IBM Education Assistance for z/OS V2R2

Item: XMLSS SIMD Support
Element/Component: z/OS BCP (XML System Service)

Material current as of May 2015

© 2015 IBM Corporation

Agenda

- Trademarks
- Presentation Objectives
- Overview
- Usage & Invocation
- Interactions & Dependencies
- Appendix

© 2015 IBM Corporation

Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.

© 2015 IBM Corporation

Presentation Objectives

- Describe the new function in XML System Services called SIMD for vector processing.
  - This function allows a caller to parse XML document with SIMD support during a non-validating parse.
  - The function is part of the product (not separately installed).
  - The new function is invoked by initializing the parser with a new feature flag.
  - Logic view and related data areas will be reviewed.
  - Service aides related to XML System Services have not changed with this support.
  - Outline publication updates.

© 2015 IBM Corporation

Overview

- SIMD – Simple Instruction Multiple Data
  - This is a hardware exploitation to allow the non-validating parser could parse with the advantage of vector processing instructions.
- Solution
  - Provide a new parser module that allows the caller have the option to perform XML document with vector processing instructions.
- Benefit / Value
  - With the new hardware support, the parsing performance might be enhanced.

© 2015 IBM Corporation

Usage & Invocation

- Big Picture of new function
  - There is no behavior difference except the initialization option.
  - The customer might get performance improvement.

- This function is enabled by a new parser initial operation that is specified on a call to gxlpInit.
  - XEC_FEAT_ALLOW_VECTOR
    - This step needs to be performed in parser initialization.

© 2015 IBM Corporation

Usage & Invocation

- Other Dependencies to Actually Enable SIMD
  - Only all of the below 3 conditions are true, SIMD is enabled
    - XEC_FEAT_ALLOW_VECTOR feature is enabled
    - Vector support is allowed with the hardware and software
    - The parser is not called in non-preemptive SRB mode.

- Interactions
    - The new feature is only compatible with non-validating parser.
    - Below feats are not allowed in combination with any of the following features:
      - GXLHXEC_FEAT_VALIDATE
      - GXLHXEC_FEAT_SCHEMA_DISCOVERY
      - GXLHXEC_FEAT_XDBX_INPUT

© 2015 IBM Corporation

Usage & Invocation

- The API sequence is as usual:
  - gxlpInit(GXLHXEC_FEAT_ALLOW_VECTOR)
    - Initialize the parser with SIMD support
  - gxlpControl()
    - Set control options
  - gxlpParse(...)
    - Parse the the document in non-validation mode
  - gxlpTerminate(...)
    - Terminate the parse instance

© 2015 IBM Corporation

Interactions & Dependencies

- Hardware Dependencies
  - SIMD support
- Software Dependencies
  - None
- Exploiters
  - Any callers that want to have the SIMD performance benefit.

© 2015 IBM Corporation

Appendix

- XML System Services User's Guide and Reference
  - http://publibz.boulder.ibm.com/epubs/pdf/gxlza140.pdf

- XML System Services web page
  - http://www.ibm.com/servers/eserver/zseries/zos/xml

© 2015 IBM Corporation