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## Chapter 2. Installing

Learn about the requirements and available installation scenarios to ensure that the deployment of License Metric Tool goes smoothly in your environment.

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### Planning the installation

Before you start the installation, review information about hardware and software requirements and other considerations to ensure that the installation completes successfully.

### License Metric Tool infrastructure

A complete deployment of License Metric Tool consists of the License Metric Tool server and its database, the BigFix server and its database, and a BigFix console. Additionally, a BigFix client must be installed on every computer from which you want to collect software inventory data. Depending on the environment size, you can install all components on a single computer, or distribute them among multiple computers.

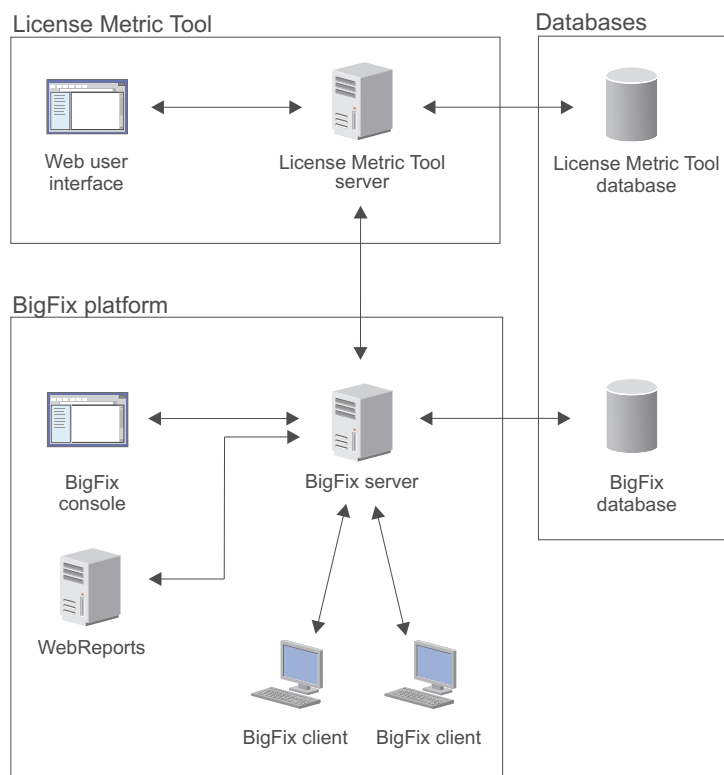


Figure 3. License Metric Tool infrastructure

#### License Metric Tool server

The License Metric Tool server provides a reporting interface for the inventory data that is collected from the computers managed by BigFix. To process the data in real time and to ensure reporting accuracy, the License Metric Tool server should run all the time. Users access the application server through a web user interface.

#### BigFix server

The BigFix server forms the heart of the BigFix infrastructure. It coordinates the flow of data to

and from individual computers. The server stores the results of capacity scans for up to five days, and thus should not be stopped for a longer period. It also stores the results of the last successful software scan from each computer. If new software scans are run more than once during server maintenance, not all of them are processed after the restart.

### **BigFix console**

The BigFix console provides a system-wide view of all computers in the infrastructure and their configuration. It is used to target computers with specific actions such as installing the scanner or scheduling software and capacity scans.

### **Web Reports**

Web Reports is a high-level web application that allows for visualizing data collected from the BigFix infrastructure. It is required by License Metric Tool to connect with the VM Manager Tool that collects data from the VM managers in your infrastructure.

### **BigFix clients**

BigFix client is common for all products that are based on the BigFix platform and should be installed on every computer, including backup and recovery machines, to ensure audit readiness. It provides information about computer properties, and is used to perform tasks such as installing the scanner on the computers. The BigFix client runs on all operating systems supported by License Metric Tool, except for IBM i that uses disconnected scans instead of the client.

Apart from the BigFix client, a scanner should also be installed on every monitored computer. The scanner is an independent component that is used by License Metric Tool to collect information about the hardware, as well as the software that is installed on the computers in your infrastructure.

### **Databases**

BigFix server and License Metric Tool server require their separate database instances. Depending on the size of your environment, these can be two database instances running on a single database engine, or two separate database engines. The data is extracted from the BigFix server database and imported to the License Metric Tool database during the Extract, Transform, and Load (ETL) import process.

## **IBM BigFix requirements**

The three major components of IBM BigFix that you must install are server, console, and clients. The application also requires a database that stores all the data retrieved from the clients.

Refer to the following requirements for each of the components:

Component	Description
Server	Server requirements
Console	Console requirements
Clients	Client requirements
Database	Database requirements

## **Supported operating systems**

Ensure that computers on which you want to install License Metric Tool components run on supported operating systems and hypervisors and that they have the prerequisite software installed.

To view the list of supported operating systems, go to IBM License Metric Tool 9.2 - Supported Operating Systems. For information about technologies eligible for PVU full capacity and subcapacity, see also: Eligible Virtualization Technology and Operating Systems and Eligible Processor Technology.

If you want to generate a custom report with a subset of information about supported operating systems, go to Software Product Compatibility Reports (SPCR).

## Software requirements

Ensure that all prerequisite software is installed on the computers in your infrastructure.

### Server requirements

For information about operating systems on which BigFix, DB2 and SQL Server are supported, see: “Supported operating systems” on page 60.

Table 6. Requirements for the License Metric Tool server

	Version	Description
BigFix	9.5 9.2	For information about the requirements, see: <ul style="list-style-type: none"><li>• BigFix 9.5 product documentation</li><li>• BigFix 9.2 product documentation</li></ul> <b>Note:</b> Earlier versions of BigFix are no longer supported and thus cannot be used.
DB2	<b>DB2 10.1 with Fix Pack 5 or higher</b> <b>DB2 10.5 with Fix Pack 6 or higher</b> (Workgroup Server Edition, Enterprise Server Edition, or Advanced Enterprise Server Edition)	To use DB2 as a database, License Metric Tool must be installed on Linux. <b>DB2 requirements</b> For information about the database requirements, see: <ul style="list-style-type: none"><li>• DB2 10.1 product documentation</li><li>• DB2 10.5 product documentation</li></ul> <b>DB2 edition</b> DB2 Workgroup Server Edition is sufficient to work with License Metric Tool regardless of the number of endpoints. You can use DB2 Enterprise Server Edition, or Advanced Enterprise Server Edition to have access to advanced features of DB2. <b>DB2 settings</b> Use a DB2 instance with default settings. Other required database settings are configured by License Metric Tool installer. <b>Restriction:</b> If you specify non-default DB2 settings, License Metric Tool might not work properly. <b>Download DB2 software</b> For more information, see: Downloading and installing DB2.

Table 6. Requirements for the License Metric Tool server (continued)

	Version	Description
SQL Server	<p>2008, 2008 Express® 2008 R2, 2008 R2 Express 2012, 2012 Express 2014, 2014 Express</p> <p><b>9.2.13</b> 2016</p>	<p>To use SQL Server as a database, License Metric Tool must be installed on Windows.</p> <p><b>SQL Server version</b></p> <p><b>9.2.13</b> Starting from application update 9.2.13, you can use MS SQL 2016 as the database.</p> <p>If you used MS SQL 2016 with earlier versions of License Metric Tool, your environment was non-compliant from IBM perspective because data that was stored in the database might have been corrupted. Problems with historical data cannot be fixed. However, data collected after the upgrade to License Metric Tool 9.2.13 is valid and compliant from IBM perspective.</p> <p><b>SQL Server edition</b></p> <p>To use SQL Server Express Edition, ensure that the following conditions are met:</p> <ul style="list-style-type: none"> <li>• The database is dedicated to License Metric Tool. It cannot be shared between License Metric Tool and BigFix.</li> <li>• The environment consists of up to 500 endpoints.</li> <li>• BigFix is dedicated to License Metric Tool and contains only the License Metric Tool fixlet site. Other applications and their fixlet sites would increase the required disk space resulting in problems with the database.</li> <li>• Additional configuration is required to use SQL Server Express. For more information, see: “Installing MS SQL Server for License Metric Tool on Windows” on page 94.</li> </ul> <p>The requirements are caused by the fact the Express Edition limits the disk space available to each database instance.</p> <p><b>Restriction:</b> The BigFix installer allows for the installation of an evaluation version of MS SQL Server. However, such version expires after 180 days and should not be used in a production environment.</p> <p><b>SQL Server settings</b></p> <p>Ensure that snapshot isolation is enabled in the SQL Server. For information about the requirements, see the Microsoft SQL Server documentation.</p> <p>The support for AlwaysOn solution has not been tested.</p> <p><b>Important:</b> If you use SQL Server 2012, install cumulative update 5 for SQL Server 2012 SP2 to prevent possible corruption of the database.</p> <p><b>Permissions and roles</b></p> <ul style="list-style-type: none"> <li>• Ensure that the MS SQL Server user has the following permissions. These permissions apply only if the databases were installed with default settings and all customizations and hardening configurations were consulted with IBM support. <ul style="list-style-type: none"> <li>– For the BigFix database (BFEnterprise): CREATE FUNCTION, CREATE SCHEMA, CREATE TABLE, CREATE VIEW, EXECUTE, SELECT</li> <li>– For the Web Reports database (BESReporting): SELECT</li> </ul> </li> <li>• Ensure that the MS SQL Server user has the appropriate role to create the License Metric Tool database. <ul style="list-style-type: none"> <li>– If you create a new database during initial configuration in License Metric Tool, the user must have the sysadmin role in MS SQL Server.</li> <li>– If you create an MS SQL database manually before the</li> </ul> </li> </ul>

Table 6. Requirements for the License Metric Tool server (continued)


	Version	Description
Linux X server	X11R7.x	The X server is required if you want to install or uninstall the License Metric Tool server in interactive mode on Red Hat Enterprise Linux. It is also required if you want to complete the server configuration by using a browser that is available on the computer where the License Metric Tool server is installed. <b>Restriction:</b> Xming X Server for Windows is not supported.
All-in-One	<b>BigFix 9.5.6</b> <b>DB2 10.5 FP5</b> <b>License Metric Tool 9.2.15</b>	These versions of components are installed if you complete the All-in-One installation, which combines the installations of BigFix, DB2, and License Metric Tool.

## Other software requirements

Table 7. Other software requirements for License Metric Tool

Required software	Required versions	Comments
Web Reports		A component of the BigFix platform that is required by License Metric Tool to configure VM managers. Web Reports can be installed during the installation of BigFix, and must reside on the same server.
Browser	<ul style="list-style-type: none"> <li>License Metric Tool is tested in Internet Explorer version 11. Most panels are also displayed correctly in Internet Explorer 10, however you can face some minor issues. It is recommended to use the newest version of Internet Explorer to ensure that all security updates and patches are applied. <b>Note:</b> Internet Explorer must have TLS 1.2 enabled if you want to use TLS 1.2 for secure communication with SSL. You can also use TLS 1.0 for secure communication with SSL.</li> <li>Firefox 17 Extended Support Release (ESR) or higher ESR editions <b>Note:</b> To use TLS 1.2, check whether your version of the browser supports it and whether it is enabled. Otherwise, use TLS 1.0 for secure communication with SSL.</li> <li>Chrome 35 or higher</li> <li><b>9.2.14</b> Microsoft Edge</li> </ul> <p><b>Restriction:</b></p> <ul style="list-style-type: none"> <li>Reports cannot be exported to PDF when multiple columns are selected. Export the data to CSV file instead.</li> <li>In reports where IP Address column is enabled, the IP address is a link that is activated by an external plug-in, such as Skype. To remove the link, disable the plug-in.</li> </ul>	<p><b>Requirements</b></p> <ul style="list-style-type: none"> <li>JavaScript must be enabled in the browser.</li> <li>Minimal supported screen resolution is 1360x768 pixels.</li> <li>Recommended screen resolution is 1920x1080 pixels.</li> </ul> <p><b>Proxies</b></p> <p>Proxies are supported and depend on the server configuration. With the default configuration, use SSL proxies. If you disabled SSL on the server, then use HTTP proxies. In big environments, the connections might time out with time-consuming operations (downloading extensive reports). In such a case, increase the timeout limit for communication between the proxy and License Metric Tool.</p>

Table 7. Other software requirements for License Metric Tool (continued)

Required software	Required versions	Comments
 KornShell		Original ksh package can be obtained from the Red Hat Enterprise Linux installation disc. Open source alternatives, such as pdksh and mksh, are not supported.
National language pack for PDF reader		To display PDF reports in a native language, a language pack that displays the native language fonts might be required.

## Red Hat packages

The following packages are required if you install the components on Red Hat Enterprise Linux.

Table 8. Red Hat packages that are required for the installation

Component	Required packages
All-in-One installation	<ul style="list-style-type: none"> <li>• All packages required for IBM BigFix (listed below)</li> <li>• All packages required for the License Metric Tool server (listed below)</li> <li>• All packages required for DB2 (listed below)</li> <li>• libaio.x86_64</li> <li>• numactl.x86_64</li> <li>• pam.i686 and all dependencies</li> <li>• pam.x86_64</li> </ul>
IBM BigFix	<ul style="list-style-type: none"> <li>• cyrus-sasl-lib.x86_64</li> <li>• krb5-libs.x86_64</li> <li>• libpng12.x86_64 (for Red Hat Enterprise Linux 7.x)</li> <li>• libstdc++.i686</li> <li>• libstdc++.x86_64 and all dependencies</li> <li>• libXext.x86_64 (Web Reports only)</li> <li>• libXrender.x86_64 (Web Reports only)</li> <li>• zlib.x86_64 (Web Reports only)</li> </ul>
License Metric Tool server	<ul style="list-style-type: none"> <li>• ksh</li> </ul>
DB2	<ul style="list-style-type: none"> <li>• libstdc++.so.6.0.8</li> <li>• Red Hat binutils</li> </ul>

## Hardware requirements

During setup, match your optimum deployment size to your hardware specifications. Use the recommendations as a general guidance.

### Hardware requirements for the server on Windows

Ensure that the computer on which you are installing the License Metric Tool meets the minimal CPU, and memory requirements for the server and database elements.

### Virtualized environment

The ETL (extract, transform, and load) import heavily uses the database resources. License Metric Tool and SQL Server can be installed on a virtualized environment. However, for large deployments that consist of more than 50,000 computers, it is recommended that dedicated hardware is used.

In a virtual environment for medium size deployments that consist of 10.000 - 50.000 computers, it is recommended that dedicated resources are considered for processor, memory, and virtual disk allocation. The virtual disk that is allocated for the VM should be dedicated RAID storage, with dedicated IO bandwidth for that VM.

Use SQL Server that is dedicated for License Metric Tool and is not shared with BigFix or other applications. Fine-tuning based on the above mentioned recommendations might be required.

## Processor and RAM

The values provided for IBM BigFix were calculated with the assumption that the BigFix server, its database and Web Reports server are installed on a single server and that the BigFix server is dedicated to License Metric Tool. If you share the BigFix server between other applications, refer to the BigFix documentation for information about hardware requirements: IBM BigFix requirements.

The values provided for License Metric Tool were calculated for the maximum of five concurrent application users.

*Table 9. Processor and RAM requirements for License Metric Tool*

Environment size	Topology		Processor	Memory
<b>Small environment</b>  Up to 5 000 endpoints	1 server	• IBM BigFix, its database, and Web Reports server	2-3 GHz, 4 cores	8 GB
		• License Metric Tool, and SQL Server		
<b>Medium environment</b>  5 000 - 50 000 endpoints*	2/3 servers**	IBM BigFix, its database, and Web Reports server	2-3 GHz, 4 cores	16 GB
		License Metric Tool and SQL Server	2-3 GHz, 4 cores	12 - 24 GB
<b>Large environment</b>  50 000 - 150 000 endpoints*	2/3 servers**	IBM BigFix, its database, and Web Reports server	2-3 GHz, 4 - 16 cores	16 - 32 GB
		License Metric Tool and SQL Server	2-3 GHz, 8 - 16 cores	32 - 64 GB
<b>Very large environment</b>  More than 150 000 endpoints*	2/3 servers**	IBM BigFix, its database, and Web Reports server	2-3 GHz, 16 cores	32 - 64 GB
		License Metric Tool and SQL Server	2-3 GHz, 8 - 16 cores	64 - 96 GB***

\* For environments with more than 35 000 endpoints, scan groups are required. For more information, see Chapter 10, "Tuning performance," on page 573.

\*\* A distributed environment, where License Metric Tool is separated from the database, is advisable.

\*\*\* SQL Server must be throttled to 3/4 RAM capacity.

## Disk space

The following tables show disk space requirements for each component.

**Important:** The BigFix client is also installed on the computers where the components are installed. Ensure that the computers have enough space for the client. For more information, see: "Hardware requirements for the client" on page 72.

## License Metric Tool

Table 10. Disk space requirements for License Metric Tool installed on Windows

Default Directory	Space required	Comments
C:\Program Files (x86)\BigFix Enterprise\BES Installers\LMT_installer	500 MB	Compressed installer that is downloaded to the selected endpoint from BigFix. It can be deleted after extracting.
	500 MB	Extracted installer.
C:\Program Files\IBM\LMT	3 GB	License Metric Tool installation directory. The amount includes space required for future upgrades.
%TEMP%	350 MB	Temporary files used during the installation.
%USERPROFILE%	1 MB	The home directory of the user running the installation.

## SQL Server for License Metric Tool

Table 11. Disk space requirements for SQL Server for License Metric Tool

Default Directory	Space required	Comments
C:\Program Files\Microsoft SQL Server	1 GB	Database installation directory.
C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA	See <i>Comments</i>	<p>Database server instance.</p> <p>The amount of disk space that is required for the database server depends on the number of computers in your environment and the average size of scan files and analyses. It can be calculated according to the following formula*:</p> <ul style="list-style-type: none"> <li>• <i>&lt;The number of computers&gt;</i> x 1 MB + 6 GB of initial disk space</li> </ul> <p>For example:</p> <p><b>10 000 computers</b>  <math>10\,000 \times 1\text{ MB} + 6\text{ GB} = 16\text{ GB}</math></p> <p><b>100 000 computers</b>  <math>100\,000 \times 1\text{ MB} + 6\text{ GB} = 106\text{ GB}</math></p>



Table 11. Disk space requirements for SQL Server for License Metric Tool (continued)

Default Directory	Space required	Comments
C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA	See Comments	<p>Database transaction logs.</p> <p>During the data import (ETL process), License Metric Tool requires some additional free disk space for database server transaction logs. The amount of disk space that is required can be significant because transaction logs store two sets of data:</p> <ul style="list-style-type: none"> <li>• Data that is used for recovery if the ETL fails</li> <li>• Data that is used to create new ETL results</li> </ul> <p>The amount of disk space that is necessary for the transaction logs depends on the number of computers in your environment as well as the number of computers in a single scan group from which data is processed during the import.</p> <p>To lower the amount of disk space that is necessary for transactions logs, distribute the scans over time so they are processed during several data imports instead of one.</p> <p>The size of transaction logs can be calculated according to the following formula*:</p> <ul style="list-style-type: none"> <li>• <math>\langle \text{The number of computers} \rangle \times 1.2 \text{ MB} + \langle \text{the number of computers in the biggest scan group} \rangle \times 1.2 \text{ MB} + 17 \text{ GB}</math> of initial disk space</li> </ul> <p>For example:</p> <p><b>10 000 computers and 10 000 scan results</b>  <math>10\,000 \times 1.2 \text{ MB} + 10\,000 \times 1.2 \text{ MB} + 17 \text{ GB} = 41 \text{ GB}</math></p> <p><b>100 000 computers and 15 000 scan results</b>  <math>100\,000 \times 1.2 \text{ MB} + 15\,000 \times 1.2 \text{ MB} + 17 \text{ GB} = 155 \text{ GB}</math></p>
C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA	See Comments	<p><b>tempdb</b> database that is used to store and manage temporary objects.</p> <p>The size of <b>tempdb</b> can be calculated according to the following formula*:</p> <ul style="list-style-type: none"> <li>• <math>\langle \text{The number of computers} \rangle \times 0.5 \text{ MB}</math></li> </ul> <p>For example:</p> <p><b>15 000 computers</b>  <math>15\,000 \times 0.5 \text{ MB} = 7.5 \text{ GB}</math></p>

\* The formulas apply to typical environments that are configured to run weekly software scans, daily data imports, and whose endpoints have about 60 software installations each. The results also depend on the amount of data returned by the scans, which means that in some environments the required amount of disk space might be smaller or bigger. In case of irregular data imports or accumulated scans, the required disk space increases.

**Note:** The retention period in this typical environment is set to the last 7 days. For more information about tuning this parameter, see: Shortening the retention period gradually to avoid problems with growing database size.

## IBM BigFix

Table 12. Disk space requirements for IBM BigFix installed on Windows

Default Directory	Space required	Comments
C:\Program Files\BigFix Enterprise\BES Server	1.8 GB	IBM BigFix installation directory.
C:\Program Files (x86)\BigFix Enterprise\BES Server\wwwrootbes\bfmirror\downloads\sha1	Around 2 GB	<p>IBM BigFix cache. It stores files that are downloaded by some of the fixlets before they are distributed to the selected endpoints. For example, the License Metric Tool installer.</p> <p>The required space might increase if you run some of the fixlets multiple times. For example, each time you run the <b>Upgrade to the latest version of IBM License Metric Tool 9.x</b>, a new installer is downloaded to the cache. Thus, the required space increases.</p> <p>To check whether a fixlet downloads any files and what their size is, log in to the IBM BigFix console, and check the value in the Download Size column for the particular fixlet. Then, ensure that enough disk space is available in the IBM BigFix cache.</p>
C:\Program Files\BigFix Enterprise\BES Console	90 MB	IBM BigFix console.

## SQL Server for IBM BigFix

For information about hardware requirements for the SQL Server that is used as the IBM BigFix database, see the IBM BigFix Version 9.x: Capacity Planning, Performance, and Management Guide.

Apart from the disk space that is described in the guide, ensure additional disk space for transaction logs on the computer where the IBM BigFix database is installed. To calculate the required disk space, check how many objects exist in all fixlet sites that you have enabled in the IBM BigFix console. An object is every computer group, analysis, fixlet, and task that exist in the console, including the ones that are not relevant. Every 1000 objects requires 1GB of free disk space. For example, if you have 500 fixlets and tasks, 300 analyses, and 20 computer groups, you have 820 objects in total. Thus, 1 GB of disk space is required.

## Hardware requirements for the server on Linux

Ensure that the computer on which you are installing the License Metric Tool meets the minimal CPU, and memory requirements for the server and database elements.

## Virtualized environment

The ETL (extract, transform, and load) import heavily uses the DB2 database resources. License Metric Tool and DB2 server can be installed on a virtualized environment. However, for large deployments that consist of 50 000 - 100 000 computers, it is recommended that dedicated hardware is used.

In a virtual environment for medium size deployments that consist of 10 000 - 50 000 computers, it is recommended that dedicated resources are considered for processor, memory, and virtual disk allocation. The virtual disk that is allocated for the VM should be dedicated RAID storage, with dedicated IO bandwidth for that VM.

Use DB2 server that is dedicated for License Metric Tool and is not shared with BigFix or other applications. Fine-tuning based on the above mentioned recommendations might be required.

## Processor and RAM

The values provided for IBM BigFix were calculated with the assumption that the BigFix server, its database and Web Reports server are installed on a single server and that the BigFix server is dedicated to License Metric Tool. If you share the BigFix server between other applications, refer to the BigFix documentation for information about hardware requirements: IBM BigFix requirements.

The values provided for License Metric Tool were calculated for the maximum of five concurrent application users.

Table 13. Processor and RAM requirements for License Metric Tool

Environment size	Topology		Processor	Memory
<b>Small environment</b>  Up to 5 000 endpoints	1 server	(All-in-One):IBM BigFix, its database, and Web Reports server, License Metric Tool and DB2	2-3 GHz, 4 cores	8 GB
<b>Medium environment</b>  5 000 - 50 000 endpoints*	2/3 servers**	IBM BigFix, its database, and Web Reports server	2-3 GHz, 4 cores	16 GB
		License Metric Tool and DB2	2-3 GHz, 4 cores	12 - 24 GB
<b>Large environment</b>  50 000 - 150 000 endpoints*	2/3 servers**	IBM BigFix, its database, and Web Reports server	2-3 GHz, 4 - 16 cores	16 - 32 GB
		License Metric Tool and DB2	2-3 GHz, 8 - 16 cores	32 - 64 GB
<b>Very large environment</b>  More than 150 000 endpoints*	2/3 servers**	IBM BigFix, its database, and Web Reports server	2-3 GHz, 16 cores	32 - 64 GB
		License Metric Tool and DB2	2-3 GHz, 8 - 16 cores	64 - 96 GB

\* For environments with more than 35 000 endpoints, scan groups are required. For more information, see Chapter 10, “Tuning performance,” on page 573.

\*\* A distributed environment, where License Metric Tool is separated from the database, is advisable.

## Disk space

The following tables show disk space requirements for each component.

**Important:** The BigFix client is also installed on the computers where the components are installed. Ensure that the computers have enough space for the client. For more information, see: “Hardware requirements for the client” on page 72.

### License Metric Tool

Table 14. Disk space requirements for License Metric Tool installed on Linux

Default Directory	Space required	Comments
user_directory/ LMT_installer	500 MB	Compressed installer that is downloaded to the selected endpoint from BigFix. The compressed installer can be deleted after it is extracted.
	500 MB	Extracted installation files.
/opt/ibm/LMT	3 GB	License Metric Tool installation directory. The amount includes space required for future upgrades.

Table 14. Disk space requirements for License Metric Tool installed on Linux (continued)

Default Directory	Space required	Comments
/tmp	350 MB	Temporary files used during the installation. <b>Important:</b> The installer must be able to run executable files in this directory.
\$HOME	1 MB	Home directory of the user running the installation.
/etc	1 MB	Directory that stores scripts that start the server.
/var	10 kB	Directory that stores the installation registry.

## DB2 for License Metric Tool

Table 15. Disk space requirements for DB2 for License Metric Tool

Default Directory	Space required	Comments
/opt/IBM/db2	1.5 GB	DB2 installation directory.
/var/db2	10 kB	Directory that stores DB2 global registry.
/home/db2inst1	See Comments	<p>Database server instance.</p> <p>The amount of disk space that is required for the database server depends on the number of computers in your environment and the average size of scan files and analysis. It can be calculated according to the following formula*:</p> <ul style="list-style-type: none"> <li>• <i>&lt;The number of computers&gt;</i> x 1 MB + 15 GB of initial disk space</li> </ul> <p>For example:</p> <p><b>10 000 computers</b>  <math>10\,000 \times 1\text{ MB} + 15\text{ GB} = 25\text{ GB}</math></p> <p><b>100 000 computers</b>  <math>100\,000 \times 1\text{ MB} + 15\text{ GB} = 115\text{ GB}</math></p>

Table 15. Disk space requirements for DB2 for License Metric Tool (continued)

Default Directory	Space required	Comments
/home/db2inst1/db2inst1/	See <i>Comments</i>	<p>Database server transaction logs.</p> <p>During the data import (ETL process), License Metric Tool requires some additional free disk space for database server transaction logs. The amount of disk space that is required can be significant because transaction logs store two sets of data:</p> <ul style="list-style-type: none"> <li>• Data that is used for recovery if the ETL fails</li> <li>• Data that is used to create new ETL results</li> </ul> <p>The amount of disk space that is necessary for the transaction logs depends on the number of computers in your environment as well as the number of computers in a single scan group from which data is processed during the import.</p> <p>To lower the amount of disk space that is necessary for transactions logs, distribute the scans over time so they are processed during several data imports instead of one.</p> <p>The size of transaction logs can be calculated according to the following formula*:</p> <ul style="list-style-type: none"> <li>• <math>\langle \text{The number of computers} \rangle \times 1.2 \text{ MB} + \langle \text{the number of computers in the biggest scan group} \rangle \times 1.2 \text{ MB} + 17 \text{ GB of initial disk space}</math></li> </ul> <p>For example:</p> <p><b>10 000 computers and 10 000 scan results</b>  <math>10\,000 \times 1.2 \text{ MB} + 10\,000 \times 1.2 \text{ MB} + 17 \text{ GB} = 41 \text{ GB}</math></p> <p><b>100 000 computers and 15 000 scan results</b>  <math>100\,000 \times 1.2 \text{ MB} + 15\,000 \times 1.2 \text{ MB} + 17 \text{ GB} = 155 \text{ GB}</math></p>
/home/db2fenc1	1 MB	Home directory of the DB2 fenced user.

\* The formulas apply to typical environments that are configured to run weekly software scans, daily data imports, and whose endpoints have about 60 software installations each. The results also depend on the amount of data returned by the scans, which means that in some environments the required amount of disk space might be smaller or bigger. In case of irregular data imports or accumulated scans, the required disk space increases.

**Note:** The retention period in this typical environment is set to the last 7 days. For more information about tuning this parameter, see: “Shortening the retention period gradually to avoid problems with growing database size” on page 583.

## IBM BigFix

Table 16. Disk space requirements for IBM BigFix installed on Linux

Default Directory	Space required	Comments
/var/opt/BESInstallers	90 MB	Directory with console and client installers.
/var/opt/BESServer	2 GB	IBM BigFix installation directory.

Table 16. Disk space requirements for IBM BigFix installed on Linux (continued)

Default Directory	Space required	Comments
/var/opt/BESServer/ wwwrootbes/bfmirror/ downloads/sha1/	Around 2 GB	<p>IBM BigFix cache. It stores files that are downloaded by some of the fixlets before they are distributed to the selected endpoints. For example, the License Metric Tool installer.</p> <p>The required space might increase if you run some of the fixlets multiple times. For example, each time you run the <b>Upgrade to the latest version of IBM License Metric Tool 9.x</b>, a new installer is downloaded to the cache. Thus, the required space increases.</p> <p>To check whether a fixlet downloads any files and what their size is, log in to the IBM BigFix console, and check the value in the Download Size column for the particular fixlet. Then, ensure that enough disk space is available in the IBM BigFix cache.</p>
/var/opt/ BESWebReportsServer	300 MB	Web Reports installation directory.
/opt/BESWebReportsServer	500 MB	Directory with the Web Reports server binaries.
/opt/BESServer	100 MB	Directory with server binaries.
	2 GB	Temporary space for server binaries. The space is needed only when you are using the All-in-One installer.
/var/log	1 MB	Directory with log files.
C:\Program Files\BigFix Enterprise\BES Console	90 MB	IBM BigFix console installation directory. The console must be installed on Windows.

For disk speed, see: “Storage performance requirements” on page 574.

## DB2 for IBM BigFix

For information about hardware requirements for DB2 that is used as the IBM BigFix database, see the IBM BigFix Version 9.x: Capacity Planning, Performance, and Management Guide.

Apart from the disk space that is described in the guide, ensure additional disk space for transaction logs on the computer where the IBM BigFix database is installed. To calculate the required disk space, check how many objects exist in all fixlet sites that you have enabled in the IBM BigFix console. An object is every computer group, analysis, fixlet, and task that exist in the console, including the ones that are not relevant. Every 1000 objects requires 1GB of free disk space. For example, if you have 500 fixlets and tasks, 300 analyses, and 20 computer groups, you have 820 objects in total. Thus, 1 GB of disk space is required.

## Hardware requirements for the client

Review important information about hardware requirements for the IBM BigFix client and the software and capacity scans that are embedded in it.

## Processor and RAM

An IBM BigFix client alone can consume up to 2% of the processing power of one processor core on an endpoint. However, the client is complemented with software and capacity scans that collect necessary software and hardware information from your endpoints. Although the capacity scan reports very low CPU usage, the software scan can consume substantial CPU resources while a scan is in progress. To decrease the impact of a software scan on production system, it can be scheduled to run on the weekends or in the evenings. You can also run the software scan with the CPU threshold option that limits the consumption of your CPU resources.

Table 17. CPU and RAM usage for IBM BigFix clients

Component	CPU	RAM	Comments
IBM BigFix client	< 2 %	< 20 MB	For more information, see: <a href="http://www-01.ibm.com/support/docview.wss?uid=swg21505815">http://www-01.ibm.com/support/docview.wss?uid=swg21505815</a> .
Software scan	Up to 100 %  You can limit the usage by running the scan with the CPU threshold attribute.	< 80 MB	The software scan runs on demand, and can be monitored by checking the following processes: wscansw, wscanfs.
Capacity scan	< 1 %	< 20 MB	The capacity scan runs every 30 minutes, and can be monitored by checking the following process: wscanhw.

## Disk space

Ensure that endpoints have enough disk space before you start installing the IBM BigFix clients.

**Important:** The following disk space requirements do not include the size of files that are downloaded to the endpoint by some of the fixlets. For example, the fixlet **Download IBM License Metric Tool**, downloads the application installer to the specified endpoint. Thus, more space is required on the targeted endpoint.

To check whether a fixlet downloads any files to the targeted endpoint, log in to the IBM BigFix console, and check the value in the Download Size column for the particular fixlet. Then, ensure that enough disk space is available on the endpoint.

Table 18. Disk space requirements for clients installed on UNIX

Operating system	Directory	Space required	Comments
UNIX	/opt/BESClient	80 MB	Client installation directory.
	/var/opt/BESClient	250 MB	Client data directory. This directory contains all scan results.
		200 MB	The additional space is required if the VM Manager Tool is installed on the endpoint.
	/opt/tivoli/cit	50 MB	Scanner installation directory.
	/opt/tivoli/cit/cache_data	100 MB on average	Scanner cache files.  The required disk space depends on the number of files, directories, and subdirectories to be scanned. It can be estimated by multiplying the number of files to be scanned by 60 bytes.
	/etc/cit	< 1 MB	Scanner configuration files.
	/tmp	100 MB on average	Scanner temporary files.
			The required disk space depends on the scanner options that are used (for example, sorting) as well as the number of files, directories, and subdirectories to be scanned. It can be estimated by multiplying the number of files to be scanned by 100 bytes.
	/usr/ibm/tivoli/common/CIT	10 MB	Scanner log files.



Table 19. Disk space requirements for clients installed on Windows

Operating system	Directory	Space required	Comments
Windows	C:\Program Files (x86)\BigFix Enterprise\BES Client	150 MB	Client installation and data directory. This directory contains all scan results.
		300 MB	The additional space is required if the VM Manager Tool is installed on the endpoint.
	C:\Program Files\tivoli\cit	20 MB	Scanner installation directory.
	C:\Program Files\tivoli\cit\cache_data	50 MB on average	Scanner cache files.  The required disk space depends on the number of files, directories, and subdirectories to be scanned. It can be estimated by multiplying the number of files to be scanned by 60 bytes.
	%WINDIR%	< 1 MB	Scanner configuration files.
	%TMP% or %TEMP%	100 MB on average	Scanner temporary files.  The required disk space depends on the scanner options that are used (for example, sorting) as well as the number of files, directories, and subdirectories to be scanned. It can be estimated by multiplying the number of files to be scanned by 100 bytes.
	C:\Program Files\tivoli\ibm\tivoli\common\CIT\logs	10 MB	Scanner log files.

## Port requirements

When planning the infrastructure, ensure that port numbers used by License Metric Tool, IBM BigFix, and the database are free to enable communication between those components.

The following is the list of default ports used by the License Metric Tool infrastructure. You can change them during the installation of each component:

Table 20. Default ports used by the License Metric Tool infrastructure

Type	Port number	Description
License Metric Tool	9081	The web browser connects to the server (HTTPS) to display the user interface.
		The BigFix server uses this port to connect to the License Metric Tool server.
DB2	50000	The server connects to DB2.
SQL Server	1433	The server connects to SQL Server.
IBM BigFix	52311	BigFix clients and console connect to the server.
		The License Metric Tool server uses this port to connect to the BigFix server.

For more information about port numbers and interactions between components of the License Metric Tool infrastructure, see: Flow of data.

## Firewall exceptions

Some of the fixlets require that the BigFix server connects to the Internet and downloads necessary files and updates. To ensure that they can be downloaded, relevant web addresses must be accessible from the computer where the server is installed. Add those addresses as firewall exceptions and ensure that they are accessible to the proxy server if you are using it.

Ensure that the following web addresses are accessible from the computer where the BigFix server is installed

- `esync.bigfix.com`
- `gatherer.bigfix.com`
- `software.bigfix.com`
- `support.bigfix.com`
- `sync.bigfix.com`

The HTTP port 80 must be open for communication.

All-in-One installation only. If the server on which you are performing the All-in-One installation cannot access the Internet, ensure that the following web address is accessible from the computer where the generate license script or file is run from. For more information, see: “Optional: Creating the license authorization file” on page 110.

- `tem.flexnetoperations.com`

**Note:** If the server on which you are performing the All-in-One installation can access the Internet, this exception is not needed because the license files will be created during the installation.

The HTTPS port 443 must be open for communication.

**Important:** This port is required only during installation, after installation it is no longer required to be open.

**9.2.12** License Metric Tool occasionally offers you a customer feedback survey. This quick survey allows you to rate the product and provide valuable feedback that can help us improve our services. To be able to participate in the survey, allow the connection to the following web page from your browser: <https://survey.medallia.eu/>.

## Proxy exceptions

If the BigFix server uses a proxy for Internet connection to access fixlet sites or prefetch downloads, the License Metric Tool server must be added to an exception list to ensure that the catalog propagation works properly.

In an environment with a proxy, propagation of the catalog might fail because the BigFix server connects to the proxy to download the catalog file instead of connecting to the License Metric Tool server directly. To ensure that the problem does not occur, add the following entries to the proxy exception list in the BigFix server configuration:

- IP address of the License Metric Tool server
- FQDN host name of the License Metric Tool server

Additionally if the BigFix server is installed on the same computer as License Metric Tool server, add the following entries to the proxy exception list:

`localhost`, `127.0.0.1`

For more information, see: Setting a proxy connection on the server.

## Installation accounts

You can install all the infrastructure components as the administrative user. You can also install some components as a non-administrative user but some limitations apply.

*Table 21. Installation accounts for the components of the License Metric Tool infrastructure*

Component	User	Limitations
All-in-One	root	
License Metric Tool server on Linux	root or non-root user	Server that is installed by a non-root user is not registered as a system service. It also cannot be upgraded with a fixlet. It must be upgraded in interactive or silent mode.
License Metric Tool server on Windows	User with administrative privileges with the <b>log on as a service</b> permission.  If you want to use the Windows authentication mode and your database server is remote, ensure that the user that accesses the database is a domain user. This user needs to have the <b>dbcreator</b> or <b>sysadmin</b> rights in MS SQL database.	
DB2	root or non-root user	For information about limitations that apply when you install DB2 as a non-root user, see the following links. <ul style="list-style-type: none"><li>• Non-root installation overview DB2 10.1 documentation</li><li>• Non-root installation overview DB2 10.5 documentation</li></ul>
SQL Server	User with administrative privileges	
IBM BigFix server	User with administrative privileges (Windows) or root (Linux)	
IBM BigFix client	User with administrative privileges (Windows) or root (Linux and UNIX)	The user on Linux and UNIX cannot be a sudo user.

## Coexistence scenarios

This topic describes supported scenarios for the agent, server, or Fixlet site coexistence. All listed scenarios are supported starting from License Metric Tool version 9.2.1.

### Agent coexistence

Two agents are installed on the same computer.

*Table 22. Applications that can coexist with License Metric Tool 9.2.1 or later*

Coexisting Application	License Metric Tool 9.2.1 or later
License Metric Tool V7	✓
Tivoli Asset Discovery for Distributed V7	✓

## Server coexistence

Two application servers are installed on the same computer.

Table 23. Applications that can coexist with License Metric Tool 9.2.1 or later

Coexisting Application	License Metric Tool 9.2.1 or later
License Metric Tool V7	✓
Tivoli Asset Discovery for Distributed V7	✓

## Fixlet site coexistence

Two Fixlet sites are enabled in the same BigFix server.

Table 24. Applications that can coexist with License Metric Tool 9.2.1 or later

Coexisting Application	License Metric Tool 9.2.1 or later
BigFix Inventory 9.2.1 or later	✓

### Considerations:

- Separated clients, reporting to one application at a given moment.

## Adding BigFix Inventory to your License Metric Tool deployment

**9.2.0.2** Available from 9.2.0.2.

License Metric Tool and BigFix Inventory can coexist within the same infrastructure. They can be connected to the same BigFix server but monitor different sets of computers. You can then use BigFix Inventory to discover non-IBM software and measure its license metric utilization on selected computers, and use License Metric Tool to monitor computers on which only IBM software is installed. Thanks to connecting both applications to a common BigFix server, you can manage them by using one console. It makes monitoring the environment much easier.

Although License Metric Tool and BigFix Inventory are connected to a common BigFix server, they work as separate applications and must be installed on separate computers. Each application manages a separate set of computers that can report to only one application at a given moment. The applications also use different fixlet sites and dedicated sets of fixlets for installation and configuration. Apart from the common BigFix server, all other aspects, such as software and capacity scans or the software catalog, are specific to each application.

### Limitations

- **Separate installation**

BigFix Inventory and License Metric Tool must be installed on separate computers.

- **VM managers**

You can add VM managers through the user interface only for the application that has the BigFix server subscribed to its fixlet site. It happens because VM managers added through the user interface must be managed by the VM Manager Tool that is installed on the BigFix server. For the other application, use advanced VM management. For more information, see: “Advanced VM management (distributed)” on page 299.

If you collect VM manager data directly from virtualization hosts by using the Run Capacity Scan on Virtualization Hosts fixlet, the coexistence is possible only if all endpoints from this host report to the same application. For more information about the fixlet, see: “Collecting capacity data from virtualization hosts for Xen and KVM” on page 181.

- **Many re-subscriptions**

You might encounter problems with the missing software catalog or scan results if you often re-subscribe endpoints between the two applications. These problems occur only if you re-subscribe endpoints more than once. For example, if you re-subscribe an endpoint from License Metric Tool to BigFix Inventory, and then subscribe it back to License Metric Tool. For more information, see: Problems with many re-subscriptions.

## Procedure

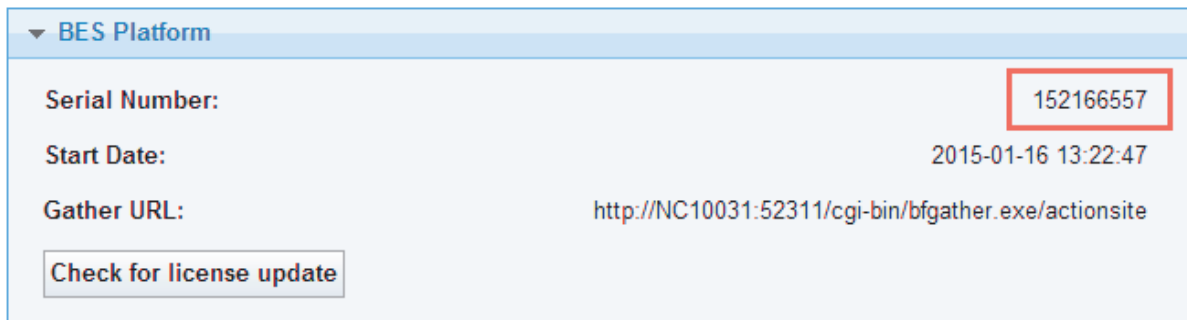
### Extending the license entitlements:

**9.2.0.2** Available from 9.2.0.2.

To use BigFix Inventory, you must first purchase extra entitlements. The entitlements can be added to your current license. After your license is updated, you can enable the BigFix Inventory Fixlet site in IBM BigFix.

## Procedure

1. Go to Passport Advantage and purchase entitlements for IBM BigFix Inventory.
2. Check the serial number of your current License Metric Tool license:
  - a. Log in to the BigFix console.
  - b. In the bottom-left corner, click **BigFix Management**.
  - c. In the navigation tree, click **License Overview**.
  - d. Your serial number is displayed in the BES Platform window.



The screenshot shows the 'BES Platform' window with the following details:

<b>Serial Number:</b>	152166557
<b>Start Date:</b>	2015-01-16 13:22:47
<b>Gather URL:</b>	http://NC10031:52311/cgi-bin/bfgather.exe/actionsite

At the bottom, there is a button labeled 'Check for license update'.

3. Email TEM@dk.ibm.com, and include the following information:
  - Your current serial number
  - Your personal data that helps to recognize you as an IBM customer
  - Details of the BigFix Inventory license that you purchased
  - A request for expanding your current serial number with the entitlement for BigFix Inventory
4. In the BES Platform window that you copied the serial number from, click **Check for license update**. If there is a change to your license, the following message is displayed: Site certificate update detected, BESAdmin must be run to propagate the change.
5. Go to the BigFix server and run the Administration Tool to update the license.

### Linux

- a. Go to /opt/BESServer/bin.
- b. Run the following command:

```
./BESAdmin.sh -syncmastheadandlicense -sitePvkLocation=path_to_license.pvk
```

### Windows

- a. Go to C:\Program Files (x86)\BigFix Enterprise\BES Server.

- b. Run BESAdmin.exe.
  - c. When prompted, provide the path to the site signing key (license.pvk), and enter the password.
  - d. In the Masthead Management tab, click **OK**.
6. Enable the BigFix Inventory fixlet site.

## Results

You updated your license and propagated the change to your endpoints. It might take several minutes until the BigFix console displays the updated status. If the status does not change, restart the console.

### Enabling the BigFix Inventory Fixlet site:

**9.2.0.2** Available from 9.2.0.2.

After you extended your license entitlements, you can enable the BigFix Inventory Fixlet site in IBM BigFix. The site is displayed next to your License Metric Tool Fixlet site.

### Before you begin

In air-gapped environments, you must use the Airgap Tool to enable the site and load its Fixlets. For more information, see Updating the fixlet site.

## Procedure

1. Log in to the BigFix console.
2. In the bottom-left corner, click **BigFix Management**.
3. In the navigation tree, click **License Overview**, and complete the following steps:
  - a. Locate the entry called BigFix Inventory and expand it.
  - b. Click **Enable** next to the **IBM BigFix Inventory v9** Fixlet site. The Fixlet site is enabled.
  - c. Return to the previous view by clicking **All Content** in the bottom-left corner.
4. To view the enabled Fixlet site, click **Sites > External Sites > IBM BigFix Inventory v9**.

## Results

You enabled the BigFix Inventory Fixlet site. The Fixlet sites are completely separate, but they can be managed in the same console.

### Dividing endpoints between computer groups:

**9.2.0.2** Available from 9.2.0.2.

Before you start subscribing your endpoints to particular sites, divide your environment into endpoints that will report to License Metric Tool, and endpoints that will report to BigFix Inventory. Separate computer groups facilitate the site subscriptions and the management of your endpoints. You can create either manual or automatic computer groups.

#### *Creating manual computer groups:*

Choose manual computer groups if you want to quickly create a group, and then click on any endpoint to add it to this group. You do not need to specify any conditions for manual groups.

### Before you begin

The names of manual computer groups cannot be changed.

### Procedure

1. In the BigFix console, click **Tools > Create New Manual Computer Group**.
2. Enter the name, and click **OK**. The computer group is created.
3. Repeat those steps to create another computer group.
4. Add your endpoints to the computer groups:
  - a. In the navigation tree, click **Computers**.
  - b. Right-click on any endpoint, and then click **Add to Manual Group**.
  - c. Select the group, and click **OK**.

### Creating automatic computer groups:

Choose automatic computer groups if you want to add endpoints to this group while it is being created. You specify conditions, such as computer names or operating systems, at the time of creation. You can add extra conditions later.

### Procedure

1. In the BigFix console, click **Tools > Create New Automatic Group**.
2. Enter the name, and select the site and domain you want it to be located in.

Create Automatic Computer Group

Group name: LMT\_endpoints

Create in site: Master Action Site

Create in domain: All Content

Include computers with any of the following properties:

Computer Name	equals	NC5810058	-	+
OS	contains	Windows	-	+
User Name	contains	Administrator	-	+

Create Cancel

3. Select **any** to include endpoints that match at least one of the specified properties.
4. Enter a property, a relation, and a value into the three boxes at the bottom of the dialog. You can choose a number of properties to include your endpoints.
5. Click **Create**.
6. Repeat those steps to create another group.

### Subscribing and refreshing endpoints:

**9.2.0.2** Available from 9.2.0.2.

After enabling the Fixlet sites in the BigFix console, you must distribute your endpoints between them. Each site must have a separate set of endpoints. You must also run a Fixlet that refreshes the endpoints capacity data and properties whenever you re-subscribe them to a different site.

## About this task

Your endpoints must be subscribed to only one Fixlet site, either the License Metric Tool or the BigFix Inventory one, because multiple site subscriptions lead to issues with software discovery. You can re-subscribe the endpoints between the sites at any time. To avoid problems with re-subscribed endpoints, you must run a Fixlet that forces the upload of capacity data and refreshes the properties to ensure that they are always related to the relevant site. The endpoints are refreshed after each re-subscription.

### Procedure

1. Subscribe a group of endpoints to the License Metric Tool site.
  - a. Click the **IBM License Reporting (ILMT) v9** Fixlet site.
  - b. In the pane on the right, click the Computer Subscriptions tab.
  - c. Select the **Computers which match the condition below** check box.
  - d. From the drop-down list, select **Group Membership** and choose the computer group that contains the License Metric Tool endpoints.
2. Subscribe a group of endpoints to the BigFix Inventory site.
  - a. Click the **IBM BigFix Inventory v9** Fixlet site.
  - b. In the pane on the right, click the Computer Subscriptions tab.
  - c. Select the **Computers which match the condition below** check box.
  - d. From the drop-down list, select **Group Membership** and choose the computer group that contains the BigFix Inventory endpoints.
3. Ensure that each of your endpoints is subscribed to only one Fixlet site.
  - a. From **Fixlets and Tasks**, select the **WARNING: Endpoints Subscribed to Multiple Sites** Fixlet.
  - b. If the Fixlet can be applied to any of your endpoints, remove those endpoints from one of the sites.
4. Ensure that capacity data and properties of each re-subscribed endpoint are refreshed.
  - a. Open one of the Fixlet sites.
  - b. From **Fixlets and Tasks**, select the **Refresh Re-Subscribed Endpoints** Fixlet.
  - c. Click **Take Action**, and select all endpoints in the Fixlet site.
  - d. Repeat those steps for another Fixlet site.

### Stopping all active actions:

**9.2.0.2** Available from 9.2.0.2.

After reassigning endpoints that were previously reporting to License Metric Tool to a new Fixlet site, you must stop all actions that are running for those endpoints, and replace them with corresponding tasks from the BigFix Inventory site.

### Before you begin

Actions must be stopped and deleted whenever you re-subscribe an endpoint to a different site.

### Procedure

1. Go to the BigFix console.
2. In the navigation tree, click **Actions**.
3. Stop and delete all actions from the License Metric Tool site that target the reassigned endpoints.
  - a. Right-click on the chosen actions, and click **Stop Action**.
  - b. Right-click on the chosen actions, and click **Delete Action**.



**Note:** You cannot stop an action for a single endpoint if you previously run it for a group of endpoints. In such case, you can delete the actions and then rerun them only for those endpoints that remain in the License Metric Tool site.

## Results

You deleted all actions for endpoints that were reassigned to the BigFix Inventory site. You will run the corresponding tasks from the new site after you download and install BigFix Inventory.

### Problems with many re-subscriptions:

**9.2.0.2** Available from 9.2.0.2.

Multiple re-subscriptions of your endpoints from one Fixlet site to another might lead to problems with the software catalog, or with the scan results. Such problems occur only if you re-subscribed your endpoints more than once, for example if you re-subscribed an endpoint from License Metric Tool to BigFix Inventory, and then subscribed it back to License Metric Tool.

#### *Missing software catalog:*

Your endpoints might be missing the software catalog, because it was not delivered during the data import. The catalog can be delivered automatically only once for each application. In the case of multiple re-subscriptions, the catalog was previously delivered and then overwritten by another application, which now requires that you deliver it manually. Each later re-subscription also requires the manual delivery.

### Before you begin

Before you re-subscribe the endpoints, ensure that all scan results are uploaded. Otherwise, one of the applications might use incorrect results, because the file names of scan results are the same both for License Metric Tool and BigFix Inventory. If all results are uploaded, the **Upload Software Scan Results** task is disabled.

### Procedure

1. Log in to the application to which you re-subscribed the endpoints.
2. In the top navigation bar, click **Management > Catalog Upload**.
3. To download the fixlet file to your computer, click the question mark sign. Then, click **Catalog Download Fixlet**. Choose the location where you want to save the `catalog_download.bes` file, and click **Save**.
4. Copy the file to the computer where the BigFix console is installed.
5. Log in to the BigFix console.
6. To import the fixlet, click **File > Import**.
7. Open the directory where you store the `catalog_download.bes` file, select the file, and click **Open**. The file is imported.
8. In the left pane, click **Sites > Master Action Site > Fixlets and Tasks**. A list of available fixlets opens in the upper right pane.
9. To run the fixlet on the endpoints, select **Catalog Download (Version: *version*)**, and click **Take Action**.

#### *Missing scan results:*

Your endpoints might be missing the scan results, because the changes on those endpoints were not detected, and there is no need for an upload of scan results. In such a case, you must reinstall the scanner and rerun the scans. After you do so, the old results are deleted, and the new ones collected and uploaded.

## Before you begin

To know which endpoints are missing scan results, open the application dashboard. The Scan Health widget shows the problematic endpoints.

### Procedure

1. Stop all actions that are running against the problematic endpoints.
2. Open the Fixlet site.
3. From **Fixlets and Tasks**, select **Uninstall Scanner**, and click **Take Action**.
4. Select all problematic endpoints, and click **OK**. Wait until the action is complete.
5. Reinstall the scanner and rerun the scans. For more information, see [Setting up scans](#).

## Adding a second License Metric Tool server

**9.2.1** Available from 9.2.1.

Multiple instances of License Metric Tool can coexist within the same infrastructure. They can be connected to the same BigFix server but monitor different computers that are grouped according to specific criteria. It allows for reporting utilization of license metrics for subsets of computers, managing parts of the environment by separate teams, or distributing the workload by importing data from a smaller number of computers.

**Important:** You can fulfill the same scenarios by dividing computers into groups in a single instance of License Metric Tool. It is the recommended approach. For more information, see: “Tutorial: Reporting subcapacity usage per computer group” on page 445.

To add another instance of License Metric Tool, install another License Metric Tool server and connect it to the same BigFix platform. Ensure that both instances of License Metric Tool use the same fixlet site. From the BigFix perspective, the separation of servers is not visible. The servers use the same fixlet site, computers, and tasks that are used to scan the environment and discover software. The separation occurs during the import of data from BigFix to License Metric Tool servers.

To import data from different sets of computers, divide the computers into groups by giving them unique computer settings. Then, create an analysis that retrieves the values of these settings. Finally, modify the data import so that each License Metric Tool server imports data only from computers that have a particular setting, and omits the remaining ones. As a result, each License Metric Tool server manages a separate group of computers.

**Note:** Consider the following limitation only if you initially installed License Metric Tool version 9.2.3 or earlier, regardless of whether you upgraded to a newer version since:

The coexisting servers must use the same database software, either SQL Server or DB2, and have the same software catalog uploaded. It is required because you will later disable the catalog delivery in one of the servers, so that a common catalog is always delivered to all computers. Different signatures in catalogs for SQL Server and DB2 would cause problems in software discovery. For more information, see [Additional considerations](#).

Complete the following procedures to enable the coexistence.

### Dividing computers between servers:

**9.2.1** Available since 9.2.1.

Divide your computers between two servers by specifying unique computer settings. Based on these settings, the servers choose specific computers to import the data from. As a result, each of your servers manages a separate group of computers. Plan the division, and then mark your computers as either *LMT1* or *LMT2*.

## About this task

This procedure shows only one way of dividing your computers between two servers. You can specify also other settings, or use relevance expressions to divide the computers according to their operating systems, computer groups, or any custom criteria. For more information about creating properties and analyses that are required to retrieve them, see [Creating retrieved properties](#) and [Creating analyses](#).

### Procedure

1. Log in to the IBM BigFix console.
2. Add new computer settings to your computers. Based on these settings, your computers are divided between two instances of License Metric Tool.
  - a. In the navigation tree, click **Computers**.
  - b. Select a group of computers that you want to add to one of the servers.
  - c. Right-click these computers, and then click **Edit Computer Settings**.
  - d. Select the **Custom Setting** check box, and enter the following values:

Setting Name: *Instance*

Setting Value: *LMT1* or *LMT2*

The value, *LMT1* or *LMT2*, depends on the instance that you want to add a specific computer to. Specify *LMT1* for a group of computers, and *LMT2* for another group.

- e. Click **OK** to save the setting. Repeat the preceding steps until all your computers have a value *LMT1* or *LMT2* specified.
3. Create a custom analysis to retrieve the specified settings from your computers.
  - a. To create an analysis, click **Tools > Create New Analysis**.
  - b. Specify the name as *Instance Assignment*.
  - c. Click the Properties tab, and then click **Add Property**.
  - d. Specify the name of the property as *Instance*.
  - e. In the relevance field, enter the following string:  
value of setting "Instance" of client|""  
This relevance expression returns the value of the setting *Instance* that you added to your computers. It can return either *LMT1* or *LMT2*.
  - f. Click **OK** to save the analysis. The analysis is added to your Master Action Site.
4. Verify that the analysis is returning correct values.
  - a. Click **Sites > Master Action Site**.
  - b. Select your custom **Instance Assignment** analysis.
  - c. Click the Results tab. The analysis shows a property called *Instance*, which returns either *LMT1* or *LMT2*. If you did not set this property for some computers, the value is empty.

### Results

You divided your computers based on specific computer settings. You can now modify the data import settings in both instances of License Metric Tool to specify whether the servers should import data about either *LMT1* or *LMT2* computers.

### Modifying servers to include specific computers:

**9.2.1** Available from 9.2.1.

Modify the data import settings so that each of your servers imports the data only from a specific group of computers. The servers choose only those computers that meet the specified criteria, for example, that are marked with a value *LMT1*, but not *LMT2*. Other computers are omitted during the import.

## About this task

The main element that decides which computers report to which server is the custom analysis that you created to retrieve some information about your computers, in this case specific values like *LMT1* or *LMT2*. The server checks the analysis results to verify values that are attached to your computers. If a computer has a value that meets the server criteria, then data from this computer is imported. Otherwise, the computer is discarded.

## Procedure

1. Go to *installation\_directory\wlp\usr\servers\server1\config*.
2. Edit the *etl\_settings.yml* file and specify the following properties and values:

**scoped\_etl\_enabled: 1**

Specifies whether a scoped data import should be enabled. If set to *0*, data from all computers is imported.

**scoped\_etl\_site\_name: *ActionSite***

Specifies the name of the Fixlet site that contains your custom analysis. *ActionSite* stands for Master Action Site.

**scoped\_etl\_site\_is\_custom: *false***

Specifies whether the Fixlet site is a custom site.

**scoped\_etl\_analysis\_name: *Instance Assignment***

Specifies the name of your custom analysis.

**scoped\_etl\_analysis\_property\_id: 1**

Specifies the ID of the analysis property *Instance*. If you added just one property, it has the ID of 1. However, you can check it by exporting the analysis to a *bes* file and opening it in a text editor.

**scoped\_etl\_based\_on: *MATCH***

Specifies conditions of a scoped data import. In this case, you can enter any value that is different from the default *SITE\_URL\_FOR\_SITE\_NAME*. The default value would import data from all computers in a Fixlet site.

**scoped\_etl\_resultstext\_match: *LMT1%***

Specifies the value based on which the server selects its computers. Specify *LMT1* for one server, and *LMT2* for another. A value returned by the analysis might include a space or a new line at the end. Enter a percent sign (%) after the value to include such occurrences instead of discarding a computer.

**scoped\_etl\_overwrite\_on\_migration: *false***

Specifies whether to overwrite these settings with default ones after an upgrade or migration.

3. Restart the server.
4. Run a data import.

## Results

You modified the servers to import data only from specific computers. You can open the **Computers** report to verify that only chosen computers are shown.

## What to do next

Review additional considerations and apply them to your environment to avoid problems with coexistence.

## Additional considerations:

To ensure that no problems occur while working with coexisting servers, review the following considerations and apply them to your environment.

### Software catalogs

To ensure that software on your computers is discovered based on the same software signatures, upload the same software catalogs to both servers. You can then disable the catalog delivery on one of them to avoid overwriting. The remaining server will deliver the catalog to all computers, regardless of the server that they report to, because the computers are in the same Fixlet site.

To disable the catalog delivery, run the following query on the database:

```
UPDATE DBO.SYSTEM_GLOBALS SET VALUE = '--- false  
' WHERE NAME='catalog_download_actions_enabled';
```

**Note:** Consider the following limitation only if you initially installed License Metric Tool version 9.2.3 or earlier, regardless of whether you upgraded to a newer version since:

Use the same database software for both servers, either DB2 or SQL Server. Signatures are different between these two types, and one software catalog might cause problems with discovery.

### VM managers

You can use the user interface to add VM managers only for one of the servers, namely the one that has the BigFix server assigned to it. This is because VM managers added in the user interface must be managed by the VM Manager Tool that is installed on the BigFix server. For the other server, you can use , in which you install additional tools on any computer.

### Changing assignments

If you want to change a computer assignment, for example from *LMT1* to *LMT2*, ensure that you edit the existing setting instead of creating a new one. To edit the setting, complete the following steps:

1. In the BigFix console, click **Computers**.
2. Right-click a single computer, and then click **Edit Computer Settings**.
3. Select the *Instance* setting, click **Edit**, and specify a new value.

### Missing scan results

Missing scan results might occur after changing the assignments of your computers. Such a change is not always detected by the server, which as a result does not upload the scan results. To correct this issue, you must reinstall the scanner and rerun the scans. After you do this, the old scan results are deleted, and the new ones are collected and uploaded. To reinstall the scanner, complete the following steps:

1. Stop all actions that are running on the problematic endpoints.
2. Open the Fixlet site.
3. From **Fixlets and Tasks**, select **Uninstall Scanner**, and click **Take Action**.
4. Select all problematic computers, and click **OK**. Wait until the action is complete.
5. Reinstall the scanner and rerun the scans. For more information, see: Setting up scans.

## Installing on Windows

A complete deployment of License Metric Tool on Windows requires the installation of three components: the BigFix platform, the License Metric Tool server, and an MS SQL database. Additionally, a BigFix client must be installed on every computer from which you want to collect software inventory data. You can install all components from scratch or add the License Metric Tool server to the existing BigFix infrastructure. Depending on the environment size, you can install all components on a single computer, or distribute them among multiple computers.

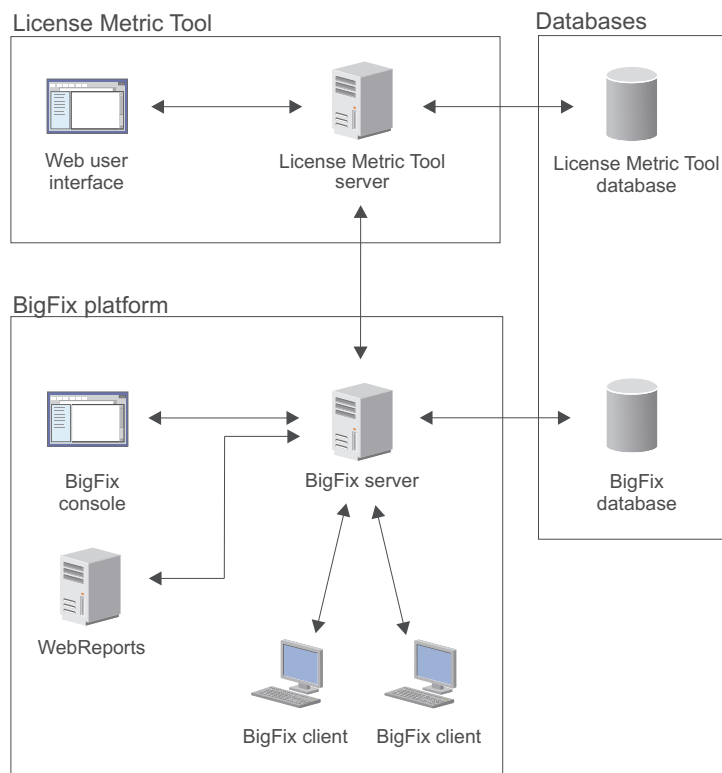


Figure 4. License Metric Tool infrastructure

## Step-by-step installation guide for Windows

Use the step-by-step installation guide to ensure that you complete all steps necessary to successfully install License Metric Tool on Windows.

Table 25. Step-by-step guide for installing and configuring License Metric Tool

Stage	Installation step
1.	<p><b>Plan the installation</b> to ensure that the computer on which you want to install License Metric Tool fulfills the following requirements:</p> <ul style="list-style-type: none"><li>— • Runs on a supported operating system</li><li>— • Fulfills the minimum hardware requirements</li><li>— • Has sufficient disk space</li><li>— • Has the required software installed</li></ul>

Table 25. Step-by-step guide for installing and configuring License Metric Tool (continued)

Stage	Installation step
2	<b>Install the BigFix platform</b> <ul style="list-style-type: none"> <li>— • Create the license authorization file</li> <li>— • Download the BigFix installer</li> <li>— • Install the BigFix server, console and the first client</li> <li>— • Install the BigFix client on every computer from which you want to collect software inventory data</li> </ul> <b>Tip:</b> You can install the clients at this point or proceed with the installation of License Metric Tool and install the clients later on.
3	<b>Install License Metric Tool</b> <ul style="list-style-type: none"> <li>— • Install MS SQL Server</li> <li>— • Enable the License Metric Tool fixlet site</li> <li>— • Install the License Metric Tool server</li> <li>— • Perform initial configuration</li> <li>— • Verify the current application and catalog version</li> </ul>
4	<b>Create users and groups</b> to give users access to License Metric Tool and to define computers for which they can see data. <ul style="list-style-type: none"> <li>— • Set up users</li> <li>— • Set up computer groups</li> </ul>
5	<b>Set up scans</b> to discover software and hardware inventory in your infrastructure. <b>Important:</b> The steps are not required if you enabled the default scan configuration during the installation. <ul style="list-style-type: none"> <li>— • Optional: Distribute scans for improved performance</li> <li>— • Activate the required analyses</li> <li>— • Install the scanner</li> <li>— • Initiate software scans</li> <li>— • Schedule uploads of software scan results</li> <li>— • Collect capacity data</li> </ul>

## Installing the BigFix platform on Windows

The BigFix platform is the core of the License Metric Tool infrastructure. It consists of a server that coordinates the flow of data to and from the monitored computers, an administrative console, and clients that collect data from the computers in your infrastructure. Before you can install License Metric Tool, install all components of the BigFix platform.

### Creating the license authorization file

The license authorization file contains deployment and licensing information and is used during the installation of the BigFix platform to create your license files and certificates.

#### About this task

The license authorization file entitles you to using the BigFix platform for License Metric Tool free of charge.

#### Procedure

1. Go to the license authorization website.
2. Specify the required information, such as your name and email address.
3. Click **Submit** and save the file to your computer.

#### Results

The LicenseAuthorization\_number\_Create.BESLicenseAuthorization file is downloaded to your computer. The file is needed during the installation of the BigFix platform.

## What to do next

Download the BigFix installer.

### Downloading the BigFix installer for Windows

To obtain the BigFix installer for Windows, go to the BigFix download center and download the Installation Generator.

### About this task

To speed up the deployment process, you can download the BigFix installer from the BigFix download center. However, to be able to use the assistance of IBM support, you must place a \$0 order for Software Support & Subscription for License Metric Tool on Passport Advantage. You can place the order at a later time.

### Procedure

1. Go to <http://support.bigfix.com/bes/release/>, and choose the latest version of the BigFix platform.
2. Download the Installation Generator.

### Installation Generator

Operating System	Download
Windows	<a href="#">Download</a>

3. To save the installer, click **Save File**.

## What to do next

Move the installer to the computer on which you want to install the BigFix platform and start the installation.

### Installing BigFix on Windows

To install the BigFix platform on Windows, run the installation wizard that will guide you through the installation of the BigFix server, console, and the first BigFix client.

### Before you begin

The BigFix platform installed on Windows requires MS SQL Server as a database. Ensure that you have MS SQL Server installed and running before you start the installation of BigFix. For information about supported versions of MS SQL Server, see: “Software requirements” on page 61.

### Restriction:

The BigFix installer allows for the installation of an evaluation version of MS SQL Server. However, such version expires after 180 days and should not be used in a production environment.

### About this task

The following procedure shows the most common installation scenario for Windows. If it does not fit your environment, you need more information about each step, or other installation tasks, see: Installing on Windows systems in the BigFix documentation.



## Procedure

1. Request a license certificate.
  - a. To start the installation, run the `BigFix-BES-version.exe` file.
  - b. When prompted, choose the **Production** installation.
  - c. After you read and accept the license agreement, select **I want to install with an IBM BigFix license authorization file**.
  - d. Specify the location of the license authorization file, and click **Next**.
  - e. Enter the DNS name or IP address of the computer on which you want to install the BigFix platform, and click **Next**.
  - f. Create a public/private key pair that will be used to authorize all users of the BigFix console. Enter the password and choose the key size, then click **Create**.



- g. Save the created files in a secure folder, and click **OK**.

**Attention:** If you lose the private key file, a new license certificate needs to be created, which requires a new installation.
    - h. Submit the request to IBM to obtain the license certificate.
      - If the computer can access the Internet, select the first option, and click **Request**. The request is submitted automatically.
      - If the computer cannot access the Internet, select the second option. The `request.BESLicenseRequest` file is generated, and saved to a chosen folder. Copy the file to a computer with Internet access. Go to BES License Request Handler, and submit the request file. In return, the `license.crt` file is saved to your computer. Copy the file back to the computer where you are installing BigFix. Return to the installation, and click **Import** to import the certificate. Then click **Create**.
2. Enter the parameters of the masthead file that contains configuration and license information. Then, click **OK**.

**Tip:** Default settings are suitable for most deployments. For detailed information about the parameters, see: Requesting a license certificate and creating the masthead.

### Advanced Masthead Parameters

The default values for these parameters should be suitable for most IBM BigFix deployments. For further information about the implications of these parameters, please contact a IBM BigFix support technician.

Server Port Number:

Gathering Interval:

Initial Action Lock:   minutes

Action Lock Controller:

☐ Exempt the following site URL from action locking:

☐ Require use of FIPS 140-2 compliant cryptography.

☒ Allow use of Unicode filenames in archives.

OK Cancel

3. Choose the destination folder for the installers of the BigFix components, and click **Next**. After the component installers are deployed, click **Finish**. The Installation Guide is launched to lead you through the installation of BigFix components: server, console, and client.
4. Install the BigFix server.
  - a. In the Installation Guide, click **Install Server**, and click **Install or Upgrade the Server on this computer**.
  - b. Follow instructions in the installation wizard. When prompted, specify the location of the `license.pvk` file, and enter the password that you specified in step 1f on page 91. Click **OK** to continue.
  - c. Create an account that you want to use to log in to the BigFix console, and click **OK**.
  - d. To complete the installation, click **Finish**.
5. Install the BigFix console.
  - a. In the Installation Guide, click **Install Console**, and click **Install or Upgrade the Console on this computer**.
  - b. Follow instructions in the installation wizard.
  - c. To complete the installation, click **Finish**.

**Tip:** You can log in to the console with the user that you created in step 4c.

6. Install the BigFix client on the computer on which you installed the BigFix server.

- a. In the Installation Guide, click **Install Clients**, and click **Install or Upgrade the Client on this computer**.
  - b. Follow instructions in the installation wizard.
  - c. To complete the installation, click **Finish**.
7. If you want to install the License Metric Tool server on a different computer, install the BigFix client on that computer.

## What to do next

You can proceed with the installation of the BigFix client on every computer from which you want to collect software inventory data or with the installation of the License Metric Tool server. You can perform these tasks in any order.

## Installing the BigFix clients

Install the BigFix client on every computer in your network that you want to monitor, including the backup and recovery machines.

## Installation methods

Methods for installing the clients vary depending on the operating system. Even if you install the BigFix server on Linux, you might need to install some of the clients on Windows if your network consists of such computers. For more information, see:

- Installing clients on Windows computers
- Installing clients on Linux and UNIX computers

If you are not sure which installation method to choose, install the client manually.

## Additional installation requirements

- If you are using HP Integrity VM, install the client on the virtual machines and their host operating systems.
- If you are using Solaris Containers/Zones or Logical Domains (LDOM), install the client in the global zone on the control domain and in other global zones. For more information, see: “Client installation on Oracle Solaris” on page 178.

## Installation packages

The BigFix installation image available on the Passport Advantage® contains client installers. You can also download client installation packages from the BigFix® support web page.

**Important:** Not all of the operating systems for which installation packages are provided as part of the BigFix installation image are supported by License Metric Tool. For more information, see: “Supported operating systems” on page 60.

## Client vs scanner

The BigFix client is common for all IBM products that are based on the BigFix platform, and is used to perform various tasks on the endpoints. It provides information about a set of computer properties like its host name or the IP address. It is also used to install the scanner on the computers, and enables scanner management through fixlets.

The scanner is an independent component that is used by License Metric Tool. It collects information about the hardware, as well as the software that is installed on the computers in your infrastructure. The data is sent to the BigFix server. You can then import it to the License Metric Tool server.

Apart from installing the BigFix client, install also the scanner on every computer that you want to monitor to ensure that all necessary data is collected. For more information, see: "Setting up scans to discover software and hardware inventory" on page 163.

## Installing License Metric Tool on Windows

Before you start the installation of License Metric Tool on Windows, ensure that an MS SQL Server is installed in your infrastructure. Then, enable a dedicated fixlet site in the BigFix console and download the License Metric Tool installer. Next, run the installation in interactive or silent mode.

### Installing MS SQL Server for License Metric Tool on Windows

License Metric Tool that is installed on Windows requires MS SQL Server as a database. However, the software is not delivered as part of License Metric Tool. Ensure that you install MS SQL Server before you proceed with the installation of the License Metric Tool server.

#### About this task

The database can be installed on the same computer as the License Metric Tool server or on a separate one. You can also reuse the MS SQL Server that you installed for the BigFix platform.

#### Procedure

For instructions on installing SQL Server, see: SQL Server installation.

#### Configuring SQL Server Express:

If you use the SQL Server Express Edition, you need to complete post-installation configuration.

#### Procedure

1. Open the local SQL Server Configuration Manager for the SQL Server Express. For detailed instructions, see: SQL Server Configuration Manager.
2. In the left pane, expand **SQL Server Network Configuration** and select **Protocols for MSSQLSERVER**.
3. On the right pane, make sure that the TCP/IP communication is enabled. Otherwise, right-click **TCP/IP** and select **Enable**.
4. Next, right-click **TCP/IP** and select **Properties**.
  - a. Enable all non-VMnet IP addresses.
  - b. In the IPAll entry, set the TCP port to 1433.
  - c. Confirm the changes by clicking **OK**.
5. Return to SQL Server Configuration Manager, and in the left pane, select **SQL Services**.
6. In the right pane, right-click **SQL Server (MSSQLSERVER)** and select **Restart**.
7. Use the following command to test the configuration:

```
netstat -an:C:\>netstat -an | find "1433"
```

The command should return the following response:

```
TCP 0.0.0.0:1433 0.0.0.0:0 LISTENING TCP [::]:1433 [::]:0 LISTENING
```

#### Enabling the fixlet site

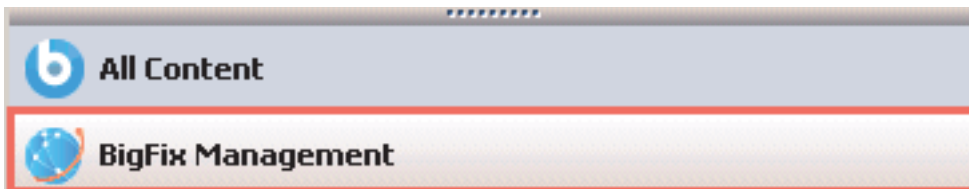
A fixlet site is a collection of fixlets, tasks, and analyses that are related to a particular BigFix application. To get access to the content that is specific to License Metric Tool, enable the application fixlet site. The procedure differs depending on whether the computer where the BigFix server is installed has the Internet access or not.

### Enabling the fixlet site on Windows with Internet access:

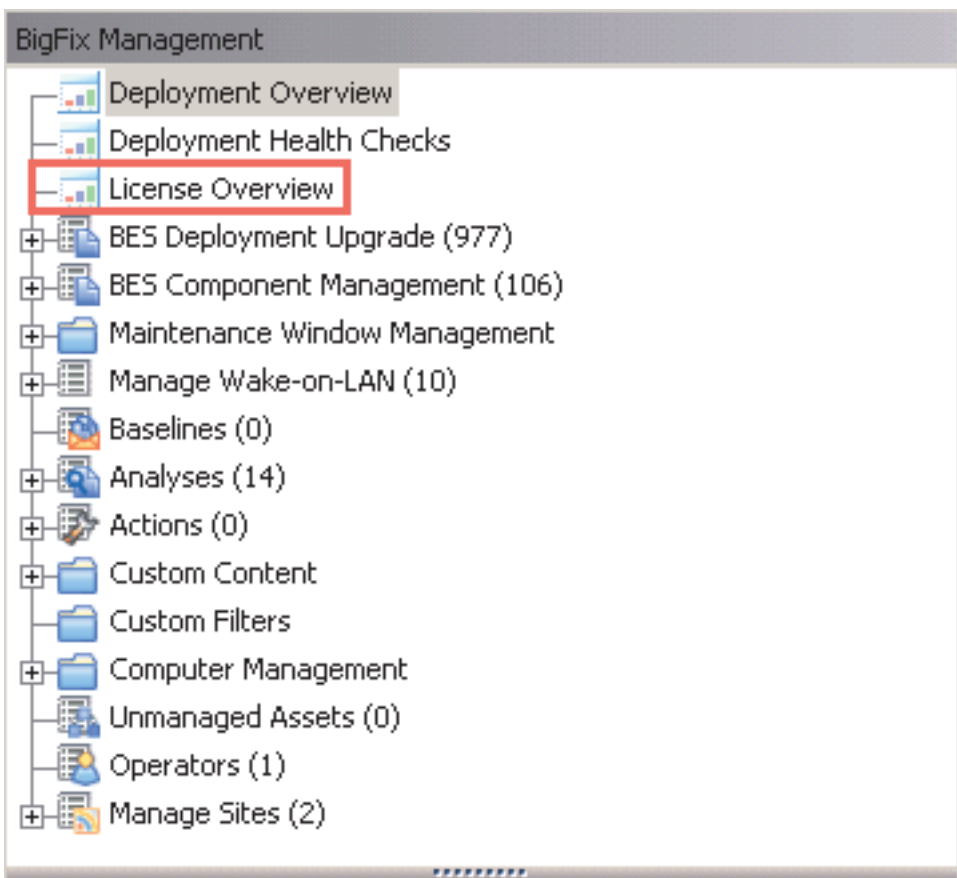
If the BigFix server can access the Internet, enable the License Metric Tool site from the BigFix console. Then, subscribe computers that you want to monitor to this site so that its content becomes applicable on these computers.

#### Procedure

1. Log in to the BigFix console.
2. In the bottom-left corner of the console, click **BigFix Management**.



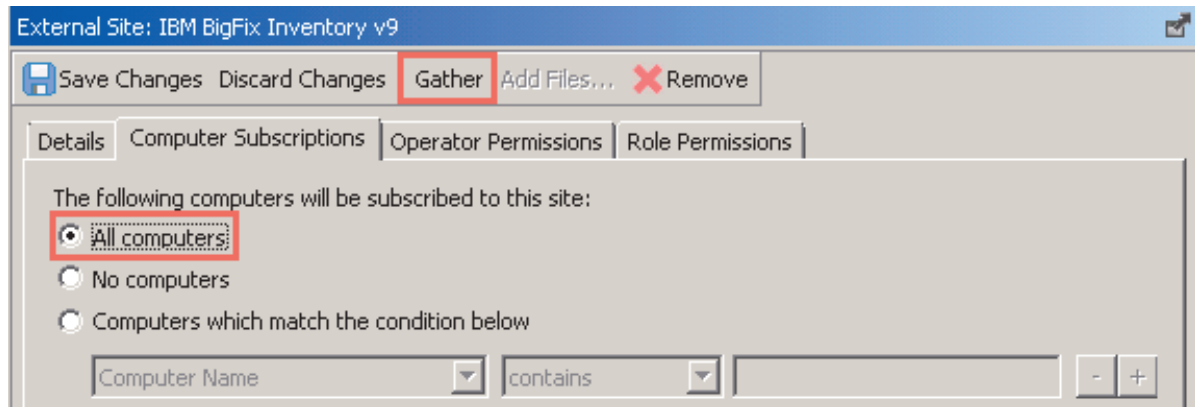
3. In the left navigation panel, click **License Overview**.



4. In the pane on the right, locate the entry called **IBM License Metric Tool**, and accept the license agreement.
5. From the list of available sites, enable the **IBM License Reporting (ILMT) v9** site. The content of the site is downloaded to the BigFix server.
6. Subscribe all computers that you want to monitor to the fixlet site so that its content becomes applicable to these computers.
  - a. In the bottom-left corner of the console, click **All Content**.

- b. In the left navigation panel, expand **Sites > External Sites**, and open the **IBM License Reporting (ILMT) v9** site.
- c. In the pane on the right, open the **Computer Subscriptions** tab, and select **All Computers**.

**Tip:** If the option is not active, click **Gather** to download the content of the fixlet site.



- d. Click **Save Changes**.

## Results

You enabled the License Metric Tool site and subscribed computers that you want to monitor to this site.

## What to do next

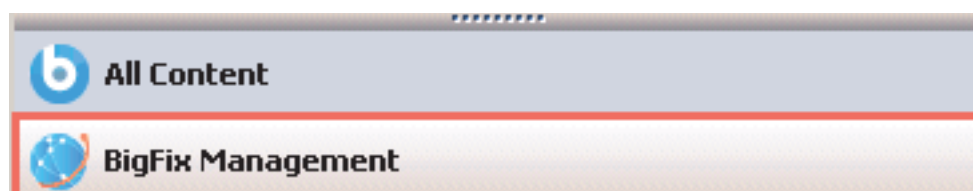
Download the License Metric Tool installer to a selected computer and start the installation.

## Enabling the fixlet site on Windows without Internet access:

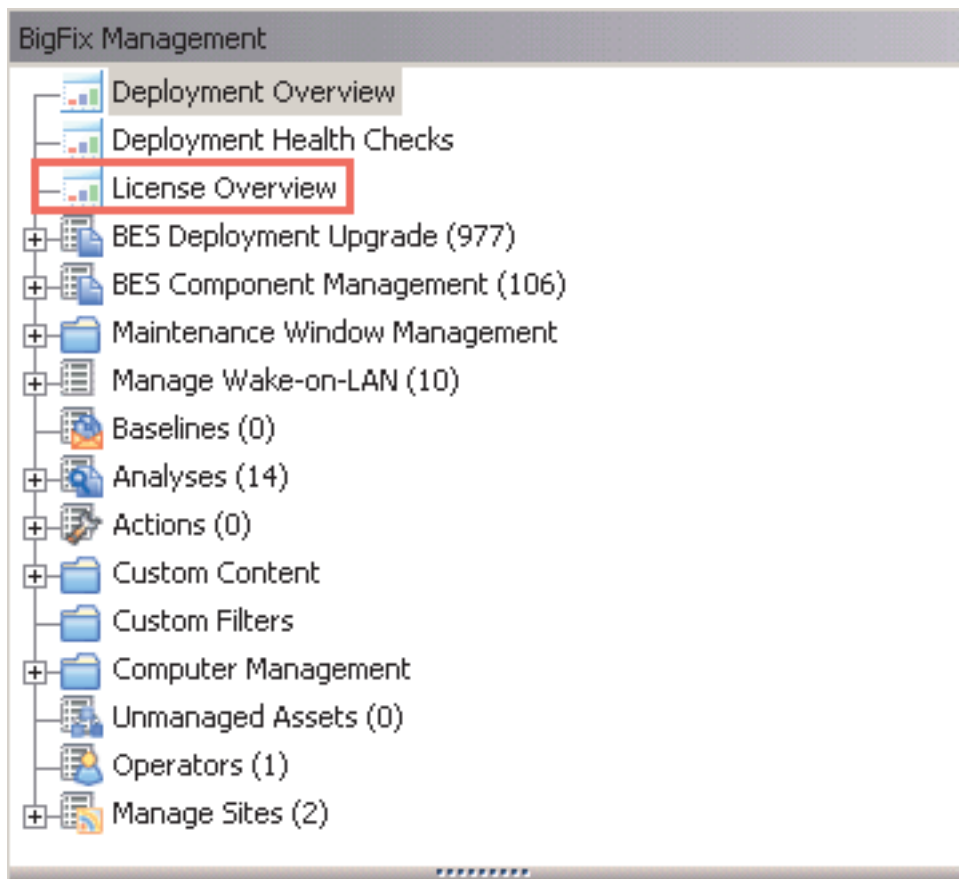
If the BigFix server cannot access the Internet, use the Airgap tool to enable the fixlet site. When the site is enabled and the content loaded, use the BES Download Cacher to download and cache the files on the BigFix server.

## Procedure

1. Create a request file to obtain the list of fixlet sites to which you are entitled.
  - a. Go to the BigFix server installation directory, by default C:\Program Files (x86)\BigFix Enterprise\BES Server, and run the BESAirgapTool.exe file. When prompted, save the files to a dedicated folder, for example Airgap.
  - b. Copy the created files to a computer with Internet access, and run the BESAirgapTool.exe file on that computer. This action exchanges the request file for a response file.
  - c. Copy the AirgapResponse file back to the computer where the BigFix server is installed, and place it in the Airgap folder. Run BESAirgapTool.exe to load the response to the BigFix server.
2. Enable the License Metric Tool site.
  - a. Log in to the BigFix console.
  - b. In the bottom-left corner of the console, click **BigFix Management**.



- c. In the left navigation panel, click **License Overview**.



- d. In the pane on the right, locate the entry called IBM License Metric Tool, and accept the license agreement.
- e. From the list of available sites, enable the **IBM License Reporting (ILMT) v9** site.
3. To create a request file to load the content into the site, repeat step 1 on page 96.
4. Subscribe all computers that you want to monitor to the License Metric Tool fixlet site so that its content becomes applicable to these computers.
  - a. Log in to the BigFix console.
  - b. In the left navigation panel, click **Sites > External Sites > IBM License Reporting (ILMT) v9**.
  - c. In the pane on the right, open the Computer Subscriptions tab, and select **All Computers**. Click **Save Changes**. The IBM License Reporting.efxm file is created on the server.
5. Cache the content of the fixlet site on the BigFix server.
  - a. On the computer where the BigFix server is installed, go to: *install\_dir*\BES Server\wwwrootbes\bfsites. Copy the IBM License Reporting.efxm file to a Windows computer with Internet access, and place it in the C:\BigFix directory.
  - b. In the C:\BigFix directory create a folder called downloads.
  - c. Run the BES Download Cacher with the following command:
 

```
BESDownloadCacher.exe -m "C:\BigFix\IBM License Reporting.efxm"
          -x C:\BigFix\downloads
```

 The BES Download Cacher downloads approximately 1 GB of required files.
  - d. Optional: The default cache size is enough if you use only the **IBM License Reporting (ILMT) v9** fixlet site. However, if you plan to run fixlets from other sites, such as **BES Support**, increase the cache size so that the BigFix server does not try to delete any files.
    - 1) Log in to the BigFix console.



- 2) In the left navigation bar, click **Computers** and right-click the computer on which the BigFix server is installed. Then, click **Edit Computer Settings**.
- 3) Increase the value of the `_BESGather_Download_CacheLimitMB` setting. If the setting is not on the list, add it and specify the value in MB.

**Tip:** The size depends on each fixlet site, however you might need to increase it to at least a couple of gigabytes.

- e. Copy the contents of the downloads folder from the computer with Internet access to the following directory on the computer where the BigFix server is installed:

```
install_dir\BES Server\wwwroot\bbs\bfmirror\downloads\sha1
```

## Results

You enabled the License Metric Tool fixlet site and loaded its content.

## What to do next

Download the License Metric Tool installer to a selected computer and start the installation.

## Installing the server on Windows

After you enable the fixlet site, download the License Metric Tool installer, and proceed with the installation. You can install the server in interactive or silent mode.

### Installing the server on Windows in interactive mode:

To install the License Metric Tool server on Windows, download the application installer to a selected computer and run the `setup-server-windows-x86_64.bat` script. Then, follow instructions in the installation wizard.

### Before you begin

- Ensure that the BigFix client is installed on the computer on which you want to install the License Metric Tool server.
- Log in as user with administrative privileges and run the installer with the **Run as Administrator** option.
- Disable or reduce the User Account Control in Windows to avoid warnings during the installation.

## Procedure

1. Download the License Metric Tool installer.
  - a. Log in to the BigFix console.
  - b. In the navigation panel, click **Sites > External Sites > IBM License Reporting (ILMT) > Fixlets and Tasks**.
  - c. In the upper right pane, select **Download IBM License Metric Tool**, and click **Take Action**.
  - d. Select the computer to which you want to download the installer, and click **OK**. Wait until the status of the action is **Completed**. The installer is downloaded to the `BES Installers\ILMT_installer` directory on the selected computer. By default, the directory is in the following location: `C:\Program Files (x86)\BigFix Enterprise\BES Installers\ILMT_installer`.

**Tip:** If the computer is not available, ensure that it has the BigFix client installed and is subscribed to the License Metric Tool fixlet site.

2. Log in to the computer where you downloaded the installer as a user with administrative privileges.
3. Go to the directory where the installer was downloaded, and extract the installation files.
4. To start the installation, run the `setup-server-windows-x86_64.bat` file. Run the installer with the **Run as Administrator** option.



**Tip:** If you encounter a slow installation, check the following items:

- Check the performance and speed of the hard disk.
  - Check whether the antivirus is scanning each file separately as it might slow down packaging. If this is the case, turn off the antivirus. If the antivirus cannot be turned off, expect the installation to be slower.
5. Select the language of the installation, and click **OK**. The installation wizard starts, and the welcome panel opens. Click **Next**. If you cannot choose your language in the installation wizard, set the system locale to a chosen language. For more information, see Troubleshooting.
  6. Read and accept the license agreement, and click **Next**.
  7. Follow instructions in the installation wizard and provide the required parameters.
  8. On the last panel, specify the user account that you want to be used for running the application service.
    - If you choose **Local System account**, the service runs under the NT AUTHORITY\SYSTEM user, which has all required rights.
    - If you choose **Other account**, specify a user with the **log on as a service** right and administrative privileges. The User Account Control in Windows must be reduced or disabled, because it might block the service from starting. The user must be entered as domain\username, machine\username, or .\username if it is a local account.

**Specify a service account**

☐ Local System account

☒ Other account:

User name: YOUR-DOMAINAdministrator

Password: \*\*\*\*\*

**Help**

Choose the user account for running the application service. The account should be chosen depending on the authentication mode you are using to access the databases.

SQL Server auth. - choose any account.

**Important:** To use Windows authentication to access the database, the service owner chosen on this panel must be available both to License Metric Tool and the relevant database server for which you use this authentication. For local databases, you can use the Local System account. For remote databases, specify a domain user that is shared between the two servers.

9. When the installation is complete, click **Done** to exit the wizard.

**Tip:** If you encountered problems during the installation, analyze the log file that is in the following directory: %USERPROFILE%/LMT9.2.15.

## Results

The License Metric Tool server is installed and the initial configuration opens in the browser. If you do not have a browser installed or want to complete the configuration from a different computer, go to: `https://host_name:port`, where *host\_name* and *port* are the values that you specified during the installation.

## What to do next

Complete the initial configuration.

### Installing the server on Windows in silent mode:

To install the License Metric Tool server on Windows, download the application installer to a selected computer, edit parameters in the `install_response.txt` file, and run the installation command.

### Before you begin

- Ensure that the BigFix client is installed on the computer on which you want to install the License Metric Tool server.
- Log in as user with administrative privileges and run the installer with the **Run as Administrator** option.
- Disable or reduce the User Account Control in Windows to avoid warnings during the installation.

## Procedure

1. Download the License Metric Tool installer.
  - a. Log in to the BigFix console.
  - b. In the navigation panel, click **Sites > External Sites > IBM License Reporting (ILMT) > Fixlets and Tasks**.
  - c. In the upper right pane, select **Download IBM License Metric Tool**, and click **Take Action**.
  - d. Select the computer to which you want to download the installer, and click **OK**. Wait until the status of the action is Completed. The installer is downloaded to the BES Installers\ILMT\_installer directory on the selected computer. By default, the directory is in the following location: C:\Program Files (x86)\BigFix Enterprise\BES Installers\ILMT\_installer.

**Tip:** If the computer is not available, ensure that it has the BigFix client installed and is subscribed to the License Metric Tool fixlet site.

2. Log in to the computer where you downloaded the installer as a user with administrative privileges.
3. Go to the directory where the installer was downloaded, and extract the installation files.
4. Read the license agreement in the BES Installers\LMT\_installer\licenses\LA\_language.txt file.
5. Edit the `install_response.txt` response file and adjust it to your installation. Ensure that the **RSP\_LICENSE\_ACCEPTED** parameter is set to true. If you do not accept the license, the installation fails. For more information about installation parameters, see: Server installation response file.
6. Start the command line and change to the directory with installation files. To start the installation, run the following command.

```
setup-server-windows-x86_64.bat -f response_file_path -i silent
```

Where *response\_file\_path* is the absolute path to the response file that you are using. For example:

```
setup-server-windows-x86_64.bat -f "C:\Program Files (x86)\BigFix Enterprise\BES Installers\ILMT_installer\install_respo
```

**Tip:** Use the `-h` option to view help information about using the script, for example:  
`setup-server-windows-x86_64.bat -h`.

**Tip:** If you encounter a slow installation, check the following items:

- Check the performance and speed of the hard disk.
- Check whether the antivirus is scanning each file separately as it might slow down packaging. If this is the case, turn off the antivirus. If the antivirus cannot be turned off, expect the installation to be slower.

## What to do next

Access the License Metric Tool user interface to complete the initial configuration. To access the user interface, go to: `https://host_name:port`, where `host_name` and `port` are the values that you specified during the installation.

*Server installation response file:*

The `install_response` file specifies input parameters that are used during the installation of the License Metric Tool server in silent mode.

Table 26. Response file parameters

Parameter key name	Description	Default
<b>RSP_LICENSE_ACCEPTED</b>	Accepts the license agreement.  The installation fails if you do not change the value of the parameter to true.	false
<b>RSP_DISABLE_PREREQ_WARNINGS</b>	Disables prerequisite checking warnings.  If the server does not have enough memory or processor cores, the silent installation fails. You can change this behavior by setting the value of this parameter to true. The installation can complete even if the requirements are not fulfilled, however insufficient resources might impact performance.	false (warnings are enabled)
<b>RSP_TLM_ROOT</b>	Specifies the installation location.  Specify an empty directory in which you want to install the server. If the directory does not exist, it is created.	<div>Windows</div> C:\Program Files\ibm\LMT <div>Linux</div> /opt/ibm/LMT
<b>RSP_TLM_HTTPS_PORT</b>	Specifies the port that is used by the server.  If you do not specify the port number, a default value is used. If the selected port is already used by a different application, the installation fails.	9081
<b>RSP_DISABLE_COMMUNICATION_WARNINGS</b>	Disables communication warnings.  If any of the ports that you specified in the <b>RSP_TLM_HTTPS_PORT</b> is locked by another application, silent installation fails. To specify a port that is temporarily used but will be available later, set the <b>RSP_DISABLE_COMMUNICATION_WARNINGS</b> parameter to true.	false

Table 26. Response file parameters (continued)

Parameter key name	Description	Default
<b>Windows</b> RSP_USER_ACCOUNT	<p>Specifies the user account for running the application service.</p> <p>The User Account Control in Windows must be reduced or disabled. Otherwise, it might block the service from starting.</p> <p>If you leave the value current, the service runs under the NT AUTHORITY\SYSTEM user, which has all required rights. If you specify a different user, ensure that the following requirements are met:</p> <ul style="list-style-type: none"> <li>• The user has the <b>log on as a service</b> right and administrative privileges.</li> <li>• The user is entered as domain\username, machine\username, or .\username if it is a local account</li> </ul> <p><b>Important:</b> To use Windows authentication to access the database, the service owner chosen here must be available both to License Metric Tool and the relevant database server for which you use this authentication. For local databases, you can use current, but for remote ones it must be a domain user that is shared between the two servers.</p>	current
<b>Windows</b> RSP_USER_ACCOUNT_PWD	Specifies the password of the user account for running the application service.	

## Performing initial configuration on Windows

During the initial configuration, you create a License Metric Tool database and the application administrator. You also set up a connection to the BigFix server and database. Optionally, you can configure a connection to the Web Reports database to give the Web Reports users access to License Metric Tool.

### Before you begin

#### Permissions and roles

- Ensure that the MS SQL Server user has the following permissions. These permissions apply only if the databases were installed with default settings and all customizations and hardening configurations were consulted with IBM support.
  - For the BigFix database (BFEnterprise): CREATE FUNCTION, CREATE SCHEMA, CREATE TABLE, CREATE VIEW, EXECUTE, SELECT
  - For the Web Reports database (BESReporting): SELECT
- Ensure that the MS SQL Server user has the appropriate role to create the License Metric Tool database.
  - If you create a new database during initial configuration in License Metric Tool, the user must have the sysadmin role in MS SQL Server.
  - If you create an MS SQL database manually before the configuration, make sure that the database is empty and use the SQL\_Latin1\_General\_CP1\_CS\_AS collation. The user for such database must have the db\_owner role in MS SQL Server.

- If you are using MS SQL Server 2012 and you chose Local System account as the service owner during the installation, give the dbcreator or sysadmin role to the NT AUTHORITY\SYSTEM user in MS SQL Server.

### Other considerations

- If you want to use Windows authentication to connect to the databases, the following requirements must be fulfilled:
  - BigFix and License Metric Tool must be installed on Windows.
  - To use a local user for authentication, BigFix and License Metric Tool must be installed on the same instance of Windows. The applications can run on different copies if the user is a domain user.
  - The owner of the License Metric Tool service must also be able to access this database.

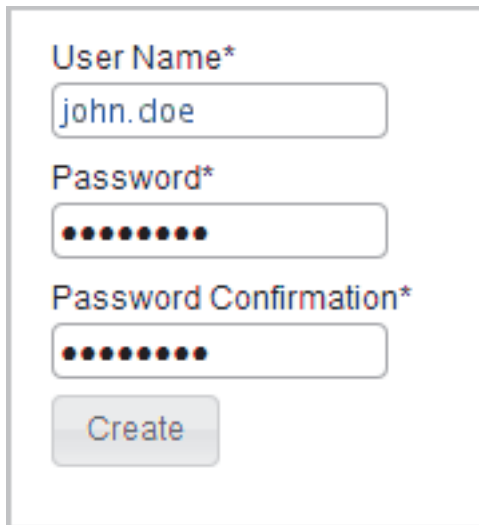
### Procedure

1. Create the License Metric Tool database.
  - a. Enter the host name of the database server. If you want to configure a named database instance or specify a non-default port, provide the host name in the following format:
    - *hostname\instance\_name*, for example localhost\MyInstance
    - *hostname:port\_number*, for example localhost:1444
  - b. Enter the name of the application database.
  - c. Select the authentication mode.
    - Select **Windows Authentication**, to authenticate with a Windows user that you specified as the service owner during the installation of License Metric Tool.

**Restriction:** If the MS SQL Server is installed on the same computer as License Metric Tool, enter the database host name without its domain name (FQDN) or use localhost instead. The host name can be specified as NC1985110 or localhost, but not as NC1985110.domain.com or 198.50.100.

    - Select **SQL Server Authentication** to authenticate with an MS SQL Server user. This authentication mode must be enabled in MS SQL Server. For more information, see: Enabling the SQL Server Authentication mode.
  - d. To create the database instance, click **Create**.
2. Create the administrator of License Metric Tool.

**Tip:** Avoid using admin, administrator, root or a similar name for the administrative account. Such an account might be prone to hacker attacks and locked out if an attacker exceeds the specified number of failed login attempts. For more information, about the account lockout, see: “Configuring user account lockout” on page 512.



A user creation form with three input fields and a button. The first field is labeled 'User Name\*' and contains the text 'john.doe'. The second field is labeled 'Password\*' and contains ten black dots. The third field is labeled 'Password Confirmation\*' and also contains ten black dots. Below the fields is a button labeled 'Create'.

3. Optional: The **Enable default scan schedule for this data source** check box is selected by default. Clear this check box if you want to manually configure the scans.

If you enable the default scan schedule, actions that are needed to collect data from the computers in your infrastructure are automatically started on the BigFix server. This option is advised for environments with up to a few thousand computers. For larger environments, finish the installation, divide the computers into groups, and then manually set up scan schedule for each group to avoid performance issues. For more information about the default and manual scan schedule, see: “Setting up scans to discover software and hardware inventory” on page 163.

4. Configure the connection to the BigFix database. The database stores information about the computers, and data that was discovered on these computers. Specify the host, port, database name, and credentials of the user that can access the BigFix database.



A database configuration form titled 'Database for the IBM BigFix Server\*'. It contains a 'Database Type\*' dropdown menu with 'SQL Server' selected. Below this is a 'Host\*' text field with '198.51.100.2'. The 'Database Name\*' text field contains 'BFEnterprise'. Under the 'Authentication' section, there are two radio buttons: 'Windows Authentication' (which is selected) and 'SQL Server Authentication'. At the bottom is a 'Save' button.

5. Configure the connection to the BigFix server. The host name or IP address, and the API port number are automatically retrieved from the database. Specify only the administrative user that you created during the installation of BigFix.

## IBM BigFix Server\*

### Authentication (Console Operator)

User Name\*

Password\*

☐ Disable automatic address lookup

**Note:** If you do not want to provide the Master Operator, you can create a dedicated BigFix user that fulfills the following requirements:

- Is assigned the IBM License Reporting (ILMT) v9 site
- Is assigned computers that you are going to monitor, and the computer where the BigFix server is installed
- Has the following permissions: *Can use REST API, Can use Console, Custom Content, Can Create Actions*

The option is supported starting from BigFix 9.5.

6. Optional: If the BigFix and License Metric Tool servers are in separated networks, the automatic address lookup might return incorrect address. To disable the lookup, select **Disable automatic address lookup**, and specify the address manually. Then, configure additional environment variables on the License Metric Tool server. For more information, see: “Configuring servers in separate networks” on page 153.
7. Optional: Configure the connection to the Web Reports database. Specify the database type, host name, database name, and credentials of the Web Reports database user. 98/

**Web Reports Database**

Database Type\*  
SQL Server ▼

Host\*  
198.51.100.2

Database Name\*  
BESREPORTING

**Authentication**

☒ Windows Authentication  
☐ SQL Server Authentication

8. To create connections to the databases, click **Create**. When the connections are created and configured, a new page opens and a message about the data import is displayed.
9. Optional: If your environment consists of more than 50 000 endpoints, complete steps to enhance the application performance before you run the import.
10. To run the initial import, click **Import Now**. The import might take a few hours, depending on your hardware capacity.



## What to do next

If you enabled the default scan schedule, the collected data might not be displayed in License Metric Tool after the initial import. Some time is required to finish scans that were initiated during the installation, and to upload scan results to the server. If the reports in License Metric Tool do not contain any data, wait about an hour until the scans are completed. Then, start another import.

If you did not enable the default scan schedule, manually configure scans to collect data that is later on displayed on the reports.

## Uninstalling on Windows

To remove License Metric Tool from your infrastructure, stop the application-specific actions and analyses that are running on the computers and uninstall the scanner. Then, remove the VM Manager Tool. Finally, uninstall the License Metric Tool server. You can also remove the related database.

### Uninstalling the server on Windows in interactive mode

To uninstall the License Metric Tool server on Windows, run the `uninstall.bat` file. Then, follow instructions in the installation wizard. The wizard does not uninstall the MS SQL Server nor the BigFix server. These components need to be removed separately.

#### Procedure

1. Log in to the computer where the License Metric Tool server is installed as the same user who performed the installation.
2. Go to the `C:\Program Files\IBM\LMT\Uninstall` directory and run the `uninstall.bat` file. Start the uninstallation with the **Run as administrator** option.
3. Follow instructions in the uninstallation wizard. When the uninstallation finishes, click **Done**.

#### Results

The License Metric Tool server is uninstalled but the database, user logins, and passwords are preserved. To remove them, delete the License Metric Tool database. You can also remove the BigFix server.

### Uninstalling the server on Windows in silent mode

To uninstall the License Metric Tool server on Windows, edit parameters in the `uninstall_response.txt` file, and run the uninstallation command. The command does not uninstall the MS SQL Server nor the BigFix server. These components need to be removed separately.

#### Procedure

1. Log in to the computer where the License Metric Tool server is installed as the same user who performed the installation.
2. Go to the directory with the uninstallation response file, open the `uninstall_response.txt` file, and edit the uninstallation parameters. By default, the directory is `C:\Program Files\IBM\LMT\Uninstall`.
3. Start the command line and run the following command.

```
uninstall.bat -f C:\Program Files\IBM\LMT\Uninstall\uninstall_response.txt -i silent
```

#### Results

The License Metric Tool server is uninstalled but the database, user logins, and passwords are preserved. To remove them, delete the License Metric Tool database. You can also remove the BigFix server.



---

## Installing on Linux

A complete deployment of License Metric Tool on Linux requires the installation of three components: the BigFix platform, the License Metric Tool server, and DB2 database. Additionally, a BigFix client must be installed on every computer from which you want to collect software inventory data. Depending on the environment size, you can install all components on a single computer, or distribute them among multiple computers.

If you are planning to install all components on a single computer or reuse an existing BigFix infrastructure, you can use the streamlined installer (also known as the All-in-One installer) to facilitate the installation process. If you want to distribute the components over multiple computers, use a separate installer for each component.

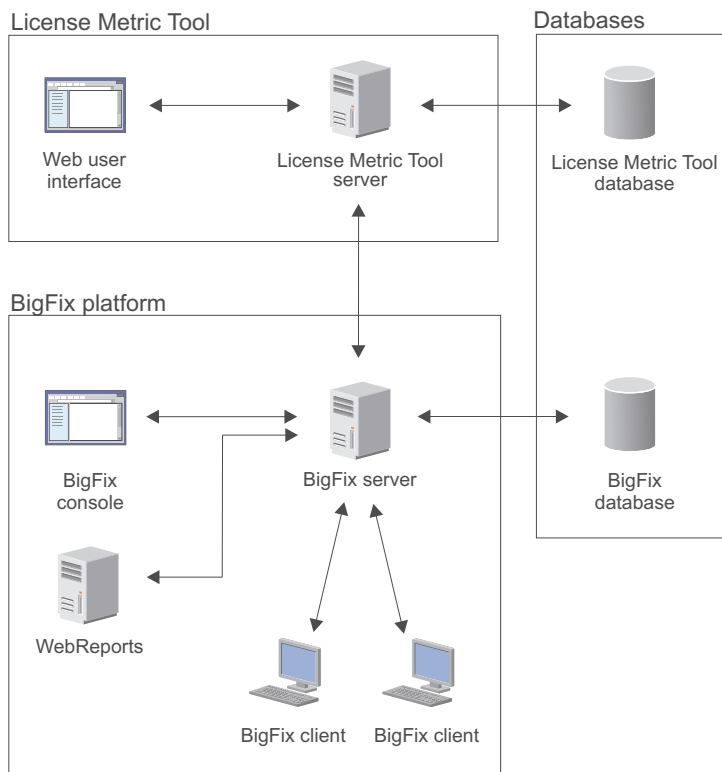


Figure 5. License Metric Tool infrastructure

### Step-by-step installation guide for Linux (one installer)

Use the step-by-step installation guide to ensure that you complete all steps necessary to successfully install License Metric Tool on Linux by using the All-in-One installer.

#### Option A: Installing All-in-One

Use the following checklist if you want to deploy the entire License Metric Tool infrastructure on one computer by using the All-in-One installer.

Table 27. Step-by-step guide for installing all components by using the All-in-One installer

Stage	Installation step
1.	<b>Plan the installation</b> to ensure that the computer on which you want to install License Metric Tool fulfills the following requirements: <ul style="list-style-type: none"> <li>___ • Runs on a supported operating system</li> <li>___ • Fulfills the minimum hardware requirements</li> <li>___ • Has sufficient disk space</li> <li>___ • Has the required software installed</li> </ul>
2	<b>Install the components</b> <ul style="list-style-type: none"> <li>___ • Download the streamlined installer</li> <li>___ • Optional: Create the license authorization file if the computer on which you are planning to install License Metric Tool does not have the Internet access</li> <li>___ • Run the All-in-One installer in interactive or silent mode</li> <li>___ • Install the BigFix console</li> <li>___ • Install the BigFix client on every computer from which you want to collect software inventory data</li> </ul>
4	<b>Create users and groups</b> to give users access to License Metric Tool and to define computers for which they can see data. <ul style="list-style-type: none"> <li>___ • Set up users</li> <li>___ • Set up computer groups</li> </ul>

## Option B: Installing the License Metric Tool server and DB2

Use the following checklist if you already have the BigFix platform installed and you want to install the License Metric Tool server and DB2 by using the All-in-One installer.

Table 28. Checklist for installing the License Metric Tool server and DB2 by using the All-in-One installer

Stage	Installation step
1.	<b>Plan the installation</b> to ensure that the computer on which you want to install License Metric Tool fulfills the following requirements: <ul style="list-style-type: none"> <li>___ • Runs on a supported operating system</li> <li>___ • Fulfills the minimum hardware requirements</li> <li>___ • Has sufficient disk space</li> <li>___ • Has the required software installed</li> </ul>
2	<b>Install the components</b> <ul style="list-style-type: none"> <li>___ • Download the streamlined installer</li> <li>___ • Enable the fixlet site</li> <li>___ • Run the All-in-One installer in interactive or silent mode</li> </ul>
4	<b>Create users and groups</b> to give users access to License Metric Tool and to define computers for which they can see data. <ul style="list-style-type: none"> <li>___ • Set up users</li> <li>___ • Set up computer groups</li> </ul>

## Step-by-step installation guide for Linux (separate installers)

Use the step-by-step installation guide to ensure that you complete all steps necessary to successfully install License Metric Tool on Linux.

Table 29. Step-by-step guide for installing and configuring License Metric Tool

Stage	Installation step
1.	<b>Plan the installation</b> to ensure that the computer on which you want to install License Metric Tool fulfills the following requirements: <ul style="list-style-type: none"> <li>— • Runs on a supported operating system</li> <li>— • Fulfills the minimum hardware requirements</li> <li>— • Has sufficient disk space</li> <li>— • Has the required software installed</li> </ul>
2	<b>Install the BigFix platform</b> <ul style="list-style-type: none"> <li>— • Create the license authorization file</li> <li>— • Download the BigFix installer</li> <li>— • Install the BigFix server, console and the first client</li> <li>— • Install the BigFix client on every computer from which you want to collect software inventory data</li> </ul> <b>Tip:</b> You can install the clients at this point or proceed with the installation of License Metric Tool and install the clients later on.
3	<b>Install License Metric Tool</b> <ul style="list-style-type: none"> <li>— • Install DB2</li> <li>— • Enable the License Metric Tool fixlet site</li> <li>— • Install the License Metric Tool server</li> <li>— • Perform initial configuration</li> <li>— • Verify the current application and catalog version</li> </ul>
4	<b>Create users and groups</b> to give users access to License Metric Tool and to define computers for which they can see data. <ul style="list-style-type: none"> <li>— • Set up users</li> <li>— • Set up computer groups</li> </ul>
5	<b>Set up scans</b> to discover software and hardware inventory in your infrastructure. <b>Important:</b> The steps are not required if you enabled the default scan configuration during the installation. <ul style="list-style-type: none"> <li>— • Optional: Distribute scans for improved performance</li> <li>— • Activate the required analyses</li> <li>— • Install the scanner</li> <li>— • Initiate software scans</li> <li>— • Schedule uploads of software scan results</li> <li>— • Collect capacity data</li> </ul>

## Installing the components on a single computer with one installer on Linux

This option is intended for environments with up to 5000 computers. Instead of installing each component separately, you can use the streamlined installer (also known as the All-in-One installer) to automatically deploy all components on one computer. You can either install the BigFix platform, the License Metric Tool server, and DB2 database, or reuse the existing BigFix platform and install the License Metric Tool server and DB2 only.

### Downloading the streamlined installer for Linux

To obtain the License Metric Tool streamlined installer for Linux, log in to Passport Advantage and download the server installation package. If the computer on which you are going to install the server does not have the Internet access, download also the license generator.

### Procedure

1. Log in to Passport Advantage.
2. On the **Navigation help** tab, click **Software download & media access**.
3. In the lower part of the page, click **IBM License Metric Tool**.

4. In the window that opens, select your preferred operating system and language for the installation packages.
5. In the lower part of the page, select **Required**, and click **Download**.
6. In the window that opens, select the download location, the preferred download method, select **I agree to the terms and conditions**, and click **Download Now**.
7. On the page that opens, click the displayed links to download the server installation package.

Image	Description
ILMT_Install_Lnx-x86-64_V9215.tar.gz	IBM License Metric Tool Platform Install V9.2.15 for Red Hat Enterprise Linux x86-64 Multilingual

8. Optional: If the computer on which you are going to install the License Metric Tool server does not have the Internet access, download one of the following packages.

**Important:** The operating system of the license generator does not indicate the operating system on which you want to install the License Metric Tool server. It indicates the operating system of the computer with Internet access on which you are going to generate the license authorization files.

Image	Description
ILMT_LicGenerator9215_linuxx64.tgz	IBM License Metric Tool License Generator V9.2.15 for Red Hat Enterprise Linux x86-64 Multilingual
ILMT_LicGenerator9215_winx64.zip	IBM License Metric Tool License Generator V9.2.15 for Windows x86-64 Multilingual

For information about part numbers of the installation packages, see: IBM Downloading IBM License Metric Tool 9.2.

## What to do next

If you want to install all components, proceed with the All-in-One installation. If you want to reuse the existing BigFix infrastructure, install the License Metric Tool server and DB2.

### Option A: Installing All-in-One on Linux

You can use the streamlined installer to deploy the entire License Metric Tool infrastructure on one computer that runs on Linux. The only component that you need to install separately is the BigFix console. The console is used to view and manage the infrastructure, and to target computers with configuration and troubleshooting tasks specific to License Metric Tool. The console is supported only on Windows.

#### Optional: Creating the license authorization file:

To complete the All-in-One installation, authorize it with a set of license files. If the computer on which you are performing the installation has the access to Internet, the license files are created during the installation. If the computer does not have the Internet access, or if for some other reason you do not want to create the license files during the installation, run a license generator and create the license files in offline mode. You can run the generator on a Windows or Linux computer with Internet access.

#### About this task

The operating system on which you generate the license files does not indicate the operating system on which you want to install License Metric Tool. You can run the generator on a Windows or Linux computer with Internet access.

**Important:** To create the license authorization file, you must use the same version of All-in-One installer, and License Generator, for example, version 9.2.6.

## Procedure

- **Linux** To create license files on a Linux computer, complete the following steps.
  1. From a directory with extracted installation files, go to the `license_files` directory, and copy the `BigFix_license_generator_Linux` directory to a 64-bit Linux computer with Internet access.
  2. Open the directory and run the `generate_license.sh` script.
  3. Enter your details, such as the first name, last name, and email address.
  4. Enter the host name of the computer on which you want to perform the installation and then enter the port number for the BigFix server.
  5. Choose the key size and then enter a password that will be used to authorize the administrative user of BigFix.

**Important:** During the installation, you will create an IEMAdmin administrative user. The above password and the IEMAdmin user password **must be the same**.

6. To select the deployment encoding (FXF encoding) that matches your environment, choose a number from the list. For more information, see: Top-down data flow: from the BigFix server to the clients.
7. Specify an output directory to save your license files.
8. After the license files are created, copy this directory back to the computer on which you want to install License Metric Tool.
9. Optional: If you want to install License Metric Tool on a computer that has the Internet access, before you start the installation, run the following command to export the environment variable.  
`export tlm_debug_online_installation=false`

**Note:** After this step, continue the installation in the same command session.

- **Windows** To create license files on Windows, complete the following steps:
  1. From a directory with extracted installation files, go to the `license_files` directory, and copy the `BigFix_license_generator_Windows.zip` file to a Windows computer with Internet access.
  2. Extract the ZIP file and open the `create_license_file.html` file.
  3. In the form, provide your details, and then click **Submit**. The license authorization file is saved to your computer.
  4. Run the `generate_license.bat` file.
  5. Specify the location of your license authorization file, and click **Next**.
  6. Enter the host name of the computer on which you want to perform the installation, and click **Next**.
  7. Enter a password that will be used to authorize the administrative user of BigFix and choose the key size level. Then, click **Create**.

**Important:** During the installation, you will create an IEMAdmin administrative user. The above password and the IEMAdmin user password **must be the same**.

You generate the license for the language that is set up as a default language for your Operating System at the moment of license generation.

8. Specify an output directory to save your license files, and click **OK**.
9. Select the option to submit your request over the Internet, and click **Request**.
10. To create a masthead file, click **Create**. Review the default configuration parameters, and click **OK**.

**Important:** During license generation, you generate the license for the language that is set up as default for your operating system.

11. After the license files are created, copy this directory back to the computer on which you want to install License Metric Tool.

12. Optional: If you want to install License Metric Tool on a computer that has the access to Internet, run the following command to export the environment variable before you start the installation.  
`export tlm_debug_online_installation=false`

**Note:** After this step, continue the installation in the same command session.

## What to do next

Start the All-in-One installation in interactive or silent mode.

### Installing All-in-One on Linux in interactive mode:

To install all components of License Metric Tool by using the All-in-One installer in interactive mode, run the `setup-server-linux-x86_64.sh` script. Then, follow instructions in the installation wizard.

### Before you begin

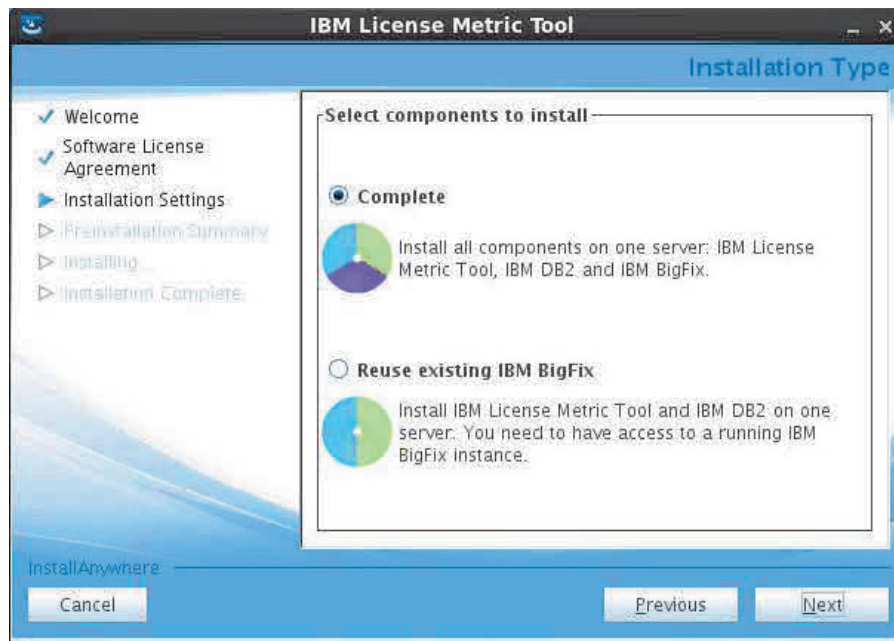
- Ensure that the computer meets the following requirements:
  - A graphical user interface is available
  - X server is configured
  - `DISPLAY` variable is set properly
- Ensure that the `/home` directory is a regular directory with write permissions to allow for the DB2 installation. The use of an automounted directory is not supported.
- The use of `sudo` is not supported.

### Procedure

1. Authorize the All-in-One installation with a set of license files. If the computer on which you are running the installation has the Internet access, the license files are created during the installation. If the computer does not have the Internet access, or if for some other reason you cannot create the license files during the installation, run a license generator and create license files in offline mode.

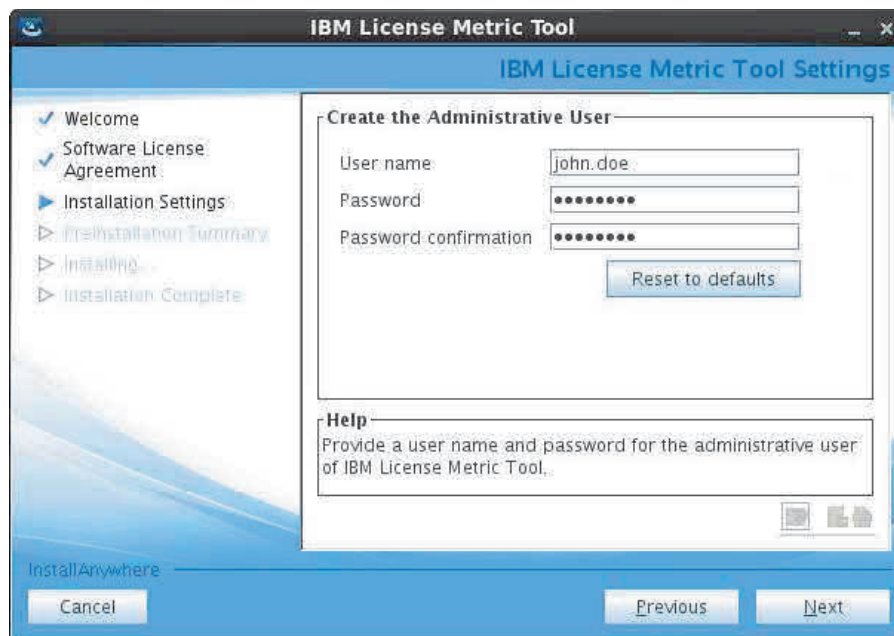
**Note:** If you decide to create license files in offline mode on a computer that has the access to Internet, make sure that you continue the installation in the same command session.

2. Go to the directory with the installation package, and extract the installation files.  
`tar xvf installation_package`
3. To start the installation, run the `setup-server-linux-x86_64.sh` script.  
`./setup-server-linux-x86_64.sh`
4. When prompted, choose **Complete** to install all components on one computer.



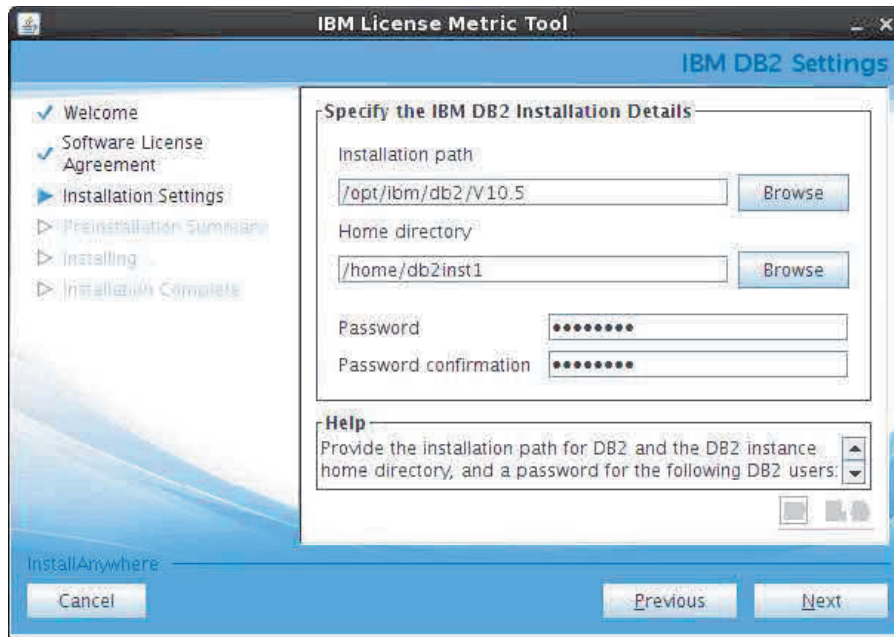
5. Create the administrative user of License Metric Tool. This user is required to log in to the application.

**Tip:** Avoid using admin, administrator, root or a similar name for the administrative account. Such an account might be prone to hacker attacks and locked out if an attacker exceeds the specified number of failed login attempts. For more information, about the account lockout, see: “Configuring user account lockout” on page 512.

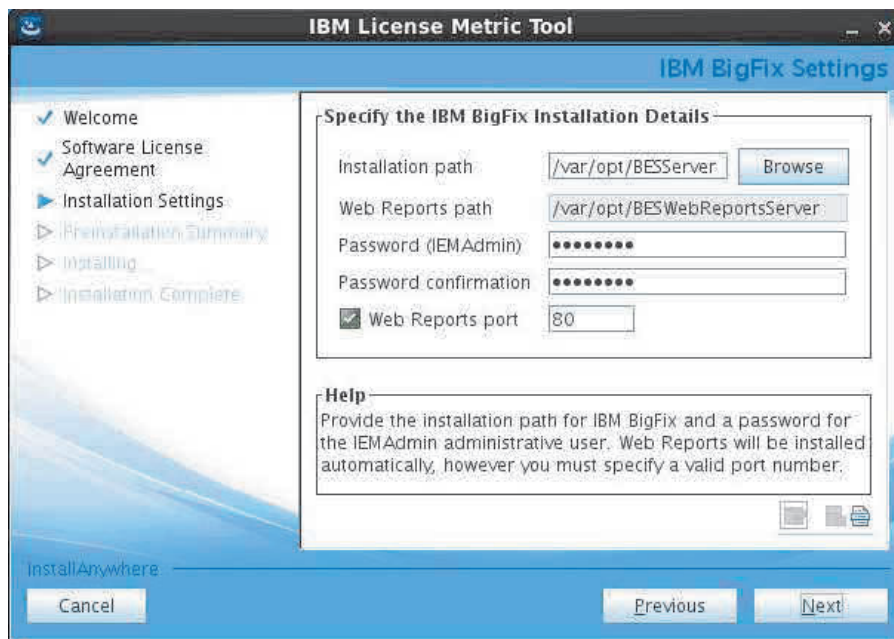


6. Provide details for the installation of DB2: installation path, home directory, and a password for the db2inst1 and db2fenc1 users.



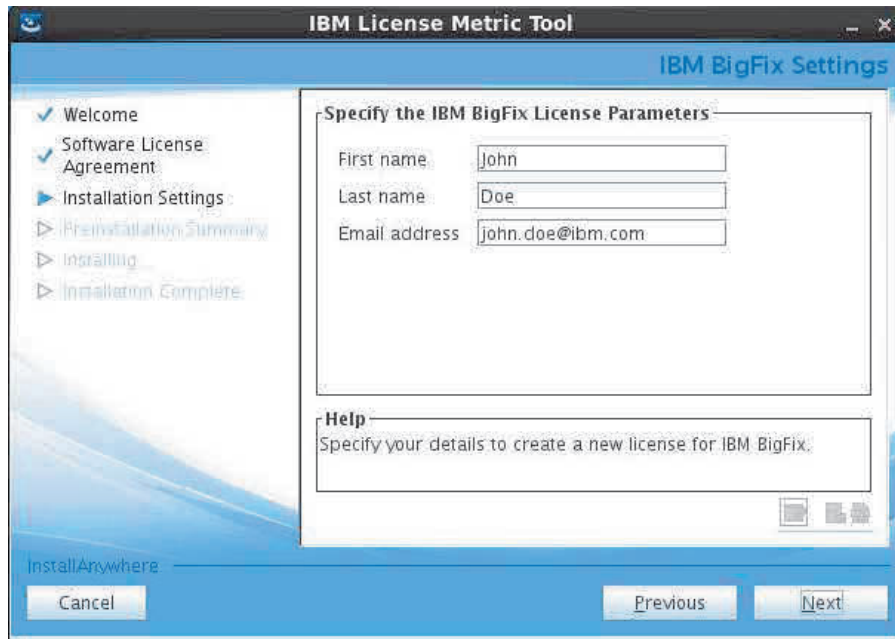


7. Provide details for the installation of BigFix: installation path for the BigFix server, and password for the IEMAdmin administrative user. Also, verify the installation path and specify the port number for Web Reports.

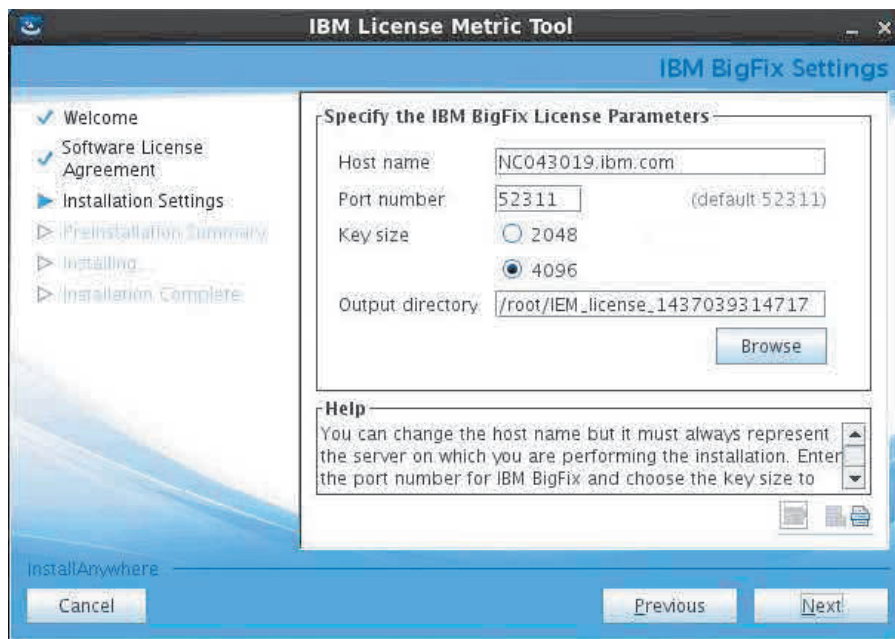


8. Depending on whether the computer can access the Internet or not, either provide your details to create new license files or specify the directory with the license files.
  - If the computer can access the Internet, perform the following steps.
    - a. Provide your details to create a new license.





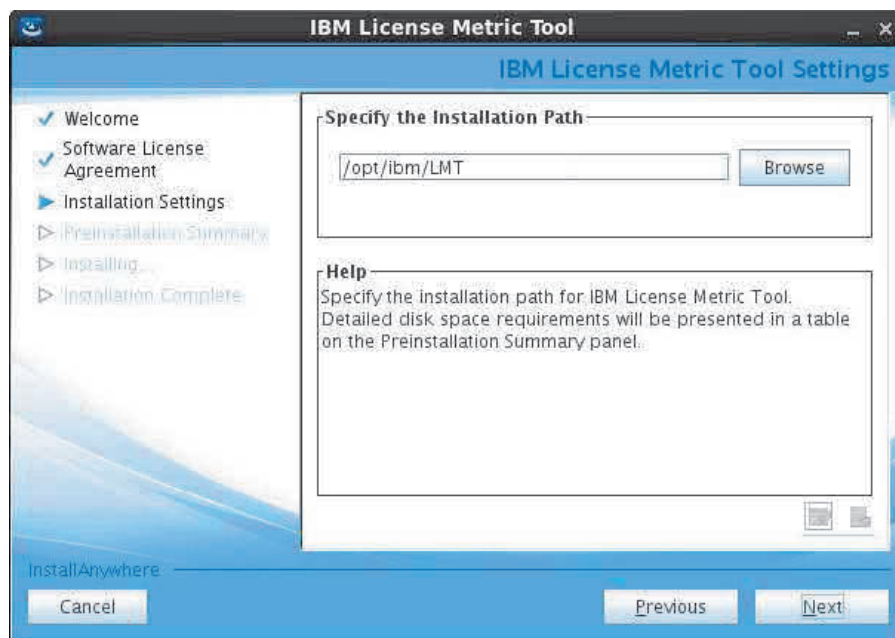
- b. Specify the host name of the computer on which you are performing the installation, and the port number that will be used by BigFix. Choose the key size to encrypt your license and specify a directory to save the license files.



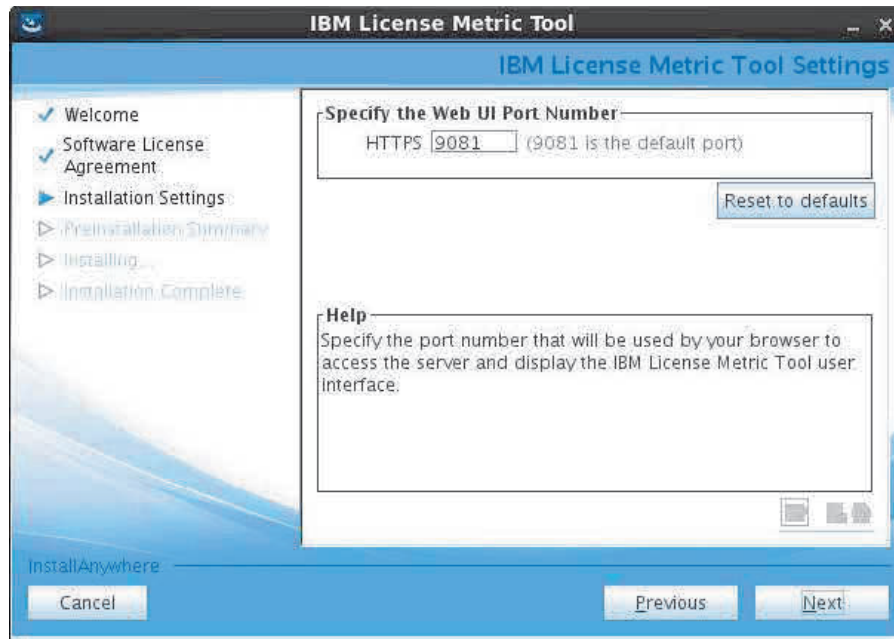
- If the computer cannot access the Internet, provide the path to the directory with license files.



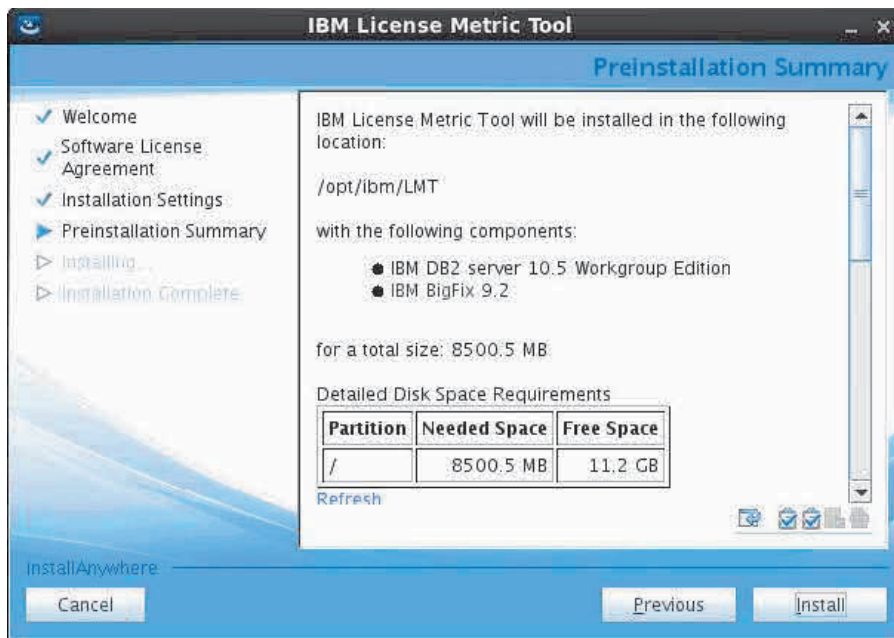
9. Provide the installation path for the License Metric Tool server.



10. Specify the port number that will be used by the browser to display the License Metric Tool web user interface.



11. Verify the installation details, and click **Install** to start the installation.



12. When the installation is complete, click **Done** to open the License Metric Tool web user interface in the browser.

**Note:** If you do not have a browser installed, you can access the web user interface from a different computer at `https://host_name:port`, where *host\_name* is the host name of the computer where the License Metric Tool server is installed, and *port* is the port that you specified during the installation.

13. To start the initial import, click **Import Now**.

## Results

After you run the initial import, software and capacity scans are automatically scheduled on the computers in your infrastructure according to the default scan configuration. Data that they collect should

be displayed on the License Metric Tool reports. However, the newly set-up environment needs time to finish the scans and to upload their results to the server. If the reports do not contain any data after the first import, wait about an hour until the scans are completed. Then, run another import.

## What to do next

Install the BigFix console.

## Installing All-in-One on Linux in silent mode:

To install all components of License Metric Tool by using the All-in-One installer in silent mode, edit parameters in the `install_response.txt` file, and run the installation command.

## Before you begin

- Ensure that the `/home` directory is a regular directory with write permissions to allow for the DB2 installation. The use of an automounted directory is not supported.
- The use of `sudo` is not supported.

## Procedure

1. Authorize the All-in-One installation with a set of license files. If the computer on which you are running the installation has the Internet access, the license files are created during the installation. If the computer does not have the Internet access, or if for some other reason you cannot create the license files during the installation, run a license generator and create license files in offline mode.

**Note:** If you decide to create license files in offline mode on a computer that has the access to Internet, make sure that you continue the installation in the same command session.

2. Go to the directory with the installation package, and extract the installation files.  
`tar xvf installation_package`
3. Read the license agreement in the `licenses/LA_language/license.txt` file.
4. Edit the `install_response.txt` file and adjust it to your installation. Ensure that you uncomment and specify the values of the following parameters:

**RSP\_LICENSE\_ACCEPTED**  
**RSP\_ADMIN\_USER\_NAME**

**Tip:** Avoid using `admin`, `administrator`, `root` or a similar name for the administrative account. Such an account might be prone to hacker attacks and locked out if an attacker exceeds the specified number of failed login attempts. For more information, about the account lockout, see: “Configuring user account lockout” on page 512.

**RSP\_ADMIN\_PASSWORD**  
**RSP\_INSTALL\_DB2**  
**RSP\_DB2\_INST\_PASSWORD**  
**RSP\_DB2\_ROOT**  
**RSP\_DB2\_INST\_HOME\_DIRECTORY**  
**RSP\_INSTALL\_IEM**  
**RSP\_IEM\_BES\_WWW\_FOLDER**  
**RSP\_IEM\_WR\_WWW\_FOLDER**  
**RSP\_IEM\_TEM\_USER\_PASSWORD**  
**RSP\_IEM\_WR\_WWW\_PORT**  
**RSP\_APP\_DS\_TEMS\_PORT**  
**RSP\_IEM\_LICENSE\_FILES\_DIR** (this parameter is optional for online installation)  
**RSP\_TLM\_ROOT**  
**RSP\_TLM\_HTTPS\_PORT**

The following parameters are required to create license files and are mandatory only when the computer on which you are installing License Metric Tool has Internet access:

**RSP\_IEM\_FIRST\_NAME**  
**RSP\_IEM\_LAST\_NAME**  
**RSP\_IEM\_EMAIL**  
**RSP\_IEM\_KEY\_SIZE**  
**RSP\_IEM\_LICENSE\_HOSTNAME**

5. Change to the directory with installation files. To start the installation, run the following command.

```
setup-server-linux-x86_64.sh -f response_file_path -i silent
```

Where *response\_file\_path* is the absolute path to the response file that you are using. For example:

```
setup-server-linux-x86_64.sh -f /tmp/images/install_response.txt -i silent
```

**Tip:** Use the `-h` option to view help information about using the script, for example:

```
setup-server-linux-x86_64.sh -h.
```

6. To access the License Metric Tool user interface, open a browser and go to `https://host_name:port`, where *host\_name* is the host name of the computer where the License Metric Tool server is installed, and *port* is the port that you specified during the installation.
7. To start the initial import, click **Import Now**.

## Results

After you run the initial import, software and capacity scans are automatically scheduled on the computers in your infrastructure according to the default scan configuration. Data that they collect should be displayed on the License Metric Tool reports. However, the newly set-up environment needs time to finish the scans and to upload their results to the server. If the reports do not contain any data after the first import, wait about an hour until the scans are completed. Then, run another import.

## What to do next

Install the BigFix console.

### Installing the BigFix console:

Install the BigFix console to view and manage the infrastructure, and to target computers with configuration and troubleshooting tasks specific to License Metric Tool.

## Procedure

1. On the computer on which you completed the All-in-One installation, go to the `/var/opt/BESInstallers/` directory.
2. Copy the Console directory to a Windows computer.
3. Open the directory and run the `setup.exe` file.

## What to do next

After you install the console, you can log in as the IEMAdmin user that you created during the installation of License Metric Tool. To access fixlets and tasks that are specific to License Metric Tool, in the navigation panel, go to **Sites > External Sites > IBM License Reporting (ILMT) v9**.

### Installing the BigFix clients:

Install the BigFix client on every computer in your network that you want to monitor, including the backup and recovery machines.

## Installation methods

Methods for installing the clients vary depending on the operating system. Even if you install the BigFix server on Linux, you might need to install some of the clients on Windows if your network consists of such computers. For more information, see:

- Installing clients on Windows computers
- Installing clients on Linux and UNIX computers

If you are not sure which installation method to choose, install the client manually.

## Additional installation requirements

- If you are using HP Integrity VM, install the client on the virtual machines and their host operating systems.
- If you are using Solaris Containers/Zones or Logical Domains (LDOM), install the client in the global zone on the control domain and in other global zones. For more information, see: “Client installation on Oracle Solaris” on page 178.

## Installation packages

The BigFix installation image available on the Passport Advantage contains client installers. You can also download client installation packages from the BigFix support web page.

**Important:** Not all of the operating systems for which installation packages are provided as part of the BigFix installation image are supported by License Metric Tool. For more information, see: “Supported operating systems” on page 60.

## Client vs scanner

The BigFix client is common for all IBM products that are based on the BigFix platform, and is used to perform various tasks on the endpoints. It provides information about a set of computer properties like its host name or the IP address. It is also used to install the scanner on the computers, and enables scanner management through fixlets.

The scanner is an independent component that is used by License Metric Tool. It collects information about the hardware, as well as the software that is installed on the computers in your infrastructure. The data is sent to the BigFix server. You can then import it to the License Metric Tool server.

Apart from installing the BigFix client, install also the scanner on every computer that you want to monitor to ensure that all necessary data is collected. For more information, see: “Setting up scans to discover software and hardware inventory” on page 163.

## Option B: Installing the License Metric Tool server and DB2

If you already have the BigFix platform installed in your environment, you can reuse it and install only the License Metric Tool server and DB2. To use this option, first enable the License Metric Tool site in the BigFix console. Then, run the streamlined installer in silent or interactive mode.

**Note:** If you want to reuse the existing BigFix server that cannot access the Internet, remember about enabling the fixlet site without Internet access before installing License Metric Tool and DB2 with one installer.

## Enabling the fixlet site:

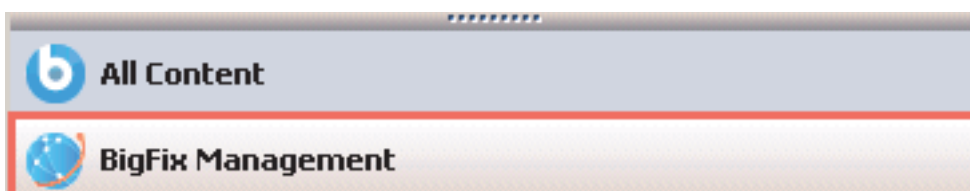
A fixlet site is a collection of fixlets, tasks, and analyses that are related to a particular BigFix application. To get access to the content that is specific to License Metric Tool, enable the application fixlet site. The procedure differs depending on whether the computer where the BigFix server is installed has the Internet access or not.

*Enabling the fixlet site with Internet access:*

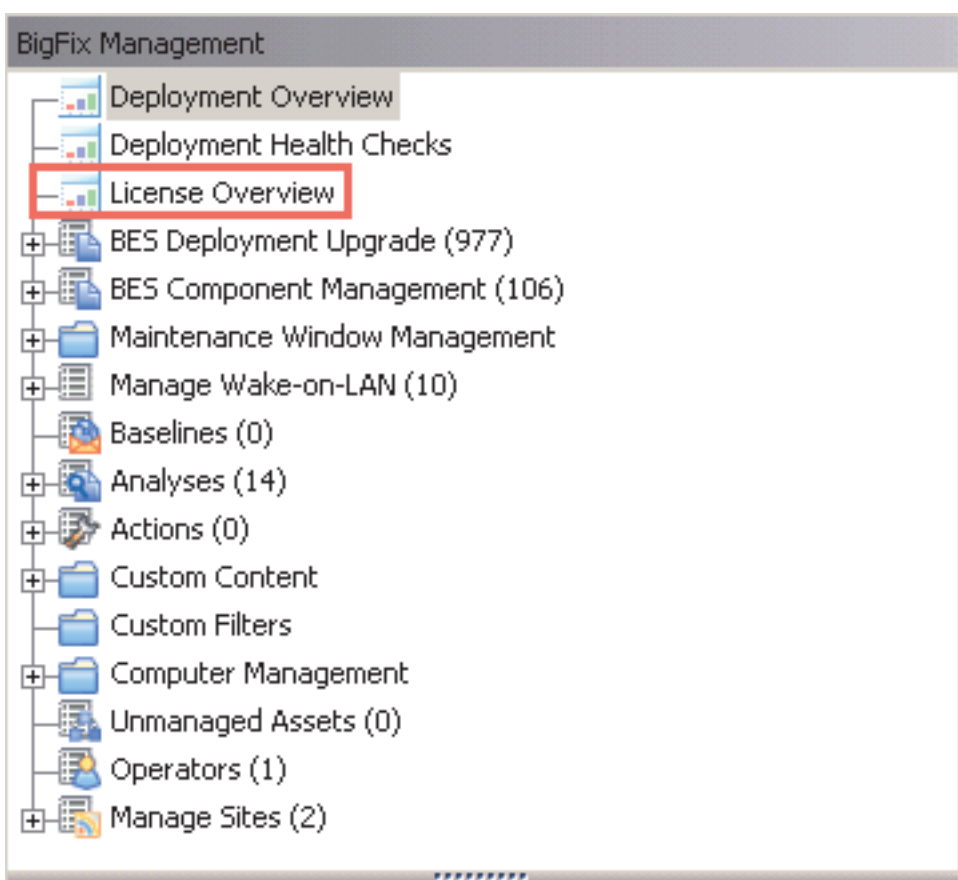
If the BigFix server can access the Internet, enable the License Metric Tool site from the BigFix console. Then, subscribe computers that you want to monitor to this site so that its content becomes applicable on these computers.

### Procedure

1. Log in to the BigFix console.
2. In the bottom-left corner of the console, click **BigFix Management**.



3. In the left navigation panel, click **License Overview**.

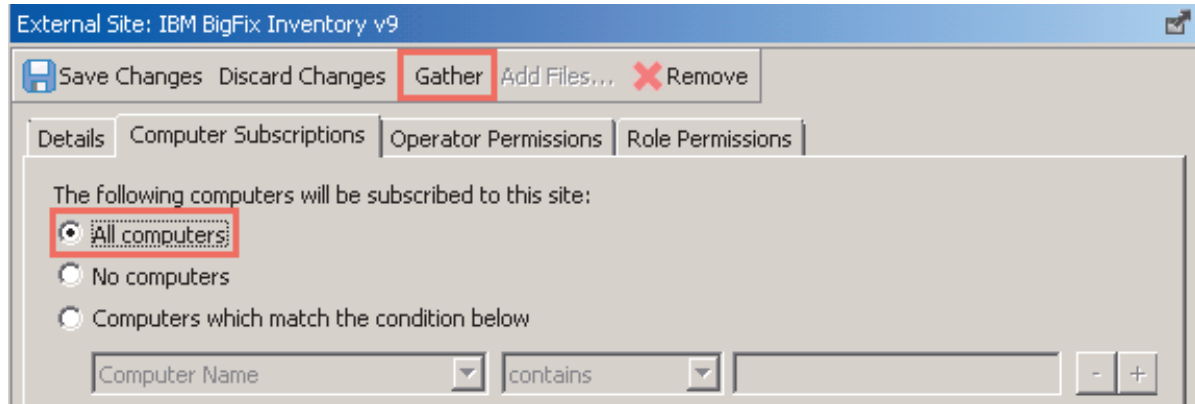


4. In the pane on the right, locate the entry called **IBM License Metric Tool**, and accept the license agreement.



5. From the list of available sites, enable the **IBM License Reporting (ILMT) v9** site. The content of the site is downloaded to the BigFix server.
6. Subscribe all computers that you want to monitor to the fixlet site so that its content becomes applicable to these computers.
  - a. In the bottom-left corner of the console, click **All Content**.
  - b. In the left navigation panel, expand **Sites > External Sites**, and open the **IBM License Reporting (ILMT) v9** site.
  - c. In the pane on the right, open the **Computer Subscriptions** tab, and select **All Computers**.

**Tip:** If the option is not active, click **Gather** to download the content of the fixlet site.



- d. Click **Save Changes**.

## Results

You enabled the License Metric Tool site and subscribed computers that you want to monitor to this site.

## What to do next

Download the License Metric Tool installer to a selected computer and start the installation.

### Enabling the fixlet site without Internet access:

If the BigFix server cannot access the Internet, use the Airgap tool to enable the fixlet site. When the site is enabled and the content loaded, use the BES Download Cacher to download and cache the files on the BigFix server.

### About this task

To complete the following procedure, you need two computers:

- Linux computer on which the BigFix server is installed
- Windows computer with Internet access

### Procedure

1. Log in to a Windows computer with Internet access and download the Airgap tool. The tool is available on the Utilities page.

**Important:** Ensure that the version of the Airgap tool that you download corresponds with the version of your BigFix server.

2. Create a request file to obtain the list of fixlet sites to which you are entitled.
  - a. Log in to the Linux computer where the BigFix server is installed.



- b. Go to the BigFix server installation directory, by default `/opt/BESSEServer/bin`, and run the following command to start the Airgap tool.

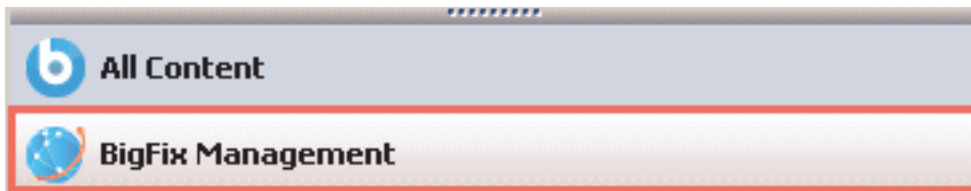
```
./Airgap.sh -remotedir /directory
```

Where *directory* is the directory in which the `airgap.tar` file is created.

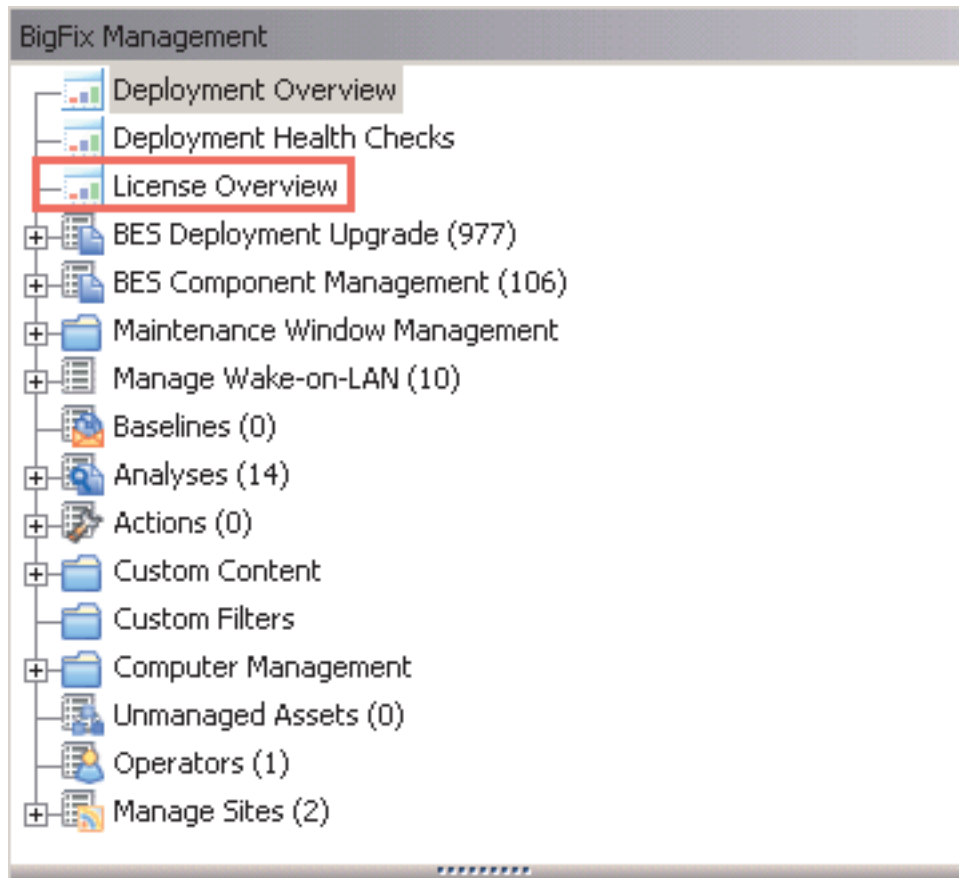
- c. Extract the `airgap.tar` file.  

```
tar xvf airgap.tar
```
  - d. Copy the extracted `AirgapRequest.xml` file to the Windows computer, and place it in the folder that contains the downloaded `BESAirgapTool.exe` file.
  - e. On the Windows computer, run the `BESAirgapTool.exe` file. This action exchanges the request file for a response file.
  - f. Copy the `AirgapResponse` file to the Linux computer, and place it in the `/opt/BESSEServer/bin` directory.
  - g. Run the Airgap tool again on the Linux computer.  

```
./Airgap.sh -run
```
3. Enable the License Metric Tool site.
    - a. Log in to the BigFix console.
    - b. In the bottom-left corner of the console, click **BigFix Management**.



- c. In the left navigation panel, click **License Overview**.



- d. In the pane on the right, locate the entry called **IBM License Metric Tool**, and accept the license agreement.
- e. From the list of available sites, enable the **IBM License Reporting (ILMT) v9** site.
4. To create a request file to load the content into the site, repeat step 2 on page 122.
5. Subscribe all computers that you want to monitor to the License Metric Tool fixlet site so that its content becomes applicable to these computers.
  - a. Log in to the BigFix console.
  - b. In the left navigation panel, click **Sites > External Sites > IBM License Reporting (ILMT) v9**.
  - c. In the pane on the right, open the Computer Subscriptions tab, and select **All Computers**. Click **Save Changes**. The **IBM License Reporting.efxm** file is created on the server.
6. Cache the content of the fixlet site on the BigFix server.
  - a. On the computer where the BigFix server is installed, go to the *install\_dir/BESServer/wwwroot/bes/bfsites* directory. Copy the **IBM License Reporting.efxm** file to a Windows computer with Internet access, and place it in the **C:\BigFix** directory.
  - b. In the **C:\BigFix** directory create a folder called **downloads**.
  - c. Run the BES Download Cacher with the following command:
 

```
BESDownloadCacher.exe -m "C:\BigFix\IBM License Reporting.efxm"
-x C:\BigFix\downloads
```

The BES Download Cacher downloads approximately 1 GB of required files.
  - d. Optional: The default cache size is enough if you use only the **IBM License Reporting (ILMT) v9** fixlet site. However, if you plan to run fixlets from other sites, such as **BES Support**, increase the cache size so that the BigFix server does not try to delete any files.
    - 1) Log in to the BigFix console.

- 2) In the left navigation panel, click **Computers** and right-click the computer on which the BigFix server is installed. Then, click **Edit Computer Settings**.
- 3) Increase the value of the `_BESGather_Download_CacheLimitMB` setting. If the setting is not on the list, add it and specify the value in MB.

**Tip:** The size depends on each fixlet site, however you might need to increase it to at least a couple of gigabytes.

- e. Copy the contents of the downloads folder from the computer with Internet access to the following directory on the computer where the BigFix server is installed:

```
install_dir/BESServer/wwwrootbes/bfmirror/downloads/sha1
```

## Results

You enabled the License Metric Tool fixlet site and loaded its content.

## What to do next

Download the License Metric Tool installer to a selected computer and start the installation.

### Installing the License Metric Tool server and DB2 in interactive mode:

To install the License Metric Tool server and DB2 by using the All-in-One installer in interactive mode, run the `setup-server-linux-x86_64.sh` script. Then, follow instructions in the installation wizard.

### Before you begin

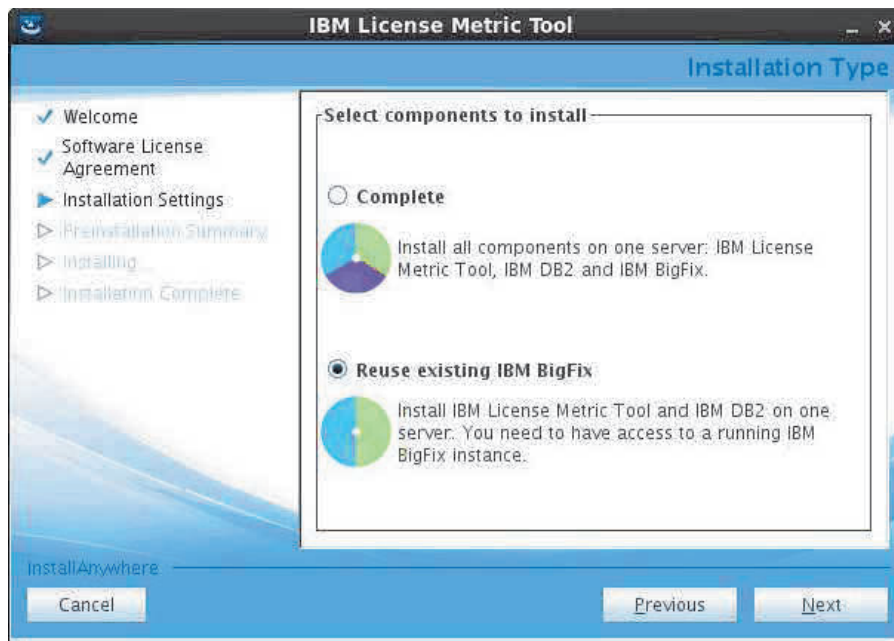
- Ensure that a BigFix client is installed on the computer on which you want to install the License Metric Tool server
- Ensure that the computer meets the following requirements:
  - A graphical user interface is available
  - X server is configured
  - `DISPLAY` variable is set properly
- Ensure that the `/home` directory is a regular directory with write permissions to allow for the DB2 installation. The use of an automounted directory is not supported.
- The use of `sudo` is not supported.

### Procedure

1. Go to the directory with the installation package, and extract the installation files.

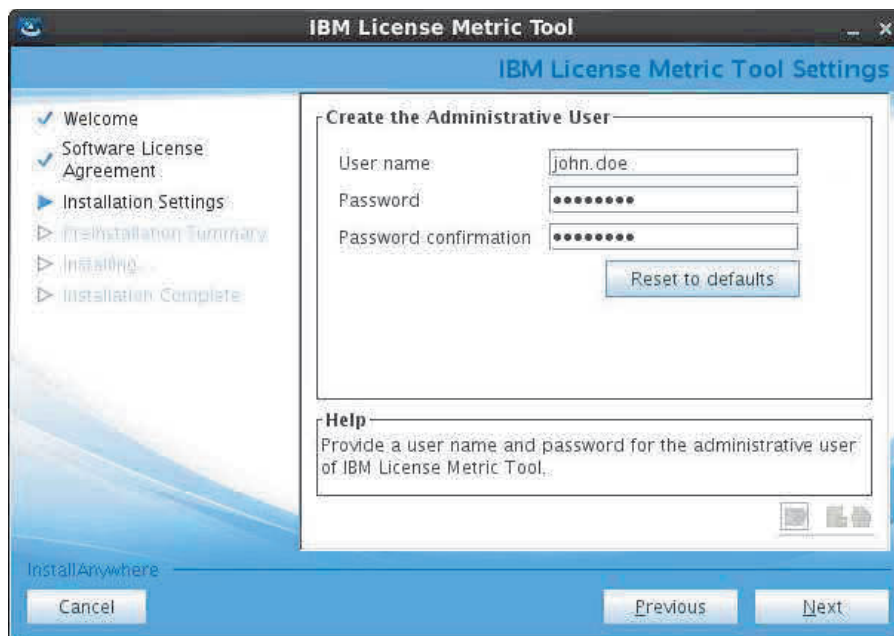
```
tar xvf installation_package
```
2. To start the installation, run the `setup-server-linux-x86_64.sh` script.

```
./setup-server-linux-x86_64.sh
```
3. When prompted, choose **Reuse existing IBM BigFix** to install only the License Metric Tool server and its database. After the installation, you must connect them to the existing BigFix server.

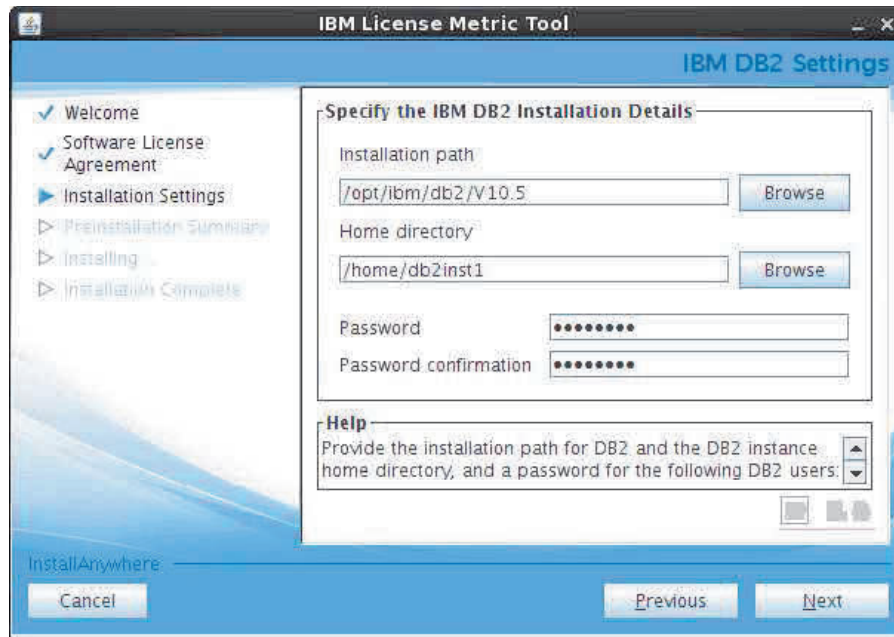


4. Create the administrative user of License Metric Tool. This user is required to log in to the application.

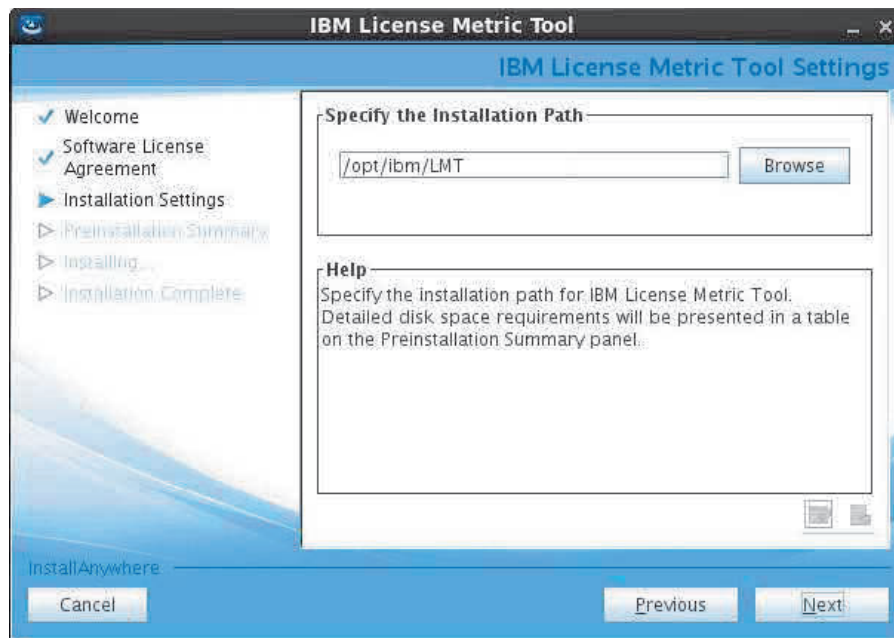
**Tip:** Avoid using admin, administrator, root or a similar name for the administrative account. Such an account might be prone to hacker attacks and locked out if an attacker exceeds the specified number of failed login attempts. For more information, about the account lockout, see: “Configuring user account lockout” on page 512.



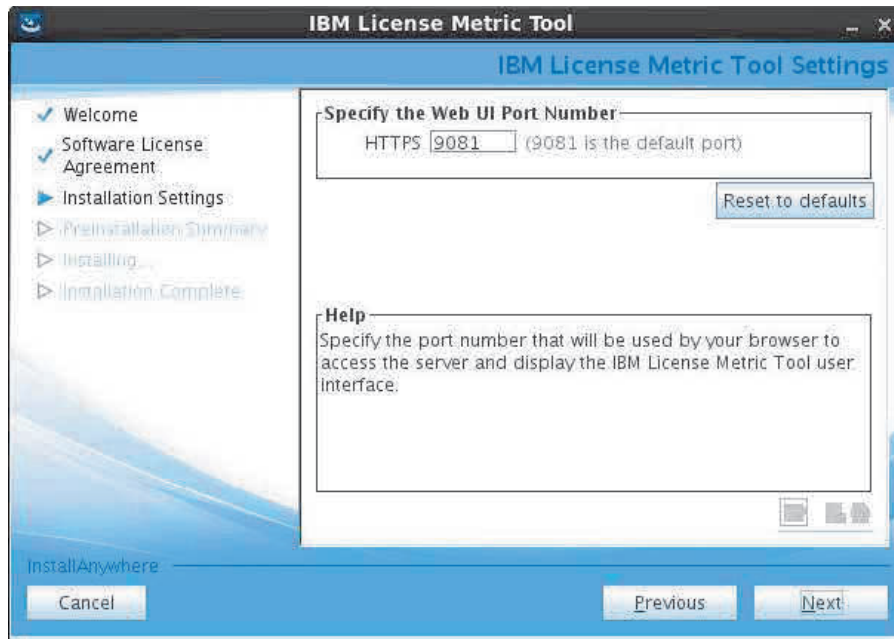
5. Provide details for the installation of DB2: installation path, home directory, and a password for the db2inst1 and db2fenc1 users.



6. Provide the installation path for the License Metric Tool server.



7. Specify the port number that will be used by the browser to display the License Metric Tool web user interface.



8. When the installation is complete, click **Done** to open the License Metric Tool web user interface in the browser and complete the initial configuration.

**Note:** If you do not have a browser installed, you can access the web user interface from a different computer at `https://host_name:port`, where *host\_name* is the host name of the computer where the License Metric Tool server is installed, and *port* is the port that you specified during the installation.

9. Optional: The **Enable default scan schedule for this data source** check box is selected by default. Clear this check box if you want to manually configure the scans.

If you enable the default scan schedule, actions that are needed to collect data from the computers in your infrastructure are automatically started on the BigFix server. This option is advised for environments with up to a few thousand computers. For larger environments, finish the installation, divide the computers into groups, and then manually set up scan schedule for each group to avoid performance issues. For more information about the default and manual scan schedule, see: "Setting up scans to discover software and hardware inventory" on page 163.

10. Configure the connection to an existing BigFix server and its database and then click **Create**. Optionally, you can connect to the Web Reports database to enable Web Reports users to access the application.

Name*	
<input type="text" value="Data Source"/>	
Database for the IBM BigFix Server*	
Database Type*	IBM BigFix Server*
<input type="text" value="DB2"/>	Host*
Host*	<input type="text" value="9.143.126.12"/>
<input type="text" value="9.143.126.12"/>	Server API Port*
Port*	<input type="text" value="52311"/>
<input type="text" value="50000"/>	Authentication (Console Operator)
Database Name*	User Name*
<input type="text" value="BFENT"/>	<input type="text" value="IEMAdmin"/>
Authentication	Password*
User Name	<input type="text" value="*****"/>
<input type="text" value="db2inst1"/>	
Password*	
<input type="text" value="*****"/>	
<input type="button" value="Create"/>	

11. To start the initial import, click **Import Now**.

### What to do next

If you enabled the default scan schedule, the collected data might not be displayed in License Metric Tool after the initial import. Some time is required to finish scans that were initiated during the installation, and to upload scan results to the server. If the reports in License Metric Tool do not contain any data, wait about an hour until the scans are completed. Then, start another import.

If you did not enable the default scan schedule, manually configure scans to collect data that is later on displayed on the reports.

### Installing the License Metric Tool server and DB2 in silent mode:

To install the License Metric Tool server and DB2 by using the All-in-One installer in silent mode, edit parameters in the `install_response.txt` file, and run the installation command.

### Before you begin

- Ensure that the BigFix client is installed on the computer on which you want to install the License Metric Tool server.
- Ensure that the `/home` directory is a regular directory with write permissions to allow for the DB2 installation. The use of an automounted directory is not supported.
- The use of `sudo` is not supported.



## Procedure

1. Go to the directory with the installation package, and extract the installation files.  

```
tar xvf installation_package
```
2. Read the license agreement in the `licenses/LA_language.txt` file.
3. Edit the `install_response.txt` file and adjust it to your installation. Ensure that you uncomment and specify the values of the following parameters:

**RSP\_LICENSE\_ACCEPTED**  
**RSP\_ADMIN\_USER\_NAME**

**Tip:** Avoid using `admin`, `administrator`, `root` or a similar name for the administrative account. Such an account might be prone to hacker attacks and locked out if an attacker exceeds the specified number of failed login attempts. For more information, about the account lockout, see: “Configuring user account lockout” on page 512.

**RSP\_ADMIN\_PASSWORD**  
**RSP\_INSTALL\_DB2**  
**RSP\_DB2\_INST\_PASSWORD**  
**RSP\_DB2\_ROOT**  
**RSP\_DB2\_INST\_HOME\_DIRECTORY**  
**RSP\_INSTALL\_IEM**=*false*  
**RSP\_TLM\_ROOT**  
**RSP\_TLM\_HTTPS\_PORT**

**Important:** The BigFix platform is not installed in this scenario. Thus, the **RSP\_INSTALL\_IEM** parameter must be set to *false*. Additionally, make sure that the parameters starting with **RSP\_IEM** are commented.

**#RSP\_IEM\_TEM\_USER\_PASSWORD**  
**#RSP\_IEM\_LICENSE\_FILES\_DIR**  
**#RSP\_IEM\_FIRST\_NAME**  
**#RSP\_IEM\_LAST\_NAME**  
**#RSP\_IEM\_EMAIL**

4. Change to the directory with installation files. To start the installation, run the following command.  

```
setup-server-linux-x86_64.sh -f response_file_path -i silent
```

Where *response\_file\_path* is the absolute path to the response file you are using. For example:

```
setup-server-linux-x86_64.sh -f /tmp/images/install_response.txt -i silent
```

**Tip:** Use the `-h` option to view help information about using the script, for example:  

```
setup-server-linux-x86_64.sh -h.
```

5. To complete the initial configuration, access the License Metric Tool user interface. Go to `https://host_name:port`, where *host\_name* is the host name of the computer where the License Metric Tool server is installed, and *port* is the port that you specified during the installation.
6. Optional: The **Enable default scan schedule for this data source** check box is selected by default. Clear this check box if you want to manually configure the scans.

If you enable the default scan schedule, actions that are needed to collect data from the computers in your infrastructure are automatically started on the BigFix server. This option is advised for environments with up to a few thousand computers. For larger environments, finish the installation, divide the computers into groups, and then manually set up scan schedule for each group to avoid performance issues. For more information about the default and manual scan schedule, see: “Setting up scans to discover software and hardware inventory” on page 163.

7. Configure the connection to an existing BigFix server and its database, then click **Create**. Optionally, you can connect to the Web Reports database to enable Web Reports users to access the application.



Name*	
<input type="text" value="Data Source"/>	
Database for the IBM BigFix Server*	
Database Type*	IBM BigFix Server*
<input type="text" value="DB2"/>	Host*
Host*	<input type="text" value="9.143.126.12"/>
<input type="text" value="9.143.126.12"/>	Server API Port*
Port*	<input type="text" value="52311"/>
<input type="text" value="50000"/>	Authentication (Console Operator)
Database Name*	User Name*
<input type="text" value="BFENT"/>	<input type="text" value="IEMAdmin"/>
Authentication	Password*
User Name	<input type="text" value="*****"/>
<input type="text" value="db2Inst1"/>	
Password*	
<input type="text" value="*****"/>	
<input type="button" value="Create"/>	

8. To start the initial import, click **Import Now**.

### What to do next

If you enabled the default scan schedule, the collected data might not be displayed in License Metric Tool after the initial import. Some time is required to finish scans that were initiated during the installation, and to upload scan results to the server. If the reports in License Metric Tool do not contain any data, wait about an hour until the scans are completed. Then, start another import.

If you did not enable the default scan schedule, manually configure scans to collect data that is later on displayed on the reports.

## Installing the components on Linux with separate installers

This option distributes the components among one, two or more servers. Components that must be installed are BigFix and License Metric Tool, each of them requiring a database. In a typical environment, BigFix and its database reside on one server, while License Metric Tool and its database on another. However, for small environments, you can install all components on one server.

### Installing the BigFix platform on Linux

The BigFix platform is the core of the License Metric Tool infrastructure. It consists of a server that coordinates the flow of data to and from the monitored computers, an administrative console, and clients that collect data from the computers in your infrastructure. Before you can install License Metric Tool, install all components of the BigFix platform.

**Important:** Even if you set up entire environment on Linux, you need a Windows computer on which you can install the BigFix console.

## Creating the license authorization file:

The license authorization file contains deployment and licensing information and is used during the installation of the BigFix platform to create your license files and certificates.

### About this task

The license authorization file entitles you to using the BigFix platform for License Metric Tool free of charge.

### Procedure

1. Go to the license authorization website.
2. Specify the required information, such as your name and email address.
3. Click **Submit** and save the file to your computer.

### Results

The LicenseAuthorization\_*number*\_Create.BESLicenseAuthorization file is downloaded to your computer. The file is needed during the installation of the BigFix platform.

### What to do next

Download the BigFix installer.

### Downloading the BigFix installer for Linux:

To obtain the BigFix installer for Linux, log in to Passport Advantage and download the required packages. If you are planning to install the BigFix platform and DB2 on a single computer, download the package that contains installers for both applications. If you are planning to install the components on separate computers, download the installers separately.

### Procedure

1. Log in to Passport Advantage.
2. On the **Navigation help** tab, click **Software download & media access**.
3. In the lower part of the page, click **IBM License Metric Tool**.
4. In the window that opens, select your preferred operating system and language for the installation packages.
5. In the lower part of the page, select **Required**, and click **Download**.
6. In the window that opens, select the download location, the preferred download method, select **I agree to the terms and conditions**, and click **Download Now**.
7. On the page that opens, click the displayed links to download the BigFix packages.

Image	Description
BigFix_Pltfm_Install_V95_Lnx_DB2.tgz	IBM BigFix Platform Installer V9.5 for Linux and DB2 Multilingual
DB2_10.5.0.5_limited_Lnx_x86-64.tar.gz	IBM DB2 Server V10.5.0.5 for Linux on AMD64 and Intel EM64T systems (x64) Multilingual

For information about part numbers of the installation packages, see: IBM BigFix 9.5.0 - Download Information.

## What to do next

Move the installer to the computer on which you want to install the BigFix platform and start the installation.

## Installing BigFix on Linux:

To install the BigFix platform on Linux, run the `install.sh` script and go through the installation of the BigFix server, DB2 database, and the first BigFix client. Then, install the BigFix console on a Windows computer.

## Before you begin

The BigFix platform installed on Linux requires DB2 as a database. You can use an existing instance of DB2 or install it together with BigFix.

## About this task

The following procedure shows the most common installation scenario for Linux. If it does not fit your environment, you need more information about each step, or other installation tasks, see: Installing on Linux systems in the BigFix documentation.

## Procedure

1. Go to the directory with the installation package, and extract the installation files.  
`tar xvf installation_package`
2. From the extracted directory, go to `ServerInstaller_n.n.nnn.n-rhe6.x86_64`, and run the installation script.  
`./install.sh`
3. To choose the production installation, enter 2.  
Select the type of installation  
[1] Evaluation: Request a free evaluation license from IBM Corporation.  
This license allows you to install a fully functional copy of the IBM BigFix on up to 1000 clients, for a period of 30 days.  
[2] Production: Install using a production license or an authorization  
1for a production license.  
Choose one of the options above or press Enter to accept the default value: [1]
4. To accept the license agreement, enter 1.
5. To install all BigFix components, enter 1.  
Select the IBM BigFix features you want to install:  
[1] All Components (server, client, and WebReports)  
[2] Server and client Only  
[3] WebReports Only  
Choose one of the options above or press <Enter> to accept the default value: [1]
6. To create a single or master database, enter 1.  
Select the database replication:  
[1] Single or master database  
[2] Replicated database  
Choose one of the options above or press <Enter> to accept the default value: [1]
7. To use a local instance of DB2, enter 1.  
Select the database:  
[1] Use a local database  
[2] Use a remote database  
Choose one of the options above or press <Enter> to accept the default value: [1]
8. Specify the installation location for BigFix.

Choose the server's root folder:  
Specify the location for the server's root folder or  
press <Enter> to accept the default value: /var/opt/BESServer

9. Specify the installation location for Web Reports.

Choose the WebReports server's root folder:  
Specify the location for the WebReports server's root folder or  
press <Enter> to accept the default value: /var/opt/BESWebReportsServer

10. Enter the port number for Web Reports.

Since version 9.5.2, freshly installed Web Reports  
is automatically configured to use HTTPS.  
Choose the WebReports server's port number:  
Specify the port number or press <Enter> to accept the default value: 8083

11. The installer checks if DB2 is installed on the server. To install it automatically from the files that are bundled with BigFix, enter 1.

DB2 installation check  
The installer does not detect if DB2 is installed on the system.  
Specify which option corresponds to your installation:  
[1] DB2 is not installed, install it.  
[2] DB2 is installed, use the installed instance.  
[3] Exit from the installation.  
Choose one of the options above or press <Enter> to accept the default value: [1]

12. Default settings containing DB2 users and installation path are listed. To accept them and proceed with the installation, enter 1.

DB2 installation  
DB2 will be installed using the following settings:  
DB2 instance owner: db2inst1  
DB2 fenced user: db2fenc1  
DB2 administration server user: dasusr1  
DB2 communication port: 50000  
DB2 installation directory: /opt/ibm/db2/V10.5  
If you want to use different value for these settings specify them  
in the installation response file. Refer to the product documentation  
for further details.  
[1] Proceed to install DB2.  
[2] Exit from the installation.  
Choose one of the options above or press <Enter> to accept the default value: [1]

13. Specify a password for the DB2 administrative users.

DB2 administrative user password:  
Specify the password for the DB2 administrative users:

14. Enter the user name and password for the initial administrative user of BigFix or press Enter to use the default IEMAdmin. This user is required to log in to the BigFix console.

15. To run the installation using a license authorization file, enter 1.

Choose the type of setup that best suits your needs:  
[1] I want to install with a BES license authorization file.  
[2] I want to install with a production license that I already have.  
[3] I want to install with an existing masthead.  
Choose one of the options above or press <Enter> to accept the default value: [1]

16. If you are not using a proxy, enter 2.

Proxy usage  
[1] Use the proxy to access the internet  
[2] Do not use the proxy  
Choose one of the options above or press <Enter> to accept the default value: [2]

17. Specify the location of your license authorization file.

License authorization location  
Enter the location of the license authorization file that  
you received from IBM or press <Enter> to accept the default value:  
./license/LicenseAuthorization.BESLicenseAuthorization

18. Specify the DNS name or IP address of the server on which you are performing the installation, or press Enter to accept the default value.
19. Specify the site admin private key password.
20. Specify the key size to encrypt the credentials.

Key size level

Provide the key size that you want to use:

[1] 'Min' level (2048 bits)

[2] 'Max' level (4096 bits)

Choose one of the options above or press <Enter> to accept the default value: [2]

21. Specify the License folder in which the license file is to be generated and saved.

Choose the license folder:

Specify a folder for your private key (license.pvk), the license certificate (license.crt), and the site masthead (masthead.afxm) or press <Enter> to accept the default value: ./license

22. Submit the request to IBM to obtain the license certificate:

- If your server can access the internet, enter 1. The request will be submitted automatically.
- If your server cannot access the Internet, enter 2, and submit the request manually:
  - a. The request.BESLicenseRequest is generated and saved to a folder with your license files. Copy this request to a computer with internet access.
  - b. On the computer with internet access, go to BES License Request Handler and submit the request file.
  - c. The license.crt file is saved to your computer. Copy it back to the BigFix server.
  - d. Return to the installation and enter 1 to import the certificate and continue with the installation.

23. Specify the value of the deployment encoding (FXF encoding) that will be used for the content.

24. To accept the default masthead values, enter 1.

Advanced masthead parameters

The masthead will be created using the following defaults:

Server port number: 52311

Use of FIPS 140-2 compliant cryptography: Disabled

Gather interval: One Day

Initial action lock: Unlocked

Action lock controller: Console

Action lock exemptions: Disabled

Unicode filenames in archives: Enabled

The above default values are suitable for most of IBM BigFix deployments.

[1] Use default values

[2] Use custom values

Choose one of the options above or press <Enter> to accept the default value: [1]

25. To run Web Reports as a root, enter 1.

Use root user for WebReports

If you specify true, WebReports service will run with root privileges.

[1] True

[2] False

Choose one of the options above or press <Enter> to accept the default value: [2]

26. When the installation is complete, install the BigFix console.

**Important:** The BigFix console is supported only on Windows.

- a. Go to /var/opt/BESInstallers.
- b. Copy the Console folder to a Windows computer.
- c. On the Windows computer, run the setup.exe script, and follow instructions in the installation wizard.

27. If you want to install the License Metric Tool server on a different computer, install the BigFix client on that computer.

## What to do next

You can proceed with the installation of the BigFix client on every computer from which you want to collect software inventory data or with the installation of the License Metric Tool server. You can perform these tasks in any order.

### Installing the BigFix clients:

Install the BigFix client on every computer in your network that you want to monitor, including the backup and recovery machines.

### Installation methods

Methods for installing the clients vary depending on the operating system. Even if you install the BigFix server on Linux, you might need to install some of the clients on Windows if your network consists of such computers. For more information, see:

- Installing clients on Windows computers
- Installing clients on Linux and UNIX computers

If you are not sure which installation method to choose, install the client manually.

### Additional installation requirements

- If you are using HP Integrity VM, install the client on the virtual machines and their host operating systems.
- If you are using Solaris Containers/Zones or Logical Domains (LDOM), install the client in the global zone on the control domain and in other global zones. For more information, see: “Client installation on Oracle Solaris” on page 178.

### Installation packages

The BigFix installation image available on the Passport Advantage contains client installers. You can also download client installation packages from the BigFix support web page.

**Important:** Not all of the operating systems for which installation packages are provided as part of the BigFix installation image are supported by License Metric Tool. For more information, see: “Supported operating systems” on page 60.

### Client vs scanner

The BigFix client is common for all IBM products that are based on the BigFix platform, and is used to perform various tasks on the endpoints. It provides information about a set of computer properties like its host name or the IP address. It is also used to install the scanner on the computers, and enables scanner management through fixlets.

The scanner is an independent component that is used by License Metric Tool. It collects information about the hardware, as well as the software that is installed on the computers in your infrastructure. The data is sent to the BigFix server. You can then import it to the License Metric Tool server.

Apart from installing the BigFix client, install also the scanner on every computer that you want to monitor to ensure that all necessary data is collected. For more information, see: “Setting up scans to discover software and hardware inventory” on page 163.

## Installing License Metric Tool on Linux

Before you start the installation of License Metric Tool on Linux, ensure that DB2 is installed in your infrastructure. Then, enable a dedicated fixlet site in the BigFix console and download the License Metric Tool installer. Next, run the installation in interactive or silent mode.

### Installing DB2 for License Metric Tool on Linux:

License Metric Tool that is installed on Linux requires DB2 database. You can install the database on the same computer as the License Metric Tool server or on a separate one. You can also reuse the instance of DB2 that you installed for the BigFix platform. DB2 installation package is delivered together with License Metric Tool.

### About this task

The following scenario shows how to install DB2 10.5 that is delivered with License Metric Tool. If it does not fit your environment, you need more information about each step or other installation options, see the documentation for DB2 10.1, or DB2 10.5.

### Procedure

1. Go to the directory with the installation package, and extract the installation files.  

```
tar xvf installation_package
```
2. From the extracted directory, run the installation script.  

```
./db2setup
```
3. In the navigation bar of the DB2 Setup Launchpad, click **Install a Product**.
4. Scroll down, and click **Install New** under DB2 Workgroup Server Edition.
5. Read and accept the license agreement. Click **Next**.
6. Select the installation type, and click **Next**.
7. Select **Install DB2 Server Edition on this computer and save my settings in a response file**, and click **Next**.
8. Specify the installation directory, and click **Next**.
9. Create a user for the DB2 Administration Server, and click **Next**.
10. Select **Create a DB2 instance**, and click **Next**.
11. Select **Single partition instance**, and click **Next**.
12. Create the DB2 instance owner. This user will be needed when you specify connection details between BigFix and License Metric Tool. Then, click **Next**.
13. Create the fenced user, and click **Next**.
14. Set up the DB2 server to send notifications or select the second check box to omit this step. Then, click **Next**.
15. Review the settings, and click **Finish**. The installation is started.
16. When the installation is complete, add a license file to extend your license.
  - a. From the directory with extracted installation files, go to `/db2/license`.
  - b. Copy the `db2wse_o.lic` file to the home directory of the DB2 instance owner, by default `/home/db2inst1`.
  - c. Open the terminal and switch the user to the DB2 instance owner.  

```
su - db2inst1
```
  - d. Add the license file to your installation.  

```
db2licm -a db2wse_o.lic
```

## Results

The installation of DB2 is complete. The default location is `/opt/ibm/db2`.

### Enabling the fixlet site:

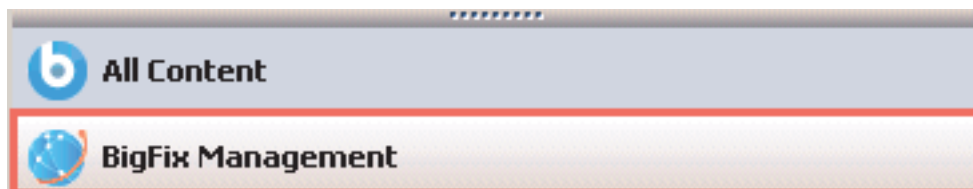
A fixlet site is a collection of fixlets, tasks, and analyses that are related to a particular BigFix application. To get access to the content that is specific to License Metric Tool, enable the application fixlet site. The procedure differs depending on whether the computer where the BigFix server is installed has the Internet access or not.

*Enabling the fixlet site with Internet access:*

If the BigFix server can access the Internet, enable the License Metric Tool site from the BigFix console. Then, subscribe computers that you want to monitor to this site so that its content becomes applicable on these computers.

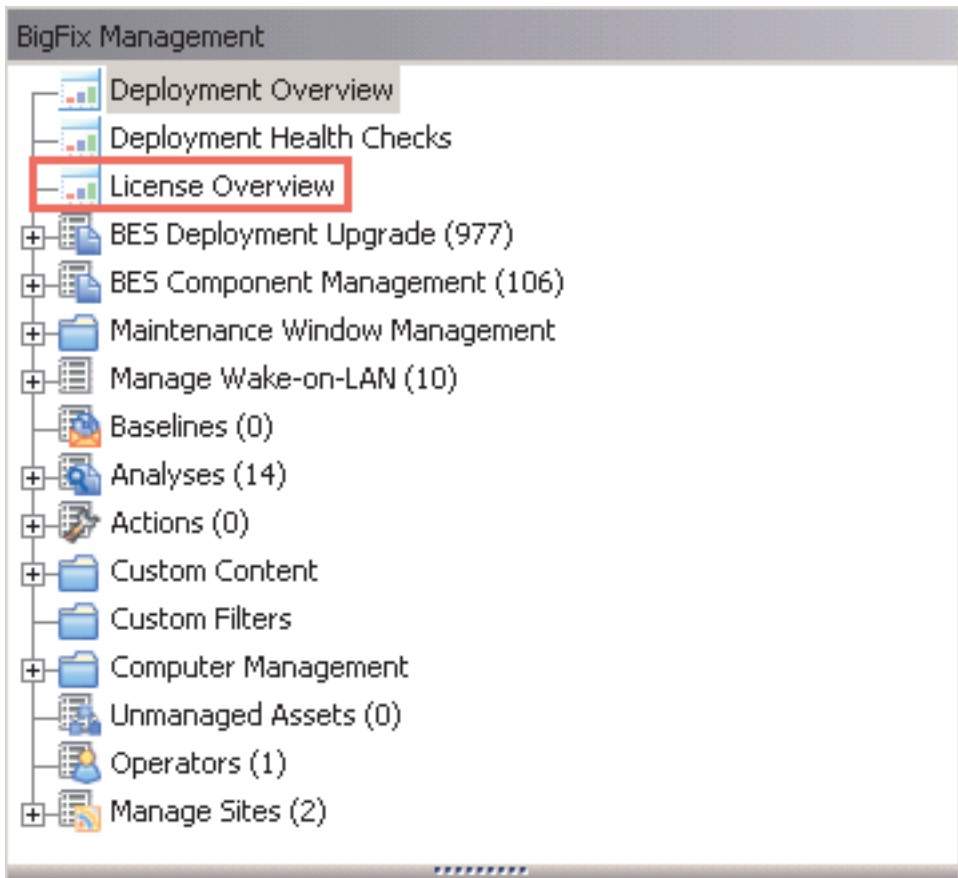
### Procedure

1. Log in to the BigFix console.
2. In the bottom-left corner of the console, click **BigFix Management**.



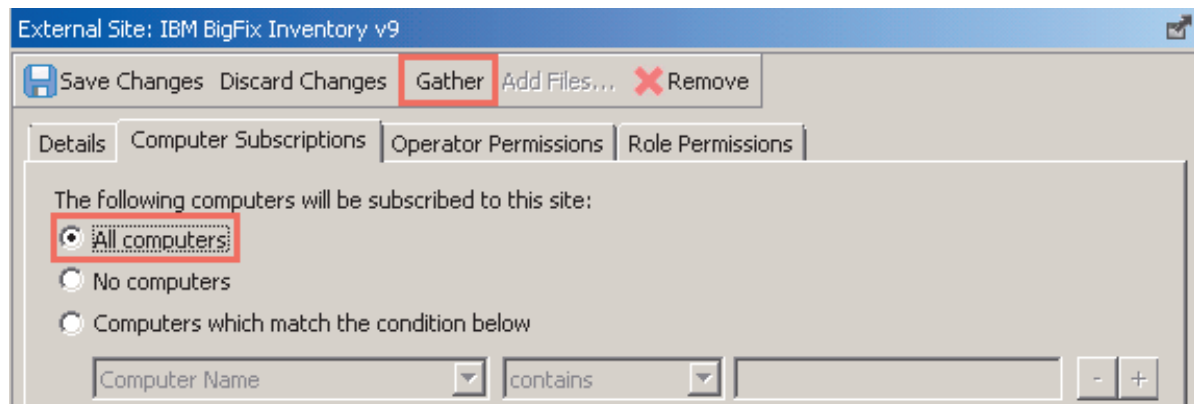
3. In the left navigation panel, click **License Overview**.





4. In the pane on the right, locate the entry called **IBM License Metric Tool**, and accept the license agreement.
5. From the list of available sites, enable the **IBM License Reporting (ILMT) v9** site. The content of the site is downloaded to the BigFix server.
6. Subscribe all computers that you want to monitor to the fixlet site so that its content becomes applicable to these computers.
  - a. In the bottom-left corner of the console, click **All Content**.
  - b. In the left navigation panel, expand **Sites > External Sites**, and open the **IBM License Reporting (ILMT) v9** site.
  - c. In the pane on the right, open the **Computer Subscriptions** tab, and select **All Computers**.

**Tip:** If the option is not active, click **Gather** to download the content of the fixlet site.



- d. Click **Save Changes**.

## Results

You enabled the License Metric Tool site and subscribed computers that you want to monitor to this site.

## What to do next

Download the License Metric Tool installer to a selected computer and start the installation.

### Enabling the fixlet site without Internet access:

If the BigFix server cannot access the Internet, use the Airgap tool to enable the fixlet site. When the site is enabled and the content loaded, use the BES Download Cacher to download and cache the files on the BigFix server.

## About this task

To complete the following procedure, you need two computers:

- Linux computer on which the BigFix server is installed
- Windows computer with Internet access

## Procedure

1. Log in to a Windows computer with Internet access and download the Airgap tool. The tool is available on the Utilities page.

**Important:** Ensure that the version of the Airgap tool that you download corresponds with the version of your BigFix server.

2. Create a request file to obtain the list of fixlet sites to which you are entitled.
  - a. Log in to the Linux computer where the BigFix server is installed.
  - b. Go to the BigFix server installation directory, by default `/opt/BESServer/bin`, and run the following command to start the Airgap tool.

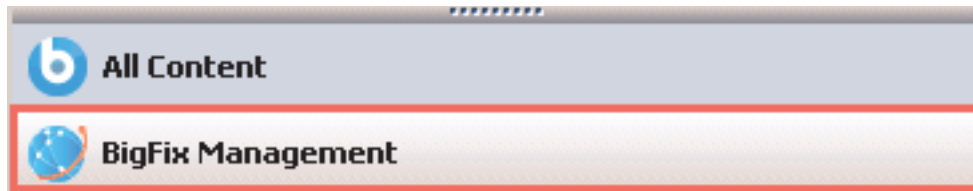
```
./Airgap.sh -remotedir /directory
```

Where *directory* is the directory in which the `airgap.tar` file is created.

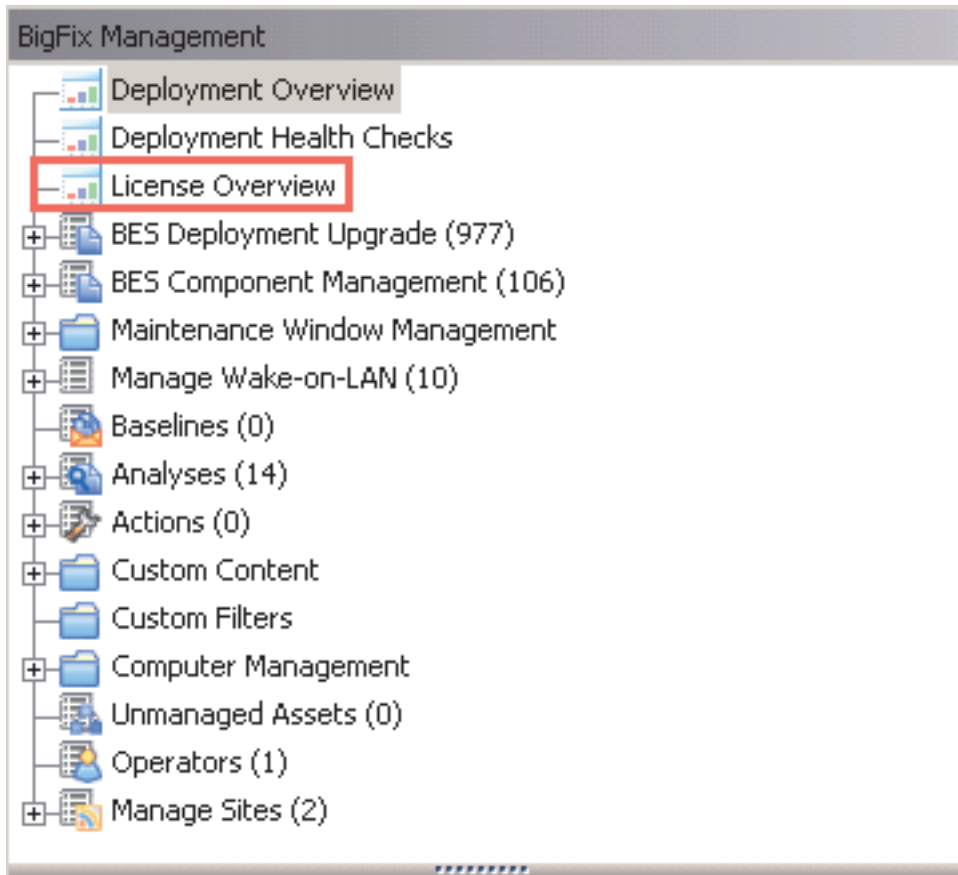
- c. Extract the `airgap.tar` file.

```
tar xvf airgap.tar
```
  - d. Copy the extracted `AirgapRequest.xml` file to the Windows computer, and place it in the folder that contains the downloaded `BESAirgapTool.exe` file.
  - e. On the Windows computer, run the `BESAirgapTool.exe` file. This action exchanges the request file for a response file.
  - f. Copy the `AirgapResponse` file to the Linux computer, and place it in the `/opt/BESServer/bin` directory.
  - g. Run the Airgap tool again on the Linux computer.

```
./Airgap.sh -run
```
3. Enable the License Metric Tool site.
  - a. Log in to the BigFix console.
  - b. In the bottom-left corner of the console, click **BigFix Management**.



- c. In the left navigation panel, click **License Overview**.



- d. In the pane on the right, locate the entry called **IBM License Metric Tool**, and accept the license agreement.
- e. From the list of available sites, enable the **IBM License Reporting (ILMT) v9** site.
4. To create a request file to load the content into the site, repeat step 2 on page 140.
5. Subscribe all computers that you want to monitor to the License Metric Tool fixlet site so that its content becomes applicable to these computers.
  - a. Log in to the BigFix console.
  - b. In the left navigation panel, click **Sites > External Sites > IBM License Reporting (ILMT) v9**.
  - c. In the pane on the right, open the Computer Subscriptions tab, and select **All Computers**. Click **Save Changes**. The IBM License Reporting.efxm file is created on the server.
6. Cache the content of the fixlet site on the BigFix server.
  - a. On the computer where the BigFix server is installed, go to the *install\_dir*/BESServer/wwwrootbes/bfsites directory. Copy the IBM License Reporting.efxm file to a Windows computer with Internet access, and place it in the C:\BigFix directory.
  - b. In the C:\BigFix directory create a folder called downloads.
  - c. Run the BES Download Cacher with the following command:

```
BESDownloadCacher.exe -m "C:\BigFix\IBM License Reporting.efxm"
-x C:\BigFix\downloads
```

The BES Download Cacher downloads approximately 1 GB of required files.

- d. Optional: The default cache size is enough if you use only the **IBM License Reporting (ILMT) v9** fixlet site. However, if you plan to run fixlets from other sites, such as **BES Support**, increase the cache size so that the BigFix server does not try to delete any files.
  - 1) Log in to the BigFix console.
  - 2) In the left navigation panel, click **Computers** and right-click the computer on which the BigFix server is installed. Then, click **Edit Computer Settings**.
  - 3) Increase the value of the `_BESGather_Download_CacheLimitMB` setting. If the setting is not on the list, add it and specify the value in MB.

**Tip:** The size depends on each fixlet site, however you might need to increase it to at least a couple of gigabytes.

- e. Copy the contents of the downloads folder from the computer with Internet access to the following directory on the computer where the BigFix server is installed:

```
install_dir/BESServer/wwwrootbes/bfmirror/downloads/sha1
```

## Results

You enabled the License Metric Tool fixlet site and loaded its content.

## What to do next

Download the License Metric Tool installer to a selected computer and start the installation.

### Installing the server on Linux:

After you enable the fixlet site, download the License Metric Tool installer, and proceed with the installation. You can install the server in interactive or silent mode.

*Installing the server on Linux in interactive mode:*

To install the License Metric Tool server on Linux, download the application installer to a selected computer and run the `setup-server-linux-x86_64.sh` script. Then, follow instructions in the installation wizard.

### Before you begin

- Ensure that the BigFix client is installed on the computer on which you want to install the License Metric Tool server.
- Ensure that the computer meets the following requirements:
  - A graphical user interface is available
  - X server is configured
  - `DISPLAY` variable is set properly
- Start the installation as root. Otherwise, the server is not registered as a system service.
- The use of `sudo` is not supported.

### Procedure

1. Download the License Metric Tool installer.
  - a. Log in to the BigFix console.
  - b. In the navigation bar, click **Sites > External Sites > IBM License Reporting (ILMT) > Fixlets and Tasks**.

- c. In the upper right pane, select **Download IBM License Metric Tool**, and click **Take Action**.
  - d. Select a computer to which you want to download the installer, and click **OK**. The installer is downloaded to the `/user/ILMT_installer` directory on the selected computer. By default: `/root/ILMT_installer`.
2. Log in as root to the computer where you downloaded the installer.
  3. Go to the directory where the installer was downloaded, and extract the installation files.  

```
tar xvf LMT-server-version-timestamp-linux-x86_64.tar.gz
```
  4. To start the installation, run the `setup-server-linux-x86_64.sh` script.
- Tip:** If the installation is slow, check the following items:
- Check the performance and speed of the hard disk.
  - Check whether the antivirus is scanning each file separately as it might slow down packaging. If this is the case, turn off the antivirus. If the antivirus cannot be turned off, expect the installation to be slower.
5. Select the language of the installation, and click **OK**. The installation wizard starts, and the welcome panel opens. Click **Next**. If you cannot choose your language in the installation wizard, set the system locale to a chosen language. For more information, see: Troubleshooting.
  6. Read and accept the license agreement, and click **Next**.
  7. Follow instructions in the wizard and provide the required installation parameters.
  8. When the installation is complete, click **Done** to exit the wizard.

**Tip:** If you encounter problems during the installation, analyze the log file that is in the `$HOME\LMT9.2.15` directory.

## Results

The License Metric Tool server is installed and the initial configuration opens in the browser. If you do not have a browser installed or want to complete the configuration from a different computer, go to: `https://host_name:port`, where `host_name` and `port` are the values that you specified during the installation.

## What to do next

Complete the initial configuration.

*Installing the server on Linux in silent mode:*

To install the License Metric Tool server on Linux, download the application installer to a selected computer, edit parameters in the `install_response.txt` file, and run the installation command.

## Before you begin

- Ensure that the BigFix client is installed on the computer on which you want to install the License Metric Tool server.
- Start the installation as root to register the server as a system service and to be able to upgrade it later with a fixlet. Otherwise you can start the installation as non-root user.
- The use of `sudo` is not supported.

## Procedure

1. Download the License Metric Tool installer.
  - a. Log in to the BigFix console.
  - b. In the navigation bar, click **Sites > External Sites > IBM License Reporting (ILMT) > Fixlets and Tasks**.

- c. In the upper right pane, select **Download IBM License Metric Tool**, and click **Take Action**.
  - d. Select a computer to which you want to download the installer, and click **OK**. The installer is downloaded to the `/user/ILMT_installer` directory on the selected computer. By default: `/root/ILMT_installer`.
2. Log in as root to the computer where you downloaded the installer.
  3. Go to the directory where the installer was downloaded, and extract the installation files.
 

```
tar xvf installation_package
```
  4. Read the license agreement in the `/user/ILMT_installer/licenses/LA_language.txt` file.
  5. Edit the `install_response.txt` response file and adjust it to your installation. Ensure that the **RSP\_LICENSE\_ACCEPTED** parameter is set to true. If you do not accept the license, the installation fails. For more information about installation parameters, see: Server installation response file.
  6. Change to the directory with installation files. To start the installation, run the following command.
 

```
setup-server-linux-x86_64.sh -f response_file_path -i silent
```

 Where *response\_file\_path* is the absolute path to the response file that you are using. For example:
 

```
setup-server-linux-x86_64.sh -f /root/ILMT_installer/install_response.txt -i silent
```

**Tip:** Use the `-h` option to view help information about using the script, for example:  
`setup-server-linux-x86_64.sh -h`.

**Tip:** If the installation is slow, check the following items:

- Check the performance and speed of the hard disk.
- Check whether the antivirus is scanning each file separately as it might slow down packaging. If this is the case, turn off the antivirus. If the antivirus cannot be turned off, expect the installation to be slower.

## What to do next

Access the License Metric Tool user interface to complete the initial configuration. To access the user interface, go to: `https://host_name:port`, where *host\_name* and *port* are the values that you specified during the installation.

*Server installation response file:*

The `install_response` file specifies input parameters that are used during the installation of the License Metric Tool server in silent mode.

Table 30. Response file parameters

Parameter key name	Description	Default
<b>RSP_LICENSE_ACCEPTED</b>	Accepts the license agreement.  The installation fails if you do not change the value of the parameter to true.	false
<b>RSP_DISABLE_PREREQ_WARNINGS</b>	Disables prerequisite checking warnings.  If the server does not have enough memory or processor cores, the silent installation fails. You can change this behavior by setting the value of this parameter to true. The installation can complete even if the requirements are not fulfilled, however insufficient resources might impact performance.	false (warnings are enabled)

Table 30. Response file parameters (continued)

Parameter key name	Description	Default
<b>RSP_TLM_ROOT</b>	Specifies the installation location.  Specify an empty directory in which you want to install the server. If the directory does not exist, it is created.	<b>Windows</b> C:\Program Files\ibm\LMT <b>Linux</b> /opt/ibm/LMT
<b>RSP_TLM_HTTPS_PORT</b>	Specifies the port that is used by the server.  If you do not specify the port number, a default value is used. If the selected port is already used by a different application, the installation fails.	9081
<b>RSP_DISABLE_COMMUNICATION_WARNINGS</b>	Disables communication warnings.  If any of the ports that you specified in the <b>RSP_TLM_HTTPS_PORT</b> is locked by another application, silent installation fails. To specify a port that is temporarily used but will be available later, set the <b>RSP_DISABLE_COMMUNICATION_WARNINGS</b> parameter to true.	false
<b>Windows</b> <b>RSP_USER_ACCOUNT</b>	Specifies the user account for running the application service.  The User Account Control in Windows must be reduced or disabled. Otherwise, it might block the service from starting.  If you leave the value current, the service runs under the NT AUTHORITY\SYSTEM user, which has all required rights. If you specify a different user, ensure that the following requirements are met: <ul style="list-style-type: none"> <li>• The user has the <b>log on as a service</b> right and administrative privileges.</li> <li>• The user is entered as domain\username, machine\username, or .\username if it is a local account</li> </ul> <b>Important:</b> To use Windows authentication to access the database, the service owner chosen here must be available both to License Metric Tool and the relevant database server for which you use this authentication. For local databases, you can use current, but for remote ones it must be a domain user that is shared between the two servers.	current
<b>Windows</b> <b>RSP_USER_ACCOUNT_PWD</b>	Specifies the password of the user account for running the application service.	

### Performing initial configuration on Linux:

During the initial configuration, you create a License Metric Tool database and the application administrator. You also set up a connection to the BigFix server and database. Optionally, you can configure a connection to the Web Reports database to give the Web Reports users access to License Metric Tool.

## Before you begin

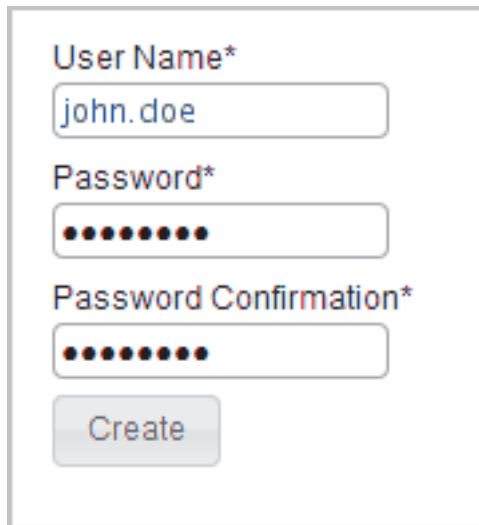
- Ensure that the DB2 user has the following permissions. These permissions apply only if the databases were installed with default settings, and all customizations and hardening configurations were consulted with IBM support.
  - For the BigFix database (BFENT): **DBAUTH**
  - For the Web Reports database (BESREPOR): **DATAACCESS**
- To reuse DB2 that you installed for BigFix with License Metric Tool, increase the number of active databases to at least 3. To increase the number, log in as the DB2 instance owner, and run the following command. Then, restart the database server.  
`db2 update dbm cfg using NUMDB number_of_active_databases`

## Procedure

1. Create the License Metric Tool database.
  - If the DB2 server is installed on the same computer as the License Metric Tool server, perform the following steps.
    - a. Select **The application and the database are on the same computer**. The host name, port number, and the default name of the database are filled in automatically. If you want to specify a different name of the database, you can choose any name that meets the DB2 naming requirements.
    - b. Provide credentials of the operating systems user that will be used for connecting to the database. The user can be an instance owner.  
  
**Tip:** Create a dedicated user for connecting to DB2.
    - c. To create the database, click **Create**.
  - If the DB2 server is installed on a different computer than the License Metric Tool server, perform the following steps.
    - a. Clear **The application and the database are on the same computer** check box.
    - b. Provide the host name and port number of the computer where the DB2 server is installed, and specify the name for the application database. You can use the default name or choose any name that meets the DB2 naming requirements.
    - c. Provide credentials of the operating systems user that will be used for connecting to the database. The user can be an instance owner.  
  
**Tip:** Create a dedicated user for connecting to DB2.
    - d. To download a script that is used for creating the database, click **Download Script**.
    - e. Move the script to the computer where the DB2 server is installed and run it. The script creates a database that can be accessed by the user that you specified in substep c.  
  
**Important:** The user who runs the script must have the SYSADM authority. You can use the DB2 instance owner.
    - f. When the database is created, return to the computer on which you are configuring License Metric Tool, and click **Create**.
2. Create the administrator of License Metric Tool.

**Tip:** Avoid using admin, administrator, root or a similar name for the administrative account. Such an account might be prone to hacker attacks and locked out if an attacker exceeds the specified number of failed login attempts. For more information, about the account lockout, see: “Configuring user account lockout” on page 512.



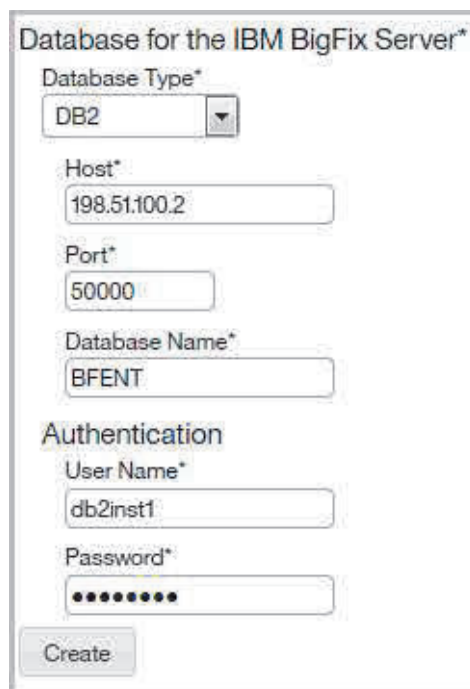


A user registration form with three input fields and a button. The first field is labeled 'User Name\*' and contains the text 'john.doe'. The second field is labeled 'Password\*' and contains ten black dots. The third field is labeled 'Password Confirmation\*' and also contains ten black dots. Below the fields is a button labeled 'Create'.

3. Optional: The **Enable default scan schedule for this data source** check box is selected by default. Clear this check box if you want to manually configure the scans.

If you enable the default scan schedule, actions that are needed to collect data from the computers in your infrastructure are automatically started on the BigFix server. This option is advised for environments with up to a few thousand computers. For larger environments, finish the installation, divide the computers into groups, and then manually set up scan schedule for each group to avoid performance issues. For more information about the default and manual scan schedule, see: “Setting up scans to discover software and hardware inventory” on page 163.

4. Configure the connection to the BigFix database. The database stores information about the computers and data that was discovered on these computers. Specify the host, port, database name, and credentials of the user that can access the BigFix database.



A database configuration form titled 'Database for the IBM BigFix Server\*'. It contains several fields: 'Database Type\*' is a dropdown menu with 'DB2' selected; 'Host\*' is a text field with '198.51.100.2'; 'Port\*' is a text field with '50000'; 'Database Name\*' is a text field with 'BFENT'. Below these is a section titled 'Authentication' containing 'User Name\*' with 'db2inst1' and 'Password\*' with ten black dots. A 'Create' button is at the bottom.

5. Configure the connection to the BigFix server. The host name or IP address, and the API port number are automatically retrieved from the database. Specify only the administrative user that you created during the installation of BigFix.

## IBM BigFix Server\*

### Authentication (Console Operator)

User Name\*

Password\*

☐ Disable automatic address lookup

**Note:** If you do not want to provide the Master Operator, you can create a dedicated BigFix user that fulfills the following requirements:

- Is assigned the IBM License Reporting (ILMT) v9 site
- Is assigned computers that you are going to monitor, and the computer where the BigFix server is installed
- Has the following permissions: *Can use REST API, Can use Console, Custom Content, Can Create Actions*

The option is supported starting from BigFix 9.5.

6. Optional: If the BigFix and License Metric Tool servers are in separated networks, the automatic address lookup might return incorrect address. To disable the lookup, select **Disable automatic address lookup**, and specify the address manually. Then, configure additional environment variables on the License Metric Tool server. For more information, see: “Configuring servers in separate networks” on page 153.
7. Optional: Configure the connection to the Web Reports database. Specify the database type, host name, database name, and credentials of the Web Reports database user.

### Web Reports Database

Database Type\*

DB2

Host\*

198.51.100.2

Port\*

50000

Database Name\*

BFENT

Authentication

User Name\*

db2inst1

Password\*

••••••••

8. To create connections to the databases, click **Create**. When the connections are created and configured, a new page opens and a message about the data import is displayed.

- Optional: If your environment consists of more than 50 000 endpoints, complete steps to enhance the application performance before you run the import.
- To run the initial import, click **Import Now**. The import might take a few hours, depending on your hardware capacity.

### What to do next

If you enabled the default scan schedule, the collected data might not be displayed in License Metric Tool after the initial import. Some time is required to finish scans that were initiated during the installation, and to upload scan results to the server. If the reports in License Metric Tool do not contain any data, wait about an hour until the scans are completed. Then, start another import.

If you did not enable the default scan schedule, manually configure scans to collect data that is later on displayed on the reports.

## Uninstalling on Linux

To remove License Metric Tool from your infrastructure, stop the application-specific actions and analyses that are running on the computers and uninstall the scanner. Then, remove the VM Manager Tool. Finally, uninstall the License Metric Tool server. You can also remove the related database.

### Uninstalling the server on Linux in interactive mode

To uninstall the License Metric Tool server on Linux, run the `uninstall.sh` script file. Then, follow instructions in the installation wizard. The wizard does not uninstall DB2 nor the BigFix server. These components need to be removed separately.

#### Procedure

- Log in to the computer where the License Metric Tool server is installed as root.
- Go to the `/opt/ibm/LMT/Uninstall` directory, and run the `uninstall.sh` script.
- Follow instructions in the uninstallation wizard. When the uninstallation finishes, click **Done**.

#### Results

The License Metric Tool server is uninstalled but the database, user logins, and passwords are preserved. To remove them, log in as the DB2 instance owner on the computer where the database is installed, and run the following command.

```
db2 deactivate db database_name
db2 drop db database_name
```

Where *database\_name* is the name of the License Metric Tool database, by default TEMADB. You can also remove the BigFix server.

### Uninstalling the server on Linux in silent mode

To uninstall the License Metric Tool server on Linux, edit parameters in the `uninstall_response.txt` file, and run the uninstallation command. The command does not uninstall DB2 nor the BigFix server. These components need to be removed separately.

#### Procedure

- Log in to the computer where the License Metric Tool server is installed as root.
- Go to the `/opt/ibm/LMT/Uninstall` directory, open the `uninstall_response.txt` file, and edit the uninstallation parameters.
- Start the command line and run the following command.  
`uninstall.sh -f /opt/ibm/LMT/Uninstall/uninstall_response.txt -i silent`

## Results

The License Metric Tool server is uninstalled but the database, user logins, and passwords are preserved. To remove them, log in as the DB2 instance owner on the computer where the database is installed, and run the following command.

```
db2 deactivate db database_name
db2 drop db database_name
```

Where *database\_name* is the name of the License Metric Tool database, by default TEMADB. You can also remove the BigFix server.

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## Installation-related tasks

If you encounter problems during the installation, you can check details related to the problem, fix it, and then resume the installation. If the BigFix and License Metric Tool servers are in separated networks, you can disable the automatic address lookup to avoid problems with initial configuration. Learn how to check the current application and catalog version to make sure that your installation and initial configuration were successful.

## Downloading License Metric Tool from Passport Advantage (PPA)

Downloading License Metric Tool is one of the crucial steps for the successful installation of the product.

### Before you begin

You can install the server components of License Metric Tool version 9.2 on Windows and Linux and distribute the remaining components according to your needs. Depending on the environment size, you can install the components on one, two, or three computers. For more information about the supported operating systems and other requirements, see: “Planning the installation” on page 59.

Before downloading License Metric Tool, consider the size and type of your environment. For more information about the installation scenarios, see: Downloading License Metric Tool 9.2. Choose the optimal installation scenario. Based on that knowledge, download the required installation packages from the Passport Advantage website.

### About this task

This procedure shows how to download License Metric Tool from Passport Advantage. In case of any questions or problems related to purchasing or downloading License Metric Tool, contact the Passport Advantage support.

For a full scenario for installing License Metric Tool and all its components, see: Installing License Metric Tool. Follow the step-by-step installation guide to install the product on a specific operating system:

- Step-by-step installation guide for Windows
- Step-by-step installation guide for Linux (separate installers)
- Step-by-step installation guide for Linux (one installer)

### Procedure

1. Go to Passport Advantage website.
2. Go to the **Passport Advantage Online** tab and log in with your IBM ID and password by clicking **Customer sing in**. In case you do not have an active IBM ID, request a new IBM ID by registering.
3. Navigate to **Software > Software and services online > Purchase and renewal** and select **Product catalogs**.
4. Enter **IBM License Metric Tool** in the **Product description** search, and click the **Arrow** button.