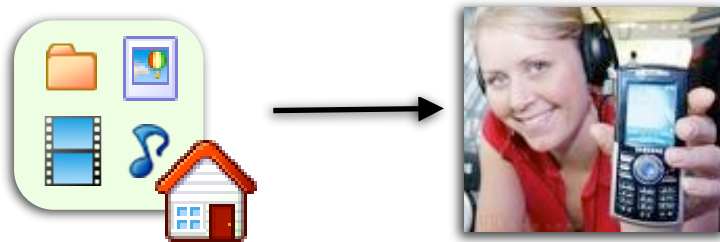


Lobster: Mobile Access to Home Media

Electric Pocket have developed Lobster, a technology platform which enables mobile users to gain easy access to media and content stored on their Home networks. There are two key and novel components to Lobster - Remote UPnP Access and Content Caching - which contribute to a platform ideally suited for the development of media and content-centric applications for mobile users.

The first application deployed on the Lobster platform is a smartphone Music Player called LobsterTunes, which enables wireless users to gain access to their entire music collection via their mobile handsets. Future applications to be built on the platform will allow users to view photos, videos and files on their handsets. The Lobster platform is content agnostic, and the range of applications which can be developed upon it is unlimited.



Remote UPnP Access

The use of industry standard Universal Plug and Play (UPnP) technologies at the core of the Lobster platform enables Lobster to be deployed in a range of environments, including those where UPnP servers are already deployed. This makes it ideal for users of technologies such as Microsoft Home Server and certain Network Attached Storage (NAS) devices.

Lobster extends the visibility of the user's UPnP server out beyond the local network, and enables users to securely access their media and content beyond their home environment.

Lobster Remote UPnP Access allows a client application on any network to discover remote UPnP devices and services on another network and retrieve any associated content. For example, this can be used to provide a Music Player application on a Smartphone from which users can browse and play music from a Home PC via the cellular data network.

Applications of Lobster technology extend to all forms of media, data and services. Connections can be via wireless or wired network connections. Clients could be on mobile devices or PC's.

Appendix A gives a more detailed discussion of the technologies used in Lobster's Remote UPnP Access.

Content Caching

Lobster has been designed to be deployed in a mobile environment. The mobile and wireless environment presents a number of challenges for a remote access solution, particularly unreliable network connectivity and limited battery life.

Lobster's Content Caching technology overcomes these challenges, by predictively downloading and caching the user's content, instead of streaming it directly to the device "on demand".

The use of Content Caching gives many advantages:

1. It is robust against loss of signal. For instance for a music player the entire playlist is downloaded as quickly as possible, so the user will often have many songs pre-cached. The player can go for long periods with no connectivity without impairing the user experience. In contrast, streaming solutions stop playback within a few seconds of losing signal, and often do not automatically restart when signal is restored.
2. The device's data connection does not need to be up all the time. Once there is a pre-cached playlist, the data connection is not used, which saves scarce resources such as device battery power and mobile bandwidth.
3. Cached content is available for the user to listen to, even when the device has no network connection at all. Lobster caches to SD card when it is available, so the user will often have access to hundreds of their favorite songs - even in "flight mode".
4. It is possible to seek position within a track or video. This makes the client applications feel much more like a traditional content player rather than a radio or TV device.

Next Steps

Electric Pocket's Lobster technology has been deployed commercially since May 2007 and has already gained industry recognition (Grand Prize Winner of Palm/Microsoft Mobile Challenge) and acceptance from the user and blogging communities.

Electric Pocket plans to grow and enhance the application's built on the Lobster platform, focusing on smartphone applications for popular media types.

Electric Pocket are interested in exploring partnerships with leading technology and marketing partners, who understand the benefits of the Lobster approach and are able to expand its market reach.

Appendix A: Technology Detail

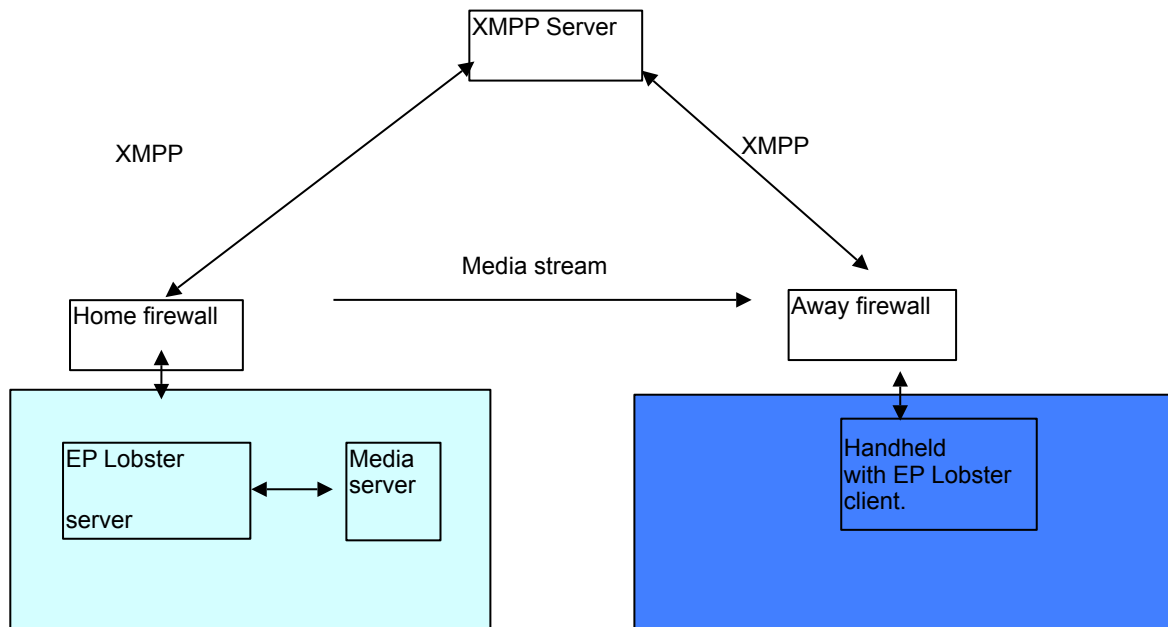


Figure 1 Accessing a Home Media Server from a remote mobile device using Lobster

The technology used to implement Lobster's Remote UPnP Access is novel and unique, and a patent has been applied for.

Lobster's remote UPnP invention uses XMPP for out of band signaling and ICE and IGC to provide NAT and Firewall traversal. These technologies provide significant advantages over competing "location free" technologies such as Orb, Avvenu and Mercora:-

1. Ease of installation and configuration. Users do not need to configure their routers/firewalls or NAT. A task which is beyond at least 99% of potential users.
2. Lobster filters the UPnP messages so that the client receives only the UPnP SSDP advertisement and discovery response messages from the home network. It does not transmit discovery search requests from the home network to the clients network or transmit SSDP advertisements from the clients network. This reduces the bandwidth and processing requirement. Moreover the bandwidth and processing requirements now only scale with the number of devices on the users home network. Because Lobster virtualises the client onto the home network this also offers significant security benefits over other possible relay or proxy remote access solutions. Other users on the same network as the client cannot see the users home network devices.

3. Lobster is designed to make configuring and connection between the client and server invisible to the user. As an example, LobsterTunes takes care of managing identity for the server and client components automatically, so the user does not need to create and remember a username and password. At install time Lobster creates unique hidden id's and keys that the client and server share to then discover each other via XMPP. This shared secret approach also allows users to give and control shared access to their content or devices to other users (e.g buddies).
4. Lobster is Open Standards based and works with all UPnP servers. For many users, that means they just need to turn on sharing in WMP11, but Lobster also works with the music they may have stored on their various machines and are already sharing via UPnP on the home network. In contrast, some competitive solutions have to be configured to see any music at all, and only share music from the desktop that they are installed on.