VIRTUAL KANSASFEST 2020 SCHEDULE

(All times: CDT, GMT-5)

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FRIDAY JULY 24
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0930-1000
Welcome to Virtual KFest

Introduction of committee members; tips and tricks for having two fantastic days.

1000-1030
Myst Demake for the Apple II
- Vince Weaver

Vince will describe how he took the 1993 classic CD-ROM game *Myst* and made a version that will run on an Apple II+, fitting on both sides of a single 140k floppy disk. The game is in lo-res with minimal sound effects, but the majority of the game is there and can be completed.

1030-1045
Willy Byte and the Infinite IRQ Investigation!
- Tom Charlesworth

Very occasionally a bug manifests that proves very tough to conquer, and when you do the intricacies of it are subtly brilliant. This is one of those…

Tom will discuss a subtle bug in *Willy Byte in the Digital Dimension* (Data Trek, 1984) and a bunch in AppleWin (Apple II emulator for Windows) that meant getting to the bottom of this took a painful 13+ years and included nuances of the 6502, 6522 and Mockingboard design!

1045-1115
A.P.P.L.E.'S Blast from the Past

- Bill Martens, Brian Wiser, Jim Maricondo

Join Brian, Bill, and Jim for highlights of new A.P.P.L.E. software and books that they've produced this year. As the oldest user group from 1978, they have created a variety of Web sites, over 30 previous books, and dozens of programs.

1115-1130
Break

1130-1145
Apple 1 Mini Raspberry: Linapple Raspberry
- Matteo Trevisan aka Toolkitman

Hello Dear KansasFest People, 1976: Yes, my birthdate and where everything started. I present my mini Apple 1 Raspberry Pi reproduction and POM 1 Operating System. I have enabled the OS to boot at startup in fullscreen for every Raspberry Pi from Zero to 4B. The first and second version were made with the name Apple Computer; the third was called POM by the Operating System Apple 1 emulator.

You can download the 3D print design and operating system like POM 1 and Linapple Apple II at wiki.reactivemicro.com/Main Page.

David Pierini made a nice introduction on Cult of Mac: https://www.cultofmac.com/644208/mini-apple-1-raspberry-pi/.

Here are several YouTube videos:
https://www.youtube.com/watch?v=iPa8qv4Io I
https://www.youtube.com/watch?v=RwikUbU5mSk
https://www.youtube.com/watch?v=pLo0narvZa4

1145-1200
Amateur Radio and the Apple II
- Peter Neubauer

The personal computer revolution changed the face of the amateur radio hobby. Hobbyists rushed to use their new computers with their radios. New "digital modes" allowed computers to wirelessly exchange data across thousands of miles. Peter will share how radio hobbyists used the Apple II computer and will demonstrate how you can do the same.

1200-1230
Modern Video for Vintage Apples
- Alexander Jacocks

Alex gives an overview of modern video solutions for vintage Apple computers. Particularly: 1) new 80-column-friendly LCD monitors and 2) video adapters for vintage equipment. There are a number of new solutions on the market for good quality output, for old machines. Come and discuss them with him!

1230-1300
Reverse-engineering Ted Nelson
- Eric Rangell

Ted Nelson inspired Steve Wozniak to create the Apple 1, and his designs are still of interest to modern application developers. Eric will talk about Ted Nelson's work and demonstrate his JOT product for the Apple II from 1986. He will then show the process for reverse-engineering the Forth code for the JOT system in order to extract the source code. A Prodos version of Forth will be demonstrated and a demo will show how a small portion of the JOT codebase can be ported to it. Resources available for researching Ted's work will be shared on the Github site for this session.

1300-1345
"Lunch" Break

1345-1415
Out of This World: How It Was Done
- Rebecca Heineman
A deep dive into the technical challenges in porting the Amiga version of *Out of This World* to the IIgs, to prove that the 65816 was powerful enough to run the game, paving the way for a Super NES version. Issues covered include how to trick players into thinking the frame rate was higher that it really was; high speed polygon fill functions without using Fill Mode; and 2 Key rollover by directly reading the ADB stream from the keyboard for better game play response.

1415-1445
Behind the Scenes at RetroMetal
- Kate Szkotnicki

Join Kate the Cat (aka Lady Ailuros), host of the RetroMetal Twitch stream, for a behind-the-scenes tour! Newcomers to the stream are always surprised and excited to find out she's streaming from hardware, but how does it all work? Join her for this special tour of The Room Where It Happens featuring the tech that makes it work.

1445-1515
The Apple /// in 2020
- Paul Hagstrom

The Apple /// can take advantage of many recent hardware and software developments. Paul will demo and discuss a number of these, some of which are quite newly available. To give some examples: a modern replacement power supply, flash media for hard drives and floppy drives, using .woz images to enable still-protected software to run, many wifi options (modems, virtual wireless drives of a couple different types). There are also a few development environments, both on the machine and connected to a modern machine. There's lots left to do and discover on the ///, and it's getting ever easier!

1515-1530
Break

1530-1600
Geek TV Table Read: Small Wonder
- Kay Savetz

A live table-read of an episode of the classic TV show *Small Wonder*. All voiced by KFesters. Hosted by not-a-robot-child Kay Savetz.

1600-1615
Retro Britening
- Scott Hansen

The Retro Brite process is a unique way to restore yellowed computer components back to their original color. During this session Scott will dive into why plastics yellow, how to restore their color, and answer your questions about the Retro Brite process.

1615-1630
Taking Apple Logo into the 2020s
- Melody & April Ayres-Griffiths

Melody and April will demonstrate their new Apple Logo II-inspired code teaching platform, turtleSpaces, which while remaining Apple Logo II compatible introduces multi-threaded turtles, three-dimensional shapes, proximity detection, turtle models, colored syntax highlighting and much (much!) more, in their efforts to fulfill Seymour Papert's dream of an educational programming environment with a low threshold and no ceiling.

1630-1645
In Search of the Most Amazing Things
- Andrew Roughan

Box scans and manuals are not available online for 100s of Apple II titles that were published.
This session will point out
- what is missing
- where to find out what is needed

and inspire you to help with the search and preservation efforts.

1645-1715
Day 1 Wrap Up

1830-1900
KFest Committee Meeting (private)

1900-2300
Fun Time! Games, Discord Video, Hardware Chat, etc.

Visit the Discord Chat to participate in after-hours activities organized by attendees.

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SATURDAY JULY 25
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0900-1000
Apple ///ers
- Paul Hagstrom

This discussion/workshop will just be a small roundtable of whatever Apple /// enthusiasts (or, even, Apple /// enthusiasts-to-be) wish to participate. We'll talk about things we discovered, or wondered about. This is an informal session, a discussion among participants and not a session with speakers. Ideas might include: using a CFFA card as a hard drive, booting from bare metal with ADTPro, common problems and troubleshooting tips, development pipelines that have worked, how to work with the MAME emulator, how to set up BOS effectively, where to find other resources.

1000-1030
Apple][Forever Awards

Presentation of awards to individuals for their special contributions to the Apple II community.

1030-1100
The Mysterious History of 4AM
- Jason Scott

International Cracker of Mystery 4AM is not just a hero, a teacher, an inspiration; they're also an indication of the heights the art of software engineering can achieve. Let's walk it all through. Jason Scott, recently voted "Least Likely to Be 4AM" but also voted "Most Likely to Work at the Internet Archive" presents historical work of 4AM, introduces the audience unaware of the scope of 4AM's work to what has gone on over the past few years, and hopes to bring the hundreds of new visitors to Virtual Kansasfest just what they have been missing.

1100-1115
$10 Raspberry Pi Zero as a USB Keyboard Adapter
- Vince Briel

Vince attempts to connect a $10 Raspberry Pi Zero to a Apple II or IIplus keyboard port and use it as a USB keyboard. This is his first attempt to connect the Pi Zero to the ASCII keyboard port powering it through via the Apple II and giving the user the ability to use the onboard keyboard as well as an external USB keyboard.

1115-1130
Break

1130-1200
Nox Archaist Updates from 6502 Workshop
- Chris Torrence, Mark Lemmert, Jarrod Kailef

Nox Archaist is a new 8-bit computer role-playing game designed by 6502 Workshop. After last year's successful Kickstarter, the 6502 Workshop team has been hard at work finishing the game content, doing beta testing, and creating all of the physical reward items. Come see what the team has been

up to and get a sneak preview of the final game!

1200-1230
Journey of an Apple][Emulator
- Tamas Rudnai

Developing a brand new Apple][emulator from scratch, from ground zero, includes challenges, struggles and learning curves. On this journey one can discover interesting technical details about Apple][hardware and its peripherals, and learn about software-based simulation technology. Tamas will talk about how he started this project from scratch, and how it turned into a fully working, super fast emulator.

Tamas has a day job writing emulators for anti-malware products, and one day he thought he might try to turn this knowledge into having some fun with the Apple][. At the beginning he was curious about how fast the Apple][would be in today's advanced technology.

To address this, Tamas started with a lightweight 6502 emulator, which was only able to run code injected directly into it. This was barely enough to test the speed of the simulated CPU itself, and nothing else. This naïve emulator did not even handle audio, video, disks and not even I/O memory addresses--only parsing and emulating opcodes as a bare bones 6502 with a simple 64K memory area. With that a speed test of the "bare metal" concluded. It turned out that even an emulated CPU can be surprisingly fast: It showed well over 1GHz of simulated 6502 CPU cycles on a MacBook Pro 2015.

Extending it further and further, adding simple hardware components like ROM, text screen and keyboard input finally led to an exciting] prompt on the screen, waiting to accept AppleSoft BASIC commands. After weeks of hard work, finally it worked! The journey did not end here though.

After countless hours and days and weeks, most major components had been implemented, and the result was a full working Apple][Plus. Tamas was able to play Donkey Kong and Hard Hat Mack loaded from WOZ disk images. The WOZ disk image format had been chosen as the main disk format type for full support of the entire available software archive. As more and more complexity was added, a series of technical issues surfaced, challenging the initial goal: Speed. With tricky techniques, Tamas overcame these issues and as a result regained a simulation speed over 1GHz.

Right now the emulator is fully capable of playing most games and running most apps. The current goal is to be able to emulate an Apple //e Enhanced and an Apple //c and to extend it further to emulate more hardware components. At the end of the session there will be a special announcement.

1230-1245
WiModem232 on the Apple II
- Jim Drew

Jim offers a WiFi modem for the Apple II so that you can surf the BBS scene. There are several BBS's already running on original Apple II hardware and the WiModem232. Jim will offer a short explanation of how to setup ProTerm and configuring the SSC for use.

1245-1300
Time Zone 2020
- Ivan Drucker

It's 2020, and you think you've got it bad in a pandemic. But it will get worse: in the year 4081, Earth will face obliteration at the hand of the jealous leader of the planet Neburon. It's up to you to use a mysterious time machine you've been given, and save humanity (as if it's worth it) by traversing the seven continents and outer space across the past and future.

That's the plot of Time Zone, the infamous 12-disk-side $99.95 epic adventure flop, released by Sierra in 1982. It was Roberta Williams' insanely ambitious followup to her highly successful Wizard and the Princess.

Time Zone's biggest headache was its constant disk swapping; at KFest 2009 I showed how I'd fixed that by hacking the game to support an Apple II (or, ok, emulator) with 14 drives. But 2020 is the year I FINALLY SOLVED IT.

At this session, I'll introduce a newly hacked "harder version" and "quicker version," as well as improve on 4AM and Qkumba's super clever DSK and image hack from 2018. And show a VERY sped-up walkthrough.

1300-1345
"Lunch" Break

1345-1400
New Lo-Res Sprite & Background Library for Animation & Games
- Sellam Abraham

Sellam has developed a lo-res graphics sprite and background animation suite, complete with editors for creating sprites and backgrounds, and &-command extensions to Applesoft that allow easy implementation of the functions of the library. The library can also be accessed via POKEs and CALLs for compatibility with compilers.

This system was used to create the demos that Dan Henderson and Sellam put out last Christmas and New Year's, and also Dan's game Planet Invasion 2020.

The system allows for the creation of whole page backgrounds that are stored as files in memory that can be drawn up nearly instantaneously. Up to 32 backgrounds are supported, but the practical limit is 24-26. The system allows for up to 31 sprites available for drawing and (non-destructive) undrawing. Other features available in

this first version include sprite-masking, frame scrolling, and built-in functionality for page-flipping and drawing to the hidden page.

Christmas Demo 2019 ==>
https://www.youtube.com/watch?v=IY-1noriP7Q

New Year's Demo 2020 ==>
https://www.youtube.com/watch?v=aXSs5G3TUSM

Planet Invasion 2020 ==>
https://www.callapple.org/software/new-apple-ii-game-planet-invasion-2020/

Sellam's presentation includes a demonstration of creating and animating, from scratch, and from start to finish, sprites and backgrounds that are then used in an Applesoft program.

1400-1430
Trick Out Your Transparent Apple: NeoPixels, Arduinos & Game Ports, Oh My!
- Joe Strosnider

With the transparent Apple //e cases coming soon, you're going to want to trick it out with lights. But what if we can trick it out and have the Apple // control those lights?

Joe describes how to control a NeoPixel Addressable LED strip with an Apple //, using the game port for communications and an Arduino as a translator.

He discusses how NeoPixels work, timing considerations, power considerations, wiring plans, Arduino code and finally controlling the system with Applesoft.

1430-1500
Applesauce: What Does Two Years Bring?
- John Morris

The Applesauce Floppy Drive Controller was released two years ago. What advances have been made to the technology, what has been learned, and what kind of effect has it had on the

Apple II community? This session is a quick run-through about the current state of software preservation for the Apple II.

1500-1515
Programming from Your Browser with 8bitworkshop
- Steven Hugg

Steven will demonstrate 8bitworkshop, a web-based IDE for 8-bit programming. We'll mess with some 6502 assembler and C code, demonstrate the various debugging tools, then download a .WAV that can be loaded from an Apple]['s cassette port!

1515-1530
Break

1530-1600
Geek TV Table Read: Superhuman Samurai SyberSquad
- Kay Savetz

A live table-read of an episode of the not-so-classic TV show *Superhuman Samurai SyberSquad*. All voiced by KFesters. Hosted by not-a-humanoid--monster-robot Kay Savetz.

1600-1630
A2osX: An Apple II Multi-user, Multitasking OS
- Patrick Kloepfer

Patrick will demonstrate the major components of A2osX including its interactive shell, file utilities, development tools, networking suite and the two new versions of ProDOS included with A2osX, ProDOS 2.03tc and ProDOS FX. This session will cover both the 0.93 released version as well as the work being done for A2osX 0.94.

1630-1700
Mining Cryptocurrency on an Apple II for Fun and Profit
- Charles Mangin

Presented by Charles Mangin (Option8).
Charles continues his quest to expand
his programming horizons while finding
the most impractical use for an Apple
II. In this session, he will outline the
challenges inherent to mining Bitcoin on
an 8-bit CPU, by first explaining just
what Bitcoin is, and delving into the
math that makes the magic happen.

1700-1730
KFest Closing

1800-1900
Big Mega Podcast (private)

SEE YOU NEXT YEAR IN KANSAS CITY!

Rev. 200715