

z/OS 3.2 IBM Education Assistant

Solution Name: Connect Timeout option for HWTHSET

Solution Element(s): 5752SCHWT z/OS client web enablement toolkit

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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

- High performance applications on z/OS should be able to quickly find available and responsive cloud endpoints.
- Applications with backup endpoints should not need to wait a long time before failing over to their backups.
- Applications should be able to respond quickly to network disruptions.
- However:
 - Applications using the HWTHTCONN service may be blocked by an unresponsive connection attempt for longer than they expect.
 - The current TCP connect timeout setting is defined once for an entire TCP stack.
 - This timeout value is typically set very slow, by default 75 seconds !!
- How do we make the timeout quicker?

Overview

- Who (Audience)
 - Users of the HTTP Enabler portion of the z/OS client web enablement toolkit
- What (Solution)
 - Applications can set a custom timeout for the initial TCP connection handshake using the HWTHTSET option HWTHT_OPT_CONNECT_TIMEOUT_MS
- Wow (Benefit / Value, Need Addressed)
 - Applications can save up to several minutes on a single bad connection attempt

Usage & Invocation

A new connection option is added:

- `HWTH_OPT_CONNECT_TIMEOUT_MS`
 - By default, this setting is disabled, and the TCP stack timeout applies.
 - An integer value in the range of 1 - 190,000 may be provided to set a connect timeout value in milliseconds.
 - If set longer than the TCP stack timeout, the stack timeout will apply.
 - This setting primarily applies to the `HWTHCONN` service.
 - It also applies to any `HWTHRQST` that performs a cross-domain redirect.
 - The value may be modified during an active connection to give future cross-domain redirects either stricter or more lenient of a timeout window.
 - Existing options `HWTH_OPT_SNDTIMEOUTVAL` and `HWTH_OPT_RCVTIMEOUTVAL` continue to apply.

Interactions & Dependencies

- Software Dependencies
 - None
- Hardware Dependencies
 - N/A
- Exploiters
 - None

Upgrade & Coexistence Considerations

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

Installation & Configuration

- Available on z/OS 2.5 and 3.1 with OA65298 PTF UJ94116
 - IPL required after applying the APAR
- Available in 3.2 Base

Summary

- z/OS client web enablement toolkit HTTP/HTTPS Enabler has been enhanced in z/OS 3.2 to support shorter TCP connect timeouts.

Appendix

Publications

- **z/OS MVS Programming: Callable Services for High-Level Languages**
 - Complete z/OS client web enablement toolkit documentation
- **z/OS MVS System Messages, Volume 6 (GOS – IEA)**
 - Toolkit message documentation
- **z/OS MVS System Codes**
 - Toolkit abend '04D'x documentation

Additional samples for z/OS client web enablement toolkit are provided via GitHub:

- <https://github.com/IBM/zOS-Client-Web-Enablement-Toolkit>