

Government of India

Ministry of Electronics and information Technology

National Informatics Centre, Himachal Pradesh, Shimla

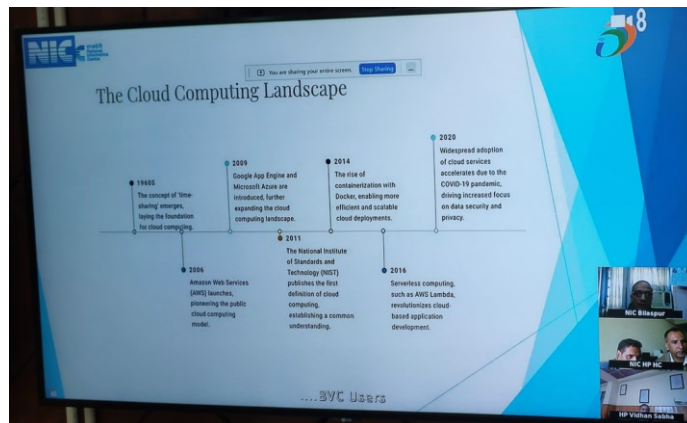
Technical Presentations by NIC HP Officials: 16-November-2024

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 16-November-2024.

The details of the presenters, along with their topics are as follows:

S.No.	Name	Designation	Topic	Rating (5.0)
1.	Sh. Rakesh Kumar	Scientist-D	Cloud Security	-
2.	Sh. Balwan Singh	Scientist-D	Zero Trust Security	-
3.	Sh. Jitender Sharma	Scientist-B	PITR In PostgreSQL	-
4.	Sh. Shailender Kaushal	Scientist-F	Group Presentation	-
5.	Sh. Sanjay Kumar	Scientist-E	Technical News	-

Data Privacy and Security in the Cloud



Sh. Rakesh Kumar giving the presentation on Cloud Security

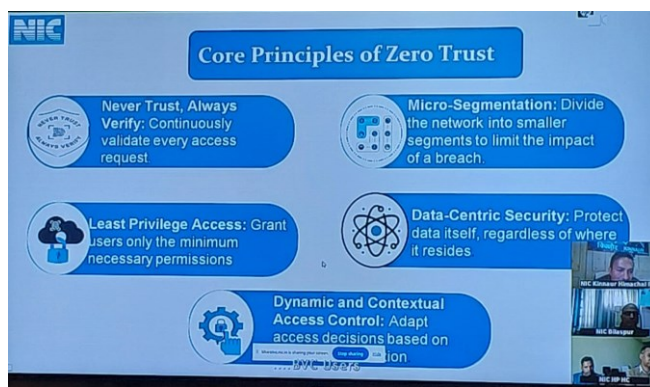
Data privacy and security in the cloud are critical concerns in today's digital landscape, where organizations and individuals rely on cloud services to store, process, and share information.

The data has become the new currency in today's world, so maintaining sensitive information is at top priority for both people and businesses.

Data security and privacy have grown increasingly crucial as a result of cloud computing's growth, which makes it possible to store and access data over the internet. So, ensuring the safety of private data on the cloud is crucial, be it personal files or business trade secrets.

Data must be Encrypted both while in Transit & at Rest in order to be kept secret. Even in the event that the Infrastructure of the Cloud Provider is compromised by making use of Robust Encryption Algorithms to Safeguard Data from unwanted access. Utilize multi-factor authentication, biometrics, and other advanced authentication methods to verify user identities and prevent unauthorized access. Grant users the minimum set of permissions necessary to perform their job functions, and regularly review and update access rights. Use a single, cloud-based identity to manage user accounts, roles, and permissions across multiple cloud services and applications. Implement automated processes to quickly provision and deprovision user accounts, ensuring timely access changes and reducing the risk of orphaned accounts. Regularly review user login events, resource access patterns, and other security logs to detect and investigate suspicious activities.

Zero Trust Security



Sh. Balwan Singh giving the presentation on Zero Trust Security

Sh. Balwan Singh delivered a presentation on Zero Trust Security which is a modern cybersecurity approach based on the principle "never trust, always verify." It challenges the traditional idea of trusting users or devices inside a network's perimeter. Instead, Zero Trust assumes that both internal and external networks can be vulnerable and enforces strict access controls.

Key Principles of Zero Trust Security are:

- 1) Verify Explicitly: Continuously verify all access requests using multi-factor authentication (MFA), identity, and location.
- 2) Least Privilege Access: Provide users or devices the minimum access required to perform tasks.
- 3) Assume Breach: Design systems with the assumption that breaches can occur, and use segmentation to limit the blast radius.
- 4) Monitor and Log: Continuously monitor network traffic and log user activity for detection and response.

Benefits of Zero Trust Security are:

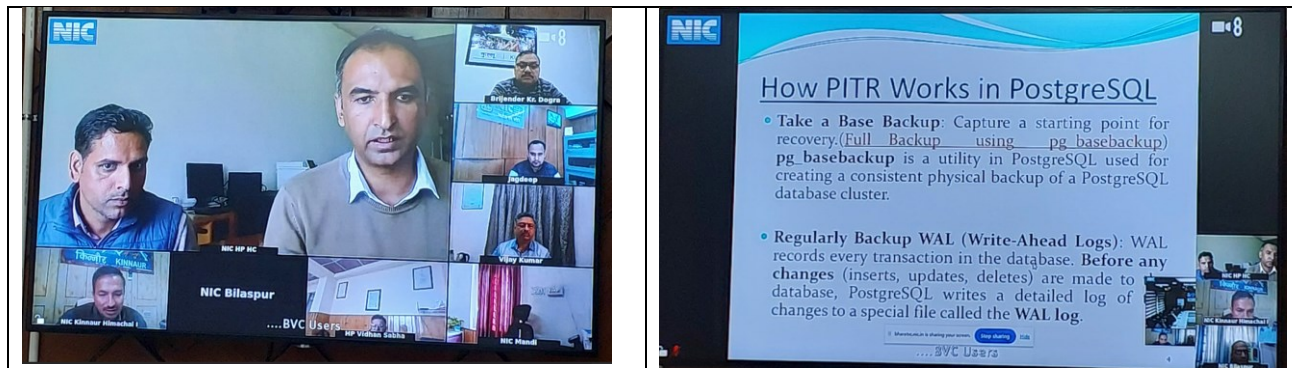
- Reduces the risk of data breaches.
- Improves visibility and control over IT environments.
- Enhances regulatory compliance.

Implementation Steps are:

- Use identity and access management (IAM) tools.
- Employ endpoint security and network segmentation.
- Integrate security monitoring and analytics tools for continuous threat detection.

It's widely adopted in modern organizations to strengthen their defense against evolving cyber threats.

Point-In-Time Recovery (PITR) is a PostgreSQL



Sh. Jitender Sharma presentation on Point-In-Time Recovery (PITR) is a PostgreSQL

Sh. Jitender Sharma delivered a presentation on Point-In-Time Recovery (PITR) which is a PostgreSQL feature that enables us to restore a database to a specific moment in the past. It is used to restore a database to a specific point in time.

It offers following benefits:

- Protects against accidental data loss
- Provides resilience against data corruption and ransomware
- Enables fine-grained recovery to any specific moment

PostgreSQL maintains a WAL that records every change to the database. These logs are crucial for PITR. PITR starts with a base backup, a snapshot of the database at a specific time, which is used as the starting point for recovery. WAL segments created after the base backup must be archived to ensure all changes can be replayed up to the desired point.

Valid transactions that occur after the mistake are not lost in PITR, but we need to either manually apply them or replay the remaining WAL logs after the recovery point to bring the database up to date. The key takeaway is that PITR doesn't erase valid data; it simply restores the state before the mistake, and we have control over how to handle subsequent valid changes.

Technical News



Sh. Sanjay Kumar, Scientist-E giving the Technical News

Sh. Sanjay Kumar, Scientist-E presented the fortnightly technical news. The main news covered:

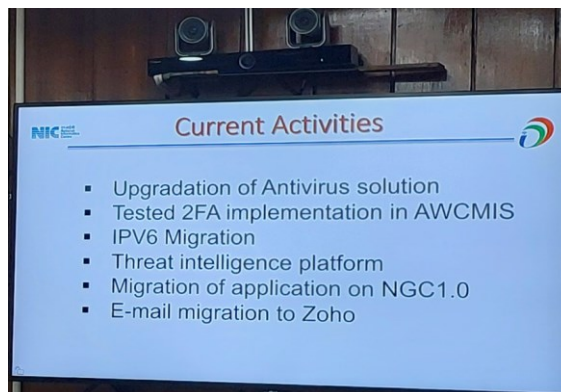
World News

- HCL Tech to setup new AI Cloud lab in Singapore
- Larsen & Turbo Engineers investing Rs. 1300 cr. for Cloud
- IT Sector upbeat after Trump's win in US elections
- District Judge Oakland, California gave verdict that Zuckerberg is not liable in lawsuits over social media harm to children
- The Vatican City launched new AI-enabled services for St Peter's Basilica, allowing virtual access to its Renaissance-era architectural treasures for all
- Google Maps unveils real-time air pollution tracker across 100 countries
- Amazon is developing smart eyeglasses for its delivery drivers to guide them to, around and within buildings

NIC News

- Jio Platforms and NICSI Team up to offer Cloud Services to Government Entities.
- Website for Bihar Vidhan Parishad, launched by Hon'ble Chairman, Bihar Vidhan Parishad.
- Workshop on Government Digital Platforms, organized by NIC Punjab.
- Hon'ble The CJI, appreciated the efforts of NIC in implementing the e-SAM (Software Assets Management), project, in Hon'ble Supreme Court.
- Role of NIC, UT Centre, J & K, appreciated by CEO, J & K, during the Assembly Elections 2024.
- Official Website of Central Institute of Fisheries Nautical and Engineering Training (CIFNET), launched by Hon'ble Minister of State, Animal Husbandry, Dairying and Minority Affairs.

Group Presentation



Sh. Shailender Kaushal, Scientist-F giving the Group presentation

Sh. Shailender Kaushal, delivered a group presentation updating about the projects being looked after by him and his group members. He provided details on the ongoing projects. He elaborated current activities managed by his groups and their future plans.

Quiz Competition on Mobile App

A quiz competition was also organized based on the technical presentations delivered by NIC Officials. A total of 28 officials participated in the quiz competition which was held on the Hindi Bodh Mobile App developed by NIC HP. 15 multiple-choice questions based on the technical content delivered by the officers were asked in the quiz competition.

The result of the quiz competition was as follows:

Position	Participant Name	Designation	Place of Posting
1 st	Sh. Sandeep Sood	Scientist-F	NIC HP State Centre
2 nd	Sh. Vinod Kumar Garg	Scientist-F	NIC HP State Centre
3 rd	Sh. Ajay Singh Chahal	SIO-Cum-Scientist-G	NIC HP State Centre



NIC HP officials attending the technical session

As agreed that the following NIC officials will present a technical talk on the topic of their choice during the upcoming meeting scheduled for Saturday, 30-November-2024.

S.No.	Participant Name	Designation	Place of Posting
1.	Sh. Pankaj Gupta	Scientist-F	NIC HP State Centre
2.	Sh. Mukesh Kumar	Scientist-D	NIC HP State Centre
3.	Sh. Sarvjeet Kumar	Scientist-C	NIC HP State Centre

Additionally, Sh. Bhupinder Pathak from NIC HP State Centre will deliver a Projects based presentation and 5-minute technical news update will be given by Sh. Sanjay Kumar, Scientist-F on the day of the Technical Talk Session.

The following officials were present in the technical talk on 16-11-2024:

NIC HP State Centre		
S.No.	Participant Name	Designation
1	Sh. Ajay Singh Chahal	SIO-Cum-Scientist-G
2	Sh. Lalit Kapoor	Scientist-F
3	Sh. Bhupinder Pathak	Scientist-F
4	Sh. Sandeep Sood	Scientist-F

5	Sh. Pankaj Gupta	Scientist-F
6	Sh. Sanjay Sharma	Scientist-F
7	Sh. Vijay Kumar Gupta	Scientist-F
8	Sh. Shailender Kaushal	Scientist-F
9	Sh. Vinod Kumar Garg	Scientist-F
10	Sh. Sandeep Kumar	Scientist-F
11	Sh. Daljeet Singh Rana	Scientist-E
12	Sh. Sanjay Thakur	Scientist-E
13	Sh. Ashish Sharma	Scientist-D
14	Sh. Sarvjeet Kumar	Scientist-C
15	Smt. Vandana Sankhayan	Scientist-C
16	Sh. Mukesh Kumar	Scientist-D
17	Sh. Prithvi Raj	Scientist-C
18	Sh. Chunni Lal	Scientist-C
19	Sh. Jitender Sharma	Scientific-B
20	Smt. Pooja Mann	Scientific/Technical Assistant-A
District Centre Bilaspur		
21	Sh. Rakesh Kumar	Scientist-D
District Centre Kangra		
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
District Centre Lahual & Spiti		
25	Sh. Jagdeep	Scientific/Technical Assistant-A
District Centre Mandi		
26	Sh. Ashwani Kumar	Scientist-E
District Centre Shimla		
27	Sh. Deepak Kumar	Scientist-C

District Centre Sirmour		
28	Sh. Vijay Kumar	Scientist-E
29	Sh. Mohan Rakesh Aggarwal	Scientist-D
District Centre Solan		
30	Sh. Swetansh Shatak	Scientific/Technical Assistant-B
District Centre Una		
31	Sh. Bhupinder Singh	Scientist-D