AmigaMCCC News
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# Changes

It's a (relatively) new year, new month, new holiday for those with reason to bother, but not a lot of new news. There are a few updates, such as one for the Odyssey web browser (formerly OW8) for MorphOS. A recent event was an on-line interview with one of the MorphOS team programmers. The exact details of this were less important to me than one statement, and the implications that follow it.

In the interview, a change in architecture (as in the hardware and processors that it runs on) was said to be one of the great challenges for MorphOS in the future. It's not something that can really be denied—Power-PC based systems are largely a dead end at this point, even though there's still life and use in G4 and GS-based systems, especially for a light and fast OS like Amiga and MorphOS. Still, sooner or later even the fastest PPC systems will look as dated as 680xO systems do now, and the smart Amiga-like operating systems will have to move to new hardware to survive and keep a shred of relevance, be it a standard Intel/AMD PC architecture or something small and streamlined, like the ARM CPU family that powers many of our phones and tablets. In any case, it's apparent AmigaOS and/or MorphOS (AROS is already there in one way or another) will have to move on to survive, and we as users will need to decide whether or not to follow. With the speed the small programming teams work though, it will undoubtedly be years before we'll need to worry too much about it.

The other half of the forward-thinking interview statement said the Amiga software support in MorphOS would need to be dropped to move to these snazzy new future-proof systems. Truth be told, the "legacy" Amiga compatibility has held MorphOS back to a degree, as classic Amiga software was never intended to support things like advanced memory protection or 64-bit multicore CPUs, and those limitations work back (or forward) to the more advanced OS for the sake of maintaining compatibility. While dropping the Amiga legacy API in Morph or OS4 frees them up for bigger and badder hardware support, how many would want to keep with them if the only software available was the stuff specifically written or ported to the OS? For a clue, look to the open-source AROS, which runs on a wide range of hardware, but lacks the same transparency in Amiga software support that Morph and OS4 currently enjoy. I enjoy using MorphOS now, but at least half or more of the software I use on the system is "classic" Amiga software without an equivalent written native to the new OS. I'm not sure I would keep with it if that capacity was lost. To be fair, there is a historical precedent for this sort of thing. When Windows and Macintosh both had their major changes and advances in architecture and operating systems, compatibility with older software suffered, or was dropped entirely. It's fairly laughable to expect your old Windows 3.1 or Mac System 6 software to run properly on the latest and greatest systems, after all. Personally, I doubt Amiga software support will ever be gone completely from MorphOS and OS4, as there is a certain sense of tradition behind it. There probably will be a few more added levels of abstraction though than now, with the classic stuff running with a metaphorical protected bubble as its own process, while the main system chugs along with its terabytes and multiple cores and whatnot. It would work much like running an Amiga emulator now, though hopefully with more of the transparency and system integration of the API used currently.

I have stuck with the Amiga and its descendants for decades now, and probably will for years yet to come. I have experience with other operating systems, all of which have their own benefits and advantages, but I've never seen any that match the sense of balance of Amiga between ease-of-use, power, and control. Others may have greater power, but they haven't offered much in the way of compelling reasons to move elsewhere. Perhaps the biggest contender in recent times would be my Android tablet. As much as I like the Amiga and MorphOS systems, I'm not sure I would ever be able to use them to work, draw, and more in a package I could hold in my hand while sitting on the couch. Maybe I just needed a whole new paradigm to draw me away from my cozy Amiga complacency, or maybe I'm just playing with a shiny new toy, and will settle back to my usual rut soon enough. Only time will tell.

…by Eric W. Schwartz
from the AmiTech Gazette
February 2013

# 30 Years Ago...

Analysis: Thirty years ago the modern internet became operational as the US military flipped the switch on TCP/IP, but the move to the protocol stack was nearly killed at birth.

The deadline was 1 January, 1983: after this, any of the Advanced Research Projects Agency Network's (ARPANET) 400 hosts that were still clinging to the existing, host-to-host Network Control Protocol (NCP) were to be cut off.

The move to packet switching with TCP/IP was simultaneous and

coordinated with the community in the years before 1983. More than 15 government and university institutions from NASA AMES to Harvard University used NCP on ARPANET.

With so many users, though, there was plenty of disagreement. The deadline was ultimately set because everybody using ARPANET was convinced of the need for wholesale change.

TCP/IP was the co-creation of Vint Cerf and Robert Kahn, who published their paper, *A Protocol for Packet Network Interconnection* in 1974.

ARPANET was the wide-area network sponsored by the US Defense Advanced Research Projects Agency (DARPA) that went live in 1969, while Cerf had been an ARPANET scientist at Stanford University. The military had become interested in a common protocol as different networks and systems using different protocols began to hook up to ARPANET and found they couldn't easily talk to each other.

Cerf, who today is vice-president and "chief internet evangelist" at Google, announced the 30th anniversary of the TCP/IP switchover in an official Google blog post titled "Marking the birth of the modern-day Internet."

The 1983 deadline's passing was anticlimactic, Cerf recalls, considering how important TCP/IP became as an enabler for the internet. Cerf writes:

> When the day came, it's fair to say the main emotion was relief, especially amongst those system administrators racing against the clock. There were no grand celebrations—I can't even find a photograph. The only visible mementos were the "I survived the TCP/IP switchover" pins proudly worn by those who went through the ordeal!
>
> Yet, with hindsight, it's obvious it was a momentous occasion. On that day, the operational Internet was born. TCP/IP went on to be embraced as an international standard, and now underpins the entire Internet.

It was a significant moment, and without TCP/IP we wouldn't have the internet as we know it.

But that wasn't the end of the story, and three years later TCP/IP was in trouble as it suffered from severe congestion to the point of collapse.

TCP/IP had been adopted by the US military in 1980 following successful tests across three separate networks, and when it went live ARPANET was managing 400 nodes.

After the January 1983 switchover, though, so many computer users were starting to connect to ARPANET—and across ARPANET to other networks—that traffic had started to hit bottlenecks. By 1986 there were 28,000 nodes chattering across ARPANET, causing congestion with speeds dropping from 32Kbps to 40bps across relatively small distances.

It fell to TCP/IP contributor Van Jacobson, who'd spotted the slowdown between his lab in Lawrence Berkeley National Laboratory and the University of California at Berkeley—just 400 yards and two IMP hops apart—to save TCP/IP and the operational internet.

Jacobson devised a congestion-avoidance algorithm to lower a computer's network data transfer speed and settle on a stable but slower connection rather than blindly flooding the network with packets.

The algorithm allowed TCP/IP systems to process lots of requests in a more conservative fashion. The fix was first applied as a client-side patch to PCs by sysadmins and then incorporated into the TCP/IP stack. Jacobson went on to author the Congestion Avoidance and Control (SIGCOMM 88) paper while the internet marched on to about one billion nodes.

And even this is not the end of the story. Years later, in an interview with The Reg, Jacobson reckoned TCP/IP faces another crisis—and, again, it's scalability.

This time, the problem is millions of users surfing towards the same web destinations for the same content, such as a piece of news or video footage on YouTube. Jacobson, a Xerox PARC research fellow and former Cisco chief scientist, told us in 2010 about his work on Content-Centric Networking, a network architecture to cache content locally to avoid everybody hitting exactly the same servers simultaneously.

…By Gavin Clarke
Posted in Networks
3rd January 2013
URL: http://bit.ly/UIzEQT

# March Calendar

March 4 — Amiga-By-The-Loop Chapter
7:30 PM — Main Grand Prairie Library
901 Conover Drive, Grand Prairie

March 4 — Board of Director's Meeting
Approximately 9:15 PM — Location TBD

March 25 — Newsletter Deadline — 8:00 AM