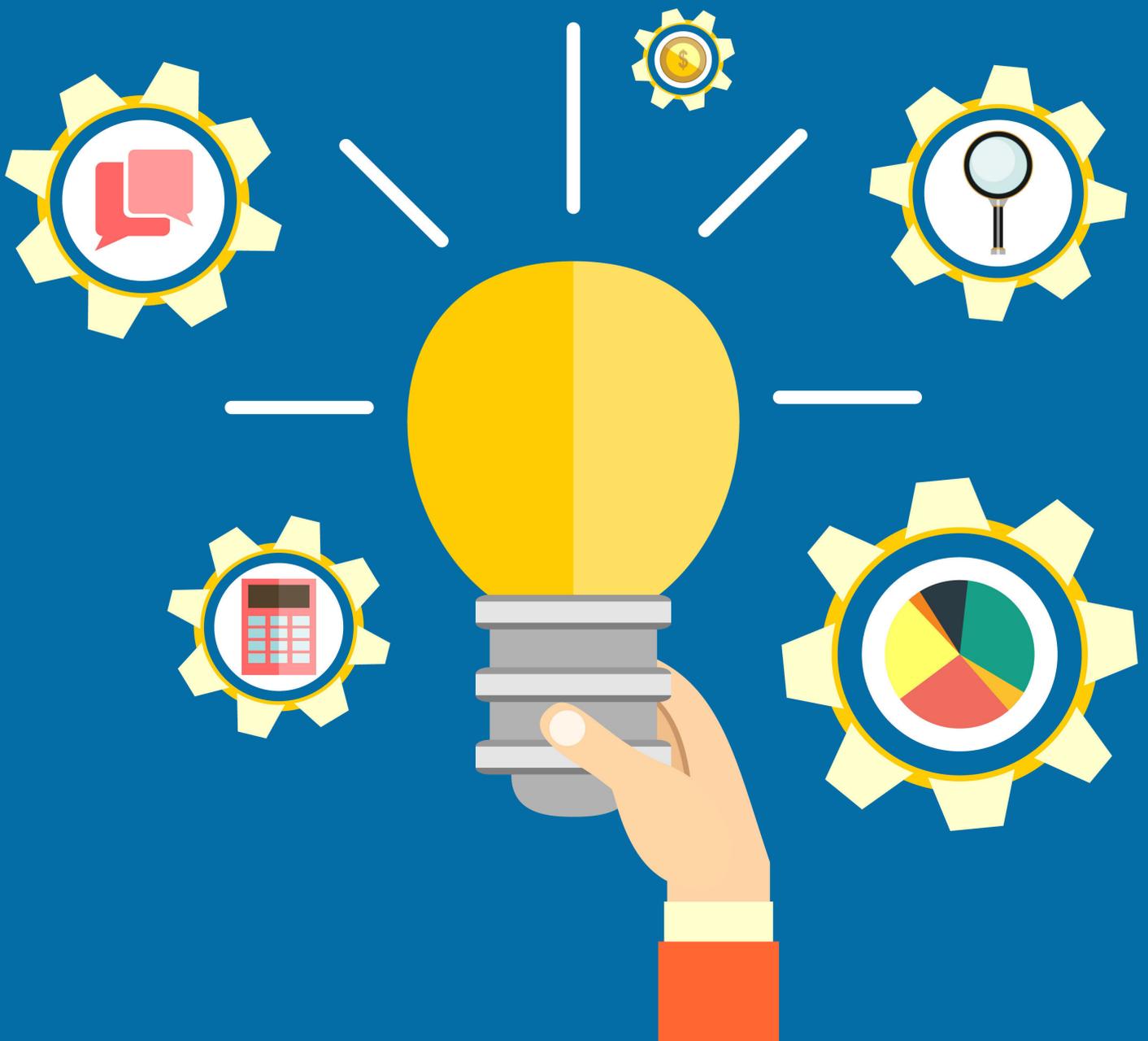


Building your own analytics platform with Countly



SUMMARY: There is no shortage of 3rd party mobile and web analytics solutions out there. Most of them are SaaS based, but some provide options to install their own servers on your premises. Whatever the solution you choose, there are some advantages and disadvantages of building own analytics solution vs buying a platform and extending for in-company needs.

In this document, we'll briefly go over why you should be deploying extensible, plugin-based analytics platforms rather than building one yourself, diving into cost, focus and business aspects. We'll then mention why and how Countly provides the most viable self-service analytics platform for mobile, web and desktop. Last part of this document provides a general overview of questions you should ask before choosing an analytics provider.

We hope this document will form a basis towards choosing, validating and implementing your own solution.



COUNTLY TEAM

Introduction

Organizations sometimes need to choose whether they should go for cloud or on-premise option. They choose the deployment that is right for them, based on considerations like IT strategy and resources, existing corporate policies, regulatory requirements, and budget.

While a SaaS solution can be painless to get started, on-premise deployment gives enterprises a complete control of management, rebranding and infrastructural operations. Some companies also have existing corporate politics and forced to comply with regulatory requirements if they are working on a domain where privacy is a concern.

Most telecom operators, international companies, enterprises in finance sector have little experience with SaaS and most (if not all) services they buy from 3rd parties are in the form of on-premise deployment. According to Dice, there are several important questions that should be asked before implementing a solution.

- Is it really just build versus buy, or is it more complex?
- Is the solution redundant with an existing capability (either custom or COTS) and if so, is there a logical migration path to the new capability, e.g does the proposed solution have well defined APIs and raw data extraction models?
- Do you already have a support model in operation, or want to hand out the maintenance to your trusted partner?

- What is the overall cost of doing one option versus another vs implementing a ready solution and extend via plugins?

Countly is a solution which has roots from both build and buy model. You buy software, but since you have the source code and necessary API sets to build on top of it, you can extend Countly for your needs. For example, you may need to add another custom dashboard, or you need another plugin that shows you most important KPIs for your business. Countly excels in extending your core analytics and gives you a platform you can rely on and invest in your future analytics requirements.

Questions to ask before choosing

As you dig deeper into your selection process for build & buy model with Countly, there are several questions you would need to get answered. Countly provides best of breed solution when it comes to having your own set of analytics service, and add more building blocks as your business grows.

These are the most important questions you need to ask yourself before going with build vs buy vs Countly:

1. Is your business facing with a privacy situation, e.g are you bound to several regulations in your sector, like GDPR, CCPA, HIPAA, COPPA or telecom regulatory programmes?
2. Do you need a simple analytics solution, or need a complete one, including analytics, performance, engagement, push notifications, etc?
3. Do you need price, complete data, rather than sampling that some of other analytics platforms provide, e.g Google Analytics?

4. Do you need integration with your current data warehouse using several methods like REST API or direct database access with well defined rules?
5. Is the platform you are going to own customizable and extensible with plugins?
6. When you scale, does your analytics platform scale with you, not harming your budget?
7. Are there any hidden costs as your analytics platform grows by?
8. Does your vendor provide you the most extensive platform support (SDK) with an open source model, so that you are not at mercy of the vendor?
9. Do you need a themeable / rebrandable service where you can really own the GUI and UI beneath?

All of the answers to those questions will get you understand what kind of a platform you are going to employ, and Countly can help you with all those items, with a focus on privacy, security, extensibility, cost-effectiveness and openness.

What does Countly provide for developers?

There are several technical reasons for development teams to choose Countly for an analytics platform deployed in-house. Below you can read technical advantages you will enjoy.

- **SDK freedom:** Countly SDK provides a default behavior to collect and send data to Countly servers, however due to its open source nature with a flexible licensing model, it's possible to manually

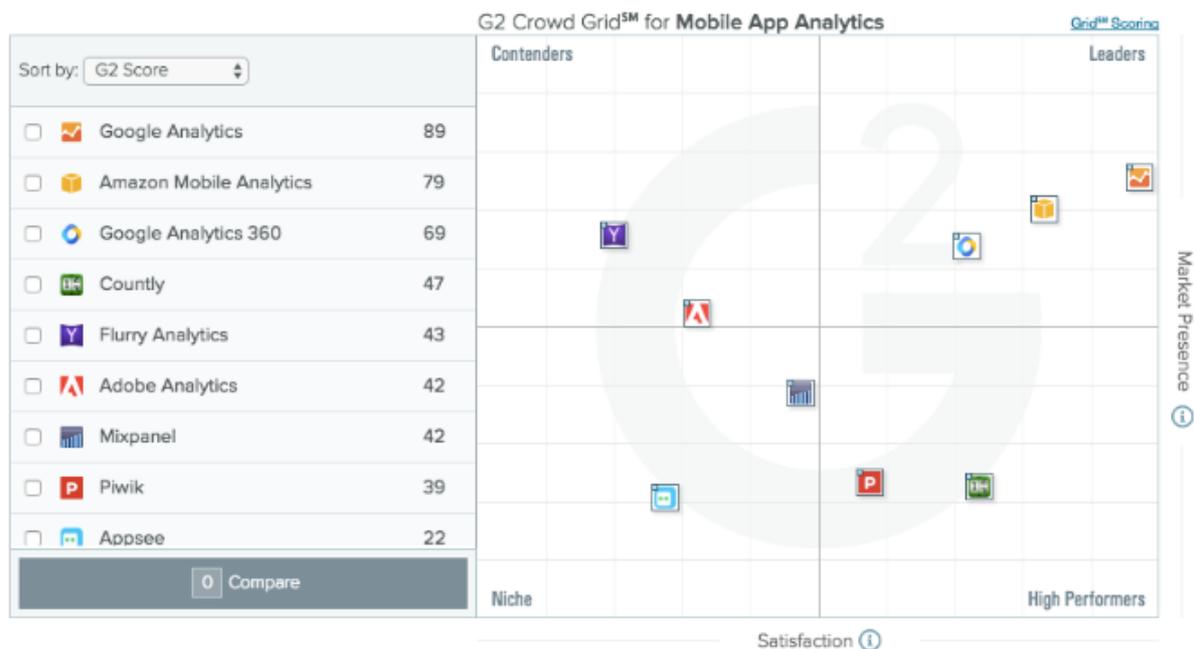
configure parameters or automatically capture views. This way it's possible to build a customized SDK with own session handling.

- **Custom data type handling:** Due to the reason Countly has a generic analytics platform, it has different types of user interfaces that handle different data types coming from mobile devices, browsers or IoT platforms. It's straightforward to add another "type" to create a new dashboard.
- **Themeable and customizable frontend:** Countly themes can be used and customized to match look and feel of your company assets, with the ability to change colors and logo.
- **Extensibility with plugins:** Not available with most of the SaaS analytics platforms out there, Countly plugins can be used to extend functionality and add any additional metrics and capabilities to the dashboard.

Given these advantages, there are things to consider before purchasing an Enterprise Edition:

1. There's an up-front capital cost for hardware and licensing. Countly sales staff will help you choosing the right hardware and budget upon contacting us.
2. You would have the option to monitor your system using company's internal network monitoring structure, or leave it to us, by using 3rd party monitoring solution. The latter option is handled by Countly engineers and we work with you side by side to understand all the hardware needs, replication sets and high availability requirements.

According to G2, the leading business software review platform, Countly is ranked as #4, after Google and Amazon. Also, Countly is #3 in "High Performers" list in G2's "Leaders of Mobile App Analytics" report. Within the comments that are provided for Countly, "extensibility" and "plugin-based structure" stands out, as these two are most important values and criteria while choosing an analytics platform.



You can download a copy of “Best Mobile Analytics Software” report directly from [G2’s web site](#).

Why Countyly should be the analytics platform of choice

With the offerings Countyly provides, many product managers opt to build their own client-side analytics, powered by Countyly. Compared to other generic mobile and web analytics tools, Countyly gives you significant advantages:

1. **Countyly is a complete privacy-aware solution, where data is stored, visualized and reported in your own servers.** No one outside of your company has the right to view this data. In our world of privacy, this is a complete advantage in sectors if you are regulated by national laws, or need personally identifiable information, e.g if you are a bank,

financial institute, telecom operator or a healthcare provider. To respect the privacy of your visitors, always include Privacy Policy item to explain how Countly is used and what data it gathers. This is important especially if you claim to be HIPAA and COPPA compliant, for your patients and customers under a specific age (e.g children).

Bottom line

Your data belongs to you. Make sure your analytics solution doesn't store and store your sensitive data, e.g personally identifiable information (PII) or revenue data.

- 2. Countly provides an end-to-end platform, covering 360 degrees of solution.** Companies, most of the time, completely underestimate the time and resources to build an analytics platform. Most of the time, even experienced product managers think that building a platform from scratch includes writing a few hundred lines of SDK, and then feeding internal Hadoop or Cassandra database. However if you want to ensure that marketing managers gain insights from this data, you will need segmentation, deep-dive drill, custom dashboards, detailed visualization tools and services. This was why **Telenor, Hungary's leading telecom operator choose Countly** as they needed a 360-degree analytics platform.

Bottom line

Do not overlook the cost, time and focus it takes from you, when building your own analytics platform. Use a complete, open source service like Countly to ensure you focus your own, core business.

- 3. No aggregation or sampling takes place on Countly servers.** When you use a service with sampling, the data point missing shows the accuracy level of the data (at the report's aggregate level as well as at the row level). Without this data, we fear that people are making data-driven decisions on potentially inaccurate data. When BMW, the leading car manufacturer chose Countly, they were confident to grow big without worrying about inflating data set.

Bottom line

Countly never samples your data. Use a service which doesn't skew the information you read from dashboard.

- 4. Countly provides fine, granular data with a customizable solution.** Cost can be a concern at the first time while deploying an on-premise solution, however security, ability to customize the product, having the general control of the software and compliance to regulatory rules can be more important than the costs. Ability to customize code can give you big advantages to connect to existing authentication systems and ETL services, where Countly can feed these systems with data and vice versa.

Bottom line

Pick a platform where you can be sure you can customize the platform, as well as you can re-collect and re-use all data stored in your own database.

5. **Countly is a scalable solution. Make sure scalability is not a blocker.** For customers using Google Analytics or Flurry, getting to understand valuable data is over 4 hours, and sometimes this time can reach 1 day. In AT&T case, where their self-service mobile app sends more than 1B sessions per month to Countly, it was important for **AT&T to choose an analytics service** which is both scalable and doesn't interrupt current business flow. Building an analytics solution which cannot scale, cannot give you data insights you need to make smart and timely decisions. In order to make sure how users interact with your data, you have to have access to a scalable, real-time platform.

Bottom line

Make sure your custom analytics solution is scalable from day 1.

6. **Countly provides a customizable solution for companies.** Our platform consists of an API-driven platform in which data can be freely extracted and visualized. When **Verimatrix** searched for a mobile analytics solution, they had the problem of grabbing and visualizing data from their current analytics providers. Countly engineers wrote plugins for Verimatrix, so Verimatrix product managers were able to customize Countly. If you want to build your own analytics service, you also need to take into consideration the time it takes to build an API service from ground up.

Bottom line

SaaS platforms don't always provide a customized solution and they don't allow you define their roadmaps. Countly, on the other hand, can be highly customized with its plugin structure

How does Countly collect, store and visualize data?

In this section, we'll help you understand how Countly tracks, collects, and visualizes your data. But first, let's review a couple of different on-premise / self-hosted deployment scenarios and review a few hints, insights and tips regarding implementation.

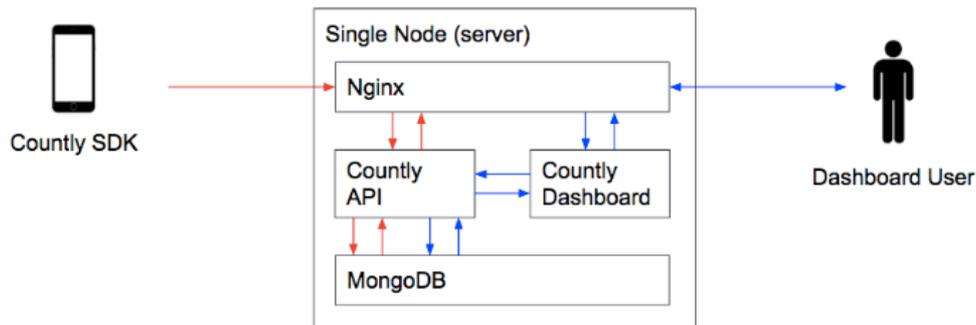
Installation of Countly servers

Deploying Countly is not hard - we have a very straightforward installation script that comes with Enterprise Edition. Countly installation can be done on a barebone, modern Linux server (e.g Ubuntu or Red Hat Enterprise Linux).

The two most common deployment options are outlined below. A third option, which leverages MongoDB sharding and replica sets, is also available for deployments involving extremely large amounts of data; if you believe you may require sharding, feel free to contact us to discuss this further.

Deployment Planning: Option 1

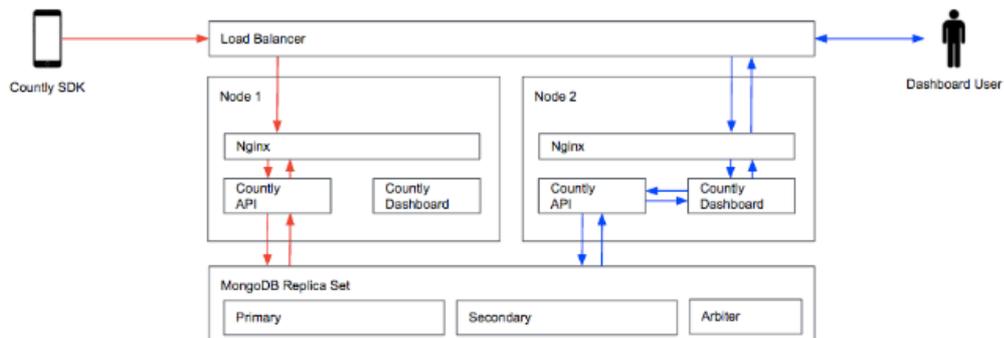
Most basic form of a Countyly deployment is a single node acting as both Countyly application server and MongoDB database server.



Configuration details for Option 1: For customers seeking to quickly deploy Countyly, a single node can act as both the Countyly application server and the MongoDB database server. A single server with 4GB of RAM and 2 CPUs can easily handle several millions of data points per month.

Deployment Planning: Option 2

Most common and recommended way of a production Countyly deployment is like below. Two Countyly application servers behind a load balancer and a MongoDB replica set with one primary and one secondary.



Configuration details for Option 2: High Availability & Scalability Countyly customers concerned with maintaining high availability and easier scalability typically chose the following deployment: Two (or more) Countyly application servers behind a load balancer and using a MongoDB replica set.

Tracking data

Once your Countly server is in place and ready to start collecting data, the next step is to start tracking data from your various apps. Countly uses SDKs which you include in your app or website in order to track data. This link contains a list of Countly SDKs with integration guides. All of Countly's SDKs are open source and can be retrieved from Github. If you need to develop your own SDK, [you can check out this guide](#).

For for each new session, Countly automatically collects the following information:

- Information related to the device
- Crash reports
- Session information
- Geographical data
- User profile data
- Custom events, if any

Countly can also automatically track page visits (mostly used in web applications) and screen views (mobile apps) and both automated and triggered event-based tracking. It's important to know similarities and differences between them, and when to implement which one.

In order to track "custom events" (which you definitely will), you need to [check this document that explains](#) what a custom event is, how they are generated and visualized. This is important as it will help you track information which Countly does not collect by default.

Collecting and submitting data

Whatever data you collect from SDKs, you need to submit them to your server. Countly server endpoints are used to collect data send from SDKs or APIs. Behind this endpoint, there is a Node.js application server that responds, collects, aggregates and writes into the MongoDB database.

When Countly server, running Node.js retrieves this data, it parses this information and writes to MongoDB. Since this process is instantaneous, whole Countly dashboard is completely real-time, where you can benefit from visualizing the data as it arrives to Countly servers.

Once server is installed, it's ready to collect data. It doesn't need hours of operations, configurations or customizations. As discussed in previous chapter, you can install Countly on a sharded platform if you have high data volume, replica set where you need data redundancy or benefit from a simple round-robin model where data flows on two or more servers to eliminate single point of failure.

Our engineers will help you decide on which model to employ and ensure a seamless deployment experience.

Visualizing data

Once your Countly server receives the collected data and stores it in the MongoDB database, your data is now ready for analysis and visualization using one of our graphical tools. Countly's dashboard uses Flot and other libraries to present your data in a visual and interactive format, but you can also any tool you choose to retrieve and present the data by leveraging our [server API](#).

As discussed in previous sections, Countly is a platform which is designed to be extensible. You can create your own extensions (“plugins”) with the help of our [plugin documentation page](#), or you can check out the [Countly Plugin Marketplace](#) for available plugins provided by both Countly and third parties.

Conclusion: Forget About Build vs. Buy: Countly Provides the Best of Both

Once you start collecting data with Countly in your own premises, you’ll realize that Countly is a drop-in replacement for all your analytics and marketing needs, making Countly a full featured platform to collect and visualize your data, and act on it when necessary.

Table below shows the most important features that you can rely on to make Countly a solution to your data collection, analysis and visualization needs.

COUNTLY vs. OTHER PLATFORMS

	COUNTLY ENTERPRISE EDITION	OTHER SERVICES
Rebrandable & whitelable	YES	NO
Fully open source (SDK & server)	YES	NO
Hosted in Europe, Asia or US	YES	NO
Full control over database	YES	NO
Extensible via plugins	YES	NO
Store files anywhere	YES	NO
No query or DB size limit	YES	NO
100% data ownership / privacy	YES	NO



Countly is a 360 degree solution for analytics, marketing and crash reporting. As a Countly customer, your business has access to a comprehensive set of powerful data analytics tools, as well as the option to write your own plugins.

Our simple pricing and plugin-based structure, combined with the opportunity to self-host analytics, makes Countly the most viable solution for companies seeking a reliable, configurable, rebranded platform. Countly complies with the data privacy standards set by GDPR, CCPA, HIPAA and COPPA regulations.

Once you start to collect data with Countly, the sky is the limit. Get in contact with Countly today (hello@count.ly) and enjoy a personalized demo.