HERE SDK for iOS

Release Notes

Hybrid Plus Version 2.1.2

Contents

Legal Notices

Trademark Acknowledgements

Disclaimer

Document Information

Product	
Name:	HERE SDK for iOS
Version:	Hybrid Plus Version 2.1.2

Document	
Name:	HERE SDK for iOS Release Notes
Id:	b96d864-1428522034
Status:	FINAL
Date:	2015-Apr-08, 19:52 (GMT)

Overview

The HERE SDK for iOS brings a rich and immersive location experience with beautiful and accurate maps, a global database of Places and a world-class routing capability. The HERE SDK for iOS comprises of the Hybrid Engine and the HERE APIs for iOS. The Hybrid Engine is a sophisticated component for rendering map data and route calculation.

In addition to downloading map data dynamically as needed, the HERE SDK also supports offline usage through use of previously cached map data or previously downloaded map packages.

The scope of this document is to provide the release notes of the HERE SDK for iOS, with respect to a particular release version. It also includes the issues reported, open and solved within this release.

Target Audience

This document is targetted at the developers who are already familiar with iOS app development. Readers should have some experience using Xcode and Objective-C.

Release Content

Native APIs	Enabling native applications to leverage HERE functionality
Hybrid Engine	Engine responsible for rendering vector map data
Documentation	API Reference Documentation, Developer Guide
Sample App/Code	One or more sample applications

Package Description

/docs	DocSet API Reference
/sample-apps	Sample iOS application project that demonstrates the HERE SDK
/user-guide	Developer's Guide and API Reference for using the HERE SDK features
Release Notes (PDF file)	This document
SDK Notices (HTML file)	Legal and copyright text for the libraries that are used by the HERE SDK. Developers that use the HERE SDK must embed or link to this text from their app.

📄 **Note:** Evaluation releases can only be used for a limited time. If the evaluation expiry date is within the next 30 days, a warning message is displayed on the map. For more information about the SDK evaluation period, please contact your HERE representative.

System Requirements

- iOS 7.0 or above
- Xcode 6-based development environment
- iPhone 4S / iPad 2 or newer devices

  ▤ **Note:** iPhone 5 or newer devices are recommended for the LiveSight feature.

Features Overview

Mapping:

- Dynamically download vector maps for over 190 countries in over 50 languages
- Preload maps for offline usage
- Map styles: normal street map, night street map, satellite, and more
- Touch gestures such as tap, pan, pinch, and twist
- Overlay objects on the map such as polylines, polygons, icons, routes
- 3D landmarks
- Overlay custom raster tiles on the map (useful for features such as heat maps)
- Show real-time traffic flow and incidents
- Traffic and transit object interaction
- Venue maps
- Extruded buildings
- Street-level imagery
- 3D map objects

Search:

- Broad content with 25 million streets, 200 million point addresses, and over 60 million categorized places across the globe
- Search Places for somewhere specific or explore by categories
- Get rich details for a Place (images, ratings, reviews, editorials etc.)
- Perform Geocoding and Reverse Geocoding lookups
- Offline Places search, Geocoding, Reverse Geocoding

Directions:

- Get driving directions, pedestrian directions
- Specify preferred route type (fastest or shortest) and route options (such as avoiding toll roads, motorways, and parks)
- Alternate routes
- Offline route calculation
- Driving directions with traffic taken into account
- Public Transit directions

Turn-by-turn Navigation:

- Online and offline turn-by-turn navigation with voice instructions in English (US), French, Italian, Spanish (Mexican), and German
- Download and set additional navigation voices

📄 **Note: [Important]** The Turn-by-turn Guidance APIs are in beta. Application developers using these APIs are required to thoroughly test their applications in all expected usage scenarios to ensure safe and correct behavior. Application developers are responsible for warning their users of the following obligations:

1. Do not follow instructions that may lead to an unsafe or illegal situation
2. Obey all local laws.
3. Be aware that using a mobile phone or some of its features while driving may be prohibited.
4. Always keep hands free to operate the vehicle while driving.
5. First consideration while driving should be road safety.

LiveSight (Augmented Reality) Beta:

- Project objects in a camera view
- Track the position of the device and objects in space
- Gesture support allows the user to interact with content
- Configurable LiveSight engine allows the user experience to be customized

Getting Started

Please refer to the documentation under the `/user-guide` folder for details on how to quickly start evaluating the HERE SDK for iOS.

> 📄 **Note:** Developers using the HERE SDK for iOS in their application projects must embed or link to the legal text provided in *Copyright Information* on page 19 from a user-accessible area of their application.

Upgrading from HERE SDK v1.x to v2.x

Version 2.0 of the HERE SDK for iOS introduces a number of significant changes. Developers upgrading from version 1.x to version 2.x should be aware of the following:

Map Data

For HERE SDK release 2.0, the map data cache has been re-designed, and it is not backwards compatible with previous SDK releases. In particular, the old cache (located in the `NokiaMaps2` directory) is removed, and a new cache (located at the `HereMaps` directory) will be used instead. Any previously downloaded map data will not carry over to the 2.0 release. Users must re-download all data again via the map loader or by panning the map to the desired geographical areas.

New Features and API Changes

New Features in Version 2.1.2

- Added the ability to selectively skip voice commands. (For more details, please see "Controlling Audio Playback" in the Developer's Guide.)

New Features in Version 2.1.1

- Added LiveSight (augmented reality) as a beta feature in this release.
- Added the Natural Guidance feature in this release
- Updated the Street-Level Imagery issue-reporting link as a web link
- Added a warning message that appears on the map view when the SDK evaluation expires in less than 30 days
- Added support for the latest iPad devices

API and Behavior Changes in Version 2.1.2

- Added the `navigationManagerShouldPlayOutput:` method in `NMANavigationManagerDelegate` to let developers selectively skip voice commands.

API and Behavior Changes in Version 2.1.1

- `CoreMedia.framework`, `CoreMotion.framework`, and `libsqlite3.dylib` are now required
- Added `referenceIdentifierForSource:` for external references in `NMAPlace`, `NMAPlaceLocation`, and `NMAPlacelink`
- Added the `sources` property and the `addSource:` method to support external references in `NMARequest`
- Added constant `NSString` values and the `createLookupRequestWithReferenceIdentifier:inSource:` method in `NMAPlaces` to support external reference sources
- Added the `topLevelCategories` property in `NMAPlaces` to retrieve localized `NMACategory` instances, if available
- Added the `refreshTopLevelCategoriesWithCompletion` method in `NMAPlaces` to allow users to refresh the localized top level categories manually
- Added the following to `NMAApplicationContext` to support switching the SDK to offline mode.
  - `setNetworkAccessAllowed:`
  - `isNetworkAccessAllowed`

- ○ `isOnline`
- ○ `NMAApplicationContextOnlineStatusDidChangeNotification`
- Deprecated `isOnRoute` in `NMALaneInfo` and replaced it with the `position` property
- Added new enum `NMALaneInfoPositionType`
- Added the `NMARouteTta` class
- Deprecated the `duration` property in `NMARoute`. Replaced it with the `tta` property and the `ttaForSubleg:subleg` method to allow users to retrieve route duration.
- Added new APIs to perform and cancel traffic-aware route calculations:
  - ○ `requestTrafficOnRoute:`
  - ○ `cancelRequest:`
- Added `NMARouteViolatedOption` enum to report additional information about routes in the `NMARouteManagerDelegatedidCalculateRoutes:withError:violatedOptions:` callback
- Added `NMAMapView minimumZoomLevel` property to report the true minimum zoom level with current map properties.
- Implemented the properties `vibrationEnabled` and `beepsEnabled` for toggling beeps and vibrations for pedestrian navigation. Note that to use these properties, the navigation voice must be enabled. Otherwise, changing these properties has no effect.
- Added an `englishTitle` property to `NMAMapPackage`

Fixed Issues and Improvements

Version 2.1.2

- Improved the detection of pinch-to-zoom gestures and reduced the possibility of accidental rotations
- Fixed an issue where `NMAMapLoader` becomes unresponsive after canceling an operation
- Fixed a performance issue where traffic-enabled routes consumed massive computing resources
- Fixed an issue where `NMAMapPolygon isValid` incorrectly returns `YES`
- Made the `NMATrafficManager` available in this release
- Fixed an issue where current audio stops immediately when the `stopAllOutput` method is called
- Fixed an issue that caused an `NSInvalidArgumentException` during application start-up

Version 2.1.1

- Fixed an issue where map views are still interactive when rendering is disabled
- Fixed a crash in `NMARouteManager` when cancelling a route calculation
- Fixed an issue where maneuver callbacks are not sent during tunnel extrapolation
- Fixed `NMAAddress.formattedText` for both Places and Geocode search
- Fixed an issue where pedestrian route durations were being underestimated
- Fixed a text spacing issue in Place addresses
- Fixed the dispatching of new commands in `NMAVoiceCatalog` callbacks
- Fixed a time zone-related issue in the truck routing feature

Version 2.1

- The position tracker now moves smoothly with the map during navigation.
- The road view now centers at the raw position when there is no map matched position.
- Fixed an issue on iOS 8 where the position indicator is missing from the map.
- Background music volume no longer goes up/down during silent periods in a navigation session.
- Position indicator is no longer shown underneath traffic incidents and bus stops.
- Speed warning sounds no longer cut off voice guidance.
- Fixed various issues related to simultaneously running navigation and apps that use the audio player.
- Updated device information codes for iPhone 6 and 6 Plus.
- Handled the deprecation of old map gestures as follows:

- ◦ Repeated tap gestures no longer interrupt zoom-in/zoom-out. Instead, they will now occur continuously
- ◦ Performing the two-finger pinch/spread gestures will now cause kinetic zoom-in/zoom-out
- ◦ Performing the two-finger rotation gesture will now cause a kinetic rotation
- The navigation voice using native TTS is faster on iOS8 than on iOS7.
- The position arrow no longer lags behind from the current position during navigation.
- Highways numbers no longer blink on the map.
- Shortened the recalculation time during navigation when the user has deviated from the planned route.
- The speed limit warning is now activated at the correct time during navigation.
- Fixed various issues that caused the `nextRoadIcon` in `NMAManeuver` and `exitIcon` in `NMASignpost` to contain a black background and the image to be blurry.
- Fixed issues causing the prerecorded guidance voice to be intermittently inaudible when background music is being played.
- Introduced a map scale modification for iPhone 6 Plus
- Fixed crashes that occur while changing navigation voice.
- The `NMAImage imageWithUIImage:` method now takes the scale of the input `UIImage` into account.
- Roman numerals in road names are no longer spelled as letters.
- Map view is no longer frozen after changing the map scheme.
- Added 3x logos and icons.
- Voice navigation with Apple TTS now plays in normal speed on iOS 8.x devices.
- Fixed an issue where the voice catalog is requested in English and returns both English and localized package names.
- Removed building blurring from the street-level issue-reporting options.
- Fixed an issue in `NMAVoiceCatalog` that caused infrequent crashes while updating the voice catalog or installing voice packages.

Known Issues

- `NMACompositeView` - The camera view may become distorted when the device orientation switches repeatedly, or if the orientation is changed from its previous state before the app comes to the foreground.

Copyright Information

📄 **Note:** Developers using the HERE SDK for iOS in their application projects must embed or link to the following legal text from a user-accessible area of their application.

```
© 2014 HERE. All rights reserved.

HERE, Nokia and Nokia Connecting People are trademarks or
registered trademarks of Nokia Corporation.
Other product and company names mentioned herein may be trademarks
or tradenames of their respective owners


-----


This product includes certain open source software.
Please see below for applicable copyright and other notices,
permissions and acknowledgements:


-----


**************************************
* boost: 1.52
**************************************
Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

**************************************
* Curl: 7.36.0
**************************************
Notices to be included into the product documentation of binary distributions:
*********************

* Copyright (c) 1995, 1996, 1997, 1998, 1999 Kungliga Tekniska H?gskolan
* (Royal Institute of Technology, Stockholm, Sweden).
* Copyright (c) 2004 - 2006 Daniel Stenberg
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
```

```
 *
 * THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
 * IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
 * OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
 * IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
 * INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
 * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
 * DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
 * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
 * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

**************************************
* Freetype: 2.4.8
**************************************
Use this text in documentation to acknowledge FreeType project:

"Portions of this software are copyright  1996-2002 The FreeType Project (www.freetype.org).
 All rights
reserved."




Additional notice for documentation of binary releases:
**************************
/* Copyright (C) 2005 by George Williams */
/*
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions are met:

 * Redistributions of source code must retain the above copyright notice, this
 * list of conditions and the following disclaimer.

 * Redistributions in binary form must reproduce the above copyright notice,
 * this list of conditions and the following disclaimer in the documentation
 * and/or other materials provided with the distribution.

 * The name of the author may not be used to endorse or promote products
 * derived from this software without specific prior written permission.

 * THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR IMPLIED
 * WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
 * MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO
 * EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
 * PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
 * OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
 * WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
 * OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
 * ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

**************************************
* libjpeg: 6b
**************************************
If the software is distributed in binary, please insert the following notice into product
 documentation:
**********************

"This software is based in part on the work of
 the Independent JPEG Group".

**************************************
* libjson: 7.6.1
**************************************
This license is also available in Documentation.pdf

Copyright 2010 Jonathan Wallace. All rights reserved.
Copyright 2011 Streamwide. All rights reserved.
```

```
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the
following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this
list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this
list of conditions and the following disclaimer in the documentation and/or other
materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY JONATHAN WALLACE ``AS IS'' AND ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL JONATHAN WALLACE
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

**************************************
* libpng: 1.2.37
**************************************
Notice to be included into the product documentation, no matter what the distribution method
 is:
********************

  *   copyright (C) 1999 by Willem van Schaik <willem@schaik.com>
  *
  *   version 1.0 - 1999.10.15 - First version.
  *
  *   Permission to use, copy, modify, and distribute this software and
  *   its documentation for any purpose and without fee is hereby granted,
  *   provided that the above copyright notice appear in all copies and
  *   that both that copyright notice and this permission notice appear in
  *   supporting documentation. This software is provided "as is" without
  *   express or implied warranty.


----

Additional notices for binary distributions:
[The following text can be omitted, if the sw is distributed according to the terms of the
 GPL]
********************

     Copyright (c) 1998-2007 Greg Roelofs.  All rights reserved.

     Permission is granted to anyone to use this software for any purpose,
     including commercial applications, and to alter it and redistribute
     it freely, subject to the following restrictions:

     1. Redistributions of source code must retain the above copyright
        notice, disclaimer, and this list of conditions.
     2. Redistributions in binary form must reproduce the above copyright
        notice, disclaimer, and this list of conditions in the documenta-
        tion and/or other materials provided with the distribution.
     3. All advertising materials mentioning features or use of this
        software must display the following acknowledgment:

          This product includes software developed by Greg Roelofs
          and contributors for the book, "PNG: The Definitive Guide,"
          published by O'Reilly and Associates.

**************************************
* lzma: 9.22beta
**************************************
This file is in the public domain.
```

```
*************************************
* Nanum gothic: 2.0
*************************************
 SIL OPEN FONT LICENSE

Version 1.1 - 26 February 2007
PREAMBLE

The goals of the Open Font License (OFL) are to stimulate worldwide
development of collaborative font projects, to support the font creation
efforts of academic and linguistic communities, and to provide a free and
open framework in which fonts may be shared and improved in partnership
with others.

The OFL allows the licensed fonts to be used, studied, modified and
redistributed freely as long as they are not sold by themselves. The
fonts, including any derivative works, can be bundled, embedded,
redistributed and/or sold with any software provided that any reserved
names are not used by derivative works. The fonts and derivatives,
however, cannot be released under any other type of license. The
requirement for fonts to remain under this license does not apply
to any document created using the fonts or their derivatives.
DEFINITIONS

"Font Software" refers to the set of files released by the Copyright
Holder(s) under this license and clearly marked as such. This may
include source files, build scripts and documentation.

"Reserved Font Name" refers to any names specified as such after the
copyright statement(s).

"Original Version" refers to the collection of Font Software components as
distributed by the Copyright Holder(s).

"Modified Version" refers to any derivative made by adding to, deleting,
or substituting # in part or in whole # any of the components of the
Original Version, by changing formats or by porting the Font Software to a
new environment.

"Author" refers to any designer, engineer, programmer, technical
writer or other person who contributed to the Font Software.
PERMISSION & CONDITIONS

Permission is hereby granted, free of charge, to any person obtaining
a copy of the Font Software, to use, study, copy, merge, embed, modify,
redistribute, and sell modified and unmodified copies of the Font
Software, subject to the following conditions:

1) Neither the Font Software nor any of its individual components,
in Original or Modified Versions, may be sold by itself.

2) Original or Modified Versions of the Font Software may be bundled,
redistributed and/or sold with any software, provided that each copy
contains the above copyright notice and this license. These can be
included either as stand-alone text files, human-readable headers or
in the appropriate machine-readable metadata fields within text or
binary files as long as those fields can be easily viewed by the user.

3) No Modified Version of the Font Software may use the Reserved Font
Name(s) unless explicit written permission is granted by the corresponding
Copyright Holder. This restriction only applies to the primary font name as
presented to the users.

4) The name(s) of the Copyright Holder(s) or the Author(s) of the Font
Software shall not be used to promote, endorse or advertise any
Modified Version, except to acknowledge the contribution(s) of the
Copyright Holder(s) and the Author(s) or with their explicit written
permission.
```

```
5) The Font Software, modified or unmodified, in part or in whole,
must be distributed entirely under this license, and must not be
distributed under any other license. The requirement for fonts to
remain under this license does not apply to any document created
using the Font Software.
TERMINATION

This license becomes null and void if any of the above conditions are
not met.
DISCLAIMER

THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT
OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL THE
COPYRIGHT HOLDER BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL
DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM
OTHER DEALINGS IN THE FONT SOFTWARE.

*************************************
* OpenSSL: 1.0.1i
*************************************

This product includes cryptographic software written by Eric Young
(eay@cryptsoft.com).

This product includes software written by Tim
Hudson (tjh@cryptsoft.com).

This product includes software developed
by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)

=====

/* Copyright (c) 2004 Kungliga Tekniska H?gskolan
  * (Royal Institute of Technology, Stockholm, Sweden).
  * All rights reserved.
  *
  * Redistribution and use in source and binary forms, with or without
  * modification, are permitted provided that the following conditions
  * are met:
  *
  * 1. Redistributions of source code must retain the above copyright
  *    notice, this list of conditions and the following disclaimer.
  *
  * 2. Redistributions in binary form must reproduce the above copyright
  *    notice, this list of conditions and the following disclaimer in the
  *    documentation and/or other materials provided with the distribution.
  *
  * 3. Neither the name of the Institute nor the names of its contributors
  *    may be used to endorse or promote products derived from this software
  *    without specific prior written permission.
  *
  * THIS SOFTWARE IS PROVIDED BY THE INSTITUTE AND CONTRIBUTORS ``AS IS'' AND
  * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  * ARE DISCLAIMED.  IN NO EVENT SHALL THE INSTITUTE OR CONTRIBUTORS BE LIABLE
  * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
  * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
  * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
  * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
  * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
  * SUCH DAMAGE.

=====

  * Copyright 2002 Sun Microsystems, Inc. ALL RIGHTS RESERVED.
```

```
/*
 * ModExp / RSA (with/without KM) plugin API
 *
 * The application will load a dynamic library which
 * exports entrypoint(s) defined in this file.
 *
 * This set of entrypoints provides only a multithreaded,
 * synchronous-within-each-thread, facility.
 *
 *
 * This file is Copyright 1998-2000 nCipher Corporation Limited.
 *
 * Redistribution and use in source and binary forms, with opr without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * 1. Redistributions of source code must retain the copyright notice,
 *    this list of conditions, and the following disclaimer.
 *
 * 2. Redistributions in binary form must reproduce the above
 *    copyright notice, this list of conditions, and the following
 *    disclaimer, in the documentation and/or other materials provided
 *    with the distribution
 *
 * IN NO EVENT SHALL NCIPHER CORPORATION LIMITED (`NCIPHER') AND/OR
 * ANY OTHER AUTHORS OR DISTRIBUTORS OF THIS FILE BE LIABLE for any
 * damages arising directly or indirectly from this file, its use or
 * this licence.  Without prejudice to the generality of the
 * foregoing: all liability shall be excluded for direct, indirect,
 * special, incidental, consequential or other damages or any loss of
 * profits, business, revenue goodwill or anticipated savings;
 * liability shall be excluded even if nCipher or anyone else has been
 * advised of the possibility of damage.  In any event, if the
 * exclusion of liability is not effective, the liability of nCipher
 * or any author or distributor shall be limited to the lesser of the
 * price paid and 1,000 pounds sterling. This licence only fails to
 * exclude or limit liability for death or personal injury arising out
 * of negligence, and only to the extent that such an exclusion or
 * limitation is not effective.
 *
 * NCIPHER AND THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ALL
 * AND ANY WARRANTIES (WHETHER EXPRESS OR IMPLIED), including, but not
 * limited to, any implied warranties of merchantability, fitness for
 * a particular purpose, satisfactory quality, and/or non-infringement
 * of any third party rights.
 *
 * US Government use: This software and documentation is Commercial
 * Computer Software and Computer Software Documentation, as defined in
 * sub-paragraphs (a)(1) and (a)(5) of DFAR 252.227-7014, "Rights in
 * Noncommercial Computer Software and Noncommercial Computer Software
 * Documentation."  Use, duplication or disclosure by the Government is
 * subject to the terms and conditions specified here.
 *
 * By using or distributing this file you will be accepting these
 * terms and conditions, including the limitation of liability and
 * lack of warranty.  If you do not wish to accept these terms and
 * conditions, DO NOT USE THE FILE.

*************************************
* zlib: 1.2.3
*************************************
Notices to be included into the product documentation:
*******************

  * Copyright (c) 1997
  * Christian Michelsen Research AS
  * Advanced Computing
  * Fantoftvegen 38, 5036 BERGEN, Norway
  * http://www.cmr.no
  *
```

```
 * Permission to use, copy, modify, distribute and sell this software
 * and its documentation for any purpose is hereby granted without fee,
 * provided that the above copyright notice appear in all copies and
 * that both that copyright notice and this permission notice appear
 * in supporting documentation.  Christian Michelsen Research AS makes no
 * representations about the suitability of this software for any
 * purpose.  It is provided "as is" without express or implied warranty.
```