Administrator Guide

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1 Overview

This guide describes how to obtain and install binary packages of Asterisk and UniMRCP modules on Debian-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.

- UniMRCP 1.6.0 and above
- Asterisk 16 and above

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>Ubuntu 16.04 LTS (xenial)</td>
<td>February 2017</td>
<td>March 2021</td>
</tr>
<tr>
<td>Ubuntu 18.04 LTS (bionic)</td>
<td>May 2019</td>
<td>TBA</td>
</tr>
<tr>
<td>Ubuntu 20.04 LTS (focal)</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](https://www.unimrcp.org/profile-registration)

Note: a new account needs to be verified and activated prior further proceeding.
2 Installing Deb Packages Using Apt-Get

Using the APT package handling utility (apt-get) is recommended for installation of UniMRCP binary packages.

2.1 Repository Configuration

The content of a typical configuration file of the APT repository, to be placed in /etc/apt/sources.list.d/unimrcp.list, is provided below.

```
deb [arch=amd64] https://username:password@unimrcp.org/repo/apt/distr main asterisk-16
```

The `username` and `password` fields included in the HTTPS URI must be replaced with the corresponding account credentials.

The `distr` field must be replaced with the corresponding distribution code name such as `bionic`.

The repository provides the following components:

- main – packages containing UniMRCP and its dependencies
- asterisk-16 – packages containing Asterisk 16 and corresponding UniMRCP modules

2.2 GnuPG Key

For verification of binary packages, UniMRCP provides a public GnuPG key, which can be retrieved and installed as follows.

```
wget -O https://unimrcp.org/keys/unimrcp-gpg-key.public | sudo apt-key add -
```

2.3 Repository Update

In order to check for updates and apply the changes in the APT configuration, use the following command.

```
sudo apt-get update
```

2.4 Installation of Asterisk

In order to install Asterisk and related modules, the following commands can be used.
sudo apt-get install asterisk

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

2.5 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.

sudo apt-get install asterisk-app-unimrcp

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

2.6 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.

sudo apt-get install asterisk-res-speech-unimrcp

As a result, apt-get will check for and install all the required components, including the packages for Asterisk and UniMRCP client.
3 Installing Deb Packages Manually

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

The *deb* packages have the following naming convention:

```
$packagename_Suniversion-$astversion-$distr_Sarch.deb
```

where

- *packagename* is the name of a package
- *universion* is the UniMRCP version
- *astversion* is the Asterisk version
- *distr* is the distribution code name (trusty, xenial, …)
- *arch* is the architecture (amd64, i386, all, …)

3.1 Package List

The following is a list of *deb* 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>Compound Asterisk package.</td>
</tr>
<tr>
<td>asterisk-config</td>
<td>Asterisk</td>
<td>Configuration files for Asterisk.</td>
</tr>
<tr>
<td>asterisk-doc</td>
<td>Asterisk</td>
<td>Source code documentation for Asterisk.</td>
</tr>
<tr>
<td>asterisk-dev</td>
<td>Asterisk</td>
<td>Development files for Asterisk.</td>
</tr>
<tr>
<td>asterisk-dahdi</td>
<td>Asterisk</td>
<td>DAHDI devices support for Asterisk.</td>
</tr>
<tr>
<td>asterisk-modules</td>
<td>Asterisk</td>
<td>Loadable modules 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>Package Name</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>unimrcp-client-dev</td>
<td>UniMRCP Development kit of the client.</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](https://unimrcp.org/project/release-view)

### 3.2 Package Dependency Graph

The following is a graph of package dependencies.

![Package Dependency Graph](image-url)
### 3.3 Package Installation Order

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

```bash
sudo dpkg --install uniapr_$universion-$distr$_$arch.deb
sudo dpkg --install uniapr-util_$universion-$distr$_$arch.deb
sudo dpkg --install unisofia-sip_$universion-$distr$_$arch.deb
```

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

```bash
sudo dpkg --install unimrcp-common_$universion-$distr$_$arch.deb
sudo dpkg --install unimrcp-client_$universion-$distr$_$arch.deb
```

Then, the Asterisk packages should follow.

```bash
sudo dpkg --install asterisk-modules_$astversion-$distr$_$arch.deb
sudo dpkg --install asterisk-config_$astversion-$distr$_$arch.deb
sudo dpkg --install asterisk _$astversion-$distr$_$arch.deb
```

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

```bash
sudo dpkg --install asterisk-app-unimrcp_$universion-$astversion-$distr$_$arch.deb
sudo dpkg --install asterisk-res-speech-unimrcp_$universion-$astversion-$distr$_$arch.deb
```

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