

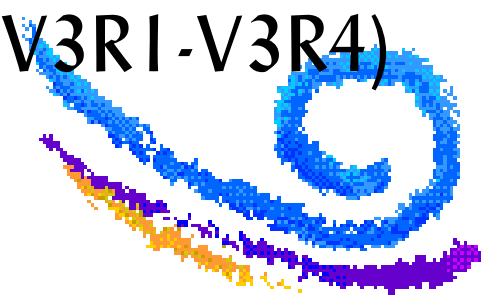
# **New Tricks for Old Dogs**

**COBOL Changes - Big Picture**

# Recent Compiler Versions

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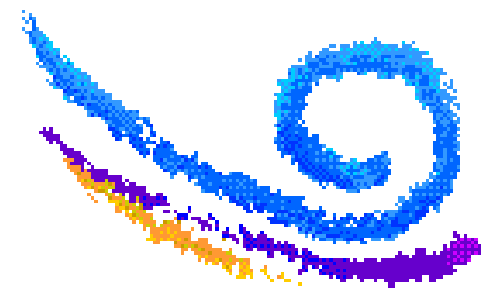
- ▶ OS/VS COBOL - no longer supported
- ▶ VS COBOL II - no longer supported
- ▶ All compilers after this require Language Environment (LE):
  - COBOL/370 - no longer supported (V1R1)
  - COBOL for MVS & VM - no longer supported (V1R2)
  - COBOL for OS/390 & VM (V2R1, V2R2)
  - IBM Enterprise COBOL for z/OS & OS/390 (V3R1-V3R4)
    - V4R1 announced December, 2007



# Major New Features - General

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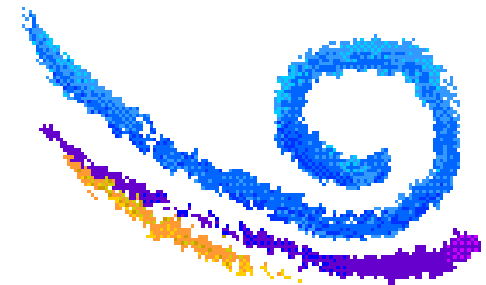
- ▶ Pointers and Address-of special register
- ▶ Reference modification (sub-stringing)
- ▶ Scope-terminators (END-*verb*)
- ▶ In-line PERFORM
- ▶ INITIALIZE statement
- ▶ EVALUATE statement
- ▶ Intrinsic function support
- ▶ Increased element and table size (128Mb)



# Major New Features - General, continued

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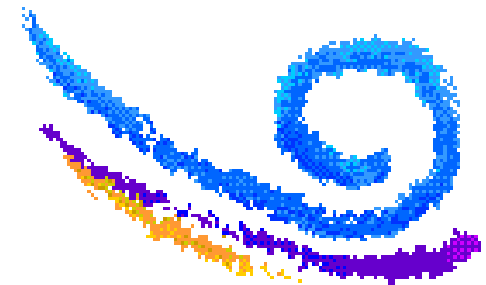
- ▶ Local-storage section
- ▶ Recursive programs
- ▶ DLL (Dynamic Link Library) support
  - Code DLLs in COBOL, call from other languages
  - Call DLLs from COBOL program
- ▶ Dynamic file allocation
- ▶ Support for HFS (Hierarchical File System) files
- ▶ Compile and run under z/OS UNIX
- ▶ DB2 co-processor
- ▶ CICS co-translator



# Major New Features - LE functions

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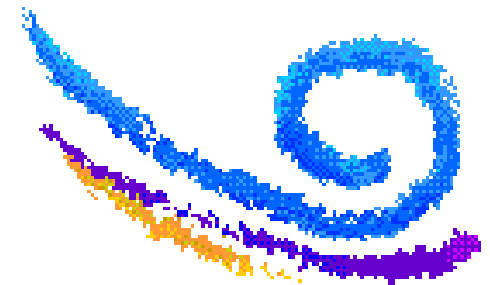
- ▶ Dynamic allocation of storage
  - Build large tables outside of load module
- ▶ Error handling
  - No need for Assembler STAE or SPIE routines
- ▶ New dump format
  - Ability to take snapshot memory dumps
- ▶ International services
  - Date, time, currency formatting, for example



# Major New Features - Improved interoperability with C

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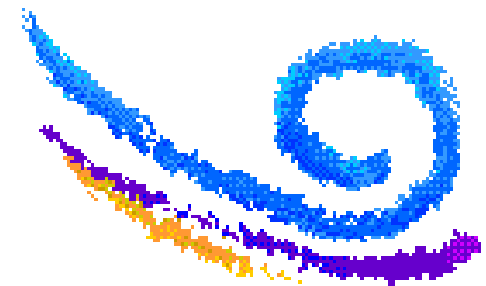
- ▶ Null-terminated strings
- ▶ Long names, mixed-case names
- ▶ Pass arguments in alternative ways
  - By reference - pointer to item
  - By content - pointer to copy of item
  - By value - copy of item in argument list directly
- ▶ Function-like behavior ("RETURNING" clause)



# Major New Features - Internet / Web oriented

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- ▶ Unicode support - translate between codepages
- ▶ XML support
  - XML PARSE
  - XML GENERATE
- ▶ Object Oriented COBOL
  - Uses JVM (Java Virtual Machine)
- ▶ COBOL - Java Interoperability





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