KRITA USER SURVEY

REPORT 2017

Results from the User Survey ran between

the 24th of January till the 7th of February 2017

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INTRODUCTION

This survey was actually prompted by the question which tablets worked well with Krita and which didn't. We also had some bugs that we couldn't quite grasp. And then there's the problem of lag. Lag is partially very dependent on user-expectation. But what is the expectation of our users? Do they have the huge amounts of RAM necessary for big canvasses? What type of hardware do they use anyway? How big are the canvasses they make in general? Might lag be related to the OpenGL features?

Other questions we were wondering about was whether people could find the documentation, if they knew how to report bugs, whether they use translations, where they get their news from. In short, was there any big issue with how accessible the ways to find help is?

And of course, what do users think needs to be improved in Krita themselves? To answer these questions we made a survey.
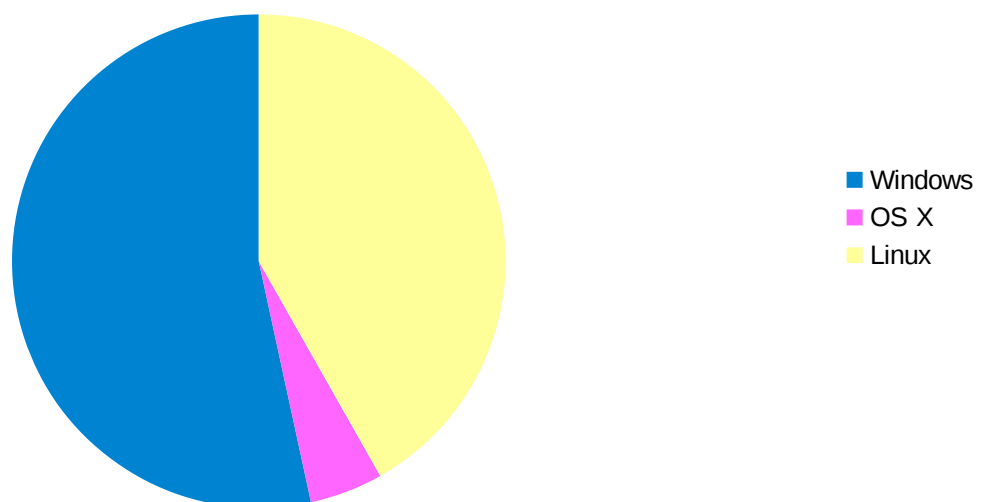
GENERAL STATISTICS

We had *1089 responses* in total over 3 Surveys: The English, Japanese and Spanish surveys. The Survey ran for two weeks, between 24th of January till the 7th of February.

The following section is about the hardware commonly used by Krita users.

OPERATING SYSTEM

Operating System Type

- Windows
- OS X
- Linux

As you can see, most Krita users use Windows. This isn't much of a surprise. What is surprising is that the Linux slice is so big, even compared to the Windows slice. Here is where the tricky bit of interpreting this data comes in. We could for example say that there's indeed a lot of Linux users, almost as many as Windows users. But that wouldn't correspond to what we know of our downloads, or even of the bugs on our bug tracker. For example, these are our web traffic statistics:

Web traffic by Operating System

- Windows
- OS X
- Linux (+ Android)
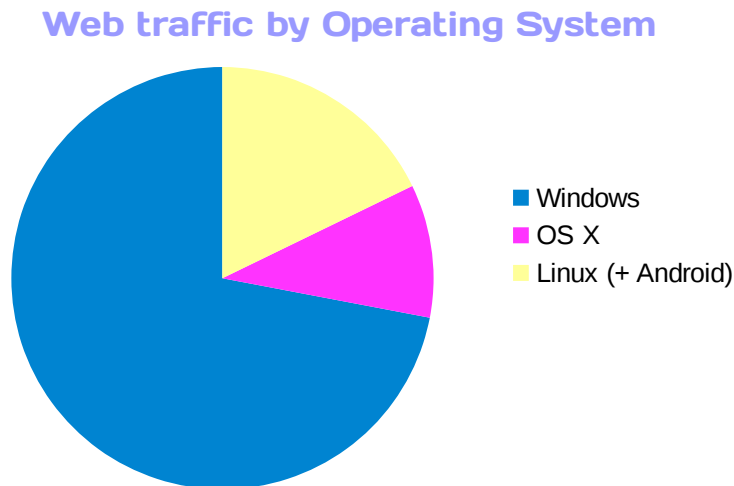
So, another interpretation would naturally be that Linux users just love to fill in surveys… this would be a bit silly. More realistically, Linux users are just more proactive in telling what they want, especially as Krita started out as a Linux program.

That the people who filled in the survey are the proactive users is pretty important to keep in mind when reading this report.
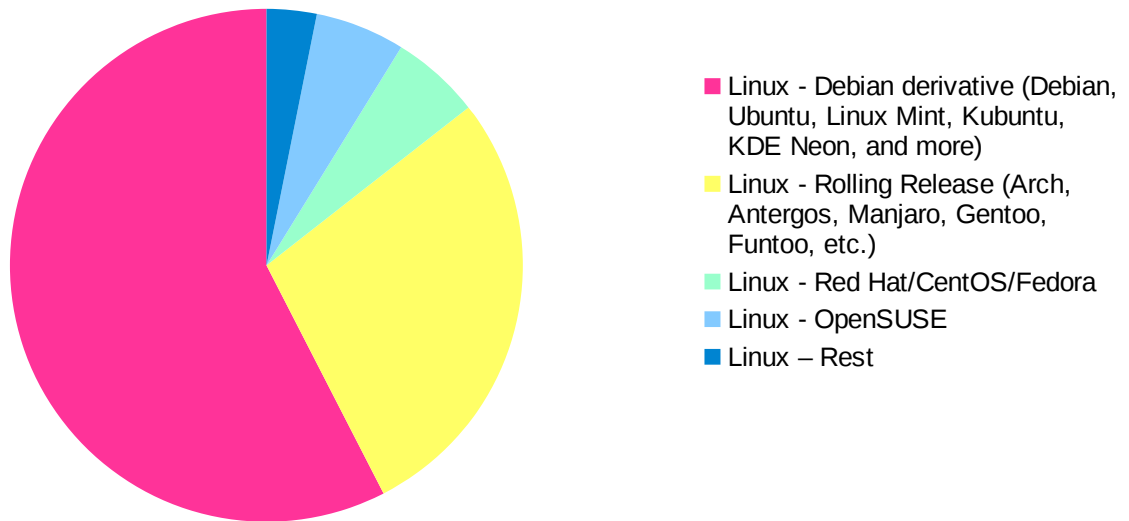
Anyway, let's take a look at the distribution, shall we?

Windows Version Distribution

- Windows 10
- Windows 8
- Windows 7
- Windows – Rest
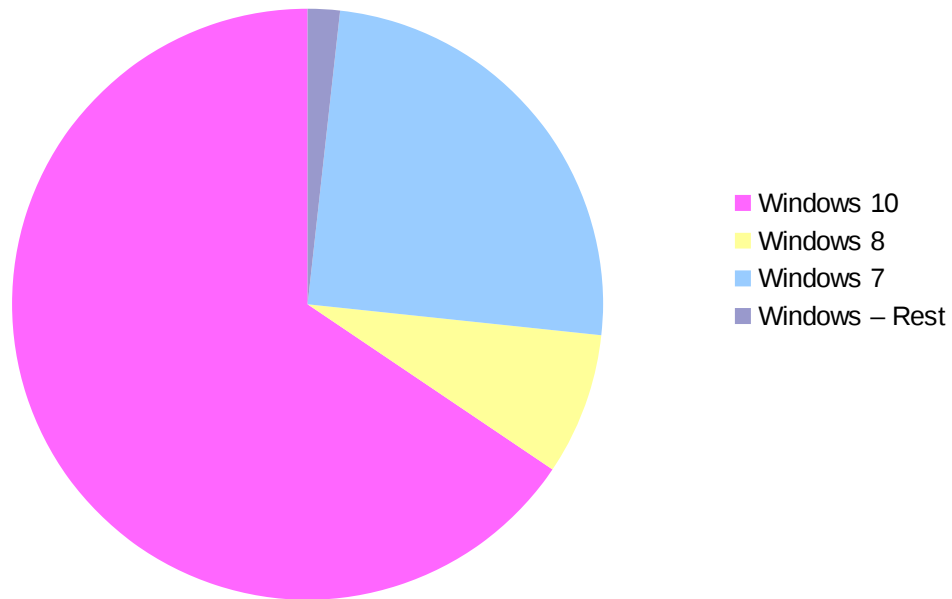
Microsoft gave/forced free upgrades to Windows 10 onto everyone who was using Windows 8 and Windows 7, so it's not surprising that Windows 10 forms the majority. Windows 7 users are likely ones who just prefer Windows 7, while Windows 8 users are to be praised for managing to avoid pressing the update button for a whole year. The Rest here is people who insist on telling us they dual-boot(with Ubuntu). No one who took the survey uses Vista or XP(Thank god).

Linux distribution

- Linux - Debian derivative (Debian, Ubuntu, Linux Mint, Kubuntu, KDE Neon, and more)
- Linux - Rolling Release (Arch, Antergos, Manjaro, Gentoo, Funtoo, etc.)
- Linux - Red Hat/CentOS/Fedora
- Linux - OpenSUSE
- Linux – Rest

Ah, Linux. There's so many Linux distributions, it's impossible to support Linux properly… Or that is what many commercial companies often say.

Let us Linux developers tell you a secret: There's only two things you need to deal with when giving Linux support: Method of distribution, and dependencies. This is also what the survey sought for. We were not interested in which random variation of Ubuntu someone was running, so much as whether it was based on Ubuntu, or more prudently, Debian at all.

This left us with 5 distinctions: 1 – Debian-based, which are slow updating newbie friendly distributions, that use .deb as the packaging format. 2 – The Red Hat based distributions, which are usually used by studios and people who like Red Hat, these use .rpm as their main packaging format. 3 – Rolling releases, these are distributions that update as soon as possible and often are for those who want to refine their build. These guys tend to build themselves. 4 – OpenSuse is separate from the Red Hat based distros because the dependencies are very different despite the packaging format being .rpm. 5 – Rest. Here is where all those minor distros go.

As you can see, the majority of people who use Krita are using a Debian derived distro. This is likely to be a mix of Ubuntu, Linux Mint and Debian itself. This is probably because we target artists, and artists don't consider themselves very technical, so they prefer to have a distribution that sets up everything for them. Another reason this is such a big group is because David Revoy tries out all the distros available each year and writes up a report about his most favorite one and how he solves certain problems. Linux newbies who want to draw tend to use his guides. It's sometimes very difficult to get new versions of Krita to Debian users in particular, so hence why we are now shipping official appimage packages.

The second biggest group is the Rolling Release category. These tend to be artists who started out on Debian or the like, got annoyed with it(likely because of an unsupported piece of hardware), and then went for the opposite. They tend to build Krita themselves, or get it via an AUR recipe. We personally recommend building Krita yourself instead of relying on a script, because then it's far easier to tell where it goes wrong when it does.

The third biggest group is the Red Hat based ones, though, we're pretty certain that most of these either use CentOS, the slow updating distro, or Fedora, which is the end-user distro.

Finally there's OpenSuse, which is a distribution with a significant amount of users. And then there's the small distros.
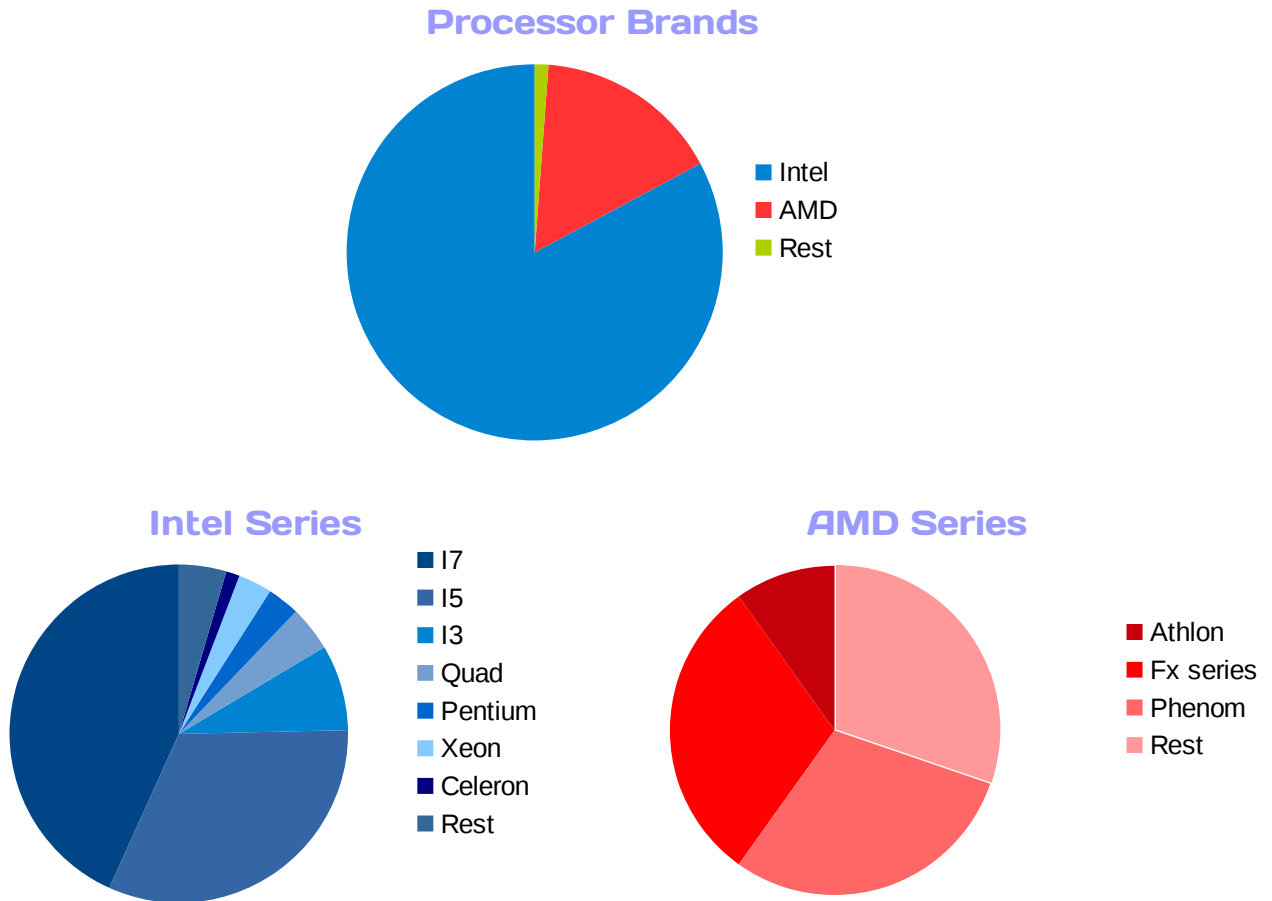
OS X Version Distribution
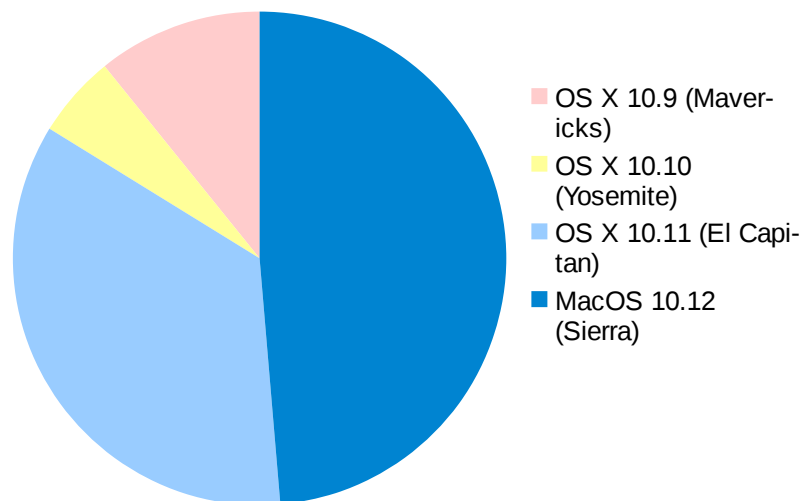
OS X version distribution is pretty straight forward. MacOS is on the newest Mac devices, OS X 10.11 users haven't updated yet. There were only two 10.10 users, and finally, the 10.9 users are probably running too old of a Mac device to be able to update. Only 51 people marked they had OS X.

PROCESSORS (CPU)

This one will be short:

Processor Brands

- Intel
- AMD
- Rest

Intel Series

- I7
- I5
- I3
- Quad
- Pentium
- Xeon
- Celeron
- Rest

AMD Series
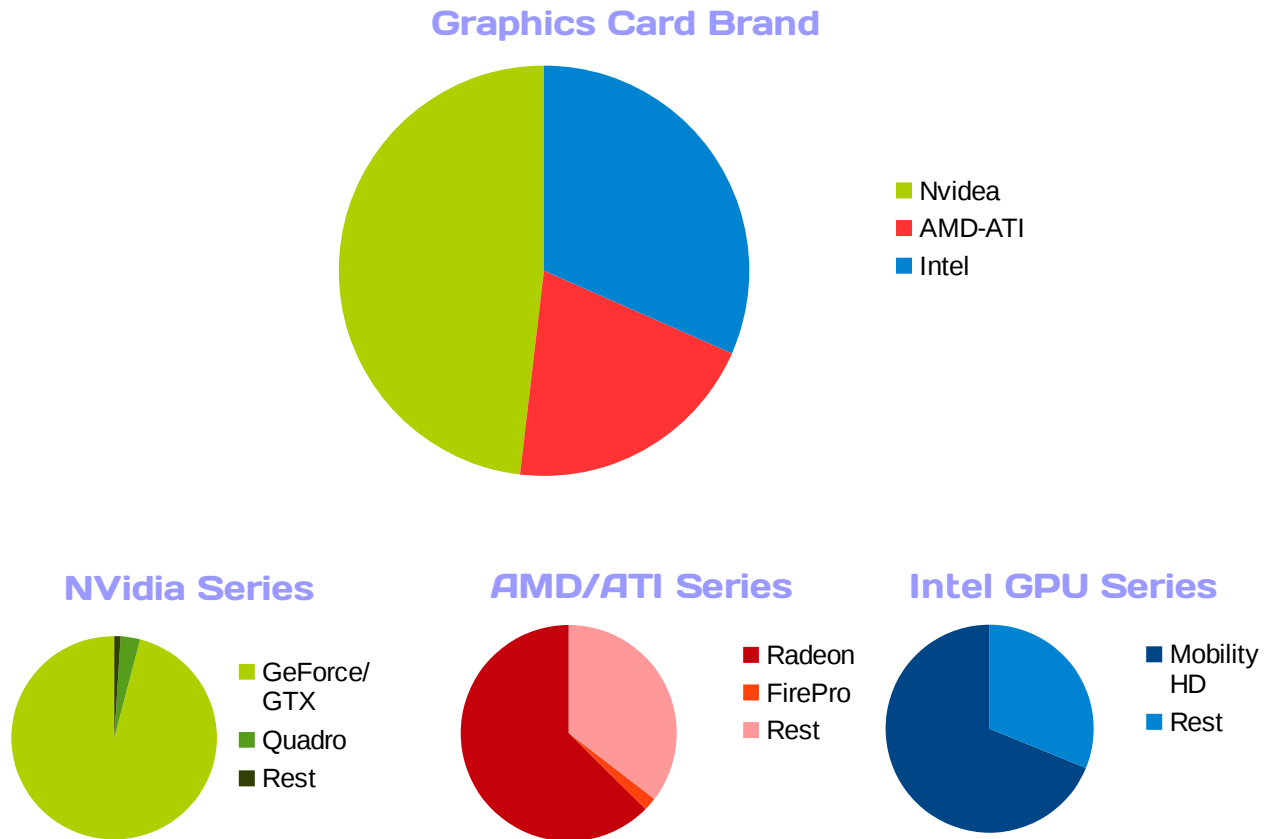
- Athlon
- Fx series
- Phenom
- Rest

Processors are the part of your computer that does all the maths. There's three major processor brands: Intel, AMD and ARM. The last one only produces for mobile devices like phones and tablets and therefore doesn't show up on here. We haven't figured out how to separate the clock speed(that is the amount of calculations a processor can do in a given period) for those who specified it, but just looking at the series tells us that quite a few people are using high-end processors.

   AMD processors suffer a bit when using Krita, because we use a library for SIMD and AVX instructions and the like(That's special ways of writing calculations that is trickier to write, but faster for the processor to use, if it understands them), and that library doesn't work well with AMD on Windows. If you use AMD, we recommend you turn off vector calculations in the configuration, under performance.

GRAPHICS CARDS (GPU)

So, this is a bit more interesting to talk about:

Graphics Card Brand

- Nvidea
- AMD-ATI
- Intel

NVidia Series

- GeForce/GTX
- Quadro
- Rest

AMD/ATI Series

- Radeon
- FirePro
- Rest

Intel GPU Series

- Mobility HD
- Rest

The graphics card is a piece of hardware in your computer that is kind of like the processor, but instead it's dedicated in calculating graphics related maths and displaying graphics onto the screen. Krita uses the graphics card via OpenGL to make showing your image really fast on the screen, so it makes things like panning and zooming much faster. It can also use it to speed up certain things via the Instant Preview functionality, and we technically also support giving 10bit per channel output if the graphics card can handle it.

Like processors, there's three major graphics card brands: Nvidia, Intel and AMD. Nvidia tends to be huge because they're often used by people who play video games. Intel has a large presence here because often laptops with Intel processors use a graphics card that is integrated with the motherboard(That's what connects all the parts of your PC). AMD is a bit the underdog in all of this.

We couldn't get much information beyond the series again, but even that tells us a lot. For Nvidia, GeForce is their consumer range of cards, while Quadro is their professional range. Though, GeForce type cards tend to be used by people who use Blender's Cycles, as that uses features of the GeForce cards(Cuda) to be faster.

Similarly, Radeon is AMD's consumer card series, while FirePro is it's professional series. Finally, Mobility HD is the main series for Intel's integrated cards.

For Intel and AMD devices it was much harder to parse the answers, so next time we'll try giving the series so that people just have to tick something.

Right now if you do own a Intel graphics card, we recommend making sure to update the drivers. A recent Windows 10 update made it so that devices where the user has updated from Windows 8 to Windows 10 but hasn't updated their drivers recently, said driver is likely to malfunction with Krita. People who have intel graphics cards tend to be the ones that have yet to learn what a graphics card is, so attempting to solve this issue has taken up quite a few man-hours diagnosing alone.

WORKING MEMORY (RAM)

This one was a bit of work because people have many different ways of writing what type of ram they have. Maybe a bit too many. We might need to give ranges to tick next time.

That said, the RAM entries are a good example of statistics doing funny things. Take a look at the following table:

Average RAM in MB	12764 MB
Mode of RAM sizes in MB	8000 MB
Median of RAM sizes in MB	8000 MB

Alright, so a little explanation. The first number is the average of all samples. That'd be 12 GB of Ram. The average is a bit of a difficult number to interpret, because outliers can really change it's size. As there's people out there with 128 GB of RAM, that can be a bit extreme, and it may not give a good idea of what the most common ram size is.

The most common size is what we call the Mode. It's 8 GB. The Median is similar, it's the middle most sample of all the samples, in this case it's 8 GB. So we can safely say that the average Krita user has 8 GB of RAM at their disposal.

If we want to have more information, we need to make a chart:

Amount of Ram available
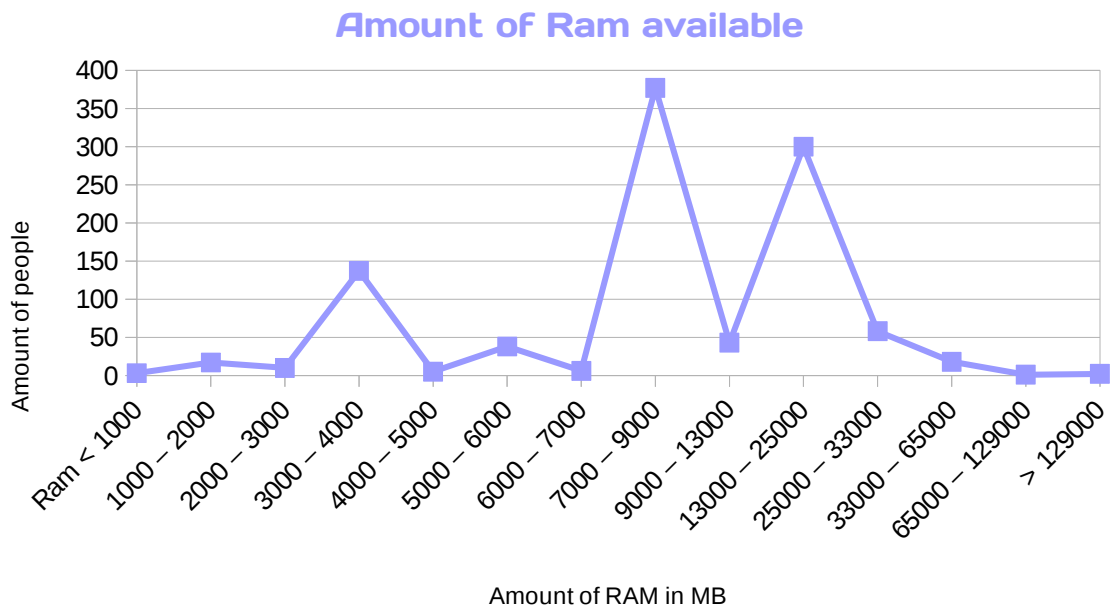
So, what this chart shows us that indeed, around 8 GB of ram is the most common, then there's a lot of people with about 16-24 GB of RAM, but on the other side there's also a lot of people with 4 GB of RAM. These are likely people with older laptops.

Generally, it's recommended to have about 4 GB of RAM for Krita, and it seems most of our proactive users have that.

SCREEN SIZE

How big is the screen resolution for most Krita users? A lot of people didn't seem to understand the concept of pixel dimensions, so we had a lot of responses with either the amount of inches a single pixel took, or the inch size of the monitor. Next time we'll just offer a list with most common resolutions.

Common Screen Resolutions
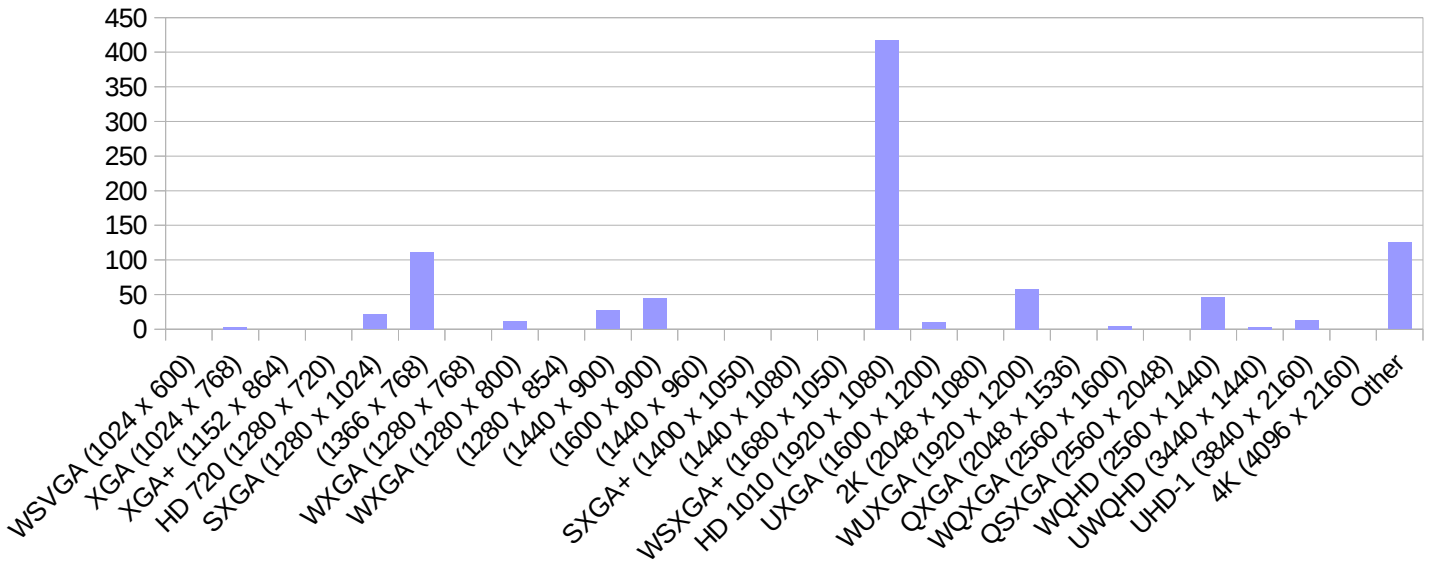
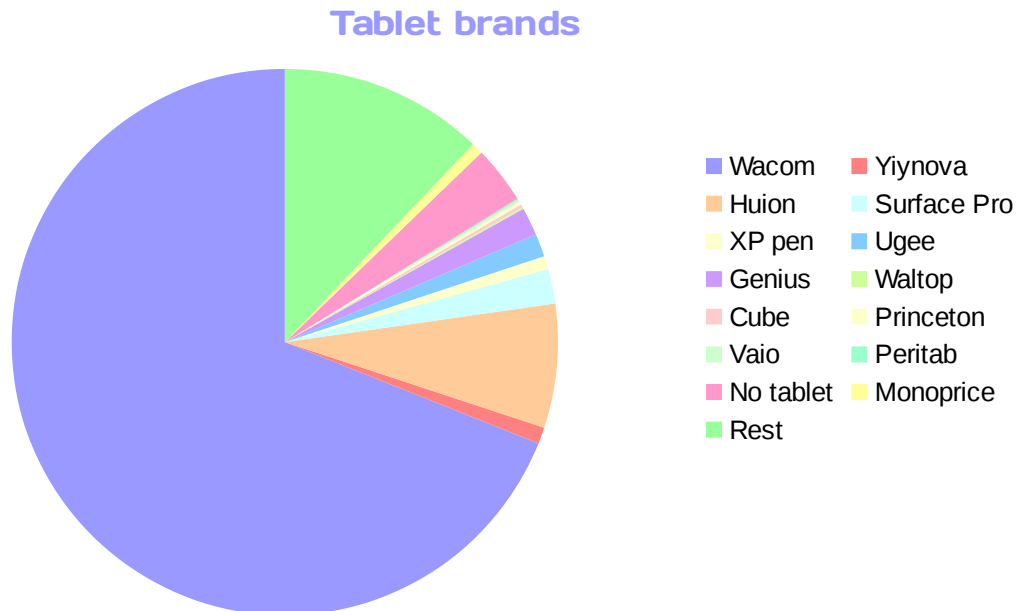Most people seem to be using a 1920 x 1080 screen. A handful, probably on laptops, has a smaller size than that.

Resolution of Screen

The DPI categories
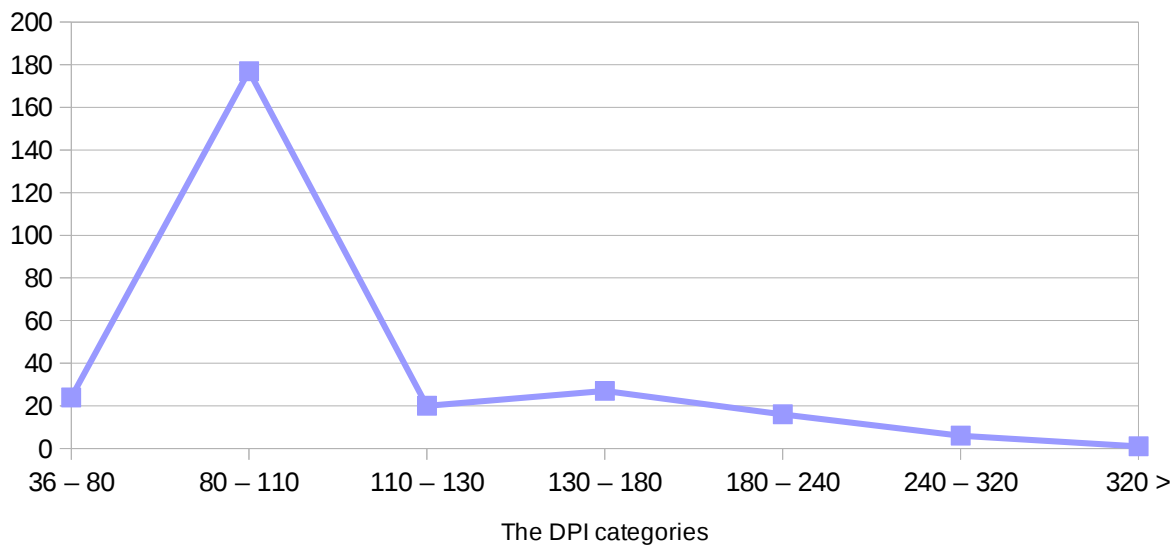
Resolution seems to peak at 92, but there's quite a few HiDPI contenders.

TABLETS

So, Krita is no fun without a tablet. And we were wondering, what kind of tablets do our users use?

Tablet brands

So, unlike the previous sections, there's a lot of different tablet brands. Most of them are actually all selling the same tablet, or at the least the same hardware, but they put a different piece of plastic around them. The drivers for such tablets tend to be the same and tend to have some really really terrible bugs in them. We've blogged about this before, and we honestly don't recommend getting such cheap tablet brands.

For that reason, we have an official list of supported brands, these are brand of which we know they produce their own drivers, of which we have hardware, and with which we have an official contact person, so that we can tell them when there's a bug in the drivers. This list is Wacom, Yiynova, Huion and the Microsoft Surface Pro.

On the question, does it work with Krita, this supported list sticks out too(tablets with too small numbers were removed here):

Works vs. Doesn't work
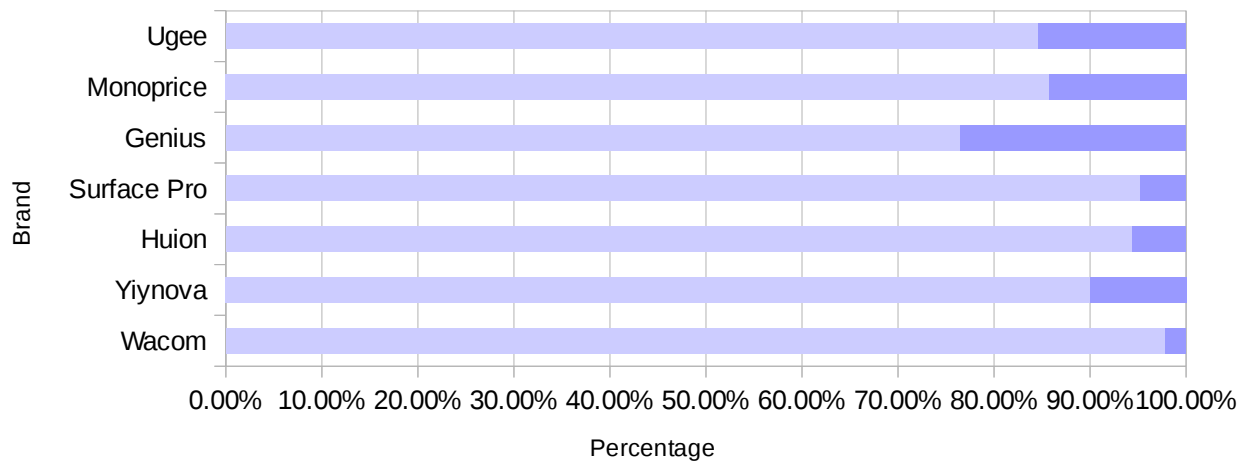
Genius is a known problem, Ugee has some really terrible drivers as well. Monoprice and Yiynova both had very small numbers in the survey, so even though there was only one person for whom they don't work, that shows up on the graph quite clearly.

We've set up a list of tablets that are supported or known to be broken here: https://docs.krita.org/List_of_Tablets_Supported

KRITA USAGE

How do people use Krita? How do they get their news? We asked a handful of questions to get to know you a little better.

END USE
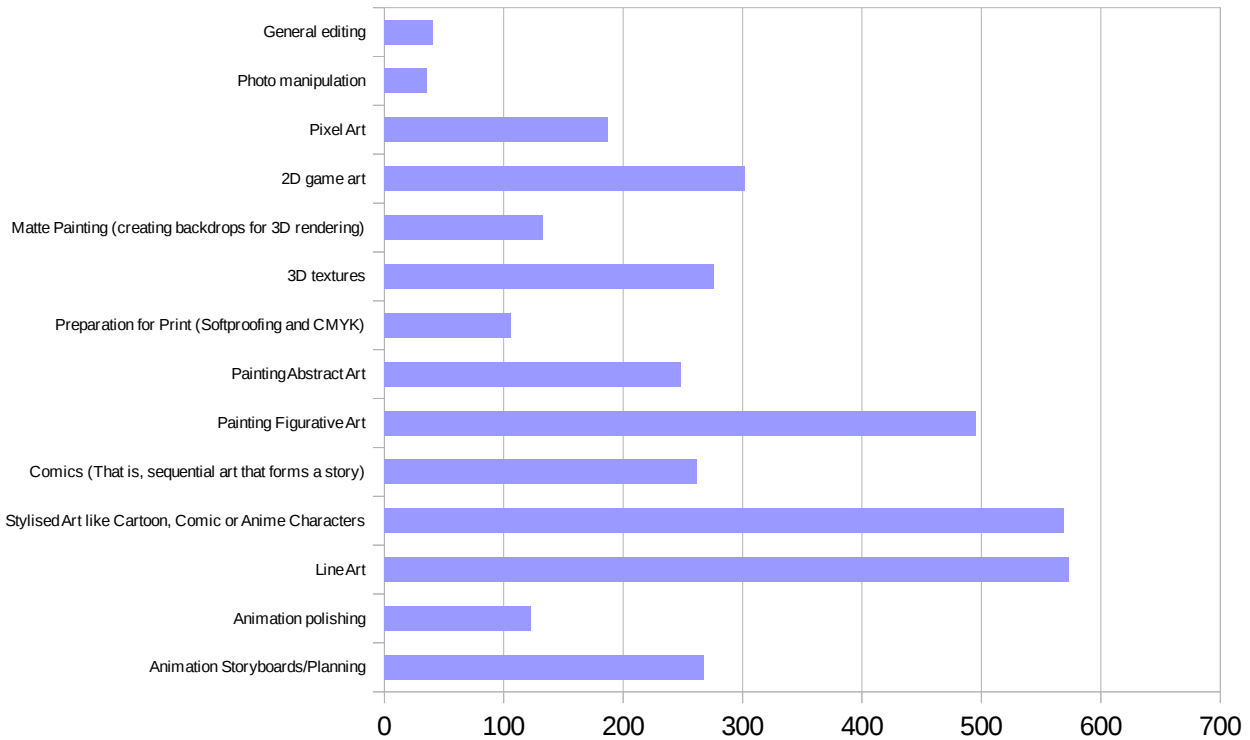
Most people use Krita to either draw stylized, abstract or figurative art. Which is great, because we made Krita for that! A good chunk of these are probably also doing pixel and 2d game art. Quite a few people use Krita for manipulating their 3D textures, though much less for Matte Painting.

For dedicated areas, people use Krita for comics, but also for roughing out animation. Matte Painting, Preparation for Print and Polishing Animation are quite dedicated areas, and more for the Krita super user, and therefore it is not that surprising that people don't use it as much.

Quite a few people noted that they use Krita for photo manipulation or general image editing. Some of these requested more photo editing tools, but sadly we are not able to say yes to that. Our focus on digital art from scratch is what has made Krita into what it is today, and we don't want to confuse that goal too much.

DOCUMENT SIZES

So, how big are Krita documents on average?

	Width	Height	Total pixels	Layer size at 8 bit	Layer size at 32 bit float
Average	2891 px	2510 px	9540088 px	37 MB	146 MB
Median	2480 px	2048 px	6000000 px	23 MB	92 MB
Mode	1920 px	1080 px	2073600 px	8 MB	32 MB
Max	14031 px	14031 px	143085600 px	546 MB	2184 MB
Min	1 px	1 px	1 px	32 bit	128 bit

And of course, like the RAM, we get the best overview if we look at it via a graph:
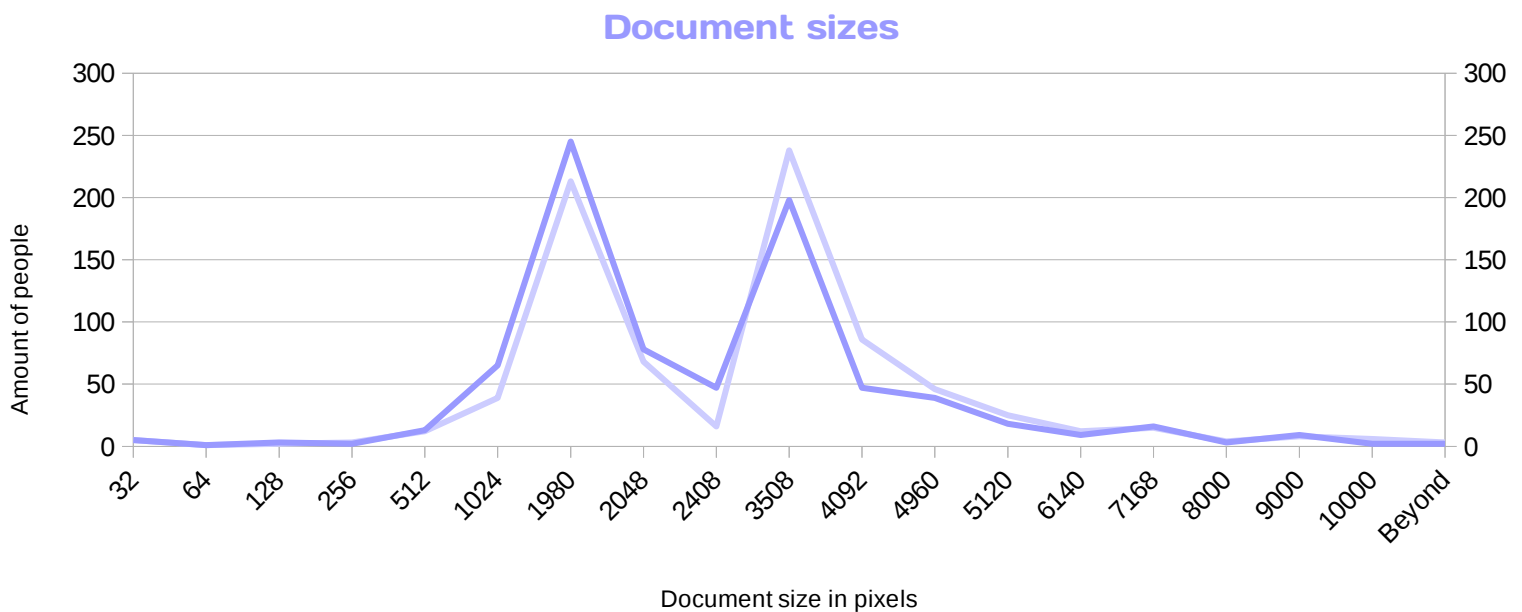
The pale line is the Widths, and the darker line is the Heights.

It seems that the majority of people are using their screen size (1920 x 1080), and after that we get a A4 at 300 DPI (2480 x 3508). The layer sizes are important because we use them for the memory pool in the performance settings. By default we have set it to 39 MB, which is a fair guess. The layer size can be calculated by doing bit depth*amount of channels*height*width. So for an 100 x 100 RGBA image of 8 bits per channel, that is 8*4*100*100. This gives the bits, so you need to divide by 8 to get the bytes, and then by 1024 twice to get the megabytes.

COLOR DEPTH

Most people use 8 bits per channel:

Most commonly used bitdepths
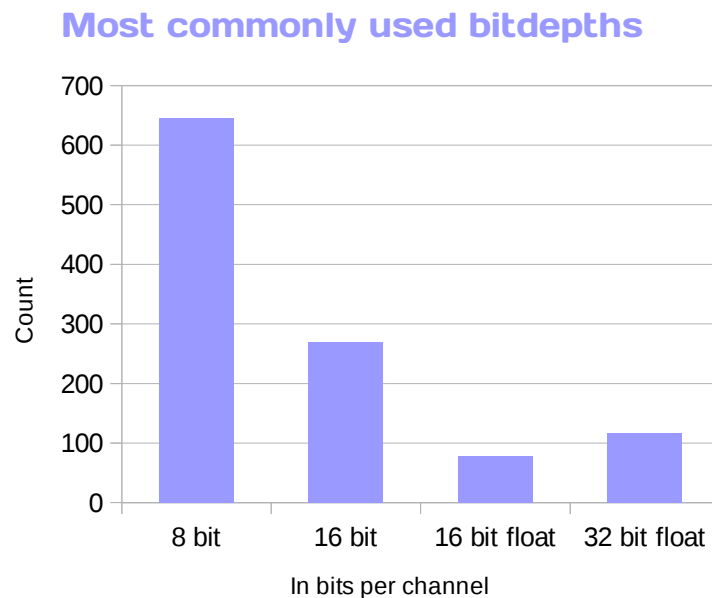
We were pleasantly surprised to see the amount of people using higher than 8 bit, because it can be quite heavy(though it gives much nicer color mixes and filter results). However, we had at the least one person complain about the lag and that there was nothing that they could do to make any difference, who had also marked 32 bit float as the only color depth they worked in, which would be the cause of this slowdown. This is probably a confusion caused by the fact that RGBA with 8 bit per channel color depth is sometimes named 32 bit color (4*8=32, see?).

This can be a bit of a problem, as 32 bit float is there for people doing super advanced work. If we use the same logic, RGBA with 32 bit per channel color depth is 4*32, so 128 bits. It is really quite heavy, and the kind of slowness as on 32 bit canvases is very difficult to solve. Generally, we recommend beginners or people who experience lag to stay with 8 bit, and only use 16 bit and above if they can live with the lag.

TRANSLATIONS

Translation usage

- Uses Translations
- ESL, prefers English UI
- Native English Speaker
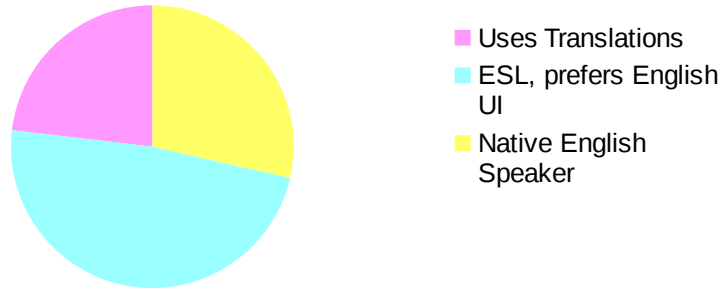
The KDE community is very dedicated to getting it's software translated. Krita benefits from that. On top of that, we have dedicated translators and team members who have made sure the website is available in Japanese, French and Spanish. And there's a lively Russian community as well.

Regardless of that, the majority of non native speakers prefer to use Krita in English. This isn't a failure on our part, rather, the types of terminology used in a program like Krita is very difficult to translate, especially with neologisms, like 'pixel', 'bit' and 'docker'. On top of that, for many people who don't have English as their native language, English is the language of one's adulthood. Your native language tends to be spoken with your parents, after all, so it can be very displacing when you see something you do your daily job with to be in your native language.
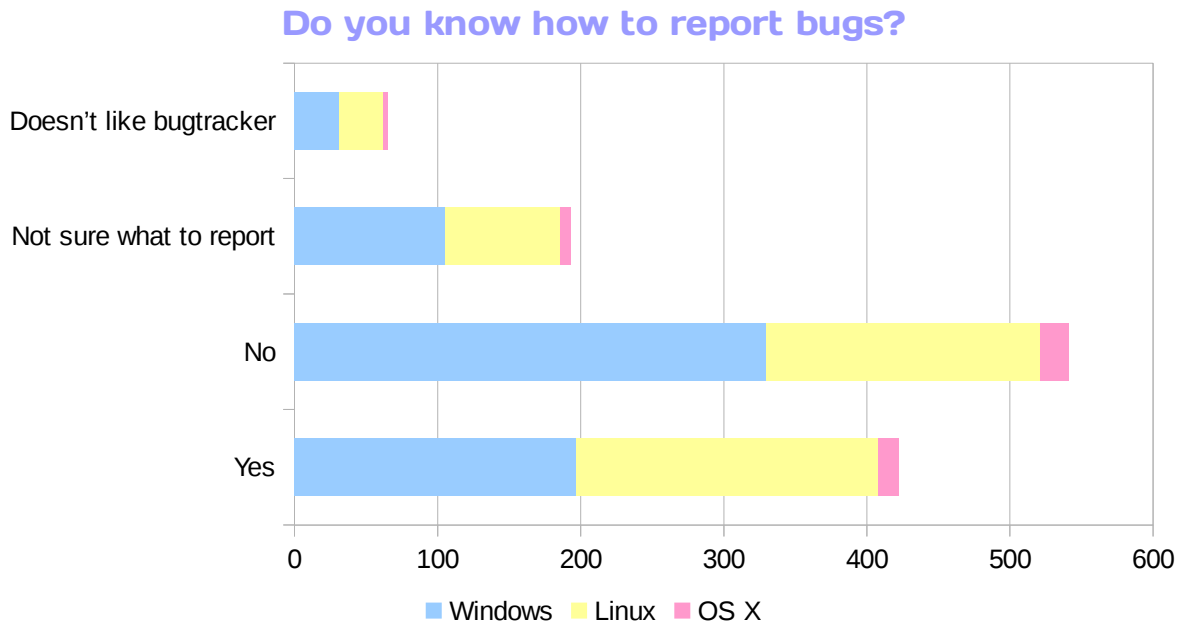
MANUAL

Did you know there's a manual?

- Yes I did
- Not until now
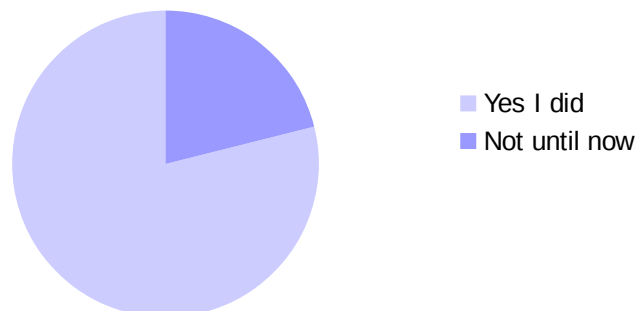
We're pretty proud of our manual. It can certainly be improved, but it's clear to read, and often contains the answers to many people's questions. It's even on a very standard hot key for manuals, F1. So we wanted to know if people knew of it's existence.

BUG REPORTING

## Do you know how to report bugs?

This is a bit of a funny one. We release unstable builds so that people can get the bugs out, but we are noticing that people aren't reporting the bugs for these(often we get bug reports after we make an official release). This is very awkward, because the point of the unstable builds is so that we can get the bugs out before the official release. So we were a bit curious what was up with people's bug reporting abilities.

In general, we don't really need more bug reports as much as more help trying to reproduce bugs, but it is trickier to get people's help with that.

Windows and OS X users seem the most clueless about how to report bugs, while Linux users are the largest amount that dislikes the bug tracker software.

KRITA NEWS SOURCES

News Sources
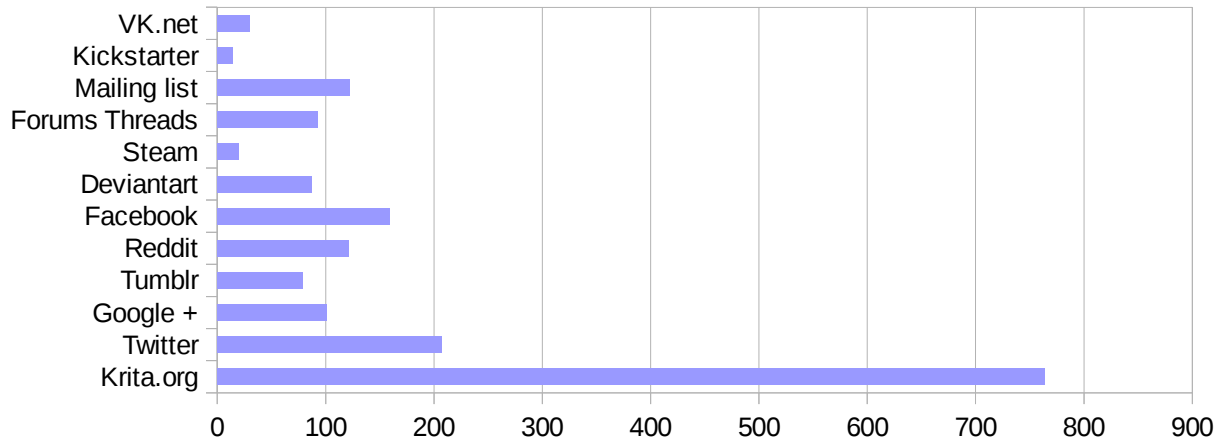
People could select multiple for these. The largest amount get their news from the website. After that, twitter, face book and the announcement mailing list as the most popular. These are the biggest ways people get their information in general, so that's not too surprising.

Then comes Reddit, thanks to dedicated fans spamming the Linux subreddit with information. Google + is an officially maintained account. Forum threads are done by various enthusiasts. Deviantart and tumblr are handled by the same person. Finally, VK is a Russian social network where we have a dedicated person hanging around, and then there's Steam and Kickstarter.

BIGGEST GRIPE

That leaves the biggest gripes:

What is your biggest gripe with Krita?

- Bugs
- Lags
- Customisation
- Dataloss
- Resources
- Missing Features
- Text tool
- Audio
- Other
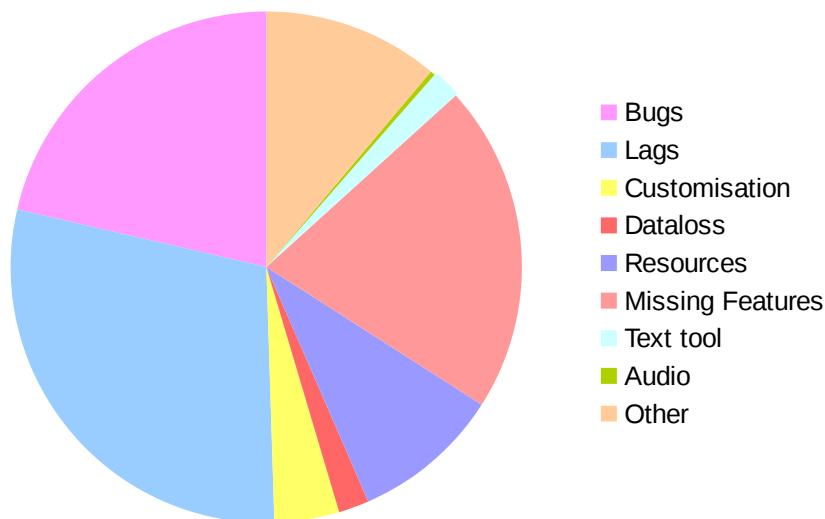
Lag is the major gripe, we'll go into detail about that in a bit.

After that is bugs, which is semi-good as we want to spend this year on fixing bugs, reducing crashes, and polishing Krita to a shine. Amongst the bugs we really want to fix is the resources bugs, which is why they got a separate section on the survey.

Then the next section is missing features. From glancing over it, it's all sorts of various things, from better text tools, to audio, to more filters, to more design features. We don't know when we'll be able to get to any of that. However, it is super useful to us if there's a consensus about what a certain feature should do, so be sure to make a topic on the forum to discuss it.

Data-loss is a REALLY SERIOUS type of bug. We have been improving the saving system in master so that it gives extra feedback on saving and in general saves better, but we do still urge you to always report Data-loss bugs!

The customization section is one that like resources needs a lot of work to be fixed proper. Finally rest section were ones that were difficult to understand, or just said they did not have any gripes.

LAG ANALYSIS

So, Lag. Lag is for most people any kind of slowness by the program. Lag is also very hard to tackle. Let us go over why...

The first problem is that Krita is a painting program that is designed to allow you to shoot yourself in the foot. That is, if you select 32 bit float, there's no warning window anywhere to tell you that this is a terrible idea with your current hardware setup. So we are always trying to figure out whether someone may have bitten off more than their computer can chew.

The second problem is that Krita is not so much a program where calculating is very important. Most of the calculations happening in Krita are very simple. Where the real slowness comes in is manipulating huge amounts of data. And that is something that is very hard to optimize. Especially because artists are always pushing the size of the canvases they make, and thus also pushing the amount of data that needs to be manipulated. Therefore, much of what we do to make Krita faster isn't so much optimization as it is implementing systems that give better feedback while doing calculations in the background.

The third problem is that we do use technologies like OpenGL and VC, the library for SIMD instructions that can potentially make Krita much faster… when it plays nice with the user's setup. Graphics drivers can sometimes have a terrible quality, or sometimes the processor, like AMD's, cannot understand what VC is trying to tell it.

INSTANT PREVIEW AND OPENGL

We are almost at our limit at how fast we can make brushes. In 2015 and 2016 we implemented a system that allows you to work on a smaller version of the canvas while it calculates the full stroke in the background. We called this Instant Preview. The problem is that Instant Preview gives a little lag moment on small brush strokes when finishing the calculation, so we often have to recommend people to turn it off(despite it making the move tool and the filters faster as well). Anyway, because Instant Preview relies on OpenGL, we have taken a look at how lag, instant preview and OpenGL relate to the Graphics card brand:

Lag stops with Instant Preview off
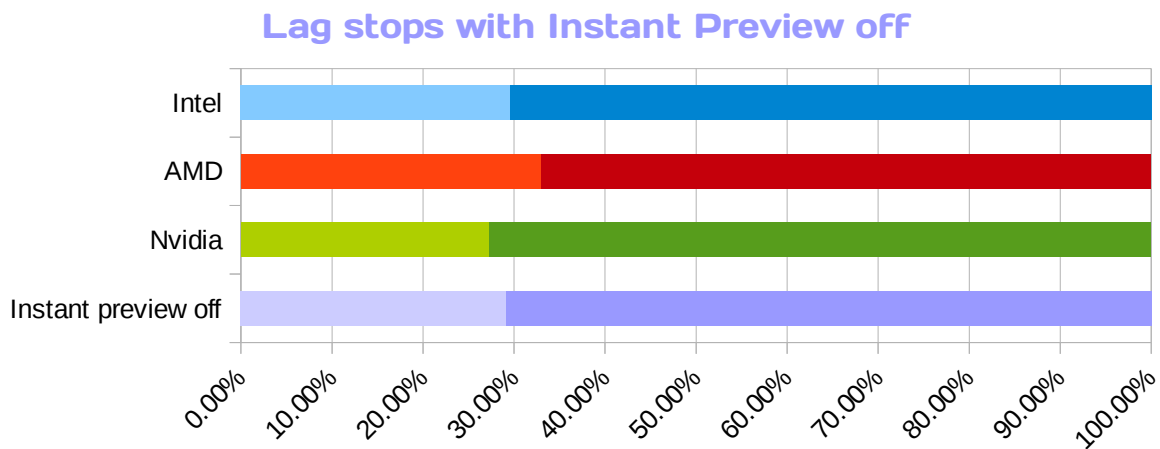
People for whom Instant Preview was the major source of lag, had an average brush size of **52**, but the most common brush size(that's the mode) was **20**. About a third of people who responded experienced this speed-up.

Lag stops with Instant Preview on
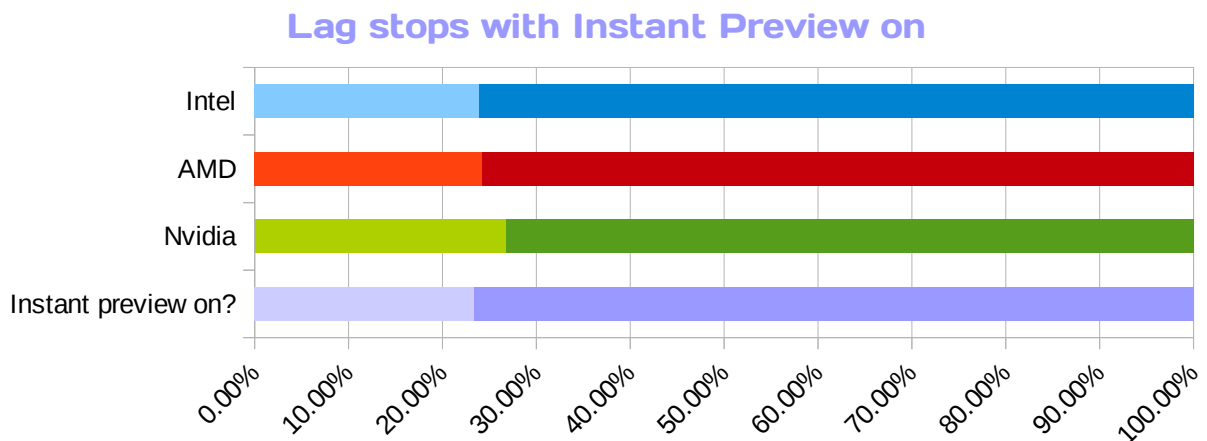
On the other hand, for some people Instant Preview did solve the lag issue. For these people, the average brush size was **59** and the most common brush size was **50**. This gives us a sense of a breaching point where Instant Preview starts going from a bother to a necessity.

Lag stops with openGL off
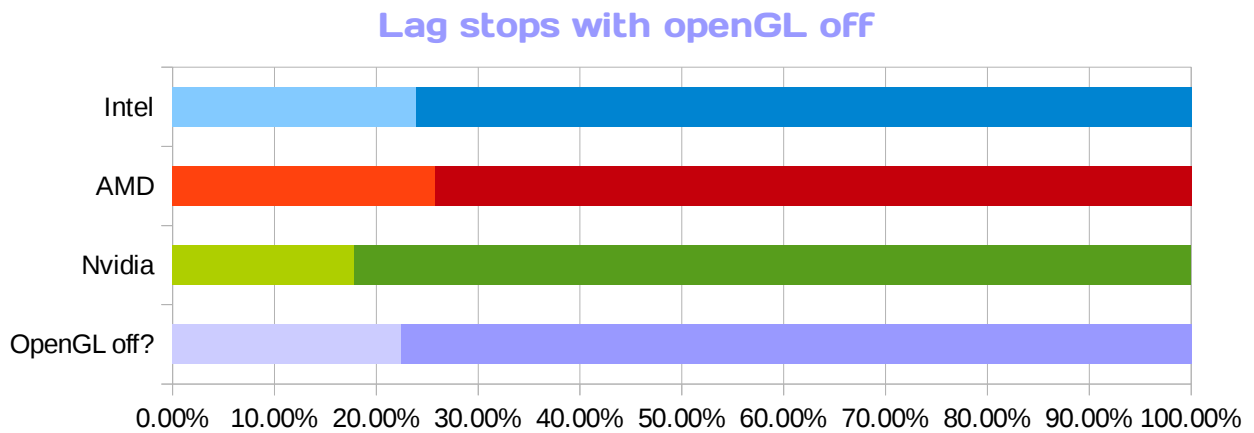
Finally, whether the lag stopped if OpenGL was turned off all together. This is a sign of a graphics driver that isn't cooperating. For these people, the average brush size was **46** and the most common was **10**.

In total, the average brush size was **52**, and the most common size was **10**. The median was **20**.

CONCLUSION

So, we actually set up the hardware survey, because we were looking for some bugs that we couldn't figure out… Sadly we didn't find the culprit drivers, but we did learn some things from the survey, like the common hardware specs, how much of a bother instant preview is in it's current incarnation, what kind of canvases you use.

In general, it was really interesting to see what kind of things you do with Krita. We'll be using the tablet data to at the very least compose a list of working and non-working tablets. We were also really charmed by all the well-wishes and encouragements we got from you in the 'anything else' section. Thank you very much!

Maybe we'll do another one next year, who knows?