

Fully Wired Mainframe Programmer II



SHARE 93

MVS/SCP Project

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Session 2816 Abstract



Is the Internet useless to a mainframe programmer?

Maybe not! Find out how the Internet can be leveraged to network with other systems professionals every day, obtain powerful free mainframe tools, transfer debugging data to IBM or ISVs, obtain program product maintenance, and share your knowledge with others. This session will take you on a tour of some of the most useful places on-line for a S/390 professional as well as quickly reviewing all the tools and techniques to will need to get started. A detailed explanation of how to get started using the IBM-MAIN mailing list will be provided. Afterwards you will be able to use the net for work instead of just surfing.

CBT Tapes and diskettes of popular freeware will be handed out at the end of the session.

Agenda



- Introduction
- Networking
- Free Software
- Transporting diagnostic data
- Obtain Service
- Web Tour
- Handouts

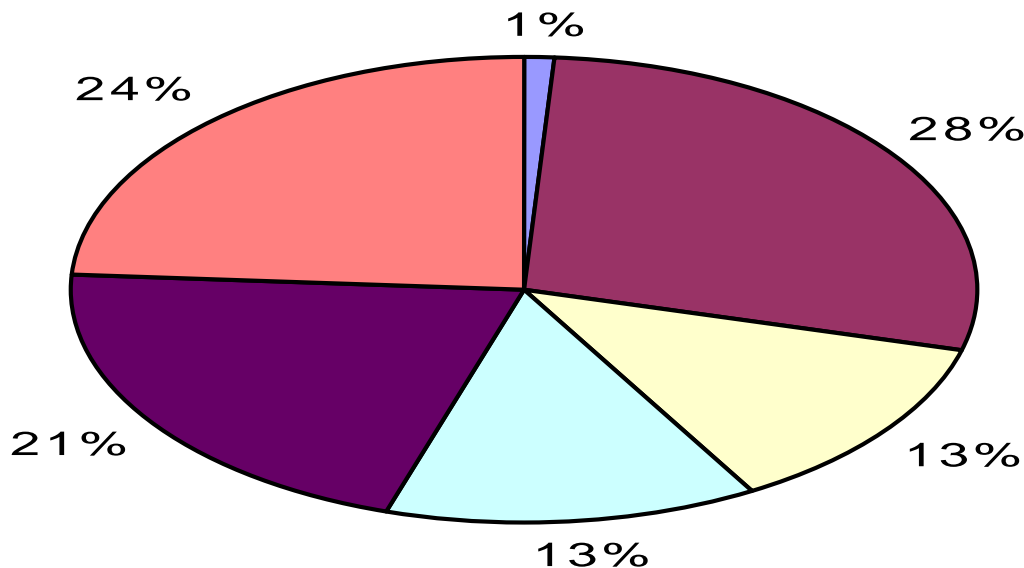
Do you have Internet access at your workplace today?









- Internet access is as important a tool for a mainframe programmer as is a telephone.
- If you do not have Internet access it may be possible to get it by documenting how it will be used to be a more productive employee.
- What is so important about the Internet?
- “This Changes Everything” because it is both global and immediate.

Network Computing Magazine Poll

Internet Access from Workplace



-  No access allowed
-  Allow all access
-  Block sites with questionable content
-  Allow Access, but disallow all nonbusiness use
-  Restrict access to employees whose jobs require it
-  Allow access, but restrict nonbusiness use to personal time

Free Publications



- Network Computing
<http://www.networkcomputing.com>
- Information Week
<http://www.informationweek.com>
- Enterprise Systems Journal
<http://www.esj.com>
- InfoSecurity News
<http://www.infosecnews.com>

More Free Publications



- Software

<http://www.softwaremagazine.com>

- Disaster Recovery Journal

<http://www.drj.com>

Networking



Peer support or networking is an important part of every user group including SHARE. The “Paddle Project” was a good example of peer support. To learn more about the “Paddle Project” attend Session 2680 JES2: Esprit de Corps in the Hyatt Regency - East Tower Ballroom Level - Grand Ballroom Thursday at 10:30pm.

Traditional Networking



- Local User Groups
- SHARE meetings
- CMG meetings
- GUIDE meetings
- Bulletin Board Systems

Local User Groups



In many areas local user groups have gone the way of the dodo. If you have a local user group with a mainframe focus be glad and go home and volunteer.

SHARE meetings



- SHARE is the strongest of the national user groups that remain.
- Companies are sending less people to SHARE than the the heyday of mainframe only data centers.
- If you are lucky enough to attend be sure to spend time working on your return ticket to SHARE. Write a TRIP report!

CMG and GUIDE



■ CMG is still active and more information can be found at <http://www.cmg.org> . Most companies are also sending less people to CMG than in the past.

■ GUIDE is still active but has changed it's focus to a format not suited to most SHARE attendees. You can find more information at <http://www.guide.org>

Bulletin Board Systems



- Bulletin Board Systems have also followed the dodo.
- The World Wide Web has effectively replaced the roll that the BBS played prior to it's demise. The web browser has become the universal client eliminating a myriad of different protocols and clients.

Internet Networking



- Mailings Lists
- Newsgroups
- Web Forums

Mailing Lists



- Almost everyone knows how to send email so networking through email is a natural use for the Internet.
- A big part of networking is finding other people interested in the same things you are especially those who might be willing to help you. Mailing lists help people interested in the same thing exchange email.

Mailing Lists



■ “If you’re really looking for community online forget the Web. What you want is a mailing list. **Lists are to chat rooms as a dinner party is to a singles bar** -- quiet enough that you can hear yourself think, generally fairly decorous and often quite engaging.” E-LIFE By Elizabeth Weise from USA Today Wednesday, August 25, 1999

What is a mailing list and how does it work?



- A mailing list works by allowing people to join the and then send a single email message that is relayed to all the list members. Responses to messages are also relayed to all list members.
- A list server program does the work of keeping track of list members and relaying the email messages. A real human being administers the list server and helps to resolve problems

Who runs a mailing list and Why?



- A real human being can run a mailing list by hand but computers run most and those are the ones I am going to talk about.
- A mailing list is normally created to facilitate discussion related to a particular topic.

Will you give me an example?



- YES!

- The mailing list I am going to use for my examples is the IBM-MAIN mailing list.

- IBM-MAIN is the IBM Mainframe Discussion List and is a very active mailing list frequently getting more than 150 messages a day.

How does it work?



- There are two email addresses associated with a list server. The list server has an address to which you send commands which normally takes the form `LISTSERV@list` i.e. `LISTSERV@BAMA.UA.EDU`
- The list has an address that you use when you want to send a message to everyone who is a list member which normally takes the form `listname@list` i.e. `IBM-MAIN@BAMA.UA.EDU`

How to I join a mailing list?



- To join a LISTSERV mailing list you start by sending the list server an email message asking to be subscribed with the text "subscribe listname Joe User"

How to I join a mailing list?



- So to join the IBM-MAIN mailing list I send a message like this one:

To: `LISTSERV@bama.ua.edu`

From: Sam Knutson <`sknutson@cbttape.org`>

Subject: `listserv`

`subscribe ibm-main Sam Knutson`

How to I join a mailing list?



- The listserv sends back a message to the email address which is being signed-up and asks for confirmation that you want to be subscribed. This is a simple control to prevent someone from signing you up for email you don't want

How to I join a mailing list? Command confirmation request



Date: Wed, 17 Feb 1999 17:09:29 -0600

From: "L-Soft list server at U of A (1.8c)" <LISTSERV@BAMA.UA.EDU>

Subject: Command confirmation request (477D8A)

To: Sam Knutson <sknutson@CBTTAPE.ORG>

Your command:

SUBSCRIBE IBM-MAIN Sam Knutson

has been received. You must now reply to this message (as explained below) to complete your subscription. The purpose of this confirmation procedure is to check that the address LISTSERV is about to add to the list for your subscription is reachable. This is a typical procedure for high-volume lists and all new subscribers are subjected to it - you are not being singled out. Every effort has been made to make this verification as simple and painless as possible. Thanks in advance for your cooperation.

(CONTINUED ON NEXT PAGE)

How to I join a mailing list?

Command confirmation request



To confirm the execution of your command, simply reply to the present message and type "ok" (without the quotes) as the text of your message. Just the word "ok" - do not retype the command. This procedure will work with any mail program that fully conforms to the Internet standards for electronic mail. If you receive an error message, try sending a new message to LISTSERV@BAMA.UA.EDU (without using the "reply" function - this is very important) and type "ok 477D8A" as the text of your message. Finally, your command will be cancelled automatically if you do not confirm it within 48h. After that time, you must start over and resend the command to get a new confirmation code. If you change your mind and decide that you do NOT want to confirm the command, simply discard the present message and let the command expire on its own.

What next?



- The listserv will wait for you to reply before actually putting you on in the mailing list. I do want to subscribe so I send back the message it directed me to.

To: LISTSERV@bama.ua.edu

From: Sam Knutson <sknutson@cbttape.org>

Subject: Re: Command confirmation request (477D8A)

ok

Joined at last!



The listserv will now send back two email messages. Any time you send the listserv a command it sends you a summary about the execution of that command. This is what I call the geek message i.e.

```
> ok
```

```
Confirming:
```

```
> SUBSCRIBE IBM-MAIN Sam Knutson
```

```
You have been added to the IBM-MAIN list.
```

```
Summary of resource utilization
```

```
-----
```

```
CPU time: 0.020 sec
```

```
Overhead CPU: 0.010 sec
```

```
CPU model: Ultra-Enterprise (1024M)
```

Welcome 1 of 7



- The welcome message is a lot more friendly and informative i.e.

```
Date: Wed, 17 Feb 1999 17:11:21 -0600
From: "L-Soft list server at U of A (1.8c)"
<LISTSERV@BAMA.UA.EDU>
Subject: You are now subscribed to the IBM-MAIN list
To: Sam Knutson <sknutson@CBTTAPE.ORG>
Reply-To: IBM-MAIN-request@BAMA.UA.EDU
```

```
Wed, 17 Feb 1999 17:11:21
```

```
Your subscription to the IBM-MAIN list (IBM Mainframe
Discussion List) has been accepted.
```

Welcome 2 of 7



Please save this message for future reference, especially if this is the first time you subscribe to an electronic mailing list. If you ever need to leave the list, you will find the necessary instructions below. Perhaps more importantly, saving a copy of this message (and of all future subscription notices from other mailing lists) in a special mail folder will give you instant access to the list of mailing lists that you are subscribed to. This may prove very useful the next time you go on vacation and need to leave the lists temporarily so as not to fill up your mailbox while you are away! You should also save the "welcome messages" from the list owners that you will occasionally receive after subscribing to a new list.

Welcome 3 of 7



To send a message to all the people currently subscribed to the list, just send mail to IBM-MAIN@BAMA.UA.EDU. This is called "sending mail to the list", because you send mail to a single address and LISTSERV makes copies for all the people who have subscribed. This address (IBM-MAIN@BAMA.UA.EDU) is also called the "list address". You must never try to send any command to that address, as it would be distributed to all the people who have subscribed. All commands must be sent to the "LISTSERV address", LISTSERV@BAMA.UA.EDU. It is very important to understand the difference between the two, but fortunately it is not complicated. The LISTSERV address is like a FAX number that connects you to a machine, whereas the list address is like a normal voice line connecting you to a person.

Welcome 4 of 7



If you make a mistake and dial the FAX number when you wanted to talk to someone on the phone, you will quickly realize that you used the wrong number and call again. No harm will have been done. If on the other hand you accidentally make your FAX call someone's voice line, the person receiving the call will be inconvenienced, especially if your FAX then re-dials every 5 minutes. The fact that most people will eventually connect the FAX machine to the voice line to allow the FAX to go through and make the calls stop does not mean that you should continue to send FAXes to the voice number. People would just get mad at you. It works pretty much the same way with mailing lists, with the difference that you are calling hundreds or thousands of people at the same time, and consequently you can expect a lot of people to get upset if you consistently send commands to the list address.

Welcome 5 of 7



You may leave the list at any time by sending a "SIGNOFF IBM-MAIN" command to `LISTSERV@BAMA.UA.EDU`. You can also tell `LISTSERV` how you want it to confirm the receipt of messages you send to the list. If you do not trust the system, send a "SET IBM-MAIN REPRO" command and `LISTSERV` will send you a copy of your own messages, so that you can see that the message was distributed and did not get damaged on the way. After a while you may find that this is getting annoying, especially if your mail program does not tell you that the message is from you when it informs you that new mail has arrived from IBM-MAIN. If you send a "SET IBM-MAIN ACK NOREPRO" command, `LISTSERV` will mail you a short acknowledgement instead, which will look different in your mailbox directory.

Welcome 6 of 7



With most mail programs you will know immediately that this is an acknowledgement you can read later. Finally, you can turn off acknowledgements completely with "SET IBM-MAIN NOACK NOREPRO".

Following instructions from the list owner, your subscription options have been set to "MIME" rather than the usual LISTSERV defaults. For more information about subscription options, send a "QUERY IBM-MAIN" command to LISTSERV@BAMA.UA.EDU. Contributions sent to this list are automatically archived. You can get a list of the available archive files by sending an "INDEX IBM-MAIN" command to LISTSERV@BAMA.UA.EDU. You can then order these files with a "GET IBM-MAIN LOGxxxx" command, or using LISTSERV's database search facilities.

Welcome 7 of 7



Send an "INFO DATABASE" command for more information on the latter. This list is available in digest form. If you wish to receive the digested version of the postings, just issue a SET IBM-MAIN DIGEST command.

More information on LISTSERV commands can be found in the LISTSERV reference card, which you can retrieve by sending an "INFO REFCARD" command to LISTSERV@BAMA.UA.EDU.

Indigestion



- The IBM-MAIN list receives over 100 messages a day on a busy weekday. This can more than 4000 or 5000 lines of email!
- I prefer to get this all combined into one large email and sent daily so that it is easier to read. The DIGEST option lets you do this.

Indigestion II



- I send a command to the listserv to set this option.

To: LISTSERV@bama.ua.edu

From: Sam Knutson <sknutson@cbttape.org>

Subject: listserv

set ibm-main digest

\$HASP000 OK



The listserv once again sends me back a message showing that it executed my command and the resources used i.e.

Date: Thu, 18 Feb 1999 06:43:38 -0600
From: "L-Soft list server at U of A (1.8c)" <LISTSERV@BAMA.UA.EDU>
Subject: Output of your job "sknutson"
To: Sam Knutson <sknutson@CBTTAPE.ORG>

> set ibm-main digest

Your subscription options have been successfully updated. Here are the exact settings now in use for your subscription. Please take a few moments to check that this is indeed what you wanted.

Subscription options for Sam Knutson <sknutson@CBTTAPE.ORG>, list IBM-MAIN:

DIGEST You receive list digests, rather than individual postings

MIME You prefer to receive messages in MIME format

FULLHDR Full (normal) mail headers (formerly "FULLBSMTP")

NOREPRO You do not receive a copy of your own postings

NOACK No acknowledgement of successfully processed postings

Subscription date: 17 Feb 1999

Summary of resource utilization

CPU time: 0.010 sec

Overhead CPU: 0.010 sec

CPU model: Ultra-Enterprise (1024M)

Mail List Options



- I also followed up by sending another message to select the ACK and REPRO options since I like a “warm fuzzy” feeling that my posts went through. You can send multiple set commands in one email just put each on a new line.
- It is also a good idea to set the CONCEAL option for lists that support it.

IBM-MAIN



- IBM-MAIN is very busy and the topics just in recent weeks have included:
- LE migration
- SMF Overhead
- Diagnosis of S0C4 abend
- ECB Waits
- SDSF and ACF2
- LPAR performance
- IEFACTRT SMF Exit
- LE options

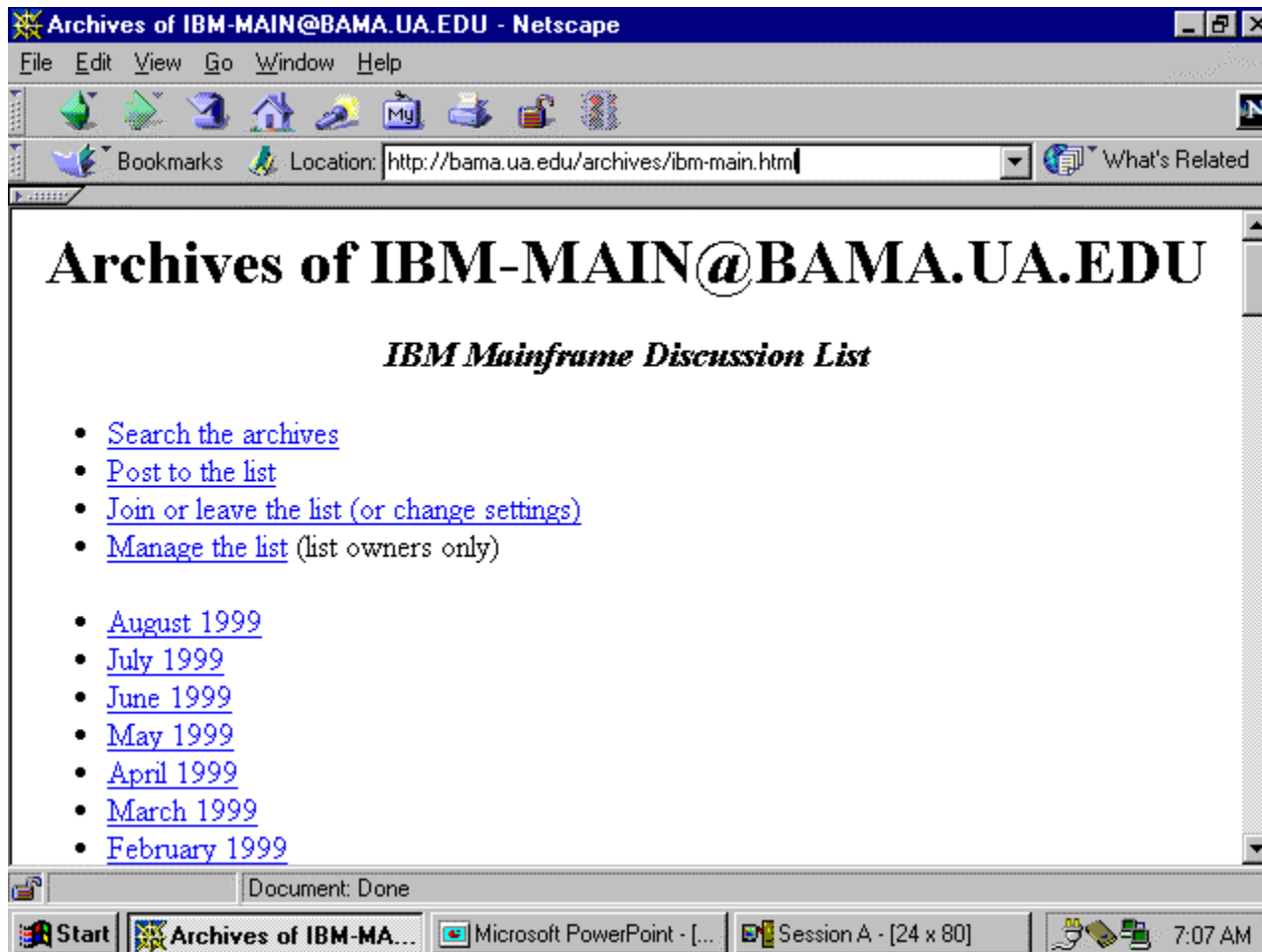
IBM-MAIN



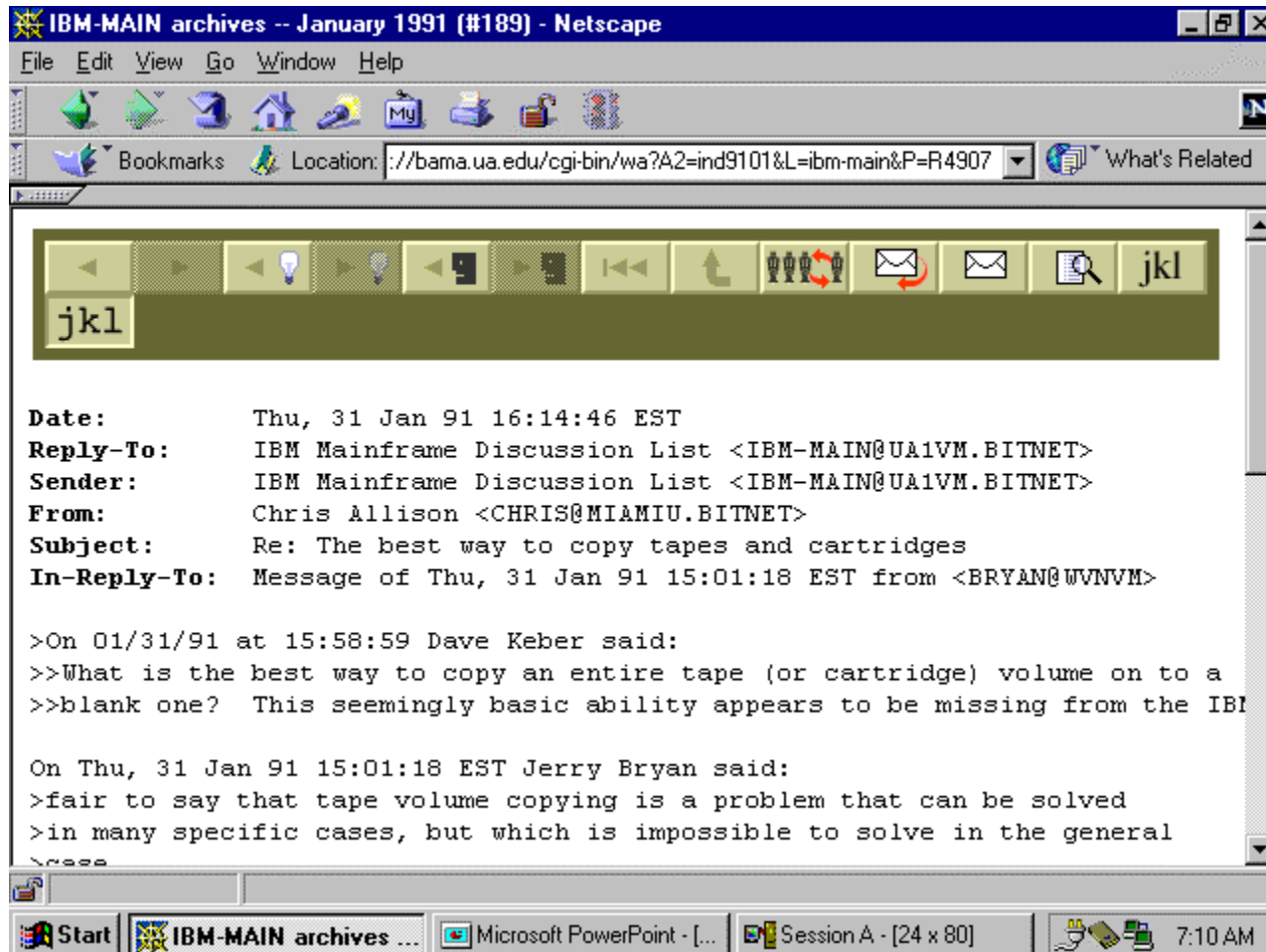
- You can also read and search on past messages on IBM-MAIN at the web archives without joining the list. This is a fabulous research tool easily as valuable as IBMLink even for those who do not care to follow the list antics on a daily basis.

<http://bama.ua.edu/archives/ibm-main.html>

IBM-MAIN Archives Page



Viewing a message



Hold the mail I am taking a vacation



- If you want to temporarily halt email from IBM-MAIN you can use the SET NOMAIL command i.e.

To: LISTSERV@bama.ua.edu

From: yourname

Subject: listserv

set ibm-main nomail

Resume Delivery



■ to reverse this you just send another message

To: LISTSERV@bama.ua.edu

From: yourname

Subject: listserv

set ibm-main mail

Stop the “email” I want to get off!



- If you decide you want to unsubscribe it's easy to do. Send the following

To: LISTSERV@bama.ua.edu

From: yourname

Subject: listserv

signoff ibm-main

How do I find other mailing lists?



- There are several catalogs of lists available on the web.

- My list <http://www.his.com/~dragon/internet.htm>

- <http://www.lsoft.com/lists/listref.html>

This is a catalog of LISTSERV lists

- <http://www.liszt.com>

- This is a catalog of many lists including some other list servers i.e. majodomo, listproc, and listserv .

IBM-MAIN

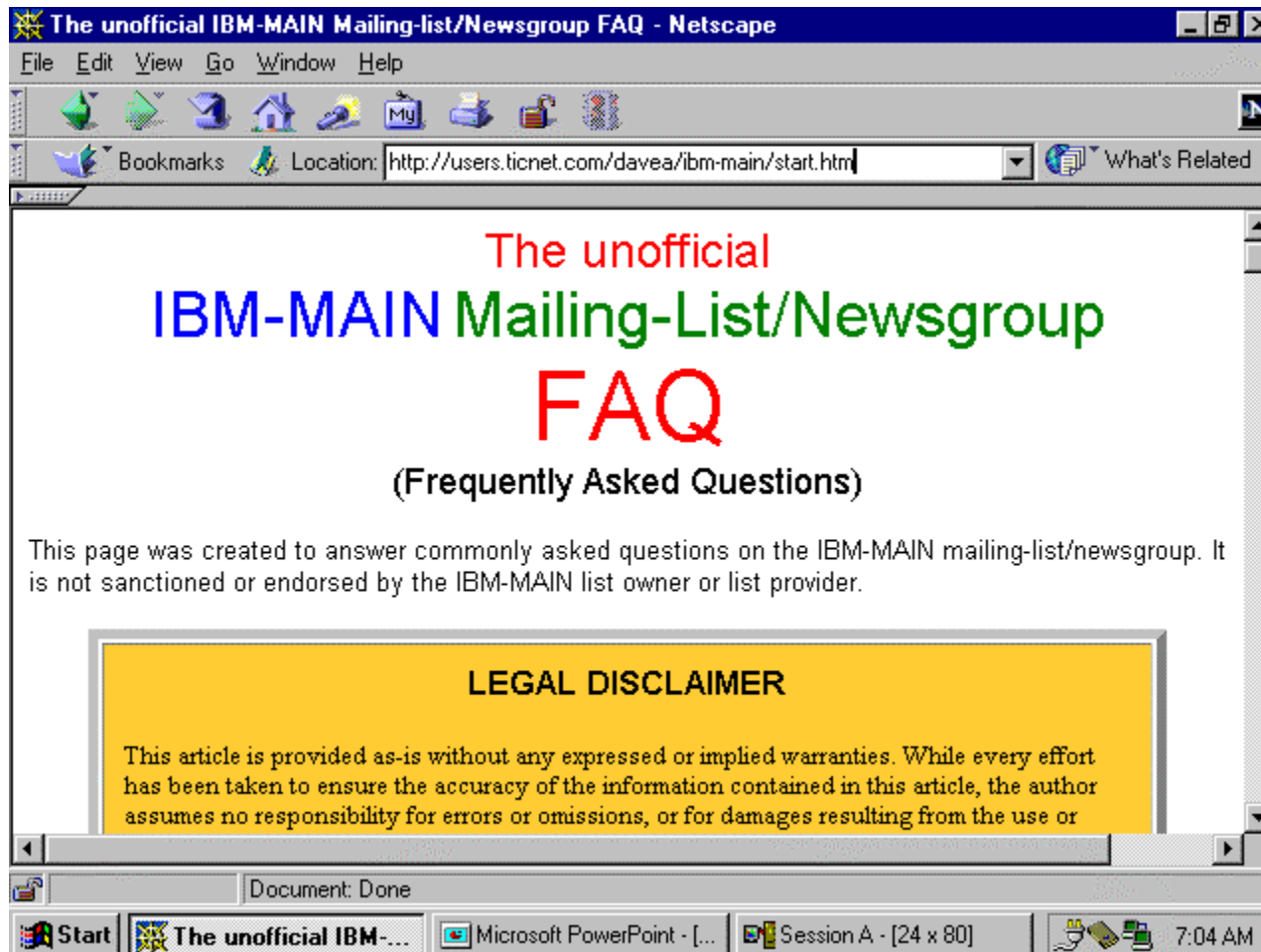


- Topic: IBM S/390 Computing almost anything
Name: IBM-MAIN
Type: LISTSERV
Listserv: LISTSERV@bama.ua.edu
List: IBM-MAIN@bama.ua.edu
Web: <http://bama.ua.edu/archives/ibm-main.html>
News: bit.listserv.ibm-main
Weekday Message Volume: 100 - 200 (**High** consider setting DIGEST option)
More information: [My IBM-MAIN Page](http://www.his.com/~dragon/ibm-main.htm)
<http://www.his.com/~dragon/ibm-main.htm>
[David Alcock Unofficial IBM-MAIN FAQ](http://users.ticnet.com/davea/IBM-MAIN/start.htm)
<http://users.ticnet.com/davea/IBM-MAIN/start.htm>
- Notes: 20% - 40% off topic posts are not unusual i.e. high signal to noise ratio, however, the remaining content is great!

Sam Knutson's IBM-MAIN information sheet



David Alcock unofficial IBM-MAIN FAQ



MVS-OE



- Topic: IBM's UNIX on MVS a.k.a OpenEdition a.k.a USS a.k.a. OE a.k.a OS390 Unix System Services
Porting to OS390, Utilities, Shell, C, Perl, Domino Go Webserver, Security, misc.
Name: MVS-OE
Type: LISTSERV
Listserv: listserv@listserv.georgetown.edu

List: MVS-OE@LISTSERV.GEORGETOWN.EDU
Web: <http://listserv.georgetown.edu/archives/mvs-oe.html>
News: n/a
Weekday Message Volume: 20 - 50
More information: n/a
Notes:

DB2-L



■ Topic: IBM DB/2 database

Name: DB2-L

Type: LISTSERV

Listserv: LISTSERV@AMERICAN.EDU

List: DB2-L@AMERICAN.EDU

Web: <http://listserv.american.edu/archives/db2-l.html>

News: n/a

Weekday Message Volume: 25 - 75

More information: n/a

Notes:

ASSEMBLER-L



■ Topic: Assembler programming on S/390

Name: ASSEMBLER-L

Type: LISTSERV

Listserv: LISTSERV@LISTSERV.UGA.EDU

List: ASSEMBLER-L@LISTSERV.UGA.EDU

Web: n/a

News: comp.lang.asm370 (same topic different messages)

Weekday Message Volume: 5 - 20

More information: [Dave's unofficial HLASM web page](http://users.ticnet.com/davea/mvs/hlasm/web_page)

<http://users.ticnet.com/davea/mvs/hlasm/start.htm>

Notes:

CICS-L



- Topic: IBM CICS
- Name: CICS-L
- Type: LISTSERV
- Listserv: listserv@vm.marist.edu
- List: CICS-L@VM.MARIST.EDU
- Web: <http://www.marist.edu/htbin/wlvindex?CICS-L>
- News: bit.listserv.ibmtcp-l
- Weekday Message Volume: 15 - 45
- More information: n/a
- Notes:

Ms. Manners on “Netiquette”



- **Mailing lists just like any other social organization have an etiquette all their own. You will pick it up pretty quickly but here are a few tips.**
- **DO read others posts for a week or two to get the flavor of the list before trying to post anything yourself. The list got along fine for years without your help it can get along for at least another week.**
- **DON'T ever send an attachment to the list.**
- **DON'T forward off-topic email like jokes or the latest hoax email chain letter to the list i.e. WARNING DO NOT OPEN ANY EMAIL WITH THE SUBJECT _____**

Ms. Manners on “Netiquette”



- **DON'T send commands for the LISTSERV to the list. Be sure you send SET xxxx, SIGNOFF xxxx to LISTSERV@listaddress**
- **DON'T respond to inappropriate messages i.e. listserv commands and all the others things you know better than to send to the list. The only thing worse than reading a useless post is reading a useless post and 20 replies. The list manager will take care of this type of thing if it is really a problem. If you absolutely have to say something respond to the person's private email not to the list.**
- **DO send PLAIN text email to the list not Rich Text or HTML. Many people use email programs which don't display this type of content and it appears as useless attachments or garbage to them. Microsoft Outlook and Microsoft Exchange are two programs which frequently send Rich Text mail without the send being aware.**

Avoid HTML in e-mail

Smith

Let me add to John's statement - it's difficult to "automagically" convert from assembly language to anything, much less legible C.

But, since part of your goal was to run the 390 program on NT, perhaps you could use some of the excellent 390 emulators available around today... that is, don't convert your program, just "run it."

John Smith

smith@biz.com Work: (555) 123-1234

Get your widget at <http://www.biz.com>

Avoid Out of Office Reply to List



Your email message RE: "Re: Storage not released at end of JOB ..." addressed to John Smith has been successfully delivered.
John Smith is currently out of the office and will SOON return on 01/16/2000

Message: I am currently on an assignment in CSC Frankfurt , please mail me at jsmith2@biz.com

A copy of your email has been delegated to: jsmith2@biz.com;

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Turn off WINMAIL.DAT in Microsoft Exchange



A good way to annoy people is to repeatedly fill their mailbox with the useless WINMAIL.DAT attachments that Microsoft Exchange insists on including. Email sent from Exchange to a non-Exchange mail reader may contain an Attachment called WINMAIL.DAT. If you use Exchange, you won't see this file, and the message will retain its formatting. However, it can be confusing for those who don't use Exchange (the majority of the Internet population), and have no use for this file. Here's how to turn it off:

Step #1: Double-click on the Mail and Fax icon in Control Panel. Click on the Services tab, and select Internet Mail from the list. If Internet Mail is not listed, click Add to add this service. Click Properties, and then Message Format. Turn off the option that reads Use MIME when sending messages. Click OK and then OK again.

Turn off WINMAIL.DAT in Microsoft Exchange II



Step #2:

Double-click on the name of each recipient in your Address Book.

Turn off the option that reads Always send to this recipient in Microsoft rich-text format. This option needs to be set for each recipient of a message - if even one has this turned on, all recipients will still get the attachment.

Note: Either of these methods should work for most users, but sometimes nothing seems to work. If you plan to be sending lots of internet email, you might consider using a mail program such as Eudora. Information on the free Eudora Light and commercial Eudora Pro can be found at <http://www.eudora.com>

This information is based on a message from Wilson Smith which you can read at: <http://www.xnet2.com/patti/archives/9608/msg00962.html>

Deja



Deja is a web site which allows you to read newsgroups with a web browser instead of using special newsreader software and finding a news server.

<http://www.deja.com>

One feature you may miss at Deja is the power search which is especially useful for ferreting out messages from recent past postings to IBM-MAIN or other mailing lists which have newsgroup mirrors.

http://www.deja.com/home_ps.shtml

Common abbreviations



- IIRC – If I remember correctly
- AFAIK – As Far As I Know
- YMMV – Your Mileage May Vary
- IMHO – In My Humble Opinion
- RTFM – Read the manual – you could have and should have looked it up yourself
- OTOH – On The Other Hand
- BTW – By The Way
- TIA – Thanks in advance
- FWIW - For What Its Worth
- ISTR - I Seem To Remember

Free Software



- Sharing source code and tools is just as much a part of user groups as sharing information. I depend on tools that I have used for years without commercial support for years and I bet you do to.
- User Groups were often formed as a basis of sharing code and modifications. We still do!

Why? Free Software



- I think that the essay "The Cathedral and the Bazaar" by Eric S. Raymond makes a more eloquent case for shared code than I possibly can. You can read it at <http://www.tuxedo.org/~esr/writings/cathedral-bazaar/>

Traditional Sources of Free Software



- SPLA Tapes
- CBT Tape
- MVS Mods Tape
- LA RACF User Group Tape
- Mellon Mods Tape
- BBS(s)

Internet Formats



- ZIP
- ZIP is standard for compression in most of the non-unix world
- Commercial ZIP utilities on PC such as PKZIP <http://www.pkware.com> or WinZIP <http://www.winzip.com>
- Info-ZIP is a freeware utility available at <http://www.cdrom.com/pub/infozip/Zip.html> for a large number of platforms including native OS/390 and OS/390 USS
- XMIT
- Using the TSO XMIT command is a convenient way to package data into standard FB records for safe transmission of the internet
- XMIT + ZIP
- XMIT packaged data sets which are then compressed with a ZIP utility such as PKZIP work especially well and are becoming a popular choice to distribute MVS software over the internet
- ASCII vs. EBCIDIC

How to download and restore typical XMIT + ZIP

Frequently files are packaged on MVS for transfer using the TSO transmit (XMIT) command to transmit them into a data set. This is done to turn PDS(s) and other odd files into nice FB 80 files which will FTP nicely to PC and UNIX systems. These files are downloaded to a PC and then compressed with PKZIP to reduce the size since disk space is limited and most people have limited bandwidth to download. The convention of files suffixed .XMI packaged in XMIT format is becoming common.

Download *name.ZIP* file to PC using your web browser or an FTP client.

Extract *name.XMI* or *name.DAT* file from *name.ZIP* file on PC . You will need a small utility program to do this. I recommend PKZIP or WinZIP.

How to download and restore typical XMIT + ZIP

Upload name.XMI files to MVS using a **binary** file transfer method (no CRLF or ASCII translation) and that the MVS dataset created is LRECL=80,RECFM=F,DSORG=PS Note that you can upload into a PDS if you want as long as it is FB80.

Receive the name.XMI file on MVS

Issue command: TSO **RECEIVE INDATASET(name.XMI)**

When prompted by message "INMR906A Enter restore parameters or 'DELETE' or 'END' +":

Enter: DA(*name.of.your.library*) UNIT(*unit*) VOLUME(*volume*)

Note: The UNIT() and VOLUME() operands are optional but shown in case your installation puts RECEIVE files on work packs by default like mine does

Trouble Downloading



- If you are having trouble downloading try to find out if you are behind a firewall. If you are behind a firewall and you cannot get your network folks to configure it to allow you to download using a web browser try getting an FTP client like WS_FTP that has a few firewall friendly options (PASV mode) that might help. Failing that download from home and email yourself the files or bring them in on a floppy as most are not that large.

Where to get **FREE** software?



■ SHARE - <http://www.share.org>

The SHARE web site requires a userid and password to access the members only area. If you do not know the userid for your installation contact SHARE headquarters. The CBT tape and archives from the many SHARE projects are available to download. Archives from a number of popular mailings lists are available to search.

Where to get **FREE** software?



- CBT Tape Home Page <http://www.cbttape.org>

- Download CBT Tape, CBT Overflow Tape, Pending updates to the CBT tape and other freeware collections. The files are stored primarily as XMIT + ZIP and when restored properly preserve all the original MVS attributes. No special user id's or memberships are required to download or to upload contributions.

Where to get **FREE** software?



■ NASPA - <http://www.naspa.net>

■ Membership in NASPA is required to access the download area. NASPA members receive a CD-ROM annually, which has included the CBT Tape in ASCII format.

Freeware Potpourri



- This list is a subset of the on-line list of MVS Freeware links at: <http://www.cbttape.org/links.htm>
- Gilbert Saint-Flour's Tools <http://members.home.net/gsf/>
- Dave's MVS page <http://users.ticnet.com/davea/mvs/>
- IBM TASID <http://somebody.home.mindspring.com>
- Mike Cleary <http://home.pacbell.net/mcleary/freeware.html>
- Mark Zelden's MVS Utilities <http://www.flash.net/~mzelden/mvsutil.html>
- Info-ZIP Home Page <http://www.cdrom.com/pub/infozip/Zip.html>
- Leonard Woren <http://www.best.com/~ldw/mvs/>

S/390 Information

Potpourri



- Sam Knutson's S/390 Home Page
<http://www.his.com/~dragon/s390.htm>
 - All the web links included in this document and many more are available through my S/390 Home Page.
- Eric Loriaux <http://www.loriaux.com/s390>
- IBM Home Page <http://www.ibm.com>
- Balbir Oberoi's <http://www.geocities.com/~oberoi/mainfrme.html>
- Washington System Center Flashes and documents
<http://www.ibm.com/support/techdocs/wsc>
- Chuck Hopf <http://www.chopf.com/geekland.shtml>

VM & VSE Sites of interest



- The VM Home Page is located at <http://www.vm.ibm.com>
- The VM Workshop Tools at <http://ukcc.uky.edu/~tools>
- WAVE User Group at <http://www.wave.org>
- VMESA-L Archives <http://listserv.uark.edu/archives/vmesa-l.html>
- VSE-L Home
http://www.lehigh.edu/~wsm0/vse-l/vse-l_archives.shtml

Traditional **VENDOR** **Support**



- Dialup BBS
- Dedicated line to hookup IIN
- Phone tag
- Fax
- Snail mail
- Sending tapes

Internet **VENDOR** Support



- email
- web sites
- mailing lists
- newsgroups
- #1 Users helping Users 24X7X365

FTP a dump to IBM

```
//jobcard
//* EXECUTE FTP IN BATCH
//FTP EXEC PGM=FTP,PARM='198.17.57.67 (EXIT'
//SYSPRINT DD SYSOUT=*
//* testcase.boulder.ibm.com = 198.17.57.67
//* also known as testcase.software.ibm.com
//SYSIN DD *
anonymous sknutson@landmark.com
cd /mvs/toibm
binary
PUT 'CSSJK.DUMP1.PACKED' pmr32162.dump1.packed
PUT 'CSSJK.DUMP2.PACKED' pmr32162.dump2.packed
quit
/*
```

FTP a PTF from IBM



```
/* EXECUTE FTP IN BATCH
//FTP EXEC PGM=FTP,PARM=(EXIT'
//SYSPRINT DD SYSOUT=*
/* ptf.boulder.ibm.com [198.17.57.68]
//SYSIN DD *
198.17.57.68
IINuser zoz8dkvm
cd /992100093
ascii
get mlst0093.txt 'CSSJK.FTPPTFS.PDS(SHARKC)' (replace
binary
get mptf0093.bin 'CSSJK.FTPPTFS.PDS(SHARKD)' (replace
quit
/*
```

Compress dumps before FTP



- If you send dumps to IBM using FTP be sure and get the compression utility TRSMAIN from <ftp://service.boulder.ibm.com/s390/mvs/tools/packlib> which will allow you to send PACKed dumps that transmit faster and use less space on IBM's FTP directory.
- TRSMAIN is easy to install following the directions and easy to execute. It uses a lot of CPU to PACK a dump but the resulting file is much smaller and will transfer quicker and use less space in the IBM FTP directory.

Compress dumps before FTP

```
//*  
/**  
/**          TRSMIN WITH PACK OPTION  
/**  
//*****  
//JOB LIB   DD      DISP=SHR,DSN=CSSJK.TERSE409.LOADLIB  
//STEP      EXEC    PGM=TRSMIN,PARM=PACK,TIME=1439  
//SYS PRINT DD      SYSOUT=*  
//IN FILE   DD      DISP=SHR,DSN=CSSJK.PROD.CONSOLE.DUMP2  
//OUT FILE  DD  
            DISP=(NEW,CATLG),UNIT=SYSDA,VOL=SER=DMPAC1,  
//          DSN=CSSJK.DUMP2.PACKED,  
//          SPACE=(CYL,(1000,150),RLSE)
```


Errata and more information after SHARE



- The foils from this presentation as well as any additions or corrections will be posted at my web site following the SHARE conference.
- <http://www.his.com/~dragon/share93.htm>
- Feel free to call me at (703) 464-1615 or email me at sknutson@landmark.com

Thank You



- Please send me any additions or corrections at sknutson@landmark.com or sknutson@cbttape.org

Handouts CBT Tape



- CBT Tape on 3480 tape cartridge
 - Unload File 1 using IEBGENER for documentation on the contents and advice on getting started finding useful tools on the tape.
 - <http://www.cbttape.org> for updates or if you did not get a tape

CBT Tape Home Page

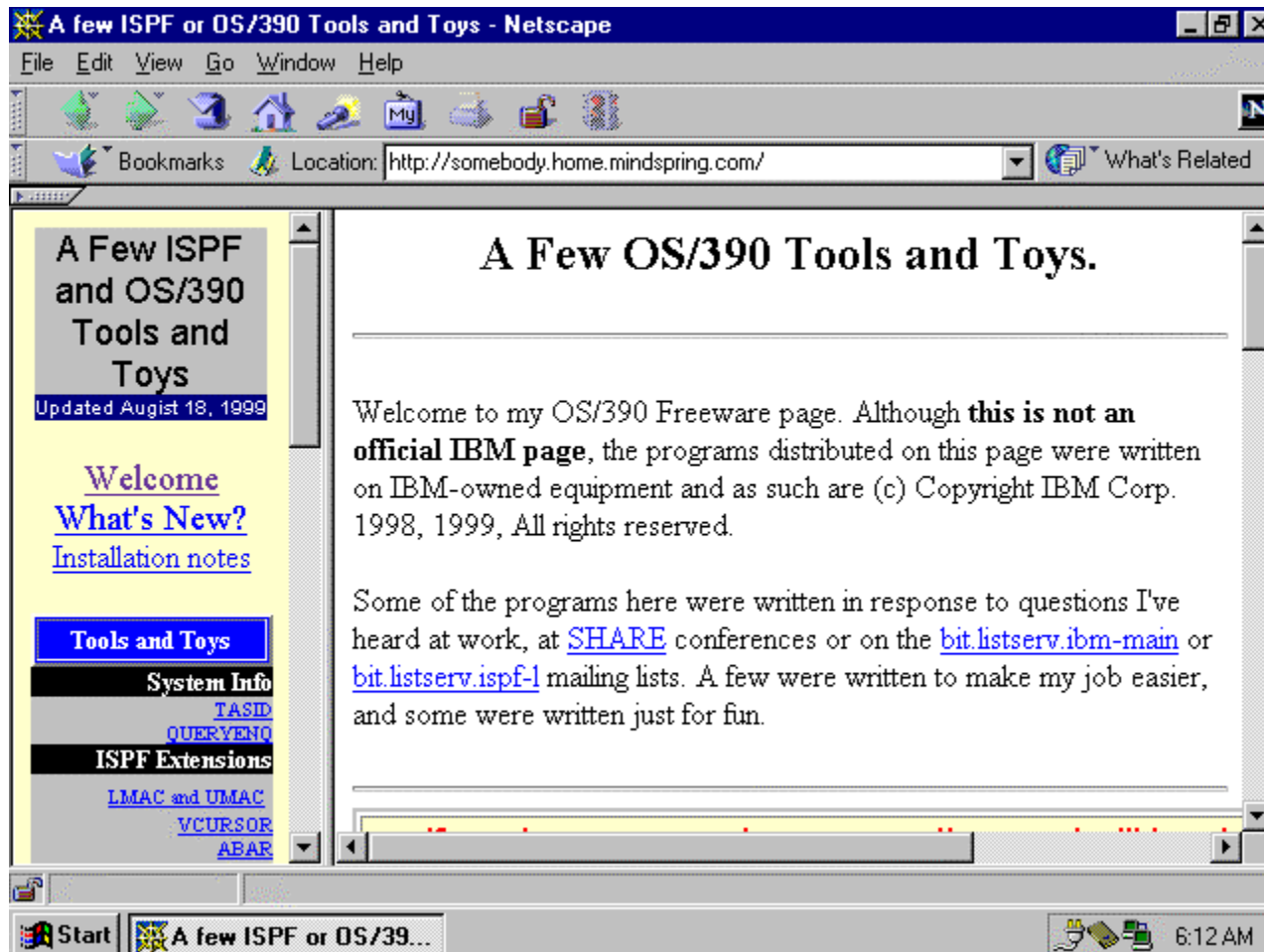


Handouts 3.5" disk



- MVS System Information Tools on 3.5" diskette
TASID + MXI + SHOWMVS = WOW!
 - See file readme.txt
 - MXI Home Page
<http://www.secltd.co.uk/home.htm>
 - TASID Home Page
<http://somebody.home.mindspring.com>
 - SHOWMVS Home Page
<http://members.home.net/gsf>

TASID Home Page



TASID

The screenshot shows a terminal window titled "Session A - [24 x 80]" with a menu of options. The menu is titled "TASID option menu" and lists eight options. Below the menu, there is a table of system statistics. The window also shows a Windows taskbar at the bottom with several open applications.

File Edit Transfer Appearance Communication Assist Window Help

File Navigate Settings

TASID option menu

Option ==> _

Select one of the following options: Version 5.05k

1 - Address space list	5 - Miscellaneous displays
2 - System ENQ contention	6 - Current dataset allocations
3 - Total system ENQ status	7 - Storage View Facility
4 - Initiator Status List	8 - Snapshot

More: +

Current time 07:18 on 1999/08/26	TSO users 2
Last IPL time 20:42 on 1999/08/15	Started tasks 39
IPL Parameters 1C4B PT 1	Jobs 4
OS/390 02.06.00 JES version JES2	System addr 25
SMF ID PROD JES level 2.5.0	Free initiators 9
User ID CSSJK RACF level 2.6.0	
Node JES2MVS TSO version 2.6.0	Total 79
VTAM Adr TPXGR201 VTAM Level 4.5	
Proc \$SJKTEST DFSMS level 1.4.0	CPU utilization 7%
Region 100000K DSS Level 1.4.0	CPU 9672-R44 (2 CPUs)
RACF Grp TSOHOLD DSF level 1.16.	ENQ Contention None

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MA a 04/015

Start A few ISPF or OS/390 T... Microsoft PowerPoint - [...] Session A - [24 x 80] 6:20 AM

TASID Address Space List

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

File Navigate Settings View Presets Auto

Address Space List Line 1 of 33
Command ==> _ Scroll ==> PAGE

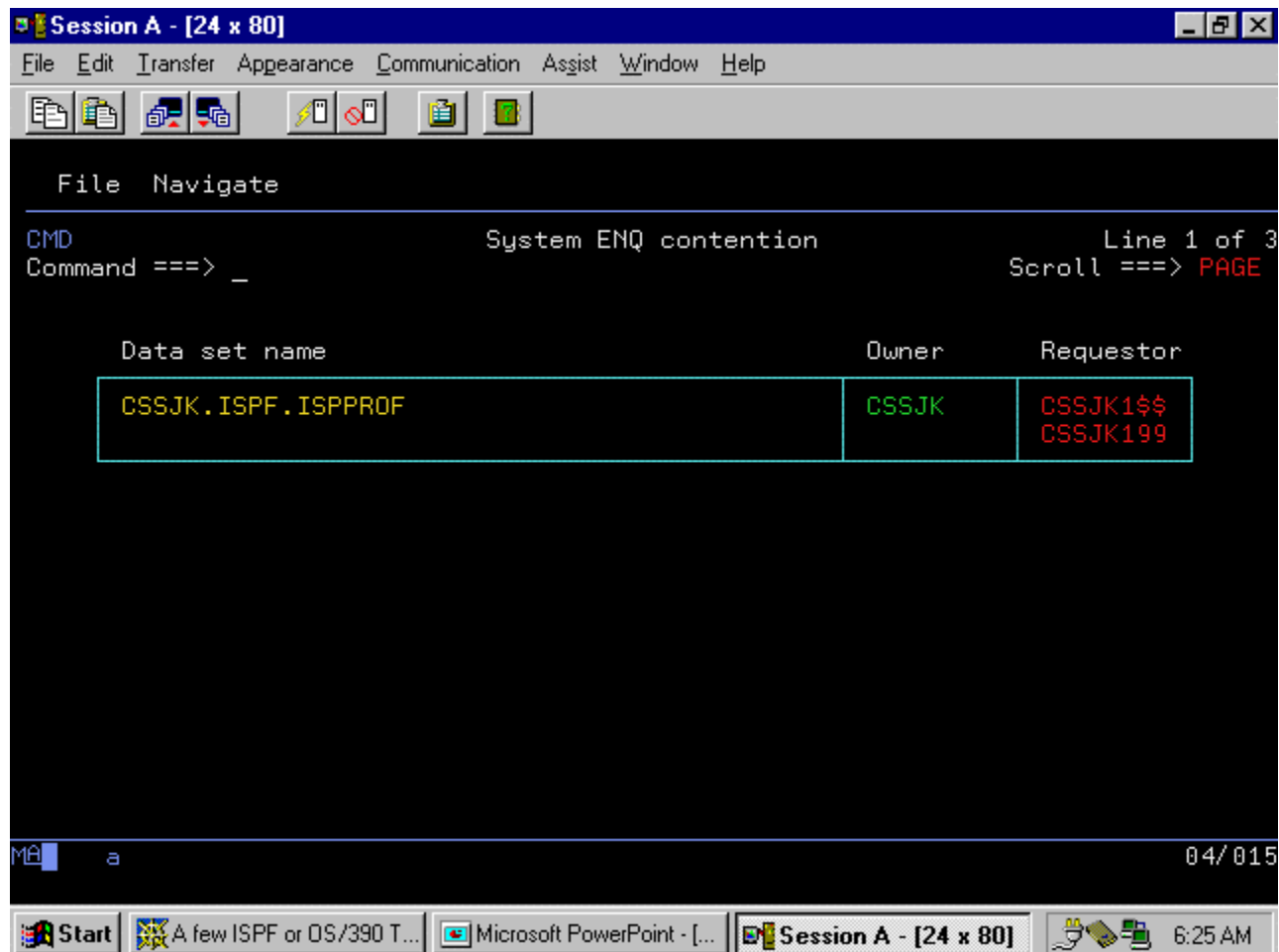
Include Prefix ==> _____ Exclude Prefix ==> _____
S Jobs(5) S TSO Users(2) _ Started tasks(39) S System addr spaces(26)

Jobname	Procname	Stepname	CPU+SRB Time	Storage	VIO	Swap	DP
- *MASTER*			1:12:43.30	1688	—	NS	FF
- ALLOCAS	ALLOCAS		0.35	208	—	NS	FF
- ANTASK00	ANTAS000	IEFPROC	0.98	556	—	NS	26
- ANTMMAIN	ANTMAIN	IEFPROC	54.11	1556	—	NS	FF
- AXDZAK	\$TSUSER		1.83	3300	—	Log	FF
- AXDZAK01		STEP1	1.92	2048	—		11
- BPXOINIT	BPXOINIT	BPXOINIT	3.35	364	—	Log	FF
- CATALOG	CATALOG	IEFPROC	1:01:39.47	3576	—	NS	FF
- CONSOLE	CONSOLE		9:42.49	2540	—	NS	FF
- CSSJK	\$SJKTEST	ISPF	1.75	2212	—		55
- DUMPSRV	DUMPSRV	DUMPSRV	0.85	300	—	NS	FF
- FTPD1		STEP1	2.42	248	—	Log	FF
- FTPD5		STEP1	0.75	196	—	Log	FF
- GRS	GRS		3:23:00.62	4628	—	NS	FF

MA a 04/015

Start A few ISPF or OS/390 T... Microsoft PowerPoint - [...] Session A - [24 x 80] 6:21 AM

TASID System ENQ contention



The screenshot shows a terminal window titled "Session A - [24 x 80]" with a menu bar (File, Edit, Transfer, Appearance, Communication, Assist, Window, Help) and a toolbar. The main display area shows the following text:

```
File  Navigate
CMD                               System ENQ contention                               Line 1 of 3
Command ==> _                      Scroll ==> PAGE
```

Data set name	Owner	Requestor
CSSJK.ISPF.ISPPROF	CSSJK	CSSJK1\$\$ CSSJK199

At the bottom of the terminal window, the prompt "MA a" is visible on the left and "04/015" on the right. The Windows taskbar at the bottom shows the Start button and several open applications: "A few ISPF or OS/390 T...", "Microsoft PowerPoint - [...]", "Session A - [24 x 80]", and the system clock showing "6:25 AM".

TASID System Enq Status

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

File Navigate Settings

CMD System ENQ Status Line 1 of 139
Command ==> _ Scroll ==> PAGE

Major name prefix ==> _____ (SYSDSN, SPFEDIT, etc)
Minor name prefix ==> _____ (dsn etc)
Address id prefix ==> CSSJK_____ (Job name, User id, etc)
System id prefix ==> _____

Major	Minor	Job Name
SPFEDIT	CSSJK.ISPF.ISPPROF	ISPSPROF
SPFEDIT	CSSJK.ISPF.ISPPROF	ISREDRT
SPFEDIT	CSSJK.ISPF.ISPPROF	ISRJLIST
SPFEDIT	CSSJK.ISPF.ISPPROF	ISRLLIST
SPFEDIT	CSSJK.ISPF.ISPPROF	ISRPLIST
SPFEDIT	CSSJK.ISPF.ISPPROF	ISRPROF
SPFEDIT	CSSJK.ISPF.ISPPROF	ISRRLIST
SPFUSER	CSSJK 'C3E2E2D1D24040' X	
SYSDSN	CBC.SCBCIMG	
SYSDSN	CBC.SCBCPNL	
SYSDSN	CBC.SCBCSKL	
SYSDSN	CBC.SCBCUTL	

MA a 04/015

Start A few ISPF or OS/390 T... Microsoft PowerPoint - [...] Session A - [24 x 80] 6:27 AM

TASID Initiator Status List

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

File Navigate

CMD Initiator Status List Line 1 of 12
Command ==> _ Scroll ==> PAGE

Available Job Classes: AILS

ID	Status	Initiator classes	Jobname	Jnum	Class
1	Busy	AS	CSSJK1\$\$	09862	A
2	Busy	AS	CSSJK199	09863	A
3	Waiting	AS			
4	Waiting	AS			
5	Waiting	AL			
6	Drained	LS			
7	Drained	F			
8	Waiting	AS			
9	Waiting	AS			
10	Drained	S			
11	Waiting	I			
12	Waiting	I			

MA a 04/015

Start A few ISPF or OS/390 T... Microsoft PowerPoint - [...] Session A - [24 x 80] 6:28 AM

TASID Miscellaneous displays

Session A - [24 x 80]

File Edit Transfer Appearance Communication Assist Window Help

File Navigate Settings View

CMD ---- TASID: Storage display LINE 00000001 COL 001 079
COMMAND ==> _ SCROLL ==> CSR

APF - APF Authorized libs	PAR - LPAR info	SPA - DASD space
LIN - Linklst PRM - Parmlib	STG - Storage info	SVC - SVC list
LPA - LPA libraries	NUC - Nucleus map	UCB - Active devices
LPD - Link Pack Directory	SUB - Subsystems	UNI - Available units

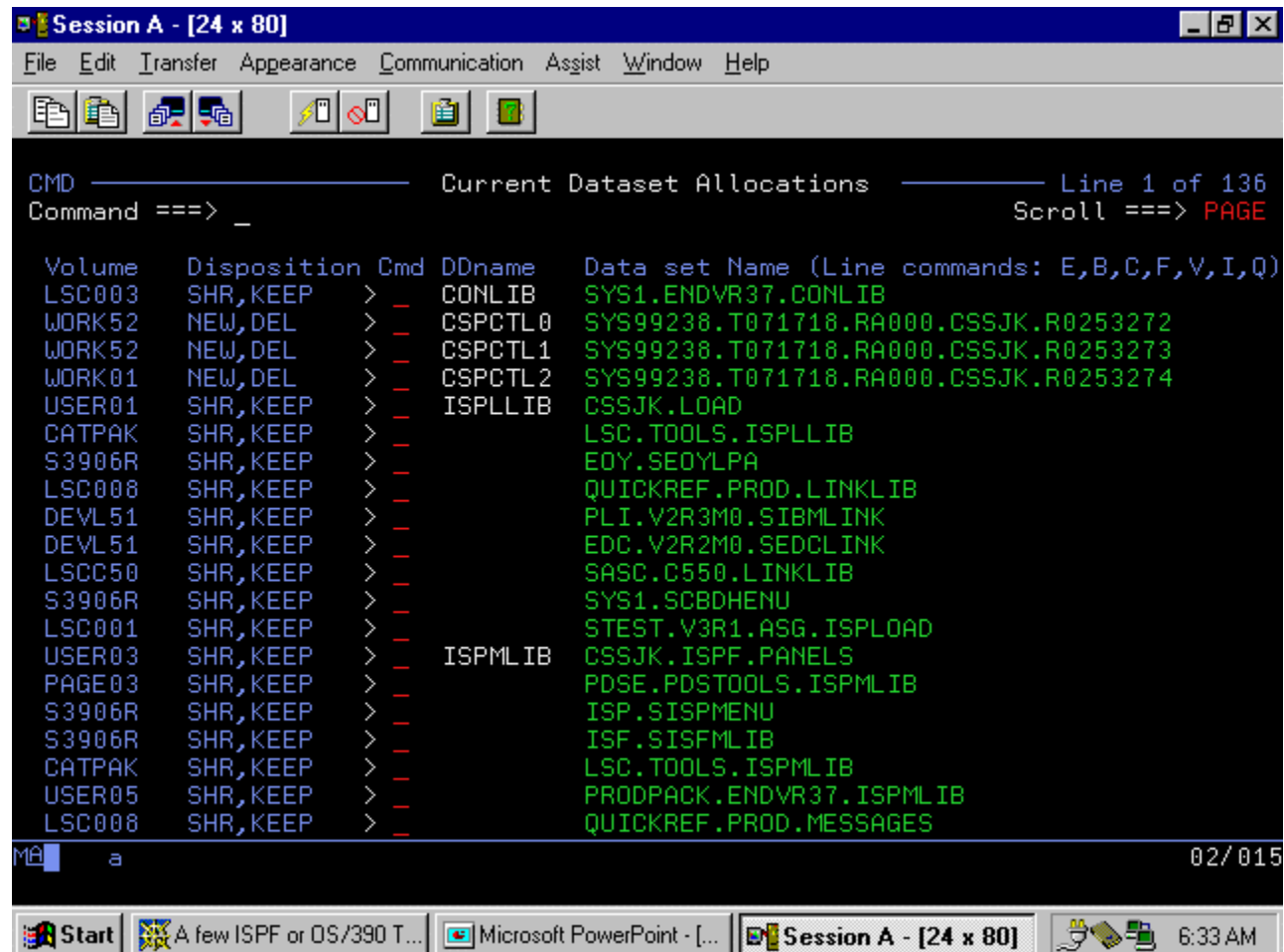
Storage area map

Start	Name	Size	End
0	PSA	4K	FFF
1000	System	16K	4FFF
5000	PVT	7148K	6FFFFFF
700000	CSA	2720K	9A7FFF
9A8000	MLPA	180K	9D4FFF
9D5000	FLPA	4K	9D5FFF
9D6000	PLPA	4956K	EACFFF
EAD000	SQA	1148K	FCBFFF
FCC000	R/W Nucleus	56K	FD9EEF
FDA000	R/O Nucleus	6425K	162013F
1621000	Ext R/W Nuc	1824K	17E8FFF

MA a 04/015

Start A few ISPF or OS/390 T... Microsoft PowerPoint - [...] Session A - [24 x 80] 6:31 AM

TASID Current Dataset Allocations



The screenshot shows a terminal window titled "Session A - [24 x 80]". The window contains a command prompt with the text "Current Dataset Allocations" and "Line 1 of 136". Below this, a table lists dataset allocations with columns for Volume, Disposition, Cmd, DDname, and Data set Name. The data set names are in green text. The table is as follows:

Volume	Disposition	Cmd	DDname	Data set Name (Line commands: E,B,C,F,V,I,Q)
LSC003	SHR,KEEP	> _	CONLIB	SYS1.ENDV37.CONLIB
WORK52	NEW,DEL	> _	CSPCTL0	SYS99238.T071718.RA000.CSSJK.R0253272
WORK52	NEW,DEL	> _	CSPCTL1	SYS99238.T071718.RA000.CSSJK.R0253273
WORK01	NEW,DEL	> _	CSPCTL2	SYS99238.T071718.RA000.CSSJK.R0253274
USER01	SHR,KEEP	> _	ISPLLIB	CSSJK.LOAD
CATPAK	SHR,KEEP	> _		LSC.TOOLS.ISPLLIB
S3906R	SHR,KEEP	> _		EDY.SEDYLP
LSC008	SHR,KEEP	> _		QUICKREF.PROD.LINKLIB
DEVL51	SHR,KEEP	> _		PLI.V2R3M0.SIBMLINK
DEVL51	SHR,KEEP	> _		EDC.V2R2M0.SEDCLINK
LSC050	SHR,KEEP	> _		SASC.C550.LINKLIB
S3906R	SHR,KEEP	> _		SYS1.SCBDHENU
LSC001	SHR,KEEP	> _		STEST.V3R1.ASG.ISPLOAD
USER03	SHR,KEEP	> _	ISPMLIB	CSSJK.ISPF.PANELS
PAGE03	SHR,KEEP	> _		PDSE.PDSTOOLS.ISPMLIB
S3906R	SHR,KEEP	> _		ISP.SISPMENU
S3906R	SHR,KEEP	> _		ISF.SISFMLIB
CATPAK	SHR,KEEP	> _		LSC.TOOLS.ISPMLIB
USER05	SHR,KEEP	> _		PRODPACK.ENDV37.ISPMLIB
LSC008	SHR,KEEP	> _		QUICKREF.PROD.MESSAGES

The terminal window also shows a taskbar at the bottom with the Start button and several open applications: "A few ISPF or OS/390 T...", "Microsoft PowerPoint - [...]", "Session A - [24 x 80]", and the system clock showing "6:33 AM".

TASID Current Dataset

Allocations line commands



- B : Browse
- C : Compress
- E : Edit
- F : Free
- I : Info
- L : Load
- S : Browse
- V : VIO
- Q : Query
- Z : Compress

TASID Storage View Facility

The screenshot displays the TASID Storage View Facility interface within a window titled "Session A - [24 x 80]". The interface includes a menu bar (File, Edit, Transfer, Appearance, Communication, Assist, Window, Help) and a toolbar with various icons. The main area shows a command prompt with the following options:

```

CMD
Command ==>
Base address ==> 00FD10C0 Alignment .. HWORD
Offset from base ==> (optional) Location ... R/W Nucleus
Find string ==> Last block .
Address fields are Point & Shoot
    
```

Below the command prompt is a memory dump table with two columns of hexadecimal addresses and their corresponding ASCII values:

00FD10C0	+0	4	8	C	0	4	8	C
+0	00000218	00FDC560	00FD103C	00FD16A8	.....	ÙE-	Ù...Ù	.y
+10	00000000	00FF8874	00FF5156	00FE7378	.....	hÈ..	éî.Ù	ÈÌ
+20	00FE71AC	01640D70	81290FD8	00FEC398	.Ù	ÉÐ.Á.	øa..Q.	ÙCq
+30	00F46628	00FE65B0	0099238F	00FD16D0	.4	Á..Ù	Á^.	r.±.Ù.
+40	00F3D000	00FF9958	00FDC788	00000000	.3}	...rì.	ÙGh....	
+50	0A0307FE	00FD1044	00FD0E90	00000000	...Ù.	Ù.à.Ù.	°....	
+60	40C3E5E3	00FD2220	00FE99AA	00FE99CA	CVT.	Ù...Ù	rì.Ùr-	
+70	00F4BBA8	9BFD65B0	00000000	00FDC9F0	.4]	yºÙ	Á^....Ù	I0
+80	00000000	816080E0	00FECC80	016507F0	....	a-0\.	Ùø0.Á.	0
+90	838C5000	00FD16D0	00FEF510	00994B60	c&8.	Ù.}.Ù	5..r.-	
+A0	00000000	7FFFFFFF	00000000	00000000	....	"	.....

At the bottom of the window, the current address is 00FD10C0, and the limits are Top - 00FC2000, Bot - 017E9FFF, Size - 00828000. The taskbar shows the Start button and several open applications: "A few ISPF or OS/390 T...", "Microsoft PowerPoint - [...]", "Session A - [24 x 80]", and the system clock showing 6:40 AM.

TASID Snapshot

```
Session A - [24 x 80]
File Edit Transfer Appearance Communication Assist Window Help

File Navigate Settings

CMD
Option ==>

Select one of
1 - Addre
2 - Syste
3 - Total
4 - Initi

-----
Current ti
Last IPL t
IPL Parame
OS/390 0
SMF ID P
User ID C
Node J
VTAM Adr T
Proc $
Region 1
RACF Grp T
(c) Copyright IB

CMD Snapshot Specifications

Enter "/" to select sections
to include. Press END to cancel.

- Address Space List
- ENQ Contention
- LPA Libraries
- Link List Libraries
- APF Libraries
- Storage information
- Subsystems
- SVC Table
- Link Pack Directory
- Nucleus Map
- I/O Units
- I/O Devices Online
- DASD Space
- LPAR Information
- Parmlib Data Sets

Version 5.05k
Days
Locations
ty
More: +
-----+
7
39
6
25
rs 7
-----
84
-----
on 14%
( 2 CPUs)
n 1

MA a 08/024

Start A few ISPF or OS/390 T... Microsoft PowerPoint - [...] Session A - [24 x 80] 6:41 AM
```


TASID Snapshot browse

```
Session A - [24 x 80]
File Edit Transfer Appearance Communication Assist Window Help
Menu Utilities Compilers Help
CMD SE      CSSJK.TASID.SNAPSHOT          Line 00000000 Col 001 080
Command ==>                               Scroll ==> CSR
***** Top of Data *****
TASID Snapshot - TASID Version 5.05k      (9907151718)

Current time 07:39 on 1999/08/26
Last IPL time 20:42 on 1999/08/15

OS/390 02.06.00 JES Version JES2
SMF ID  PROD   JES ..... OS 2.5.0
User ID  CSSJK  RACF ..... 2.6.0
Nodename JES2MVS TSO ..... 2.6.0
Vtamaddr TPXGR201 VTAM ..... 4.5
Procname $SJKTEST DFP ..... 1.4.0
Region  100000K DSS ..... 1.4.0
RACF Grp TSOHOLD DSF ..... 1.16.0
Mode    PR/SM  ISPF ..... 4.5.0
LPARs   HSM    ..... 1.4.0

-----+-----+
| TSO Users          | 7 |
| Started Tasks     | 39 |
| Jobs              | 6 |
| System Addr       | 25 |
| Free Initiators   | 7 |
|-----+-----+
| Total              | 84 |
|-----+-----+
| CPU utilization    | 14% |
| CPU 9672-R44      | 2 CPUs |
| Real Storage       | 196,608K |
| ENQ Contention     | 1 |

Sysres: S3906R      System: PROD      PLEX: DEVL52
IPL Load Parm: 1C4B PT 1

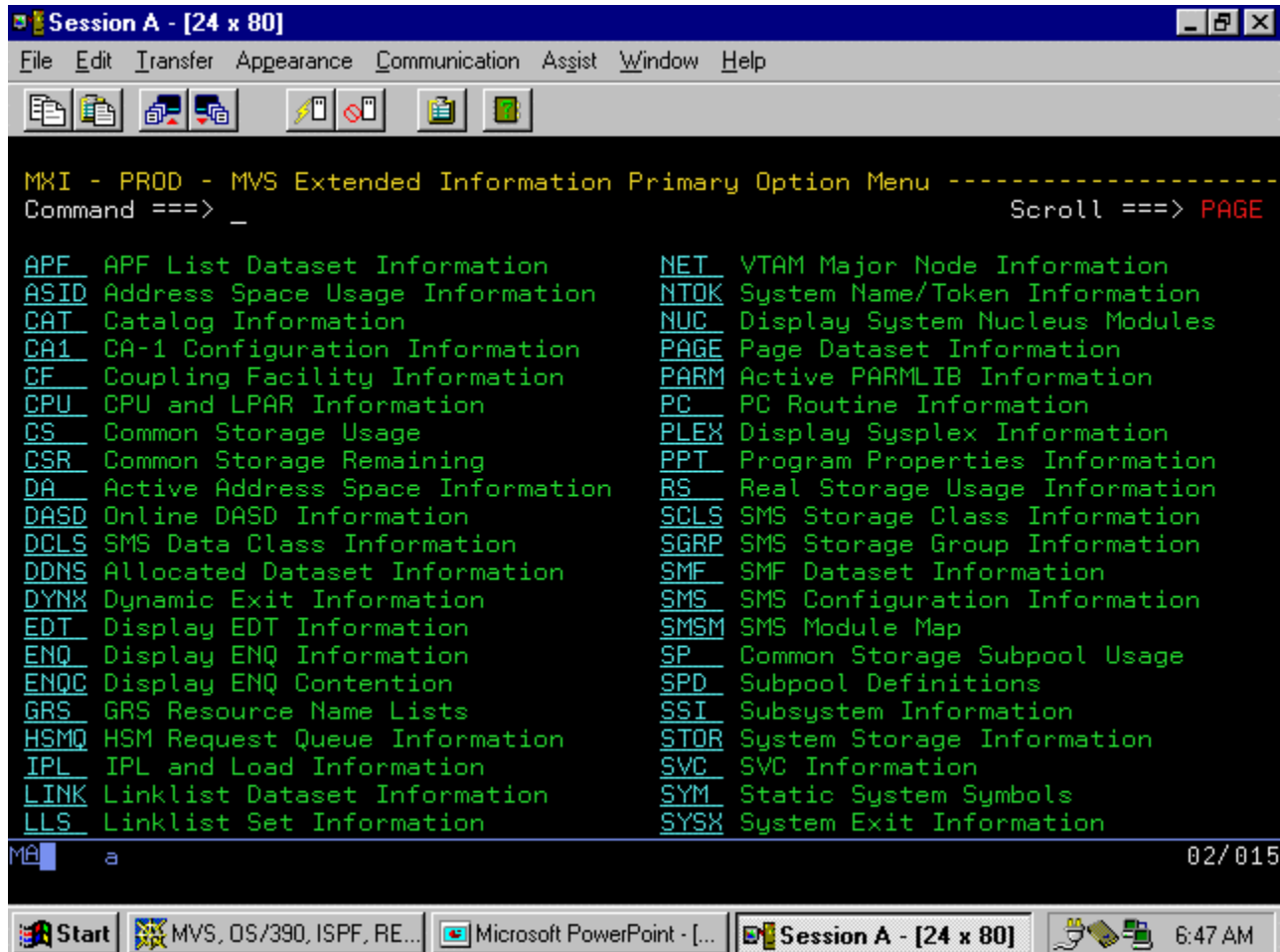
MA a 04/015
```

Start A few ISPF or OS/390 T... Microsoft PowerPoint - [...] Session A - [24 x 80] 6:43 AM

MXI Home Page



MXI

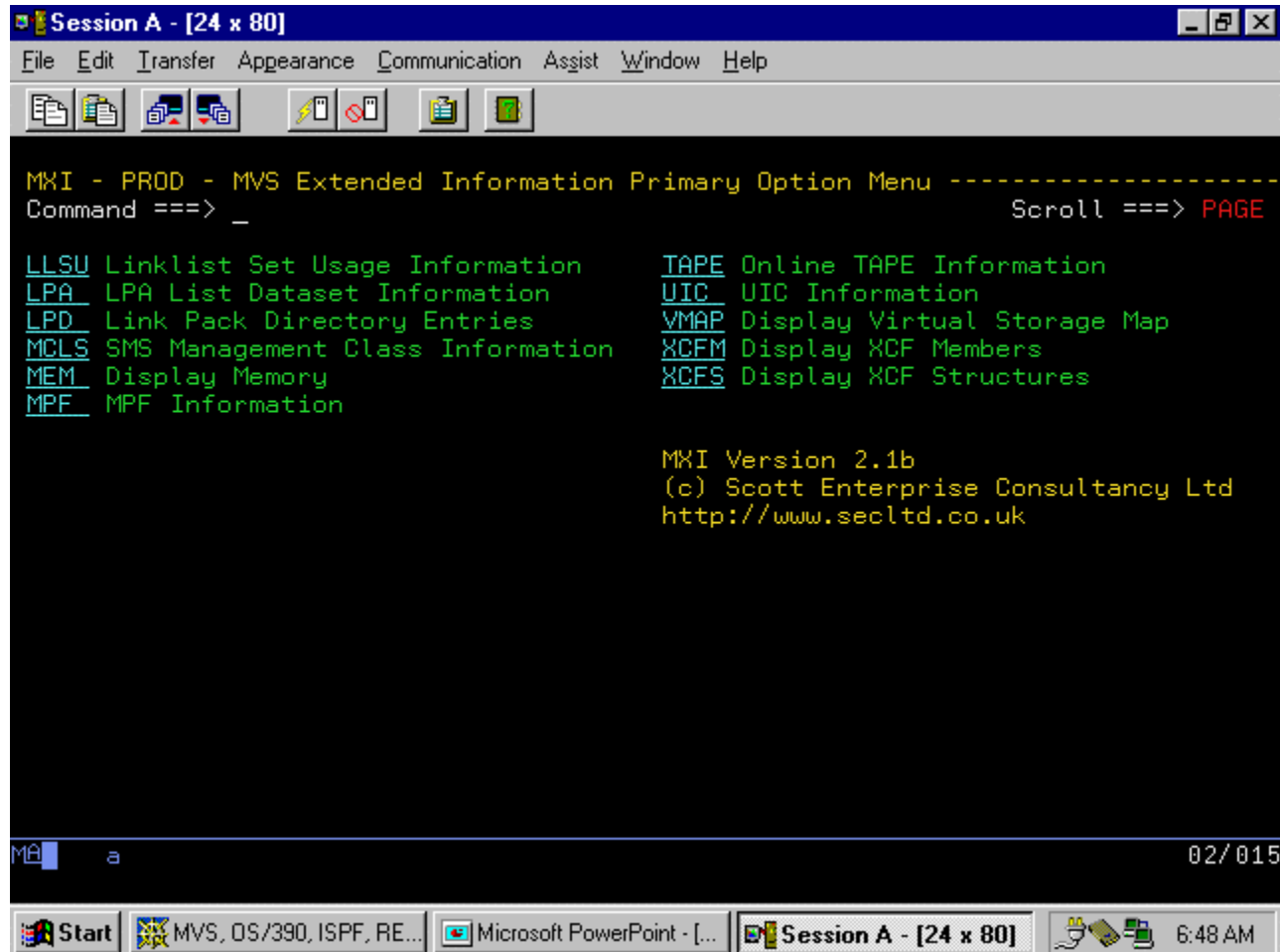


The screenshot shows a terminal window titled "Session A - [24 x 80]". The menu lists various system information options, including:

- APF APF List Dataset Information
- ASID Address Space Usage Information
- CAT Catalog Information
- CA1 CA-1 Configuration Information
- CF Coupling Facility Information
- CPU CPU and LPAR Information
- CS Common Storage Usage
- CSR Common Storage Remaining
- DA Active Address Space Information
- DASD Online DASD Information
- DCLS SMS Data Class Information
- DDNS Allocated Dataset Information
- DYNX Dynamic Exit Information
- EDT Display EDT Information
- ENQ Display ENQ Information
- ENQC Display ENQ Contention
- GRS GRS Resource Name Lists
- HSMQ HSM Request Queue Information
- IPL IPL and Load Information
- LINK Linklist Dataset Information
- LLS Linklist Set Information
- NET VTAM Major Node Information
- NTOK System Name/Token Information
- NUC Display System Nucleus Modules
- PAGE Page Dataset Information
- PARM Active PARMLIB Information
- PC PC Routine Information
- PLEX Display Sysplex Information
- PPT Program Properties Information
- RS Real Storage Usage Information
- SCLS SMS Storage Class Information
- SGRP SMS Storage Group Information
- SMF SMF Dataset Information
- SMS SMS Configuration Information
- SMSM SMS Module Map
- SP Common Storage Subpool Usage
- SPD Subpool Definitions
- SSI Subsystem Information
- STOR System Storage Information
- SVC SVC Information
- SYM Static System Symbols
- SYSX System Exit Information

The terminal shows the command prompt "Command ==> _" and the instruction "Scroll ==> PAGE". The status bar at the bottom of the terminal window displays "MA a" and "02/015". The Windows taskbar at the bottom shows the Start button and several open applications: "MVS, OS/390, ISPF, RE...", "Microsoft PowerPoint - [...]", and "Session A - [24 x 80]". The system clock shows "6:47 AM".

More MXI options



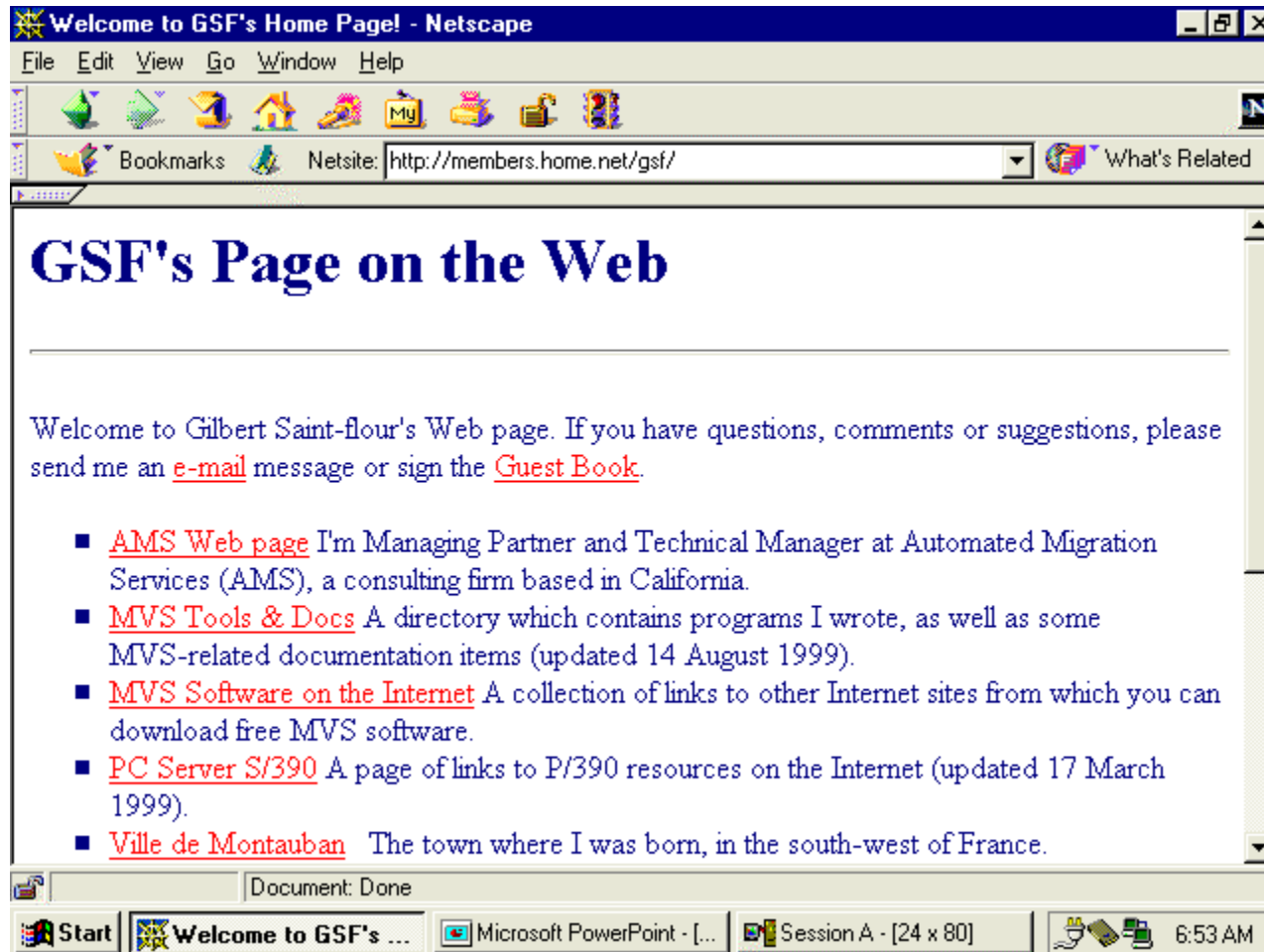
```
Session A - [24 x 80]
File Edit Transfer Appearance Communication Assist Window Help
[Icons]
MXI - PROD - MVS Extended Information Primary Option Menu -----
Command ==> _                               Scroll ==> PAGE

LLSU Linklist Set Usage Information           TAPE Online TAPE Information
LPA  LPA List Dataset Information             UIC  UIC Information
LPD  Link Pack Directory Entries             VMAP Display Virtual Storage Map
MCLS SMS Management Class Information         XCFM Display XCF Members
MEM  Display Memory                         XCFS Display XCF Structures
MPF  MPF Information

MXI Version 2.1b
(c) Scott Enterprise Consultancy Ltd
http://www.secltd.co.uk

MA a 02/015
[Taskbar: Start, MVS, DS/390, ISPF, RE..., Microsoft PowerPoint - [...], Session A - [24 x 80], 6:48 AM]
```

Gilbert Saint-flour's Web page



SHOWMVS

```
Session A - [24 x 80]
File Edit Transfer Appearance Communication Assist Window Help
Menu Utilities Compilers Help
BROWSE      GSF Utilities - ShowMVS R623d      Line 000000 SHOWMVS R623d
Command ==> _____ Scroll ==> CSR
***** Top of Data *****
Operating System:
  OS/390 02.06.00      CVTOSLVL: FF FF F0 00 00 00 00
  DFSMS/MVS 1.4.0      Dynamic Linklist is supported
                      Dynamic LPA is available
                      DFSMS Loader Fork Exit is present
  JES2 Level: OS 2.5.0  NJE Node: JES2MVS      DSNID: 02
Last IPL:
  Date: Sunday 1999-08-15 (11 days ago)  Time: 20.42  Julian: 1999.227
  From: S3906R/1209  NUC Id: 1  Type: Cold Start  CVTUSER: 00000000
  SYSPLEX name: DEVL52  SYSPLEX ID: 0D  OpenMVS available: YES
  Timezone: W 05.00.00
System Software:
MA a 04/015
Start MVS, OS/390, ISPF, RE... Microsoft PowerPoint - [...] Session A - [24 x 80] 6:49 AM
```

Special Thanks



- Sam Golob
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- Gilbert Saint-Flour
- Bob Johnson
- Dr. Robert P. Rannie
- John Kalinich
- Paula Knutson
- Gabe Goldberg
- Rob Scott
- Doug Nadel