Precise Workload Analysis for SAP HANA

Version 1.0.1

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Release Notes

What's new in 1.0.1

The following features are new in this release of Precise Workload Analysis for SAP HANA.

30S Timeframe

The 30S timeframe shows the data collected in last 30 seconds. This new timeframe allows you to look at statements that executed in the last 30 seconds, including long-running statements that are still running.

> Some of the charts are not shown here because they are not relevant for this short timeframe.

Hana Statement Memory Utilization

The Hana Statement Memory Utilization feature shows the memory utilization of each HANA statement in the following areas:

- TOP HANA STATEMENTS (Shown as a column)
- HANA STATEMENT SUMMARY (Shown as a field inside the statement drill down)
- MEMORY UTILIZATION OVERTIME (Shown as a chart inside the statement drill down)

> For monitoring the memory usage of a HANA instance, the following configuration is required on the SAP HANA instance:
>
> In the global.ini file, expand `resource_tracking`, and set the following parameters to **On** (the default setting is **Off**):
>
> - `enable_tracking`
> - `Memory_tracking`
>
> You do not need to restart or these settings to take effect.

Support for HANA MDC (Multitenant Database Containers)

Workload Analysis for SAP HANA supports Multi-tenant Database Containers where multiple database containers can be installed on single HANA server. Each container is identified by its Tenant Database Name and can be monitored separately in Precise Workload Analysis for SAP HANA.

For more information about monitoring such an instance, see Installation Instructions.

Performance Enhancements

Multiple performance improvements have been made in the product to reduce memory footprint of the collector.

Licensing Update

Workload Analysis for SAP HANA 1.0.1 includes licensing changes that require new license keys, available from your IDERA contact.

Welcome to Workload Analysis for SAP HANA

This wiki helps you understand Precise Workload Analysis for SAP HANA characteristics and features.

FAQs

The following items are frequently asked questions regarding Precise Workload Analysis for SAP HANA.

How often does the Precise Workload Analysis for SAP HANA sample?

Every second.

How often does the sample data is sent to PMDB?

Every 30 seconds.

How often does the Web GUI update?

Every 15 seconds.

What privileges are required for the user created in HANA to install Workload Analysis for SAP HANA?

The user must have `CATALOG READ`, `INIFILE ADMIN`, and `OPTIMIZER ADMIN` privileges for monitoring SAP HANA.

Does a single installer support both 64-bit and 32-bit processors?

Yes.

We have a firewall between Precise FPs and the Database Servers for SAP (including HANA DB). What port is used by the agent to connect to HANA DB?

The following ports are used by Workload Analysis for SAP HANA:

- 20701 (PMDB)
- 20705 (MQ)
- 20700 (GUI)

Is it possible to change the GUI port for Workload Analysis for SAP HANA?

Yes, but there is no option to change it in the GUI. It can be changed manually from ports.ini and server.xml files in the Workload Analysis for SAP HANA installation directory.

To change the GUI port:

1. Stop the services.
2. Find and replace the required ports in the following files:
    - `<FW_ROOT>\deploy\etc\ports.ini`
    - `<FW_ROOT>\etc\ports.ini`
    - `<FW_ROOT>\tomcat\conf\server.xml` (Only for the GUI port)
3. Start the services.

What open ports are required on the HANA server for Workload Analysis for SAP HANA to work?

The port that is used for communication between Workload Analysis for SAP HANA is **3*NN*15** (Si ngle Container Server) and/or **3*NN*13** for (Multiple Container Server), where *NN* is the instance number, which is taken as an input during the installation. The default instance number is **00**, hence the default port would be **30015** or **30013**.

Is it possible to upgrade the Workload Analysis for SAP HANA framework from v0.0.1 to v0.0.2

There is no upgrade path. The existing product should be uninstalled and the new version installed. To access the GUI of the newly-installed version, your browser cookies and cache should be deleted as the structure of widgets has changed in the newer version.

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Additionally, IDERA helps you by providing:

- 24/7 technical support for critical issues.
- Availability to report cases and access a web-based customer portal for update status.
- Access to our Knowledge Center where you can find FAQs, How To's, Best Practices, and Webcasts.

This wiki includes the following Web browser minimum requirements:

- Internet Explorer 8.0
- Mozilla Firefox 4
- Google Chrome 6

You can access the IDERA Help system through the **Help** icon on the top right section of your window or by pressing F1 on the section where you need more information.

You can print a help topic from the wiki using the Print function in your browser.

Get Started

Precise Workload Analysis for SAP HANA delivers valuable real-time and historical data to help tune queries as well as actionable recommendations to improve performance.

Use the following checklist to get started using Precise Workload Analysis for SAP HANA.

	Follow these steps
✔	Run the Setup.exe file from the root folder of the installation kit to install the Precise Workload Analysis for SAP HANA
✔	Enter the installation path for the framework. The default path is C:\Program Files\Precise\Hanalyzer
✔	Enter instance details and credentials
✔	Precise Workload Analysis for SAP HANA is installed on same server where Setup.exe is executed

This section of the wiki contains information about:

- Installation and deployment

Installation and deployment

You can install and deploy Workload Analysis for SAP HANA in any environment size.

- Software Requirements
- Hardware Requirements
- Required User Permissions
- Installation Instructions

Software Requirements

You need to comply with the following requirements to install the Precise Workload Analysis for SAP HANA.

Workload Analysis of SAP HANA Installer Requirements

Type	Requirement	Suggestions
Microsoft .NET Framework version	2.0 or later	For more information about the .NET Framework, see the MSDN article: NET Framework Versions and Dependencies.
Operating System (32-bit and 64-bit)	• Windows Vista SP2 or later • Windows Server 2008 SP2 • Windows Server 2008 R2 • Windows 7 • Windows Server 2012 • Windows Server 2012 R2 • Windows 8 • Windows 8.1 • Windows 10	

Browser requirements

The Precise Workload Analysis for SAP HANA's web consoles are compatible with the following browsers:

- Internet Explorer 10.x+
- Google Chrome
- Mozilla Firefox

Port requirements

- Framework: 20700 (Tomcat GUI port) and 20705 (ActiveMQ port)
- PMDB: 20701 (PostgreSQL port)

Hardware Requirements

The following guidelines provide an estimation of the hardware resources required to deploy Workload Analysis for SAP HANA depending on the number of servers you want to monitor.

Installs under 15 monitored instances

Type	Requirement
CPU Cores	2 - 4
Memory	4 - 10 GB
Disk Space	Approximately 3 GB - 5 GB per monitored instance

Installs 15 - 45 monitored instances

Type	Requirement
CPU Cores	4 - 8
Memory	10 - 32 GB
Disk Space	Approximately 3 GB - 5 GB per monitored instance

Required User Permissions

The monitoring of SAP HANA in Precise Workload Analysis for SAP HANA works if the Database User has **CATALOG READ** permission.

Installation Instructions

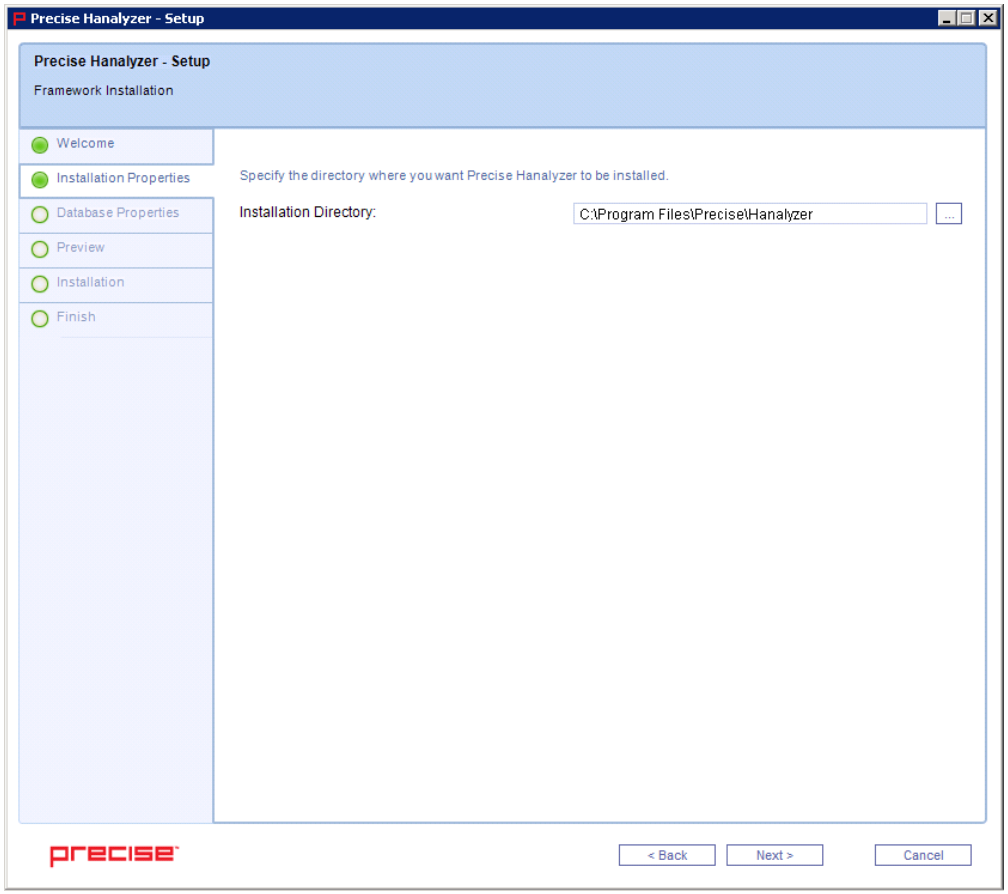
You can install the Precise Workload Analysis for SAP HANA on any computer that meets or exceeds the product requirements.

To start installing the Precise Workload Analysis for SAP HANA:

1. Log on with an administrator account to the computer on which you want to install Workload Analysis for SAP HANA.
2. Run Setup.exe in the root of the installation kit.
3. Click **Next** on the Welcome window of the setup program.
4. Review the license agreement. To accept this license agreement, click **I accept the terms and conditions of this License Agreement** , and then click **Next .**

Select an installation location

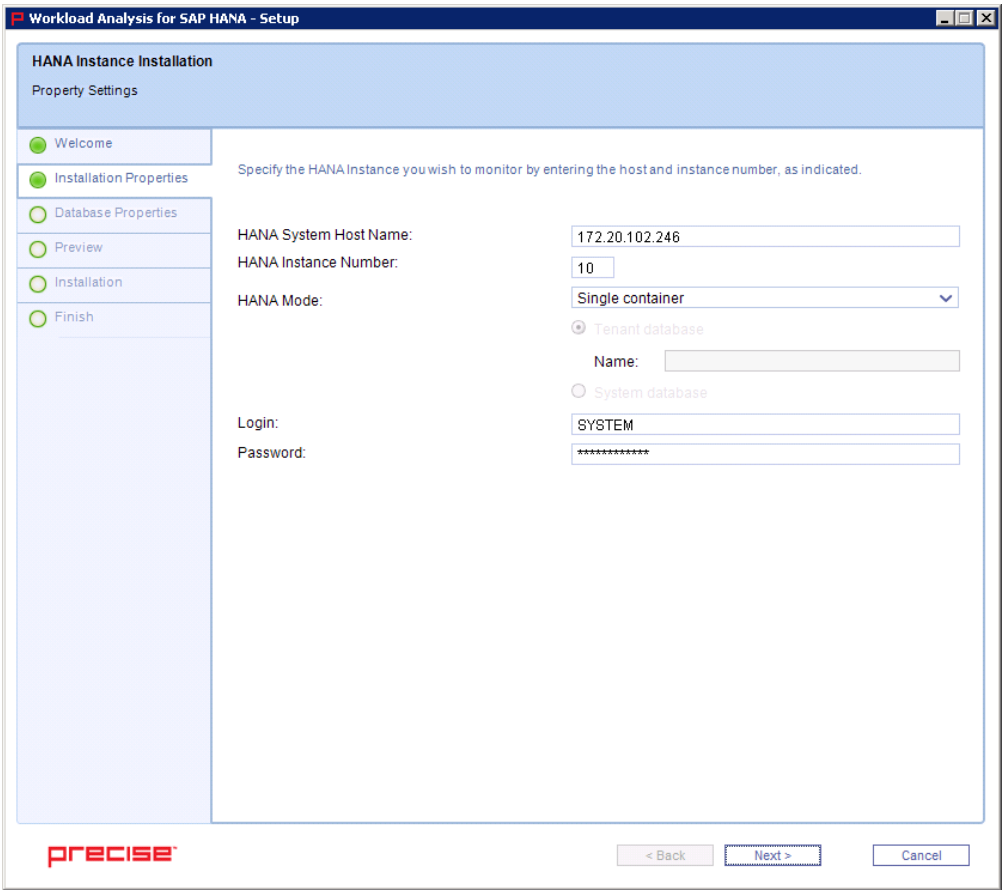
You can use the default install location or specify a different path. For your first install, we recommend using the default location. Click **Next** to continue with the installation.



Enter SAP HANA Instance details

SAP Hana Instance details consists of a Host Name and a two-digit Instance Number along with its logon credentials.

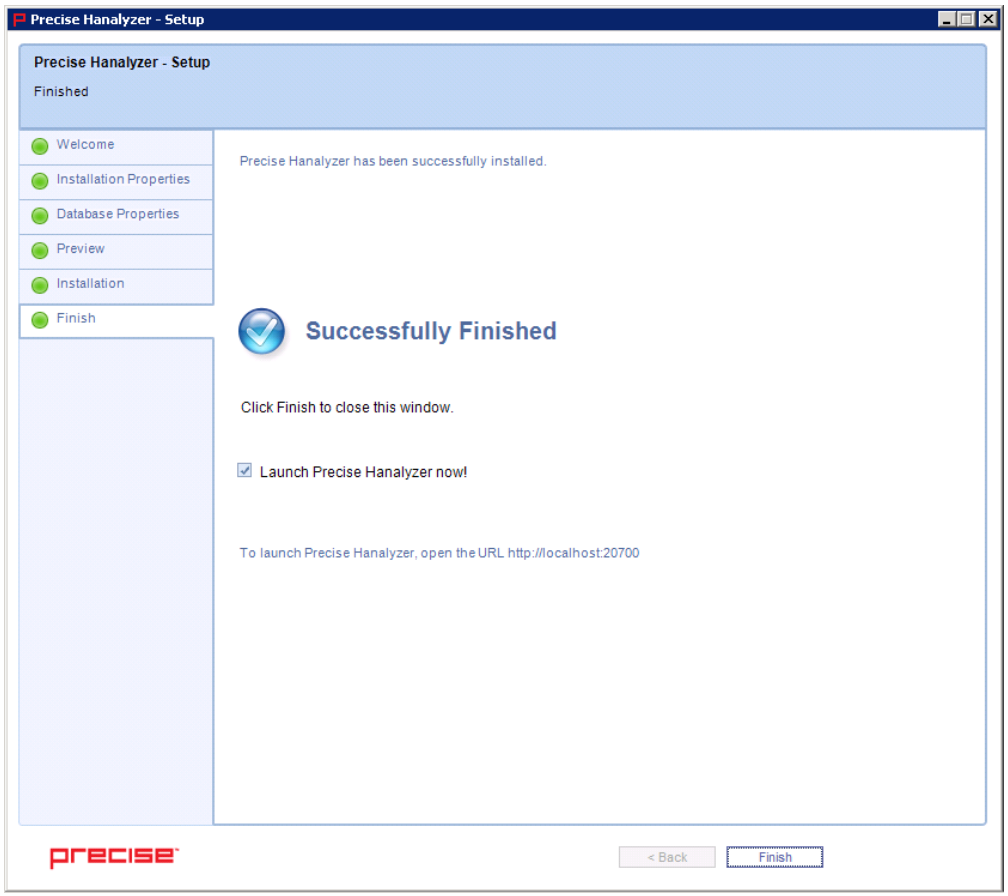
If the HANA server is of Multiple container mode, select Multiple containers in HANA Mode dropdown, and enter the Tenant database name or select System database whichever applicable.



Complete the install

The setup will grant the provided accounts access to Workload Analysis for SAP HANA.

Once the Workload Analysis for SAP HANA is installed, the Web GUI can be accessed on compatible web browser with the URL **http://<machine_name>:20700**.



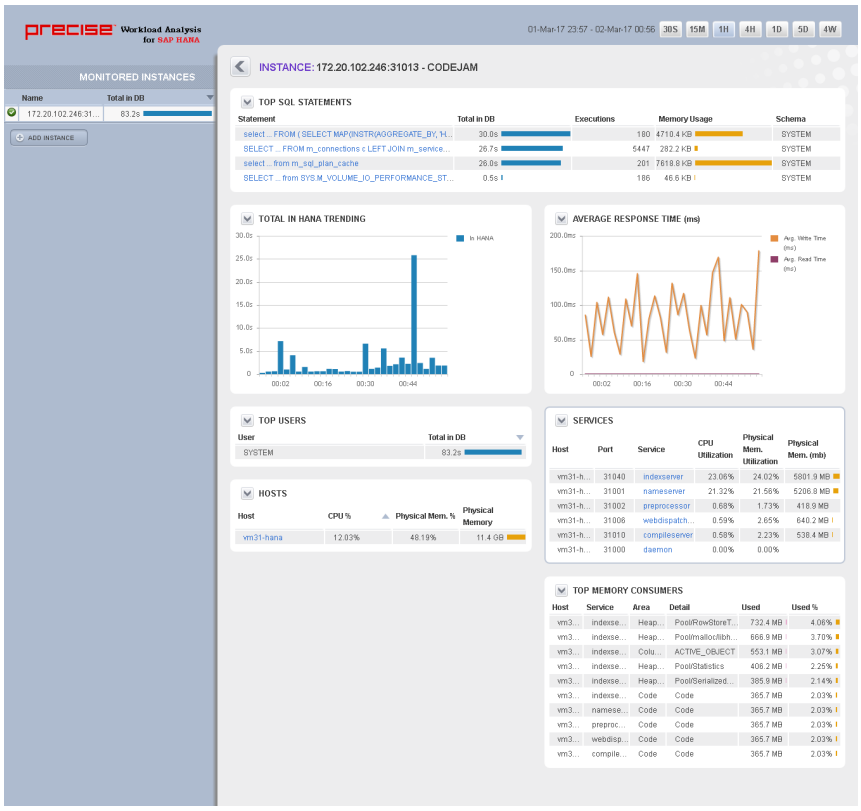
To uninstall Precise Workload Analysis for SAP HANA, see Product Uninstallation

Workload Analysis for SAP HANA Dashboard

The left column displays a list of the monitored instances, allowing you to identify their status using specific icons for each possible status. Below is a description of each status:

ICON	STATUS
	Instance is active and there is data collected in the last 2 minutes
	Instance is inactive or unreachable
	Instance has been removed
	Unknown. No data collected in the last 2 minutes
	Stopped

Select a time frame from the available options (30 seconds, 15 minutes, 1 hour, 4 hours, 1 day, 5 days, and 4 weeks) to retrieve the information.



Dashboard Components

Total in HANA Trending

Displays information measured in seconds about In HANA.

Top Users

Provides a list of logins executed in the monitored instances. The list also defines the type of user, the total workload in the DB (measured in seconds), and the number of executions.

Top SQL Statements

Displays a list of the most frequently executed SQL statements, including queries and updates that have been performed on a specific monitored instance and/or a specific database. Each statement can be drilled down to obtain more detailed information. SQL Plan can also be seen on the drill down page.

Hosts

Displays a list of hosts involved in the monitored instances. Each host is shown with its average CPU and Physical Memory Usage in the selected time frame. Each host can be drilled down to obtain more detailed information.

Average Response Time

Shows a graph of Average Read time and Average Write time on the HANA Database.

Services

Shows a list of HANA services with their Host, Port, and Utilization of CPU and Physical Memory. Each service can be drilled down to obtain more detailed information.

Top Memory Consumers

Provides the list of top memory consumer services with their Area and Detail of memory consumption.

Administering Workload Analysis of SAP HANA

The Administration of Workload Analysis of SAP HANA can be done by executing the Setup.exe from the Installed Framework Directory. This installer allows you to Apply License and Add, Remove Configure HANA Instances for monitoring.

This section includes the following topics:

Configuration based on SQL Plan Cache capacity

Configuring the WASH Collector when the Total HANA SQL Plan Cache capacity is greater than 8 GB

If the sum of the SQL Plan Cache capacity of all the HANA instances monitored is more than 8GB, you must set the Maximum Heap size (Xmx value) for the collector. The following table includes suggested Xmx values to be set for the range of HANA SQL Plan Cache Capacities.

Range of Total Plan Cache Capacity	Suggested Xmx Value
8 GB - 12 GB	1.5 GB
12 GB - 16 GB	2 GB
16 GB - 24 GB	3 GB
24 GB - 32 GB	4 GB

By default, the Xmx Value is 25% of the physical memory of the machine. Hence it is recommended to have the physical memory of at least 1 GB more than the custom Xmx value.

How to check the SQL Plan Cache Capacity of HANA Server

To check the SQL Plan Cache capacity of a HANA server, execute the following on an SAP HANA Client:

```
SELECT plan_cache_capacity FROM M_SQL_PLAN_CACHE_OVERVIEW
```

The result provides the SQL Plan Cache capacity in bytes.

How to set the Xmx value of the collector

The Xmx value should be set after you install Workload Analysis for SAP HANA.

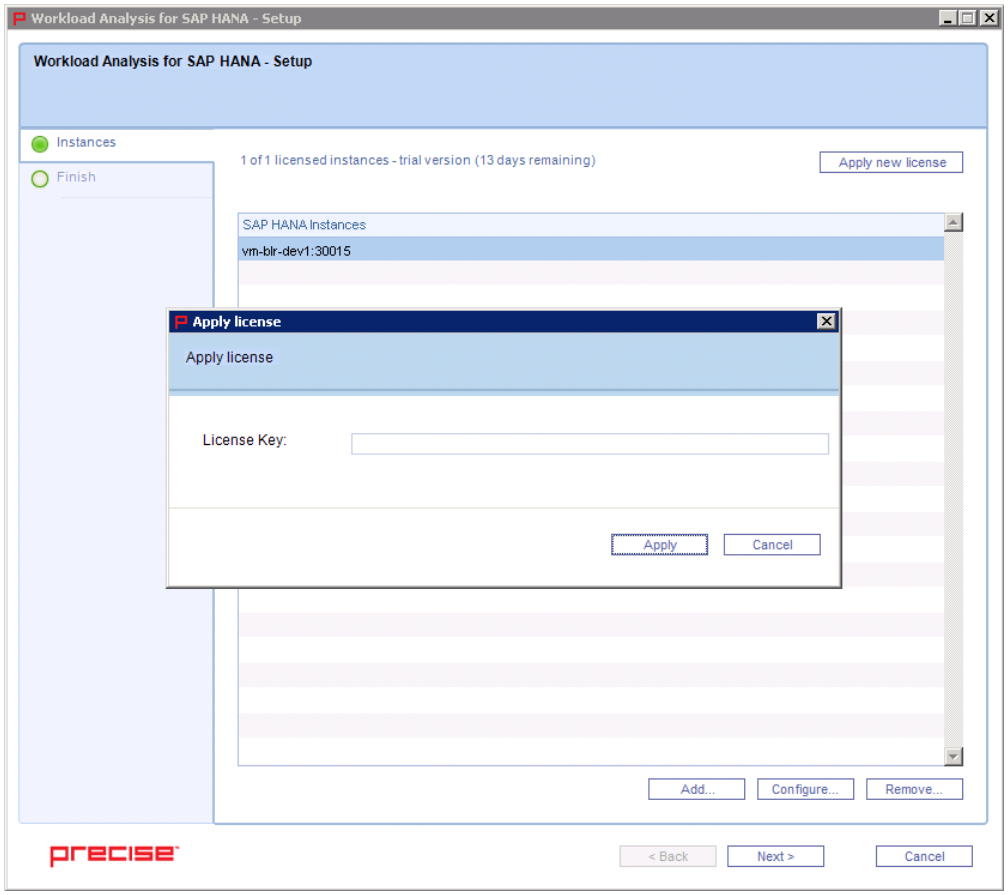
To set the Xmx value:

1. Go to **Start Menu > Run**, and then type `regedit`
2. In the Registry Editor, find (Ctrl+F) **Apache Software Foundation**.
3. Expand Apache Software Foundation:
   > Procrun 2.0
   > precise_hanalyzer_deploy_localsystem
   > Parameters
4. Select **Java**.
5. On the right hand panel, double-click **Options**, and then add the following new line in the **Value Data** field:
   `-Xmx<MaxHeapSize>`
   Examples:
   `-Xmx2g`
   `-Xmx4096m`
6. Restart the Collector Service.

Apply License

The trial License for Workload Analysis of SAP HANA comes with monitoring of one HANA instance for 15 days.

The installer will have Apply New License button that will pop up a dialogue box for licence key input.



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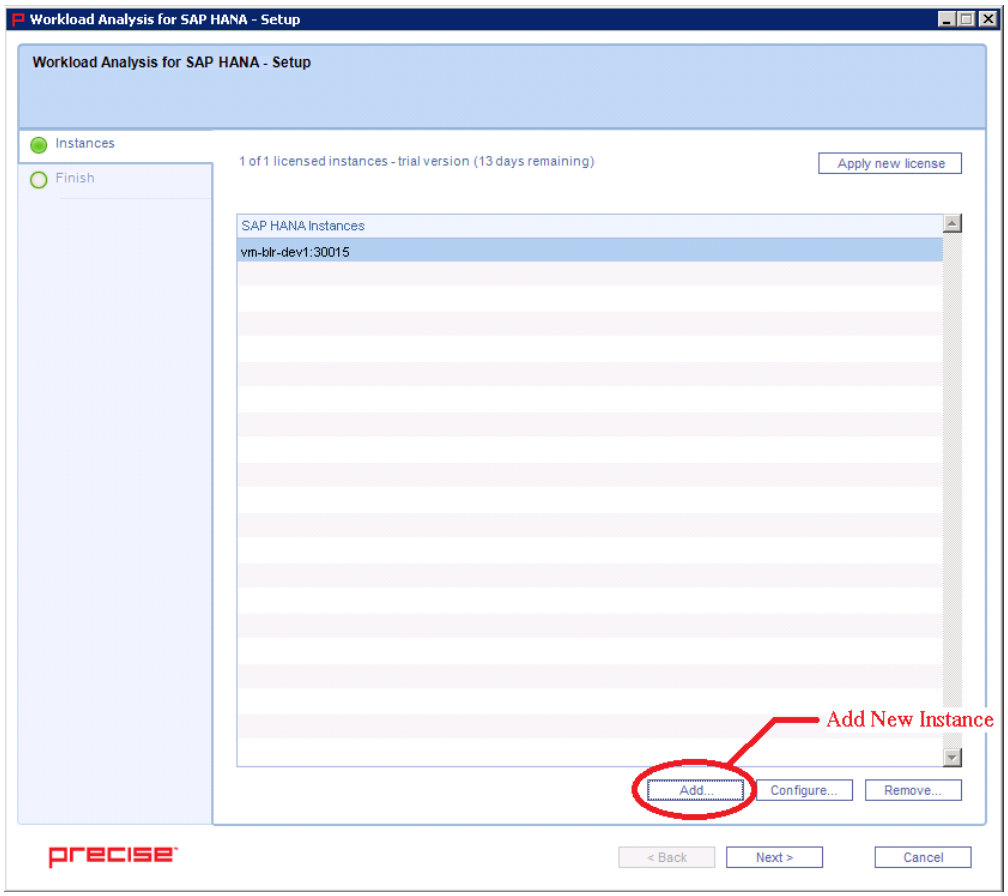
Add new Instance for monitoring

To add a new instance:

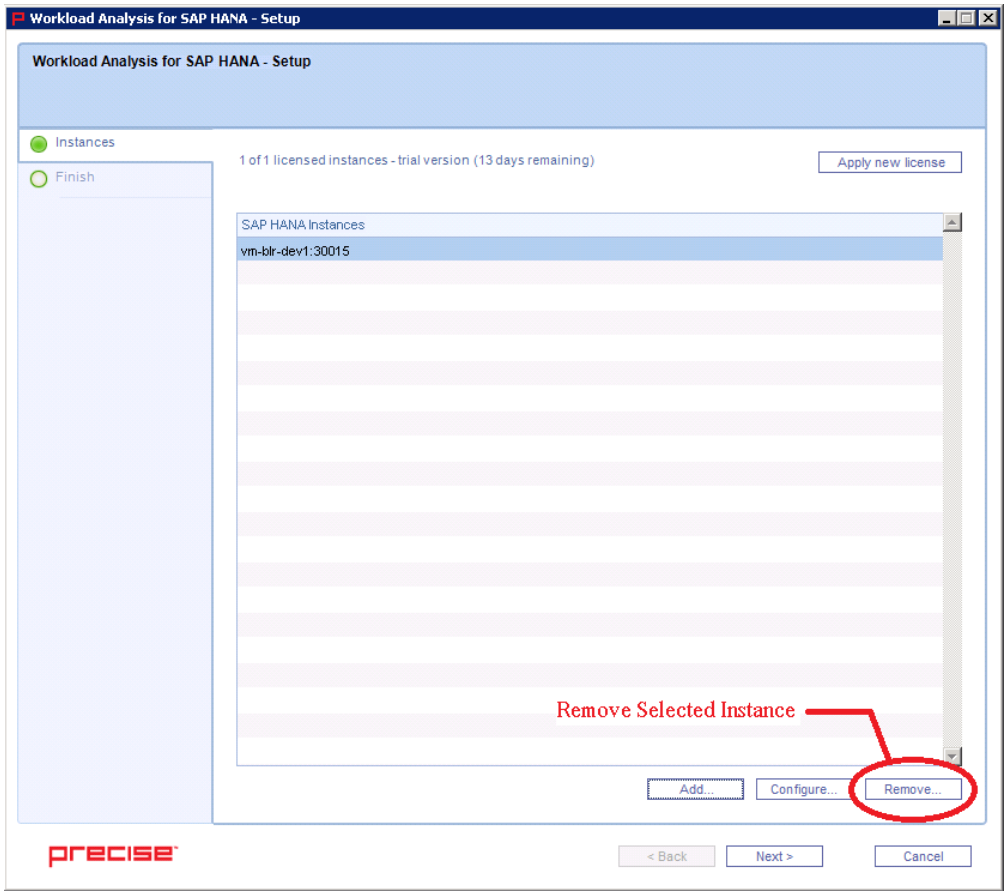
1. Run Setup.exe from installed directory.
2. Click **Add ...** .
3. Enter the HANA instance details.
4. Complete the installation.



Delete Existing Instance

To delete an existing instance:

1. Run Setup.exe from the installed directory.
2. Click **Remove ...** .
3. Confirm instance removal, and then click **Uninstall**.



Product Uninstallation

Precise Workload Analysis for SAP HANA can be uninstalled using the following steps:

1. Go to **Add or Remove Programs** or **Programs and Features** on your Windows installation.
2. Select **Precise Hanalyzer**, and then click **Uninstall**.
3. Delete the installed directory manually from the installation path.