



IoT Security and Penetration Testing

About Cognixia

Cognixia- A Digital Workforce Solutions Company is dedicated to delivering exceptional trainings and certifications in digital technologies. Founded in 2014, we provide interactive, customized training courses to individuals and organizations alike, and have served more than 130,000 professionals across 45 countries worldwide.

Our team of more than 7000 industry experts facilitate more than 450 comprehensive digital technologies courses, along with state-of-the-art infrastructure, to deliver the best learning experience for everyone. Our comprehensive series of instructor-led online trainings, classroom trainings and on-demand self-paced online trainings cover a wide array of specialty areas, including all of the following:

- IoT
- Big Data
- Cloud Computing
- Cyber Security
- Machine Learning
- AI & Deep Learning
- Blockchain Technologies
- DevOps

Cognixia is ranked amongst the top five emerging technologies training companies by various prestigious bodies. We're also RedHat Enterprise Partner, Microsoft Silver Learning Partner and an authorized training partner for ITIL, Automation Anywhere and ISC2.



Our Awards & Affiliations

 **Best Workplace Amongst Emerging Enterprises** Awarded By **Great Indian Workplace Awards – 2018** Mumbai, India



 **Best Training Provider of the Year** Awarded By **The Golden Globe Tiger Awards – 2018** Kuala Lumpur, Malaysia



World HRD Congress has awarded for Excellence in Training (Asia) 

 **WORLD HRD CONGRESS** Cognixia is awarded as Training Company of the Year, 2018 

 **ISO 9001:2015 CERTIFIED** ISO 9001:2015 Certified Quality Management System 

 **ISO/IEC 27001:2013 CERTIFIED** ISO/IEC 27001:2013 Certified Information Security Management System 

 **AFRICA C** Best Emerging Technology Training Organization at the Middle East Training & Development Leadership Awards 2018 

 **TOP 5 CLOUD TRAINING INSTITUTIONS INDIA 2016**  **HIGHER EDUCATION REVIEW**

 **TOP 5 Big Data TRAINING INSTITUTES 2017**  **siliconindia**

 **TOP 10 IoT TRAINING INSTITUTES PROMISING IN INDIA 2017**  **HIGHER EDUCATION REVIEW**

 Top 10 IoT Training Companies for the Second consecutive year.  **2017 IoT India MAGAZINE**

 **siliconindia** BEST TRAINING PROVIDER **BIG DATA HADOOP DEVELOPER OF THE YEAR 2016** 

 Top 10 IoT Training Institutes – 2016  **Analytics India MAGAZINE**

 **Asian Training & Leadership Award, Dubai** 

 **TOP 5 Emerging Technologies 2016 TRAINING COMPANIES**  **siliconindia**

Authorized Training Partners for



Red Hat



Silver
**Microsoft
Partner**



IoT Security Outlook

The IDC estimates that there would be 152,200 IoT devices connected every minute by 2025, indicating that there would be about 80 billion IoT devices connected annually. While IoT devices have numerous benefits and are immensely helpful for different purposes, they also pose as attractive vulnerabilities for cybercriminals. Be it insecure passwords, networks, ecosystem interfaces or any other vulnerability and weakness, once an IoT device is compromised, it can lead to major losses for any organization, and not just financially.

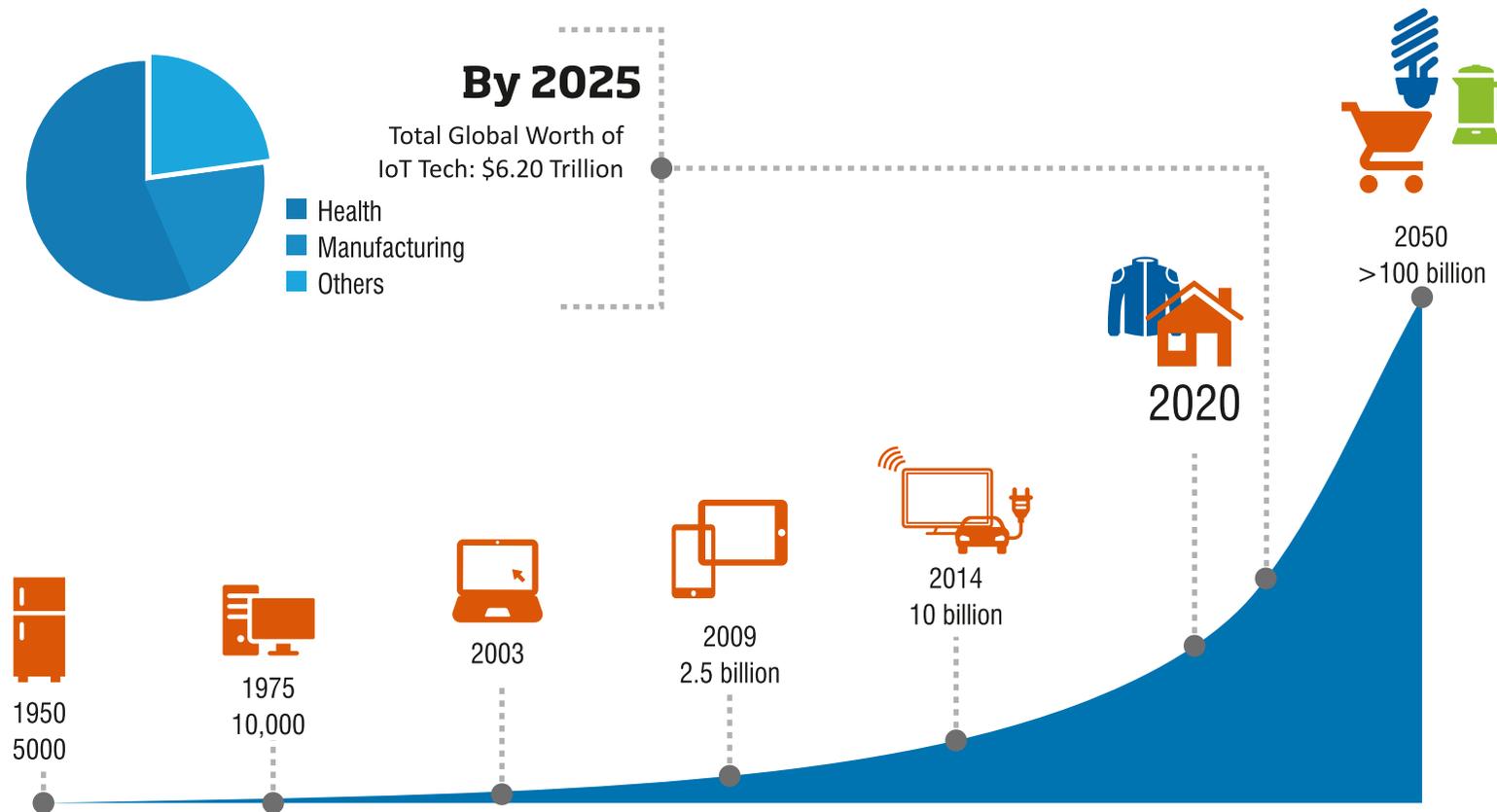
The Ponemon Institute and Shared Assessments Survey indicates that 76% of risk professionals believe that cyberattacks on their organizations would likely be executed through IoT.



Cognixia's IoT Security and Penetration Testing training course

To keep up with the changing trends and need of the hour, Cognixia introduces its new course – IoT Security and Penetration Testing. This course aims to highlight the need to incorporate security in IoT devices and solutions. This course employs a holistic approach to provide a comprehensive understanding of security and privacy in an IoT system from device to cloud.

This IoT security training imparts a comprehensive understanding and knowledge of threat modelling practices which will help participants unveil potential vulnerabilities as well as possible threats to the IoT ecosystem. The course also covers penetration testing which will help participants deploy best practices to assess and defend their solutions. This IoT security course also incorporates hands-on practical exercises for a thorough experiential and practical learning experience to the participants.



Who should take this course?

Professionals who have just begun their careers in the field of IoT security or want to begin their careers in IoT security would find this course extremely useful. This course also helps validate and brush up the skills and knowledge of experienced IoT security professionals.

The course is also highly recommended for professionals who want to transition from another role to a security role.

Prerequisites

In order to enroll for this IoT Security and Penetration Testing training and certification course, participants need to have successfully completed the Advanced IoT training offered by Cognixia, or have equivalent knowledge and skills in IoT.



Program structure



30 hours of
live online
instructor-led training



Industry
experienced
instructor



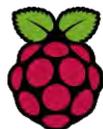
24x7
dedicated PoC
support



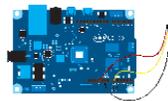
Multiple hands-on
exercises and labs
to ensure thorough
understanding
of concepts



ARDUINO



RASPBERRY PI



SENSORS



WIFI MODULE



BREADBOARD



BLUETOOTH MODULE



NODEMCU

Detailed Curriculum

Module 1: IoT security and privacy

- Introduction to information and cybersecurity
- Basic terminologies
- Standards and open source initiatives
- CIA triads: Effectively addressing security and privacy concerns
- Attack surfaces and vulnerabilities: Device, network, gateway and cloud
- Risk assessment and management
- Cryptography: Applications of cryptography in IoT communications and data security
- Device security
 - Application hardening
 - OS/platform hardening
 - Physical security
- Gateway security
- Communication protocols and network security
 - Data link layer – wireless communication technology security provisions
 - Wi-Fi, Bluetooth, Zigbee, 802.15.4 protocols
 - Application layer security
 - MQTT and HTTP protocols
 - Network hardening
- IoT cloud platforms
 - API and endpoint security
 - Security of data at rest
 - Standard security frameworks
 - Example platforms: AWS and Microsoft Azure

Detailed Curriculum

Module 2: IoT Penetration Testing

- IoT ecosystem and penetration testing approaches
- IoT penetration testing lab setup
- Threats, vulnerabilities, attack surface, attack vector, risk assessment and management
- Attack and fault trees
- Threat modeling IoT system
 - What is threat modelling?
 - Why and when to threat model?
 - Threat modeling diagrams and components
 - Relationship with attack and fault trees
 - Identity and address threats
 - Documentation and rating
 - Microsoft threat modeling approach and tool
 - STRIDE – Identifying threats
 - DRIED model to rate threats
 - Countermeasure and mitigation
- Threat modeling – IoT applications (Device/web/mobile)
- Threat modeling IoT hardware
- Firmware and application exploits
- IoT hacking
- IoT testing and security automation

Why Choose Cognixia?



LIFETIME LMS ACCESS



24 x 7 SUPPORT



REAL-LIFE PROJECTS & CASE STUDIES



INDUSTRY EXPERTS AS TRAINERS



INDUSTRY STANDARD CERTIFICATE



Potential Career Options

NETWORK SECURITY ENGINEERS

CYBERSECURITY ANALYSTS

NETWORK AND SECURITY ANALYSTS

FULL STACK ENGINEERS

INFORMATION SYSTEM SECURITY ARCHITECTS

NETWORK SECURITY ADMINISTRATORS

PRODUCT SECURITY ANALYSTS

IT SECURITY ANALYSTS

SECURITY TEST ENGINEERS

APPLICATION SECURITY TESTERS/ANALYSTS

SECURITY DELIVERY ANALYSTS, ETC.



IoT Security and Penetration Testing



To learn more visit

<https://www.cognixia.com/>