



Configuring the Service Catalog Database

The Cisco Prime Service Catalog product requires an OLTP database, which is referred to as the ServiceCatalog database. The ServiceCatalog database can be manually created by the DBA prior to executing the Cisco Prime Service Catalog installer, or automatically created by the installer if the user selects the "Create Database" option on the installation wizard. The following sub-sections contain the manual instructions for creating the ServiceCatalog database on either Oracle or SQL Server.



Note

The installer does not automatically create the Oracle tablespaces for you. It only creates a ServiceCatalog schema with a fixed size of 500 MB in the tablespaces specified by you on the installation wizard. Thus, even if you decide to let the installer create the ServiceCatalog schema automatically, you may still want to follow the instructions in the subsequent sections to prepare your Oracle server with the appropriate tablespaces, prior to running the Cisco Prime Service Catalog installer.

Configuring Oracle

If you choose to use Oracle for your database, follow the instructions in this section to prepare the Oracle server and to create an Oracle user to be the owner of the ServiceCatalog schema.

Oracle Parameters

Configure the following Oracle parameters:

Step 1 Execute the following commands to find out the current values for the following Oracle parameters:

```
SHOW PARAMETER CURSOR_SHARING;
```

```
SHOW PARAMETERS PROCESSES;
```

```
SHOW PARAMETERS OPEN_CURSORS;
```

Step 2 If CURSOR_SHARING is not set to EXACT, use the following command to change it:

```
ALTER SYSTEM SET CURSOR_SHARING=EXACT SCOPE=BOTH SID='*';
```

Step 3 If OPEN_CURSORS is less than 1000, use the following command to change it:

```
ALTER SYSTEM SET OPEN_CURSORS = 1000 SID='*' SCOPE=BOTH;
```

- Step 4** If PROCESSES parameter is smaller than 500, then work with your DBA to bump up the PROCESSES parameter for your Oracle database to 500 (or higher).
- Step 5** Restart the Oracle instance to make sure that the new parameters take effect.
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catcio.sql Package

- Step 1** Execute the following sql command as the Oracle “sys” user to find out if the catcio.sql package has been installed on the Oracle database:
- ```
select count(*) from all_tables where owner='SYS' and table_name like
'IND_ONLINE$';
```
- Step 2** If the returned value is ZERO, then log in to Oracle database as “sys” user (connect as “sysdba”), and install the catcio.sql package. This needs to be done before you proceed with the Prime Service Catalog installation. The catcio.sql script is usually located in the \$ORACLE\_HOME/rdbms/admin directory.
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## Redo Logs

Allocate at least three groups of Redo logs with two files each of 200 MB for Oracle.

## Unicode Character Set

For a new installation, you must configure the Oracle database to use one of the following Unicode characters sets: “AL32UTF8” or “AL16UTF16”.

To determine if the database character set is Unicode, execute the following sql command:

```
SELECT VALUE FROM NLS_DATABASE_PARAMETERS WHERE PARAMETER='NLS_CHARACTERSET';
```

If the value returned for the NLS\_CHARACTERSET parameter is neither “AL32UTF8” nor “AL16UTF16”, then you need to create a new Oracle database, and specify the character set to be either “AL32UTF8” or “AL16UTF16” at creation time.



**Note**

For an upgrade installation from release 9.x, the database character set does not have to be Unicode.

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## Creating Tablespaces and Database Schema for Hosting Service Catalog Data

For a new installation, you can prepare the tablespaces and database schema as described in this section before executing the Service Catalog installer, or you can let the Service Catalog installer create the database schema on the default tablespaces for you by selecting the “Create Database” option presented by the installation wizard. The “Create Database” option of the Service Catalog installer is described in more detail in the [Installing Prime Service Catalog on WildFly Application Server](#) or [Installing Prime Service Catalog on WebLogic Application Server](#).

To create tablespaces and database schema:

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- Step 1** Create a new tablespace named **SERVICECATALOG**, with initial size of 500 MB and AUTOEXTEND ON.
- Step 2** Create a new temporary tablespace named **SERVICECATALOG\_TEMP**, with initial size of 30 MB and AUTOEXTEND ON.
- Step 3** Create a database user named **CPSCUser**, with default tablespace set to SERVICECATALOG and temporary tablespace set to SERVICECATALOG\_TEMP. **CPSCUser** should be granted QUOTA UNLIMITED on the SERVICECATALOG tablespace.
- Step 4** Log in to the Oracle server as the "sys" user, and execute the following commands to grant the permissions to "CPSCUser":

```
GRANT
CREATE SESSION,
CREATE TABLE,
CREATE PROCEDURE,
CREATE SEQUENCE,
CREATE TRIGGER,
CREATE VIEW,
CREATE MATERIALIZED VIEW,
CREATE SYNONYM,
ALTER SESSION
TO CPSCUser;

GRANT EXECUTE ON DBMS_LOB TO CPSCUser;

COMMIT;
```

- Step 5** The permissions listed above are required for the normal operation of the Service Catalog application. There are some special permissions needed for the application to monitor and automatically recover from long-running queries that may affect the performance of the product. If these additional permissions are not granted to "CPSCUser", the product will not fail; but the user may see an error message in the application server's log file that is similar to the following.

```
ERROR [com.newscale.bfw.udkernel.udsql.UdSqlBean] (ajp--0.0.0.0-8009-1)
COR-ID=-7123843321231324051::SQL Exception while getting open session:
java.sql.SQLException: [newscale][Oracle JDBC Driver][Oracle]ORA-00942: table
or view does not exist
```

(Optional) To grant these special permissions, log in to the Oracle server as the "sys" user, and execute the following commands:

```
GRANT ALTER SYSTEM TO CPSCUser;
GRANT SELECT ON v_$session TO CPSCUser;
GRANT SELECT ON v_$mystat to CPSCUser;
COMMIT;
```




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**Note** As an additional validation, the installer verifies if the database user is granted the optional privileges and if not, a warning message shows up indicating the missing privileges. Click OK to continue without the optional privileges or click Cancel to exit the installation. Not having the optional privileges does not cause the application to fail but limits its functionality.

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## Configuring Oracle RAC 12C

If you want to perform database connection failover, you can use Oracle RAC 12C for your databases. For instructions to install Oracle RAC 12c, see Oracle documentation.

After you set up Oracle RAC , note down the cluster SCAN name and the service name. These parameters are required while configuring database during the Prime Service Catalog installation.

If you cannot use a DNS server or the DNS server is inaccessible on the Prime Service Catalog server, you must manually map the SCAN IP addresses to the SCAN name in the /etc/hosts file in that server. The following is an example of this mapping in the /etc/hosts file:

```
SCAN Name to SCAN IP Mapping
<scan_ip-1> <scan_name>
<scan_ip-2> <scan_name>
<scan_ip-3> <scan_name>
```

Where:

*scan\_ip-x* is the SCAN IP address and *scan\_name* is the SCAN name.

## Configuring Microsoft SQL Server

If you choose to use Microsoft SQL Server for your databases, follow the instructions in this section to prepare the SQL Server, and to create the ServiceCatalog database.

### Default Instance or Named Instance

The SQL Server can be set up as a Default Instance or a Named Instance. The port number for each instance must be unique per database host.

### Mixed-Mode Authentication

The SQL Server must be configured to use mixed-mode authentication. This is because the Prime Service Catalog Installer needs to connect to the SQL Server as the "sa" user in order to create the Service Catalog schema.

## Creating ServiceCatalog Database and Login User

For a new installation, you can prepare the ServiceCatalog database and login user as described in this section before executing the Service Catalog installer, or you can let the Service Catalog installer create the database and login user for you by selecting the "Create Database" option presented by the installation wizard. The "Create Database" option of the Service Catalog installer is described in more detail in the [Installing Prime Service Catalog on WildFly Application Server](#) or [Installing Prime Service Catalog on WebLogic Application Server](#).

To create the ServiceCatalog database and login user:

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**Step 1** Create a database named **ServiceCatalog** in the SQL Server, with the following settings for the data file

- Initial size = 1 GB.
- Autogrowth = 500 MB, unlimited

- Step 2** Set the collating sequence for the ServiceCatalog database to case-insensitive.
- Step 3** Put the ServiceCatalog database in SINGLE-USER mode, and execute the following command:  
ALTER DATABASE ServiceCatalog SET READ\_COMMITTED\_SNAPSHOT ON.
- Step 4** Put the ServiceCatalog database back in MULTI-USER mode.
- Step 5** Create a SQL Server Login named **CPSCUser**, with the Default Database property set to “ServiceCatalog”.



**Note** CPSCUser must be a SQL Server login account that authenticates to the SQL Server using SQL Server authentication method, and not Windows authentication method.

- Step 6** Ensure that the “Enforce Password Policy” option is unchecked in the Security setting properties for CPSCUser. Furthermore, the password for CPSCUser must contain only alphanumeric characters. For example, enter only letters and numbers for password. Do not enter any special characters like underlines, asterisks, brackets, and so on. Some combinations of these special characters may cause the installer to fail at product installation time with a “Database Connection Test failed” error message.
- Step 7** Assign this CPSCUser to be the **db\_owner** of the “ServiceCatalog” database. Verify your setting to ensure that:
- The user name “CPSCUser” in the ServiceCatalog database is mapped to the login name “CPSCUser” in the SQL Server
  - The default schema is “dbo”
  - The user name “CPSCUser” has the “db\_owner” database role membership.
- Step 8** There are some special permissions needed for the application to monitor and automatically recover from long-running queries that may affect the performance of the product. If these additional permissions are not granted to “CPSCUser”, the product will not fail; but the user may see some error messages in the application server's log file that are similar to the following:

```
ERROR [com.newscale.bfw.udkernel.udsql.UdSqlBean]
(org.springframework.scheduling.quartz.SchedulerFactoryBean#0_Worker-3) SQL Exception
while getting open session: java.sql.SQLException: [newscale][SQLServer JDBC
Driver][SQLServer]The user does not have permission to perform this action.
Error: Error while validation policiesjava.lang.Exception: Connection SessionId could
not be obtained exiting policy check for service item subscription
```

(Optional) To grant these special permissions, log in to the SQL Server as the “sa” user, and execute the following commands:

```
EXEC sp_addsrvrolemember 'CPSCUser', 'sysadmin'
GRANT ALTER ANY CONNECTION TO CPSCUser
GO
```

## Adding -T272 Property to SQL Server Database

When SQL Server is restarted, the requisition identity value jumps by 1000 after each restart of SQL Server. To resolve this issue, add the -T272 as the database property for the SQL Server database. This will force the identity column value to increment by 1 instead of 1000 each time the SQL Server is restarted.

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- Step 1** Open SQL Server Configuration Manager.
- Step 2** Click on the **SQL Server Services** in the left pane.
- Step 3** Right click on the SQL Server (MSSQLSERVER) to open the properties window.
- Step 4** In the **Startup Parameters** tab, enter -T272 in the **Specify a startup parameter** field and click **Add**.
- Step 5** Click **OK** to close the properties window.
- Step 6** For the changes to take effect, you must restart the SQL Server.
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## Setting Compatibility Mode

Since Prime Service Catalog 12.1 release supports both MS SQL Server 2012 and MS SQL Server 2016, ensure that database is set to the corresponding compatibility mode as below:

- MS SQL Server 2012 must be set to 110
- MS SQL Server 2016 must be set to 130

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- Step 1** Right click on the database and select **Options**.
- Step 2** Set the appropriate mode for the Compatibility Level field.
- Step 3** Click **OK** to save the settings.
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