# Java Card 2.1 Application Programming Interface



Sun Microsystems, Inc. 901 San Antonio Road Palo Alto, CA 94303 USA 650 960-1300

Final Revision 1.0, February 24, 1999



Copyright 1999 Sun Microsystems, Inc., 901 San Antonio Road, Palo Alto, CA 94043 USA. All rights reserved. Copyright in this document is owned by Sun Microsystems, Inc.

Sun Microsystems, Inc. (SUN) hereby grants to you at no charge a nonexclusive, nontransferable, worldwide, limited license (without the right to sublicense) under SUN's intellectual property rights that are essential to practice the Java Card API Specification ("Specification") to use the Specification for internal evaluation purposes only. Other than this limited license, you acquire no right, title, or interest in or to the Specification and you shall have no right to use the Specification for productive or commercial use.

### RESTRICTED RIGHTS LEGEND

Use, duplication, or disclosure by the U.S. Government is subject to restrictions of FAR 52.227-14(g)(2)(6/87) and FAR 52.227-19(6/87), or DFAR 252.227-7015(b)(6/95) and DFAR 227.7202-1(a).

SUN MAKES NO REPRESENTATIONS OR WARRANTIES ABOUT THE SUITABILITY OF THE SOFTWARE, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. SUN SHALL NOT BE LIABLE FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES.

#### TRADEMARKS

Sun, the Sun logo, Sun Microsystems, JavaSoft, JavaBeans, JDK, Java, Java Card, HotJava, HotJava Views, Visual Java, Solaris, NEO, Joe, Netra, NFS, ONC, ONC+, OpenWindows, PC-NFS, EmbeddedJava, PersonalJava, SNM, SunNet Manager, Solaris sunburst design, Solstice, SunCore, SolarNet, SunWeb, Sun Workstation, The Network Is The Computer, ToolTalk, Ultra, Ultracomputing, Ultraserver, Where The Network Is Going, Sun WorkShop, XView, Java WorkShop, the Java Coffee Cup logo, and Visual Java are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries.

THIS PUBLICATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. THIS PUBLICATION COULD INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. CHANGES ARE PERIODICALLY ADDED TO THE INFORMATION HEREIN; THESE CHANGES WILL BE INCORPORATED IN NEW EDITIONS OF THE PUBLICATION. SUN MICROSYSTEMS, INC. MAY MAKE IMPROVEMENTS AND/OR CHANGES IN THE PRODUCT(S) AND/OR THE PROGRAM(S) DESCRIBED IN THIS PUBLICATION AT ANY TIME.



# **Java Card API**

# **Table of Contents**

Overview											1
Class Hierarchy											۷
Package java.lang											$\epsilon$
Class ArithmeticException											9
Class ArrayIndexOutOfBou	ındsl	Exce	ptio	n							11
Class ArrayStoreException											13
Class ClassCastException											15
Class Exception											17
Class IndexOutOfBoundsEx	xcept	ion									19
Class NegativeArraySizeExc	cepti	on									21
Class NullPointerException											23
Class Object											25
Class RuntimeException											27
Class SecurityException .											29
Class Throwable											31
Package javacard.framewoi	rk										33
Class AID											35
Class APDU											39
Class APDUException .											51
Class Applet											56
Class CardException .											63
Class CardRuntimeException	on										66
Interface ISO7816											69
Class ISOException											76
Class JCSystem											78
Class OwnerPIN											87
Interface PIN											92
Class PINException											95
Interface Shareable											98
Class SystemException .											99
Class TransactionException	١.										103
Class UserException .											107
Class Util											110
Package javacard.security											117
Class CryptoException .											119
Interface DESKey											123
Interface DSAKey											125
Interface DSAPrivateKey											129
Interface DSAPublicKey											131
Interface Key											133



### Java Card 2.1 API

Class KeyBuilder .										135
Class MessageDigest										141
Interface PrivateKey										146
Interface PublicKey .										147
Interface RSAPrivateCrt	Key	7								148
Interface RSAPrivateKe										155
Interface RSAPublicKey										158
Class RandomData .										161
Interface SecretKey .										164
Class Signature										165
Package javacardx.crypt	0									176
Class Cipher										177
Interface KeyEncryption	L									186
Indev										188



# Java Card TM 2.1 Platform API Specification Final Revision 1.0

This document is the specification for the Java Card 2.1 Application Programming Interface.

See:

## **Description**

Packages							
java.lang	Provides classes that are fundamental to the design of the Java Card technology subset of the Java programming language.						
javacard.framework	Provides framework of classes and interfaces for the core functionality of a Java Card applet.						
javacard.security	Provides the classes and interfaces for the Java Card security framework.						
javacardx.crypto	Extension package containing security classes and interfaces for export-controlled functionality.						

This document is the specification for the Java Card 2.1 Application Programming Interface.



# DOCKET

# Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

# **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

### **LAW FIRMS**

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

### **FINANCIAL INSTITUTIONS**

Litigation and bankruptcy checks for companies and debtors.

## **E-DISCOVERY AND LEGAL VENDORS**

Sync your system to PACER to automate legal marketing.

