Abstract

This document contains information about the software collection library release 1.2 available from Oracle. It describes the differences from the upstream version, includes notes on installing and configuring software collections, and provides a statement of what is supported.

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Preface

The *Software Collection Library 1.2 for Oracle Linux Release Notes* provides details of the software collection library release 1.2 that is available from Oracle for Oracle Linux 6 and Oracle Linux 7.

Audience

This document is written for developers who want to use software collections with Oracle Linux 6 or Oracle Linux 7. It is assumed that readers have a general understanding of the Linux operating system.

Related Documents

The latest version of this document and other documentation for this product are available at:


Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><strong>monospace</strong></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
Chapter 1 Release Notes

1.1 About the Software Collection Library for Oracle Linux

Note

The software collection library is currently available for Oracle Linux 6 (x86_64) and Oracle Linux 7 (x86_64) and is supported for customers with Oracle Linux Premier Support.

All source RPMs for the software collection library, including build dependencies, can be found at the following URLs: https://oss.oracle.com/SCL/1.2/OL6/SRPMS and https://oss.oracle.com/SCL/1.2/OL7/SRPMS.

The software collection library allows you install and use several different versions of the same software at the same time on a system. Software collections are primarily intended for development environments, which often require more recent versions of software components such as Perl, PHP, or Python to gain access to the latest features, but which need to avoid the risk of disrupting other processes on the system that rely on different versions of these components. You use the software collection library `scl` utility to run the developer tools from the software collections that you have installed under the `/opt/rh` directory hierarchy. `scl` isolates the effects of running these tools from other versions of the same software utilities that you have installed.

1.2 Differences from the Upstream Release

There are some minor differences between the Oracle versions of the software collections and the upstream release.

The changes include:

- Addition of Oracle Linux GPG keys.
- Removal of the MariaDB, MongoDB, MySQL, PostgreSQL, and Thermostat software collections.
- Removal of the `rhscl-dockerfiles` package.
- Branding changes.

1.3 Available Software Collections

The following software collections are available in the Oracle Linux 6 and Oracle Linux 7 SoftwareCollections12 channels on ULN or the Oracle Linux 6 and Oracle Linux 7 software_collections repositories on Oracle Public Yum:

- **devassist09**
  
  DevAssistant 0.9.1 assists in the creation and configuration of the development environment for projects that use the C, C++, Java, and Python programming languages. DevAssistant has a modular architecture that allows it to be modified to work with many languages, frameworks, and tools.

  For more information, see [http://devassistant.org/](http://devassistant.org/).

- **devtoolset-3**
  
  Developer Toolset consists of development, debugging, and performance monitoring tools, including the latest versions of the GNU compiler collection, GNU debugger, and Eclipse development platform.
Available Software Collections


**git19**

Git 1.9.4 is built on a decentralized architecture and provides a distributed revision-control system that emphasizes high performance and data integrity and supports non-linear, distributed work flows.

For more information, see http://git-scm.com/.

**httpd24**

The httpd 2.4.6 Apache HTTP Server implements event-based processing for enhanced performance, FastCGI, an improved SSL module, and the mod_auth_kerb module.

For more information, see http://httpd.apache.org/docs/2.4/.

**maven30**

Maven 3.0.5 is a tool for managing builds, documentation, and reporting for Java projects.

For more information, see http://maven.apache.org/.

**nginx16**

Nginx 1.6.1 is a combined web and proxy server that is designed to provide enhanced concurrency and performance without placing excessive demands on memory. New features include SPDY 3.1 support (Oracle Linux 7 only), improvements to SSL, cache revalidation for conditional requests, and an authentication-request module.

For more information, see http://nginx.org/.

**nodejs010**

Node.js 0.10 is a programming platform that includes npm 1.3.24. This software collection requires the V8 JavaScript engine implemented by v8314.

For more information, see http://nodejs.org/.

**perl516**

Perl 5.16.3 provides better performance, new debugging features, enhanced Unicode support, improved interoperability with MySQL and PostgreSQL, and the mod_perl and perl-DateTime modules for use with httpd24.

For more information, see https://www.perl.org/ and http://perldoc.perl.org/.

**php54**

PHP 5.4.16 provides PEAR 1.9.4, various language and interface improvements, and the APC, memcache, and Zend OPcache extensions.

For more information, see http://php.net/.

**php55**

PHP 5.5.6 has enhanced language features for better exception handling, generators, and Zend OPcache, and also includes the memcache and mongodb extensions.

For more information, see http://php.net/.

**python27**

Python 2.7 includes a new ordered dictionary type, faster I/O, and better forward compatibility with Python 3. Also included are the Python 2.7.5 interpreter, web-programming extension libraries and mod_wsgi for
use with httpd24, PostgreSQL connectors, and the numpy and scipy modules for scientific applications.

For more information, see https://www.python.org/.

Python 3.3 includes the Python 3.3.2 interpreter, web-programming extension libraries and mod_wsgi for use with httpd24, MySQL, and PostgreSQL connectors, and the numpy and scipy modules for scientific applications.

For more information, see https://www.python.org/.

Ruby on Rails 4.0.2 provides additional features and improvements including support for live streaming over persistent connections and can be used with ruby200. This software collection requires the V8 JavaScript engine implemented by v8314.

For more information, see http://rubyonrails.org/.

Ruby 1.9.3 includes Ruby on Rails 3.2.8 and provides enhanced Unicode support, improved threading, quicker loading, the mod_passenger module for use with httpd24, and a large collection of Ruby gems.

For more information, see https://www.ruby-lang.org/.

Ruby 2.0.0 provides improved performance and reliability, provides additional features and enhanced debugging, and retains backward compatibility with Ruby 1.9.3 at source level.

For more information, see https://www.ruby-lang.org/.

Note

The v8314 software collection, which provides a V8 JavaScript engine, is supported only as a dependency of other software collections.

1.4 Installing the Software Collection Library Utility from ULN

The scl-utils package, which provides the software collection library scl utility, is available in the Oracle Linux 6 and Oracle Linux 7 latest channels.

The software collection packages are available in the Oracle Linux 6 and Oracle Linux 7 SoftwareCollections12 channels.

To be able to use a software collection on an Oracle Linux 6 or Oracle Linux 7 system, you must install the scl utility on that system.

To install scl on a system:

1. Log in to the ULN at linux.oracle.com and subscribe the system to the appropriate latest and SoftwareCollections12 channels:

   • For Oracle Linux 6, subscribe the system to the ol6_x86_64_latest and ol6_x86_64_SoftwareCollections12 channels.
   • For Oracle Linux 7, subscribe the system to the ol7_x86_64_latest and ol7_x86_64_SoftwareCollections12 channels.
2. Install the `scl-utils` package.

```
# yum install scl-utils
```

You can now install and use software collection packages on the system. See Section 1.6, “Installing a Software Collection” and Section 1.8, “Using the Software Collection Version of a Command”.

**Note**

Alternatively, you can obtain the `scl-utils` and software collection packages from Oracle Public Yum. See Section 1.5, “Installing the Software Collection Library Utility from Oracle Public Yum”.

### 1.5 Installing the Software Collection Library Utility from Oracle Public Yum

The `scl-utils` package, which provides the software collection library `scl` utility, is available in the Oracle Linux 6 and Oracle Linux 7 latest repositories on Oracle Public Yum.

The software collection packages are available in the Oracle Linux 6 and Oracle Linux 7 software collections repositories:

- http://public-yum.oracle.com/repo/OracleLinux/OL7/SoftwareCollections12/x86_64/ (Oracle Linux 7)

To be able to use a software collection on an Oracle Linux 6 or Oracle Linux 7 system, you must install the `scl` utility on that system.

To install `scl` on a system:

1. Use a command such as `curl` or `wget` to download the yum repository file that includes an entry for the software collections repository:

   - For example, using `wget` with Oracle Linux 6:
     ```
     ```
   - For example, using `wget` with Oracle Linux 7:
     ```
     ```

2. Edit the downloaded yum repository file:

   a. Set the value of the `enabled` parameter for the `software_collections` repository to 1, for example:

      ```
      [ol6_software_collections]
      name=Software Collection Library release 1.2 packages for Oracle Linux 6 (x86_64)
      gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-oracle
      gpgcheck=1
      enabled=1
      ```

   b. If the system is not already subscribed to the `latest` repository on Oracle Public Yum or the `latest` channel on ULN, set the value of the `enabled` parameter for the `latest` repository to 1, for example:

      ```
      [ol6_latest]
      ```
3. Install the `scl-utils` package.

   ```
   # yum install scl-utils
   ```

   You can now install and use software collection packages on the system. See Section 1.6, “Installing a Software Collection” and Section 1.8, “Using the Software Collection Version of a Command”.

### 1.6 Installing a Software Collection

After you set up the system to access the `software_collections` repository on Oracle Public Yum or the `SoftwareCollections12` channel on ULN, you can use `yum` to install a software collection on the system:

```
# yum install sw_col
```

Replace `sw_col` with the name of the software collection that you want to install.

A software collection can have a number of optional packages that you can also choose to install if required. To list these packages, use the following command:

```
# yum list available sw_col-\*
```

To list the installed software collections, use the `scl --list` command.

To list the packages that a software collection contains, use the `scl --list sw_col` command.

### 1.7 Updating or Removing a Software Collection

You can update or remove a software collection in the same way as you would update or remove any ordinary package, for example:

```
# yum update sw_col
# yum remove sw_col
```

### 1.8 Using the Software Collection Version of a Command

To enable and use the version of a command that a software collection contains, use the `scl` utility with the `enable` action:

```
# scl enable sw_col -- command args
```

By default, the specified command from the software collection runs in a `bash` environment. If required, you can specify a different shell environment.

If you want to enable several software collections so that you can run several utilities together, specify `bash` to provide the environment from which you can access the utilities, for example:

```
# scl enable sw_col1 sw_col2 -- bash
```

**Note**

The `X_SCLS` environment variable contains a list of the currently enabled software collections in the shell.
You can specify the commands that you want to run in a software collection environment and pipe these to the `scl` command:

```
# cat cmd_file | scl enable sw_col
```

You could also create an executable wrapper script to run an `scl` command, for example:

```
#!/bin/bash
scl enable php55 -- php $@
```

For more information, see the `scl(1)` manual page.

### 1.9 Using Services Provided by Software Collections

Some of the software collections install service scripts in `/etc/rc.d/init.d` that include the software collection name in the name of the service script, for example `httpd24-httpd`. As for any system service, you can enable, disable, and control a software collection service by using `chkconfig` and `service` under Oracle Linux 6 or `systemctl` under Oracle Linux 7.

### 1.10 Accessing Software Collection-Specific Manual Pages

A software collection is packaged with a manual page that describes its content. Use the following command to display the manual page for a software collection:

```
# scl enable sw_col -- man sw_col
```

### 1.11 Known Issues

The following sections describe known issues in this release.

#### 1.11.1 d8 or v8-shell Cannot Open Shared Object File

The following messages might be displayed when running the `d8` or `v8-shell` commands from the `v8314-v8-devel` package:

```
./d8: error while loading shared libraries: libv8.so.v8314-3.14.5: cannot open shared object file: No such file or directory
./v8-shell: error while loading shared libraries: libv8.so.v8314-3.14.5: cannot open shared object file: No such file or directory
```

The workaround is to add `/opt/rh/v8314/root/usr/lib64` to `LD_LIBRARY_PATH` before running the commands, for example:

```
# export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/opt/rh/v8314/root/usr/lib64
```

(Bug ID 20083754)

#### 1.11.2 libasan-static Package Dependency

When installing the `devtoolset-3-libasan-devel-4.9.1-10.el7` package, which requires the `libasan-4.9.1-10.el7` package, there is a potential dependency issue if the `libasan-static-4.8.3-9.el7` package is already present on the system. An error such as the following is reported:

```
--> Finished Dependency Resolution
Error: Package: libasan-static-4.8.3-9.el7.1686 (el7_x86_64_optional_latest)
```
Multiple Versions of a Software Collection Cannot Be Installed

Requires: libasan = 4.8.3-9.el7

The workaround is to remove the `libasan-static` package before installing the `devtoolset-3-libasan-devel` package.

(Bug ID 21896256)

1.11.3 Multiple Versions of a Software Collection Cannot Be Installed

You cannot install multiple versions of software collections on a system. For example, you cannot install both `php54` and `php55`, `ruby193` and `ruby200`, or `python27` and `python33`.

(Bug ID 20090086)