RG-MACC_2.0 Installation Manual

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1. Installation

1.1. Preparation

1.1.1. The Physical Server Requirement

The minimum requirement of the server hardware:

Hardware	Spec.	Comments
CPU	4 cores 2.0GHz or higher	
Memory	8G or more	
Hard drive	500G or more	Single disk
Network Interface	Gigabit or higher	
System	Centos 6.5/6.6 64bit (minimal version)	Centos Download URL http://vault.centos.org/6.6/isos/x86_64/

Ports Mapping (This section can be skipped if server uses outer public IP):

The operation system of MACC is CentOS, which does not contain default self defense. Users need ports mapping instead of whole case mapping when there is not any protection.

Please make sure the following ports are not isolated by the firewall.

Inner Ports	Outer Ports	Protocol	Necessary	Comments
80	80 or others	TCP	Yes	HTTP access port
443	443 or others	TCP	No	HTTPS access port
3478	3478	UDP	Yes	Port interacts with device
3479	3479	UDP	Yes	Port interacts with device
22	Ports except 22	TCP	No	The SSH remote login port of MACC server. Please do not use port 22 if need mapping, and please create secure password to prevent from attacking.

1.1.2. Disk Partition And Directory Requirement

The /macc directory is used for both MACC installation and operation data. This directory is required to be existed and assigned 200G or more space.

1. *Single high-capacity disk*

For high-capacity disk, if OS was installed and new partitions cannot be made, /macc directory can be created by the following commend:

```
[root@localhost ~]# mkdir /macc
```

2. *Multiple disks, and data disk is not mounted. (Use aliyun as an example)*

Usually there are system disk and data disk.

The disks status can be checked by the commend: fdisk –l

```
[root@xxxxxxx ~]# fdisk -l

Disk /dev/xvda: 21.5 GB, 21474836480 bytes      <------System Disk
255 heads, 63 sectors/track, 2610 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00078f9c

      Device Boot          Start             End          Blocks      Id    System
/dev/xvda1     *                1            2611       20970496      83    Linux

Disk /dev/xvdb: 429.5 GB, 429496729600 bytes      <-------Data Disk
255 heads, 63 sectors/track, 52216 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000
```

Use **df** commend to check disk mounting status:

```
[root@iZ28iclrr63Z ~]# df -h
Filesystem          Size    Used Avail Use% Mounted on
/dev/xvda1           20G    2.4G     17G    13% /
/dev/xvdb           394G    275G    100G    74% /macc
```

If the data disk (/dev/xvdb in the example above) is not mounted then it needs to be formatted and mount to /macc. The following process is recommended:

```
mkfs -t ext4 /dev/xvdb
mkdir /macc
mount /dev/xvdb /macc
##Modify /etc/fstab, auto mount disk after start.
vi /etc/fstab     append at the end
/dev/xvdb /macc ext4 defaults 0 0
```

/dev/xvdb is added on demand. Use **df** commend to confirm after restarting the server.

3. Multiple disks, and data disk is mounted.

It needs to create data disk soft link to /macc in this case.

Checking disk mounting status by **df** commend:

```
[root@iZ28iclrr63Z ~]# df –h
Filesystem          Size  Used Avail Use% Mounted on
/dev/xvda1           20G  2.4G   17G  13% /
/dev/xvdb           394G  275G  100G  74% /data
```

If the data disk is mounted under /data directory, you need to use commend ln –s /data/macc /macc to create macc directory.

1.1.3. Change The System Time

The system time needs to be synchronized with the real time.

1. Server without internet connection

For the server without internet connection, use date commend to change the time and write into CMOS, for example:

```
[root@localhost ~]# date 083000272015
Sun Aug 30 00:27:00 CST 2015
[root@localhost ~]# clock –w
```

2. Server with internet connection

Server with internet connection is able to synchronize time automatically.

1.1.4. Configure IP address and DNS server

The IP address and DNS server need to be configured before deployment and installation.

Configure IP address

Use commend ifconfig to check outer network interface:

```
[root@localhost ~]# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:15:5D:5D:27:0B
          inet addr:172.18.33.67  Bcast:172.18.33.255  Mask:255.255.255.0
          inet6 addr: fe80::215:5dff:fe5d:270b/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:1212674 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1061523 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1133515990 (1.0 GiB)  TX bytes:1032504656 (984.6 MiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:3407442 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3407442 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:504690004 (481.3 MiB)  TX bytes:504690004 (481.3 MiB)
```

Use eth0 above as an example, modify ***/etc/sysconfig/network-scripts/ifcfg-eth0.*** Assume the eth0 port ip is 192.168.23.128, gateway is 192.168.23.1.

```
vi  /etc/sysconfig/network-scripts/ifcfg-eth0
```

```
DEVICE=eth0
HWADDR=00:0C:29:1E:A8:FE
TYPE=Ethernet
UUID=af14aac2-b6ab-413a-af07-a1c3f4328391
ONBOOT=yes
NM_CONTROLLED=yes
BOOTPROTO=static
IPADDR=192.168.23.128
GATEWAY=192.168.23.1
NETMASK=255.255.255.0
```

Let ONBOOT = yes, BOOTPROTO = static. Add IPADDR, GATEWAY, NETMASK, then restart the server.

Configure the DNS server

```
echo “nameserver 8.8.8.8”  >> /etc/resolv.conf
```

1.1.5. Copy And Deployment upgrade package

There are two types deployment upgrade package: ISO and .tar.gz, the only difference between

them is the file type.

1. ISO deployment upgrade package: Upload directly

Use the communication tool for windows/linux in CentOS to copy the ISO file into any directory in the server. For the tool detail please go to chapter 2.1.

Run the commend of mounting ISO: mount –o loop /[File Direcotory]/[File Name] /mnt/iso

For example:

```
mkdir /mnt/iso
mount –o loop /home/ RG-MACC_2.0_Build20160509.iso /mnt/iso
```

Do not mount under tmp directory otherwise tmp will be read only and the script cannot be installed.

Copy ISO content into /mnt/install/[Directory]

```
mkdir /mnt/install
cp -r /mnt/iso/* /mnt/install/
```

2. ISO deployment upgrade package: Upload with flash disk

Insert the flash disk into the server usb port.

Use commend fdisk –l to check flash disk partitions:

```
Disk /dev/sdb: 53.7 GB, 53687091200 bytes
255 heads, 63 sectors/track, 6527 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x502626b1

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb2               1        6527    52428096   8e  Linux LVM
```

Mount the flash disk under /mnt directory: mount -o loop /dev/sdb2 /mnt/

Do not mount under tmp directory otherwise tmp will be read only and the script cannot be installed.

```
/dev/sda3            37140        65271   225967104   8e  Linux LVM

Disk /dev/sdb: 53.7 GB, 53687091200 bytes
255 heads, 63 sectors/track, 6527 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x502626b1

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb2               1        6527    52428096   8e  Linux LVM
```

3. ISO deployment upgrade package: Download from internet

Set up a http/ftp server which is connected with the MACC server and contains the deployment

files, login the MACC server and run the following commend to download files.

If using http then run the commend:

```
wget http://[Server Address]/[File Name]
```

If there is 'wget commend is not known' error, please make sure the server is able to access the internet and use yum to install wget.

If using ftp then run the commend:

```
wget ftp://[ftp user name]:[ftp password]@[address]/[directory]/[file name]
```

Run the following commend to mount ISO under /mnt/iso directory:

```
mkdir /mnt/iso
mount -o loop RG-MACC_2.0_Build20160509.iso /mnt/iso/
cd /mnt/iso/
```

Copy the ISO content into /mnt/install/directory

```
mkdir /mnt/install
cp -ar /mnt/iso/* /mnt/install/
```

4. ISO deployment upgrade package: Upload by ISO disk

Login CentOS and mount CDROM.

Run the following commend to mount ISO disk under /mnt/iso:

```
mkdir /mnt/iso
mount -o loop /dev/cdrom /mnt/iso/
cd /mnt/iso/
```

Copy the ISO content into /mnt/install/directory

```
mkdir /mnt/install
cp -ar /mnt/iso/* /mnt/install/
```

5. .tar.gz deployment upgrade package: Upload

The package can be copied directly or download by HTTP/FTP. Usr tar commend to extract the package.

```
[root@localhost pkg]# tar xzvf    RG-MACC_2.0_Build20160509.tar.gz
```

1.2. Installation and Upgrade

1.2.1. Install MACC

a) Make sure the archive is OK, and set the executable authority of script files.

```
[root@localhost pkg]# cd /mnt/install/
[root@localhost install]# ls -l
drwxr-xr-x. 4 root root    4096 Aug 29 16:43 installpkg
-rwx--x--x. 1 root root 35048 Aug 29 16:43 install.sh       <<-----First time installation
-rwx--x--x. 1 root root 35048 Aug 29 16:43 upgrade.sh    <<-----Upgrade installation
[root@localhost install]#
[root@localhost install]# chmod    777 *.sh
```

b) Install the package.

```
[root@localhost install]#./install.sh -l en      <<--- setting for English version
System version : CentOS release 6.5 (Final)
Checking for system ...64-bit
Checking for macc directory...yes
Checking for ppl...no
Installing ppl...
```

The following rpm signature warning can be ignored.

```
    warning:
    /macc/install_pkg/
RG-MACC_2.0_Build20160509/installpkg/soft/rpm/kernel-headers-2.6.32-504.1.3.el6.x86_64.rpm:
Header V3 RSA/SHA1 Signature, key ID c105b9de: NOKEY
```

The following Mysql startup error can be ignored.

```
    Initializing mysql...
    ERROR! MySQL server PID file could not be found!
    Starting MySQL.. SUCCESS!
    SUCCESS! MySQL running (2811)
    Initialize mysql.....................[OK]
    Checking for tomcat...no
    spawn openssl genrsa -des3 -out ./ca/serverkey.pem 2048
```

c) Check if the DB works well.

```
    [root@localhost install]# ps –ef | grep mongod
    mongod      3810       1    2 13:24 ?          00:00:00 /usr/bin/mongod -f /etc/mongod.conf
    root        3838    2110    0 13:24 pts/0      00:00:00 grep mongodwarning:
    root        1605       1    2 Aug12 ?          05:05:28 mongod -f /etc/mongod.conf <<-- exist
```

d) Restart DB if it can't be seen.

```
    [root@localhost install]# rm –rf    /var/lib/mongo/*      <<-----Delete files under this directory
    [root@localhost install]# service mongod start      <<-----Start mongoDB
    Starting mongod: [    OK    ]
```

1.2.2. Verify the Installation

a) Login MACC with URL (http://IP [:port]) in browser (Chrome is recommended), the IP is server

ip addr, and default port is 80.

b) Input the account info. The default account admin can be login.

username : admin

password: admin

c) Setting the language of English.

1) Go to account button on the right part of top view, you can see such as “admin”;

2) Click account name, and you can see “setting” sub menu;

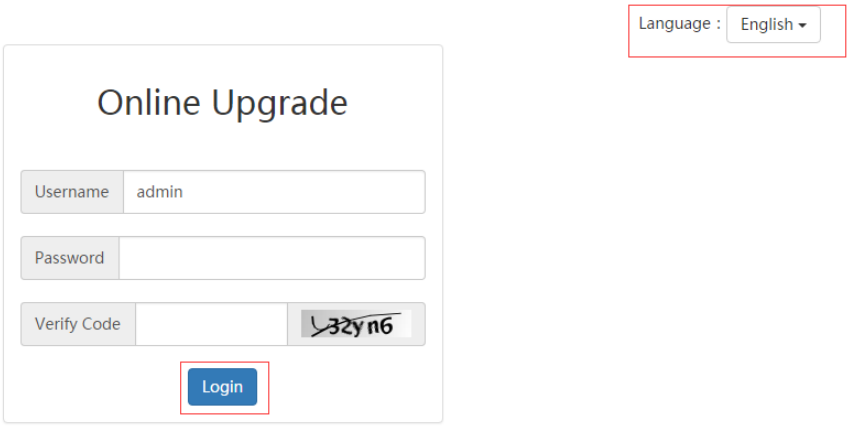
3) Choose “language” options and select “English”;

1.2.3. Upgrade MACC

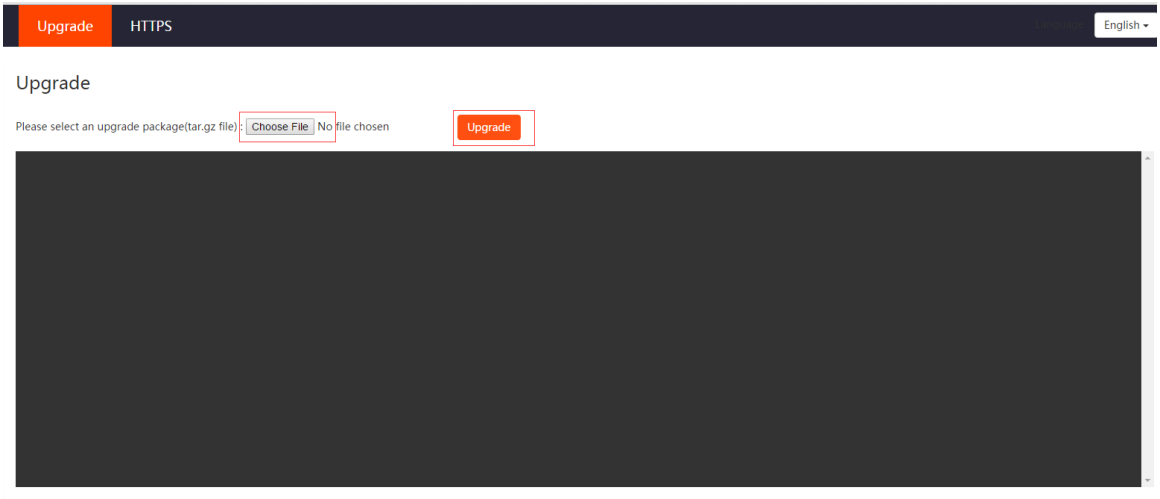
If you had use an older release before, and need to upgrade to the new one. There are two ways to upgrade MACC, online upgrade and console manual upgrade.

1. Online upgrade

You can access http://maccIP:8090, that is MACC online upgrade GUI as following, default account is the same as MACC account: **admin/admin**.



After login in, select xxx.tar.gz upgrade package, then click upgrade.



2. Console manual upgrade

a) Execute the upgrade script in the directory as install path.

```
[root@localhost pkg]# cd /mnt/install/
[root@localhost install]# ls -l
drwxr-xr-x. 4 root root    4096 Aug 29 16:43 installpkg
-rwx--x--x. 1 root root 35048 Aug 29 16:43 install.sh       <<-----First time installation
-rwx--x--x. 1 root root 35048 Aug 29 16:43 upgrade.sh    <<-----Upgrade installation
```

b) Upgrade the package.

```
[root@localhost pkg]#./upgrade
```

2. Reference

2.1. Files Transmission Tool

You can use ***SecureFXPortable*** to transmit files to linux server in SFTP way.

2.2. Maintainence Tool

The ***SecureCRTPortable*** can be used for configuration by connecting linux server with SSH2.