

CNL ASSIGNMENT - 01

- INFO ON THE TOP 5 CN COMPANIES
- JOB ROLES AND DESCRIPTION
- CERTIFICATIONS IN THE DOMAIN OF CN
- UNIVERSITIES CONDUCTING ACTIVE RESEARCH IN CN

ANTRIKSH SHARMA – 20070122021 | ACHYUT SHUKLA - 20070122005
ADITYA DESAI - 20070122006 | AKSHAT PARASHAR – 20070122009

TOP 5 COMPANIES

CISCO

Market Capitalization: 179.68 Billion

Location: U.S.

Stock Price: USD 43.39

Top products:

- Cisco 4000 series ISR routers
- Catalyst 2960-X & 2960-L switches
- ASA 5500-X with FirePOWER Services
- 7800 Series IP phone
- Router EHWIC WAN Cards
- Aironet 1810/1810W Series wireless APs.

ARISTA

Market Capitalization: 31.75 Billion

Location: U.S.

Stock Price: USD 103.00

Top products:

- Arista EOS/cEOS/vEOS router
- CloudVision automation and telemetry
- Cognitive WiFi
- Arista 7800R3/7500/7300X/7368X4 series
- Arista 7020R Switch.

JUNIPER

Market Capitalization: 9.30 Billion

Location: U.S.

Stock Price: USD 28.79

Top products:

- Juniper EX Series 4200 Cable
- Juniper EX Ethernet Switching
- Juniper Layer 3 Switch
- Juniper Networks EX-UM-4X4SFP – EX4300

ARUBA

Market Capitalization: 2.70769 Billion

Location: U.S.

Stock Price: USD 24.67

Top products:

- Aruba instant on 1830 8G switch
- CX 6400 series
- R8J41A
- MeshConfig. Aruba Central.
- AirWave.

NVIDIA

Market Capitalization: 39.60 Billion

Location: U.S.

Stock Price: USD 158.38

Top products:

- Nvidia RIVA 128
- Nvidia GeForce 256 DDR
- Nvidia GeForce 6800 series
- Nvidia GeForce GTX 295

TOP JOB PROFILES

CISCO

JOB PROFILE	DESCRIPTION
ASIC Design Verification Engineer III	Will participate in the ASIC design verification for Cisco high-end switching products. Responsibilities include the development of simulation models, test plan, direct and random tests, code or functional coverage, multi-chip/system simulation, and performance analysis
Quality and Operations - Failure Analysis Engineer	You would be responsible for configure, test and analyze product platforms in controlled environments.
Software Engineer – Internal Applications	Apply principles and techniques of engineering, mathematics, and computer science to the design, development, and testing of business software applications. May work as a member of a scrum team across the entire software development lifecycle
Technical Consulting Engineer	Continually develops their working knowledge of networking products and protocols to provide second/third level technical support on a worldwide basis via phone, email, web and remote access in designated technology focus areas
Technical program manager	The EN(Enterprise networking) Networking Experiences Operations team responsible for Strategic Execution, Planning, PMO, Business Operations

ARISTA

JOB PROFILE	DESCRIPTION
Network Advanced Services Engineer	this position, you will be working as a technology expert in the Routing & Switching space to design, implement, and support (troubleshoot) our deployments within a number of customer infrastructures
Professional Services Engineer	The Arista PS engineer role helps customer deployments through the lifecycle starting with design all the way to implementation and migration and further on to enable operational capabilities.
NetSuite QA Engineer	Identify and define test scenarios and test cases based on functional requirements for existing and new features, execution of functional, regression, and acceptance tests to ensure the product being released is up to industry and company standards.
Managed Network Detection and Response (MNDR) Analyst	Awake's mission is to protect companies from advanced cyber-attacks and to help their security teams operate with super-human efficiency. Our approach is simply different than what is available today, and we aim to create a world-class, diverse and enduring capability to help protect the information assets that enrich our world
Software Engineer - Engineering Productivity (SRE/DevOps)	Arista Networks is looking for a skilled professional for our Engineering Productivity team to help maintain and support our rapidly expanding infrastructure and internal user base

JUNIPER

JOB PROFILE	DESCRIPTION
Senior AEM Developer	Support the technology implementation of Adobe Experience Manager (AEM) as a strategic content management platform. Design, Solution & Implement AEM based web applications
Technical Support Engineer 2- Datacentre Switching	Technical Support Engineer in Juniper TAC (Technical Assistance Centre) for supporting Juniper's Campus & Data-Centre products (EX, QFX & QFabric) & technologies
Data Engineer	As a Data Engineer you will focus on the ingestion, processing and analysis of large unstructured datasets.
SDN Cloud Consultant/Architect	This is a highly technical role, providing primarily offshore post-sales Consulting delivery under the Juniper Networks Professional Services Team.
Principal Engineer- ASIC Verification	We are looking to hire an ASIC verification engineer with extensive experience on networking ASIC verification, with in-depth knowledge of verification methodology and tools, good problem solver, excellent communication, as well as proven record of delivering functioning silicon.

ARUBA

JOB PROFILE	DESCRIPTION
Foundation Software Engineer	The candidate will be responsible for board bring-up and board support package/device driver development.
Senior Full Stack Developer (UI)	In this role, you will work as a member of a DevOps-based team delivering the customer and admin-facing UI platform for HPE Green Lake Cloud Platform, a core part of HPE's as-a-Service strategy.
Sr. DevOps/SRE Engineer	As an SRE, you own the customer experience by ensuring that all of our production infrastructure works flawlessly to ensure that Infosight is up and running
Senior Hardware Board Design Engineer	Develops and implements parameters and test plans for new and existing designs
Cloud Application Developer	In this role you will design, code, document and test microservices in a cloud-based orchestration environment managing embedded networking switches

NVIDIA

JOB PROFILE	DESCRIPTION
Senior Network Engineer	This position will be part of the E2E Verification team while the main goal is to test the most complex Ethernet/IB Switch features and topologies which enables NVIDIA products to meet the industry leading benchmarks of efficiency and quality
Linux System Admin	The position comprises setup and maintenance of all hardware systems and supporting infrastructure.
Firmware Practical Engineer	Dedicated Software or Electronics Practical engineer with a passion for computers and operating systems to join the Software group to develop and maintain the infrastructure of the Firmware management team
IC Practical Engineer	This job allows you to work in a complex, exciting engineering environment handling challenging IC testing activities. One responsibility of this position will be handling various types of testing of Nvidia ICs
Software Manager - Networking	Software Manager required to join the InfiniBand Switch Operating System team. As a team lead, you will take part in developing the next generation Network Operating System using advanced techniques.

CERTIFICATIONS IN CN

1. Cisco Certified Network Associate (CCNA)

The CCNA is an associate-level credential that covers a wide range of networking fundamentals. It is one of the largest companies in the networking industry, making the credential useful to have for many network professionals.

2. CompTIA Network+

The CompTIA Network+ certification tests your understanding of networking basics regardless of which company your networking technology may come from. CompTIA also offers the CompTIA A+ certification for those who are looking for entry-level IT jobs—which the Google IT Support Professional Certificate can train you for.

3. Juniper Networks Certified Associate - Junos (JNCIA-Junos)

The JNCIA-Junos is the associate-level certification for Juniper Networks technologies. It's the first step required for those who want to go on to take more advanced certifications from Juniper Networks in data centre technologies, enterprise routing and switching, or service provider routing and switching.

4. SolarWinds Certified Professional

The SolarWinds Certified Professional credential enables you to use and maintain SolarWinds network and system products. SolarWinds products are used prominently in certain industries, like government and accounting.

5. Aruba Certified Mobility Associate (ACMA)

Some companies may expect you to have knowledge of Aruba networking features. The ACMA ensures you're able to design, set up, and configure a basic Aruba Wireless Local Area Network. There are four other associate-level Aruba certifications (Switching, ClearPass, Design, and Security); getting any three of them will make you an Aruba Edge Associate.

6. VMWare Certified Technical Associate - Network Virtualization (VCTA-NV)

If you're interested in virtualization, getting the VCTA-NV certification can be a good way to get started with the essentials of the VMWare NSX network virtualization platform. The certification will test your basic knowledge of the NSX terminology, graphical user interfaces, and other core technical skills.

ACTIVE RESEARCH IN THE AREA OF COMPUTER NETWORKS

5G network slicing using SDN and NFV: A survey of taxonomy, architectures and future challenges.

**Conducted by: School of Computer Science, University College
Dublin, Ireland**

Abstract: The increasing consumption of multimedia services and the demand of high-quality services from customers has triggered a fundamental change in how we administer networks in terms of abstraction, separation, and mapping of forwarding, control and management aspects of services. The industry and academia are embracing 5G as the future network capable of supporting next generation vertical applications with different service requirements. To realize this vision in 5G network, the physical network has to be sliced into multiple isolated logical networks of varying sizes and structures which are dedicated to different types of services based on their requirements with different characteristics and requirements (e.g., a slice for massive IoT devices, smartphones or autonomous cars, etc.). Softwarization using Software-Defined Networking (SDN) and Network Function Virtualization (NFV) in 5G networks are expected to fill the void of programmable control and management of network resources.

A survey on Bluetooth Low Energy security and privacy.

Conducted by: Fraunhofer Institute for Secure Information Technology SIT, Germany

Abstract: Since its introduction in 2009, Bluetooth Low Energy (BLE) has become a remarkable success. Due to its unique properties of low power requirements and its ubiquitous availability in practically every smartphone, it outnumbered classic Bluetooth BR/EDR in most areas. It enabled a multitude of new product categories like smart watches or connected healthcare devices that would not be feasible without such a technology. We are currently facing version 5.2 of the specification which is the result of a number of major and minor revisions, each fixing problems of earlier versions while adding new features and capabilities. This includes more secure pairing methods, like secure connection pairing. Cyber security was considered from the beginning of the Bluetooth specification and has been improved with each specification release. On the other hand, security weaknesses in the specification as well as in individual Bluetooth stack implementations have been identified. Designing a secure BLE device, or analyzing its security is a complicated task due to the overwhelming number of possible configurations. As the specification introduces constantly new features and subtle changes regarding privacy and security, this will become an even more complex task. To the best of our knowledge, no systematic overview over the current state of BLE does exist that covers the security and privacy properties of the different BLE versions and features including known weaknesses and attacks in a single place. With this survey we want to fill this gap.

Clustering objectives in wireless sensor networks: A survey and research direction analysis.

Conducted by:

- a. Department of Informatics, University of Oslo, Oslo, Norway
- b. Faculty of Computer Sciences, Østfold University College, Halden, Norway

Abstract: Since its introduction in 2009, Bluetooth Low Energy (BLE) has become a remarkable success. Due to its unique properties of low power requirements and its ubiquitous availability in practically every smartphone, it outnumbered classic Bluetooth BR/EDR in most areas. It enabled a multitude of new product categories like smart watches or connected healthcare devices that would not be feasible without such a technology. We are currently facing version 5.2 of the specification which is the result of a number of major and minor revisions, each fixing problems of earlier versions while adding new features and capabilities. This includes more secure pairing methods, like secure connection pairing. Cyber security was considered from the beginning of the Bluetooth specification and has been improved with each specification release. On the other hand, security weaknesses in the specification as well as in individual Bluetooth stack implementations have been identified. Designing a secure BLE device, or analyzing its security is a complicated task due to the overwhelming number of possible configurations. As the specification introduces constantly new features and subtle changes regarding privacy and security, this will become an even more complex task. To the best of our knowledge, no systematic overview over the current state of BLE does exist that covers the security and privacy properties of the different BLE versions and features including known weaknesses and attacks in a single place. With this survey we want to fill this gap.

5G Testbed

Conducted by: IIIT Hyderabad along with Indian Institute of Technology

IIIT-Delhi Centre of Excellence on LiFi

Abstract: The project will deliver an end-to-end 5G testbed consisting of 5G BS and UE nodes that support enhanced mobile broadband (eMBB), Ultra low latency communication (URLLC), and massive MTC including NB IoT services. The operating frequently includes both sub 6 GHz and mmwave frequencies. The system will exceed IMT 2020 5G performance requirements including Low Mobility Large Cell (i.e., LMLC) targets introduced by India at ITU.

The 'Indigenous 5G Testbed' project is a long term effort with a team of 100+ researchers/engineers based out of IIT-H campus.

Waseem Akram working in Department of Computer Applications, GDC Mendhar, Poonch is working on Potential of Li-Fi (Light Fidelity) Technology for Internet Penetration in Rural India