z/OS 3.1 IBM Education Assistant

Solution Name: Remove HWIREST restriction on ISV/TSO rexx

Solution Element(s): z/OS BCPii

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Agenda

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Trademarks

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

- Additional Trademarks:
    - None

Objectives

- Describe the z/OS BCPii enhancement to HWIREST on behalf of TSO/E REXX and ISV REXX applications

Overview

- ## Who (Audience)

  - Users of the z/OS BCPii whose applications execute in ISV REXX and TSO/E environments

- ## What (Solution)

  - z/OS BCPii delivers support that allows TSO/E REXX and ISV REXX application the ability to issue commands previously not permitted for those environments. This includes the ability to activate and load LPARs, issue requests to the console, and more

- ## Wow (Benefit / Value, Need Addressed)

  - Although BCPii is the primary automation interface for hardware and firmware used by customers and ISV's, it previously restricted applications executing in TSO/E REXX and ISV REXX interfaces from being able to deploy systems and more. With this enhancement, TSO/E REXX and ISV REXX application gain unrestricted access to all supported REST API operations (Appendix A of the [Hardware Management Console Web Services API](#))

Usage & Invocation

- Unrestricted access to all supported REST API operations listed under Appendix A of the [Hardware Management Console Web Services API](#) for TSO/E REXX and ISV REXX applications

- Support for HWIREST invocation via AXR MODIFY command

Action	Request X-API-Target-Name	FACILITY Class Profile	Minimum Access	Description
Query Job Status GET /api/jobs/{job-id}	netid.nau OR netid.nau.imagename	HWI.TARGET.netid.nau OR HWI.TARGET.netid.nau.imagename	READ	Where netid.nau represents the 3– to 17–character SNA name of the particular CPC and imagename represents the 1– to 8–character LPAR name. The call should re-use the target name associated with the originating operation that resulted in this job URI, which may have been either against a CPC or an LPAR.
Delete Completed Job Status DELETE /api/jobs/{job-id}	netid.nau OR netid.nau.imagename	HWI.TARGET.netid.nau OR HWI.TARGET.netid.nau.imagename	CONTROL	Where netid.nau represents the 3– to 17–character SNA name of the particular CPC and imagename represents the 1– to 8–character LPAR name. The call should re-use the target name associated with the originating operation that resulted in this job URI, which may have been either against a CPC or an LPAR.
Cancel Job[1] POST /api/jobs/{job-id}/operations/cancel	netid.nau OR netid.nau.imagename	HWI.TARGET.netid.nau OR HWI.TARGET.netid.nau.imagename	CONTROL	Where netid.nau represents the 3– to 17–character SNA name of the particular CPC and imagename represents the 1– to 8–character LPAR name. The call should re-use the target name associated with the originating operation that resulted in this job URI, which may have been either against a CPC or an LPAR.

[1]This operation is not permitted for BCPii REXX execs running in the TSO/E environment or an ISV-provided REXX environment unless z/OS is version 2.4 or 2.5 with APAR OA61976 applied or a later z/OS version.

"Console object" on page 747:

Action	Request X-API-Target-Name	FACILITY Class Profile	Minimum Access	Description
Get Console Properties GET /api/console	netid.nau	HWI.TARGET.netid.nau	READ	Where netid.nau represents the 3– to 17–character SNA name of the particular CPC the console is associated with.
Restart Console[1]	netid.nau	HWI.TARGET.netid.nau	CONTROL	Where netid.nau represents the 3– to 17–character SNA name of the particular CPC

Interactions & Dependencies

- Software Dependencies
  - None

- Hardware Dependencies
  - None

- Exploiters
  - None

Upgrade & Coexistence Considerations

- To exploit this solution, all systems in the Plex must be at the new z/OS level: No

Installation & Configuration

- Part of z/OS 3.1 base

- APAR OA61976
    - Rolled down to z/OS 2.4
    - IPL is required after applying the APAR

Summary

- TSO/E REXX and ISV REXX applications can now take full unrestricted advantage of HWIREST

Appendix

- Publication References

  - Syntax of HWIREST and other useful BCPii information: [IBM z/OS MVS Programming: Callable Services for High-Level Languages](#)

    - [z/OS MVS Programming: Callable Services for High-Level Languages PDF](#)

  - Supported REST API operations: [Hardware Management Console Web Services API, Appendix A, available on Resource Link:](#) Library -> z15 or higher -> Hardware Management Console Web Services API)

  - [MVS System Management Facilities (SMF): BCPii SMF 106](#)

  - [MVS System Codes: BCPii System Code '042'X](#)

  - [MVS System Messages, Vol 6 (GOS-IEA) HWI mesages](#)

  - [z/OS MVS Diagnosis: Tools and Service Aids - SYSBCPII component trace](#)

  - [zOS Hot Topics: BCPii - A RESTed development](#)

- External github repo with HWIREST samples
  - https://github.com/IBM/zOS-BCPii