great. sure, I'm available.

12
From bradsi Mon Jul 15 10:29:08 1991
To: philba
Cc: bradc richt
Subject: BAMBI Funcionality Test Defintion
Date: Mon, 15 Jul 91 10:28:40 PDT

what if we said bambi only worked with dos5? that would greatly reduce the testing effort. if past experience is a guide, when testing tries to cover all the dos versions, they do a shallow job and it consumes lots of resource. I'm willing to say bambi only works on dos5, if bambi can detect version number and refuse to install if not dos5 (or great) (with an override switch).

| >From a-lawren Mon Jul 15 10:13:10 1991
| To: dosdev dostech
| Cc: a-lawren chrissh richsa
| Subject: BAMBI Funcionality Test Defintion
| Date: Mon Jul 15 09:12:09 PDT 1991
|
| BAMBI Functionality Test Defintion
| Lawrence Norman (a-lawren)
|
| BAMBI Functionality Testing has not up to this point been defined.
|
| File Operations (Open, Save, Delete), need to be exercised
| intensely under a number of different configurations and senarios
| to insure file integrety. Lost Clusters, Cross Linked files,
| Corrupted Files as well as Trashed Hard Disks have been the
| results from BAMBI misbehaving.
|
| Below is a list of identified areas that need to be investigated by
| Testing. If there are some configurations or senerios that you can
| think of that will potentially give BAMBI some trouble please send
| me mail back and I will add it to the list.
|
| Configuration Tests :
| -DOS 5.0 and UMB.
| -Double Buffering.
| -Different Versions of DOS: DR DOS, DOS 3.xx, DOS 4.xx, DOS 5.0x
| Compaq DOS, etc..
| -XMS support
| -Test changing Bambi parameters "on the fly", turning caching off

```
|   in the middle of a File Operation, turning on again with different
|   parameters.  etc..
|
| Hardware:
| -Different Drive Types (MFM, IDE, SCSI).
| -Different Disk Drive sizes.
| -Different controlers on the same Hard Disk.
| -KeyBoard interactions /various interupts.
| -KeyBoard "Pop-Up" TSR's.
| -Physical Errors on Disk Drive.
| -Logical Partions: Funny Partition sizes, Compaq DOS & Large Partiti
ons.
| -Number of Disk Drives.
| -Removable Drives Bernolli and the utilites that come with these
|   Drives.
| -Forcing cache to CD RAM and Network (should fail).
| -Western Digital Controlers and FastDisk.
|
| Software:
| -Disk Software "DM Driver" (which has cylinders greater than 1024).
| -"Stacker" and other Disk Compression schemes.
| -Caching with Swap Drive Partition in place.
| -PC Kwik and other Caches already installed (Doesn't BAMBI detect).
| -Disk Manager w/ BAMBI (Device Driver, gives whole 600MB instead of
only
|  400MB which is a DOS limitation).
| -Caching RAM Drives.
| -Command Line User Interface with BAMBI, different varations.
| -Support for floppy Disk caching.
| -Subsitute Drives.
| -Interlink the new DOS file transfer.
| -Disk Compation Utilites: Speed Disk, etc... Do they work??
| -Damage to files During Power Down, compare with results with No Cac
he,
|   PC Kwik, OS/2.
| -DOS automated tests that is Disk intensive and perhaps give us
|   performance data as well.
|
| Windows:
| -Interaction between Windows (How it takes and gives back extended m
emory).
| -Old smart Drive bugs should be regressed with BAMBI.
| -SmartDrive and BAMBI compatablity.
| -Windows Automated tests that are disk intensive and gives perfomanc
e
|   data.
| -Windows Setup.
| -Setting up an older version of windows with BAMBI in place.
```

| -Different windows mode (Standard & Enhanced).
| -Mulitiple DOS VM's on the same disk doing a lot of file operations.
|
| Thanks,
| Lawrence.
|

13
From bradsi Mon Jul 15 10:50:12 1991
To: chrisp
Subject: Re: King Kahn
Date: Mon, 15 Jul 91 10:50:11 PDT

just mail to Philippe Kahn. I don't have his user number,
and you don't need it if the name is unique.

14
From bradsi Mon Jul 15 10:54:39 1991
To: o-anton
Subject: Re:
Date: Mon, 15 Jul 91 10:54:38 PDT

no access to the m-n. can you fax me? 206/883-8101.
haven't seen softletter. can get a copy, though if you
have soft copy, please send.

how's going?

15
From bradsi Mon Jul 15 10:55:43 1991
To: russs
Cc: richab
Subject: RE: catchings/van name
Date: Mon, 15 Jul 91 10:55:40 PDT

OK. Be their buddy. Get their impressions of 3.1; if they
are not beta testers we should show it to them and get them
on track.

58
From bradsi Mon Jul 15 19:25:16 1991
To: billg
Subject: disk cachers
Date: Mon, 15 Jul 91 19:25:13 PDT

Here are the latest bambi numbers in comparison with other disk cachers. As I mentioned, Gordon has reviewed bambi and will continue to help out, perhaps even 1/4 time if that won't impact the fs work he's doing too much. He has identified some very useful improvements (such as valid_bits).

Bambi is currently competitive with the other cachers and there is room for improvement.

Philba's nuts are on the line over bambi and he knows it. The bambi guys formerly were on the dos team; I moved them over to work directly with phil on this till it was done.

We do not yet have the cross os tests done with Bambi so there is no direct corelation between bambi+win3.1 and os/2 2.0+Superfat I have attached the os2 2.0+superfat vs win 3.1+smartdrv for os/2 1.38 -- testing is running the tests with build 1.49 but wont be done for a couple of days. They told me that their spot check indicated that some of the extremely slow cases have improved but that over all windows 3.1 is still faster than OS/2 2.0.

Note that the few places where OS/2 2.0 is faster is where we are banging on the FS (delete 64 files, for example).

The plan for improving Bambi's performance is:
- get testing focused on testing with bambi and not with smart drv.
- instrument bambi with a profiler to determine where we are spending the time. this may suggest additional improvements.
- design and implement valid-bits. performance test this
- design and implement several alternative replacement algorithms. performance test this

---

Here are the general cache test results

negative percents are where bambi is slower, positive, faster. numbers are in seconds.

	NoCache	Bambi	Sdrv	Hyper	PC-Kwk	Power
WORD	325	279	271/-2.87%	273/-2.15%	272/-2.51%	272/-2.51%
EXCEL	386	357	378/5.88%	368/3.08%	340/-4.76%	516/44.54%
dBase	537	244	336/37.70%	347/42.21%	273/11.89%	311/27.46%
QuickC	175	149	152/2.01%	155/4.03%	148/-0.67%	152/2.01%
DOS S	2192	1265	1263/-0.16%	N/A	1285/1.58%	N/A
PC BNCH	N/A	70	115/64.29%	N/A	N/A	N/A

What the performance numbers show is that bambi's performance range is 2.87% slower than SD to 62% faster. It is also interesting that no cache beats bambi hands down (pc kwik is 4.7% faster on excel) in any of the categories and bambi does exceed the others significantly in several categories. Note also that in one category, smartdrive beats them all (word).

---

cross os summary

Date:	6/2/91	RAM:	3968KB
Win Build:	3.10.031	DOS:	v 5.0
Cruiser Build:	6.138	NET:	No
Mode:	Enhanced	SmartDrv:	2048 512
Computer:	25 Mhz PS/2 70	PrintMan:	On
Display:	VGA	Printer:	HP LJ Series II

Notes:
* Times are in seconds
* DOS apps under OS/2 are started
  after DOS box is initialized
* %s are percent change (+ faster, - slower)

* GUI App versions:	Win	PM	* DOS App versions	
Excel	2.1d	2.2	Lotus 123	2.2
Corel Draw	1.2	1.0	WordPerfect	5.0
PageMaker	3.0	3.0	DOS Word	5.5
PowerPoint	N/A	2.01D		
GUI Word	1.1	1.1		

MSC 00732747

Win3.1 vs			
Boot System	OS/2 2.0	Win3.1.31	OS/2 2.0
Cold Boot			
System Beep (SB)	19.0	19.0	0.00%
DOS	N/A	26.0	N/A

Shell	75.7	41.0	84.63%
Warm Boot			
System Beep (SB)	14.0	14.0	0.00%
DOS	N/A	22.0	N/A
Shell	70.0	36.0	94.44%
Shell from SB	56.0	22.0	154.55%

App Load & Quit

Load App	OS/2 2.0	Win3.1.31	Win3.1 vs OS/2 2.0
Excel	14.3	3.7	286.49%
Corel Draw	19.1	8.0	138.75%
PageMaker 3(collage.pm3)	36.7	9.6	282.29%
PageMaker 4.0	N/A	11.6	N/A
PowerPoint	N/A	7.8	N/A
Win/PM Word	30.1	6.3	377.78%
DOS Box (first time)	11.6	2.1	452.38%
Lotus 123	15.5	5.4	187.04%
Word Perfect	9.0	3.5	157.14%
DOS Word		4.2	

Exit App	OS/2 2.0	Win3.1.31	Win3.1 vs OS/2 2.0
Excel	4.3	1.1	290.91%
Corel Draw	2.4	1.2	100.00%
PageMaker 3.0 (w/pub)	7.9	2.8	182.14%
PageMaker 4.0	N/A	1.6	N/A
PowerPoint	N/A	1.2	N/A
Win/PM Word	8.1	1.5	440.00%
Lotus 123	4.3	1.2	258.33%
Word Perfect	5.2	1.2	333.33%
DOS Word		2.5	

GUI APPS

Excel	OS/2 2.0	Win3.1.31	Win3.1 vs OS/2 2.0
Load Drt.xls	8.7	5.9	47.46%
Load 21big2.xls	89.4	39.5	126.33%
Recalc 21big2.xls	68.4	7.1	863.38%
Macro Buildtst.xlm	53.0	34.0	55.88%

Corel Draw	OS/2 2.0	Win3.1.31	Win3.1 vs OS/2 2.0
Load Jukebox.cdr	13.3	26.8	-50.37%
Preview Display	28.0	34.5	-18.84%

			Win3.1 vs
PageMaker 3.0	OS/2 2.0	Win3.1.31	OS/2 2.0
Load Bench1.pm3	28.6	4.3	565.12%
Load Collage.pm3	14.9	1.9	684.21%
Text flow	39.3	17.2	128.49%
			Win3.1 vs
PageMaker 4.0	OS/2 2.0	Win3.1.31	OS/2 2.0
Load Collage.pm4	N/A	8.6	N/A
Text flow	N/A	23.4	N/A
			Win3.1 vs
PowerPoint	OS/2 2.0	Win3.1.31	OS/2 2.0
Load Time Columbus.ppt	N/A	3.6	N/A
Save Columbus	N/A	2.7	N/A
Slide Sorter	N/A	12.3	N/A
			Win3.1 vs
Win/PM Word	OS/2 2.0	Win3.1.31	OS/2 2.0
Load Bwword.doc	Broken	2.8	N/A
Load Spellww.doc	17.2	2.3	647.83%
Spell Check	Broken	42.4	N/A
PageDown Test	Broken	29.4	N/A
DOS APPS			
		(no PIF)	Win3.1 vs
Lotus 123	OS/2 2.0	Win3.1.31	OS/2 2.0
Load Big.wk1	9.5	7.6	25.00%
Save	4.2	9.4	-55.32%
Recalc	2.3	2.1	12.20%
		(PIF)	Win3.1 vs
Word Perfect	OS/2 2.0	Win3.1.31	OS/2 2.0
Load spellwp5.wp	2.5	1.6	56.25%
Spell Check	31.1	29.4	5.78%
Save	2.3	2.5	-8.00%
		(PIF)	Win3.1 vs
DOS Word 5.5	OS/2 2.0	Win3.1.31	OS/2 2.0
Load 85pg Doc (spelldw5.doc)			
"Raw" DOS	N/A	0.7	N/A
Full screen DOS	1.5	1.0	50.00%
Page Down to end of doc			
"Raw" DOS	N/A	11.7	N/A
Full screen DOS	11.7	12.2	-4.10%
Full screen (OS/2 vs DOS)	24.8	12.2	103.28%

Windowed DOS	23.4	15.9	47.17%
Windowed (OS/2 vs DOS)	41.4	15.9	160.38%

SYSTEM TESTS

			Win3.1 vs
Desktop	OS/2 2.0	Win3.1.31	OS/2 2.0
Open Lg Grp (20 Items)	6.0	0.7	809.09%

			Win3.1 vs
Help	OS/2 2.0	Win3.1.31	OS/2 2.0
'F1' in ProgMan	5.8	3.2	79.01%
Quit Help	0.8	0.5	53.85%
Help About	0.9	0.8	16.88%

			Win3.1 vs
File Manager	OS/2 2.0	Win3.1.31	OS/2 2.0
Run File Manager (1st)	10.5	4.0	162.50%
Run FM (subsequent)	7.9	3.7	112.70%
Expand fmtest brnch (1st)	10.0	6.8	47.06%
Expand fmtest (next)	10.9	6.8	60.29%
Copy 64 files (drag/drop)	9.2	12.6	-26.98%
Move 64 files (drag/drop)	6.5	8.1	-19.75%
Delete 64 files	3.1	7.0	-55.71%
Copy 64 files c: to a:	67.8		
Delete 64 files from a:	27.6		
Delete fmtest dir tree	22.0	52.4	-58.02%

PRINTING

PCL - LaserJet Series II

			Win3.1 vs
GUI Apps	*OS/2 2.0	Win3.1.31	OS/2 2.0
GUI Word (5p6dfnt.doc)			
Control to app	21.1	8.0	164.74%
Print Mgr Done	84.2	36.6	130.28%
First page drop	49.9	30.2	65.61%
Last page drop	84.2	59.6	41.23%
GUI Word (2ptxtgr.doc)			
Control to app	17.9	19.4	-7.82%
Print Mgr Done	82.8	43.5	90.31%
First page drop	75.0	56.9	31.72%
Last page drop	82.8	64.3	28.83%
Excel (7pxlprnt.xls)			
Control to app	27.8	20.6	34.79%
Print Mgr Done	165.5	124.1	33.34%
First page drop	92.9	51.3	81.19%
Last page drop	164.2	138.5	18.55%
PageMaker (Bench1.pm3)			
Control to app	150.8	Driver Bug	
Print Mgr Done	574.5		

First page drop	261.5		
Last page drop	573.9		
* CorelDraw (Jukebox.cdr)			
Control to app	139.8	148.8	-6.06%
Print Mgr Done	283.2	203.6	39.07%
Page drop	284.5	221.4	28.52%

59
From bradsi Mon Jul 15 19:29:33 1991
To: davidcol
Subject: Re: FW: Edit menu accelerators standards
Date: Mon, 15 Jul 91 19:29:31 PDT

here's bill's response, and mine to him.

| >From billg Mon Jul 15 19:08:24 1991
| To: bradsi
| Subject: Re: FW: Edit menu accelerators standards
| Date: Mon Jul 15 19:08:23 1991
|
| This is a very interesting development.
|
| We made the change to Winword (which ships in Ocotber),
| we made the change to powerpoint, to project, to excel,
| to voodoo and all the other applications. We get the change
| into the user interface guidelines and Windows wont be
| the same.
|
| What are you saying should be in our interface guidelines?
| SOmething that contradicts windows or contradicts our
| applications? I was involved in the legal review of this
| issue and believe me these things arent simple or cheap.
|
| Many of the issues that are listed are issues that applications
| have already dealt with.
|
| I am not sure what the right choice is - maybe you are telling
| me to go change all the applications again?
|

I was very surprised by this too, since we had discussed these issues with apps and told them we weren't going to do it. Yet they went ahead anyways and didn't tell us. So now we're forced to do it?

We still have to test all the other companies apps to make sure there

are no compatibility problems. Manual changes. There is plenty of work ahead before it's all really done.

At the same time, we did the new standard font dialog. This presents fonts as a list of fonts plus a list of styles (bold, italic etc). Approved by UITF, etc. Yet WinWord refuses to put in WW 2 -- and it will greatly affect their usability. [Look at the ugly list of fonts you get now, versus a clean list by family, then style.] The arguments are exactly the same as the ones here. Sounds very inconsistent to me.

I want to ship win 3.1. The edit accelerators won't change anyone's minds about windows. I'm sorry the apps group proceeded even though there was no agreement this would be in win 3.1, and even put in the style guide. Why didn't they check to make sure? Why wasn't it proposed months ago? Not like it's a new revelation.

I'm not at all happy by the way this has been handled. To get this sprung on us and escalated, when we never agreed in the first place. It's puts us in a bad position -- damned if you do, damned if you don't.

60
From bradsi Mon Jul 15 19:31:46 1991
To: bobmu paulma
Subject: Re: Win-32 on Dos
Date: Mon, 15 Jul 91 19:31:42 PDT

| >From bens Fri Jul 12 09:33:10 1991
| To: bradsi
| Subject: Re: Win-32 on Dos
| Date: Fri, 12 Jul 91 09:32:54 PDT
|
| I'm already thinking along these lines. I'm not depending upon Win4
.
|
| We should not resurrect the DLL approach. Implementing the interest
ing
| parts of the Win32 API (complete 2D graphics model, threads, preempt
ion,
| deserialized input model, sparse virtual memory, and memory-mapped f
iles)
| would be a ton of work. There are no spare people to put on this ef

```
fort --
| unless you postponed NT.  Putting off all these features would give
you
| a 32-bit Windows API that matched Win16 functionality, but this is s
till
| a great deal of work, and makes it very unlikely that Windows/NT and
| Windows/Enhanced would be compatible.  The only reason we are going
to
| able to deliver Win32 on DOS is because we are leveraging scottlu/ch
uckwh
| and their 16 developers.  DOS/Win32 only has 8 developers, and we ar
e
| focused on KERNEL and Win16 compatibility/performance.
|
| An early, retail release would be based upon DOS 5.x.  Using DOS 6 w
ould
| make it impossible to ship in 1992.  Compatiblity testing for DOS 6
will
| be a long and arduous process.  Compatibility testing of Win32 will
be a
| big task as it is -- combining DOS6 and Win32 will have a combinator
ic
| effect on the testing effort.
|
| So, the product is:
|      1)  A replacement for Win 3.1 on 386+ machines
|      2)  100% compatible with Win16 applications
|      3)  Win32 API
|      4)  Win 3.1 shell, applets, etc. (perhaps not even ported to 32-
bit)
|    * 5)  Win 3.1 DLLs ported to 32-bits, with 16-bit thunks (commdlg,
 ole, dde,
|              shell, etc.)
|    * 6)  Win32 Printer and Display drivers!
|      7)  Win386 with minor tweaks to VxDs
|
| The product does NOT HAVE:
|      1)  Prot-mode network drivers
|      2)  Prot-mode file system
|      3)  Peer server (file, print, named pipe)
|
|
| NOTE:    If the WinServer project is successful, then we can have tho
se
|          features in DOS/Win32.
|
|          If DOS6 is allowed to punt "nasty" DOS app compatibility (ap
ps
```

| that grovel DOS file system internals), then it is possible to
| get DOS 6 done and tested as the Win32 base. However, I think
| this is an unnecessary risk. It makes much more sense to give
| DOS 6 time to mature -- we can ship DOS6 with the Win4 shell.
|
|
| A realistic date is RTM Monday, 11/30/92:
| a) Win 3.1 team starts on Monday, 12/02/91
| b) Feature freeze on Tuesday, 03/31/92
| c) Beta 1 to PRS on Tuesday, 06/30/92
| d) Beta 2 to PRS on Monday, 08/31/92
| e) System Test starts Monday, 10/16/92
| f) Retail RTM on Monday, 11/30/92
|
| This is the kind of date the apps group gives, where they pick a date
| 1 to 1.5 years in the future, and then do everything they can (including
| cutting features) and make the date on the nose. This is not a 5/91 Win 3.1
| date.
|
| Here is how I arrived at this date:
| 1) Windows/NT Product 1 is scheduled to ship 6/92
| We are dependant upon Win/NT for USER, GDI, and printer drivers.
| There is no way we can ship sooner than they do.
| 2) Display drivers
| We have a new device driver model. We need to get many display
| drivers written if we are to replace Win 3.1 in the marketplace.
| The good news is that Win32 display drivers are in some ways
| simpler than Win16 drivers. It still takes time. We need to
| start an aggressive campaign *NOW* to get these written. Instead
| of relying upon outside people, we should use MS employees.
| 3) Printer drivers
| We are in better shape here, as the UniDriver approach allows us
| to write a new "printer driver" very quickly. The NT gr

oup
| is well along on the Win32 UniDriver. However, it alway
s
| takes longer than we like to get a full suite of drivers
written,
| tested, and debugged.
| 4) Win16 app compatibility, performance, and size
| The good news is that we have 90% of our thunk code writ
ten,
| and we have an aggressive schedule to get this code test
ed and
| done (by 12/91). However, we will need time to get the
| performance (especially GDI) and size competitive with W
in 3.1.
| 5) Setup/Install
| We need to be even better than Win 3.1. This takes cale
ndar
| time to do continual testing and improvements to hardwar
e and
| software detection.
|
| Questions?
|
|

MSC 00732755

MS-PCA 1111638
CONFIDENTIAL

HIGHLY
CONFIDENTIAL