Amiga One G3 - SE

March *Amiga Computer Users of Edmonton* 2002

Inside

Asha's Sunday Chats

Every Sunday evening (in most places) a few Amigans (and former Amigans hoping for the best) gather to chat and share information on a wide range of topics. Subjects will range from the Amiga (of course) to books, TV, and movies to whether or not aliens have visited our planet.

Come join us on the IRC
The network is ExodusNet
The new servers are:
irc.superhosts.net, irc.midnightrose.org, irc.codemain.com
The channel is #team*Amiga
The time(s) are each Sunday evening (9:00pmEST-11:00pmEST
2:00am Monday to 4:00am Monday GMT)
For those who can use Java chat, point your browsers at:
www.reefer.org/chat4.html
or
http://www.reefer.org/chat.html

I put my cam up Sundays so that you can see me as we chat. If you're using an Amiga, get WebVision Aminet, or, if that's down, email me and I'll send you the latest version I've got). It can live on the same screen (MUI) as AmIRC and is easy to use and setup. You can also see the cam on the Web (using a browser). The cam address is www.ashafx.com/cam. There's always a picture up, but it's only live on Sunday nights.

We also love playing with sounds. You can grab all (or some) of the sounds we are playing by going to:
http://enja.org

We have a nice group of friendly folks sharing information, help and humor as we wend our way through the Great Amiga Oddessy.
Hope to see you there!

Please repost this anywhere you find Amigans online!

Asha, asha@ashafx.com, http://www.ashafx.com

AMICUE Saturday Coffee SIG
Every Saturday
1:30-3:30
Haps Hungry House
159 St Stoney Plain Rd.

OS 4.0 DEVELOPMENT PROGRESS REPORT

Posted on 05-Mar-2002
Status: February 13, 2002 (Status as of February 1)
Ben Hermans, LL.M managing partner Hyperion Entertainment
1.0 AMIGA OS 4.0 DESIGN GOALS

- 1 - Migrate OS 3.9 from 68K to PPC
- 2 - Untie the OS from the Amiga custom chipsets
- 3 - Introduce modern functionality
- 4 - Eliminate key performance bottle-necks
- 5 - Prepare the Amiga OS as a host-OS for Amiga DE

1.1 DEVELOPMENT UPDATE
* Exec Second Generation (Exec SG)
Exec is the kernel of the AmigaOS and is currently written in 68K assembly. Exec will be re-written for in C and new functionality will be introduced to allow the deployment of OS 4 on any suitable PPC hardware including but not
limited to the Amiga One, Blizzard PPC, Cyberstorm PPC, Shark PPC from Elbox, Pegasos from bPlan etc.
The following features are planned:

Alberta Amiga is a publication of AMICUE the Amiga Computer Users of Edmonton.
Alberta Amiga is published monthly to inform and support the
Amiga Community in Northern Alberta.
AMICUE meets on the third Thursday of each month at Arch
Bishop Jordan High School 2021 Brentwood Blvd.. Sherwood Park.
Yearly Membership fees of $20.00

Now Amiga content is available Anywhere and Everywhere

March 11th, 2002 - Snoqualmie, WA - Amiga, Inc. is pleased to introduce its new line of products, a complete solution for the delivery of content to any type of digital device with the express purpose of enriching the end user experience.

Amiga® AnywhereTM, provides a revolutionary infrastructure for the production and distribution of digital content emphasizing high performance, superb quality, and minimal resource consumption.

With 3,000 developers already signed on, 67 titles available and hundreds more in development, Amiga® AnywhereTM brings developers and consumers together anywhere and everywhere on any and every digital device.

Through a long term partnership with the Tao Group, Amiga content and services are now available for the vast majority of software platforms including the various flavors of Microsoft Windows®, Linux, Embedded Linux, Symbian OS and VxWorks. The software runs unchanged on almost all of the mainstream microprocessor families.

Bill McEwen, Amiga's President and CEO, said, "The Amiga community is renowned world-wide for creating exciting applications. It has a heritage as one of the leaders in the video game industry and film animation. Today, those skills are being used in creating content that can run on almost any digital device and will offer new levels of excitement as we move forward."

"In the two years since Tao and Amiga first began working together, our relationship has progressively tightened," said Francis Charig, Chairman of Tao. "Operators are seeking content that consumers will actually pay for, portable content that runs across a broad range of appliances. Amiga is the first company that has actually got content that fulfills this important objective."

Amiga® AnywhereTM capable devices have instant access to a rapidly growing world of quality applications, exciting content and valuable services. Many existing devices can become Amiga® AnywhereTM capable while several new devices, such as the Nokia MediaTerminal come with that capability as standard, offering a compelling reason for customer purchase.

(from page 2 OS4.o Development)

Hardware abstraction layer Virtual memory New library interface Resource tracking and management Optional memory protection WarpOS backwards compatibility
The following design documents regarding Exec SG were already written and are either finalised or being discussed:
- New library model (final draft)
- Hardware abstraction layer (first draft)
- Virtual environment (first draft)

All design documents are available as PDF files.
Both Dave Haynie and Heinz Wrobel have agreed to serve as technical consultants and the design documents for the HAL and Virtual Environment are
currently being re-written to take account of the relevant feedback we
collected.

Development status:
Actual coding on the higher level functionality of Exec is already under way.
Most of the ``high level'' functionality of Exec SG is already implemented (some 50 functions) which includes all list and tag functions and most notably the memory subsystem and parts of the new library scheme.
The memory system is for now limited to the ``classic'' memory system i.e. the MemHeader/MemChunk functionality. A more sophisticated system is planned and VM support will also be added down the line.
All of the implemented functions and especially the memory subsystem were successfully tested and withstood torture tests without problem.
Work is currently underway on the booting process.
The plan is to adapt a remote gdb kernel so that the whole debugging process can be cross-hosted on Linux thus making debugging substantially easier.
All in all the work is around 50% done.
* 68K emulation
The 68 emulation will be key to OS 4 with many parts of the operating system still in 68K form as well as a very large base of applications and games in 68K.
Development status of the JIT emulator:
Nearly all 68040 integer instructions are now emulated and work is about to start on FPU emulation, OS integration and further performance optimisation.
Emulated opcodes:
data transfer: "move" opcodes, moveq, lea, pea, movem, movec, clr, scc
arithmetics: add, addi, adda, addx, addq, sub, subi, suba, subx, subq, neg, mulu, muls, divs, divu
comparing: cmp, cmpi, cmpm, cmpa shifts: asl, lsl, rol, asr, lsr, ror, roxr, roxl flow control: bra, dbra, bsr, jmp, jsr, rts,
rtr conditional branches: dbcc.x, bcc.x logic opcodes:

eor, eori, not, andi, and, ori, or, btst, bset, bclr, bchg, tas miscellaneous: nop, exg, swap, tst,
ext, extb, link, unlk
Adressing: all addressing modes which are supported in 68020 Flag emulation:
negative, overflow, carry, zero, extended
During dynamic recomplilation a low-level flag data-flow analysis allows run-time optimalisations of recompiled code.

* PPC native TCP/IP stack & PPP drivers
Early tests already suggest that this is the fastest TCP/IP stack found on the Amiga.
Features are as follows:
- implemented as a single shared library - compatible with the Amiga standard “bsdsocket” API, as defined by the AmiTCP product - enhanced API for more control over the inner workings and configuration - built-in DHCP client -
Internet Superserver (inetd) - IP filtering and networking address translation - drivers for asynchronous PPP (dial-up networking) and PPP over Ethernet
Development status:
The TCP/IP stack (``Roadshow'') and PPP drivers have been completed with the following issues outstanding:
- GUI (also required for the PPP drivers)
- SSL implementation/integration.
SSL V2 is very close to completion.
* Re-implementation of the Amiga file system (FFS2) for PPC
FFS2 is a fully backwards compatible re-implementation in C of the Fast File System. It supports media > 4 GByte, and a new variant of the file/directory name storage format which allows for long file names (up to 108 characters).
Development status:
Completed and successfully tested.
* Recovery and Salvage tools for FFS2 and SFS
Salvage, Undelete, Unformat, Repair, RDBSalv, ReOrg/Defrag, Check Integrity etc. with full support for FFS2 and SFS
Development status:
Filesystem Check, Salvage (recovery by copying to another partition), Undelete, Optimize (”ReOrg”/”Defrag”), Find Partitions and Unformat are done.
The filesystem Repair function still needs some work.
Localization and user documenation is not done yet.
* PPC native RTG system (Picasso 96 V3)
The RTG system allows for the use of modern graphics cards such as the Matrox and ATI cards on the Amiga.
Development status:
Permedia 2 driver: 85% completed Permedia 3 driver: 60% completed Voodoo 3
driver: 100% completed Matrox G450/G550: work in progress ATI Radeon family: work in progress
Picasso 96 V3 will subsequently be ported to PPC with the use of the new Exec SG library model for optimal performance.
An arithmetically optimised PPC native version of layers.library is planned.
* Warp3D (3D driver system)
Warp3D is a powerful yet low-level 3D API which is both available on the classic Amiga and intent/Amiga DE which allows developers to rapidly migrate 3D content between both platforms.
Development status:
Permedia 2 driver: 100% completed Permedia 3 driver: work to start upon completion of 2D drivers Voodoo 3 driver: 100% completed Matrox G450/G550: work to start upon completion of 2D drivers ATI Radeon family: work to start upon completion of 2D drivers
* OpenGL 1.3 support (Mesa 4.0)
OpenGL is a cross-platform (Mac, Linux, Windows, AmigaDE etc.) high-level 3D API originally developed by Silicon Graphics.
Support for OpenGL 1.3 will be provided by porting the open source project Mesa (which now passes all SGI compliance tests) which will sit on top of Warp3D so that graphics-card functionality not currently offered by the OpenGL API may be supported nonetheless.
Development status:
Work will start once Warp3D V5 has been completed.
* PPC native RTA system based on AHI
Developer: Martin Blom and others
A Retargetable Audio System allows the use of plug-in soundcards (PCI or Zorro II).
AHI by Martin Blom is currently the de facto standard on the Amiga and a PPC native version will be offered with support for a wide variety of soundcards including but not limited to all current Amiga soundcards and the Soundblaster 128 and Live (EMU10K1) cards.
Development status:
Martin Blom has started work on the Soundblaster Live drivers.
* PPC native Intuition and Reaction

* Reaction is the BOOPSI based GUI system for the Amiga, introduced in OS 3.5 and extended in OS 3.9.
The functionality of Reaction will be extended by providing more classes and be integrating Reaction better within the OS.
The addition of the following classes is being contemplated:
-application.class - name not finalized. This class will be a “parent” and likely unify window class and arexx class management together, ease management of multi-window applications and support easy creation of applications as commodities.
-speedhint.class - a new help display class based on the speenthint code from window.class, however this will allow for a more powerful API and future growth path.
-popwin.gadget - similar to chooser.gadget but allows a popup display containing most any other gadget as a child - most useful for a popup listview. For this gadget to function, Intuition needs to gain some new ability. The safety of making these changes and therefore including the gadget will need to be evaluated via beta testing.
- prefs.class - a new baseclass that allows for custom plug-in preferences modules for any of the ReAction classes. Subclasses need to be written for the existing ReAction classes and supported in ReActionPrefs.
The following functionality will also be implemented:
Drag and Drop support. New ``ghosted'' look
* Intuition will sport the following new features:
New DrawInfo pens, Enhanced window borders Resolution-adaptive system gadgets User-selectable styles for system glyphs and 3D frames with support for external plug-ins Configurable look for proportional gadgets New-style (3D recessed) ``disabled'' look for gadgets where applicable Gad-Tools enhancements (pop-up capability for cycle gadgets etc.) Full-user control of Workbench palette
Development status:
Work is expected to be completed in time for release of OS 4.0 with more work already planned for subsequent updates of the OS 4.0.
* SCSI drivers for onboard (UW) SCSI controllers
The current SCSI drivers for the onboard SCSI controllers of the Cyberstorm PPC and the BlizzardPPC are written in 68K code which cannot be emulated due to the usage of MMU instructions and the different MMU pagesizes of the 68K and PPC line of CPU’s.
It is therefore necessary to replace these drivers.
Support for other SCRIPTS based PCI-based SCSI controllers is planned to allow an easy migration of SCSI hardware to non-SCSI systems such as the AmigaOne.
Development status:
The SCSI driver framework is completed with work in progress on implementing the actual driver for the Cyberstorm PPC onboard SCSI controller. Good progress is being made and the driver is expected to be finished in time.
* WarpInput API
WarpInput is an API for multimedia controller devices (akin to DirectInput on Windows) which allows a programmer to provide support through one API for a wide variety of input-devices such as keyboard, mouse, joysticks(analog and digital), track-ball, Playstation controller etc. The design document is in its second draft and implementation has started.
Development status:
Work is underway to re-implement lowlevel.library in C.
* Minimal USB stack A minimal USB stack would allow for the use of USB based keyboards and mice which would effectively aid in untying the OS from the custom chipsets.
Development status:
Design documents are drafted and implementation work is underway. * PPC native datatypes PPC native datatypes for common formats such TIFF, JPEG, PNG and BMP.
Development status:
Completed but still need to be recompiled for OS 4.
* New HDToolbox
HDToolbox is a utiliy which allow for the formatting and partitioning of storage devices. The new incarnation of HDToolbox will offer substantially more functionality than the current version.
Development status:
- Lowlevel part (’the Engine’): Some 80% of the written code was tested with a total of about 85% written. Succesfully tested code includes: removing/adding partition and filesystem, moving and sizing partition, saving RDB back to disk or to a file. The automatic error reporting and correction of RDB structures is still missing. This is the last remaining major item which remains to be implemented in the Engine.
- Highlevel part (GUI):
The partitioning window is 100% complete owing to a new gadget designed by Massimo Tantignone. So is the filesystem selection window barring the gadgets related to the correction/error reporting of RDB values. Two windows remain to be fully managed: the Installation window (already working but incomplete) and the lowlevel SCSI utilities window which is fully designed but not yet working. Also missing is a complete test of the GUI layout functionalities:
the GUI will try to open a custom screen if the current screen is not big enough but this is not tested yet.
Still to do: support for localization and user documentation.
Overall the development status is estimated to be 85% completed. * Support for TrueType/OpenType fonts
Currently the AmigaOS does not support TrueType fonts which is a serious deficiency.
A new font-engine as well as a reworked version of the bullet API, bullet.library, diskfont.library is called for.
Development status:
Work on the initial version for OS 4 is around 95% completed.

Amiga OS XL Comparisons

Amithlon

The fastest Amiga ever

Insert the CD-ROM, switch on your PC and boot into the fastest Amiga ever. There is no complicated and boring installation.
The development team of Harald Frank (VMC) and Bernd Meyer even implemented native support for nVidia and Matrox graphics cards providing maximum graphics performance. Opening windows on the Workbench is so fast that you can barely watch it anymore.
With AMIthlon you can even use your old Amiga hard-disk in your PC. Simply connect it to your PC, start AMIthlon and that's it.

Features:
fastest emulation of a 68040 CPU/FPU with a heavily optimized JIT engine see benchmarks
very high speed: over 600 MHz 68040 (on a 1 GHz AMD Athlon)
flexible and easy to support x86 native API interface to get all the power out of the system

Graphic:
New licenced Picasso96 v3 version
Picasso96 nVIDIA and Matrox drivers with Hardware acceleration
more Picasso drivers in preparation

Audio:
AHI drivers for all common onboard AC97 Codecs
more AHI in preparation

Peripherals:direct support for PS2 mice with up to 5 keys and 2 wheels
direct support for Seriel mice with up to 5 keys and 2 wheels
direct support for seriel interfaces with 16Cx50 Uarts
direct support for parallel interfaces with SPP/EPP/ECP
own "scsi.device" compatible drivers with full support for SCSI, IDE and ATA devices
Amiga Harddisks (IDE or SCSI) can be connected and booted
Scanners (can be used directly with e.g. ScanQuix)
CD-Writers (MasterISO, BurnIT can be used directly)
huge choice of supported disk controllers (SCSI I/II/UW/UW-UW ATA-66/100, all common Adaptec controllers)

Communication:
VMC-ISDN based drivers for PCI ISDN cards with SIEMENS- (e.g. AVM FritzCard) and Cologne HFC chip set.

Network:
supports all NE2000 compatible PCI cards
more network drivers in preparation
direct support for Miami and MiamiDX
direct support for AmiTCP

System requirements:
Athlon-, Duron, Pentium-, Celeron-CPU 500 MHz or better.

Amiga XL

The most functional Amiga ever

The host operating system for AmigaXL is QNX 6.1. It is included in the package. QNX has many similarities with the AmigaOS. It has a micro kernel and the drivers are separate processes. Like devices and handlers in AmigaOS these can be dynamically started and stopped. This makes the system extremely light weight and resource efficient. Features that QNX provides can directly be used within the emulated Amiga. This includes network functionality and multimedia features. QNX applications like the web browser Opera® can be started directly from the AmigaOS screen. One can say both operating systems work together seamlessly.

Features:
fast emulation of a 68040 CPU/FPU with JiT (Just In Time Compiling)
high speed: around 450 MHz 68040 (on a 1 GHz AMD Athlon). New tools and preferences for the AmigaOS (AmiXL-preferences, Audio-Mixer,
QNX-Programstarter)
QNX WWW-browser with SSL, JavaScript, Java, Macromedia Flash-Player,
MPEG-Player and RealAudio-Player.

Graphic:
all common graphiccards are supported, Picasso96-software

Audio:
all common soundcards are supported, paula-emulation and AHI-driver

Peripherals:
all serial-, PS/2- and USB-mice, also with scroll-wheel and 3 button-mice
all standard-PC- or USB-keyboards
all SCSI- and IDE-harddrives and CD-ROM-drives: IDE/ATAPI-support and all common SCSI-chips
direct access to QNX-, Windows-, Linux-partitions
direct access to Amiga-harddrives
all common printers, parallel port and USB; Dirvers for Hewlett Packard, Epson and Canon (and compatible models), as well as postscript-capable printers
Laptop-friendly need-oriented CPU-usage, resulting in long battery-runtimes.

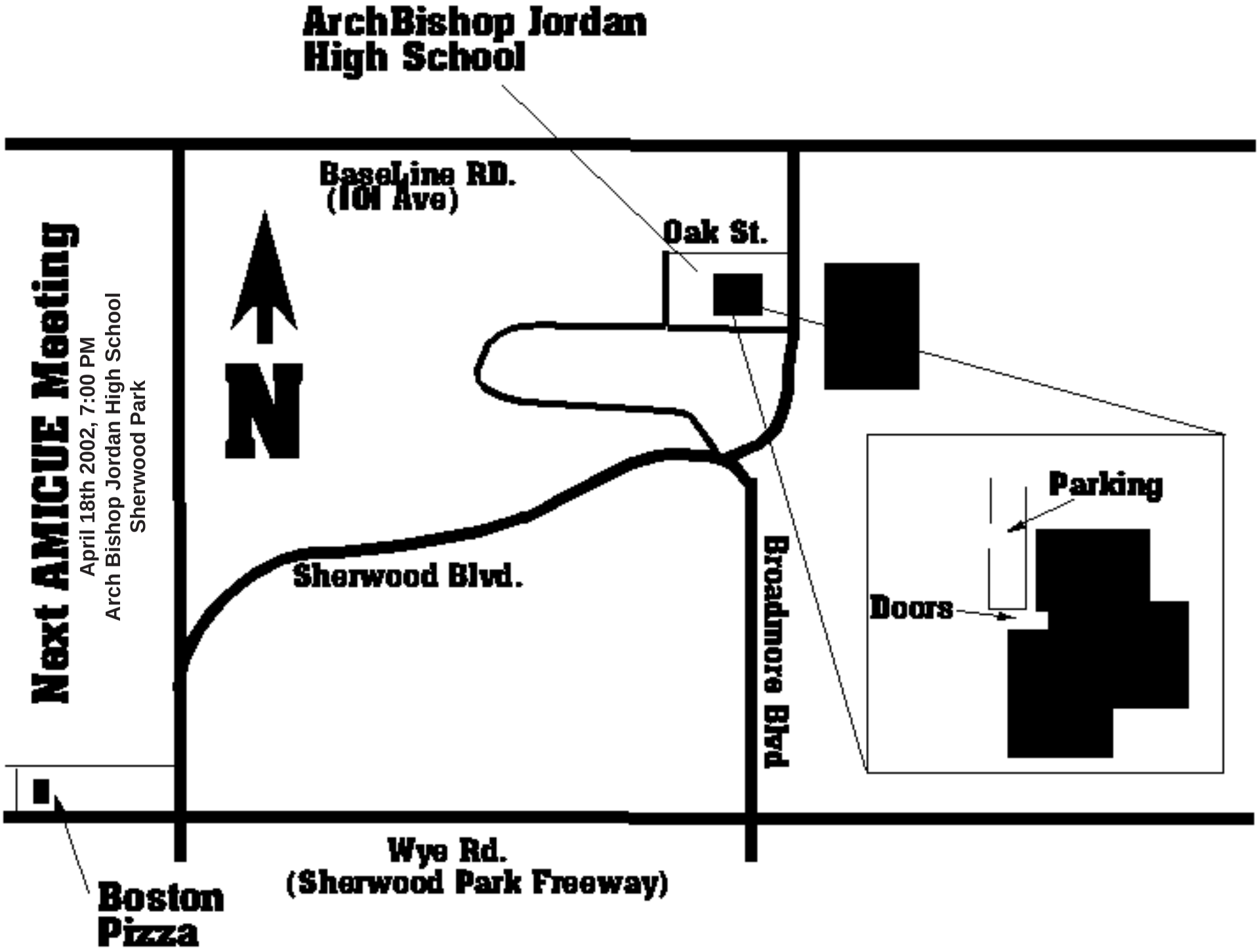
Communication:
The complete and current list of QNX can be found at qdn.qnx.com/support/hardware/platform/index.html.

Network:
all common networkcards, 10 and 100 MBit, PCMCIA for laptops
Networksupport for TCP/IP and direct QNX-networking in a LAN (free access to all resources in the net)

System requirements:
Athlon-, Duron, Pentium-, Celeron-CPU 500 MHz or better. QNX/AmigaXL supports
the common graphic-, sound-, modem- and network-cards.

AmigaBest

If You Can Please Pay Walther for This Years Membership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Next AMICUE Meeting
April 18th 2002, 7:00 PM
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