



Installing and Upgrading AtoM

Linux - Ubuntu 16.04 LTS (Xenial Xerus)

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This document is based in Ubuntu 16.04 LTS (Xenial Xerus)®. Once you have installed it, you should be able to follow the instructions described below. In particular, we are going to use Ubuntu packages that can be found

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- Install the dependencies

Recommended installation parameters, gotchas and tips for installing on other systems. Using Ansible for deployment, managing upgrades, and multi-site management.

Install the dependencies

MYSQL

We strongly recommend using MySQL® 5.6 as it's much better than the previous versions in terms of speed, scalability and user-friendliness. Also, we've experienced very good results using MariaDB Server or MariaDB, so don't be afraid and use them if you want!

Warning



- Option 1: Download the tarball
- Option 2: Check out the code from our git repository
- Filesystem permissions
- Create the database
- Run the web installer
- Deployment of workers
- Configure AtoM via the command-line
- Security considerations

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Outline

1. Installation overview
2. Upgrade overview
3. Ansible demonstration

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Version 2.3.1 is our latest release.

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Important

Please make sure you have reviewed the requirements before proceeding. Also, you may want to consider setting up the firewall before you start installing the services described below to avoid exposing them to outside access.

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- Install the dependencies
 - MySQL
 - Elasticsearch
 - Web server
 - Nginx
 - PHP
 - Gearman job server

First: Ansible Demo

Refer to handout...



AtoM Camp: Installing AtoM with Ansible

Document author: David Juhasz

Date and time: Tuesday, 09 May 2017,

Instructor: Steve Breker

1. Quick overview of Ansible

- Automation and orchestration - like Chef, Puppet
- FOSS, Project now managed and copyrighted by RedHat
- Written in python and PowerShell
- Agentless structure - no minimal software required on installation nodes (python is required)
- Idempotent (unless you do it wrong)
- Uses SSH for secure connection and communication with remotes
- Config uses [YAML](#) and [Jinja templates](#).

2. Install ansible

- Centos/Redhat:

```
$ sudo yum install ansible
```

- Ubuntu/Debian:

```
$ sudo apt-get install software-properties-common  
$ sudo apt-add-repository ppa:ansible/ansible  
$ sudo apt-get update  
$ sudo apt-get install ansible
```

- MacOSX: Install with pip

```
$ sudo pip install ansible
```

- Windows: not supported (for control machine)

3. Clone <https://github.com/djuhasz/deploy-pub/tree/dev/add-ufw-role>

```
$ git clone -b dev/atomcamp-deploy \  
https://github.com:djuhasz/deploy-pub.git  
$ cd deploy-pub/playbooks/atom-xenial/
```

4. Overview of ansible directory structure and file types:

- No hard and fast rules as far as I can tell. There are many variations on the "recommended" directory structure shown below.

Vagrant AtoM Image



Fastest way to get a fully functional AtoM instance running

- Instructions here:
- <https://www.accesstomemory.org/docs/latest/dev-manual/env/vagrant/>

Best suited to development, or demo box

- Lightweight
 - Allocates 2GB RAM, 2 CPUs
 - Minimum reqs for **host**: 2GB RAM; 8 GB Disk space
- Not secure
 - Run behind a firewall!
- AtoM pre-installed from Artefactual's Git repo

Benefits to using:

- Less time spent building boxes, more time developing & demoing!
- Easy to update AtoM from Git (always running latest AtoM code)
- If it gets broken during development, just rebuild it
- Artefactual devs use it so thoroughly tested

The AtoM Vagrant box is meant for testing and development and should NOT be used in production!

Installing AtoM

Full instructions for manual install here:

- <https://www.accesstomemory.org/docs/latest/#installation>

Server Requirements? **It depends...**

- Depends on:
 - Role: Dev/Test/Demo system or Production?
 - Load: traffic/users
 - Size of database
 - Size of Elasticsearch index
- Minimum example: AtoM Vagrant image
 - 2 CPU, 2 GB RAM
- Large client install example
 - 5 virtual servers, with approx 20 CPU cores and 40GB of RAM in total
 - 10 or 12 CPU cores for their MySQL server
 - Multi-node install (see next slide)
- Requirements of individual components will help dictate
 - Elasticsearch
 - MySQL
 - NGINX

Multi-node Installation

It is possible to split an AtoM installation

- Put different components on different servers/VMs
- E.g.
 - Server 1: AtoM Src - front end web server - read only
 - Server 2: MySQL server
 - Server 3: AtoM - Read write for admins
- Unlikely to do this on a low-load or development setup

Why do this?

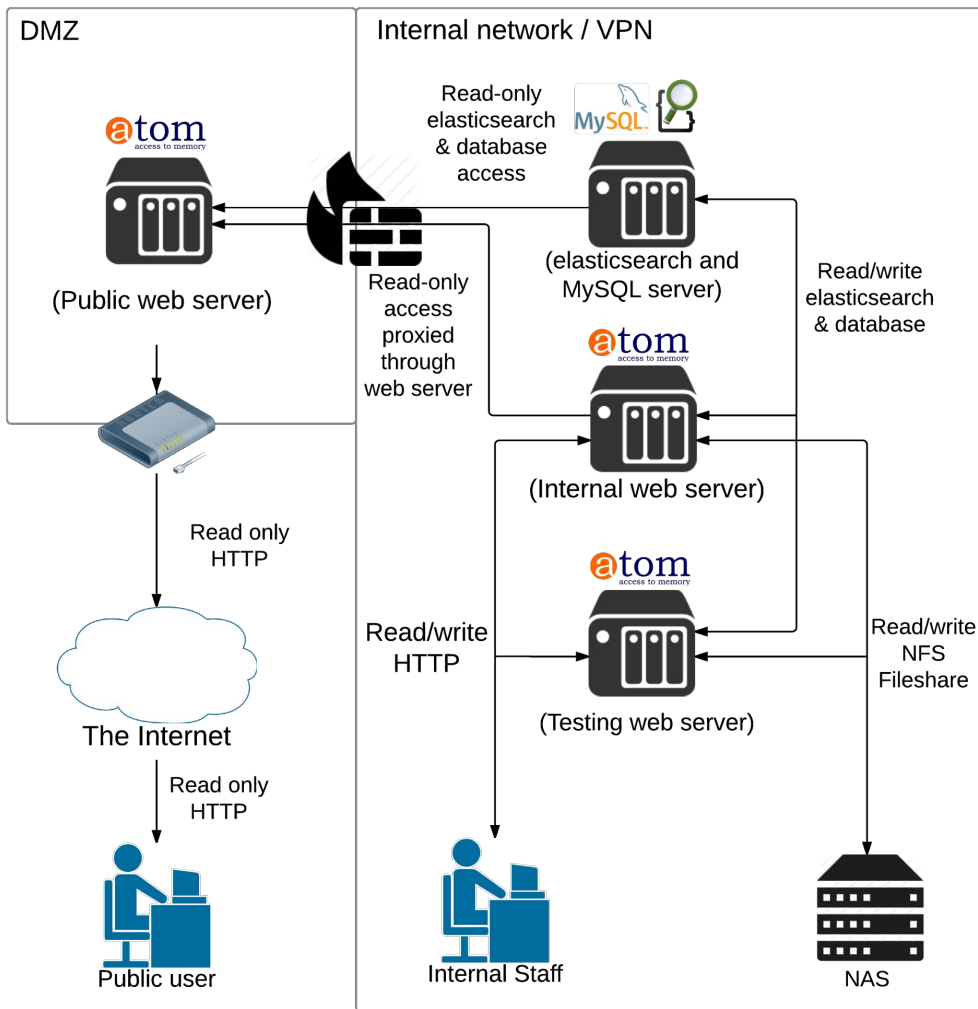
- Added security
 - Only server exposed to internet is web front end
 - DB server and ES server can be on private network
- Isolates server load
 - E.g. MySQL server load will not affect ES & Web servers
 - Easier to identify causes of server load and mitigate
- Easier to replace individual nodes without replacing full AtoM stack
- Could add additional front end (internal view vs public)
- Possibly more straightforward to add clustering/replication
 - E.g. for MySQL

Why NOT do this?

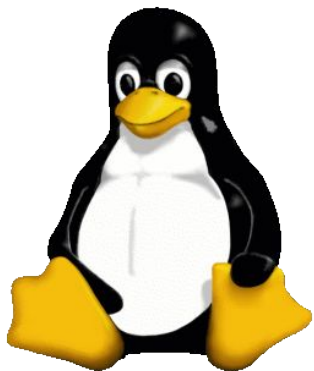
- Added complexity might not be necessary
 - Could be more difficult to administer and debug
 - Additional knowledge required to configure AtoM correctly
 - Increased networking complexity
 - Budget: more servers means added cost

Multi-node installation

cont.



Selecting Operating System



Artefactual strongly recommends running AtoM on Linux servers

- Specifically Ubuntu
- Artefactual does not test installation on non-Ubuntu systems!
- Users report running on other Linux distros
 - CentOS/Redhat Enterprise Linux
- The [AtoM user forum](#) is a great resource for reaching out to the AtoM community for their experiences

Software dependencies listed here:

- <https://www.accesstomemory.org/docs/latest/admin-manual/installation/requirements/#software-dependencies-required>
- Includes minimum version information (e.g. PHP 5.5)

In theory, if dependencies are available for O/S choice, it could work

- Installation instructions for various O/S:
 - <https://www.accesstomemory.org/docs/latest/#installation>

CentOS / Redhat Enterprise Linux (RHEL)



CentOS likely most common alternative O/S

- Very conservative philosophy wrt package versions
- There are pros and cons to this

AtoM PHP requirement: 5.5, 5.6, 7+

- Redhat/Centos 6: **5.3.3**
- Redhat/Centos 7: **5.4.16**

Redhat won't provide a major software version update to a released O/S version as it could cause surprises after an update.

CentOS / Redhat Enterprise Linux (RHEL)

cont.

Fortunately, CentOS/RHEL provide their SCL

- Redhat Software Collections Repo
 - Tested and verified to work with Redhat target version
 - Still patched and updated with YUM - it's just another repo!

<https://wiki.centos.org/AdditionalResources/Repositories/SCL>

<https://wiki.centos.org/SpecialInterestGroup/SCLo/CollectionsList>

<http://developerblog.redhat.com/2013/08/01/php-5-4-on-rhel-6-using-rhsc/>

Upgrade Tips

AtoM upgrade docs found here:

<https://www.accesstomemory.org/docs/latest/admin-manual/installation/upgrading/>

Essentially new install, followed by copying the original DB across and upgrading it

- Ensure you have backups of your original database
- Remember to create a new database if keeping original server!
 - Pick a new database name
 - Using the original database name on the **same server** will **overwrite** your original database!!
 - Not an issue if destination server is different from original server

If running in a virtualized environment:

- Easy to create a second server to use for upgrade
 - Ensures that O/S is updated
 - Ensures that all software dependencies are current
 - Decreases chances of affecting / interrupting current live system

Back to Ansible

Let's check our installation demo!



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Q&A

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