which a pipe may speak initially, and if the sample set is wet, several "tails" will be required so that the acoustic can be heard to respond realistically to *staccato* or *legato* playing.

The other aspect of Hauptwerk computing demand is polyphony: the number of pipe samples that can be played simultaneously depends upon the CPU and RAM specification of the PC. Allowance must be made for the reverberation time of the acoustic, for a wet sample set, as well as the speed of playing. Version 3.23 allows full use of available RAM but restricts polyphony to 1024, after which pipes will fail to sound. Version 3.3 limits RAM usage for samples to 3 gigabyte, but has a more graceful way of managing pipes that may be sounded after the polyphony limit has been reached. The Advanced Edition does not have these limitations but costs more. Below is a block schematic of my Hauptwerk organ console:

A Hauptwerk Virtual Organ System
(kaspencer)
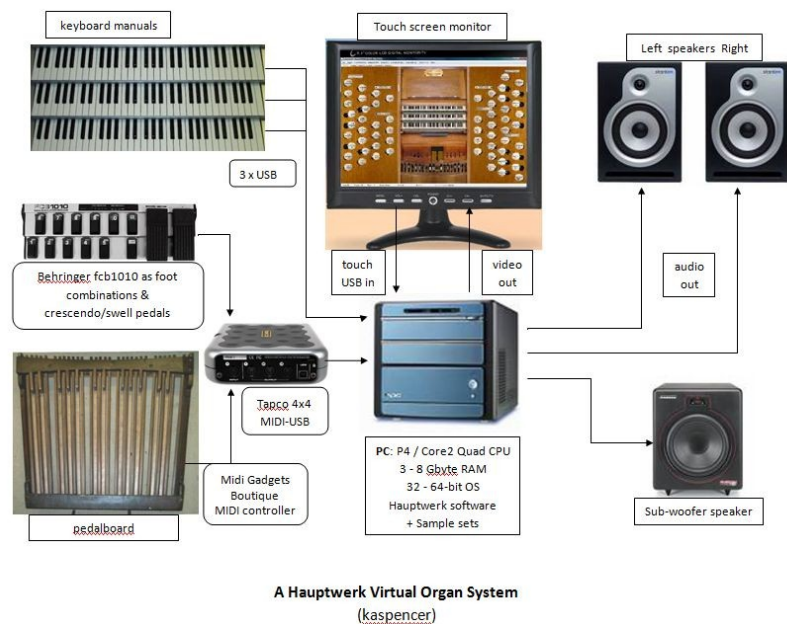
More Information much more detail about this project is available:

http://www.my-music.mine.nu/project.htm   - full account, and photographs
http://www.youtube.com/kaspenceruk   - see the 5 part video tour

The South West England Hauptwerk User Group The first meeting of this new group will take place in November - currently there are only a few members - search the General Discussion topics of the Hauptwerk Forum, for details.
The Hauptwerk website and forum is at *http://www.hauptwerk.com*

A Hauptwerk Virtual Organ Console
(Kenneth Spencer)

The building of a console for use with the Hauptwerk Virtual Organ software

Although I have only a limited ability as an organist, I have been fascinated by the pipe organ since my teenage years, when I spent my time playing guitar in a 1960's band. And from then on, I have had an ambition to have a pipe organ. As a keen amateur musician, I have owned several electronic organs and two pianos (including a baby grand), and currently have nine guitars.

In 2007 I happened to be looking at musical software on the Internet, and came upon *MyOrgan*, which is one of the several pieces of software which allows pipe organ samples to be played with a MIDI keyboard. I wasn't overly impressed but it stimulated further searches, and eventually I discovered "Hauptwerk". This program was written and marketed at that time by it's UK-based creator, Martin Dyde, through his company Crumhorn Labs. (Martin now works as senior developer for Milan Digital Audio of the US, who have taken ownership of the software).

So, I installed the software and connected up my 49-note MIDI keyboard and was amazed to hear a real pipe organ - at that stage I wasn't quite aware that owing to the MIDI channel assignment of the keyboard, I was actually playing the pedal division! After correcting that little problem I found myself exploring the ranks of the organ of St Anne's Church, Moseley, near Birmingham, which is the organ supplied with the software. I knew I had found something which could enable me to achieve something I had wanted to do for so many decades.

At the time I had a Technics SX-EA1 electronic organ, with 2 x 49-note manuals, and a 13-note pedalboard. But, it also had a MIDI out socket - unused in the 12 years that I had owned the organ! On connecting the MIDI output to my computer and after a lot of fiddling with the various MIDI parameters, I had the Technics console controlling the St Anne's organ.

I spent the next several months configuring the details of the setup so that I could control, not only the two manual divisions and pedal organ, but also the stops, the combination pistons and the swell and crescendo pedals of the St Anne's organ with the Technics controls. I also downloaded and purchased some sample sets of a few organs from various countries. I purchased a Hauptwerk licence USB dongle for the Basic Edition, and started to consider how I might build a console a little more worthy of the software.

In October 2008 I found a 110 year old concave-radiating 30-note pedalboard on eBay, and my wife and I drove her car (my car, an RX8, would never accommodate a full size pedalboard!) up to Loughborough to collect it. It was absolutely filthy and it took me well into 2009 to clean, sand and re-varnish it. Then in April 2009 I started to build my console around the re-assembled pedalboard.

To MIDIfy the pedalboard I purchased a MIDI controller board and a set of reed switches and magnets from a small company in Budapest. For the manuals, I bought three 61-note MIDI keyboards and stripped them from their cases.

My Hauptwerk Basic licence permitted only two audio channels so although I bought an 8-channel M-Audio card, at this stage I only needed 2 near-field monitors and a sub-woofer. I chose a pair of M-Audio 85W bi-amplified BX85a and a Kef 125W subwoofer. For control I purchased a Behringer FCB1010 MIDI foot controller to give me 10 general combination pistons, and Swell and Crescendo pedals. Then I built a new PC with a Core 2 Quad CPU, 8 gigabyte RAM and Windows Vista Ultimate 64-bit (now Windows 7 Ultimate x64). For the computer display I bought a 19" TFT touch screen monitor, which allows control of the organs and software.

By June 2009 I had completed the console and had it assembled and tested in my garage. Then my wife and I hauled it up our winding staircase to my office-cum-music room. And that is what you see on the front page!

Currently I have some 25-odd organs from all over the world. Probably my favourites are the 1778 Pazicky at St. Imre, Pusztaszabolcs, Budapest, Hungary; the 1901 JJ Binns at The Old Independent Church, Haverhill, Suffolk, England; the (Father) Willis at Salisbury Cathedral, Wiltshire, England; the 2006 Pecsi organ in the Palace of Arts Budapest; the Cavaille-Coll in L'eglise St Madeleine, Paris, France and the Paramount 320 theatre organ.

I have also upgraded to the Advanced Edition licence with the release of v4.0 of Hauptwerk in 2011. I now have 16Gbyte RAM, six more speakers and some additional sample sets. I shall further develop the console and construct a set of physical stops and pistons with LEDs driven from Hauptwerk's MIDI-outputs.

As the Hauptwerk software holds the complete organ in RAM, for a large organ, many gigabyte of RAM are required. For an organ of several thousand pipes, 16 or 32 gigabyte is needed. Each pipe is recorded several times to reflect the ways in