

Hints & Tips for 21CS VSEⁿ

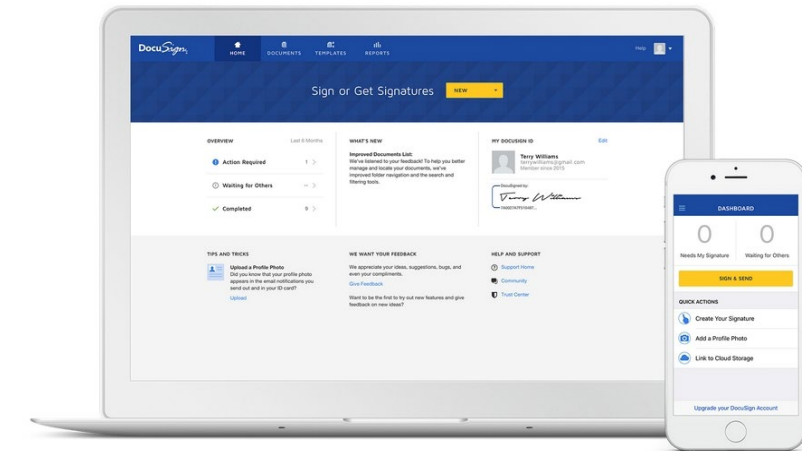
21CS VSEⁿ Team

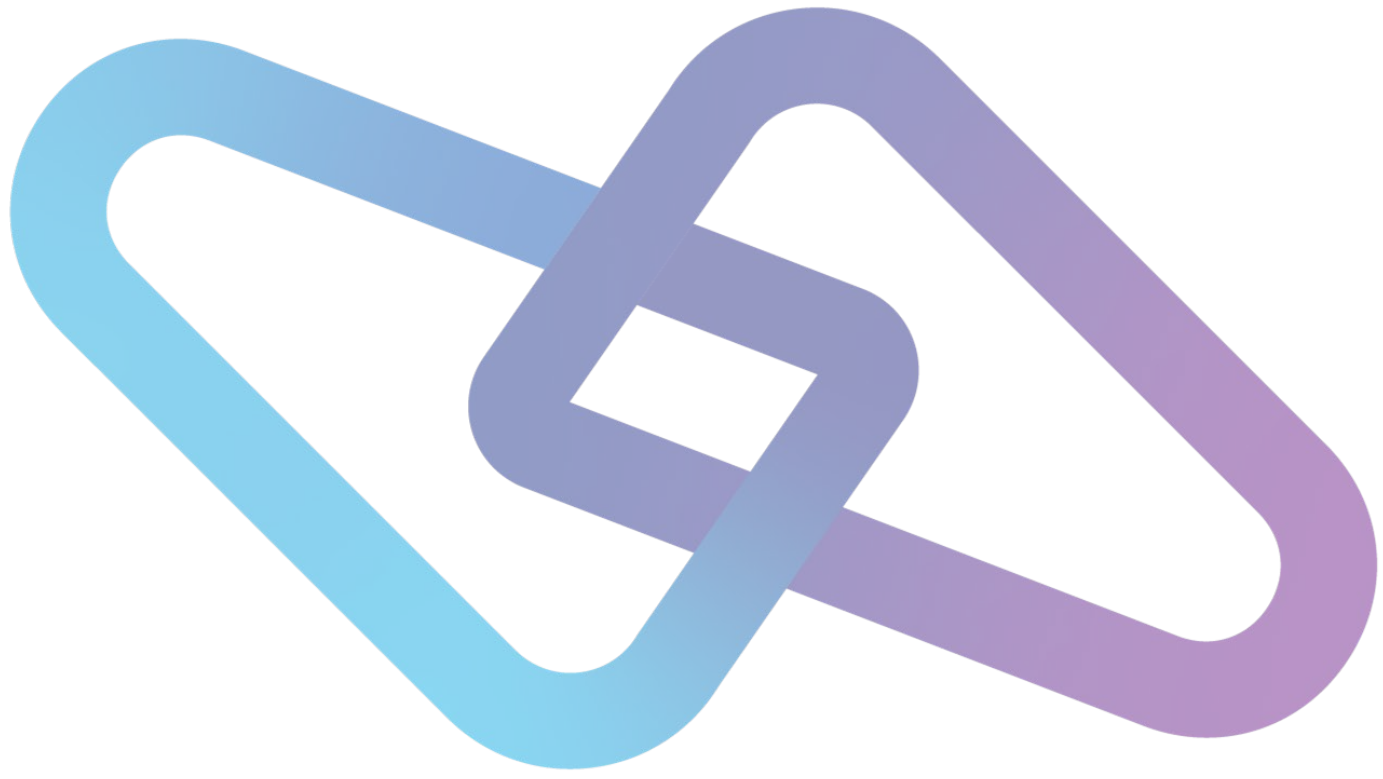
vse@21cs.com

Ordering requirements: contracts signed via DocuSign



- There are 2 documents to be reviewed and signed:
 - 21CS Customer Relationship Agreement
 - 21CS Product Order License Information Attachment
- For customers in the USA, it will be triggered by Al Hanna and you will get an email from:
 - „Al Hanna via DocuSign“
 - DocuSign NA3 System dse_NA3@docusign.net
- For customers outside of the USA, it will be triggered by Tiffani Corbin and you will get an email from:
 - „Tiffani Corbin via DocuSign“
 - DocuSign EU System dse@eumail.docusign.net
- If after being notified that it has been triggered, you do not find the above email in your Inbox, please check your spam/junk mail folder





FSU to VSEn

- If you plan to install VSEⁿ on a system that is capable of reading tape images in virtual tape format, you do not need to copy the image to a real tape or VSEⁿ/VSAM. Otherwise, you can:
 - Use a “real” tape: Create a TAPE from the *VSEnvrn.AWS* file.
 - Mount an AWS image via VSEⁿ Virtual Tape Support
 - tape-to-tape utility (SMDMU)
 - Install/upgrade from DASD using VSAM: Transfer the Installation tape into VSAM dataset.
 - Allocate VSAM with skeleton SKVTAPE (ICCF library 59)
 - Transfer the AWS file to VSAM via SMDMU, IN\$FILE or FTP (V, LRECL=32758).
- For more information about this topic, please refer to the **VSEⁿ Version 6 Release 3 System Upgrade and Service** manual.

FSU (cont.)



- Make sure that FSUPREP (FSU preparation step) has run successfully before starting with FSU
- Do a backup :)
- VTAM no longer requires a license key: remove it from the the EXEC card in your VTAM/VCDD start JCL

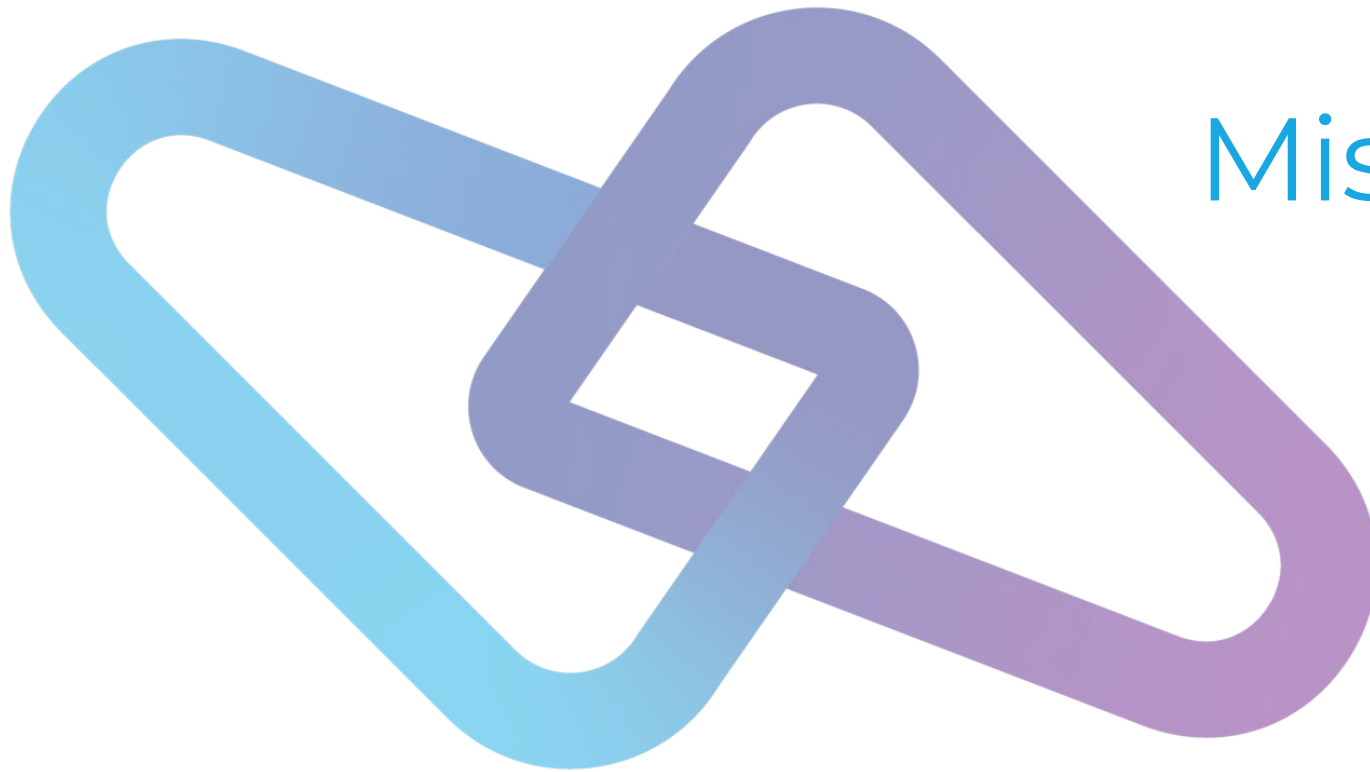
```
// EXEC ISTINCVT, SIZE=ISTINCVT, PARM='CUSTNO=xxxx-xxx-xxxx, VTAMPW=nnnn-n*  
nnn-nnnn-nnnn-nnnn', DSPACE=2M
```

- The IBM TCP/IP for z/VSE and IPv6/VSE keys won't work with 21CS derivative products, so you will need to request new key from 21CS for the respective product.
- If Sub-Capacity License is agreed, start CMT recording with // EXEC PROC=CMTSTART in USERBG.PROC or other jobs running after IPL, if you had it before, it will still be there after FSU, so no change needed.

ESM and FSU



- Please remove “*SYS ESM = xxx*” from the stage 2 FSU IPL procedure before the reipl from SYSWK1.
 - If you don’t use IUI, please make sure that you removed it from IPL proc in both IJSYSRS.SYSLIB and PRD2.SAVE
 - Remember your native SYSA password
- Top secret APAR’s for VSEn:
 - **LU06593** ESIVSE --> for TSS Common Component
 - **LU06484** ENF/CIS --> for TSS Common Component
 - Alert for VSE?



Miscellaneous topics

TRACE ENHANCEMENTS

- VP00132 (VA00138) – display mnemonics for all instructions
- VP00147 (VA00148) – Fix errors in Storage Alteration Trace
- VP00161 (VA00157) – Enhancements to SSL Trace

SDAID MNEMONICS

- Missing mnemonics have been added to the mnemonic conversion routine for all instructions described in the z/Architecture Principles of Operation (SA22-7832-12) for the z16 processor.
- The instruction trace formatted records have been expanded to hold 7-character mnemonics.
- The mnemonic conversion routine and related modules have been updated to correctly convert instructions with hexadecimal code starting with `x'ED'`. Misprints in the instruction mnemonics have been fixed.

SDAID MNEMONICS - Examples

Missing Mnemonics

Before

| | | | | | | | | | | |
|------|---|----|-----|--------|--------------|----------|--|--------------|----------|-------------------|
| INST | 0 | BG | C00 | ?????? | E320C0260075 | 005001D2 | | PSW=471D3000 | 805001D8 | INSTRTST+0000015A |
| INST | 0 | BG | C00 | ?????? | B9CB3012 | 005001E0 | | PSW=471D3000 | 805001E4 | INSTRTST+00000168 |
| INST | 0 | BG | C00 | ?????? | E330C02400C6 | 005001F6 | | PSW=471D0000 | 805001FC | INSTRTST+0000017E |
| INST | 0 | BG | C00 | ?????? | E544C0240030 | 005001FC | | PSW=471D0000 | 80500202 | INSTRTST+00000184 |

After

| | | | | | | | | | | |
|------|---|----|-----|--------|--------------|----------|--|--------------|----------|-------------------|
| INST | 0 | BG | C00 | LAEY | E320C0260075 | 004001D2 | | PSW=471D3000 | 804001D8 | INSTRTST+0000015A |
| INST | 0 | BG | C00 | SLHHHR | B9CB3012 | 004001E0 | | PSW=471D3000 | 804001E4 | INSTRTST+00000168 |
| INST | 0 | BG | C00 | LLHH | E330C02400C6 | 004001F6 | | PSW=471D0000 | 804001FC | INSTRTST+0000017E |
| INST | 0 | BG | C00 | MVHHI | E544C0240030 | 004001FC | | PSW=471D0000 | 80400202 | INSTRTST+00000184 |

SDAID MNEMONICS - Examples

7 Character Op Codes


Column shifted one space right

Before

```
INST  0  BG  C00  ?????? EC13010000DB  0050020E      PSW=471D1000 80500214 INSTRTST+00000196
```

After

```
INST  0  BG  C00  ALGHSIK EC13010000DB  0040020E      PSW=471D1000 80400214 INSTRTST+00000196
```



Incorrect Evaluation of x'ED' instructions

Before

```
INST  0  BG  C00  RNSBG  ED000FFF0054  0050021A      PSW=471D1000 80500220 INSTRTST+000001A2
```

After

```
INST  0  BG  C00  TDCDT   ED000FFF0054  0040021A      PSW=471D1000 80400220 INSTRTST+000001A2
```

SDAID – Storage Alteration Trace

When tracing the storage alteration events via SDAID, the following issues may appear:

1. Storage alteration events caused by the EXRL instruction are not recognized by SDAID.
2. Storage alteration events caused by instructions provided by the General-instructions-extension facility may not be recognized, or incomplete data can be printed in the DATA field.
3. Storage alteration events caused by instructions provided by the Long displacement facility are processed incorrectly in case the displacement is longer than 4095, causing incorrect data in the ALTERED STORAGE ADD and DATA fields.

SDAID – Storage Alteration Trace Examples - EXRL

```

STOR  0  BG  C00  NIY      EB07CF880054  ADD=005000E2  PSW=471D1000 805000E8
ALTERED STORAGE: ADD=00501000 DATA=05
GR 0-7  00500078 00000006 003E8000 00500000 0063FFFF 00000000 00000000 00501000
      8-F  000DB4AA 003E8618 00000000 00501077 00500078 0050200C 000DB4B0 00500078
STOR  0  BG  C00  STHY      E310CF880070  ADD=005000F2  PSW=471D1000 805000F8
ALTERED STORAGE: ADD=00501000 DATA=0004
GR 0-7  00500078 00000004 003E8000 00500000 0063FFFF 00000000 00000000 00501000
      8-F  000DB4AA 003E8618 00000000 00501077 00500078 0050200C 000DB4B0 00500078
  
```

```

STOR  0  BG  C00  NIY      EB07CF880054  ADD=004000E2  PSW=471D1000 804000E8
ALTERED STORAGE: ADD=00401000 DATA=05
GR 0-7  00400078 00000006 003B8000 00400000 0053FFFF 00000000 00000000 00401000
      8-F  000DB4AA 003B8618 00000000 00401077 00400078 0040200C 000DB4B0 00400078
STOR  0  BG  C00  EXRL      C6100000F8D  ADD=004000EC  PSW=471D1000 804000F2
STOR  0  BG  C00  MVC      D2047000BF89  ADD=00402006  PSW=471D1000 804000F2
ALTERED STORAGE: ADD=00401000 DATA=F1F3F5F7F9
GR 0-7  00400078 00000004 003B8000 00400000 0053FFFF 00000000 00000000 00401000
      8-F  000DB4AA 003B8618 00000000 00401077 00400078 0040200C 000DB4B0 00400078
STOR  0  BG  C00  STHY      E310CF880070  ADD=004000F2  PSW=471D1000 804000F8
ALTERED STORAGE: ADD=00401000 DATA=0004
GR 0-7  00400078 00000004 003B8000 00400000 0053FFFF 00000000 00000000 00401000
      8-F  000DB4AA 003B8618 00000000 00401077 00400078 0040200C 000DB4B0 00400078
  
```

SDAID – Storage Alteration Trace - Examples

General-instructions-extension

Before

```
STOR  0  BG  C00  ??????  E544CF8800FF  ADD=00500100  PSW=471D1000  80500106
ALTERED STORAGE: ADD=00501000 DATA=00FFF5F7F9500078
GR 0-7  00500078 00000001 003E8000 00500000 0063FFFF 00000000 00000000 00501000
      8-F  000DB4AA 003E8618 00000000 00501077 00500078 0050200C 000DB4B0 00500078
```

After

```
STOR  0  BG  C00  MVHHI  E544CF8800FF  ADD=00400100  PSW=471D1000  80400106
ALTERED STORAGE: ADD=00401000 DATA=00FF
GR 0-7  00400078 00000001 003B8000 00400000 0053FFFF 00000000 00000000 00401000
      8-F  000DB4AA 003B8618 00000000 00401077 00400078 0040200C 000DB4B0 00400078
```

SDAID – Storage Alteration Trace - Examples

Long Displacement Facility

Before

```
STOR  0  BG  C00  CSY      EB24CF880014  ADD=00500176  PSW=471D0000  8050017C
ALTERED STORAGE: ADD=00501000  DATA=00
GR 0-7  00500078  00000001  3E000000  00000000  00000000  00000005  00000000  00501000
      8-F  000DB4AA  003E8618  00000000  00501077  00500078  0050200C  000DB4B0  00500078
```

After

```
STOR  0  BG  C00  CSY      EB24CF880014  ADD=00400176  PSW=471D0000  8040017C
ALTERED STORAGE: ADD=00401000  DATA=00000000
GR 0-7  00400078  00000001  3B000000  00000000  00000000  00000005  00000000  00401000
      8-F  000DB4AA  003B8618  00000000  00401077  00400078  0040200C  000DB4B0  00400078
```

SSL Trace

Two new features have been implemented:

1. Micro-seconds are now part of debug trace timestamp.
2. File Descriptor - fd, data member of struct gsk_soc_init_data, is now part of debug trace wherever applicable. Value 0 will be used where fd is not available or not initialized.

CSI

```
29-07-2024 08:26:25.269235 [0x00C10200] -> ssl_write_data, reflen=97
```

BSI

```
25-07-2024 07:28:27.343180 [0x00BB7530] -> ssl_write_data, reflen=97
```

Code Pages

- C for VSEn compiler
- Set Code Page 1047 in your emulator
- Square brackets []
 - Code Page 1047 x'AD' x'BD'
 - Code Page 037 x'BA' x'BB'
 - Code page 231 x'63' x'FC'

Handling OLTP dumps

Ensure the dump is written to the VSE DUMP library.

FTP the dump from the dump library to your PC.

Upload the dump to BOX

Run DFHPD440 analysis and send us the output

PRINT FORMAT and PRINT 0:END are of little use

Handling OLTP Dumps - Problems

- The dump is written to SYSLST and not the dump library.
- The dump library is full, so no dump is produced
- Dumps are suppressed so no dump is produced

Handling OLTP dumps - recommendations

- // OPTION SYSDUMPC in OLTP JCL (This is the default)
- Ensure the dump library is large enough and has enough free space. Delete any old dumps.

```
// EXEC PROC=DTRINFOA
// EXEC INFOANA,SIZE=AUTO
SELECT DUMP MANAGEMENT
DUMP NAME SYSDUMP.BG.DBG00037
DELETE
RETURN
SELECT END
/*
// EXEC LIBR
RELEASE L=SYSDUMP
/*
```

- DFHSIT DUMP=YES

Handling OLTP dumps – Dump Table

```
CEMT I SYD(*)
```

```
STATUS: RESULTS - OVERTYPE TO MODIFY
```

```
Syd(SM0102 ) Max( 001 ) Cur(0000)
```

```
Syd(SM0103 ) Sys Max( 001 ) Cur(0000)
```

```
Syd(SR0001 ) Sys Max( 001 ) Cur(0000)
```

```
CEMT SET SYD(SM0102) SYSDUMP
```

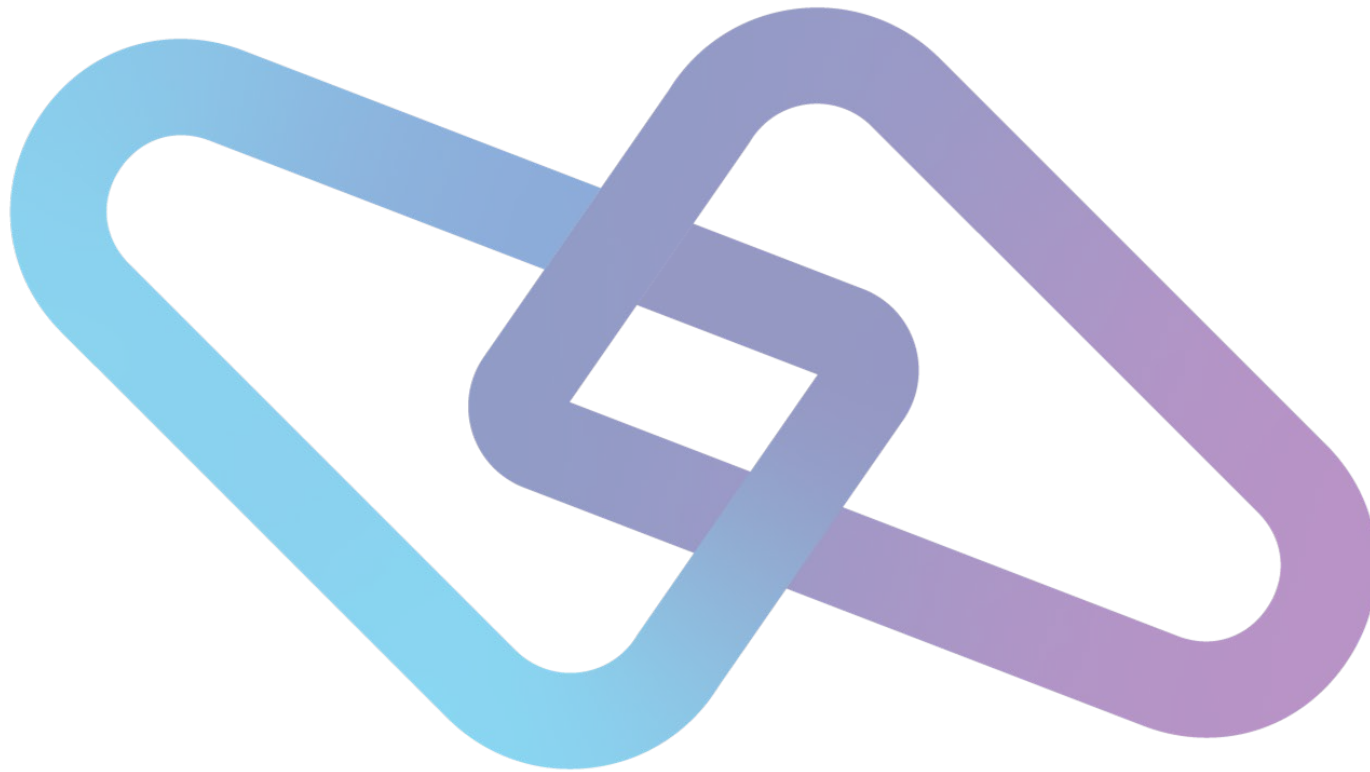
```
CEMT SET SYD(AP0001) ADD
```

```
CEMT SET SYSD(dumpcode) RESET
```

```
CEMT SET SYSD(dumpcode) SHUTDOWN
```

Random PTF mention

- VP00165
- When using SOAP web services in OLTP the XML document returned to the requesting client may contain NULL values if the XML document is larger than 1024 bytes.
- Particularly upgrades from 6.1 or earlier.



21CS VSEⁿ PDF Catalogs

The fastest way to find
what you are looking for

Agenda



- What is a PDF Catalog?
- Benefits of Searching an Index
- Where to find the 21CS PDF Catalog
- Searching the PDF Index
- Search Results



What is a PDF Catalog?

A PDF catalog is a group of PDF files, that contains a common index. 21CS provides its collected technical documentation this way.

A PDF catalog contains:

- A **PDX** file which contains the index of PDF documents and folders that contain documents.
- A folder with **IDX** files which contain the actual index entries.


Benefits of Searching an Index



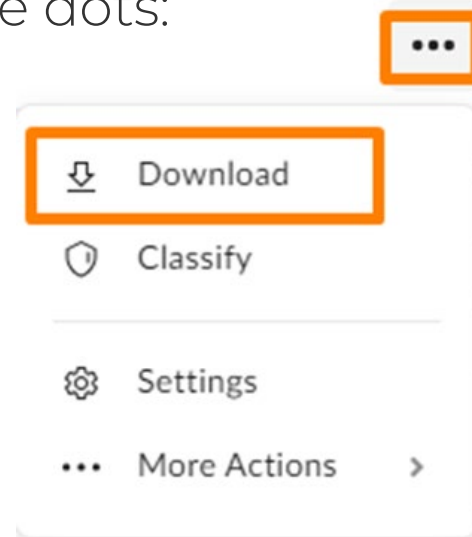
- Significantly **faster** than a full text search of every single PDF document.
- A list of results with **direct links** to the references in all the indexed documents.

Where to find the 21CS PDF Catalog

Find the Adobe Acrobat Indexed folder in your Box under 01 - Documentation.

| NAME |
|--|
|  Adobe Acrobat Indexed 2024_06_12 |

To download click on the three dots:



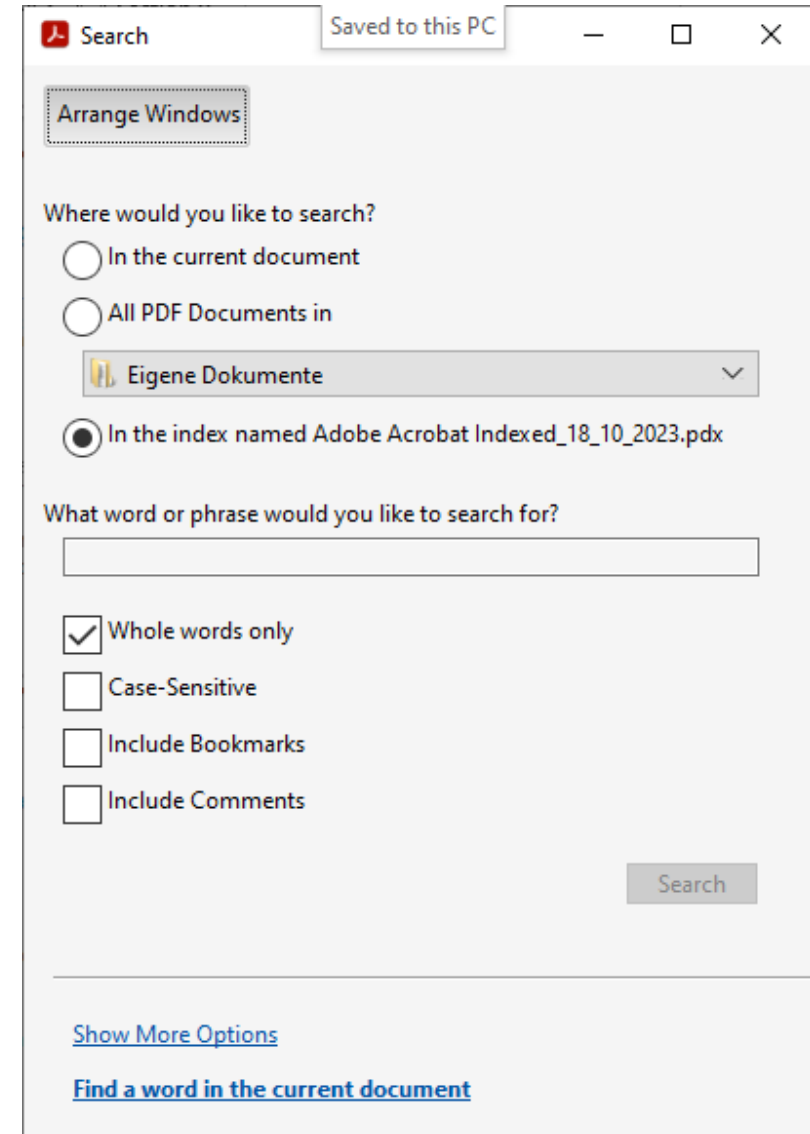
Searching the PDF Index

1. Download and extract (zip file) the folder provided in Box.
To search a PDF index, Acrobat needs to be opened as a standalone application, not within a web browser.
2. Open the PDX file.

Programs that allow opening Adobe Acrobat index files with the extension pdx:

Freeware: Adobe Reader

Commercial: Adobe Acrobat



Search Results



- Result within seconds.
- List of directly linked references in the indexed manuals.
- Refine the search within the result.

VSEn_6_3_Operation_V2.pdf - Adobe Acrobat Pro (64-bit)

File Edit View E-Sign Window Help

Home Tools VSEn_6_3_Operatio... x

Search

Looking For:
SYSWK1 in the index named Adobe Acrobat Indexed_18_10_2023.pdx

Results:
26 document(s) with 370 instance(s)

New Search

Results:

- > e-business Connectors User's Guide
- > Guide to System Functions
- > VSEⁿ/ICCF Administration and Operation
- > Messages and Codes Volume 1
- > Operation
 - > **SYSWK1** VSEn System Utilities VSEⁿ libraries Librarian BACKUP
- > Program Directory
- > Program Directory
- > Using the Sub-Capacity Reporting Tool
- > System Control Statements
- > System Utilities
- > TCP/IP Support
- > VSEⁿ/POWER Administration and Operation Version 9 Release 5

Sort by: Relevance Ranking

Collapse file paths

[Refine Search Results](#)

[Show Fewer Options](#)

[Find a word in the current document](#)

Backing Up and Restoring Data | 131

For the major backup/restore tasks, VSEⁿ has dialogs under the Interactive User Interface. These dialogs create jobs that invoke a particular backup or restore program. The description of these dialogs is the main subject of this topic.

Quite a few of the save/restore tasks listed below can also be performed with **SMDMU for VSEⁿ** program. For details, refer to the *SMDMU for VSEⁿ User's Guide and Reference manual*.

Table 10: Overview on Programs for Saving/Restoring Data

| Kind of data | Backup | Restore | Reorganize | Recommended | Where described |
|---|--------------------------------|---------------------------------|---|--|--|
| Total volumes (for example, DOSRES, SYSWK1) | VSE ⁿ Fast Copy | VSE ⁿ Fast Copy | (see Note) | VSE ⁿ Fast Copy or dialog | VSEn System Utilities |
| VSE ⁿ libraries | Librarian BACKUP | Librarian RESTORE | Librarian BACKUP/RESTORE | Librarian or Interactive User Interface dialogs | VSEn Guide to System Functions VSEn System Control Statements |
| Non-VSE ⁿ /VSAM data | VSE ⁿ Fast Copy | VSE ⁿ Fast Copy | - | VSE ⁿ Fast Copy | VSEn System Utilities |
| VSE ⁿ /VSAM data | VSE ⁿ /VSAM, Backup | VSE ⁿ /VSAM, Restore | VSE ⁿ /VSAM, Export and Import | VSE ⁿ /VSAM, Backup/Restore or Interactive User Interface dialogs | VSEn/VSAM Commands VSEn Administration |
| VSE ⁿ /ICCF libraries | DTSUTIL, Backup | DTSUTIL, Restore | DTSUTIL, Backup Format and restore | DTSUTIL or dialog | VSEn/ICCF Administration and Operation |
| VSE ⁿ /POWER queue | POFFLOAD, SAVE | POFFLOAD, LOAD | - | POFFLOAD | VSEn/POWER Administration and Operation |
| SQLIDS | ARCHIVE | ARCHIVE | - | ARCHIVE | VSEn Administration |
| HDB for VSE ⁿ | IMAGE COPY | IMAGE COPY | Reorganization UNLOAD and RELOAD | HDB for VSE ⁿ | HDB for VSEn Resource Definition and Utilities |
| System History File | MSHP or Fast Copy | MSHP or Fast Copy | - | MSHP or dialog | VSEn System Control Statements |

Note: Reorganizing data means a change of the physical arrangement of data to obtain a better correspondence of physical and logical structures in order to speed up access and to utilize storage more efficiently. The Fast Copy parameter REORGANIZE only relocates a file and does not rearrange data in general.



Q & A



Thank you!