



Cisco: Virtualizing the Home

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During Cisco's Analyst's Conference call last week, CEO John Chambers talked about virtualization, how it is becoming a reality not only in data centers but "[going all the way to our homes.](#)" Yes, data center virtualization has been around for quite a while but its applicability to the home is very new.

What exactly does virtualization mean to the digital home and why is it important enough for Cisco to make it a centerpiece of its corporate strategy?

What is Virtualization in the Home?

In essence, virtualization means being able to find and use an object (for example, a database, a movie, or an MP3 file) even though you don't have a copy of it locally. To use a simple example, consider Amazon.com and books. Amazon has a bunch of books which they keep in stock themselves, but it also knows about the inventory of other partner booksellers. When you conduct a search for a book on Amazon's website, the program examines a database containing all the information regarding the books it knows about and creates a list of all the copies available with specific information about each copy. If you buy a book, it is shipped from the physical warehouse at which it is housed, be it Amazon's or a partner bookseller's. In this example, the partner bookseller's entire library of books has been virtualized through Amazon – though a specific book may actually be in a warehouse half way across the country, it is within Amazon's *virtual* inventory.

The key tenet of virtualization is that the location of an object does not matter; access is ensured as *if* the object is stored locally. Though this concept may seem foreign to you, the fact is you already use virtualization. For example, every time you send a web video link to a friend, you are an agent of virtualization. You have no idea where the actual video is stored, nor does your friend, but the link makes it possible to view the video as *if* it is stored on one's PC. The link simply points back to YouTube servers which know where the video is located, go through the work of "grabbing" it and presenting it to the viewer – all in a seamless, easy-to-use manner that replicates local access.

Why Does it Matter?

If virtualization is already a regular part of our web experience, why is Cisco making such a fuss about it? Good question.

In the last several years, with the rollout of broadband, home networks have become increasingly common. TDG estimates that there will be nearly [150 million home networks worldwide](#) by the end of

2010; by 2015, home networks will be commonplace in broadband households throughout developed countries. As well, TDG expects the number of networked devices worldwide to near 1.3 billion in 2010 and 2.8 billion in 2015.

One of the key reasons consumers deploy a home network is to access media between multiple connected devices; to share media, for example, between their PCs, DVRs, digital cameras, and MP3 players located throughout the home. In this multi-zone, multi-platform, multi-media scenario, things suddenly become very complicated. Enter virtualization.

Rather than having to copy all these files to all these devices, it is much simpler to virtualize the media. This allows every device to “see” all the media on all devices connected to the network without having to have a copy of it. As before, the consumer is able to enjoy their digital media on all their connected devices as *if* it is stored on the device itself.

Making Home Virtualization a Reality

There are already standards in place to assist with these “connected home” virtualization services. Two examples are UPnP and DLNA. UPnP (Universal Plug and Play) allows devices to discover each other on the home network. DLNA (Digital Living Network Alliance) allows those devices to share media across the network. These standards will soon start showing up as standard features of new connected media devices.

In principle, these standards should help make it very easy for consumers to access their digital media. I have a DLNA server loaded on one of my computers and, with no other action on my part, I was able to easily browse and consume the media on that computer on my TV through my PS3.

Cisco and the Home

And so we come to why Mr. Chambers made the statement about virtualization and the home. Cisco's intention to establish a branded presence in the digital home is widely known, and the company is working aggressively to deliver a new set of connected devices aimed at the consumer market. Today, for example, Cisco offers a [Home Media Hub](#), a platform that handles automatic backup of all the media it can find on the network and allows consumption of that media from any browser-enabled device both inside and outside the home. Within the next year, Cisco's consumer device strategy will become clearer as the company rolls out a host of new connected CE platforms. With their Linksys products and Scientific Atlanta set-top boxes all sporting the Cisco labels, it is obvious Cisco intends to become a household name. When combined with its wide-area offerings, Cisco is building a formidable end-to-end network by which consumers can access their media regardless of device, location, or network (what TDG has termed “quantum access”). Virtualization in the home is thus key to Cisco's long-term vision.

Clearly Cisco has its eyes on the “new network edge” and the emerging battlefield within the digital home. Welcome to the human network indeed!

About TDG

TDG is the leading voice in the digital video ecosystem providing market planning and research services to keep our clients In Front of the Curve™. Since 2004, TDG has helped more than 250 technology leaders, media companies, and service providers to master the quantum shifts impacting how consumers access, navigate, distribute, and consume broadband media - whenever and wherever they may be.