Java Verified—
A Description and Update to the Verification and Signing Process for the Java ME Application Developer

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TS-5397

Developing Applications for Mobile Devices?

How to get the best from a signed application…

Java Verified™ Program is a standards-based application testing and signing program accepted by multiple operators and device manufacturers for third party applications

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Agenda

Java Verified Program

Application Signing

Bear in Mind

Marketing and Support for Your Application

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Unified Testing Initiative

- Established in 2003
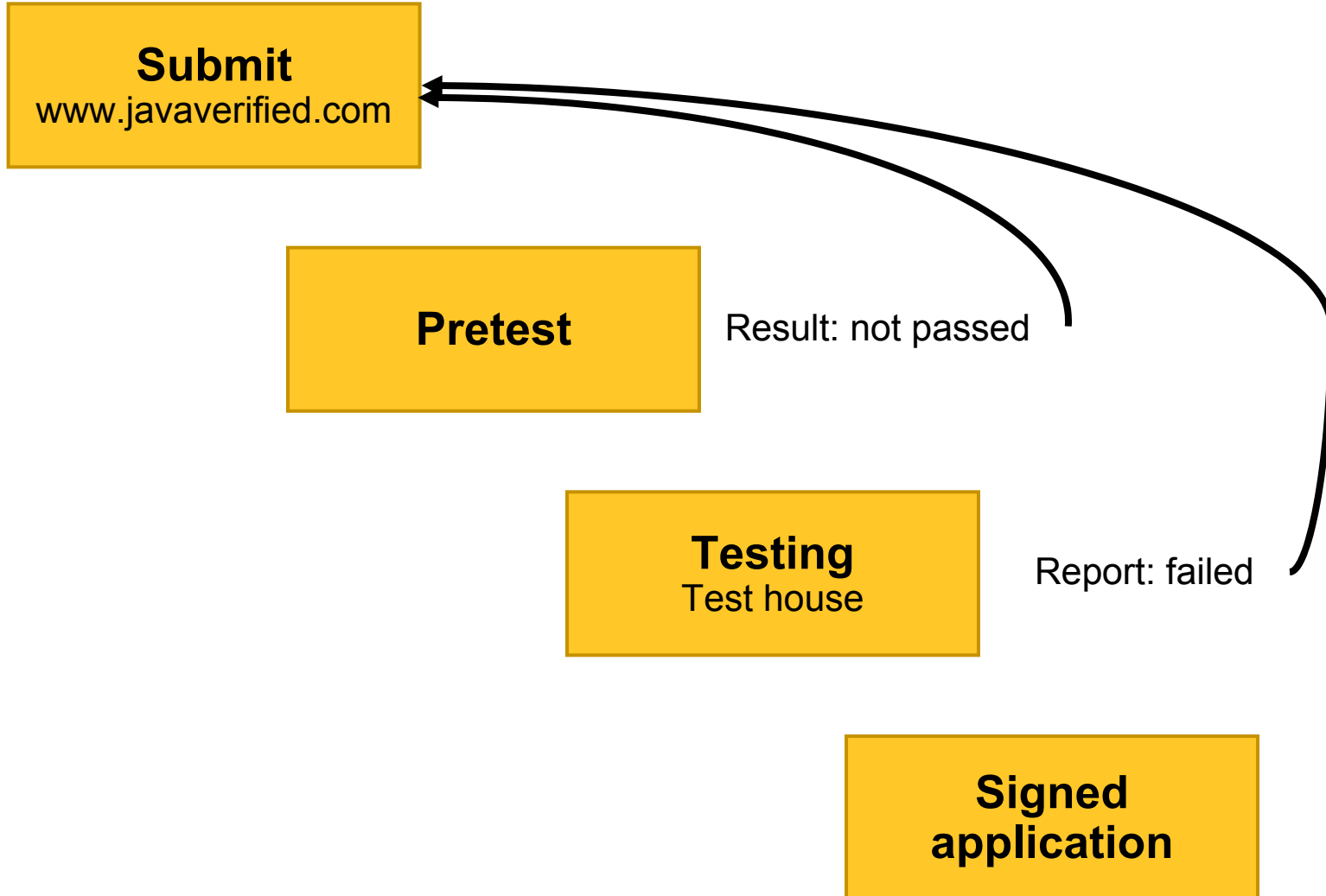- Unified Testing Criteria
- GeoTrust CA for UTI

GeoTrust CA for UTI

Java Verified Program

- February 2004
- Unified Testing Criteria
- UTI Certificate

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Device Matrix

- Two types of devices:
  - Lead device
  - Device in a platform
- Testing will be done with the lead device on a live network
  - The application will pass the testing on other devices in the same platform
- 377 devices in total
  - 119 lead devices
  - 75% are MIDP 2

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Testing Criteria

- One criteria to apply all applications
  - Exceptions are available when criteria is not supported by the device

- Focus on the essentials:
  - Application installation and start up
  - UI clarity and consistency
  - Language support and text problems
  - Application and the phone co-operation
  - Application creating connections and things related to that
  - Using and accessing PIM data

- The criteria evolves constantly, 2.1 is the current version

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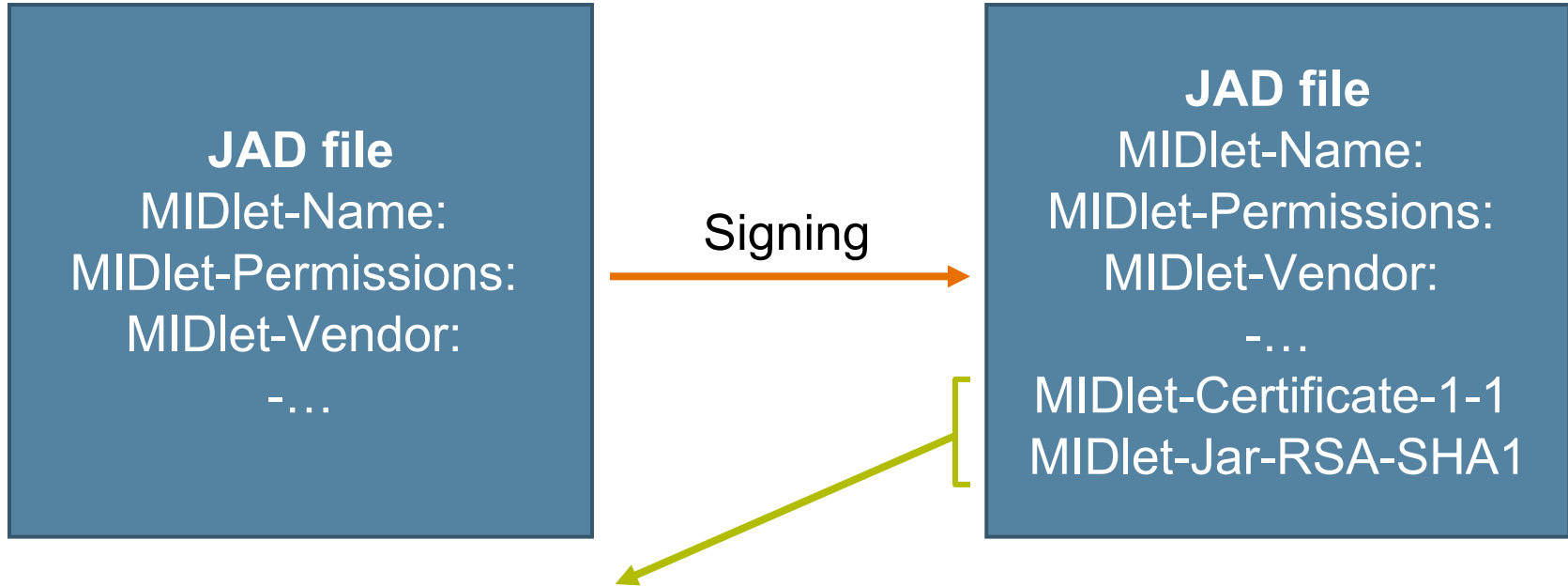Java Verified Program

Application Signing

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The Basics:
Private and Public Key

- **Private key** is used to sign the application
  - Can you can trust the signature in the application?

- **Public key** is used to verify that the signature is authentic
  - Embedded in the phone by the manufacturer
  - "Root certificate"

Example

| JAD file
MIDlet-Name:
MIDlet-Permissions:
MIDlet-Vendor:
-… | Signing → | JAD file
MIDlet-Name:
MIDlet-Permissions:
MIDlet-Vendor:
-…
MIDlet-Certificate-1-1
MIDlet-Jar-RSA-SHA1 |

Installation time:

- Does the device have the corresponding root certificate?
  Is the information correct?

  No: Installation fails
  Yes: Installation succeeds

Digital Signatures and Domains

- Access restrictions in Java™ Platform, Micro Edition (Java ME platform) fall into domains

- A signed application installs to the domain which has the corresponding root certificate in the device

- The access restrictions on APIs and permission types vary between domains

Unidentified 3rd party protection domain

Identified 3rd party protection domain

Operator domain

Manufacturer domain

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Permission Types

- Not allowed
- Ask every time
- Ask first time
- Always allowed

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MIDP 2.0—Network Access

- Unidentified third-party protection domain:
    - = Application is not signed
        - Not allowed, **Ask every time**, Ask first time
- Identified third-party protection domain:
    - = Java Verified Program signed application
        - Not allowed, Ask every time, **Ask first time**, Always allowed

Identified Third-Party Protection Domain

- Challenge with different policies:
  - MIDP 2.0
  - MIDP 2.1
  - MSA
- Some required, some recommended
- Operators may have different security requirements

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Signing in Java Verified Program

- Done after the application has passed the testing
  - GeoTrust CA for UTI

- Result:
  - The application cannot be altered
  - Application is installed to the Identified third-party protection domain of the device
  - Better user experience:
    - The application is trusted by the device, no installation errors
    - The user has more options to control the application behaviour
  - Access to certain APIs

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Java Verified Program

Application Signing in Java ME Platform

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Application Quality

- The test criteria has the main considerations for mobile applications
    - Use it at the application specification phase
    - Use it at the application acceptance testing phase
- The criteria can easily be integrated as part of your application development process

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Before Submitting

- Make sure the application works:
  - Use it yourself!
  - Get an independent test done (not by the coder)

- Exploit the available information
  - Your operator/carriers and manufacturers developer program and tools they may provide

Why the Application Does Not Install?

- No "GeoTrust CA for UTI" in the certificate store, remove from JAD:
  - MIDlet-Certificate-1-1
  - MIDlet-Jar-RSA-SHA1

- "MIDlet-" in Java Application Descriptor (JAD) file = "MIDlet-" in Java Archive (JAR) file manifest
  - Exceptions: MIDlet-Jar-Size and MIDlet-Jar-URL

- MIDlet-Permissions are correct?

- Date and Time settings on the device must match the certificate validity period

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Marketing and Support

- Java Verified Program testing is required by a growing number of device manufacturers and network operators

- Member companies provide developer support programs also deploy tested applications

- Applications that pass Java Verified Program testing
  - Eligible for Java Powered™ logo
  - May be promoted on java.com
  - Placement in future catalogues

2007 JavaOne^{SM} Conference News

- UTI is announcing the availability of the root certificate to non-member companies who support Java Verified Program goals
  - Provides a global standard certificate for an identified third-party
  - Opens new market opportunities to Java Verified Program tested applications
  - Ensures consistency and reduces complexity for developers

Summary

- To have the biggest market exposure use Java Verified Program

- Java Verified Program helps with the user experience of your application

- Java Verified Program reduces complexity being the "one stop shop" in application testing

- **When creating your application, remember…**

For More Information

- www.javaverified.com

- JavaOne Pavilion—JavaME Application Alley:
  - Java Verified Program
  - Java Verified Program test houses
  - Companies who market JavaME platform mobile applications

Q&A

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