not show Log Insight Windows Agents.

- View the contents of the Log Insight Agents log files located in the following directories .
 - Windows - `%ProgramData%\VMware\Log Insight Agent\log`
 - Linux - `/var/log/loginsight-agent/`

Look for log messages that contain the phrases `Config transport error: Couldn't resolve host name` and `Resolver failed. No such host is known.`

- Verify that the `liagent.ini` contains the correct configuration for the target vRealize Log Insight server. See [“Set Target vRealize Log Insight Server,”](#) on page 26 and [“Set Target vRealize Log Insight Server,”](#) on page 37.

vRealize Log Insight Agents Do Not Send Events

An incorrect configuration can prevent the vRealize Log Insight agents from forwarding events to the vRealize Log Insight server. If a flat file collection channel is not configured correctly, you may see messages such as `“Invalid settings were obtained for channel 'CHANNEL_NAME'. Channel 'CHANNEL_NAME' will stay dormant until properly configured.”`

Problem

The vRealize Log Insight agents instances appears on the **Administration > Agent** page but no events appear in Interactive Analytics page from the vRealize Log Insight agents host names. The flat file collection channel is not configured correctly.

Cause

Incorrect configuration can prevent the vRealize Log Insight agents from forwarding events to the vRealize Log Insight server.

Solution

- Define a valid collection channel. Verify whether or not the flat file collection channel is configured correctly. See [Chapter 3, “Configuring a vRealize Log Insight Agent,”](#) on page 23.

- For the vRealize Log Insight Windows agent, try the following.
 - If Windows channels are enabled, view the contents of the vRealize Log Insight Windows agent log files located at %ProgramData%\VMware\Log Insight Agent\log. Look for log messages related to channel configuration that contain the phrases Subscribed to channel CHANNEL_NAME. Typically-used channels are Application, System, and Security.
 - If a channel is not configured correctly, you might see log messages similar to Could not subscribe to channel CHANNEL_NAME events. Error Code: 15007. The specified channel could not be found. Check channel configuration. You might see an error code number other than 15007.
 - If a flat file collection channel is not configured correctly, you might see messages like Invalid settings were obtained for channel 'CHANNEL_NAME'. Channel 'CHANNEL_NAME' will stay dormant until properly configured
- For both vRealize Log Insight Windows agent and vRealize Log Insight Linux agent, try the following.
 - ◆ If no flat file collection channel is configured, you might see messages similar to Cannot find section 'filelog' in the configuration. The flat file log collector will stay dormant until properly configured

The contents of the vRealize Log Insight agents log files are located in the following directories.

 - Windows - %ProgramData%\VMware\Log Insight Agent\log
 - Linux - /var/log/loginsight-agent/

What to do next

For more information about configuring the vRealize Log Insight agents see [“Configure the Log Insight Windows Agent After Installation,”](#) on page 24 and [“Configure the Log Insight Linux Agent,”](#) on page 36.

Add an Outbound Exception Rule for the Log Insight Windows Agent

Define an exception rule for unblocking the Log Insight Windows Agent in the Windows firewall.

The procedure applies to Windows Server 2008 R2 and later, and to Windows 7 and later.

Prerequisites

- Verify that you have an administrator account or an account with administrative privileges.

Procedure

- 1 Select **Start > Run**.
- 2 Type `wf.msc` and click **OK**.
- 3 Right-click **Outbound rules** in the left pane and click **New Rule**.
- 4 Select **Custom** and follow the wizard to set the following options.

Option	Description
Program	liwinsvc.exe
Service	LogInsightAgentService
Protocol and Ports	TCP 9000 for cfapi and 514 for syslog

- 5 On the Specify the profiles for which this rule applies page, select the appropriate network type.
 - Domain
 - Public
 - Private

NOTE You can select all network types to make sure that the exception rule is active regardless of the network type.

What to do next

Go to the Log Insight Windows Agent log directory %ProgramData%\VMware\Log Insight Agent\log and open the latest log file. If recent events contain the messages `Config transport error: Couldn't resolve host name` and `Resolver failed. No such host is known`, restart the Log Insight Windows Agent service and the Windows machine.

NOTE The Log Insight Windows Agent service can take up to 5 minutes to reconnect to the server.

Allow Outbound Connections from the Log Insight Windows Agent in a Windows Firewall

Configure Windows firewall settings to allow outbound connections of the Log Insight Windows Agent to the vRealize Log Insight server.

After you install and start the Log Insight Windows Agent service, the Windows domain or local firewall may restrict the connectivity to the target vRealize Log Insight server.

The procedure applies to Windows Server 2008 R2 and later, and to Windows 7 and later.

Prerequisites

- Verify that you have an administrator account or an account with administrative privileges.

Procedure

- 1 Select **Start > Run**.
- 2 Type `wf.msc` and click **OK**.
- 3 In the Actions pane click **Properties**.
- 4 On the **Domain Profile** tab, select **Allow(default)** from the **Outbound connections** drop-down menu.

If the computer is not connected to a domain, you can select **Private Profile** or **Public Profile**, depending on the network type the computer is connected to.

- 5 Click **OK**.

What to do next

Define an unblocking exception rule for the Log Insight Windows Agent in the Windows firewall. See [“Add an Outbound Exception Rule for the Log Insight Windows Agent,”](#) on page 76.

Mass Deployment of the Log Insight Windows Agent is Not Successful

The mass deployment of the Log Insight Windows Agent is not successful on target machines.

Problem

After performing a mass deployment on Windows domain machines by using Group Policy Objects, the Log Insight Windows Agent fails to install as a local service.

Cause

Group policy settings might prevent the Log Insight Windows Agent from being installed correctly.

Solution

- 1 Edit the Group Policy Object (GPO) settings and redeploy the Log Insight Windows Agent agent.
 - a Right-click the GPO, click **Edit** and navigate to **Computer Configuration > Policies > Administrative Templates > System > Logon**.
 - b Enable the **Always wait for the network at computer startup and logon** policy.
 - c Navigate to **Computer Configuration > Policies > Administrative Templates > System > Group Policy**.
 - d Enable the **Startup policy processing wait time**, and set **Amount of time to wait (in seconds)** to 120.
- 2 Run the `gpupdate /force /boot` command on target machines.

Log Insight Agents Reject Self-Signed Certificates

The Log Insight Agents reject self-signed certificate.

Problem

A vRealize Log Insight agent rejects self-signed certificate and cannot establish a connection with the server.

NOTE If you experience connection problems with the agent, you can generate detailed logs to check by changing the debug level for the agent to 1. For more information, see ["Define Log Details Level in the Log Insight Agents,"](#) on page 74.

Cause

The messages you see in the agent log have specific causes.

Message	Cause
Rejecting peer self-signed certificate. Public key doesn't match previously stored certificate's key.	<ul style="list-style-type: none"> ■ This might happen when the vRealize Log Insight certificate is replaced. ■ This might happen if the HA-enabled in-cluster environment is configured with different self-signed certificates on vRealize Log Insight nodes.
Rejecting peer self-signed certificate. Have a previously received certificate which is signed by trusted CA.	There is a CA-signed certificate stored on the agent side.

Solution

- ◆ Verify whether your target host name is a trusted vRealize Log Insight instance, and then manually delete the previous certificate from vRealize Log Insight Agent cert directory.
 - For Log Insight Windows Agent, go to C:\ProgramData\VMware\Log Insight Agent\cert.
 - For Log Insight Linux Agent, go to /var/lib/loginsight-agent/cert.

NOTE Some platforms might use nonstandard paths for storing trusted certificates. The Log Insight Agents have an option to configure the path to trusted certificates store by setting the `ssl_ca_path=<fullpath>` configuration parameter. Replace <fullpath> with the path to the trusted root certificates bundle file. See [Configure the Log Insight Agents SSL Parameters](#).

vRealize Log Insight Server Rejects the Connection for Non-Encrypted Traffic

The vRealize Log Insight Server rejects the connection with the Log Insight Agents when you try to send non-encrypted traffic.

Problem

When you attempt to use `cfapi` to send non-encrypted traffic, the vRealize Log Insight Server rejects your connection. One of the following error messages appears in the agent log: 403 Forbidden or 403 Only SSL connections are allowed.

Cause

vRealize Log Insight is configured to accept only SSL connections, but the Log Insight Agents are configured to use a non-SSL connection.

Solution

You can configure a vRealize Log Insight Server to accept non-SSL connections or configure Log Insight Agents to send data through an SSL `cfapi` protocol connection.

Procedure

- 1 Configure your vRealize Log Insight Server to accept a non-SSL connection.
 - a Click the configuration drop-down menu icon and select **Administration**.
 - b Under Configuration, click **SSL**.
 - c Under the API Server SSL header, deselect **Require SSL Connection**.
 - d Click **Save**.
- 2 Configure the vRealize Log Insight agent to send data through an SSL `cfapi` protocol connection.
 - a Navigate to the folder containing the `liagent.ini` file.

Operating system	Path
Linux	/var/lib/loginsight-agent/
Windows	%ProgramData%\VMware\Log Insight Agent

- b Open the `liagent.ini` file in any text editor.

- c Change the value of the `ssl` key in the `[server]` section of the `liagent.ini` file to `yes` and the protocol to `cfapi`.

```
proto=cfapi
```

```
ssl=yes
```

- d Save and close the `liagent.ini` file.

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