ORACLE
PeopleSoft

PeopleSoft Deployment Packages Installation for Search Components (PeopleSoft PeopleTools 8.62)

July 2025

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About This Documentation

Understanding This Documentation

This documentation is designed to guide you through the deployment of the Oracle's PeopleSoft Deployment Packages. It is not a substitute for the documentation provided for PeopleSoft PeopleTools or PeopleSoft applications.

Typographical Conventions

To help you locate and understand information easily, the following conventions are used in this documentation:

Convention	Description
`Monospace`	Indicates a PeopleCode program or other code, such as scripts that you run during the install. Monospace is also used for messages that you may receive during the install process.
Italics	Indicates field values, emphasis, and book-length publication titles. Italics is also used to refer to words as words or letters as letters, as in the following example: Enter the letter *O*. Italics are also used to indicate user-supplied information. For example, the term *domain* is used as a placeholder for the actual domain name in the user's environment. When two such placeholders are used together, they may be set apart with angle brackets. For example, the path <*PS_CFG_HOME*>/appserv/<*domain*> includes two placeholders that require user-supplied information.
Initial Caps	Field names, commands, and processes are represented as they appear on the window, menu, or page.
lower case	File or directory names are represented in lower case, unless they appear otherwise on the interface.
Menu, Page	A comma (,) between menu and page references indicates that the page exists on the menu. For example, "Select Use, Process Definitions" indicates that you can select the Process Definitions page from the Use menu.

Convention	Description
Cross-references	Cross-references that begin with *See* refer you to additional documentation that will help you implement the task at hand. We highly recommend that you reference this documentation. Cross-references under the heading *See Also* refer you to additional documentation that has more information regarding the subject.
⇒ (line-continuation arrow)	A line-continuation arrow inserted at the end of a line of code indicates that the line of code has been wrapped at the page margin. The code should be viewed or entered as a continuous line of code, without the line-continuation arrow.
" " (quotation marks)	Indicate chapter titles in cross-references and words that are used differently from their intended meaning.
Note. Note text.	Text that begins with *Note.* indicates information that you should pay particular attention to as you work with your PeopleSoft system.
Important! Important note text.	A note that begins with *Important!* is crucial and includes information about what you need to do for the system to function properly.
Warning! Warning text.	A note that begins with *Warning!* contains critical configuration information or implementation considerations; for example, if there is a chance of losing or corrupting data. Pay close attention to warning messages.

Products

This documentation may refer to these products and product families:

- Oracle® Enterprise Manager
- Oracle® Tuxedo
- Oracle® WebLogic Server
- Oracle's PeopleSoft Application Designer
- Oracle's PeopleSoft Change Assistant
- Oracle's PeopleSoft Change Impact Analyzer
- Oracle's PeopleSoft Data Mover
- Oracle's PeopleSoft Process Scheduler
- Oracle's PeopleSoft Pure Internet Architecture
- Oracle's PeopleSoft Customer Relationship Management
- Oracle's PeopleSoft Enterprise Learning Management
- Oracle's PeopleSoft Enterprise Performance Management

- Oracle's PeopleSoft Financial Management
- Oracle's PeopleSoft Human Capital Management
- Oracle's PeopleSoft Interaction Hub
- Oracle's PeopleSoft Pay/Bill Management
- Oracle's PeopleSoft PeopleTools
- Oracle's PeopleSoft Staffing Front Office
- Oracle's PeopleSoft Supply Chain Management

See the Products area on the Oracle web site, https://www.oracle.com/products/oracle-a-z.html.

Related Information

Oracle provides reference information about PeopleSoft PeopleTools and your particular PeopleSoft Application. You can access documentation for recent releases of PeopleSoft PeopleTools and PeopleSoft Applications at the PeopleSoft page in the Oracle Help Center. You can also find documentation by searching for the product name on My Oracle Support.

- PeopleSoft on the Oracle Help Center

  You can access PeopleSoft Online Help, or download the PeopleBooks PDFs, from the PeopleSoft page in the Oracle Help Center. Select PeopleTools or your PeopleSoft application from the navigation list on the left. On the page for the selected product application, select the PeopleTools release or image number at the top and go to the Online Help and PeopleBooks section.

  See Oracle Help Center, https://docs.oracle.com/en/applications/peoplesoft/index.html.

- *PeopleTools: Getting Started with PeopleTools* for your release.

  This documentation provides a high-level introduction to PeopleTools technology and usage.

  See PeopleTools on the Oracle Help Center, https://docs.oracle.com/en/applications/peoplesoft/peopletools/index.html.

- PeopleSoft Application Fundamentals for your PeopleSoft Application and release

  This documentation provides essential information about the setup, design, and implementation of your PeopleSoft Application.

  See Oracle Help Center, https://docs.oracle.com/en/applications/peoplesoft/index.html.

- Installation guides

  You can find the installation guides for PeopleSoft PeopleTools and your PeopleSoft application on the appropriate Oracle Help Center page. Select your release or update image at the top and then go to the Install and Upgrade section.

- My Oracle Support

  This support platform requires a user account to log in. Contact your PeopleSoft representative for information.

  See My Oracle Support, https://support.oracle.com.

  You can find several pages which compile documentation, links, and known issues for various PeopleSoft product areas. For a list of many of the PeopleSoft pages, select the PeopleSoft tab on the Oracle Information Center Catalog.

  See Oracle Information Center Catalog, My Oracle Support, Doc ID 50.2.

To install additional component software products for use with PeopleSoft products, including those products that are packaged with your PeopleSoft products as well as products from other vendors, you should refer to the documentation provided with those products, as well as this documentation. For those additional components that are offered by Oracle, such as Oracle Middleware products, see the documentation on the Oracle Help Center.

See Oracle Help Center, https://docs.oracle.com/en/.

Comments and Suggestions

Your comments are important to us. We encourage you to tell us what you like, or what you would like changed about PeopleSoft documentation and other Oracle reference and training materials. Please send your suggestions to:

PSOFT-Infodev_US@oracle.com

While we cannot guarantee to answer every email message, we will pay careful attention to your comments and suggestions. We are always improving our product communications for you.

Chapter 1

Preparing to Deploy

This chapter discusses:

- Understanding OpenSearch, OpenSearch Dashboards, and Logstash
- Prerequisites for OpenSearch, OpenSearch Dashboards, and Logstash

Understanding OpenSearch, OpenSearch Dashboards, and Logstash

This section discusses:

- Understanding the OpenSearch, OpenSearch Dashboards, and Logstash DPK
- Reviewing the OpenSearch, OpenSearch Dashboards, and Logstash Deployment
- Reviewing the Migration to OpenSearch
- Reviewing the PT-INFRA DPK Usage
- Reviewing Additional Information for OpenSearch, OpenSearch Dashboards, and Logstash

Understanding the OpenSearch, OpenSearch Dashboards, and Logstash DPK

This release of PeopleSoft PeopleTools supports the open-source OpenSearch suite for search, insights, and analytics. OpenSearch is a fully open-source search and analytics suite.

Oracle provides deployment packages that deliver the required OpenSearch software version, OpenSearch Dashboards, Logstash, Java-based plug-ins needed for integration with PeopleSoft environments, and customized code where required. Be sure to obtain and use the DPKs as described in this documentation.

The OpenSearch, OpenSearch Dashboards, and Logstash DPK is supported on Linux and Microsoft Windows operating systems. Oracle recommends that the OpenSearch, OpenSearch Dashboards, and Logstash DPK be installed on servers that are separate from those used for PeopleSoft installations. You download the DPK from Oracle Software Delivery Cloud or My Oracle Support. This documentation sometimes uses "OSK DPK" to refer to the OpenSearch, OpenSearch Dashboards, and Logstash DPK.

The OSK DPK includes:

- OpenSearch

  OpenSearch is an open-source search engine used for the PeopleSoft Search Framework. OpenSearch is an open-source version of the Elasticsearch source code and is licensed under Apache Version 2.0, a Java-based information retrieval library.

- OpenSearch Dashboards

  Use OpenSearch Dashboards to visualize data for OpenSearch server monitoring and application index

monitoring, and to create PeopleSoft Insights to visualize application search indexes. The installation of OpenSearch Dashboards is optional.

Note. The documentation typically refers to OpenSearch Dashboards when discussing installation and setup. The visualizations that users create with OpenSearch Dashboards are PeopleSoft Insights or simply Insights.

- Logstash

  Logstash collects JMX (Java Management Extensions) metrics from JMX servers and provides them to the search engine. The PeopleSoft Health Center displays the charts and data using OpenSearch Dashboards.

  The OSK DPK includes an input plug-in for the JMX agents used for the PeopleSoft Health Center. The installation of Logstash is optional. For the current release, Logstash is supported for use with PeopleSoft Health Center, and as a part of the external data integration feature. Due to security concerns, any other data indexed using this Logstash will not be supported.
- PeopleSoft-developed plug-ins for OpenSearch, OpenSearch Dashboards, and Logstash
- PeopleSoft-delivered customized code for OpenSearch
- Oracle Java 21
- Open-source Python software
- PeopleSoft-developed Python scripts for OpenSearch deployment automation

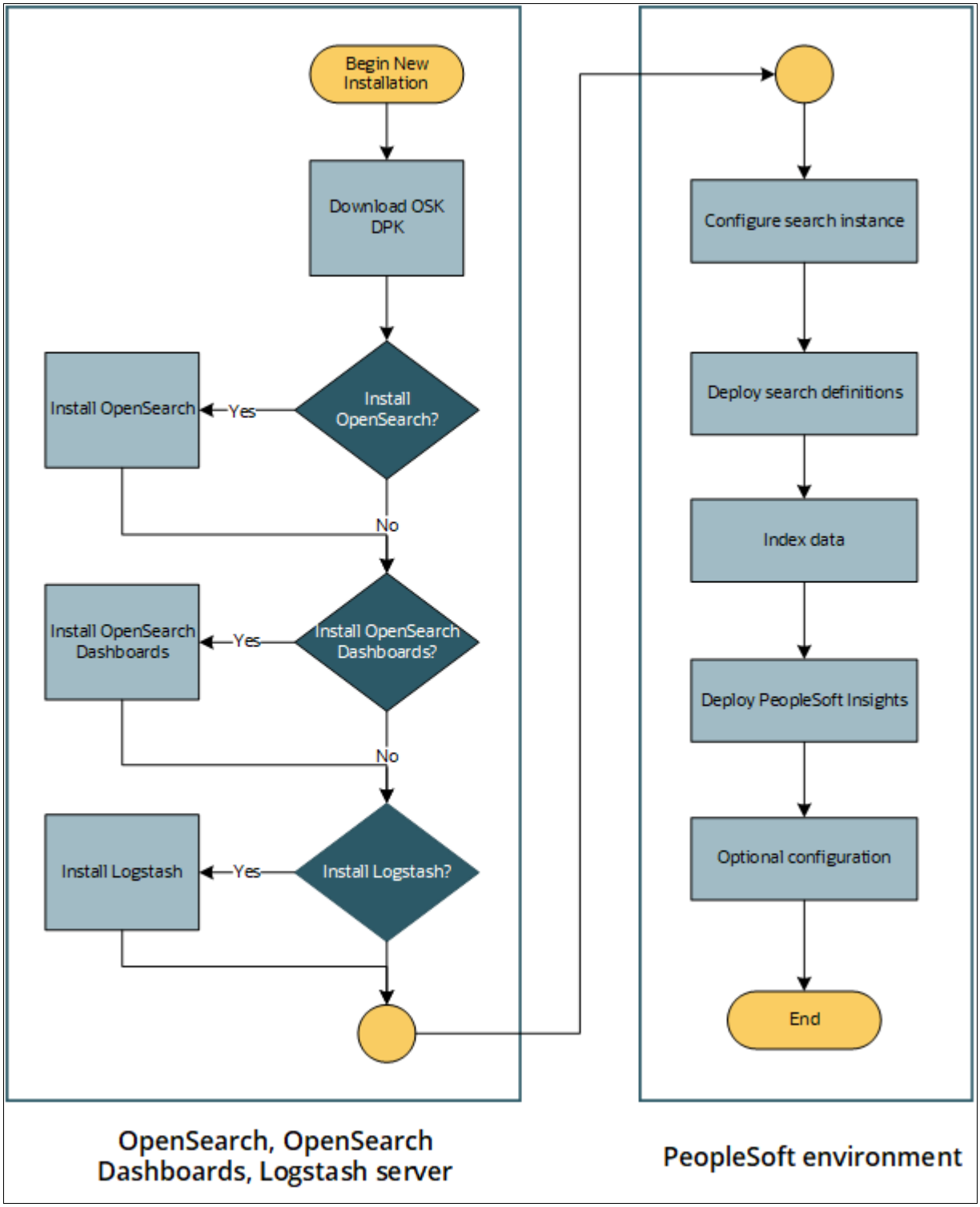
The OSK DPK installation enables automatic setup of OpenSearch clusters, nodes, administrator user, and proxy user.

The following considerations were made when these DPKs were designed:

- System administration experience with PeopleTools is required. If you are new to the PeopleSoft system, it may be necessary to familiarize yourself with the PeopleSoft architecture before proceeding.
- System administration experience with OpenSearch is required. If you are new to the OpenSearch system, it may be necessary to familiarize yourself with the OpenSearch architecture before proceeding.

Reviewing the OpenSearch, OpenSearch Dashboards, and Logstash Deployment

Here is an overview of the deployment process.



Deployment of OpenSearch, OpenSearch Dashboards, and Logstash

The deployment of OpenSearch for PeopleSoft environments includes the following high-level steps:

1. Download the Linux or Microsoft Windows version of the OSK DPK from My Oracle Support or Oracle Software Delivery Cloud.

   See "Deploying the OpenSearch, OpenSearch Dashboards, and Logstash Deployment Package," Obtaining the OpenSearch, OpenSearch Dashboards, and Logstash DPK.

2. Extract the DPK zip file and run the script to deploy and set up OpenSearch, OpenSearch Dashboards, and Logstash.

   See "Deploying the OpenSearch, OpenSearch Dashboards, and Logstash Deployment Package."

3. Set up the OpenSearch instance in the PeopleSoft application.

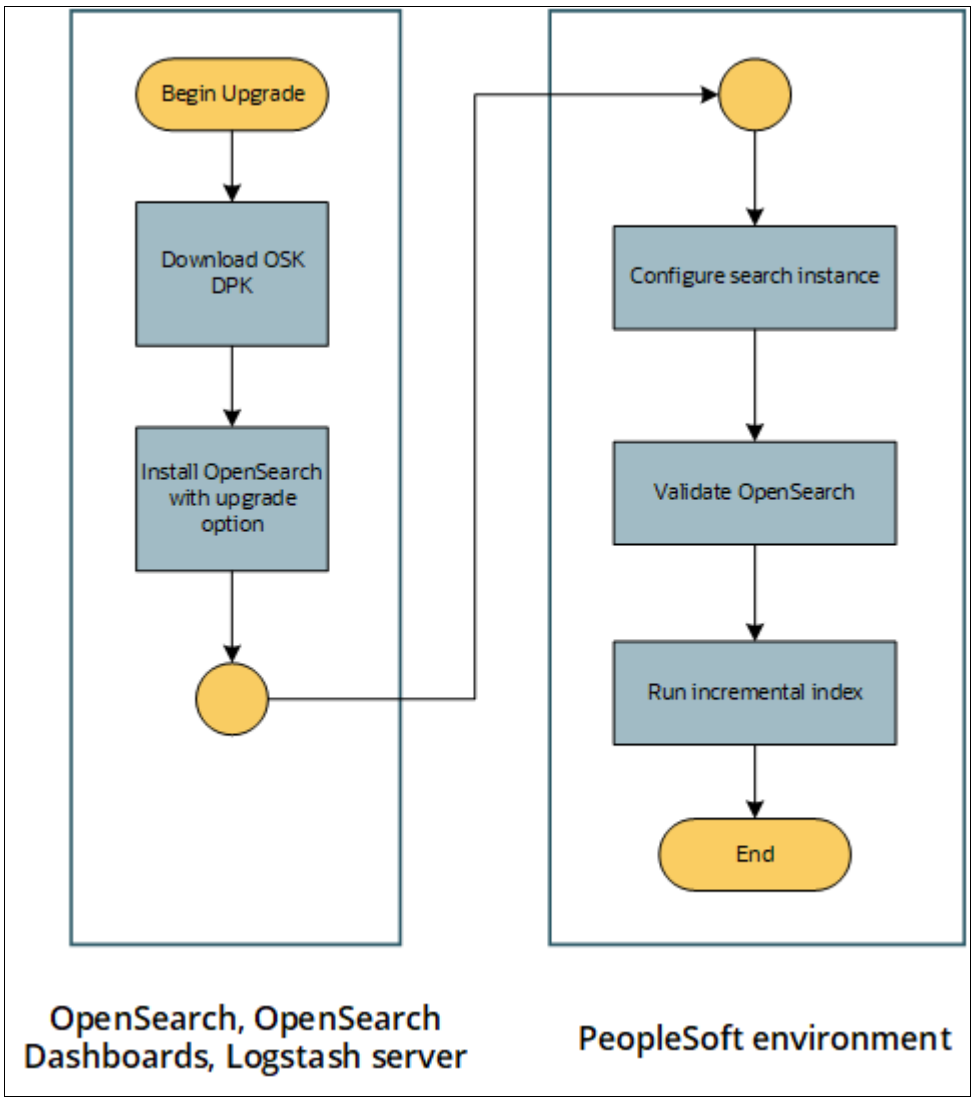
   See "Integrating OpenSearch with the PeopleSoft Environment."

Reviewing the Migration to OpenSearch

You can move from an existing installation of Elasticsearch 7.0 or 7.10 to OpenSearch using the OSK DPK setup script. After carrying out the migration, you perform a series of steps in the PeopleSoft environment to set up OpenSearch in the PeopleSoft Search Framework. After you update the search instance credentials, test and validate OpenSearch, you set OpenSearch as the primary search instance going forward.

The migration process does not include Kibana or Logstash. You must install the current versions of OpenSearch Dashboards and Logstash separately.

Here is an overview of the migration process.



Migrating to OpenSearch

Reviewing the PT-INFRA DPK Usage

The PT-INFRA DPK contains supporting (third-party) software that is required for a PeopleSoft installation. A separate PT-INFRA DPK is delivered as needed to provide security updates for one or more of the components. You can use this separate PT-INFRA DPK with a new OSK DPK installation to take advantage of up-to-date security updates (CPUs) for Java. You also have the option to use the PT-INFRA DPK to obtain the latest Java when upgrading OpenSearch.

Review the installation guide for the PT-INFRA DPK to learn how to obtain the PT-INFRA DPK and examine the manifest to decide whether to use it for OpenSearch.

See *PT-INFRA Deployment Package Installation (PeopleSoft PeopleTools 8.62),* PeopleSoft PeopleTools on the Oracle Help Center, Install and Upgrade, https://docs.oracle.com/en/applications/peoplesoft/peopletools/index.html.

Then see the installation and upgrade sections of the current document to use the PT-INFRA DPK for updated Java.

Reviewing Additional Information for OpenSearch, OpenSearch Dashboards, and Logstash

For more information about OpenSearch, OpenSearch Dashboards, and Logstash, and PeopleSoft products, see these resources:

- Find the PeopleTools product documentation on the Oracle Help Center.

  See PeopleSoft PeopleTools on the Oracle Help Center, https://docs.oracle.com/en/applications/peoplesoft/peopletools/index.html.
- For details on using OpenSearch with the PeopleSoft Search Framework, see *PeopleTools: Search Technology*.
- For details on using OpenSearch Dashboards for creating dashboards to visualize application search indexes, see the information on Application Data and PeopleSoft Insights in the *PeopleTools: Search Technology* product documentation.
- For details on using Logstash with PeopleSoft Help Center, see the *PeopleTools: Performance Monitor* product documentation.
- For details on using OpenSearch, OpenSearch Dashboards, and Logstash with external data integration, see the *PeopleTools: Search Technology* product documentation.
- You can find the most current version of this installation documentation, *PeopleSoft Deployment Packages Installation for Search Components (PeopleSoft PeopleTools 8.62),* on the Oracle Help Center.
- You can find links to the most current OSK DPK, which is available in the My Oracle Support Patches & Updates area, on the PeopleSoft Search and Insights Home Page.

  You can also find other information you need to implement OpenSearch, OpenSearch Dashboards, and Logstash on the home page.

  See PeopleSoft Search and Insights Home Page, (select the tab PeopleTools 8.62), My Oracle Support, Doc ID 2205540.2, https://support.oracle.com/epmos/faces/DocumentDisplay?id=2205540.2.
- For more information about using PeopleSoft DPKs, see *PeopleSoft PeopleTools 8.62 Deployment Packages Installation,* on the Oracle Help Center.

  See PeopleSoft PeopleTools on the Oracle Help Center, https://docs.oracle.com/en/applications/peoplesoft/peopletools/index.html.
- The PeopleSoft 9.2 application demo images available on Oracle Cloud Marketplace include the automatic installation and initialization of OpenSearch, OpenSearch Dashboards, and Logstash.

  See Deploying PeopleSoft Applications on Oracle Cloud Infrastructure Instances, https://docs.oracle.com/en/applications/peoplesoft/peoplesoft-common/tutorial-deploy-demoimage.
- For information on deploying the OpenSearch, OpenSearch Dashboards, and Logstash DPK in containers, see *PeopleSoft PeopleTools 8.62 Deployment Packages Installation,* "Deploying the PeopleSoft DPKs in Containers."

Prerequisites for OpenSearch, OpenSearch Dashboards, and Logstash

This section discusses:

- Reviewing Hardware Prerequisites for OSK DPK
- Reviewing Software Prerequisites for OSK DPK
- Reviewing OpenSearch Recommendations

Reviewing Hardware Prerequisites for OSK DPK

You can install the OpenSearch, OpenSearch Dashboards, and Logstash DPK directly on a system running a Linux or Microsoft Windows operating system. The OSK DPK is certified to run on those Linux and Microsoft Windows operating systems that are certified for OpenSearch for a PeopleSoft environment. The host can be a physical computer or a virtual machine.

- Host computer

  The OSK DPK can be installed on a Linux or Microsoft Windows host (bare metal or virtual).

  Installing OpenSearch Dashboards and Logstash are optional. Oracle recommends that you install the OSK DPK on a server that is separate from those used for PeopleSoft installations. OpenSearch Dashboards and Logstash can be installed on one of the OpenSearch nodes in the OpenSearch cluster for improved performance, depending on the available memory and CPU. For PeopleSoft Health Center and OpenSearch monitoring purposes, completely different OpenSearch Dashboards and OpenSearch instances can be used to isolate the OpenSearch Dashboards used for application analytics.

  If you want to use PeopleSoft Health Center, you must install OpenSearch, OpenSearch Dashboards, and Logstash.

  See *PeopleTools: Search Technology.*

  See *PeopleTools: Performance Monitor,* "Working with PeopleSoft Health Center."

- Host operating system

  The host operating system must be 64-bit Oracle certified platform.

  The integration of OpenSearch, OpenSearch Dashboards, and Logstash with PeopleSoft systems is supported for Microsoft Windows and Linux operating systems. For current support information see the My Oracle Support certifications for PeopleSoft PeopleTools.

  See My Oracle Support, Certifications.

  See PeopleSoft PeopleTools Certifications, My Oracle Support, Doc ID 747587.1, for help searching PeopleSoft Certifications.

- RAM (Memory)

  Oracle recommends a minimum of 32 GB available RAM for running an OpenSearch environment, and preferably 64 GB.

  Note. See the information on heap size in the section Reviewing OpenSearch Recommendations.

- Disk space

  A minimum of 100 GB free disk space is required for the OpenSearch deployed environment.

- CPU

  A minimum of 4 CPUs is recommended.

  Note. Choose a modern processor with multiple cores. If you need to choose between faster CPUs or more cores, choose more cores. The extra concurrency that multiple cores offers will far outweigh a slightly faster clock speed.

Reviewing Software Prerequisites for OSK DPK

Here are the software requirements for using the OSK DPK:

- PeopleSoft environment
  - The OpenSearch, OpenSearch Dashboards, and Logstash integration is supported for PeopleSoft 9.2 applications for the current PeopleSoft PeopleTools release.
  - The OSK DPKs are updated regularly to incorporate the latest Java JDK. OSK DPKs are released concurrently with PeopleTools patches, but are not dependent on the PeopleTools patch release. You can use the OSK DPKs with earlier PeopleTools patches, as long as the PeopleTools patch level is greater than the minimum patch level listed on My Oracle Support Certifications. See the notes for OpenSearch in the certifications for the current PeopleSoft PeopleTools release.
  - Oracle recommends that you use the OSK DPK for the latest PeopleTools patch release to take advantage of the latest fixes and features. See the PeopleSoft Search and Insights Home Page, for up-to-date information on features and fixes that require specific PeopleTools patch releases.

    See PeopleSoft Search and Insights Home Page, My Oracle Support, Doc ID 2205540.2.
- Secure Shell (ssh) client

  You need an SSH client to connect to the host for any PeopleSoft administrative tasks after the environment setup.
- Zip utility

  You need a utility that can extract (unzip) the DPK zip file on your operating system.
- Verify that the host name and fully-qualified domain name (FQDN) of the OSK server and PeopleSoft server can be resolved.

  The PeopleSoft mid-tier server, where the application server, Process Scheduler, and web server are installed, must be able to resolve the host name and FQDN for the OSK server. Similarly, the OSK server must be able to resolve the host name and FQDN of the PeopleSoft server.

Reviewing OpenSearch Recommendations

These specifications apply to the computer where you install OpenSearch.

- OpenSearch prerequisites

  Before installing the OSK DPK, review the prerequisites on the OpenSearch web site. OpenSearch has strict bootstrap validations. If you do not fulfill the prerequisites, the OpenSearch instance may not start.
- Heap size

  To adjust memory usage after installation, you can adjust the memory settings in the jvm.options properties file. Locate the jvm.options file in the config directory under the installation directory, and modify the values for Xms and Xmx.

  `Xms` represents the initial size of the total heap space.

  `Xmx` represents the maximum size of the total heap space.

  The standard recommendations are to set Xms and Xmx to the same value, and to give 50% of the available memory to the OpenSearch heap, while leaving the other 50% free. The memory is used by Lucene for caching in-memory data structures. As a standard practice never set the heap size greater than 30 GB, as setting a higher value would not use JAVA compressed pointers, wastes memory, reduces CPU performance, and makes the garbage collection (GC) struggle with large heaps.

  For example, if the available memory is 20 GB, set both Xms and Xmx to 10 GB:


```
-Xms10g
-Xmx10g
```

After you modify the jvm.options file, start and stop OpenSearch.

See "Performing Additional Tasks," Starting and Stopping an OpenSearch Service.

- Swapping

  Disable swapping. Swapping is expensive in terms of memory required, and thus affects performance.

  You can disable swapping on Linux temporarily by running: `sudo swapoff -a`. To disable it permanently, you will need to edit the /etc/fstab file and comment out any lines that contain the word "swap."

  You can disable swapping on Microsoft Window by disabling the paging file entirely. For example, select System Properties, Advanced. Click the Settings button in the Performance area. Select Advanced, Virtual memory, and change the value for the paging file. Alternatively, you can set the sysctl value vm.swappiness to 1.

  If disabling swapping completely is not an option, you can decrease the "swappiness" value. This value controls how aggressively the operating system (OS) tries to swap memory. This prevents swapping under normal circumstances, but still allows the OS to swap under emergency memory situations. A swappiness of 1 is better than 0, since on some kernel versions a swappiness of 0 can invoke the out-of-memory (OOM) killer. If neither approach is possible, you should enable `bootstrap.memory_lock`. This allows the JVM to lock its memory and prevent it from being swapped by the OS. The recommendation is to set this parameter to true. To enable this parameter, set this value in the opensearch.yml configuration file:

  ```
  bootstrap.memory_lock: true
  ```

  See "Performing Additional Tasks," Modifying the OpenSearch Configuration File (Optional).

- Type of disk drive

  Solid-state drives (SSDs) are by far superior to any spinning media. SSD-backed nodes see boosts in both query and indexing performance. If you choose to use SSDs, the I/O scheduling should be set to Deadline/noop for optimal utilization of SSDs and increased performance.

  If you use spinning media, try to obtain the fastest disks possible (high-performance server disks, 15k RPM drives). Using RAID 0 is an effective way to increase disk speed, for both spinning disks and SSDs. There is no need to use mirroring or parity variants of RAID, since high availability is built into OpenSearch via replicas. Avoid network-attached storage (NAS). NAS is often slower, displays larger latencies with a wider deviation in average latency, and is a single point of failure.

- File Descriptors and MMAP

  Lucene uses a very large number of files. You should increase your file descriptor count to something very large, such as 64,000. OpenSearch uses a mix of new IO File system (NioFS) and memory-mapped file system (MMapFS) for the various files. Ensure that you configure the maximum map count so that there is ample virtual memory available for mmapped files. This can be set by modifying vm.max_map_count in /etc/sysctl.conf; for example, `vm.max_map_count =262144`.

Chapter 2

Deploying the OpenSearch, OpenSearch Dashboards, and Logstash Deployment Package

This chapter discusses:

- Understanding the OpenSearch, OpenSearch Dashboards and Logstash Installation
- Obtaining the OpenSearch, OpenSearch Dashboards and Logstash DPK
- Installing OpenSearch and OpenSearch Dashboards on Linux
- Installing OpenSearch and OpenSearch Dashboards on Linux Securely
- Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows
- Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows Securely
- Preparing for the Logstash 8.11.3 Installation
- Installing Logstash 8.11.3 on Linux
- Installing Logstash 8.11.3 on Microsoft Windows
- Generating JSON and Threshold Parameter Files after Logstash 8.11.3 Installation
- Using Logstash 8.11.3 with an SSL Setup
- Starting Logstash 8.11.3 Manually

Understanding the OpenSearch, OpenSearch Dashboards and Logstash Installation

The OSK DPK zip file includes a setup script, psft-dpk-setup.bat for the Microsoft Windows DPK and psft-dpk-setup.sh for the Linux DPK. Include the following decisions in preparing to install with the OSK DPK setup script:

- Run the script interactively, or run it in silent mode with a prepared configuration file.
- Install OpenSearch and OpenSearch Dashboards together or separately.
- If you choose to install OpenSearch Dashboards at the same time as you install OpenSearch, the OSK DPK setup script prompts you to specify the OpenSearch server that you want to connect to OpenSearch Dashboards.

  You can connect to the server that you are in the process of installing, or enter the credentials for a different OpenSearch server.
- If you choose to install OpenSearch Dashboards at a different time, you must have an existing OpenSearch server to connect to.

For example, you could install OpenSearch first on server1, and then at a later date install OpenSearch Dashboards on server2, and specify the OpenSearch installation on server1.

- Install Logstash after you install OpenSearch and OpenSearch Dashboards.

  Installing Logstash at the same time as OpenSearch and OpenSearch Dashboards may lead to problems with displaying certain OpenSearch Dashboards dashboards, such as those for CPU utilization.
- You can use the same Logstash installation for both PeopleSoft Health Center and external data integration.
- You have the option to use the PT-INFRA DPK to install the latest Java version as part of a new installation.
- Specify OpenSearch clusters and nodes.

  The OpenSearch deployment creates an OpenSearch cluster with one or more OpenSearch nodes. Briefly, an OpenSearch node refers to the server where OpenSearch is installed, and the cluster is comprised of nodes which all have the same cluster name. The DPK setup script asks for the cluster name and the names of existing nodes. If you provide an existing cluster name and list of existing nodes, the existing nodes will join the cluster. For information on adding additional nodes after installation, see the section Adding Additional OpenSearch Nodes.

  See "Performing Additional Tasks," Adding Additional OpenSearch Nodes.
- See the requirements and recommendations for Logstash in the section Preparing for the Logstash Installation.
- When using the OSK DPK setup script:
  - The user who installs the OSK DPK owns all the OpenSearch files, and only that user will be able to start the process.
  - The installation does not require root access (on Linux) or administrator access (on Microsoft Windows).

For information on using OpenSearch Dashboards, Logstash, and on the OpenSearch concepts mentioned in this task, such as clusters and nodes, see the PeopleTools product documentation.

See *PeopleTools: Search Technology.*

See *PeopleTools: Performance Monitor,* "Understanding PeopleSoft Health Center."

Task 2-1: Obtaining the OpenSearch, OpenSearch Dashboards and Logstash DPK

To obtain the OSK DPK from My Oracle Support:

1. Sign in to My Oracle Support.

   See My Oracle Support, https://support.oracle.com.
2. Select the Patches & Updates tab.
3. Select Product or Family (Advanced), and search for PeopleSoft PeopleTools.
4. Select the current release from the Release drop-down list, and then click Search.
5. In the list of results, locate the OpenSearch, OpenSearch Dashboards, and Logstash file for your operating system, OSK-DPK-<*Operating_System*>-<*Release*>_<*DPK_revision*>.zip, where the file name includes the following:
   - <*Operating_System*> is LNX for Oracle Linux, or WIN for Microsoft Windows.
   - <*Release*> is a number with the OpenSearch and PeopleSoft PeopleTools versions, such as 2.11.0.862.
   - <*DPK_revision*> is a number specific to the DPK revision, which is 01 in this example.

For example, OSK-DPK-WIN-2.11.0.862_01.zip or OSK-DPK-LNX-2.11.0.862_01.zip.

6. Download the file.

   Be sure that the directory where you download the zip file has adequate available space. The directory should be a newly created directory with no other files present.

   This documentation refers to the downloaded zip file as *OSK_FILENAME*.zip, and the directory where you download the zip file as *OSK_INSTALL*.

7. Extract the opensearch-manifest from the zip file for software version information.

   Use this information when considering whether to use the PT-INFRA DPK to get updated JDK. The installation, upgrade and migration sections in this documentation include information on using the PT-INFRA DPK.

   Note. Do not destroy the original zip file.

   The opensearch-manifest includes the following items:

```
type= osk
platform=<operating_system>
version=<opensearch_version>
jdk_version=<version>
from_tools_version=<version>
to_tools_version=<version>
```

Task 2-2: Installing OpenSearch and OpenSearch Dashboards on Linux

This section discusses:

- Installing OpenSearch and OpenSearch Dashboards on Linux Interactively
- Using the PT-INFRA DPK when Installing OpenSearch and OpenSearch Dashboards on Linux
- Installing OpenSearch and OpenSearch Dashboards on Linux in Silent Mode
- Verifying the OpenSearch Installation on Linux
- Verifying the OpenSearch Dashboards Installation
- Removing the OpenSearch Installation from Linux
- Removing the OpenSearch Dashboards Installation from Linux
- Completing the OSK DPK Post-Installation Steps on Linux

Task 2-2-1: Installing OpenSearch and OpenSearch Dashboards on Linux Interactively

Use this procedure on physical or virtual Linux hosts. Ensure that there is enough space on the Linux host for the OpenSearch and OpenSearch Dashboards installations and your estimated indexing requirements.:

Make a note of the values you supply for users, ports, passwords, and so on. When you configure the OpenSearch instance for PeopleSoft, the values must match those specified here.

1. Download the required OSK DPK for Linux, referred to as *OSK_FILENAME*.zip, and save it in a newly created directory accessible to the Linux host, referred to as *OSK_INSTALL*.
2. In a terminal windows, change directory to *OSK_INSTALL*.

```
cd OSK_INSTALL
```

3. Extract the entire contents of *OSK_FILENAME*.zip in the same directory, *OSK_INSTALL*.

```
unzip OSK_FILENAME.zip
```

Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

The extraction creates the following directories and files in *OSK_INSTALL*:

- setup directory — includes the setup scripts and a silent installation sample
- archives directory — includes archives for deployment
- readme.txt file
- opensearch–manifest — lists the versions of OpenSearch and JDK

4. Run the DPK setup script from *OSK_INSTALL*/setup as follows:

```
./psft-dpk-setup.sh --install --install_base_dir BASE_DIR
```

- For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*. For example:

```
./psft-dpk-setup.sh --install --install_base_dir /home/opensearch
```

- Use double-dashes when specifying the script options; for example, `--install`.

5. If you are using the PT-INFRA DPK with the OSK DPK, verify that you see the progress message:

```
Extracting PTINFRA DPK
[OK]
```

6. Answer *y* (yes) to install OpenSearch, or *n* (no) to exit.

```
You've chosen to do a fresh installation of OpenSearch, Logstash
and OpenSearch-dashboards.
Do you want to install OpenSearch (y/n): y
```

7. Enter a name for the OpenSearch administrative user, or press ENTER to accept the default name, osadmin.

   The administrative user is used to authenticate requests on OpenSearch.

Note. The administrative user is not the same as the user who installs the OSK DPK and owns the files.

```
Enter the admin username for OpenSearch [ osadmin ] :
```

8. Enter the password two times for the OpenSearch administrative user, at the following prompt.

Note. The script does not display the password or any masking characters as you type.

```
Enter the password for osadmin :
Re-enter the password for osadmin :
```

9. Enter a name for the OpenSearch proxy user, or accept the default name, people.

   Note that this is not the same user as the PeopleSoft connect ID, which also has people as the default value.

```
Enter the proxy username for OpenSearch [ people ] :
```

10. Enter the password for the OpenSearch proxy user.

```
Enter the password for people :
Re-enter the password for people :
```

11. Enter the name for the OpenSearch cluster, or accept the default name, OSCLUSTER.

```
Enter the OS cluster name [ OSCLUSTER ] :
```

12. Enter the OpenSearch HTTP port., or accept the default, 9200.

    This is the port on which OpenSearch listens for requests.

```
Enter the HTTP port for OpenSearch [ 9200 ] :
```

13. Enter the host name for any nodes that are already members of a cluster.

```
Enter the list of discovery hosts [ ["127.0.0.1", "[::1]"] ] :
```

    Be sure to use the following syntax:

    - Enclose one or more host names in square brackets.
    - Enclose the host name or IP address in *double quotes* (" ").
    - Use commas to list two or more hosts.
    - Use this as an example for one host: `["host1.example.com"]`
    - Use this as an example for more than one host: `["host1.example.com", "127.0.0.1"]`

14. Enter the full path location for the OpenSearch data.

    Oracle recommends that you do not use the default location, *BASE_DIR*/pt/opensearch-2.11.0/data, with PeopleSoft environments. Instead, specify the full path for a data directory that is outside of *BASE_DIR*/pt/opensearch-2.11.0.

```
Enter the path where you want the Opensearch data to reside
[ /home/opensearch/pt/opensearch-2.11.0/data ] :
```

15. Enter the location for the OpenSearch logs.

    The default location is *BASE_DIR*/pt/opensearch-2.11.0/logs.

```
Enter the path where you want the Opensearch Logs to be written to
[ /home/opensearch/pt/opensearch-2.11.0/logs ] :
```

16. Enter the heap size in GB.

    Enter a number as shown in this example:

    See Prerequisites.

```
Enter the Java Heap size for Opensearch in GB [ 2 ] : 7
```

17. Review the status messages as the script sets up the PeopleSoft environment.

```
Extracting the new OpenSearch Binary.......[OK]
Extracting the new JDK.....................[OK]
Setting users/roles in OpenSearch..........[OK]
Configuring OpenSearch.....................[OK]
Starting OpenSearch server.................[OK]
SUCCESS: Specified value was saved.........[OK]
Opensearch Installation Completed.
```

18. Answer *n* (no) to skip the Logstash installation.

```
Do you want to install Logstash : (y/n): n
```

19. Answer *y* (yes) to install OpenSearch Dashboards, or *n* (no) to exit.

    ```
    Do you want to install OpenSearch-dashboards: (y/n): y
    ```

    The script displays the server name and port for the current server.

    ```
    OpenSearch Host: server1.example.com
    OpenSearch Port: 9200
    ```

20. Answer *y* (yes) to set up OpenSearch Dashboards to connect to the OpenSearch server you are currently installing, or *n* (no) to enter information about a different OpenSearch server.

    ```
    Do you want to use the same OpenSearch(as above)
    for Opensearch-dashboards: (y/n):
    ```

21. Enter the OpenSearch Dashboards port, or accept the default, 5601.

    ```
    Enter the server port for OpenSearch-dashboards [ 5601 ] :
    ```

22. If you answered no to the prompt asking whether to use the current OpenSearch server, enter the host name and port for the OpenSearch server to connect to.

    ```
    Enter the OpenSearch host[http(s)://hostname]:

    Enter the OpenSearch port [ 9200 ] :
    ```

23. Wait until the installation is complete.

    ```
    Checking whether OpenSearch service is running.......
    Extracting the new OpenSearch Dashboards Binary........[OK]
    Configuring OpenSearch Dashboards......
    OpenSearch Dashboards Keystore updated.................[OK]
    OpenSearch Dashboards installation is completed.
    ```

24. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

25. To start and use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

A successful deployment includes the following:

- The OpenSearch home directory is found in *BASE_DIR*/pt/opensearch-2.11.0.
- The OpenSearch Dashboards home directory is found in *BASE_DIR*/pt/opensearch-dashboards-2.11.0.
- Java is installed to *BASE_DIR*/pt/os_jdk21.0.*yy*, where yy is the JDK version.
- The JAVA_HOME environment variable is set to *BASE_DIR*/pt/os_jdk21.0.*yy* for the current terminal session.

  See Performing Post-Installation Steps on Linux.

Task 2-2-2: Using the PT-INFRA DPK when Installing OpenSearch and OpenSearch Dashboards on Linux

Use the PT-INFRA DPK along with the installation to apply up-to-date JDK.

Use this procedure on physical or virtual Linux hosts. Ensure that there is enough space on the host for the OpenSearch installation and your estimated indexing requirements.

Make a note of the values you supply for ports, passwords, and so on. When you configure the OpenSearch instance for PeopleSoft, the values must match those specified here.

1. Download the required OSK DPK for Linux, *OSK_FILENAME*.zip, and saved it in a newly created directory accessible to the Linux host, referred to as *OSK_INSTALL*

   Extract the opensearch-manifest from the OSK DPK.

   See Obtaining the OpenSearch, OpenSearch Dashboards, and Logstash DPK.

2. Download the latest PT-INFRA DPK for Linux, and save it in the same *OSK_INSTALL*.

   For the OpenSearch installation you need only the first PT-INFRA DPK, PT-INFRA-DPK-LNX-8.62-<*DATE*>_1of2.zip.

   Extract the ptinfra-manifest and compare it with the opensearch-manifest to determine whether to continue with this procedure. Use the information in the section Using the PT-INFRA DPKs with the OpenSearch, OpenSearch Dashboards, and Logstash DPK, in the PT-INFRA DPK installation guide.

   See *PT-INFRA Deployment Package Installation (PeopleSoft PeopleTools 8.62)*, PeopleSoft PeopleTools on the Oracle Help Center, Install and Upgrade, https://docs.oracle.com/en/applications/peoplesoft/peopletools/index.html.

3. Open a terminal window.
4. Go to *OSK_INSTALL*.
5. Extract the entire contents of *OSK_FILENAME*.zip into the same directory, *OSK_INSTALL*.

   It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation. The extracted directories and files are:

   - setup directory **—** includes the setup script and a silent installation sample
   - archives directory **—** includes archives for deployment
   - readme.txt file
   - opensearch–manifest **—** lists the versions of OpenSearch and JDK

6. Verify that *OSK_INSTALL* contains the extracted files and PT-INFRA-DPK-LNX-8.62-<*DATE*>_1of2.zip file.

   ```
   setup/
   archives/
   readme.txt
   opensearch-manifest
   PT-INFRA-DPK-LNX-8.62-<DATE>_1of2.zip
   ```

   Note. After you have extracted the *OSK_FILENAME*.zip you can delete it, move it, or leave it in *OSK_INSTALL*. Ensure that the intact PT-INFRA-DPK-LNX-8.62-<*DATE*>_1of2.zip is present as shown here.

   ---

7. Change directory to *OSK_INSTALL*/setup.
8. Run the DPK setup script with these options:

   ```
   ./psft-dpk-setup.sh --install --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*; for example:


```
./psft-dpk-setup.sh --install --install_base_dir /home/opensearch
```

- Use double-dashes when specifying the script options; for example, `--install`.

9. Answer *y* (yes) to install OpenSearch, or *n* (no) to exit.

```
You've chosen to do a fresh installation of Opensearch, Logstash
and Opensearch-dashboards.
Do you want to install Opensearch? (y/n): y
```

10. Verify that you see the progress message for the PT-INFRA DPK:

```
Extracting PTINFRA DPK
[OK]
```

11. Answer the remainder of the prompts as mentioned in the previous section, Installing OpenSearch and OpenSearch Dashboards on Linux Interactively.
12. Wait until the installation is complete.

```
Checking whether OpenSearch service is running.......
Extracting the new OpenSearch Dashboards Binary........[OK]
Configuring OpenSearch Dashboards......
OpenSearch Dashboards Keystore updated.................[OK]
OpenSearch Dashboards installation is completed.
```

13. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

14. To start and use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

A successful deployment includes the following:

- The OpenSearch home directory is found in *BASE_DIR/*pt/opensearch–2.11.0.
- The OpenSearch data and logs directories are installed to the locations you specified.
- The OpenSearch Dashboards home directory is found in *BASE_DIR/*pt/opensearch-dashboards-2.11.0
- Java is installed to *BASE_DIR/*pt/os_jdk21.0.*yy*, where yy is the JDK version.

  The JDK is the version supplied by the PT-INFRA DPK.
- The JAVA_HOME environment variable is set to *BASE_DIR/*pt/os_jdk21.0.*yy*.

  This environment variable is set at the system level.

Task 2-2-3: Installing OpenSearch and OpenSearch Dashboards on Linux in Silent Mode

Encrypting the OpenSearch Passwords on Linux

You can use the setup script to install OpenSearch and OpenSearch Dashboards in silent mode by preparing a text file that includes installation details.

The passwords that you include in the silent mode text file must be encrypted using the PSCipher utility. You must use the pscipher.jar and psvault files that are part of the OSK DPK. The psvault that is delivered with PeopleSoft PeopleTools will not work for OpenSearch.

1. Open a terminal window, and change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

2. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories in *OSK_INSTALL*:

   - setup directory — includes the setup script and a sample configuration file.
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch-manifest — lists the version information for OpenSearch and JDK included in the DPK

3. Change directory to *OSK_INSTALL*/archives, and extract pt-jdk21.0.*yy*.tgz into a temporary directory, or a directory with a different name.

   It may be necessary to extract the file twice. The sample uses pt-jdk-temp as the directory name

4. Change directory to *OSK_INSTALL*/archives and extract pt-opensearch-2.11.0.tgz into a temporary directory, or a directory with a different name.

   It may be necessary to extract the file twice. The sample uses pt-opensearch-temp as the directory name.

   - bin
   - config
   - lib
   - logs
   - modules
   - plugins

5. Copy psvault from the directory *OSK_INSTALL*/pt-opensearch-temp/plugins/orcl-security-plugin/config/properties to *OSK_INSTALL*/pt-opensearch-temp/plugins/orcl-security-plugin.

6. Run the following command, specifying the user names and passwords for the OpenSearch administrator and proxy user.

   ```
   <path_to_java>/java -Dpscipher.path=<path_to_which_files_are_extracted>⇒
    -cp <path_to_which_files_are_extracted>/pscipher.jar⇒
    com.peoplesoft.pt.opensearch.pscipher.PSESEncrypt <administrative_user>⇒
    <password>  <proxy_user>  <password>  <output_path>/<outputfile>
   ```

   This example uses the default administrative user, osadmin, and proxy user, people:

   ```
   /home/OSK_INSTALL/archives/pt-jdk-temp/bin/java -Dpscipher.path=/home⇒
   /OSK_INSTALL/archives/pt-opensearch-temp/plugins/orcl-security-plugin -⇒
   cp /home/OSK_INSTALL/archives/pt-opensearch-temp/plugins/orcl-security-⇒
   plugin/pscipher.jar com.peoplesoft.pt.opensearch.pscipher.PSESEncrypt⇒
    osadmin password1 people password2 /home/OSK_INSTALL/os_output.txt
   ```

7. Copy the encrypted text from the output file, os_output.txt in this example, without adding line feeds or spaces. Paste the encrypted passwords into the silentinstall.config file for the osadmin.password and

people.password parameters.

Creating a Configuration File and Running the Silent Mode Installation on Linux

To install in silent mode:

1. Create a configuration file.

   The *OSK_INSTALL/*setup directory includes a sample configuration file, silentinstall.config. If you want to use this file, it is a good idea to make a backup copy of the original file before you continue.

   Edit the configuration file with the required values. See the section Installing OpenSearch and OpenSearch Dashboards on Linux Interactively for guidance on specifying the values.

2. Enter *y* (yes) if you want to install OpenSearch, or *n* (no) if you want to skip the OpenSearch installation.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory. If you enter no, you can leave them blank. Enter encrypted text for the passwords as described in the previous section.

```
#Silent Install Configuration Values for installing opensearch
and opensearch-dashboards

#Install opensearch Y/N is mandatory field
Install opensearch?[Y/N]=

### If the upgrade from elasticsearch to opensearch is yes then
the below values have to be filled #####

#Opensearch cluster name (mandatory)
cluster.name= OSCLUSTER

#Opensearch host name (mandatory)
network.host=

#Opensearch port number (optional-default 9200)
#If its upgrade from ES to Opensearch and if you want to use the
same port number as ES. Please make sure ES is down else please
enter a different port number for OS.

http.port=

#Opensearch data directory (optional-default OS_HOME/data)
#If its upgrade from ES to Opensearch and if you want to use the
same data path as ES. Please make sure ES is down else please
enter a different data path for OS.
path.data=

#Opensearch log directory (optional-default OS_HOME/logs)
path.logs=

#Opensearch discovery hosts (optional)
discovery.hosts=

#Opensearch heap size (optional-default 2)
OS_HEAP_SIZE=
```

```
#Opensearch admin username (optional - default osadmin)
admin.user=

#Opnesearch encrypted password for osadmin (mandatory)
admin.password=encrypted password

#Opensearch proxy username (optional - default people)
people.user= proxy

#Opensearch encrypted password for people (mandatory)
people.password=encrypted password
```

3. Specify *N* (no) to skip the Logstash installation.

   When you enter N (no) for this field, you can leave the other parameters in the Logstash section blank.

```
Install Logstash?[Y/N]=N

#Install Logstash Y/N is mandatory field
Install Logstash?[Y/N]=

#Logstash port number (optional-default 9800)
LS_port=

#Logstash host name (mandatory)
LS_host =

#The Opensearch username (mandatory)
OS_user =

#The encrypted Opensearch password [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh] (mandatory)
OS_pwd =

#Configure Logstash Y/N (for PeopleSoft Health Centre) is mandatory⇒
 field
Configure Logstash(for PHC)?[Y/N]=

#IB REST service URL (mandatory)
IB_REST_URL=

#Enter the encrypted IB user [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh] (mandatory)
IB_USER=

#Enter the encrypted IB password [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh](mandatory)
IB_PWD=

#location where JSON files need to be created(optional-default LS_HOME⇒
/pt/jmxmonitor)
JSON_LOC=
```

```
#The polling frequency for JMX metrics (mandatory)
polling_freq =

#The number of threads (mandatory)
no_of_threads =

#The Opensearch host name (mandatory)
OS_host =

#The Opensearch port (mandatory)
OS_port =

#Do you want to create JSON files(Y/N) (mandatory)
JSON_files?[Y/N] =

#To fetch the alert configuration, alerts must be configured in
Peopletools>Health Centre>Alert Configuration. Do you want to
fetch the alert configuration parameters?(Y/N) (mandatory)
alert_conf?[Y/N] =
```

4. Specify *y* if you want to install OpenSearch Dashboards, or *n* if you do not.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory in this section. If you enter no, you can leave them blank.

   ```
   #Install Opensearch-dashboards Y/N is mandatory field
   Install opensearch-dashboards?[Y/N]=

   #Opensearch-dashboards host name (mandatory)
   opensearch-dashboards.host=

   #Opensearch-dashboards port number (optional-default 5601)
   opensearch-dashboards.port=
   ```

5. If you want to install OpenSearch Dashboards and connect to the currently-installed OpenSearch server, specify *y* (yes) for the following.

   If you want to install OpenSearch Dashboards and connect to a previously-installed OpenSearch server, specify *n* (no).

   ```
   #Set the value to Y if Install Opensearch(Y) and Install
   Opensearch-dashboards(Y)
   Use same OS?[Y/N]= n
   ```

6. Specify the host name, port, OpenSearch administrative user, and encrypted password for the OpenSearch server.

   ```
   #Provide the Opensearch instance details mapped to Opensearch-dashboards
   OS.host[http(s)://hostname]=
   OS.port=
   OS.user=
   OS.password=
   ```

7. If the OpenSearch is SSL enabled, enter the path to the certificate.

   ```
   #Provide SSL certificate path if Opensearch is SSL enabled.
   OS.cacert.path=
   ```

8. Enter *n* to indicate you do not want to upgrade.

   You must enter a value for this field. The upgrade instructions are covered in the chapter "Migrating from Elasticsearch to OpenSearch." If you enter *n*, you do not have to enter values for the remaining fields in this section.

```
##############Silent Upgrade Configuration Values for upgrading⇒
 Opensearch
from Elasticsearch ################

#Upgrade elasticsearch to Opensearch Y/N is mandatory field
Upgrade elasticsearch to opensearch?[Y/N]= n
```

9. In a terminal window, run the DPK setup script from *OSK_INSTALL*/setup as follows:

   Note. The command includes line feeds for readability. Do not include the line feeds when you run.

```
./psft-dpk-setup.sh --install_silent
--install_base_dir BASE_DIR
--config full_path_configuration_file
```

   - Use double-dashes when specifying the script options; for example, `--install_silent`.
   - For the `install_base_dir` option, specify the full path where you want OpenSearch and OpenSearch Dashboards installed. The installation directory is referred to in this documentation as *BASE_DIR*.
   - For the `config` option, specify the full path to the prepared configuration file. For example:

     Note. The command includes line feeds for readability. Do not include the line feeds when you run.

```
./psft-dpk-setup.sh --install_silent
--install_base_dir /home/opensearch
--config /home/temp_install/silentinstall.config
```

10. When the script completes, you see messages such as:

```
OpenSearch Installation Completed.
....
OpenSearch-dashboards installation is completed.
```

11. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

12. To use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

Task 2-2-4: Verifying the OpenSearch Installation on Linux

To verify the OpenSearch installation, in a terminal window, ensure that the following command gives an output:

```
ps –ef | grep opensearch
```

After verifying the process, use one of the following methods to verify the OpenSearch installation.

- Run a REST call.

  This example uses the CURL utility for the REST call:

```
curl --user <username>:<password> -XGET http://<host>:<port>
```

For details about the correct usage for the CURL utility, see your operating system documentation.

- Open a browser and enter the URL: http://<host>:<port>/

  Supply the username and password in the dialog box that appears.

For both the REST command and the browser URL, use these definitions:

- username — the OpenSearch user administrator name that you entered during the DPK setup script installation
- password — the password you entered during the DPK setup script installation
- host — the OpenSearch host name
- port — OpenSearch HTTP (REST) port that you entered during the DPK setup script installation

When using either method, you should see a message similar to the following:

```
{
  name" : "server.example.com",
  "cluster_name" : "OSCLUSTER",
  "cluster_uuid" : "IvQKVvLjQiKUwBAMk6Hy7w",
  "version" : {
    "distribution" : "opensearch",
    "number" : "2.11.0",
    "build_type" : "zip",
    "build_hash" : "aa8cdda4ea0da22834936ae7f90f8586b9999c43",
    "build_date" : "2024-12-07T13:36:46.831959Z",
    "build_snapshot" : false,
    "lucene_version" : "9.7.0",
    "minimum_wire_compatibility_version" : "7.10.0",
    "minimum_index_compatibility_version" : "7.0.0"

}
```

Task 2-2-5: Verifying the OpenSearch Dashboards Installation

You must access OpenSearch Dashboards from the PeopleSoft installation. To verify that OpenSearch Dashboards is running after you complete the OSK DPK installation, check for the OpenSearch Dashboards process by entering this command:

```
ps  -ef | grep node
```

Task 2-2-6: Removing the OpenSearch Installation from Linux

Use these steps to remove the OpenSearch installation from a Linux host:

Note. You must use the manual steps. There is no cleanup option for the psft-dpk-setup.sh script.

1. Use the following command to determine the OpenSearch process ID (pid):

   ```
   ps -ef |grep opensearch
   ```

2. Stop the process, substituting the OpenSearch process ID for <pid>:

```
stop <pid>
```

3. Remove the OpenSearch installation directory.

Task 2-2-7: Removing the OpenSearch Dashboards Installation from Linux

Use these steps to remove the OpenSearch Dashboards installation from a Linux host:

Note. You must use the manual steps. There is no cleanup option for the psft-dpk-setup.sh script.

1. Use the following command to determine the process ID (pid) for the running OpenSearch Dashboards service:

   ```
   ps -ef |grep node
   ```

2. Stop the process, substituting the OpenSearch Dashboards process ID for <pid>:

   ```
   stop <pid>
   ```

3. Remove the OpenSearch Dashboards installation directory.

Task 2-2-8: Completing the OSK DPK Post-Installation Steps on Linux

After you complete the OpenSearch installation, if you want to perform operations described later in this chapter, such as starting and stopping OpenSearch, or running the opensearchuser script, perform the manual steps described in this section.

- Ensure that the heap size is set to a value equal to or less than 50% of available memory, and not exceeding 30G.

  See "Preparing to Deploy," Reviewing OpenSearch Recommendations.

- In a terminal for the current session, set the JAVA_HOME environment variable to the location installed by the DPK setup script; for example:

  ```
  export JAVA_HOME= BASE_DIR/pt/os_jdk21.0.yy
  ```

Task 2-3: Installing OpenSearch and OpenSearch Dashboards on Linux Securely

This section discusses:

- Preparing to Install OpenSearch and OpenSearch Dashboards with SSL on Linux
- Installing OpenSearch and OpenSearch Dashboards with SSL on Linux Interactively
- Installing OpenSearch and OpenSearch Dashboards with SSL on Linux in Silent Mode

Task 2-3-1: Preparing to Install OpenSearch and OpenSearch Dashboards with SSL on Linux

You can install OpenSearch and OpenSearch Dashboards to work with SSL. Before running the script to install OpenSearch and OpenSearch Dashboards, you must set up the truststore and import certificates. The OpenSearch portion of the installation script includes prompts for the keystore, keystore password, truststore, and truststore password. The OpenSearch Dashboards portion of the installation script includes prompts for the private key and PEM files.

The OSK DPK includes the keytool utility, which you can use to set up the truststore and keystore.

1. Open a terminal window, and change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

2. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories in *OSK_INSTALL*:

   - setup directory — includes the setup script and a sample configuration file.
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch-manifest — lists the version information for OpenSearch and JDK included in the DPK

3. Change directory to *OSK_INSTALL*/archives, and extract pt-jdk21.0.*yy*.tgz into a temporary directory, or a directory with a different name, such as pt-jdk-temp.

   It may be necessary to extract the file twice.

4. Change directory to pt-jdk-temp/bin.

   ```
   cd /home/pt-jdk-temp/bin
   ```

5. Follow the instructions in the product documentation to set up a truststore and import the certificate.

   See *PeopleTools: Search Technology*, "Configuring SSL Between PeopleSoft and Search Engine."

   The instructions set up the keystore and private file under the OpenSearch home directory, OS_HOME. Here you should use a temporary directory to save the file. Make a note of the full path where you create the file, because you will use it when running the installation script.

   ```
   keytool -importcert -keystore temp/mytruststore.jks -file /home/certs⇒
   /cacert.cer -alias my_ca
   ```

Task 2-3-2: Installing OpenSearch and OpenSearch Dashboards with SSL on Linux Interactively

Use this procedure on physical or virtual Linux hosts. Ensure that there is enough space on the Linux host for the OpenSearch and OpenSearch Dashboards installations and your estimated indexing requirements.:

Make a note of the values you supply for users, ports, passwords, and so on. When you configure the OpenSearch instance for PeopleSoft, the values must match those specified here.

1. Download the required OSK DPK for Linux, referred to as *OSK_FILENAME*.zip, and save it in a newly created directory accessible to the Linux host, referred to as *OSK_INSTALL*.
2. In a terminal window, change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

3. Extract the entire contents of *OSK_FILENAME*.zip in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory — includes the setup scripts and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch–manifest — lists the versions of OpenSearch and JDK
4. Run the DPK setup script from *OSK_INSTALL*/setup as follows:

   ```
   ./psft-dpk-setup.sh --install_secure --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*. For example:

     ```
     ./psft-dpk-setup.sh --install_secure --install_base_dir /home⇒
     /opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--install`.
5. If you are using the PT-INFRA DPK with the OSK DPK, verify that you see the progress message:

   ```
   Extracting PTINFRA DPK
   [OK]
   ```

6. Answer *y* (yes) to install OpenSearch, or *n* (no) to exit.

   ```
   You've chosen to do a fresh installation of OpenSearch, Logstash
   and OpenSearch-dashboards.
   Do you want to install OpenSearch (y/n): y
   ```

7. Enter a name for the OpenSearch administrative user, or press ENTER to accept the default name, osadmin.

   The administrative user is used to authenticate requests on OpenSearch.

   Note. The administrative user is not the same as the user who installs the OSK DPK and owns the files.

   ```
   Enter the admin username for OpenSearch [ osadmin ] :
   ```

8. Enter the password two times for the OpenSearch administrative user, at the following prompt.

   Note. The script does not display the password or any masking characters as you type.

```
Enter the password for osadmin :
Re-enter the password for osadmin :
```

9. Enter a name for the OpenSearch proxy user, or accept the default name, people.

   Note that this is not the same user as the PeopleSoft connect ID, which also has people as the default value.

   ```
   Enter the proxy username for OpenSearch [ people ] :
   ```

10. Enter the password two times for the OpenSearch proxy user.

    ```
    Enter the password for people :
    Re-enter the password for people :
    ```

11. Enter the name for the OpenSearch cluster, or accept the default name, OSCLUSTER.

    ```
    Enter the OS cluster name [ OSCLUSTER ] :
    ```

12. Enter the OpenSearch HTTP port., or accept the default, 9200.

    This is the port on which OpenSearch listens for requests.

    ```
    Enter the HTTP port for OpenSearch [ 9200 ] :
    ```

13. Enter the host name for any nodes that are already members of a cluster.

    ```
    Enter the list of discovery hosts [ ["127.0.0.1", "[::1]"] ] :
    ```

    Be sure to use the following syntax:

    - Enclose one or more host names in square brackets.
    - Enclose the host name or IP address in *double quotes* (" ").
    - Use commas to list two or more hosts.
    - Use this as an example for one host: `["host1.example.com"]`
    - Use this as an example for more than one host: `["host1.example.com", "127.0.0.1"]`

14. Enter the full path location for the OpenSearch data.

    Oracle recommends that you do not use the default location, *BASE_DIR*/pt/opensearch-2.11.0/data, with PeopleSoft environments. Instead, specify the full path for a data directory that is outside of *BASE_DIR*/pt/opensearch-2.11.0.

    ```
    Enter the path where you want the Opensearch data to reside
    [ /home/opensearch/pt/opensearch-2.11.0/data ] :
    ```

15. Enter the location for the OpenSearch logs.

    The default location is *BASE_DIR*/pt/opensearch-2.11.0/logs.

    ```
    Enter the path where you want the Opensearch Logs to be written to
    [ /home/opensearch/pt/opensearch-2.11.0/logs ] :
    ```

16. Enter the heap size in GB.

    Enter a number as shown in this example:

    See Prerequisites.

    ```
    Enter the Java Heap size for Opensearch in GB [ 2 ] : 7
    ```

17. Enter the full path, including the file name, for the keystore file.

    ```
    Enter the path of keystore file :
    ```

18. Enter the password two times for the keystore password.

```
Enter the password for keystore :
Re-enter the password for keystore :
```

19. Enter the full path, including the file name, for the truststore.

```
Enter the path of truststore file :
```

20. Enter the password two times for the truststore password.

```
Enter the password for truststore :
Re-enter the password for truststore :
```

21. Review the status messages as the script sets up the PeopleSoft environment.

```
Extracting the new OpenSearch Binary.......[OK]
Extracting the new JDK.....................[OK]
Setting users/roles in OpenSearch..........[OK]
Configuring OpenSearch.....................[OK]
Starting OpenSearch server.................[OK]
Opensearch Installation Completed.
```

22. Answer *y* (yes) to install OpenSearch Dashboards, or *n* (no) to exit.

```
Do you want to install OpenSearch-dashboards: (y/n): y
```

The script displays the server name and port for the current server.

```
OpenSearch Host: server1.example.com
OpenSearch Port: 9200
```

23. Answer *y* (yes) to set up OpenSearch Dashboards to connect to the OpenSearch server you are currently installing, or *n* (no) to enter information about a different OpenSearch server.

```
Do you want to use the same OpenSearch(as above)
for Opensearch-dashboards: (y/n):
```

24. Enter the OpenSearch Dashboards port, or accept the default, 5601.

```
Enter the server port for OpenSearch-dashboards [ 5601 ] :
```

25. Enter the full path, including the file name, for the key file for OpenSearch Dashboards.

```
Enter the path containing the key file for OSD :
```

26. Enter the full path, including the file name, for the signed certificate file for OpenSearch Dashboards.

```
Enter the path containing the signed certificate file for OSD:
```

27. Enter the full path, including the file name, for the PEM file for OpenSearch Dashboards.

```
Enter the path for the PEM file for OSD :
```

28. If you answered no to the prompt asking whether to use the current OpenSearch server, enter the host name and port for the OpenSearch server to connect to.

Note. Enter a host name with https for secure installation.

```
Enter the OpenSearch host[https://hostname]:

Enter the OpenSearch port [ 9200 ] :
```

29. Wait until the installation is complete.

```
Checking whether OpenSearch service is running.......
Extracting the new OpenSearch Dashboards Binary........[OK]
Configuring OpenSearch Dashboards......
Configuring Region Maps for US states
OpenSearch Dashboards Keystore updated.................[OK]
OpenSearch Dashboards installation is completed.
```

30. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

31. To start and use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

A successful deployment includes the following:

- The OpenSearch home directory is found in *BASE_DIR*/pt/opensearch-2.11.0.
- The OpenSearch Dashboards home directory is found in *BASE_DIR*/pt/opensearch-dashboards-2.11.0.
- Java is installed to *BASE_DIR*/pt/os_jdk21.0.*yy*, where yy is the JDK version.
- The JAVA_HOME environment variable is set to *BASE_DIR*/pt/os_jdk21.0.*yy* for the current terminal session.

  See Performing Post-Installation Steps on Linux.

Task 2-3-3: Installing OpenSearch and OpenSearch Dashboards with SSL on Linux in Silent Mode

Encrypting the OpenSearch Passwords on Linux

You can use the setup script to install OpenSearch and OpenSearch Dashboards in silent mode by preparing a text file that includes installation details.

The passwords that you include in the silent mode text file must be encrypted using the PSCipher utility. You must use the pscipher.jar and psvault files that are part of the OSK DPK. The psvault that is delivered with PeopleSoft PeopleTools will not work for OpenSearch.

1. Open a terminal window, and change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

2. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories in *OSK_INSTALL*:

   - setup directory **—** includes the setup script and a sample configuration file.
   - archives directory **—** includes archives for deployment
   - readme.txt file

- opensearch-manifest — lists the version information for OpenSearch and JDK included in the DPK

3. Change directory to *OSK_INSTALL/*archives, and extract pt-jdk21.0.*yy*.tgz into a temporary directory, or a directory with a different name; for example, pt-jdk-temp.

   It may be necessary to extract the file twice.

4. Change directory to *OSK_INSTALL/*archives and extract pt-opensearch-2.11.0.tgz into a temporary directory, or a directory with a different name; for example, pt-opensearch-temp.

   It may be necessary to extract the file twice.

   - bin
   - config
   - lib
   - logs
   - modules
   - plugins

5. Copy psvault from the directory *OSK_INSTALL/*pt-opensearch-temp/plugins/orcl-security-plugin/config/properties to *OSK_INSTALL/*pt-opensearch-temp/plugins/orcl-security-plugin.
6. Run the following command, specifying the user names and passwords for the OpenSearch administrator and proxy user.

   ```
   <path_to_java>/java -Dpscipher.path=<path_to_which_files_are_extracted>⇒
    -cp <path_to_which_files_are_extracted>/pscipher.jar⇒
    com.peoplesoft.pt.opensearch.pscipher.PSESEncrypt <administrative_user>⇒
    <password>  <proxy_user>  <password>  <output_path>/<outputfile>
   ```

   This example uses the default administrative user, osadmin, and proxy user, people:

   ```
   /home/OSK_INSTALL/archives/pt-jdk-temp/bin/java -Dpscipher.path=/home⇒
   /OSK_INSTALL/archives/pt-opensearch-temp/plugins/orcl-security-plugin -⇒
   cp /home/OSK_INSTALL/archives/pt-opensearch-temp/plugins/orcl-security-⇒
   plugin/pscipher.jar com.peoplesoft.pt.opensearch.pscipher.PSESEncrypt⇒
    osadmin password1 people password2 /home/OSK_INSTALL/os_output.txt
   ```

7. Copy the encrypted text from the output file, os_output.txt in this example, without adding line feeds or spaces. Paste the encrypted passwords into the silentinstall.config file for the osadmin.password and people.password parameters.

Encrypting the Truststore and Keystore Passwords on Linux

After extracting the OSK DPK archives, you can use the opensearchuser script to encrypt the keystore and truststore passwords.

1. Change directory to pt-opensearch-temp/bin.

   ```
   cd /home/pt-opensearch-temp/bin
   ```

2. Enter the following command for each password:

   ```
   ./opensearchuser encrypt [password text]
   ```

3. Copy the encrypted text and paste it into the silentinstall.config file for the OS_keystore_pwd and OS_truststore_pwd.

Creating a Configuration File and Running the Silent Mode Installation on Linux

To install in silent mode:

1. Create a configuration file.

   The *OSK_INSTALL/*setup directory includes a sample configuration file, silentinstall.config. If you want to use this file, it is a good idea to make a backup copy of the original file before you continue.

   Edit the configuration file with the required values. See the section Installing OpenSearch and OpenSearch Dashboards on Linux Interactively for guidance on specifying the values.

2. Enter *y* (yes) if you want to install OpenSearch, or *n* (no) if you want to skip the OpenSearch installation.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory. If you enter no, you can leave them blank. Enter encrypted text for the passwords as described in the previous section.

```
#Silent Install Configuration Values for installing opensearch
and opensearch-dashboards

#Install opensearch Y/N is mandatory field
Install opensearch?[Y/N]=

### If the upgrade from elasticsearch to opensearch is yes then
the below values have to be filled #####

#Opensearch cluster name (mandatory)
cluster.name=

#Opensearch host name (mandatory)
network.host=

#Opensearch port number (optional-default 9200)
#If its upgrade from ES to Opensearch and if you want to use the
same port number as ES. Please make sure ES is down else please
enter a different port number for OS.

http.port=

#Opensearch data directory (optional-default OS_HOME/data)
#If its upgrade from ES to Opensearch and if you want to use the
same data path as ES. Please make sure ES is down else please
enter a different data path for OS.
path.data=

#Opensearch log directory (optional-default OS_HOME/logs)
path.logs=

#Opensearch discovery hosts (optional)
discovery.hosts=

#Opensearch heap size (optional-default 2)
OS_HEAP_SIZE=
```

```
#Opensearch admin username (optional - default osadmin)
admin.user=

#Opnesearch encrypted password for osadmin (mandatory)
admin.password=encrypted password

#Opensearch proxy username (optional - default people)
people.user= proxy

#Opensearch encrypted password for people (mandatory)
people.password=encrypted password
```

3. If you want to configure OpenSearch to use SSL, supply the keystore path and encrypted password, and the truststore path and encrypted password.

```
##For Secure installation of Opensearch please fill the below values

#Openearch keystore path
OS_keystore_path=

#Opensearch encrypted keystore password
OS_keystore_pwd= encrypted password

#Opensearch truststore path
OS_truststore_path=

#Opensearch truststore password
OS_truststore_pwd= encrypted password
```

4. Specify *N* (no) to skip the Logstash installation.

   When you enter N (no) for this field, you can leave the other parameters in the Logstash section blank. This sample does not show the entire Logstash section.

```
#Install Logstash Y/N is mandatory field
Install Logstash?[Y/N]=N
[...]
```

5. Specify *y* if you want to install OpenSearch Dashboards, or *n* if you do not.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory in this section. If you enter no, you can leave them blank.

```
#Install Opensearch-dashboards Y/N is mandatory field
Install opensearch-dashboards?[Y/N]=

#Opensearch-dashboards host name (mandatory)
opensearch-dashboards.host=

#Opensearch-dashboards port number (optional-default 5601)
opensearch-dashboards.port=
```

6. If you want to install OpenSearch Dashboards and connect to the currently-installed OpenSearch server, specify *y* (yes) for the following.

   If you want to install OpenSearch Dashboards and connect to a previously-installed OpenSearch server, specify *n* (no).

```
#Set the value to Y if Install Opensearch(Y) and Install
Opensearch-dashboards(Y)
Use same OS?[Y/N]= n
```

7. Specify the host name, port, OpenSearch administrative user, and encrypted password for the OpenSearch server.

   Note. Enter a host name with https for secure installation.

   ```
   #Provide the Opensearch instance details mapped to Opensearch-dashboards
   OS.host[https://hostname]=
   OS.port=
   OS.user=
   OS.password=
   ```

8. If the OpenSearch is SSL enabled, enter the path to the certificate, the keystore, and the PEM file.

   ```
   #Provide SSL required values for OSD if Opensearch is SSL enabled.
   OSD.cert.path=
   OSD.cert.key=
   OSD.cert.pem=
   ```

9. Enter *n* to indicate you do not want to upgrade.

   You must enter a value for this field. The upgrade instructions are covered in the chapter "Migrating from Elasticsearch to OpenSearch." If you enter *n*, you do not have to enter values for the remaining fields in this section. This sample does not show the remaining fields.

   ```
   ##############Silent Upgrade Configuration Values for upgrading⇒
    Opensearch
   from Elasticsearch ################

   #Upgrade elasticsearch to Opensearch Y/N is mandatory field
   Upgrade elasticsearch to opensearch?[Y/N]= n
   [...]
   ```

10. In a terminal window, run the DPK setup script from *OSK_INSTALL*/setup as follows:

    Note. The command includes line feeds for readability. Do not include the line feeds when you run.

    ```
    ./psft-dpk-setup.sh --install_silent_secure
    --install_base_dir BASE_DIR
    --config full_path_configuration_file
    ```

    - Use double-dashes when specifying the script options; for example, `--install_silent_secure`.
    - For the `install_base_dir` option, specify the full path where you want OpenSearch and OpenSearch Dashboards installed. The installation directory is referred to in this documentation as *BASE_DIR*.
    - For the `config` option, specify the full path to the prepared configuration file. For example:

      Note. The command includes line feeds for readability. Do not include the line feeds when you run.

      ```
      ./psft-dpk-setup.sh --install_silent_secure
      --install_base_dir /home/opensearch
      --config /home/temp_install/silentinstall.config
      ```

11. When the script completes, you see messages such as:

```
OpenSearch Installation Completed.
....
OpenSearch-dashboards installation is completed.
```

12. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

13. To use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

Task 2-4: Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows

This section discusses:

- Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows Interactively
- Using the PT-INFRA DPK when Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows
- Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows in Silent Mode
- Verifying the OpenSearch Installation on Microsoft Windows
- Removing the OpenSearch Installation from Microsoft Windows
- Removing the OpenSearch Dashboards Installation from Microsoft Windows
- Completing the OSK DPK Post-Installation Steps

Task 2-4-1: Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows Interactively

Use this procedure on physical or virtual Microsoft Windows hosts. Ensure that This procedure assumes that there is enough space on the host for the OpenSearch and OpenSearch Dashboards installation and your estimated indexing requirements.

Make a note of the values you supply for ports, passwords, and so on. When you configure the OpenSearch instance for PeopleSoft, the values must match those specified here.

1. Download the required OSK DPK for Microsoft Windows, *OSK_FILENAME*.zip, and save it in a newly created directory accessible to the Microsoft Windows host, referred to as *OSK_INSTALL*.
2. Go to *OSK_INSTALL*.
3. Extract the entire contents of *OSK_FILENAME*.zip in the same directory, *OSK_INSTALL*.

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file

- opensearch–manifest — lists the versions of OpenSearch and JDK

4. Open a command prompt.
5. Change directory to *OSK_INSTALL*/setup.
6. Run the DPK setup script with these options:

   ```
   psft-dpk-setup.bat --install --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path where you want OpenSearch and OpenSearch Dashboards installed. The installation directory is referred to in this documentation as *BASE_DIR*; for example:

     ```
     psft-dpk-setup.bat --install --install_base_dir C:\opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--install`.
7. Answer *y* (yes) to install OpenSearch, or *n* (no) to exit.

   ```
   You've chosen to do a fresh installation of OpenSearch,
   Logstash and OpenSearch-dashboards.
   Do you want to install OpenSearch? (y/n): y
   ```

8. If you are using the PT-INFRA DPK with the OSK DPK, verify that you see the progress message:

   ```
   Extracting PTINFRA DPK
   [OK]
   ```

9. Enter a name for the OpenSearch administrative user, or press ENTER to accept the default name, osadmin.

   The OpenSearch administrative user is used to authenticate requests on OpenSearch.

   Note. The OpenSearch administrative user is not the same as the user who installs the OSK DPK and owns the files.

   ```
   Enter the admin username for OpenSearch [ osadmin ] :
   ```

10. Enter the password two times for the OpenSearch administrative user that you specified, at the following prompt.

    Note. The script does not display the password or any masking characters as you type.

    ```
    Enter the password for osadmin.
    Re-enter the password for osadmin:
    ```

11. Enter a name for the OpenSearch proxy user, or accept the default, people.

    Note that this is not the same user as the PeopleSoft connect ID, which also has people as the default value.

    ```
    Enter the proxy username for OpenSearch [ people ] :
    ```

12. Enter the password two times for the OpenSearch proxy user that you specified.

    ```
    Enter the password for people.
    Re-enter the password for people:
    ```

13. Enter the name for the OpenSearch cluster, or accept the default name, OSCLUSTER.

    ```
    Enter the OS cluster name [ OSCLUSTER ] :
    ```

14. Enter the OpenSearch HTTP port.

This is the port on which OpenSearch listens for requests. The default is 9200.

```
Enter the HTTP port for OpenSearch [ 9200 ] :
```

15. Enter the host name for any nodes that are already members of a cluster.

    ```
    Enter the list of discovery hosts [ ["127.0.0.1", "[::1]"] ] :
    ```

    Be sure to use the following syntax:

    - Enclose one or more host names in square brackets.
    - Enclose the host name or IP address in *double quotes* (" ").
    - Use commas to list two or more hosts.
    - Use this as an example for one host: `["host1.example.com"]`
    - Use this as an example for more than one host: `["host1.example.com", "127.0.0.1"]`

16. Enter the full path location for the OpenSearch data.

    Oracle recommends that you do not use the default location, *BASE_DIR*\pt\opensearch-2.11.0\data, with PeopleSoft environments. Instead, specify the full path for a data directory that is outside of *BASE_DIR*\pt\opensearch-2.11.0.

    ```
    Enter the path where you want the OpenSearch data to reside
    [ C:\opensearch\pt\opensearch-2.11.0\data ] :
    ```

17. Enter the location for the OpenSearch logs.

    The default location is *BASE_DIR*\pt\opensearch-2.11.0\logs.

    ```
    Enter the path where you want the OpenSearch logs to be written to
    [ C:\opensearch\pt\opensearch-2.11.0\logs ] :
    ```

18. Enter the heap size in GB.

    Enter a number as shown in this example:

    See Prerequisites.

    ```
    Enter the Java Heap size for OpenSearch in GB [ 2 ] : 7
    ```

19. Review the status messages as the script installs OpenSearch.

    ```
    Extracting the new OpenSearch Binary..........[OK]
    Extracting the new JDK........................[OK]
    Setting users/roles in OpenSearch.............[OK]
    Configuring OpenSearch........................[OK]
    Starting OpenSearch server....................[OK]

    SUCCESS: Specified value was saved..........  [OK]
    Opensearch Installation Completed.
    ```

20. Answer *n* (no) to skip the Logstash installation.

    ```
    Do you want to install Logstash: (y/n): n
    ```

21. Answer *y* (yes) to install OpenSearch Dashboards, or *n* (no) to exit.

    ```
    Do you want to install OpenSearch-dashboards: (y/n): y
    ```

    The script displays the server name and port for the current server.

    ```
    OpenSearch Host: server1.example.com
    ```

```
OpenSearch Port: 9200
```

22. Answer *y* (yes) to set up OpenSearch Dashboards to connect to the OpenSearch server you are currently installing, or *n* (no) to enter information about a different OpenSearch server.

```
Do you want to use the same OpenssSearch(as above)
for OpenSearch-dashboards: (y/n):
```

23. Enter the OpenSearch Dashboards port, or accept the default, 5601.

```
Enter the server port for OpenSearch-dashboards [ 5601 ] :
```

24. If you answered no to the prompt asking whether to use the current OpenSearch server, enter the host name and port for the OpenSearch server to connect to.

```
Enter the Opensearch host[http(s)://hostname]:

Enter the Opensearch port [ 9200 ] :
```

25. Wait until the installation is complete.

```
Checking whether OpenSearch service is running.......
Extracting the new OpenSearch Dashboards Binary........[OK]
Configuring OpenSearch Dashboards......
OpenSearch Dashboards Keystore updated.................[OK]
OpenSearch Dashboards installation is completed.
```

26. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

27. To start and use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

A successful deployment includes the following:

- The OpenSearch home directory is found in *BASE_DIR*\pt\opensearch-2.11.0.
- The OpenSearch data and logs directories are installed to the locations you specified.
- The OpenSearch service is installed and running.
- The OpenSearch Dashboards home directory is found in *BASE_DIR*\pt\opensearch-dashboards-2.11.0
- Java is installed to *BASE_DIR*\pt\os_jdk21.0.*yy*, where yy is the JDK version.
- The JAVA_HOME environment variable is set to *BASE_DIR*\pt\os_jdk21.0.*yy*.

  This environment variable is set at the system level.

Task 2-4-2: Using the PT-INFRA DPK when Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows

Use this procedure on physical or virtual Microsoft Windows hosts. Use the PT-INFRA DPK along with the installation to apply up-to-date JDK.

Ensure that there is enough space on the host for the OpenSearch installation and your estimated indexing requirements. Make a note of the values you supply for ports, passwords, and so on. When you configure the OpenSearch instance for PeopleSoft, the values must match those specified here.

1. Download the required OSK DPK for Microsoft Windows, *OSK_FILENAME*.zip, and save it in a newly created directory accessible to the Microsoft Windows host, referred to as *OSK_INSTALL*

Extract the opensearch-manifest from the OSK DPK.

See "Deploying the OpenSearch, OpenSearch Dashboards, and Logstash DPK," Obtaining the OpenSearch, OpenSearch Dashboards, and Logstash DPK.

2. Download the latest PT-INFRA DPK for Microsoft Windows, and save it in the same *OSK_INSTALL*.

   For the OpenSearch installation you need only the first PT-INFRA DPK, PT-INFRA-DPK-WIN-8.62-<*DATE*>_1of2.zip.

   Extract the ptinfra-manifest and compare it with the opensearch-manifest to determine whether to continue with this procedure. Use the information in the section Using the PT-INFRA DPKs with the OpenSearch, OpenSearch Dashboards, and Logstash DPK, in the PT-INFRA DPK installation guide.

   See *PT-INFRA Deployment Package Installation (PeopleSoft PeopleTools 8.62)*, PeopleSoft PeopleTools on the Oracle Help Center, Install and Upgrade, https://docs.oracle.com/en/applications/peoplesoft/peopletools/index.html.

3. Go to *OSK_INSTALL*.
4. Extract the entire contents of *OSK_FILENAME*.zip into a new directory under *OSK_INSTALL*.

   It is recommended to extract into a new directory with the same name as the zip file, *OSK_FILENAME*. The extracted directories and files are:

   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch–manifest — lists the versions of OpenSearch and JDK

5. Verify that *OSK_INSTALL* contains the *OSK_FILENAME* directory and PT-INFRA-DPK-WIN-8.62-<*DATE*>_1of2.zip file.

```
OSK_FILENAME/
     setup/
     archives/
     readme.txt
     opensearch-manifest
PT-INFRA-DPK-WIN-8.62-<DATE>_1of2.zip
```

Note. After you have extracted the *OSK_FILENAME*.zip you can delete it, move it, or leave it in *OSK_INSTALL*. Ensure that the intact PT-INFRA-DPK-WIN-8.62-<*DATE*>_1of2.zip is present as shown here.

---

6. Open a command prompt.
7. Change directory to *OSK_INSTALL**OSK_FILENAME*\setup.
8. Run the DPK setup script with these options:

```
psft-dpk-setup.bat --install --install_base_dir BASE_DIR
```

   - For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*; for example:

```
psft-dpk-setup.bat --install --install_base_dir C:\opensearch
```

   - Use double-dashes when specifying the script options; for example, `--install`.

9. Answer *y* (yes) to install OpenSearch, or *n* (no) to exit.

```
You've chosen to do a fresh installation of Opensearch, Logstash
```

```
and Opensearch-dashboards.
Do you want to install Opensearch? (y/n): y
```

10. Verify that you see the progress message for the PT-INFRA DPK:

```
Extracting PTINFRA DPK
[OK]
```

11. Answer the remainder of the prompts as mentioned in the previous section, Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows Interactively.
12. Wait until the installation is complete.

```
Checking if Opensearch service is running.......
Extracting the new Opensearch-dashboards Binary .......[OK]
Configuring Opensearch-dashboards ......
Opensearch-dashboards Keystore updated. [OK]
Opensearch-dashboards installation is completed.
```

13. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."
14. To start and use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

A successful deployment includes the following:

- The OpenSearch home directory is found in *BASE_DIR*\pt\opensearch–2.11.0.
- The OpenSearch data and logs directories are installed to the locations you specified.
- The OpenSearch service is installed and running.
- The OS_HOME environment variable is set to *BASE_DIR*\pt\opensearch–2.11.0.

  The environment variable persists until you close the command prompt window.
- The OpenSearch Dashboards home directory is found in *BASE_DIR*\pt\opensearch–dashboards–2.11.0
- Java is installed to *BASE_DIR*\pt\os_jdk21.0.*yy*, where yy is the JDK version.

  The JDK is the version supplied by the PT-INFRA DPK.
- The JAVA_HOME environment variable is set to *BASE_DIR*\pt\os_jdk21.0.*yy*.

  This environment variable is set at the system level.

Task 2-4-3: Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows in Silent Mode

This section discusses:

- Encrypting the OpenSearch Passwords on Microsoft Windows
- Creating a Configuration File and Running the Silent Mode Installation on Microsoft Windows

Encrypting the OpenSearch Passwords on Microsoft Windows

You can use the setup script to install OpenSearch and OpenSearch Dashboards in silent mode by preparing a text file that includes installation details.

The passwords that you include in the silent mode text file must be encrypted. For the OpenSearch installation, encrypt the OpenSearch administrative user and proxy user passwords using the PSCipher utility. You must use the pscipher.jar and psvault files that are part of the OSK DPK. The psvault that is delivered with PeopleSoft PeopleTools will not work for OpenSearch.

1. Go to *OSK_INSTALL*.
2. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories in *OSK_INSTALL*:

   - setup directory — includes the setup script and sample configuration file
   - archives directory — includes archives for deployment
   - readme.txt file and other files
   - opensearch-manifest — lists the version information for OpenSearch and JDK included in the DPK
3. Go to *OSK_INSTALL*\archives and extract pt-jdk21.0.*yy*.tgz into a temporary folder, or a folder with a different name.

   It may be necessary to extract the file twice. The sample uses pt-jdk-temp as the directory name
4. Go to *OSK_INSTALL*\archives and extract pt-opensearch-2.11.0.tgz into a temporary folder, or a folder with a different name.

   It may be necessary to extract the file twice. The sample uses pt-opensearch-temp as the directory name. The extraction creates the following folders:

   - bin
   - config
   - lib
   - logs
   - modules
   - plugins
5. Copy psvault from the folder *OSK_INSTALL*\pt-opensearch-temp\plugins\orcl-security-plugin\config\properties to *OSK_INSTALL*\pt-opensearch-temp\plugins\orcl-security-plugin.
6. In a command prompt, run the following command, specifying the passwords for the OpenSearch administrative user and proxy user.

   ```
   <path_to_java>\java -Dpscipher.path=<path_to_which_files_are_extracted>⇒
    -cp <path_to_which_files_are_extracted>\pscipher.jar⇒
    com.peoplesoft.pt.opensearch.pscipher.PSESEncrypt <admin_user>  ⇒
   <password>  <proxy_user>  <password>  <output_path>\<outputfile>
   ```

   For example uses the default OpenSearch administrative user, osadmin, and proxy user, people.

   ```
   C:\OSK_INSTALL\archives\pt-jdk-temp\bin\java -Dpscipher.path=C:\OSK_⇒
   INSTALL\archives\pt-opensearch-temp\plugins\orcl-security-plugin -cp C:⇒
   \OSK_INSTALL\archives\pt-opensearch-temp\plugins\orcl-security-plugin⇒
   \pscipher.jar com.peoplesoft.pt.opensearch.pscipher.PSESEncrypt osadmin⇒
   ```

```
 password1 people password2 C:\OSK_INSTALL\os_output.txt
```

7. Copy the encrypted text from os_output.txt, without adding line feeds or spaces. Paste the encrypted passwords into the silentinstall.config file for the osadmin.password and people.password parameters.

   The output has this format:

   ```
   osadmin:{V2.1}encrypted password==
   people:{V2.1}encrypted password==
   ```

Creating a Configuration File and Running the Silent Mode Installation on Microsoft Windows

To install in silent mode:

1. Create a configuration file.

   The *OSK_INSTALL/*setup directory includes a sample configuration file, silentinstall.config. If you want to use this file, it is a good idea to make a backup copy of the original file before you continue.

   Edit the configuration file with the required values. See the section Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows Interactively for guidance on specifying the values.

2. Enter *y* (yes) if you want to install OpenSearch, or *n* (no) if you want to skip the OpenSearch installation.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory. If you enter no, you can leave them blank. Enter encrypted text for the passwords as described in the previous section.

   ```
   #Silent Install Configuration Values for installing opensearch and⇒
    opensearch-dashboards

   #Install opensearch Y/N is mandatory field
   Install opensearch?[Y/N]=

   ### If the upgrade from elasticsearch to opensearch is yes then
   the below values have to be filled #####

   #Opensearch cluster name (mandatory)
   cluster.name= OSCLUSTER

   #Opensearch host name (mandatory)
   network.host=

   #Opensearch port number (optional-default 9200)
   #If its upgrade from ES to Opensarch and if you want to use the
   same port number as ES. Please make sure ES is down else
   please enter a different port number for OS.

   http.port=

   #Opensearch data directory (optional-default OS_HOME/data)
   #If its upgrade from ES to Opensarch and if you want to use the
   same data path as ES. Please make sure ES is down else please
   enter a different data path for OS.
   path.data=
   ```

```
#Opensearch log directory (optional-default OS_HOME/logs)
path.logs=

#Opensearch discovery hosts (optional)
discovery.hosts=

#Opensearch heap size (optional-default 2)
OS_HEAP_SIZE=

#Opensearch admin username (optional - default osadmin)
admin.user=

#Opensearch encrypted password for osadmin (mandatory)
admin.password=encrypted password

#Opensearch proxy username (optional - default people)
people.user=

#Opensearch encrypted password for people (mandatory)
people.password=encrypted password
```

3. Specify *N* to skip the Logstash installation.

   When you enter no, you can leave the other parameters in the Logstash section blank.

```
Install Logstash?[Y/N]=N

#Install Logstash Y/N is mandatory field
Install Logstash?[Y/N]=

#Logstash port number (optional-default 9800)
LS_port=

#Logstash host name (mandatory)
LS_host =

#The Opensearch username (mandatory)
OS_user =

#The encrypted Opensearch password [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh] (mandatory)
OS_pwd =

#Configure Logstash Y/N (for PeopleSoft Health Centre) is mandatory⇒
 field
Configure Logstash(for PHC)?[Y/N]=

#IB REST service URL (mandatory)
IB_REST_URL=

#Enter the encrypted IB user [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh] (mandatory)
IB_USER=
```

```
#Enter the encrypted IB password [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh](mandatory)
IB_PWD=

#location where JSON files need to be created(optional-default LS_HOME⇒
/pt/jmxmonitor)
JSON_LOC=

#The polling frequency for JMX metrics (mandatory)
polling_freq =

#The number of threads (mandatory)
no_of_threads =

#The Opensearch host name (mandatory)
OS_host =

#The Opensearch port (mandatory)
OS_port =

#Do you want to create JSON files(Y/N) (mandatory)
JSON_files?[Y/N] =

#To fetch the alert configuration, alerts must be configured in
Peopletools>Health Centre>Alert Configuration. Do you want to
fetch the alert configuration parameters?(Y/N) (mandatory)
alert_conf?[Y/N] =
```

4. Specify *y* if you want to install OpenSearch Dashboards, or *n* if you do not.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory in this section. If you enter no, you can leave them blank.

   ```
   #Install Opensearch-dashboards Y/N is mandatory field
   Install opensearch-dashboards?[Y/N]= y

   #Opensearch-dashboards host name (mandatory)
   opensearch-dashboards.host=

   #Opensearch-dashboards port number (optional-default 5601)
   opensearch-dashboards.port=
   ```

5. If you want to install OpenSearch Dashboards and connect to the currently-installed OpenSearch server, specify *y* (yes) for the following.

   If you want to install OpenSearch Dashboards and connect to a previously-installed OpenSearch server, specify *n* (no).

   ```
   #Set the value to Y if Install Opensearch(Y) and Install Opensearch-⇒
   dashboards(Y)
   Use same OS?[Y/N]= n
   ```

6. Specify the host name, port, OpenSearch administrative user, and encrypted password for the OpenSearch server.

   ```
   #Provide the Opensearch instance details mapped to Opensearch-dashboards
   ```

```
OS.host[http(s)://hostname]=
OS.user=
OS.port=
OS.password=
```

7. If the OpenSearch is SSL enabled, enter the path to the certificate.

```
#Provide SSL certificate path if Opensearch is SSL enabled.
OS.cacert.path=
```

8. Enter *n* to indicate you do not want to upgrade.

   You must enter a value for this field. The upgrade instructions are covered in the chapter "Upgrading OpenSearch and OpenSearch Dashboards." When you enter *n* for the first field you do not have to enter values for the remaining fields in the upgrade section.

```
##############Silent Upgrade Configuration Values for upgrading⇒
 Opensearch
from Elasticsearch ################

#Upgrade elasticsearch to Opensearch Y/N is mandatory field
Upgrade elasticsearch to opensearch?[Y/N]= N

#CAUTION !!! The above option does upgrade from Elasticsearch to
OpenSearch.For already ingested data, you may copy the data
after the installation process or allow the upgrade process to copy

#Current elasticsearch home path in the format
[<base_dir>/pt/elasticsearch<x.x.x>]
(mandatory)
current.es.home=

#Copying the data from Elasticsearch to opensearch
#Caution! The data copy may take time based on the volume of
data to copy. Please ensure the target directory have sufficient
free space to copy.[Y/N]
data copy ?[Y/N]=
```

9. In a command prompt window, run the DPK setup script from *OSK_INSTALL*\setup as follows:

Note. The command here includes line feeds for readability. Do not include the line feeds when you run.

```
psft-dpk-setup.bat --install_silent
--install_base_dir BASE_DIR
--config_file full_path_configuration_file
```

- Use double-dashes when specifying the script options; for example, `--install_silent`.
- For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*.
- For the `config` option, specify the full path to the prepared configuration file. For example:

  Note. The command includes line feeds for readability. Do not include the line feeds when you run.

```
psft-dpk-setup.bat --install_silent
--install_base_dir C:/opensearch
```

```
--config C:/tmp_install/silentinstall.config
```

10. When the script completes, you see a message such as:

```
Opensearch Installation Completed.
Silent mode installation of opensearch-dashboards
```

11. After you complete the OpenSearch installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

12. To start and use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

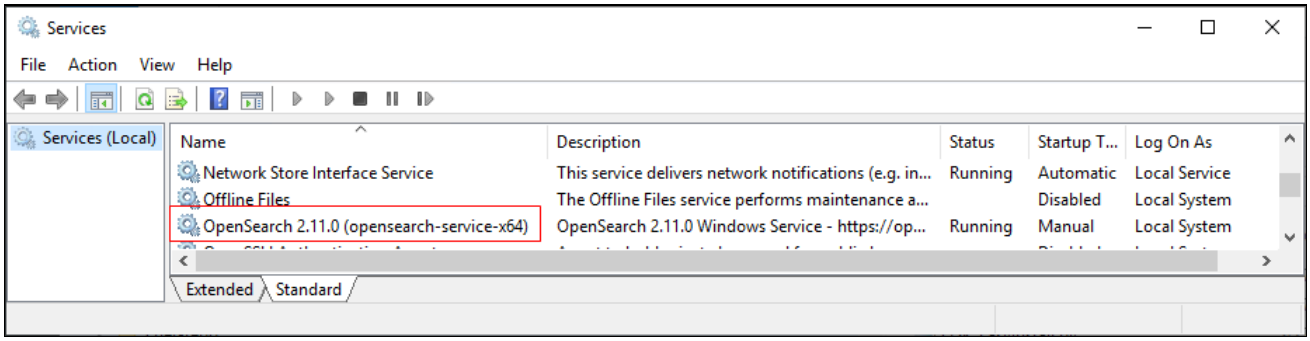
Task 2-4-4: Verifying the OpenSearch Installation on Microsoft Windows

The OpenSearch deployment sets up a Windows service.

Note. OpenSearch Dashboards as a service is not available for Microsoft Windows.

To verify the installation:

1. Launch the Services dialog box, for example by opening Task Manager and selecting the Services tab.
2. Verify that the "opensearch-service-x64" service is present and has status "Running," as in this example:



Services dialog box with OpenSearch 2.11.0 service

3. If the OpenSearch service is not listed, you can start it manually:
   a. Open a command prompt.
   b. Go to *OSK_HOME*\bin and enter the following command:

```
opensearch-service.bat install
```

   c. Start the service with the following command:

```
opensearch-service.bat start
```

After verifying the service, use one of the following methods to verify the OpenSearch installation.

- Run a REST call.

  This example uses the CURL utility to run the REST call:

```
curl --user <username>:<password> -XGET http://<host>:<port>
```

  For details about the correct usage of the CURL utility, see your operating system documentation.

- Open a browser and enter the URL: http://<host>:<port>/

  Supply the username and password in the dialog box that appears.

Use these definitions for both methods:

- username — the OpenSearch user administrator you specified during the DPK setup script installation
- password — the password you entered during the DPK setup script installation
- host — the OpenSearch host name
- port — the OpenSearch HTTP (REST) port that you entered during the DPK setup script installation

When using either method, you should see a message similar to the following:

```
{
  "name" : "server.example.com",
  "cluster_name" : "OSCLUSTER",
  "cluster_uuid" : "IvQKVvLjQiKUwBAMk6Hy7w",
  "version" : {
    "distribution" : "opensearch",
    "number" : "2.11.0",
    "build_type" : "zip",
    "build_hash" : "aa8cdda4ea0da22834936ae7f90f8586b9999c43",
    "build_date" : "2024-02-07T13:36:46.831959Z",
    "build_snapshot" : false,
    "lucene_version" : "9.7.0",
    "minimum_wire_compatibility_version" : "7.10.0",
    "minimum_index_compatibility_version" : "7.0.0"
  },
  "tagline" : "The OpenSearch Project: https://opensearch.org/"
}
```

Task 2-4-5: Removing the OpenSearch Installation from Microsoft Windows

Use these steps to remove the OpenSearch DPK installation from Microsoft Windows.

Note. You must use the manual steps. There is no cleanup option for the psft-dpk-setup.bat script.

1. Open a command prompt.
2. Enter the following commands, substituting the OpenSearch installation directory, such as *BASE_DIR*\pt\opensearch-2.11.0, for *OSK_HOME*.

   ```
   OSK_HOME\bin\opensearch-service.bat stop
   OSK_HOME\bin\opensearch-service.bat remove
   ```

3. Remove the OpenSearch installation directory.

Task 2-4-6: Removing the OpenSearch Dashboards Installation from Microsoft Windows

If you installed OpenSearch Dashboards, use these steps to remove the OpenSearch Dashboards installation from Microsoft Windows.

Note. You must use the manual steps. There is no cleanup option for the psft-dpk-setup.bat script.

1. Stop the OpenSearch Dashboards script if it is running.

   If the command window that you used to start the OpenSearch Dashboards script is open, either terminate the OpenSearch Dashboards script by pressing Ctrl+C, or close the command window.

2. Remove the OpenSearch Dashboards installation directory.

Task 2-4-7: Completing the OSK DPK Post-Installation Steps

After you complete the OSK DPK installation, if you want to perform operations described later in this chapter, such as starting and stopping OpenSearch, or running the opensearchuser script, perform the manual steps described in this section.

- Ensure that the heap size is set to a value equal to or less than 50% of available memory, and not exceeding 30G.

  See "Preparing to Deploy," Prerequisites.

- Verify that the JAVA_HOME environment variable was set to the location installed by the DPK setup script. If not, set it, for example:

  ```
  set JAVA_HOME=BASE_DIR\pt\os_jdk21.0.yy
  ```

Task 2-5: Installing OpenSearch and OpenSearch Dashboards on Microsoft Windows Securely

This section discusses:

- Preparing to Install OpenSearch and OpenSearch Dashboards with SSL on Microsoft Windows
- Installing OpenSearch and OpenSearch Dashboards with SSL on Microsoft Windows Interactively
- Installing OpenSearch and OpenSearch Dashboards with SSL on Microsoft Windows in Silent Mode

Task 2-5-1: Preparing to Install OpenSearch and OpenSearch Dashboards with SSL on Microsoft Windows

You can install OpenSearch and OpenSearch Dashboards to work with SSL. Before running the script to install OpenSearch and OpenSearch Dashboards, you must set up the truststore and import certificates. The OpenSearch portion of the installation script includes prompts for the keystore, keystore password, truststore, and truststore password. The OpenSearch Dashboards portion of the installation script includes prompts for the private key and PEM files.

The OSK DPK includes the keytool utility, which you can use to set up the truststore and keystore.

1. Open a terminal window, and change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

2. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

The extraction creates the following directories in *OSK_INSTALL*:

- setup directory — includes the setup script and a sample configuration file.
- archives directory — includes archives for deployment
- readme.txt file
- opensearch-manifest — lists the version information for OpenSearch and JDK included in the DPK

3. Change directory to *OSK_INSTALL/*archives, and extract pt-jdk21.0.*yy*.tgz into a temporary directory, or a directory with a different name, such as pt-jdk-temp.

   It may be necessary to extract the file twice.

4. Change directory to pt-jdk-temp\bin.

   ```
   cd D:\pt-jdk-temp\bin
   ```

5. Follow the instructions in the product documentation to set up a truststore and import the certificate.

   See *PeopleTools: Search Technology*, "Configuring SSL Between PeopleSoft and Search Engine."

   The instructions set up the keystore and private file under the OpenSearch home directory, OS_HOME. Here you should use a temporary directory to save the file. Make a note of the full path where you create the file, because you will use it when running the installation script.

   ```
   keytool -importcert -keystore temp\mytruststore.jks -file C:\certs⇒
   \cacert.cer -alias my_ca
   ```

Task 2-5-2: Installing OpenSearch and OpenSearch Dashboards with SSL on Microsoft Windows Interactively

Use this procedure on physical or virtual Microsoft Windows hosts. Ensure that there is enough space on the Microsoft Windows host for the OpenSearch and OpenSearch Dashboards installations and your estimated indexing requirements.:

Make a note of the values you supply for users, ports, passwords, and so on. When you configure the OpenSearch instance for PeopleSoft, the values must match those specified here.

1. Download the required OSK DPK for Microsoft Windows, referred to as *OSK_FILENAME*.zip, and save it in a newly created directory accessible to the Microsoft Windows host, referred to as *OSK_INSTALL*.
2. In a command prompt window, change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

3. Extract the entire contents of *OSK_FILENAME*.zip in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory — includes the setup scripts and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch–manifest — lists the versions of OpenSearch and JDK

4. Run the DPK setup script from *OSK_INSTALL*\setup as follows:

   ```
   psft-dpk-setup.bat --install_secure --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*. For example:

     ```
     psft-dpk-setup.bat --install_secure --install_base_dir C:\opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--install`.

5. If you are using the PT-INFRA DPK with the OSK DPK, verify that you see the progress message:

   ```
   Extracting PTINFRA DPK
   [OK]
   ```

6. Answer *y* (yes) to install OpenSearch, or *n* (no) to exit.

   ```
   You've chosen to do a fresh installation of OpenSearch, Logstash
   and OpenSearch-dashboards.
   Do you want to install OpenSearch (y/n): y
   ```

7. Enter a name for the OpenSearch administrative user, or press ENTER to accept the default name, osadmin.

   The administrative user is used to authenticate requests on OpenSearch.

   Note. The administrative user is not the same as the user who installs the OSK DPK and owns the files.

   ```
   Enter the admin username for OpenSearch [ osadmin ] :
   ```

8. Enter the password two times for the OpenSearch administrative user, at the following prompt.

   Note. The script does not display the password or any masking characters as you type.

   ```
   Enter the password for osadmin :
   Re-enter the password for osadmin :
   ```

9. Enter a name for the OpenSearch proxy user, or accept the default name, people.

   Note that this is not the same user as the PeopleSoft connect ID, which also has people as the default value.

   ```
   Enter the proxy username for OpenSearch [ people ] :
   ```

10. Enter the password two times for the OpenSearch proxy user.

    ```
    Enter the password for people :
    Re-enter the password for people :
    ```

11. Enter the name for the OpenSearch cluster, or accept the default name, OSCLUSTER.

    ```
    Enter the OS cluster name [ OSCLUSTER ] :
    ```

12. Enter the OpenSearch HTTP port., or accept the default, 9200.

    This is the port on which OpenSearch listens for requests.

    ```
    Enter the HTTP port for OpenSearch [ 9200 ] :
    ```

13. Enter the host name for any nodes that are already members of a cluster.

    ```
    Enter the list of discovery hosts [ ["127.0.0.1", "[::1]"] ] :
    ```

    Be sure to use the following syntax:

- Enclose one or more host names in square brackets.
- Enclose the host name or IP address in *double quotes* (" ").
- Use commas to list two or more hosts.
- Use this as an example for one host: `["host1.example.com"]`
- Use this as an example for more than one host: `["host1.example.com", "127.0.0.1"]`

14. Enter the full path location for the OpenSearch data.

    Oracle recommends that you do not use the default location, *BASE_DIR*/pt/opensearch-2.11.0/data, with PeopleSoft environments. Instead, specify the full path for a data directory that is outside of *BASE_DIR*/pt/opensearch-2.11.0.

    ```
    Enter the path where you want the Opensearch data to reside
    [ /home/opensearch/pt/opensearch-2.11.0/data ] :
    ```

15. Enter the location for the OpenSearch logs.

    The default location is *BASE_DIR*/pt/opensearch-2.11.0/logs.

    ```
    Enter the path where you want the Opensearch Logs to be written to
    [ /home/opensearch/pt/opensearch-2.11.0/logs ] :
    ```

16. Enter the heap size in GB.

    Enter a number as shown in this example:

    See Prerequisites.

    ```
    Enter the Java Heap size for Opensearch in GB [ 2 ] : 7
    ```

17. Enter the full path, including the file name, for the keystore file.

    ```
    Enter the path of keystore file :
    ```

18. Enter the password two times for the keystore password.

    ```
    Enter the password for keystore :
    Re-enter the password for keystore :
    ```

19. Enter the full path, including the file name, for the truststore.

    ```
    Enter the path of truststore file :
    ```

20. Enter the password two times for the truststore password.

    ```
    Enter the password for truststore :
    Re-enter the password for truststore :
    ```

21. Review the status messages as the script sets up the PeopleSoft environment.

    ```
    Extracting the new OpenSearch Binary.......[OK]
    Extracting the new JDK.....................[OK]
    Setting users/roles in OpenSearch..........[OK]
    Configuring OpenSearch.....................[OK]
    Starting OpenSearch server.................[OK]
    Opensearch Installation Completed.
    ```

22. Answer *y* (yes) to install OpenSearch Dashboards, or *n* (no) to exit.

    ```
    Do you want to install OpenSearch-dashboards: (y/n): y
    ```

    The script displays the server name and port for the current server.

```
OpenSearch Host: server1.example.com
OpenSearch Port: 9200
```

23. Answer *y* (yes) to set up OpenSearch Dashboards to connect to the OpenSearch server you are currently installing, or *n* (no) to enter information about a different OpenSearch server.

```
Do you want to use the same OpenSearch(as above)
for Opensearch-dashboards: (y/n):
```

24. Enter the OpenSearch Dashboards port, or accept the default, 5601.

```
Enter the server port for OpenSearch-dashboards [ 5601 ] :
```

25. Enter the full path, including the file name, for the key file for OpenSearch Dashboards.

```
Enter the path containing the key file for OSD :
```

26. Enter the full path, including the file name, for the signed certificate file for OpenSearch Dashboards.

```
Enter the path containing the signed certificate file for OSD:
```

27. Enter the full path, including the file name, for the PEM file for OpenSearch Dashboards.

```
Enter the path for the PEM file for OSD :
```

28. If you answered no to the prompt asking whether to use the current OpenSearch server, enter the host name and port for the OpenSearch server to connect to.

Note. Enter a host name with https for secure installation.

```
Enter the OpenSearch host[https://hostname]:

Enter the OpenSearch port [ 9200 ] :
```

29. Wait until the installation is complete.

```
Checking whether OpenSearch service is running.......
Extracting the new OpenSearch Dashboards Binary........[OK]
Configuring OpenSearch Dashboards......
Configuring Region Maps for US states
OpenSearch Dashboards Keystore updated.................[OK]
OpenSearch Dashboards installation is completed.
```

30. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

31. To start and use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Working with Insights Dashboards for PeopleSoft Application Data."

Task 2-5-3: Installing OpenSearch and OpenSearch Dashboards with SSL on Microsoft Windows in Silent Mode

Encrypting the OpenSearch Passwords on Microsoft Windows

You can use the setup script to install OpenSearch and OpenSearch Dashboards in silent mode by preparing a text file that includes installation details.

The passwords that you include in the silent mode text file must be encrypted. For the OpenSearch installation, encrypt the OpenSearch administrative user and proxy user passwords using the PSCipher utility. You must use the pscipher.jar and psvault files that are part of the OSK DPK. The psvault that is delivered with PeopleSoft PeopleTools will not work for OpenSearch.

1. Go to *OSK_INSTALL*.
2. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories in *OSK_INSTALL*:

   - setup directory — includes the setup script and sample configuration file
   - archives directory — includes archives for deployment
   - readme.txt file and other files
   - opensearch-manifest — lists the version information for OpenSearch and JDK included in the DPK
3. Go to *OSK_INSTALL*\archives and extract pt-jdk21.0.*yy*.tgz into a temporary folder, or a folder with a different name; for example, pt-jdk-temp.

   It may be necessary to extract the file twice.
4. Go to *OSK_INSTALL*\archives and extract pt-opensearch-2.11.0.tgz into a temporary folder, or a folder with a different name; for example, pt-opensearch-temp.

   It may be necessary to extract the file twice. The extraction creates the following folders:

   - bin
   - config
   - lib
   - logs
   - modules
   - plugins
5. Copy psvault from the folder *OSK_INSTALL*\pt-opensearch-temp\plugins\orcl-security-plugin\config\properties to *OSK_INSTALL*\pt-opensearch-temp\plugins\orcl-security-plugin.
6. In a command prompt, run the following command, specifying the passwords for the OpenSearch administrative user and proxy user.

   ```
   <path_to_java>\java -Dpscipher.path=<path_to_which_files_are_extracted>⇒
   ```

```
pscipher.jar⇒
 com.peoplesoft.pt.opensearch.pscipher.PSESEncrypt <admin_user>  ⇒
<password>  <proxy_user>  <password>  <output_path>\<outputfile>
```

For example uses the default OpenSearch administrative user, osadmin, and proxy user, people.

```
C:\OSK_INSTALL\archives\pt-jdk-temp\bin\java -Dpscipher.path=C:\OSK_⇒
INSTALL\archives\pt-opensearch-temp\plugins\orcl-security-plugin -cp C:⇒
\OSK_INSTALL\archives\pt-opensearch-temp\plugins\orcl-security-plugin⇒
\pscipher.jar com.peoplesoft.pt.opensearch.pscipher.PSESEncrypt osadmin⇒
 password1 people password2 C:\OSK_INSTALL\os_output.txt
```

7. Copy the encrypted text from os_output.txt, without adding line feeds or spaces. Paste the encrypted passwords into the silentinstall.config file for the osadmin.password and people.password parameters.

   The output has this format:

   ```
   osadmin:{V2.1}encrypted password==
   people:{V2.1}encrypted password==
   ```

Encrypting the Truststore and Keystore Passwords on Microsoft Windows

After extracting the OSK DPK archives, you can use the opensearchuser script to encrypt the keystore and truststore passwords.

1. Change directory to pt-opensearch-temp/bin.

   ```
   cd C:\pt-opensearch-temp\bin
   ```

2. Enter the following command for each password:

   ```
   opensearchuser encrypt [password text]
   ```

3. Copy the encrypted text and paste it into the silentinstall.config file for the OS_keystore_pwd and OS_truststore_pwd.

Creating a Configuration File and Running the Silent Mode Installation on Microsoft Windows

To install in silent mode:

1. Create a configuration file.

   The *OSK_INSTALL/*setup directory includes a sample configuration file, silentinstall.config. If you want to use this file, it is a good idea to make a backup copy of the original file before you continue.

   Edit the configuration file with the required values. See the section Installing OpenSearch and OpenSearch Dashboards with SSL on Microsoft Windows Interactively for guidance on specifying the values.

2. Enter *y* (yes) if you want to install OpenSearch, or *n* (no) if you want to skip the OpenSearch installation.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory. If you enter no, you can leave them blank. Enter encrypted text for the passwords as described in the previous section.

   ```
   #Silent Install Configuration Values for installing opensearch
   and opensearch-dashboards
   ```

```
#Install opensearch Y/N is mandatory field
Install opensearch?[Y/N]=

### If the upgrade from elasticsearch to opensearch is yes then
the below values have to be filled #####

#Opensearch cluster name (mandatory)
cluster.name=

#Opensearch host name (mandatory)
network.host=

#Opensearch port number (optional-default 9200)
#If its upgrade from ES to Opensearch and if you want to use the
same port number as ES. Please make sure ES is down else please
enter a different port number for OS.

http.port=

#Opensearch data directory (optional-default OS_HOME/data)
#If its upgrade from ES to Opensearch and if you want to use the
same data path as ES. Please make sure ES is down else please
enter a different data path for OS.
path.data=

#Opensearch log directory (optional-default OS_HOME/logs)
path.logs=

#Opensearch discovery hosts (optional)
discovery.hosts=

#Opensearch heap size (optional-default 2)
OS_HEAP_SIZE=

#Opensearch admin username (optional - default osadmin)
admin.user=

#Opnesearch encrypted password for osadmin (mandatory)
admin.password=encrypted password

#Opensearch proxy username (optional - default people)
people.user= proxy

#Opensearch encrypted password for people (mandatory)
people.password=encrypted password
```

3. If you want to configure OpenSearch to use SSL, supply the keystore path and encrypted password, and the truststore path and encrypted password.

```
##For Secure installation of Opensearch please fill the below values

#Openearch keystore path
OS_keystore_path=
```

```
#Opensearch encrypted keystore password
OS_keystore_pwd= encrypted password

#Opensearch truststore path
OS_truststore_path=

#Opensearch truststore password
OS_truststore_pwd= encrypted password
```

4. Specify *N* (no) to skip the Logstash installation.

   When you enter N (no) for this field, you can leave the other parameters in the Logstash section blank. This sample does not show the entire Logstash section.

   ```
   #Install Logstash Y/N is mandatory field
   Install Logstash?[Y/N]=N
   [...]
   ```

5. Specify *y* if you want to install OpenSearch Dashboards, or *n* if you do not.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory in this section. If you enter no, you can leave them blank.

   ```
   #Install Opensearch-dashboards Y/N is mandatory field
   Install opensearch-dashboards?[Y/N]=

   #Opensearch-dashboards host name (mandatory)
   opensearch-dashboards.host=

   #Opensearch-dashboards port number (optional-default 5601)
   opensearch-dashboards.port=
   ```

6. If you want to install OpenSearch Dashboards and connect to the currently-installed OpenSearch server, specify *y* (yes) for the following.

   If you want to install OpenSearch Dashboards and connect to a previously-installed OpenSearch server, specify *n* (no).

   ```
   #Set the value to Y if Install Opensearch(Y) and Install
   Opensearch-dashboards(Y)
   Use same OS?[Y/N]= n
   ```

7. Specify the host name, port, OpenSearch administrative user, and encrypted password for the OpenSearch server.

   ```
   #Provide the Opensearch instance details mapped to Opensearch-dashboards
   OS.host[http(s)://hostname]=
   OS.port=
   OS.user=
   OS.password=
   ```

8. If the OpenSearch is SSL enabled, enter the path to the certificate, the keystore, and the PEM file.

   ```
   #Provide SSL required values for OSD if Opensearch is SSL enabled.
   OSD.cert.path=
   OSD.cert.key=
   OSD.cert.pem=
   ```

9. Enter *n* to indicate you do not want to upgrade.

You must enter a value for this field. The upgrade instructions are covered in the chapter "Migrating from Elasticsearch to OpenSearch." If you enter *n,* you do not have to enter values for the remaining fields in this section. This sample does not show the remaining fields.

```
##############Silent Upgrade Configuration Values for upgrading⇒
 Opensearch
from Elasticsearch ################

#Upgrade elasticsearch to Opensearch Y/N is mandatory field
Upgrade elasticsearch to opensearch?[Y/N]= n
[...]
```

10. In a terminal window, run the DPK setup script from *OSK_INSTALL/*setup as follows:

    Note. The command includes line feeds for readability. Do not include the line feeds when you run.

    ```
    psft-dpk-setup.bat --install_silent_secure
    --install_base_dir BASE_DIR
    --config full_path_configuration_file
    ```

    - Use double-dashes when specifying the script options; for example, `--install_silent_secure`.
    - For the `install_base_dir` option, specify the full path where you want OpenSearch and OpenSearch Dashboards installed. The installation directory is referred to in this documentation as *BASE_DIR*.
    - For the `config` option, specify the full path to the prepared configuration file. For example:

      Note. The command includes line feeds for readability. Do not include the line feeds when you run.

      ```
      psft-dpk-setup.bat --install_silent_secure
      --install_base_dir /home/opensearch
      --config /home/temp_install/silentinstall.config
      ```

11. When the script completes, you see messages such as:

    ```
    OpenSearch Installation Completed.
    ....
    OpenSearch-dashboards installation is completed.
    ```

12. After you complete the OpenSearch and OpenSearch Dashboards installation, you must configure the integration with the PeopleSoft environment.

    See "Integrating OpenSearch with the PeopleSoft Environment."

13. To use OpenSearch Dashboards, see the Search Technology product documentation.

    See *PeopleTools: Search Technology,* "Working with Insights Dashboards for PeopleSoft Application Data."

Task 2-6: Preparing for the Logstash 8.11.3 Installation

This section discusses:

- Fulfilling Logstash 8.11.3 Prerequisites for PeopleSoft Health Center
- Obtaining the Integration Broker REST URL for Logstash 8.11.3

Task 2-6-1: Fulfilling Logstash 8.11.3 Prerequisites for PeopleSoft Health Center

As mentioned, Logstash is used for PeopleSoft Health Center. Oracle recommends that you install Logstash on a system that is separate from the system with the PeopleSoft installation.

Before installing Logstash for the PeopleSoft Health Center, ensure that:

- OpenSearch and OpenSearch Dashboards are installed, and you have the port numbers and passwords.
- PeopleSoft Pure Internet Architecture (PIA) is running.
- Integration Broker is configured.
- The Integration Broker user must be a PeopleSoft user who has access to the service operation PT_CREATEJSON_REST_GET.

  If you set up SSL for Logstash, the Integration Broker user needs access to service operations PT_HC_ALERTS_GET and PT_PHCTHRESHOLD_GET.
- The role assigned to the Integration Broker user must include permission list PTPT4800 (ACM Administrator).

  See *PeopleTools: Security Administration.*
- PPM agents are enabled.
- JMX agents are enabled.
- The PPM agents must have equivalent JMX agents registered.

  Make sure the PPM agents have equivalent JMX agents registered. The Agent IDs that the following SQL returns should have entries in the PS_PTPMJMXUSER table. If there are missing agents in the PS_PTPMJMXUSER table, it either means your JMX registration is not successful or your PSPMAGENT table is carrying agents that are no longer needed.

  ```
  select * from PSPMAGENT where PM_DOMAIN_MONITOR='Y';
  ```

  See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."
- You have run the Automated Configuration Management (ACM) plug-in PTSFMonitorConfiguration, in the SEARCH_TEMPLATE template.

  See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."
- If you want to use PeopleSoft Health Center alerts, configure the PeopleSoft Health Center and the Push Notification Framework.

  See *PeopleTools: Performance Monitor,* "Configuring Health Center Alerts."

Note. The Logstash installation does not support SSL configuration.

Task 2-6-2: Obtaining the Integration Broker REST URL for Logstash 8.11.3

Before beginning the Logstash installation, make a note of the Integration Broker REST service URL, user name and password. You will enter it when performing the OSK DPK installation. You can obtain the URL with these steps:

1. Sign in to the PeopleSoft installation (PIA) in a browser.
2. Select PeopleTools > Integration Broker > Integration Setup > Service Operation Definitions.
3. Locate the service operation PT_CREATEJSON_REST_GET.

4. On the General page for the service operation, in the URI grid, select the Validate link.
5. Select Generate URL and make a note of the REST URL.

See *PeopleTools: Integration Broker,* "Accessing and Viewing REST Service Operation Definitions."

If the setup is such that Performance Monitor is configured for remote monitoring, the Integration Broker REST URL should be the one that connects to the monitoring database. If the PPM and JMX agents registrations are successful, the registration details are available in a monitoring system database in the tables PSPMAGENT and PS_PTPMJMXUSER.

Task 2-7: Installing Logstash 8.11.3 on Linux

This section discusses:

- Installing Logstash 8.11.3 on Linux Interactively
- Installing Logstash 8.11.3 on Linux in Silent Mode
- Removing the Logstash 8.11.3 Installation from Linux

Task 2-7-1: Installing Logstash 8.11.3 on Linux Interactively

Use this procedure on physical or virtual Linux hosts. This procedure assumes:

- You have downloaded the required OSK DPK for Linux, referred to as *OSK_FILENAME.zip,* and saved it in a newly created directory accessible to the Linux host, referred to as *OSK_INSTALL.*
- You have installed OpenSearch and OpenSearch Dashboards.
- You have the values for the ports, passwords, and host names for the OpenSearch installation.
- You have fulfilled the Logstash prerequisites.

To install Logstash:

1. Open a terminal window.
2. Run the DPK setup script from *OSK_INSTALL*/setup as follows:

   ```
   ./psft-dpk-setup.sh --install --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR.* For example:

     ```
     ./psft-dpk-setup.sh --install --install_base_dir /home/opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--install`.
3. If you are using the PT-INFRA DPK with the OSK DPK, verify that you see the progress message:

   ```
   Extracting PTINFRA DPK
   [OK]
   ```

4. Answer *n* (no) to skip the OpenSearch installation.

   ```
   You've chosen to do a fresh installation of Opensearch, Logstash
   and Opensearch-dashboards.
   Do you want to install Opensearch: (y/n): n
   ```

5. Answer *y* (yes) to install Logstash.

   The script displays information about the current server.

Note. Answer yes to install Logstash for external data integration. For use with PeopleSoft Health Center, answer yes both to this prompt, and to the later prompt asking if you want to configure PeopleSoft Health Center.

```
Do you want to install Logstash : (y/n): y
Logstash will be installed on server1.example.com
```

6. Enter the HTTP port for Logstash.

   The default is 9800.

   ```
   Enter the HTTP port for Logstash [ 9800 ] :
   ```

7. Enter the OpenSearch administrative user name that you specified when installing OpenSearch.

   ```
   Enter the Opensearch username:
   ```

8. Enter the password two times for the OpenSearch administrative user..

   ```
   Enter the Opensearch password:
   Re-enter the Opensearch password:
   ```

9. Review the status messages as the script installs Logstash.

   ```
   Extracting the Logstash Binary ...........[OK]
   Configuring the Logstash .................[OK]
   ```

10. Answer *y* (yes) to configure the installed Logstash for PeopleSoft Health Center, or *n* (no) to continue.

    ```
    Do you want to configure PeopleSoft Health Centre: (y/n): y
    ```

11. Enter the URL for the Integration Broker REST service.

    ```
    Enter the IB REST service URL:
    ```

12. Enter the Integration Broker user name.

    Note. Be sure to fulfill the prerequisites for the Integration Broker user in the section Preparing for the Logstash Installation.

    ```
    Enter the IB user:
    ```

13. Enter the Integration Broker password twice.

    ```
    Enter the IB password:
    Re-enter the IB password:
    ```

14. Enter the full path to the location to save the JSON files.

    ```
    Enter the location where JSON files need to be created
    [/home/opensearch/pt/logstash-8.11.3/pt/jmxmonitor ]:
    ```

15. Enter the polling frequency, in seconds, for the JMX agents.

    The polling frequency is mandatory input. There is no recommended or default value.

    The value you enter sets the frequency with which the JMX metrics data are fetched from JMX servers. This means that every *n* seconds, data is pushed to OpenSearch.

    It is a good idea to regularly purge the psft_hc_metrics index. The interval you select depends upon your usage. See the information on the Monitoring Server page in the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Configuring the Monitoring Server."

```
Enter the polling frequency for JMX metrics:
```

16. Enter the number of threads that will be used to retrieve metrics and create events.

    The number you select depends upon your usage. Increase or decrease it as needed.

    ```
    Enter the number of threads:
    ```

17. Enter the host name and port that you used to set up the OpenSearch host.

    ```
    Enter the Opensearch host name:

    Enter the Opensearch port:
    ```

18. Enter *y* (yes) if you want to create JSON files, or *n* (no) to continue.

    If your environment is set up to use SSL, or if you have not completed the necessary prerequisite steps, enter *n* (no). See the section Preparing for the Logstash Installation for information on creating the JSON files manually.

    ```
    Do you want to create JSON files? (y/n): y
    ```

19. Answer *y* (yes) if you want to fetch alert configurations.

    Before the script can fetch the alert configuration, you must have set up PeopleSoft Health Center for alerts. You see this prompt if you answered yes to the prompt to create JSON files and if the JSON files are created successfully.

    See *PeopleTools: Performance Monitor*, "Configuring PeopleSoft Health Center."

    ```
    To fetch the alert configuration, alerts must be configured in
    Peopletools>Health Centre>Alert Configuration.
    Do you want to fetch the alert configuration parameters? (y/n):
    ```

20. Enter *n* (no) to indicate you do not want to configure Logstash for the Process Scheduler metric.

    Note. The PeopleSoft Process Scheduler Metric is currently reserved for internal Oracle use.

    ```
    Do you want to configure for PeopleSoft Process Scheduler Metric: (y/n):
    n
    ```

21. Wait until the installation is complete.

    ```
    Configuring Logstash.....................[OK]
    Verifying if Logstash config files are present in place....
    Logstash config files are present.

    Creating Json files. This may take some time...

    Logstash installation completed
    ```

22. Answer *n* (no) to skip the OpenSearch Dashboards installation and exit.

    ```
    Do you want to install opensearch-dashboards: (y/n): n
    ```

23. To use Logstash for PeopleSoft Health Center, see the Performance Monitor product documentation.

    Note. The OSK DPK installation creates JSON files and starts Logstash if the required conditions are met.

    See *PeopleTools: Performance Monitor*, "Configuring PeopleSoft Health Center."

24. To use OpenSearch, OpenSearch Dashboards, and Logstash for external data integration, see the Search

Technology product documentation.

See *PeopleTools: Search Technology*, "Integrating External Data with PeopleSoft."

A successful deployment includes the following:

- The LOGSTASH_HOME environment variable is set to *BASE_DIR*/pt/logstash-8.11.3 for the current terminal session.
- Java is installed to *BASE_DIR*/pt/os_jdk21.0.*yy*, where yy is the JDK version.
- The JAVA_HOME environment variable is set to *BASE_DIR*/pt/os_jdk21.0.*yy* for the current terminal session.

See Performing Post-Installation Steps on Linux.

Task 2-7-2: Installing Logstash 8.11.3 on Linux in Silent Mode

Encrypting the Logstash Passwords on Linux

The passwords that you include in the silent mode text file must be encrypted. For the Integration Broker password for the Logstash installation, encrypt the password using the PSLSCipher script that is part of the OSK DPK.

1. Open a terminal window, and change directory to *OSK_INSTALL*.
2. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories in *OSK_INSTALL*:

   - setup directory — includes the setup script and sample configuration file
   - archives directory — includes archives for deployment
   - readme.txt file and other files
   - opensearch-manifest — lists the version information for OpenSearch and JDK included in the DPK
3. Change directory to *OSK_INSTALL*/archives and extract pt-jdk21.0.*yy*.tgz into a directory with the same name.

   It may be necessary to extract the file twice.
4. Change directory to *OSK_INSTALL*/archives and extract pt-logstash-8.11.3.tgz into a directory with the same name.

   It may be necessary to extract the file twice. The extraction creates several directories and text files.
5. Set the following environment variables.

   Add JAVA_HOME to the PATH. Use the location where you extracted pt-jdk21.0.*yy*.tgz. Set LOGSTASH_HOME to the location where you extracted pt-logstash-8.11.3.tgz.

   ```
   export PATH=JAVA_HOME/Bin;$PATH
   export LOGSTASH_HOME=OSK_INSTALL/archives/pt-logstash-8.11.3
   ```
6. Change directory to *OSK_INSTALL*/pt-logstash-8.11.3/pt/bin.

7. Run the script, supplying the password:

   ```
   ./PSLSCipher.sh password
   ```

8. Copy the encrypted password from the output on the screen, without adding line feeds or spaces, and paste it into the silentinstall.config file for the IB_PWD parameter.

   The output has this format:

   ```
   Encrypted text: {V2.1}encrypted password==
   ```

The OSK DPK installation includes a psvault key file, which is found in the directory *LOGSTASH_HOME/*pt/properties. The key in this psvault is not related to the keys available in OpenSearch or the PeopleSoft Web server (PIA) psvault. It is recommended that appropriate access be used to protect the Logstash psvault, as with other similar files.

To generate and use a new version of psvault:

1. Change directory to *OSK_INSTALL/*pt-logstash-8.11.3/pt/bin.
2. Run the script as follows to build a new key:

   ```
   ./PSLSCipher.sh -buildkey
   ```

3. Regenerate the Integration Broker user ID and password, and the OpenSearch password with one of these commands:

   ```
   ./PSLSCipher.sh password
   ```

   Or

   ```
   ./PSLSCipher.sh user ID
   ```

4. Edit the Logstash configuration files in the directory *LOGSTASH_HOME*\pt\config with the new encrypted text.
   - Update the values for the Integration Broker user ID and password in JsonLogstash.properties.
   - Update the values for the OpenSearch password in LogstashPipeLine.CONF.

See Reviewing the Logstash Configuration Files (Optional).

See *PeopleTools: Security Administration,* "Securing the External Key File."

Creating a Configuration File and Running the Silent Mode Installation on Linux

To install in silent mode:

1. Create a configuration file.

   The *OSK_INSTALL/*setup directory includes a sample configuration file, silentinstall.config. If you want to use this file, it is a good idea to make a backup copy of the original file before you continue.

   Edit the configuration file with the required values. See the section Installing Interactively for guidance on specifying the values.

2. Enter *N* (no) to skip the OpenSearch installation.

   You must enter a value for this field. You can leave the other fields in the OpenSearch section blank. This sample does not show all of the fields.

   ```
   #Silent Install Configuration Values for installing opensearch and⇒
    opensearch-dashboards
   ```

```
#Install opensearch Y/N is mandatory field
Install opensearch?[Y/N]= N
[...]
```

3. Specify *y* (yes) to install Logstash.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory. Enter encrypted text for the passwords as described in the previous section.

   To install and configure Logstash for PeopleSoft Health Center, enter *y* for the field `Install Logstash?` and for the `Configure Logstash(for PHC)?` field.

```
#Install Logstash Y/N is mandatory field
Install Logstash?[Y/N]=Y

#Logstash port number (optional-default 9800)
LS_port=

#Logstash host name (mandatory)
LS_host =

#The Opensearch username (mandatory)
OS_user =

#The encrypted Opensearch password [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh] (mandatory)
OS_pwd =

#Configure Logstash Y/N (for PeopleSoft Health Centre) is mandatory⇒
 field
Configure Logstash(for PHC)?[Y/N]=

#IB REST service URL (mandatory)
IB_REST_URL=

#Enter the encrypted IB user [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh] (mandatory)
IB_USER=

#Enter the encrypted IB password [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh](mandatory)
IB_PWD=

#location where JSON files need to be created(optional-default LS_HOME⇒
/pt/jmxmonitor)
JSON_LOC=

#The polling frequency for JMX metrics (mandatory)
polling_freq =

#The number of threads (mandatory)
no_of_threads =

#The Opensearch host name (mandatory)
```

```
OS_host =

#The Opensearch port (mandatory)
OS_port =

#Do you want to create JSON files(Y/N) (mandatory)
JSON_files?[Y/N] =

#To fetch the alert configuration, alerts must be configured in
Peopletools>Health Centre>Alert Configuration. Do you want to
fetch the alert configuration parameters?(Y/N) (mandatory)
alert_conf?[Y/N] =

#Configure Logstash Y/N (for PeopleSoft Process Scheduler Metric) is⇒
 mandatory field
Configure Logstash(for Process Scheduler Metric)?[Y/N] =

#IB REST service URL for Process Scheduler Metric (mandatory)
IB_REST_PRCS_URL=

#Enter the encrypted IB user for Process Scheduler Metric [encrypted⇒
 using PSLSCipher.bat/PSLSCipher.sh] (mandatory)
IB_USER_PRCS=

#Enter the encrypted IB password for Process Scheduler Metric ⇒
[encrypted using PSLSCipher.bat/PSLSCipher.sh](mandatory)
IB_PWD_PRCS=

#The Opensearch host name (mandatory)
OS_host =

#The Opensearch port (mandatory)
OS_port =
```

4. Specify *n* (no) to skip the OpenSearch Dashboards installation.

   You must enter a value for this field. You can leave the other fields in the OpenSearch Dashboards section blank. This sample does not show all of the fields.

   ```
   #Install opensearch-dashboards Y/N is mandatory field
   Install opensearch-dashboards?[Y/N]= N
   [...]
   ```

5. Enter *N* to indicate you do not want to upgrade.

   You must enter a value for this field. This sample does not show all of the fields.

   See "Migrating from Elasticsearch to OpenSearch."

   ```
   ########################Silent Upgrade Configuration Values for⇒
    upgrading Opensearch from Elasticsearch ############################

   #Upgrade elasticsearch to Opensearch Y/N is mandatory field
   Upgrade elasticsearch to opensearch?[Y/N]= N
   ```

```
[...]
```

6. In a command prompt window, run the DPK setup script from *OSK_INSTALL*\setup as follows:

   Note. The command here includes line feeds for readability. Do not include the line feeds when you run.

   ```
   ./psft-dpk-setup.sh --install_silent
   --install_base_dir BASE_DIR
   --config_file full_path_configuration_file
   ```

   - Use double-dashes when specifying the script options; for example, `--install_silent`.
   - For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*.
   - For the config_path option, specify the full path to the prepared configuration file. For example:

     Note. The command includes line feeds for readability. Do not include the line feed when you run.

     ```
     ./psft-dpk-setup.sh --install_silent
     --install_base_dir /home/opensearch
     --config_file /home/tmp_install/silentinstall.config
     ```

7. When the script completes, you see a message such as:

   ```
   Logstash Installation Completed.
   ```

8. To use Logstash, see the Performance Monitor product documentation.

   Note. The OSK DPK installation creates JSON files if the required conditions are met.

   See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."

9. To use OpenSearch, OpenSearch Dashboards, and Logstash for external data integration, see the Search Technology product documentation.

   See *PeopleTools: Search Technology*, "Integrating External Data with PeopleSoft."

Task 2-7-3: Removing the Logstash 8.11.3 Installation from Linux

Use these steps to remove the Logstash installation from a Linux host:

Note. You must use the manual steps. There is no cleanup option for the psft-dpk-setup.sh script.

1. Use the following command to determine the process ID (pid) for the running Logstash service:

   ```
   ps -ef |grep Logstash
   ```

2. Kill the process, substituting the Logstash process ID for <pid>:

   ```
   kill -9 <pid>
   ```

3. Remove the Logstash installation directory.

Task 2-8: Installing Logstash 8.11.3 on Microsoft Windows

This section discusses:

- Installing Logstash 8.11.3 on Microsoft Windows Interactively
- Installing Logstash 8.11.3 on Microsoft Windows in Silent Mode
- Removing the Logstash 8.11.3 Installation from Microsoft Windows

Task 2-8-1: Installing Logstash 8.11.3 on Microsoft Windows Interactively

Use this procedure on physical or virtual Microsoft Windows hosts. This procedure assumes that:

- You have downloaded the required OSK DPK for Microsoft Windows, *OSK_FILENAME.zip*, and saved it in a newly created directory accessible to the Microsoft Windows host, referred to as *OSK_INSTALL*.
- You have installed OpenSearch and OpenSearch Dashboards.
- You have the values for the ports, passwords, and host names for the OpenSearch installation.
- You have fulfilled the Logstash prerequisites.

To install Logstash:

1. Open a command prompt.
2. Change directory to *OSK_INSTALL*/setup.
3. Run the DPK setup script with these options:

   ```
   psft-dpk-setup.bat --install --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*; for example:

     ```
     psft-dpk-setup.bat --install --install_base_dir C:\opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--install`.
4. Answer *n* (no) to the prompt to install OpenSearch.

   ```
   You've chosen to do a fresh installation of OpenSearch,
   Logstash and Opensearch-dashboards.
   Do you want to install OpenSearch? (y/n): n
   ```

5. If you are using the PT-INFRA DPK with the OSK DPK, verify that you see the progress message:

   ```
   Extracting PTINFRA DPK
   [OK]
   ```

6. Answer *y* (yes) to install Logstash.

   The script displays information about the current server.

   Note. Answer yes to install Logstash for external data integration. For use with PeopleSoft Health Center, answer yes both to this prompt, and to the later prompt asking if you want to configure PeopleSoft Health Center.

   ```
   Do you want to install Logstash: (y/n): y
   Logstash will be installed on server1.example.com
   ```

7. Enter the HTTP port for Logstash.

   The default is 9800.

   ```
   Enter the HTTP port for Logstash [ 9800 ] :
   ```

8. Enter the OpenSearch administrative user name that you specified when installing OpenSearch. The default is

osadmin.

```
Enter the Opensearch username: osadmin
```

9. Enter the password two times for the OpenSearch administrative user.

```
Enter the Opensearch password:
Re-enter the Opensearch password:
```

10. Review the status messages as the script installs Logstash.

    See Starting Logstash on Microsoft Windows.

```
Extracting the Logstash Binary ..........[OK]
Configuring the Logstash ................[OK]

Logstash installation completed. Please Start the Logstash manually.

Do you want to configure PeopleSoft Health Centre: (y/n): y
```

11. Answer *y* (yes) to configure the installed Logstash for PeopleSoft Health Center, or *n* (no) to continue.

```
Do you want to configure PeopleSoft Health Centre: (y/n): y
```

12. Enter the URL for the Integration Broker REST service.

```
Enter the IB REST service URL:
```

13. Enter the Integration Broker user name.

    Note. Be sure to fulfill the prerequisites for the Integration Broker user in the section Preparing for the Logstash Installation.

```
Enter the IB user:
```

14. Enter the Integration Broker password twice.

```
Enter the IB password:
Re-enter the IB password:
```

15. Enter the full path to the location to save the JSON files.

```
Enter the location where JSON files need to be created
[ C:\opensearch\pt\logstash-8.11.3\pt\jmxmonitor ]:
```

16. Enter the polling frequency, in seconds, for the JMX agents.

    The polling frequency is mandatory input. There is no recommended or default value.

    The value you enter sets the frequency with which the JMX metrics data are fetched from JMX servers. This means that every *n* seconds data is pushed to OpenSearch.

    It is a good idea to regularly purge the psft_hc_metrics index. The interval you select depends upon your usage. See the information on the Monitoring Server page in the Search Technology product documentation.

    See *PeopleTools: Search Technology*, "Configuring the Monitoring Server."

```
Enter the polling frequency for JMX metrics:
```

17. Enter the number of threads that will be used to retrieve metrics and create events.

    The number you select depends upon your usage. Increase or decrease it as needed.

```
Enter the number of threads:
```

18. Enter the information you used to set up the OpenSearch host.

```
Enter the Opensearch host name:

Enter the Opensearch port:
```

19. Enter *y* (yes) if you want to create JSON files, or *n* (no) to continue.

    If your environment is set up to use SSL, or if you have not completed the necessary prerequisite steps, enter *n* (no). See the section Preparing for the Logstash Installation for information on creating the JSON files manually.

```
Do you want to create JSON files? (y/n): y
```

20. Answer *y* if you want to fetch alert configurations.

    Before the script can fetch the alert configuration, you must have set up PeopleSoft Health Center for alerts. You see this prompt if you answered yes to the prompt to create JSON files, and if the JSON files are created successfully.

    See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."

```
To fetch the alert configuration, alerts must be configured in
Peopletools>Health Centre>Alert Configuration. Do you want to
fetch the alert configuration parameters? (y/n):
```

21. Enter *n* (no) to indicate that you do not want to configure Logstash for the Process Scheduler metric.

Note. The PeopleSoft Process Scheduler Metric is currently reserved for internal Oracle use.

```
Do you want to configure for PeopleSoft Process Scheduler Metric: (y/n):
n
```

22. Wait until the installation is complete.

```
Configuring Logstash...................[OK]
Verifying if Logstash config files are present in place....
Logstash config files are present.

Creating Json files. This may take some time...

Logstash installation completed
```

23. Answer *n* (no) to the prompt to install OpenSearch Dashboards.

    The script exits.

```
Do you want to install Opensearch-dashboards: (y/n): n
```

24. After you complete the Logstash installation, to start and use Logstash with PeopleSoft Health Center, see the Performance Monitor product documentation.

Note. The OSK DPK installation creates JSON files if the required conditions are met. You must start Logstash manually.

    See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."

25. To use OpenSearch, OpenSearch Dashboards, and Logstash for external data integration, see the Search Technology product documentation.

    See *PeopleTools: Search Technology,* "Integrating External Data with PeopleSoft."

Task 2-8-2: Installing Logstash 8.11.3 on Microsoft Windows in Silent Mode

Encrypting the Logstash Passwords on Microsoft Windows

The passwords that you include in the silent mode text file must be encrypted. For the Integration Broker password for the Logstash installation, encrypt the password using the PSLSCipher script that is part of the OSK DPK.

1. Go to *OSK_INSTALL*.
2. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   ```
   unzip OSK_FILENAME.zip
   ```

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories in *OSK_INSTALL*:

   - setup directory — includes the setup script and sample configuration file
   - archives directory — includes archives for deployment
   - readme.txt file and other files
   - opensearch-manifest — lists the version information for OpenSearch and JDK included in the DPK
3. Go to *OSK_INSTALL*\archives and extract pt-jdk21.0.*yy*.tgz into a temporary folder, or a folder with a different name.

   It may be necessary to extract the file twice.
4. Go to *OSK_INSTALL*\archives and extract pt-logstash-8.11.3.tgz into a temporary folder, or a folder with a different name.

   It may be necessary to extract the file twice. The extraction creates several folders and text files.
5. In a command prompt, set the following environment variables.

   Add JAVA_HOME to the PATH. Use the location where you extracted pt-jdk21.0.*yy*.tgz. Set LOGSTASH_HOME to the location where you extracted pt-logstash-8.11.3.tgz.

   ```
   PATH=%JAVA_HOME%/bin;%PATH%
   LOGSTASH_HOME=OSK_INSTALL\archives\pt-logstash-8.11.3
   ```
6. Change directory to *OSK_INSTALL*\pt-logstash-8.11.3\pt\bin.
7. Run the script, supplying the password:

   ```
   PSLSCipher.bat password
   ```
8. Copy the encrypted password from the output on the screen, without adding line feeds or spaces, and paste it into the silentinstall.config file for the IB_PWD parameter.

   The output has this format:

   ```
   Encrypted text: {V2.1}encrypted password==
   ```

The OSK DPK installation includes a psvault key file, which is found in the directory *LOGSTASH_HOME*\pt\properties. The key in this psvault is not related to the keys available in OpenSearch or the PeopleSoft Web server (PIA) psvault. It is recommended that appropriate access be used to protect the Logstash psvault, as with other similar files.

To generate and use a new version of psvault:

1. Change directory to *OSK_INSTALL*\pt-logstash-8.11.3\pt\bin.
2. Run the script as follows to build a new key:

   ```
   PSLSCipher.bat -buildkey
   ```

3. Regenerate the Integration Broker user ID and password, and the OpenSearch password with this command:

   ```
   PSLSCipher.bat password or user ID
   ```

4. Edit the Logstash configuration files in the directory *LOGSTASH_HOME*\pt\config with the new encrypted text.
   - Update the values for the Integration Broker user ID and password in JsonLogstash.properties.
   - Update the values for the OpenSearch password in LogstashPipeLine.CONF.

See Reviewing the Logstash Configuration Files (Optional).

See *PeopleTools: Security Administration,* "Securing the External Key File."

Creating a Configuration File and Running the Silent Mode Installation on Microsoft Windows

To install in silent mode:

1. Create a configuration file.

   The *OSK_INSTALL/*setup directory includes a sample configuration file, silentinstall.config. If you want to use this file, it is a good idea to make a backup copy of the original file before you continue.

   Edit the configuration file with the required values. See the section Installing Logstash 8.11.3 on Microsoft Windows Interactively for guidance on specifying the values.

2. Enter *n* (no) to skip the OpenSearch installation.

   You must enter a value for this field. You can leave the other fields in the OpenSearch section blank. This sample does not show all of the fields.

   ```
   #Silent Install Configuration Values for installing opensearch
   and opensearch-dashboards

   #Install opensearch Y/N is mandatory field
   Install opensearch?[Y/N]= N

   [...]
   ```

3. Specify *y* to install Logstash.

   You must enter a value for this field. If you enter yes, you must specify values for the items labelled mandatory. If you enter no, you can leave them blank. Enter encrypted text for the passwords as described in the previous section.

   To install and configure Logstash for PeopleSoft Health Center, enter *y* for both the field `Install Logstash?`, and for the `Configure Logstash (for PHC)?` field.

   ```
   #Install Logstash Y/N is mandatory field
   ```

```
Install Logstash?[Y/N]=

#Logstash port number (optional-default 9800)
LS_port=

#Logstash host name (mandatory)
LS_host =

#The Opensearch username (mandatory)
OS_user =

#The encrypted Opensearch password [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh] (mandatory)
OS_pwd =

#Configure Logstash Y/N (for PeopleSoft Health Centre) is mandatory⇒
 field
Configure Logstash(for PHC)?[Y/N]=

#IB REST service URL (mandatory)
IB_REST_URL=

#Enter the encrypted IB user [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh] (mandatory)
IB_USER=

#Enter the encrypted IB password [encrypted using PSLSCipher.bat⇒
/PSLSCipher.sh](mandatory)
IB_PWD=

#location where JSON files need to be created(optional-default LS_HOME⇒
/pt/jmxmonitor)
JSON_LOC=

#The polling frequency for JMX metrics (mandatory)
polling_freq =

#The number of threads (mandatory)
no_of_threads =

#The OpenSearch host name (mandatory)
OS_host =

#The OpenSearch port (mandatory)
OS_port =

#Do you want to create JSON files(Y/N) (mandatory)
JSON_files?[Y/N] =

#To fetch the alert configuration, alerts must be configured in
Peopletools>Health Centre>Alert Configuration. Do you want to
fetch the alert configuration parameters?(Y/N) (mandatory)
```

```
alert_conf?[Y/N] =

#Configure Logstash Y/N (for PeopleSoft Process Scheduler Metric) is⇒
 mandatory field
Configure Logstash(for Process Scheduler Metric)?[Y/N] =

#IB REST service URL for Process Scheduler Metric (mandatory)
IB_REST_PRCS_URL=

#Enter the encrypted IB user for Process Scheduler Metric [encrypted⇒
 using PSLSCipher.bat/PSLSCipher.sh] (mandatory)
IB_USER_PRCS=

#Enter the encrypted IB password for Process Scheduler Metric ⇒
[encrypted using PSLSCipher.bat/PSLSCipher.sh](mandatory)
IB_PWD_PRCS=

#The Opensearch host name (mandatory)
OS_host =

#The Opensearch port (mandatory)
OS_port =
```

4. Specify *n* (no) to skip the OpenSearch Dashboards installation.

   You must enter a value for this field. You can leave the other fields in the OpenSearch Dashboards section blank. This sample does not show all of the fields.

   ```
   #Install opensearch-dashboards Y/N is mandatory field
   Install opensearch-dashboards?[Y/N]= N

   [...]
   ```

5. Enter *n* to indicate you do not want to upgrade.

   You must enter a value for this field. This sample does not show all of the fields.

   See "Migrating from Elasticsearch to OpenSearch."

   ```
   ########################Silent Upgrade Configuration Values for⇒
    upgrading Opensearch from Elasticsearch ############################

   #Upgrade elasticsearch to Opensearch Y/N is mandatory field
   Upgrade elasticsearch to opensearch?[Y/N]= N

   [...]
   ```

6. In a command prompt window, run the DPK setup script from *OSK_INSTALL*\setup as follows:

   Note. The command here includes line feeds for readability. Do not include the line feeds when you run.

   ```
   psft-dpk-setup.bat --install_silent
   --install_base_dir BASE_DIR
   --config_file full_path_configuration_file
   ```

   - Use double-dashes when specifying the script options; for example, `--install_silent`.

- For the `install_base_dir` option, specify the full path where you want OpenSearch installed. The installation directory is referred to in this documentation as *BASE_DIR*.
- For the config_path option, specify the full path to the prepared configuration file. For example:

  Note. The command includes line feeds for readability. Do not include the line feeds when you run.

  ```
  psft-dpk-setup.bat --install_silent
  --install_base_dir C:/opensearch
  --config_file C:/tmp_install/silentinstall.config
  ```

7. When the script completes, you see a message such as:

   ```
   Logstash Installation Completed.
   ```

8. To start and use Logstash, see the Performance Monitor product documentation.

   Note. The OSK DPK installation creates JSON files if the required conditions are met.

   See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."

9. To use OpenSearch, OpenSearch Dashboards, and Logstash for external data integration, see the Search Technology product documentation.

   See *PeopleTools: Search Technology*, "Integrating External Data with PeopleSoft."

Task 2-8-3: Removing the Logstash 8.11.3 Installation from Microsoft Windows

Use these steps to remove the Logstash installation from Microsoft Windows.

Note. You must use the manual steps. There is no cleanup option for the psft-dpk-setup.bat script.

1. Stop the Logstash script if it is running.

   If the command window that you used to start the Logstash script is open, either terminate the Logstash script by pressing Ctrl+C, or close the command window.

2. Remove the Logstash installation directory.

Task 2-9: Generating JSON and Threshold Parameter Files after Logstash 8.11.3 Installation

This section discusses:

- Generating JSON Files for Logstash 8.11.3
- Generating Threshold Parameter Files for PeopleSoft Health Center Alerts (Logstash 8.11.3)

Task 2-9-1: Generating JSON Files for Logstash 8.11.3

The OSK installation prompts you for information that it uses to generate JSON files, which are used for collecting metrics for PeopleSoft Health Center. If you perform the OSK DPK installation before registering the PPM and JMX agents, carry out these steps to get the JSON configuration files for Logstash:

1. Register the PPM and JMX agents as described in an earlier section.

See Obtaining the Integration Broker REST URL.

See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."

2. Enter the value for the Integration Broker REST URL in *LOGSTASH_HOME*\pt\config\JsonLogstash.properties.

   See "Performing Additional Tasks," Reviewing the Logstash Configuration Files.

3. Set the following environment variables:

   - Add JAVA_HOME to the PATH environment variable, where JAVA_HOME is the installation location for Java.

     For Microsoft Windows:

     ```
     PATH=%JAVA_HOME%/bin;%PATH%
     ```

     For Linux:

     ```
     export PATH=JAVA_HOME/Bin;$PATH
     ```

   - Set LOGSTASH_HOME to the installation location for Logstash if necessary.

     For Microsoft Windows:

     ```
     set LOGSTASH_HOME=BASE_DIR\pt\logstash-8.11.3
     ```

     For Linux:

     ```
     export LOGSTASH_HOME=BASE_DIR/pt/logstash-8.11.3
     ```

4. Go to *LOGSTASH_HOME*\pt\bin and run the script CreateJSON.bat (Microsoft Windows) or CreateJSON.sh (Linux) to get the JSON files.

   See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."

Note. If you want to add a new application to be monitored, rerun CreateJSON.bat (Microsoft Windows) or CreateJSON.sh (Linux). It is not necessary to restart Logstash.

Note. For information on generating JSON files with an SSL setup, see the section Using Logstash with an SSL Setup.

Task 2-9-2: Generating Threshold Parameter Files for PeopleSoft Health Center Alerts (Logstash 8.11.3)

Threshold parameters are used on the Configure Health Alerts page in PeopleSoft Health Center. The OSK installation prompts you for information on configuring alerts. If you perform the OSK installation before you configure alerts for the PeopleSoft Health Center, carry out these steps to use health alerts:

1. In your PeopleSoft application, configure Health Center alerts.

   See *PeopleTools: Performance Monitor,* "Configuring Health Center Alerts."

2. Register the PPM and JMX agents as described in an earlier section.

   See Obtaining the Integration Broker REST URL.

   See *PeopleTools: Performance Monitor,* "Configuring PeopleSoft Health Center."

3. Enter the value for the Integration Broker REST URL in *LOGSTASH_HOME*\pt\config\JsonLogstash.properties.

   See "Performing Additional Tasks," Reviewing the Logstash Configuration Files.

4. Set the following environment variables:
   - Add JAVA_HOME to the PATH environment variable, where JAVA_HOME is the installation location for Java.

     For Microsoft Windows:

     ```
     PATH=%JAVA_HOME%/bin;%PATH%
     ```

     For Linux:

     ```
     export PATH=JAVA_HOME/Bin;$PATH
     ```

   - Set LOGSTASH_HOME to the installation location for Logstash if necessary.

     For Microsoft Windows:

     ```
     set LOGSTASH_HOME=BASE_DIR\pt\logstash-8.11.3
     ```

     For Linux:

     ```
     export LOGSTASH_HOME=BASE_DIR/pt/logstash-8.11.3
     ```

5. Go to *LOGSTASH_HOME*\pt\bin and run the script FetchThreshold.bat (Microsoft Windows) or FetchThreshold.sh (Linux) to generate ThresholdParams.json.

Note. For information on generating ThresholdParams.json files with an SSL setup, see the section Using Logstash with an SSL Setup.

Task 2-10: Using Logstash 8.11.3 with an SSL Setup

This section discusses:

- Modifying the Logstash Configuration File for an SSL Setup
- Generating JSON Files, Fetching Threshold Parameters, and Sending Alerts with an OpenSearch SSL Setup
- Configuring SSL for PeopleSoft Domain's JMX Agents (Logstash 8.11.3)

Task 2-10-1: Modifying the Logstash Configuration File for an SSL Setup

This section includes guidelines for using Logstash with an OpenSearch installation that uses SSL signon.

1. Open *LOGSTASH_HOME*\pt\config\LogstashPipeLine.CONF for editing.

   See "Performing Additional Tasks," Reviewing the Logstash Configuration Files.

2. Add a line specifying the OpenSearch root certificate in the output section, and then save the file.

   See *PeopleTools: Search Technology*, "Configuring SSL between PeopleSoft and Search Engine."

   In this example, the cacert line is in bold font:

```
input {
  jmx {
    path => "C:\opensearch\pt\logstash-8.11.3\pt\jmxmonitor"
    polling_frequency => 5
    type => "jmx"
    nb_thread => 15
  }
 }
```

```
output {
opensearch {
hosts => [" https://<OS_host>:<OS_port>"]
index => "psft_hc_metrics"
user => "osadmin"
password => "encrypted_password"
ecs_compatibility => disabled
cacert => 'C:\opensearch\pt\opensearch-2.11.0\plugins\orcl-security-⇒
plugin\config\properties\cacert.cer'
}
}
```

Task 2-10-2: Generating JSON Files, Fetching Threshold Parameters, and Sending Alerts with an OpenSearch SSL Setup

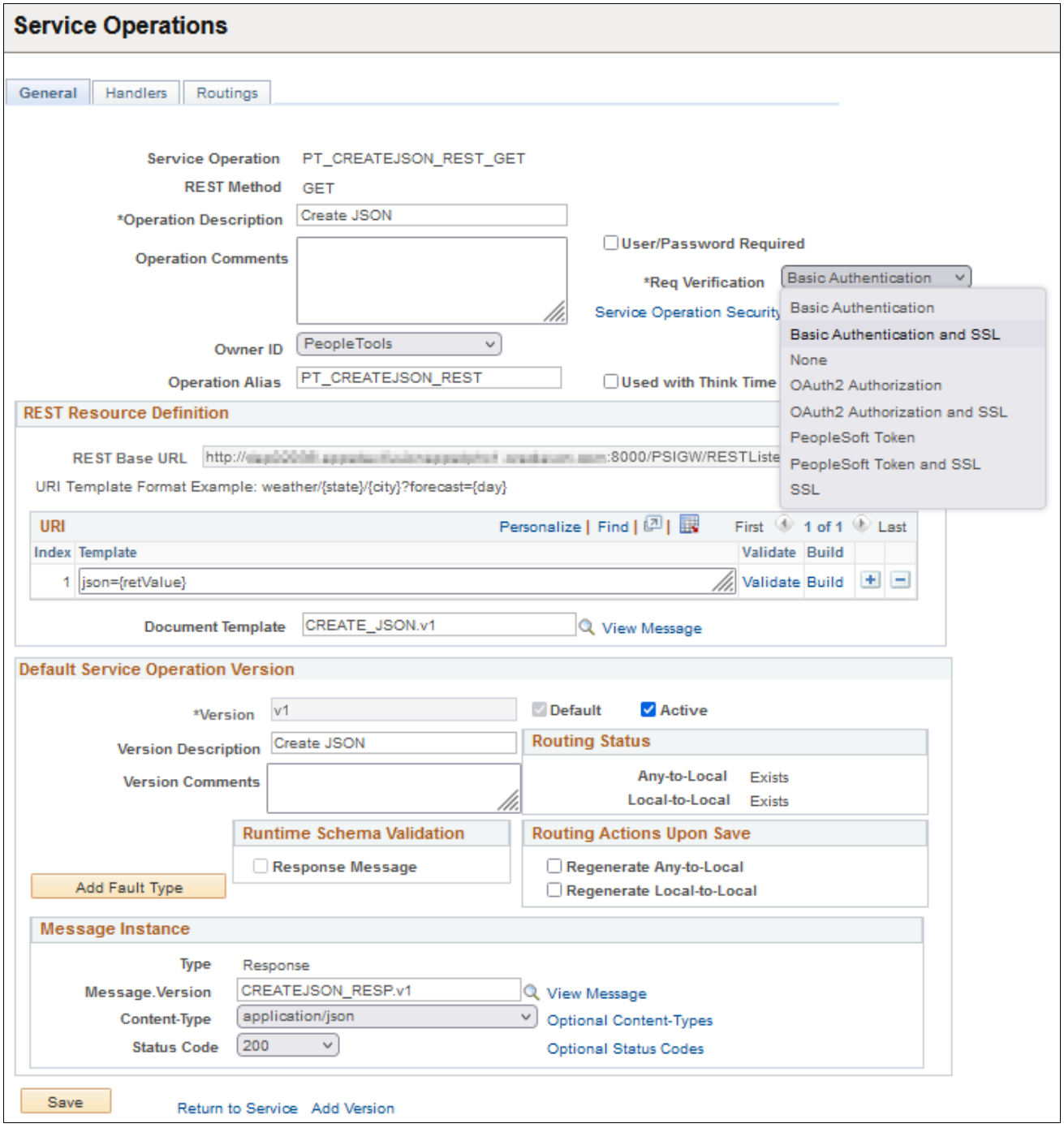
The creation of the JSON configuration files requires connection to the Integration Broker REST URL. By default the connection to the Integration Broker REST URL is authenticated using Basic Authentication (Integration Broker User name and password). If your environment is set up to use SSL, you must change the authentication and create the JSON files manually after completing the OSK DPK installation.

In addition, you must also run a script to create the JSON file for threshold parameters. Threshold parameters are used on the Configure Health Alerts page in PeopleSoft Health Center.

1. Install Logstash, and answer *n* (no) to the prompt about JSON files.
2. Sign in to the PeopleSoft installation (PIA) in a browser and ensure that the Integration Broker user has permission list PTPT4800.
3. Select PeopleTools > Integration Broker > Integration Setup > Service Operation Definitions.
4. Locate the service operation PT_CREATEJSON_REST_GET.

5. Select *Basic Authentication and SSL* from the Req Validation drop-down list, and click Save.

   This example shows the General page for the PT_CREATEJSON_REST_GET service operation.



Service Operations General page

6. On the General page for the service operation, in the URI grid, select the Validate link.
7. Select the SSL check box and then select Generate URL.
8. Make a note of the REST URL on the Validate URI window.
9. Save the changes.

10. Locate the Service Operation PT_HC_ALERTS.
11. Select *Basic Authentication and SSL* from the Req Validation drop-down list, and click Save.
12. Locate the Service Operation PT_PHCTHRESHOLD_GET.
13. Select *Basic Authentication and SSL* from the Req Validation drop-down list, and click Save.
14. Obtain a certificate from a Certificate Authority (CA) and save it as certLS.jks.
15. Verify that the JAVA_HOME environment variable is set to the installation location for Java.
16. Generate the truststore using the keytool command.

    You are prompted for the password while generating the jks file. Make a note of the password that you enter to use in the next step.

    ```
    keytool -importcert -keystore <certificate_path>\certLS.jks -file
    <certificate_path>\certnew.cer -alias <alias_name>
    ```

    For example:

    ```
    keytool -importcert -keystore D:\SSL\newSSLJava11\certLS.jks -file
    D:\SSL\newSSLJava11\certnew.cer -alias my_ca
    ```

17. Put the certLS.jks truststore file under *LOGSTASH_HOME*\pt\config\.
18. Encrypt a password for the truststore using PSLSCipher.bat (Microsoft Windows) or PSLSCipher.sh (Linux).

    See Encrypting the Logstash Passwords on Microsoft Windows.

    See Encrypting the Logstash Passwords on Linux.
19. Open the JsonLogstash.properties file for editing.
20. Locate the SSL-related parameters and remove any commenting characters.
    - To enable SSL for JMX agents, set JMXSSLEnabled to true.

      If you enable SSL, you must also set the parameters JMXSSLTruststorePassword and JMXSSLTruststoreType.

      ```
      JMXSSLEnabled=true
      ```

    - Enter the encrypted password for JMXSSLTruststorePassword.

      ```
      JMXSSLTruststorePassword=encrypted password
      ```

    - Enter PKCS12 or JKS for the truststore type.

      ```
      JMXSSLTruststoreType=JKS
      ```

21. To create the JSON files after completing the OSK DPK installation, go to *LOGSTASH_HOME*\pt\bin and run CreateJSON.bat (Microsoft Windows) or CreateJSON.sh (Linux).
22. To generate ThresholdParams.json, go to *LOGSTASH_HOME*\pt\bin and run FetchThreshold.bat (Microsoft Windows) or FetchThreshold.sh (Linux).

See Also

PeopleTools: Search Technology, "Configuring SSL between PeopleSoft and Search Engine"

PeopleTools: Security Administration, "Installing Web Server-Based Digital Certificates"

PeopleTools: Performance Monitor, "Configuring PeopleSoft Health Center"

Task 2-10-3: Configuring SSL for PeopleSoft Domain's JMX Agents (Logstash 8.11.3)

To enable SSL for the JMX agents for Logstash, you must also configure SSL for the PeopleSoft application server and Process Scheduler domains. This section is required only if you enabled SSL by setting the parameter `JMXSSLEnabled=true` in the previous section.

The keystore that is used at the domain level needs to be signed with the root certificate, and the same needs to be imported to the Logstash truststore certLS.jks.

For information on working with keystore and truststore files, see the information on SSL/TLS and Digital Certificates.

See *PeopleTools: Security Administration.*

1. If necessary, create a keystore.

   Alternatively, use the default keystore, pskey.
2. Create a certificate request.
3. Import the signed certification into the keystore.
4. Import the root CA into the keystore.
5. Run PSADMIN in your PeopleSoft environment, and select 1) Application Server or 2) Process Scheduler.
6. Select 1) Administer a domain, and select the domain.
7. Select Configure this domain.
8. Select PHC Remote Admin Settings.
9. Enter each requested value and press ENTER to continue.

   The menu includes general parameters for PeopleSoft Health Center remote administration, as well as the SSL values. The following sample includes only the SSL parameters.

```
Enable Remote Administration SSL=1
Remote Administration SSL Keystore=<PS_CFG_HOME>/mykeystore
Remote Administration SSL Keystore Password=encrypted password
Remote Administration SSL Keystore Type=PKCS12
Remote Administration SSL Truststore=<PS_CFG_HOME>/mykeystore
Remote Administration SSL Truststore Password=encrypted password
Remote Administration SSL Truststore Type=PKCS12
```

See Also

PeopleTools: System and Server Administration, "PSTOOLS Options"

PeopleTools: Performance Monitor, "Configuring PeopleSoft Health Center"

Task 2-11: Starting Logstash 8.11.3 Manually

This section discusses:

- Starting Logstash 8.11.3 on Microsoft Windows for PeopleSoft Health Center
- Starting Logstash 8.11.3 on Linux for PeopleSoft Health Center

- Starting Logstash 8.11.3 on Microsoft Windows for External Data Integration

Task 2-11-1: Starting Logstash 8.11.3 on Microsoft Windows for PeopleSoft Health Center

Before you use Logstash for PeopleSoft Health Center, you must start it manually. It is started automatically when you install on Linux.

1. Open a command prompt window, and change directory to *LOGSTASH_HOME*\bin.

   LOGSTASH_HOME refers to the path where you've installed Logstash. For example, if the OSK DPK is deployed under c:\opensearch, Logstash is installed under c:\opensearch\pt\logstash-8.11.3. In this example, LOGSTASH_HOME should be set to c:\opensearch\pt\logstash-8.11.3.

2. Run the following command:

   ```
   logstash.bat -f LOGSTASH_HOME\pt\config\LogstashPipeLine.CONF
   ```

Task 2-11-2: Starting Logstash 8.11.3 on Linux for PeopleSoft Health Center

On the Linux platform, after you install Logstash, the Logstash service is automatically started. If the Logstash service is not started, you can start the service by executing the following command:

```
logstash -f LOGSTASH_HOME/pt/config/LogstashPipeLine.CONF
```

See *PeopleTools: Performance Monitor.* "Configuring PeopleSoft Health Center."

Task 2-11-3: Starting Logstash 8.11.3 on Microsoft Windows for External Data Integration

Logstash is part of the feature that enables you to integrate external data with your PeopleSoft data.

See *PeopleTools: Search Technology,* "Understanding the Integration of External Data with PeopleSoft."

Before using the external data integration feature on Microsoft Windows, you must start Logstash. It is started automatically when you install on Linux.

1. Change directory to *BASE_DIR*\pt\logstash-8.11.3.
2. Set the environment variables with these commands:

   ```
   set JAVA_HOME=BASE_DIR\pt\os_jdk21.0.yy
   set LOGSTASH_HOME=BASE_DIR\pt\logstash-8.11.3
   ```

3. Run this script:

   ```
   start_psftext_logstash.bat
   ```

Chapter 3

Migrating from Elasticsearch to OpenSearch

This chapter discusses:

- Understanding the Migration to OpenSearch
- Migrating from Elasticsearch to OpenSearch Interactively
- Migrating from Elasticsearch to OpenSearch in Silent Mode
- Copying Data from Elasticsearch to OpenSearch Manually
- Completing the Migration in the PeopleSoft Application

Understanding the Migration to OpenSearch

You can move from Elasticsearch 7.0 or 7.10 to OpenSearch using the OSK DPK setup script. To prepare for the migration, ensure that you have the following information:

- *It is important that you ensure your server has sufficient resources.*

  If Elasticsearch and OpenSearch are running on the same server, ensure that it has sufficient storage and RAM to sustain the additional volume of data.
- Base directory for the new OpenSearch installation

  It is a good idea to choose a base directory different from the one used for Elasticsearch.
- Home directory for the existing Elasticsearch installation.
- Administrative user and password for the new OpenSearch installation
- Proxy user and password for the new OpenSearch installation
- HTTP port for the new OpenSearch installation.

  Ensure that the port is not in use. Note that the default HTTP port for OpenSearch is the same as that for Elasticsearch. If you want to use the same port number for OpenSearch as you used for the existing Elasticsearch, stop the Elasticsearch service before beginning this process.
- Data and log directories for the new OpenSearch installation.

  If you want to use the same data directory as you used for Elasticsearch, stop the Elasticsearch service before beginning this process. There is a prompt that asks whether you want the script to copy the existing data (referred to as data that is already ingested) from Elasticsearch to OpenSearch.
- Migration from Elasticsearch with SSL

  If the Elasticsearch installation is configured with SSL, the migration process will copy the keystore and certificates to OpenSearch.

Note. There is no process to migrate from Kibana to OpenSearch Dashboards. You must do a fresh installation of OpenSearch Dashboards.

See "Performing Additional Tasks," Starting and Stopping an OpenSearch Service.

Task 3-1: Migrating from Elasticsearch to OpenSearch Interactively

This section discusses:

- Migrating from Elasticsearch to OpenSearch Interactively on Linux
- Migrating from Elasticsearch to OpenSearch Interactively on Microsoft Windows

Task 3-1-1: Migrating from Elasticsearch to OpenSearch Interactively on Linux

Use this process to move from an existing installation of Elasticsearch to OpenSearch using the OSK DPK setup script interactively.

Note. This process does not migrate or upgrade Kibana or Logstash. Instead, you must perform a new installation of OpenSearch Dashboards or the latest Logstash.

1. Download the current OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL*.
2. Open a terminal window.
3. Change directory to *OSK_INSTALL*.
   ```
   cd OSK_INSTALL
   ```
4. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:
   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch–manifest — lists the versions of OpenSearch and JDK
5. Change directory to *OSK_INSTALL*/setup.
6. Run the DPK setup script with these options:
   ```
   ./psft-dpk-setup.sh --os_upgrade --install_base_dir BASE_DIR
   ```
   - For the `install_base_dir` option, specify the full path to the location where you want to install OpenSearch; for example:
     ```
     ./psft-dpk-setup.sh --os_upgrade --install_base_dir /home/opensearch
     ```
   - Use double-dashes when specifying the script options; for example, `--os_upgrade`.

7. Answer *y* (yes) to upgrade Elasticsearch, or *n* (no) to exit.

```
You have chosen to do an upgrade from Elasticsearch to OpenSearch.
For data that is already ingested, you may copy the data after the
installation process or allow the upgrade process to copy.
Do you still want to continue with the upgrade? (y/n):
```

8. Enter the path to the current Elasticsearch home, *ES_HOME*, such as /home/elk710/pt/elasticsearch7.10.0:

```
Enter the path to current ES_HOME[<base_dir>/pt/elasticsearchx.x.x]:
/home/elk710/pt/elasticsearch7.10.0
```

9. Enter the name for the OpenSearch administrative user or press ENTER to accept the default, osadmin.

   The administrative user is used to authenticate requests on OpenSearch.

   Note. The administrative user is not the same as the user who installs the OSK DPK and owns the files.

```
Enter the admin username for Opensearch [ osadmin ] :
```

10. Enter the password twice for the OpenSearch administrative user.

```
Enter the password for osadmin :
Re-enter the password for osadmin :
```

11. Enter the name for the OpenSearch proxy user, or accept the default, people.

    Note that this is not the same user as the PeopleSoft connect ID, which also has people as the default value.

```
Enter the proxy username for Opensearch [ people ] :
```

12. Enter the password twice for the OpenSearch proxy user.

```
Enter the password for people :
Re-enter the password for people :
```

13. Enter the OpenSearch cluster name, or accept the default, OSCLUSTER.

```
Enter the OS cluster name [ OSCLUSTER ] :
```

14. Enter an unused HTTP port for OpenSearch, or accept the default, 9200.

    This is the port on which OpenSearch listens for requests.

```
Enter the HTTP port for Opensearch [ 9200 ] :
```

15. Enter the host name for any nodes that are already members of a cluster.

```
Enter the list of discovery hosts [ ["127.0.0.1", "[::1]"] ] :
```

    Be sure to use the following syntax:

    - Enclose one or more host names in square brackets.
    - Enclose the host name or IP address in *double quotes* (" ").
    - Use commas to list two or more hosts.
    - Use this as an example for one host: `["host1.example.com"]`
    - Use this as an example for more than one host: `["host1.example.com", "127.0.0.1"]`

16. Enter the full path location for the OpenSearch data.

    Oracle recommends that you do not use the default location, *BASE_DIR*/pt/opensearch-2.11.0/data, with PeopleSoft environments. Instead, specify the full path for a data directory that is outside of *BASE_DIR/*

pt/opensearch-2.11.0.

```
Enter the path where you want the Opensearch data to reside
[ /home/opensearch/pt/opensearch-2.11.0/data ] :
```

17. Enter the location for the OpenSearch logs.

    The default location is *BASE_DIR*/pt/opensearch-2.11.0/logs.

    ```
    Enter the path where you want the Opensearch Logs to be written to
    [ /home/opensearch/pt/opensearch-2.11.0/logs ] :
    ```

18. Enter the heap size in GB.

    Enter a number as shown in this example:

    See Prerequisites.

    ```
    Enter the Java Heap size for Opensearch in GB [ 2 ] : 7
    ```

19. Review the status messages as the script installs OpenSearch.

    ```
    Extracting the new OpenSearch Binary .......[OK]
    Extracting the new JDK .............        [OK]
    Setting users/roles in OpenSearch ..........[OK]
    Configuring Opensearch .....................[OK]
    Opensearch Installation Completed.
    ```

20. Enter *y* (yes) if you want the script to copy Elasticsearch data to the OpenSearch data directory, and then enter *y* to confirm.

    If you do not want to copy the data now, enter *n* to exit.

    See Copying the Data from Elasticsearch to OpenSearch Manually if you want to copy the data after completing this process.

    ```
    Do you want to copy the data now ? (y/n): y

    Caution! The data copy may take time based on the volume of data
    to copy. Please ensure the target directory have sufficient
    free space to copy.

    Please confirm to proceed ? (y/n): y
    Copying data from ES to OpenSearch ..............
    ```

21. Wait until the process is complete.

    ```
    Starting OpenSearch server ......
    SUCCESS: Specified value was saved.
    [OK]
    Checking if OpenSearch service is running.......

    OpenSearch Upgrade completed.
    ```

Task 3-1-2: Migrating from Elasticsearch to OpenSearch Interactively on Microsoft Windows

Use this process to move from an existing installation of Elasticsearch to OpenSearch using the OSK DPK setup script interactively.

Note. This process does not upgrade Kibana to OpenSearch Dashboards. Instead, you must perform a new installation of OpenSearch Dashboards.

1. Stop the service for the existing Elasticsearch installation.

   This is required due to directory permissions.

   a. Open a command prompt, and change directory to *ES_HOME*/bin.

   b. Enter this command to stop the service:

   ```
   elasticsearch-service.bat stop
   ```

2. Download the current OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL*.
3. Open a terminal window.
4. Change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

5. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch–manifest — lists the versions of OpenSearch and JDK

6. Change directory to *OSK_INSTALL*/setup.
7. Run the DPK setup script with these options:

   ```
   psft-dpk-setup.bat --os_upgrade --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path to the location where you want to install OpenSearch; for example:

     ```
     psft-dpk-setup.bat --os_upgrade --install_base_dir C:\opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--os_upgrade`.

8. Answer *y* (yes) to upgrade Elasticsearch, or *n* (no) to exit.

   ```
   You have chosen to do an upgrade from Elasticsearch to OpenSearch.
   For data that is already ingested, you may copy the data after the
   installation process or allow the upgrade process to copy.
   Do you still want to continue with the upgrade? (y/n):
   ```

9. Enter the path to the current Elasticsearch home, *ES_HOME*, such as C:\elk710\pt\elasticsearch7.10.0:

   ```
   Enter the path to current ES_HOME[<base_dir>\pt\elasticsearchx.x.x]:
   C:\elk710\pt\elasticsearch7.10.0
   ```

10. Enter the name for the OpenSearch administrative user or press ENTER to accept the default, osadmin.

    The administrative user is used to authenticate requests on OpenSearch.

Note. The administrative user is not the same as the user who installs the OSK DPK and owns the files.

```
Enter the admin username for Opensearch [ osadmin ] :
```

11. Enter the password twice for the OpenSearch administrative user.

```
Enter the password for osadmin :
Re-enter the password for osadmin :
```

12. Enter the name for the OpenSearch proxy user, or accept the default, people.

    Note that this is not the same user as the PeopleSoft connect ID, which also has people as the default value.

```
Enter the proxy username for Opensearch [ people ] :
```

13. Enter the password twice for the OpenSearch proxy user.

```
Enter the password for people :
Re-enter the password for people :
```

14. Enter the OpenSearch cluster name, or accept the default, OSCLUSTER.

```
Enter the OS cluster name [ OSCLUSTER ] :
```

15. Enter an unused HTTP port for OpenSearch, or accept the default, 9200.

    This is the port on which OpenSearch listens for requests.

```
Enter the HTTP port for Opensearch [ 9200 ] :
```

16. Enter the host name for any nodes that are already members of a cluster.

```
Enter the list of discovery hosts [ ["127.0.0.1", "[::1]"] ] :
```

    Be sure to use the following syntax:

    - Enclose one or more host names in square brackets.
    - Enclose the host name or IP address in *double quotes* (" ").
    - Use commas to list two or more hosts.
    - Use this as an example for one host: `["host1.example.com"]`
    - Use this as an example for more than one host: `["host1.example.com", "127.0.0.1"]`

17. Enter the full path location for the OpenSearch data.

    Oracle recommends that you do not use the default location, *BASE_DIR*\pt\opensearch-2.11.0\data, with PeopleSoft environments. Instead, specify the full path for a data directory that is outside of *BASE_DIR*\pt\opensearch-2.11.0.

```
Enter the path where you want the Opensearch data to reside
 [ C:\opensearch\pt\opensearch-2.11.0\data ] :
```

18. Enter the location for the OpenSearch logs.

    The default location is *BASE_DIR*\pt\opensearch-2.11.0\logs.

```
Enter the path where you want the Opensearch Logs to be written to
[ C:\opensearch\pt\opensearch-2.11.0\logs ] :
```

19. Enter the heap size in GB.

    Enter a number as shown in this example:

    See Prerequisites.

```
Enter the Java Heap size for Opensearch in GB [ 2 ] : 7
```

20. Review the status messages as the script installs OpenSearch.

```
Extracting the new OpenSearch Binary .......
Extracting the new OpenSearch Binary .......
[OK]
Extracting the new JDK ............
[OK]
Setting users/roles in OpenSearch .......
[OK]
Configuring Opensearch ......
Checking if Opensearch service is running.......
Opensearch Installation Completed.
```

21. Enter *y* (yes) if you want the script to copy Elasticsearch data to the OpenSearch data directory, and then enter *y* to confirm.

    If you do not want to copy the data now, enter *n* to exit.

    See Copying the Data from Elasticsearch to OpenSearch Manually if you want to copy the data after completing this process.

```
Would you like to copy the data now ? (y/n): y

Caution! The data copy may take time based on the volume of data to⇒
 copy.
Please ensure the target directory have sufficient free space to copy.

Please confirm to proceed ? (y/n): y
Copying data from ES to OpenSearch ..............
```

22. Wait until the process is complete.

```
Starting Opensearch server ......
SUCCESS: Specified value was saved.
[OK]
Checking if Opensearch service is running.......

OpenSearch Upgrade completed.
```

Task 3-2: Migrating from Elasticsearch to OpenSearch in Silent Mode

This section discusses:

- Migrating from Elasticsearch to OpenSearch in Silent Mode on Linux
- Migrating from Elasticsearch to OpenSearch in Silent Mode on Microsoft Windows

Task 3-2-1: Migrating from Elasticsearch to OpenSearch in Silent Mode on Linux

You can use the setup script to migrate from Elasticsearch to OpenSearch in silent mode by preparing a text file that includes details about the current installation.

Review the guidelines in Understanding the Migration to OpenSearch before beginning the process.

Note. You cannot use this process to upgrade or migrate Kibana or Logstash. Instead, you must perform a new installation of OpenSearch Dashboards and the latest version of Logstash and start them manually.

To migrate in silent mode:

1. Create a configuration file.

   The *OSK_INSTALL/*setup directory includes a sample configuration file, silentinstall.config. If you want to use this file, it is a good idea to make a backup copy of the original file before you continue.

2. To indicate that you do not want to install OpenSearch, enter *n* (no) for this question:

   ```
   #Install opensearch Y/N is mandatory field
   Install opensearch?[Y/N]= n
   ```

3. Enter values for the items in this section for the migration from Elasticsearch to OpenSearch.

   Note. The parameter for choosing to upgrade appears later in the configuration file.

   ```
   ### If the upgrade from elasticsearch to opensearch is yes then the⇒
    below values have to be filled #####

   #Opensearch cluster name (mandatory)
   cluster.name=

   #Opensearch host name (mandatory)
   network.host=

   #Opensearch port number (optional-default 9200)
   #If its upgrade from ES to Opensarch and if you want to use the same⇒
    port number as ES. Please make sure ES is down else please enter a⇒
    different port number for OS.

   http.port=

   #Opensearch data directory (optional-default OS_HOME/data)
   #If its upgrade from ES to Opensarch and if you want to use the same⇒
    data path as ES. Please make sure ES is down else please enter a⇒
    different data path for OS.
   path.data=

   #Opensearch log directory (optional-default OS_HOME/logs)
   path.logs=

   #Opensearch discovery hosts (optional)
   discovery.hosts=
   ```

```
#Opensearch heap size (optional-default 2)
OS_HEAP_SIZE=

#Opensearch admin username (optional - default osadmin)
admin.user=

#Opensearch encrypted password for osadmin (mandatory)
admin.password=

#Opensearch proxy username (optional - default people)
people.user=

#Opensearch encrypted password for people (mandatory)
people.password=
```

4. To indicate that you do not want to install OpenSearch Dashboards, or Logstash, enter *n* (no) to these questions, which occur later in the silentinstall.config sample file.

```
################################################
#Install Logstash Y/N  is mandatory field
Install Logstash?[Y/N]= n

################################################
#Install Opensearch-dashboards Y/N is mandatory field
Install opensearch-dashboards?[Y/N]= n
```

5. Enter *y* (yes) to indicate you want to upgrade Elasticsearch to OpenSearch.

   You must enter a value for this field.

```
#Upgrade elasticsearch to Opensearch Y/N is mandatory field
Upgrade elasticsearch to opensearch?[Y/N]= Y

#CAUTION !!! The above option does upgrade from Elasticsearch to Open⇒
Search.
For already ingested data, you may copy the data after the installation⇒
 process
or allow the upgrade process to copy
```

6. Enter the full path to the home directory for the current Elasticsearch installation in the `current.es.home` field.

```
#Current elasticsearch home path in the format
[<base_dir>/pt/elasticsearch<x.x.x>]
(mandatory)
current.es.home=/home/elk/pt/elasticsearch7.10.0
```

7. Enter *y* (yes) for the `data copy` field if you want the script to copy the current Elasticsearch data to the new OpenSearch data directory.

   See Copying the Data from Elasticsearch to OpenSearch Manually if you want to copy the data after completing this process.

```
#Copying the data from Elasticsearch to opensearch
#Caution! The data copy may take time based on the
volume of data to copy. Please ensure the target directory
have sufficient free space to copy.[Y/N]
```

```
data copy ?[Y/N]= Y
```

8. In a terminal window, run the DPK setup script from *OSK_INSTALL/*setup as follows:

   Note. The command shown here includes line feeds for readability. Do not include the line feeds when you run.

   ```
   ./psft-dpk-setup.sh --os_upgrade_silent
   --install_base_dir <BASE_DIR>
   --config full_path_configuration_file
   ```

   - Use double-dashes when specifying the script options; for example, `--os_upgrade_silent`.
   - For *BASE_DIR*, supply the location where you want to install OpenSearch.
   - For the `config` option, specify the full path to the prepared configuration file. For example:

     Note. The command shown here includes line feeds for readability. Do not include the line feeds when you run.

     ```
     ./psft-dpk-setup.sh --os_upgrade_silent /home/opensearch
     --config /home/tmp_install/silentinstall.config
     ```

9. Wait until you see a message indicating the upgrade is complete.

   ```
   Extracting the new OpenSearch Binary ........[OK]
   Extracting the new JDK .......................[OK]
   Setting users/roles in OpenSearch.............[OK]
   Configuring OpenSearch........................[OK]

   Opensearch Installation Completed

   Copying data from ES to OpenSearch.............[OK}
   Starting Opensearch server.............

   SUCCESS: Specified value was saved.............[OK]

   Checking if Opensearch service is running......
   OpenSearch Upgrade Completed.
   ```

Task 3-2-2: Migrating from Elasticsearch to OpenSearch in Silent Mode on Microsoft Windows

You can use the setup script to move from Elasticsearch to OpenSearch in silent mode by preparing a text file that includes details about the current installation.

Review the guidelines in Understanding the Migration to OpenSearch before beginning the process.

Note. You cannot use this migration process for Kibana or Logstash. Instead, you must perform a new installation of OpenSearch Dashboards and the latest version of Logstash and start them manually.

To migrate in silent mode:

1. Stop the service for the existing Elasticsearch installation.

   This is required due to directory permissions.

a. Open a command prompt, and change directory to *ES_HOME*/bin.

b. Enter this command to stop the service:

```
elasticsearch-service.bat stop
```

2. Create a configuration file.

   The *OSK_INSTALL*/setup directory includes a sample configuration file, silentinstall.config. If you want to use this file, it is a good idea to make a backup copy of the original file before you continue.

3. To indicate that you do not want to install OpenSearch, enter *n* (no) for this question:

```
#Install opensearch Y/N is mandatory field
Install opensearch?[Y/N]= n
```

4. Enter values for the items in this section for the migration from Elasticsearch to OpenSearch.

Note. The parameter for choosing to upgrade appears later in the configuration file.

```
### If the upgrade from elasticsearch to opensearch is yes
then the below values have to be filled #####

#Opensearch cluster name (mandatory)
cluster.name=

#Opensearch host name (mandatory)
network.host=

#Opensearch port number (optional-default 9200)
#If its upgrade from ES to Opensarch and if you want to use
the same port number as ES. Please make sure ES is down
else please enter a different port number for OS.

http.port=

#Opensearch data directory (optional-default OS_HOME/data)
#If its upgrade from ES to Opensarch and if you want to use
the same data path as ES. Please make sure ES is down
else please enter a different data path for OS.
path.data=

#OpenSearch log directory (optional-default OS_HOME/logs)
path.logs=

#OpenSearch discovery hosts (optional)
discovery.hosts=

#Opensearch heap size (optional-default 2)
OS_HEAP_SIZE=

#Opensearch admin username (optional - default osadmin)
admin.user=

#Opensearch encrypted password for osadmin (mandatory)
admin.password=
```

```
#Opensearch proxy username (optional - default people)
people.user=

#Opensearch encrypted password for people (mandatory)
people.password=
```

5. To indicate that you do not want to install OpenSearch Dashboards, or Logstash, enter *n* (no) to these questions, which occur later in the silentinstall.config sample file.

```
################################################
#Install Logstash Y/N  is mandatory field
Install Logstash?[Y/N]= n

################################################
#Install Opensearch-dashboards Y/N is mandatory field
Install opensearch-dashboards?[Y/N]= n
```

6. Enter *y* (yes) to indicate you want to upgrade Elasticsearch to OpenSearch.

   You must enter a value for this field.

```
#Upgrade elasticsearch to Opensearch Y/N is mandatory field
Upgrade elasticsearch to opensearch?[Y/N]= Y

#CAUTION !!! The above option does upgrade from Elasticsearch to Open⇒
Search.
For already ingested data, you may copy the data after the installation⇒
 process
or allow the upgrade process to copy
```

7. Enter the full path to the home directory for the current Elasticsearch installation in the `current.es.home` field.

```
#Current elasticsearch home path in the format
[<base_dir>/pt/elasticsearch<x.x.x>]
(mandatory)
current.es.home=C:\elk\pt\elasticsearch7.0.0
```

8. Enter *y* (yes) for the `data copy` field if you want the upgrade script to copy the current Elasticsearch data to the new OpenSearch data directory.

   See Copying the Data from Elasticsearch to OpenSearch Manually if you want to copy the data after completing this process.

```
#Copying the data from Elasticsearch to opensearch
#Caution! The data copy may take time based on the
volume of data to copy. Please ensure the target directory
have sufficient free space to copy.[Y/N]
data copy ?[Y/N]= Y
```

9. In a command prompt window run the DPK setup script from *OSK_INSTALL*/setup as follows:

Note. The command here includes line feeds for readability. Do not include the line feed when you run.

```
psft-dpk-setup.bat --os_upgrade_silent
--install_base_dir <BASE_DIR>
--config <full_path_configuration_file>
```

- Use double-dashes when specifying the script options; for example, `--os_upgrade_silent`.
- For *BASE_DIR*, supply the location where you want to install OpenSearch.
- For the `config` option, specify the full path to the prepared configuration file. For example:

  Note. The command shown here includes line feeds for readability. Do not include the line feeds when you run.

  ```
  psft-dpk-setup.bat --os_upgrade_silent
  --install_base_dir C:/opensearch
  --config C:/tmp_install/silentinstall.config
  ```

10. Wait until you see a message indicating the upgrade is complete.

    ```
    Extracting the new OpenSearch Binary ........[OK]
    Extracting the new JDK .......................[OK]
    Setting users/roles in OpenSearch.............[OK]
    Configuring OpenSearch........................[OK]

    Opensearch Installation Completed

    Copying data from ES to OpenSearch.............[OK}
    Starting Opensearch server.............

    SUCCESS: Specified value was saved.............[OK]

    Checking if Opensearch service is running......
    OpenSearch Upgrade Completed.
    ```

Task 3-3: Copying Data from Elasticsearch to OpenSearch Manually

After extracting the OSK DPK, you can manually copy and complete the upgrade of an existing installation in either of the following scenarios:

- You are performing a new installation of the OSK DPK, and you want to copy data from a previous Elasticsearch installation.
- You used the script to migrate from Elasticsearch to OpenSearch, and you answered *No* or *n* to the copy data prompt.

Use these steps to copy data manually:

1. Stop the OpenSearch instance (service).
2. On Microsoft Windows, you must also stop the Elasticsearch service.

   This is required due to directory permissions.
3. Delete the data folder from the OpenSearch home directory.
4. Copy the data folder from Elasticsearch to OpenSearch.
5. Start the OpenSearch instance (service).

This starts OpenSearch with all the data indexed in Elasticsearch.

Task 3-4: Completing the Migration in the PeopleSoft Application

After you install OpenSearch, use these steps to complete the migration from Elasticsearch to OpenSearch. This assumes that you have completed the installation of the OSK DPK with the os_upgrade option.

1. Configure the primary search instance with OpenSearch credentials.

   See Adding and Configuring an OpenSearch Instance.
2. Validate OpenSearch with test users.
3. Run an incremental index on all search definitions.

   See *PeopleTools: Search Technology*, "Working with Search Indexes."

Chapter 4

Upgrading OpenSearch and OpenSearch Dashboards

This chapter discusses:

- Upgrading OpenSearch and OpenSearch Dashboards to a New Revision on Linux
- Upgrading OpenSearch and OpenSearch Dashboards to a New Revision on Microsoft Windows
- Upgrading OpenSearch from 2.3.0 to 2.11.0 Interactively
- Upgrading OpenSearch from 2.3.0 to 2.11.0 in Silent Mode

Task 4-1: Upgrading OpenSearch and OpenSearch Dashboards to a New Revision on Linux

This section discusses:

- Upgrading to a New Revision on Linux Interactively
- Using the PT-INFRA DPK When Upgrading to a New Revision on Linux

Task 4-1-1: Upgrading to a New Revision on Linux Interactively

Use this process to upgrade an existing installation of OpenSearch and OpenSearch Dashboards to a later OSK DPK revision using the DPK setup script interactively. For example, if you installed using OSK-DPK-LNX-2.11.0.862_01.zip, you can upgrade to OSK-DPK-LNX-2.11.0.862_02.zip or later.

1. Download the new revision OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL*.
2. Open a terminal window.
3. Change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

4. Extract the entire contents of *OSK_FILENAME*.zip in the same directory, *OSK_INSTALL*.

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment

- readme.txt file
- opensearch–manifest — lists the versions of OpenSearch and JDK

5. Open a command prompt.
6. Change directory to *OSK_INSTALL*/setup.
7. Run the DPK setup script with these options:

   ```
   ./psft-dpk-setup.sh --upgrade --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path to the existing OpenSearch installation. The installation directory is referred to in this documentation as *BASE_DIR*; for example:

     ```
     ./psft-dpk-setup.sh --upgrade --install_base_dir /home/opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--upgrade`.
8. Answer *y* (yes) to upgrade OpenSearch, or *n* (no) to exit.

   ```
   You've chosen to do an upgrade, it'll bring down the Opensearch for a⇒
    while, do you still want to continue with the ugprade? (y/n): y
   ```

9. Review the status messages as the script stops and upgrades the existing OpenSearch.

   ```
   Stopping Opensearch server.....................[OK]
   Extracting the new Opensearch Binary..........[OK]
   Upgrade in process.............................[OK]
   Cleaning up....................................[OK]
   Starting Opensearch server.....................[OK]

   Opensearch Upgrade Completed.
   ```

10. Answer *y* (yes) to upgrade OpenSearch Dashboards, or *n* (no) to exit.

    ```
    Do you want to upgrade Opensearch-dashboards: (y/n): y
    ```

    The script displays progress messages.

    ```
    Opensearch service is running.
    Proceeding with the Opensearch-dashboards installation.
    Extracting the new Opensearch-dashboards Binary .......[OK]
    Upgrade in process.....................................[OK]
    Opensearch-dashboards Upgrade Completed.
    ```

Task 4-1-2: Using the PT-INFRA DPK When Upgrading to a New Revision on Linux

Use this process to apply up-to-date JDK, from the PT-INFRA DPK, to the upgraded OpenSearch environment.

1. Download the new revision OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL*.

   Extract the opensearch-manifest from the OSK DPK.

   See "Deploying the OpenSearch, OpenSearch Dashboards, and Logstash Deployment Package," Obtaining the OpenSearch, OpenSearch Dashboards, and Logstash DPK.
2. Download the latest PT-INFRA DPK for Linux, and save it in the same *OSK_INSTALL*.

   For use with the OpenSearch upgrade, you need only the first PT-INFRA DPK, PT-INFRA-DPK-LNX-8.62-

<*DATE*>_1of2.zip.

Extract the ptinfra-manifest and compare it with the opensearch-manifest to determine whether to continue with this procedure. Use the information in the section Using the PT-INFRA DPKs When Upgrading OpenSearch in the PT-INFRA DPK installation guide.

See *PT-INFRA Deployment Package Installation (PeopleSoft PeopleTools 8.62)*, PeopleSoft PeopleTools on the Oracle Help Center, Install and Upgrade, https://docs.oracle.com/en/applications/peoplesoft/peopletools/index.html.

3. In a terminal window, change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

4. Extract the entire contents of *OSK_FILENAME.*zip in the same directory, *OSK_INSTALL*.

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory **—** includes the setup script and a silent installation sample
   - archives directory **—** includes archives for deployment
   - readme.txt file
   - opensearch**–**manifest **—** lists the versions of OpenSearch and JDK

5. Verify that *OSK_INSTALL* contains the extracted files and PT-INFRA-DPK-LNX-8.62-<*DATE*>_1of2.zip file.

   ```
   setup/
   archives/
   readme.txt
   opensearch-manifest
   PT-INFRA-DPK-LNX-8.62-<DATE>_1of2.zip
   ```

   Note. After you have extracted the *OSK_FILENAME.*zip you can delete it, move it, or leave it in *OSK_INSTALL.* Ensure that the intact PT-INFRA-DPK-LNX-8.62-<*DATE*>_1of2.zip is present as shown here.

6. Change directory to *OSK_INSTALL*/setup.
7. Run the DPK setup script with these options:

   ```
   ./psft-dpk-setup.sh --upgrade --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path to the existing OpenSearch installation. The installation directory is referred to in this documentation as *BASE_DIR*; for example:

     ```
     ./psft-dpk-setup.sh --upgrade --install_base_dir /home/opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--upgrade`.

8. Answer the prompts as described in the previous section, and wait until the process is complete.

Task 4-2: Upgrading OpenSearch and OpenSearch Dashboards to a New Revision on Microsoft Windows

This section discusses:

- Upgrading to a New Revision Interactively on Microsoft Windows
- Using the PT-INFRA DPK When Upgrading to a New Revision on Microsoft Windows

Task 4-2-1: Upgrading to a New Revision Interactively on Microsoft Windows

Use this process to upgrade an existing installation of OpenSearch and OpenSearch Dashboards to a later OSK DPK revision using the DPK setup script interactively. For example, if you installed using OSK-DPK-WIN-2.11.0.862_01.zip, you can upgrade to OSK-DPK-WIN-2.11.0.862_02.zip or later.

Note. This process does not upgrade Logstash 8.11.3. Instead, perform a new installation of Logstash manually.

1. Download the new revision OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL*.
2. Go to *OSK_INSTALL*.
3. Extract the entire contents of *OSK_FILENAME*.zip in the same directory, *OSK_INSTALL*.

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch-manifest — lists the versions of OpenSearch and JDK
4. Open a command prompt.
5. Change directory to *OSK_INSTALL*/setup.
6. Run the DPK setup script with these options:

   ```
   psft-dpk-setup.bat --upgrade --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path to the existing OpenSearch installation. The installation directory is referred to in this documentation as *BASE_DIR*; for example:

     ```
     psft-dpk-setup.bat --upgrade --install_base_dir C:\opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--upgrade`.
7. Answer *y* (yes) to upgrade OpenSearch, or *n* (no) to exit.

   ```
   You've chosen to do an upgrade, it'll bring down the opensearch for a⇒
    while, do you still want to continue with the ugprade? (y/n): y
   ```

8. Review the status messages as the script stops and upgrades the existing OpenSearch.

```
Stopping Opensearch server.....................[OK]
Extracting the new Opensearch Binary..........[OK]
Upgrade in process.............................[OK]
Cleaning up....................................[OK]
Starting Opensearch server.....................[OK]

Opensearch Upgrade Completed.
```

9. Answer *y* (yes) to upgrade OpenSearch Dashboards or *n* (no) to exit.

   ```
   Do you want to upgrade Opensearch-dashboards: (y/n): y
   ```

   The script displays progress messages.

   ```
   Opensearch service is running.
   Proceeding with the Opensearch-dashboards installation.
   Extracting the new Opensearch-dashboards Binary........[OK]
   Upgrade in process.....................................[OK]
   Opensearch-dashboards Upgrade Completed.
   ```

Task 4-2-2: Using the PT-INFRA DPK When Upgrading to a New Revision on Microsoft Windows

Use this process to apply up-to-date JDK, from the PT-INFRA DPK, to the upgraded OpenSearch environment.

1. Download the new revision OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL*.

   Extract the opensearch-manifest from the OSK DPK.

   See "Deploying the OpenSearch, OpenSearch Dashboards, and Logstash Deployment Package," Obtaining the OpenSearch, OpenSearch Dashboards, and Logstash DPK.

2. Download the latest PT-INFRA DPK for Microsoft Windows, and save it in the same *OSK_INSTALL*.

   For use with the OpenSearch upgrade, you need only the first PT-INFRA DPK, PT-INFRA-DPK-WIN-8.62-<*DATE*>_1of2.zip.

   Extract the ptinfra-manifest and compare it with the opensearch-manifest to determine whether to continue with this procedure. Use the information in the section Using the PT-INFRA DPKs When Upgrading or Migrating to OpenSearch in the PT-INFRA DPK installation guide.

   See *PT-INFRA Deployment Package Installation (PeopleSoft PeopleTools 8.62)*, PeopleSoft PeopleTools on the Oracle Help Center, Install and Upgrade, https://docs.oracle.com/en/applications/peoplesoft/peopletools/index.html.

3. Go to *OSK_INSTALL*.
4. Extract the entire contents of *OSK_FILENAME*.zip into a new directory under *OSK_INSTALL*.

   It is recommended to extract into a new directory with the same name as the zip file, *OSK_FILENAME*. The extracted directories and files are:

   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch-manifest — lists the versions of OpenSearch and JDK

5. Verify that *OSK_INSTALL* contains the *OSK_FILENAME* directory and PT-INFRA-DPK-WIN-8.62-

<DATE>_1of2.zip file.

```
OSK_FILENAME/
     setup/
     archives/
     readme.txt
     opensearch-manifest
PT-INFRA-DPK-WIN-8.62-<DATE>_1of2.zip
```

Note. After you have extracted the *OSK_FILENAME.*zip you can delete it, move it, or leave it in *OSK_INSTALL.* Ensure that the intact PT-INFRA-DPK-WIN-8.62-<*DATE*>_1of2.zip is present as shown here.

6. Open a command prompt.
7. Change directory to *OSK_INSTALL**OSK_FILENAME*\setup.
8. Run the DPK setup script with these options:

   ```
   psft-dpk-setup.bat --upgrade --install_base_dir BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path to the existing OpenSearch installation. The installation directory is referred to in this documentation as *BASE_DIR*; for example:

     ```
     psft-dpk-setup.bat --upgrade --install_base_dir C:\opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--upgrade`.
9. Answer the remaining prompts as described in the previous section, and wait until the process is complete.

Task 4-3: Upgrading OpenSearch from 2.3.0 to 2.11.0 Interactively

This section discusses:

- Upgrading Interactively on Linux
- Upgrading Interactively on Microsoft Windows

Task 4-3-1: Upgrading Interactively on Linux

Use this process to upgrade an existing installation of OpenSearch 2.3.0 to OpenSearch 2.11.0 using the OSK DPK setup script interactively. It is not necessary to reindex after upgrading.

Note. The upgrade does not include OpenSearch Dashboards. Instead, you must perform a new installation of OpenSearch Dashboards 2.11.0.

Note. You have the option to use the PT-INFRA DPK to obtain the latest JDK when upgrading.

1. Download the current OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL.*
2. Open a terminal window.
3. Change directory to *OSK_INSTALL.*

   ```
   cd OSK_INSTALL
   ```

4. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL.*

Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

The extraction creates the following directories and files in *OSK_INSTALL*:

- setup directory — includes the setup script and a silent installation sample
- archives directory — includes archives for deployment
- readme.txt file
- opensearch–manifest — lists the versions of OpenSearch and JDK

5. Change directory to *OSK_INSTALL*/setup.
6. Run the DPK setup script with these options:

   ```
   ./psft-dpk-setup.sh --full_upgrade --install_base_dir OSK_BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path where you want OpenSearch installed; for example:

     ```
     ./psft-dpk-setup.sh --full_upgrade --install_base_dir /home/opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--full_upgrade`.
7. Answer *y* (yes) to upgrade OpenSearch, or *n* (no) to exit.

   ```
   You've chosen to do an upgrade, it'll bring down the opensearch for a⇒
    while, do you still want to continue with the ugprade? (y/n): y
   ```

8. Enter the path to the current *OS_HOME*, such as /home/opensearch230/pt/opensearch–2.3.0:

   ```
   Enter the path to current OS_HOME[<base_dir>/pt/opensearch-2.3.0]: ⇒
   /home/opensearch230/pt/opensearch-2.3.0
   ```

9. Enter the current OpenSearch user name, such as osadmin:

   ```
   Enter the current OpenSearch username: osadmin
   ```

10. Review the status messages as the script stops and upgrades the existing OpenSearch.

    ```
    Stopping OpenSearch server..............[OK]
    Extracting the new OpenSearch Binary.....[OK]
    Extracting the new JDK..................[OK]
    Upgrading OpenSearch....................[OK]
    Configuring OpenSearch..................[OK]
    Starting OpenSearch server..............[OK]

    SUCCESS: Specified value was saved.      [OK]

    Checking if OpenSearch service is running.......
    OpenSearch is running...................[OK]

    Cleaning up security cache..............[OK]

    OpenSearch Upgrade Completed..
    ```

Task 4-3-2: Upgrading Interactively on Microsoft Windows

Use this process to upgrade an existing installation of OpenSearch 2.3.0 to OpenSearch 2.11.0 using the OSK DPK setup script interactively.

Note. The upgrade does not include OpenSearch Dashboards or Logstash. Instead, you must perform a new installation of OpenSearch Dashboards and Logstash and start them manually.

Note. You have the option to use the PT-INFRA DPK to obtain the latest JDK when upgrading.

1. Download the current OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL*.
2. Go to *OSK_INSTALL*.
3. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch–manifest — lists the versions of OpenSearch and JDK
4. Open a command prompt.
5. Change directory to *OSK_INSTALL*/setup.
6. Run the DPK setup script with these options:

   ```
   psft-dpk-setup.bat --full_upgrade --install_base_dir OSK_BASE_DIR
   ```

   - For the `install_base_dir` option, specify the full path to where you want OpenSearch installed. For example:

     ```
     psft-dpk-setup.bat --full_upgrade --install_base_dir C:\opensearch
     ```

   - Use double-dashes when specifying the script options; for example, `--full_upgrade`.
7. Answer *y* (yes) to upgrade OpenSearch, or *n* (no) to exit.

   ```
   You've chosen to do an upgrade, it'll bring down the opensearch for a⇒
    while, do you still want to continue with the ugprade? (y/n): y
   ```

8. Enter the path to the current *OS_HOME*, such as C:\opensearch230\pt\opensearch–2.3.0:

   ```
   Enter the path to current OS_HOME[<base_dir>/pt/opensearch-2.3.0]: C:⇒
   \opensearch230\pt\opensearch-2.3.0
   ```

9. Enter the current OpenSearch user name, such as osadmin:

   ```
   Enter the current OpenSearch username: osadmin
   ```

10. Review the status messages as the script stops and upgrades the existing OpenSearch.

    ```
    Stopping OpenSearch server.................[OK]
    ```

```
Extracting the new OpenSearch Binary.......[OK]
Extracting the new JDK.....................[OK]
Upgrading OpenSearch.......................[OK]
Configuring OpenSearch.....................[OK]
Starting OpenSearch server.................[OK]

SUCCESS: Specified value was saved.        [OK]

Checking if OpenSearch service is running.......
OpenSearch is running......................[OK]

Cleaning up security cache.................[OK]

OpenSearch Upgrade Completed..
```

Task 4-4: Upgrading OpenSearch from 2.3.0 to 2.11.0 in Silent Mode

You can use the setup script to upgrade OpenSearch in silent mode on either Microsoft Windows or Linux by preparing a text file that includes details about the current installation. It is not necessary to reindex after upgrading.

Note. The upgrade does not include OpenSearch Dashboards or Logstash. Instead, you must perform a new installation of OpenSearch Dashboards and Logstash and start them manually.

Note. You have the option to use the PT-INFRA DPK to obtain the latest JDK when upgrading.

To upgrade in silent mode:

1. Download the current OSK DPK and save it in a newly created directory, referred to here as *OSK_INSTALL*.
2. Open a terminal window.
3. Change directory to *OSK_INSTALL*.

   ```
   cd OSK_INSTALL
   ```

4. Extract the entire contents of *OSK_FILENAME.zip* in the same directory, *OSK_INSTALL*.

   Note. It is a good idea to extract into the same directory where you downloaded the zip files, and to extract into an empty directory for each new installation.

   The extraction creates the following directories and files in *OSK_INSTALL*:

   - setup directory — includes the setup script and a silent installation sample
   - archives directory — includes archives for deployment
   - readme.txt file
   - opensearch–manifest — lists the versions of OpenSearch and JDK
5. Change directory to *OSK_INSTALL*/setup.
6. Create a configuration file.

   The *OSK_INSTALL*/setup directory includes a sample configuration file, silentinstall.config. If you want to

use this file, it is a good idea to make a backup copy of the original file before you continue.

7. To indicate that you do not want to install OpenSearch, OpenSearch Dashboards, or Logstash, enter *n* (no) to these questions:

   Note. This sample shows only a few lines from the silentinstall.config file.

   ```
   #Install opensearch Y/N is mandatory field
   Install opensearch?[Y/N]= n

   ###############################################
   #Install Logstash Y/N  is mandatory field
   Install Logstash?[Y/N]= n

   ###################################################
   #Install Opensearch-dashboards Y/N is mandatory field
   Install opensearch-dashboards?[Y/N]= n
   ```

8. Enter y (yes) to indicate you want to upgrade OpenSearch.

   You must enter a value for this field.

   ```
   ##############Silent Upgrade Configuration Values for upgrading
   OpenSearch from 2.3.0 to 2.11.0 ################

   #Upgrade OpenSearch Y/N is mandatory field
   Upgrade OpenSearch?[Y/N]= y
   ```

9. Edit the configuration file with the location (current.os.home) and user name (current.osuer) for the current OpenSearch 2.3.0 installation.

   You must enter values for both of these fields.

   ```
   #Current OpenSearch home path in the format [<base_dir>/pt/opensearch-⇒
   2.3.0] (mandatory)
   current.os.home=

   #CurrentOpenSsearch username (mandatory)
   current.osuser=
   ```

10. On Microsoft Windows, in a command prompt window, run the DPK setup script from *OSK_INSTALL/*setup as follows:

    Note. The command here includes line feeds for readability. Do not include the line feeds when you run.

    ```
    psft-dpk-setup.bat --full_upgrade_silent
    --install_base_dir <OSK_BASE_DIR>
    --config_file <full_path_configuration_file>
    ```

    - Use double-dashes when specifying the script options; for example, `--full_upgrade_silent`.
    - For *OSK_BASE_DIR*, supply the location for OpenSearch 2.11.0.
    - For the config_file option, specify the full path to the prepared configuration file. For example:

      Note. The command shown here includes line feeds for readability. Do not include the line feeds when you run.

```
psft-dpk-setup.bat --full_upgrade_silent
--install_base_dir C:/opensearch
--config_file C:/tmp_install/silentinstall.config
```

11. On Linux, in a terminal window, run the DPK setup script from *OSK_INSTALL*/setup as follows:

    Note. The command shown here includes line feeds for readability. Do not include the line feeds when you run.

    ```
    ./psft-dpk-setup.sh --full_upgrade_silent
    --install_base_dir <OSK_BASE_DIR>
    --config_file full_path_configuration_file
    ```

    - Use double-dashes when specifying the script options; for example, `--full_upgrade_silent`.
    - For *OSK_BASE_DIR*, supply the location for OpenSearch 2.11.0
    - For the config_file option, specify the full path to the prepared configuration file. For example:

      Note. The command shown here includes line feeds for readability. Do not include the line feeds when you run.

      ```
      ./psft-dpk-setup.sh --full_upgrade_silent
      --install_base_dir /home/opensearch
      --config_file /home/tmp_install/silentinstall.config
      ```

12. Wait until you see a message indicating the upgrade is complete.

    ```
    Stopping OpenSearch server ..............[OK]
    Extracting the new OpenSearch Binary .....[OK]
    Extracting the new JDK ..................[OK]
    Upgrading OpenSearch ....................[OK]
    Configuring OpenSearch ..................[OK]
    Starting OpenSearch server ..............[OK]

    Checking if OpenSearch service is running.
    OpenSearch is running....................[OK]

    Cleaning up security cache...............[OK]

    OpenSsearch Upgrade Completed.
    ```

Chapter 5

Integrating OpenSearch with the PeopleSoft Environment

This chapter discusses:

- Reviewing PeopleSoft Application Updates for OpenSearch and OpenSearch Dashboards
- Setting Up the PeopleSoft Application for OpenSearch
- Adding and Configuring an OpenSearch Instance

Task 5-1: Reviewing PeopleSoft Application Updates for OpenSearch and OpenSearch Dashboards

To use OpenSearch and OpenSearch Dashboards for your PeopleSoft application, you will need to apply updates and fixes from your application's most current update image.

See PeopleSoft Search and Insights Home Page, My Oracle Support, Doc ID 2205540.2

Task 5-2: Setting Up the PeopleSoft Application for OpenSearch

This section discusses:

- Understanding the PeopleSoft Application Setup
- Verifying the Integration Broker Setup
- Verifying PeopleSoft Roles for All Installations

Understanding the PeopleSoft Application Setup

Make sure your PeopleSoft environment meets these requirements:

- The Integration Broker and the integration gateway are up and running.

  When you use the PeopleSoft DPKs to install an environment, the Integration Broker configuration is performed as part of the installation.

  See Verifying the Integration Broker Setup for additional information.
- The PeopleSoft roles required for OpenSearch are set for both types of installation.

  See Verifying PeopleSoft Roles for All Installations.

After you satisfy these requirements, and complete the subsequent tasks to configure and deploy OpenSearch, test the connection on the Search Instance Properties page.

See *PeopleTools: Search Technology,* "Working with Search Instances."

Task 5-2-1: Verifying the Integration Broker Setup

Use these instruction if you need to verify that Integration Broker is set up. The Integration Broker configuration includes the following setup tasks:

- Define the integration gateway.

  See *PeopleTools: Integration Broker Administration,* "Administering Integration Gateways."
- Define the integration gateway properties, including the keystore password setup.

  See *PeopleTools: Integration Broker Administration,* "Configuring Security and General Properties"
- Define service operations, including web services target and REST target locations.

  See *PeopleTools: Integration Broker Administration,* "Using the Target Locations Page to Set Target Locations for Services."
- Define nodes, including portal and content URIs.

  See *PeopleTools: Portal Technology*, "Defining Portal Nodes."

You can use the Integration Broker Activity Guide to carry out the necessary configuration. The activity guide provides centralized access to the PeopleSoft Pure Internet Architecture (PIA) pages used to configure PeopleSoft Integration Broker and the Integration Network.

See *PeopleTools: Integration Broker Administration,* "Understanding the Integration Broker Configuration Activity Guide."

You also have the option of configuring Integration Broker using the Automated Configuration Manager (ACM). See the product documentation for information on how to use the delivered plug-ins for Integration Broker configuration.

See *PeopleTools: Automated Configuration Manager.*

Task 5-2-2: Verifying PeopleSoft Roles for All Installations

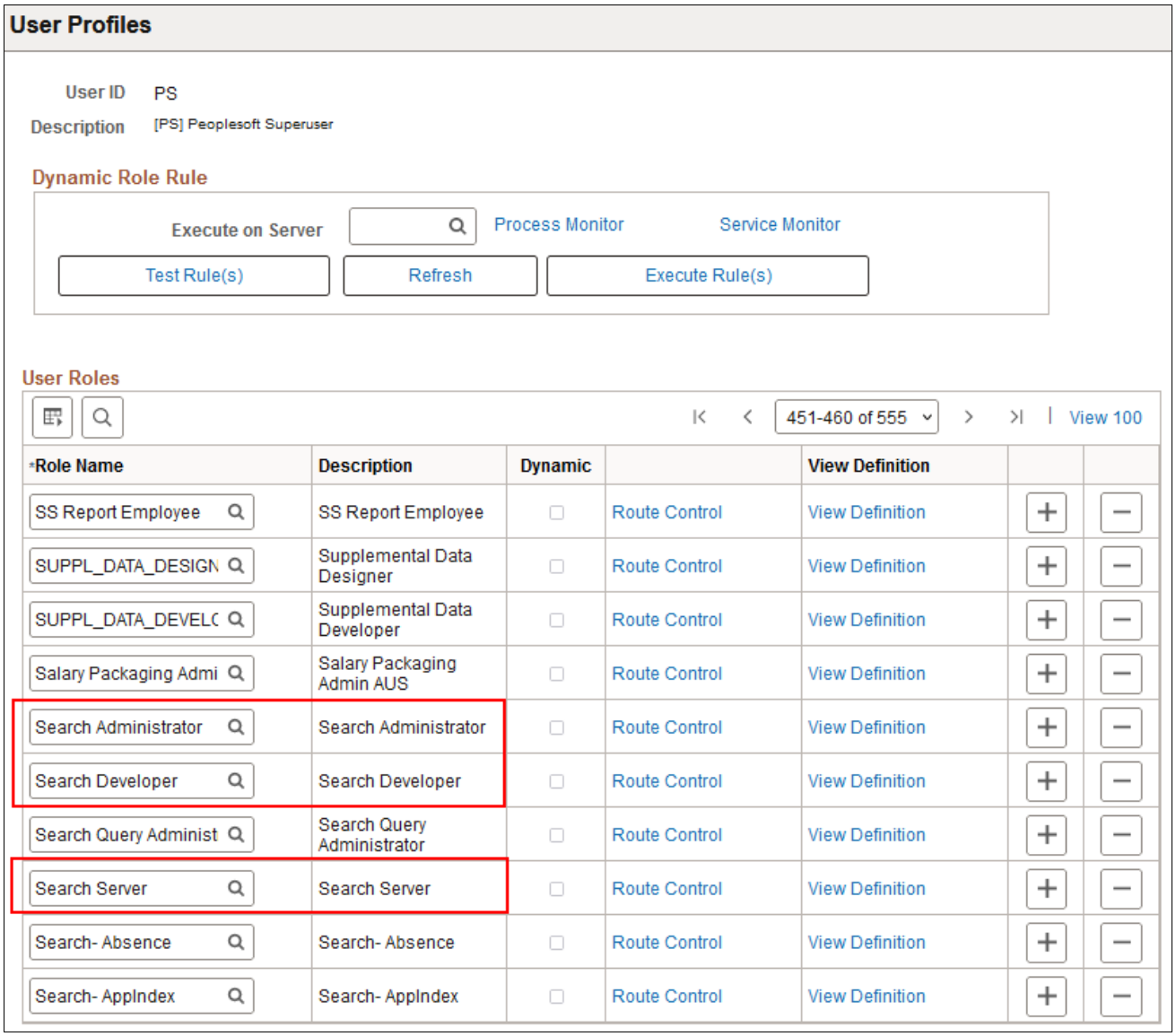
The user who will set up the OpenSearch integration must have the Search Administration, Search Developer, Search Server and ACM Administration roles.

If not, the Security Administrator should add the roles as follows:

1. Sign in to the PeopleSoft application in a browser.
2. Select PeopleTools > Security > User Profiles > User Profiles.
3. Select a User ID.
4. On the User Profiles page, select the Roles tab.

5. Verify that the roles are present, or add them if necessary.

   This example shows the Roles list with Search Administrator, Search Developer, and Search Server. The fourth required role, ACM Administration, is not shown here.



User Profiles page, Roles

Task 5-3: Adding and Configuring an OpenSearch Instance

This section discusses:

- Using the Automated Configuration Management SEARCH_TEMPLATE
- Configuring the Search Instance on the Search Instance Properties Page

Task 5-3-1: Using the Automated Configuration Management SEARCH_TEMPLATE

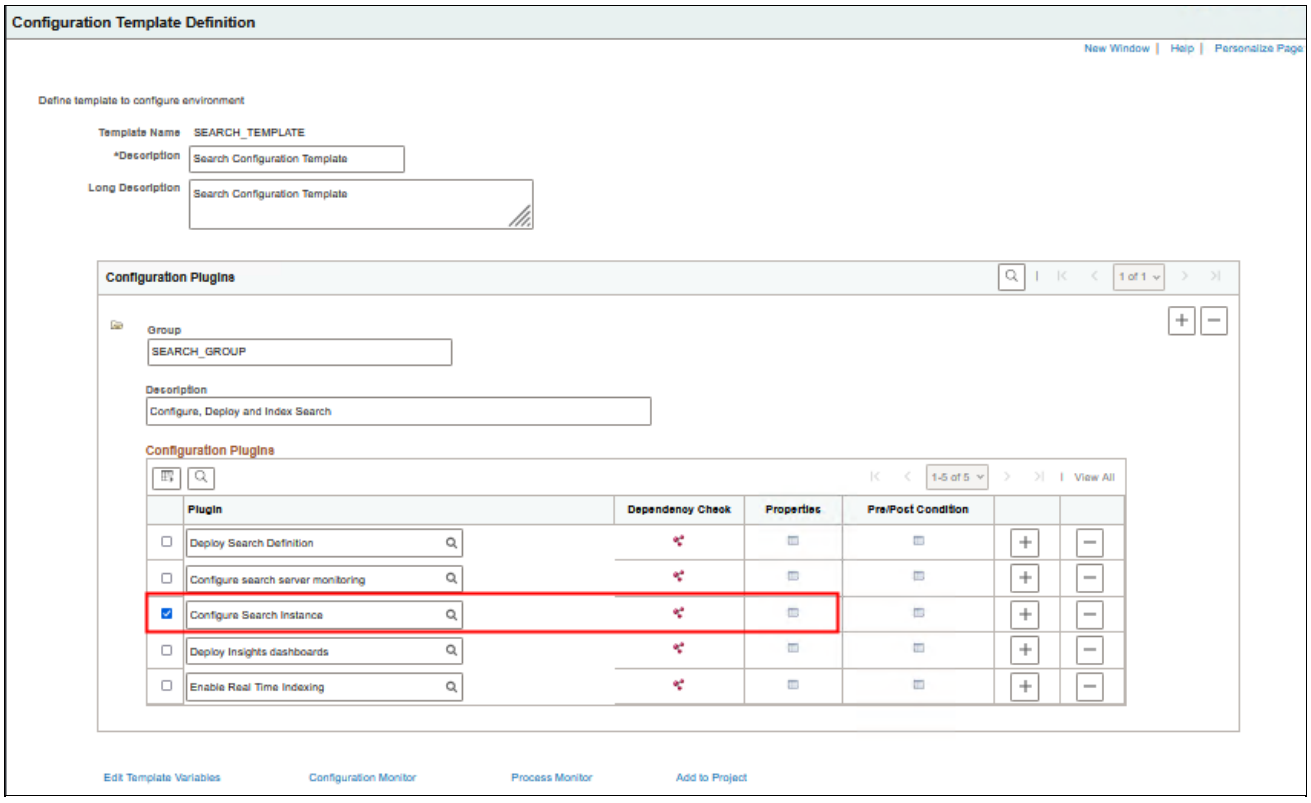
The ACM framework enables you to store environment configuration settings in a template stored in the database or an external template file, which you can reapply when needed. You can use Automated Configuration Management (ACM) to configure the OpenSearch instance. Using ACM allows you to automate the deployment and indexing.

See *PeopleTools: Automated Configuration Management.*

1. Verify that you have the ACM Administrator role, as mentioned in the previous section.

   See Setting Up the PeopleSoft Application for OpenSearch.
2. Select PeopleTools > Automated Config Manager > ACM Templates > Define ACM Templates.
3. Search for and open SEARCH_TEMPLATE.
4. On the Configuration Template Definition page, verify that Configure Search Instance is selected, and then click the Properties icon.

Note. Do not select Deploy Search Definition or Configure search server monitoring at this point.



Configuration Template Definition page for SEARCH_TEMPLATE

5. Specify the properties for the plug-in on the Configure Search Instance page.

   The values that begin and end with an AT sign ("@") are ACM template variables that can be used across multiple plug-ins in the template. As mentioned, PeopleSoft Integration Broker configuration is required for these tasks. These variables will be taken from Integration Broker and shared. You do not have to manually fill them in at this point.

   See *PeopleTools: Automated Configuration Management.*

   This table describes the properties for the Configure Search Instance plug-in (PTSFConfigureSrchInstance). Use the properties to configure the PeopleSoft system to talk to OpenSearch and assign roles.

Property	Default Value	Description
env.ptsf_search_instance	PTSF_SEARCH	Search instance name
env.search_provider	OS	Name of the search engine. OpenSearch (OS) is the valid value.
env.search_nodes	1	The number of nodes that have been set up for the OpenSearch cluster. OpenSearch provides High Availability by forming a cluster of multiple nodes. If you have set up a cluster with multiple nodes, specify the number here. The page expands with additional property fields for the multiple nodes. See *PeopleTools: Search Technology* for information on High Availability. See Adding Additional OpenSearch Nodes for information on adding additional nodes.
env.node1_search_host	@searchhost@	The host name for the node. Enter the server name, including the domain, such as myhost.example.com, or an IP address.
env.node1_search_port	@searchport@	The port on which OpenSearch listens for requests. Enter the value supplied when installing the OSK DPK. The default you see during installation is 9200.

Property	Default Value	Description
env.node1_search_use_ssl	False	Flag to determine whether the configuration is secure or non-secure. Valid values are: • False — indicates non-secure (HTTP) configuration • True — indicates secure (HTTPS) configuration. Set this property to true only when the PeopleSoft environment is configured for SSL and that URL has been used for the OpenSearch callback. See *PeopleTools: Search Technology,* "Configuring SSL Between PeopleSoft and Search Engine."
env.node1_search_admin_user	NA	The administrative user for OpenSearch. Enter the value supplied when installing the OSK DPK. The default is osadmin. You cannot change this user during the installation. After the installation is complete, you can use the opensearchuser script to add users and assign them administrative roles. See *PeopleTools: Search Technology,* "Creating Users and Assigning Roles for a Search Instance."
env.node1_search_admin_password	NA	The password supplied for the osadmin user when installing the OSK DPK.
env.node1_search_read_user	NA	The OpenSearch proxy user. Enter the value supplied when installing the OSK DPK. The default is people.
env.node1_search_read_password	NA	The password supplied for the proxy user when installing the OSK DPK.
env.insights_host	ss.us.oracle.com	The server name for the host where OpenSearch Dashboards is running.

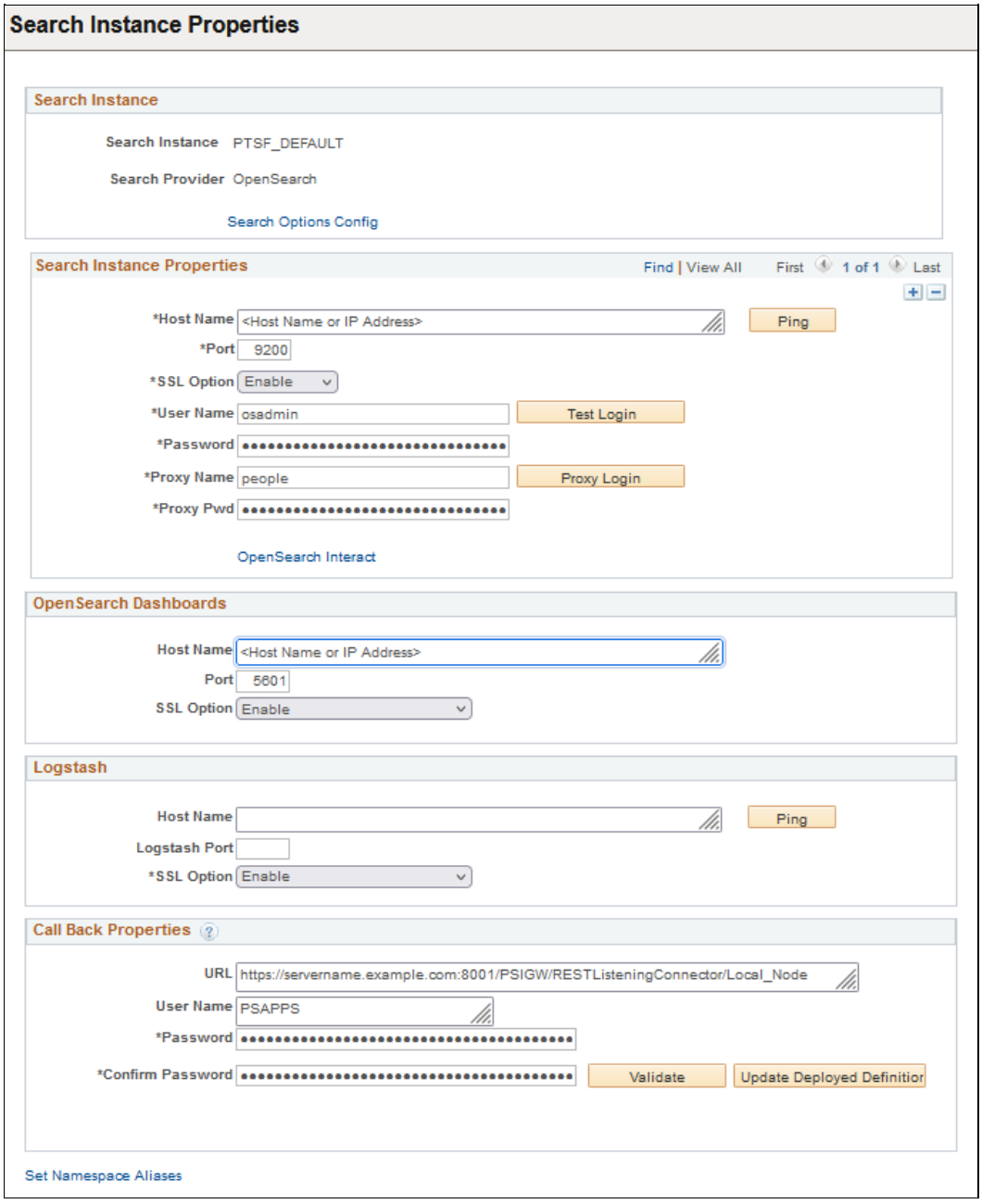
Property	Default Value	Description
env.insights_port	3456	The port on which OpenSearch Dashboards listens for requests. Enter the value supplied when installing the OSK DPK. The default you see during installation is 5601.
env.insights_use_ssl	false	Flag to determine whether the configuration is secure or non-secure for OpenSearch Dashboards. Valid values are: • False — indicates non-secure (HTTP) configuration • True — indicates secure (HTTPS) configuration. See *PeopleTools: Search Technology,* "Configuring SSL for OpenSearch Dashboards."
env.logstash_host	dd.us.oracle.com	The server name for the host where Logstash is running.
env.logstash_port	1234	The port on which Logstash listens for requests. Enter the value supplied when installing the OSK DPK. The default you see during installation is 9800.
env.logstash_use_ssl	false	Flag to determine whether the configuration is secure or non-secure for Logstash. Valid values are: • False — indicates non-secure (HTTP) configuration • True — indicates secure (HTTPS) configuration. See *PeopleTools: Search Technology,* "Configuring SSL for Logstash."
env.search_call_back_user	@userid@	The user ID for OpenSearch to access the PeopleSoft system for access control list (ACL) values. This must be a valid PeopleSoft user ID with Search Server role assigned. **Note.** It should not be necessary to change this value.
env.search_call_back_password	NA	Password for the call-back user ID.

Property	Default Value	Description
env.ps_search_administrator_user	@userid@	Search administrator user name See Setting Up the PeopleSoft Application for OpenSearch.
env.ps_search_developer_user	@userid@	Search developer user name See Setting Up the PeopleSoft Application for OpenSearch.
env.gateway_host	@host@.@domain@	Host where the Integration Broker gateway is installed.
env.gateway_port	@httpport@	Port number for the Integration Broker gateway.
env.gateway_ssl_port	@sslport@	Gateway SSL port.
env.use_ssl_gateway	False	Flag to determine whether the gateway is secure or non-secure for callback. Valid values are: • False — indicates non-secure (HTTP) configuration • True — indicates secure (HTTPS) configuration. See *PeopleTools: Search Technology,* "Configuring SSL Between PeopleSoft and Search Engine."
env.default_local_node	@nodename@	Default local node
env.enable_global_menu_search	All	Enable global search and menu search for All, Local, or a comma-separated list or portals.

6. Save the template and click Execute to begin the program run.

7. To verify that the search instance page has been configured for OpenSearch, select PeopleTools > Search Framework > Administration > Define Search Instances.

   On the Search Instance Properties page, make sure the Search Provider is OpenSearch, and that the Callback URL includes RESTListeningConnector, as in this example:



Search Instance Properties page

8. Select PeopleTools > Automated Config Manager > ACM Templates > Define ACM Templates.
9. Search for and open SEARCH_TEMPLATE.
10. On the Configuration Template Definition page, verify that Deploy Search Definition is selected and click the Properties icon.

Note. Do not select Configure Search Instance or Configure Search Server Monitoring.

11. Specify the properties for the plug-in on the Deploy Search Definition page and click OK.

    This table describes the properties for the Deploy Search Definition plug-in (PTSFAdministerSearch) in the SEARCH_TEMPLATE. Use the plug-in to deploy, undeploy, and schedule index generation.

Property	Default Value	Description
env_ptsf_search instance	PTSF_SEARCH	OpenSearch instance name
env.ptsf_selection_type	GLOBAL	Valid values: • ALL Deploys all search definitions and categories excluding the ones listed in env.ptsf_exclude_definitions. • GLOBAL Deploys search definitions and categories used for Global search. • LIST Deploys the search definitions and their categories mentioned in env.ptsf_include_definitions.
env.ptsf_include_definitions	NA	Comma separated list of search category names to be included. You can use % as an operator in any part of the name. For example, EP_CS%, %CS_DOC%, %CS%DOC% and so on.
env.ptsf_exclude_definitions	NA	Comma separated list of search category names to be excluded. You can use % as an operator in any part of the name. For example, EP_CS%, %CS_DOC%, %CS%DOC% and so on.
env.ptsf_check_audit_errors	True	If true check for access to query/connected query, or invalid objects. For a search definition if audit errors are found, it will not proceed further with the action specified in the ptsf_admin_operations property for this particular search definition. It will continue with the next one.
env.ptsf_admin_operations	DEPLOY,INDEX	Valid values: • DEPLOY — the search definitions will be deployed • INDEX — the search index will be scheduled.

Property	Default Value	Description
		The INDEX option will create run control ids for both full indexing and incremental indexing, but schedules only full indexing for the first execution of the SEARCH_TEMPLATE. The full indexing run control ids will have the naming convention <SearchDefinition>_FULL and incremental indexing will have the naming convention <SearchDefinition>_INCR. When the SEARCH_TEMPLATE is executed the second and subsequent times, it will run incremental indexing only if the previously done FULL indexing is successful; otherwise it will again schedule full indexing. **Note.** To schedule recurring incremental indexing, you must set the recurrence manually using the incremental run control ids created by ACM framework from the Schedule Index page. ACM will not do this automatically. • UNDEPLOY — the search definition will be removed. • DEPLOY,INDEX
env.ptsf_index_all_lanaguages	False	If true the schedules are created to index all languages.
env.report_schedule_status_after_minutes	NA	Maximum minutes to wait before reporting scheduling status. • Enter 0 to wait till finish. • Leave blank to skip report. • Enter the time to wait to show status. For example, enter 5 to show the status once after 5 minutes.
env.ptsf_schedule_on_server	NA	Specify the Process Scheduler to run the indexing on. Leave this blank to use master scheduler.

12. Save the template and click Execute to begin the deployment.
13. Use the plug-in Configure Search Server Monitoring to configure the OpenSearch monitoring server, deploy

the PeopleSoft Health Center dashboards to OpenSearch Dashboards, and deploy the system monitoring and OpenSearch index metrics dashboards to OpenSearch Dashboards.

See the information on the delivered plug-in PTSFMonitorConfiguration in the Automated Configuration Management product documentation.

See *PeopleTools: Automated Configuration Management,* "Delivered Configuration Plug-ins."

See *Search Technology,* "Working with Search Instances."

Task 5-3-2: Configuring the Search Instance on the Search Instance Properties Page

If you need to add other search instances, you also have the option of adding the search instance using the Search Instance Properties page mentioned in the previous section. See the section on working with search instances in the product documentation.

Note. This initial configuration can be done instead of the ACM configuration described above, but one benefit of using the ACM Deploy option is that it will build run controls for the user running the ACM.

See *PeopleTools: Search Technology,* "Administering PeopleSoft Search Framework."

Chapter 6

Performing Additional Tasks for OpenSearch and OpenSearch Dashboards

This chapter discusses:

- Modifying the OpenSearch Configuration File (Optional)
- Starting and Stopping an OpenSearch Service
- Adding Additional OpenSearch Nodes
- Bringing Up an OpenSearch Node
- Using the opensearchuser Script
- Adding OpenSearch as a Service in Linux
- Adding OpenSearch Dashboards as a Service in Linux
- Reviewing the Logstash 8.11.3 Configuration Files (Optional)

Task 6-1: Modifying the OpenSearch Configuration File (Optional)

If you need to override the default values provided by the OpenSearch software, you can use the opensearch.yml file. Go to the *OSK_HOME/*config directory to locate the opensearch.yml file, and modify it in a text editor for your environment. It is probably a good idea to make a backup copy before modifying the file.

Note. Because the OSK DPK setup script automates the configuration, modifying opensearch.yml should not normally be necessary.

- cluster.name **—** a unique name for the cluster.

  This parameter identifies the cluster for auto-discovery. Make sure the name is unique. Do not reuse the same cluster names in different environments, because you might end up with nodes joining the wrong cluster.

- node.name **—** any meaningful name, such as *hostname,* which would make it easy to identify where the node is running.

- path.data **—** the path to the location where you want to store the OpenSearch data.

  To include multiple paths, use commas to separate the paths.

- path.logs **—** the path to the location where you want to store the OpenSearch logs.

- bootstrap.memory_lock **—** if set to *True,* this parameter locks the memory when the OpenSearch instance is started.

  The recommendation is to set this to True.

- network.host **—** the IP address or hostname of the machine.

- http.port — the port where OpenSearch should listen for incoming requests.

  Set this property whether or not SSL is configured. OpenSearch can work either in https or http mode, but not in both modes at the same time.

- gateway.expected_nodes — the number of data or master nodes that are expected to be in the cluster.

  Recovery of local shards will start as soon as the expected number of nodes have joined the cluster.

  Note. This parameter may be specified in the opensearch.yml file as needed.

- gateway.recover_after_nodes — the number of data or master nodes required for recovery.

  Recovery will take place as long as this many data or master nodes have joined the cluster. Once the recover_after_time duration has passed, (the default is 5 minutes), recovery will start as long as the gateway.recover_after_nodes condition is met. Whenever you add a new user or role to OpenSearch, make sure that it is added to each of the nodes.

- node.max_local_storage_nodes — the number of nodes on a single system

  Enter "1" to disable multiple nodes on a single system.

- action.destructive_requires_name — When set to *True,* this will require explicit names when deleting indexes.
- orclssl.http.ssl — enable or disable https

  Accepts values true or false.

- orclssl.transport.ssl — enable or disable transport layer encryption

  Accepts values true or false.

- orclssl.keystore — path to the keystore

  The keystore file must be placed under *OSK_HOME*/config.

- orclssl.keystore_password — keystore password.

  Provide an encrypted password, which is obtained using the encryption mechanism in opensearchuser script.

  See Using the opensearchuser Script.

- orclssl.truststore — path to the truststore

  The truststore file must be placed under *OSK_HOME*/config.

- orclssl.truststore_password — truststore password

  Provide an encrypted password which is obtained using the encryption mechanism in opensearchuser script.

  See Using the opensearchuser Script.

- acl.cache.delete.interval — Interval to run the delete process to clear the ACL security values cache. By default it is 24h.
- acl.cache.delete.bulk_size — Number of deletions to run in one bulk delete request.

  By default it is 10000.

Task 6-2: Starting and Stopping an OpenSearch Service

If you modify the opensearch.yml or jvm.options file, use these instructions to stop and restart the OpenSearch services.

On Microsoft Windows, the OpenSearch service is installed by the DPK setup script.

1. Open a command prompt, and change directory to *OSK_HOME/*bin.
2. To see the usage for the service command:

   ```
   opensearch-service
   opensearch-service.bat install|remove|start|stop|manager [SERVICE_ID]
   ```

3. To stop and remove the OpenSearch service:

   ```
   opensearch-service.bat remove
   ```

4. To start the service, run these commands from *OSK_HOME/*bin:

   ```
   opensearch-service.bat install
   opensearch-service.bat start
   ```

On Linux to start and stop the process:

1. In a terminal window, change directory to *OSK_HOME/*bin.
2. To start the OpenSearch process:

   ```
   nohup ./opensearch &
   ```

3. To stop the process:
   a. Use this command to find the OpenSearch process ID:

      ```
      ps -ef | grep opensearch
      ```

   b. Use this command to stop the process, substituting the process ID for pid:

      ```
      kill <pid>
      ```

Task 6-3: Adding Additional OpenSearch Nodes

Use these steps to add an additional OpenSearch node after you have completed the OSK DPK installation. The additional node will be added to the same cluster.

1. Install OpenSearch on a second server and provide the following information during the DPK setup script:
   - For the cluster name, specify the same name as that of the first OpenSearch node.
   - At the prompt "Enter the host name of nodes which are already member of a cluster", specify the IP address for the first OpenSearch node.
2. Stop and restart the second OpenSearch node.

   See Starting and Stopping an OpenSearch Service.

To avoid "split brain" problem, it is always recommended to have an odd number of nodes (N) in the cluster if N is less than 4. For more information, search for details about configuring minimum master nodes in the OpenSearch online help.

See OpenSearch Web site, https://opensearch.org/.

Task 6-4: Bringing Up an OpenSearch Node

If one of the nodes in an existing cluster is down, use these steps to bring it up:

1. If you are running on Linux, set these environment variables:
   - Verify that the heap size is set to a value equal to or less than 50% of available memory, and not exceeding 30G.

     See "Preparing to Deploy," Reviewing OpenSearch Recommendations.
   - Set the JAVA_HOME environment variable, where yy is the JDK version.

     `export JAVA_HOME= BASE_DIR/pt/os_jdk21.0.yy`
2. Start the OpenSearch node.

   See Starting and Stopping an OpenSearch Service.

Task 6-5: Using the opensearchuser Script

To add users or roles after installation, use the opensearchuser script, found in *OSK_HOME/*bin. The opensearchuser script has the following uses:

- To add a new user or change password for a user:

  `opensearchuser adduser [user]`
- To add roles for an existing user:

  `opensearchuser addrole [user]`
- To view existing users:

  `opensearchuser listusers`
- To view roles of a user:

  `opensearchuser listrole [user]`
- To remove a user:

  `opensearchuser removeuser [user]`
- To encrypt the given text:

  `opensearchuser encrypt [text]`

  This is used for encrypting the keystore password while configuring SSL. The password needs to be encrypted in the opensearch.yml file.

Task 6-6: Adding OpenSearch as a Service in Linux

This section discusses:

- Prerequisites
- Adding an OpenSearch Service
- Verifying the OpenSearch Service Starts Automatically
- Removing the OpenSearch Service

Prerequisites

Use the instructions in this section to run OpenSearch as a service on a Linux host, and to start automatically upon rebooting. Ensure that you fulfill these requirements:

- The OpenSearch process should not be running.

  If OpenSearch is running, ensure that it is not being used, and then stop the process.

  See Starting and Stopping an OpenSearch Service.
- The script to install the service must be run by the root user.
- OpenSearch is installed on the Linux server where you run this procedure.
- The OpenSearch and JDK installation directories are located under the DPK base directory; that is:
  - The DPK base directory is referred to in this documentation as *BASE_DIR*, such as /home/opensearch.
  - The OpenSearch installation directory, *OSK_HOME*, is found in *BASE_DIR*/pt/opensearch-2.11.0.
  - The Java installation directory, *JAVA_HOME*, is found in *BASE_DIR*/pt/os_jdk21.0.*yy*, where yy is the JDK version.
- OpenSearch must be run by the user who owns *OSK_HOME*.

  This is due to the fact that the script does not input the user name.
- You have downloaded and extracted the required OSK DPK for Linux, in a directory referred to as *OSK_INSTALL*.

Task 6-6-1: Adding an OpenSearch Service

The script to add or delete the service uses the following arguments:

- `-h or --help`

  Show the help message and exit.
- `--add`

  An OpenSearch service will be added.
- `--delete`

  The OpenSearch service will be removed.
- `--install_base_dir` *`BASE_DIR`*

  Enter the base directory *(BASE_DIR)* where you installed the OSK DPK.

To add OpenSearch as a service:

1. Open a terminal window, running as root.
2. Change directory to *OSK_INSTALL*/setup:

   ```
   cd OSK_INSTALL/setup
   ```

3. Run this command to add the service:

   ```
   ./psft-os-service.sh --add --install_base_dir BASE_DIR
   ```

4. Use this command to verify that the service was added.

   The output of the following ps command must show a running OpenSearch process:

   ```
   ps -ef | grep opensearch
   ```

5. Use this systemctl command to check if a service is started for OpenSearch:

   ```
   systemctl status opensearch
   ```

   This should give an output with the status "active (running)," as shown in bold font in this sample:

   ```
   opensearch.service - OpenSearch
      Loaded: loaded (/etc/systemd/system/opensearch.service; enabled;⇒
    vendor preset: disabled)
      Active: active (running) since Tue 2020-09-01 22:24:38 PDT; 12s ago
        Docs: https://opensearch.org
   Main PID: 59416 (java)
       Tasks: 34
      Memory: 2.2G
      CGroup: /system.slice/opensearch.service
   ```

Task 6-6-2: Verifying the OpenSearch Service Starts Automatically

After you install the OpenSearch service and verify the installation, test to make sure the service starts automatically after you reboot the Linux server.

1. Reboot the Linux server.
2. Use this command to verify that the service has come up automatically.

   ```
   systemctl status OpenSearch
   ```

   This should give an output with the status "active (running)," as shown in bold font in this sample:

   ```
   opensearch.service - OpenSearch
      Loaded: loaded (/etc/systemd/system/opensearch.service; enabled;⇒
    vendor preset: disabled)
      Active: active (running) since Tue 2020-09-01 22:24:38 PDT; 12s ago
        Docs: https://opensearch.org
   Main PID: 59416 (java)
       Tasks: 34
      Memory: 2.2G
      CGroup: /system.slice/opensearch.service
   ```

Task 6-6-3: Removing the OpenSearch Service

To remove the OpenSearch service:

1. Open a terminal window, running as root.
2. Change directory to *OSK_INSTALL*/setup:

   ```
   cd OSK_INSTALL/setup
   ```

3. Run this command to remove the service:

   ```
   ./psft-os-service.sh --delete
   ```

4. Use one of these commands to verify that the service was deleted:

   - The output of the following ps command should not include any OpenSearch process:

     ```
     ps -ef | grep opensearch
     ```

- To check the status for the OpenSearch service, use this command:

  ```
  systemctl status OpenSearch
  ```

Task 6-7: Adding OpenSearch Dashboards as a Service in Linux

This section discusses:

- Prerequisites
- Adding an OpenSearch Dashboards Service
- Verifying that the OpenSearch Dashboards Service Starts Automatically
- Removing the OpenSearch Dashboards Service

Prerequisites

Use the instructions in this section to run OpenSearch Dashboards as a service on a Linux host, and to start automatically upon rebooting. Ensure that you fulfill these requirements:

- The OpenSearch Dashboards process should not be running.

  If OpenSearch Dashboards is running, ensure that it is not being used, and then stop the process.

  See Starting and Stopping an OpenSearch Service.
- The script to install the service must be run by the root user.
- OpenSearch Dashboards is installed on the Linux server where you run this procedure.
- The OpenSearch Dashboards and JDK installation folders are located under the DPK base directory; that is:
  - The DPK base directory is referred to in this documentation as *BASE_DIR*, such as /home/opensearch.
  - The OpenSearch Dashboards installation directory, *DASHBOARDS_HOME*, is found in *BASE_DIR*/pt/opensearch-dashboards-2.11.0.
  - The Java installation directory, *JAVA_HOME*, is found in *BASE_DIR*/pt/os_jdk21.0.*yy*, where yy is the JDK version.
- OpenSearch Dashboards must be run by the user who owns *DASHBOARDS_HOME*.

  This is due to the fact that the script does not input the user name.
- You have downloaded and extracted the required OSK DPK for Linux, in a directory referred to as *OSK_INSTALL*.

Note. OpenSearch Dashboards as a service is not available for Microsoft Windows.

Task 6-7-1: Adding an OpenSearch Dashboards Service

The script to add or delete the service for OpenSearch Dashboards uses the following arguments:

- `-h or --help`

  Show the help message and exit
- `--add`

  A OpenSearch Dashboards service will be added.
- `--delete`

The OpenSearch Dashboards service will be removed.

- `--install_base_dir` *`BASE_DIR`*

  Enter the base directory *(BASE_DIR)* where you installed the OSK DPK.

To add OpenSearch Dashboards as a service:

1. Open a terminal window, running as root.
2. Change directory to *OSK_INSTALL*/setup:

   ```
   cd OSK_INSTALL/setup
   ```

3. Run this command to add the service:

   ```
   ./psft-osd-service.sh --add --install_base_dir BASE_DIR
   ```

4. Use this command to verify that the service was added:.

   The output of the command must show a running OpenSearch Dashboards process.

   ```
   ps -ef | grep node
   ```

5. Use this command to verify that the process is running.

   ```
   systemctl status opensearch-dashboards
   ```

   This should give an output with the status "active (running)," as shown in bold font in this sample:

   ```
   opensearch-dashboards.service - OpenSearch-Dashboards
      Loaded: loaded (/etc/systemd/system/opensearch-dashboards.service;⇒
    enabled; vendor preset: disabled)
      Active: active (running) since Tue 2020-09-01 23:05:38 PDT; 9s ago
   Main PID: 67149 (node)
       Tasks: 11
      Memory: 111.7M
      CGroup: /system.slice/openSearch-dashboards.service
   ```

Task 6-7-2: Verifying that the OpenSearch Dashboards Service Starts Automatically

After you install the OpenSearch Dashboards service and verify the installation, test to make sure the service starts automatically after you reboot the Linux server.

1. Reboot the Linux server.
2. Verify that the service has come up automatically.

   ```
   systemctl status opensearch-dashboards
   ```

   This should give an output with the status "active (running)," as shown in bold font in this sample:

   ```
   opensearch-dashboards.service - OpenSearch-Dashboards
      Loaded: loaded (/etc/systemd/system/opensearch-dashboards.service;⇒
    enabled; vendor preset: disabled)
      Active: active (running) since Tue 2020-09-01 23:05:38 PDT; 9s ago
   Main PID: 67149 (node)
       Tasks: 11
      Memory: 111.7M
      CGroup: /system.slice/openSearch-dashboards.service
   ```

Task 6-7-3: Removing the OpenSearch Dashboards Service

To remove the OpenSearch Dashboards service:

1. Open a terminal window, running as root.
2. Change directory to *OSK_INSTALL/*setup:
   ```
   cd OSK_INSTALL/setup
   ```
3. Run this command to remove the service:
   ```
   ./psft-osd-service.sh --delete
   ```
4. Use one of these methods to verify that the service was deleted:
   - The output of the following ps command should not include any OpenSearch Dashboards process:
     ```
     ps -ef | grep node
     ```
   - Use this systemctl command:
     ```
     systemctl status opensearch-dashboards
     ```

Task 6-8: Reviewing the Logstash 8.11.3 Configuration Files (Optional)

When you install Logstash 8.11.3, the DPK installation creates configuration files in *LOGSTASH_HOME/*pt/config. The values in the files are supplied by the installation process, so you should not need to make any changes.

- JsonLogstash.properties includes the following parameters:
  - IBServiceURL — the Integration Broker REST service URL
  - JSONLocation — the location that you specified for the JSON files
  - IBusername — encrypted name for the Integration Broker user
  - IBpassword — encrypted password for the Integration Broker user
  - The file also includes SSL-related parameters, which are described elsewhere in this documentation.

    See "Deploying the OpenSearch, OpenSearch Dashboards, and Logstash Deployment Package," Using Logstash 8.11.3 with an SSL Setup.
- LogstashPipeline.CONF includes input and output values for the Logstash event processing pipeline.

  See the Logstash information on the Elastic web site for a description of the Logstash pipeline process.

  The file has the following format:

```
input {
  jmx {
    path => "C:\opensearch\pt\logstash-8.11.3\pt\jmxmonitor"
    polling_frequency => 5
    type => "jmx"
    nb_thread => 15
  }
 }
```

```
output {
opensearch {
hosts => "server.example.com:9200"
index => "psft_hc_metrics"
user => "osadmin"
password => "encrypted_password"
ecs_compatibility => disabled
}
}
```

The password in the output section is the osadmin password, which is encrypted using the key available in the psvault.

Use these guidelines if you must change the configuration files:

- Enter the same value for the path in the input section of LogstashPipeline.CONF and the JSONLocation in the JsonLogstash.properties file.
- The polling_frequency parameter in the input section of LogstashPipeline.CONF is the frequency with which the JMX data is pulled from JMX agents and pushed to OpenSearch.

  This value is mandatory. There is no default or recommended value. Set the value based on the requirements of your environment.
- The nb_thread parameter in the input section of LogstashPipeline.CONF, which refers to the number of threads used for retrieving data, can be increased or decreased based on your environment if necessary.