Runtime Infrastructure - Support #6341

evaluate JNA as a replacement for LIBFFI and/or our built-in COM bridge

05/10/2022 12:44 PM - Greg Shah

Status:	New		**Start date:**	
Priority:	Normal		**Due date:**	
Assignee:			**% Done:**	0%
Category:			**Estimated time:**	0.00 hour
Target version:				
billable:	No		**case_num:**	
vendor_id:	GCD		**version:**	
Description				

History

#1 - 05/10/2022 12:53 PM - Greg Shah

- Subject changed from evaluate JNA as a replacement for LIBFFI to evaluate JNA as a replacement for LIBFFI and/or our built-in COM bridge

Java Native Access is an open source library which provides a dynamic mechanism to call native libraries directly from Java.

Where LIBFFI required a JNI interface to be created, JNA allows roughtly the same capabilities from pure Java. JNA embeds LIBFFI inside it (LIBFFI is MIT licensed, so that is OK) and uses it as the core backing the same what that FWD does.

In combination with the JNA Platform Library there are also facilities to integrate COM support without writing native code.

Using JNA could be a cleaner mechanism for native library support (see #1634) and/or for COM support (instead of our own COM bridge that we have in our JNI layer). One issue that would have to be handled is that JNA assumes that there is a static interface created for the given native interface. We would have to generate and reference this as part of the conversion. The current approach with LIBFFI does not require the same idea.

In both cases (LIBFFI and COM bridge), we would have to re-implement the layer and retest carefully. There is no functional benefit and it is not clear if there might be any performance benefit or penalty. We also don't know if there are any functional drawbacks that might cause issues.