



# LISTSERV® 16.0 Installation Manual for OpenVMS

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This document describes the installation of the **LISTSERV 16.0 for OpenVMS** with a build date of **December 9, 2009**.

**Please note that OpenVMS/VAX was no longer supported as of LISTSERV version 1.8e (14.0).**

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# Section 1 Things to Consider Before Installation

## 1.1 Technical Requirements

1. LISTSERV 16.0 was built on OpenVMS V7.3 and may not work on earlier versions. Because L-Soft no longer has any working hardware running older versions of VMS, the lowest supported version is V7.3.
2. **OpenVMS (VAX): not supported.** The last version of LISTSERV to support the VAX architecture was 1.8d (13.x). Following the retirement of a trusty, 14 year old MicroVAX, L-Soft no longer has access to any VAX hardware.
3. LISTSERV 16.0 does not supports third-party TCP/IP stacks – Compaq TCP/IP Services for OpenVMS is required (UCX 4.x will also work). L-Soft believes that version 16.0 may still work with most third-party stacks, but these configurations are not supported.
4. L-Soft international, Inc.'s legacy LSMTP mailer product, or MadGoat's Message Exchange (MX) version 4.1 or higher, or Innosoft International's PMDF(R) product, version 4.2 or higher. Please note that if you choose to use LSMTP you must also install either MX or PMDF(R) if you want local mail delivery to VMSMail mailboxes.

If your TCP/IP package includes an SMTP server, you may wonder why you need to install an additional mail package when you have no trouble sending mail to/from the Internet with what you have. The reason is that you need to interface LISTSERV to the mail package - when a message arrives for the LISTSERV address, or for one of the mailing lists, it must be passed to LISTSERV for processing. Reading the corresponding MAIL.MAI files is not an acceptable solution, because important SMTP and RFC822 information is lost in the process of gatewaying the message to VMSmail. Thus, you need an interface that intercepts the message before it is passed to VMSmail, and delivers it to LISTSERV. Both LSMTP and Version 4.1 of MX include a built-in LISTSERV interface, and L-Soft has developed a LISTSERV "channel program" for PMDF® version 4.2 and above. While you can of course use other mail packages if you develop a suitable LISTSERV interface for them, it is simpler to install a product for which the work has already been done and tested. This is the reason why L-Soft recommends the use of either LSMTP, PMDF® or MX. (Remember that LSMTP does not interface directly to VMSMail and you will need either PMDF® or MX in addition to LSMTP if you want local mail delivery to VMSMail mailboxes.)

**Note:** New sales of LSMTP have been discontinued. If you have a perpetual LSMTP license, you may of course continue to use LSMTP as long as you like. However, no further patches or fixes will be available from L-Soft for LSMTP.

For more information on PMDF®, write to Sales@INNOSOFT.COM or call +1 (818) 919-3600. MX is a free product, available via anonymous FTP from FTP.SPC.EDU and a number of other sites.

**Note:** L-Soft international, Inc. ("L-Soft") does not warrant or make any representation whatsoever regarding either PMDF(R) or MX, the use thereof, or the results of such use, except insofar as their ability to successfully interface to the LISTSERV product is concerned. Under no condition shall L-Soft be liable for any indirect, consequential, or incidental damage arising from the use, the result of the use, or the inability to use such

products. The products are warranted as per their respective vendor's licensing agreements.

## 1.2 NJE mode vs TCP/IP mode

LISTSERV can operate in either TCP/IP or NJE mode. In TCP/IP mode, LISTSERV communicates with other servers over the Internet, using the SMTP protocol. In NJE mode, LISTSERV communicates with other servers over BITNET, using the NJE protocol. It is possible to install support for both TCP/IP and NJE modes, but only one mode can be active at a time.

It is unlikely that any modern site will be using NJE given that BITNET is defunct, but the instructions are included for historical reasons.

NJE mode requires the JNET(R) software package. JNET(R) is assumed to be installed if the JANSHR logical name is defined. JANSHR points to the JNET(R) shareable image. JNET(R) does not need to have been started for NJE support to be installed. However, the JNET(R) logical names should be defined before starting the installation.

TCP/IP mode requires one of several TCP/IP packages. Like JNET(R), TCP/IP packages are identified by looking for library or shareable image files. Similarly, your TCP/IP packages does not need to have been started for TCP/IP support to be installed, but the logical names do need to be defined. If multiple TCP/IP libraries are found, you will be required to choose one. You should choose the TCP/IP package that will be running when LISTSERV is running in TCP/IP mode. If you later decide to switch TCP/IP packages, you will need to reinstall LISTSERV.

## 1.3 The *LISTSERV* account

The LISTSERV account will be created by this installation if it does not already exist. LISTSERV is created with the following settings:

UIC	the UIC specified
Default	the root device and directory specified.
Access	Full Batch, No Network, No Local, No Dialup, and No Remote.
CPUTIME	0 (no CPU Time limit)
PGFLQUO	65536
WSDEF	1024
WSQUOTA	2048
WSEXTENT	16384
Privileges (Authorized and Default)	SYSNAM,SYSPRV,SYSLCK,TMPMBX[,EXQUOTA][,WORLD]

The UIC of the LISTSERV account is used as the owner UIC for all files created under LISTSERV\_ROOT. Thus, a user with the same UIC as LISTSERV will have full access to the LISTSERV files. Similarly, users in the same UIC group as LISTSERV will have group access to the LISTSERV files. It is recommended that LISTSERV be given a unique UIC in a group that is not populated by (nonprivileged) interactive users.

By default, LISTSERV's login directory is the root of the LISTSERV directory tree. This is not a requirement. The only requirement for LISTSERV's login directory is that LISTSERV needs to have write access and enough disk quota (or EXQUOTA privilege) to create its .LOG files.

The access restrictions on the LISTSERV account are recommended but not required. Full batch access is required, since the LISTSERV detached process is created by SUBMITting a batch job under a username of LISTSERV.

If disk quotas are enabled on the device containing the LISTSERV root directory, LISTSERV will either need the EXQUOTA privilege or a disk quota entry on that device.

In addition to the privileges listed above, you may need to enable some privileges for LISTSERV-NJE. The JNET® "Application Programmer's Reference" lists the privileges required for a program that uses the JNET® Application Program Interface. If you are planning to run LISTSERV in NJE mode, LISTSERV will also need the privileges listed. For versions 3.5 and 3.6 of JNET®, the only additional privilege required is WORLD, which is automatically added when you select NJE support.

## 1.4 The LISTSERV directory tree

You will be required to specify the root of the LISTSERV directory tree. If the LISTSERV account already exists, it will default to the login directory of the LISTSERV account. LISTSERV refers to this directory tree by the concealed logical name LISTSERV\_ROOT. The following directories are created by the installation:

LISTSERV_ROOT:[000000]	where the .EXE and startup files are located.
LISTSERV_ROOT:[MAIN]	where most data files are located. Also, used as a work area.
LISTSERV_ROOT:[SPOOL]	Incoming and outgoing mail spool directory.
LISTSERV_ROOT:[TMP]	Temporary (scratch) file directory.

## 1.5 LISTSERV and MX

Message Exchange (MX) is a freeware electronic mail interface. Version 4.1 introduced some additional LISTSERV support. MX now includes a LISTSERV agent which communicates directly with the local LISTSERV server passing on commands. If MX V4.1 is installed and the LISTSERV support is installed but not enabled, the installation will attempt to enable the LISTSERV support. Like JNET(R), MX does not need to be started for the installation to determine that it is there, but the MX logical names do need to be defined.

Once the installation is finished, if MX is already running and you wish to start the LISTSERV agent, use the following commands:

```
$ @SYS$STARTUP:LISTSERV_STARTUP LOGICALS

$ @SYS$STARTUP:MX_STARTUP LSV

$ RUN MX_EXE:MCP

MCP> RESET ROUTER/CLUSTER

MCP> EXIT
```

This sequence of commands will not be needed to start the LISTSERV agent every time. If you enable the LISTSERV support in MX, the LISTSERV agent will be started every time that MX is started.

**Note:** You will need to reset the MX ROUTER process every time you create a new list.

## 1.6 LISTSERV and PMDF®

PMDF® is a commercial electronic mail interface produced by Innosoft International, Inc. This installation provides an executable, PMDF\_CHANNEL.EXE, to interface between PMDF® and LISTSERV. PMDF\_CHANNEL.EXE uses the PMDF® Application Program Interface, which was introduced in version 4.2. The installation uses several of the PMDF® logical names, so, like JNET®, PMDF® does not need to be started, but the logical names need to be defined.

If PMDF® version 4.2 or higher is found, PMDF\_CHANNEL.EXE will be copied to LISTSERV\_ROOT:[PMDF] and LSV\_CHANNEL\_MASTER.COM will be copied to PMDF\_COM:. LSV\_CHANNEL\_MASTER.COM is executed by PMDF(R) to handle the LISTSERV channel; it contains the line:

```
$ run listserv_root:[pmdf]pmdf_channel
```

You will need to add the following lines to PMDF\_ROOT:[TABLE]PMDF.CNF to activate the LISTSERV channel:

```
lsv_channel logging

LISTSERV
```

In addition, you will need to add the following aliases to PMDF\_ROOT:[TABLE]ALIASES:

```
listserv:                listserv@LISTSERV

owner-listserv:          owner-listserv@LISTSERV
```

and for each of the mailing lists:

```
listname:                listname@LISTSERV
```

```

owner-listname:          owner-listname@LISTSERV
listname-request:       listname-request@LISTSERV
listname-server:        listname-server@LISTSERV
listname-search-request: listname-search-request@LISTSERV
listname-signoff-request: listname-signoff-request@LISTSERV
listname-subscribe-request: listname-subscribe-request@LISTSERV
listname-unsubscribe-request: listname-unsubscribe-request@LISTSERV

```

You will need to add these eight aliases for each new mailing list you create.

The LISTSERV\_ROOT:[PMDF] directory will be created if PMDF(R) support is installed. This directory should contain the following PMDF-related files:

LINK_PMDF_CHANNEL.COM	used to link a new version of PMDF_CHANNEL.EXE. Needs to be done each time you install a new version of PMDF®.
LSV_MAILIN_RTN.OBJ	object code for LISTSERV interface routines
PMDF.OPT	an options file specifying the PMDF® shareable image.
PMDF_CHANNEL.C	C source code for PMDF_CHANNEL.EXE.
PMDF_CHANNEL.EXE	LISTSERV channel program.
PMDF_CHANNEL.OBJ	object code for PMDF_CHANNEL.EXE

**Note:** PMDF\_CHANNEL.EXE will need to be relinked each time you install a new version of PMDF®. The following command will relink PMDF\_CHANNEL.EXE:

```
$ @LISTSERV_ROOT:[PMDF]LINK_PMDF_CHANNEL
```

## 1.7 LISTSERV and JNET®

You will need to make some modifications to JANTIDY.COM, if you use it to restart JNET(R) every night. JANTIDY.COM needs to be modified to stop and restart the LISTSERV process. The command to stop the LISTSERV process:

```
$ @LISTSERV_ROOT:[000000]STOP_LISTSERV
```

needs to be placed before the "jcp shutdown". The command to restart the LISTSERV process is:

```
$ @SYS$STARTUP:LISTSERV_STARTUP START
```

It needs to be placed after the "@janstart warm".

## **1.8 Failover facility**

LISTSERV for VMS now includes "failover" functionality. The failover facility allows you to build a fully-redundant LISTSERV configuration based on an OpenVMS cluster with shared mass storage (CI, SCSI cluster, etc.). Failover can take place among any number of suitably-configured nodes. Following a failover, the service will automatically migrate back to the designated primary when it is returned to operation. A priority scheme allows you to establish a hierarchy of failover nodes from most to least preferred (nodes with the same priority are treated as peers).

The failover facility requires a special add-on license on top of your base LISTSERV license. However, only one base LISTSERV license is required, regardless of the number of failover nodes. In other words, the standby nodes do not consume a license until they take over from the primary, at which point the primary has relinquished its use of the base license.

For more information on the LISTSERV for VMS failover facility, please download our white paper "Implementing the LISTSERV failover facility" from <ftp://ftp.lsoft.com/documents/WhitePaper-VMSfailover.txt> .

## Section 2 Quick Installation

We recommend that you take a few moments to read this installation guide before starting the installation of LISTSERV. The software is delivered in VMSINSTAL format, downloadable from FTP.LSOFT.COM as a ZIP file. To extract the VMSINSTAL savesets from the ZIP file, type:

```
$ UNZIP = $directory:UNZIP.EXE
```

```
$ UNZIP xxxxxx.ZIP
```

You can get a copy of UNZIP.EXE from L-Soft, or from <http://www.info-zip.org/UnZip.html> . Then, to begin installation, login as SYSTEM and type:

```
$ @SYS$UPDATE:VMSINSTAL LSV018 directory
```

For instance:

```
$ @SYS$UPDATE:VMSINSTAL LSV018 DKA100:[LISTSERV_ROOT]
```

**Note:** If the directory you specify does not exist, then VMSINSTAL will prompt you to supply it.

## Section 3 Installing LISTSERV

### 3.1 LISTSERV executables

The LISTSERV installation is responsible for providing three executables: LSV.EXE, LSV\_MAILIN.EXE, and LCMD.EXE. LSV.EXE is the program that is run by the server process. LSV\_MAILIN.EXE is a standalone incoming mail interface for LISTSERV. It allows you to route mail to LISTSERV from DCL level. By default, LSV\_MAILIN.EXE is not installed with privileges. If you plan to use LSV\_MAILIN.EXE, it will either need to be installed with or run from an account that has SYSLCK and SYSPRV.

LCMD.EXE is used to send commands directly to the local server (instead using mail or going through the NJE interface). Commands sent via LCMD are executed ahead of commands received via mail or NJE files; this can be particularly useful when the server is backlogged. LCMD.EXE requires SYSPRV and SYSLCK. However, if you wish to allow general users to use LCMD, you can install it with those privileges. LCMD.EXE also needs to be able to create files within LISTSERV\_SPOOL\_DIR. The default LISTSERV\_SPOOL\_DIR, LISTSERV\_ROOT:[SPOOL] is created with a SYSTEM protection of RWE, allowing users with SYSPRV to create files within it. If you relocate LISTSERV\_SPOOL\_DIR, you will need to keep SYSTEM:RWE protection on the directory file.

LCMD must be defined as a DCL verb. If you choose not to add LCMD to DCLTABLES, you will need to add it to your process command table with the following command:

```
$ SET COMMAND LISTSERV_ROOT:[000000]LCMD
```

LISTSERV\_ROOT:[000000]LCMD.CLD is the command definition file for the LCMD command. Consult the SET COMMAND documentation for more information on DCL verbs and command tables.

In addition to adding LCMD to DCLTABLES, the installation will add the help for LCMD to the help library of your choice. The installation displays the names of the help libraries accessed by the DCL HELP command: SYS\$HELP:HELPLIB.HLB, HELP\_LIBRARY, HELP\_LIBRARY\_1, etc. The help for LCMD will be available from DCL (\$ HELP LCMD) if you choose one of these libraries. The help text for LCMD, LISTSERV\_ROOT:[000000]LCMD.HLP, is provided if you later decide to add or relocate the LCMD help.

### 3.2 Downloading and Running VMSINSTAL

Log in as SYSTEM, or as an account with system-level privileges. Next, create a scratch directory, and make it the default. (Do not attempt to install LISTSERV into the same directory from which you do the installation, as this is destined to fail.) For the purpose of example, we will assume that you are creating the scratch directory DKA100:[LISTSERV-SCRATCH].

```
$ create /directory dka100:[listserv-scratch]
```

```
$ set default dka100:[listserv-scratch]
```

Next, download the appropriate kit from <ftp://ftp.lsoft.com/listserv/vms> into DKA100:[LISTSERV-SCRATCH]. This will be either AXP.ZIP or VAX.ZIP, depending on your

hardware. Then, unzip the file (for our example we will assume that you are installing on Alpha hardware, and that you have already downloaded and installed UNZIP.EXE).

```
$ unzip axp.zip
```

Finally, run VMSINSTAL against the savesets.

```
$ @sys$update:vmsinstal lsv018 dka100:[listserv-scratch]
```

This results in the following conversation. Output of VMSINSTAL is displayed in fixed-width type. Our responses are shown in **<bold sans-serif type>**, and comments that are not part of the installation program are shown in plain sans-serif type.

```

      OpenVMS AXP Software Product Installation Procedure V7.3-1

It is 16-JUL-2003 at 10:07.

Enter a question mark (?) at any time for help.

* Are you satisfied with the backup of your system disk [YES]? <return>

The following products will be processed:

      LSV V1.8

      Beginning installation of LSV V1.8 at 10:12

%VMSINSTAL-I-RESTORE, Restoring product save set A ...

      LISTSERV(R) for VMS, Version 1.8e

      Copyright L-Soft international, 1986-2002

* Do you want to purge files replaced by this installation [YES]?
<return>

%LSV-I-NONJE, Jnet was not found

-LSV-I-NONJE, LISTSERV-NJE support will not be installed

TCP/IP Libraries have been found for the following products:

      1. DEC TCP/IP Services for VMS (UCX)

%LSV-I-TCPIP, LISTSERV TCP/IP support will be installed.

      LISTSERV requires the creation of the LISTSERV account. The files
      provided by this installation should be stored under the login
      directory of this account. These files may be relocated, if
      desired. Consult the installation guide for more information.

Looking for the LISTSERV account ...
```

\* What UIC do you want to use for the LISTSERV account [[100,100]]:  
**<return>**

\* Where should the LISTSERV root directory be located  
 [SYS\$SYSDEVICE:[LISTSERV]]: **<return>**

If disk quotas are enabled on the LISTSERV device, you will either need to set a disk quota entry for LISTSERV or grant the EXQUOTA privilege to LISTSERV.

\* Do you wish to grant EXQUOTA to LISTSERV [YES]? **<return>**

```
%VMSINSTAL-I-ACCOUNT, This installation creates an ACCOUNT named
LISTSERV.
%UAF-I-ADDMSG, user record successfully added
%UAF-I-RDBADMSGU, identifier LISTSERV value [000100,000100] added to
rights database
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named
LISTSERV.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named
LISTSERV.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[LISTSERV].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[LISTSERV.MAIN].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[LISTSERV.TMP].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[LISTSERV.SPOOL].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[LISTSERV.LOG].
```

It appears that MX is not installed on this system. MX (Message Exchange) is a freeware electronic mail interface. MX version 4.1 now includes an agent which directly interfaces with LISTSERV.

Consult the installation guide if you later decide to install MX.

Building SITE\_CONFIG.DAT.

SYSTEM\_CONFIG.DAT and SITE\_CONFIG.DAT are read when the LISTSERV process is created. They contain logical name definitions that are used to control the operation of LISTSERV. SYSTEM\_CONFIG.DAT contains defaults. You should limit your modifications to SITE\_CONFIG.DAT.

If you wish to modify the contents of SITE\_CONFIG.DAT once the installation is finished, you should use the configuration utility provided. To execute this utility type:

```
$ @LISTSERV_ROOT:[000000]LISTSERV_CONFIGURE
```

The NODE logical name should contain the local host name. NODE is used to control whether LISTSERV operates in TCP/IP or NJE mode. If NODE is an Internet host name, LISTSERV-TCP/IP will be enabled. If NODE is a BITNET nodeid, LISTSERV-NJE will be enabled.

\* Enter the LISTSERV node name [VMS001]: **LISTSERV.EXAMPLE.COM<return>**

**Note:** The node name suggested by the installation program is the VMS system name. Under the assumption that you are NOT installing into an NJE (BITNET) environment, you should NOT take the default, but rather should enter the fully-qualified DNS hostname you wish for LISTSERV to identify itself with.

If you take the default and you are not operating in an NJE environment, a message will be displayed telling you that you can't do that, and you will be presented with the question again.

The MYDOMAIN logical name should list all possible variants of the local host name. If this is a BITNET site, you should list both the nodeid and nodeid.BITNET forms. For example, the following is the MYDOMAIN logical for the SEGATE system:

```
SEGATE.SUNET.SE SEGATE.BITNET SEGATE
```

\* Enter the MYDOMAIN value for this system [LISTSERV.EXAMPLE.COM]:  
**<return>**

The LOCAL logical name is a list of one or more wildcarded strings that identify hostnames that should be handled locally.

\* Enter the LOCAL value for this system [\*.EXAMPLE.COM]: **<return>**

The TZONE logical name should contain the local time offset from Greenwich Mean Time or one of the standard timezone abbreviations.

\* Enter the TZONE value for this system [EST]: **<return>**

**Note:** TZONE will default to whatever the VMS system time zone is set to.

The CREATEPW logical name should contain the password required to create a list.

\* Enter CREATEPW value for this system [XXXXXXXX]: **LUXFIAT<return>**

The STOREPW logical name should contain the password required for other privileged commands.

Note: At present, there are no other privileged commands.

**Note:** STOREPW should simply be set to the same value as CREATEPW.

\* Enter STOREPW value for this system [XXXXXXXXX]: **LUXFIAT**<return>

The POSTMASTER logical name should list the addresses of the users responsible for managing LISTSERV on this system. POSTMASTER is used to identify users who are authorized to send privileged commands to LISTSERV and to identify the users who should be notified in case of errors. Addresses that appear after a "quiet:" keyword are authorized to send privileged commands but are not notified of errors. For example, a POSTMASTER value of

```
JOE@XYZ.EDU quiet: JACK@XYZ.EDU JIM@XYZ.EDU
```

authorizes Joe, Jack, and Jim to send privileged commands, but only Joe will be notified of LISTSERV errors.

\* Enter the POSTMASTER value for this system  
[LISTMGR@LISTSERV.EXAMPLE.COM]: **<return>**

The STARTMSG logical name should list the addresses of users who should be notified when LISTSERV starts. Enter NONE if you do not wish any notification.

\* Enter the STARTMSG value for this system  
[LISTMGR@LISTSERV.EXAMPLE.COM]: **NONE**<return>

The MYORG logical name, the short organization name, appears on the "From:" line of messages sent from LISTSERV. It should be kept reasonably short to avoid causing the "From:" to extend over multiple lines.

\* Enter the MYORG value for this system [LISTSERV.EXAMPLE.COM]: **<return>**

**\*\* TCP/IP mode only \*\***

LISTSERV can be configured to deliver mail in either synchronous or asynchronous mode. In synchronous mode, mail is forwarded by the LISTSERV server process during the course of its duties. In asynchronous mode, mail is delivered by one or more SMTP worker processes. Each worker process is assigned a host to which it will connect and forward mail messages.

\* Do you wish to use asynchronous mode [YES]? **<return>**

We recommend that you create one worker process per 10,000-50,000 mail messages delivered per day.

\* How many worker processes do you wish to create: 1 <return>

%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named LISTSERV.

%UAF-I-MDFYMSG, user record(s) updated

\* Enter the host name for worker # [LISTSERV.EXAMPLE.COM]: <return>

LCMD.EXE is used to send commands to the LISTSERV process. If you want to allow general users to use LCMD, it will need to be installed with SYSPRV and SYSLCK.

Note: Installing LCMD with SYSPRV and SYSLCK will NOT allow unauthorized users to send privileged commands.

\* Do you want to install LCMD with SYSPRV and SYSLCK [YES]? <return>

\* Do you want to add LCMD to DCLTABLES [YES]? <return>

\* Do you want to add the LCMD help to a library [YES]? <return>

There are several help libraries in which the LCMD help can be placed. Some of them are:

SYS\$SYSROOT:[SYSHLP]HELPLIB.HLB

\* Where do you wish to put the LCMD help  
[SYS\$SYSROOT:[SYSHLP]HELPLIB.HLB]: <return>

No more questions will be asked during the installation. The remaining steps will take between 5 and 30 minutes depending upon your CPU, installation media, etc.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...

Linking LSV.EXE ...

Linking LSV\_MAILIN.EXE ...

Linking LCMD.EXE ...

Linking SMTPW.EXE

%VMSINSTAL-I-RESTORE, Restoring product save set D ...

To start LISTSERV at system startup, you will need to add the following command to the system startup command procedure:

```
$ @SYS$STARTUP:LISTSERV_STARTUP
```

LISTSERV should be started after Jnet or your TCP/IP package depending upon whether you are running in NJE or TCP/IP mode.

If this is a new installation, you will need to register a License Activation Key (LAK) before LISTSERV will start. Your LAK should be contained in a file called LICENSE.MERGE. To install the LAK, define the LISTSERV logical names with:

```
$@SYS$STARTUP:LISTSERV_STARTUP LOGICALS
```

and then follow the instructions found in LICENSE.MERGE. For more information on LAKs, consult the installation guide.

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
```

```
Installation of LSV V1.8 completed at 10:29
```

```
Adding history entry in VMI$ROOT:[SYSUPD]VMSINSTAL.HISTORY
```

```
Creating installation data file: VMI$ROOT:[SYSUPD]LSV018.VMI_DATA
```

```
VMSINSTAL procedure done at 10:29$
```

### **3.3 IMPORTANT - License Activation Key**

Before you can start up LISTSERV, you will need to install a License Activation Key (LAK) for 'LISTSERV-VMS-xxx' (xxx = AXP, or a wildcard for architecture-independent licenses). LAKs are similar to PAKs, but are installed differently. The reason we do not use PAKs is that we support LISTSERV on IBM® mainframes and unix® and Microsoft Windows® systems, where PAKs are not available. In order to offer the same range of services on all systems, we had to develop our own "license key" scheme. Using PAKs for OpenVMS(tm) and LAKs for other system would have required us to develop two parallel authorization schemes, and would also complicate the task of issuing license keys to customers. Since LISTSERV is a server and typically runs on a single cluster member, there was no technical advantage to the use of PAKs, other than having all the licensing information in a single place.

Just like PAKs, LAKs are not included in the VMSINSTAL kit and must be installed separately. However, since the LAK manager is part of LISTSERV, you must install LISTSERV (LSV018) before you can install the LAK. Once LISTSERV is installed, run:

```
$@SYS$STARTUP:LISTSERV_STARTUP LOGICALS
```

and follow the instructions in the License Registration Form that came with your media. For evaluation kits, the License Registration Form is the file called LICENSE.MERGE in the FTP directory where you found the AXP.ZIP file. That file is also included in the ZIP file itself.

## Section 4 Starting LISTSERV to Verify a Successful Installation

Once you've finished the LISTSERV installation, you're ready to start LISTSERV and verify its successful installation.

The LISTSERV installation creates SYS\$STARTUP:LISTSERV\_STARTUP.COM to start LISTSERV. It contains a hard coded reference to the root directory chosen during the installation. The other startup files determine the root directory by virtue of their own location. Thus, if you decide to move the LISTSERV root directory, you will need to modify SYS\$STARTUP:LISTSERV\_STARTUP to point to the new root. The following startup files are located in the root directory:

CREATE_LISTSERV.COM	used to create the server process.
GO.COM	executed by the server process to set up its environment.
LISTSERV_CONFIGURE.COM	the server configuration utility.
LISTSERV_INSTALL.DAT	lists the files to be installed at startup.
LISTSERV__STARTUP.COM	the real startup file. It is executed by SYS\$STARTUP:LISTSERV_STARTUP.COM.
STOP_LISTSERV.COM	send a STOP command to the server.

LISTSERV\_\_STARTUP.COM will take a comma-separated list of options including LOGICALS, to define the logical names; INSTALL, to install the .EXEs; and START, to start the server process. If no options are specified, all three options are chosen.

GO.COM references a couple of files in LISTSERV\_FILES\_DIR (by default LISTSERV\_ROOT:[MAIN]): SYSTEM\_CONFIG.DAT and SITE\_CONFIG.DAT. These files contain process-table logical names that are defined for the server process. SYSTEM\_CONFIG.DAT contains the default values. SITE\_CONFIG.DAT can be used to override the defaults. You should confine your modifications to SITE\_CONFIG.DAT. If SITE\_CONFIG.DAT has not been created at install time, the installation will create a new one based on some questions asked. The installation will ask you to specify a value for the following logical names:

NODE	the local node name. If you specify an Internet host name, LISTSERV-TCP/IP will be enabled. If you specify a BITNET nodeid (without the .BITNET), LISTSERV-NJE will be enabled.
MYDOMAIN	Lists the possible host names for this system. If this is a BITNET site, you should include the nodeid and nodeid.BITNET forms.
LOCAL	Lists wildcarded host names that identify the "local" mail.

TZONE	the Greenwich Mean Time offset for your location. The value should take the form +hhmm or -hhmm. For example, -0500 is the GMT offset for Eastern Standard time. Timezone abbreviations such as EST, CET, JST, etc. will also work.
CREATEPW	the password required to create a list.
STOREPW	the password required for other privileged commands.
POSTMASTER	lists the addresses of people who manage LISTSERV on this system. If a user appears in the list, they are authorized to send privileged commands. IF a user appears in the list, but not after a "quiet:". they will be notified of server errors.
STARTMSG	lists the addresses of users to be notified when the server starts.
MYORG	your "organization name." This appears on the "From:" line of messages from LISTSERV, so you should try to keep it short to avoid a multi-line "From:."

LISTSERV\_CONFIGURE.COM can be used to update the values stored in SITE\_CONFIG.DAT. If you make modifications while the LISTSERV process is running, you will need to restart it (`$ LCMD STOP REBOOT`) before the changes will take effect.

To start LISTSERV at system startup, you should add the following command to the system startup command procedure:

```
$ @SYS$STARTUP:LISTSERV_STARTUP
```

LISTSERV should be started after JNET® or your TCP/IP package depending upon whether you are running in NJE or TCP/IP mode. If have installed MX along with its LISTSERV support, you will need to add the following commands to the system startup command procedure:

```
$ @SYS$STARTUP:LISTSERV_STARTUP LOGICALS
```

```
$ @SYS$STARTUP:MX_STARTUP
```

```
$ @SYS$STARTUP:LISTSERV_STARTUP
```

This sequence of commands should replace the "@SYS\$STARTUP:MX\_STARTUP" that started MX. Note: if you are running LISTSERV in NJE mode and the server reports an error starting the JNET(R) interface, make sure it has the necessary privileges. If you had to abort it with STOP/ID or Ctrl-Y, you may have to issue the following command:

```
$ JCP REMOVE/HOOK LISTSERV
```

## Section 5 Registering the Server

**Note:** This section does not apply to evaluation kits or to LISTSERV Lite or Shareware kits. Evaluation copies of LISTSERV should not be registered because they are (presumably) temporary servers running test lists, whose existence should not be broadcast. LISTSERV Lite and Shareware kits are automatically registered via a different process.

Once the server is ready for production use (that is, once you have purchased and installed a permanent License Activation Key, and once you have arranged for LISTSERV to be started automatically when the system boots), you should consider registering it with L-Soft. Registering the server is necessary to broadcast its existence to the other LISTSERV servers and to receive automatic, periodic updates of LISTSERV's networking tables. Once you have registered, your server will also be sent periodic updates about the public lists hosted by other LISTSERV sites, and, similarly, other LISTSERV sites will receive information about the public lists you are hosting. Registration also makes it possible to assign the most efficient DISTRIBUTE routing path for your server.

Please note the following requirements for registration:

L-Soft registers only sites that have unlimited (UNITS=0) licenses or sites licensed for DISTRIBUTE-only use, which are running version 1.8d or higher of LISTSERV Classic or LISTSERV Classic HPO. (Versions prior to 1.8d are not Y2K compliant and therefore sites seeking new LISTSERV registrations must be running the release version of 1.8d or later.)

In order to qualify for registration, a LISTSERV site must also:

- Be running in NETWORKED runmode. If you have RUNMODE=STANDALONE or RUNMODE=TABLELESS in SITE.CFG, you must remove the RUNMODE line (or change it to RUNMODE=NETWORKED) and stop and restart the server before registering.
- Be readily accessible via the Internet by e-mail from outside users.
- Have a name that is unlikely to change any time soon. For instance, LISTSERV.EXAMPLE.ORG, LISTS.EXAMPLE.EDU, and LSV.EXAMPLE.COM are completely acceptable (although we strongly suggest using "LISTSERV" rather than "LISTS" or "LSV", simply because that is what most users are familiar with), whereas something like A8B703A.CC.EXAMPLE.EDU is not. If you are running a test server that you plan to rename later when it goes into production, do not register the server until it is running under its final name. Note also that a hostname containing "LISTSERVE", "LISTSERVER", or any other misspelling of "LISTSERV" is not acceptable.
- Have an A or MX record in DNS corresponding to the value you place in the NODE section (an A record is recommended at minimum).

L-Soft does not register sites running evaluation kits, LISTSERV Lite, or LISTSERV shareware. Requests to register such sites will be discarded.

L-Soft cannot register intranet sites since by definition such sites are not accessible via the Internet. Registration requires that your LISTSERV site be readily accessible via e-mail by

outside users.

If your LISTSERV Classic site does not meet the above criteria, there are other options for keeping your LISTSERV networking tables current (which is the most important reason for registering the software). See <http://www.lsoft.com/table-updates.html> for more information.

You may submit an online registration form at <http://www.lsoft.com/regform.html> . If there are special considerations for your site that are not covered by the standard form, or if you are unable to access the web site, you can contact [registrar@lsoft.com](mailto:registrar@lsoft.com) to obtain a registration form. When contacting the site registrar, please tell us what operating system LISTSERV is running under so that we can send you the proper form.

### **5.1 Automatic Registration for LISTSERV Lite Servers**

LISTSERV Lite servers are registered automatically when you start the software for the first time. This auto-registration is not optional for Free Edition servers, but may be disabled for non-Free Edition Lite servers by specifying STANDALONE runmode (see "RUNMODE=" in the [Site Configuration Keyword Reference](#) document for LISTSERV).

The auto-registration allows you to take part in the global List of Lists and CataList services maintained by L-Soft. Registrations are verified on a regular basis by a central L-Soft server, which sends out several informational commands that return non-privileged information about your server (anyone can issue these commands). Since these registrations are maintained by regular communication with your server, please note that, should you decommission the server, registration verifications will continue to be mailed to your server for several days until the central server decides that your server is actually gone, and not simply unable to receive mail for some reason. Please note carefully that it is not possible for L-Soft to stop these registration queries manually even if you write to us and tell us that the server has been shut down permanently. They will stop after several days without a response.

## Section 6 Installing the LISTSERV Web Interface

**Note:** Under OpenVMS, L-Soft cannot guarantee future compatibility between its web archive/administration interface and web server software other than the Compaq Secure Web Server (CSWS). CSWS is an Apache-based web server provided by Compaq at <http://www.openvms.compaq.com/openvms/products/ips/apache/csws.html> (as of 23 May 2002).

1. Copy the WA.EXE executable from LISTSERV's MAIN directory to the CGI script directory for your web server. You can rename WA.EXE to something else, but a short name will help keep the HTML documents small! WA.EXE must have ACLs set such that it can be executed by whatever userid the web server is running under (and in turn, that userid must have read access to the directories under which LISTSERV will keep web archive notebooks).
2. Create a subdirectory on your web server to contain the various files LISTSERV will be creating. You should not use your main directory as LISTSERV will create quite a few files! The suggested name is 'archives'.
3. Define the systemwide logical LISTSERV\_WWW\_ARCHIVE\_PATH to point to the directory you just created, and LISTSERV\_WWW\_ARCHIVE\_URL with the URL to the directory in question (preferably relative). You may also need to define the systemwide logical LISTSERV\_TCPGUI\_IPADDR containing the IP address of the web server.
4. Modify LISTSERV's configuration to add two variables, as follows:

WWW_ARCHIVE_CGI	is the relative URL that leads to the CGI script you have just installed. Typically this will be something like '/htbin/wa.exe'. This is a URL, not an OS path name.
WWW_ARCHIVE_DIR	is the full path name to the directory you created in step 2.

For each list that you want accessible through the web interface, you must create a subdirectory in the directory you created in step 3, named like the list. For instance, if you create 'archives/xyz-l', the list XYZ-L will be accessible through the interface. Note that only lists with public archives are ever made accessible, for security reasons.

Finally, reboot LISTSERV. It should create a file accessible with the URL <http://localhost/archives/index.html>, and from there you should be able to access all the postings.

## Section 7 Upgrading your LISTSERV Installation

Because of non-backward-compatible changes made by LISTSERV 16.0 to the format of LISTSERV's SIGNUP files which allow UTF-8 characters to be used in passwords, and the addition of non-reversible subscriber password encryption, L-Soft **STRONGLY RECOMMENDS** that, prior to upgrading, a full backup be made of your LISTSERV installation.

L-Soft recommends reading the [LISTSERV 16.0 release notes](#) before proceeding with the upgrade.

### **IMPORTANT: LISTSERV 16.0 requires a version 15.0 LAK!**

You must obtain and install a LISTSERV version 16.0 product LAK prior to upgrading your server, or LISTSERV will not start after the upgrade.

**IMPORTANT: Install your LISTSERV 16.0 product LAK before upgrading!** A valid product LAK (License Activation Key) with "REL=16.0" must be installed before upgrading or LISTSERV will not start after the upgrade.

If you have not received a LISTSERV 16.0 product LAK, please contact your sales representative or SALES@LSOFT.COM before upgrading!

If your product LAK has EXP=NEVER, you will also need to install an appropriate LISTSERV maintenance LAK.

To find out if you can upgrade to LISTSERV 16.0 with your current LAKs, please issue a SHOW LICENSE command to LISTSERV and examine the response. It will be similar to this:

```
License type:          Permanent
Expiration date:      None - perpetual license
Maintenance until:    26 May 2009, serial number MNT-XYZ-1
Capacity:             Unlimited
Version:              16.0
Serial number:        XYZ-1
Build date:           9 Dec 2009
```

Your license key will be valid for the 16.0 upgrade if your current product LAK is for version **16.0 or higher** and your maintenance is **not expired**.

If you have received a new LAK but not yet installed it, first, install the new LAK onto your old installation, following the instructions that come with the LAK. Send LISTSERV a "SHOW LICENSE" command after restarting LISTSERV to ensure that the new LAK has been installed properly.

Your 16.0 license key will work with older versions of the product, so it may be installed on an older version without causing a problem. Please contact your sales representative or write to SALES@LSOFT.COM if you did not receive your new license key.

**DO NOT PROCEED FARTHER UNTIL YOU HAVE INSTALLED YOUR LICENSE KEY!**

The upgrade kits for OpenVMS can be downloaded from [the LISTSERV evaluation kit download page](#). Simply choose the correct kit for your AXP hardware architecture and install it over your existing installation. Your current configuration, lists, and other settings will be preserved. Note that evaluation kits are production code limited only by an evaluation LAK, which your production LAK will override.

Again, L-Soft recommends making a backup of your entire LISTSERV directory tree before updating the code.

To install, stop LISTSERV, then run VMSINSTAL on the new kit. The kit will automatically update your previous installation.

Contact L-Soft technical support (see the options below for contacting support) if you have any question regarding the upgrade procedure. Please note that technical support is unable to assist with licensing issues; you should contact the sales group in that case.

## Section 8 Additional Resources

### 8.1 Documentation

#### 8.1.1 Manuals

All of L-Soft's formal documentation for LISTSERV, including its manuals, installation guides, and online help systems, is available at <http://www.lsoft.com/manuals> .

#### 8.1.2 White Papers

L-Soft frequently publishes white papers on specific topics for our products. These white papers are available at <http://www.lsoft.com/resources/whitepaper.asp> .

#### 8.1.3 Tech Tips

Every quarter, L-Soft's newsletter, LISTSERV at Work, is released and contains Tech Tips that are written by L-Soft specialists with the goal of giving our customers some advice and expert guidance with specific topics regarding our products. For a complete list of these Tech Tips, go to <http://www.lsoft.com/resources/techtip.asp> .

### 8.2 Mailing Lists

There are several mailing lists dedicated to the support of LISTSERV.

<a href="mailto:LSTSRV-L@PEACH.EASE.LSOFT.COM">LSTSRV-L@PEACH.EASE.LSOFT.COM</a>	for LISTSERV maintainers and interested list owners
<a href="mailto:LSTOWN-L@PEACH.EASE.LSOFT.COM">LSTOWN-L@PEACH.EASE.LSOFT.COM</a>	for LISTSERV list owners
<a href="mailto:LISTSERV-LITE@PEACH.EASE.LSOFT.COM">LISTSERV-LITE@PEACH.EASE.LSOFT.COM</a>	for LISTSERV Lite users
<a href="mailto:LISTSERV-DEVELOPERS@PEACH.EASE.LSOFT.COM">LISTSERV-DEVELOPERS@PEACH.EASE.LSOFT.COM</a>	for third-party developers using features documented in the Developer's Guide to LISTSERV

To subscribe to any of these lists, send mail to [LISTSERV@PEACH.EASE.LSOFT.COM](mailto:LISTSERV@PEACH.EASE.LSOFT.COM) with the following command in the body of the message:

```
SUBSCRIBE listname Your Name
```

### 8.3 Contacting L-Soft Support

At <http://www.lsoft.com/lsv-faq.html> we've attempted to document a few of the most frequently-asked questions pertaining to installing and running a LISTSERV server. Before

writing to our support department for problem resolution, please take a moment to read through the online FAQ and see if your problem is answered there.

L-Soft recognizes that the FAQ pages are not going to solve every problem you may face. We are always willing to help diagnose and correct problems you may be having with your registered LISTSERV® server. To that end, please note the following when you write to L-Soft with a problem report:

1. Please make the subject line of your report indicative of the problem, and in particular the product with which you are having a problem. A subject like "Problem posting to moderated LISTSERV list" is much more useful to us than "Help me please!"
2. Include any appropriate log entries. LISTSERV keeps logs of everything it does when you are running it in the background (i.e., with `./go bg`), and without a log excerpt it is often impossible to determine what caused a given error.
3. If LISTSERV dumps core, please run the debugger on the core file (see [FAQ 1.3](#) in the LISTSERV maintainer's support FAQ) and include the results.
4. Always send a copy of your site configuration file (with the passwords XXX'ed out).
5. Send along anything else that you think might be helpful in diagnosing the problem.

If you are running LISTSERV Lite, please join the LISTSERV-LITE mailing list, LISTSERV-LITE@PEACH.EASE.LSOFT.COM, and send your trouble reports there.

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