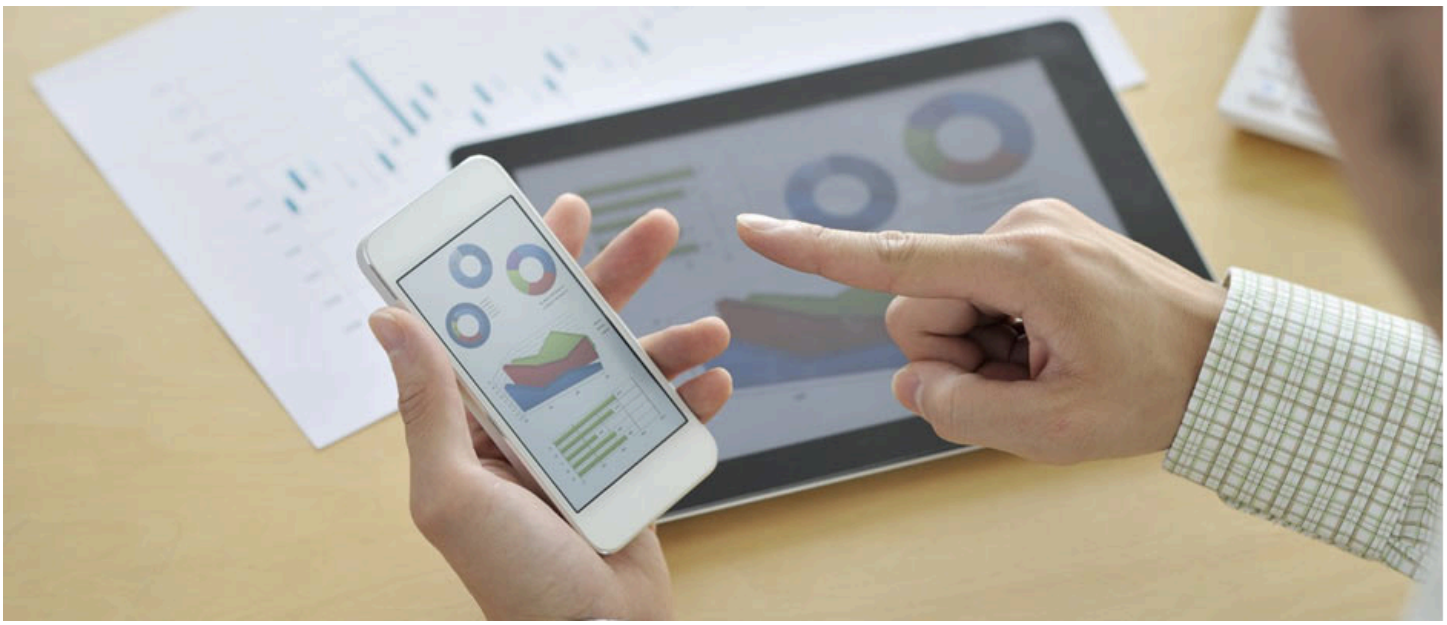
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SCIENTIAMOBILE WURFL .NET API CHANGELOG

Support

The ScientiaMobile Enterprise Support Portal is open to all WURFL users, both commercial license holders and evaluation users. It represents the combined knowledge base for the WURFL community. Commercial licensees are invited to post questions in the forum using the account to which their licenses are associated. This may mean faster handling of those posts by ScientiaMobile's personnel.

For commercial license holders, there are tiered support levels to address a variety of business support needs. After logging into your account, commercial licensees with support options can access the Enterprise Support portal to post tickets. These tickets will receive expedited attention.

To inquire about support plans, use our License Inquiry or our General Inquiry form.

Update Notifications

If you would like to be notified of our API updates, major data updates, and other technical changes, please subscribe to our ScientiaMobile Announcements list.

scientiamobile

www.scientiamobile.com

Tel +1.703.310.6650

E-mail: sales@scientiamobile.com

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ScientiaMobile WURFL .NET API Changelog

1.14.1.1 - Oct 30th, 2026

- Enhancements to bot detection and is_robot virtual capability computation

1.14.1.0 - Sep 29th, 2026

- Added support for
  - emerging SmartTVs, STBs and other OTT devices and platforms
  - new robots, spiders, content fetchers and crawlers via is_robot and robot_family capabilities
  - emerging custom User-Agents for Android, iOS and other platforms
- Expanded support for
  - app detection via is_app and advertised_app_name
  - User-Agent Client Hints
  - Fire OS devices
- Fixed behavior for
  - is_robot false positive
- New configuration option (CapabilityFallbackCacheMode: Enabled / Disabled)
  - It switches off/on (default value is on) the per-device capability fallback cache. Disabling it lowers memory usage on large data sets, at the cost of slower static/virtual capability computation.
  - To disable, use InMemoryConfigurer.CapabilityFallbackCache(CapabilityFallbackCacheMode.Disabled). This setting is also exposed on Configuration via the CapabilityFallbackCacheMode property.
  - The mode can also be switched at runtime via IWURFLManager.SetCapabilityFallbackCacheMode(mode). Switching to Disabled stops writing new cache entries. Switching to Enabled resumes caching from the next lookup.
  - A Reload() keeps the last-set mode and rebuilds with an empty cache.

1.14.0.2 - Aug 3rd, 2026

- New patch file consistency validation
  - Patch files are now validated against the WURFL data file for User-Agent conflicts. If a patch adds a device whose User-Agent conflicts with one already defined by another device, the engine load now throws a UserAgentNotUniqueException instead of silently replacing the existing device. Note that two User-Agents can conflict without being byte-identical, since the engine compares them in processed form.
  - [IMPORTANT] Patch files containing such conflicts loaded successfully in previous releases; they will now cause a load failure.

1.14.0.1 - Jul 16th, 2026

- Fixed an issue in the CFNetwork User-Agent normalization process that could cause certain CFNetwork/Darwin (iOS/macOS) User-Agents to be misidentified as a generic device instead of matching the correct specific device
- Optimization of virtual capabilities computation

1.14.0.0 - Jun 9th, 2026

- Added support for
  - emerging custom user-agents for Android, iOS and other platforms
  - new robots, spiders, content fetchers and crawlers via is_robot and robot_family capabilities
- Expanded support for
  - User-Agent Client Hints
  - app detection via is_app and advertised_app_name
  - iOS and iPadOS versions and devices
  - SmartTVs, STBs and other OTT devices and platforms
  - Game Consoles
  - Android based Smart-TV devices
- Dropped support for
  - UcwebU3Matcher (UCWeb U3 Browser) Note: Any Android User-Agents from this browser will be handled by the AndroidMatcher and the iOS User-Agents by the AppleMatcher
- REMOVAL NOTICE
  - The getter method Configuration:UpdaterLogPath has been removed.
  - The method InMemoryConfigurer.SetMatchMode(MatchMode matchMode) has been removed.
  - The getter method WURFLUpdater.InitialDelay has been removed.
  - The setter method WURFLUpdater.InitialDelay has been removed.
  - The method GenericNormalizer.Normalize(string, WURFLRequest) have been removed.

1.13.6.1 - Mar 17th, 2026

- Cache performance improvements
- Added support for
  - Spring 2026 iPhone and iPads

1.13.6.0 - Feb 17th, 2026

- Added support for
  - emerging custom User-Agents for Android, iOS and other platforms
  - new robots, spiders, content fetchers and crawlers via is_robot and robot_family capabilities
- Expanded support for
  - User-Agent Client Hints
  - Android based Smart-TV devices
  - SmartTVs, STBs and other OTT devices and platforms

    - app detection via is_app and advertised_app_name
    - iOS and iPadOS versions and devices
- Dropped support for
    - UcwebU2Matcher (UCWeb U2 proxy Browser) Note: Android User-Agents from this browser will be handled by the AndroidMatcher
- SimpleWebAppCore demo has been removed. Refer to WurflAspNetCoreSample demo
- CHANGED BEHAVIOR
    - The cacheSizeDevice parameter of Configuration constructor is no longer considered and the alternative constructor is called.
    - The method Configuration.CacheSizeDevice always return 0
    - The method Configuration.MatchMode always return MatchMode.Default
    - The method WURFLManager.GetDeviceById(String deviceId, WURFLRequest request) always returns the "generic" device.
    - The method WURFLManager.GetDeviceForRequest(WURFLRequest wurflRequest) always returns the "generic" device.
    - The method Configuration.ExtraHeadersExperimental always returns true.
    - The method WURFLManager.HeaderQuality HeaderQuality(WURFLRequest wurflRequest) always returns HeaderQuality.None
- REMOVAL NOTICE
    - The method WURFLRequestFactory.CreateRequest(HttpRequest httpreq, MatchMode matchMode) has been removed.
- DEPRECATION NOTICE
    - The method UpdatePipeline.GetHttpStatusCode(WebException ex)

1.13.5.1 - Dec 4th, 2025

- Added support for .NET10.0

1.13.5.0 - Nov 3rd, 2025

- Added support for
    - emerging custom User-Agents for Android, iOS and other platforms
    - Vega OS platform and devices
- Expanded support for
    - SmartTVs, STBs and other OTT devices and platforms
    - app detection via is_app and advertised_app_name
    - Android based Smart-TV devices
    - User-Agent Client Hints
    - robot_family virtual capability:
        - New "AI Trainer" and "AI Assistant" categories
        - Bytespider and GPTBot User-Agents will now be classified as "AI Trainer"
        - ChatGPT-User User-Agents will now be classified as "AI Assistant"

- Fixed behavior for
  - User-Agents and HTTP Requests with invalid or missing Android versions will now return "10.0" as the default/fallback Android version. The previously returned version was "6.0".

1.13.4.2 - Oct 1st, 2025

- Fix
  - iOS and iPadOS versions and devices
  - emerging custom User-Agents for Android, iOS and other platforms
  - Added netstandard2.0 target to both WURFLOnSite and WURFLOnSite.NETCore NuGet packages
- Changed Behavior
  - The method InMemoryConfigurer.ExtraHeadersExperimental(bool extraHeadersExperimental) has no effect.
  - The method InMemoryConfigurer.GetExtraHeadersExperimental() always returns true.
  - The method WURFLManager.GetMatchMode() always returns MatchMode.Default.
  - The method WURFLRequestFactory.CreateRequest(HttpRequest httpreq, MatchMode matchMode) always returns an empty WURFLRequest object.
  - The constructor WURFLRequest(IDictionary<String, String> headers, IUserAgentNormalizer userAgentCleaner, UserAgentPriority userAgentPriority, MatchMode matchMode) ignores all parameters except for headers.
- Removal Notice
  - The enum UserAgentPriority has been removed.
  - The constructor WURFLRequestFactory(IUserAgentNormalizer userAgentNormalizer, UserAgentPriority priority) has been removed.
  - Constructors of the Configuration class that received a UserAgentPriority parameter have been removed.
  - The method Configuration.UserAgentPriority() has been removed.
  - Constructors of the WURFLRequest class that received a UserAgentPriority parameter have been removed.
  - The method WURFLRequestFactory.GetUserAgentPriority() has been removed.
  - The method WURFLManager.GetUserAgentPriority() has been removed.
  - The method WURFLManager.GetExtraHeadersExperimental has been removed.
  - The method WURFLManager.SetExtraHeadersExperimental has been removed.
  - The method declaration IWURFLManager.GetExtraHeadersExperimental has been removed.
  - The method declaration IWURFLManager.SetExtraHeadersExperimental has been removed.
  - The interface IUserAgentResolver has been removed.
  - The class DefaultUserAgentResolver has been removed.
  - The method WURFLManager.GetAllMandatoryCapabilities has been removed.
  - The method declaration IWURFLManager.GetAllMandatoryCapabilities has been removed.
- Deprecation Notice
  - The interface IUserAgentNormalizer
  - The method WURFLManager.GetDeviceForRequest(WURFLRequest wurflRequest)
  - The method WURFLManager.GetDeviceById(String deviceId, WURFLRequest request)
  - The method WURFLManager.HeaderQuality(WURFLRequest wurflRequest)
  - The Configuration class constructor with cacheSizeDevice parameter
  - The method Configuration.ExtraHeadersExperimental
  - The method Configuration.CacheSizeDevice

- The method Configuration.MatchMode
- The class WURFLRequest
- The method WURFLRequest.CacheKey()
- The class GenericNormalizer

1.13.4.1 - Jul 9th, 2025

- WURFL Asp.Net extensions dll removal
  - This library has been removed from the NuGet package and is no longer distributed (see deprecation notice 1.13.3.1 Feb 2025).
  - Note: The NuGet package now includes a demo solution, WurflAspNetExtensionSample, which shows you how to create your own ASP.NET extension for WURFL (based on .NET 9).

1.13.4.0 - Jun 11th, 2025

- Added support for
  - emerging custom User-Agents for Android, iOS and other platforms
  - new robots, spiders, content fetchers and crawlers
- Expanded support for
  - User-Agent Client Hints
  - iOS and iPadOS versions and devices
  - SmartTVs, STBs and other OTT devices and platforms
  - app detection via is_app and advertised_app_name
  - Chromium based browsers and web clients
- Note: VIZIO SmartCast and ViziOS User-Agents now return advertised_* virtual capability return values consistent with the platform's branding and specification. Notable updates for that platform:
  - advertised_device_os: defaults to VIZIO SmartCast
  - advertised_browser: defaults to Chromium
- DEPRECATION NOTICE
  - enum UserAgentPriority
  - enum MatchMode
  - enum value MatchMode.Default
  - constructor Configuration with filteredGroups parameter
  - constructor Configuration with userAgentPriority parameter
  - exception MissingGroupException
  - exception BadCapabilityGroupException
  - method IWurflInfo.FilterGroups
  - method DeviceRepository.IsGroupDefined
  - method Configuration.FilteredGroups

1.13.3.1 - Apr 8th, 2025

- Fixed WurflFilePermissionException in WURFLUpdater when InMemoryConfigurer().MainFile() path contains just the file name.
- Fixed an issue preventing the proper functioning of IntelliSense suggestions. Developers can now benefit from code auto-completion as expected.
- DEPRECATION NOTICE
  - method WURFLRequestFactory.GetUserAgentPriority
  - class WURFLRequestFactory
  - method WURFLManager.GetUserAgentPriority
  - method WURFLManager.GetMatchMode
  - method WURFLManager.DumpBuckets
  - method IWURFLManager.GetUserAgentPriority
  - method IWURFLManager.GetMatchMode
  - method IWURFLManager.GetAllMandatoryCapabilities
  - interface IUserAgentResolver
  - method InMemoryConfigurer.GetExtraHeadersExperimental
  - method InMemoryConfigurer.ExtraHeadersExperimental

1.13.3.0 - Feb 18th, 2025

- Added support for
  - advertised_architecture: A new virtual capability that returns the architecture of the device based on analysis of the 'Sec-Ch-Ua-Arch' User-Agent Client Hint.
  - emerging custom User-Agents for Android, iOS and other platforms
  - new robots, spiders and crawlers
- Expanded support for
  - app detection via is_app and advertised_app_name
  - SmartTVs, STBs and other OTT devices
  - Android versions and devices
  - iOS and iPadOS versions and devices
  - User-Agent Client Hints
- A note regarding the .NET Framework 4.5.2 WURFL assembly:
  - Since .NET Framework 4.5.2 does not support TLS >= 1.2 natively, the WURFLUpdater class and the WurflManager.WurflDownload() method may not work properly.
  - To avoid this there have two options:
    - your app should let the OS chose the TLS version
    - use a more recent .NET Framework version
  - Please see https://learn.microsoft.com/en-us/dotnet/framework/network-programming/tls
- A note regarding the WURFL Asp.Net extensions dll:
  - This library is no longer maintained and will be removed in a future release. Its use is deprecated.

1.13.2.0 - Oct 2nd 2024

- Added support for
  - emerging custom User-Agents for Android, iOS and other platforms
  - new robots, spiders and crawlers
- Expanded support for
  - app detection via is_app and advertised_app_name
  - SmartTVs, STBs and other OTT devices
  - User-Agent Client Hints
  - iOS and iPadOS versions and devices
- REMOVAL notice: values FastDesktopBrowser and HighPerformance have been removed from MatchType enum
- Modified dependency on NLog library so that any version greater than or equal to 4.7.0 can be used (until this release v5.2.8 was required)

1.13.1.1 - Jul 16th 2024

- Addded method WURFLManager.wurflDownload to download WURFL file from the Snapshot Generator to a folder

1.13.1.0 - May 28th 2024

- Added support for
  - emerging custom User-Agents for Android, iOS and other platforms
  - new robots, spiders and crawlers
- Expanded support for
  - app detection via is_app and advertised_app_name
  - SmartTVs, STBs and other OTT devices
  - iOS and iPadOS versions and devices
  - User-Agent Client Hints

1.13.0.1 - May 3rd 2024

- Added the option for logging to file for detection and updater API (methods EnableUpdaterLogFile() and EnableApiLogFile() in configurer classes) - logging is based on NLog
- Deprecated updater InitialDelay
- Fix: double initial request to the updater
- Removal of over 60 methods and constructors that have been marked [Obsolete] for at least 4 years. .NET [Obsolete] code removals (R) and scope change from public to private (I):
  - WURFLManager.Reload(configurer) -- R
  - IUserAgentResolver (extensions) -- R
  - DefaultUserAgentResolver (extensions) -- R
  - WURFLManagerExtensions -- R
  - WURFLRequestFactory (extensions) --R
  - NormalizerChain, GenericNormalizerChain (replaced by GenericNormalizer)

    - UserAgentUtils.GetAndroidVersion -- R
    - UserAgentUtils.GetAndroidModel -- R
    - UserAgentUtils.GetUcBrowserVersion -- R
    - UserAgentUtils.GetUcAndroidVersion -- R
    - UserAgentUtils.GetUcAndroidModel -- R
    - IWURFLManager.GetDeviceForRequest(wurflRequest, matchmode) -- R
    - IWURFLManager.GetDeviceForRequest(userAgent, matchmode) -- R
    - DefaultUserAgentResolver -- I
    - IWURFLRequestFactory.CreateRequest -- R
    - WURFLRequestFactory.CreateRequest -- R
    - Several WURFLRequest constructors (using matchMode, uaProfile -- R
    - WURFLRequest.IsIISMangled -- R
    - WURFLRequest.UserAgentProfile -- R
    - WURFLRequest.Headers -- I
    - WURFLRequest.InternalIsMobileBrowser -- I
    - WURFLRequest.MobileKeywordDetected -- I
    - WURFLRequest.ScreenSizeDetected -- I
    - WURFLRequest.InternalIsBot -- I
    - WURFLRequest.InternalIsDesktopHeavyDutyAnalysis -- I
    - WURFLRequestFactory constructors -- R
- Ehn: performance improvement of is_robot and form_factor virtual capabilities evaluation

1.13.0.0 - Feb 28th, 2024

- Added support for
    - New robots, spiders and crawlers
    - Emerging custom User-Agents for Android, iOS and other platforms
- Expanded support for
    - SmartTVs, STBs and other OTT devices
    - User-Agent Client Hints
    - App detection via is_app and advertised_app_name
    - Digital assistant and connected speaker devices
    - Game Consoles
- Fixed behavior for
    - Spark Email Client (iOS/macOS) now defaults to a desktop detection

1.12.11.1 - Jan 30th, 2024

- Added support for .NET8.0

1.12.11.0 - Oct 23rd, 2023

- Added support for
  - new SmartTVs, STBs and other OTT devices
  - new robots, spiders and crawlers
- Expanded support for
  - custom User-Agents for Android, iOS and other platforms
  - User-Agent Client Hints
  - app detection via is_app and advertised_app_name
  - iOS and iPadOS versions and devices
  - Tizen based devices
- Fixed behavior for
  - Firefox on Android will now use "6.0" as the default/fallback OS version in cases where an Android version is absent

1.12.10.1 - Aug 31st, 2023

- Fixed potential NullReferenceException in GetDeviceForRequest
- Fixed advertised_app_name virtual capability evaluation for certain Pandora apps

1.12.10.0 - June 27th, 2023

- Added support for
  - new robots, spiders and crawlers
  - new SmartTVs, STBs and other OTT devices
- Expanded support for
  - custom User-Agents for Android, iOS and other platforms
  - app detection via is_app and advertised_app_name
  - Chromium based browsers and web clients
- Fixed behavior for
  - User-Agents and HTTP Requests with invalid or missing Android versions will now return "6.0" as the default/fallback Android version. The previously returned version was "4.0".
- Note: We periodically update the definition of what we consider to be a smartphone. These changes affect the is_smartphone and form_factor capabilities. This version of the WURFL API makes the following change:
  - Minimum OS version requirements increased to iOS 12, Android 8.0

1.12.9.0 - March 14th, 2023

- Added support for
  - new robots, spiders and crawlers
  - custom User-Agents for Android, iOS and other platforms
- Expanded support for
  - SmartTVs, STBs and other OTT devices

    - User-Agent Client Hints
    - App detection via is_app and advertised_app_name
    - iOS and iPadOS versions and devices
    - Android devices

1.12.8.0 - Nov 30th, 2022

- Added support for .NET7.0
- Versions 4.5.2, 4.6.1 and .NET5.0 are end of life and unsupported - please upgrade to a newer supported version
- Added support for
    - new robots, spiders and crawlers
    - custom User-Agents for Android, iOS and other platforms
- Expanded support for
    - Android devices
    - SmartTVs, STBs and other OTT devices
    - Chromium based browsers and web clients
    - App detection via is_app and advertised_app_name
    - iOS and iPadOS versions and devices
    - User-Agent Client Hints

1.12.7.0 - Sept 21th, 2022

- Added support for
    - new robots, spiders and crawlers
    - new email clients
- Expanded support for
    - SmartTVs, STBs and other OTT devices
    - Digital assistant and connected speaker devices
    - Fire OS devices
    - App detection via is_app and advertised_app_name
    - Mobile and desktop applications
    - iOS and iPadOS versions and devices

1.12.6.0 - May 31, 2022

- .NET Framework 4.7.2 and 4.6.2 are now supported
- .NET Framework 4.5.2 support will be removed in a future release
- Added IWURFLManager method BuildUserAgentFromClientHints
- Added support for
    - custom User-Agents for Android, iOS and other platforms
    - new SmartTVs, STBs and other OTT devices

    - device level detection for certain Roku UAs
- Expanded support for
    - User-Agent Client Hints
    - ChromeOS devices
    - is_smartphone and form_factor capabilities
    - App detection via is_app and advertised_app_name
    - Chromium based browsers and web clients
    - iOS and iPadOS versions and devices Note: We periodically update the definition of what we consider a Smartphone. These changes affect the is_smartphone and form_factor capabilities. This version of the WURFL API makes the following changes:
    - Horizontal Resolution requirements increased to 540 pixels
    - Minimum OS version requirements increased to iOS 9, Android 6.0
    - Removed RIM OS and Windows Phone OS from being considered as Smartphone OS'es
    - Added HarmonyOS

1.12.5.0 - March 1, 2022

- Added support for
    - new robots, spiders and crawlers
    - custom User-Agents for Android, iOS and other platforms
- Added methods: bool WURFLManager.IsUaFrozen(string useragent) HeaderQuality WURFLManager.HeaderQuality(WURFLRequest wurflRequest) HeaderQuality WURFLManager.HeaderQuality(HttpRequest request)
- Expanded support for
    - User-Agent Client Hints
    - SmartTVs, STBs and other OTT devices
    - App detection via is_app and advertised_app_name Note: Support for User-Agent Client Hints is now turned on by default.

1.12.4.0 - November 24, 2021

- Added support for
    - new robots, spiders and crawlers
- Expanded support for
    - SmartTVs, STBs and other OTT devices
    - Custom User-Agents for Android, iOS and other platforms
    - App detection via is_app and advertised_app_name
    - Certain Windows 11 User-Agents
    - iOS and iPadOS versions and devices
    - KaiOS based devices
    - Tizen based devices
- Fixed behavior for ExtraHeadersExperimental

- Removed references to Ionic.Zip (not used anymore)

1.12.3.0 - September 29, 2021

- Added support for
  - new robots, spiders and crawlers
- Expanded support for
  - App detection via is_app and advertised_app_name
  - SmartTVs, STBs and other OTT devices
  - Certain User-Agents from the Roku OS platform
  - iOS and iPadOS versions and devices
- Fixed behavior for
  - Google Read Aloud Assistant: this service is a text to speech assistant and will no longer be categorized as a robot

1.12.2.0 - July 19, 2021

- Added support for
  - Chromium based browsers and web clients
- Expanded support for
  - Android devices
  - App detection via is_app and advertised_app_name
  - Certain non-standard app based User-Agents
  - SmartTVs, STBs and other OTT devices
  - Custom User-Agents for Android, iOS and other platforms

1.12.1.0 - May 24, 2021

- Added support for
  - new robots, spiders and crawlers
- Expanded support for
  - SmartTVs, STBs and other OTT devices

1.12.0.0 - February 26, 2021

- Added support for
  - new robots, spiders and crawlers
  - Chromium based browsers and web clients
- Expanded support for
  - SmartTVs, STBs and other OTT devices

    - KaiOS based devices
    - App detection via is_app and advertised_app_name
    - game consoles
    - Firefox based browsers
- Fixed behavior for
    - User-Agents with invalid Android versions will now consistently return the default/fallback Android version (4.0)

1.11.10.0 - November 23, 2020

- Added support for
    - Chromium based browsers and web clients
- Expanded support for
    - SmartTVs, STBs and other OTT devices
    - App detection via is_app and advertised_app_name
    - iOS and macOS webviews and apps
    - iOS and iPadOS versions and devices
    - Android TV devices
- Compatibility extended to
    - .Net 5.0

1.11.9.0 - September 14, 2020

- Added support for
    - new robots, spiders and crawlers
- Expanded support for
    - SmartTVs, STBs and other OTT devices
    - iOS and macOS webviews and apps
    - App detection via is_app and advertised_app_name

1.11.8.0 - July 1, 2020

- Compatibility extended to
    - .Net Framework 4.8
    - .Net Core 2.1
    - .Net Core 3.1
- Added support for
    - new robots, spiders and crawlers
- Expanded support for
    - SmartTVs, STBs and other OTT devices
    - Android devices

    - iOS versions and devices
    - App detection via is_app and advertised_app_name

1.11.7.1 - May 4, 2020

- Added support for iOS 13.5 hardware mappings

1.11.7.0 - April 30, 2020

- Added support for
    - new digital assistant and connected speaker devices
- Expanded support for
    - UC Browser User-Agents
    - iOS versions and devices
    - App detection via is_app and advertised_app_name
    - SmartTVs, STBs and other OTT devices
    - Chromium based browsers and web clients

1.11.6.0 - February 17, 2020

- Expanded support for
    - App detection via is_app and advertised_app_name
    - Web browsers
    - new iOS versions and devices
    - SmartTVs, STBs and other OTT devices
- Fixed behavior for
    - Android User-Agents

1.11.5.0 - December 4, 2019

- Added support for
    - new robots, spiders and crawlers
- Expanded support for
    - new iOS versions and devices
    - App detection via is_app and advertised_app_name
    - Chromium based browsers and web clients
    - SmartTVs, STBs and other OTT devices
    - Fire OS TV devices
- Fixed behavior for
    - UC Browser User-Agents

    - Samsung Browser: Both Dex and Samsung browsers will now return "Samsung Browser" for the advertised_browser_name virtual capability. This is because both browsers will send a similar HTTP request in desktop mode/requesting a desktop User-Agent.
    - Vivaldi: Vivaldi web browser will now return "Vivaldi" and not "Vivaldi browser" for the advertised_app_name virtual capability. This is to be consistent with the browser's branding.

1.11.4.0 - September 16, 2019

- Expanded support for
    - App detection via is_app and advertised_app_name
    - Chromium based browsers and web clients
    - SmartTVs, STBs and other OTT devices
    - KaiOS based devices
    - certain Xiaomi devices

1.11.3.0 - June 17, 2019

- Expanded support for
    - SmartTVs, STBs and other OTT devices
    - App detection via is_app and advertised_app_name
    - Chromium based browsers
    - Digital Assistant devices
    - new iOS versions and devices
- Fixed behavior for
    - UC Browser User-Agents
    - bot, spider and crawler detection

1.11.2.0 - April 17, 2019

- Added support for
    - new robots, spiders and crawlers
- Expanded support for
    - SmartTVs, STBs and other OTT devices
    - App detection via is_app and advertised_app_name
    - Google Assistant based devices
    - Chromium based browsers
- Fixed behavior for
    - bot, spider and crawler detection

1.11.1.0 - February 11, 2019

- Added support for
  - new robots, spiders and crawlers
  - new Chromium and Gecko based browsers
- Expanded support for
  - App generated UAs on Android and iOS platforms
  - App detection via is_app and advertised_app_name
  - STBs and other OTT devices
  - SmartTVs, STBs and other OTT devices
  - Chromium based browsers
  - Google Assistant based devices
- Fixed behavior for
  - is_app and is_app_webview behavior under certain conditions where additional HTTP headers are available
  - Android model name extraction for certain User-Agents
  - certain Kindle user agents

1.11.0.0 - December 5, 2018

- Added support for
  - new Chromium based browsers
  - new virtual capability - pixel_density
- Expanded support for
  - app detection via is_app, is_app_webview and advertised_app_name
  - Xbox game consoles
  - web automation frameworks and libraries
  - Internet Explorer and Edge browsers
  - Yahoo Mail
  - robots, crawlers and spiders
  - new Apple devices
  - Gmail
- Fix bug on GetVirtualCapabilities() method (controlcap_generalized_browser_type not available due to restrictions in the loaded WURFL data)

1.10.0.0 - September 24, 2018

Mod: Potentially breaking change: Please note that this version standardizes tvOS return values for advertised_device_os and advertised_browser capabilities and aligns them to Apple's branding practices. "TV OS" will henceforth be called "tvOS" and "TV OS App" will be renamed to "tvOS App" Add: Support for new Chromium and

Gecko based browsers Enh: Expanded support for app detection via is_app and advertised_app_name Enh: Expanded support for KaiOS based devices Enh: Expanded support for PlayStation devices Enh: Expanded support for Apple TV devices

1.9.5.0 - July 23, 2018

Enh: Aligned some return values for the advertised_device_os virtual capability to align with device_os static capability - "Bada" is now "Bada OS" - "Nokia Series 40" is now "S40 OS" - "Symbian" is now "Symbian OS" Add: Support for Certain Android P User-Agents Add: Support for Certain TV OS User-Agent formats Add: Support for Digital Assistants Add: Support for New Opera browser versions Add: Support for New Tizen versions Add: Support for Upcoming Android and iOS versions Add: Support for New tvOS versions Enh: Improved support for is_app capability for SmartTV devices Enh: Expanded app detection support via is_app and advertised_app_name Enh: Optimized model name extraction for certain Android apps that send irregular User-Agent structures

1.9.4.0 - May 21, 2018

Add: Support for upcoming iOS versions Add: Support for MIUI Browser Add: Support for Quark Browser Add: Support for Avast Secure Enh: Improved support for Apple iPad (6th gen) Enh: Improved support for Sony and Vizio Smart TVs Enh: Improved support for Roku devices Enh: Improved support for App name detection (advertised_app_name) Enh: Improved support for Microsoft Office Enh: Improved support for Yandex browser Enh: Improved support for Baidu Browser Enh: Improved support for Apple Core Media User-Agents Enh: Improved support for Facebook Messenger Mod: Deprecation of some methods that will be removed in a future release

1.9.3.1 - April 23, 2018

Fix: Detection performance regression (Roku) Fix: Bug on calculation of some Virtual Capabilities when WURFL cache is enabled Enh: Added new virtual capability - generalized_browser_type Enh: Added new virtual capability - generalized_os_brand Enh: Deprecation of WURFLManager.GetAllMandatoryCapabilities(). Since 1.8.0.0 wurfl engine takes care of loading/checking that vcap needed static capabilities are present.

1.9.3.0 - March 19, 2018

Potentially breaking change: The definition of what we consider smartphones is changing with this release. Please read this article for more details on what is changing and why. https://www.scientiamobile.com/keeping-smartphones-smart Add: Support for KaiOS Add: Support for Tizen 4.0 Add: Support for some Android media players Enh: Improved detection of Robots and Crawlers Enh: Improved detection of Mobile and desktop applications Enh: Improved detection of Smart-TVs Enh: Improved detection of SmartPhones Enh: Improved detection of Game consoles

Version 1.9.2.0 - December 18, 2017

Add: Support for Upcoming iOS versions Add: Support for Upcoming Tizen versions Add: Support for Extracting model numbers for desktop devices under certain conditions Ehn: Improved detection of Opera Mobi and Tablet on Android Ehn: Improved detection of Requests from UCBrowser's U2 engine

Version 1.9.1.1 - November 15, 2017

Enh: Improved engine load phase

Version 1.9.1.0 - November 2, 2017

Breaking: The default version of Android is now 4.0. Undetecteable/corrupted Android User-Agents will now return a more appropriate OS version.
Ehn: Improved detection of Ehn: Improved detection of Fire OS Ehn: Improved detection of iPhone hardware Ehn: Improved detection of Apps Ehn: Improved detection of Huawei devices Ehn: Improved detection of Firefox on Android User-Agents
Ehn: Improved detection of Android and iOS UCbrowser User-Agents
Ehn: Improved detection of Edge browser
Add: Support for Upcoming iOS versions Add: Support for Upcoming Android versions Add: Support for Edge browser on iOS and Android Add: Support for Steam in-game requests Add: Support for Firefox Focus Add: Support for Yandex Desktop Add: Additional validation for advertised_device_os

Version 1.9.0.1 - October 13, 2017

Ehn: .NETCore 2.0 port.

Version 1.9.0.0 - June 29, 2017

Ehn: Decommissioning of WURFLManager's MatchMode options Add: Support for Epiphany detection Add: Support for iOS 11 Add: Support for Samsung Dex Add: Support for Samsung Browser Add: Support for Tizen 3.0 Add: Stripping of non-printable characters from the User-Agent Ehn: Improved detection of Android Ehn: Improved detection of Bots Ehn: Improved detection of Apps Ehn: Improved detection of Amazon Silk Browser Ehn: Improved detection of CFNetwork User-Agents

Version 1.8.4.0 - April 6, 2017

Add: detection of Nintendo Switch Add: detection of Email client Ehn: improved detection of devices with encoded user agents Fix: Android 4.4/5.x mistakenly classified as apps

Version 1.8.3.3 - March 13, 2017

Add: GetDeviceForRequest method that uses System.Web.HttpRequest. Refactored WURFLRequest factories and UserAgentResolvers accordingly Ehn: New constructor in WURFLUPdater that takes a WURFLManager, also added new updater methods PerformUpdate() and PerformPeriodicUpdate() and deprecated old ones.

Version 1.8.3.2 - February 16, 2017

Ehn: various WURFLUpdater improvements

Version 1.8.3.1 - February 2, 2017

Fix: updated changelog

Version 1.8.3.0 - February 1, 2017

Add: support for upcoming iOS and Android versions Add: support for new Microsoft Edge browsers Ehn: detection of some Nintendo devices running Access/Netfront browsers Ehn: detection of macOS User-Agents Ehn: improved checks on updater module

Version 1.8.2.0 - November 22, 2016

Enh: Added new virtual capability - advertised_app_name Enh: Improved detection of MSIE browsers with alphanumeric versions Enh: Improved detection of UAs originating from Google Search app on iOS Add: iOS 10.2 hardware IDs Add: Updated support for Microsoft Edge and Opera browsers Fix: in robot, Kindle and Windows Phone detection

Version 1.8.1.2 - November 7, 2016

Ehn: Wurfl Updater - Triggered first update immediately after updater launch. Fix: Wurfl Updater - cleaned cache on reload

Version 1.8.1.1 - October 10, 2016

Add: WURFLUpdater module

Version 1.8.1.0 - September 26, 2016

From this release we are be compiling with dotNET v4.5.2 compatibility. We will be removing dotNET 2.0/3.0 support in the next releases so we suggest to upgrade your dotNET framework as soon as possible. Enh: Review of patch file load process Enh: DeviceNotDefinedException is thrown when GetDeviceById() method is called with unexistent deviceid Enh: WurflUncosistencyException is thrown when a patch redefine an existent device with wrong user_agent/fall_back attributes Add: Android 7.1 devices Add: Iphone 7 and 7 plus device Add: support for Amazon mobile app

Version 1.8.0.4 - August 19, 2016

Fix: Null pointer exception calling GetVirtualCapabilities() method for some devices

Version 1.8.0.3 - August 17, 2016

Enh: Performance improvements

Version 1.8.0.2 - August 9, 2016

Fix: Consistency exception loading wurfl-latest.zip

Version 1.8.0.1 - August 1, 2016

Fix: Runtime FatalExecutionEngineError exception

Version 1.8.0.0 - July 26, 2016

Add: Support for url-encoded UAs Add: Chinese Android detection Add: Android 7 detection Enh: Better iPod Touch detection Enh: Better Facebook and Mobile App detection Enh: Mandatory Capabilities are automatically loaded during engine load Enh: Major performance improvements Enh: New enumerators for caps/mandatory/vcaps

Version 1.7.1.1 - June 15, 2016

Fix: Duplicated key exception when using WURFLCache in multithreaded environments

Version 1.7.1.0 - April 14, 2016

Add: Palemoon Browser detection Add: Bravia, SmartTV detection Add: iOS 10 and new iOS devices detection Add: Desktop App detection Fix: IIS detection issues Fix: controlcap mechanism

Version 1.7.0.0 - February 8, 2016

Add: WURFL.XML deviceIds consistency check Add: New virtual capability: device_name Enh: Improved detection of Apple devices Enh: Improved detection Edge browser

Version 1.6.4.1 - December 21, 2015

Fix: Added mandatory capabilities for advertised capabilities

Version 1.6.4.0 - December 4, 2015

Enh: Improved detection of Nokia devices Enh: Improved detection of Android User-Agents (UAs) without model names Enh: Improved detection of Certain feature phones running Opera Mini Enh: Improved detection of SmartTVs Enh: Improved detection of UAs from Android apps Enh: Improved detection of Blackberry Playbook Enh: Improved detection of Bot UAs Enh: Improved detection of Firefox on iOS Enh: Improved internal UA matching methods Enh: Improved LRU cache logic

Version 1.6.3.0 - October 19, 2015

Enh: Improved detection of Apple devices Enh: Improved detection of Bots Enh: Improved detection of Androids Enh: Improved detection of Edge browser Enh: Improved virtual capability computation for Safari on iOS Enh: Improved virtual capability computation for Samsung Browser Enh: Improved virtual capability computation for BlackBerry 10 Enh: Improved virtual capability computation for Mac OS X Enh: Improved is_app_webview virtual capability computation for Android 5.X Enh: Improved CFNetwork UAs detection Add: Improved LRU and DoubleLRU cache

Version 1.6.2.0 - August 20, 2015

Enh: Improved detection in VC tool for MSIE 12/Edge Enh: Improved detection of Windows Phone Enh: Improved detection of Bots

Version 1.6.1.0 - July 16, 2015

Enh: Improved detection in VC tool for Baidu browser Enh: Improved detection in VC tool for iOS Enh: Improved iOS device detection Enh: Improved Opera browser detection Enh: Improved FirefoxOS detection

Version 1.6.0.1 - April 29, 2015

Enh: Load Time and Detection performances improvement Add: Possibility to set cache size Enh: Code Refactoring

Version 1.6.0.0 - April 3, 2015

Add: Android 5.1 support Add: MSIE 12/Edge 12.0 support Add: Tizen 2.3 support Add: Trove Bot detection Add: Windows Phone 10 support Add: New is_phone and is_app_webview virtual capabilities Enh: Improved WURFL detection performances Enh: Improved detection of Android, CFNetwork, Chromium, Firefox OS, MSIE 12/Edge, Opera, SmartBrowser, SmartTV, UCWebBrowser, Wii

Version 1.5.3.0 - December 12, 2014

Add: 360 Browser (for Desktop and Android) detection in VC tool Add: Opera on Android detection in VC tool Add: Opera on iOS detection in VC tool Add: iOS 8.1 and 8.2 WURFL hardware IDs Add: Windows 10 detection Enh: LD Algorithm Enhancement

Version 1.5.2.1 - September 23, 2014

Enh: improved form_factor virtual capability