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Revision History

Date	Description
August, 2012	Release 10.2, Web Services added
March, 2015	Release 11.1 Role and Route based Workflow added
May, 2017	Added CentOS, and SuSE Linux, along with RHEL. Support for 'systemd' systems.
November, 2020	Release 12.1 Added ICM, supporting API MOCR, and other supporting programs
February, 2023	Release 13.1 Added Check Automate; Updated ISD for RHEL 8.x libraries; UV settings for release 12.2.x; Updated SEML to allow use of SSL; Updated CPDF; Changed "url.groom" script to "image.cleanup.util.sh"; Added support for Alma Linux and Rocky Linux: CentOS-Stream is not supported; Linux SysV deprecated.

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Prior to Installation

This document provides a complete description of the procedures necessary to install 1MAGE Release 13.1.0 software.

General Assumptions

Important



1MAGE relies on specific third-party hardware and software that must be in place and functioning for any installation of 1MAGE to be successful. This document provides instructions for 1MAGE installation *only*; for hardware and third-party software installation instructions, refer to the documentation provided by the vendor.

NOTE: Unless otherwise stated “Linux” refers equally to RHEL, SuSE, or open source binary compatible versions of RHEL.

Do not begin installing 1MAGE until you:

- Install and configure VM or hardware—including servers, scanning and view stations, printers (as well as any network attachments).
- Load the required release level of UNIX on the 1MAGE server and load UNIX on the *archive* server, if one is being used.
- 1MAGE server may requires specific AIX / Linux library packages be installed on server environments. For 1MAGE on Linux see “Appendix A: Required Linux Items”
- Load the required release level of UniVerse (Step 2) on the 1MAGE server.

Pre-Requisite Checklist

For each server/workstation/printer checked below, either install the related components listed at left, or confirm their configuration. This checklist is not absolute or exhaustive, and is contingent on your hardware and level of imaging integration. If you have any questions, please call 1mage Software Inc. technical support.

Related Component	Server/Workstation/Printer					
	1MAGE Server	Legacy Server	Archive Server	Scan PC	View PC PC	Printer
1. Networking DNS/DHCP	✓	✓	✓	✓	✓	✓
2. UNIX O/S	✓	✓	✓			
3. Windows				✓	✓	
4. NFS or Samba (optional)	✓		✓	✓	✓	
5. UniVerse	✓					
6. uvnet (If both 1MAGE & legacy systems are UniVerse and database integration will be used)	✓	✓				

1MAGE Installation

Important

Before beginning your 1MAGE installation, confirm that the release level of UNIX and UniVerse required by the 1MAGE application is installed and operational on the 1MAGE server. UNIX must also be installed on the archive server if one is used.

Overview

- Complete the following steps to install the 1MAGE Server on a UNIX or Linux platform. To help guide you, an installation checklist is provided in “Appendix H: 1MAGE Installation Checklist” Platform specific instructions will be identified in each step, if required.

- An inverted triangle (∇) is used in the 1MAGE installation procedures to indicate a space in the command syntax; for example, $df_{\nabla}k$.

Step 1. Define Partitions

Size of Partition: Identify a partition on your image server that will hold the 1MAGE software and indexes. 1MAGE base software requires approximately 80 MB of storage space, but as your system grows, you will need more.

For AIX and HP-UX: Even though you can expand the size of your partition in the future, creating a partition of 400-500 MB *at installation* is prudent.

For Linux: If you are creating a /1MAGE partition you may find that resizing is not easy. Create a partition now that is large enough to accommodate your future needs.

Work Areas: The /1MAGE directory will contain subdirectory work areas. Depending on your imaging solution, some, or all, of the following work areas may need to be on their own partition:

- 1MAGE.RENDQ: Used by COLD capture and rendition printing; volume dictates storage requirements.
- unindexed: Acts as a repository for unindexed and/or faxed-in images. The number of images retained in the queue impacts storage requirements.
- 1MAGE.URL: Used as a temporary storage directory to store images requested by various inquiry processes. The number of images retained in this directory, and how often the directory is “groomed”, impacts storage requirements.

Home Directory: Although you may name this partition anything you wish, we suggest that you locate it in /1MAGE. Please note:

- You may locate this partition in any subdirectory (for example: /home/1MAGE) if you do not want to put it in /1MAGE.
- To ensure a successful 1MAGE installation, be sure to use the complete pathname to 1MAGE (\$IMAGEHOME) whenever called for in the UNIX or PC environment. This pathname is set when the /etc/profile is modified. (“See Step 4: Edit /etc/profile”, on page 5.)

- In order for the software to effectively track the size of the partition, and prevent image loss due to under-allocation of disk space, the /1MAGE partition should be created as a *file system*, which is visible to the UNIX `df` command.
- To check the partition's available disk space, type the UNIX command, `df` along with any platform specific arguments at the UNIX prompt. For example, on a Solaris server, type:
`df -k`

Step 2. Install UniVerse

Install the required release level of UniVerse on the 1MAGE server, using UniVerse provided documentation.

Note: Starting with UniVerse release UV 12.2.1 on AIX and Linux, the user 'uvdb' need to be created, and the packages of "libns1", 'ncurses-compat-libs' and "dnf install 'libxcrypt-compat'" need to be added before installing. (dnf install libxcrypt-compat)

Normal Installation on RHEL/Alma/Rocky Linux:

1. Unzip the UV zip package to a destination folder
2. CD to the destination folder
3. Run "`cpio -ivcBdum uv.load < ./STARTUP`"
4. Run "`./uv.load`"
5. Keep Defaults for all Prompts

The UV "SYSTEM_BUFFER" setting will likely need to be set to the value of "0", and "uvregen" run.

Step 3. Extract 1MAGE from Install Media

IMPORTANT: When installing 1MAGE to a partition, or to a mounted directory, verify that the permissions for the partition or the mounted directory allow proper access for all image users before loading the image software. Failure to set permissions correctly will prevent the image server from operating correctly.

1. Change directories to where you want to install 1MAGE. To load the software into /1MAGE, `cd` to "/" (root). To load the software into a partition on a subdirectory of root, such as /home, `cd` to /<name of partition>.

2. From the desired install location, enter the following platform specific command (<install-path> is the absolute path to the 1IMAGE cpio):
 - a. On AIX: `cpio -icvBdum <v>/<install-path>/Server/1IMAGE.CPIO`
 - b. All Others: `cpio -icv <v>/<install-path>/Server/1IMAGE.CPIO`

Step 4. Edit `/etc/profile` (SKIP This Step on Linux)

Do the following for all operating systems except Linux. If installing 1IMAGE on Linux refer to the instructions provided in [Appendix A: Required Linux Items](#)

1. Open a vi session to modify `/etc/profile`.
2. Add the following lines **immediately before the final trap statement**; remember to place back quotes around `pwd`:

```
if [ <v>-f <v>/.uvhome<v> ]<v>;<v>then
    PATH="${PATH} : `cat <v>/.uvhome`/bin"
    export PATH
fi

INITPWD=`pwd`
cd <v>/<1IMAGE home directory>/bin
.<v>./profile.1image
cd <v>${INITPWD}
```

3. Ensure the PATH variable in `/etc/profile` includes the paths to the following UNIX commands used by 1IMAGE:

basename	mkdir
cat	mknod
chmod	mv
cmp	pg
compress	ps
cp	rm
cut	sh
df (For HP: bdf)	tail
export	touch
find	tr
grep	tty
hostname	uname
lp	wc
lpstat	who
ls	xterm
mail	zcat

NOTE: To quickly determine if all commands are in the path, execute the `check_cmds` script in `$IMAGEHOME/bin`. This script will identify any of these commands that are not included in the `PATH` variable.

To manually check each command, and determine the path, enter `type <UNIX command name>` and press Enter. The complete path name displays on the next line. For example:

```
root:~# type cat
cat is /usr/bin/cat
```

IMPORTANT: If you will be using BASH or CSH as your default shell, be sure that these UNIX commands are NOT aliased in such a way as to require user input. Requiring user input for commands such as “`cp`”, “`mv`”, or “`rm`” will prevent the image server from operating correctly. On Linux, aliased commands can be quickly determined by reviewing the contents of `/root/.bashrc` and `/root/.cshrc`.

Step 5. Create Links for 1IMAGE to Start at Boot

WARNING: 1mage strongly cautions against modifying the UniVerse script when you insert these links.

The following table details the strategy that 1mage Software will use in determining pointer location. 1mage recognizes that your

personal experience with a specific platform makes you its foremost authority.

Use the following platform specific tables, to determine the file location for your system.

Platform	“Systemd” systems image.service startup
Linux	<ol style="list-style-type: none"> 1. Locate the unit file “<i>image.service</i>” in the directory “<i>\$IMAGEHOME/bin/install_items</i>”. 2. Copy the unit file to the directory “<i>/etc/systemd/system</i>”. 3. Rename the unit file as needed. 4. Change the permissions on this file to “644”. 5. Change the owner and group for this file to root:root (owner:group). 6. Enable the 1mage service to start at boot time, by entering the command: “<code>systemctl enable image.service</code>” 7. Locate the file “<i>1mage.sh</i>” in the <i>\$IMAGEHOME/bin/install_items</i>. 8. Copy this file to “<i>/etc/profile.d</i>” directory. 9. Change the permissions on this file to 755. 10. Change the owner and group for this file to root:root (owner:group). 11. Edit the <i>1mage.sh</i> file as needed for your specific 1MAGE server requirements. 12. Run the command “. <i>/etc/profile</i>” to update your ENV.
Platform	SysV / init 1mage.rc startup
Linux	<p>Deprecated , If needed, ask 1Mage for older installation manual.</p>

AIX	<ul style="list-style-type: none"> • Backup the <i>inittab</i> file to <i>inittab.sav</i> • Insert entry into <i>inittab</i> after database has started. For example: <pre>uvrc:2:wait:/etc/uv.rc>/dev/console_2>&1 imagerc:2:wait:/etc/image.rc>/dev/console_2>&1</pre> • <i>image.rc</i> should source <i>/etc/profile</i> and then call the 1MAGE rc scripts; see below: <pre>./etc/profile /1MAGE/bin/rc.imserver start /1MAGE/bin/rc.lmage start /1MAGE/bin/rc.ss start /1MAGE/bin/rc.lfax start</pre> <hr/> Note: Start rc.lfax only if 1fax is installed • For <i>isd</i> to be able to execute a database shell, create a hard link to <i>ptc (rs6000)</i> called <i>ptmx (posix)</i>. Use the command: <pre>#ln /dev/ptc /dev/ptmx</pre>
HP-UX	<ul style="list-style-type: none"> • Insert entries into <i>/sbin/rcX.d</i>. This is a symbolic link to a program in <i>/sbin/init.d</i>. This should start after database startup and before <i>dtlogin</i> or any login daemons (DCE). • Insert <i>/usr/sbin:/sbin</i> at the beginning of <i>/etc/PATH</i>. • Remove <i>/usr/sbin:/sbin</i> from root <i>.profile</i>.

Step 6. Create Storage Directories

Image storage directories are where 1MAGE will store the document image files. When 1MAGE is indexing an image, an image master record ID is assigned to that image. 1MAGE performs a calculation on the image master record ID based on your system settings and decides in what image storage directory it should store the document image file.

IMPORTANT: The decision of where to create the image storage directories is very important in planning for flexibility and growth of the imaging system. Locate the storage directories on a different partition than the /1MAGE directory.

Your platform configuration, projected daily image storage volume, and online storage requirements are important factors to consider when determining the number of storage directories to create. As a rule, dispersing images on a greater, rather than lesser, number of directories makes the image retrieval processes more efficient.

Plan to make an adequate number of storage directories, so that the maximum total number of files that could exist in a single directory does not exceed 20,000. The file system is more effective when the number of files, in each of its directories, does not exceed this amount.

1MAGE does not limit the number of directories that you may create. Our expectation is that you will create the number of directories that you need to maximize the efficiency of your image retrieval.

We highly recommend that the number of directories created be a prime number, as it works to ensure an even distribution of images. For example, if creating approximately 1000 directories, 997 would be a good choice for modulo since it is the closest prime number to 1000.

NOTE: There are two available methods for creating image storage directories: Automated (Line 2) or Manual (Line 3). The automated method is preferred, as it will update the necessary files.

If the \$IMAGEHOME environment variable has not yet been set, use the complete path to where 1MAGE has been installed, for example /1MAGE.

1. Create a directory or partition named "/i"
 - i. The actual image storage directories will be stored inside this partition.
 - ii. Ensure this directory or partition is not within the /1MAGE directory or partition.
2. Create the image storage directories (Automated)
 - i. Change directories to *\$IMAGEHOME/bin*

- ii. Enter `create_imagestore` to run the automated script
- iii. When prompted, enter the directory or partition path (from line 1) where the image storage directories are to be created. For example, `/i` (without the quotations), and press Enter.
- iv. When prompted, enter the desired directory name prefix for your image storage directory names, and press Enter. This prefix will be pre-pended to each of the image storage directory names. For example, if `'i'` (without the quotations) is used as the prefix, then the image storage directories will appear as follows: `i01, i02, i03 ...`
- v. When prompted, enter the total number of image storage directories you wish to create, and press Enter.
- vi. A prompt displays requesting you to confirm the name and number of directories to be created. Press `"y"` to create the directories, or press `"n"` to abort the script.
- vii. Once the directories have been created you will be prompted to update `1MAGE.CTRL`. Answer `"y"` to have `1MAGE.CTRL` automatically configured to recognize the newly created image storage directories.

WARNING: Any existing values defining the image storage directories in `1MAGE.CTRL` will be overwritten. Answer `"y"` to this prompt only if you plan immediate use of the newly created image storage directories.

3. Create the image storage directories (Manually) This step is unnecessary if the directories were created in the previous step.
 1. Create the previously determined number of storage directories, in partition `/i`.

NOTE: Name each storage directory using the convention `./i/innnn`, where `nnnn` is 01 thru 09 (note the leading zero) and 10 thru 9999.

Although 1mage Software, Inc. suggests that the storage directories be named `/i/innn` (for example, `/i/i01`, `/i/i02`, etc.), you may name these directories anything you wish. Please make note of the naming convention used, as it is needed in future steps. For example, you may name a storage

directory /i01/STORE01, /i01/STORE02..., and record /i01/STORE for use step 6.

Alternatives to this directory-naming schema can be constructed (i.e. /2004Q1/i01, /2004Q1/i02...). Please contact 1mage Software, Inc, or your 1MAGE reseller for assistance with creating a schema, as additional steps are required.

The total number of image storage directories must be equal (or greater than) the modulo number defined in the 1MAGE/1MAGE.CTRL/MODULO file. Once you have determined the number of storage directories that will be used, record this number for use in Step 6.

2. Set file permissions for the image storage directories to be read-write.

NOTE: 1mage Software, Inc. recommends that you plan for a regular backup routine for your document image files. In addition to ensuring that all of your image files are safe, such procedures provide for limitless image storage capabilities.

For technical advice about planning and backing up your 1mage environment, contact 1mage Software, Inc. or your 1MAGE Reseller.

Step 7. Edit Essential Text Files

The text files listed within this step require modification. You may use any text editor to edit these files. Open a command console and do the following:

1. *Edit the file /etc/services*

Warning: Place these entries in their appropriate numeric position in the services file. If you insert isd as the last line in the services file, getservbyname () may fail in ic and isd

- i. Add the following lines in their appropriate location.

isd	2222/tcp	#1MAGE isd
its	5555/tcp	#1MAGE its

NOTE: The recommended port for the Image Transfer Service (its) is 5555, however, this value can be set to any available port on your server.

2. Edit the file `/etc/hosts`

- i. Add the IP address and hostname of the Image Server. Also, as needed, add the IP address of any client workstations that will be connecting to the server.

Note: If the image server is required to connect back to any clients, Client IP addresses need to have proper “reverse zone lookup” or a line item in the “hosts” file. Either host name or IP address maybe used.

3. Edit the file `1MAGE.CTRL/MODULO`

Note: This file does not need to be edited if you used the `create_imagestore` script to update `1MAGE.CTRL`.

- i. At the command prompt, go to the directory `$IMAGEHOME/1MAGE.CTRL`
- ii. Open the file `MODULO`, in a vi editor.
- iii. Ensure that the number which appears on line 1 is equal to the total number of previously created storage directories. Again, it is highly recommended that the number of storage directories be a prime number. This ensures the best possible image file distribution across the image storage directories.

1. Edit `IMAGE.CTRL/IMAGE.ENV`

Note: If you used the `create_imagestore` script to create the storage directories, in Step 6, this step will have been accomplished already. Ensuring accuracy is still recommended.

- i. At the command prompt, go to directory `$IMAGEHOME/1MAGE.CTRL`
- ii. Open the file `IMAGE.ENV` in a vi editor.
- iii. Ensure the path in the first line reflects the home directory of 1mage (`$IMAGEHOME`). If installed at root, it should read:
`/1MAGE`
- iv. Ensure the path in the second line reflects the path to the image storage directories and the prefix of the subdirectories. If created per the recommendations above (partition `i`; directory prefix `i`), it should read: `/i/i`

Step 8. Create “image” Group

Use a system administration utility or, the UNIX commands specific to your system, to add a UNIX group to the `etc/group` file. 1MAGE suggests that you name the group “image.”

Step 9. Add User(s)

At root, use a system administration utility, or the UNIX commands specific to your system, to create the following user login(s), with the following parameters:

- user login = “image, imageadm” (image is the default user, imageadm and root are default administrative users)
- group id = image
- home directory path = <\$IMAGEHOME>/ (please note forward slash)
- initial program = /bin/ksh
- If an additional administrative user is desired, repeat these instructions.

IMPORTANT: If you use Bash or Csh as your initial program, confirm that the file creation mask (*umask*) = *000(0)*. This can be quickly determined by executing the `umask` command at the UNIX prompt. If *umask* is not = *000(0)* then locate the appropriate shell rc script such as *bashrc* or *cshrc* and edit this file accordingly. On Linux environments, these files are typically located in */etc*.

WARNING: Some older versions of UNIX have `useradd` utilities that will delete the contents of a specified home directory if it already exists. Verify that the `useradd` utility will not delete the contents of the specified home directory.

Step 10. Set Password(s)

At root, use a system administration utility, or the UNIX commands specific to your system, to set the **password** for each user that was created, using proper password security.

Step 11. Update UniVerse Database File

1MAGE requires modifications to be made to the UniVerse database.

- **For UV 11.3.x and Higher:** A modified version of libu2gci.so dynamically linked library is delivered with each 1MAGE installation. This modified file needs to be copied into the `../uv/bin` directory.

1. Execute the following command to stop the database:

```
uv-admin-stop
```

2. Change directories to the bin directory inside the UniVerse directory. To find the UniVerse home directory, type the following command at the prompt:

```
cat/.uvhome
```

3. Execute the following command to rename the existing libu2gci.so dynamically linked library (where YYMMDD is the current two digit Year, Month and Day):

```
mvlibu2gci.so_YYMMDD
```

4. Use the following commands to copy 1MAGE's version of the database shell to the current directory:

```
cp/<$IMAGEHOME>/bin/install_items/  
libu2gci.so_1MAGE.11.x.x.dlllibu2gci.so
```

NOTE: The name is changed to simply 'libu2gci.so'.

5. Check permissions:

```
chmod755libu2gci.so
```

6. Use the command to re-start the database:

```
uv-admin-start
```

Step 12. Reboot

From root, type "who" to list any users currently logged on. Wait until all users are logged off, and reboot the server.

Step 13. Test 1MAGE Installation

Perform the following test procedure to confirm that 1MAGE has been installed correctly:

Telnet into the 1mage server and log in as "image". If the 1MAGE interface displays, then 1MAGE has been installed correctly. If you receive an error similar to:

"314 Cannot find SERVER hostname in network database -- IN ISP"

Confirm that the Image.clic file in \$IMAGEHOME/license is a current demo license. If you receive an error other than "314 Cannot find SERVER ...", when attempting to log in, go back to "Step 7, Edit Essential Text Files", and confirm that the essential text files have been configured correctly.

If you have checked the essential test files and you continue to receive an error when attempting to log in, call 1image Software Technical Support for assistance.

From the UV command prompt run the program "INITIAL.SETUP". This program will display for You and allow You to edit 1IMAGE settings. Values that likely need to be set are "Server IP", "1IMAGE.URL", and "1IMAGE Admin login name/group".

Step 14. Configure Printers

See "Appendix D: Printing Procedures" for complete information on configuring printers for 1IMAGE.

Step 15. Set the Disk Space Checking Threshold

Disk space checking is used to set the threshold percentage at which you want 1IMAGE to display a warning and/or abort a process. See "Appendix E: Setting up Disk Space Checking" for configuring this feature.

Step 16. Licensing

1IMAGE software is shipped with an encrypted temporary license, which allows for 500 images to be indexed and full access by all users, to the following features:

- Viewing
- Faxing
- Printing
- COLD (Computer Output to Laser Disk)
- Rendition Printing Management
- Web
- Workflow

After temporary licensing permissions expire, and permanent licensing is enabled, access is limited to the type, and number, of users, and features are limited to those that were purchased.

For more information regarding updating 1MAGE server permanent licenses, please see the Technical Bulletin “About Image Licensing,” which can be found on the documentation CD delivered with your software. It provides the information that you will need when contacting 1MAGE technical support.

In addition to updating the required 1MAGE server licenses, SwiftServ licenses will also need to be updated. The SwiftServ licenses provided with your installation are temporary licenses, and need to be updated at the same time you update your 1MAGE license. See the Technical Bulletin “SwiftServ Installation and Licensing” for complete instructions on updating your SwiftServ license.

Step 17. Custom Configuration

At this point, you should be able to log into the telnet interface to the image server. However, there are still tasks that must be completed in order to customize the image server to meet your business requirements. These remaining tasks are:

- Adding users
- Creating keys
- Creating types
- Creating categories
- Creating image queues
- Assigning scanning privileges to image queues
- Assigning indexing privileges to image queues

Before completing these tasks you should have a plan in place in how these imaging components will be organized in your business environment. Consult your document imaging plan for specific details on how to configure these components. If you do not have a document imaging plan, and would like to have one, please call 1mage Client Services at 1-800-844-1648. For specific instructions on how to complete these custom configuration tasks please refer to the system administration manual.

Appendix A: Required Linux Items

Note: Starting with UniVerse release UV 12.2.x on AIX and Linux:

The user 'uvdb' need to be created, and the packages of "libnsl" and 'ncurses-compat-libs'" need to be added before installing.

The UV "SYSTEM_BUFFER" setting will likely need to be set to the value of "0", and "uvregen" run.

1IMAGE suggests creating the following links for UNIX commands:

- `ln -s /usr/bin/tee /bin/tee`
- `ln -s /bin/more /bin/pg`

1IMAGE suggests the following packages be installed, for 1IMAGE Servers that will be running on a Linux operating system.

- General Packages
 - a. Printer Support
 - b. NFS Server (if needed for other Unix servers or stations)
 - c. SMB Server
 - d. VSFTP Server (if 1Scan transfer method is FTP)
 - e. Man Pages
 - f. Utilities
- System Environment/Shells
 - KORN
- i686 RPM packages when using 64bit O/S required for Swiftserv)
 - `glibc-2*i686.rpm`
 - `nss-softokn-freebl*i686.rpm`
 - `libxcrypt-4.1.1-6*.i686.rpm`
 - `libstdc++.i686`

IMPORTANT: For the Lunux, use 'dnf / yum' package manger

```
dnf install glibc-2*i686
```

```
dnf install nss-softokn-freebl*i686
```

```
dnf install libcrypt.so.1
```

```
dnf install libxcrypt*.i686
```

or ``rpm -iv`` to specify packages in a single command:

```
'rpm-iv_glibc-2*i686.rpm_nss-softokn-freebl*i686.rpm libxcrypt-4.1.1-6*.i686'
```

For other Linux versions, use the applicable package manager.

- i686 RPM packages for 32bit services (isd, its, 32bit UV)
 - pam-1*i686.rpm
 - libstdc++-4*i686.rpm' (needed by pam)
 - audit-libs-2.2-2.el6.i686 (needed by pam)
 - glibc-2*i686.rpm (needed by pam)
 - nss-softokn-freebl*i686.rpm' (needed by glibc)

NOTE: Both packages need to be specified:

```
'rpm-iv_glibc-2*i686.rpm_nss-softokn-freebl*i686.rpm'
```

- libselinux-2*i686.rpm (Needed by pam)
- libgcc*i686.rpm (Needed by compat-libstdc++)
- cracklib*i686.rpm (Needed by pam)

NOTE: Other packages may be added as desired. The end-use of the machine will determine which packages to install. Customer machines may also require ftp or other connectivity packages. All machines should have printer and networking packages installed.

Appendix B: Sample 1image.sh for Linux

For Linux Installations Only:
Do not change /etc/profile;
instead, create a new script in
the /etc/profile.d directory.
Script names that end in ".sh"
are automatically sourced
within /etc/profile. A sample file
is shown below: (This file is
normally provided with the
other install items.)

A copy of this file may be
found in your
\$IMAGEHOME/bin/install_item
s directory. To use this file,
move it to the /etc/profile.d
directory, rename this file, and
edit it as needed.

```
#!/bin/ksh
#####
# 1IMAGE System
# 1image.sh
# Sets up environment for 1IMAGE on RH Linux. Place
# in /etc/profile.d.
# 1IMAGE REL 8.3.1k REV 010630
# Copyright 2001 by 1IMAGE Software, Inc.
# All rights reserved.
#####
# additional variables for 1IMAGE/Linux
# compatibility.
LIBPATH=/usr/lib ; export LIBPATH
# For stdin/stdout filters in shell scripts
COLUMNS=1024 ; export COLUMNS
# UNIVERSE
UVHOME=`cat /.uvhome`/bin
if [ -d "$UVHOME" ] ; then
    PATH=$PATH:$UVHOME ; export PATH
fi
unset UVHOME
# set the 1IMAGE environment
imagehome="/1IMAGE"
if [ -f ${imagehome}/bin/profile.1image ] ; then
    initpwd=`pwd`
    cd ${imagehome}/bin
    . ./profile.1image
    cd ${initpwd}
    unset initpwd
    # custom code for WIN32 logins
    # look for "pc" in the tty's hostname
    IPNAME=`who am i --lookup | cut -d\ ( -f2 |cut -
d\ ) -f1`
    TEST=`echo ${IPNAME} | grep pc`
    if [ "${TEST}" != "" ] ; then
        SERVER_ID=${IPNAME}~WIN32~$IMAGEHOST
        export SERVER_ID
    fi
fi
unset imagehome
set -o vi
# set the umask so 1IMAGE.TRLOG files can be removed
# properly
umask 000
```

Appendix C: 1MAGE Initialization for UNIX (Other than Linux)

Currently the 1MAGE installation documentation requires */etc/profile* to contain the following entry:

```
INITPWD=`pwd`
cd /<1MAGE home directory>/bin
. ./profile.1mage
cd ${INITPWD}
```

This ensures that image users are given the proper environment to use 1MAGE when they log in. It also ensures that *isd* (image server daemon) is started with the proper environment, when the system is started. Failure to run *isd* in the proper environment will cause unpredictable results when using the 1MAGE API's.

If administrators do not want to change */etc/profile*, they must emulate two important things:

1. Setting an image user's environment at logon.
2. Setting *isd*'s environment when the system is booted.

The first item is fairly simple and can be implemented by modifying the *.profile* file in a user's home directory. Care should be taken when modifying the *.profile* file provided in the */1MAGE* directory, because it is built to service remote ASCII users. The preferred method of modifying the behavior of the *.profile*, provided by 1MAGE, is to insert a call to a user written shell script, at the beginning of the code. Remember that any modifications to 1MAGE could possibly overwrite the *.profile* file, in the */1MAGE* directory.

The second item is platform (and sometimes version) dependent. The easiest way to test that *isd* has the proper environment is to look at *\$IMAGEHOME/log/isd_2222.log*. The first few lines of this file reflect the environment *isd* is using. It is recommended that administrators modify */etc/profile* as 1MAGE suggests, reboot the system, and save the *isd_2222.log* (for future reference), before trying other profile configurations.

Currently, *isd* is started in the *rc.1mage* shell script provided by 1MAGE. *It is imperative that rc.1mage is started after Universe.* If *isd* is started from some other location, it should still follow this general sequence of events.

Appendix D: Printing Procedures

Printing capabilities for the 1IMAGE system are only functional if a relationship has been configured between UNIX and 1IMAGE. This operational configuration is achievable when you:

1. Ensure that networked attached printers that support Laser, PCL, PS, and PSII printing are operational.
2. Setup a UNIX print queue for each imaging printer. (See “Setup UNIX Print Queues”)
3. Define a `svstart.ics` file in the `1VIEW` directory that includes a printer ID number for each imaging printer. (See “Define a `svstart.ics` File”)
4. Associate the UNIX print queue you setup in Step 2 with the printer ID number you defined in Step 3. (See “Define a Network Printer”)
5. Confirm or modify the default printer value for your `default_id` login. (See “Modify Default Printer for “1IMAGE Default User” (`default_id`)”)
6. (optional) Associate other printer values with user logins or client hostnames. (See “Associate Printers With User Logins or Client Hostnames”)

➤ **Setup UNIX Print Queues**

Use your system administration utility to create UNIX print queues of **seven or fewer** characters.

When you select the name of an installed printer from the list supplied by your system administration utility, and supply its IP address, the utility automatically creates a printer queue or queues that point to the networked printer. These are either PCL (Printer Command Language) **and/or** PS (PostScript).

UNIX printer queue names should be no more than **seven characters in length**, because the UNIX utility for printing only recognizes the first seven characters as significant. When naming a queue, remember that more printers may need to be added at a later date. Use a naming convention that incorporates a numeral even if only one imaging printer is operational. For example, use “`lj1_pcl`”, so that “`lj2_pcl`” may easily be added later.

➤ **Define a `svstart.ics` File**

The file `/1IMAGE/1VIEW/svstart.ics.sample` is a sample startup `ics` (image command set) file, which lists examples of all supported

printer definitions. Because each *svstart.ics* file is configured to reflect a site's unique hardware and naming conventions, 1MAGE can only provide general guidelines for defining the *svstart.ics* file.

Use a text editor to create a new ics text file, using */svstart.ics.sample* as an example. You may also copy */svstart.ics.sample* to */svstart.ics*, and modify to your site's specifications.

Include at least four command lines in your *svstart.ics* file:

Line 1: ICS

Line 2: printer default 0.

Line 3: set filename svsave

Line 4: printer number 0 type < > command "< >" alias < >

Notice that Line 4 defines printer number 0, which is the default printer. Use subsequent lines to define printer numbers for *other* imaging printers for which UNIX print queues have been created.

Use the printer number definition command syntax format:

```
printer_number < > type < > command "< >" alias < >
```

Each element in the command syntax is explained below:

printer number (printer ID): Printer numbers range from 0 to 99 and are used exclusively by 1VIEW and 1MAGE. The printer ID "0" is always the default printer; this printer must be defined in line 4 of the *svstart.ics* file.

Every UNIX print queue created should be assigned a printer ID number. Specifically, this means that when UNIX creates both PCL and PS queues for a printer, printer numbers should be defined for *each queue* even if you do not anticipate printing to one of them.

type: The type is either an output type file or a filter. Some filters use svview command syntax and others print to default files identified by their absolute file name. The most common output file types are HPLJ3 (HP LaserJet 3/4-300dpi-PCL5 compressed images letter size) and P2_300 (PostScript Level 2 at 300 dpi using Group 4 PostScript filter). These are in **bold font** below:

HPLJ	HP LaserJet 2 - PCL 4 - 75 dpi letter
HPLJPL	HP LaserJet 2 - PCL 4 - 150 dpi letter
HPLJ2	HP LaserJet 2 - PCL 4 - 300 dpi letter
HPLJ2LEG	Same but legal sized paper
HPLJ2B	Same but B sized paper
HPLJ2A4	Same but A4 sized paper
HPLJ2A3	Same but A3 sized paper
HPLJ3	HP LaserJet 3/4 - 300 dpi - PCL 5 compressed images (letter size)
HPLJ3LEG	Same but legal sized paper
HPLJ3B	Same but B sized paper
HPLJ3A4	Same but A4 sized paper
HPLJ3A3	Same but A3 sized paper
P2_300	PostScript Level 2 at 300 dpi using Group 4 PostScript filter
P2_300LE G	Same but legal sized paper
P2_300B	Same but B sized paper
P2_300A4	Same but A4 sized paper
P2_300A3	Same but A3 sized paper
POST300	PostScript Level 1 - 300 dpi
RHPGL_A	HPGL-2 plotters with HP's RTL (Raster Transfer Language) extension, A-E size. The default model is HP250. Other HP plotter types are RHPGL_D set with the environment variable NDGH PGL.
RHPGL_B	
RHPGL_C	
RHPGL_E	
EPS24	Epson 24 pin
TF_G4	TIFF Group 4
TF_UNC	TIFF Uncompressed
TF_PAK	TIFF PackBits
TF3_96	TIFF Fax compatible Group 3 - low res
TF3_192	TIFF Fax compatible Group 3 - high res
TF2	TIFF Group 3 - not fax compatible
CALS	CALS Raster Type 1 file

command: The UNIX command string writes each page to a *tmp* file, by executing a system print command script, which is found in the NDG-supplied script file “*svprint*”. The script also removes the *tmp* file after it prints the image.

The command string is:

```
“NDGUTIL/svprint <UNIX print queue name>”
```

NOTE: The UNIX print queue name matches the UNIX print queue name created in Step one.

IMPORTANT: The script distributed in *svprint* is for System V UNIX users, which looks like:

```
lp -c -d $1 $2  
rm $2
```

- \$1 is the printer queue name
- \$2 is the temp print file name.
- The `-c` flag removes the *tmp* file after an image is printed
- The `-d` flag sends the printout to the printer where \$1 is the printer queue name.

If you are using BSD UNIX, change the script to read:

```
lpr -P $1 -r -h
```

If you are using Linux, change the script to read:

```
lpr -P $1 -r -h $2  
rm $2
```

- The `-P` flag forces output to a specific Printer, which is usually the default printer
- The `-r` flag removes the *tmp* file after an image is printed
- The `-h` flag prints each page separately and removes the header that would otherwise appear on each page and the flag.

alias: The alias helps a user quickly identify the type and location of a printer. For example, using a term like “accounting” in conjunction with a description like “HPLJ3 Letter”, for a site that has multiple HP LaserJet printers, means that the printer in the Accounting department is unambiguously identified.

The alias displays on the 1VIEW Output screen during image inquiry.

Example of a svstart.ics: The following is an example of a svstart.ics file, for a site that is printing images on an HP LaserJet3 printer and on a Talaris printer. The symbol ‘%’ identifies a comment line associated with a subsequent command line.

```

ICS

% This sets the default printer on the users “Output” menu and the
% “plot” ICS command to printer number 0

printer default 0

%This sets the default “save” file name on the users “Output” menu
%and the “plot” and “save” ICS commands to svsave.001,...

set filename svsave

%Each printer and its associated system command is defined here.

printer number 0 type HPLJ3 command “$NDGUTIL/svprint talaris” alias
“Letter PCL5 accounting”

printer number 1 type HPLJ3 command “$NDGUTIL/svprint lx1_pcl” alias
“Letter PS accounting”

```

◆ Define a Network Printer

This procedure associates a UNIX print queue with the printer ID number and designates the nature of the image classes accepted by the print queue. This data is stored in the file *1MAGE.NETPRT*.

1. Log into the 1MAGE serve through command line as image
2. Select F. 'define network printers' from the maintenance menu options.

```
<1. maintenanc> 2. phantoms 3.
+-----+
| A. system parameters |
| B. environment variables |
| C. disk space checking |
| D. define cold templates |
| E. workflow master maintenance |
| F. define network printers |
| G. setup lscan server queues |
+-----+
```

The Define Network Printers screen displays.

```
IM185          Define Network Printers          09:00:12 05 AUG
-----
Ref  Printer          Description          sview.ini Ref  Class
-----
01)  Pan              Panasonic          1              C,G,I
02)  HPLJ5             TEST DUMMY         2              C,G,I

PAGE 1 OF 1
(A)dd, (F)orward, (B)ack, (S)ave, Line number or (EX)it : █\ \
```

3. Type A and press Enter. The cursor displays in the Printer field. Type a previously defined UNIX Queue name, and press Enter. The system validates the UNIX Queue name and the cursor displays in the Description field.
4. At Description, type a descriptive name for the printer and press Enter. The cursor displays in the 1VIEW Ref field.

A code description may include any combination of 20 alphanumeric characters and spaces.

5. At *svstart.ics* Ref, type the printer ID number that defines the printer in the *svstart.ics* file and press Enter.

6. At Image classes, type one or more of the following C (for COLD), G (for GHOSTED), I (for IMAGE), L (for LINE PRINTER) and press Enter. The cursor displays at the prompt.

NOTE: You may enter combinations separated by commas; for example, C,G,I.

7. Type S and press Enter to save, then type EX and press Enter to exit. If you have not saved changes, the message `SAVE CHANGES (Y/N)?` displays.

➤ Modify Default Printer for “1IMAGE Default User” (default_id)

NOTE: This task has been moved to 1mageadmin. We recommend using 1mageadmin.

User ID	<input type="text" value="image"/>
User's Name	<input type="text" value="1 IMAGE default user"/>
Group	<input type="text" value="1 IMAGE default users"/>
Organization	<input type="text" value="--None--"/>
Email Address	<input type="text" value="info@1mage.com"/>
Log API Access	<input checked="" type="checkbox"/>
Global Security	<input type="text"/>

Tags			
H	O	Description	Value
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1IMAGE.URL path	192.168.22.208 /image.url
<input type="checkbox"/>	<input type="checkbox"/>	API Logging File	imlogfile
<input type="checkbox"/>	<input type="checkbox"/>	API Logging Parameters	API.LIST.CRIM
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Default Printer Definition	lp0
<input checked="" type="checkbox"/>	<input type="checkbox"/>	GURL JPG option	Y

Tag Code	<input type="text" value="DEFAULT.PRINTER"/>	<input type="button" value="Save"/> <input type="button" value="Delete"/>
Description	<input type="text" value="Default Printer Definiti"/>	
Tag Value	<input type="text" value="lp0"/>	

➤ Associate Printers With User Logins or Client Hostnames

NOTE: This task has been moved to 1mageadmin. We recommend using 1mageadmin.

User ID	<input type="text" value="ap1"/>
User's Name	<input type="text" value="Accts Pay user 1"/>
Group	<input type="text" value="Accounts Payable"/> ▼
Organization	<input type="text" value="Accounts Payable"/> ▼
Email Address	<input type="text"/>
Log API Access	<input type="checkbox"/>
Global Security	<input type="text" value="VENNO~1001"/>

Tags			
H	O	Description	Value
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1FAX Personal Coversheet	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1IMAGE.URL path	192.168.22.208 /image.url
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Default Printer Definition	lp0
<input checked="" type="checkbox"/>	<input type="checkbox"/>	GURL JPG option	Y
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is 1Mail enabled on this server	N

Tag Code	<input type="text" value="DEFAULT.PRINTER"/>	<input type="button" value="Save"/>
Description	<input type="text" value="Default Printer Definitio"/>	
Tag Value	<input type="text" value="lp0"/>	

<input type="button" value="Delete"/>

➤ Delete a Printer

1. Log into the 1IMAGE serve through command line as image
2. Select F 'define network printers' from the maintenance menu options.
3. Type the line number of the printer you want to delete, and press Enter. The cursor then displays at the line.
4. Press the spacebar one time and press Enter again. The printer is deleted and the list is refreshed

Appendix E: Setting up Disk Space Checking

Note: This task is available using 1mageadmin. We recommend using 1mageadmin.

Use this maintenance screen to:

- Check a directory's available disk space
- Set the "high water mark" of threshold for valid image storage partitions. (1MAGE displays a warning and/or aborts a process when this threshold is reached.)

Use the following steps to configure disk space checking.

Step 1. Select L. disk space checking from the maintenance menu options.

```

1MAGE Mai
<1. maintenanc> 2. phantoms 3.
+-----+
| A. system parameters |
| B. environment variables |
| C. disk space checking |
| D. define cold templates |
| E. workflow master maintenance |
| F. define network printers |
+-----+

```

The Disk Space Checking Parameters screen displays.

```

IM175          Disk Space Checking Parameters          09:50:25 05 AUG 2
01) Command
02) Location of %used

Ref  Partition          Max. Pct
---  -
03)  /                  90%

PAGE 1 OF 1
(A)dd, (C)heck, (D)isplay, (F)orward, (B)ack, (S)ave, Line # or (EX)it : █\ \

```

Step 2. Re-define fields 01 and 02 (if necessary)

At	Do this
01) Command	<p>Type <the prevailing platform's UNIX command for displaying a "% used" column when checking disk space> and press Enter.</p> <p>For example, type df for an AIX (IBM) box and type bdf for a HP-UX box.</p>
02) Location of %used	<p>Type the start location and the length of the "% used" display and press Enter.</p> <p>For instance, programming 37,4 would mean "When displaying the output, begin at column 37 and continue the display for four characters."</p> <p>Important Do not assume that the default location which displays after installation is correct; instead confirm that there can be a display of at least <i>four</i> characters (three digits and the % symbol) in the location you want. Using a length of four will ensure that "100%" will generate an error.)</p> <p>Make adjustments to the location if needed and save your changes.</p>

Step 3. Add partitions and set the threshold

Create all image storage partitions on the server and then add the following in IM175, Disk Space Checking Parameters:

- i01
- /1MAGE
- /tmp

Type A and press Enter. The cursor displays at a new line in the Partition column. Enter a partition name and a maximum percentage (we recommend 90%) and press Enter. If the partition name is valid, the system accepts your entry.

```

IM175                               Disk Space Checking Parameters          09:50:25 05 AUG 2
01) Command
02) Location of %used

Ref  Partition                               Max. Pct
---  -
03)  /                                       90%
      █////////////////////////////////////

PAGE 1 OF 1
Partition name.  Enter a single space to delete.

```

Step 4. Do one of the following:

- To display disk space used parameters for all directories

Type D(isplay) and press Enter to display the File System screen.

The table that displays is dependent on the operating system in use (e.g. AIX, HPUX), therefore its display is not standardized.

In the example below, which was captured on a Linux box, column headings display the File system, 1K-blocks, Used, Available, Use%, and where the file is mounted.

```

File Systems
...+...10...+...20...+...30...+...40...+...50...+...60...+...70...+...
Filesystem          1K-blocks      Used Available Use% Mounted on
/dev/mapper/vg_imagelx14-lv_root 51606140 12845300 36139400 27% /
tmpfs                1213744         0  1213744  0% /dev/shm
/dev/sda1            495844         40020   430224  9% /boot
/dev/mapper/vg_imagelx14-lv_home 22250696  176136 20944272 1% /home
...+...10...+...20...+...30...+...40...+...50...+...60...+...70...+...

Press <RETURN> to continue:█

```

- To check disk space

Type C(heck) and press Enter to display the Checking Disk Space screen.

1MAGE checks the file system disk space and reports any file systems that exceed their threshold.

```

IM175 Checking Disk Space

This checks the file system disk space and reports any errors
just like it does during normal operation.

There are no file systems that exceed their threshold percent.
Press <RETURN> to continue:█

```

Step 5. Save modifications and exit the screen.

Do *one* of the following:

- Type S and press Enter.

Type EX and press Enter. If you have not saved changes, the message SAVE CHANGES (Y/N)? displays.

Appendix F: Configuring image.cleanup.util.sh

Edit the crontab that will initiate the shell script image.cleanup.util.sh. This script cleans up temp files and logs cached by 1MAGE and Jakarta..

- 1) Login as root.
- 2) At the command line, type

```
crontab -e
```
- 3) Press Enter to display your default system editor (either vi or ed).
- 4) Add a line at the bottom of the file that states the time that you want image.cleanup.util.sh to run.
 - a. Use the syntax <minute>_<hour>_<day of month>_<month of the year >_<day/s of the week>_<pathname to 1MAGEHOME>/bin/ image.cleanup.util.sh
 - b. Use “*” for a wild card.
 - c. For example:

```
0_3_*_*_*/1MAGE/bin/ image.cleanup.util.sh
```

This entry tells cron to initiate image.cleanup.util.sh at 3:00 a.m. every day of each year.

Appendix G: Setup 1mageadmin, v1a, 1Access in Apache-Tomcat (Jakarta)

Software needed: Apache-Tomcat , Java, 1mageadmin.war v1a.war file.

Load Java JRE: Java is platform specific, Linux, and Windows versions are available from the internet. Other UNIX platforms may need to be downloaded and installed from the vendor's website or system install media. Once Java is loaded on the system, set and export the **JAVA_HOME environment variable** in /etc/profile. Also, edit the **PATH environment variable** to include Java.

Load Apache-Tomcat: Download Apache-Tomcat from "http://tomcat.apache.org/". Download the binary version. Since Apache-Tomcat is written in Java, the binary version is compatible across all platforms. Load the release in a partition with at least 50 megabytes of unused space (e.g. "/opt", or /usr/local).

Load 1mageadmin or v1a:

1. Copy the file(s) *1mageadmin.war*, and/or *v1a.war* into the "webapps" directory. (e.g. "/opt/jakarta/webapps")
2. Apache-Tomcat will extract the war files to directory(ies) named 1mageadmin, and v1a.
3. In the new directory(ies) of "*\opt\jakarta\webapps\1mageadmin\WEB-INF\classes*" and/or "*\opt\jakarta\webapps\v1a\WEB-INF\classes*", edit the file *application.properties* with your site info.

```
#Server setting parameters
imageHost=imageserver
isdPort=2222
ispPor=0
traceFlag=true
connectTimeout=60
PasswordRequiredFlag=true
```

Start up of Apache-Tomcat at boot time.

When configuring the startup scripts for boot time. The command to start Tomcat is:

```
$ cd /opt/Jakarta/bin
$ ./startup.sh
```

and the command to stop it is:

```
$ cd /opt/jakarta/bin
$ ./shutdown.sh
```

Platform	“Systemd” systems image.service startup
Linux	<ol style="list-style-type: none"> 1. Locate the unit file “jakarta.service” in the directory “\$IMAGEHOME/bin /install_items”. 2. Copy the unit file to the directory “/etc/systemd/system”. 3. Rename the unit file as needed. 4. Change the permissions on this file to “644”. 5. Change the owner and group for this file to root:root (owner:group). 6. Enable the 1MAGE service to started at boot time. “systemctl enable image.service”
Platform	SysV/ init 1mage.rc startup
Linux / Unix	<ol style="list-style-type: none"> 1. Locate the file “tomcat.rc for init.d” in the directory “\$IMAGEHOME/bin /install_items”. 2. Copy this file to “/etc/init.d” directory. 3. Rename as needed. 4. Change the permissions on this file to 755. 5. Change the owner and group for this file to root:root (owner:group). 6. Linux SysV init deprecated , If needed, ask 1Mage for older installation manual

Define the 1mage.url virtual directory.

Under the directory “\opt\jakarta\conf\” save off “server.xml”. Edit the working copy of “*server.xml*” with the following text just above the final “</Host>”

OPTION 1: (Use this context when the imageserver is the V1A server)

```
<Context path="/image.url" docBase="/1MAGE/1MAGE.URL"
debug="0">
</Context>
```

OPTION 2: (Use this context if the imageserver is not the V1A server, and 1mage.url is a Windows/SAMBA type share from the imageserver)

```
<Context path="/image.url"
docBase="//imageserver_hostname\1mage.url" debug="0">
</Context>
```

You will need to edit the “docBase” path to match your install location of 1MAGE.URL

NOTE 1: Both v1a and 1ACCESS use the virtual directory to receive images.

NOTE 2: User Permissions and Domain Users Permissions may need to be set for proper access.

NOTE 3: The virtual directory name needs to match up with the value set in the 1MAGE CLIENT.URL tag, this value is used by 1ACCESS, and v1a and needs to be setup under “default_id”. The tag maybe reset / changed for Groups or Users as needed.

NOTE 4: You may reset the port that Jakarta listens on by editing the file “\opt\jakarta\conf\server.xml”, changing the following line:

```
<Connector port="8080" protocol="HTTP/1.1"
```

NOTE 5: You may choose to setup v1a as the default website under the directory “/opt/jakarta/webapps” Stop Jakarta before making changes. If not previously done, under the directory /opt/jakarta/conf, save a copy of the “server.xml” file. Then edit the original “server.xml” file, by adding the following context statement just above the final “</Host>”

```
<Context path="/" docBase="/opt/jakarta/webapps/v1a"
reloadable="true"> </Context> (“docBase=” Path/appname
may need to be changed)
```

Appendix H: 1MAGE Installation Checklist

This checklist is provided for your convenience. We suggest that you print this checklist before installing 1MAGE, and check off items as they are completed.

- Step 1: Define Partitions
- Step 2: Install UniVerse
- Step 3: Extract 1MAGE from Install Media
- Step 4: Edit /etc/profile
- Step 5: Create Links for 1MAGE to Start at Boot
- Step 6: Create Storage Directories
- Step 7: Edit Essential Text Files
 - Step 7a: Edit /etc/services
 - Step 7b: Edit /etc/hosts
 - Step 7c: Edit /1MAGE/1MAGE.CTRL/MODULO (as needed)
- Step 8: Create “image” Group
- Step 9: Add User(s)
- Step 10: Set Password(s)
- Step 11: Update UniVerse Database File
- Step 12: Reboot
- Step 13: Test 1MAGE Installation
- Step 14: Configure Printers
- Step 15: Set the Disk Space Checking Threshold
- Step 16: Licensing
- Step 17: Custom Configuration

Appendix I: Image Content Management

The 1mage Software Document Management System now includes a new module called “Image Content Management” (ICM). This module consists of the “Auto-Indexing” and “OCR Data Mining” components:

Auto-Indexing processes AZURE supported file types, (pdf, tif, tiff, jpg, jpeg, png, gif), returning all OCR read information on the image(s). 1MAGE then indexes the image(s) by the OCR read information automatically.

Data Mining provides a way to search for specific information (data mine) indexed documents for any information that is contained on those documents using search criteria to specify what kind of data being searched for or to simply mine all the data on an image.

Auto-Indexing Component

This is a process to make the task of indexing and archiving images into the 1MAGE.MASTER image archive simple and easy. The program PROCESS.OCRINDEX will process all AZURE supported file types placed into the 1MAGE.OCRQ queue, sending them to Azure, receiving the OCR information back, and then indexing the files using the OCR data. The process creates a 1MAGE document and makes it accessible thru the SEARCH ALL feature of 1ACCESS, V1A, or through custom coding using 1MAGE APIs for integration with proprietary software.

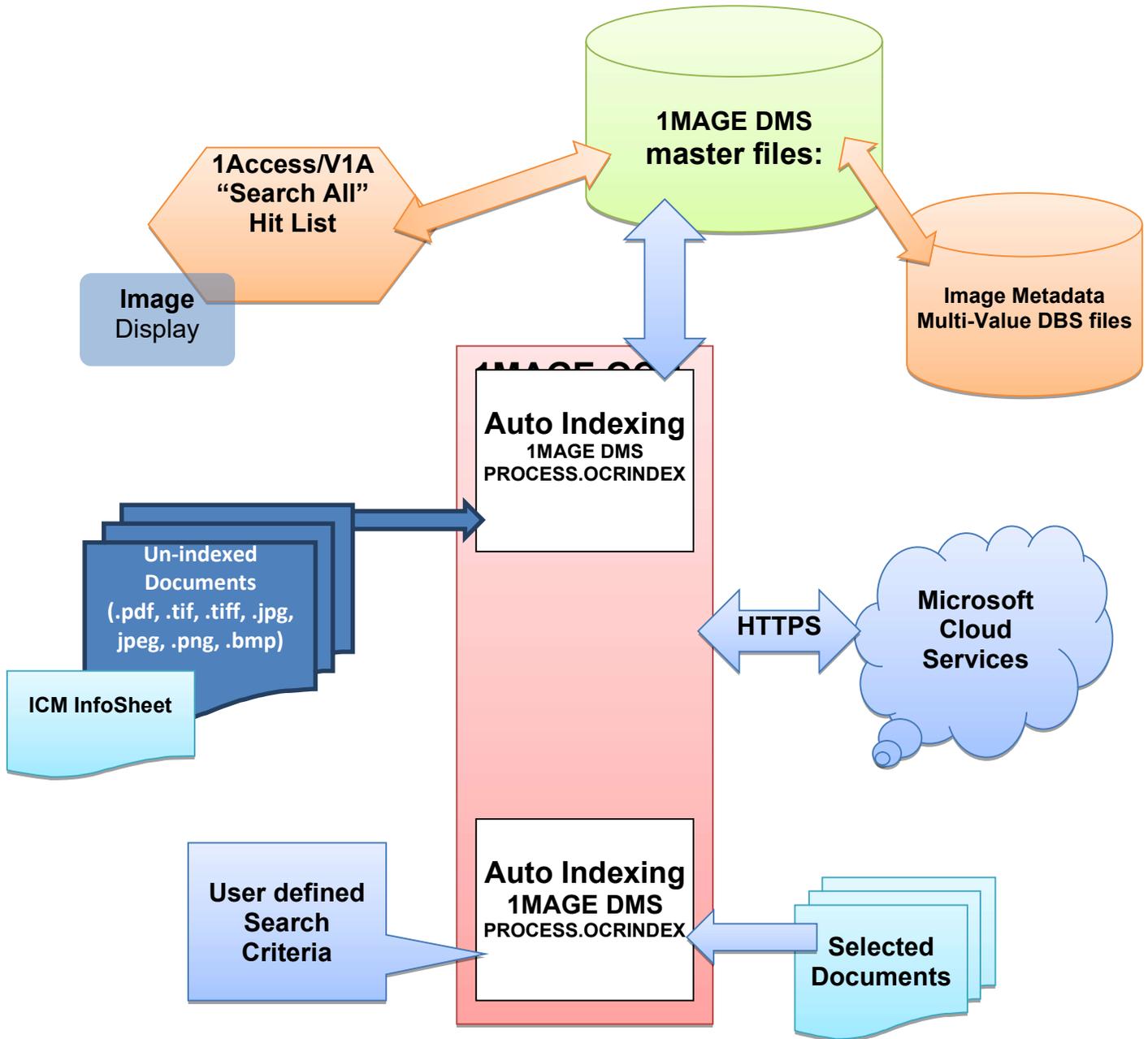
Data Mining Component

This is a process used by companies to turn raw data into useful information. By using software to look for patterns in large batches of data, businesses can learn more about their customers to develop more effective marketing strategies, increase sales, decrease costs, and identify sensitive data for both internal and external security reasons.

By combining the capabilities of Microsoft Azure and Image Content Management, it is now possible to search for OCR text information from any document stored in your 1mage system and either output that information in the form of a report, or in the form of UniVerse data file, or in the form of a custom developed user program or in the form of an Excel compatible delimited file that can be analyzed by your own custom processes.

ICM Data Mining can be performed from the “Data Mine” tab in V1A, using PROCESS.OCRINDEX to mine in the background, or through the new MOCR API that will mine in “real-time” mode.

Image Content Management Diagram



Python Installation

For ICM to successfully communicate with Azure, the image server will need to have Python installed. We recommend installing Python version 3.6 or higher.

Windows Installation

1. Open a web browser to <https://www.python.org/downloads/>
2. Download Python v3.6+
3. Run the executable file on the image server.
4. During installation, check the box that installs for all users. (see below)
5. Additionally, check the box that adds Python to PATH. (see below)



6. Click “Install Now” and allow the wizard to complete installation.
7. Open a command prompt.
8. Install the requests library with: `python -m pip install requests`
9. Restart UniVerse and ISD

Linux Installation (CENTOS and Red Hat only)

1. Open a bash terminal on the image server
2. Enable the EPEL package library with the command: `sudo yum install epel-release`
 - a. Enter the root user password and/or answer yes (y) to install the package
3. Install Python with: `sudo yum install python36`
 - a. Answer yes (y) to install the package
4. Install PIP with: `sudo yum install python-pip`

- a. Answer yes (y) to install the package
5. Make sure pip is up to date with: `sudo pip install -upgrade pip`
6. Install the requests library with: `sudo pip install requests`
7. Restart UniVerse and ISD

ICM Azure Setup

In addition to the initial 1mage installation process (or 1mage upgrade process in the case of an upgrade) ICM requires a small amount of additional online setup before the OCR and Data-Mining modules will function correctly. To keep everything as simple for our customers as possible, 1mage will take care of this entire initial setup process themselves.

For technical reference, however, here are the basic steps 1mage will follow to connect ICM to Azure:

1. New Resources, Groups, and Permissions will need to be created for a new customer in 1mage's root Azure account;
2. Azure will provide an endpoint where ICM will need to send images for OCR and Data-Mining processing;
3. 1mage will provide the new account key that will need to be used when sending images to Azure;
 - a. The key and endpoint need to be entered on the Image Server in the "1MAGE.OCTRL" file, under the "AZURE" record. From the UV prompt, use the following command to view/edit this record: **ED 1MAGE.OCTRL AZURE**

Here is example output of this record:

```
0001: https://westus.api.cognitive.microsoft.com/vision/v2.0/  
0002: 24aef4cdc2916233800abcde910106d2  
Bottom at line 2.
```

***NOTE* The security key above in line 0002: was generated randomly and will not function**

Regenerating Keys

If needed, 1mage can regenerate the unique key value at any time. When a new key is created, the new value will need to be updated in this record for 1mage and Azure to continue working together in productive harmony.