

# **Advantage<sup>TM</sup> VISION:Report<sup>®</sup>** **Advantage<sup>TM</sup> VISION:Forms<sup>TM</sup>** **for VSE**

## **Getting Started Guide**

**16.1**



Computer Associates<sup>TM</sup>

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# Introduction

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Advantage VISION:Report for VSE is an easy-to-use program development and report writing tool that you use to build and execute programs, minimizing the amount of programming time and effort required to fix a file, prepare a report, or generate test data.

There is virtually no limit to the types of reports Advantage VISION:Report for VSE can create. Preprinted forms, memos, letters, and labels are handled with ease. Arithmetic operations are provided with automatic decimal alignment and rounding, but you can override these features at any time. Normally, up to eight reports can be produced in one program. Advantage VISION:Report for VSE also supports European format for numeric printing.

Advantage VISION:Report for VSE uses a straightforward, self-documenting, COBOL-like language. First time users can be up and running after less than eight hours of training. Since Advantage VISION:Report for VSE requires you to define only the fields to be used, time-consuming COBOL file definition activity is eliminated.

Advantage VISION:Report for VSE also allows file definitions and program source statements to be saved in CA-LIBRARIAN, CA-PANVALET, PDS, or other source statement libraries to be shared by other programs, avoiding duplicate programming work. Character, zoned, decimal, packed, binary, and unconventional data types are supported. You can also validate programs prior to their execution.

One common language means that Advantage VISION:Report for VSE is easier to learn and manage than several individually sold utilities. Everything from file comparison and format conversions to testing, debugging, and prototyping can be accomplished using Advantage VISION:Report for VSE.

Using Advantage VISION:Report for VSE, you have the option to access, retrieve, update, and report on data from VSAM, sequential, and optionally:

- Computer Associates CA-IDMS/DB
- IBM®
- DB2® and SQL/DS
- IMS and DL/I

Also, a CALL verb is available to access callable databases. To enhance file access, Advantage VISION:Report for VSE also:

- Internally reads CA-LIBRARIAN and source statement libraries.
- Provides a CALL command for invoking subroutines written in Assembler or COBOL.
- Allows literals to be used as parameters in a CALL statement.

Advantage VISION:Report for VSE performs multiple functions with just one pass of the database. Conditional record selection, sorting, translating, matching, and merging can all occur with only one read of the master file. For further efficiency, Advantage VISION:Report for VSE also:

- Handles internal sorts in one statement.
- Releases and returns records from SORT in one easy step.
- Accepts compound conditional IF statements, allowing for complex data selection.
- Allows conditional branching.

Advantage VISION:Report for VSE operates under VSE/SP/ESA.

## Installing and Accessing the Documentation

Before you install Release 16.1 of Advantage VISION:Report for VSE, read this section.

### CD-ROM Contents

The CD-ROM contains:

- Advantage VISION:Report Advantage VISION:Forms Reference Guide  
RPREF161
- Advantage VISION:Report Advantage VISION:Forms for VSE  
Installation Guide  
RPINV161
- Advantage VISION:Report Advantage VISION:Forms for VSE  
Getting Started Guide  
RPGSV161
- Advantage VISION:Report Messages and Codes  
RPMMSG160
- VISION:Forms Reference Guide  
FOREF307
- VISION:Forms Tutorial  
FOTUT307
- Advantage VISION:Report Interface to DB2 Reference Guide  
ILREF161
- Advantage VISION:Report Interface to DB2 Installation Guide  
ILINV161
- Adobe® Acrobat® Reader software and Help

### About the Online Documentation

The CD-ROM contains the documentation for Advantage VISION:Report for VSE. The documents are in Adobe Acrobat Portable Document Format (PDF) and are designed for you to read online using the Acrobat Reader.

Each online document contains a table of contents, index, and underlined blue hypertext links. To go directly to the chapter, section, or topic, click the hypertext link.

## Installing Online Documentation and the Acrobat Reader

You can install the online documentation on your local hard drive or on a network server. Alternatively, you can access the documentation directly from the CD-ROM.

If you do not have Acrobat Reader installed, you can install it from the CD-ROM.

### To install the online documentation, the Acrobat Reader, or both

1. Close all application programs, including screen-saver software.
2. Insert the CD-ROM into the CD-ROM drive.
3. Click the Start menu and select Run.
4. In the Run dialog box, type: D:\Books\Setup.exe, where D: is the CD-ROM drive.  
To complete the Run dialog box and continue, click OK.
5. Follow the instructions. Computer Associates recommends that you install the online documentation in the default directory (C:\ProgramFiles\Computer Associates\VISION\_Report 16.1 VSE\Books\) or a directory of your choice (for example, C:\VISION\_Report 16.1 VSE\Books\).

## Viewing Online Documentation

Regardless of the location of the online documentation (on a local drive, a network server, or CD-ROM), you can view the online documentation using the following methods:

- Click the Start menu, point to Programs, point to VISION\_Report 16.1 VSE, and click the document title.
- In Windows Explorer, point to the directory on the hard drive where you installed the online documentation. Double-click the PDF file name.
- In Windows Explorer, point to the Books directory on the CD-ROM drive and double-click the PDF file name.

## Using Adobe Acrobat Reader

Use Acrobat Reader to view the online documentation, adjust the size of the page, perform searches, and print a range of pages. For more information, use the Acrobat Help menu.

## Contacting Computer Associates

For technical assistance with this product, contact Computer Associates Technical Support on the Internet at [esupport.ca.com](http://esupport.ca.com). Technical support is available 24 hours a day, 7 days a week.



# New Features and Functions

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## Enhancements for VISION:Report Release 16.1

The main enhancements of VISION:Report 16.1 are:

- Support VRDS file structure
- Support KSDS files with a logical record length greater than 32K
- Support up to a maximum of 256 files that are opened at the same time
- DB2 Connect command enhancement (using the DB2 Interface Component)
- License Management Program (LMP) Support
- Two native VSAM commands: CLOSER and TCLOSE
- 31-bit address mode
- Improved performance when CA-Datcom VSAM interface is invoked
- Ability to specify new SORT options on the SORT statement

### Support VRDS File Structure

VRDS supports numbered records with a maximum record size as part of the record.

### Support KSDS Files With LRECL Greater Than 32K

Support for KSDS files with a logical record length greater than 32K is increasing the LRECL. This requires the appropriate request for storage, and being able to reference beyond 32K in QUIKVSAM.

### Support 256 Concurrent Open Files

Increase table size to accommodate 256 files (i.e., KSDS, RRDS, ESDS, etc.) being open at the same time, and being able to track them.

## DB2 Connect Command Enhancement

VISION:Report 16.1 for VSE has added additional parameters to the DB2 CONNECT command in the VISION:Report Interface to DB2 component of the product. The new DB2 CONNECT command syntax is as follows:

CONNECT {parameter1 IDENTIFIED BY parameter2} {TO parameter3}  
where:

- Parameter1 is either authorization\_name or host\_variable
- Parameter2 is either password or host\_variable
- Parameter3 is either server\_name or host\_variable

Example 1 below connects to DB2 via SQL host\_variables, which are defined in the program and assigned these values:

- AUTH1 = DYLB
- PASSWD1 = DYLPW
- SERVER1 = SQLDS
- AUTH2 = DYLC
- PASSWD2 = DYLPW2
- SERVER2 = DYLB1B

```
PERFORM 600 THRU 700      (to get the server name of the first server)
```

```
EXEC SQL CONNECT  
:AUTH2 IDENTIFIED BY :PASSWD2 TO:SERVER2  
END EXEC
```

```
PERFORM 600 THRU 700      (to get the server name of the second server)
```

```
600 EXEC SQL SELECT  
      CURRENT SERVER  
      INTO :CURRENTSERVER  
      FROM SQLDBA.SYSUSERLIST  
END EXEC
```

```
MOVE CURRENTSERVER TO PRT20  
PRINT
```

```
EXEC SQL COMMIT  
END EXEC
```

```
700 EXIT
```

## License Management Program (LMP)

This enhancement moves the product forward to take advantage of the Computer Associates License Management Program (LMP) program. It is an automated, standardized approach to license management and designed to eliminate problems in tracking the licensed use of Computer Associates products.

## Native VSAM Commands

Two new native VSAM commands have been added: CLOSER and TCLOSE, which allow native VSAM commands to be the same as calling QUIKVSAM. CLOSER calls independent VSAM services to close, then reopen a VSAM data set. VISION:Report does not release the data set. TCLOSE is a temporary close of the data set, but VSAM does not release control of it.

## 31-bit Address Mode

This enhancement simply moves the product forward to take advantage of the increased storage provided when running applications in 31-bit mode as opposed to 24-bit mode.

## Improved Performance When CA-Datcom VSAM Interface Is Invoked

QUIKVSAM performance can be enhanced when the CA-Datcom VSAM Transparency (Interface) module is invoked. Previously, the CA-Datcom VSAM Transparency module could not emulate the SHOWCAT facility. It also could not function efficiently when no VSAM files were previously accessed and GENCB, MODCB, SHOWCB, or TESTCB macros were issued. This version of QUIKVSAM will not use the 'xxxxCB" macros.

## Specify New SORT Options On The SORT Statement

There are various new specifications of SORT options on the SORT statement. They are in the format XXVVVVVVVV, where XX is the option and VVVVVVVV is the value. The format is similar to the record length specification RL00352. The new specification options include:

- GV - Overrides installation default sort size
- PG - Sort program name
- PR - Printing of message option and overrides SORTPRT option
- RT - Sort message routing
- ST - Storage value specified in bytes
- WF - Number of work files
- WN - Name of work files

# Installation Overview

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This chapter provides a brief overview of the installation procedure for VISION:Report in the VSE environment. For detailed installation instructions, refer to the respective Advantage VISION:Report for VSE Installation Guide.

## Installation Steps

If you have not done so already, please contact Computer Associates for proper LMP key(s).

### To install VISION:Report on a VSE system

1. Prepare JCL and call it QJINSTL. This restores File 1 from the distribution tape, and link edit object modules in the Phase sublibrary. (Refer to the *Advantage VISION:Report Advantage VISION:Forms for VSE Installation Guide*, for a sample JCL of QJINSTL.)
2. Punch out members QJOPTREC and ASMQJOPT from the restored Advantage VISION:Report for VSE library.
3. Customize ASMQJOPT and insert member QJOPTREC where instructed. (Refer to the *Advantage VISION:Report Advantage VISION:Forms for VSE Installation Guide*.)
4. Run member ASMQJOPT to assemble and link the QJOPTION block.
5. Punch out member QJTSTPGM, and then modify and submit to test your installation. (Refer to the *Advantage VISION:Report Advantage VISION:Forms for VSE Installation Guide*, for a sample JCL of QJTSTPGM.)



# Upgrading from Previous Releases

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This chapter is designed to assist you in migrating from previous releases of Advantage VISION:Report for VSE. Carefully review the following sections for situations that could apply to your installation.

## Command and Keyword Syntax

With the exception of features and options added to the Advantage VISION:Report for VSE language, the original syntax of this product has not changed.

If your Advantage VISION:Report for VSE source programs follow the syntax as described in the Advantage VISION:Report for VSE Reference Guide, you should not experience any difficulty in migrating to the new release of Advantage VISION:Report for VSE, especially if you have been implementing previous releases in a timely manner.

If you have previously implemented Release 15.0 or 15.1 of Advantage VISION:Report for VSE, most of the common syntax problems should have already been resolved. To verify your syntax, check your current production Advantage VISION:Report for VSE programs prior to the implementation of these releases. Simply use the EDIT=YES option. EDIT=YES performs syntax checking and creates a proof copy of report output without executing the program.

To easily test your most critical production Advantage VISION:Report for VSE programs in one execution, generate your QJOPTION block with all your normal options and EDIT=YES. Assuming your Advantage VISION:Report for VSE source programs are in a partitioned data set or library, simply set up a job stream to find out whether your Advantage VISION:Report for VSE programs compile correctly. Then, before using the new version of Advantage VISION:Report for VSE in a production environment, remove the EDIT=YES option and run your most critical production programs to ensure that they perform as intended.

If you receive diagnostic errors in programs that worked in previous releases, most likely the syntax was incorrect. The most common problems include commands or parameters being misspelled, optional parameters not in the proper order, and non-existent optional parameters at the end of an otherwise valid statement. All keyword validation has been strengthened and all keywords or parameters must be spelled correctly or completely in order to pass diagnostics.

## Compatibility Mode

If you need to run Advantage VISION:Report for VSE in a compatibility mode with previous releases, there is a member called ZAPCOMP that applies all of the necessary Program Compatibility Patches (PCPs) to make this release compatible with the previous release. You should carefully review all the PCPs, to determine which applies to your company, before running the job.

**Note:** Evaluate ZAPCOMP members carefully.

We recommend that you do not modify the original modules, but run ZAPCOMP against a separate library, such as PCPLIB.

The member ZAPCOMP is in the SAMPLIB under MVS, and in the source sublibrary for VSE.

## Common Syntax Problems

The following exhibits some of the more common syntax problems. The errors are shown in bold print.

- The SORT command left out the ON noise word.

```
SORT flddefl RLnnnn etc          should be:  
SORT flddefl RLnnnn ON etc
```

- The MOVE command was misspelled.

```
MOV A TO B                       should be:  
MOVE A TO B
```

- The mandatory keyword TO was left out.

```
MOVE INF1-2 PRT1                 should be:  
MOVE INF1-2 TO PRT1
```

- Invalid keyword or parameters were entered, possibly in the wrong sequence. The MOVE command can be used with either an edit code or a variable length operand, but not both at the same time.

```
MOVE A TO B 0C X           should be:
MOVE A TO B 0C           (MOVE with Edit Code) or
MOVE A TO B X             (MOVE Variable Length)
```

- An invalid keyword was used in an improper sequence or place; in this case, EQU cannot be substituted for EQ.

```
IF A EQU B                 should be:
IF A EQ B
```

- Invalid keyword or parameters were entered at the end of an otherwise valid statement. There is no THRU statement number option.

```
GET INF ATEND 700 THRU 900 should be:
GET INF ATEND 700
```

- Invalid keyword or parameters were entered. There is no GIVING optional parameter to the ADD verb.

```
ADD A TO B GIVING C       should be:
ADD A TO B                 (results were never put in C)
```

- Initialization constants must follow edit specification. Some earlier releases did not enforce this coding rule completely.

```
EQU fldname WST1-10 ZEROS 0C should be:
EQU fldname WST1-10 0C ZEROS
```

- One or more spaces did not follow the statement before the optional comments.

```
MOVE A TO B/*             should be:
MOVE A TO B /*
```

- The MULT and DIVD verb did not have the required BY and GIVING keywords.

```
DIVD A B C                should be:
DIVD A BY B GIVING C
```

- The Option R for rounding in the MULT and DIVD verb cannot be separated by a space from flddef3.

```
MULT flddef1 0D BY flddef2 0D GIVING flddef3 0D R
should be:
MULT flddef1 0D BY flddef2 0D GIVING flddef3 0DR
```

- You cannot add fields that contain non-leading blanks or spaces.

```
ADD INF1 TO WST1          where INF is "1 234"
```

- Duplicate sequence numbers are not allowed, even with OPTION SEQCHK= NO.

```
190 MOVE A TO B
190 MOVE C TO D          should be:
200 MOVE C TO D
```

- Previous releases checked only the first letter of the required keyword.

```
TRACE Lxxxxx or TRACE Axxxxx or TRACE Oxxxxx
should be:
TRACE LAST50 or TRACE ALL or TRACE OFF
```

- Numeric fields should be initialized or values moved in prior to any arithmetic operations. EBCDIC fields should be initialized to zeros (X'F0F0...'). Blanks are accepted, but not recommended. Packed fields should be initialized to packed zeros (X'...000C'). Binary fields should be initialized to binary zeros (X'0000'). The most convenient way to initialize storage at the beginning of a job is with an EQUate statement.

```
EQU PK-FIELD WST1-3-P ZERO
ADD P'1' TO PK-FIELD
```

It should not be assumed that an area of storage is initialized properly for arithmetic operations. Assume, in the following example, that working storage area, WST1-3, has not been properly initialized (WST is initialized to low values at the beginning of a job unless set to another value by an EQUate statement).

```
ADD P'1' TO WST1-3-P          should be:
MOVE ZEROS TO WST1-3-P
...
ADD P'1' TO WST1-3-P
```

When moving packed and binary fields to PTR or PTX, and editing is to be performed, you must code the type of editing required. The number of decimal points wanted (0 through 9) is a requirement. By using the number of decimal editing, all positions from the packed or binary field will be printed. In the following example, assume that 12345 is in WST1-3-P:

```
MOVE WST1-3-P TO PRT1 0      Results= 12345
MOVE WST1-3-P TO PRT1 0C    Results= 12,345
MOVE WST1-3-P TO PRT1      Results= 5 (no editing
                             performed)
```

When specifying the number of decimal points, you cannot use 'D' on the MOVE statement. In this example, again assume that 12345 is in WST1-3-P:

```
MOVE WST1-3-P TO PRT1 0D    Results= error
```

Packed fields in the prior releases always put a blank edit fill character in the first print position you specified when moving packed fields to PRT. Again, in this example, assume that 12345 is in WST1-3-P:

```
MOVE WST1-3-P TO PRT1 0      Results= depend on release
```

The results in prior releases would have a blank in print position 1 and 12345 in positions 2 through 6, which was invalid and should have been 12345 in positions 1 through 5.

- Only reference an offset in a header that is smaller than you are allowed in the PRTSIZE option. Assume that PRTSIZE is set to 121.

```
MOVE HDA1-133 TO OFA1      should be:
MOVE HDA1-120 TO OFA1      /* HDA121 is invalid
```

- Using the OPTION SEQCHK=YES, all statements other than the OPTION and VSE I/O statements must have sequence numbers coded, including EQU statements. Assume OPTION SEQCHK=YES was specified:

```
EQU ABC WST1-8            should be:
010 EQU ABC WST1-8
```

Because most source programs are stored on disk, the usage of SEQCHK=YES is not needed in most cases.

- Duplicate EQU names, unless used in redefining an area previously defined (by the same name), are not allowed.
- On the BREAK statement, the obsolete SB and SA parameters M, N, and P were ignored in previous releases, but not flagged as errors. It can only be 0, 1, or 2.

```
BREAK 1 INF... SB N SA M   should be:
BREAK 1 INF... SB 1 SA 0
```

- When specifying number of decimal points, 'D' cannot be used on the MOVE statement. nD is not a valid option for an edit code; only C, E, or N is supported. An edit code other than C, E, or N is accepted only if defined in the user edit macro table, and it is specified without a numeric prefix. Assume that WST1-3-P contains 12345:

```
MOVE WST1-3-P TO PRT1 0D   should be:
MOVE WST1-3-P TO PRT1 0C
```

- On the RETURN SORTED statement, 'INTO' is the correct syntax, not 'TO'.

```
RETURN SORTED TO WST1      should be:
RETURN SORTED INTO WST1
```

- When using STMTEND=nn option, you should not have any data in the next column after the column a statement ends in, as the next position immediately to the right (nn plus 1) designates whether or not the current statement is to be continued to the next statement. This is true, even if it is part of a comment (/\*). Ensure that comments terminate before the STMTEND column. Assume that STMTEND=71:

```

                                COL7
                                2
MOVE ABC TO XYZ /* MOVE AR-ACCOUNT-CODE should be:
MOVE ABC TO XYZ /* MOVE AR-ACCOUNT-CODE

```

- When using the ACCUM command into a CTX counter, be careful that the number of bytes specified elsewhere is addressed correctly by using the low order.

```

REPORT          field 1   CTA1-2-P          should be:
REPORT          field 1   CTA7-8-P
:
:
:
ACCU            field 1   IN A 2 BYTE CTA

```

- The HDR statement must begin in positions 5, 6 or 7, allowing possible sequence numbers to be in positions 1 through 4. The positioning of the HDR statement must follow the syntax:

```

. .+. .10. .+.
HDR etc          should be:
HDR etc

```

If you receive a diagnostic error that you did not receive in a previous release, verify the syntax in the Advantage VISION:Report for VSE Reference Guide. If, after changing the statement to conform with the syntax, it still does not compile without diagnostics, then contact Computer Associates Technical Support.

## Memory Allocation

To increase the number of available input and output files, Advantage VISION:Report for VSE now allocates and utilizes memory (storage) and input/output buffers more efficiently. Specifically, Advantage VISION:Report for VSE obtains only the amount of memory requested, directly or indirectly.

If programs written under previous releases referenced memory beyond what was defined, they could abnormally terminate, usually with an operation or protection exception. This generally occurs when storage is overlaid by an incorrect memory specification.

The following is a list of situations that can cause memory allocation errors.

- Loading a table and exceeding the space requested or searching through a table and exceeding its limit. When loading or searching through tables, a check must be made to ensure that its limit is not exceeded. SET PTR instructions should be examined to ensure that they do not exceed the table's specified maximum entries.
- Specifying a record length and/or block size smaller than the file characteristics and then addressing or moving data to an area beyond what was specified. Because I/O buffers for the exact record size are requested, this could cause a protection exception. Sometimes this can be subtle, such as a VSAM file defined outside the job stream or a variable length file exceeding its specified maximum record length or block size.
- Referencing a field in a file area before opening the file. If you coded an explicit OPEN file statement, this can cause an ABEND by deferring the allocation of memory for the file area. Code the OPEN statement before referencing the field.
- Moving a field to another area that is smaller or beyond the maximum limits. This could cause memory to be overlaid or cause an ABEND. For example, if a SAVAREA was defined as 500 bytes maximum and you coded MOVE WST1-10 TO SAV495, the memory after SAV500 would be overlaid, resulting in unpredictable results.
- Migrating to another release of an operating system. This could cause an ABEND, for the same reasons stated above. The memory that was obtained from the new operating system can be in a different area or more restrictive; violations will cause an ABEND.

## Printer Output

If programs written under previous releases were adjusted to accommodate these inconsistencies, you can experience spacing problems in reports that are sensitive to exact alignment (for example, preprinted forms or labels). If your installation creates these types of reports, before using this new release of Advantage VISION:Report for VSE in a production environment, run these jobs to ensure that they perform as intended.

