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Secure Remote Desktop Access

Advisory during the COVID-19 outbreak

Programme by : Ministry of Electronics & Information Technology(MeitY), Govt. of India

Supported by : Ministry of Home Affairs (MHA), Govt. of India

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Information Security Education and Awareness (ISEA) Project Phase-II

**Programme by
Ministry of Electronics and Information Technology
Government of India**



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Preface

The Coronavirus Disease or the COVID-19 pandemic is now a grave crisis that people across the world are facing. With no cure sighted, it is only the precautionary measures taken by common people that can keep it at bay; the major among these measures being social distancing or keeping away from crowds, gatherings and from each other to stop it from spreading further. Following the suit of social distancing many organizations across the world have been obliged to provide the option of work from home to its employees.

As working from home becomes mandatory due to COVID-19 pandemic, it is to be ensured that any endpoint that an employee uses is fully protected. Cybercriminals have started to exploit fears around the COVID-19 outbreak to conduct email scams, phishing and ransomware attacks. As per the Check Point research, there are 4,000 COVID-19 domains that have been registered earlier this year, many likely fronts for Cybercrime.

In view of the above, Information Security Education and Awareness (ISEA), Ministry of Electronics and Information Technology (MeitY), Government of India, is working to help you stay safe in the digital world throughout the COVID-19 pandemic and support internet users and employees to be aware and stay safe.

We (ISEA) reveal how to stay safe online while Working From Home (WFH) during the COVID-19 outbreak. To fight against the virus, social distancing techniques are the best solutions as per the experts. People have to opt to work remotely to self-isolate or to simply help slow the spread of the virus.

***We wish all of you a
very healthy and fun at home***



1 Cyber Security Risk Trends reveals with respect to COVID-19

The new trend of cyber-attacks through malware and ransomware in the context of COVID-19 is 'Fearware'. The cyber attackers are exploiting the fear of coronavirus to cause the victim to fall prey to cyber-attacks.

The hackers are releasing new computing viruses and mobile applications relating to COVID-19 updates and other information. They are also designing phishing websites, emails and phishing UPI accounts in name of COVID-19, which are leading to Cyber frauds.

Organizations are responding to growing COVID-19 disruptions by allowing employees and students to work from home via the internet

As organizations use VPNs [virtual private networks] for telework, more vulnerabilities are being found and targeted by malicious cyber actors.

The surge in inexperienced remote workers is creating a host of potential cybersecurity threats.

Phishing emails and messages in the name of boss are one form of cyber-attacks targeting employees working from home.

Cybercriminals are targeting the individuals in the form of the phishing attacks through emails, messages to steal sensitive & critical information and deploy additional malware through websites and mobile applications to lure internet users.

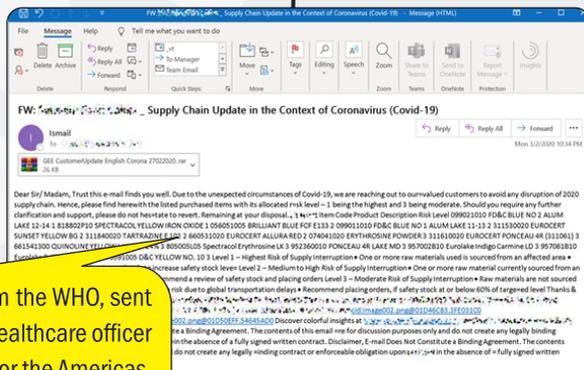




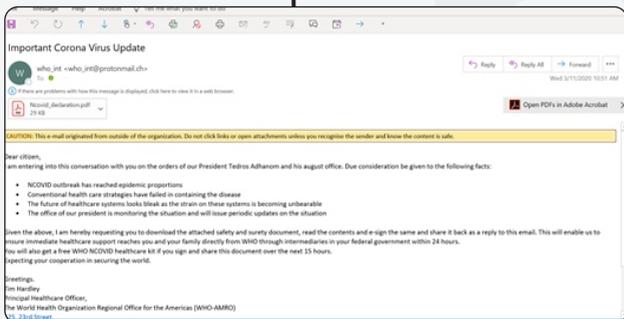
Following are some of the incidents reported in India and other countries. Some examples/ Case Studies refer about trends of Cyber Security Risks as part of COVID-19 disruption.

Example 1 :

Using World Health Organization mail in the name of COVID-19 as legit application by the fraudsters and spreading malwares to control your end devices



The email looks like it's from the WHO, sent by a Tim Hardley, principal healthcare officer from WHO's regional office for the Americas. A Google search throws up no results for such a WHO official.



Example 2 :

Using names of trusted organizations in phishing attacks in order to attain credibility and to lure victims to further open attachment

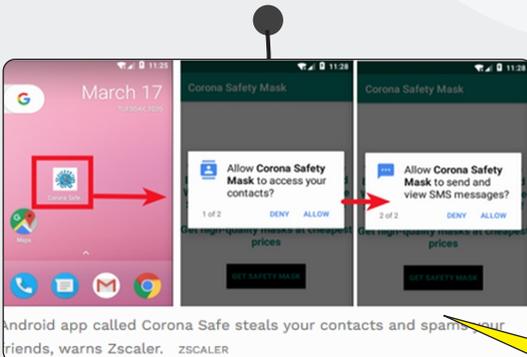
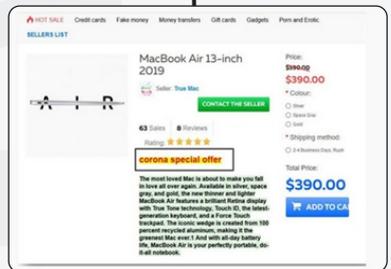
Example 3 :

Using organization mobile applications in the name of COVID-19 as legit application by the fraudsters and spreading phishing mails/sites and fake news



Example 4 :

- Offering discount by sending promotional codes & also sending legitimate information on Coronavirus Maps may attract viruses and financial frauds.
- Coupons or promotional codes such as “Coronavirus” codes or “CoronaVirus Discount! 10% off ALL products”
- A hacking group named “SSHacker” is offering Facebook account hacking services with a 15% discount with promotional code “COVID-19” on DeepDotMarket.



Example 5 :

Malware being delivered via Android apps that steal victims ? offering Coronavirus safety mask upon installation

Criminals are misusing the search data and curiosity related to Coronavirus. Be vigilant on messages, emails and websites. Cyber Criminals can remotely access people's sensitive information and bank transactions



2 Malware and Ransomware families related to COVID -19

The following are few of the malware and ransomware families in the context of COVID-19.

Emotet Trojan

Emotet is a Trojan that is primarily spread through spam emails (malspam). The infection may arrive either via malicious script, macro-enabled document files, or malicious link. Emotet emails may contain familiar branding designed to look like a legitimate email. Though its old Trojan these trojans visible during this COVID-19 crisis



Ransomware 'Locky'

The variant of Locky ransomware was found in most of the fake emails connected with the outbreak



Maze ransomware attackers extort vaccine testing facility

The cybercriminal gang behind Maze ransomware has been extorting a UK-based clinical research organization that has been preparing to play a potential role in testing vaccine candidates for the novel Coronavirus despite assurances that they would not harm any healthcare organizations during the COVID-19 crisis



Covidlock

A new type of ransomware known as CovidLock encrypts key data on an Android device and denies access to the victims unless they pay up



Agent Tesla

Agent Tesla collects account information from the victim's machine. It can steal data from the victim's clipboard and encrypts the data with 3DES before sending it over the C2 server. As the employees' working from home use Internet for various official activities this AgentTesla keyloggers are used by cyber attackers to steal sensitive information



AZORult

Adversaries have created a weaponized coronavirus map app that infects victims with a variant of the information-stealing AZORult malware



TrickBot

The TrickBot banking malware have developed an Android app that can bypass some of the two-factor authentication (2FA) solutions employed by banks. This Android app, named TrickMo, works by intercepting one-time password (OTP) codes banks send to users via SMS or push notifications. TrickMo collects and then sends the codes to the internet crooks to bypass logins or authorize fraudulent transactions.



Lokibot

LokiBot is trojan-type malware designed to infiltrate systems and collect a wide range of information. ... LokiBot typically infiltrates systems without users' consent - it is distributed via spam emails (Windows OS), various private messages (SMS, Skype, etc.), and malicious websites



Nanocore RAT

Nanocore is a remote access Trojan virus otherwise known as RAT Malware which is used in both targeted and non-targeted attacks. A RAT or Remote Administration Tool, is a software that gives a person full control over a tech device, remotely. The RAT gives the user access to your system, just as if they had physical access to your the device and found campaigns using COVID-19 fears to distribute the Nanocore RAT





3 Online threats that people may encounter working remotely

The online threats that people working remotely should be aware of during the pandemic COVID- 19, which have been observed during this outbreak are:



Unsecured Wi-Fi networks:

Personal Wi-Fi networks installed at home can be controlled to make it secure. However, if it is chosen to use public Wi-Fi networks it may lead to sniffing/ monitoring your internet activities by unintended users as public Wi-Fi networks are primary spots for malicious users to spy on Internet traffic and collect confidential information.

Remember Most of the Wi-Fi networks normally use the 'WEP' open authentication that is unsecure. This type of encryption has many security flaws that can cause your personal information, through your network traffic, to be seen. Your home network can also be flagged as unsecured if the encryption type is set to 'WEP'

For more details, please visit:

<https://www.infosecawareness.in/concept/wifi-security?lang=en>

Here are few simple things that you should do to secure your wireless network:

- Open your router settings page
- Create a unique and strong password for your router administration interface and for your SSID
- Change your Network's SSID name
- Enable Highest Network Encryption which your router supports
- Filter MAC addresses
- Reduce the Range of the Wireless Signal
- Upgrade your Router's firmware regularly.

For more information, please visit: www.infosecawareness.in/wifi-security



Using personal devices and networks:

Many employees may be using the personal devices as hotspots for complete work schedules in case of non-availability of Wi-Fi. Users may not hesitate to connect to a mobile hotspot, but that doesn't mean it should always allow it. Learn what threats these hotspots pose and how to handle them.

Whenever you connect to the Internet through mobile hotspot—no matter whether you're using a laptop, phone, or tablet— you may encounter unknown members in your network or hackers who access your mobile internet without your permission. If you and everyone who shares access to the internet using your mobile hotspot (including strangers) exceed the data limit in your plan, you're the one who gets the bill for the excess data usage. Avoid this scenario by bolstering the security of your mobile hotspot. All possible threats for a regular Wi-Fi network are also applicable to the mobile hotspot.

The personal devices lack the tools built in to business networks such as strong antivirus software, customized firewalls and automatic online backup tools. This increases the risk of malware finding its way onto devices and thus both personal and work-related information can be compromised.

Here are few simple things that you should do to secure your personal hotspot

- Enable Strong Encryption on Your Hotspot
- Change Your Hotspot's SSID
- Create a Strong Wireless Network Password (Pre-shared Key)
- Enable Your Hotspot's Port-Filtering and Blocking Features
- Don't Give Out Your Network Password and Change It Often
- Restrict number of devices connected to the hotspot
- Refresh your hotspot and check for other devices if connected
- Disconnect the internet service if not in use

Thankfully, armed with the right knowledge and tools, you can avoid many of these threats and continue getting the work done.



Some more examples and indications of attacks by fraudsters during COVID -19

Example 1 :

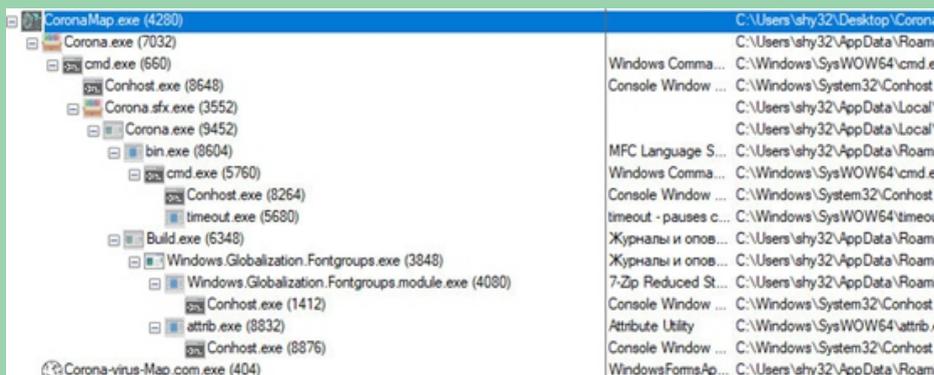
Beware of ‘Coronavirus Maps’ – It’s a malware infecting PCs to steal passwords



- Cybercriminals will stop at nothing to exploit every chance to prey on internet users.
- Even the disastrous spread of COVID-19 (the disease), is becoming has become an opportunity for them to likewise spread malware or launch cyber-attacks.
- The malware attack specifically aims to target those who are looking for cartographic presentations of the spread of COVID-19 on the Internet, and tricks them to download and run a malicious application that, on its front-end, shows a map loaded from a legit online source but in the background compromises the computer.

Signs of Infection :

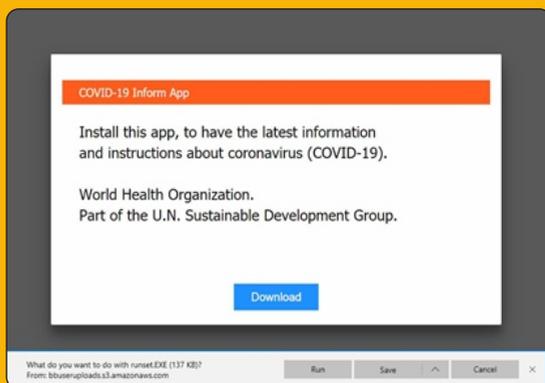
Executing the Corona-virus-Map.com.exe results in the creation of duplicates of the Corona-virus-Map.com.exe file and multiple Corona.exe, Bin.exe, Build.exe, and indows.Globalization. Fontgroups.exe files.



Example 2 :

Hackers Hijack Routers' DNS to Spread Malicious COVID-19 Apps

- A new cyber-attack is hijacking router's DNS settings so that web browsers display alerts for a fake COVID-19 information app from the World Health Organization that is the Oski information-stealing malware.
- The malware opens the web browser on its own (while installing the mobile application) and displays a message prompting them to download a 'COVID-19 Inform App' that was allegedly from the World Health Organization (WHO).
- These alerts were being caused by an attack that changed the DNS servers configured on their home D-Link or Linksys routers to use DNS servers operated by the attackers.
- If a user downloads and installs the application, instead of receiving a COVID-19 information application they will have the Oski information-stealing Trojan installed on their computer.
- When launched, this malware will attempt to steal the following information from the victim's computer:
 - browser cookies
 - browser history
 - browser payment information
 - saved login credentials
 - cryptocurrency wallets
 - text files
 - browser form autofill information
 - Authy 2FA authenticator databases
 - a screenshot of your desktop at the time of infection, and more.



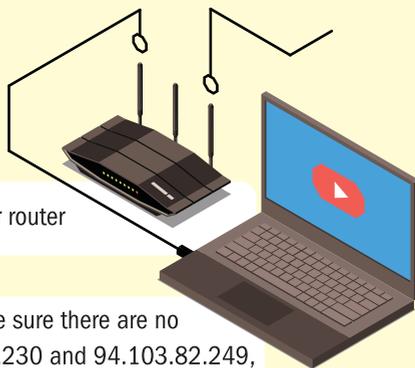


What you should do if affected by this attack ?

If your browser is randomly opening to a page promoting a COVID-19 information app, then you need to login to your router and make sure you configure it to automatically receive its DNS servers from your ISP.

As every router has a different way of configuring DNS servers, it is not possible to give a specific method on how to do this.

In general, you will want to follow these steps:



Login to your router

Find the DNS settings and make sure there are no servers, especially 109.234.35.230 and 94.103.82.249, manually configured. If they are, set the DNS servers setting to 'Automatic' or ISP assigned.

Then save your configuration

- Reboot mobile devices, game consoles, and computers so that they use the correct DNS settings from ISP.
- As people are reporting that they think their settings were changed because of a weak password and that remote administration was enabled, it is important to change your password to something stronger and to disable remote administration on the router.
- Finally, if you downloaded and installed the COVID-19 app, you should immediately perform a scan on your computer for malware.
- Once clean, change all of the passwords for sites whose credentials are saved in your browser and you should change the passwords for any site that you visited since being infected.
- When resetting your passwords, be sure to use a unique password at every site.

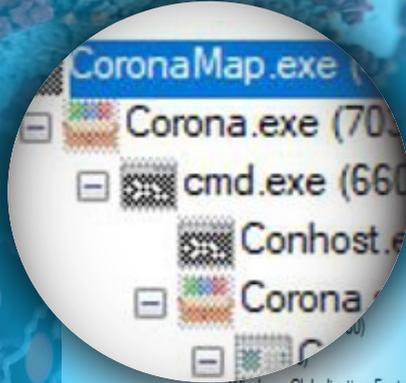
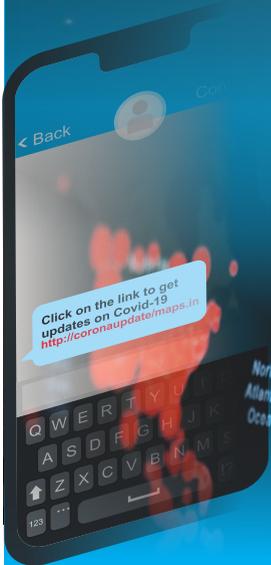


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Malware Attacks

in light of COVID-19 pandemic



Beware of Coronavirus Virus Spread Maps

It's a malware infecting PCs to steal passwords

The disastrous spread of COVID-19 is becoming an opportunity for the cybercriminals to spread malware or launch cyber attacks

Avoid clicking on any unknown messages with links/ install application from unknown sources
Keep your personal information safe

Don't use open Wi-Fi

Use strong and different passwords for different accounts
Install updated Anti-Virus/Malware Software

For more information, please visit: www.infosecawareness.in

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4 Recommendation of Best Practices to be followed by users to stay safe online:

While working from home in this situation (COVID-19 lock down period), ensure that you abide by the security measures taken by organization. Also, follow the directions given by your organisation on how to handle certain cybersecurity aspects; they may also provide you access to some security tools needed to protect yourself while working from home.

The following safety guidelines may help you to secure yourself while working from home.

Password Security:

First and foremost, ensure use of strong passwords for your Wi-Fi network, system, email accounts, remote desktop systems, VPN connection etc.



To ensure strong passwords: Use at least eight characters for strong password, avoid Dictionary Words and the once ones which bad guys can guess; use characters from at least three of the following four classes: English upper case letters, English lower case letters, Westernized Arabic numerals (0,1,2,...) Non-alphanumeric (special) characters such as punctuation symbols.

Enable two factor authentication to ensure security

Two-factor authentication methods rely on a user providing a password, as well as a second factor, usually either a security token or a biometric factor, such as a fingerprint or facial scan.



Where you can use 2FA

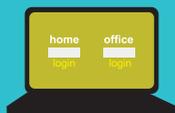
You can enable 2FA on most of your online accounts, like your:

- email accounts
- social media networks
- internet banking
- online shopping sites.
- You can also set 2FA up on your devices — on laptops, tablets, smartphones, and even some game consoles

Do not share the passwords/ systems allocated with the family members.

For more details, please visit: [<https://www.infosecawareness.in/concept/good-and-strong-password?lang=en>]

Use separate login users for your system if you are using personal computer for work from home



If personal computer is used at home for carrying out official work, then it is certain you maintain official files on your personal computer. To avoid loss of data or revealing official information to family members, it is preferred to use separate login users for your home systems

Network Security:

Use VPN (Virtual Private Network) through organization provided hardware only.

- Use Virtual Private Network (VPN) only on company-provided hardware with up-to-date security features, else infected data may transmit over VPN to subsequent networks of your organization if the your system is infected/compromised.



Set up firewalls

- Enable firewalls which act as a line of defence to prevent threats entering the system. They create a barrier between the device and the internet by closing ports to communication. This can help prevent malicious programs entering and can stop data leakage from the device.



Secure your home router

It is important to take simple steps to protect your home network to prevent malicious parties having access to connected devices. Changing your router password is a good first step, but there are other actions you can take. For example, you should make sure firmware updates are installed so that security vulnerabilities can be patched. The encryption should be set to WPA2 or WPA3. Restrict inbound and outbound traffic, use the highest level of encryption available





Wi-Fi Connectivity

Ensure you use a secure Wi-Fi network to connect to your organisation network. Avoid Public Hotspots or open Wi-Fi.



Closure of Unwanted Ports

It is highly recommended to close unnecessary network ports with the help of your IT/Security teams. Also, turn off networking capabilities (such as Bluetooth and Wi-Fi) for mobile and laptop when not necessary for work

For more details, please visit <https://www.infosecawareness.in/concept/wifi-security>

Data Security

- Continuously back up your data into separate devices as you may be safe with this data in case of any ransomware attacks. Better to back-up your official data on daily basis.
- Use encrypted communications
- Disable use of Macros in Microsoft office, as COVID-19 malwares are mostly using VBA Macros as an initial step for targeting victims.
- Non-technical staff, while working from home, should take care of the confidentiality of valuable transactions and sensitive financial documents.
- Securing the data while transmitting it includes encryption and authentication and also the end-to-end users are authorized. Encryption plays an important role in securing many different types of information technology (IT) assets. It provides the Confidentiality which encodes the message's content, Authentication verifies the origin of a message and Integrity proves the contents of a message have not been changed since it was sent.



For more details, please visit: <https://www.infosecawareness.in/concept/family/data-security>

Remote Access Security

Remote desktop: is a program or an Operating System feature that allows a user to connect to a computer in another location, computer's desktop and interact with it as if it were local.

It is noteworthy to document remote access requirements:

- Authorize remote access before allowing connections, monitor and control remote access.
- Encrypt remote access connections from the organization's firewall and threat detection.
- Ensure employee' systems/desktops are fully protected and has the same protection as office workstations.

Virtual Desktop: The work from home employees need to access project / company data and applications through a browser-based webpage or virtual desktop.

- Ensure that all applications and data are stored on the portal's server and cannot be downloaded or saved on an employee's device without permission. This is a good way to keep control over accessing your data and how it is used.
- Make it mandatory to restrict employee's access to other programs while the portal is in use else there may be a high risk of over exposure.



Risk Assessment:

- Risk assessment should be performed as part of selecting a remote access method (application portals, remote desktop access, direct application access).



Look out for phishing emails and sites

With the rise in the number of people working from home due to the Coronavirus outbreak, no doubt there will be plenty of Cybercriminals looking to cash in on the trend. It's highly likely that phishing emails will target remote workers in a bid to steal their personal information or gain access to company accounts.



- **Avoid clicking on links in unsolicited emails and email attachments:** To spot a phishing email, cross check the sender's email address for spelling errors and look for poor grammar in the subject line and email body. Hover over links to see the URL and don't click links or attachments.



- Even if a link is clicked and end up on a legitimate-looking site, be sure to check its credibility before entering any information.
- Common signs of a phishing site include lack of an HTTPS

padlock symbol (although phishing sites increasingly have SSL certificates), misspelled domain names, poor spelling and grammar, lack of an "about" page, and missing contact information.

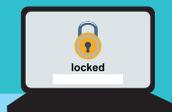


Tips to Remember :

- Review emails carefully for grammar and spelling mistakes or any other suspicious signs.
- Do not open links or attachments from unknown parties.
- Never Go to Your Bank's Website by Clicking on Links Included in Emails
- Enter your username and password only over a secure connection. Look for the "https" prefix before the site URL, indicating the connection to the site is secure.
- Be cautious about opening any attachments or downloading files you receive regardless of who sent them.
- Look for the sender email ID before you enter/give away any personal information.
- Use antivirus, antispyware and firewall software (update them regularly too).
- Always update your web browser and enable phishing filter.

Device Security

Lock device when not in use: Password-locking the device while leaving your system so that unauthorized access to your data can be avoided



Tips to Remember :

- Install updates regularly
- Use an updated antivirus software for filtering malwares :
- A good & up to date antivirus software can act as the next line of defence by detecting and blocking known malware
- with remote access policy configuration for auto-update of virus definition, your machine should be properly patched before connecting to your organisation network.
- If you're looking for more protection, use an additional full disk encryption tools (Ex: VeraCrypt or BitLocker etc)

For more details, please visit: <https://www.infosecawareness.in/topic/desktop-security>

Staying safe and Secure in the Time of COVID-19

It's amply clear that these attacks exploit Coronavirus fears and people's hunger for information about the outbreak. Given the impact on the security of businesses and individuals alike, it' is essential to avoid falling victim to online scams and practice good digital hygiene:

Businesses should ensure that secure remote access technologies are in place and configured correctly, including the use of multi-factor authentication, so that employees can conduct business just as securely from home.

- Individuals should keep away from using unauthorized personal devices for work, and ensure personal devices have the same level of security as a company-owned device, and also consider the privacy implications of employee-owned devices connecting to a business network."
- Watch out for emails and files received from unknown senders. Most importantly, check a sender's email address for authenticity, don't open unknown attachments or click on suspicious links, and avoid emails that ask them to share sensitive data such as account passwords or bank information.
- Use trusted sources, such as legitimate government websites – for up-to-date, fact-based information about COVID-19.

Authorised Websites for info on COVID-19 related :

<https://www.mohfw.gov.in/>

<https://www.who.int/india/emergencies/novel-coronavirus-2019>

