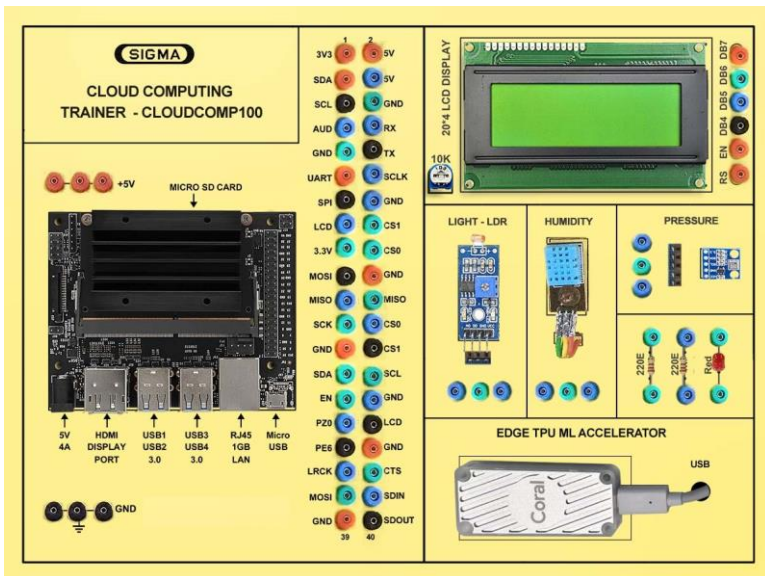# CLOUD COMPUTING TRAINER
MODEL - CLOUDCOMP100

This Cloud computing trainer has been designed with a view to provide practical and experimental knowledge of Cloud Computing technology used in Internet and Clouds.

SPECIFICATIONS

1. Microcontroller Board

1. A57 Microcontroller
2. CPU   : Quad-core ARM A57 @ 1.43 GHz
3. OS   : Linux
4. RAM   : 4 GB 64-bit LPDDR4 25.6 GB/s
5. Ethernet Connectivity   : Gigabit Ethernet
6. Wifi Connectivity   : 802.11 b/g Wireless LAN Dual-Band 2.4/5.0 GHz, 3G
7. Bluetooth Connectivity   : Bluetooth 5.0
8. USB Connectivity   : USB 3.0 – 4 Nos. – Micro USB Port
9. Storage   : microSD – 32 GB
10. Camera   : 2 x MIPI CSI-2 DPHY lanes
11. Display   : HDMI and Display port
12. Protocols   : GPIO, I2C, I2S, SPI, UART
13. Power - 5V, 4A DC

2. Sensors:

1. Temperature and Humidity– DHT11
2. Ambient Light Sensor – LDR
3. Ambient Pressure Sensor – BMP180

3. Modules and Hardware:

1. 20 X 4 - LCD Display
2. LEDs and Resistors
3. 2 mm interconnection Sockets

4. AI GPU Accelerator

1. Google Edge TPU ML accelerator
2. 4 TOPS total peak performance
3. 2 TOPS per watt
4. USB 3.0 (USB 3.1 Gen 1) Type - C socket

5. Accessories:

1. 2 mm interconnection Sockets : On Board
2. 2 mm Banana Jumper Cable : 20 Nos
3. 2mm Banana Jack to Single pin jumpers : 2 Nos
4. USB to Micro USB Cable : 2 Nos
5. Ethernet Cable : 1 No
6. HDMI to HDMI Cable : 1 No
7. VGA 15 pin Male to HDMI Converter : 1 No
8. Power Supply   Adaptor : 5V, 4A DC
9. SD Memory Card with Codes for All Experiments : 32 GB - 2 No
10. 16 GB Pen Derive : 1No
    with Software, Library, Drivers, Codes, Soft Copy of Manual & Mobile App
11. Printed Practical Manual : 1 No
12. E-Books for AI Subject : 10 Nos
13. Mp4 Video Class for AI Subjects : 100 Nos
14. Power Supply : 230V AC, 50 Hz
15. Operating Conditions : 0-40 °C, 85% RH
16. Mains Cord : 1 No – On Board

6. Cabinet and PCB

The complete circuit diagram is screen printed on component side of the PCB with circuit and Parts at the same place. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement. The acrylic cover is fitted on PCB to safeguard parts. It works on 230 V AC Supply.

<p align="center">THEORY EXPERIMENTS</p>

A. Introduction to Cloud Computing

1. What is Cloud Computing?
2. Introducing and Defining Cloud Computing
3. The Fundamentals of Cloud Computing
4. Getting Inside the Cloud
5. Developing Your Cloud Strategy

B. Understanding the Nature of the Cloud

6. Seeing the Advantages of the Highly Scaled Data Center
7. Exploring the Technical Foundation for Scaling Computer Systems
8. Checking the Cloud's Workload Strategy
9. Managing Data
10. Discovering Private and Hybrid Clouds

C. Cloud Services Models

11. Evolving from Virtualization to the Cloud
12. Planning Organizational Roles in the Cloud
13. Seeing Infrastructure as a Service - IaaS
14. Exploring Platform as a Service – PaaS
15. Using Software as a Service - SaaS
16. Understanding Massively Scaled Applications and Business Processes
17. Setting Some Standards

D. Cloud Computing Deployment Models

18. Public Cloud
19. Private Cloud
20. Hybrid Cloud

E. Managing the Cloud

21. Managing and Securing Cloud Services
22. Governing the Cloud
23. Virtualization and the Cloud
24. Managing Desktops and Devices in the Cloud
25. Service Oriented Architecture and the Cloud
26. Managing the Cloud Environment

F. Cloud Computing Challenges

27. Security
28. Managing Cloud Spend
29. Governance
30. Lack of resources and/or expertise
31. Compliance
32. BYOL Bring Your Own License
33. Managing Multi-Cloud
34. Cloud Migration
35. Understanding Security and Risk
36. Key Principles of Information Security
37. Risk Management Basics
38. Reviewing Security Standards
39. Exploring Common Security Risks and Mitigations
40. Application Interface
41. Shared Technology
42. Insider and Criminal Threats
43. Data Exposure and Loss
44. Organizational Risks
45. Implementing an ISMS
46. Responding to Incidents
47. Digital Forensics in the Cloud
48. Recognizing Security Benefit
49. The Essentials and Beyond

G. Cloud Computing Security Strategies

50. CSA Cloud Security Alliance
51. Data Breaches
52. Misconfiguration and Inadequate Change Control
53. Lack of Cloud Security Architecture and Strategy
54. Insufficient Identity, Credentials and Access Management
55. Account Hijacking
56. Insider Threat
57. Insecure Interfaces and APIs
58. Weak Control Plane

59. Metastructure and Applistructure Failures

60. Limited Cloud Usage Visibility

61. Abuse and Nefarious Use of Cloud Services

62. Cyber Attacks In Action

63. End-to-end data encryption

64. Secure Data Transfers

65. Local Data Backups

66. Distributed Denial-Of-Service Protections

67. Vulnerability Assessments

68. Access Management

69. Aligning Cloud Deployments with Organizational Goals

70. Identifying the Impact of Cloud Adoption to Business Processes

71. Culture and Business Changes

72. Management Changes

73. Testing for Readiness

74. Understanding the Importance of Service-Level Agreements

75. Cloud Service-Level Agreements (SLAs)

76. The Essentials and Beyond

H. Cloud Privacy and Compliance

77. Identifying Legal Risks

78. Records Management

79. Software Licensing

80. Audit

81. Identifying Privacy Risks

82. Safe Harbor

83. Managing Identity in the Cloud

84. Federated Identity Management

85. Single Sign-On

86. The Essentials and Beyond

87. Future of the Cloud

I. Commercial vs Opensource Cloud Solutions

88. Amazon Web Services

89. Microsoft Azure

90. Openstack

PRACTICAL EXPERIMENTS

Building Your Private Cloud using Openstack

1. What is Openstack?
2. Requirements
3. Install Ubuntu 22.04.LTS
4. Install Openstack open source Cloud platform
5. Install Sunbeam
6. Install MicroStack
7. Stop and Start Sunbeam
8. Disable and Enable Sunbeam
9. To find out Static IP address assigned to its primary network interface
10. To install and configure OpenSSH server
11. To bootstrap OpenStack cloud and configure it
12. To launch sample instance and delete cloud instances.
13. To set OpenStack client set up
14. To create Samples templates including images and flavors
15. To create Sample identities
16. To use the concept of domains, roles, users and groups to manage identities
17. To create Sample key pair
18. To create Sample network resources created.
19. To create and Navigate through the OpenStack dashboard menu
20. Manage instance templates, including images and flavors.
21. To enable multi-tenancy and manage global, and tenant resources
22. To learn how OpenStack manages various virtual network resources
23. To learn how OpenStack manages different types of storage
24. To limit access to resources by applying quotas
25. To tear down your OpenStack lab environment

CLASS ROOM TRAINING – ONLINE AND OFFLINE

The training includes Single user Classroom / laboratory teaching, learning and simulation software module. The content has easy explanation of various complex topics with animation and simulation for ease of student learning. It also supports learning through videos, graphs, charts, along with mandatory rich content and theory to understand fundamental concepts, interactive learning objects, FAQ, MCQ etc. The content is supplied in digital online access or license protection.

Contact US

Registered Office	Factory
SIGMA TRAINERS AND KITS	SIGMA TRAINERS AND KITS
E-113, Jai Ambe Nagar,	B-6, Hindola Complex,
Near Udgam School,	Below Nishan Medical Store,
Drive-in Road,	Lad Society Road,
Thaltej,	Near Vastrapur Lake,
AHMEDABAD-380054. INDIA.	AHMEDABAD-380015. INDIA.

Contact Person

Prof. D R Luhar – Director

Mobile   : 9824001168
Whatsapp   : 9824001168

Phones: E-Mails :

Office   : +91-79-26852427   sales@sigmatrainers.com
Factory   : +91-79-26767512   drluhar@gmail.com
                    +91-79-26767648
                    +91-79-26767649