L-Soft international, Inc.

Installation Manual for
LISTSERV® for Windows
Version 17.0

This document sets forth a simplified installation procedure for **LISTSERV 17.0 for Windows** with a build date of **June 8, 2019 or later**. Supported versions of Microsoft Windows are described elsewhere in this document.

Information in this document is subject to change without notice. Companies, names, and data used in examples herein are fictitious unless otherwise noted. L-Soft international, Inc. does not endorse or approve the use of any of the product names or trademarks appearing in this document.

All of L-Soft's manuals are available at the following URL: **http://www.lsoft.com/manuals.html**

L-Soft invites comment on its manuals. Please feel free to send your comments by e-mail to: MANUALS@LSOFT.COM

Last Revised 10 Jun 2019

Table of Contents

Preface – About this Manual

This manual is for LISTSERV Classic running under Microsoft Windows. LISTSERV Lite users should see the installation guide written specifically for LISTSERV Lite.

This manual makes the following assumptions:

1. You have a supported Microsoft Windows operating system installed and operating normally on a computer in your network that meets the various technical requirements listed later in this guide;

2. You have physical access to the machine in question and are logged in as Administrator, or at least as a member of the Administrators group with full control of the machine;

3. You can troubleshoot your supported version of Microsoft Windows (i.e. native OS problems, not problems related to LISTSERV) without assistance from this guide or from L-Soft.

Number three is particularly important. L-Soft will be happy to assist you with LISTSERV-related problems arising under a supported version of Microsoft Windows (assuming of course that you have purchased support for our product) but is unable to assist you in setting up your operating system, the Internet Information Service (or any other web server software available for the supported Microsoft Windows operating systems), or any aspect of your operating system that is not directly related to LISTSERV's operation. If you are not familiar with Microsoft Windows operating systems, please be aware that L-Soft cannot help you with either their installation or subsequent troubleshooting.

This manual also follows this convention:

> "Windows" or "the Windows operating system" means the Microsoft Windows Server and Workstation operating system versions currently supported by L-Soft. In other words, if we say "Windows", we mean "all of the Microsoft Windows operating systems under which LISTSERV is currently supported".

> "Windows Server" means specifically the Microsoft Windows Server operating systems which are currently supported by L-Soft.

> "Windows Workstation" means specifically the Microsoft Windows workstation operating systems which are currently supported by L-Soft.

> If we indicate a specific Microsoft Windows operating system by name, for example, "Windows 10", we mean specifically that version of the operating system and no other.

At the release date of LISTSERV 17.0, the following Microsoft Windows operating systems were supported by L-Soft for use with LISTSERV:

L-Soft LISTSERV 17.0 Supported Microsoft Windows Operating Systems

LISTSERV for Microsoft Windows	Windows 7 (64-bit only)
	Windows 8.x (64-bit only)
	Windows 10 (64-bit only)
	Windows Server 2008 R2
	Windows Server 2012
	Windows Server 2012 R2
	Windows Server 2016
	Windows Server 2019

Support for 32-bit Microsoft Windows operating systems was withdrawn by L-Soft as of version 16.0-2017a.

Section 1 Things to Consider Before Installation

You will need to gather some information before you start installation:

- What is the DNS hostname for the machine on which LISTSERV is going to be installed? This is something like `LISTSERV.YOURDOMAIN.COM` . It must be a fully-qualified domain name (FQDN) and it must map to an A or MX record as noted above in the networking requirements. While it is possible to use a bracketed IP (eg, `[10.0.0.24]`) for testing purposes, as noted above the use of bracketed IPs in production is not supported and not recommended.

- What SMTP server do you intend to use for LISTSERV's outgoing mail? Like the hostname for the LISTSERV machine, this must be an FQDN hostname listed in DNS. If you will be installing a compatible third-party MTA on the same machine as LISTSERV then the answer to this question is identical to the answer for #1. Otherwise this must be the name of an external machine, i.e., one running sendmail or some other SMTP implementation that can accept LISTSERV's outgoing mail for delivery. (If you will be installing a third-party MTA on the local machine, you will probably still want to identify an external SMTP machine to use temporarily to test LISTSERV prior to installing the local MTA, which is the recommended procedure.)

- What are the email addresses for the LISTSERV maintainers (the person or persons who are authorized to create lists and operate/maintain the server)?

- What drive and directory are you going to install LISTSERV into? (The installation script defaults to C:\LISTSERV; if you have more space on another drive, e.g., a RAID array or other large disk, you will want to install LISTSERV on that drive rather than on C:.)

- What program group or folder do you want LISTSERV's icons to be placed in?

1.1 Technical Requirements

There are three classes of technical requirements for running LISTSERV under Windows -- hardware, software, and networking. Please read each section carefully.

1.1.1 Hardware Requirements

1. **CPU Architecture:** LISTSERV runs under 64-bit Windows on 64-bit Intel architectures only.

2. **Multiple Processors:** While LISTSERV itself will not use multiple processors (LISTSERV is a single-threaded application), overall machine performance may be enhanced by use of multiple processors if other applications running simultaneously on the machine can take advantage of them.

3. **Memory:** L-Soft recommends that a dedicated Windows LISTSERV machine start out with a minimum of 8GB, as this will minimize paging and can lead to a marked improvement in performance, particularly if the web archive/administration interface (see below) is implemented. In particular, LISTSERV servers running with the High Performance Option (HPO) require more memory than non-HPO servers and should therefore start out with at least 16GB.

4. **Disk Space Needed:** LISTSERV itself takes up very little space (perhaps 4MB total for all of its default system files). When planning a LISTSERV system you need to take into account how large your lists will be (100 bytes per subscriber entry in a given list) and how much space you will need for discussion list archives, which have the potential to grow quite large depending on your traffic and number of lists. For most small systems, a 4GB or larger drive is probably sufficient for some time. Larger systems will naturally require larger disks.

5. **Disk Architecture:** LISTSERV will run perfectly well for most sites on inexpensive SATA disks of the modern sort. If performance is an issue, it will be greatly enhanced by the use of fast SAS disks in a RAID array with write-back caching and a write-back battery back-up. *Write-through caching is not recommended.* Usually it is best to divide a RAID array into at least two partitions: A boot partition of 3GB (effective 1.5GB) RAID 0+1, and a data partition making up the rest of the available disk space at RAID 5. If it is not feasible to divide the array in this manner, RAID 0+1 for the entire array is suggested. (The boot partition can be larger if desired -- particularly as very large disks are much more economical than in the past -- but we would still recommend that it be configured RAID 0+1).

    With prices continuing to drop for modern data storage, the above should be considered absolute minimums and we would actually recommend starting with larger disks and partitions wherever possible.

    To date we have not done any testing with solid-state drives. However we consider it prudent to caution against using SSD for highly-dynamic data such as LISTSERV's spool and archives. SSD might profitably be used for boot partitions, however, where data (at least in comparison to LISTSERV's data) rarely or only occasionally changes.

6. **Disk Format and Security:** L-Soft *strongly recommends* that LISTSERV be installed on an NTFS-formatted partition. LISTSERV will run out of a FAT partition, but FAT does not provide the same level of security and performance available with NTFS.

7. **LISTSERV in a virtualized environment:** LISTSERV works very well in a Microsoft Hyper-V environment. We recommend using a dedicated Hyper-V instance for this purpose, with service parameters adjusted to fit your local needs. The same minimums noted above for physical servers apply to Hyper-V instances. If you are looking for a high-availability solution for LISTSERV for Windows, Hyper-V with its failover clustering feature may be what you are looking for.

    Customers have also reported success running LISTSERV in virtual environments such as Microsoft Azure.

General performance notes:

-   L-Soft *STRONGLY DISCOURAGES* running LISTSERV out of a RAM disk in order to speed up I/O. This is not a supported configuration and if you have problems with it the support group's response will be to tell you to stop using the RAM disk.

-   If system RAM is tight, either a fast disk or more RAM is a necessity if you are to minimize I/O time lost to paging. An otherwise fast system can become quite sluggish if it is required constantly to read and write to virtual memory. Adding more RAM is usually preferred as it is more efficient to access RAM than it is to access even a fast disk.

1.1.2 Software Requirements

1. LISTSERV requires one of the Microsoft Windows operating systems listed in the matrix found in the Preface to this manual.

2. Either Internet Information Service (IIS) or some other WWW server (i.e., Apache) should be installed on the machine if you intend to use the web archive and administration interface. *LISTSERV's web interface cannot be installed on a separate machine.* If you are using an older version of IIS which includes the IIS SMTP service, IIS SMTP should be disabled or not installed unless you intend to use it for inbound and outbound mail (in which case, please contact L-Soft support to receive a white paper describing how to do this).

3. INBOUND MAIL: The SMTP "listener" service (SMTPL.EXE) provided in the LISTSERV installation kit must be installed. Third-party SMTP MTAs (Mail Transfer Agents) are supported for inbound LISTSERV mail if they can be configured to redirect LISTSERV's mail to SMTPL running on a non-standard "high" port (for instance, 40025).

> Note: While sites with valid licenses for L-Soft's legacy LSMTP mailer may of course continue to use LSMTP for both inbound and outbound mail, L-Soft strongly discourages the use of this discontinued, no longer supported product. We will be happy to discuss alternatives with you; please simply write to support@lsoft.com and request details.

4. OUTBOUND MAIL: The SMTPL.EXE "listener" service *cannot* be used for outbound mail. You will need to have access to an SMTP MTA that can handle LISTSERV's outbound mail. This machine can be a unix machine running one of the standard unix MTAs (sendmail/qmail/postfix), a Windows machine running Microsoft Exchange, or any fully-standards-compliant SMTP server running on any platform, as long as it can handle the amount of traffic you will generate with LISTSERV.

    Low-end SMTP servers can handle modest delivery loads (perhaps 10K-25K messages per hour, although we have seen a well-tuned IIS SMTP instance handle up to 75K per hour). For heavier delivery loads, L-Soft recommends a high-performance SMTP server that can handle loads of more than 1 million messages per hour.

    If the outbound MTA is running on an external machine, that machine must be configured to accept for delivery so-called "relay mail" from the machine running LISTSERV (it may of course otherwise be configured to reject "relay mail" coming from other hosts).

    If you need a "turnkey" single-machine solution for LISTSERV, please contact the support department for assistance.

> Please note the following for both inbound and outbound mail:
>
> ● LISTSERV does not have the capability of accessing a remote mailbox for its inbound mail. LISTSERV does not understand POP or IMAP or any other mail retrieval protocol. All mail coming in to LISTSERV must arrive via SMTP.
>
> ● LISTSERV cannot connect directly to an SMTP server that requires SMTP AUTH on the outbound side. If you cannot arrange an exception for the LISTSERV server such that it is not required to authenticate to the outbound SMTP server, you will have to use an intermediary method to offload the outbound mail. Typically, the IIS SMTP server mentioned above can be used to solve this problem.

1.1.3 Networking requirements

1. 24x7x365 TCP/IP connectivity, with enough bandwidth to handle your workload. Please note carefully that LISTSERV is not designed to dial up and access POP mailboxes. The proper installation and operation of LISTSERV is contingent on direct connection to the Internet in order for it to receive and send SMTP mail. If you do not understand this, L-Soft *strongly recommends* that you get expert technical advice before proceeding further, or consider using a hosting service instead of running LISTSERV yourself (for an overview of hosting services offered by L-Soft, please see http://www.lsoft.com/products/ease.asp.

2. In conjunction with networking requirement #1, and as a fundamental requirement of the SMTP mail protocol, LISTSERV requires a static IP address which is mapped via a DNS A or MX record to a particular host name (typically LISTSERV.yourdomain, for example, LISTSERV.EXAMPLE.COM). If you are planning to use the web archive/administration interface with LISTSERV, an A record is required at minimum (web browsers cannot connect to hosts that have only an MX record). Please note carefully that L-Soft does not support LISTSERV servers running without DNS entries (i.e., we do not support servers configured with bracketed IP addresses instead of FQDNs [fully-qualified domain names, for example, LISTSERV.EXAMPLE.COM]).

   The use of a CNAME is STRONGLY DISCOURAGED because typically such hostnames are rewritten ("canonicalized") when mail sent from them traverses the Internet. This will cause mail to appear to be coming from a "different" host than your subscribers may be expecting, even though in fact the A and CNAME records point to the same physical machine.

   The modern Internet mail system is becoming more and more heavily dependent on DNS-based anti-spam protocols such as DMARC, DKIM, and SPF. LISTSERV is designed to support these protocols and is capable of signing outbound email with DKIM (which is one of the keystones of the DMARC system). For more information, please contact the support department.

   Microsoft's WINS and MAPI protocols are not supported or used by LISTSERV.

   There are no guarantees that LISTSERV will work with a dynamically-assigned IP address (for instance, one obtained through DHCP), and a DNS entry is required if you expect people to be able to send mail to, and also--in many cases where the user's ISP does a reverse DNS lookup to validate that the mail is not spam--to *receive* mail from the server.

   Again, if you do not understand any part of this requirement, L-Soft *strongly recommends* that you get expert technical advice before proceeding further.

3. If installing LISTSERV behind a firewall with the expectation that users from the outside world will be able to access it, it is imperative that you provide access to the following TCP ports on the LISTSERV machine: Port 25 (SMTP) and port 80 (webserver, if the web archive/administration feature is enabled). It may also be necessary to provide access to port 53 (nameserver) if LISTSERV is unable to resolve the name of its outgoing mail host. Opening other ports may be necessary for other features to work properly (e.g., port 443 if your web server supports SSL/https).

   Installing LISTSERV behind a firewall is almost more of an art than a science (and every firewall seems to be different) but the bottom line is that the above ports must be open if you

expect LISTSERV to work. It is not recommended to route incoming LISTSERV mail through another machine (i.e., the firewall) as this normally leads to complications.

1.1.4 Older Versions of Windows Server No Longer Supported

L-Soft no longer supports Microsoft Windows Server earlier than Server 2008 R2. Only 64-bit Windows operating systems are supported.

1.1.5 Older Versions of Windows Workstation No Longer Supported

L-Soft supports only the 64-bit versions of Microsoft Windows 7, 8.x, and 10. Use of the Professional or Ultimate Editions is strongly recommended; use of the Home Edition is not recommended.

Section 2 Installing LISTSERV

L-Soft provides its software via download only. The installation/evaluation kit for Windows (Intel architecture only) are found at

http://www.lsoft.com/download/listserv.asp

The LISTSERV installation kit contains a complete implementation of LISTSERV for Windows, limited for evaluation purposes only by the License Activation Key (LAK) that is shipped with it. If you have already purchased LISTSERV you will have received a production LAK separately--we will describe the installation of that key later in this document.

2.1 Starting the installation

First, place the distribution kit into a temporary directory (e.g., C:\TEMP or C:\SCRATCH). DO NOT try to run the kit from the directory into which you are going to actually install LISTSERV.

Next, make sure that you are logged in either as the Administrator user or as a member of the Administrators group. You cannot install LISTSERV unless you have administrative control of the computer.

The kit is a self-contained, self-extracting setup kit that includes all of the files you will need for the installation. Simply run LISTSERV.EXE from a DOS prompt or double-click on it in Windows Explorer to start the installation and follow the script.

2.2 Basic configuration

The installation script will ask whether or not you want to go ahead and configure the LISTSERV server. You MUST do a basic server configuration at install time or the installer will exit, but bear in mind that a more complex configuration can be done after finishing the installation, if necessary. For the basic configuration done at install time, you will need to have the information discussed below for NODE, SMTP_FORWARD, and POSTMASTER. (Note: This basic configuration step is skipped for upgrades, which are assumed to be already configured.)

Configuring the server after installation is done via the web administration interface. Log in as a LISTSERV administrator, and choose Server Administration/Site Configuration/Site Configuration to enter the web-based configurator.

It should be noted that the MAIN\SITE.CFG file is now used only for initial startup and for certain settings which need to be read in immediately when LISTSERV starts; changes made via the web configurator are written to a platform-independent file which is maintained by LISTSERV and which should not be hand-edited.

In addition, the old SITE.EXE configuration GUI is no longer supported or provided (because it operates on the MAIN\SITE.CFG file). If you have a copy from a previous installation, it should not be used, and L-Soft recommends that it simply be deleted along with SITE.HLP and SITEDATA.FILE.

2.2.1 NODE

The NODE setting is the fully-qualified domain name as registered in DNS for the machine on which LISTSERV is running. As noted above, it is possible to insert a square-bracketed dotted-decimal IP address in this box for testing purposes, but L-Soft neither recommends nor supports this in production. This is the host name that LISTSERV will always identify itself with when it sends mail out.

2.2.2 MYDOMAIN

MYDOMAIN does not refer to your corporate domain. MYDOMAIN is the space-separated list of all possible host names your machine might be known as. In many cases the value of MYDOMAIN is the same as NODE, but for instance some machines running LISTSERV also run the enterprise's World Wide Web server, and may thus be identified in DNS as something like "WWW.MYCOMPANY.COM". And of course we'll assume that NODE has been set above to something like LISTSERV.MYCOMPANY.COM. Using this as an example you would set the MYDOMAIN setting to contain, in space-separated format, all of these names that mail might come in to LISTSERV under, with the NODE value coming first:

```
LISTSERV.MYCOMPANY.COM WWW.MYCOMPANY.COM POP.MYCOMPANY.COM
```

Alternately the same thing can be done by specifying

```
%NODE% WWW.MYCOMPANY.COM POP.MYCOMPANY.COM
```

This way if someone accidentally writes to LISTSERV@POP.MYCOMPANY.COM, LISTSERV will recognize POP.MYCOMPANY.COM as equivalent to LISTSERV.MYCOMPANY.COM and will process the mail as if it had been addressed to LISTSERV@LISTSERV.MYCOMPANY.COM. Otherwise the mail will bounce as LISTSERV has no other way to know what other names the machine might be known by in DNS.

2.2.3 SMTP_FORWARD

This setting refers to the name of the machine which will be handling LISTSERV's outgoing mail. It must be a fully-qualified domain name of a machine registered in DNS. For instance if your corporate mail gateway is MAIL.MYCOMPANY.COM, you could set SMTP_FORWARD to that value.

2.2.4 POSTMASTER

This is a space-separated list of userid@host.domain type email addresses belonging to people who have authority to manage LISTSERV--specifically the people who are allowed to create lists, but also who have pretty much global authority on the server to look at lists, modify list headers, and so forth. There are some advanced options for this setting but for right now you will probably just want to insert your own email address so that you can test the server.

Note: The POSTMASTER should NEVER be LISTSERV@ anywhere or POSTMASTER@ anywhere. These userids are reserved and mean specific things to LISTSERV. If you need to use a generic name for a postmaster account, it is recommended that you use something like "listmaster" or "lstmaint" instead.

2.2.5 CREATEPW

The password that will be used to create lists and perform certain management functions (such as administering LISTSERV's user password feature). Note that when using the web management features, you do not use the CREATEPW= value, but rather your own personal LISTSERV password, to validate your identity. See the main LISTSERV documentation for information on how to create a personal LISTSERV password.

> **Note:** While they are still available and documented, CREATEPW and its companion STOREPW are obsolete, as postmasters can authenticate all commands with their personal LISTSERV password. If you do not want to set CREATEPW at all, you should set it to the special value `*NOPW*`, which will disable the authentication system they are associated with. `*NOPW*` is the recommended value.

2.2.6 MYORG (optional)

A string that identifies your organization in the From: line of administrative mail sent out by LISTSERV. This defaults to the NODE value you coded above, but you can change it to be more descriptive, eg, "University of XYZ" or "My Company, Inc." If you were to set it to "My Company, Inc.", the From: line of administrative mail would look like this:

```
From:           "My Company, Inc. LISTSERV Server (16.5)"
                <LISTSERV@LISTSERV.MYCOMPANY.COM>
```

Only the part preceding "LISTSERV Server" may be modified by the MYORG setting. The rest of this string is hard-coded and cannot be changed.

2.3 Advanced Configuration

There are a number of advanced configuration parameters that can be set to modify LISTSERV's behavior and/or tune it for better performance. The most common parameters are found in the Site Configuration Keyword Reference document.

A tuning guide for high volume sites is available upon request; please contact L-Soft's support department at `support@lsoft.com` for a copy.

For information about LISTSERV's DBMS and mail-merge features, the Common-Jobs Language Interpreter (CJLI), LDAP/Active Directory integration, and other extensibility features, please see the *Developer's Guide to LISTSERV*, also found on L-Soft's web site at the URL noted above.

2.4 Installing the License Activation Key (LAK)

If you are just evaluating the software, the LAK will be installed for you automatically. Note however that evaluation LAKs expire at the end of each year, on December 31. If you have an older kit that you've had around for a while then you may want to either download a newer kit (recommended) or you can download a new evaluation LAK from the LISTSERV evaluation kit download page.

The procedure to install a LISTSERV LAK (either a new evaluation LAK or a production LAK) is as follows:

1. Create a disk file with the license information supplied. If you received the license registration form electronically, simply delete the mail headers and other extraneous information (you do not need to remove the instructions found at the top of the LAK). If you received it via FAX or postal mail, you will have to retype the information. Please observe spacing carefully. To make the LAK easier to transcribe, we always insert multiple blanks where one is needed. Thus, unless you see a big white space on the FAX, you should not insert any blank.

2. Make a backup copy of the file you have just created.

3. Install a copy of the file under the name LICENSE.MERGE in the product's main directory. This would be MAIN\LICENSE.MERGE relative to your LISTSERV root directory (eg C:\LISTSERV\MAIN\LICENSE.MERGE) if you installed LISTSERV under C:\LISTSERV).

4. Start LISTSERV (or stop and restart it if it was already running). It will compile the new LAK, verify its integrity, and merge it into its license database. If no error was detected, it will then delete the LICENSE.MERGE file. This is why you must make a backup copy of the license file before activating it. The LAK will of course remain in the license database, but you may need the original in case of hardware failure.

5. Verify that LISTSERV is running with your new LAK by issuing the command SHOW LICENSE either by e-mail or at the LISTSERV command prompt (in interactive mode).

> **Important:** The LICENSE.MERGE file MUST be a flat ASCII text file (Unicode is not supported).
>
> If you create the LICENSE.MERGE file with NOTEPAD, please note that by default the NOTEPAD application will save your file with a `.txt` extension (e.g., if you type `license.merge` in the "Save as" dialog box, NOTEPAD will actually save `license.merge.txt`). If this happens you must rename the file to `license.merge` or LISTSERV will not see it on startup. You can avoid this problem by enclosing the name of the file in double quotes, i.e., when you are prompted for the filename in the "Save as" dialog box, enter `"license.merge"` (you *must* use the double quote marks!) and press the OK/Save button. If you use the double quotes, your file *will* be saved as `license.merge` and not as `license.merge.txt`.

Section 3 Starting LISTSERV to Verify a Successful Installation

To start LISTSERV for debugging/testing purposes, first open a CMD.EXE "Command Prompt" (otherwise known as a "DOS box" to us old-timers) in "Run as administrator" mode. (You will have to right-click the Command Prompt icon and choose that option.) Next, change to the drive where you have installed LISTSERV, enter CD LISTSERV\MAIN at the prompt, and hit return.

You should now be able to start LISTSERV interactively by entering "LSV START" at the prompt and hitting return. You will see various startup messages go by and then you will be prompted to enter commands if you wish. For instance, a SHOW LICENSE command issued from the interactive command line looks like this:

```
10 Jun 2019 15:19:36 Initialization complete
10 Jun 2019 15:19:36 You can enter commands via the keyboard at any time


Paused - enter a command:
show lic
10 Jun 2019 15:19:40 From LISTSERV@LISTSERV.EXAMPLE.COM: show lic
* License type:      Evaluation
* Expiration date:   31 Dec 2020
* Maintenance until: 31 Dec 2020 (graduated license)
* Capacity:          4 points (0 in use)
* Version:           17.0
* Serial number:     EVAL-NT
* Build date:        8 Jun 2019
```

You may start the SMTPL.EXE SMTP "listener" service interactively in the same way.

You can run only one copy of LISTSERV at any given time. That is, you cannot start LISTSERV interactively if it is already running as a service, or vice-versa, nor can you start LISTSERV in multiple CMD windows. The same applies to the SMTP listener.

When LISTSERV is installed, it is registered in the Services Manager to start automatically as a system service at boot time. Thus if you have rebooted your machine after installing LISTSERV, it may already be running. If it is already running when you attempt to start it in a DOS box, you will get the following error:

```
C:\LISTSERV\MAIN>lsv start
>>> Unable to create SMTP synchronization events <<<

abnormal program termination
```

Similarly, if the SMTPL "listener" is already running as a service, you will get something like:

```
C:\LISTSERV\MAIN>smtpl start
LISTSERV SMTP listener, version 1.1e
Copyright Eric Thomas 1994-2019
>>> Cannot bind to 0.0.0.0, port 25: error 10048
Statistics for this session:

 Physical memory: 8132M (3222M available)
```

```
 Paging file:      16260M (10648M free)
 Process memory:   47364k in use
 Connections:      0 (max 0, total 0 in this session)
 Messages:         0 (0 recipients)
 SMTPL uptime:     0 00:00:00 (98.1% CPU utilization)
```

If the services are running, simply stop them from the Control Panel/Services applet, or just issue the commands

```
NET STOP LISTSERV
NET STOP LISTSERV-SMTP
```

in your DOS box before proceeding.

If there are no problems, LISTSERV will start up with messages similar to the following:

```
C:\LISTSERV\MAIN>lsv start
10 Jun 2019 16:53:18 LISTSERV(R) for Windows version 17.0 starting...
10 Jun 2019 16:53:18  Copyright Eric Thomas 1986-2019
10 Jun 2019 16:53:18 Build date: 8 Jun 2019
10 Jun 2019 16:53:18
10 Jun 2019 16:53:18 SIGNUP files are being compressed...
10 Jun 2019 16:53:18 -> No entry removed.
10 Jun 2019 16:53:18 The network tables are outdated and must be rebuilt.
* Network tables generation process started - be patient...
* Step 1 complete - DBINDEX file generated.
*                   198 NJE nodes, 64 dummy nodes, total 262.
* Step 2 complete - NODESUM3 file generated (7840 bytes).
*                   10 countries, 3 networks, 59 ':internet.' tags,
*                   73 hostnames, total 2411 bytes of Internet<->NJE data.
* Step 3 complete - LINKDEF2 file generated (236 links).
* Step 4 complete - no list/AFD/FUI entry updated for changed node names.
* Step 5 complete - SIGNUP files have been compressed, no entry removed.
10 Jun 2019 16:53:18 The peers tables are being rebuilt...
10 Jun 2019 16:53:19 ->>> No entry for LISTSERV.EXAMPLE.COM in PEERS NAMES.
10 Jun 2019 16:53:19 ->>> Dummy entry generated pending official registration:
10 Jun 2019 16:53:19 ->>> LISTSERV@LISTSERV.EXAMPLE.COM - Backbone=NO, License
number=9999.
10 Jun 2019 16:53:19 -> There are 300 known servers.
10 Jun 2019 16:53:19 File PEERS.DBNAMES has been rebuilt.
10 Jun 2019 16:53:19 File PEERS.DBINDEX has been rebuilt.
10 Jun 2019 16:53:19 File PEERS.NAMESUM has been rebuilt.
10 Jun 2019 16:53:19 File PEERS.DISTSUM2 has been rebuilt.
* Peers tables rebuilt successfully.
10 Jun 2019 16:53:19 Nearest backbone host is LISTSERV@PLUM.EASE.LSOFT.COM
10 Jun 2019 16:53:19 Nearest NJE host is LISTSERV@CUNYVM
* Step 6 complete - link weights file successfully compiled.
*
* Network tables generation completed successfully.
10 Jun 2019 16:53:19 Nearest backbone host is LISTSERV@PLUM.EASE.LSOFT.COM
10 Jun 2019 16:53:19 Nearest NJE host is LISTSERV@CUNYVM
10 Jun 2019 16:53:19 License merged successfully:
> LISTSERV-WINNT-*
>          UNITS=4
>          EXP=31-DEC-2020
>          REL=16.5
>          OPT=EVAL
>          SERIAL=EVAL-NT
>          CKS=1-BFBC2F88-23E6788A
**************************************************************************
```

```
******************************** Evaluation copy ********************************
********************************************************************************
*                                                                              *
* This  software is  an evaluation  copy,  provided to  you at  no charge  to  *
* demonstrate the capabilities  of our product(s). You are  granted a license  *
* to use this  evaluation copy until 31  Dec 2016, at which  time the program  *
* will automatically  exit with an  error message  every time you  attempt to  *
* start it. The reason for this restriction is that we want to make sure that  *
* you evaluate the  latest version of the software, and  not an obsolete copy  *
* obtained from an outdated distribution.                                      *
*                                                                              *
* LICENSE: Subject  to the  restrictions set  forth below,  you may  use this  *
* evaluation copy as you  see fit (and until 31 Dec 2016), as  long as you do  *
* not derive a profit from such use.                                           *
*                                                                              *
* RIGHT TO COPY:  You may copy the  software as necessary to use  it, and for  *
* backup purposes.  In addition, you  can copy and distribute  the evaluation  *
* kit, IN ITS  ENTIRETY, provided that you  do not alter or modify  it in any  *
* way, and that  you do not derive  a profit from such  copy or distribution.  *
* Our copyright notice  must remain on the original copy  of the software and  *
* be included on any copy you make.                                            *
*                                                                              *
* NO RIGHT TO MODIFY: You are not  allowed to modify the software in any way,  *
* except for the  interfaces provided with source code, which  you may modify  *
* and/or  recompile  for your  own  use. Any  modified  version  remains  our  *
* property and subject to the present terms and conditions.                    *
*                                                                              *
* USE AT YOUR OWN RISK: THE SOFTWARE  IS PROVIDED ON AN 'AS IS' BASIS. L-SOFT  *
* DOES NOT MAKE  ANY EXPRESS OR IMPLIED WARRANTY OF  ANY KIND WHATSOEVER WITH  *
* RESPECT TO  THE SOFTWARE,  INCLUDING, WITHOUT  LIMITATION, ANY  WARRANTY OF  *
* MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Neither L-Soft nor any  *
* of  its employees,  officers  or  agents will  be  liable  for any  direct,  *
* indirect or consequential  damages, even if L-Soft had been  advised of the  *
* possibility of such damage.                                                  *
*                                                                              *
* FOR ASSISTANCE  CONTACT: SUPPORT@LSOFT.COM, or  call +1 (301)  731-0440 (or  *
* 1-800-399-5449 from the US or Canada).                                       *
*                                                                              *
********************************************************************************
10 Jun 2019 16:53:19 Sent information mail to LSTMAINT@EXAMPLE.COM
10 Jun 2019 16:53:19 Initialization complete.
10 Jun 2019 16:53:19 You can enter commands via the keyboard at any time.
```

SMTPL isn't as verbose. It will start up with only a few messages:

```
C:\LISTSERV\MAIN>smtpl start
10 Jun 2019 14:39:31 LISTSERV SMTP listener, version 1.1e
10 Jun 2019 14:39:31 Copyright Eric Thomas 1994-2019
10 Jun 2019 14:39:31 Now listening to 0.0.0.0, port 25.
10 Jun 2019 14:39:31 Initialization complete - 200 concurrent threads.
```

To test the server, send Internet mail to the LISTSERV address with some random command, such as HELP, to check that the SMTP listener and outgoing mail interface are working correctly. Please note that the "LISTSERV address" is the address formed by "LISTSERV@" + the value you defined in the site configuration file for NODE=. For instance, if you defined NODE=LISTSERV.XYZ.COM, the LISTSERV address would be LISTSERV@LISTSERV.XYZ.COM.

DO NOT attempt to create lists or use the WWW interface until the basic email functions (i.e., sending commands to LISTSERV by email and getting a response) are tested and working correctly.

Note that LISTSERV will not see any mail you send it via MAPI unless you have a MAPI/SMTP gateway for your LAN. LISTSERV does not include a MAPI gateway and thus does not support MAPI.

When running as services, LISTSERV and SMTPL both create log files in the \LISTSERV\LOG directory but, for performance reasons, the file buffers are not flushed with each and every write. If you attempt to TYPE the log file, it may appear to be empty. If you wait a few minutes, the buffers will be flushed and you will be able to examine the files. LISTSERV generates "crash reports" when it terminates abnormally, which are sent to the LISTSERV postmasters by default. These "crash reports" normally include a traceback of the error along with the last 100 LISTSERV log entries prior to the crash, and should be sent to L-Soft support for problem resolution.

In interactive mode, the log files are also created but the file buffers are flushed continuously. Flushing the logs continuously ensures that, in the event of a severe program failure, the logs will always contain information about the cause of the failure.

(Due to the fact that writing to command windows can significantly slow down an application, interactive mode should be used *only* when you are trying to troubleshoot a problem.)

> **Note:** While critical errors are reported to the Windows System Event Log and can be examined with Event Viewer (select the Application log), the Windows error codes are almost never useful for debugging problems with LISTSERV. The LISTSERV console log should be consulted in favor of the event log when a problem arises.

When running as services, both LISTSERV and SMTPL may be stopped from the Control Panel/Services applet, or by issuing the commands NET STOP LISTSERV and NET STOP LISTSERV-SMTP from a DOS prompt.

When running in interactive mode, to stop LISTSERV, simply type STOP. To stop SMTPL, wait until there is no more activity and type Ctrl-C.

3.1 Windows Firewall Considerations

It is recommended that sites using the Windows Firewall should open the firewall to the LISTSERV program. This is the preferred method as it makes it easy to change various TCP/IP-related aspects of LISTSERV's operation (e.g., outbound mail port, TCPGUI port) without having to change the firewall.

For the SMTPL.EXE "listener", it is recommended to open the firewall on port 25 from all IP addresses. Alternately, simply open the firewall to the appropriate program. The only advantage to explicitly opening port 25 as opposed to opening the firewall to SMTPL.EXE or some other specific MTA program is that you can easily switch from SMTPL to another MTA or vice versa without having to worry about changing the firewall settings. Port 25 is also a "well-known" port so inbound mail is in almost every case going to come to port 25, regardless of which program is listening on that port for LISTSERV's mail.

Section 4 Registering your LISTSERV Classic 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.

Note: 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.

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"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 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.

Section 5 Installing the LISTSERV Web Interface

5.1 Setting Up the Interface During Installation

It is strongly recommended that you set up the basic web interface when you install the software. The installation kit will offer to do this for you; you need only provide the directory used for CGI programs and the directory and base URL used for LISTSERV's web files.

Note that you will still have to configure the web server separately in order to make the web interface work. For that process, please see the links in the next section.

If you choose to set up the interface later, please see the next section.

5.2 Setting Up the Interface Manually

If you choose to install the web interface manually, please refer to the appropriate white paper depending on what version of Microsoft Internet Information Services you are running:

Configuring the LISTSERV Web Interface for IIS 7.x

Configuring the LISTSERV Web Interface for IIS 8.x

These and other informative white papers can be found on L-Soft's web site at
http://www.lsoft.com/resources/whitepaper.asp .

Complete information on installing the Web Archive Interface (including how to publish the content of "Send= Private" and/or "Confidential= Yes" lists) is contained in the Site Manager's Operations Manual for LISTSERV.

Section 6 Creating Your First List

Site administrators can create a new mailing list, including the directories necessary for supporting the archives, in a matter of minutes using the List Creation Wizard. This wizard guides you through a set of questions about the type of list that you want to create.

To create a list using the List Creation Wizard, select **Server Administration -> List Creation** from the sidebar menu.
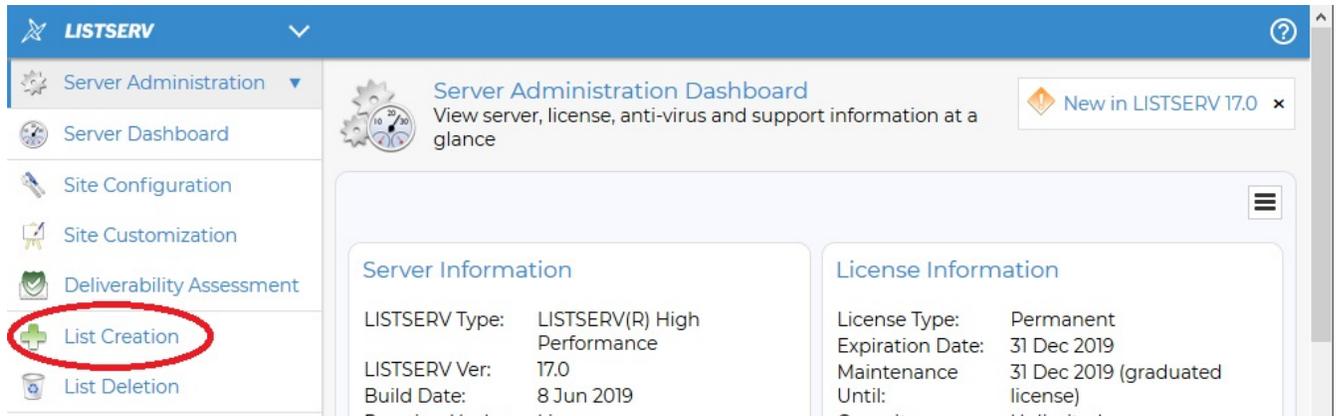
The List Creation Screen opens. Enter the **List Name**, the **List Title**, and then select the **Create with Wizard** option.
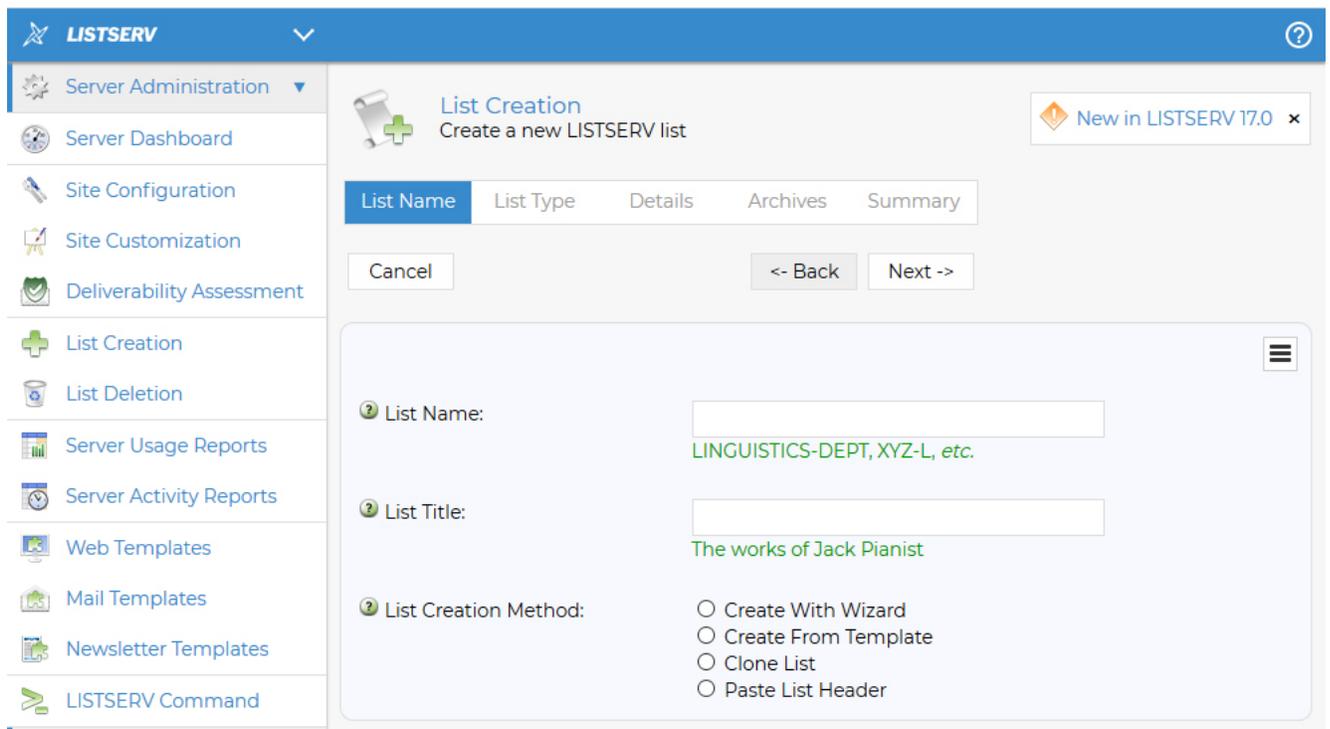
Click the **[Next ->]** button to continue. The List Type screen opens. Enter the **List Owner**, and then select the type of list you'd like to create. Your choices are **Announcement List**, **Unmoderated Discussion List**, and **Moderated Discussion List**.

Click the **[Next ->]** button to continue. The Details screen opens. Define how subscriptions are handled and which users can send messages to the list. This screen will vary slightly depending on the type of list you're creating.

Click **[Next ->]** to continue. The Archives screen opens. Click the **List Archives** drop-down menu to define whether or not you want to archive messages posted to the mailing list. (In

addition to "No Archives", you will be presented with a choice of Weekly, Monthly, or Yearly archives.) If posted messages are to be archived, then click the **Archive Access** drop-down menu to choose whether the archives will be available to the public or to subscribers only. Next, set the disk path to the location where the archives will be stored on the LISTSERV machine. Finally, define whether to create the archive directories manually or to let LISTSERV do it.

List Archive path vs. Web Archive path

There is often confusion about the difference between the directories where the mailing list's notebook archives are kept and the directories where the mailing list's web archive interface files (mostly message indexes) are kept.

Here are a few guidelines to assist in determining where to store list archive files.

L-Soft's STRONG RECOMMENDATION is that each list be given a separate directory in which its notebook archives and any files made available via LISTSERV's file server are kept. This directory SHOULD NOT be the same directory created to enable the web archive interface for the list.

Further, L-Soft STRONGLY RECOMMENDS that a separate directory tree be established for the purpose of storing list notebook archives and other related files which are not part of the LISTSERV web interface. This directory tree SHOULD NOT be located in a web-accessible location.

For instance, your base LISTSERV installation directory might be `C:\LISTSERV` . In that case, we would recommend creating the directory `C:\LISTSERV\LISTS` as a container for further sub-directories which in turn would contain the archives for your

various lists. Thus, the "Path" variable you would enter in the List Creation Wizard for a list called MYLIST-L would be `C:\LISTSERV\LISTS\MYLIST-L` .

The reason for separating list notebook archives from web archives is primarily one of security. If a list's notebook archives are placed under the web archive directory that is created for the list, the notebooks are thereby accessible to anyone who can "guess" the URL leading to them – even if the Notebook= setting for the list is "Private"!

Click **[Next ->]** to continue. The Summary screen opens. Review your selection, and then click **[Create]**.
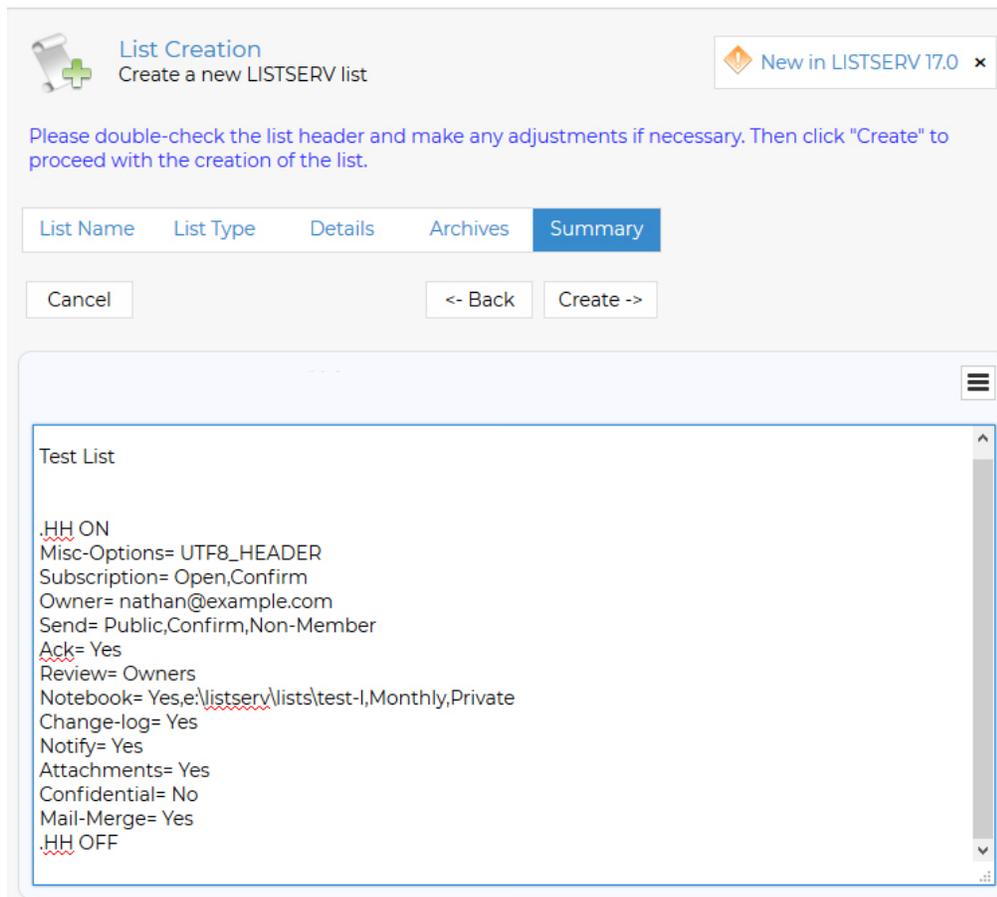
Section 7 Installing F-Secure® Anti-Virus (FSAV) Protection

Please note that this feature is not available under LISTSERV Lite.

Please note that the anti-virus scanning software is available only for Windows Server versions currently supported by L-Soft, and that this feature is only available for LISTSERV Classic or LISTSERV Classic HPO sites running those operating systems. An L-Soft maintenance contract is also required.

If you are running LISTSERV under a workstation version of Windows, F-Secure Anti-Virus is not available to you.

LISTSERV Version 17.0 supports on-the-fly anti-virus scanning of all messages sent to mailing lists that run under LISTSERV Classic or LISTSERV Classic HPO on Windows and Linux-x86 or x86-64 servers, including inline uuencoded binaries and MIME attachments in those messages. This is a value-added feature which, in addition to a regularly-licensed LISTSERV Classic or LISTSERV Classic-HPO installation, requires the following:

1. For sites with perpetual ("EXP=NEVER") LAKs: An additional "maintenance" LAK, meaning that you must purchase maintenance (which includes automatic anti-virus signature updates for the term of the LAK) for LISTSERV in order to use the feature. This LAK will come from your sales representative automatically when a perpetual LISTSERV LAK is purchased with maintenance and must be renewed yearly.

2. For all sites: A separate F-Secure Anti-Virus key that should be sent to you by your sales representative along with your LISTSERV LAK.

The table below indicates the web sites for F-Secure downloads.

Windows Servers (2008 R2, 2012/2012 R2, 2016, 2019)
NOTICE: Use of F-Secure Server Security Standard 12.12 and later requires, at minimum, LISTSERV version 16.0-2017a. LISTSERV version 17.0 or later is STRONGLY RECOMMENDED*. **Issue a SHOW VERSION command to LISTSERV to ascertain your product level BEFORE upgrading or installing FSAV. The current LISTSERV for Windows kit can be downloaded at http://www.lsoft.com/download/listserv.asp#windows .** **Installation kits:** F-Secure Server Security 12.12 for Windows Servers (2008 R2, 2012/2012 R2, 2016) https://ftp.lsoft.com/F-Secure/fsss-12.12.104-v3.exe (see below for hotfixes) Please note that L-Soft does *not* provide licenses for the sister product F-Secure Email and Server Security, nor do we provide licenses for any "premium" version of the F-Secure software. We are licensed only for F-Secure Server Security Standard, which is all that is needed with LISTSERV. If downloading the product directly from F-Secure's WebClub, please be aware of the difference and be sure to download the correct kit. *Note: At the time this document was revised, F-Secure Server Security 12.12 for Windows Servers reported as F-Secure Anti-Virus 9.52 in the output of a LISTSERV "release" command. This is NOT a LISTSERV bug --*

LISTSERV is repeating what FSAV tells it. To ensure that FSSS 12.12 is installed, right-click the "F" shield icon in the system tray and click "About". It should report "F-Secure Server Security 12.12 build 104".

Manuals:
F-Secure E-Mail and Server Security Administrator's Guide

*We recommend upgrading LISTSERV to at least version 16.0-2017a (and at this point, to 16.5, the current released version) because of an incompatibility with earlier versions of LISTSERV that is present in current versions of the F-Secure products. The incompatibility may result in display errors when F-Secure reports a virus. We have taken account of this incompatibility in LISTSERV version 16.0-2017a and later. To ensure that you have at least LISTSERV version 16.0-2017a, issue a SHOW LICENSE to your LISTSERV server. The build date reported should be 28 Feb 2017 or later.

*It should be noted that earlier versions of LISTSERV do not support, or do not completely support, the DMARC anti-spam standards currently in place with many large ISPs world-wide. For this reason also, **we strongly recommend** upgrading older versions of LISTSERV to the latest generally-available version, at time of writing, 17.0.*

Windows Workstations (Windows 7, etc.)

Unfortunately, F-Secure no longer provides a standalone kit for FSAV for Windows Workstation. This makes it impossible for L-Soft to provide FSAV kits for Windows Workstation class operating systems (7, 8.x, 10, and so forth).

For more information on alternatives, please see below at "Special Considerations for Windows Workstations".

In order to use LISTSERV®'s Anti-Virus features, F-Secure® Server Security or Anti-Virus must be installed on the same server as LISTSERV. If you already have F-Secure Server Security or Linux Security installed on the server, you should make sure that you are running the version supported by LISTSERV:

- For Windows 2008 R2, 2012/2012 R2, 2016, and 2019 Server: version 12.12
- For Windows 7 and later: Please see Special Considerations for Windows Workstations, below.

7.1. Recommended FSAV Versions for LISTSERV 17.0

L-Soft strongly recommends that all such Windows LISTSERV sites running on a Server version of Windows upgrade to at least version 12.12 with all hotfixes for that version released to date (see http://www.f-secure.com/en_EMEA/support/business/hotfixes/ for applicable hotfixes).

The FSAV for Windows Servers or FSAV for Linux Servers license key provided by L-Soft is for a single stand-alone server only. If you wish to run the Enterprise edition of F-Secure Anti-Virus, this can be purchased separately, and it will still work with LISTSERV.

The FSAV for Windows Servers license key normally provided by L-Soft is for the server version of F-Secure Anti-Virus. The server version will *not* install on a workstation version of Windows (that is, Windows 7, Windows Vista, or Windows XP). If you are affected by this, please contact your sales representative for an FSAV for Windows Workstations key.

The FSAV key provided by L-Soft is valid only as long as your paid maintenance contract for LISTSERV is up-to-date. If you discontinue LISTSERV maintenance, you must uninstall F-Secure Anti-Virus or purchase a separate key from F-Secure.

7.2.1 Special Considerations For Windows Workstations

F-Secure no longer provides a standalone installer for its F-Secure Anti-Virus for Windows Workstations product (which is now known as F-Secure Client Security). Therefore we can no longer provide this product to our customers who are running LISTSERV in this environment.

Sites running LISTSERV 17.0 or later under a Windows Workstation variant such as Windows 7 or Windows 10 have the following options:

- Run LISTSERV with an antivirus product from another vendor that supports real-time scanning of compressed archives, by using the FOREIGN_ANTI_VIRUS site configuration parameter.

- Migrate the installation to a Windows Server platform.

- Migrate the installation to L-Soft's ListPlex® Email List Hosting service.

7.3 Recommended F-Secure Hotfixes

Given our own experience and that of customers who have reported problems to support, L-Soft strongly recommends that all currently-available hotfixes for FSAV be installed.

Hotfixes for Windows can be downloaded from:
https://www.f-secure.com/en/web/business_global/downloads/server-security/latest

Please check the F-Secure website regularly for any hotfixes that may be provided.

When downloading F-Secure hotfixes, be sure to choose the ones for standalone environments. These are the ones with the .fsfix extension.

> **WARNING:** Depending on your browser, F-Secure's .fsfix files may download with a .zip extension. If this happens, please DO NOT unzip the file and run anything from it, as this will not apply the fix. Simply rename the file with an .fsfix extension (which is associated by Windows with F-Secure) and double-click the file to execute it.

7.4 F-Secure Anti-Virus Installation Instructions

Following is a quick summary of installation, if you are installing F-Secure (from the stand-alone kit). If you need further clarification, please consult the manuals cited in the table above.

1. Download the appropriate installation kit (it will be an installer executable with the extension .exe) for your platform (see table above).

2. CD into the scratch directory where you have downloaded the executable, and run it.

3. When prompted for a key, enter the F-Secure key that you received from your L-Soft sales representative. If you did not receive an F-Secure Anti-Virus key along with your LISTSERV LAK, please contact your L-Soft sales representative.

4. When prompted to "Select components to install", *Virus & Spy Protection xx.xx* and *DeepGuard x.xx* should be checked. It is also recommended that *Browsing Protection x.xx* and *Web traffic scanning x.xx* be checked.

5. When reaching the F-Secure Policy Manager dialog, choose *Stand-alone Installation*. (If you are upgrading an existing copy of F-Secure Server Security, choose *Keep current settings*.)

7.5 Recommended F-Secure Settings

This section describes the recommended settings for the 12.x series of F-Secure Server Security. They are in essence identical to settings for earlier versions, but the instructions below are specific to the 12.x F-Secure Web Console.

In general, you can accept the defaults. However, the following are recommended if not set:

- Real Time Scanning enabled (mandatory)

- Targets:

    o *Scan these files: Defined files*

       The defaults in this section are OK, or you can add to them. Nothing needs to be changed for LISTSERV.

    o *Exclude from scanning: Defined exclusions*

       Under the "Objects" category, you should explicitly exclude LISTSERV's spool directory (or directories, if your configuration has more than one). Also exclude any outbound spool directories you may have (some very large LISTSERV sites split their spools into inbound and outbound for efficiency). **Do *not* exclude any other subdirectories under \LISTSERV.**

- Scanning Options:

    o We recommend checking all four boxes.

- Actions:

    o Action when virus is found: "Delete Automatically" (strongly recommended)

    o Action when spyware is found: Your choice; "Report only" is fine.

- DeepGuard should be enabled, recommend take the defaults. If DeepGuard prevents LISTSERV from running, you can exempt it and it will show up under the "Monitored Programs" section of the DeepGuard settings. (This can also be done for any other legitimate executable on the machine, should DeepGuard take a negative view of it.)

- As noted above under "Targets", LISTSERV spool directories MUST be exempted from scanning. All other LISTSERV directories can and should be scanned.

7.6 Performance Considerations

F-Secure Anti-Virus running on Windows provides an option for "real-time protection". This means that F-Secure will automatically check any file matching the criteria configured. The "real-time protection" settings that are set by default should work for most installations.

However, please note that L-Soft does STRONGLY recommend that you change the "Action to take on infected files" to "Delete Automatically".

Otherwise, the "out-of-the-box" settings enable protection for all file extensions that are known to be susceptible to viruses, on all directories on the server. As long as your LISTSERV maintenance is up-to-date, you are entitled to protect the entire server on which LISTSERV

resides, not just LISTSERV itself, using the FSAV key provided by L-Soft. Therefore, there is no need to change the settings.

If you do decide to change the real-time protection settings, please keep the following in mind:

- Requesting scanning for "All File Types" may result in a noticeable drop in performance.

  If you have real-time scanning enabled for "All File Types", without specifying exceptions, then every file written on the server will be checked for viruses. This has the potential to slow down the server in a situation where many files are written continuously. In particular, an active LISTSERV site tends to create many files containing incoming LISTSERV "jobs" and outgoing mail. To avoid performance problems, avoid enabling automatic scanning of all files on the server.

- At a minimum, you should keep real-time scanning on for the EXE extension on the LISTSERV directory tree.

  To do this, follow these steps:

  1. Open and log in to the F-Secure Web Console.

  2. Go to the "Real-time protection" page under "Server protection".

  3. Make sure "Real-time scanning" is enabled, and select an action to take on infected files (preferably "Delete automatically").

  4. Under "Targets" select the Configure button to the right of "Scan these files: Defined files" and ensure that "EXE" appears in the list of selected file types.

  5. Press the "OK" button to save the settings.

- Some performance benefits may be found by excluding "immune" folders from the real-time scanning.

  You may want to exclude certain folders that will never contain any files that are prone to infection, for example folders that only contain text files. To exclude folders: in the "Real-time protection" applet, under "Targets" select the Configure button to the right of "Exclude from scanning: Defined exclusions". Under "Objects", ensure that the checkbox is checked, and use the "Add" button to add those folders that do not need to be scanned. LISTSERV's archive directories, for example, should never contain infected files unless there are people or processes external to LISTSERV that use those directories for other purposes.

Section 8 Upgrading your LISTSERV installation

> Because of non-backward-compatible changes made in LISTSERV 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 if you are upgrading from a version earlier than 16.0.

IMPORTANT: LISTSERV 17.0 requires a version 17.0 Product LAK!
This release also requires valid Maintenance expiring on 8 Jun 2019 or later!

You must obtain and install a LISTSERV version 17.0 product LAK and (for sites with perpetual licensing) an appropriate maintenance LAK, or LISTSERV will not start after the upgrade.

IMPORTANT: LISTSERV 16.x web interface customizations and branding
are NOT COMPATIBLE with LISTSERV 17.0!

Before upgrading to LISTSERV 17.0, please be sure to back up your LISTSERV installation.

PLEASE read the LISTSERV 17.0 What's New *document before upgrading!*

LISTSERV 17.0 is a major upgrade to the traditional LISTSERV web interface, bringing it in line with present day standards with responsive templates designed to display on both desktops and hand-held devices. While there is a backward-compatible interface mode that allows both the server interface and individual list interfaces to fall back to the non-responsive 16.x "look and feel," customizations made to the 16.x web templates are **not compatible** with the 17.0 web interface and will have to be retooled to fit into the new responsive interface. If your LISTSERV server has heavily-customized or branded templates, **L-Soft strongly recommends that this retooling be done in a test environment before upgrading your production server.**

Before installing any upgraded files, the LISTSERV installer scripts for both Windows and unix will copy SITE.WWWTPL (if it exists) to SITE165.WWWTPL. This is a requirement for the "compatibility mode" previously mentioned, and preserves any customizations made to the 16.x web templates for use by that mode.

LISTSERV sites that normally upgrade using manual methods rather than using the installer kits MUST perform the SITE.WWWTPL -> SITE165.WWWTPL operation manually. Unix LISTSERV sites performing this manual operation MUST ensure that the resulting site165.wwwtpl file is named in lower case, is owned by 'listserv', and has the same permission settings as site.wwwtpl.

IMPORTANT: Install your LISTSERV 17.0 product LAK before upgrading!

A valid product LAK (License Activation Key) with "REL=17.0" must be installed before upgrading or LISTSERV will not start after the upgrade.

If you have not received a LISTSERV 17.0 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 17.0 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 Nov 2019, serial number MNT-XYZ-1
Capacity:            Unlimited
Version:             17.0
Serial number:       XYZ-1
Build date:          8 Jun 2019
```

Your license key will be valid for the 17.0 upgrade if your current product LAK is for version **17.0 or higher** and your maintenance is **not expired.**

Upgrading LISTSERV is almost as simple as installing it. Simply follow these steps:

- If you are upgrading from one full version of LISTSERV to another (for instance, from 16.5 to 17.0), you should have received a new LAK from your sales representative. If you do not have a LAK for the version you are upgrading to, **stop right here** and contact your L-Soft sales representative. If you are not sure what version you are currently licensed for, send a "SHOW LICENSE" command to LISTSERV.

- If you have received a new LAK, install it 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. Do not proceed further until this step has been correctly completed.

- Back up the entire LISTSERV directory hierarchy (just in case).

- Stop LISTSERV and SMTPL.

- Get the current Windows evaluation kit from the LISTSERV evaluation kit download page 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.

> Note: If you have LISTSERV's web interface installed, the evaluation kit installer *should* upgrade WA.EXE and WA.SYM in your WWW_ARCHIVE_CGI directory. If for any reason this does *not* happen, you can simply copy WA.EXE and WA.SYM

---

from \LISTSERV\MAIN into the WWW_ARCHIVE_CGI directory to complete the web interface upgrade.

- If you are running the legacy LSMTP MTA as your mailer, open the Windows Control Panel/Services applet and ensure that the "LISTSERV SMTP Listener" service is disabled. This is very important! Note that the current version of the installation GUI will not register SMTPL.EXE as a service if an installation of LSMTP is detected in the Windows registry, but it is still wise to check this.

Note: While sites with valid licenses for L-Soft's legacy LSMTP mailer may of course continue to use LSMTP for both inbound and outbound mail, L-Soft strongly discourages the use of this discontinued, no longer supported product. We will be happy to discuss alternatives with you; please simply write to support@lsoft.com and request details.

- Restart LISTSERV and SMTPL (if not running legacy LSMTP) and send a command to make sure the installation was successful.

Section 9 Additional Resources

9.1 Documentation

9.1.1 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 .

9.1.2 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 .

Specifically related to the configuration and setup of LISTSERV, the following white papers may be useful depending on your situation:

- Configuring the LISTSERV Web Interface for IIS 7.x

- Configuring the LISTSERV Web Interface for IIS 8.x

- Moving LISTSERV to a New Server

- Connecting LISTSERV to an Existing Database Management System (DBMS)

- Using the Microsoft IIS SMTP Service for LISTSERV Deliveries

9.1.3 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 .

9.2 Mailing Lists

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

LSTSRV-L@PEACH.EASE.LSOFT.COM   for LISTSERV maintainers and interested list owners

LSTOWN-L@PEACH.EASE.LSOFT.COM   for LISTSERV list owners

LISTSERV-LITE@PEACH.EASE.LSOFT.COM   for LISTSERV Lite users

LISTSERV-   for third-party developers using features documented in the Developer's Guide to

DEVELOPERS@PEACH.EASE.LSOFT.COM   LISTSERV

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

`SUBSCRIBE listname Your Name`

9.3 Contacting L-Soft Support

At http://www.lsoft.com/manuals/lsv-faq.stm 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.

This page is intentionally blank.