

## CNDS Challenge 04

**Issued:** Monday, 18 November 2002  
**Mode of study:** Independent learning  
**Skills:** Problem solving

### Background

Proxies are important devices for either giving connectivity of nodes on a private network to a public one, or for allowing enhanced security. In Figure Ch4.1 Host1 makes a direct connection to the Internet through the Proxy. It does this by communicating the destination address and port to a specific port on the proxy server, which will then forward the request onto the destination. In this case, the proxy is setup to receive this traffic on port 1001. It then forwards this data onto the Internet.

In this case, 102.10.10.3 is a real Internet address, while the 192.168.0.x network is a private network, which cannot directly connect onto the Internet. The proxy thus offers Internet connectivity to any node on this network, through the proxy server.

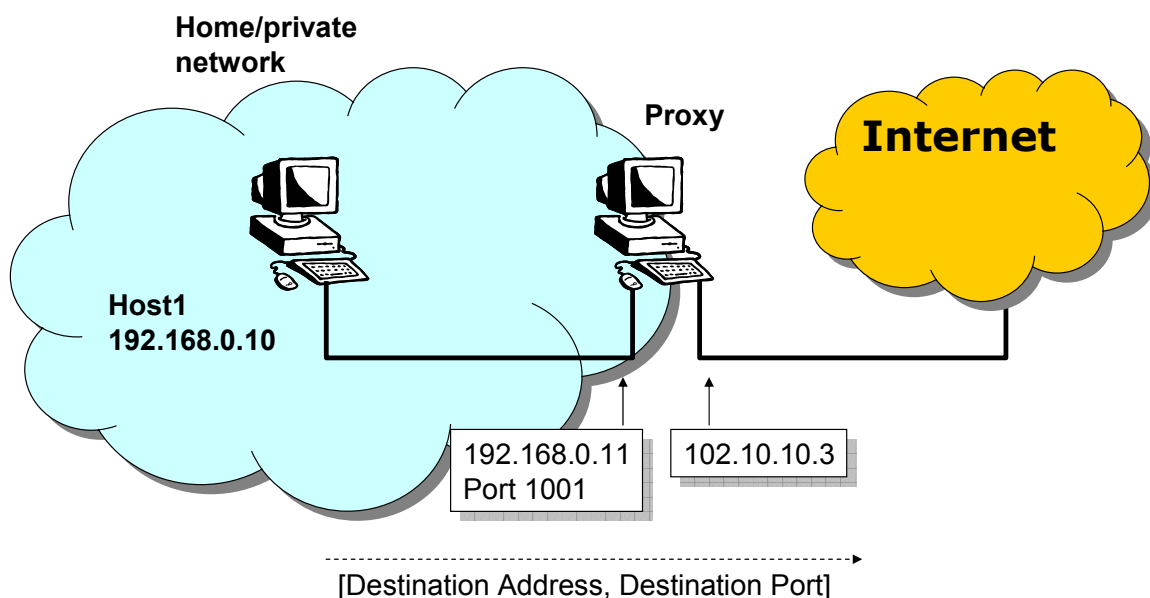


Figure Ch4.1: Proxy server

### Challenge 4

1. If the proxy server in Figure Ch4.1 is setup to act as a proxy for WWW and FTP traffic, complete Figure Ch4.2 for the setup of the proxy settings on Host1.

Outline of setup:

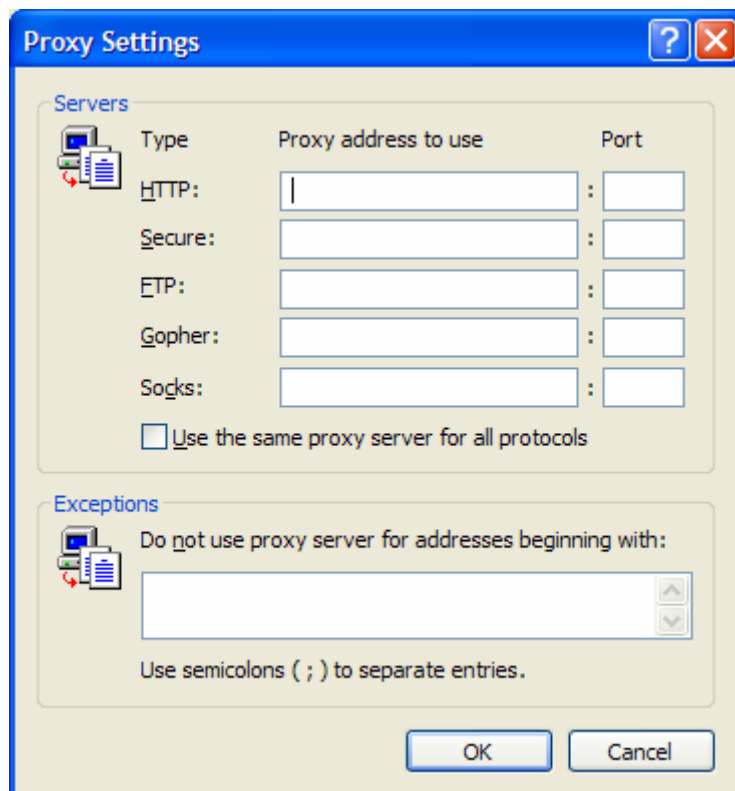
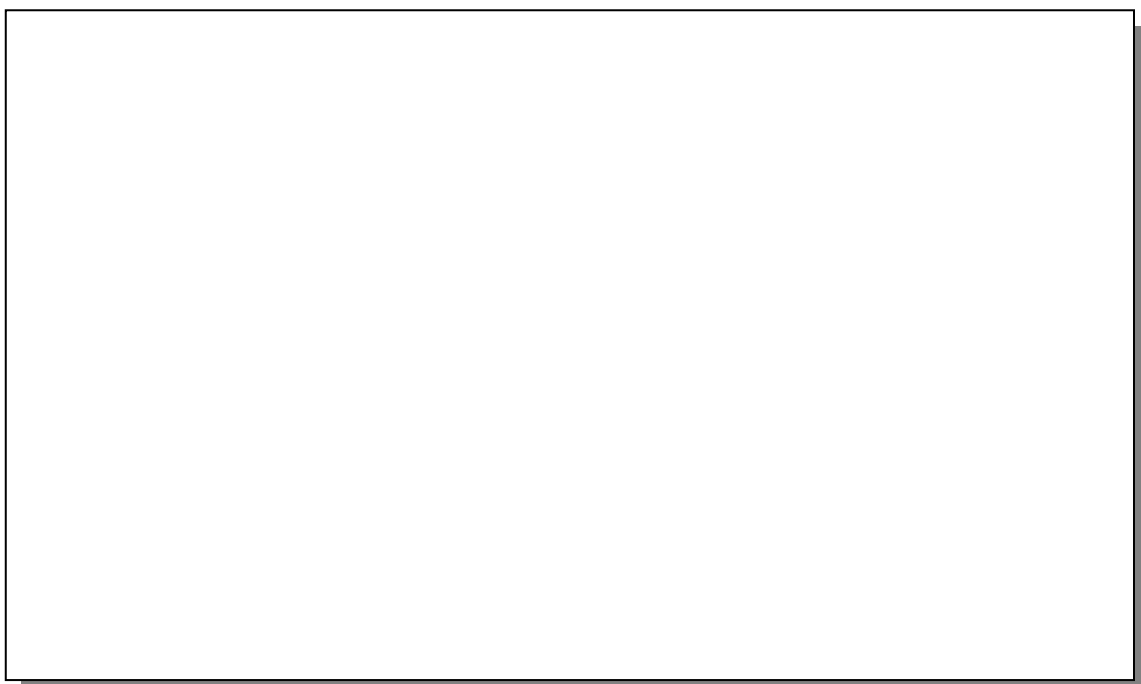
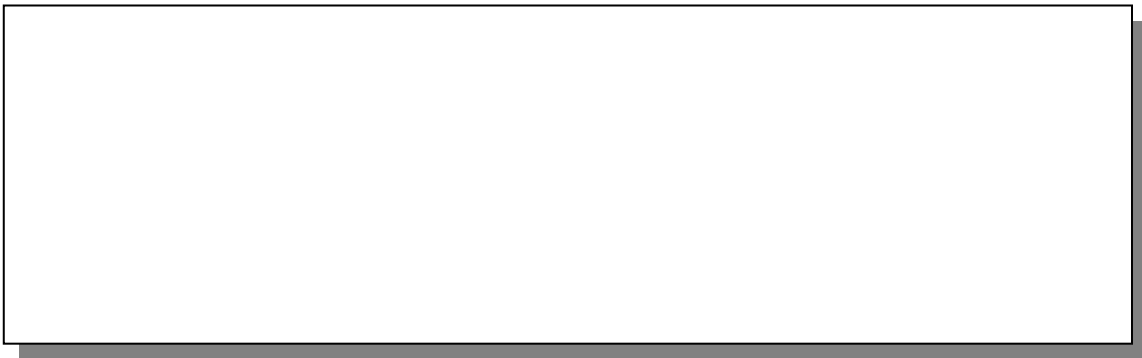


Figure Ch4.2: Proxy settings

2. **Outline** how the server code for the client-server connection in the Teaching Pack could be modified so that it could act as a proxy server for the network connection given in Figure Ch4.3. In this case, the host at 192.168.0.10 requires to communicate with port 2000 on 201.10.11.3.



3. How might the proxy server software be enhanced so that it allows for additional security checking?



192.168.0.10

Proxy

201.10.11.3



192.168.0.11  
Port 1001

201.10.11.3

201.10.11.3  
Port 2000

Figure Ch4.3: Example of a proxy