

WINDOWS 3.0 - RUDE Q & A  
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- Q1. Everybody has known about Windows for months. Why didn't you just announce it?
- A1. Especially for retail products, we're committed to announcing and shipping simultaneously.
- Q2. But you had EVERYBODY under NDA. Don't you think it got ridiculous to call it "the future version of Windows" as if there really were a cloud of secrecy around the product?
- A2. We had nearly 1,500 developers in a prerelease program. These developers legitimately needed access to the code. We also had an aggressive beta test. This was needed to get the product right. It is hard to keep the lid on when so many people have the product; however, holding back on our beta test or communication with ISVs was not consistent with getting the product right.
- Q3. Why did it take so long to develop Windows?
- A3. We hope it was worth the wait.
- Q4. Don't you think Windows will delay OS/2 acceptance?
- A4. We think Windows will generate a lot of excitement about the Microsoft GUI and this will benefit OS/2. Windows does not compete with OS/2; it is part of a family of GUI products from Microsoft. Both Windows and OS/2 share a common user interface; this means that customers can choose Windows or OS/2 depending on their needs and still get the family leverage. OS/2 provides the corporate market with a superset of Windows; it enhances the operating environment with features like protection, security and file system capabilities. DOS/Windows will remain a workstation operating system while OS/2 will play an increasing role as a server operating system. As members of the same family, OS/2 and Windows 3.0 offer users a choice. We have introduced a software migration kit that will allow Windows applications to be ported quickly to OS/2 and will broaden the base of applications available for OS/2. The appropriate OS will depend on individual needs.
- Q5. Will there be a Windows 4.0?
- A5. Absolutely. Microsoft is committed to Windows.
- Q6. But where do you draw the line? How good will Windows get?
- A6. We will continue to focus on making the best product possible for customers at a 1-2 MB design point. We will draw the line at features that would require us to move beyond the design point or significant changes to APIs.

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- Q7. I've heard there are 32-bit APIs in Windows. Doesn't that erase another significant difference between it and OS/2?
- A7. We have defined some memory APIs and provided a dynamic link library in the Windows SDK for 16-bit Windows applications to make calls to 16- or 32-bit DOS-extended code. The Windows applications can only be 16-bit applications and all Windows APIs remain 16 bit.
- Q8. At Fall COMDEX you said Windows is a 1-2 MB platform. But isn't your salesforce going to be pushing it for more powerful platforms so you can sell Windows applications?
- A8. Our sales force is going to focus on encouraging movement to the graphical user interface or development requirements. For many users, this will be a move to Windows. Depending on the application, it may also be OS/2. Clearly if a customer is committed to a 1-2 MB machine, the appropriate choice will be Windows. On 4 MB and higher it really depends on the application.
- Q9. What is IBM's position on Windows?
- A9. IBM has endorsed and its sales force is recommending Windows for 1-2 MB machines.
- Q10. Are you going to merge DOS and Windows?
- A10. We expect that some OEMs will bundle Windows with DOS, which is effectively a merge.
- Q11. What's this about not bringing out your Windows applications until the PM applications have shipped?
- A11. Microsoft has already announced PM Excel and PM Word. By second half 1990, PM applications will ship either before or with their Windows counterparts. This means that Project and PowerPoint, our most recent Windows applications, will be followed by PM versions before long.
- Q12. Can we expect to see a Windows database any time soon?
- A12. Ask the applications group.

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- Q13. Why has it taken so long for Microsoft to bring out decent Windows development tools?
- A13. There are over 40,000 Windows SDKs in the market and we are seeing more applications than ever. We believe the Windows 3.0 SDK makes it easier than ever to develop complex Windows apps; also, there is Windows support incorporated in some of Microsoft's upcoming language products. There is also a real variety of excellent third-party tools for developing more simple applications.
- Q14. Since you announced the SMK, do you think anyone will develop for OS/2?
- A14. The software migration kit is great for Windows developers who want to move quickly to OS/2 or new developers who want to target both platforms. Some developers will choose to develop 32-bit applications for OS/2 2.0.
- Q15. Do you think it's reasonable for Microsoft and IBM to say that OS/2 will ever run on 2 MB?
- A15. In order to meet the 2MB design point OS/2 would have to trade-off significant functionality that would make this difficult.
- Q16. Has Apple seen Windows 3.0? Do you think this will affect the lawsuit at all?
- A16. Microsoft always shows significant technology to our partners prior to announcing it. The lawsuit pertains to Windows 2.03. It has nothing to do with Windows 3.0.
- Q17. But don't you think Windows 3.0 is a real threat to the Macintosh?
- A17. Everyone benefits when the market for GUI expands significantly. We believe that the excitement generated by Windows 3.0 will benefit everyone who has a stake in graphical computing, including Apple.
- Q18. How do you expect Apple to respond?
- A18. You should ask Apple. Apple is a very innovative company. Microsoft continues to be absolutely committed to bringing out high quality products for the Macintosh.
- Q19. How many Windows units have you sold?
- A19. We've sold well over 5 million copies of Windows to date.

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- Q20. Does that include runtime or OEM bundles?
- A20. It includes OEM copies but not runtimes.
- Q21. That's a very high number. How many people do you estimate are actually using Windows as part of their daily computing?
- A21. We believe that most people who buy packaged product, use it. This is especially true in the last year when many great Windows apps have come to market.
- Q22. So what do you estimate your true installed base to be?
- A22. About 3 million.
- Q23. What's going on with multimedia and handwriting recognition?
- A23. Microsoft has been investing in multimedia since our sponsorship of the CD-ROM conference in 1986. At our most recent conference we stressed tools for multimedia development and getting hardware vendors committed to this technology. Handwriting is an extremely interesting area to us and we believe that it is a technology which really begs for a standard operating system. Windows will be an important platform for Microsoft's efforts in both of these areas. Windows 3.0 has an architecture that allows it to be extended for multimedia using DLLs and device drivers. It anticipates multimedia requirements.
- Q24. Will 1-2-3 release 3.0 run under Windows 3.0?
- A24. Lotus 1-2-3 will run unmodified in the standard mode of Windows 3.0. We did some work with Lotus and other vendors on the XMS specification that made this possible. Also Iris Associates announced a software product that will allow it to run under all modes of Windows. And Lotus has announced that 1-2-3 release 3.1 will run under all modes of Windows and is being demoed at the Windows announcement.
- Q25. What about other DOS-extended applications?
- A25. Lotus 1-2-3 release 3.0 is by far the most popular DOS-extended application on the market today. It runs under standard mode because it conforms to XMS as specified in the VCPI specification -- it depends on the vendor and the developer selected for a DOS extender. Not every DOS-extended application does. So not every DOS-extended application will run under standard mode. With the announcement of DPMI on May 10, we are confident that we will begin seeing fully Windows 3.0-compatible applications.

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- Q26. In the meantime does that mean other DOS-extended applications won't run under Windows 3.0?
- A26. Any DOS-extended application will run under real mode in Windows 3.0. Again, Lotus 1-2-3 release 3.0 is the dominant DOS extended application (see above for particulars).
- Q27. What's the story on DPMI?
- A27. Microsoft played a key role in defining a spec called DPMI, or DOS Protected Mode Interface. DPMI provides a common spec for DOS extended applications to adhere to that will allow these applications to co-exist with protected mode environments. Windows 3.0 fully supports the .9 level DPMI specification announced on May 10 with the support of other vendors. Other vendors are beginning to write to the DPMI spec (in fact, Rational is announcing that it is already doing so) and we expect DPMI-compliant applications to begin shipping by year-end. A number of DOS-extender vendors and applications will be demoing their products running under 386 enhanced mode of Windows 3.0.
- Q28. Will Microsoft support New Wave?
- A28. New Wave is a Windows 2.x application. HP is demoing a version under 3.0 at the announcement; you should talk to HP about release plans.
- Q29. Will Windows 3.0 support LAN Manager 2.0?
- A29. Yes. It will ship a LAN Manager 2.0 compatible Win Net driver in Windows 3.0 that offers full 2.0 compatibility.
- Q30. When will LAN Manager 2.0 ship?
- A30. I think the networking group is saying this summer. You should confirm with them.
- Q31. What have you just announced regarding TrueType fonts?
- A31. Microsoft has said that a future version of Windows will support TrueType fonts.
- Q32. So it is not supported in Windows 3.0?
- A32. Correct. However we have targeted TrueType support in 1990.
- Q33. Does this mean we'll see a Windows 3.1 in 1990?
- A33. We haven't decided if Royal fonts will be implemented in a 3.1 or as a DLL made available to customers.

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- Q34. What's this I heard about Brad Silverberg taking over Windows?
- A34. He has joined Microsoft and will be a VP reporting to Steve Ballmer. Microsoft has not announced what Brad will do yet.
- Q35. Is Windows 3.0 bug free?
- A35. It is the most extensively tested version of Windows yet.
- Q36. Since Windows 2.1 applications won't be compatible with Windows 3.0, when do you expect people will be able to start using Windows?
- A36. Windows 2.1 applications will run in a special mode of Windows 3.0 called real mode. But about 85 percent of the commercially available Windows applications are available now or will be within 30 days. To find out the status of a Windows applications, end-users can call 1-800-323-3577.
- Q37. What about support for Novell Netware. Has it improved in Windows 3.0?
- A37. Novell customers need to update their Netware shell to version 3.01. This is available through CompuServe, Netware or from a Novell reseller. There is additional support for Novell networks that ship with Windows 3.0.
- Q38. Microsoft told ISVs to write for OS/2 and then made Windows great. Wasn't this rude to ISVs?
- A38. Microsoft evangelized heavily for Windows and people who developed for Windows first and then moved to OS/2 are probably the happiest.
- Q39. Why aren't you providing a runtime for Windows 3.0. Isn't this making Windows apps more expensive?
- A39. One reason is to eliminate the confusion among end-users and in the channel about runtime. Windows really is meant to be an operating environment, not just an application interface. Its benefits are only really appreciated when it's functioning this way. In terms of cost, the price of entry into Windows is \$149 - only \$50 for current Windows or Windows runtime users. This cost is amortized across a number of applications. And the value received for that cost, in terms of a richer set of applications capabilities and the productivity of working with multiple applications under a single environment, makes this a nominal cost. In addition, full Windows adds significant value to a single application.
- Q40. When do you expect to see applications that can run on either Windows or OS/2 with a single binary?
- A40. The goal is for Windows 3.0 binaries to run in OS/2 2.0.

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- Q41. Is Windows 3.0 really viable for a 1 MB system? Doesn't Windows really require 2 MB or even 4 MB?**
- A41. Windows 3.0 is a very viable environment on a 1 MB system. We absolutely committed ourselves to a one-megabyte design point in developing Windows and we encourage users to try it. Users of multiple large applications might move to a 2 MB system. The great thing about the Windows 3.0 memory manager is that it provides direct access up to 16MB of extended memory. Better still, on a 386 platform, because of virtual memory, it will provide the functional equivalent of four times the amount of physical RAM.**
- Q42. What market share do you predict for Windows? How much revenue will it generate?**
- A42. We are projecting that 40 percent of new DOS systems will be Windows systems within a year. We can't comment on revenue forecasts.**

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Windows 3.0 Announcement  
Internal Microsoft Rude Q&A  
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1. What hardware is no longer supported by windows 3.0 that was supported in windows 2.x

Windows has substantially increased the number of certified systems from about 30 on win 2.x to about 300 on windows 3.0. In addition the number of printer models supported has increased from 165 to 191

and additional support for new displays.

the following are no longer supported:

Displays: Wync 700; Microdisplay Systems Genius  
Printers: Xerox 4020 Ink Printer; NEC P2/P3; Toshiba P321-41 printers

2. how many lines of code?

Windows represents about 85 man-years of additional development to the Windows 2.x code base.

3. Why don't you support the 386-to-the-Max Limulator.

Microsoft has developed a specification that resolves the inherent incompatibilities of protected mode memory managers and ems memory management software. This specification is called the Global EMM Import Specification and is publicly available. For a specific vendor you will need to contact the vendor on their plans to support the specification.

Microsoft does supply the EMM.386 limulator with Windows 3.0 and MS-DOS 4.01 that supports the specification.

4. What about Apple? Microsoft thinks that Windows will generate enormous interest and trial of the graphical user interface. This should benefit everyone.

5. Will MS stop supporting Apple with the Microsoft applications?. Will Project be on the Mac?

Microsoft will continue to fully support the Macintosh with its applications family. Can't comment on future versions of Project but in general we target Windows, OS/2 and the Mac.

6. What are the advantages or disadvantages of Windows vs. the Mac?

Windows is a software product that provides the graphical user interface on the ms-dos-based pc's and works well in low-memory configurations providing color and interapplication communication. The Macintosh is a hardware and software combination.

7. Won't windows kill OS/2? Why bother with OS/2. How is your relationship with IBM

We believe that Windows 3.0 will accelerate the overall market for Microsoft's graphical environments as millions more DOS users become aware of the great applications and the benefits of GUI. OS/2 provides additional operating system capabilities that make it uniquely suited for the server market; for line of business applications in the corporate market and as a key platform for applications that seek to

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exploit its multitasking capabilities. the 32-bit version of os/2 provides additional benefits to the applications developer.

Microsoft is working on technologies to make it easier to think about moving smoothly between Windows and os/2. The Software Migration Kit recently announced enable application vendors to write applications that will work on either Windows or OS/2 for example and when running on OS/2 take advantage of its additional functions.

While Windows and OS/2 will co-exist for a long time, it will be a sensible decision for millions of windows customers to update to OS/2.

8. Where is IBM at the announcement. Why doesn't IBM license Windows. Why doesn't Compaq

IBM was demonstrating Current, a Windows application published by IBM and Windows Connection, a Windows interface to IBM's 3270 emulation programs at the announcement. Ask Compaq.

9. I heard that Windows now supports 32-bit flat model memory? Is this true? Isn't this inconsistent with the Comdex MS/IBM announcement? What is Mathematica demo'ing.

Windows applications remain 16 bit. There are a few API's that have been defined to enable 16 bit Windows applications to access 32 flat model memory, but the Windows applications themselves remain 16 bit. Mathematica is showing their 16 bit windows application that is calling a 32 bit engine in dos.

OS/2 2.0 has hundred of 32 bit enabled api's throughout the operating system.

10. So what if Windows doesn't have all its API's made into 32-bit API's. What else does an ISV need beside the 32-bit memory API's in Windows 3.0?

Minicomputer applications written for 32 bit linear address will not want to have to rearchitect to become a windows 16 bit application. with os/2 2 they can port their application in a straightforward way since the architecture is entirely 32 bit.

11. How did you select the vendors to participate in the demos for the announce? It seems unfair

To qualify, we had to know about the vendor; they had to be commit to shipping their applications with 30-60 days of the Windows announce or we used some judgement regarding applications we thought would be of general interest since space was limited. We have more comprehensive programs such as our applications catalog that is open to any isv that wishes to participate.

12. Why are you selling your update direct instead of through resellers. Aren't you really letting anyone order windows directly for \$50 whether they have a copy or not?

The windows update is consistent with Microsoft's normal process for directly servicing updates for customers who bought product from the reseller channels. There are also millions of Windows owners who received the product bundled with a hardware system or as a run-time with a Windows application. We need to be able to service these customers as well.

13. When do you really expect people to able to use Windows 3.0? New Wave it work yet.

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Virtually all Windows 2.x applications can run under the Real Mode of Windows 3.0. So all current Windows owners can take advantage of the new Shell, printer and display drivers. Virtually all Windows 2.x applications are providing versions that can also take advantage of the protected modes of Windows 3.0. Most of these updates are either available today or within 30 days for a nominal fee or no charge. To find out the status of updates for any Windows application end-users can call 1-800-323-3577.

In addition there are over 50 new applications that have been announced and are now available for Windows that are already fully compatible with the protected mode of Windows 3.0.

14. I have a Vermont Microsystems Display Adapter (or some other specific driver) for Windows 2.x. It doesn't work with Windows 3.0. What am I supposed to do? When will it be supported?

You have to contact the individual manufacturer for the specific information regarding availability of their driver. There are over 500 Independent Hardware Vendors (IHVs) registered in the free Pre-release developer program that we started for windows 3.0 in February, 1988.

15. I never could run DOS apps well under Windows 2.x. Has this improved for Windows 3.0? How much memory is available for DOS applications?

There is a substantial improvement for memory available to DOS apps under Windows 3.0. This question is very dependent exactly what you have configured, however the following represent typical situations in Windows enhanced mode, the difference between running a DOS application under stand-alone dos and under windows is only 8 kbytes (vs. 16 under windows/386 2.x). For standard mode, the difference is about 50 kbytes (vs 240k for win286 2.x).

16. I have a Novell Network. I never could get it to work well under Windows 2.x. Has this improved? What do I need to do to run under Windows 3?

Yes, Windows works compatibly with excellent performance and with the new integration between the networking software and the Windows 3.0 interface. Novell customers need to update their Network shell to version 3.01. This is available for no fee on CompuServe or for \$30 directly from Novell.

17. Windows 2.x was terrible at 3270 emulation (or I have a xxx brand 3270 emulator that doesn't work under Windows 2.x). You say this has improved under Windows 3.x. What does this mean?

The issues with 3270 emulation related to two primary issues: memory constraints as dos 3270emulators can be as large as 220 kbytes and how windows works with certain types of Terminal and Stay Resident programs. The memory problem is resolved in two ways under Windows 2-protected mode provides more memory to applications and also many vendors are now providing windows versions of 3270 emulators that take up significantly less memory (in addition to providing other benefits like DDE etc).

We have also made Windows 3 more compatible with virtually all T&SR approaches. Windows works well with virtually all major 3270 emulator packages in either 2 or 3-tier configurations.

18. Microsoft really misled the ISVs about Windows. You said to write to OS/2 for the last 3 years and one of the major reasons was because OS/2 solved the memory problems for DOS. Aren't you just trying to win it all since your applications group has most of the key windows applications?

Microsoft has been very open about the strategy of our applications division. In cases where we were unable to persuade an ISV to write for Windows first, we recommended that they then write for OS/2.

19. Why aren't you providing a run-time for Windows 3.0. Isn't this making Windows apps more expensive?

Run-times are limited versions of Windows that are complicated for end-users, expensive for ISVs and difficult to keep current. We have not had any negative reactions from ISVs about not offering a Windows 3.0 run-time. Most ISVs had independently decided to discontinue it. ISVs who are licensed for the Windows 2.x run-time can continue to ship it indefinitely.

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20. How come Microsoft announced Powerpoint and Project for Windows 3 before the announcement but all the other ISVs had to wait? You even advertised Windows 3 in your mouse ad. Isn't this incredibly unfair?

Keeping the Non-disclosure for Windows intact proved to be difficult to enforce, even within Microsoft.

21. What is the Driver Library Disk program? How much is it?

The Driver Library Disk provides an on-going service to registered Windows owners to be able to get updates to existing printer and display drivers as improvements are made over time—or to get new printer and display drivers. There is information in the Windows package about how to get information on the service. There are far too many printer and display drivers for Windows to be able to put them all in the package. Printer drivers will be made available for no charge via on-line services or for a nominal fee for diskettes mailed from Microsoft.

22. Does Windows 3 work on the Mach 20 board?

No

23. How do you see DOS evolving. Will you merge dos and windows? will you make dos multitasking? What is DOS 5?

We will continue to enhance MS-DOS to make more memory available to applications, to improve performance and to provide greater ease of use and useful utilities. WE will be providing a major release of dos in 1990 that will provide significantly more memory to applications.

24. What international versions are available.

The French and German version shipped on May 22, 1990 at the same time as the English version. Windows will be available in over 13 languages by the end of 1990.

25. When do you expect to see applications that can run on either Windows or OS/2 with a single binary? Will you ever be able to run OS/2 apps on Windows?

We recently shipped the OS/2 Software Migration Kit that enables application vendor to modify their Windows application to be able to run on OS/2 and take advantage of the additional features of OS/2. Our goal is to provide binary compatibility on OS/2 for Windows applications. We are confident that we can accomplish that goal but have not announced specific timing for binary compatibility.

26. Will Windows support the Adobe Type Manager (ATM)?

ATM is provided by Adobe. Ask Adobe.

27. Which networks do you support? What Appletalk? What about NFS.

TOPx is the leading supplier of peer-to-peer networking on the Macintosh. TOPx has announced that they will be providing a version for Windows 3.0. You will have to ask them for specifics.

28. How much harddisk does windows require?

Window requires 4.5 Mbytes of harddisk for Standard Mode and 6.3 mbytes for Enhanced Mode with all of the product installed. Various components can be removed in necessary, such as unused fonts.

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29. How many applications can you really run on a 1 mbyte system? Doesn't Windows really require 2 mbytes or really even 4? What about shadow ram systems?

In Standard Mode, you can run 2 large applications well on a 1 mbyte system ( 640k plus 256k of extended memory available). You can run a large application and several smaller applications well on a typical network configuration in 1 mbyte.

30. Will windows run on 8086 machines? yes

31. Which versions of Lan Manager does Windows support? Both the 1.1 and 2.0 versions are supported. Lan Manager 2.0 is not yet available.

32. Does Windows save my configuration setting from Windows 2.x so I don't have to set everything up again? Yes. Windows will retain the information stored in the Windows 2.x .ini file in the Windows 3.0 .ini file. This helps make it easier to upgrade.

33. Why is the File Manager so slow?

Most operations for the File Manager are quite fast. We have not had a lot of complaints about this but will of course look for ways to improve Windows 3.0 in the future.

34. How does the memory Real Mode Windows 3.0 compare to Windows 2.x. What Windows applications don't work in Real Mode?

35. What is Free Memory indicated in the Help About box on Windows 3.0. How exactly does it measure? What are Free System Resources?

Free memory measure the total memory available to an application. In 386 Virtual Mode it measures not only the amount of memory physically available but also the memory made available by using the harddisk for virtual memory ( usually about 4x the physical memory)

Free System Resources measures the attainable memory when internal system limits are taken into consideration.

36. How many bits per pixel does the color palette manager in Windows 3.0 support?

Windows 3.0 color palette manager support 1, 4, 8 and 24 bit per pixel formats.

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