Perfecto BlazeMeter

Test Coverage Guide

A Blueprint for Strategic Mobile & Web Testing

FALL/WINTER 2022

In Partnership With

codemagic NowSecure

‘WHAT SHOULD I BE TESTING RIGHT NOW?’

The digital landscape for web and mobile app testing is constantly changing. New devices, market updates, OS releases — it’s a lot to keep up with! Perfecto customers frequently come to use asking a few common questions:

What combination of devices, OS versions, and browsers should we be testing against?

How can we prepare for yet-to-be-released updates and releases?

To answer those questions and quell any anxiety keeping up with the changes may cause, we have compiled an exclusive, comprehensive guide for you to get a sense of the broader testing picture. This guide includes Perforce data and global mobile market usage data to provide a benchmark of devices, web browsers, and user conditions to test on — so you can make strategic decisions about test coverage across mobile and web applications.

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DATA INTO PRACTICE

How can the coverage data be applied to real-world executions? Here are five considerations when assessing size, capacity, and the right platform coverage in a mobile test lab.

Balance Data & Analysis With Risk

Combine data in this guide with your own analysis and risk assessment to decide whether to start testing with the Essential, Enhanced, or Extended mobile coverage buckets.

Optimize Your Lab Configuration

Bundle in test data parameters (like number of tests, test duration, and required execution time). These parameters provide the actual time a full- cycle or subset may take based on your lab configuration. If outside the boundaries of the testing cycle time, more parallelization and platforms may be required.

Map Coverage Against Your Pipeline

Map coverage needs to your test pipeline. In Figure 1 below, we divide a common pipeline by testing types and triggers. Virtual devices are often best used in earlier phases. Real devices in later phases.

Test Against Security Vulnerabilities

Mobile apps have become an indispensable part of daily life, helping people communicate with friends and family, browse and shop online, collaborate with colleagues, monitor healthcare devices, manage finances and much more. But mobile app pervasiveness has altered the cyber threat landscape and made mobile apps a growing target for attack. What are you doing to ensure your mobile security is airtight?

Figure 1. Coverage Against Pipeline

	Unit Testing P1		Build Acceptance Test P1 + P2	Acceptance Test Regression & Non-Functional	Production P3
Test Platform	1 iOS (device/simulator) 2 Android (device/emulator) 2 Desktop Browsers		Essential (Top 10) Mobile & Web Platforms	Enhanced/Extended Coverage (Top 25-32 Platforms)	2 iOS 2 Android 2-4 Browsers
Trigger	Per-commit	Post-commit	Scheduled Daily	Scheduled Nightly	Scheduled Hourly
Environment	Dev Workstation		Continuous Integration Server		Production

Eliminate Bottlenecks With Load Testing

A service outage can cost hundreds of thousands of dollars and harm your brand reputation. Avoid these nightmare scenarios by incorporating load testing into your device testing strategy.

We recommend running both smaller load tests after each build and larger load tests for specific events when your site will be put under extra stress, e.g. Black Friday or the Super Bowl. Start at 10% of your peak load, then slowly ramp up while monitoring indicators at each stage.

Next, identify your total capacity, then run load tests at 80% of that total. Monitor your load testing KPIs and how your system reacts. Ensure everything is perfectly stable at 80%. Memory capacity should be mellow, CPU low, and recovery from spikes quick. If something seems jittery at this point, you certainly won't be able to count on it at 100% load.

If the test failed, identify bottlenecks and errors and fix what needs fixing before testing your system again. If it succeeded, slowly climb up to 100%.

Once you've reached full capacity, it's time to test the load you anticipate based on previous user patterns, trend analysis, product requirements, and expected events. Check for memory leaks, high CPU usage, unusual server behavior, and any errors during these tests.

BlazeMeter recently joined Perfecto as part of the Perforce family. Learn how these two leading platforms are joining forces to offer full coverage of the entire test pyramid. >>

Key Performance Indicator (KPI) Checklist

KPI ▼	Threshold ▼▲	Comparison ▼▲	Actual ▼▲	Status ▼▲
responseTime.max	10000	>	480255	X
responseTime.avg	5000	>	480000.08	X
errors.percent	10	>	0	✓
errors.count	20	>	0	✓

Sizing Your Executions

As you expand coverage, parallel testing becomes essential for accelerating test runs and avoiding unnecessary labor costs.

Figure 2 below examines the impact of 150 regression tests each running for three minutes against one platform. By multiplying each test against the test coverage bucket, we get total hours per test cycle.

150 regression tests for each of the top 10 devices would take about 10 business days. In this case, we need to run more tests in parallel to complete testing sooner.

With the right number of devices & parallel executions, you can accelerate test runs and avoid costs.

As the figure shows, running those same regression tests in parallel across 9 devices saves 67 hours and approximately $3,500 per cycle. (Figuring an average $100K salary and 2,080 working hours a year.)

Parallel test execution (against the right platforms with the right test cases with high value) helps teams save time, reduce costs, and expedite feedback. Combined with BlazeMeter, Perfecto the first in the industry to offer UX load testing that simulates real-world conditions for your mobile devices.

Figure 2. Sizing Parallel Executions

Coverage Bucket	No. of Unique Tests (Regression Ste.)	Avg. Time Per Test	Execution Window	Execution Time (Serial)	Parallel Execution Requirement	Cost Avoidance (Business Tester Annual Salary Input)
Essential Top 10	150	3 minutes	8 hours	4,500 minutes (75 hours)	9	67 hours saved ($3,500 per cycle)
Enhanced Top 25	150	3 minutes	8 hours	11,250 minutes (187.5 hours)	23	180 hours saved ($8,640 per cycle)
Extended Top 32	150	3 minutes	8 hours	14,400 minutes (240 hours)	30	232 hours saved ($11,136 per cycle)

What Should I Be Testing Right Now?

The digital landscape for web and mobile app testing is constantly changing. New devices, market updates, OS releases — it's a lot to keep up with! Perfecto customers frequently come to use asking a few common questions:

- What combination of devices, OS versions, and browsers should we be testing against?
- How can we prepare for yet-to-be-released updates and releases?

To answer those questions and quell any anxiety keeping up with the changes may cause, we have compiled an exclusive, comprehensive guide for you to get a sense of the broader testing picture. This guide includes Perforce data and global mobile market usage data to provide a benchmark of devices, web browsers, and user conditions to test on — so you can make strategic decisions about test coverage across mobile and web applications.

Develop a Testing Strategy for Flutter Apps

Flutter is a cross-platform framework that enables you to create mobile, web, and desktop applications. The testing strategy for Flutter apps may differ significantly from those of other mobile frameworks depending on your use case. However, there are also many similarities.

Flutter offers a feature-rich testing toolset, including unit, widget, and integration tests. Unit and widget tests are usually cheaper and easier to write but less accurate than integration tests. However, integration tests are relatively expensive and slow. Therefore, it's necessary to follow the testing pyramid by using many unit tests, some widget tests, and a few select integration tests.

Integration tests should cover critical user paths, such as registration and checkout. These tests should be run regularly overnight on simulators against the development branch. Because UI tests are expensive, we advise running them on hardware devices only for special occasions like releases.

Additionally, you can test less critical paths that lead to more user satisfaction, such as promotions or user profile handling. However, to avoid flakiness in the tests, you can exclude them from the overnight test set and just run them before a release.

As a multiplatform toolkit, Flutter comes with some additional challenges you'll need to cope with in your integration tests. For example, besides different screen sizes, you should consider different platforms, like Linux, macOS, Windows, and the web. Additionally, you will have to handle the long execution times of integration tests, as you will need to set them up and run them on different devices one by one. Therefore, it is recommended to parallelize them to reduce cost and execution time.

To conclude, with a robust testing strategy that follows the testing pyramid and integration tests that cover your critical user paths before a release, you can reduce manual testing, increase delivery speed, and boost customer satisfaction.

To read more about full-stack testing of Flutter apps please read more from CodeMagic.

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Top 5 Security and Privacy Vulnerabilities in Mobile Apps

Vulnerabilities	
PCT	Issue
50%	Insecure Data Storage & Crypto
48%	Insecure Network Communication
47%	Use Insecure Coding Practices
32%	Exposure to Reverse Engineering
32%	Exposure to Reverse Engineering

Mobile apps have become an indispensable part of daily life, helping people communicate with friends and family, browse and shop online, collaborate with colleagues, monitor healthcare devices, manage finances and much more. But mobile app pervasiveness has altered the cyberthreat landscape and made mobile apps a growing target for attack.

The NowSecure Platform automated mobile application security testing engine analyzes millions of Android and iOS apps across a range of industries. Built on OWASP Mobile Application Security Verification Standard (MASVS) and with decades of mobile pen testing experience, NowSecure Platform runs a battery of more than 600 automated tests using static, dynamic, interactive and APISec technology.

Here are five of the most common security vulnerabilities and privacy issues that NowSecure testing uncovers:

Insecure Data Storage and Crypto

Mobile developers often save files into a mobile device file system and data into system or app logs without adding proper security controls and encryption. This lack of protection makes it easy for threat actors to access sensitive information, opening the door to fraud, identify theft, regulatory or compliance violations and reputational harm.

Insecure Network Communications

Mobile apps rely on networks to transmit data to cloud and backend services, but these connections lack the same protections as web applications. Web app developers use HTTPS in the browser to encrypt connections, but mobile app developers must use APIs and write their own secure connections, which many fail to do. These vulnerabilities allow threat actors to intercept traffic and exploit open networks, VPNs and public Wi-Fi, leading to stealing credentials, phishing, fraud, identity theft and many other problems.

Insecure Coding Practices

Poor coding practices create a wide range of attack vectors. Logic flaws, bugs in third-party libraries, debugging features, memory leaks and buffer overflows offer a direct path to sensitive data. Mobile app developers that fail to write and use secure code risk data theft, unauthorized access, fraud and reputational harm.

Exposure To Reverse Engineering

Attackers can use easily accessible tools that inspect the binary code of a mobile app to understand how it was built. This information can then be used to determine how to exploit the mobile app and/or attack the back end. Developers may think Apple and Android digital rights management software protects their mobile apps from reverse engineering, but cyberattackers can bypass these protections. Mobile apps without safeguards against tampering may become susceptible to data theft, IP theft, fraud and compromised backend systems.

Insecure Authentication or Authorization

Missing or flawed authentication schemes in password acceptance, session management and permissions can enable threat actors to access mobile apps through a backend server. Cyberattackers can then use their own brute-force automated tools to gain unauthorized control of the mobile app, allowing them to steal sensitive data, access intellectual property and upload malicious programs like ransomware.

To find and fix mobile app security and privacy issues, mobile DevSecOps teams should integrate automated mobile AppSec testing into the dev pipeline and ensure high-risk or complex apps undergo expert penetration testing. Mobile Devs, QA and Security teams can learn more on secure coding and testing best practices with free training. And if you are building Android apps for the Google Play store, consider adding an Independent Security Validation to your Google Play Data Safety section. Visit the NowSecure Mobile App Risk Tracker to view the current risk profile of Android and iOS mobile apps across 13 industry segments.

Prepare Your Mobile UX for Peak Online Events

A five-star user experience has become the standard expectation for mobile applications. With the rise of stock trading, mobile banking, mobile commerce, mobile healthcare and more, consumers have come to rely on mobile applications for more time-sensitive transactions or situations where flawless user experiences and fast performance are key.

Because mobile applications are so prevalent and the go-to device for many, you must allocate your testing efforts accordingly and invest in user experience (UX) testing to ensure a seamless UX—especially when there is an increased load on mobile applications. Here are a few examples with above-average load where your mobile applications might be put to the test:

- Black Friday
- Superbowl Sunday
- Peak travel season, holidays
- Major launches
- Financial meltdowns

Web browser testing is quite different than mobile device testing. There are many variables and characteristics in mobile performance testing that can affect the UX that are not applicable to web browser testing.

Mobile-specific variables include:

- Mobile device hardware – Performance will differ across various devices such as iPhone X, Samsung Galaxy S22, Google Pixel 6, etc.

- Mobile networks - A mobile device will perform differently when it is connected to Wifi versus 5G versus 3G, etc.
- Types of mobile apps - Performance will vary across native mobile, mobile web and hybrid apps.
- Biometric authentication – Facial, fingerprint and voice recognition are forms of biometric authentication commonly used in mobile applications that impact UX.

The Solution

Using BlazeMeter in tandem with Perfecto, you can test both your mobile user experience along with your backend under load in the cloud and scale up to two million virtual users. All the above-mentioned mobile-specific variables can be incorporated to simulate realistic mobile traffic patterns including detailed server and end-user experience reports to help you measure and understand how your mobile app is impacted under load.

Mobile UX testing is now possible to help you provide flawless and reliable end-user experiences for your customers. Load testing from BlazeMeter enhances Perfecto's mobile testing capabilities by giving teams a clear view of the entire mobile experience.

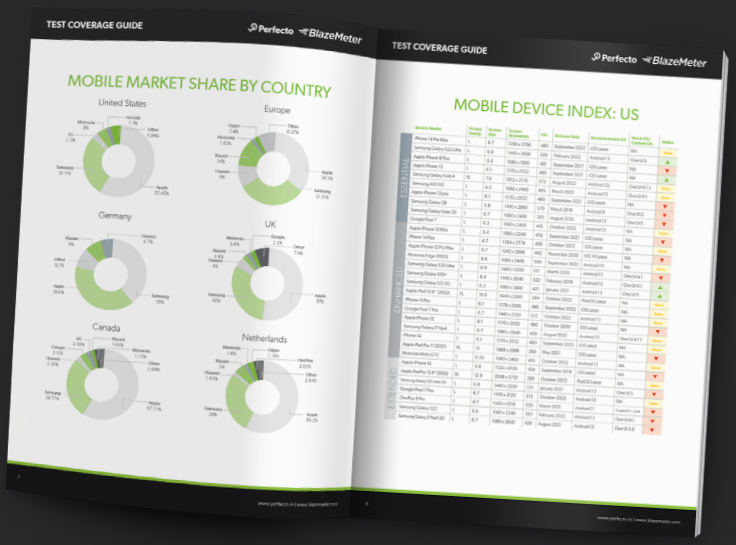
Confronting the Toughest Mobile Testing Challenges

As technology available to web and mobile apps continues to get more complex, it's important that you are able to test against every advanced use case to ensure a flawless UX. From biometric authentication to barcode scanning and beyond, Perfecto is the only platform in the industry to be able to test against all advanced use cases.

That means you can ditch your patchwork testing strategy for a seamless, end-to-end experience that will save you time and money. You can learn more about testing against these complex use cases by downloading the "10 Toughest Mobile Testing Challenges" eBook today.

MOBILE COVERAGE RECOMMENDATIONS

Select your target country and assess coverage by device as divided into three groups — Essential, Enhanced, and Extended. Cross-reference this list with your own data and risk assessment to determine coverage gaps and opportunities.



Terms & Symbols to Know

Essential: Must test for minimal coverage. Includes top 10 most-used devices.

Enhanced: Expand for reduced risk. Includes top 25 devices, including legacy and trending devices and different screen sizes.

Extended: For maximum coverage, least risk. Includes top 32 devices, with niche, legacy, and brand new devices to represent the long tail.

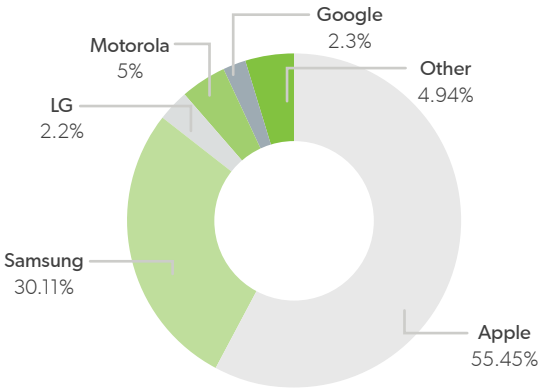
Up Arrow, Down Arrow, Equal Sign: Indicates usage changes since last quarter.

New: Devices that are *new to the index* or are reference devices running the latest OS.

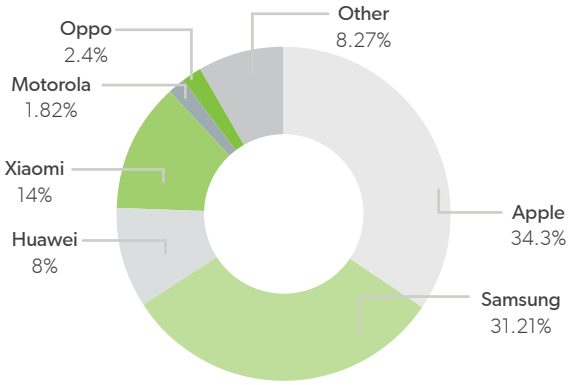
Note: The Mobile Device Coverage Index is an objective reflection of selected markets based on mobile device usage of specific operating system versions. Some of the device and operating system combinations that are recommended in this report may no longer be available from OEMs or wireless network providers due to market dynamics

MOBILE MARKET SHARE BY COUNTRY

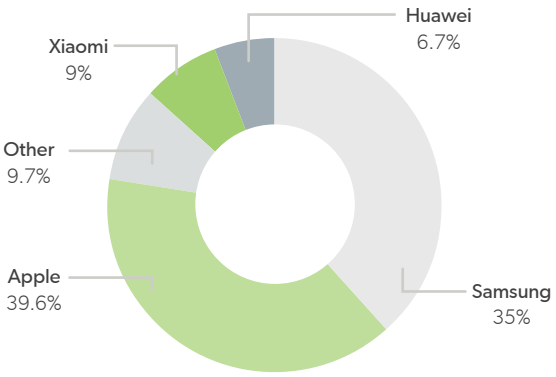
United States



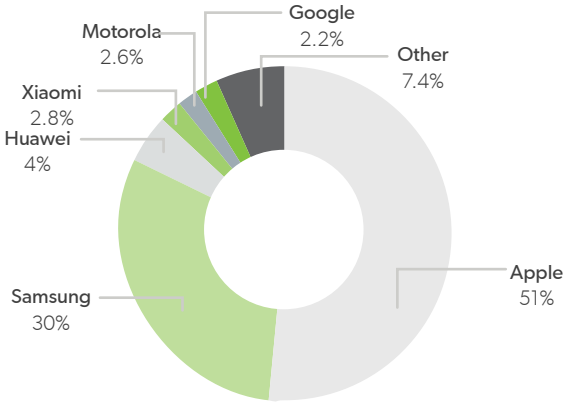
Europe



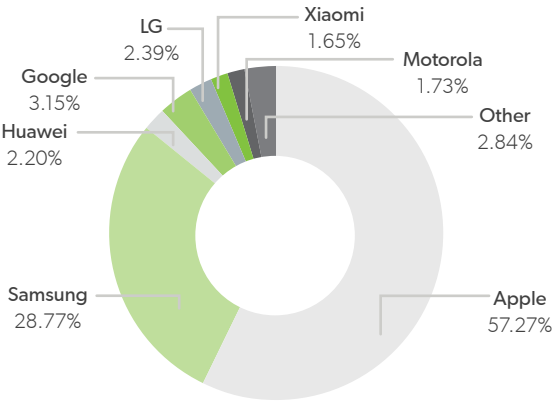
Germany



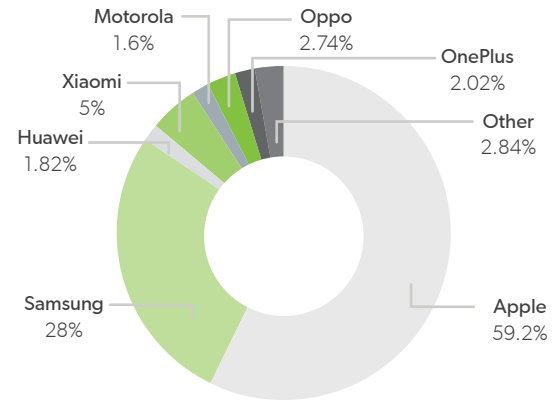
UK



Canada

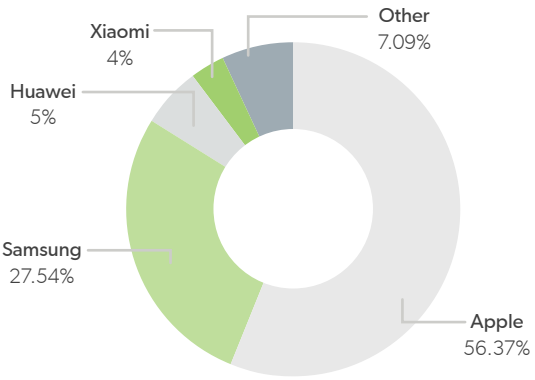


Netherlands

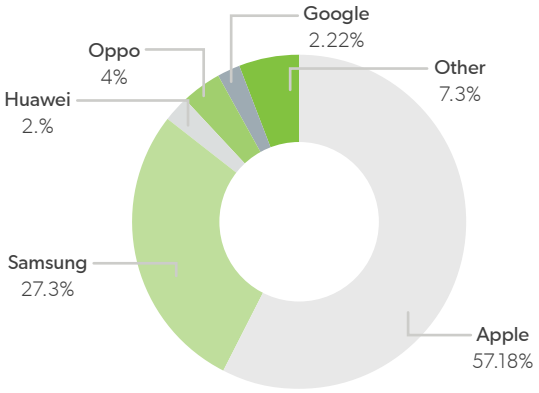


MOBILE MARKET SHARE BY COUNTRY

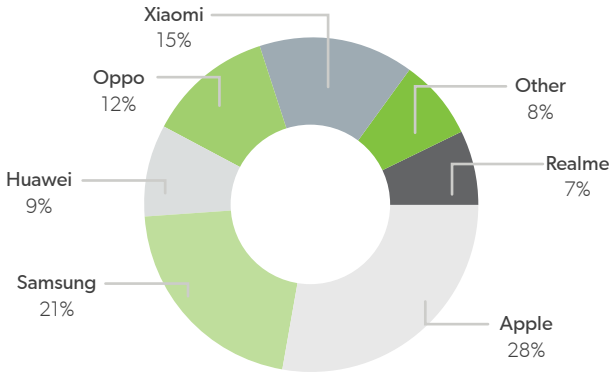
Switzerland



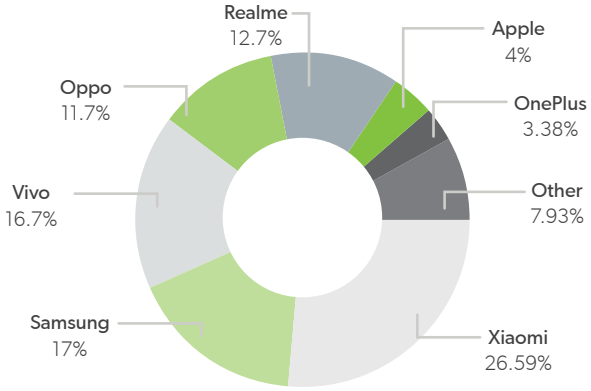
Australia



Singapore



India



MOBILE DEVICE INDEX: US

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	New
	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 13	One UI 5	▲
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	Apple iPhone 13	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▲
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	New
	Samsung A53 5G	L	6.5	1080 x 2400	405	March 2022	Android 12	One UI 4.1	New
	Apple iPhone 13 pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Samsung Galaxy S9	L	5.8	1440 x 2960	570	March 2018	Android 9	One UI 2	▼
	Samsung Galaxy Note 20	L	6.7	1080 x 2400	393	August 2020	Android 13	One UI 5	▼
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	Apple iPhone 13 Mini	L	5.4	1080 x 2340	476	September 2021	iOS Latest	NA	▼
	iPhone 14 Plus	L	6.7	1284 x 2778	458	October 2022	iOS Latest	NA	New
	Apple iPhone 12 Pro Max	L	6.7	1242 x 2688	442	November 2020	iOS 14 Latest	NA	▼
	Motorola Edge (2022)	L	6.6	1080 x 2400	399	September 2022	Android 13	NA	New
	Samsung Galaxy S20 Ultra	L	6.9	1440 x 3200	511	March 2020	Android 12	One UI 4.1	▼
	Samsung Galaxy S10+	L	6.4	1440 x 3040	522	February 2019	Android 12	One UI 4.1	▲
	Samsung Galaxy S21 5G	L	6.2	1080 x 2400	421	January 2021	Android 13	One UI 5	▲
	Apple iPad 10.9'' (2022)	XL	10.9	1640 x 2360	264	October 2022	iPadOS Latest	NA	New
	iPhone 14 Pro	L	6.1	1179 x 2556	460	September 2022	iOS Latest	NA	New
	Google Pixel 7 Pro	L	6.7	1440 x 3120	512	October 2022	Android 13	NA	New
	Apple iPhone 12	L	6.1	1170 x 2532	460	October 2020	iOS Latest	NA	▼
	Samsung Galaxy Z Filp4	L	6.7	1080 x 2640	426	August 2022	Android 12	One UI 4.1.1	New
	iPhone 14	L	6.1	1170 x 2532	460	September 2022	iOS Latest	NA	New
	Apple iPad Pro 11 (2021)	XL	11	1668 x 2388	265	May 2021	iOS Latest	NA	▼
	Motorola Moto G72	L	6.55	1080 x 2460	410	October 2022	Android 12	NA	New
EXTENDED	Apple iPhone XS	L	5.8	1125 x 2436	458	September 2018	iOS Latest	NA	▼
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	New
	Samsung Galaxy S21 Ultra 5G	L	6.8	1440 x 3200	515	January 2021	Android 13	One UI 5	▼
	Google Pixel 7 Pro	L	6.7	1440 x 3120	512	October 2022	Android 13	NA	New
	OnePlus 9 Pro	L	6.7	1440 x 3216	525	March 2021	Android 11	OxygenOS 11.2.6.6	▼
	Samsung Galaxy S22	L	6.6	1080 x 2340	393	February 2022	Android 12	One UI 4.1	▼
	Samsung Galaxy Z Flip3 5G	L	6.7	1080 x 2640	426	August 2021	Android 12	One UI 4.0	▼

MOBILE DEVICE INDEX: CANADA

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	New
	Samsung A53 5G	L	6.5	1080 x 2400	405	March 2022	Android 12	One UI 4.1	New
	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 12	One UI 4.1	▲
	Apple iPhone 11 Pro Max	L	6.5	1242 x 2688	458	September 2019	iOS 14 Latest	NA	▼
	Apple iPhone 13 Pro Max	L	6.7	1284 x 2778	458	September 2021	iOS Latest	NA	▲
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	New
	Samsung Galaxy S21 5G	L	6.2	1080 x 2400	421	January 2021	Android 13	One UI 5	▼
	Apple iPhone 13 Pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Samsung Galaxy Z Filp4	L	6.7	1080 x 2640	426	August 2022	Android 12	One UI 4.1.1	New
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	Motorola Edge (2022)	L	6.6	1080 x 2400	399	September 2022	Android 13	NA	New
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	Samsung Galaxy S22 +	L	6.6	1080 x 2340	393	February 2022	Android 12	One UI 4.1	New
	Apple iPhone 13	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	New
	Apple iPhone 12 Pro Max	L	6.7	1242 x 2688	442	November 2020	iOS latest	NA	▲
	Samsung Galaxy S10+	L	6.4	1440 x 3040	522	February 2019	Android 12	One UI 4.1	▼
	Apple iPad Pro 11 (2021)	XL	11	1668 x 2388	265	May 2021	iOS Latest	NA	New
	iPhone 14 Pro	L	6.1	1179 x 2556	460	September 2022	iOS Latest	NA	New
	Huawei Mate 50 Pro	L	6.74	1212 x 2616	428	September 2022	EMUI 13	HarmonyOS 3.0	New
	Apple iPad Mini (2019)	XL	7.9	1536 x 2048	324	March 2019	iPadOS Latest	NA	▲
	Samsung Galaxy Tab A8 10.5	XL	10.5	1200 x 1920	216	January 2022	Android 11	One UI 3.0	New
	Apple iPhone 13 Mini	L	5.4	1080 x 2340	476	September 2021	iOS Latest	NA	New
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	New
	iPhone 14 Plus	L	6.7	1284 x 2778	458	October 2022	iOS Latest	NA	New
	Samsung Galaxy Note 20 Ultra 5G	L	6.9	1440 x 3088	496	August 2020	Android 10	One UI 2.5	New
EXTENDED	Apple iPad Air 2019	XL	10.5	1668 x 2224	265	March 2019	iPadOS Latest	NA	New
	Apple iPhone SE (2020)	N	4.7	750 x 1334	326	April 2020	iOS Latest	NA	New
	Apple iPad 10.2 (2021)	XL	10.2	1620 x 2160	265	September 2021	iPadOS Latest	NA	New
	Apple iPhone 11 Pro	L	5.8	1125 x 2436	458	September 2019	iOS Latest	NA	▲
	Apple iPhone 12 Mini	L	5.4	1080 x 2340	476	October 2020	iOS Latest	NA	▲
	Samsung Galaxy S9+	XL	6.2	1440 x 2960	529	March 2018	Android 10	One UI 2	▼
	Apple iPad 10.9" (2022)	XL	10.9	1640 x 2360	264	October 2022	iPadOS Latest	NA	New

MOBILE DEVICE INDEX: EU5

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 12	One UI 4.1	▲
	Samsung Galaxy S20	L	6.2	1440 x 3200	563	March 2020	Android 13	One UI5	▼
	Apple iPhone 13 Pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Samsung Galaxy S22 +	L	6.6	1080 x 2340	393	February 2022	Android 12	One UI 4.1	▲
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	New
	Apple iPhone 12 Pro Max	L	6.7	1242 x 2688	442	November 2020	iOS latest	NA	▼
	Huawei Nova 9	L	6.57	1080 x 2340	392	September 2021	Harmony OS 2.0	EMUI 12	▼
	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	New
	Samsung Galaxy S9+	L	6.2	1440 x 2960	529	March 2018	Android 10	One UI 2	▼
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	Apple iPhone 13 Mini	L	5.4	1080 x 2340	476	September 2021	iOS Latest	NA	▼
	Xiaomi Mi10T Pro 5G	L	6.67	1080 x 2400	395	October 2020	Android 10	MIUI 12	▼
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	Huawei Mate 50 Pro	L	6.74	1212 x 2616	428	September 2022	EMUI 13	HarmonyOS 3.0	New
	Samsung Galaxy Z Filp4	L	6.7	1080 x 2640	426	August 2022	Android 12	One UI 4.1.1	New
	Huawei P30 Pro	L	6.47	1080 x 2340	398	March 2019	Android 10	EMUI 10	▼
	Huawei P40 Lite 5G	L	6.5	1080 x 2400	405	May 2020	Android 10	EMUI 10.1	▼
	Samsung Galaxy Fold 3 5G	XL	7.6	1768 x 2208	374	August 2021	Android 12	One UI 4.0	▲
	Apple iPad Pro 11 (2021)	XL	11	1668 x 2388	265	May 2021	iOS Latest	NA	▼
	Samsung Galaxy S21 5G	XL	6.2	1080 x 2400	421	January 2021	Android 11	One UI 3.1	▲
	Samsung Galaxy A52s	L	6.5	1080 x2400	405	September 2021	Android 12	One UI 4.0	▼
	Xiaomi 11T Pro 5G	L	6.67	1080 x 2400	395	October 2021	Android 11	MIUI 12.5	▲
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	New
	iPhone 14 Pro	L	6.1	1179 x 2556	460	September 2022	iOS Latest	NA	New
	Oppo A17	L	6.56	720 x 1612	269	September 2022	Android 12	ColorOS 12.1	New
EXTENDED	Apple iPhone 13 Pro Max	L	6.7	1284 x 2778	458	September 2021	iOS Latest	NA	▼
	Samsung Galaxy Tab S6 Lite	XL	10.4	1200 x 2000	224	May 2022	Android 12	One UI 4.0	New
	Xiaomi 12T Pro	L	6.67	1220 x 2712	446	October 2022	Android 12	MIUI 13	New
	Apple iPad Mini (2019)	XL	7.9	1536 x 2048	324	March 2019	iPadOS Latest	NA	▼
	Apple iPad 10.9" (2022)	XL	10.9	1640 x 2360	264	October 2022	iPadOS Latest	NA	New
	Apple iPhone 13	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Sony Xperia 10 iV	L	6	1080 x 2520	457	June 2022	Android 12	NA	New

MOBILE DEVICE INDEX: UK

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	New
	Apple iPhone 12	L	6.1	1170 x 2532	460	October 2020	iOS 14 Latest	NA	New
	Samsung Galaxy S21 Ultra 5G	L	6.8	1440 x 3200	515	January 2021	Android 11	One UI 3.1	▲
	Samsung Galaxy S20 Ultra	L	6.9	1440 x 3200	511	March 2020	Android 12	One UI 4.1	▲
	Samsung Galaxy S21 Ultra 5G	L	6.8	1440 x 3200	515	January 2021	Android 11	One UI 3.1	▲
	Apple iPhone 13 Pro Max	L	6.7	1284 x 2778	458	September 2021	iOS Latest	NA	▼
	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 12	One UI 4.1	New
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	Apple iPhone 12 Pro Max	L	6.7	1242 x 2688	442	November 2020	iOS latest	NA	▲
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	Xiaomi 12T Pro	L	6.67	1220 x 2712	446	October 2022	Android 12	MIUI 13	New
	Xiaomi 11T Pro 5G	L	6.67	1080 x 2400	395	October 2021	Android 11	MIUI 12.5	▼
	Huawei Mate 50 Pro	L	6.74	1212 x 2616	428	September 2022	EMUI 13	HarmonyOS 3.0	New
	Xiaomi Redmi Note 10	L	6.43	1080 x 2400	409	March 2021	Android 11	MIUI 12	▼
	Oppo A57	L	6.56	720 x 1612	269	April 2022	Android 12	ColorOS 12.1	▲
	iPhone 14	L	6.1	1170 x 2532	460	September 2022	iOS Latest	NA	New
	Oppo A17	L	6.56	720 x 1612	269	September 2022	Android 12	ColorOS 12.1	New
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	New
	Vivo Y16	L	6.51	720 x 1600	270	September 2022	Android 12	Funtouch 12	New
	Motorola Moro G32	L	6.5	1080 x 2400	405	August 2022	Android 13	NA	New
	Apple iPad 10.9" (2022)	XL	10.9	1640 x 2360	264	October 2022	iPadOS Latest	NA	New
	Samsung Galaxy A52s	L	6.5	1080 x2400	405	September 2021	Android 12	One UI 4.0	▼
	Apple iPhone 13 Mini	L	5.4	1080 x 2340	476	September 2021	iOS Latest	NA	▼
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	▼
	Apple iPhone 13 pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
EXTENDED	Samsung Galaxy Tab S6 Lite	XL	10.4	1200 x 2000	224	May 2022	Android 12	One UI 4.0	▲
	Samsung Galaxy S21 5G	L	6.2	1080 x 2400	421	January 2021	Android 11	One UI 3.1	▲
	Samsung Galaxy Z Flip3 5G	L	6.7	1080 x 2640	426	August 2021	Android 12	One UI 4.0	▼
	Samsung A53 5G	L	6.5	1080 x 2400	405	March 2022	Android 12	One UI 4.1	▲
	Honor 70	L	6.67	1080 x 2400	395	June 2022	Android 12	Magic UI 6.1	New
	Samsung Galaxy Z Filp4	L	6.7	1080 x 2640	426	August 2022	Android 12	One UI 4.1.1	New
	Oppo Reno8 Pro 5G	L	6.7	1080 x 2412	394	July 2022	Android 12	ColorOS 12.2	New

MOBILE DEVICE INDEX: GERMANY

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 12	One UI 4.1	▲
	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	New
	Apple iPhone 13 Pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	New
	Huawei P30 Pro	L	6.47	1080 x 2340	398	March 2019	Android 10	EMUI 10	▼
	Xiaomi 11T Pro 5G	L	6.67	1080 x 2400	395	October 2021	Android 11	MIUI 12.5	▼
	Apple iPhone 12 Pro Max	L	6.7	1242 x 2688	442	November 2020	iOS latest	NA	=
	Huawei Mate 50 Pro	L	6.74	1212 x 2616	428	September 2022	EMUI 13	HarmonyOS 3.0	New
	Samsung Galaxy S20	L	6.2	1440 x 3200	563	March 2020	Android 13	One UI5	▼
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	New
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	Apple iPhone 13 Mini	L	5.4	1080 x 2340	476	September 2021	iOS Latest	NA	▲
	Xiaomi Mi10T Pro 5G	L	6.67	1080 x 2400	395	October 2020	Android 10	MIUI 12	▲
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	Huawei Nova 9	L	6.57	1080 x 2340	392	September 2021	Harmony OS 2.0	EMUI 12	▼
	Samsung Galaxy Z Filp4	L	6.7	1080 x 2640	426	August 2022	Android 12	One UI 4.1.1	New
	Samsung Galaxy S9+	L	6.2	1440 x 2960	529	March 2018	Android 10	One UI 2	▼
	Huawei P40 Lite 5G	L	6.5	1080 x 2400	405	May 2020	Android 10	EMUI 10.1	▲
	Samsung Galaxy Fold 3 5G	XL	7.6	1768 x 2208	374	August 2021	Android 12	One UI 4.0	▼
	Apple iPad Pro 11 (2021)	XL	11	1668 x 2388	265	May 2021	iOS Latest	NA	▼
	Samsung Galaxy S21 5G	XL	6.2	1080 x 2400	421	January 2021	Android 11	One UI 3.1	▲
	Samsung Galaxy A52s	L	6.5	1080 x2400	405	September 2021	Android 12	One UI 4.0	▼
	Samsung Galaxy S22 +	L	6.6	1080 x 2340	393	February 2022	Android 12	One UI 4.1	▲
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	New
	iPhone 14 Pro	L	6.1	1179 x 2556	460	September 2022	iOS Latest	NA	New
	Oppo A17	L	6.56	720 x 1612	269	September 2022	Android 12	ColorOS 12.1	New
EXTENDED	Apple iPhone 13 Pro Max	L	6.7	1284 x 2778	458	September 2021	iOS Latest	NA	▼
	Samsung Galaxy Tab S6 Lite	XL	10.4	1200 x 2000	224	May 2022	Android 12	One UI 4.0	New
	Xiaomi 12T Pro	L	6.67	1220 x 2712	446	October 2022	Android 12	MIUI 13	New
	Apple iPad Mini (2019)	XL	7.9	1536 x 2048	324	March 2019	iPadOS Latest	NA	▼
	Apple iPad 10.9" (2022)	XL	10.9	1640 x 2360	264	October 2022	iPadOS Latest	NA	New
	Apple iPhone 13	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Sony Xperia 10 iV	L	6	1080 x 2520	457	June 2022	Android 12	NA	New

MOBILE DEVICE INDEX: NETHERLANDS

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	iPhone 14 Pro	L	6.1	1179 x 2556	460	September 2022	iOS Latest	NA	New
	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 12	One UI 4.1	▲
	Apple iPhone 12 Pro Max	L	6.7	1242 x 2688	442	November 2020	iOS latest	NA	▲
	Samsung Galaxy A52s	L	6.5	1080 x2400	405	September 2021	Android 12	One UI 4.0	New
	Apple iPhone 12	XL	6.1	1170 x 2532	460	October 2020	iOS 14 Latest	NA	▲
	Samsung Galaxy S21 5G	XL	6.2	1080 x 2400	421	January 2021	Android 11	One UI 3.1	New
	Samsung Galaxy S21 Ultra 5G	XL	6.8	1440 x 3200	515	January 2021	Android 11	One UI 3.1	▼
	Xiaomi 12T Pro	L	6.67	1220 x 2712	446	October 2022	Android 12	MIUI 13	New
	Apple iPhone 13 pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▲
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	Samsung Galaxy S10	L	6.1	1440 x 3040	550	February 2019	Android 12	One UI 4.1	▼
	Xiaomi 11T Pro 5G	L	6.67	1080 x 2400	395	October 2021	Android 11	MIUI 12.5	New
	Samsung Galaxy Tab S6 Lite	XL	10.4	1200 x 2000	224	May 2022	Android 12	One UI 4.0	New
	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	▼
	Samsung A53 5G	L	6.5	1080 x 2400	405	March 2022	Android 12	One UI 4.1	New
	iPhone 14	L	6.1	1170 x 2532	460	September 2022	iOS Latest	NA	New
	Apple iPad Pro 11 (2021)	XL	11	1668 x 2388	265	May 2021	iPadOS Latest	NA	New
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	Apple iPhone 13 Pro Max	L	6.7	1284 x 2778	458	September 2021	iOS Latest	NA	New
	Apple iPhone 12 Pro	XL	6.1	1170 x 2532	460	October 2020	iOS Latest	NA	▲
	Samsung Galaxy S21 Ultra 5G	XL	6.8	1440 x 3200	515	January 2021	Android 11	One UI 3.1	▲
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	▼
	Apple iPhone 11 Pro	L	5.8	1125 x 2436	458	September 2019	iOS Latest	NA	▲
	Huawei Mate 50 Pro	L	6.74	1212 x 2616	428	September 2022	EMUI 13	HarmonyOS 3.0	New
	Oppo Reno8 Pro 5G	L	6.7	1080 x 2412	394	July 2022	Android 12	ColorOS 12.2	▲
EXTENDED	Samsung Galaxy A32	XL	6.4	1080 x 2400	411	February 2021	Android 11	OneUI 3.1	▼
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	New
	Oppo A77	L	6.56	720 x 1612	269	June 2022	Android 12	ColorOS 12.1	New
	Xiaomi Mi 11 Lite	L	6.55	1080 x 2400	402	April 2021	Android 11	MIUI 12	▼
	Oppo Find X5 Pro	L	6.7	1440 x 3216	525	Macrh 2022	Android 12	ColorOS 12.1	▼
	OnePlus 10T	L	6.7	1080 x 2412	394	August 2022	Android 12	OxygenOS 12.1	New
	Apple iPad 10.9" (2022)	XL	10.9	1640 x 2360	264	October 2022	iPadOS Latest	NA	New

MOBILE DEVICE INDEX: SWITZERLAND

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	New
	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 12	One UI 4.1	▲
	Xiaomi 12T Pro	L	6.67	1220 x 2712	446	October 2022	Android 12	MIUI 13	New
	Apple iPhone 13 Pro Max	L	6.7	1284 x 2778	458	September 2021	iOS Latest	NA	▼
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	New
	Huawei Mate 50 Pro	L	6.74	1212 x 2616	428	September 2022	EMUI 13	HarmonyOS 3.0	New
	Samsung Galaxy S21 Ultra 5G	L	6.8	1440 x 3200	515	January 2021	Android 11	One UI 3.1	▼
	Oppo Find X5 Pro	L	6.7	1440 x 3216	525	Macrh 2022	Android 12	ColorOS 12.1	▲
	Samsung Galaxy S21 5G	L	6.2	1080 x 2400	421	January 2021	Android 11	One UI 3.1	▼
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	OnePlus Nord 2T	L	6.43	1080 x 2400	409	May 2022	Android 12	OxygenOS 12.1	New
	Oppo A77	L	6.56	720 x 1612	269	June 2022	Android 12	ColorOS 12.1	New
	Apple iPad Pro 11 (2021)	XL	11	1668 x 2388	265	May 2021	iOS Latest	NA	▼
	Apple iPhone 13	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	New
	Xiaomi 12T Pro	L	6.67	1220 x 2712	446	October 2022	Android 12	MIUI 13	New
	Apple iPhone 13 pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Google Pixel 7 Pro	L	6.7	1440 x 3120	512	October 2022	Android 13	NA	▲
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	Sony Xperia 1 IV	L	6.5	1644 x 3840	643	June 2022	Android 13	NA	New
	iPhone 14 Pro	L	6.1	1179 x 2556	460	September 2022	iOS Latest	NA	New
	Oppo Reno 6 5G	L	6.43	1080 x 2400	409	June 2021	Android 11	ColorOS 11.3	▼
	Samsung Galaxy Z Filp4	L	6.7	1080 x 2640	426	August 2022	Android 12	One UI 4.1.1	▲
	OnePlus 10T	L	6.7	1080 x 2412	394	August 2022	Android 12	OxygenOS 12.1	New
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	New
	Samsung Galaxy Fold 3 5G	XL	7.6	1768 x 2208	374	August 2021	Android 12	One UI 4.0	▲
EXTENDED	Samsung Galaxy S20 FE 5G	L	6.5	1080 x 2400	407	October 2020	Android 10	One UI 2.5	▲
	Apple iPad 10.9" (2022)	XL	10.9	1640 x 2360	264	October 2022	iPadOS Latest	NA	New
	Samsung Galaxy S20 +	L	6.7	1440 x 3200	522	March 2020	Android 13	One UI 5	▼
	Samsung Galaxy A52s	L	6.5	1080 x2400	405	September 2021	Android 12	One UI 4.0	▲
	Oppo A54 5G	L	6.51	720 x 1600	270	April 2021	Android 10	ColorOS 7.2	▼
	iPhone 14	L	6.1	1170 x 2532	460	September 2022	iOS Latest	NA	New
	iPhone 14 Plus	L	6.7	1284 x 2778	458	October 2022	iOS Latest	NA	New

MOBILE DEVICE INDEX: AUSTRALIA

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	New
	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 12	One UI 4.1	▲
	Apple iPhone 12 Pro Max	L	6.7	1242 x 2688	442	November 2020	iOS latest	NA	▼
	Samsung A53 5G	L	6.5	1080 x 2400	405	March 2022	Android 12	One UI 4.1	New
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	▲
	Apple iPhone 13 Pro Max	L	6.7	1284 x 2778	458	September 2021	iOS Latest	NA	▼
	Samsung Galaxy S20 Ultra	L	6.9	1440 x 3200	511	March 2020	Android 12	One UI 4.1	▲
	Xiaomi Mi11 Ultra	L	6.81	1440 x 3200	515	April 2021	Android 11	MIUI 12.5	▲
	Huawei Mate 50 Pro	L	6.74	1212 x 2616	428	September 2022	EMUI 13	HarmonyOS 3.0	New
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	Samsung Galaxy Note 20 Ultra 5G	L	6.9	1440 x 3088	496	August 2020	Android 13	One UI 5	New
	Apple iPhone 13 Pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	New
	iPhone 14 Pro	L	6.1	1179 x 2556	460	September 2022	iOS Latest	NA	New
	Samsung Galaxy S22	L	6.6	1080 x 2340	393	February 2022	Android 12	One UI 4.1	New
	Samsung Galaxy Z Filp4	L	6.7	1080 x 2640	426	August 2022	Android 12	One UI 4.1.1	▲
	Xiaomi 12T Pro	L	6.67	1220 x 2712	446	October 2022	Android 12	MIUI 13	New
	Motorola Edge 30 Pro	L	6.7	1080 x 2400	393	March 2022	Android 13	NA	New
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	New
	Oppo A57	L	6.56	720 x 1612	269	April 2022	Android 12	ColorOS 12.1	New
	Samsung Galaxy A52s	L	6.5	1080 x2400	405	September 2021	Android 12	One UI 4.0	New
	Samsung Galaxy A73 5G	L	6.7	1080 x 2400	393	April 2022	Android 12	One UI 4.1	New
	Apple iPad Pro 11 (2022)	XL	11	1668 x 2388	265	October 2022	iPadOS Latest	NA	New
	Apple iPhone 13	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Oppo A16s	L	6.52	720 x 1600	269	August 2021	Android 11	ColorOS 11.1	New
	Apple iPad Mini (2019)	XL	7.9	1536 x 2048	324	March 2019	iPadOS Latest	NA	▲
EXTENDED	Samsung Galaxy S20 +	L	6.7	1440 x 3200	522	March 2020	Android 13	One UI 5	▲
	Samsung Galaxy S20 FE 5G	L	6.5	1080 x 2400	407	October 2020	Android 12	One UI 4.1	New
	Samsung Galaxy S10+	L	6.4	1440 x 3040	522	February 2019	Android 12	One UI 4.1	▼
	Apple iPhone 13 Mini	L	5.4	1080 x 2340	476	September 2021	iOS Latest	NA	▼
	Samsung Galaxy S22 +	L	6.6	1080 x 2340	393	February 2022	Android 12	One UI 4.1	▼
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	Oppo Find X3 Pro	L	6.7	1440 x 3216	525	March 2021	Android 11	ColorOS 11.2	New

MOBILE DEVICE INDEX: SINGAPORE

	Device Model	Screen Family	Screen Size	Screen Resolution	PPI	Release Date	Recommended OS	Stock OS/ Custom OS	Status
ESSENTIAL	Samsung Galaxy S22	L	6.6	1080 x 2340	393	February 2022	Android 12	One UI 4.1	=
	Apple iPhone 13 Pro Max	L	6.7	1284 x 2778	458	September 2021	iOS Latest	NA	▼
	iPhone 14 Pro	L	6.1	1179 x 2556	460	September 2022	iOS Latest	NA	New
	Huawei P40 Pro	L	6.58	1200 x 2640	441	April 2020	Android 10	EMUI 10.1	▲
	OnePlus Nord 2T	L	6.43	1080 x 2400	409	May 2022	Android 12	OxygenOS 12.1	New
	Samsung Galaxy Fold 4	XL	7.6	1812 x 2176	373	August 2022	Android 12L	One UI 4.1.1	New
	Apple iPhone 13	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Samsung Galaxy S22 Ultra	L	6.8	1440 x 3088	500	February 2022	Android 12	One UI 4.1	▲
	Oppo Find X5 Pro	L	6.7	1440 x 3216	525	Macrh 2022	Android 12	ColorOS 12.1	▲
	Google Pixel 7	L	6.3	1080 x 2400	416	October 2022	Android 13	NA	New
ENHANCED	Apple iPhone 11 Pro	L	5.8	1125 x 2436	458	September 2019	iOS 14 Latest	NA	▼
	Huawei Mate 50 Pro	L	6.74	1212 x 2616	428	September 2022	EMUI 13	HarmonyOS 3.0	New
	Xiaomi 12T Pro	L	6.67	1220 x 2712	446	October 2022	Android 12	MIUI 13	New
	Huawei Mate 40 Pro	L	6.76	1344 x 2772	456	November 2020	Android 10	EMUI 11	▲
	Apple iPhone 13 Mini	L	5.4	1080 x 2340	476	September 2021	iOS Latest	NA	▲
	Samsung Galaxy S21 5G	L	6.2	1080 x 2400	421	January 2021	Android 13	One UI 5	▼
	Apple iPhone 12	L	6.1	1170 x 2532	460	October 2020	iOS Latest	NA	▼
	iPhone 14 Pro Max	L	6.7	1290 x 2796	460	September 2022	iOS Latest	NA	New
	Oppo Reno8 Pro 5G	L	6.7	1080 x 2412	394	July 2022	Android 12	ColorOS 12.2	New
	Apple iPhone 13 Pro	L	6.1	1170 x 2532	460	September 2021	iOS Latest	NA	▼
	Samsung A53 5G	L	6.5	1080 x 2400	405	March 2022	Android 12	One UI 4.1	▲
	Xiaomi Redmi Note 11	L	6.43	1080 x 2400	409	February 2022	Android 11	MIUI 13	▼
	Xiaomi 11T Pro 5G	L	6.67	1080 x 2400	395	October 2021	Android 11	MIUI 12.5	▲
	Samsung Galaxy Z Filp4	L	6.7	1080 x 2640	426	August 2022	Android 12	One UI 4.1.1	New
	Vivo X60	L	6.56	1080 x 2376	398	April 2021	Android 11	Funtouch 11.1	New
EXTENDED	Samsung Galaxy Fold 3 5G	XL	7.6	1768 x 2208	374	August 2021	Android 12	One UI 4.0	▼
	Apple iPad Pro 12.9" (2022)	XL	12.9	2048 x 2732	265	October 2022	iPadOS Latest	NA	New
	Vivo X70 Pro 5G	L	6.56	1080 x 2376	398	September 2021	Android 11	Funtouch OS 12	▲
	Apple iPhone 8 Plus	L	5.5	1080 x 1920	401	September 2017	iOS Latest	NA	▼
	iPhone 14	L	6.1	1170 x 2532	460	September 2022	iOS Latest	NA	New
	Samsung Galaxy Tab S8	XL	11	1600 x 2560	274	March 2022	Android 12	One UI 4.1	▼
	Apple iPad 10.9" (2022)	XL	10.9	1640 x 2360	264	October 2022	iPadOS Latest	NA	New

MOBILE MARKET CALENDAR 2022

OS

October	November	December	January	February	March	April
OS/iPadOS 16.1 iOS 15.7.1	iOS/iPadOS 16.2					

Devices

October	November	December	January	February	March	April
Huawei Nova 10 SE	Xiaomi Redmi Note 12 Pro+	Huawei Mate 60 Pro Plus	Xiaomi 13 Pro	Samsung S23 Ultra	OnePlus 11	Samsung Galaxy A54
Xiaomi 12T Pro	Samsung Galaxy A04e	Samsung Galaxy A74 5G		Samsung S23	Oppo Find X6	Google Pixel 7a
Apple iPad Pro 12.9 (2022)	Huawei Pocket S	Vivo X90		Oppo Find N Flip		
Apple iPad Pro 11 (2022)	Motorola Razr (2022)					
Apple iPad (2022)	Oppo A58					
Huawei Mate 50 Pro	OnePlus Nord N300					
Sony Xperia 5 IV	Xiaomi Redmi Note 12 Explorer					
Motorola Moto G72						
Google Pixel 7						
Google Pixel 7 Pro						
Honor X40 GT						
Oppo A77s						
Realme C30s						
Vivo iQ00 Neo 7						
Vivo Y73t						
Vivo X Fold+						

WEB & OS RECOMMENDATIONS

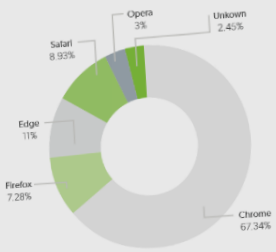
Here you will find a list of browser/OS combinations — categorized by latest, previous, and newest beta — that organizations in every country should test on to achieve the desired market coverage.

Given that browser versions update quickly and often automatically without users knowing, it is important to ensure that browser quality aligns with a variety of OS versions.

GLOBAL WEB INDEX

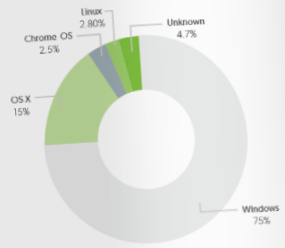
Desktop Browser Popularity and Market Share

Browser Market Share Worldwide - March 2022



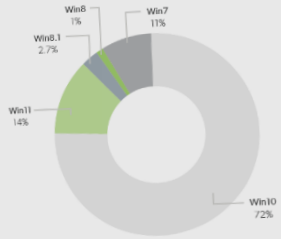
Desktop OS Market Share and Popularity

Operating System Market Share Worldwide - March 2022



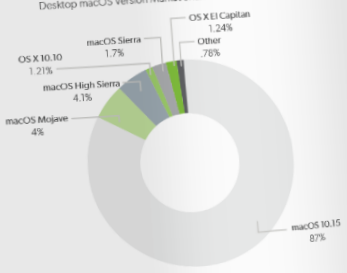
Windows OS Families Market Share and Popularity Breakdown

Desktop Windows Version Market Share Worldwide - March 2022



MacOS Families Market Share and Popularity Breakdown

Desktop macOS Version Market Share Worldwide - March 2022



Source: gs.statcounter.com/browser-market-share

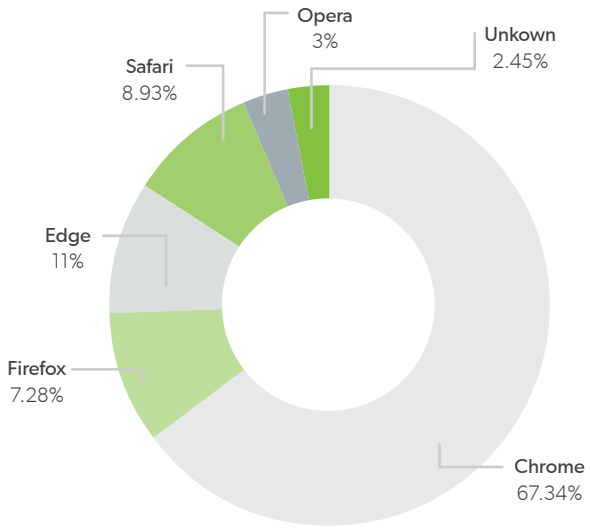
BROWSER CALENDAR 2022

	October	November	December	January	February	March	April
Chrome	107	108 109 Beta		109	110	111	112
Firefox	106	107	108	109	110	111	112
Safari	16 16.1		16.2				
Edge	107		108	109	110	111	112
Desktop OS	MacOS Big Sur 11.7.1 MacOS Monterey 12.6.1 MacOS Ventura 13.0						

GLOBAL WEB INDEX

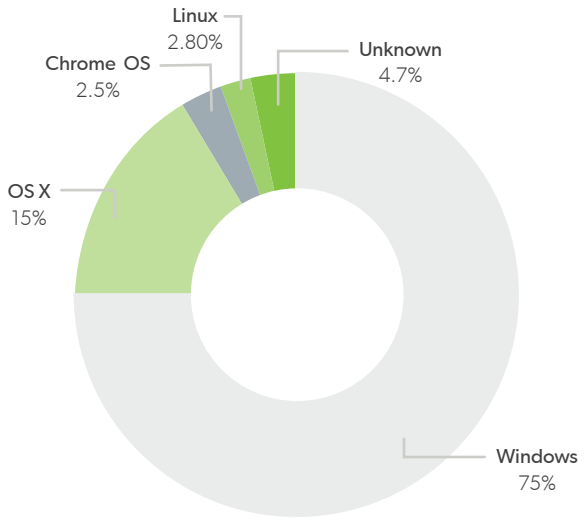
Desktop Browser Popularity and Market Share

Browser Market Share Worldwide - March 2022



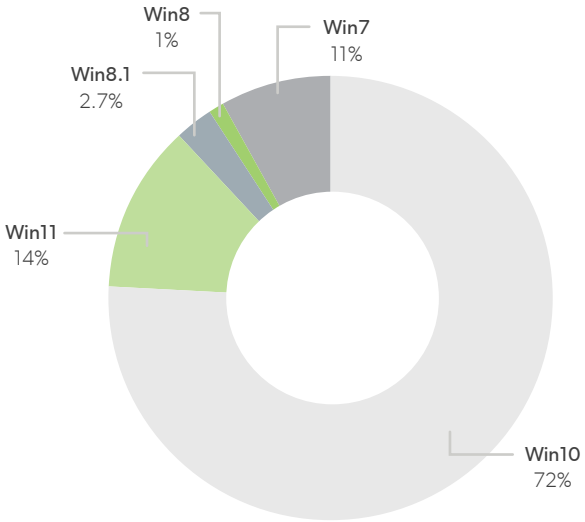
Desktop OS Market Share and Popularity

Operating System Market Share Worldwide - March 2022



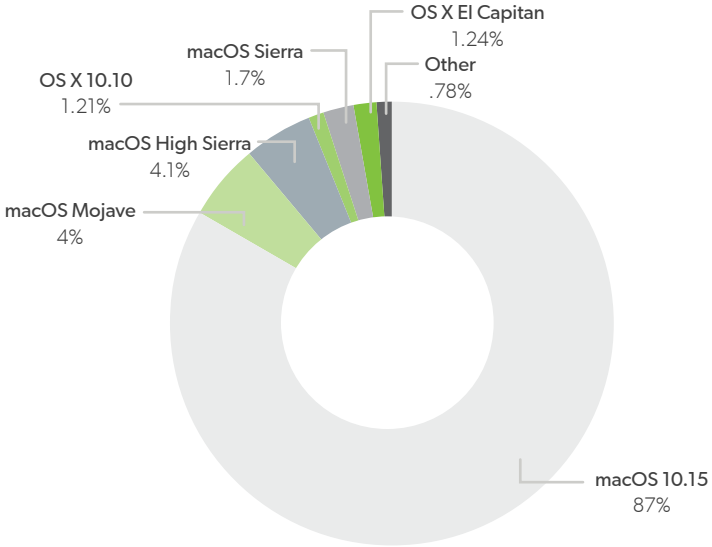
Windows OS Families Market Share and Popularity Breakdown

Desktop Windows Version Market Share Worldwide - March 2022



MacOS Families Market Share and Popularity Breakdown

Desktop macOS Version Market Share Worldwide - March 2022



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BROWSER CALENDAR 2022

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Safari	16 16.1		16.2				
Edge	107		108	109	110	111	112
Desktop OS	MacOS Big Sur 11.7.1 MacOS Monterey 12.6.1 MacOS Ventura 13.0						

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ABOUT BLAZEMETER

The BlazeMeter Continuous Testing Platform is a complete solution for shift-left continuous testing. The platform includes UI functional testing, user experience testing, API testing and monitoring, performance testing, and virtual services.

Visit www.blazemeter.com for a free trial, demo, or to learn more.

Related Resources

Solving the Toughest Mobile Testing Challenges

What Is Good Testing in 2022?

Eliminate Testing Dependencies & Bottlenecks With Mock Services for Mobile

Let's Connect

We'd love to discuss how Perfecto and BlazeMeter can help you overcome your most difficult testing obstacles.

Let's Talk

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