Title: MOBILE PHONE USED WITHIN A CLIENT-SERVER SYSTEM

Abstract: The present invention relates to a mobile apparatus (MB) comprising: trapping means (IPAD_T) for: receiving from a client device (PC) a request (REQI, REQ2, REQ3) for accessing data, said request using an Internet protocol network access and comprising an information (IP_AD1, IP_AD2) representative of a server device, - based on said representative information, redirecting said request to a first server device (DS) or to a second server device (MB), said mobile apparatus being said second server device, retrieving means (RET3V1) for retrieving the data (DATI, DAT2), transmitting means (USB2_D) for transmitting said data to said client device (PC) using said Internet protocol network access.
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
Mobile phone used within a client-server system

FIELD OF THE INVENTION

The present invention relates to a mobile apparatus comprising data. It relates also to an associated client-server communication system comprising such a mobile apparatus. It finally relates to the corresponding communication method.

Such a mobile apparatus is, for example, a mobile phone or a Personal Digital Assistant PDA.

BACKGROUND OF THE INVENTION

One well known prior art discloses a computer and a remote disk comprising data, said disk being accessed which is accessed by said computer using an Internet Protocol IP network access. This disk is usually called a disk server.

This disk is connected to the computer via physical connection such as a cable, the disk being called an Ethernet disk server. This disk comprises a lot of memory storage and can therefore contain a huge amount of data. In order for the disk server to communicate with the computer, an Ethernet hub is needed. This hub is a device which makes the connection between the computer and the disk server. Hence, thanks to this system, one can have an internal network at home. One can access easily to his own personal data at home.

However, such a system is not useful when one is not at home. Indeed, one cannot access to his own personal network when traveling for example, and especially when one wants to edit a data file for example. Moreover said system is costly because of the hub.

SUMMARY OF THE INVENTION

It is an object of the invention to propose a mobile apparatus comprising data which allows a user to access his own personal data from any computer as if said user was connected to his home network.

To this end, the mobile apparatus in accordance with the invention is characterized in that it comprises:

- trapping means for:
  - receiving from a client device a request for accessing data, said request using an Internet protocol network access and comprising an information representative of a server device,
based on said representative information, redirecting said request to a first
server device or to a second server device, said mobile apparatus being said second
server device,
- retrieving means for retrieving the data,
- transmitting means for transmitting said data to said client device using said Internet
protocol network access.

Hence, the mobile apparatus in accordance with the invention allows a user to access
his personal data at any place using any computer and to edit his own personal data. Thanks
to the trapping means and the Internet protocol access of such a mobile apparatus, any
computer which acts as a client device will see the mobile apparatus as a server device. The
fact that the data are on the mobile apparatus instead of a remote server is transparent to the
computer used. Moreover, no hub is necessary. Thus, a user doesn't have to take his disk
server and his hub everywhere with him. Hence, the user accesses to his own data as if he
was connected to his own home network.

According to not limited embodiments of the invention, the mobile apparatus in
accordance with the invention further comprises the following characteristics.

The first server device may be a remote server. Thus, a remote server can be accessed
via an Internet network access using the mobile apparatus. It is interesting when a client
device has no Internet access or when the Internet access of this client device is not
authorized for the user of the mobile phone or when it is disable momentarily.

The first server device may be the mobile apparatus. Thus, the mobile apparatus
comprises at least two servers.

The mobile apparatus may comprise a web server and/or a file server and/or a media
server. Thus, either some data, files or media files can be accessed.

The mobile apparatus may comprise preset information representative of the mobile
apparatus and associated with different servers within said mobile apparatus. Thus, the
mobile apparatus can expose to the client device different servers and different kind of
associated services.

The information representative of a server device may be an Internet protocol address.

Thus, the mobile apparatus is viewed by the client device as any other server device.

The mobile apparatus may comprise a dynamic host configuration protocol service.
Thus, it allows to manage different IP addresses associated with the servers in the mobile
apparatus and to avoid conflict between those addresses.
The trapping means may be located in an application layer. It avoids dependency to a
mobile apparatus supplier.

The trapping means may be located in a transport and network layer. It allows to be
more efficient and to transmit the request faster.

The mobile apparatus may be a mobile phone and the client device may be a
computer. It permits a user to connect his mobile apparatus everywhere on any computer.

The present invention also relates to a method of accessing data in a server device,
said method comprising the steps of:
- sending a request from a client device to a mobile apparatus using an Internet protocol
network access provided by said mobile apparatus, said request comprising an information
representative of a server device,
- receiving said request in the mobile apparatus and, based on the information
representative of a server device, redirecting said request to a first server device or to a
second server device, said second server device being the mobile apparatus,
- retrieving data in the mobile apparatus, said mobile apparatus acting as a local server,
- transmitting said data to said client device using said Internet protocol network
access.

The present invention finally relates to a computer program product comprising
program instructions for implementing said method.

These and other aspects of the invention will be apparent from and will be elucidated
with reference to the embodiments described hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will now be described in more detail, by way of example, with
reference to the accompanying drawings, wherein:
- Figure 1 corresponds to a first not limited embodiment of the mobile apparatus
  according to the present invention used within a client-server communication system;
- Figure 2 corresponds to a first not limited variant of the first embodiment of Figure 1;
- Figure 3 corresponds to a second not limited embodiment of the mobile apparatus
  according to the present invention used within a client-server communication system;
- Figure 4 illustrates a first network exposed to a computer by the mobile apparatus
  according to the present invention;
- Figure 5 illustrates a second network exposed to a computer by the mobile apparatus
  according to the present invention; and
- Figure 6 illustrates a third network exposed to a computer by the mobile apparatus according to the present invention.

**DETAILED DESCRIPTION OF THE INVENTION**

Referring to Figure 1, a first not limited embodiment of a mobile apparatus MB in accordance with the invention is depicted. Such a mobile apparatus MB is used within a client-server communication system SYS which comprises:
- a first device PC, which is in this example a personal computer, and
- a second device MB, which is the mobile apparatus.

In this example, the mobile apparatus MB is a mobile phone. Of course, it can be any other mobile apparatus such as a Personal Digital Assistant PDA, or a multimedia player. The example of the mobile phone will be considered in the following description.

The computer PC and the mobile phone MB communicate via an Internet protocol IP network access through different communication layers well-known by the man skilled in the art, whose main layers are:
- an application layer APPLI_L,
- a transport and network layer TCPIP_L, and
- a physical layer PHYS_L.

Each layer solves a set of problems involving the transmission of data, and provides a well-defined service to the upper layer protocols based on using services from some lower layers. Upper layers are logically closer to the user, relying on lower layer protocols to translate data into forms that can eventually be physically transmitted.

In order to communicate through these different layers, the computer PC and the mobile phone MB comprise different associated communication means.

An example of such a communication is illustrated in the Figure 1, where the computer PC communicates with the mobile phone MB, that is to say access to data on the mobile phone MB via a web browser, and the data are transmitted from the mobile phone MB to the computer via an Universal Serial Bus USB link on the physical layer PHYS_L, the data being stored in the mobile phone MB. Of course any other communication links such as wireless link Bluetooth (defined in the standard IEEE 802.15.1), Wifi (defined in the IEEE standard 802.11), or Zigbee (defined in the standard IEEE 802.15.4) can be used.

Moreover, in this example, a request/response protocol, such as HTTP (for Hypertext Transfer Protocol) is used for the application layer APPLI_L where the originated client is the web browser, and the destination server is the mobile phone MB as will be described.
hereinafter. Such a protocol HTTP is based on a transport and network protocol TCP_IP (for Transmission Control Protocol _Internet Protocol). The HTTP client initiates a request by establishing a TCP_IP connection to a particular port. The HTTP server listening on that port waits for the client to send a request message and upon receiving said request, the server sends back a status line and a message of its own, the body of which can be a requested data or file, an error message, or some other information.

Thus, in this example, the computer PC comprises:
- a web browser WEB_B to communicate on the application layer APPLI_L,
- a network Internet card driver NIC1_D to communicate on the transport and network layer TCPIP_L, and
- a USB driver USB1_D to communicate on the physical layer PHYS_L.

The web browser WEB_B enables to send a request REQ(IP ADI) comprising an IP address IP ADI to the mobile phone MB.

The network Internet card driver NIC1_D allows two devices to communicate over a network, here an Internet network. Such a card implements the electronic circuitry required to communicate using a specific physical layer standard such as Ethernet. This allows communication among small groups of devices on the same LAN (for Local Area Network) and large-scale network communications through routable protocols, such as Internet Protocol IP.

The USB driver USB1_D provides a serial bus standard to connect the mobile phone MB to the computer PC. It can be a USB driver with a cable or a wireless USB driver WUSB.

As for the mobile phone MB, it comprises:
- means for providing an Internet protocol IP network access (not represented), that is to say said mobile phone is configured to send and receive data encapsulated in Internet protocol packets,
- trapping means IPAD_T to communicate either on the application layer APPLI_L, or either on the TCPIP layer, s will be described below,
- retrieving means RET_M for retrieving the data in the mobile phone MB, these retrieving means are in a not limited example a file system or a memory access system,
- a network Internet card driver NIC2_D to communicate on the transport and network layer TCPIP_L, and
- a USB driver USB2_D to communicate on the physical layer PHYS_L.
It is to be noted that when the trapping means IPAD_T are implemented in the application layer APPLI_L, these trapping means can be implemented easily without being dependent of the supplier of the mobile phone. On the other hand, when the trapping means IPAD_T are implemented on the TCPIP layer, it is dependent from the supplier of the mobile phone, but it can be more efficient because it is carried out within the TCPIP layer, so it is faster.

In this not limited example of Figure 1, the trapping means are located in the application layer APPLI_L.

These trapping means IPAD_T enable to:

- trap a request REQ1(IP_AD1) received from the computer PC,
- analyze such a request,
- retrieve the data DAT1 in the mobile phone MB using the retrieving means RET_M, and
- trigger the transmission of said data DAT1 to the computer PC via its network Internet card driver NIC2_D and its USB driver USB2_D.

Thanks to his mobile phone MB, a user of the mobile phone MB can access to his own personal data via any computer PC everywhere at anytime, for example, when the user is on vacation or at some friends' home.

To do so, the user connects his mobile phone MB with a computer PC available. He then opens the web browser WEB_B of the computer PC he has accessed to, and enters an IP address IP_AD1. This IP address is associated with his mobile phone MB. When the IP address IP_AD1 is entered, a web page associated to this IP address is displayed on the screen of the computer PC. For example, the screen displays the address book of all his personal contacts. He can then edit his address book. Of course, instead of the IP address, the user can also enter a fully qualified name FQN in the web browser WEB_B or any other information representative of the mobile phone MB.

When the mobile phone MB is connected with the computer PC, it starts to behave like a Network Interface Card NIC, and provides an Internet protocol IP network access which enables the computer PC to access the mobile phone MB. The computer PC sees the mobile phone MB as a server to which a corresponding IP address is associated as any server. The fact that this server is a mobile phone is transparent for the computer PC.

The access to the personal data via the computer PC is done as follows.

In a first step 1), the web browser WEB_B of the computer PC sends a request REQ1(IP_AD1) comprising the IP address IP_AD1 entered by the user to the mobile phone
MB. Said IP address corresponds to any server viewed from the computer PC side and, in fact, corresponds to the mobile phone MB. Again, the fact that this IP address corresponds to the mobile phone MB is transparent for the computer PC.

In a second step 2), the request REQ(I _ADl) is transmitted to the mobile phone MB via the different protocol layers. This is done in two sub-steps. In a first sub-step 2a), the request finds its way through the different layers in the computer PC as follows.

- In the application layer APPLI_L, the request REQ(I _ADl) is encapsulated into the web protocol, here HTTP. Then, said request is transmitted by the web browser WEB_B to the network Internet card driver NIC1_D through the transport and network layer TCPIP_L.

- In the transport and network layer TCPIP_L, the request REQ(I _ADl) is encapsulated into the TCP_IP protocol, that is to say into IP packets and then transmitted to the USB driver USB1_D through the physical layer PHYS_L.

- Finally, the request REQ(I _ADl) is encapsulated in the USB protocol and sent to the mobile phone MB via said physical layer PHYS_L. Thus, the IP packets of the TCPIP protocol are encapsulated in the USB protocol.

- Then, the USB driver USB1_D of the computer PC transmits these encapsulated IP packets to the USB driver USB2_D of the mobile phone MP, using the IP network access.

In a second sub-step 2b), the request REQ(I _ADl) finds its way through the different layers in the mobile phone MB as follows.

- In the physical layer PHYS_L, the request REQ(I _ADl) is received by the USB driver USB2_D of the mobile phone MB. It is then desencapsulated out of the USB protocol to be transmitted to the transport and network layer TCPIP_L.

- In the transport and network TCPIP_L Layer, the request REQ(I _ADl) is received by the network Internet card driver NIC2_D and is desencapsulated out of its TCP_IP protocol to be transmitted to the application layer APPLI_L.

- In the application layer APPLI_L, the request REQ(I _ADl) is received by the trapping means IPAD_T and is desencapsulated out of its web protocol, here the HTTP protocol. The trapping means IPAD_T then analyze the request REQ(I _ADl) , retrieve the data DAT1 asked for, and transmit said data DAT1 to the computer PC. The data DAT1 hence are transmitted through the same path as it has been described for the request REQ(I _ADl) on the reverse way as illustrated in the Figure 1.

Here in the example taken, the data DAT1 correspond to a web page which displays the personal address book of the user of the mobile phone MB. Hence, the user can edit his personal address book on the computer screen.
The user can also possibly modify/update his address book. When the user makes a
modification on his address book and wants to update it, he clicks on a button of the interface
to do so, for example, and then, the computer sends a request REQ (not illustrated in Figure
1) of updating to the mobile phone MB. Data stored in the mobile phone MB can easily be
modified/updated via the computer PC using a standard web services such as MediaWiki or
WebDAV (for Web based Distributed Authoring And Versioning) for example.

Such MediaWiki or WebDAV protocols aim is to make the World Wide Web a
readable and writable medium. It provides functionalities to create, change and move
documents on a remote server (typically a web server), here the mobile phone MB. Support
for WebDAV can be found for most operating systems of a computer nowadays, making it as
easy to use files on a WebDAV server as if they were stored in a local directory. Thus, if the
mobile phone MB comprises such a WebDAV service, it will be easy for the user of the
mobile phone to connect to every computer. It is to be note that this WebDAV service is an
additional service running over the HTTP protocol.

Hence, the user can easily edit, modify and update his own personal data on his
mobile phone MB via the computer PC, which is easier than doing this editing, modification
and updating on the small screen and with a small keyboard of the mobile phone.

Thus, in this client-server communication system SYS, the computer PC acts as a
client, while the mobile phone MB acts as a local server and in this example as a web server,
wherein the standard web browser of the computer is used to access said web server. It is to
be noted, that nowadays, most computers PC have a web browser. Thus, it will be easy for a
user to access to his personal data/files on any computer everywhere.

It is to be noted that the network communication between the computer PC and the
mobile phone MB has been described with three communication layers for sake of simplicity,
but it will be apparent to the man skill in the art that this network communication can be
modeled with more layers.

It is to be noted that, a web server has been taken as example, but many other kind of
servers can be considered.

For example it may be a file server. The mobile phone MB acts as a file server and is
viewed by the computer PC as a remote host with disks (storage areas). A file server standard
protocol such as, but not limited to, SMB/CIFS (for Server Message Block/Common Internet
File System) or NFS (for Network File System) can be used. Such protocols work through a
client-server approach, where a client makes specific requests and the server responds
accordingly. One section of said protocols is specifically for file system access, such that
clients may make a request to a file server. SMB or NFS servers make their file systems and other resources available to clients on the network. Client computers may have their own hard disks, which are not publicly shared, yet also want access to the shared file systems on the server. Hence these protocols allow a computer to access files over a network as easily as if they were on its local disks. Hence, when acting as a file server, the mobile phone MB can store all documents for the user, such as user-specific data files, for example an excel work sheet file, that can be edited using excel on the PC. In other words, the user can transparently use the PC applications, since the applications see the mobile device as a (remote) disk.

Hence, the mobile phone MB appears as a remote network drive (although it is not one). Note that in all modern Operating Systems, this is transparent for the user and the applications.

As another example, the web server may be a media server. The mobile phone MB acts as a media server. A media server standard protocol such as, but not limited to, UPNP (for Universal Plug And Play) or RTSP (for Real Time Streaming Protocol) protocols can be used. In the case of the UPNP protocol, the computer PC acts as a media renderer device, and the mobile acts as a media server device. In the case of the RTSP, the media player in the computer PC sees the mobile phone MB as an RSTP (for Real Time Streaming Protocol) server.

Hence, thanks to this example illustrated in Figure 1, one has seen that the mobile phone MB has given a fake IP network access to the computer PC on the IP network provided by said mobile phone MB to said computer PC, as the server to which the computer PC has accessed is not a remote server, but the mobile phone itself.

In a not limited variant of this first embodiment as illustrated in Figure 2, a plurality of IP addresses IP_AD1, IP_AD2 can be associated with the mobile phone MB. The mobile phone represents then a plurality of local servers. The trapping means IPAD_T will then make a selection between all these IP addresses and redirect the corresponding request to the right local server SERV1, SERV2 inside the mobile phone MB and to their associated databases DAT1_B, DAT2_B within the mobile phone.

Hence, in this variant, the trapping means IPAD_T redirect the request to a first server SERV1 or a second server SERV2, which are both corresponding to the mobile phone MB.

In a second not limited embodiment, the mobile phone MB can provide either such a fake IP network access (the mobile phone is the server), either a real IP network access (the mobile phone is used as a link to a remote server DS) as illustrated in Figure 3.
In this embodiment, the client-server communication system SYS comprises the same objects as those described in the Figure 1, that is to say the client computer PC, the mobile phone MB with the components described above plus at least one remote server DS.

The mobile phone MB comprises furthermore:

- other physical communication means UMST I_D to transmit a request from the client computer PC for accessing a remote server DS, and
- another network card interface driver NIC3_D to communicate with the remote server DS.

It is to be noted that, in this example, the trapping means IPAD_T are implemented on the TCPIP layer TCPIP_L. Therefore, there will be no retransmission of a whole request between the application layer and the TCPIP layer when said request is to be transmitted to a remote server as it will be described hereinafter.

In the example using a web browser, the other physical communication means are a UMTS driver UMTS I_D using a UMST (for Universal Mobile Telecommunication System) protocol, which is one of the third-generation (3G) mobile phone technologies.

In order to communicate with the mobile phone MB, the remote server DS, which is, in this example, an HTTP server, communicates via a network operator system NETOS. This network operator system NETOS comprises, as well-known by the man skilled in the art, a UTRAN system (for UMTS Terrestrial Radio Access Network). One reminds that the UTRAN system comprises radio base stations and Radio Network Controllers RNC. Then the HTTP remote server DS, which comprises a TCPIP interface, communicates with the network operator system NETOS via an Ethernet driver ETH_D and an IP network comprising a plurality of routers IP_R.

In this not limited example, there is only one remote server DS illustrated, but of course, there can be a plurality of remote server DS.

In order to access a remote server DS via the mobile phone MB, the user connects his mobile phone MB on the computer PC, and opens the web browser WEB_B on the computer PC. He then enters the IP address (or Fully Qualified Name FQN or any other information representative of said server) of the remote server DS he wants to access, said IP address being illustrated in the Figure 3 as IP_AD3. The web page corresponding to this remote server DS is then displayed on the screen of the computer PC.

This access via the mobile phone MB is interesting when the computer PC has no direct access to Internet or when the access is momentarily deactivated.

The access to the remote server DS via the mobile phone MB is done as following.
In a first step 1), the web browser WEB_B of the computer PC sends a request
REQ3(IP_AD3) comprising said IP address IP_AD3 to the mobile phone MB. Said request
REQ3(IP_AD3) is carried through the different layers of the computer PC using the different
protocols as described in the first embodiment above.

In a second step 2), on the side of the mobile phone MB, the request REQ3 (IP_AD3)
is carried through the two first layers of the mobile phone MB, the physical and the TCPIP
ones, by the USB driver USB2_D and the NIC driver NIC2_D respectively, using the USB
and TCP_IP protocols respectively.

In a third step 3), the trapping means IPAD_T which, in this example, are
implemented in the TCPIP layer TCPIP_L, analyzed this request and, as this request has a
remote server destination, send it in the format of IP packets to the second NIC driver
NIC3_D, said request being then sent to the UMTS driver UMTS1_D on the physical layer
PHYS_L.

In a fourth step 4), the request REQ3(IP_AD3) is sent to the remote server DS via the
network operator system NETOS using the UTRAN system and the IP network.

In a fifth step 5), the web page DAT3 corresponding to the IP address IP_AD3 and
thus remote server DS requested by the user is sent back to the computer PC via the mobile
phone MB.

Finally, the user can enter or can ask for some data via this page. These data are sent
to or retrieve from the remote server DS, through the mobile phone MB using the same
communication scheme as described before. Thus, a real IP network access has taken place
via the mobile phone MB because a remote server DS has been accessed. As in the first
embodiment, the mobile phone MB can be a file server or a mobile server.

It is to be noted that, in this example, when a fake IP network access takes place, there
is no UMTS communication because the TCPIP encapsulated data (IP packets) arrive directly
to the local server, i.e. to the mobile phone MB.

Regarding the addressing of the IP addresses of the local servers in the mobile phone
MB, there are two possibilities:
- First, there can be private IP addresses IP_ADPR, for example 10.10.1.1.
- Second, there can be public addresses IP_ADPU, for example 102.101.103.13.

In the first case, either the computer PC will see a single network, either two
networks.

When the computer PC sees only one network, it sees a single LAN network, as
illustrated in Figure 4, that has (at least) two hosts, one which is the mobile phone itself as a
local server, and another host which is the real network access to a remote server via the mobile phone MB. The PC can discover this IP network access using a UPNP service, the mobile phone acting as an UPNP Access Point Device APD to access to a WAN (for Wide Area Network) network.

When the computer PC sees two networks, as illustrated in Figure 5, it sees two different networks:
- a "real" one, that is to say, the network that the mobile makes available to the computer, e.g. 3G WAN, the mobile phone acts then as a UPNP Access Point Device;
- a "fake" one, that is to say, the one enabling the user to carry and access to his data/files.

It is to be noted that the computers running standard operating systems such as XP or LINUX (registered trademarks) can support multiple Network Internet Card simultaneously and can therefore access multiple networks at the same time.

In this example, the computer comprises two NIC drivers NIC_D instead of one and the mobile phone three NIC drivers NIC_D instead of two.

This second implementation can be useful for:
- the security of the personal data because the address spaces will be disjoint, and
- the modularity, since the implementation of this local server on a mobile phone, as a separate service from the real network access already implemented in most of all mobile phones, is easier.

In both first cases, there is a single address space for the LAN network. Thus, in a not limited embodiment, one can provision a "fake" DHCP (for Dynamic Host Configuration Protocol) service in the mobile phone MB for the IP addresses used by the mobile phone MB for its different local servers. Hence, these pre-agreed IP (corresponding to pre-established IP services) addresses are trapped locally, that is to say, information corresponding to theses addresses are routed to the corresponding local servers which is inside the mobile phone MB. For the WAN network, the addressing is done typically using the Internet service provider.

It is to be noted that the telecommunication operator, who is usually acting as Internet service, provider could provide this "fake" DHCP service in the mobile phone MB for these set of pre-agreed IP services.

One reminds that this DHCP service provides a mechanism for allocation of IP addresses, enable to avoid a conflict between IP addresses.
In another embodiment, the DHCP service is a real one provided by the Internet service provider and is implemented by a remote DHCP server. It avoids providing to a host computer some preset IP addresses corresponding to the local servers of a mobile phone MB.

In the second case, the computer PC sees only one network, as illustrated in Figure 6, which is the Internet WAN network.

In this case, there is still a single address space. Thus, one has to reserve the IP addresses corresponding to the local servers within the mobile phone MB to the adequate Internet authority.

It is to be noted that when the mobile phone MB is disconnected from the computer, one can have some removing means (not represented) implemented in the mobile apparatus MB to remove the potential user's data that could be in the cache memory of the applications stored on the computer PC for privacy. Hence, these removing means erase the cache memory in an adequate manner.

Hence, the mobile apparatus of the present invention that has been described and the associated client-server communication system comprises the following advantages:

- one can use his mobile phone and access to his own data as if he was at home, and as if he has accessed to his local home network. This is possible because:
  - such mobile apparatuses has or will have a memory capacity of many hundred kilobytes rapidly going to gigabytes,
  - those mobile apparatuses comprise not only bigger storage but also more and more powerful CPU,
  - as every computer comprises a standard based web or at least IP based applications, it will be easy for a user to connect his mobile phone and access his data by the web interface of any computer,
- as one can use any Internet standard protocol, it provides an independence towards the host platform, here the computer,
- when the mobile apparatus acts as a media server in a streaming mode, the personal media files are protected: no copy of the original media files are made on the computer,
- it permits to protect the personal data of the user of the mobile phone, because none of these personal data are stored on the host computer,

When there is a remote server:

- one can make a backup copy of the user data on the remote server and on the mobile apparatus,
- the mobile apparatus can act as an Internet cache for the data of the requests to a remote server.

It should be noted that the above-mentioned embodiments illustrate rather than limit the invention, and that those skilled in the art will be capable of designing many alternative embodiments without departing from the scope of the invention as defined by the appended claims. In the claims, any reference signs placed in parentheses shall not be construed as limiting the claims. The word "comprising" and "comprises", and the like, does not exclude the presence of elements or steps other than those listed in any claim or the specification as a whole. The singular reference of an element does not exclude the plural reference of such elements and vice-versa. The invention may be implemented by means of hardware comprising several distinct elements, and by means of a suitably programmed computer. In a device claim enumerating several means, several of these means may be embodied by one and the same item of hardware. The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measures cannot be used to advantage.
1. A mobile apparatus (MB) comprising data (DAT1, DAT2), said mobile apparatus comprising:
   - trapping means (IPAD_T) for:
     - receiving from a client device (PC) a request (REQ1, REQ2, REQ3) for accessing data, said request using an Internet protocol network access and comprising an information (IP_AD1, IP_AD2) representative of a server device,
     - based on said representative information, redirecting said request to a first server device (DS) or to a second server device (MB), said mobile apparatus being said second server device,
   - retrieving means (RET_M) for retrieving the data (DAT1, DAT2),
   - transmitting means (USB2_D) for transmitting said data to said client device (PC) using said Internet protocol network access.

2. A mobile apparatus (MB) as claimed in the claim 1, wherein the first server device is a remote server (DS).

3. A mobile apparatus (MB) as claimed in the claim 1, wherein the first server device is the mobile apparatus (MB).

4. A mobile apparatus (MB) as claimed in claim 1, further comprising a web server and/or a file server and/or a media server.

5. A mobile apparatus (MB) as claimed in claim 1, further comprising preset information representative of the mobile apparatus and associated with different servers (SERV1, SERV2) within said mobile apparatus.

6. A mobile apparatus (MB) as claimed in claim 1, wherein the information representative of a server device is an Internet protocol address (IP_AD).

7. A mobile apparatus (MB) as claimed in claim 1, further comprising a dynamic host configuration protocol service (DHCP).
8. A mobile apparatus (MB) as claimed in claim 1, wherein the trapping means (IPAD_T) are located in an application layer (APPLI_L).

9. A mobile apparatus (MB) as claimed in claim 1, wherein the trapping means (IPAD_T) are located in a transport and network layer (TCPIP_L).

10. A client-server communication system (SYS) comprising a client device (PC) and a server device (MB), wherein the client device (PC) is able to access data (DAT) of the server device (MB) via an Internet protocol network access provided by said server device, and wherein the server device is a mobile apparatus (MB) as claimed in claim 1.

11. A method of accessing data in a server device, said method comprising the steps of:
   - sending a request (REQ1, REQ2, REQ3) from a client device (PC) to a mobile apparatus (MB) using an Internet protocol network access provided by said mobile apparatus, said request comprising an information (IP_AD) representative of a server device,
   - receiving said request (REQ1, REQ2, REQ3) in the mobile apparatus (MB) and, based on the information (IP_AD) representative of a server device, redirecting said request to a first server device (DS) or to a second server device, said second server device being the mobile apparatus (MB),
   - retrieving data (DAT1, DAT2) in the mobile apparatus (MB), said mobile apparatus (MB) acting as a local server,
   - transmitting said data to said client device (PC) using said Internet protocol network access.

12. A computer program product comprising program instructions for implementing, when said program is executed by a processor, a method as claimed in claim 11.