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This Week's Stories

Newly Discovered Vulnerability Raises Fears Of Another WannaCry

May 25, 2017

A newly found flaw in widely used networking software leaves tens of thousands of computers potentially vulnerable to an attack similar to that caused by WannaCry, which infected more than 300,000 computers worldwide, cybersecurity researchers said on Thursday.

The U.S. Department of Homeland Security on Wednesday announced the vulnerability, which could be exploited to take control of an affected computer, and urged users and administrators to apply a patch.

Rebekah Brown of Rapid7, a cybersecurity company, told Reuters that there were no signs yet of attackers exploiting the vulnerability in the 12 hours since its discovery was announced.

But she said it had taken researchers only 15 minutes to develop malware that made use of the hole. "This one seems to be very, very easy to exploit," she said.

Rapid7 said it had found more than 100,000 computers running vulnerable versions of the software, Samba, free networking software developed for Linux and Unix computers.

There are likely to be many more, it said in response to emailed questions.

Most of the computers found are running older versions of the software and cannot be patched, said Brown.

Some of the computers appear to belong to organizations and companies, she said, but most were home users.

The vulnerability could potentially be used to create a worm like the one which allowed WannaCry to spread so quickly, Brown said, but that would require an extra step for the attacker.

Cybersecurity researchers have said they believe North Korean hackers were behind the WannaCry malware, which encrypted data on victims' computers and demanded bitcoin in return for a decryption key.

reuters.com

AT&T's Vision For Time Warner Content Is Mobile-Friendly And Ad-Based

May 24, 2017

After achieving sooner-than-expected success with its DirecTV Now offering, AT&T is now turning its attention to crafting Time Warner content that will be more mobile friendly. What does that mean, exactly? Well, let's just say if AT&T CEO Randall Stephenson has his way, 20-minute Game of Thrones episodes could soon be on the way.



In comments delivered at an investor conference, Stephenson indicated the carrier's DirecTV Now mobile app pulled in subscribers – 200,000 of them, to be specific – much more quickly than AT&T anticipated following its launch in December. Stephenson said that told the carrier demand for “premium content integrated with the mobile experience was really, really high.” Ultimately, he said that conclusion convinced AT&T to make an acquisition move to actually own content rather than just delivering it.

“While DirecTV gave us great access to premium content, not owning it limits what you can do. Can you curate the content uniquely for a mobile environment? Can you create new ad supported models for a mobile environment?” he explained. “Time Warner changes the game.”

The Time Warner acquisition will give AT&T the opportunity to craft content specifically for the mobile experience, he said. And that could mean cutting episode lengths to be better suited to mobile viewership.

“I’ll cause (CEO Richard) Plepler at HBO to panic when I say this, but can you begin to think about things like Game of Thrones as an example, where in a mobile environment, a 60-minute episode may not be the best experience? Should you think about 20-minute episodes?” Stephenson asked.

Stephenson said AT&T also plans to capitalize on the combination of its massive mobile, broadband, and pay TV distribution with Time Warner’s “massive inventory of advertising.” The latter, he said, draws some 750 billion impressions each year in addition to AT&T’s 150-200 billion. Stephenson indicated AT&T will be able to monetize those through targeted advertising, driving up yields that can either flow to the bottom line or be reinvested in customer mobile content. But that requires making sure AT&T has the ability to take unique viewer information from DirecTV and mobile subscribers and feed it into models for advertising within Time Warner. Getting that system up and running is a priority for the carrier right now, he said.

Stephenson added he’s confident AT&T’s “really dense cell site grid” and spectrum position with 60 MHz of fallow airwaves will be sufficient to accommodate the increase in video traffic that these plans entail. But that doesn’t mean AT&T will sit back if more spectrum becomes available ahead of 5G.

“We’ll be looking, whether it be the government auctions in 2018 (or) secondary market transactions, to continue to enhance that position,” he noted. “But we’ve got a really good position to begin deploying nationwide 5G footprint as we get the standards, the technology, and the equipment in place.”

wirelessweek.com

Products & Services

T-Mobile Launching Its Flexible ‘Digits’ Plan On May 31st

May 25, 2017

Multiple Lines On One Phone? Multiple Phones With One Number? Totally Up To You.

T-Mobile has been working on a new type of multi-number, multi-device phone service. Digits, one of the company's UnCarrier moves, is now through beta testing and ready to launch at the end of the month.

Digits allows customers to seamlessly use their phone number for messaging and calls across a number of devices including phones, tablets, and computers. This type of service has already been available to Apple device users, but T-Mobile is taking it a step further.

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“Digits allows customers to seamlessly use their phone number for messaging and calls across a number of devices including phones, tablets, and computers.”

Along with streamlined messaging, Digits also allows you to use more than one number on a given device. So, rather than carrying around different phones for personal and work use, you can have more than one number on the same device. You can also have the same number on different devices, meaning you can get rid of that ancient landline and have your home number on every one of your family members' phones.

All current T-Mobile customers will have their numbers upgraded to Digits on May 31st and they'll be able to purchase an additional Digits line for \$10 per month.

Customers with a T-Mobile One Plus plan will be able to get an additional Digits line for free for a limited time.

engadget.com

Verizon Takes Home Broadband Wireless With 4G LTE Router

May 24, 2017

Verizon is taking broadband internet in the home wireless.

The carrier on Wednesday debuted a new 4G LTE router – dubbed the SmartHub – that delivers connectivity using Verizon's mobile network.

According to Verizon, the SmartHub router can be used like a traditional WiFi router to connect smartphones, laptops, and smart devices in the home. As well as providing connectivity, the router comes with a companion app that allows users to monitor and control smart home accessories remotely. This includes receiving use notifications and setting schedules for connected lights, thermostats, and security cameras, among other things. Prominent partners include the Nest thermostat and Kwikset Home Connect door locks.

Since it uses Verizon's mobile network, the carrier pointed out the device is portable, allowing customers to move the SmartHub between their home, office, or vacation locations. A replacement battery also means the device will keep providing connectivity in the event of a power outage, Verizon noted.

As with any other device connected to Verizon's network, the SmartHub requires a data plan from the carrier. Those appear to be offered in tiers similar to Verizon's smartphone offerings, with main options from 4-12 GB for between \$30 and \$70 per month. Additional data packages for between 14 and 100 GB are also available at a cost of between \$80 and \$710 per month.

Of course, there's also an unlimited option for \$110 per month, but that comes with the caveat that data speeds could be reduced after 22 GB of usage in the event of network congestion.

(Editor's note: A Verizon spokesman subsequently clarified the SmartHub unlimited plan is subject to the same 10 GB 4G LTE threshold as the Jetpack. After customers hit 10 GB, they'll be on the carrier's 3G network for the remainder of the bill cycle.)

Customers should also note the SmartHub also carries a \$20 per month line access fee – just like a smartphone.

The router itself is available starting today for \$199.99 retail or \$99.99 with a two-year contract.

wirelessweek.com

How To Use Snapchat's New 'Group Stories' Feature

May 23, 2017

Snapchat on Tuesday announced a new feature allowing multiple users to contribute photos and videos to the same "Story," a collection of posts that stay viewable for a limited amount of time.

Snapchatters can find the new feature by swiping to the Stories page, tapping the "Create Story" button on the top-right, and naming their group story. Snapchat users can then invite other users by username to add content.

Alternatively, Snapchat users can choose to invite only friends or "friends of friends" within a specific geographic area to contribute to a group story. That might be useful for events like weddings and parties.

The group Stories will disappear if 24 hours pass without a user adding a new photo or video. That means groups of friends might make a game out of keeping their shared Story alive, much like some Snapchat users strive to continue their "snap streaks" with other Snapchatters.

The group Story update is rolling out to iPhone and Android users over the next day, Snapchat says. The update comes as Snapchat's user growth is slowing amid a heated battle with the Facebook-owned Instagram. That rival app has been growing steadily in part by mimicking features popularized by Snapchat, including stories and visual effects called "Lenses."

time.com

Emerging Technology

The Kickstarter-Backed Smartwatch That Gets It Right

May 26, 2017

A Crowdsourcing Wunderkind You'll Really Want.

Not sold on smartwatches? We get it. Like any new technology, there's still a lot to be desired. But the Kickstarter-backed Ticwatch 2 provides wearers with the seamless, simple experience they expect.

Digital Trends called the Ticwatch 2 a "breath of fresh air for smartwatches." Its proprietary OS (which is still compatible with iOS and Android) is intuitive, easy on the eyes, and packed with features you'll actually use—like a sports app that tracks your fitness goals, and call and text alerts that let you release your vice-like grip on your smartphone without missing a thing.

Inside, Ticwatch 2 packs a 300mAh battery that lasts up to two days after one 80-minute wireless charge. There's also a built-in GPS, dynamic heart rate sensor, gyrometer, and accelerometer. It's IP65 water-resistant case measures 44mm in diameter and are 11.95mm thick. Its silicon rubber watch band is 20mm and is perfect for wear at the gym or while playing sports, so feel free to get sweaty. What really separates Ticwatch 2 is its ultra-smooth style that lets you get smart with pride.

Ticwatch 2 carries a regular price tag of \$199.99, but during this special promotion, you can bring one home for \$169.99.

popularmechanics.com

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"Ticwatch 2 provides wearers with the seamless, simple experience they expect."

This Gadget Turns iPhones Into Photo Printers – With A Virtual Twist

May 23, 2017

In 2017, people around the world will take an estimated 1.2 trillion digital photos, according to digital imaging research firm InfoTrends. But how many of those photos will be printed out? Probably not many.

Prynt, a startup founded in 2014, is trying to revamp the way digital content is shared -- with photo-printing, augmented-reality-powered devices for smartphones.

Prynt first launched a photo-printing phone case in 2015 on Kickstarter and now is unveiling a second-generation version. CNNTech got an early look at the new "Prynt Pocket," which is available for \$150 starting Tuesday.

The Prynt Pocket, which lets you print photos directly from your iPhone, is about half the size of the original and can now be used without having to take off an existing phone case. The idea is that digital and physical don't have to be mutually exclusive: Users can capture the moment automatically with both a physical photo and a social-media-friendly video.

Here's how it works: Download the Prynt app, slide the gadget onto your phone and snap a photo (or choose an existing picture from social media or your camera roll). You can add special effects like filters, stickers, text and frames, and the image prints in about 30 seconds.

The device also has augmented reality video features, similar to Apple's (AAPL, Tech30) moving image format called Live Photos or Instagram's Boomerang app, which makes short videos that loop back and forth. When you take a photo, the Prynt app records a video and stores it in the cloud. After the picture has been printed, use the app to see the moving photo or share it on social media.

"It's the best of both worlds: You get something that is tangible, unique...but you also have a sense of the context of what happened at that time," Prynt cofounder and CEO Clément Perrot told CNNTech.

Perrot says people are "living memories as a group" -- everyone takes videos at events like weddings. "Here's a way to capture all of that and put it into something that people would look back at. If it stays on their phone, you don't necessarily look at it again," he said.

Both versions of the product use Zink's inkless paper, so no ink cartridge or toner is needed (the ink is activated with heat). The Prynt Pocket holds 10 sheets of paper at a time (a pack of 40 costs \$20). The Prynt Pocket works only on iPhone currently but an Android version will be available later this year.

Other companies have developed portable printers designed for smartphones, like HP's Sprocket photo printer and Polaroid's instant mobile photo printer (both sell for \$130 at Staples). Instant-film cameras, like those from Fujifilm and Polaroid, have also made a comeback in recent years.

"People are going back to instant photographing [because] digital photography is missing some of the nostalgia that physical photos have -- the fact that you can touch something and go back to it," Perrot said.

Prynt's products aim to be "a simple context to bridge the physical and digital," he said.

money.cnn.com

"Prynt, a startup founded in 2014, is trying to revamp the way digital content is shared -- with photo-printing, augmented-reality-powered devices for smartphones."

Mergers and Acquisitions

Digital Power Corporation Receives Regulatory Approval For Acquisition Of Majority Control Of Microphase

May 25, 2017

DPW Announces MPC Transaction Set To Close; Company To Transition To Holding Company Model

Digital Power Corporation a growth company seeking to increase revenues through acquisitions and organic growth, today announced it has received regulatory approval in connection with the acquisition of the controlling interest in Microphase Corporation (MPC), the 62-year old global designer, developer, original equipment manufacturer (OEM) and industry leader of electronic components, devices and subsystems for the Defense, Aerospace and Telecommunication sectors. The Company believes MPC is prominent in delivering world-class radio frequency (RF) and microwave devices, and components and innovative testing devices. DPW previously announced the acquisition of MPC on May 3, 2017. The transaction is set to close imminently.

The Company also announced that upon the close of the acquisition of the controlling interest of MPC, it will begin executing a corporate restructure and the Company will operate as a holding company with all operations at the subsidiary level. Details of the corporate restructure will be announced by the Company over the coming days and weeks as milestones are achieved or news deemed appropriate.

President and CEO Amos Kohn stated, "We are very pleased we have received the necessary approval. We look forward to completing the close of acquiring a majority interest in Microphase Corporation. The closing of Microphase will not only hallmark the Company executing its core acquisition strategy adopted during the last quarter of 2016, it will start the next chapter for the company, transitioning to a holding company whose name will change." Mr. Kohn continued, "We are investing primarily in technology and industrial companies serving advanced and mission critical applications for our focused markets. We take a hands-on active approach and work closely with our portfolio companies to strive to create market leaders." The Company cited the close of the MPC transaction as an important milestone that provides added value to shareholders and to its operations. It will be strategic as it pursues future acquisitions. The financial operations and results of MPC will be fully consolidated with the Company starting with the public reporting of the 2nd quarter of 2017 for DPW.

As previously disclosed, for the remainder of 2017, the Company is pursuing an increase in revenues by seeking to attract new customers and implementing an aggressive acquisition strategy to build upon its anticipated organic growth. This anticipated revenue increase reflects management's and the Board's commitment to an aggressive growth strategy through acquisitions adopted pending the change in control completed in September 2016. In implementing this strategy, the Company has hired a number of additional personnel and consultants to assist in identifying, analyzing, negotiating and acquiring potential companies. The Company will need to raise a substantial amount of capital for acquisitions and to support its infrastructure. As a result of its projected growth, its anticipated net income may not match its growth in gross revenues and it may continue to experience losses through 2017 and 2018 until these acquisitions have been fully integrated into its operations or until its cost reduction and efficiency changes have been implemented.

nasdaq.com

"The closing of Microphase will not only hallmark the Company executing its core acquisition strategy adopted during the last quarter of 2016, it will start the next chapter for the company, transitioning to a holding company whose name will change."

Cuebiq Deal With Photobucket Grows Pub Network To 180 Partners

May 23, 2017

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“Cuebiq’s SDK now has more than 180 partners and a user base of more than 61 million active monthly users.”

Cuebiq, one of the largest providers of accurate and precise location data in the U.S., has teamed up with popular photo-sharing platform Photobucket.

The Photobucket app boasts more than 50 million estimated downloads and is the world’s leading dedicated photo and video sharing service.

The partnership marks a milestone for Cuebiq’s publisher partners’ client roster. Cuebiq’s SDK now has more than 180 partners and a user base of more than 61 million active monthly users.

Cuebiq’s publisher network consists of apps that leverage location and geo-behavioral insights to provide users a more relevant user experience. Cuebiq also provides publishers with sales tools that help drive revenue, such as real-time campaign optimization based on store visits, post-campaign footfall attribution measurement, and audience insights. Cuebiq’s Attribution SaaS reporting tool has quickly become the industry standard and measurements include footfall uplift, dwell time, brand affinities, impression to visit time, and more.

“Utilizing new data points (from) Cuebiq will help us better understand how our users interact with our apps,” said John Corpus, Photobucket CEO. “More importantly, it will help us hone in on what matters to our customers on a daily basis.”

It’s a win-win for the new partners.

“We’re excited to add Photobucket as our most recent partner to our growing publisher network,” said Antonio Tomarchio, the CEO of Cuebiq. “Publishers are increasingly in need of ways to differentiate themselves to their customers and advertising partners.”

mobileadvertisingwatch.com

Industry Reports

More Than 60 Percent Of U.S. Companies Have No Idea What 5G Is

May 26, 2017

From inside the industry, it seems almost unfathomable that someone hasn’t heard the term 5G. We talk about it constantly, somehow niggling its way into every discussion – spectrum and tests, densification and CapEx, fixed and wireless. Telecom’s obsession with 5G has grown to the point where even the carriers themselves are criticizing each other for jumping the gun. But it seems that all the hype may not be expanding as far beyond our bubble as we think.

New data from ABI Research indicates a whopping 62 percent of enterprise companies had no familiarity with 5G. And just over a third (37 percent) said they’re just starting to even look into the technology.

But 5G isn’t the only up and coming technology companies were in the dark about. A whopping 93 percent of companies had no awareness of blockchain, only 7 percent had already or were planning

to adopt autonomous vehicle solutions, and just 22 percent of companies were exploring indoor location solutions – a key component in IoT solutions for vertical markets like retail.

So what exactly are enterprises focused on?

“The survey clearly shows that we are currently in the phase of adding connectivity to physical first products,” Stuart Carlaw, chief research officer at ABI Research, observed. “The top three most significant technology segments identified by respondents all centered on connecting physical first products to digital domains. These were wired (Ethernet, PoE), short-range wireless (Bluetooth, WiFi), and cellular technologies (4G/4.5G, LTE-M, NB-IoT, LPWA).”

To close the gap between industry and enterprise awareness will require “significant education and awareness activities,” Carlaw said.

ABI Research said its data is based on a first quarter survey of 455 U.S.-based companies in nine vertical markets spanning retail, healthcare, transportation, logistics, automotive, manufacturing, utilities, consumer packaged goods, and government.

wirelessweek.com

Windows Switch To Git Almost Complete: 8,500 Commits And 1,760 Builds Each Day

May 24, 2017

The Windows Team's Migration To Git Is Almost Complete.

Back in February, Microsoft made the surprising announcement that the Windows development team was going to move to using the open source Git version control system for Windows development. A little over three months after that first revelation, and about 90 percent of the Windows engineering team has made the switch.

The switch to Git has been driven by a couple of things. In 2013, the company embarked on its OneCore project, unifying its different strands of Windows development and making the operating system a more cleanly modularized, layered platform. At the time, Microsoft was using SourceDepot, a customized version of the commercial Perforce version control system, for all its major projects.

SourceDepot couldn't handle a project the size of Windows, so rather than having the whole operating system in a single repository, the Windows code was actually divided among 65 different repositories, with a kind of virtualization layer on top to produce a unified view of all the code. Some of these 65 repos contained nicely isolated, standalone components; others took vertical or horizontal slices through the operating system; others were just grab bags of different code. As such, the repo structure didn't correspond with OneCore's module boundaries.

Microsoft wanted a structure that better fit OneCore. It also wanted a system that better fit the development of "Windows as a Service" and the move from making one major release every three years to making a smaller release every six months. Windows development has been substantially opened up compared to the Windows 7 and Windows 8 days, with much more customer feedback through the Insider Program. The development team is trying to be much more responsive to bug reports and suggestions coming from Windows users, and this changed the demands placed on the version control system.

Even with its customization and multiple repositories, the scale of the Windows codebase, some 3.5 million files in total, pushed SourceDepot to the limit. Creating a branch took the better part of a day,

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“A little over three months after that first revelation, and about 90 percent of the Windows engineering team has made the switch.”

with a performance-imposed limit of about 500 branches total. Groups had to think long and hard about whether they would actually create a branch—they certainly weren't going to create one on a whim—and would then have to scavenge someone else's branch if they decided that they really needed one; they would have to find an old, unused branch and ask the team that created it to kill it off so that the system would have capacity for the new branch.

Addressing these performance concerns was the second big driver for the switch away from SourceDepot to something new.

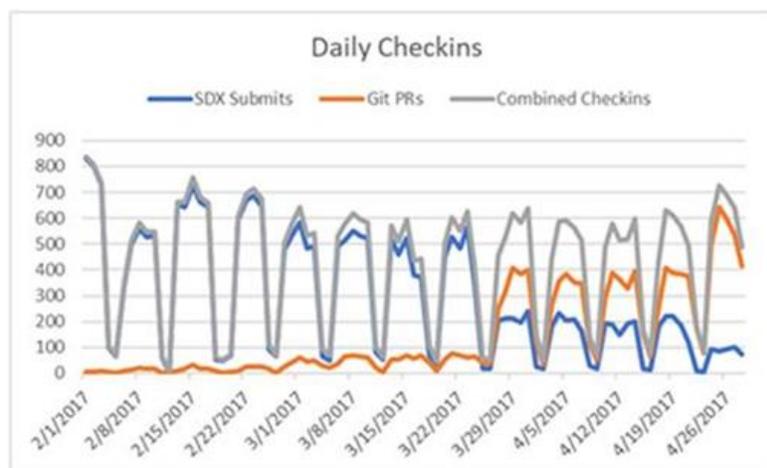
More broadly, the company wanted to develop a single engineering system ("1ES"), spanning not just version control, but bug tracking, building, and more, that could span the entire company. Presently, different teams use different systems; some had already migrated to Git on their own, but other, larger, older products are on SourceDepot. The other aspects of application lifecycle management (ALM) are being handled Visual Studio Team Services (VSTS), the cloud-hosted version of the Team Foundation Server ALM system.

The Switch To Git

Due to widespread developer familiarity and strong support for creating lots of branches with low overhead, the decision was made to use Git as the new system. But Git isn't designed to handle 300GB repositories made up of 3.5 million files. Microsoft had to embark on a project to customize Git to enable it to handle the company's scale.

This work has proceeded along three main paths. The first is the Git Virtual File System (GVFS) project, which allows the repository to be cloned (that is, copied from the remote server to a local, modifiable copy that developers actually work on locally) without having to replicate all 300GB at once. Instead, a skeleton copy of the repository is created locally, and as files are opened they're pulled on an as-needed basis from the Git server. The server components similarly needed to be updated to handle this style of operation.

The second is to make algorithmic improvements to Git itself. Microsoft found that Git would often touch files unnecessarily; this meant that GVFS would fetch those files similarly unnecessarily and that operations on the repository got slower as the number of files in the repository grew. With 3.5 million files, even simple operations such as `git status`, which shows which files have been modified and have changes that need to be committed, took about 30 minutes. The company made algorithmic improvements to improve the scaling and made many operations "aware" of GVFS, only touching those files that were actually available locally—files that GVFS hasn't yet requested from the server obviously cannot be changed, so they do not need to be checked for changes. This first pass took the `git status` down to about 9 seconds.



After an initial period with only about 10 percent of developers using Git, Microsoft has moved large parts of the Windows team to the new system. The switch from SourceDepot check-ins to Git commits shows this shift within the company.

This helped considerably, and with these changes in place Microsoft moved about 2,000 Windows devs to using Git back in March. However, the company then noticed that performance got worse the longer a developer worked on their local repository; the average git status had crept up to 11 seconds. The reason for this was that as the developers went about their jobs, they'd touch more and more files. Often these files weren't actually modified, just fetched incidentally while building or debugging something else, but the net result was that the local repository became bigger and bigger over time.

This has led to a second round of optimization work: changing Git so that, to as great an extent as possible, its performance scales not with the total number of files in the repository (as it was initially), nor even with the number of files retrieved and stored locally (as it was with GVFS), but with the number of locally stored files that have been modified. Git status is now down to 2.3 seconds, and the company's goal is to get it under one second.

The third thing the company has done is build a Git proxy server so that remote teams with higher latency, lower-bandwidth connections can work on the Windows code without too much pain.

Cloning the Windows repository from Redmond takes about 127 seconds; the repository itself is hosted in Azure on the West Coast, so bandwidth is high and latency is relatively low. The same operation from the company's North Carolina office was taking 25 minutes. With the introduction of the proxy, this has dropped to 70 seconds—it's actually quicker than in Redmond, because the latency to the proxy is even lower than the latency between Redmond and Azure.

Big Numbers

The result? The Windows repository now has about 4,400 active branches, with 8,500 code pushes made per day and 6,600 code reviews each day. An astonishing 1,760 different Windows builds are made every single day—more than even the most excitable Windows Insider can handle.

Where Source Depot tended to force branches to be kept long term (because it was so painful to create a new one), the company can now use a more conventional model of short-lived branches, where a branch is created for a specific feature, development is done on the branch, merged into the main tree, and the branch closed. Git aficionados might be surprised that many of the details of how Git is used are left for teams to decide themselves.

The Git community has its own version of the tabs versus spaces debate: whether merges should use rebasing, squashed commits, or full commit history. This is a religious issue—some people greatly prefer to see the individual commits and accurate history of individual commits, others prefer the cleaner history that comes of rebasing and squashing—and different teams have different policies. Squash commits are more popular overall.

Git is, of course, open source. Microsoft has forked the Git client to make it understand GVFS and use algorithms that scale according to the number of modified files. Presently, GVFS has to be used with the Git server that's part of VSTS, as only that has the required extensions to serve files the way GVFS requires. The company's ambition, however, is to do a way with these forks and have as much of the work integrated into the mainline as possible—with the ultimate goal being to get all of its modifications accepted by the main Git developers and incorporated into the standard Git codebase.

To ease that, the company is moving from Android-style development—where development occurs in private, with occasional public code drops—to developing "in the open," with regular updates and openness to outside contributions. Third parties have already shown interest in the work: Atlassian

SourceTree has added GVFS support, and Tower Git will soon add support. Visual Studio's integrated Git support will add GVFS support in Visual Studio 2017 Update 3.

Microsoft also says that it has had discussions with both Google and Facebook—both of whom face similar scale issues—about its Git development. These companies both have their own internal systems to handle their workloads, and it's possible that we may start to see collaboration between the companies in the future.

The last parts of the Windows team that are using SourceDepot should make the switch to Git over the next few months. After that, the new system will be rolled out beyond the Windows division, with other development teams making the switch.

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