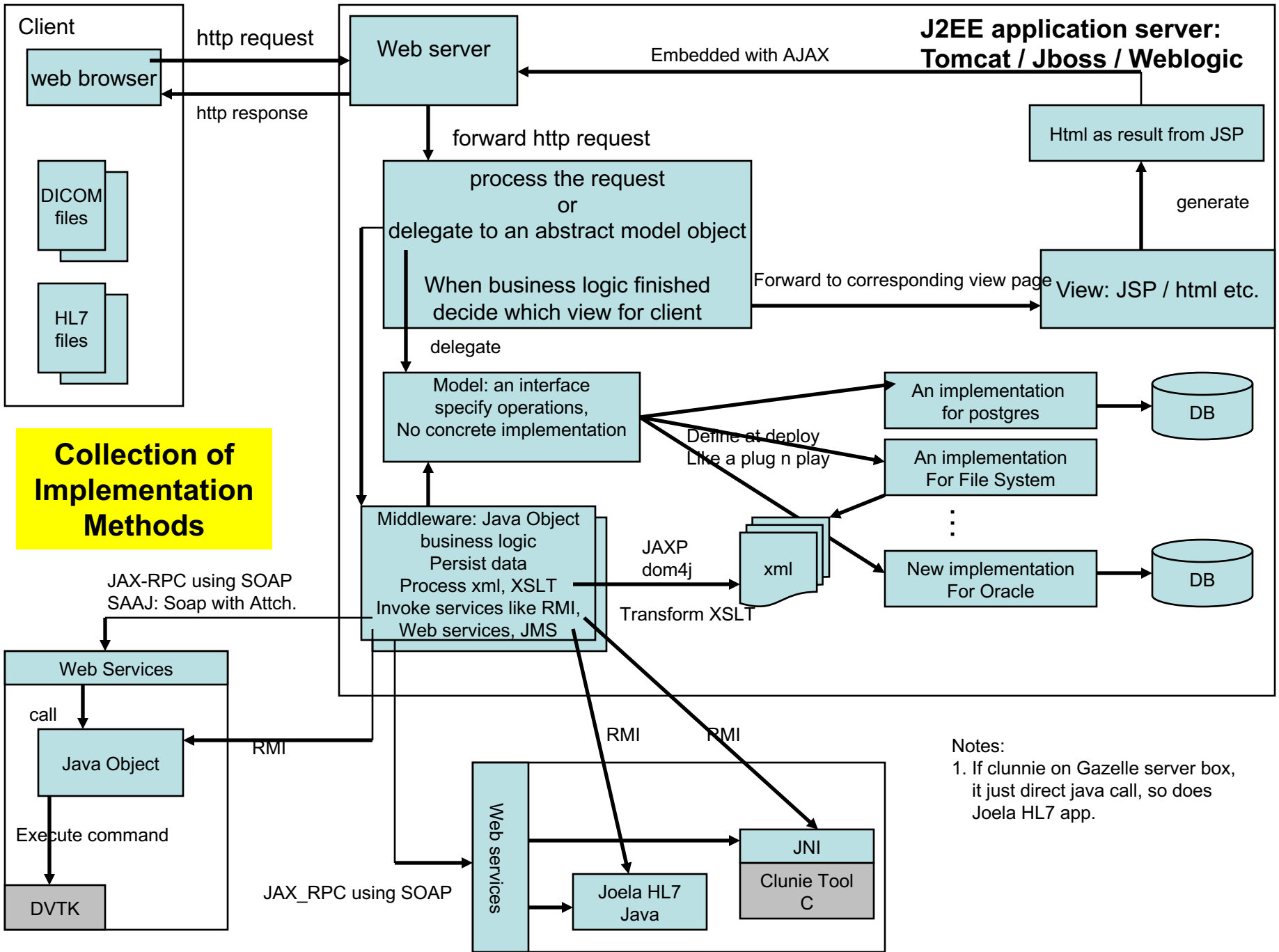
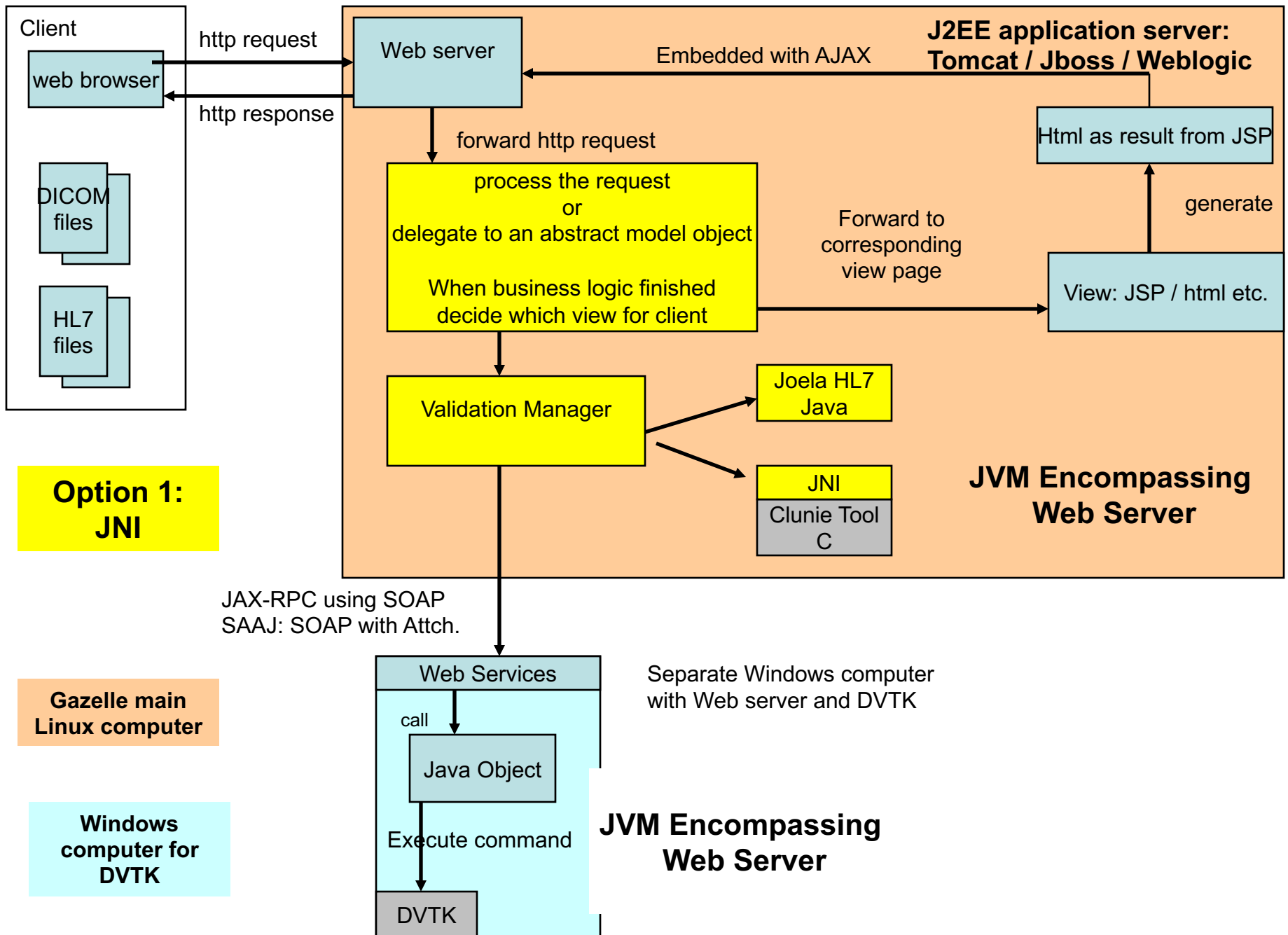


DICOM / HL7 Verification / Java Basis

- Random user with no account just wants to validate an HL7 message or DICOM object
- The next diagram shows a number of ways to achieve that. There are alternative solutions shown in this diagram.
- Four specific options/diagrams are then drawn to show how this would work if you chose certain implementations.
- There are certainly other options (or combinations of options). The next step is a table of benefits of the different approaches.



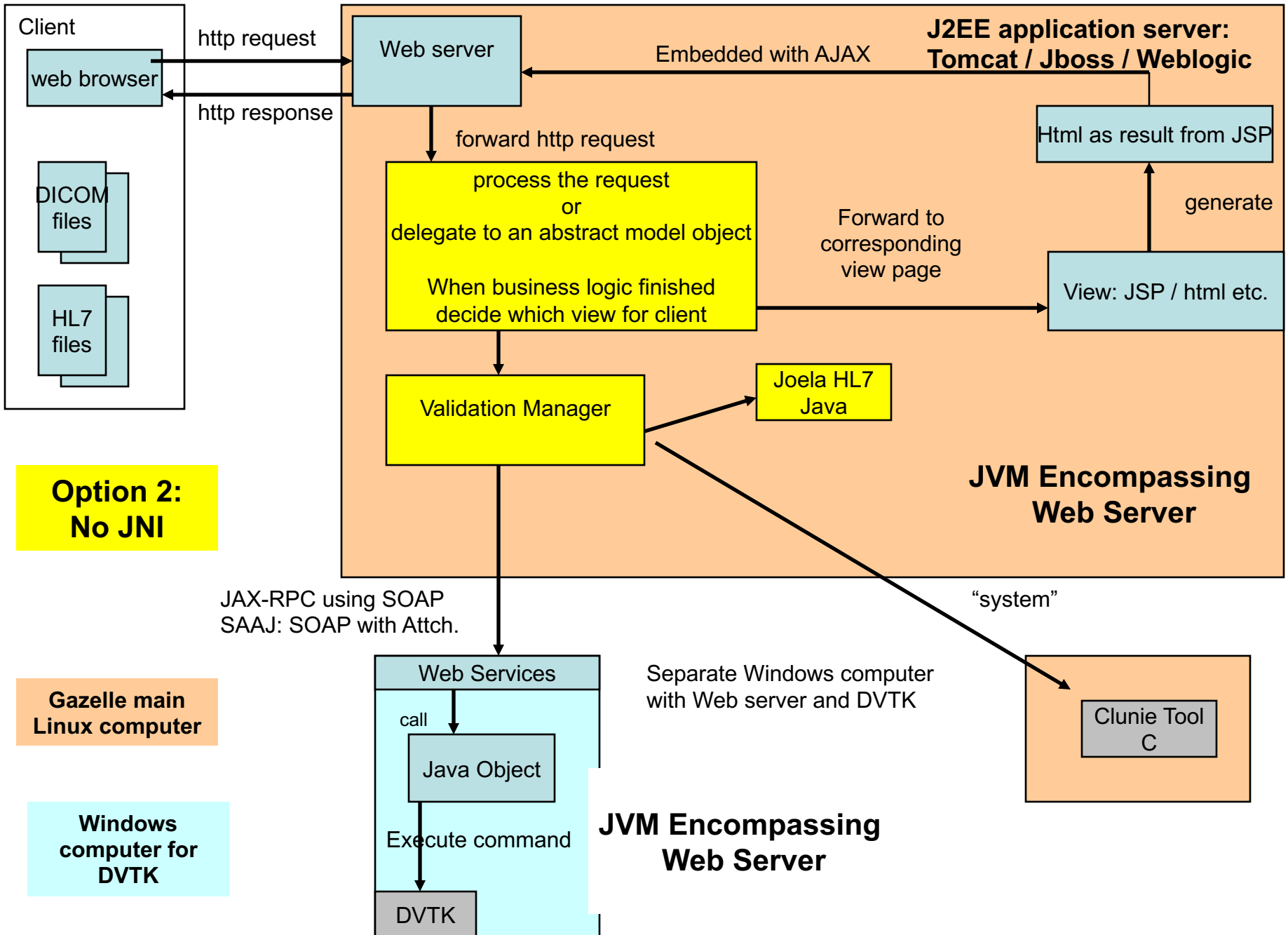


JVM Option 1: JNI

- Validate HL7 request received by web server
- Request passed on to Validation Manager (object within the JVM)
- Validation Manager invokes method on Joela/HL7 validator directly (part of the JVM)
- Validate DICOM request received by web server
- Request passed on to Validation Manager (object within the JVM)
- Clunie tool has been modified to expose one/more subroutines through a JNI interface
- Validation Manager invokes method on Clunie/JNI interface
- DVTK cannot live in the same JVM if Gazelle runs on a Linux box
- Validate DICOM request received by web server
- Request passed on to Validation Manager (object with the JVM)
- Validation Manager invokes Web Services on a separate Windows box that is running the DVTK software.
- Some Java (or other) glue code on the Windows box bridges the Web Services request to the DVTK evaluation software

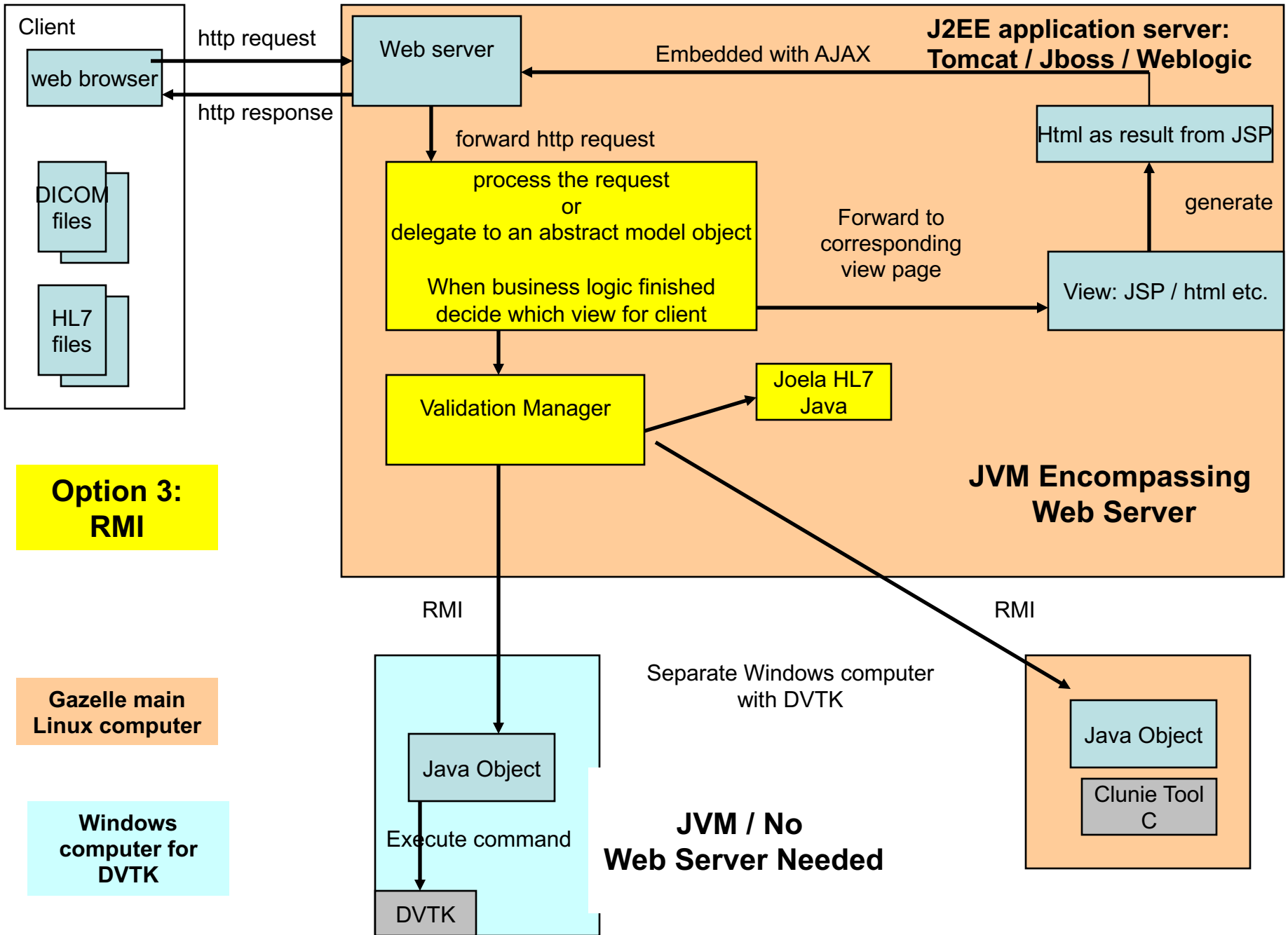
Option 1 Assumptions

- Validation Manager is a Java class that is invoked by the Web Server (probably a Gazelle class before that).
- Pull as many managers as possible into the JVM that runs the Web Server
- Some software (DVTk) will have to run elsewhere
- For things not written natively in Java, use JNI to get to the C libraries or C++ objects



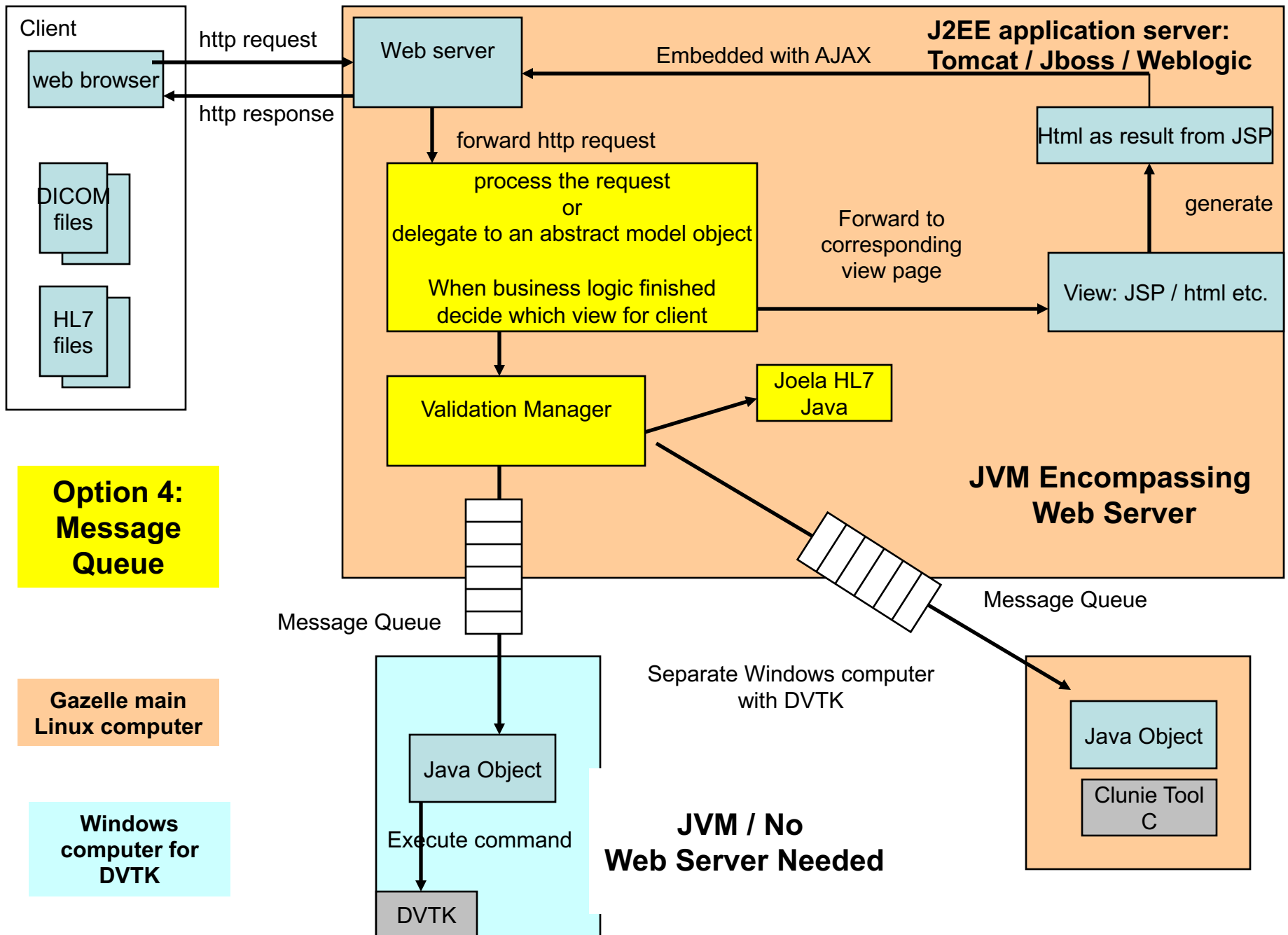
JVM Option 2: No JNI

- Same as Option 1 except that legacy code is not integrated using JNI but is executed through “system” commands



JVM Option 3: RMI

- Same as Option 2 except that remote applications (DVTK, Clunie) are invoked with RMI and not Web Services or “system”
- Implies one or more JVMs running on those systems to accept the RMI request



JVM Option 4: Message Queue

- Same as Option 3 except that communication from the Evaluation Manager to components outside the JVM is through a Message Queue