



Link Direct

July 2001 Edition



CONTENTS

1. OVERVIEW

2. SYSTEM CONFIGURATION

2.1 Installation on a Network Server

2.2 Installation on Workstations

2.3 Single Server Configuration

2.4 Multiple Server Configuration

2.5 Workstation Configuration

3. SYSTEM INFORMATION

3.1 Hardware Requirements

3.2 Software Requirements

3.3 Processing Overheads

4. SETUP

4.1 Preparation for Link Direct Setup

4.2 Installing Link Direct

4.3 Removing Link Direct

5. FILE UPDATE

5.1 Overview

5.2 Running the Update Manually

5.3 Running the Update Automatically

5.4 Removal a Scheduled Task

6. TECHNICAL DETAILS

6.1 Technical Help

6.2 Customer Services

6.3 Training

1. OVERVIEW

The LinkDirect service is a suite of programs providing the following features:

- LinkDirect allows HTML Internet/Intranet content to be dynamically processed - changing all references which are recognised Butterworths content into hyperlinks pointing to that Butterworths book. The content can be from any site, not just Web servers on the site where LinkDirect is installed. Web search results when accessed will also have all recognised content changed to links to the relevant Butterworths books.
- Butterworths is continually updating its services, books and book content. This means that some of the data files installed with LinkDirect required to recognise and validate content references becomes out of date. LinkDirect provides a mechanism for updating these files automatically or by request, over the Internet.
- Browsers on the same network can be selectively set up to have all content processed by LinkDirect or to bypass LinkDirect processing.

An example of LinkDirect in action can be seen by accessing Butterworths Law Direct (via www.butterworths.com). All the links within the articles on those pages have been inserted by LinkDirect.

NOTE: It is important to note that to follow the links inserted by LinkDirect the user must subscribe to the specific service referenced by the link or it must be a complementary service. For details on subscription contact Butterworths Electronic Publishing on 0845 608 1188 or email butterworths.direct@butterworths.com.

LinkDirect only filters HTTP protocol requests. It does not intercept or support HTTPS, FTP or any other protocol requests.

2. SYSTEM CONFIGURATION

2.1 INSTALLATION ON A NETWORK SERVER

It is possible to configure LinkDirect in several different ways. All configurations in the current version require that access to the Internet must be routed through a Proxy Server.

Installed on a server, LinkDirect behaves like a Proxy Server. It can be installed on a free-standing server or on the same server as a web server or Proxy Server. LinkDirect can be used to process all requests from selected workstations. It is possible to exclude responses from selected web servers from being processed by LinkDirect.

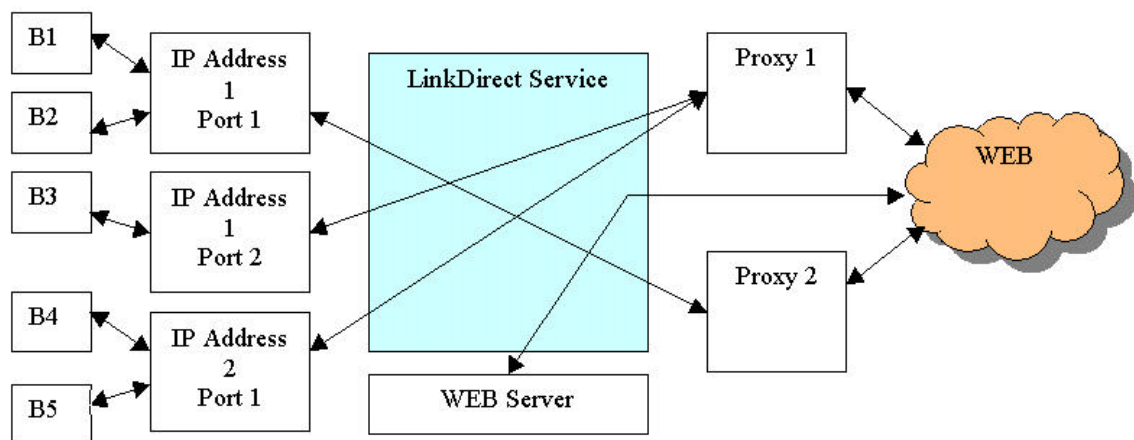
In situations where multiple LANs or Proxy Servers are used, a single instance of LinkDirect can be configured to route clusters of workstations through designated Proxy Servers, (e.g. where security on the Proxy Servers vary).

2.2 INSTALLATION ON WORKSTATIONS

In this configuration LinkDirect can be used to process requests from the workstation on which it is installed.

See the diagram below:

Logical Diagram



B1 through B5 are browsers (workstations).

2.3 SINGLE SERVER CONFIGURATION

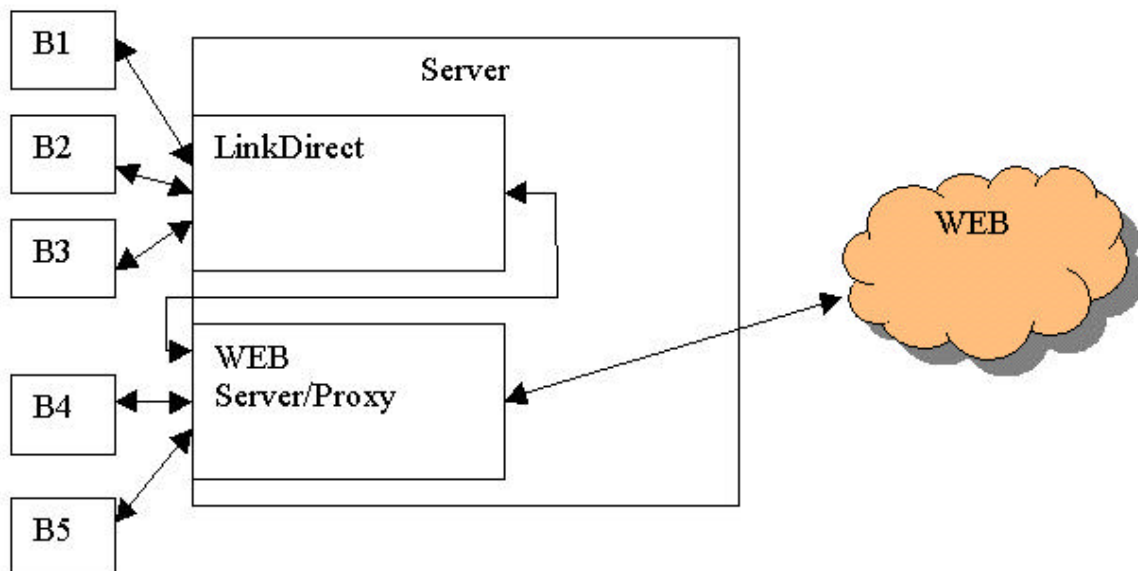
In this configuration LinkDirect is installed on the same machine as the web server or proxy server. They can even share the same IP address but have to service different ports.

If all requests are to be processed by LinkDirect then LinkDirect should be installed on Port 80 and the web/proxy server to a different port (e.g. 2000). LinkDirect is then configured to route all input to the same IP address and the port on which the web/proxy is installed.

In a configuration where LinkDirect routes to a web server it cannot be used to mark up Internet requests. It will only mark up requests to that web Server. Browsers B4 and B5 (see diagram below) access the web server directly while B1, B2 and B3 routes via LinkDirect. B1, B2 and B3 can also access the web server (if it is not a proxy server) by entering a URL with the format "http://<web server>:<WEB Server port number>". B4 and B5 can access LinkDirect by using the LinkDirect port number instead.

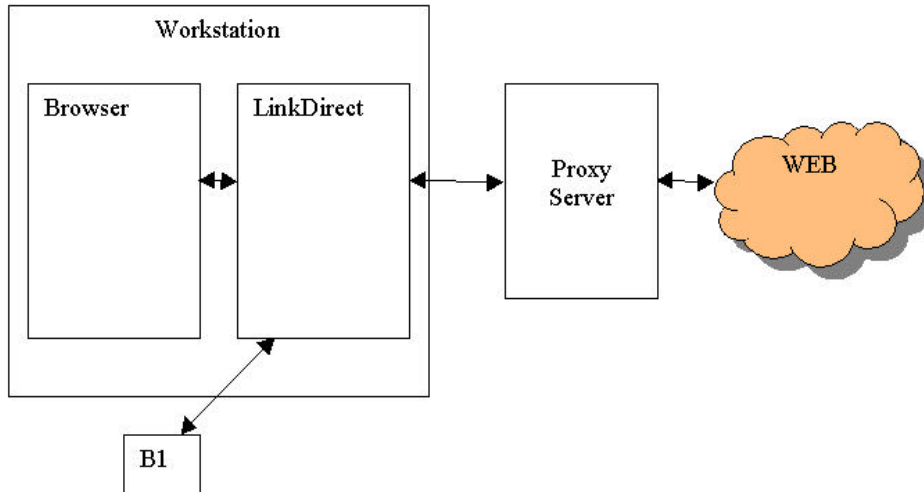
2.4 MULTIPLE SERVER CONFIGURATION

The diagram below illustrates how LinkDirect interacts with a multiple server configuration.



2.5 WORKSTATION CONFIGURATION

In this diagram B1, (which might be an older or less powerful machine) uses another workstation as its LinkDirect server.



As can be seen from the configuration diagrams, LinkDirect is very flexible but always consider the minimum requirements.

3. SYSTEM INFORMATION

3.1 HARDWARE REQUIREMENTS

The following requirements are necessary for the installation of LinkDirect:

Operating Systems: Windows NT 4 or later, Windows 2000, Windows 98.

Memory: 128MB minimum (recommended 256MB).

Disk: 500MB free space.

CPU speed: Depends on anticipated volumes. Minimum: Pentium 100MHz.

A LAN connection to a Proxy Server. (Only certified Proxy Server is MS Proxy).

TCP/IP and WINSOCK.

Note that it does NOT require IIS or MS Proxy on the LinkDirect machine.

3.2 SOFTWARE REQUIREMENTS

It is important to ensure that DNS servers are configured for the TCP/IP protocol. This is done through the "control panel/Network" icon. Consult with your network administrator for details of how to set this up, as well as the IP address(es) of your DNS servers. If you cannot obtain the IP address for your DNS server another mechanism is to update your hosts file ("WINNT\system32\drivers\etc\hosts"). In this extension 'WINNT' is the directory where Windows is installed.

Add a line that looks something like this:

```
187.182.9.203 187.182.9.203 LinkDirect server (this machine)
187.182.9.204 187.182.9.204 Proxy server
```

Substitute the correct IP addresses for each line.

3.3 PROCESSING OVERHEADS

The functionality of the software means that it will have some processing overhead. This overhead varies depending on the size of HTML scripts that it processes. GIF, JPEG, BMP requests have very little impact as they are tunneled through (not processed). On most web pages the response time difference is hardly noticeable being only milli-seconds different. The slower the web connection, the less the difference is noticed.

LinkDirect does impact the throughput of a server. It reduces the maximum throughput by a ratio varying between 4:1 to 7:1 in tests carried out.

4. SETUP

4.1 PREPARATION FOR LINKDIRECT SETUP

Gather the following information. If you don't know some of the requirements, contact your LAN/System administrator who will be able to provide the information.

Proxy Server IP Address

Proxy Server Port Number

LinkDirect Server IP Address – 213.38.165.127

LinkDirect Port Number - 80

Valid logon for the Proxy Server:

Domain:

User ID:

Password:

Installation Disk Drive:

Number of instances of the Markup Engine

MARKUP ENGINE

Deciding on the number of instances of the Markup engine to implement is dependent on several factors: The number of processors installed on the LinkDirect machine, the available memory and the anticipated usage.

A typical workstation machine would only install one instance of the Markup engine.

Central Server installations are more difficult. The following should be born in mind:

Each instance of the Markup engine requires approximately 110MB of memory. So, if a machine has only 128MB of memory, a maximum of a single instance should be used.

If enough memory is available, select 1.5 (suggested) times the number of processors for this value and in the case of a single processor, select 2. This setting can be fine-tuned later.

The number of instances does not affect disk requirements.

DISK SPACE

Check the disk drives on the machine you wish to install LinkDirect to ensure there is enough disk space. This is done in the following manner:

1. Double Left Click on My Computer.
2. Right click on each drive in turn and then left click on properties. The available disk space will be displayed. Select a drive with more than 500MB free space and note it down.

LOGON INFORMATION

It is strongly suggested that the logon for the Proxy Server should be specially created with no expiry for the password; otherwise LinkDirect will stop working when the password expires.

PROXY SERVER INFORMATION AND LINKDIRECT PORT

The proxy server information has to be provided by the administrator if it is on a different machine. If LinkDirect is being installed on the same machine as a web/proxy server, the web/proxy server cannot be on the same IP address/Port number as LinkDirect. Set the web/proxy server or LinkDirect to a different port number. Either can be moved. If the web server port is changed and LinkDirect is installed on port 80 (the default HTTP port) then all requests will be processed by LinkDirect, without having to configure any browsers. If only some workstations should have all their requests processed by LinkDirect, then the web server should be left on port 80 and LinkDirect installed on a different port (e.g. 2000). The browsers that should have their requests processed by LinkDirect, must then be reconfigured (as described below), setting their proxy to point at the LinkDirect IP Address and Port. When the alternate port is selected, select a fairly high number as the low numbers are all occupied by published services like FTP, HTTPS, TELNET etc.

LINKDIRECT IP ADDRESS

The LinkDirect Machine IP Address is the IP Address of the machine on which you are installing LinkDirect. This can be obtained in the following manner:

On the LinkDirect machine,

1. Click 'Start' then select 'Run'.
2. Enter 'cmd' and click OK. This will display a command (DOS) window.
3. Enter 'ipconfig' and hit Enter.
4. One or several IP addresses will be displayed. If more than one IP Address is displayed, consult with your LAN administrator. Otherwise note down the IP Address. Ignore the subnet mask etc.

4.2 INSTALLING LINKDIRECT

INSTALLING ON THE SAME MACHINE AS A WEB OR PROXY SERVER

If you are installing LinkDirect on the same machine as a web server or Proxy Server then you have to do the following, otherwise skip to Running Setup

Change the web Server or Proxy Server settings to select a Port Number that does not conflict with the port LinkDirect is to be installed on. Typically LinkDirect would route all web requests to the Proxy/web server on the same machine. If this is the case then both LinkDirect and the Proxy IP addresses will be the same. The Proxy/web server will then be moved to a different port (not the default HTTP port 80) e.g. 2000. In this LinkDirect configuration the Proxy Port will then be set to 2000 and the LinkDirect Port to 80 and the IIS configuration program should be used to move the port number for the Proxy/WEB server to 2000 (or whatever port number was selected). Alternatively, LinkDirect can be installed on different port (not port 80 e.g. 2000) and the WEB/Proxy left on port 80. See Proxy Server information.

RUNNING SETUP

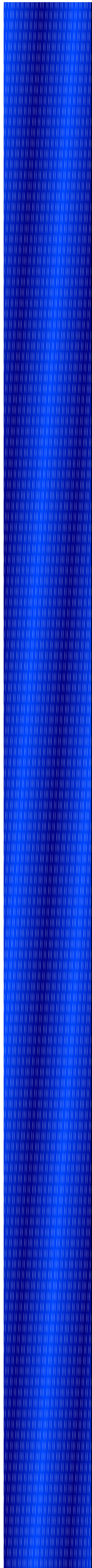
1. Insert the installation CD in the CD drive.
2. Browse the CD and double left click setup.exe.
3. On the security panel, enter the logon information
4. On the server panel, enter the Proxy Server details in the boxes provided and the LinkDirect IP Address in the Server boxes provided.
5. In the miscellaneous panel, you might want to change the name of the LinkDirect log file, but should leave the other options as they are.
6. On the tuning screen enter the number of instances of the markup engine that you wish to implement, as decided above.
7. Set the lockfile name to a file on the local machine e.g. 'c:\temp\lockfile'.
8. Set Maximum number of locks to 10.
9. Select the installation directory based on the disk drive selected above.
10. The LinkDirect service will be installed and started. This will take several minutes.
11. Click Start/Control Panel/ Services and check that 'LinkDirectService' has started. If not, try starting it. If it still fails, it most likely means that it has a port conflict with the WEB server or Proxy server on the same machine and you will have to reconfigure the WEB/Proxy server or LinkDirect to avoid the conflict (see 'Proxy Server Information' above).

The LinkDirect server installation is complete. If you have installed LinkDirect on port 80, no further configuration is required. Otherwise see 'Configuring the Browser'

NOTE.

The LinkDirectService is installed to start automatically when the machine is restarted. To change this:

1. Select Start/Control Panel/Services.
2. Double left click the LinkDirectServices in the list that is displayed. This will display the LinkDirectService properties.
3. Select 'manual' and click OK.



From now on the LinkDirectService will have to be started manually after restarting the machine

CONFIGURING THE BROWSER

If LinkDirect is installed on a different port than port 80, the browsers on the workstations that should be routed through LinkDirect have to be configured.

On each such workstation open up the Browser.

Microsoft Internet Explorer:

IE4:

1. Click View/Internet Options/Connections/LAN Settings/Advanced.
2. Uncheck 'Use the same proxy server for all protocols'.
3. Change the IP address/Port for HTTP to point at the LinkDirect server IP address/Port.

IE5 or later:

1. Click Tools/Internet Options/Connections/LAN Settings/Advanced.
2. Uncheck 'Use the same proxy server for all protocols'.
3. Change the IP address/Port for HTTP to point at the LinkDirect server IP address/Port.

4.3 REMOVING LINK DIRECT

REMOVING LINKDIRECT USING THE SETUP PROGRAM

Follow the same steps as for installing LinkDirect. Select the option to remove LinkDirect when presented with the option. The uninstall should remove all files from the system, as well as all registry settings.

LinkDirect can also be uninstalled through the Start/Control Panel/Add, Remove Programs option in the control panel. This will still require that the LinkDirect CD be available.

REMOVING LINKDIRECT MANUALLY

This is not recommended.

Removing the registration of the Markup engine

1. Select Start/Run and enter 'cmd' then OK.
2. A command window (DOS) is displayed.
3. Change to the installation drive: <drive letter>: <enter>
4. Change to the installation directory: CD <directory>
5. enter: regsvr32 /u statchypertextstream.dll <enter>

Removing the registry entries:

1. Select Start/Run and enter 'regedit' then OK.
2. Open HKEY_LOCAL_MACHINE/Software/Butterworths/LinkDirect.
3. Delete all entries from this point.

Removing the files.

Delete all files installed in <Install directory>\LinkDirect.

Also delete the following files in <Install Directory>:

Statchypertextstream.dll
LinkDirect*. *

5. FILE UPDATE

5.1 OVERVIEW

The file update service installs automatically as part of the LinkDirect installation. It provides a program that can be run either on demand or automatically to retrieve the latest versions of the LinkDirect data files.

The file update service does not require that the LinkDirect service be shut down while an update is happening. If LinkDirect is installed with multiple instances of the MarkUp engine then the service will not be interrupted at all as each instance is updated in turn, leaving the other instances to continue to service incoming requests.

The file update service only retrieves files that have become out of date and the files are compressed during transmission. The size of the files could still cause the update to take quite a while, so if manual updating is used consider that it may potentially take a long time to complete.

The file update program is called LinkDirectUpdateNow.exe and is installed in the directory selected during the installation of LinkDirect but can be run from any directory. The program requires access to the Internet, specifically www.butterworths.com. Your Butterworths representative will provide the exact URL you have to use to update files. This information is also available from the Butterworths help desk (telephone 0845 30 50 500).

The updated files allow additional patterns to be recognised as more content becomes available and can also include corrections if proves necessary.

5.2 RUNNING THE UPDATE MANUALLY

1. Click Start, Run
2. Type in 'cmd' and press Enter. This displays the command window (DOS window).
3. Type the name of the drive where the installation directory is, enter a colon and backslash afterwards and hit Enter (eg c:<enter>). Using the change directory (cd) command change to the LinkDirect installation directory, (e.g. cd LinkDirect)
4. type: LinkDirectUpdateNow <server IP> <Server Port> <enter>
5. A message is displayed for each file indicating whether it is up to date or whether it is being retrieved. After all files are successfully transferred they are implemented and the LinkDirectService is restarted. A message is displayed indicating progress and results. If the transfer or restart fails the operation can be retried. All information is also logged to a file 'c:\temp\trace.log' which can be checked afterwards for information regarding the update. This is useful when running a scheduled task.

NOTE. The IP address of the update server can be obtained from the Butterworths Help Desk (telephone 0845 30 50 500).

5.3 RUNNING THE UPDATE AUTOMATICALLY

To run the update automatically you will need to set up a scheduled task:

1. Create a batch file (a text file with the extension .bat) containing the following text:

```
<drive of LinkDirect>:  
CD <LinkDirect directory>  
LinkDirectUpdateNow <server IP> <Server Port>
```

2. Using Windows Explorer, change directory to c:\<windows directory>\tasks
3. Double click 'Add Scheduled Task'
4. Click 'Next' and then browse to the directory where the batch file was created and select the batch file.
5. Click 'Next' and select the frequency that the update should be run.
6. Click Next and select the time the task should be run and also select the date the updates should start. Ensure that the time selected is such that the machine will be connected to the Internet at that time but also consider selecting a time that has minimal operational impact.

Note. It is suggested that although midnight exactly might seem like a good time to schedule a task, an odd time is often better (e.g. 01:27), as this will minimise the possibility of all users updating at the same time, and updates therefore becoming slow.

7. Enter the user name and password that should be used to run the job.
8. Click finish. The scheduled task has been created.

5.4 REMOVING A SCHEDULED TASK

1. Using Windows Explorer, navigate to the c:\<windir>\tasks directory.
2. Delete the batch file that was created to run LinkDirectUpdateNow.
3. The scheduled task has been removed.

6. OTHER INFORMATION

6.1 TECHNICAL HELP

Support for our on-line services available:

07.00 - Midnight Monday to Friday

08.00 – Midnight Saturday and Sunday by e-mail at:

online.support@Butterworths.com

[Tel: \(44\) 0845 608 1188](tel:(44)08456081188) [Fax: \(44\) 01483 257 917](tel:(44)01483257917)

<http://www.butterworths.com/content/support/techsupport.htm>

To assist the helpline in resolving your problems as quickly as possible please have the following information to hand before calling

What internet browser are you using?

What product do you subscribe to?

Do you have a network or a standalone PC?

If you are on a network what type is it? (ie. Novell NT etc)

Which version of Dos are you using

Which version of Windows are you using?

What was the sequence of events leading up to your problem?

6.2 CUSTOMER SERVICES

Butterworths Direct Helpline is available from Monday to Friday 08 00 – 18 00

Tel: 0208 662 2000

For calls from outside the UK: (44) 207 400 2822

6.3 TRAINING

To find out more about our comprehensive training courses, and to reserve a place.

Tel: (44) 0207 400 2500

E-mail: training@butterworths.co.uk