

# Installation

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The following outlines the instructions for installing the analysis server on Ubuntu linux.

## Database

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- Install a new server with Ubuntu or use an existing installation
- Install the PostgreSQL database server

```
sudo apt-get install postgresql postgresql-contrib
```

- Configure the PostgreSQL server e.g.. set a new **postgres** user password

```
sudo -u postgres psql postgres  
\password postgres
```

- Enter the new **postgres** user password and repeat as required. Type Control+D or \q to exit the posgreSQL prompt
- Create a new database

```
sudo -u postgres createdb ar1
```

- Change the terminal location to the **database** directory and ensure the **schema.sql** file is located in the directory
- Import the database schema into the **ar1** database. The following command will import the schema onto the local PostgreSQL server, using the **postgres** user. The **psql** command will prompt for the password

```
sudo psql -U postgres -W -f schema.sql \  
-h 127.0.0.1 -d ar1
```

- Define the database user privilege within the **ar1** database. The following command will set the user/password/privileges within the database, using the **postgres** user. The **psql** command will prompt for the password. **Note that you should change the password within the grant-privileges.sql file before running this command**

```
sudo psql -U postgres -W -f grant-privileges.sql \  
-h 127.0.0.1 -d ar1
```

## Other Database commands

- Login to postgres and prompt for password

```
psql -U postgres -h 127.0.0.1 -W
```

- List databases via psql

```
\list
```

- Drop database

```
drop database "ar1"
```

- Create database

```
create database "ar1"
```

## Golang

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In order to compile the server source code, the golang toolset must be installed. If only release versions are to be used then this step is not necessary.

The easiest method for installing the current version of the golang tool chain is to use the **godeb** project. More information regarding the **godeb** project can be found at the following URL:

<https://github.com/niemeyer/godeb>

A pre-built **godeb** binaries can be found at the following URL:

<https://godeb.s3.amazonaws.com/godeb-amd64.tar.gz>

<https://godeb.s3.amazonaws.com/godeb-386.tar.gz>

Using the **list** godeb command (as shown below) will display the various versions available.

```
./godeb list
1.6.2
1.6.2
1.6.1
1.6
1.5.4
```

The latest version can be installed using the following command:

```
godeb install 1.6.2
```

## Logging

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The server logs to it's own specific file, which requires the following steps:

- Make a directory for the log

```
sudo mkdir /var/log/ar1-server
```

- Change the directory owner to the user that will run the server

```
sudo chown YOURUSER /var/log/ar1-server
```

- Change the directory group to the user that will run the server

```
sudo chgrp YOURUSER /var/log/ar1-server
```

## HTTPS Certificate

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The client uses HTTPS (TLS) to communicate with the server. An organisation specific certificate should be created.

- Generate a new RSA private key file. The example creates a 2048 bit key

```
openssl genrsa -out server.key 2048
```

- Generate a new certificate in X509 format. The certificate generation process requires the user to enter various organisation details. The following shows the command and some DEMO values:

```
openssl req -new -x509 -key server.key -out server.pem \  
-days 3650
```

You are about to be asked to enter information that will be incorporated into your certificate request.

What you are about to enter is what is called a Distinguished Name or a DN. There are quite a few fields but you can leave some blank.

For some fields there will be a default value,  
If you enter '.', the field will be left blank.

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Country Name (2 letter code) [AU]:COUNTRY

State or Province Name (full name) [Some-State]:STATE

Locality Name (eg, city) []:CITY

Organization Name (eg, company) []:COMPANY

Organizational Unit Name (eg, section) []:SECTION

Common Name (e.g. server FQDN or YOUR name) []:COMPANY

Email Address []:USER@ORG

## Systemd Service

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To enable the AutoRun analysis server to run on boot up, a Systemd service must be created. The following instructions detail the steps required. The instructions show the installation into the **/opt** directory.

- Create a directory in **/opt**

```
sudo mkdir /opt/ar1
```

- Change the directory owner to the user we want to run the application as:

```
sudo chown USERNAME /opt/ar1
```

- Change the directory group to the user we want to run the application as:

```
sudo chgrp USERNAME /opt/ar1
```

- Copy the required files to the directory as listed below:

```
arl-server.config
arl-setbind.sh
arl
server.key
server.pem
```

- Set the appropriate configuration options in the config file (arl.config). The configuration values are detailed in the **configuration.pdf** document.
- If the server is to be run on the lower TCP ports such as 80 or 81, then edit the **arl-setbind.sh** file with the correct paths (if they differ). The file is used to set execute options on the **arl** binary and to allow it to bind to lower TCP ports. The file should be run each time the binary is changed. The files default contents are:

```
#!/bin/sh
chmod +x /opt/arl/arl
sudo setcap cap_net_bind_service+ep /opt/arl/arl
```

- Next define the Systemd service config by creating a new service file:

```
sudo nano /etc/systemd/system/arl.service
```

- Copy the following to the service file or use the file located in the **configuration** directory:

```
[Unit]
Description=ARL

[Service]
ExecStart=/opt/arl/arl -c /opt/arl/arl.config
```

```
[Install]
```

```
WantedBy=multi-user.target
```

- To test the service, run the following command:

```
systemctl start ar1.service
```

- To check the service output, run the following command:

```
systemctl status ar1.service
```

- If there are problems, then the service can be stopped by running the command:

```
systemctl stop ar1.service
```

- Once the configuration is correct and the server is running, the service can be made to run at boot, by running the following command:

```
systemctl enable ar1.service
```