```
/*
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```

TITLE:

To create a cluster of machines

AIM:

To create a cluster of machines and achieve a password less access

OBJECTIVE:

To understand the importance of clusters in distributed computing

THEORY:

Cluster Computing:

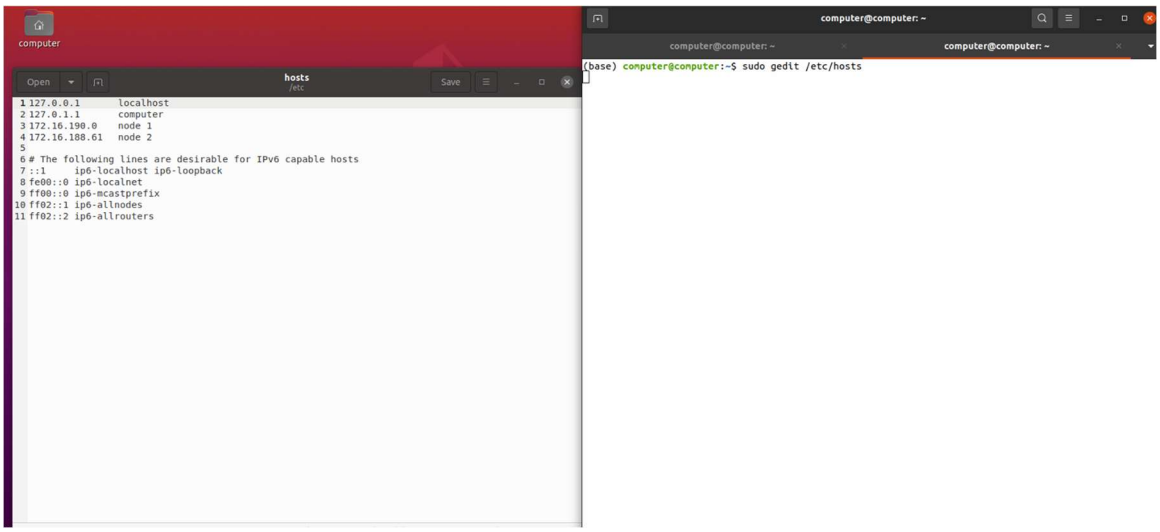
Cluster computing involves multiple interconnected computers (nodes) working together to solve computational problems, enhancing processing power. It's used for complex tasks and applications.

Steps to Create Clusters:

1. Define Purpose: Identify tasks and applications for the cluster.
2. Select Hardware: Choose compatible hardware for each node.
3. Install OS: Install an operating system on each node.
4. Set Up Network: Establish a reliable, high-speed network connection.
5. Install Middleware: Install cluster middleware for communication.
6. Configure Node Communication: Configure nodes to communicate effectively.
7. Set Up Shared Storage: Establish shared storage for all nodes.
8. Install Applications: Install and configure applications for parallel processing.
9. Testing: Conduct thorough testing of the cluster.
10. Monitoring and Management: Implement monitoring tools for performance tracking.
11. Documentation: Document cluster configuration and specifications.
12. Scale as Needed: Add more nodes if necessary, maintaining compatibility.

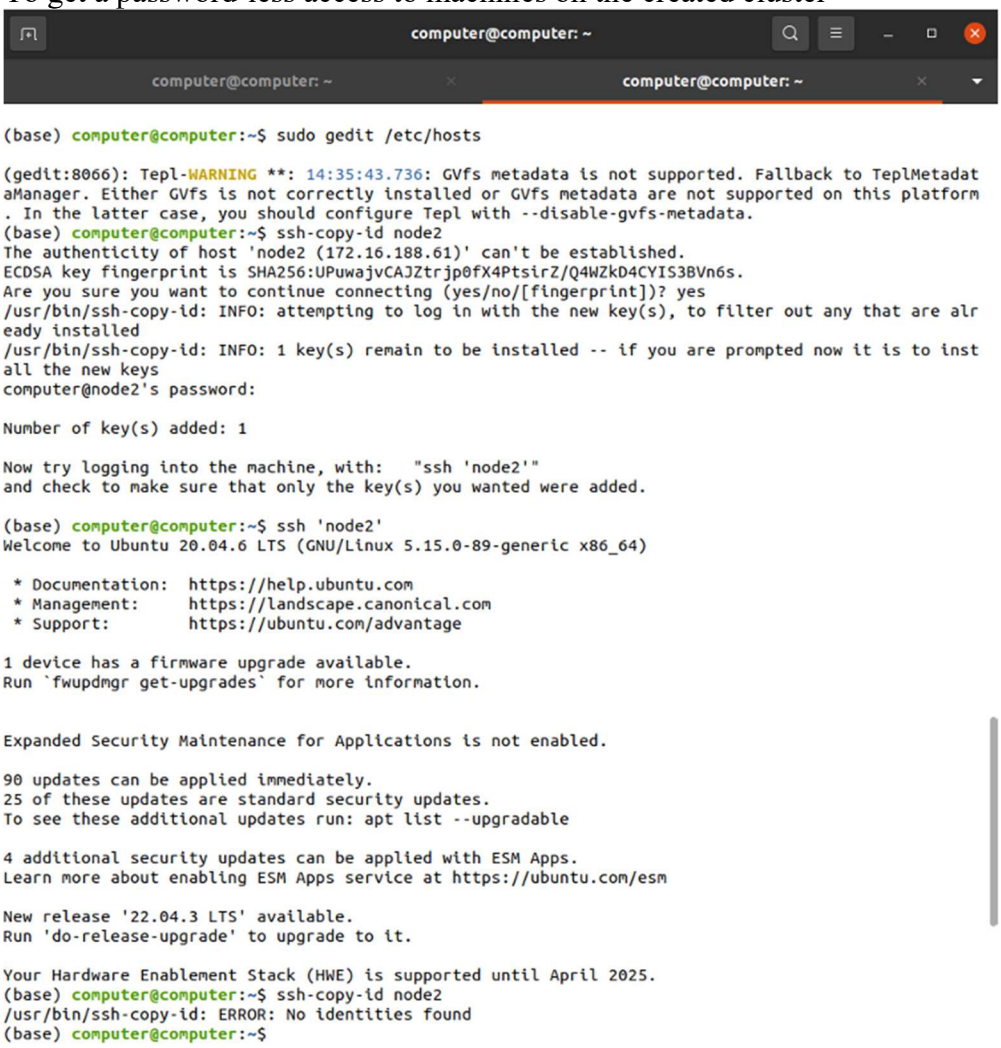
INPUT:

Creation of clusters



OUTPUT:

To get a password-less access to machines on the created cluster



CONCLUSION:

The cluster of machines was accomplished

PLATFORM:

Linux

LANGUAGE:

C language.

FAQs

1. What is a cluster of machines ?
2. What is a grid of machines ?
3. Give applications of Cluster Computing

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FAQ:

Q1. What is a cluster of machine?

Ans. A cluster of machines refers to a group of interconnected computers or servers that work together to perform tasks collaboratively. These clusters often function as a single system to enhance performance, reliability, and scalability.

Q2. What is grid of machines?

Ans. A grid of machines is a distributed computing infrastructure that connects geographically dispersed resources to work together on a common task. Unlike clusters, grids may include heterogeneous machines and can span multiple organizations or locations.

Q3. Give applications of cluster computing.

Ans. Applications of cluster computing include:

- High-Performance Computing (HPC): Solving complex scientific and engineering problems that require significant computational power.
- Load Blancing: Distributing computing tasks efficiently across a cluster to optimize resource utilization.
- Parallel Processing: Dividing a task into subtasks processed concurrently on multiple machines for faster results.
- Fault Tolerance: Ensuring system reliability by having redundant nodes that can take over in case of failures.
- Data Analysis: Processing large datasets by distributing tasks across a cluster for faster analytics.