Asterisk Modules

Administrator Guide

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1 Overview

This guide describes how to obtain and install binary packages of Asterisk and UniMRCP modules on Red Hat-based distributions. The document is intended for system administrators and developers.

1.1 Applicable Versions

Instructions provided in this guide are applicable to the following versions.

<table>
<thead>
<tr>
<th>UniMRCP</th>
<th>Asterisk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6.0 and above</td>
<td>16 and above</td>
</tr>
</tbody>
</table>

1.2 Supported Distributions

UniMRCP binary packages are currently available only for x86_64 (64-bit) architecture.

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Released</th>
<th>End of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat / Cent OS 7</td>
<td>February 2017</td>
<td>TBA</td>
</tr>
<tr>
<td>Red Hat / Cent OS 8</td>
<td>May 2021</td>
<td>TBA</td>
</tr>
</tbody>
</table>

Note: packages for other distributions can be made available upon request. For more information, contact services@unimrcp.org.

1.3 Authentication

UniMRCP binary packages are available to authenticated users only. In order to register a free account with UniMRCP, please visit the following page.

https://www.unimrcp.org/profile-registration

Note: a new account needs to be verified and activated prior further proceeding.
2 Installing RPMs Using YUM

Using the Yellowdog Updater, Modifier (yum), a command-line package management utility for Red Hat-based distributions, is recommended for installation of UniMRCP binary packages.

2.1 Repository Configuration

The content of a typical yum configuration file, to be placed in /etc/yum.repos.d/unimrcp.repo, is provided below.

```
[unimrcp]
name=UniMRCP Packages for Red Hat / Cent OS-$releasever $basearch
baseurl=https://username:password@unimrcp.org/repo/yum/main/rhel$releasever/$basearch/
enabled=1
sslverify=1
gpgcheck=1
gpgkey=https://unimrcp.org/keys/unimrcp-gpg-key.public

[unimrcp-asterisk-16]
name=UniMRCP Asterisk-16 Packages for Red Hat / Cent OS-$releasever $basearch
baseurl=https://username:password@unimrcp.org/repo/yum/asterisk-16/rhel$releasever/$basearch/
enabled=1
sslverify=1
gpgcheck=1
gpgkey=https://unimrcp.org/keys/unimrcp-gpg-key.public

# Do NOT use this repository on Red Hat / Cent OS 7 as the repository is currently available only for former versions.
[asterisk-current]
name=Asterisk dependencies for Red Hat / Cent OS-$releasever $basearch
baseurl=http://packages.asterisk.org/centos/$releasever/current/$basearch/
enabled=1
gpgcheck=0
gpgkey=http://packages.asterisk.org/RPM-GPG-KEY-Digium
```

The username and password fields included in the HTTPS URI must be replaced with the corresponding...
account credentials.
Note that the repository *asterisk-current*, provided by Asterisk, is used to retrieve the package *asterisk-sounds-core-en-gsm*. Since this repository is currently not available for Red Hat / Cent OS 7, the Asterisk sound files need to be installed separately in this case.

### 2.2 Repository Verification

In order to verify that yum can properly connect and access the UniMRCP repository, the following command can be used.

```bash
yum repolist unimrcp
yum repolist unimrcp-asterisk-16
```

where *unimrcp* and *unimrcp-asterisk-16* are names of the sections set in the yum configuration file above.

In order to retrieve a list of packages the UniMRCP repositories provides, the following command can be used.

```bash
yum --disablerepo="*" --enablerepo="unimrcp, unimrcp-asterisk-16" list available
```

### 2.3 Installation of Asterisk (app-unimrcp)

In order to install Asterisk and related modules, the following commands can be used.

```bash
yum install asterisk
yum install asterisk-sip
yum install asterisk-pjsip
```

As a result, yum will check for and install all the required components, including the packages for Asterisk.

### 2.4 Installation of Applications Suite (app-unimrcp)

In order to install the *app-unimrcp* module, which provides a suite of MRCP applications for Asterisk, the following command can be used.

```bash
yum install asterisk-app-unimrcp
```

As a result, yum will check for and install all the required components, including the packages for
Asterisk and UniMRCP client.

2.5 Installation of Speech Resource (res-speech-unimrcp)

In order to install the res-speech-unimrcp module, which provides an MRCP implementation of the Asterisk Speech Recognition Interface, the following command can be used.

```
yum install asterisk-res-speech-unimrcp
```

As a result, yum will check for and install all the required components, including the packages for Asterisk and UniMRCP client.
3 Installing RPMs Manually

UniMRCP RPM packages can be installed manually using the `rpm` utility. Note, however, that the system administrator should take care of package dependencies and install and install all the packages in appropriate order.

The Asterisk RPM packages have the following naming convention:

```
asterisk-$modulename-$astversion-$packageversion.el$rhelversion.$arch.rpm
```

where

- `modulename` is the name of module (either `app-unimrcp` or `res-speech-unimrcp`)
- `astversion` is the Asterisk version
- `packageversion` is the RPM release version
- `rhelversion` is the Red Hat version
- `arch` is the architecture (x86_64, i686, …)

3.1 Package List

The following is a list of RPM packages required for installation of UniMRCP modules for Asterisk, including UniMRCP dependencies.

<table>
<thead>
<tr>
<th>Package Name</th>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>asterisk-app-unimrcp</td>
<td>Asterisk</td>
<td>A suite of MRCP applications.</td>
</tr>
<tr>
<td>asterisk-res-speech-unimrcp</td>
<td>Asterisk</td>
<td>An MRCP implementation of Generic Speech Recognition Interface of Asterisk.</td>
</tr>
<tr>
<td>asterisk</td>
<td>Asterisk</td>
<td>Asterisk package.</td>
</tr>
<tr>
<td>asterisk-sip</td>
<td>Asterisk</td>
<td>Asterisk SIP channel module.</td>
</tr>
<tr>
<td>asterisk-pjsip</td>
<td>Asterisk</td>
<td>Asterisk PJSIP channel module.</td>
</tr>
<tr>
<td>asterisk-devel</td>
<td>Asterisk</td>
<td>Development files for Asterisk.</td>
</tr>
<tr>
<td>unimrcp-client</td>
<td>UniMRCP</td>
<td>Shared libraries and sample applications of the client.</td>
</tr>
<tr>
<td>unimrcp-client-dev</td>
<td>UniMRCP</td>
<td>Development kit of the client.</td>
</tr>
<tr>
<td>Package</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>unimrcp-common</td>
<td>UniMRCP Data common for the client and the server.</td>
<td></td>
</tr>
<tr>
<td>unimrcp-common-dev</td>
<td>UniMRCP Development kit of the common client and server data.</td>
<td></td>
</tr>
<tr>
<td>uniapr</td>
<td>UniMRCP UniMRCP edition of the Apache Portable Runtime (APR) library.</td>
<td></td>
</tr>
<tr>
<td>uniapr-dev</td>
<td>UniMRCP Development kit of the corresponding APR library.</td>
<td></td>
</tr>
<tr>
<td>uniapr-util-dev</td>
<td>UniMRCP Development kit of the corresponding APR-Util library.</td>
<td></td>
</tr>
<tr>
<td>unisofia-sip</td>
<td>UniMRCP UniMRCP edition of the Sofia SIP library.</td>
<td></td>
</tr>
<tr>
<td>unisofia-sip-dev</td>
<td>UniMRCP Development kit of the corresponding Sofia SIP library.</td>
<td></td>
</tr>
</tbody>
</table>

The respective packages for each of the components can be obtained from the UniMRCP website by visiting the download area having logged in to your account.

https://unimrcp.org/project/release-view

### 3.2 Package Dependency Graph

The following is a graph of package dependencies.

![Package Dependency Graph](image)

### 3.3 Package Installation Order
Note that all the RPM packages provided by UniMRCP are signed by a GNU Privacy Guard (GPG) key. Before starting the installation, you may need to import the public key in order to allow the `rpm` utility to verify the packages.

```
rpm --import https://unimrcp.org/keys/unimrcp-gpg-key.public
```

Packages for the APR, APR-Util and Sofia-SIP libraries must be installed first.

```
rpm -ivh uniapr-$universion-$packageversion.el$rhelversion.$arch.rpm
rpm -ivh uniapr-util-$universion-$packageversion.el$rhelversion.$arch.rpm
rpm -ivh unisofia-sip-$universion-$packageversion.el$rhelversion.$arch.rpm
```

Then, packages for common data and the client library should follow.

```
rpm -ivh unimrcp-common-$universion-$packageversion.el$rhelversion.$arch.rpm
rpm -ivh unimrcp-client-$universion-$packageversion.el$rhelversion.$arch.rpm
```

Then, the Asterisk packages should follow.

```
rpm -ivh asterisk -$astversion-$packageversion.el$rhelversion.$arch.rpm
rpm -ivh asterisk-sip-$astversion-$packageversion.el$rhelversion.$arch.rpm
rpm -ivh asterisk-pjsip-$astversion-$packageversion.el$rhelversion.$arch.rpm
```

Finally, based on your requirements, either `app-unimrcp` and/or `res-speech-unimrcp` packages can be installed.

```
rpm -ivh asterisk-app-unimrcp-$astversion-$packageversion.el$rhelversion.$arch.rpm
rpm -ivh asterisk-res-speech-unimrcp-$astversion-$packageversion.el$rhelversion.$arch.rpm
```

The same order should be considered for the installation of the corresponding development packages.