



Government of India

Ministry of Electronics and information Technology

National Informatics Centre, Himachal Pradesh, Shimla

Technical Presentations by NIC HP Officials: 20-Jan-2024

As part of an ongoing series of 10-minute technical talks presented by NIC officials of their choice on a regular basis, the recent technical session held on 20-Jan-2024.

This technical session was focused on cyber Security. At the outset SIO Himachal Pradesh delivered a comprehensive presentation on the critical importance of Cyber Security Awareness by implementing practices of protecting computer systems, networks, and data from digital threats and attacks. As world becomes increasingly interconnected and dependent on technology, digital transactions grown multiple folds, NIC Cloud experienced 5-fold growth, the importance of cybersecurity has grown exponentially. Therefore, it is essential for safeguarding systems and data from a wide range of threats, including malware, ransomware, phishing attacks, and other malicious activities that can compromise the integrity, confidentiality, and availability of information.



SIO NIC Himachal Pradesh taking Technical Session on Cyber Security Awareness

With the rapid increase of digital data, maintaining the privacy of personal and sensitive information has become crucial. Cybersecurity measures help prevent unauthorized access and ensure that data remains confidential, protecting individuals and organizations from identity theft and privacy breaches.

SIO highlighted the necessity for routine Security Audits of Web applications, Mobile Apps, Web APIs and also Network at regular intervals. SIO urged constant system upgrades through the timely installation of updates. Additionally, a proactive measure involves eliminating outdated operating System/ Software from the network to ensure optimal security. A part from securing data in transit, it is also essential to safeguard it in the database while at rest. Developers must ensure data encryption in web applications by redirecting all sites hosted on the NIC cloud from the conventional HTTP protocol to the more secure HTTPS.

SIO directed to respond promptly to any correspondence originating from CERT-In and considered this as a personal responsibility for NIC officials.

Sh. Ram Narayan Yadav delivered a presentation on Machine Learning which is an application of Artificial Intelligence (AI) that provided systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine Learning is increasingly integrated into various daily used apps, enhancing user experiences and providing personalized services.



Sh. Ram Narayan Yadav giving presentation on Machine Learning

Virtual Assistants (e.g. Siri, Google Assistant, Alexa) use machine learning algorithms to understand and respond to user commands, learn user preferences over time, and provide personalized recommendations. In Social Media Platforms (e.g., Facebook, Instagram, Twitter) machine learning is employed for content recommendation, personalized feeds, and targeted advertising based on user behavior and interests. Search Engines (e.g., Google Search) use machine learning to understand user intent, improve search result relevance, and predict what users are likely to find useful based on their search history. In Email Services (e.g., Gmail) machine learning is used for spam filtering, categorizing emails, and suggesting responses. It helps prioritize important emails and improve overall email management. Recommendation systems powered by machine learning are used in Online Shopping (e.g., Amazon, flipkart) to analyze user preferences, purchase history, and browsing behavior to suggest products, personalize homepages, and optimize the overall shopping experience.

He explained the difference between Supervised Learning, Unsupervised Learning and Reinforcement Learning. The choice of machine learning type depends on the nature of the problem we are trying to solve and the characteristics of our data. He highlighted the various ML algorithm used solutions.

Sh. Sanjay Sharma, Scientist-F, also gave presentation on Cyber Security. He reiterated the need for an annual audit of all applications hosted on the NIC cloud. He emphasized the necessity of conducting regular Vulnerability Assessments (VAs) for all virtual machines (VMs). He stressed the installation of up-to-date antivirus software and updated released patches.



Sh. Sanjay Sharma on the best practices for Cyber Security

VMs are to be secured by strictly controlling and updating only the essential ports behind the firewall. Renewal of SSL certificates for hosted websites well before their expiration dates. He recommended restricting entry to VMs exclusively through VPN, enhancing the overall security.

The adoption of geofencing measures was also discussed proposing its implementation wherever deemed necessary to fortify the protective layers around our digital assets. He asserted to follow all the guidelines for Indian Government Websites.

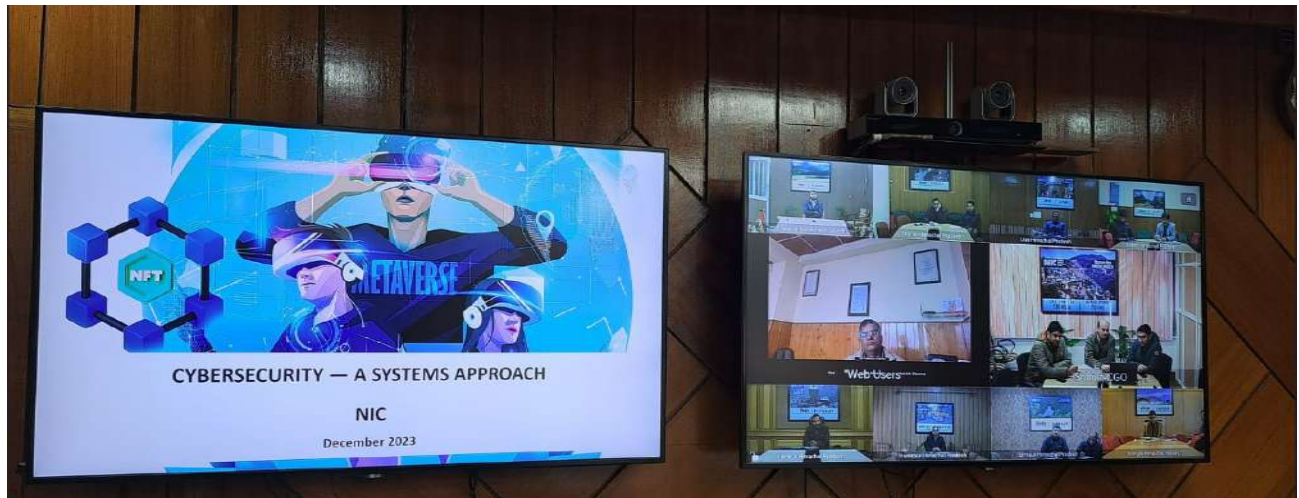
Sh. Lalit Kapoor, Scientist-F described the role of NIC HP for email Services. Cybersecurity for email servers is crucial in safeguarding sensitive information and preventing unauthorized access. Transport Layer Security (TLS) is implemented to encrypt the communication between email servers, ensuring that data is protected during transit. Restrict access to the email server by implementing strong access controls, including secure passwords, multi-factor authentication (MFA), and regular access reviews. Keep the email server software and associated applications up-to-date with the latest security patches. Regularly update and patch vulnerabilities to minimize the risk of exploitation.

He also elaborated the Video Conferencing Facilities managed and provided by NIC HP. He informed to prefer Studio Based VC because it is connected on Secure Network that uses trusted and secure VC Equipment. We have well managed VC sessions with dedicated manpower for assistance.



Sh. Lalit Kapoor showing the demonstration of email and VC services of NICHHP

Video conference attacks refer to malicious activities aimed at disrupting, compromising, or unauthorized access to video conferencing sessions. Zoom-bombing occurs when unauthorized individuals gain access to a Zoom meeting and disrupt it by sharing inappropriate content, offensive images, or engaging in disruptive behavior. Attackers may use phishing emails or messages to trick users into clicking on malicious links or providing sensitive information, leading to unauthorized access to video conference platforms. Unauthorized individuals may attempt to listen in on video conferences without participants' knowledge. This can compromise sensitive information discussed during the meeting. In a MitM attack, an attacker intercepts and possibly alters the communication between participants in a video conference. This can lead to the theft of sensitive information.



Sh. Sanjay Kumar giving presentation on Network Security

Sh. Sanjay Kumar informed about present Network infrastructure in NIC Himachal Pradesh. There are total 76 VMs (Web & Database). Trend micro antivirus is installed/updated on all the VMs. Windows patches/updates installation done on all VMs regularly. Access to these VMs is only through VPN and there is no internet access given on any virtual machine. All the network devices like router, switches etc. are configured with Minimum Baseline Security Standard (MBSS) which is required to protect our sensitive information. All the manageable devices are configured with MAC & IP based Access Control List to restrict unauthorized access.

Quiz Competition on Mobile App

A quiz competition was also organized based on the technical presentations delivered by NIC Officials. A total of 34 officials participated in the quiz competition which was held on the Hindi Bodh Mobile App developed by NIC HP. 20 multiple-choice questions based on the technical content delivered by the officers were asked in the quiz competition.

The latest enhancement in the mobile application introduced the capability to challenge a question where the users can express their doubts or seek further clarification by challenging the validity or accuracy of a question. This time 2 questions were challenged by the participant through the Mobile app. The Hindi Bodh app admin accepted their challenge and the outcome of the quiz competition was promptly and dynamically updated online immediately.

The result of the quiz competition was as follows:

Position	Participant Name	Designation	Place of Posting
1 st	Sh. Sanjay Sharma	Scientist-F	NIC HP State Centre
2 nd	Sh. Ravi Kishan Meena	Scientific/Technical Assistant-B	NIC District Centre Chamba
3 rd	Kum. Anikita Mishra	Scientist-B	NIC HP State Centre

SIO also took feedback from all the District and associate officers for conducting workshop on cyber security awareness on their respective places.



NIC HP officials attending the technical session

As decided that the following NIC officials will present a technical talk on the topic of their choice during the upcoming meeting scheduled for coming Saturday, 03-Feb-2024.

S.No.	Participant Name	Designation	Place of Posting
1.	Sh. Sanjeev Kumar	Scientist-C	NIC Distt Centre Solan
2.	Sh. Akhilesh Bharati	Scientist-E	NIC Distt Centre Mandi
3.	Sh. Balwan Singh	Scientist-D	NIC Distt Centre Kinnaur
4.	Sh. Akshay Mehta	Scientist-E	NIC Distt Centre Kangra

The following officials were present in the technical talk on 20-01-2024:

NIC HP State Centre		
1	Sh. Ajay Singh Chahal	SIO-Cum-Scientist-G
2	Sh. Lalit Kapoor	Scientist-F
3	Sh. Sandeep Sood	Scientist-F
4	Sh. Sanjay Kumar	Scientist-F
5	Sh. Sanjay Sharma	Scientist-F
6	Sh. Vijay Kumar Gupta	Scientist-F
7	Sh. Vimal Kumar Sharma	Scientist-F
8	Sh. Sandeep Kumar	Scientist-E

9	Sh. Daljeet Singh Rana	Scientist-E
10	Sh. Sanjay Thakur	Scientist-E
11	Sh. Ashish Sharma	Scientist-D
12	Sh. Mangal Singh	Scientist-D
13	Sh. Sarvjeet Kumar	Scientist-C
14	Smt. Vandana Devi	Scientist-C
15	Sh. Mukesh Kumar	Scientist-C
16	Sh. Prithvi Raj	Scientist-C
17	Kum. Ankita Mishra	Scientist-B
18	Sh. Ramnarayan Yadav	Scientist-B
District Centre Chamba		
19	Sh. Ravi Krishan Meena	Scientific/Technical Assistant-B
District Centre Hamirpur		
20	Sh. Vinod Kumar Garg	Scientist-F
District Centre Kangra		
21	Sh. Bhupinder Pathak	Scientist-F
22	Sh. Akshay Mehta	Scientist-E
District Centre Kinnaur		
23	Sh. Balwan Singh	Scientist-D
District Centre Kullu		
24	Sh. Brijender Kumar Dogra	Scientist-E
25	Sh. Sanjay Gupta	Scientist-E
District Centre Lahual & Spiti		
26	Sh. Jagdeep	Scientific/Technical Assistant-A
District Centre Mandi		
27	Sh. Akhilesh Bharati	Scientist-E
District Centre Shimla		
28	Sh. Pankaj Gupta	Scientist-F
29	Sh. Deepak Kumar	Scientist-C
District Centre Sirmour		
30	Sh. Vijay Kumar	Scientist-E
31	Sh. Mohan Rakesh Aggarwal	Scientist-D

District Centre Solan		
32	Sh. Sanjeev Kumar	Scientist-C
33	Sh. Swetansh Shatak	Scientific/Technical Assistant-B
District Centre Una		
34	Sh. Bhupinder Singh	Scientist-D