

SME Server is an open-source Linux server distribution designed to be:

- Simple to setup and use: Installation and basic configuration takes less than 20 minutes, and every configuration option can be set via a web-based interface.
- Secure and stable to operate: SME Server only includes what is necessary, which translates into the entire ISO being around 500MB. Stability comes from using proven, supported rpm packages and from an update system that notifies you with available updates.
- Cross-platform and extendable to meet future needs: SME Server already has everything necessary to provide the core services most people need to network Linux, Macintosh, and Windows systems.
- And it's completely free!
- Download the ISO from [http://wiki.contribs.org/SME\\_Server:Download](http://wiki.contribs.org/SME_Server:Download)

The heart of SME Server 7 is based on the GPL'd sources of the unsupported developer release of SME 7.0 alpha from Mitel (<http://www.mitel.com/>) , who is the copyright holder for much of what makes SME Server what it is. Mitel's commercial offering is known as the "Mitel Managed Application Server", and in the past was known as e-Smith. Mitel has been very generous to fund development of the alpha and beta versions and to keep to the spirit of the GPL by sharing their source code freely.

SME Server 7 uses many packages from CentOS (<http://centos.org>) and RPMForge (<http://rpmforge.net>) . CentOS 4 is built from publicly available open source Red Hat Enterprise Linux SRPMS (<http://ftp.redhat.com/pub/redhat/linux/enterprise/4/en/os/i386/SRPMS>) and aims to be binary compatible. RPMForge is a collaborative effort of several RPM packagers that build RPMs not included with CentOS. Almost all of the packages that SME Server includes from these upstream vendors are included unmodified. The purpose of doing so is to take advantage of the stability that comes from the huge user base that uses these packages, for security, and to allow automatic updates as soon as an update is available from the upstream vendor. Security updates from Redhat/Centos should be available until 2012 for Centos 4.

## About This Manual

This manual walks you step-by-step through the straightforward process of installing and configuring your SME Server. The Appendices and Glossary provide background information on subjects related to networking and the Internet and are intended to supplement chapters in the main section of this document.

## Production

This document was revised on the wiki's at [smeserver.sourceforge.net](http://smeserver.sourceforge.net) and [wiki.contribs.org](http://wiki.contribs.org)

## History

- October 2005 - Revisions for SME Server 7.0 started at [sourceforge.net](http://sourceforge.net)

(Previous versions were published by e-smith, Mitel and [contribs.org](http://contribs.org), and are the basis for this manual)

## Endorsements

This is the official documentation for SME Server and is endorsed by the developers at <http://wiki.contribs.org>

## Acknowledgements

Thank you to the developers that create and maintain the SME Server distribution. And thank you to the companies and people that support the developers.

## Software Licensing Terms and Conditions

The SME Server is licensed under the General Public License (GPL). This means that you are free to use, and alter the software. If you do alter any of the packages, you must make the source code (with patches please) freely available. The agreement is found on the ISO. Acceptance of this agreement is required during the software installation.

**SME Server™**  
Server manager

admin@jackson.robs.homelinux.org

**Collaboration**

- Users
- Groups
- Quotas
- Pseudonyms
- Information bays

**Administration**

- Backup or restore
- View log files
- Mail log file analysis
- Reboot or shutdown

**Security**

- Remote access
- Local networks
- Port forwarding
- Proxy settings

**Configuration**

- Software installer
- Date and time
- Workgroup
- Directory
- Printers
- Hostnames and addresses
- Domains
- E-mail
- Antivirus (ClamAV)
- Review configuration

**Miscellaneous**

## Support, warranty and licensing information

Copyright (C) 1999-2005 Mitel Networks Corporation

This is an unsupported developer release of the Mitel Networks SME Server.

MITEL NETWORKS DOES NOT PROVIDE ANY SUPPORT FOR THIS DEVELOPER RELEASE.

Mitel Networks also sells a commercial release of this software which has additional features and is fully supported by Mitel Networks and its resellers. For details on the commercial release, please visit <http://www.mitel.com/6000MAS/>

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The following copyright applies to the Mitel Networks SME Server compilation and any portions of the Mitel Networks SME Server it does not conflict with. Whenever this policy does conflict with the copyright of any individual portion of the Mitel Networks SME Server, it does not apply.  
\*\*\*\*\*

SME Server users may copy and redistribute this software. The text of the GPL license may be found at <http://www.fsf.org/licensing/licenses/gpl.html>. Some packages may have an alternate open source licence. The applicable license for each software module is specifically identified and can be seen by running the `rpm -qiv packagename` command, from the command line. Details on other open source licences can be obtained here: <http://www.opensource.org/licenses/>.

### About Our Example Company: The Pagan Vegan

In this manual, we use examples of a catering and event-planning company, The Pagan Vegan or TPV, that configures, administers and makes use of their server. As far as we know, no company of this name exists.

### What's New

For the most complete list of information about changes that have been made in SME Server, see the release notes that accompany your download.

## Server Features

The SME Server server and gateway installs automatically on a PC, converting it to an industrial-strength communications server that optionally allows all of the computers on your network to share a single Internet connection.

In one simple, easy-to-install package, you get:

- A high performance email server that handles email to and from your users.
- Enhanced security features that reduce the risk of intrusion.
- A central file server enabling seamless information exchange among Windows, Macintosh and Unix machines.
- A web server to host your company web and/or intranet site.
- Browser based server-manager software that makes it easy to add new user accounts, control remote access, configure network printers, set up workgroups and connect additional networks.
- Special services that speed web and Internet access, improving the performance of your network.
- A shared email address book that is maintained automatically.
- i-bays, a unique communications and collaborative facility that makes it easy for users to work together on projects.
- Quota Management - you have the ability to set a limit on the amount of a disk space a user can use for files and e-mail.
- Windows 2000 and XP domain logon support - Previous versions have allowed the server to act as a domain controller for client computers running Windows 95, 98, ME or NT. This version now extends that domain logon support to Windows 2000 and Windows XP.
- USB printer support - It is now possible to connect the SME Server to a printer via the USB port.
- Improved Macintosh file sharing support - The server now includes better support for Macintosh file sharing and eliminates some previous cases where Macintosh users were unable to access i-bays.
- Experimental ISDN card support - While our software has always supported external ISDN adapters, this version now includes experimental support for using an internal passive ISDN card.
- Use of unmodified packages from upstream providers - Packages from Centos 4 (2.6.9 kernel), Mitel, and other packages from atrpms and rpmforge are used unmodified whenever possible. The result is that any other Redhat EL4 or Centos 4 RPMS should work without modification.
- Installation on a system with 1 hard drive is automatically set up half of a RAID1 mirror, ready to accept a second drive. Systems with 2 drives are set up as RAID 1; 3-5 drives as RAID5; and 6+ Drives as RAID6.
- Secure email enhancements. POP3/SSL, IMAP/SSL, SMTP/SSL, SMTP AUTH over SMTP/SSL.
- Webmail has been upgraded to the latest versions of Horde, Imp, Turba and Ingo from horde.org
- SMTP Email reception is now handled by qpsmtpd. Advanced but simple to use plugin system to easily install extra functionality and write local rules. Almost all features are implemented in plugins.
- Antivirus email and hard drive scanning is now provided by ClamAV. Virus definitions are kept up to date automatically, and program updates will be available automatically via the software installer (yum).
- Email attachment handling: Including the ability to block EXE, ZIP, PIF and automatic conversion of TNEF or UUENCODE encoded attachments to MIME.
- Spam Filtering with Spamassassin. Automatic tagging with X-spam-status headers, and optional filtering and subject tagging. Configurable rejection levels.
- Enhancement to the pseudonyms panel. You now have the ability to send (e.g.) support@domain1 and support@domain2 to different places, and you can now enter pseudonyms of pseudonyms.
- Yum based Software installer panel. Approved contribs and official updates can now be installed in the server-manager. Selectable "Automatically install updates" option.



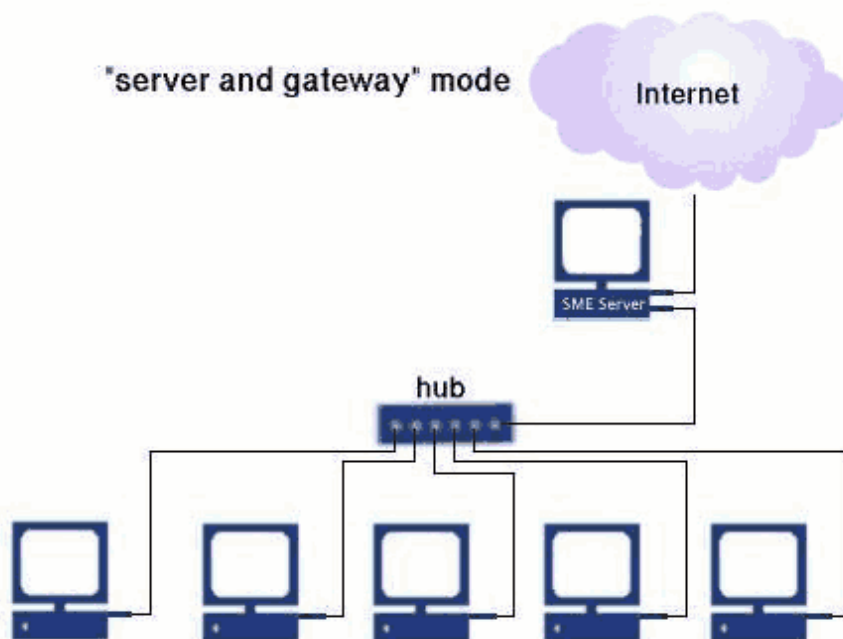
**Languages:**

**English** • Deutsch

## The role of the SME Server

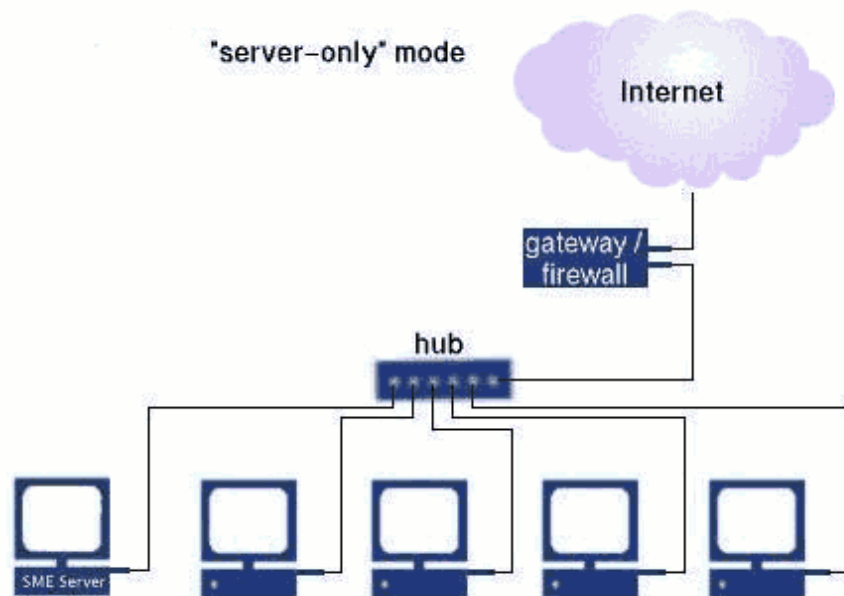
Your SME Server manages your connection to the Internet by routing Internet data packets to and from your network (which allows all the computers on your network to share a single Internet connection) and by providing security for your network, minimizing the risk of intrusions. When one of your local computers contacts the Internet, or is contacted by an outside machine on the Internet, the SME Server not only routes that connection, but seamlessly interposes itself into the communication. This prevents a direct connection from being established between an external computer on the Internet and a computer on your local network thereby significantly reducing the risk of intrusion onto your network.

Your server also provides services - including e-mail, web access and a powerful file sharing and collaboration feature called "i-bays" - that allow you to communicate better internally and with the rest of the world using the Internet. Throughout this user's guide, the word gateway is used to mean the computer that acts as the interface between your local, internal network and the external world.



>>>Server and Gateway Mode<<<]]

If you prefer, you can also run your SME Server in "server-only" mode. In "server-only" mode, your server provides your network with services, but not the routing and security functions associated with the role of "gateway". The server-only mode is typically used for networks already behind a firewall. In that configuration, the firewall fulfills the role of gateway, providing routing and network security.



>>Server only Mode]] Once

installed, your SME Server can be configured and managed remotely. Routine administration is handled from your desktop using a web-based interface, so only on rare occasions will you require direct access to the server computer. Once installation is complete, most customers put the server in an out-of-the-way place like a utility closet. If you wish, you can disconnect the keyboard and monitor. (Note that some computers may not operate correctly without an attached keyboard.)



#### Tip:

#### More About Ethernet

Appendix A: Introduction to the Ethernet Local Area Network (LAN) , briefly explains ethernet, ethernet components and typical ethernet configuration.



#### Languages:

English • Deutsch

## Your Internet Service Provider (ISP)

Your Internet Service Provider or ISP is your connection to the Internet - it routes Internet data packets to and from your server. It also provides other essential services. This section of the user's guide reviews what ISPs offer and what the implications are in choosing among the various options available to you. While your ISP can also assist you in selecting and arranging the right Internet services for your organization, it's important to know the general range of services available, since not all ISPs offer all services.



#### Warning:

If you are operating the product in "server-only" mode, you will need to review your gateway/firewall documentation and perhaps consult with your ISP regarding your configuration. For example, depending on your plans for the server, your ISP may need to publish DNS records associating your mail and/or web servers with your firewall IP address. You may also need to configure your firewall for port forwarding of services.

In server-only mode, the single Ethernet connection to the local network is "trusted" as being secure and packet filtering is disabled. For that reason, a server-only server must always be behind a local firewall. You should not directly connect such a system to the Internet via an Internet Service

Provider.

## Dedicated versus dialup connectivity

Connectivity, also referred to as Internet access type, refers to the physical connection between your site and your ISP. How you connect to your ISP affects the speed of your Internet connection, which, in turn, impacts such things as how quickly your web site is displayed to visitors.

Dedicated connectivity refers to a full-time connection to your ISP. Although they are more expensive than the alternative, dedicated connections are generally faster and allow you to use the full range of services on your server. There are several common types of dedicated connectivity. ADSL provides relatively fast data transmission over phone lines. A cable connection links you to your cable company, which provides you with many (though not all) of the same services as a traditional ISP. The speed of transmission over a cable network can vary widely (from quite fast to very slow) based in part on the usage within your neighborhood.

If you have dialup connectivity, your server is not permanently connected to the Internet. Rather, it connects to your ISP over a phone line using a modem or ISDN adapter . Because your connection to the Internet is not permanent, some of the services on your server cannot be provided to the outside world. For example, having your server host your external company web site would create a problem because whenever your server was not connected to the Internet, the web site would not be available. (However, it could certainly host an intranet web site because the local network would always be connected.)

## The IP address

An IP address is an identifying number assigned to all devices connected to the Internet, and is used in routing information from one device to another. Like your phone number, your IP address enables other people to reach you. In our standard configuration, your ISP only needs to allocate one IP address for your network. It is assigned to your server, which will accept all the Internet data packets intended for your network and distribute them to the appropriate computer - much like an office receptionist is able to accept incoming calls and direct them to the appropriate extension.

### Static versus dynamic IP addressing

A static IP address never changes. It is permanently assigned to your server by your ISP.



#### Note:

Static IP addressing is preferable to dynamic IP addressing because it makes it easier for users on the Internet to connect to your services.

Dynamic IP address assignment means that your IP address is assigned to you only temporarily and may be changed by your ISP. This makes it more difficult to ensure continuity of service to your network. Consider again our telephone number analogy. When your telephone number changes, you are able to place outgoing calls. However, until your new phone number is registered with Directory Services, other people are unable to look up your new number and place calls to you. Similarly, whenever your IP address changes, a record associating your server with its new IP address must be published with the equivalent of Directory Services (known as Domain Name Service or DNS) before incoming traffic can find you.

If your IP address is dynamically assigned and you have a dedicated connection to your ISP (for example, with a typical cablemodem), you may find it helpful to use a dynamic DNS service . We strongly recommend

you review Appendix B: Dynamic DNS services for more information about this worthwhile option.

### **Routable versus non-routable IP addresses**

If an IP address is analogous to your phone number, then a routable IP address is the equivalent of a full telephone number complete with country code and area code such as +1-613-555-1234. Using the same analogy, a non-routable address is the equivalent of an office extension. If your server is assigned a non-routable address, it cannot directly receive incoming Internet connections, which limits the services that it can provide to your site.

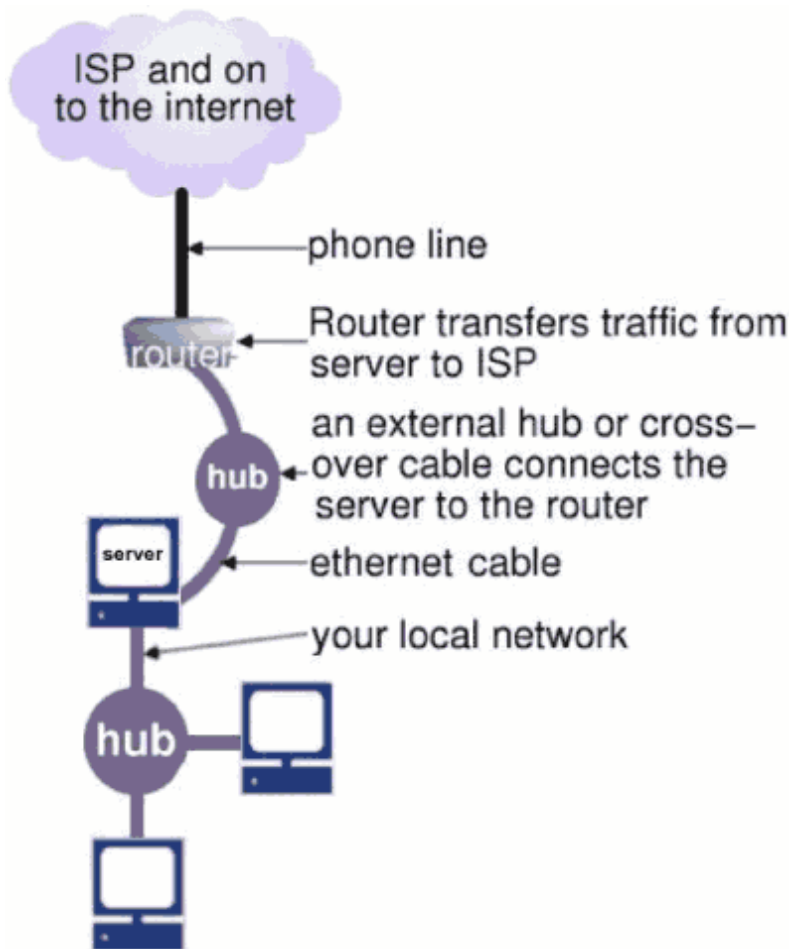
### **Arranging connectivity with your ISP**

If you are going to be using your server in "server and gateway" mode, you will need to arrange for a connection to the Internet. Your ISP will help you connect your site and provide you with services that enable you to take advantage of the Internet (e.g. e-mail delivery). To some extent, the type of connection used determines the services needed. Therefore, we guide you first through arranging connectivity and then direct you to the appropriate list of services for each type of connection. The terms used in the following sections are defined at the end of this chapter.

To connect your site to the Internet, you not only need to arrange your physical connection (modem, ISDN, DSL, cable modem, etc.), but you also need to ensure that your server can locate the appropriate devices at your ISP's site. Your ISP will give you this information (e.g. IP addresses for their devices) which must eventually be entered into your server console (a straightforward process covered in a later chapter). Many ISPs use a DHCP server which can directly configure your server with some or all of these parameters.

### **Ordering a corporate ADSL or other commercial dedicated connection**

Typically, your ISP will arrange for and configure your external hub and router. Alternatively, you may be required to install that hardware yourself under their direction. If a special phone line is required, the ISP will typically arrange that. It is most typical with corporate service that you receive a routable, static IP address. In fact, usually you will be allocated a block of routable, static IP addresses for your corporation - you will need only one for your server.



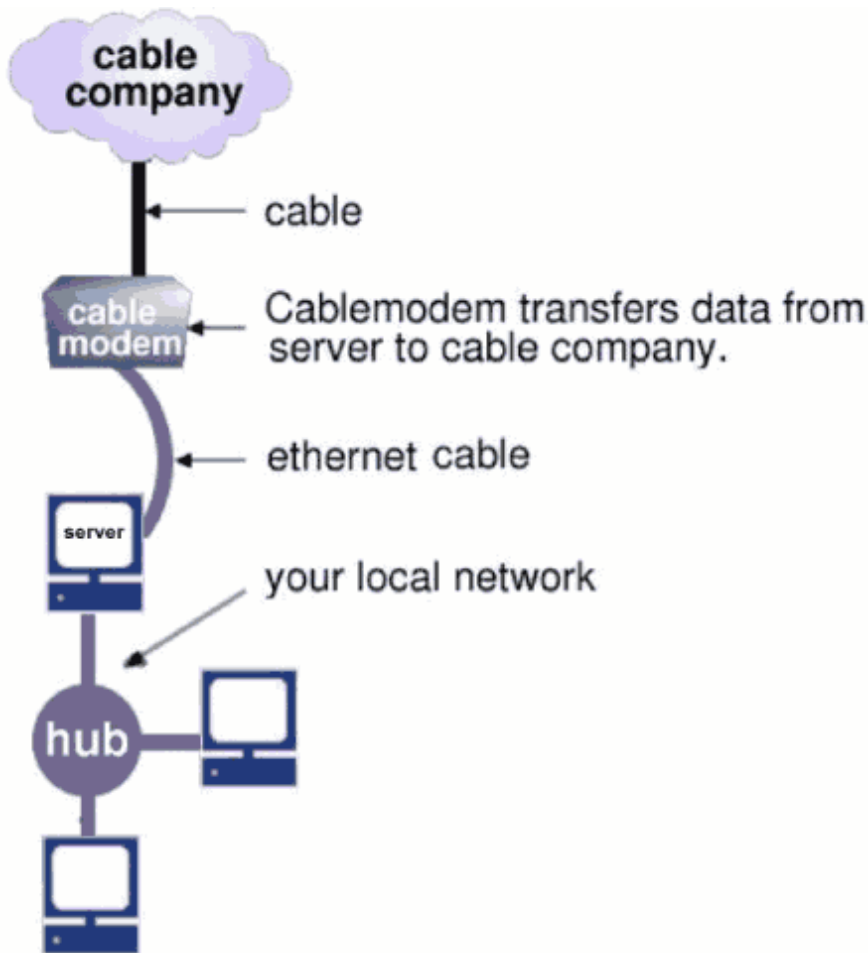
Information provided to you by your ISP:

- static IP address (or block of addresses from which you choose one)
- IP address of router ("gateway IP address")
- subnet mask

Order services from: Service List A

#### Ordering cablemodem or residential ADSL service

Typically, your cable company or ADSL provider will install a configured cablemodem or ADSL router at your site. If you do not have cable access, your cable company will install it for you. ADSL connects to the ISP via a conventional phone line. If you require an additional phone line, it is typical for you to arrange that yourself. There are three possible configurations when ordering cablemodem or residential ADSL services.



#### Note:

In the tables below, please keep the following information in mind:

- ISPs often supply the items marked \* to your server by DHCP.
- Some ISPs block outgoing HTTP connections, forcing you to use their proxy server. This interferes in a few minor ways with your server (e.g., the test for Internet connectivity will fail erroneously). However, using the ISP's proxy server will normally work fine.

1. You receive a routable, static IP address Information provided to you by your ISP:

- static IP address
- IP address of cablemodem or ADSL router ("gateway IP address")
- subnet mask

Order services from: Service List A

2. You receive a routable, dynamically assigned IP address and you elect to use a dynamic DNS service (We encourage you to review Appendix B: Dynamic DNS Services for a discussion of dynamic DNS services.) Information provided to you by your ISP:

- gateway IP address\*
- subnet mask\*

Information provided by dynamic DNS service:

- DNS service account name
- DNS service password

Order services from: Service List B

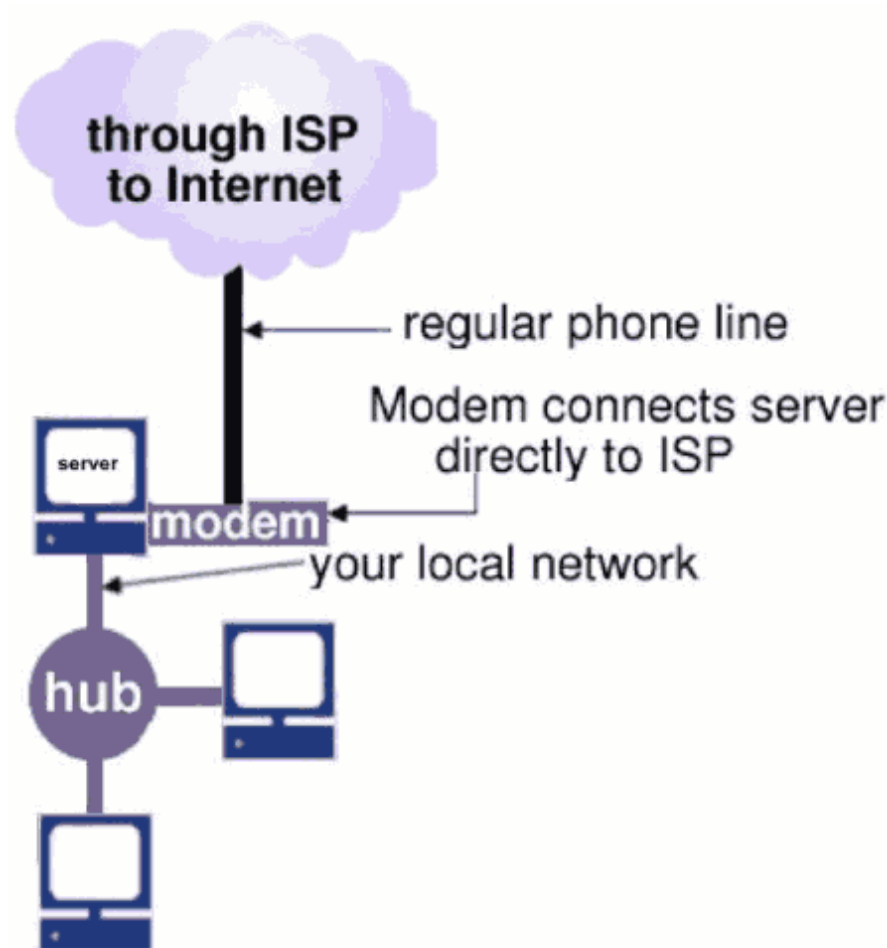
3. You receive a routable, dynamically assigned IP address and you elect not to use a dynamic DNS service OR your IP address is non-routable. Information provided to you by your ISP:

- IP address of cablemodem or ADSL router ("gateway IP address")\*
- subnet mask\*

Order services from: Service List D

### Ordering a dialup connection

It is typical for you to purchase and install your own modem or ISDN adapter for your dialup connection. (Be sure to use a Linux-compatible modem - ~WinModems will not work.) Your modem connects to your ISP over a conventional phone line. If you require an additional phone line, it is typical for you to arrange that yourself.



Your ISDN adapter will connect to the ISDN connection installed by your ISP or local telecommunications provider. The software can work with external ISDN adapters and includes support for passive ISDN cards.



#### Warning:

While the software includes experimental support for ISDN cards, we do not provide technical support for the use of these cards as they have not yet been tested in a wide enough variety of environments.

There are two possible configurations with dialup service: 1. Your ISP is able to meet all of the following three conditions:

- you receive a routable, static IP address
- your ISP will provide a secondary mail server for your domain, which receives e-mail when your server is not connected.
- your ISP is able to accept the "ETRN command". (This command is used by the server to retrieve the mail held by the ISP's secondary mail server.)

Information provided to you by your ISP:

- static IP address
- dialup access number
- dialup account name
- dialup account password

Order services from: Service List C

2. Your ISP is unable to meet all three of the above conditions Information provided to you by your ISP:

- dialup access number
- dialup account name
- dialup account password

Order services from: Service List D

## **Arranging Services From Your ISP**

In each of the previous sections on connectivity, we direct you to the appropriate list of services that should be ordered from your ISP.

### **Service List A**

- domain name set up and hosting
- publication of DNS address records for your web server, FTP server and e-mail server
- publication of DNS mail (MX) records
- secondary mail server (optional)
- Internet news server (optional)

### **Service List B**

Services to order from ISP:

- secondary mail server (optional)
- Internet news server (optional)

Services From Dynamic DNS Service

- domain name (depending on the service purchased, your dynamic DNS service may restrict what your domain name can be)
- publication of DNS address records for your web server, FTP server and e-mail server
- publication of DNS mail (MX) records

### **Service List C**

- PPP dialup access (with static IP)
- domain name
- publication of DNS address records for your e-mail server\*
- publication of DNS mail (MX) records
- secondary mail server (ETRN must be supported)
- Internet news server (optional)

Your web and FTP servers are available to the external world only when your server is connected to the Internet. DNS address records for web and FTP servers only need to be published if it is likely that someone external to your site will need to connect to them for a particular reason.

#### Service List D

Please read the important notes (below) on the limitations of this configuration.

- PPP dialup access (if you are using dialup connectivity)
- POP mailbox (with generous size limitation)
- domain name - route all mail for domain name to the single POP mailbox
- Internet news server (optional)



#### Warning:

##### Note on Service List D (Multidrop Mail)

Service list D is applied to configurations where the publication of DNS records is not practical either because your IP address changes frequently or because it is non-routable. Because there is no published address receiving incoming network connections, this configuration does not allow you to host a web page or FTP site using your SME Server.

In this case, e-mail is handled using a method called "multidrop", which involves temporarily storing all e-mail messages addressed to your domain in a POP mailbox at your ISP until your server connects and fetches them. Your POP mailbox must be large enough to hold the e-mail for your organization until it is fetched. If your primary ISP cannot supply this, you can use another ISP for your e-mail hosting.

As e-mail messages are delivered into the POP mailbox at your ISP, some of the addressee information is removed. To determine to whom the e-mail message is addressed, your server uses several heuristics. This works very well for normal person-to-person e-mail. However, messages from mailing lists (and other sources where the user's account name is not present in the headers) cannot be delivered. Any e-mail that cannot be delivered will be returned to the sender. If the e-mail cannot be returned to sender, it will be directed to the system administrator.

Some ISPs add a header to each e-mail message as it enters the POP mailbox to assist in determining the addressee. One common header tag is: "X-Delivered-To". If your ISP does this, make note of the header tag used so that you can configure your server to look for it (explained in a later section).

Because of the potential problems involved with delivery of e-mail to multidrop mailboxes, we strongly encourage you to consider other means of mail delivery before resorting to using multidrop.

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## Terms used in ordering connectivity and services

### ADSL (or DSL)

```
-----  
ADSL is a type of high-speed Internet access that uses regular phone lines  
and is available in many metropolitan areas.  
-----
```

### Domain Name

```
-----  
This refers to the unique name attached to your organization on the Internet.  
For example, "tofu-dog.com" or "e-smith.com". If you don't have a domain name,  
your ISP can help you select one, ensure it is available, and register it.  
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```

### DNS (Domain Name Service)

```
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DNS, or Domain Name Service, refers to the software and protocols involved  
in translating domain names to IP addresses. Your server provides DNS lookup services  
for your local network, and your ISP typically also provides you with the IP addresses  
of DNS servers. These servers do not need to be configured into your server as the DNS  
server that is provided with your server will correctly resolve all local and Internet  
names.  
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```

### DNS: Publication of DNS Address Records

```
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The publication of DNS address information allows other DNS servers to look up  
your domain information. Your ISP must publish DNS address records associating the  
name of your web server ("www.domain.xxx"), FTP server ("ftp.domain.xxx") and e-mail  
server ("mail.domain.xxx") with the IP address of your server.  
-----
```

### DNS: Publication of DNS Mail (MX) Records

```
-----  
The publication of DNS mail (MX) records is the method used to inform Domain Name Services  
worldwide that all e-mail to your domain ("yourdomain.xxx") should be delivered to  
your e-mail server ("mail.yourdomain.xxx").  
-----
```

### ETRN