



MONTHLY NEWS LETTER



(Research & Development Cell, CTC (7&7), CRPF, Ranchi, Thursday, the 10 November '2016)

TALK'BOX

"Much of the stress that people feel doesn't come from having too much to do. It comes from not finishing what they've started."

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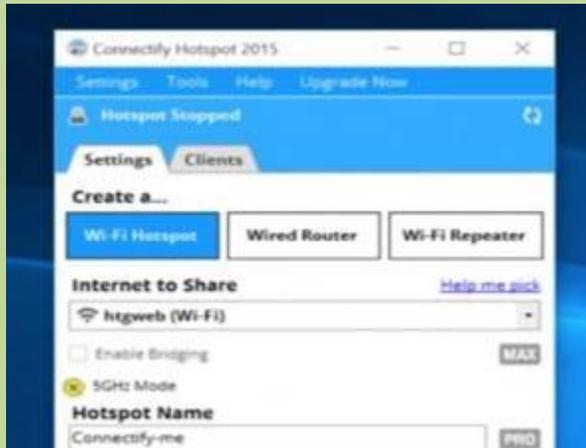
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"If you spend too much time thinking about a thing, you'll never get it done."

Turn Your Windows PC Into a Wi-Fi Hotspot

Windows can turn your PC into a wireless hotspot, allowing it to share its wired or wireless Internet connection with other wireless devices. But how you set it up that depends on what version of Windows you're running. Here's how it all works.

Turn Your PC Into a Wi-Fi Hotspot the Easy Way



If you can't get the built-in Windows Wi-Fi hotspot working, you should try using Connectify Hotspot instead — it's a completely foolproof Wi-Fi hotspot with tons of options and a nice interface.

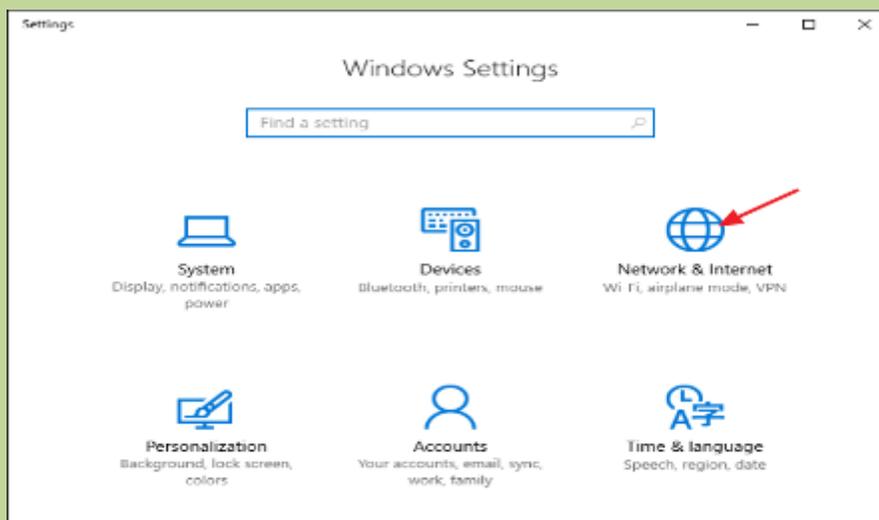
Connectify Hotspot is great if you're at a hotel that charges per device. If you pay for the Pro version you can even use your PC as a Wi-Fi repeater or a wired router, or share a tethered connection off your phone

Download Connectify to Create a Wi-Fi Hotspot the Easy Way

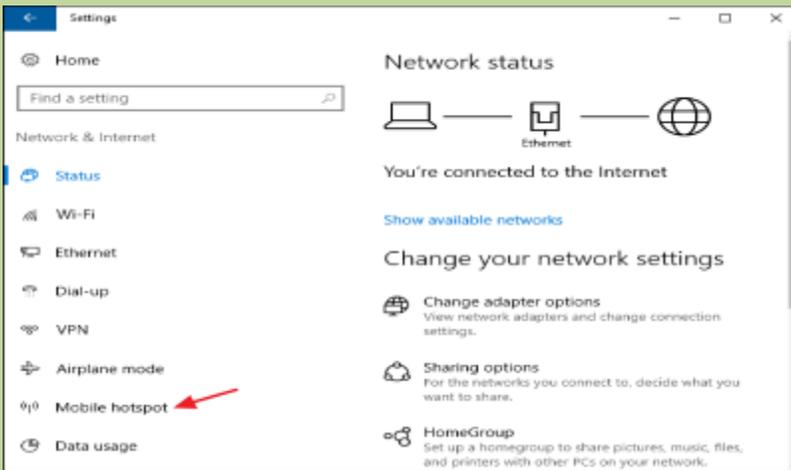
Share a Wired or Wireless Internet Connection in Windows 10

If you're running Windows 10 with the Anniversary Update installed, then you're in luck. With that update, Windows now has a single switch for turning any PC with Wi-Fi into a hotspot, and it doesn't matter whether the Internet connection you want to share is wired or wireless.

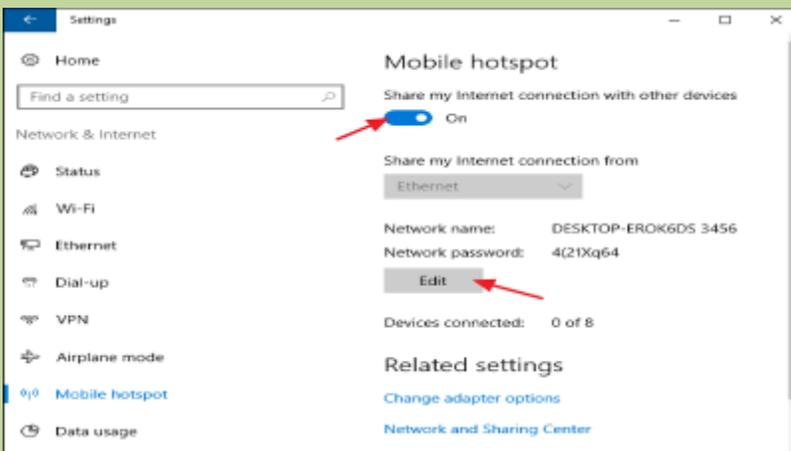
First, fire up Settings by pressing Windows+I on your keyboard. On the main Settings page, click "Network & Internet."



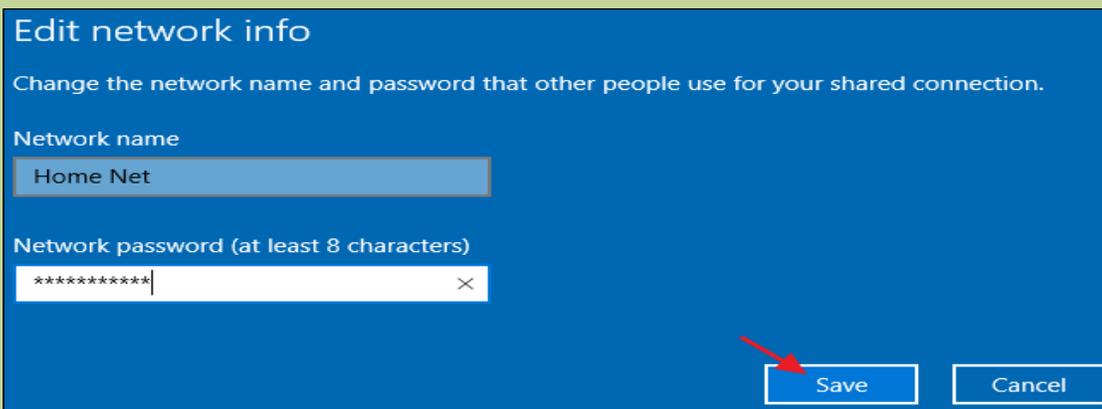
On the Network & Internet page, on the left-hand side, click "Mobile hotspot."



On the right-hand side, turn on the “Share my Internet connection with other devices” switch. If you want something other than the default network name and password, click the “Edit” button.



In the Edit window, type whatever network name and password you want to use and then click “OK.”



And that's all you really have to do in Windows 10. It's one of the best new features of the Windows 10 Anniversary Update.



Rthm - The Life App

Rthm provides a window into your body. It was designed to offer insight on how well your body is doing, and how it is changing over time. Take just 30 seconds a day to check in on your health.

It is the only mobile app capable of monitoring your heart rate through clothes, allowing it to track your cardiovascular health over time, guide your meditation, and remove the question of “is this exercise and meditation really working?”

Though it works without a genetic test, signing up for the DeepRthm genetic analysis allows the AI to use your DNA and the length of your Telomeres (molecular markers of stress and aging) to curate your precise nutritional, exercise, and behavioural needs, and deliver the results directly to your app. If you already have been genotyped by 23andMe, AncestryDNA, Family Tree DNA, or DeCODEme you can upload your data at <http://user.getrthm.com> and instantly begin receiving insights and view your traits about your health in the Rthm app.

Get Motivated.

-Set your daily goals for steps, active time, meditation time, and sleep duration. Rthm monitors your progress towards these goals using a fun and intuitive user interface.

Get Heart Rate in 6 seconds.

-Simply hold the phone flat on your chest and wait until you feel a vibration.
-If you are exercising and your heart rate is elevated select exercise mode before placing on chest for an accurate reading.

-Improve your heart health by tracking your resting heart rate and overall fitness.

Get Active.

-Rthm uses Health Kit to track your activity trends, steps, distance, calories.

Get Mindful in 2 minutes.

-Easy meditation anywhere with real-time feedback from your breathing and heart patterns. Choose a meditation time, hold your phone still, and breathe with the visual guide. The phone will vibrate when your meditation has completed. You will receive a summary of how your heart rate changed through the meditation.

Get Rested.

Rthm tracks your sleep times automatically and maps your circadian rhythm to provide recommendations on how you can improve your sleep.

Get DeepRthm.

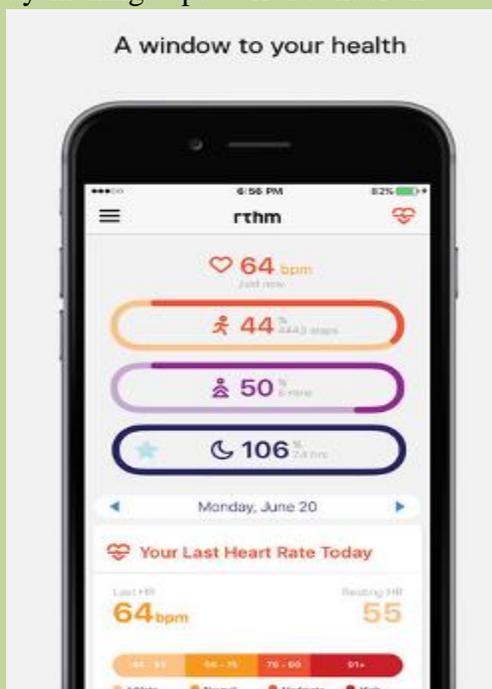
-Opt for DeepRthm Genetic Analysis and receive a DNA collection kit used to sequence your genes and telomere length.

-Receive genetic based health recommendations for a longer life.

Get Smart Tips.

-Rthm discovers insights and provides tips on what you can do to improve your well-being.

MagniWare began life with a focus on hardware, looking to solve the problem of wearable fatigue by making a powerful sensor that was easy to use. But the hardware focus nearly exhausted the startup's small initial funding pool. With its new app Rthm, it's acknowledging that the best way to get people using health-related tech is not to require any special hardware at all.



Instead, Rthm offers informed advice on how to “extend your life” via exercise and meditation. It provides an added level of personalization thanks to a special method of measuring your heart rate and breathing using only the sensors that are already included in your phone. It also plugs into HealthKit for additional info, including sleep and activity levels. And before you think this is yet another startup selling snake oil in the guise of “wellness,” the company maintains that it’s only dealing in practices proven to have a measurable impact on real signals, like resting heart rate.

VIRTUAL REALITY (VR) PLATFORM IN ANDROID



Virtual reality is the term used to describe a three-dimensional, computer generated environment which can be explored and interacted with by a person. That person becomes part of this virtual world or is immersed within this environment and whilst there, is able to manipulate objects or perform a series of actions.

The platform is to be built-into the Android operating system starting with the release of Android 7.0 Nougat, and includes both software and hardware specifications, calling compatible phones "Daydream-Ready". It will be the successor to Google Cardboard.



Google Cardboard is a virtual reality (VR) platform intended as a low-cost system to encourage interest and development in VR applications. Users can either build their own viewer from simple, low-cost components using specifications published by Google, or purchase a pre-manufactured one. The viewer is used by placing a smartphone into the back of it and viewing through the lenses in the front.

Drawbacks in Google cardboard-

Lack of content and low resolution apps-the product still lacks the content that could make it a daily-use product.

Simulation sickness-Which is the result of a disparity between a perceived experience and what one actually experiences— is a big challenge for the Google Cardboard.

Hardware limitations-Certain smartphones do not function effectively in Google Cardboard due to poor hardware specifications. Low processing power, internal memory, outdated processors, and low-quality displays are some of the issues that users might face.

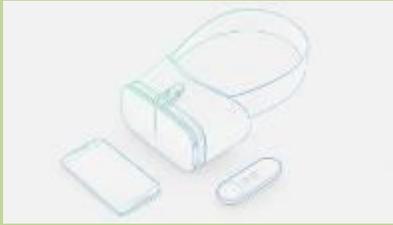
The success of Cardboard convinced Google to develop more advanced virtual reality hardware and appoint a new chief of virtual reality. Google announced an enhanced VR platform called Daydream

Daydream will only work on new phones with specific components. Google announced that eight hardware partners will make Daydream-ready phones :

Samsung, HTC, LG, Xiaomi, Huawei, ZTE, Asus and Alcatel.

The first "Daydream-Ready" phone was the ZTE Axon 7, which was released on July 27, 2016. Google have designed a headset and controller which will act as a reference for these hardware partners to use as a starting point. Google is also designing their own Daydream headset.

Google Daydream features and interface



As the image shows, a Daydream headset will have a head band, just like the Oculus, Vive and (more similar) Samsung Gear VR. Google Cardboard didn't have a band, as it was intended only for brief VR demos.

But like Cardboard and Gear VR, you'll still insert your phone into the headset, and view the screen through lenses that allow you to see the image clearly as such a close distance. Naturally, you'll have to wear headphones for immersive audio (just as you do with all current VR headsets).

The Daydream controller is an integral part of the system: it's not optional. You'll use it to select things and play games. It's a bit like an Android TV or Apple TV remote, in that it has a clickable touchpad and a couple of buttons, so it's easy to use without looking at it. It also has an orientation sensor so it knows where you're pointing.



In addition to Android N's VR mode, you'll also have a version of Google Play for VR which you'll find on the Daydream Home screen (below). This may sound obvious, but it's important because it means you can explore apps in a virtual reality environment with screenshots and videos, install them and then play them - all in one interface. It's something Oculus currently lacks.



As the teaser screens show, Need for Speed: No Limits will be one of the launch Daydream games, as will EVE: Gunjack, a space shooter and 'Action Bowling'. Google has updated some of its own apps for VR, including Google Play Movies, Street View and Google Photos. YouTube is a big one: you'll be able to create playlists in VR, and it also supports spatial audio, so sounds will come from different places depending on where you're looking. Plus, you'll be able to watch all standard videos as well as dedicated VR videos in YouTube. Given that YouTube isn't available on the Oculus or HTC Vive, it's one extra reason (beyond the overall low cost) to get Daydream.

TECHNICAL TERMS

Application Programming Interface (API):-



Application Programming Interface is a set of programming instructions and protocols which help in building software applications. It provides an interface for software components to communicate with each other. Every development platform develops its own API which helps third-party developers create software or apps on that platform.

Examples of APIs include Windows API, Google Maps API and Facebook API. Even the standard programming languages like C++ and Java have their own APIs. These APIs are not only good for programmers but also for users. Due to the fact that all developers would be using common APIs there would be consistency in the interfaces on that particular platform. API takes on a new meaning depending on the platform on which it's being used. APIs in object-oriented languages are a set of class definitions with set behaviors and they can be accessed by calling functions that are present in that particular class. In web development, API refers to a set of HTTP request and response messages.

Address Resolution Protocol (ARP):

ARP is an internet protocol used to map the IP networking address to the physical MAC address of a machine. It is a protocol used to resolve the address of the client machine that makes a request to know his machine address/MAC (Medium Access Control). The server machine which is on a remote computer gets a piece of information from the ARP which helps it uniquely identify the client machine. The whole process completes when the client receives a response from the server containing the required address.

There are two types of ARP: Gratuitous and Proxy. Proxy ARP is more vulnerable to security threats and hence Gratuitous is used more often. The reverse process i.e. finding the IP address can be done with the help of Reverse ARP. In this case, the client sends its physical/MAC address and then the server replies with the IP address.

*****Designed and initiated to build up your technical foundations*****

To be continued in next edition.....

QUICK TIPS

How to make out most of your Laptop battery

It's always a dilemma when you are in the middle of some important work and your laptop gives you that annoying message telling you that the battery is now critical, and the laptop will soon go into the hibernation mode. Well, with a little more care and a few simple and easy steps can help you increase your laptop battery capacity and also its life span letting you use it for a longer time.

1. Switch-off unused wireless radios: Most wireless devices on a laptop keep draining the battery if switched on, even when they are not being used. So when the laptop is being used on battery power, it's advisable to turn off the WiFi and Bluetooth services if you don't require them at that moment.

2. Reducing the brightness of the screen: The backlight of the LCD display consumes a significant amount of battery when it's kept at the brightest setting. Dimming down the brightness to a comfortable level can give the laptop up to 30 minutes of extra backup.

3. Switch off external devices: Most USB devices and other external devices like external hard drives or USB lights or even USB mice should be switched off and removed if not in use. For example, charging an iPod when using the laptop on battery is a very bad idea unless absolutely necessary, as it will keep draining the battery. The same goes for the integrated CD or DVD player. One should keep it empty when not in use as the rotor keeps rotating when there is a CD or DVD placed in the drive.

4. Get some extra RAM: Whenever a laptop runs short of RAM memory it end up shifting to the virtual memory which results in hard disk use, which is a much less efficient option in terms of power consumption. Putting in extra RAM does use more power, so don't get too much extra, but when compared to the use of virtual memory it's a more efficient option.

5. Shutdown background apps: It's always a good idea to shut down all those background applications which you don't regularly require (like desktop search applications), as they use CPU processing power and consequently consume battery power.

6. Use energy saving options on the OS: One can always optimize the power options available in the power settings to get maximum battery life. The notebook should be instructed to shut down the hard drives and turn the display off whenever not in use.

7. Improve battery cycle: For a healthy Lithium-ion based battery, it is always suggested to keep the electrons that are present inside in motion occasionally. That means it's never a good idea to keep you laptop plugged in or on charge all the time as the electrons lose their ability to store energy. One should let it discharge fully and charge it completely at least once a month to keep the battery as good as new.

8. Try to reduce multitasking: When using the laptop on battery power, one should try as much as possible to use one application at a time, and should ideally shut one application completely before opening another, to reduce consumption of both processing and battery power.

9. Defrag regularly: When a hard drive is defragmented disk puts lesser stress on the battery and hard disk as it takes lesser time to find files, so in order to make the hard drive efficient one should perform defragmentation regularly, which should be at least once every month.

10. Hibernate: When running on battery, hibernating the laptop is always a healthier option than putting it on standby, or shutting it down. This is because the laptop's hibernate mode saves it in the state it was hibernated in, and does not require the laptop to reboot all applications, thereby using much less power.

QUIZ NO. 7

1. What is the name of the latest Android OS
 - A. KitKat
 - B. Lollipop
 - C. Marshmallow
 - D. Nougat
2. Summer Olympic 2020 will be held at –
 - A. Beijing
 - B. Tokyo
 - C. PyeongChang
 - D. Vancouver
3. First Indian women Olympic Medal winner is
 - A. Saina Nehwal
 - B. MC Mary Kom
 - C. Karnam Malleshwari
 - D. Sakshi Malik
4. The recently published book "She Walk, She Leads" is written by -
 - A. Gunjan Jain
 - B. Nita Ambani
 - C. Chanda Kochhar
 - D. Mala Sen
5. Which of the following Bank is not a Public Sector Bank?
 - A. IDBI Bank
 - B. State Bank Of India
 - C. Bharatiya Mahila Bank
 - D. HDFC Bank
6. Tata Chemicals sells urea business to Yara International ASA of ____
 - A. Norway
 - B. Russia
 - C. USA
 - D. Germany
7. Unsorted transaction that can used to immediately update database is called -
 - A. Direct database access
 - B. Sequential database access
 - C. Alternate database access
 - D. Instance database access
8. Ubuntu is which type of operating system -
 - A. Open Access
 - B. Open Source
 - C. Windows Based
 - D. Mac Based
9. In MICR, C stands for –
 - A. Code
 - B. Colour
 - C. Computer
 - D. Character
10. The OSI reference model is divided into how many layers?
 - A. Seven
 - B. Five
 - C. Four
 - D. Six
11. In MS word, you can use Styles to –
 - A. Make copies of documents
 - B. Save changes to documents
 - C. Delete text in documents
 - D. Format your documents

(Email ID: rdcellcttit@gmail.com)

12. Who have honoured with the 2016 Rajiv Gandhi National Sadbhavana Award?

- A. Wahiduddin Khan
- B. Shubha Mudgal
- C. Amjad Ali Khan
- D. Muzaffar Ali

13. The transfer rates of FireWire 400 (1394a) is up to ____.

- A. 400 Mbps
- B. 200 Mbps
- C. 100 Mbps
- D. 64 Kbps

14. Internet Protocol Version 6 has been launched in year ____

- A. 2003
- B. 2008
- C. 2012
- D. 2016

15. Who has been appointed as the new chairman of Press Trust of India (PTI)?

- A. Viveck Goenka
- B. Riyadh Mathew
- C. Mahendra Mohan Gupta
- D. Hormusji N Cama

16. Who has become first Indian woman to cross 60m in javelian throw?

- A. Seema Antil
- B. Annu Rani
- C. H M Jyothi
- D. Sindoor Gujar

17. The book “Karachi, You’re Killing Me!” has been authored by whom?

- A. Mohsin Sidiqi
- B. Nudrat Kamal
- C. Saba Imtiaz
- D. Somak Ghoshal

18. Which state government has signed a MoU with Indian Space Research Organisation (ISRO) to promote education?

- A. Maharashtra
- B. Tamil Nadu
- C. Telangana
- D. Kerala

19. The ‘Progress Panchayat’ for minorities has been launched from which state of India?

- A. Haryana
- B. Rajasthan
- C. Madhya Pradesh
- D. Uttar Pradesh

20. Who has been appointed as the new Director General (DG) of Central Industrial Security Force (CISF)?

- A. M Mahadevan
- B. R K Pachnanda
- C. Kumar Shakti Shekhar
- D. P Singh

(Email ID: rdcellcttit@gmail.com)

ANSWERS TO QUIZ- 7

1	2	3	4	5	6	7	8	9	10
D	B	C	A	D	A	D	B	D	A
11	12	13	14	15	16	17	18	19	20
D	B	A	C	B	B	C	C	A	D

R & D CELL, CTC(T&IT)

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