HP IT Operations Compliance

Software Version: 1.0

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Installation and Setup Guide

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Contents

Chapter 1 About ITOC

HP IT Operations Compliance (ITOC) allows IT Operations users to track business service compliance against corporate and regulatory policies, making their environment compliant and therefore secure.

With ITOC you can:

- Scan compliance of business services against policies in a repeatable and reliable manner.

- Remediate non-compliance.

- Provide an overall view of compliance status across policies and business services.

- Track exceptions on resources to requirements in the Statement of Applicability (SoA).

- Track the lifecycle and revisions of policies, business services, controls, and SoAs.

For more information about ITOC use, see the **HP IT Operations Compliance User Guide**.

Chapter 2 Install ITOC In Your Environment

ITOC can be installed as root or non-root user. HP recommends you install ITOC as root user. The benefits of installing as root user include the following:

- The PostgreSQL database is also installed.
- The ITOC service starts automatically on ITOC server startup.

Prerequisites

You must have a root or non-root user with write permission to the install directory.

- To install as non-root, you must configure the database before installing ITOC.

System Requirements

Support and compatibility information for HP IT Operations Compliance 1.0 is located in the **HP IT Operations Compliance Support and Compatibility Reference**.

Download the ITOC Installer

Download the ITOC installer, then copy and extract the `<itoc installer>.zip` to `/tmp` on the ITOC server.

Run the ITOC Installer

1. Log in as root or non-root user.
2. Unzip `{installer}.zip.`

   For example:

   `$unzip /tmp/H7V16-15900.zip`
3. Run the ITOC installer:

   `$/tmp/itoc-installer-1.0.0.bin`

Install ITOC as Root User

This section describes how to install ITOC as root user. If you are installing as non-root user, see Install ITOC as Non-Root User.

1. The installer runs through an interview to capture install parameters. Enter the values specified in the installer interview, or press **Enter** to accept the defaults:

```
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer
archive...
Configuring the installer for this system's environment...
Launching installer...
================
HP IT Operations Compliance (created with InstallAnywhere)
------------------------
Preparing CONSOLE Mode Installation...
================
Introduction
------------
This installation wizard will guide you through the install-
ation of HP IT Operations Compliance 1.00.000.576
It is strongly recommended that you quit all programs before
continuing with this installation.
You may cancel the installation at any point by pressing
CTRL+C.
PRESS <ENTER> TO CONTINUE:
==================
License Agreement
-----------------
.
.
.
```

2. Enter **Y** to accept the terms of the license agreement:

```
DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT? (Y/N): Y
```

3. Select **1** to install the PostgreSQL database as well as ITOC. Select **2** if PostgreSQL is already installed and configured on your system (see Use the PostgreSQL Database on the System):

```
Install Postgresql Database
---------------------------
Install HP ITOC included Postgresql Database?
```

```
->1- Yes
2- No
ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT
THE DEFAULT::
```

4. Enter and then reenter the installer user password:

```
Installation User Password
--------------------------
Password of "root" user performing this installation. It is
used by Remote
Execution Engine for Scan/Remediate operations. It will be
persisted in a file
encrypted.
Please Enter the Password:
===========================
Installation User Password Re-Prompt
------------------------------------
Please Re-Enter the Password:
```

5. Create your user-defined ITOC Admin User password, which is the password for the new itocadmin account within ITOC itself. This password must have 6 or more characters. Then reenter this password when re-prompted:

```
ITOC Admin User Password
------------------------
It is a password for seeded admin user. It will also be used
to generate certificates and for other application logic. It
will be persisted in a file encrypted.
Please Enter the Password:
==================
ITOC Admin User Password Re-Prompt
----------------------------
Please Re-Enter the Password:
```

6. Select **1** to accept the installation defaults (as shown in the example), or select **2** to customize installation values (see Customize Installation Values):

```
Installation Defaults
---------------------
Following configurable defaults will be used to perform HP
IT Operations
Compliance installation:
Install Folder : /opt/hp/itoc
JRE : OpenJRE
Server Hostname : itoc.yoursite.hp.com
Database Hostname : itoc.yoursite.hp.com
Database Port : 5432
Database Name : itoc
```

```
Organization Administration Database Name : idmitoc
Database User : itocadmin
 ->1- Accept
2- Customize
ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO
ACCEPT THE DEFAULT: 1
```

7. Create a database user password, and reenter the password when prompted. If you have already installed the database, enter the database user password you created at that time, and reenter this password when prompted:

```
ITOC Database User Password
---------------------------
It is a password of database user. It will be persisted in a
file encrypted.
Enter the database user password:
===================
ITOC Database User Password Re-Prompt
-------------------------------------
RE-Enter the database user password:
```

8. Review the pre-installation summary, and press **Enter** to complete installation:

```
Pre-Installation Summary
------------------------
Please Review the Following Before Continuing:
Install Folder:
/opt/hp/itoc

Product Name
HP IT Operations Compliance 1.00.000.576

ITOC Database
PostgreSQL (itocadmin:itoc@itoc21.qa.opsware.com:5432)

ITOC Organization Administration Database
PostgreSQL (itocadmin:idmitoc@itoc.yoursite.hp.com:5432)

Disk Space Information (for Installation Target):
Required: 806.05 MegaBytes
Available: 41,184.39 MegaBytes

PRESS <ENTER> TO CONTINUE:
======================
Installing...
-------------
Congratulations. HP IT Operations Compliance has been suc-
```

```
cessfully installed to:
/opt/hp/itoc
PRESS <ENTER> TO EXIT THE INSTALLER:
```

Use the PostgreSQL Database on the System

1. Select **2** to use the PostgreSQL database already installed and configured on your system:

    ```
    Install Postgresql Database
    ---------------------------
    Install HP ITOC included Postgresql Database?
    ->1- Yes
    2- No
    ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT
    THE DEFAULT:: 2
    ```

2. Enter and then reenter the installer user password (see step 4 in Install ITOC as Root User).

3. Create your user-defined ITOC Admin User password, which is the password for the new
    `itocadmin` account within ITOC itself. This password must have 6 or more characters.
    Then reenter this password when re-prompted (see step 5 in Install ITOC as Root User).

4. Select the installation defaults or choose to customize the installation values.

5. Provide information about the PostgreSQL database you want to use:

    ```
    Advanced Database Configuration
    -------------------------------
    Provide detailed information for database setup or enter the
    database
    parameters that would point to an existing HP ITOC database.
    For more
    information about these fields, refer to the HP IT Oper-
    ations Compliance
    Installation Guide.
    Enter the Database Hostname (Default: itoc.yoursite.hp.com):
    Enter the Database Port (Default: 5432):
    Enter the ITOC Database Name (Default: itoc): itoc
    Enter the ITOC Organization Administration Database Name
    (Default: idmitoc):
    Enter the Database Username (Default: itocadmin):
    ```

6. Create a database user password, and reenter the password when prompted. If you have
    already installed the database, enter the database user password you created at that time,
    and reenter this password when prompted:

```
ITOC Database User Password
---------------------------
It is a password of database user. It will be persisted in a
file encrypted.
Enter the database user password:
==================
ITOC Database User Password Re-Prompt
-------------------------------------
RE-Enter the database user password:
```

7. Review the pre-installation summary, and press **Enter** to complete installation (see step 8 in Install ITOC as Root User).

Customize Installation Values

If you specified `2 - Customize`, you have the opportunity to enter custom installation values at the following prompts:

1. Enter an alternate existing absolute path and press **Y** to confirm your choice, or press **Enter** to accept the default:

```
Choose Install Folder
---------------------
Please choose a destination folder for this installation.
Where would you like to install?
Default Install Folder: /opt/hp/itoc
ENTER AN ABSOLUTE PATH, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
```

2. Enter the number for the JRE of your choice, or press **Enter** to accept the default:

```
Select JRE
----------
Select one of the following JRE options to be used by HP
ITOC
Open JRE: Use the OpenJDK JRE that is bundled with HP ITOC
00.14.1200
Oracle JRE: Use the Oracle JRE that is already installed on
the system.
->1- Open JRE
2- Oracle JRE
ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT
THE DEFAULT:: 1
```

3. Enter a fully qualified domain hostname for this ITOC server, or press **Enter** to accept the default:

```
Enter the ITOC Server hostname
------------------------------
Enter the fully qualified domain name of this system. This
name is used to
generate the SSL certificate and configure HP ITOC.

WARNING: If you enter an IP address, after installation com-
pletes, you must
manually generate a self-signed certificate using the fully-
qualified domain
name of the system on which you installed HP ITOC. For more
information, refer
to the "HP IT Operations Compliance Configuration Guide."

Fully Qualified Hostname (Default: itoc.yoursite.hp.com):
```

4. Enter the following parameters for advanced database configuration, or press **Enter** to accept the defaults:

```
Advanced Database Configuration
-------------------------------
Provide detailed information for database setup or enter the
database
parameters that would point to an existing HP ITOC database.

Enter the Database Hostname (Default: itoc.yoursite.hp.com):
Enter the Database Port (Default: 5432):
Enter the ITOC Database Name (Default: itoc):
Enter the ITOC Organization Administration Database Name
(Default: idmitoc):
Enter the Database Username (Default: itocadmin):
```

- **Database Hostname:** The hostname of the ITOC server on which you are installing ITOC.

- **Database Port:** The port of the ITOC server on which you are installing ITOC.

- **ITOC Database Name:** One of two ITOC databases that are installed, with the same user for both databases. This database contains ITOC application data.

- **ITOC Organization Administration Database Name:** One of two ITOC databases that are installed, with the same user for both databases. This database contains ITOC organization administration data.

- **Database Username:** The ITOC user.

5. Enter the database user password, and then reenter the password when re-prompted.

6. Review the pre-installation summary, and press **Enter** to complete installation.

> **Note:** ITOC services are started automatically following ITOC installation.

Install ITOC as Non-Root User

This section describes additional prerequisites and information needed to install ITOC as non-root user.

Configure the Install Directory

1. Create the install directory:

   ```
   #mkdir -p <itoc_install_directory>
   ```

   For example:

   ```
   #mkdir -p /opt/hp/itoc
   ```

2. Configure permissions for the user on the install directory to allow access for the user created in step 1.

   ```
   #chown <username> <itoc_install_directory>
   #chgrp <usergroup> <itoc_install_directory>
   ```

   For example:

   ```
   #chown itoc /opt/hp/itoc
   #chgrp itoc /opt/hp/itoc
   ```

Install and Configure PostgreSQL

You must install and configure PostgreSQL 9.1.3+ on your server before installing ITOC.

Install PostgreSQL

For general PostgreSQL installation instructions, see:

```
http://www.postgresql.org/docs/9.3/static/index.html
```

For installation instructions for a specific platform, see:

```
https://wiki.postgresql.org/wiki/YUM_Installation
```

Configure PostgreSQL

After you have installed PostgreSQL, use PostgreSQL documentation or work with a database administrator to configure a database, user, and password. This section provides an example of typical configuration steps.

1. As root user, set up the database.

2. Configure the database as necessary:

   a. As required to allow encrypted password access, modify the `pg_hba.conf` file:

   ```
   # TYPE DATABASE USER ADDRESS METHOD
   host itoc all 0.0.0.0/0 md5
   host idmitoc all 0.0.0.0/0 md5
   ```

   b. (Optional) Configure `/var/lib/pgsql/pgsql_ver-sion/data/postgresql.conf` with the following recommended parameters, as needed:

   ```
   listen_addresses = '*'
   maintenance_work_mem = 64MB
   wal_buffers = -1
   checkpoint_segments = 64
   checkpoint_timeout = 10min
   effective_cache_size = 4GB
   max_locks_per_transaction = 96
   log_min_duration_statement = 1000
   max_connections = 275
   shared_buffers = 4GB
   log_rotation_size = 500MB
   log_line_prefix = '%t:%r [%p]: [%1] user=%u,db=%d '
   log_filename = 'postgresql-%d.log'
   ```

3. Restart the PostgreSQL service:

   ```
   #service postgresql-<pgsql_version> restart
   ```

4. Create the PostgreSQL user role and password. Create the two databases using the example script shown below:

   - One database for ITOC application data, named `itoc`.

   - One database for ITOC organization administration data, named `idmitoc`.

   ```
   #!/bin/sh

   set -e
   ```

```
tsfolder="hpitocspace"
tablespace="hpitocdata"

[ $# -lt 1 ] && echo "USAGE: `basename $0` <dbpassword>
[username] [port] [dbname] [authdbname]" && exit 1

db_pswd="$1"
dbuser="$2"
port="$3"
dbname="$4"
idmdbname="$5"

[ -z "$dbuser" ] && dbuser="itocadmin"
[ -z "$port" ] && port=5432
[ -z "$dbname" ] && dbname="itoc"
[ -z "$idmdbname" ] && idmdbname="idmitoc"

su_cmd="su - postgres"
c_cmd="sudo -u postgres psql -p $port"

echo "mkdir $tsfolder" | $su_cmd
echo "create user $dbuser WITH CREATEROLE CREATEUSER
PASSWORD '$db_pswd';" | $c_cmd
echo "create tablespace $tablespace owner $dbuser location
'/var/lib/pgsql/$tsfolder';" | $c_cmd
echo "create database $dbname OWNER $dbuser template tem-
plate0 encoding 'UTF8' lc_collate 'C' tablespace $ta-
blespace;" | $c_cmd
echo "create database $idmdbname OWNER $dbuser template tem-
plate0 encoding 'UTF8' lc_collate 'C' tablespace $ta-
blespace;" | $c_cmd

exit $?
```

Install ITOC

1. As non-root user, enter the values specified in the install interview, or accept the defaults
   by pressing **Enter**:

```
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer
archive...
Configuring the installer for this system's environment...
Launching installer...
```

```
==================
HP IT Operations Compliance (created with InstallAnywhere)
-------------------------
Preparing CONSOLE Mode Installation...
==================
Introduction
------------
This installation wizard will guide you through the install-
ation of HP IT
Operations Compliance 1.00.000.576
It is strongly recommended that you quit all programs before
continuing with
this installation.
You may cancel the installation at any point by pressing
CTRL+C.
PRESS <ENTER> TO CONTINUE:
==================
License Agreement
-----------------
.
.
.
```

2. Press **Y** to accept the terms of the license agreement:

```
DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT? (Y/N): Y
```

3. Enter and then reenter the installer user password:

```
Installation User Password
--------------------------
Password of user performing this installation. It is used by
Remote
Execution Engine for Scan/Remediate operations. It will be
persisted in a file
encrypted.
Please Enter the Password:
============================
Installation User Password Re-Prompt
------------------------------------
Please Re-Enter the Password:
```

4. Create your user-defined ITOC Admin User password, which is the password for the new `itocadmin` account within ITOC itself. This password must have 6 or more characters. Then reenter this password when re-prompted:

```
ITOC Admin User Password
------------------------
It is a password for seeded admin user. It will also be used
```

```
to generate
certificates and for other application logic. It will be per-
sisted in a file
encrypted.
Please Enter the Password:
===================
ITOC Admin User Password Re-Prompt
----------------------------
Please Re-Enter the Password:
```

5. Select **1** to accept the installation defaults (as shown in the example), or select **2** to cus-
   tomize installation values (see Customize Installation Values):

```
Installation Defaults
---------------------
Following configurable defaults will be used to perform HP
IT Operations
Compliance installation:
Install Folder : /opt/hp/itoc
JRE : OpenJRE
Server Hostname : itoc.yoursite.hp.com
Database Hostname : itoc.yoursite.hp.com
Database Port : 5432
Database Name : itoc
Organization Administration Database Name : idmitoc
Database User : itocadmin
 ->1- Accept
2- Customize
ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO
ACCEPT THE DEFAULT: 1
```

6. Enter the database user password you created when you installed the PostgreSQL data-
   base, and reenter this password when prompted:

```
ITOC Database User Password
--------------------------
It is a password of database user. It will be persisted in a
file encrypted.
Enter the database user password:
=================
ITOC Database User Password Re-Prompt
-------------------------------------
RE-Enter the database user password:
```

7. Review the pre-installation summary, and press **Enter** to complete installation:

```
Pre-Installation Summary
------------------------
Please Review the Following Before Continuing:
```

```
Install Folder:
/opt/hp/itoc

Product Name
HP IT Operations Compliance 1.00.000.576

ITOC Database
PostgreSQL (itocadmin:itoc@itoc21.qa.opsware.com:5432)

ITOC Organization Administration Database
PostgreSQL (itocadmin:idmitoc@itoc.yoursite.hp.com:5432)

Disk Space Information (for Installation Target):
Required: 806.05 MegaBytes
Available: 41,184.39 MegaBytes

PRESS <ENTER> TO CONTINUE:
========================
Installing...
-------------
Congratulations. HP IT Operations Compliance has been suc-
cessfully installed to:
/opt/hp/itoc
PRESS <ENTER> TO EXIT THE INSTALLER:
```

Start ITOC Services as Non-Root User

ITOC services are started automatically during ITOC installation. When installing as non-root user, perform the following additional actions using `sudo` or `root` user to make the installation fail-safe against reboot:

On RHEL 6

```
cp <install_dir>/scripts/itoc|portal /etc/init.d
chkconfig itoc|portal on
```
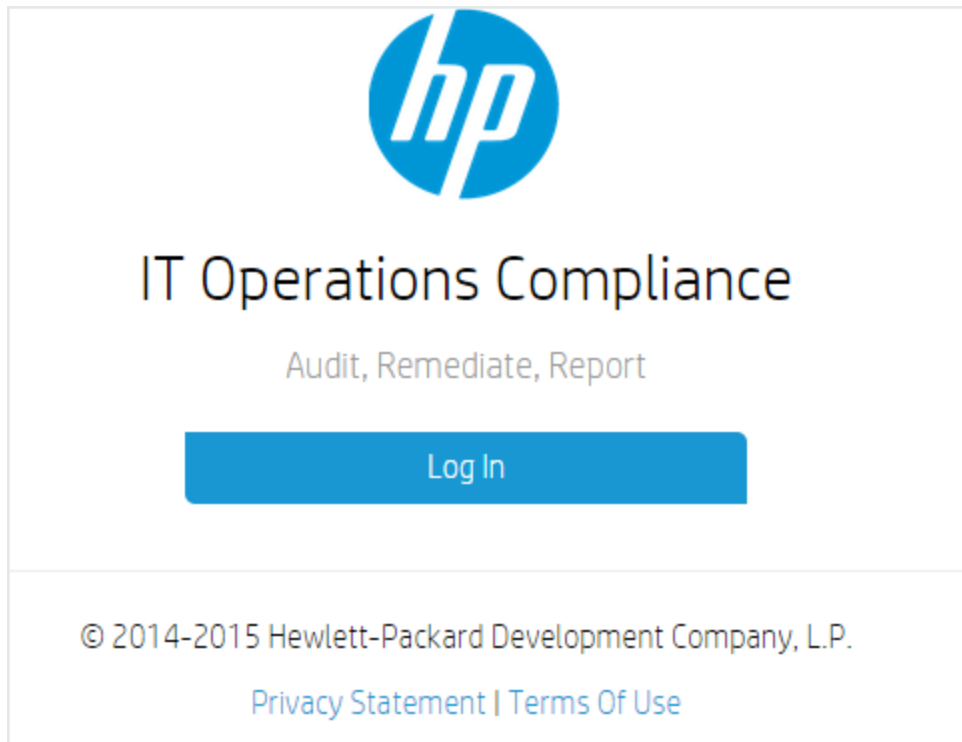
On RHEL 7

```
cp <install_dir>/scripts/itoc|portal.service /us-
r/lib/systemd/system/
```

```
systemctl daemon-reload
```

```
systemctl enable itoc|portal.service
```

Log In to ITOC

Note: The ITOC hostname must be resolvable from your Windows client server.

1. From your browser, log into ITOC:

   ```
   https://<ITOC_hostname>:9000
   ```


2. Press the **Login** button.

3. Accept the certificate that appears in the Security warning.

4. At the ITOC login screen, enter "itocadmin" as the username and the password you set (or created) during the installation. Press **Log In**.

For more information about login permissions and users, see the **IT Operations Compliance Administration Guide**.

Chapter 3 Administration

For information about ITOC administration, including Business and System Configuration, see the **HP IT Operations Compliance Administration Guide**.

Chapter 4 HPLN Content

This section describes how to download and import HP-provided ITOC content from HP Live Network (HPLN).

IT organizations are increasingly required to cut costs while maintaining a secure and compliant infrastructure. The Security and Compliance Service for HP IT Operations Compliance delivers up-to-date compliance policies to immediately identify security configuration issues in your environment. The policies include built-in remediation wherever applicable, so you can fix compliance issues quickly without expending a lot of resources.

You can access HPLN with your HP Passport credentials and be kept up-to-date on the latest industry compliance standards, based on the needs of your data center. For example, you will have access to regularly updated security best practices, such as the Center for Internet Security (CIS), Payment Card Industry (PCI), and so on.

As part of HP ITOC 1.0, the following content is available to download over HPLN to assist organizations with managing compliance:

- Compliance Control Library

- CIS Compliance Benchmark Policies

- PCI Compliance Benchmark Policies

- FISMA Compliance Benchmark Policies

- HIPAA Compliance Benchmark Policies

Compliance Control Library

The Compliance Control Library includes an array of user-customizable controls to audit and remediate common configurations that pose security and compliance risks on OS platforms and database servers, such as local security settings on Windows or RPMs on Linux.

For example, users can define different audits to ensure that a subset of Windows managed servers has a minimum password length of 8 characters, while a different set of servers has a minimum password length of 10. Where possible, controls have remediation enabled to allow users to bring managed servers into custom-defined compliance.

Controls specific to OS platform, software applications, and other database servers are delivered in separate bundles. The following control libraries are currently available as free non-subscription content for HP IT Operation Compliance Version 1.0:

Name	Description	Applicable ITOC Release
Control Library for Microsoft Windows	Includes an array of user-customizable controls to audit and remediate commonly used objects on Microsoft Windows OS platforms.	All
Control Library for UNIX	Includes an array of user-customizable controls to audit and remediate commonly used objects on Linux OS platforms.	All
Control Library for Oracle 10g/11g	Includes an array of user-customizable controls to audit commonly used objects on Oracle 10g and 11g database servers.	All
Control Library for DB2 Database Servers	Includes an array of user-customizable controls to audit commonly used objects on DB2 database servers.	ITOC 1.0
Control Library for MS SQL Server	Includes an array of user-customizable controls to audit commonly used objects on MS SQL servers.	ITOC 1.0

The following platform resources are supported as part of Control Library for Microsoft Windows:

- Microsoft Windows Server 2008 R2

- Microsoft Windows Server 2012

- Microsoft Windows Server 2012 R2

The following platform resources are supported as part of Control Library for UNIX:

- RHEL 5

- RHEL 6

- RHEL 7

- CentOS 5

- CentOS 6

- CentOS 7

- OEL 5

- OEL 6

- OEL 7

- SuSE Linux Enterprise Server (SLES) 11

- Ubuntu 12.04 LTS Server

The following software resources are supported as part of Control Library for Oracle 10g/11g:

- Oracle 10g

- Oracle 11g

> **Note:** Oracle10g and Oracle11g are supported only when installed on either RHEL 6 and SLES 11.

The following software resources are supported as part of Control Library for DB2:

- DB2 Database Server 10.5

The following software resources are supported as part of Control Library for MS SQL Server:

- MS SQL server 2005

Regulatory Policies

The out-of-the-box (OOTB) regulatory policies provide predefined values for audit and remediation according to guidelines such as CIS, PCI, or SOX.

The policies shown in the following table are currently available as free non-subscription content for HP ITOC 1.0, implemented according to CIS guidelines.

Name	Description	Prerequisite Control Library	Applicable ITOC Release
CIS Benchmark for Oracle 9i/10g, Version 2.01	CIS Security Configuration Benchmark for Oracle Database Server 9i/10g provides prescriptive guidance to secure Oracle database from conventional OOTB threats.	Control Library for Oracle 10g/11g	All
CIS CentOS Linux 7 Benchmark v1.1.0	CIS CentOS Linux 7 Benchmark provides prescriptive guidance for	Control Library for UNIX	ITOC 1.0

	establishing a secure configuration posture for CentOS version 7.0 running on x86 and x64 platforms.		
CIS DB2 Database Server 10.5 Benchmark v1.1.0	The CIS DB2 10.5 Benchmark v1.1.0 policy provides prescriptive guidance for establishing a secure configuration posture for DB2 Database Server 10.5.	Control Library for DB2 Database Server	ITOC 1.0
CIS Microsoft Windows Server 2012 v1.0.0	CIS Microsoft Windows Server 2012 Benchmark v1.0.0 provides prescriptive guidance for establishing a secure configuration posture for CIS Microsoft Windows Server 2012.	Control Library for Windows	All
CIS Microsoft Windows Server 2012 R2 v1.1.0	CIS Microsoft Windows Server 2012 R2 Benchmark v1.1.0 provides prescriptive guidance for establishing a secure configuration posture for CIS Microsoft Windows Server 2012 R2.	Control Library for Windows	ITOC 1.0
CIS MSSQL Server 2005 Benchmark v1.2.0	The CIS MSSQL Benchmark v1.2.0 policy provides prescriptive guidance for establishing a secure configuration posture for CIS MSSQL Server 2005.	Control Library for MS SQL Server	ITOC 1.0
CIS Red Hat Enterprise Linux 5 Benchmark v2.1.0	CIS Red Hat Enterprise Linux 5 Benchmark provides prescriptive guidance for establishing a secure configuration posture for RHEL versions 5.x running on x86 and x64 platforms.	Control Library for UNIX	All
CIS Red Hat Enterprise Linux 6 Benchmark v1.3.0	CIS Red Hat Enterprise Linux 6 Benchmark provides prescriptive guidance for establishing a secure configuration posture for RHEL versions 6.x running on x86 and x64	Control Library for UNIX	All

	platforms.		
CIS Red Hat Enterprise Linux 7 Benchmark v1.0.0	CIS Red Hat Enterprise Linux 7 Benchmark provides prescriptive guidance for establishing a secure configuration posture for RHEL versions 7.x running on x86 and x64 platforms.	Control Library for UNIX	ITOC 1.0
CIS Security Configuration Benchmark for Oracle Database Server 11g, version 1.0.1	CIS Security Configuration Benchmark for Oracle Database Server 11g provides prescriptive guidance to secure Oracle database from conventional OOTB threats.	Control Library for Oracle 10g/11g	All
CIS SuSE Linux Enterprise Server 11 Benchmark v 1.0.0	CIS SuSE Linux Enterprise Server 11 Benchmark provides prescriptive guidance for establishing a secure configuration posture for SLES version 11 running on x86 and x64 platforms.	Control Library for UNIX	All
CIS Ubuntu 12.04 LTS Server Benchmark v1.0.0	This document provides prescriptive guidance for establishing a secure configuration posture for Ubuntu 12.04 LTS Server.	Control Library for UNIX	All
NIST SP 800-53 Revision 4 (FISMA)	Audit policy for NIST Special Publication 800-53 Revision 4 - Recommended Security Controls for Federal Information Systems and Organizations. This policy is applicable to the following resource types: Microsoft Windows Server 2008 R2, Microsoft Windows Server 2012, RHEL compatibles, and SuSE compatibles.	Control Library for Windows and Control Library for UNIX	ITOC 1.0
NIST SP 800-66 Revision 1 (HIPAA)	Audit policy for NIST Special Publication 800-66 Revision 1 - Recommended Security Controls for Health Insurance Portability and	Control Library for Windows and Control Library for UNIX	ITOC 1.0

	Accountability Act. This policy is applicable to RHEL compatibles and SuSE compatibles.		
Payment Card Industry Data Security Standard version 3.0.0	The Payment Card Industry Data Security Standard was developed to encourage and enhance cardholder data security and facilitate the broad adoption of consistent data security measures globally. This policy is applicable to the following resource types: Microsoft Windows Server 2008 R2, Microsoft Windows Server 2012, RHEL compatibles, and SuSE compatibles.	Control Library for Windows and Control Library for UNIX	ITOC 1.0

The following table shows which platforms and software resources are covered in the PCI, FISMA, or HIPAA policies, if the policy is in SA as well as in ITOC, and whether or not an ITOC agent installer is included in the ITOC 1.0 release:

OS Resources

Vendor	Platform	Agent Installer	CIS	PCI	FISMA	HIPAA
Microsoft	MS Windows Server 2008 MS	No	SA	SA	SA	SA
	MS Windows Server 2008 R2	No	Not in SA	ITOC	ITOC	Not in SA
	MS Windows Server 2012	Yes	ITOC	ITOC	ITOC	Not in SA
	MS Windows Server 2012 R2	Yes	ITOC	Not in SA	Not in SA	Not in SA
Red Hat	RHEL 5	Yes	ITOC	ITOC	ITOC	ITOC
	RHEL 6	Yes	ITOC	ITOC	ITOC	ITOC
	RHEL 7	Yes	ITOC	ITOC	ITOC	ITOC

CentOS	CentOS 5	Yes	NA	ITOC	ITOC	ITOC
	CentOS 6	Yes	Not in SA	ITOC	ITOC	ITOC
	CentOS 7	Yes	ITOC	ITOC	ITOC	ITOC
Oracle	OEL 5	Yes	NA	ITOC	ITOC	ITOC
	OEL 6	Yes	NA	ITOC	ITOC	ITOC
	OEL 7	Yes	NA	ITOC	ITOC	ITOC
Novell	SLES 11	Yes	ITOC	ITOC	ITOC	ITOC
Ubuntu	Ubuntu 12.04 LTS	Yes	ITOC	Not in SA	Not in SA	Not in SA
	Ubuntu 14.04 LTS	Yes	Not in SA	Not in SA	Not in SA	Not in SA
Software Resources						
DB2	DB2 10.5	NA	Yes	No	No	No
Microsoft	MS SQL Server 2005	Yes	No	No	No	No
Oracle	Oracle 10g	NA	Yes	No	No	No
	Oracle 11g	NA	Yes	No	No	No

Note: For all benchmark policies, the corresponding compliance control library is a pre-requisite. Please import the respective control library before importing any benchmark policy.

Note: All rules in a policy are set with audit, remediation parameter values as recommended by the benchmark document. There are some rules for which the benchmark suggests to set the value that is consistent with the security and operational requirements of an organization.

Such requirements in OOTB policies and the values provided in the audit and remediation para-meters are intended as an example only or as a default value set as per the benchmark recom-mendation. Please edit rules to include the specific values that are consistent with the security and operational requirements of your organization.

Please refer to the regulatory policy documentation for requirements that need specific values to be configured.

Download Content from HPLN

The compliance content delivered for HP IT Operations Compliance is available for download from HPLN. Your HP Passport login credentials are required for viewing HP ITOC product-related information and downloading the required compliance content offerings on HPLN.

HP ITOC product-related information is located at:

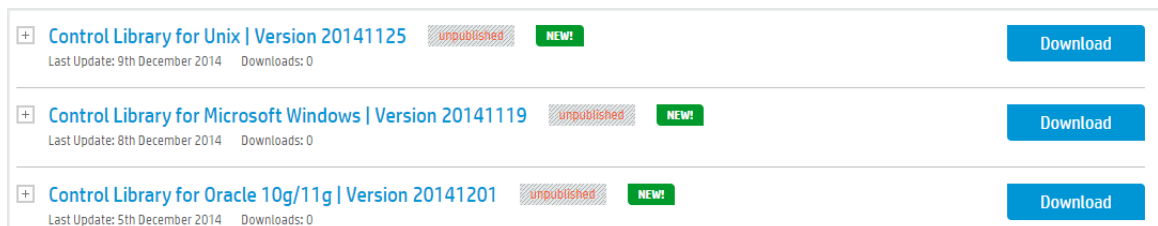https://hpln.hp.com/group/hp-it-operations-compliance

To download the compliance content packs offered:

1. Expand the **Featured Content** section in the right hand side of product landing page, and click on the content offering you want.
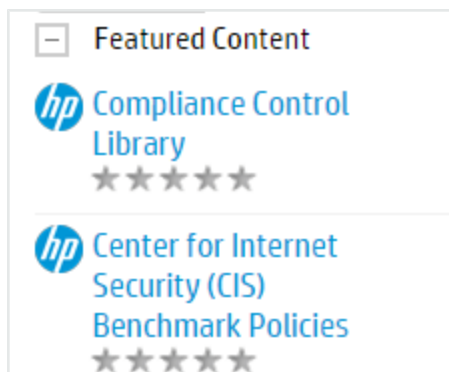
2. Click on the **Download** button for the required **Content Pack**:

   - Compliance Control Library Content Packs can be downloaded from:

     https://hpln.hp.com/contentoffering/compliance-control-library

- CIS Benchmark Policy Content Packs can be downloaded from:

  https://hpln.hp.com/contentoffering/center-internet-security-cis-benchmark-policies

- PCI DSS Benchmark Policy Content Packs can be downloaded from:

  https://hpln.hp.com/contentoffering/pci-dss-benchmark-policies

- FISMA (SP800-53) Benchmark Policy Content Packs can be downloaded from:

  https://hpln.hp.com/contentoffering/fisma-sp800-53-benchmark-policies

- HIPAA (SP800-66) Benchmark Policy Content Packs can be downloaded from:

  https://hpln.hp.com/contentoffering/hipaa-sp800-66-benchmark-policies

3. Copy to your ITOC server; for example, to `/tmp`.

Import Compliance Content

Note: Having the Compliance Control Library is a prerequisite for importing any Compliance Regulatory Policy mentioned.

1. Log into ITOC server as root or non-root user.

2. Import the Control Library:

   ```
   $<itoc_install_directory>/importer/ControlImporter <con-
   trolBundleFile> <itocUser> <itocPassword> <tenant>
   ```

   For example:

   ```
   $/opt/hp/itoc/importer/ControlImporter /tmp/hpitoc-WinCon-
   trolLibrary.zip itocadmin hpitoc public
   ```

3. Run the controls importer once for each control package desired.

4. Import Policies:

   ```
   $<itoc_install_directory>/importer/PolicyImporter <poli-
   cyZipFile> <itocUser> <itocUserPassword> <tenant>
   ```

   For example:

   ```
   $/opt/hp/itoc/importer/PolicyImporter /tmp/hpitoc-cis-
   win2k12-3449-20141125.zip itocadmin hpitoc public
   ```

5. Run the Policy Importer once for each policy package desired.

Log Files

The Control and Policy Import log files are located here:

$<itoc_install_directory>/importer/log

- ControlImporter.log - Control Import log file

- PolicyImporter.log – Policy Import log file

Chapter 5 **After ITOC Installation**

Once you have installed ITOC in your environment, you are ready to:

- Create or import resources and install agents on platform-type resources.

- Create or import and modify business services.

- Review imported policies and modify rule parameters to match your organization's criteria and environment.

- Create maintenance windows, in which compliance scan and remediation jobs will run.

- Create and modify SoAs for policies and business services.

- Run compliance scan and remediation jobs, and view results.

- Integrate with LDAP, assign roles to groups, and create consumer organizations to integrate with LDAP for production or test environments.

See the **HP IT Operations Compliance User Guide** and the **HP IT Operations Compliance Administration Guide** for further information.

Chapter 6 ITOC Uninstallation

This section describes how to uninstall the ITOC application and agents from your system.

Uninstall Basics

There are several reasons that you might choose to uninstall ITOC:

- Removing test installations.

- Removing demo installations.

Uninstall the ITOC Application

The ITOC uninstaller is located in your ITOC install directory. ITOC must be uninstalled by the user who performed installation.

1. Run the ITOC uninstaller:

   ```
   /opt/hp/itoc/ITOC_Installation/Uninstall_HPITOC


    =======================
   HP IT Operations Compliance (created with InstallAnywhere)
   --------------------------------
   Preparing CONSOLE Mode Uninstallation...
   ```

2. Press **1** or **Enter** to confirm the uninstallation:

   ```
   Deinstall ITOC
   --------------
   Do you really want to deinstall ITOC?
   ->1- OK
   2- Cancel
   ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO
   ACCEPT THE DEFAULT:
   =======================
   Uninstalling...
   .
   .
   .
   Uninstall Complete
   ------------------
   All items were successfully uninstalled.
   Manually delete the files/folders in /opt/hp/itoc incase
   ```

```
there are any remaining.

PRESS <ENTER> TO CONTINUE:
```

Uninstall an Agent

This section describes how to uninstall an agent from a resource.

Uninstall a Linux Agent

1. Run the following command to uninstall a Linux agent:

   ```
   <itoc_install_directory>/.uninstall_itoc_minion.sh
   ```

2. Delete the Agent Key.

Uninstall a Windows Agent

1. Run the following command to uninstall a Windows agent:

   ```
   C:/salt/uninst.exe
   ```

2. Delete the Agent Key.

Delete the Agent Key

1. Delete the agent key using the following command:

   ```
   $<itoc_install_directory>/scripts/minion_reg.sh -d <agent_
   identifier_key_string> -y
   ```

2. The `agent_identifier_key_string` typically is the hostname of the target agent host. To confirm, enter:

   ```
   $<itoc_install_directory>/scripts/minion_reg.sh -L
   ```

   The `agent_identifier_key_string` is in the command output.

Appendix A **Install Agents on Resources Manually**

This appendix describes how to install Salt agents on your resources manually. To install agents on resources using the ITOC UI, see the **HP IT Operations Compliance User Guide**.

ITOC provides Salt agent installer packages for the following target resources:

Platform	Agent Installer Package
RHEL 5 x64, CentOS 5 x64, OEL 5 x64	`RHEL5_minion-2014.7.2.1`
RHEL 6 x64, CentOS 6 x64, OEL 6 x64	`RHEL6_minion-2014.7.1.1`
RHEL 7 x64, CentOS 7 x64, OEL 7 x64	`RHEL7_minion-2014.7.1.1`
SLES 11 SP2 x64	`SLES11_minion-2014.7.4.184.2`
Ubuntu 12.04 LTS x64	`Ubuntu12045LTS_minion-2014.7.1`
Ubuntu 14.04 LTS x64	`Ubuntu14041LTS_minion-2014.7.5`
Windows Server 2012 R2 x64, Windows Server 2012	`Win64_minion-2014.7.5.exe`

Linux Installation

Use this procedure to install agents on Linux platforms.

Copy the Agent Install Package on the ITOC Server

1. Copy the agent install package for the target platform to the target server:

   ```
   $scp <itoc_install_directory>/salt/srv/salt/<install_pack-
   age>
   user@minion_server:/tmp
   ```

   For example (using Red Hat 7):

```
$scp /opt/hp/itoc/salt/srv/salt/RHEL7_minion-2014.7.1.1 user-
@minion_server:/tmp
```

Run the Agent Install Package on the Target Server

1. Run the agent install package using the ITOC server FQDN:

   ```
   /tmp/<install_package> -- -f <ITOC_server_FQDN>
   ```

   For example:

   ```
   /tmp/RHEL7_minion-2014.7.1.1 -- -f itoc-
   server.itoc.mysite.com
   ```

   > **Note:** The syntax `--  -f` is correct as shown above.

   To view available options for the installer, use the `--  -h` option:

   ```
   /tmp/RHEL7_minion-7.0.3 -- -h

   Verifying archive integrity... All good.

   .

   .

   USAGE: install_minion.sh [-d | --dir] <itoc_install_dir-
   ectory> [-f | --fqdn] <salt_master_fqdn> [-h | --help]
   ```

     - `-f | --fqdn` : Salt Master host FQDN. Corresponding entry should be created in `/etc/hosts` by user to resolve it locally.

     - `-d | --dir` (optional): Directory where salt agent will be installed. The default value is `/opt/hp/itoc`.

     - `-h | --help` (optional): Installer usage help.

Next step: Accept the Agent Key on the ITOC Server.

Windows Installation

Prerequisites

1. Install the Python 2.7 64-bit library in on the Windows agent target. In the following example, `%SystemDrive%` is `D`.

a. Modify the `itoc.rex.salt.minion.windows.pythonloc = C:/py-thon27` **property in the** `<install_dir>/wildfly-8.1.0.Fin-al/standalone/deployments/itoc.war/WEB-INF/classes/application.properties` **file to** `itoc.rex.salt.minion.windows.pythonloc = D:/python27`

b. Restart your service:

`<itoc_install_directory>/scripts/itoc restart appserver`

2. Install the `PyWin32` 64-bit library pointing to Python, installed in step 1.

3. Select an SSH installation for Windows. HP ITOC has been tested with the following two SSH installation options for Windows; however, you can use any other similar solution.

- **COPSSH 64-bit** –**https://www.itefix.net/copssh**

- **BITVISE SSH** – **https://www.bitvise.com/**

> **Note:** All the Windows servers on a system must have either **COPSSH** or **BITVISE SSH** installed. Do not use both. HP ITOC does not support a mix of **COPSSH** and **BITVISE SSH** on servers.

By default, the ITOC `application.properties` file is configured to support **COPSSH** as follows (default configurations are shown in **bold** text):

```
## itoc.rex.salt.minion.windows.temp : salt minion temp
dir for windows
## This is an optional property with default value
C:/tmp
itoc.rex.salt.minion.windows.temp = C:/tmp

## itoc.rex.salt.minion.windows.pythonloc : salt minion
python location for windows
## This is an optional property with default value C:/py-
thon27
itoc.rex.salt.minion.windows.pythonloc = C:/python27

## itoc.rex.salt.minion.windows.sshsaltloc : location
for salt installation while access from SSH
## This is an optional property with default value /cy-
gdrive/c/salt
itoc.rex.salt.minion.windows.sshsaltloc = /cygdrive/c/salt
```

```
## itoc.rex.salt.minion.windows.sshenvtype : what kind
of command set windows ssh uses (POSIX or Windows)
## This is an optional property with default value POSIX
itoc.rex.salt.minion.windows.sshenvtype = POSIX
```

To use **BITVISE** instead of **COPSSH**, the `application.properties` file must have the following information (shown in **bold** text):

```
## itoc.rex.salt.minion.windows.temp : salt minion temp
dir for windows
## This is an optional property with default value
C:/tmp
itoc.rex.salt.minion.windows.temp = C:/tmp


## itoc.rex.salt.minion.windows.pythonloc : salt minion
python location for windows
## This is an optional property with default value C:/py-
thon27
itoc.rex.salt.minion.windows.pythonloc = C:/python27


## itoc.rex.salt.minion.windows.sshsaltloc : location
for salt installation while access from SSH
## This is an optional property with default value /cy-
gdrive/c/salt
itoc.rex.salt.minion.windows.sshsaltloc = C:/salt


## itoc.rex.salt.minion.windows.sshenvtype : what kind
of command set windows ssh uses (POSIX or Windows)
## This is an optional property with default value POSIX
itoc.rex.salt.minion.windows.sshenvtype = Windows
```

For both **COPSSH** and **BITVISE**, the user must ensure that:

- The Python 2.7 64-bit library is installed in the directory specified by `itoc.rex.salt.minion.windows.pythonloc`, as shown in step 1.

- `itoc.rex.salt.minion.windows.sshsaltloc` must be:

    - `%SystemDrive%:/salt` for **BITVISE** use.

    - `/cygdrive/%SystemDrive%/salt` for **COPSSH** use.

- `itoc.rex.salt.minion.windows.temp` and `itoc.rex.salt.minion.windows.sshsaltloc` are pre-created.

- `itoc.rex.salt.minion.windows.temp` must have read and write permissions for the Administrator and System users.

- `itoc.rex.salt.minion.windows.sshsaltloc` must have read permissions.

- All directory names specified in the `application.properties` files must use `/` as a
separator, not `\`.

- Appropriate firewall settings should be updated to allow the SSH server to communicate.

HP recommends that the user create a template Windows server with this configuration and clone it for easy configuration.

Install the Agent on a Windows Target

Use this procedure to install agents on Windows platforms.

1. Copy the Windows agent install file to the target server.

2. Run the Windows agent install self-extracting executable:

   `c:/temp/Win64_minion-2014.7.5.exe`

   It will extract the package in same location.

3. Enter the following command to install the agent using the command prompt:

   `cd minionpkg`

   ```
   minionpkg\install_minion.bat itocserver.itoc.mysite.com
   Install finished successfully!
   ```

Next step: Accept the Agent Key on the ITOC Server.

Accept the Agent Key on the ITOC Server

1. List the available keys:

   `$<itoc_install_directory>/salt/usr/bin/minion_reg.sh -L`

   For example:

   `$/opt/hp/itoc/salt/usr/bin/minion_reg.sh -L`

```
Accepted Keys:

itocserver.itoc.mysite.com

Unaccepted Keys:

targetserver.itoc.mysite.com

Rejected Keys:
```

2. Accept the agent with your selected key:

```
$<itoc_install_directory>/salt/usr/bin/minion_reg.sh -a <tar-
get_FQDN> -y
```

> **Note:** You can accept all agent keys at once. Install the agents on multiple target serv-
> ers as needed for your environment, then accept all agent keys:
> ```
> $<itoc_install_directory>/salt/usr/bin/minion_reg.sh -A -y
> ```

To view available options for the `minion_reg.sh` script, use the `-h` option:

```
minion_reg.sh -h
```

Appendix B Start, Stop, and Check Service Status

You can start, stop, restart, or check ITOC services manually on RHEL 6 or RHEL 7 using the commands in the following sections:

- Using Optional Commands on RHEL 6 and RHEL 7
- Using ITOC Scripts on RHEL 6 and RHEL 7

Using Optional Commands on RHEL 6 and RHEL 7

- On RHEL 6, use the `service` command:

  ```
  service <itoc | portal> <start | stop | status | restart>
  ```

  The following example shows how to start ITOC manually on RHEL 6:

  ```
  service itoc start
  ```

- On RHEL 7, use the `systemctl` command:

  ```
  systemctl <start | stop | status | restart> <itoc | portal>
  ```

  The following example shows how to start ITOC manually on RHEL 7:

  ```
  systemctl start itoc
  ```

  Note: After you perform these steps, wait a few minutes for all services to start.

Using ITOC Scripts on RHEL 6 and RHEL 7

ITOC services can be configured manually using ITOC scripts:

```
$<itoc_install_directory>/scripts <itoc | portal> <start | stop |
status | restart>
```

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