Mainframe Vs ANSI Rexx   by H. Fosdick   © 2024 **RexxInfo.org**

These charts enumerate the exact differences between ANSI-standard Rexx and mainframe Rexx. They may be helpful in language conversions, or if you know one of these two language variants and want to learn the other.

Profiles

	ANSI Rexx	Mainframe Rexx
Usage	* A superset of the original TRL-2 language definition defined in 1996 * Runs on all platforms from cell phones to supercomputers * Several open source interpreters available	* Default scripting language for all IBM mainframe operating systems * The only high-level language that interfaces to all mainframe environments and address spaces
Compiler Available	No	Yes
Open Source	Yes	No
Programming Paradigms	Scripting, Procedural, Functional (not object-oriented)	Scripting, Procedural, Functional (not object-oriented)
User Group	Rexx Language Association	Rexx Language Association
Quick Online Lookup	Quick Lookup	Quick Lookup
Reference Card (printable PDF)	ANSI Rexx	Mainframe Rexx
Forum	RexxLA forum	RexxLA forum, Mainframe Experts Forum (Rexx Thread)
Further information	RexxInfo.org	RexxInfo.org

Language Comparison

	ANSI Rexx	Mainframe Rexx
Requires "Rexx" in 1st line comment	No	Usually
ANSI Symbols (aka character set)	Yes	Yes, a superset
ANSI standards for case-insensitivity, free formatting, etc	Yes	Yes

ANSI String Notations (character, hexadecimal, and binary)	Yes	Yes
ANSI Notations for statement separator, line continuation, comments, assignment, etc	Yes	Yes
ANSI Notation for Parentheses (following functions and for expression evaluation)	Yes	Yes
ANSI Notation for Operators (Arithmetic, Comparison, Logical/Boolean, and Concatenation)	Yes	Yes
ANSI Notation for Compound Variables	Yes	Yes
Instructions Conform to ANSI-1996	Yes	Many small differences from ANSI, listed below
Functions Conform to ANSI-1996	Yes	Many small differences from ANSI, listed below
Includes Instructions beyond ANSI	No	UPPER
Includes Functions beyond ANSI	No	EXTERNALS, FIND, INDEX, JUSTIFY, LINESIZE, USERID
Stream I/O	Yes	z/OS: yes, if Stream I/O Package is installed z/VM: yes
EXECIO	No	Yes
Array Read & Write	No	Yes with EXECIO
DBCS Support	No	Yes via 13 functions
TSO/E External Functions	No	z/OS: yes, 19 External Functions z/VM: covers many of these through similar VM commands
TSO/E Rexx Commands	No	z/OS: yes, 10 Rexx Commands z/VM: covers many of these through similar VM commands
Explicit Terminal Buffer/Stack Manipulation Commands	No	Yes
Run an Operating System Command	Just issue the command string	Just issue the command string

Mainframe Instructions that Differ from ANSI-1996

Instruction	Mainframe Rexx
ADDRESS	z/OS and z/VM do not support two formats introduced by ANSI-1996: ADDRESS [environment] [command] [redirection] ADDRESS [[VALUE] expression [redirection]]
CALL	z/OS does not support NOTREADY

PARSE	z/OS and z/VM add two more template options: EXTERNAL and NUMERIC. z/OS only supports the LINEIN option if the Stream I/O package is installed, while VM supports this natively.
SIGNAL	z/OS supports the conditions ERROR, FAILURE, HALT, NOVALUE, and SYNTAX. z/VM supports ERROR, FAILURE, HALT, NOTREADY, NOVALUE, and SYNTAX. Neither support LOSTDIGITS.
TRACE	z/OS and z/VM support the additional flags: ! and S. They also support this alternative format for the trace instruction: TRACE [string] | [symbol] | [[value] expression]
UPPER	A mainframe-only instruction (not in ANSI)

Mainframe Functions that Differ from ANSI-1996

Function	Mainframe Rexx
ADDRESS	z/OS and z/VM do not support this format: ADDRESS([option])
CHANGESTR	Unsupported by z/OS and z/VM
CHARIN	Supported by z/OS if the Stream I/O Package is installed, while VM supports this natively.
CHAROUT	Supported by z/OS if the Stream I/O Package is installed, while VM supports this natively.
CHARS	Supported by z/OS if the Stream I/O Package is installed, while VM supports this natively. z/OS and z/VM only support the format of the CHARS function without the C or N option. Returns 1 if there is at least one character available in the stream and 0 otherwise.
COUNTSTR	Unsupported by z/OS and z/VM
DATATYPE	z/OS and z/VM add two more TYPES to the list: C -- returns 1 if string is a mixed SBCS/DBCS string D (Dbcs) -- returns 1 if string is a DBCS-only string enclosed by SO and SI bytes
DATE	z/OS and z/VM add two more OPTION_OUT parameters: C (Century) -- the number of days, including the current day, since and including January 1 of the last year that is a multiple of 100 in the form: ddddd (no leading zeros) J (Julian) -- date in the format: yyddd
EXTERNALS	A mainframe-only function (not in ANSI) z/VM: returns the number of elements in the terminal input buffer (system external event queue) z/OS: there is no equivalent buffer. Therefore, in the TSO/E implementation of REXX, the externals function always returns a 0
FIND	A mainframe-only function (not in ANSI)
INDEX	A mainframe-only function (not in ANSI)
JUSTIFY	A mainframe-only function (not in ANSI)
LINEIN	Supported by z/OS if the Stream I/O Package is installed, while VM supports this natively.

LINEOUT	Supported by z/OS if the Stream I/O Package is installed, while VM supports this natively.
LINES	Supported by z/OS if the Stream I/O Package is installed, while VM supports this natively. z/OS and z/VM only support this format: LINES([name]) z/VM: the function returns the number of completed lines remaining in the character input stream.
LINESIZE	A mainframe-only function (not in ANSI). z/VM: returns the current terminal line width. Returns 0 in any of these cases: * Terminal line size cannot be determined. * Virtual machine is disconnected. * The command CP TERMINAL LINESIZE OFF is in effect. z/OS: if the script runs in foreground, returns the current terminal line width minus 1 (the point at which the language processor breaks lines displayed by the say instruction). If the script runs in background, this function always returns 131. In non-TSO/E address spaces, this function returns the logical record length of the OUTDD file (default is SYSTSPRT).
QUALIFY	Unsupported by z/OS and z/VM
STREAM	Supported by z/OS if the Stream I/O Package is installed, while VM supports this natively. Options are implementation and platform dependent, refer to the manual for your interpreter.
TIME	z/OS and z/VM support solely this format: TIME(option_out)
TRACE	z/OS and z/VM support two additional settings: ! and S
USERID	A mainframe-only function (not in ANSI)

Based on *RexxInfo.org charts*, *TSO/E REXX Reference*, and *REXX VM Reference*.