Installation Guide MAS

Installation Instructions

ERICSSON

Contents

1 Introduction

1.1 Scope

This document provides step by step instructions for installation, upgrade and uninstallation of the software for the MAS component.

1.2 Audience

This document is primarily written for software installation technicians.

1.2.1 Prerequisite Knowledge

The readers of this document should have a good understanding of Messaging-over-IP and good knowledge and experience of:

- IP based networks
- UNIX

Note: Installation of the software is only to be performed by personnel authorized by having attended the corresponding courses.

1.3 Related Documents

The following documents also contain information related to the component, or are referred to from this document:

- Operation and Maintenance MAS
- Solaris Documentation (http://docs.sun.com) *System Administration Guide, Solaris 10*

1.4 Document Conventions

1.4.1 Notational Conventions

This document uses the following notational conventions:

Bold font style is used for emphasis, to indicate keywords and buttons.

Italic font style is used for references, window/page/menu titles and specific terms.

`Bold Monospace font` is used to describe user input.

`Monospace font` is used for code, paths and on-screen computer output.

Square brackets ‘‘[]’’ are used to enclose parameters that are optional.

Curly brackets ‘‘{}’’ are used to enclose parameter values given as examples.

Less than and greater than characters ‘‘<>’’ are used to enclose variable names.

Backslash ‘‘\’’ at the end of a line means that this line is continued onto the next line.

The dollar sign ‘‘$’’ is the UNIX Korn (and Bourne) shell prompt.

The percent sign ‘‘%’’ is the UNIX C shell prompt.

The number sign ‘‘#’’ is the superuser prompt.

The number sign ‘‘#’’ is also used for comments.

A star ‘‘*’’ matches zero or more characters.

A question mark ‘‘?’’ matches one character.

A tilde ‘‘~’’ means the home directory of the current user.

‘‘<MAS_HOME>’’ is the installation directory for MAS, for example ‘‘/apps/mas’’.

‘‘<DS_HOME>’’ is the installation directory for the Deployment Server, e.g. ‘‘/apps/MOBYdsadm’’

2 Installation

2.1 General

2.1.1 Container File

The MAS software is delivered in a container file named **mas_<rel>.mas0001.solaris10.tar.gz**, where ‘‘<rel>’’ indicates the release number of the software.

The container file contains the following file:

MOBYmas.pkg Solaris package that contains the main MAS software, including the installation program.

In this document, the container file is called **<mas_container_file>**

The MAS is a platform for executing applications written in VoiceXML/CCXML/ECMAScript, and in order to accomplish a service useful to and end user, an application package needs to be installed. The application package normally needs one or several media content packages (MCPs), containing prompts in various codecs and languages. All this implies that the following normally should be installed:

1 The MAS itself.

2 An application package.

3 One or several media content packages.

2.1.2 Installation Workflow

The installation of the MAS component includes the procedures described in:

1 Section 2.2 Prerequisites on page 5.

2 Section 2.3 Prepare Installation on page 6.

3 Section 2.4 Install MAS on page 6.

4 Section 2.5 Verify Installation on page 13.

5 Section 2.6 Backup on page 13.

2.2 Prerequisites

2.2.1 Hardware

The MAS component requires a minimum of 1 GB RAM.

2.2.2 Software

Also, the MAS component requires that the following software have been installed:

- Correct version of OS, as installed from the Deployment server.

2.2.3 Disk Space

The MAS installation disk space requirements for the different partitions are described in the table below.

Table 1

Partition	**Required disk space (minimum)**	**Comments**
<tempdir> e.g. /apps/dist/mas	100 MB	Temporary directory for the MAS installation.
<MAS_HOME> e.g /apps/mas	100 MB	Installation directory for the MAS.
/apps/logs/mas	200 MB	Log files for the MAS.
/apps/backup/mas	10 MB	Configuration backup files

To check disk space, use for example the `df -k` command.

2.2.4 Component Dependencies

The MAS component requires that the following components have been installed:

Table 2

Part	Component (service)	Comments
EMANATE master agent	MEMA	Required for the SNMP agent and the MAS start up and stop script (rc.mas). Note: EMANATE master agent is automatically installed on the host when the host is jumpstarted via the Deployment Server.

2.3 Prepare Installation

The following steps must be performed before starting the installation of the MAS component.

1. Make sure that the alias *mcrhost*, which shall point out the host where the MCR is located, is known by the system (use the **`nslookup`** command to find out).
2. If previous, unsuccessful, installation attempts have taken place, uninstall such earlier installations.
3. If silent installation is preferred, create a response file. See Section 2.4.4 Response file on page 9.

2.4 Install MAS

There are three ways to install the MAS component:

- Interactive installation, see Section 2.4.1 Interactive installation on page 5.
- Silent installation, see Section 2.4.2 Silent installation on page 7.
- Deployment Server installation, see Section 2.4.3 Deployment Server installation on page 8.

After a successful installation the MAS component will be set in the administrative state locked, which means that no traffic will be accepted. For instructions on how to unlock the component, see *Operations and Maintenance MAS*, section *Unlock*.

2.4.1 Interactive installation

1. Make sure that you have superuser (root) privileges.
2. Insert the CD that contains the software into the CD-ROM drive on the host.
3. Change to CD-ROM directory.

```
# cd /cdrom/cdrom0
```

(or type: **cd /cdrom/<CD-ROM name>**)

4. Copy the container file for the MAS component to a temporary directory on the host.

   ```
   # cp <mas_container_file> <tempdir>
   ```

5. Change to the temporary directory.

   ```
   # cd <tempdir>
   ```

6. Unzip and extract the <mas_container_file>, e.g.:

   ```
   # gunzip mas_<rel>.mas0001.solaris10.tar.gz
   ```

   ```
   # tar xf mas_<rel>.mas0001.solaris10.tar
   ```

   This file will be extracted:

   ```
   MOBYmas.pkg
   ```

   Afterwards, remove the container file.

   ```
   # rm <mas_tar_file>
   ```

7. Install the solaris package.

   ```
   # pkgadd -d MOBYmas.pkg
   ```

8. Answer the questions asked during installation. See Section 9 Installation parameters on page 27

   Note: At the end of the installation, the installation program tries to verify that the parameters entered are valid according to the XML schema validator. If bad parameters are entered, error messages telling the wrong parameter value are logged.

9. If the installation script detects that a previous installation has been performed, it will ask if any prevous configuration shall be restored.

   Select **y** if reuse of an existing configuration is desired.

10. Verify the installation. See Section 2.5 Verify Installation on page 13

11. Backup the installation. See Section 2.6 Back Up on page 13

12. If the installation is done on a SunFire T2000 (Niagara), you must do the following changes to the "M3 customizations" section of /etc/system:

    Change the line "rlim_fd_max=4096" to "rlim_fd_max=16384".

    Add the line "set ip:dohwcksum=0".

After modifying /etc/system, reboot the host.

2.4.2 Silent installation

1. Make sure that you have superuser (root) privileges.
2. Insert the CD that contains the MAS software into CD-ROM drive on the host.
3. Change to the CD-ROM directory.

   # cd /cdrom/cdrom0

   (or type: **cd /cdrom/<CD-ROM name>**)
4. Copy the container file for the MAS component to a temporary directory on the host.

   # cp <mas_container_file> <tempdir>
5. Change to the temporary directory.

   # cd <tempdir>
6. Unzip and extract the <mas_container_file>, e.g.:

   # gunzip mas_<rel>.mas0001.solaris10.tar.gz

   # tar xf mas_<rel>.mas0001.solaris10.tar

   This file will be extracted:

   `MOBYmas.pkg`

   Afterwards, remove the container file.

   # rm <mas_container_file>
7. Create the response file, `MOBYmas.response`. See Section 2.4.4 Response file on page 9.
8. Install the package

   # pkgadd -r MOBYmas.response -d MOBYmas.pkg
9. Verify the installation. See Section 2.5 Verify Installation on page 13
10. Backup the installation. See Section 2.6 Back Up on page 13
11. If the installation is done on a SunFire T2000 (Niagara), you must do the following changes to the "M3 customizations" section of /etc/system:

    Change the line "rlim_fd_max=4096" to "rlim_fd_max=16384".

Add the line "set ip:dohwcksum=0".

After modifying /etc/system, reboot the host.

2.4.3 Deployment Server installation

The MAS can either be installed when installing the operating system, using an action script; or at a later time, using a job script.

2.4.3.1 Using an action script

1 Copy the <mas_container_file> to the package directory for the action (described in *the O&M Deployment Server* document) and move to this directory.

2 Unzip and extract the <mas_container_file>:

```
# gunzip mas_<rel>.mas0001.solaris10.tar.gz

# tar xf mas_<rel>.mas0001.solaris10.tar
```

This file will be extracted:

```
MOBYmas.pkg
```

Afterwards, remove the <mas_container_file>:

```
# rm <mas_tar_file>
```

3 Create the response file, `MOBYmas.response` in the same directory as the package file. See Section 2.4.4 Response file on page 9 for how to create a response file.

4 Configure an action object for the MOBYmas package installation. How to add and configure an action object for a Solaris package installation is described in the *O&M Deployment Server* document.

5 When installing the operating system on the host, the MOBYmas package will be installed.

6 If the installation is done on a SunFire T2000 (Niagara), you must do the following changes to the "M3 customizations" section of /etc/system:

Change the line "rlim_fd_max=4096" to "rlim_fd_max=16384".

Add the line "set ip:dohwcksum=0".

After modifying /etc/system, reboot the host.

2.4.3.2 Using a job script

1 Copy the <mas_container_file> to the package directory for the job (described in the *O&M Deployment Server* document) and move to this directory.

2 Unzip and extract the <mas_container_file>:

```
# gunzip mas_<rel>.mas0001.solaris10.tar.gz

# tar xf mas_<rel>.mas0001.solaris10.tar
```

This file will be extracted:

```
MOBYmas.pkg
```

Afterwards, remove the <mas_container_file>:

```
# rm <mas_tar_file>
```

3 Create the response file, `MOBYmas.response` in the same directory as the package file. See Section 2.4.4 Response file on page 9 for how to create a response file.

4 Configure a job object for the MOBYmas package installation. How to add and configure a job object for a Solaris package installation is described in the *O&M Deployment Server* document.

5 Execute the job object.

6 If the installation is done on a SunFire T2000 (Niagara), you must do the following changes to the "M3 customizations" section of /etc/system:

Change the line "rlim_fd_max=4096" to "rlim_fd_max=16384".

Add the line "set ip:dohwcksum=0".

After modifying /etc/system, reboot the host.

2.4.4 Response file

Create a response file using pkgask. This command extracts the questions asked in the package file and creates a response file.

This command does not install the package.

- Create response file

```
# pkgask -r MOBYmas.response -d MOBYmas.pkg
```

Answer the questions asked during the creation of the response file. See Section 9 Installation parameters on page 27

If the the response file exists, an error message is displayed.

Remove the response file and try again.

Note: It is important that pkgask is run on the same hardware type as you will later install the MAS on

Note: If you are about to upgrade, run pkgask on the host where the MAS to be upgraded is installed.

- Modify the response file

  Each row should start with the parameter name, followed by an equal sign and should end with the desired parameter value.

  Example: {ParameterName=Value}

Table 3 Parameters

Name	Default value	Range	Desription
REGISTERED_NAME	mas	Any valid string	The name of the installed MAS. **This must not be changed**.
UPGRADE	NA	"", yes,no	*This parameter is currently not used, and is reserved for future use.* The parameter is set when install software detects a previous installation.
REUSECONFIG	NA	yes,no	Specifies wether the current configuration should be reused.
MY_JAVA_HOME	/apps/jdk1.6.0_06 (for T2000 hosts) /apps/java (for non T2000 hosts)	Any valid path	The path to the java runtime environment base directory.
LOGICALZONE	unspecified	Any valid string	The name of the logical zone this software in installed in.
SSP_HOST_LIST	host=ssphost, port=5060	Any valid hostname and port in range 0 - 65535.	SSP hostname and port. This parameter should be left empty if a SIP Proxy has been defined (parameter SIP_PROXY_HOST).
SIP_PROXY_HOST	host=sipproxyhost, port=5060	Any valid hostname and port in range 0 - 65535.	SIP Proxy hostname and port. This parameter should be left empty if an SSP has been defined (parameter SSP_HOST_LIST).

Table 3 Parameters

Name	Default value	Range	Desription
ASR_PROTOCOL	none	mrcp, xmp	Speech recognition engine protocol.
ASR_HOST	NA	Any valid hostname	Speech recognition engine host.
ASR_PORT	NA	Any valid integer 0 - 65535	Speech recognition engine port.
TTS_PROTOCOL	none	mrcp,xmp	Text to speech engine protocol.
TTS_HOST	NA	Any valid hostname	Text to speech engine host.
TTS_PORT	NA	Any valid integer 0 - 65535	Text to speech engine port.
SIP_CHANNELS	60	Any valid integer 0 - 65535	Number of SIP channels. Sets the HighWaterMark to the specified number of SIP channels.
INIT_HEAP_SIZE	207M	Any valid string	JVM parameter. Calculated depending on number of SIP channels.
MAX_HEAP_SIZE	207M	Any valid string	JVM parameter. Calculated depending on number of SIP channels.
NEW_GEN_HEAP_SIZE	24M	Any valid string	JVM parameter. Calculated depending on number of SIP channels.
THREADPOOLSIZE	150	Any valid integer 30-1000	JVM parameter. Calculated depending on number of SIP channels.
SEARCHBASE	o=userdb	Any valid string	The default LDAP searchbase.

Table 3 Parameters

Name	Default value	Range	Desription
SIP_HOSTNAME	NA	A hostname found on the machine.	The host name for the network interface on which MAS will open its listening port for SIP. Note: When MAS registers with an SSP it will register with the following address of record: “sip:mas@<SIP_HOSTNAME >”. It is therefore important that the hostname given here is also used when configuring the routing in the SSP component. Eg. if SIP_HOSTNAME is the fully qualified domain name for MAS, that must also be used in the SSP routing configuration, if SIP_HOSTNAME is the IP-address of the MAS, that IP-address must also be used in the SSP routing configuration.
XMP_HOSTNAME	NA	A hostname found on the machine.	The host name for the network interface on which MAS will open its listening port for XMP.
RTP_HOSTNAME	NA	A hostname found on the machine.	The host name for the network interface on which MAS will open its RTP ports. The value entered is used as is and if a hostname is given instead of an IP address the calling party, gateway, SIP phone or what ever used, must be able to resolve the hostname.
HOSTNAME_TO_REGISTER_IN_MCR	NA	A hostname found on the machine.	The host name under which MAS will register itself in MCR.

2.4.5 Correction of wrong parameters

If invalid parameters are provided during the installation, it is recommended that the package is removed, and then reinstalled with the correct parameters.

2.5 Verify Installation

Verify the installation of the MAS component by performing the following steps:

1. Check the result in the installation log file.

   The installation log file will be found under /apps/logs/mas/ and have the syntax mas@<hostname>.<date and time>.installlog.

2. Start the MAS. See the description in *, section* .

   ```
   #/etc/init.d/rc.mas start
   ```

3. Verify that the MIB can be accessed and that the MIB contains the correct information. See the description in:

   Operation & Maintenance MAS, section *View Static Data in MIB*

   Operation & Maintenance MAS, section *View Dynamic Data in MIB*

4. Unlock the component, see *Operations and Maintenance MAS*, section *Unlock*.

5. If possible, perform a test phone call to the MAS.

2.6 Back Up

After the installation and configuration of the MAS component is completed, it is recommended to back up the files and directories as described in *Operation & Maintenance MAS*, section *Back Up*.

3 Start and Stop

For instructions on how to manually start the MAS component, see *Operation & Maintenance MAS*, section *Start Component*.

For instructions on how to manually stop the MAS component, see *Operation & Maintenance MAS*, section *Stop Component*.

4 Registration and Unregistration in MCR

Registration is usually performed automatically by the MAS installation program, however, you can register or unregister without re-installing from scratch.

4.1 MCR registration (or update)

The registration program will register the MAS, the application and the media content packages in the MCR.

4.1.1

Make sure that the mcr values in ‘‘<MAS_HOME>/cfg/mas.xml’’ are correct, then type the following command:

```
# /etc/init.d/rc.mas register
```

Note: If the registration fails for any reason, for example if the MCR host isn't reachable, the MAS component will keep on trying to register every five minutes.

4.2 MCR unregistration

The unregistration program will unregister the MAS, the application and the media content packages from the MCR.

To unregister the MAS component from the MCR, just type the following command:

```
# /etc/init.d/rc.mas unregister
```

Note: If the unregistration fails for any reason, for example if the MCR host isn't reachable, the MAS component will keep on trying to unregister itself and installed applications in the MCR every five minutes.

5 Patch installation

A MAS patch contains corrections for the MAS.

This patch will not overwrite media content packages and application packages.

A MAS patch is delivered as two files:

- Package file
- README file

The README file contains instructions on how perform an installation of the patch.

6 Upgrade

6.1 Upgrade to the latest MAS version from a previous version

In a system where there are more than one MAS instance, it is recommended to upgrade one MAS instance first and verify its functionality, before the other instances are upgraded.

During the uninstallation, configuration files, application and media content packages are backed up to be possible to reuse when upgrading to a new MAS version.

6.1.1 Upgrading the OS while upgrading MAS

In the case where an OS upgrade/reinstallation is required, see *Operation & Maintenance MAS*, section *Backup Restore*.

This procedure will ensure that all configuration files that are needed for the upgrade are saved.

6.1.2 Procedure for Solaris 10 Live Upgrade

Installation of the MAS adds some files located outside the /apps file system on the operating system disk. When an upgrade of the operating system (Solaris

10) is performed, all MAS related files residing outside of /apps will no longer be visible. The files affected are:

- /etc/init.d/rc.mas
- /var/svc/manifest/application/mobeon/MOBYmas/MOBYmas.xml
- /etc/sfw/mobeon/MOBYmas/mas
- /etc/sfw/mobeon/MOBYmas/snmpagent
- /etc/system

These files will normally be backed up and restored into the new upgraded operating system by the LiveUpgrade framework. Should the framework fail the files can be retrieved from the old Operating System version using the **lumount** command.

6.2 Interactive upgrade

Perform the following actions to upgrade from the older MAS to the new version:

1. Stop the current traffic gracefully.

   ```
   # /etc/init.d/rc.mas shutdown
   ```

   This command waits until the number of current calls is 0. Then the MAS will enter the locked state and will return to the prompt. The number of current calls is shown in the mib attribute masConnectionStatisticsConnections, which can be checked using the following command.

   ```
   # /etc/init.d/rc.mas viewmib
   ```

2. Remove the currently installed package as described in Section 8 Uninstallation on page 25.

3. Start the installation of the new version of the MAS as described in steps in Section 2.4.1 Interactive installation on page 5.

6.3 Silent upgrade

Perform the following actions to silently upgrade from an older MAS version to the new version:

1. Stop the current traffic gracefully.

   ```
   # /etc/init.d/rc.mas shutdown
   ```

   This commad waits until the number of current calls is 0. Then the MAS will enter the locked state and returns to the prompt. The number of current calls is shown in the mib attribute masConnectionStatisticsConnections, which can be checked using the following command.

   ```
   # /etc/init.d/rc.mas viewmib
   ```

2. Remove currently installed package as described in Section 8 Uninstallation on page 25.

3. Start the installation of the new version of the MAS as described in steps in Section 2.4.2 Silent installation on page 7.

6.4 MAS Deployment Server upgrade

The MAS Deployment Server upgrade works similary to the MAS Deployment Server installation. See Section 2.4.3 Deployment Server installation on page 8 for further details.

7 Rollback

Currently there is no standard procedure to perform software version rollback for the MAS component.

If the MAS should be rolled back to a previous version, the only way to do it is to uninstall the current MAS component, and then reinstall the previous version.

8 Uninstallation

There are three ways to uninstall the MAS component:

- Interactive uninstallation, see Section 8.1 Interactive uninstallation on page 25
- Silent uninstallation, see Section 8.2 Silent uninstallation on page 25
- Deployment Server uninstallation, see Section 8.3 Deployment Server uninstallation on page 26

8.1 Interactive uninstallation

This procedure will uninstall the complete MAS software that has been installed by the procedure given in this guide.

To uninstall the MAS component:

1. Stop the MAS component.

   See *Operations & Maintenance MAS*, section *Stop Component*.

2. Back up the configuration files.

   If the backup procedure is followed (backup after installation, upgrade and re-configuration), there is no need for backing up prior to the uninstallation. For information, see *Operation & Maintenance MAS*, section *Back Up*.

3. Become superuser (root).

   ```
   $ su -
   ```

4. Run the Solaris package remove command.

   ```
   # pkgrm MOBYmas
   ```

5. Answer yes to all questions for the package to be uninstalled.

8.2 Silent uninstallation

1. Stop the MAS component.

   See *Operations & Maintenance MAS*, section *Stop Component*.

2. Back up the configuration files.

If the backup procedure is followed (backup after installation, upgrade and re-configuration), there is no need for backing up prior to the uninstallation. For information, see *Operation & Maintenance MAS*, section *Back Up*.

3. Become superuser (root).

   ```
   $ su -
   ```

4. Run the Solaris package removal command.

   ```
   # pkgrm -n MOBYmas
   ```

8.3 Deployment Server uninstallation

Uninstallation of MAS from a Deployment Server is not supported.

9 Installation parameters

The MAS installation script requires information to be input during the installation. If silent installation is used, the input is read from the MOBYmas.response file.

These questions are asked.

- **Do you want to reuse previous installed configuration and Application? [y,n,?]**

  This question will only be shown if there has been a previous installation of MAS on the host.

  If upgrade is desired, select 'y'. Then no further questions will be asked and all configuration, application and media content packages will be restored.

  If upgrade is not desired, select 'n'. Then a new installation of MAS will be performed.

- **Java home directory [/apps/java]:**

  The path to the java runtime environment base directory.

  If left blank, the install program will use default values. The default value will depend on the type of hardware.

- **SIP host name [host name found on the machine]:**

  The host name for the network interface on which MAS will open its listening port for SIP. (See the list of host names found by the installation program above).

- **XMP host name [host name found on the machine]:**

  The host name for the network interface on which MAS will open its listening port for XMP. (See the list of host names found by the installation program above).

- **RTP host name [host name found on the machine]:**

  The host name for the network interface on which MAS will open its RTP ports.

- **Host name, under which the component will register in MCR [host name found on the machine]:**

  The host name under which MAS will register itself in MCR.

- **Provide the logicalzone [unspecified]:**

The name of the logical zone this software is installed on.

The installation tries to connect to MCR and retrieve logical zones and present the values to the installer.

The first value in the list is set as default.

If MCR is not reachable the default value will be "unspecified".

- **Select remote party to be used:**

  Select one of SSP or SIP proxy.

  – SSP

    A list of SSP hosts can be given by entering new values. When "SSP Host" is left blank, the list is finished.

    - **SSP host name [ssphost:5060]:**

      For details on this parameter, see the remote party group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

    - **SSP port number [5060]:**

      For details on this parameter, see the remote party group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

  – SIP proxy

    - **SIP proxy host name [sipproxy:5060]:**

      For details on this parameter, see the remote party group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

    - **SIP proxy port number [5060]:**

      For details on this parameter, see the remote party group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

- **Speech recognition engine protocol [not used]:**

  For details on this parameter, see the speechrecognition service group *in Operations & Maintenance MAS,* section *Change Configuration Parameters in File* .

  – **Speech recognition engine host name:**

    This is not displayed if "speech recognition engine protocol" was left blank.

For details on this parameter, see the speechrecognition service group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

– **Speech recognition engine port number:**

This is not displayed if "speech recognition engine protocol" was left blank.

For details on this parameter, see the speechrecognition service group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

- **Text to speech engine protocol [not used]:**

For details on this parameter, see the texttospeech service group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

– **Text to speech engine host name:**

This is not displayed if "text to speech engine protocol" was left blank.

For details on this parameter, see the texttospeech service group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

– **Text to speech engine port number:**

This is not displayed if "text to speech engine protocol" was left blank.

For details on this parameter, see the texttospeech service group in *Operations & Maintenance MAS,* section *Change Configuration Parameters in File*.

- **Default LDAP search base [o=userdb]:**

The default searchbase for searches in the user directory.

- **Maximum number of SIP channels [60]:**

The number of simultaneous SIP calls this host can handle.

This sets the HighWaterMark to the specified value. When MAS reaches this value, MAS unregisters from the SSP (if an SSP is used in the deployment),

This sets the InitThreshold to a value slightly higher than the specified value. When MAS reaches this value, the MAS starts to redirect calls back to SSP (if an SSP is used in the deployment).

This also sets the LowWaterMark to a percentage value of HighWaterMark.

- **Please provide threadpoolsize: [blank=default (150)]**

  This is a JVM parameter used for tuning performance.

  The default value is based on the maximum number of simultaneous channels.

9.1 Recommended hardware

The table below shows the maximum number of concurrent SIP channels that may be allowed on selected hardware setups.

Table 4

Max number of SIP Voice channels	Max number of SIP Video channels	Recommended hardware
-	-	Sun Fire V210, 1.3 GHz 1GB
-	-	SunFire T2000 (Niagara),

10 Log files

10.1 Installation Log File

The installation log file will be located in `/apps/logs/mas/` and will be named according to the following convention:

`mas@<Host name>.<YYYY_MM_DD_HHMM>.installog`

Example:

`mas@bilbo.2006_01_27_1606.installog`

This log file is not removed when the component is uninstalled.

10.2 Uninstallation Log File

The uninstallation log file will be located at `/apps/logs/mas/` and will be named according to the following convention:

`mas@<Host name>.<YYYY_MM_DD_HHMM>.uninstallog`

Example:

`mas@bilbo.2006_01_27_1606.uninstallog`

These log files are not removed when the component is uninstalled.

10.3 Patch Log Files

For patch installation, an additional log file is created by patch installation. The output will end up in a file whose name is reported after the installation is complete.

For patch removal, the additional log file will be discarded if everything is OK.

If something goes wrong, the output will end up in a file whose name is reported after the removal attempt is complete.

11 Install Media Content Packages

The media content package is delivered in a container file which is named:

<name>.<type>.<language_code>.<variant>.<customer>.<rev>.<prodnum>.tar

“<language_code>” is in the same format as preferredLanguage in MUR. “<variant>” specifies the media content package variant, i.e. voice1 or video1; “<name>” may indicate that this file is a customer adaptation and <customer> the name of the customer.

In this document, the media content package delivery file is called **<mcp_file>**

Note: Multiple media content packages can be installed on a MAS instance.

11.1 Prerequisites

11.1.1 Disk Space

The media content package disk space requirements for the different partitions are described in the table below.

Table 5

Partition	Required disk space (minimum)	Comments
<tempdir> e.g /apps/dist	Install package size	Temporary directory for the MAS installation.
<MAS_HOME> e.g /apps/mas	Install package size	Installation directory for the MAS.

To check disk space, use for example the **df -k** command.

11.2 Interactive Media Content Package Installation

1. Log in to the host where the media content package should be installed.
2. Become superuser (root).

   ```
   $ su -
   ```

3. Copy the media content package delivery file to a temporary directory on the host.

   ```
   # cp <mcp_file> <tempdir>
   ```

4. Change to <tempdir>

   ```
   # cd <tempdir>
   ```

5. If the MAS component is running in a live system, the MAS must be stopped before a media content package is updated. This is because the media content package installation may possibly replace an active media content package.

   To manually stop the MAS component, see section *Stop Component* in the document *Operation and Maintenance MAS*.

6. Install the package by issuing the following command :

   ```
   # /etc/init.d/rc.mas installmcp <mcp_file>
   ```

7. Wait for the installation to complete with the following output:

   ```
   Installation of <mcp_file> was successful
   ```

8. Restart the MAS component in order to make the newly installed media content package available. Refer to section *Restart Component* in the document *Operation and Maintenance MAS*.

11.3 Media Content Package Deployment Server installation

The media content package can either be installed using an action script when installing the operating system, or at a later time using a job script.

11.3.1 Using an action script

1 Copy the <mcp_file> to the <DS_HOME>/install/dist directory on the deployment server.

2 Extract the action_mas_package script from <mcp_file>:

```
# tar xf <mcp_file> ./mediatmp/action_mas_package
```

Note: The action_mas_package file in the <mcp_file> is identical to the action_mas_package file in the <app_file>. If you already have extracted the action_mas_package file from the <app_file> (refer to Section 14.3.1 on page 42) this step and the next can be ignored.

3 Copy the action_mas_package file from the mediatmp directory to the deployment server action scripts directory (described in the *O&M Deployment Server* document).

4 Make sure that the action_mas_package has the same permissions as other action scripts in the directory.

```
# chmod 755 action_mas_package
```

5 Configure an action object for the media content package installation that runs the script action_mas_package from the action scripts directory with the following parameters:

```
installmcp <mcp_file>
```

How to add and configure an action object is described in the *O&M Deployment Server* document.

Note: Make sure that the MAS package installation action will be executed before the media content package installation action object. See the *O&M Deployment Server* document for the execution order of action objects.

6 When installing the operating system on the host, the media content package will be installed.

Note: The action does not include a restart of the MAS component. A restart is needed before the new media content package can be used.

11.3.2 Using a job script

1 Copy the <mcp_file> to the <DS_HOME>/install/dist directory on the deployment server.

2 Extract the job_mas_package script from <mcp_file>:

```
# tar xf <mcp_file> ./mediatmp/job_mas_package
```

Note: The job_mas_package file in the <mcp_file> is identical to the job_mas_package file in the <app_file>. If you already have extracted the job_mas_package file from the <app_file> (refer to Section 14.3.2 on page 43), this step and the next can be ignored.

3 Copy the job_mas_package file from the mediatmp directory to the deployment server job scripts directory (described in the *O&M Deployment Server* document).

4 Make sure that the job_mas_package has the same permissions as other job scripts in the directory.

```
# chmod 755 job_mas_package
```

5 Configure a job object for the media content package installation that runs the script job_mas_package from the job scripts directory with the following parameters:

```
installmcp <mcp_file>
```

How to add and configure a job object is described in the *O&M Deployment Server* document.

6 Execute the job object.

Note: The job does not include a restart of the MAS component. A restart is needed before the new media content package can be used.

12 View Installed Media Content Packages

To show what media content packages are installed on a MAS component, use the following command:

#/etc/init.d/rc.mas viewmcp

An example of a typical output is shown below.

```
The following Media Content Packages are installed:
=================================================
Id:         mcp0001.1
Name:       vvamcp
Type:       prompt
Language:   en
Customer:   mobeon
Variant:    voice1
Audio :     audio/pcmu
Video:
ProductId:  mcp0001.1
R-state:    p2a.007
```

13 Uninstall Media Content Packages

13.1 Interactive Media Content Package Uninstallation

To uninstall a media content package first retrieve the identity of the installed package by use of the **viewmcp** command. Check the id property of the media content package and provide this id as a parameter to the **uninstallmcp** command.

1. Retrieve the id of the media content package to uninstall:

   #/etc/init.d/rc.mas viewmcp

2. If the MAS component is running in a live system, the MAS must be stopped before a media content package is uninstalled. This is because the uninstallation may possibly remove an active media content package.

   To manually stop the MAS component, see section *Stop Component* in the document *Operation and Maintenance MAS*.

3. Uninstall the media content package.

   #/etc/init.d/rc.mas uninstallmcp <id>

4. Restart the MAS component according to section *Restart Component* in the document *Operation and Maintenance MAS*.

13.2 Media Content Package Deployment Server Uninstallation

To uninstall a media content package, configure a job object for the uninstallation that runs the script **/etc/init.d/rc.mas** on the remote host with the following parameters:

```
uninstallmcp <id>
```

The id for a media content package can be retrieved using the **/etc/init.d/rc.mas viewmcp** command.

Note: A restart is also needed after uninstalling an application package.

14 Install Application Package

The application package is delivered in a container file which is named:

<name>.<customer>.<rev>.<prodnum>.solaris10.tar

“<name>” may indicate that this file is a customer adaptation and <customer> the name of the customer.

In this document, the application container file is called **<app_file>**

Note: Only one application package can be installed at a time in a MAS.

14.1 Prerequisites

14.1.1 Disk Space

An application package installation requires the disk space indicated in the table below for the different partitions.

Table 6

Partition	Required disk space (minimum)	Comments
<tempdir> e.g /apps/home	Install package size	Temporary directory for the application package installation.
<MAS_HOME> e.g /apps/mas	Install package size	Installation directory for the application package.

To check disk space, use for example the **df -k** command.

14.2 Interactive Application Installation

1. Log in to the host where the application package should be installed.
2. Become superuser (root).

   $ su -

3. Copy the application package delivery file to a temporary directory on the host.

   # cp <app_file> <tempdir>

4. Change to <tempdir>

```
# cd <tempdir>
```

5. If the MAS component is running in a live system, the MAS must be stopped before an application package installation is performed. This is because the installation may possibly replace an active part of an already installed application.

   To manually stop the MAS component, see section *Stop Component* in the *Operations and Maintenance MAS*.

6. Install the package by issuing the following command:

   ```
   # /etc/init.d/rc.mas installapp <app_file>
   ```

7. Wait for the installation to complete with the following output:

   ```
   Installation of /apps/dist/<app_file> was successful
   ```

8. Restart the MAS component in order to make the newly installed application package available. Refer to section *Restart Component* in the document *Operations and Maintenance MAS*.

14.3 Application Deployment Server installation

The application package can either be installed using an action script when installing the operating system, or at a later time using a job script.

14.3.1 Using an action script

1 Copy the <app_file> to the <DS_HOME>/install/dist directory on the deployment server.

2 Extract the action_mas_package script from <app_file>:

```
# tar xf <app_file> ./apptmp/action_mas_package
```

Note: The action_mas_package file in the <app_file> is identical to the action_mas_package file in the <mcp_file>. If you already have extracted the action_mas_package file from the <mcp_file> (refer to Section 11.3.1 on page 34), this step and step 3 can be ignored.

3 Copy the action_mas_package file from the apptmp directory to the deployment server action scripts directory (described in the *O&M Deployment Server* document).

4 Make sure that the action_mas_package has the same permissions as the other action scripts in the directory.

```
# chmod 755 action_mas_package
```

5 Configure an action object for the application package installation that runs the script action_mas_package from the action scripts directory with the following parameters:

```
installapp <app_file>
```

How to add and configure an action object is described in the *O&M Deployment Server* document.

Note: Make sure that the MAS package installation action will be executed before the application package installation action object. See the *O&M Deployment Server* document for the execution order of action objects.

6 When installing the operating system on the host, the media content package will be installed.

Note: The action does not include a restart of the MAS component. A restart is needed before the new media content package can be used.

14.3.2 Using a job script

1 Copy the <app_file> to the <DS_HOME>/install/dist directory on the deployment server.

2 Extract the job_mas_package script from <app_file>:

```
# tar xf <app_file> ./apptmp/job_mas_package
```

Note: The job_mas_package file in the <app_file> is identical to the job_mas_package file in the <mcp_file>. If you already have extracted the job_mas_package file from the <mcp_file> (refer to Section 11.3.2 on page 35), this step and step 3 can be ignored.

3 Copy the job_mas_package file from the apptmp directory to the deployment server job scripts directory (described in the *O&M Deployment Server* document).

4 Make sure that the job_mas_package has the same permissions as the other job scripts in the directory.

```
# chmod 755 job_mas_package
```

5 Configure a job object for the application package installation that runs the script job_mas_package from the job scripts directory with the following parameters:

```
installapp <app_file>
```

How to add and configure a job object is described in the *O&M Deployment Server* document.

6 Execute the job object.

Note: The job does not include a restart of the MAS component. A restart is needed before the new media content package can be used.

15 View Installed Application Packages

To show which application package is installed on a MAS component, use the following command:

#/etc/init.d/rc.mas viewapp

An example of a typical output is shown below.

```
The following Application is installed:
=======================================
Id:         vva0001.1
Name:       vva
Customer:   mobeon
ProductId: vva0001.1
R-state:    p2a.008
Services:
 - Default on sip:5060
 - OutdialNotification on xmp:8080
```

16 Uninstall Application Package

16.1 Interactive Application Package Uninstallation

To uninstall an application package, first retrieve the identity of the installed Application by use of the **viewapp** command. Check the id property of the application and provide this id as a parameter to the **uninstallapp** command.

1. Retrieve the id of the application package to uninstall:

   ```
   #/etc/init.d/rc.mas viewapp
   ```

2. If the MAS component is running in a live system, the MAS must be stopped before an application package is uninstalled. This is because the uninstallation may possibly remove an active application package.

   To manually stop the MAS component, see section *Stop Component* in the document *Operation and Maintenance MAS*.

3. Uninstall the application package.

   ```
   #/etc/init.d/rc.mas uninstallapp <id>
   ```

4. Restart the MAS component according to section *Restart Component* in the document *Operation and Maintenance MAS*.

16.2 Application Package Deployment Server Uninstallation

To uninstall an application package, configure a job object for the uninstallation that runs the script **`/etc/init.d/rc.mas`** on the remote host with the following parameters:

```
uninstallapp <id>
```

The id for an application package can be retrieved using the **/etc/init.d/rc.mas viewapp** command.

Note: A restart of the MAS component is also needed after uninstalling an application package.

17 Upgrade Application Package

To upgrade an application package, follow the steps below.

1 Become super-user (root)

```
# su -
```

2 Open "configfiles.txt" to find the names of all configuration files used by the application package you are about to upgrade:

```
# cat <MAS_HOME>/applications/<application id>/configfiles.txt
```

3 For every configuration file in "configfiles.txt", copy the file to a temporary directory:

```
# cp <MAS_HOME>/cfg/<config file> <tempdir>
```

4 Uninstall the old version of the application package:

```
# /etc/init.d/rc.mas uninstallapp <application id>
```

5 Install the new version of the application package:

```
# /etc/init.d/rc.mas installapp <app_file>
```

6 Copy all backed-up configuration files to the cfg directory:

```
# cp <tempdir>/<config file> <MAS_HOME>/cfg/
```

7 Restart the MAS component according to section *Restart Component* in the document *Operation and Maintenance MAS*.

18 Installed Packages

To see which MAS packages are installed on a host, follow the procedure described below:

1. Login to the host.
2. Become superuser (root).

   $ su -

3. Check the VERSION file.

   # pkginfo -l MOBYmas

```
   PKGINST:  MOBYmas
      NAME:  CompEdge Media Access Server/SNMP agent
  CATEGORY:  application
      ARCH:  sparc
   VERSION:  MAS_R2A.026
   BASEDIR:  /apps/mas
    VENDOR:  Mobeon
    PSTAMP:  mobeon-20051206
  INSTDATE:  Sep 26 2006 15:18
    STATUS:  completely installed
     FILES:      127 installed pathnames
                   9 directories
                  21 executables
              124844 blocks used (approx)
```

   In this example the R2A.026 version of MAS is installed.

19 Install System Wide Announcement

System wide announcement (SWA) and the contents of this chapter is only applicable if SWA is also supported by the application installed on MAS.

The system wide announcement files are media files that can be replaced in the Media Content Packages without restarting MAS. These media files are prefixed with SWA_ followed by the filename identifying the file to be replaced, i.e. **SWA_<filename>**. Default these files contains 0.1ms silent audio and are added to specific locations in the application call flow. These announcements can easily be replaced by non silent audio content using the **swaadmin** tool.

Note: Multiple system wide announcements can be installed on a MAS instance. One for each media content package

To change the announcement follow the procedure below:

1. Record new audio in same format as the installed media content package.
2. Name the new files as the corresponding SWA file in the default call flow. Example:

   SWA_001.wav

   SWA_002.wav

   SWA_003.wav
3. Add these file in to a tar file. Example.

   ```
   # tar -cvf <swa_tar_file> <swa_file1> <swa_file2> ...
   ```
4. Install the **<swa_tar_file>** using the **swaadmin** tool according to the descriptions in the subsections below. There are two different ways to run the tool, manually or using the deployment server.

19.1 System Wide Announcement Installation

1. Log in to the host where the system wide announcement should be installed.
2. Become superuser (root).

   ```
   $ su -
   ```
3. Copy the system wide announcement tar file to a temporary directory on the host.

   ```
   # cp <swa_tar_file> <tempdir>
   ```
4. Change to <tempdir>

```
# cd <tempdir>
```

5. Install the tar file by issuing the following command :

   ```
   # /apps/mas/bin/swaadmin.sh install <mcpid>
   <swa_tar_file>
   ```

6. Call in and listen to the new system announcements.

Note: The **swaadmin** tool will only replace media files prefixed with SWA_. Other files included in the **<swa_tar_file>** will be left out by the tool. If for some reason a non SWA media file needs to be replaced the **swaadmin** tool can be forced to replace any file included in the **<swa_tar_file>** by usage of a force flag **-f**.

Example: **/apps/mas/bin/swaadmin.sh install <mcpid> <swa_tar_file> -f**

MAS must also be restarted before these new media files can be played.

19.2 System Wide Announcement Deployment Server installation

The System Wide Announcement package can be installed via a job script.

19.2.1 Using a job script

1 Copy the **<swa_tar_file>** to the <DS_HOME>/install/dist directory on the deployment server.

2 Configure a job object for the System Wide Announcement installation that copies the **<swa_tar_file>** to all MAS machines:

How to add and configure a job object is described in the *O&M Deployment Server* document.

As destination use /apps/dist directory

3 Execute the job object.

4 Configure another job object for the System Wide Announcement installation that runs the **/apps/mas/bin/swaadmin.sh** script on all MAS machines with the following parameters: install <mcpid> /apps/dist/<swa_tar_file>

How to add and configure a job object is described in the *O&M Deployment Server* document.

5 Execute the job object

6 Call in and listen to the new system announcements.

20 Uninstall System Wide Announcement

20.1 System Wide Announcement Uninstallation

To uninstall a system wide announcement package first retrieve the identity of the installed package by use of the **viewmcp** command. Check the id property of the media content package and provide this id as a parameter to the **uninstall** command.

1. Retrieve the id of the media content package to uninstall the SWA from:

   ```
   # /etc/init.d/rc.mas viewmcp
   ```

2. Uninstall the system wide announcement package.

   ```
   # /apps/mas/bin/swaadmin.sh uninstall <mcpid>
   ```

20.2 System Wide Announcement Deployment Server Uninstallation

To uninstall a system wide announcement package, configure a job object for the uninstallation that runs the script **/apps/mas/bin/swaadmin.sh** on the remote host with the following parameters:

```
uninstall <mcpid>
```

The id for a media content package can be retrieved using the **/etc/init.d/rc.mas viewmcp** command.