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It Infrastructure Architecture - Infrastructure Building Blocks and Concepts Second Edition May 14 2020 For many decades, IT infrastructure has provided the foundation for successful application deployment. Yet, general knowledge of infrastructures is still not widespread. Experience shows that software developers, system administrators, and project managers often have little knowledge of the big influence IT infrastructures have on the performance, availability and security of software applications. This book explains the concepts, history, and implementation of IT infrastructures. Although many of books can be found on individual infrastructure building blocks, this is the first book to describe all of them: datacenters, servers, networks, storage, virtualization, operating systems, and end user devices. Whether you need an introduction to infrastructure technologies, a refresher course, or a study guide for a computer science class, you will find that the presented building blocks and concepts provide a solid foundation for understanding the complexity of today's IT infrastructures.

Cybersecurity for Executives in the Age of Cloud Mar 24 2021 With the rising cost of data breaches, executives need to understand the basics of cybersecurity so the can make strategic decisions that keep companies out of headlines and legal battles. Although top executives do not make the day-to-day technical decisions related to cybersecurity, they can direct the company from the top down to have a security mindset. As this book explains, executives can build systems and processe that track gaps and security problems while still allowing for innovation and achievement of business objectives. Many of the data breaches occurring today are the result of fundamental security problems, not crafty attacks by insidious malware. The way many companies are moving to cloud environments exacerbates these problems. However, cloud platforms can also help organizations reduce risk if organizations understand how to leverage their benefits. If and when a breach does happen, a company that has the appropriate metrics can more quickly pinpoint and correct the root cause. Over time, as organizations mature, they can fend off and identify advanced threats more effectively. The book covers cybersecurity fundamentals such as encryption, networking, data breaches, cyber-attacks, malware, viruses, incident handling, governance, risk management, security automation, vendor assessments, and cloud security.

RECOMMENDATION: As a former senior military leader, I learned early on that

my personal expertise of a subject was less important than my ability to ask better questions of the experts. Often, I had no expertise at all but was required to make critical high risk decisions under very tight time constraints. In this book Teri helps us understand the better questions we should be asking about our data, data systems, networks, architecture development, vendors and cybersecurity writ large and why the answers to these questions matter to our organizations bottom line as well as our personal liability. Teri writes in a conversational tone adding personal experiences that bring life and ease of understanding to an otherwise very technical, complex and sometimes overwhelming subject. Each chapter breaks down a critical component that lends to a comprehensive understanding or can be taken individually. I am not steeped in cyber, but Teri's advice and recommendations have proven critical to my own work on Boards of Directors as well as my leadership work with corporate CISOs, cybersecurity teams, and C-Suite executives. In a time-constrained world this is a worthy read. - Stephen A. Clark, Maj Gen, USAF (Ret) AUTHOR: Teri Radichel (@teriradichel) is the CEO of 2nd Sight Lab, a cloud and cybersecurity training and consulting company. She has a Master of Software Engineering, a Master of Information Security Engineering, and over 25 years of technology, security, and business experience. Her certifications include GSE, GXPN, GCIH, GPEN, GCIA, GCPM, GCCC, and GREM. SANS Institute gave her the 2017 Difference Makers Award for cybersecurity innovation. She is on the IANS (Institute for Applied Network Security) faculty and formerly taught and helped with curriculum for cloud security classes at SANS Institute. She is an AWS hero and runs the Seattle AWS Architect and Engineers Meetup which has over 3000 members. Teri was on the original Capital One cloud team helping with cloud engineering, operations, and security operations. She wrote a paper called Balancing Security and Innovation With Event Driven Automation based on lessons learned from that experience. It explains how companies can leverage automation to improve cybersecurity. She went on to help a security vendor move a product to AWS as a cloud architect and later Director of SaaS Engineering, where she led a team that implemented the concepts described in her paper. She now helps companies around the world with cloud and cyber security as a sought-after speaker, trainer, security researcher, and pentester.

Advances in Network Security and Applications Jul 20 2023 This book constitutes the proceedings of the 4th International Conference on Network Security and Applications held in Chennai, India, in July 2011. The 63 revised full papers presented were carefully reviewed and selected from numerous submissions. The

papers address all technical and practical aspects of security and its applications for wired and wireless networks and are organized in topical sections on network security and applications, ad hoc, sensor and ubiquitous computing, as well as pee to-peer networks and trust management.

Zero Trust Networks with VMware NSX Jul 16 2020 Secure your VMware infrastructure against distrusted networks using VMware NSX. This book shows you why current security firewall architecture cannot protect against new threats to your network and how to build a secure architecture for your data center. Author Sreerjith Keeriyattil teaches you how micro-segmentation can be used to protect east-west traffic. Insight is provided into working with Service Composer and using NSX REST API to automate firewalls. You will analyze flow and security threats to monitor firewalls using VMware Log and see how Packet Flow works with VMware NSX micro-segmentation. The information presented in Zero Trust Networks with VMware NSX allows you to study numerous attack scenarios and strategies to stop these attacks, and know how VMware Air Watch can further improve your architecture. What You Will LearnKnow how micro-segmentation works and its benefitsImplement VMware-distributed firewallsAutomate security policies Integrate IPS/IDS with VMware NSXAnalyze your firewall's configurations, rules, and policies Who This Book Is For Experienced VMware administrators and security administrators who have an understanding of data center architecture and operations

Applied Network Security Jun 14 2020 Master the art of detecting and averting advanced network security attacks and techniques About This Book Deep dive into the advanced network security attacks and techniques by leveraging tools such as Kali Linux 2, MetaSploit, Nmap, and Wireshark Become an expert in cracking WiFi passwords, penetrating anti-virus networks, sniffing the network, and USB hacks This step-by-step guide shows you how to confidently and quickly detect vulnerabilities for your network before the hacker does Who This Book Is For This book is for network security professionals, cyber security professionals, and Pentesters who are well versed with fundamentals of network security and now want to master it. So whether you're a cyber security professional, hobbyist, business manager, or student aspiring to becoming an ethical hacker or just want to learn more about the cyber security aspect of the IT industry, then this book is definitely for you. What You Will Learn Use SET to clone webpages including the login page Understand the concept of Wi-Fi cracking and use PCAP file to obtain passwords Attack using a USB as payload injector Familiarize yourself with the process of trojan attacks Use Shodan to identify honeypots, rogue access points,

vulnerable webcams, and other exploits found in the database Explore various tools for wireless penetration testing and auditing Create an evil twin to intercept network traffic Identify human patterns in networks attacks In Detail Computer networks are increasing at an exponential rate and the most challenging factor organisations are currently facing is network security. Breaching a network is not considered an ingenious effort anymore, so it is very important to gain expertise in securing your network. The book begins by showing you how to identify malicious network behaviour and improve your wireless security. We will teach you what network sniffing is, the various tools associated with it, and how to scan for vulnerable wireless networks. Then we'll show you how attackers hide the payloads and bypass the victim's antivirus. Furthermore, we'll teach you how to spoof IP / MAC address and perform an SQL injection attack and prevent it on your website. We will create an evil twin and demonstrate how to intercept network traffic. Later, you will get familiar with Shodan and Intrusion Detection and will explore the features and tools associated with it. Toward the end, we cover tools such as Yardstick, Ubertooth, Wifi Pineapple, and Alfa used for wireless penetration testing and auditing. This book will show the tools and platform to ethically hack your own network whether it is for your business or for your personal home Wi-Fi. Style and approach This mastering-level guide is for all the security professionals who are eagerly waiting to master network security skills and protecting their organization with ease. It contains practical scenarios on various network security attacks and will teach you how to avert these attacks.

CCNP Security IPS 642-627 Official Cert Guide Sep 17 2020 CCNP Security IPS 642-627 Official Cert Guide David Burns Odunayo Adesina, CCIE® No. 26695 Keith Barker, CCIE No. 6783 . Master CCNP Security IPS 642-627 exam topics . Assess your knowledge with chapter-opening quizzes . Review key concepts with exam preparation tasks Learn, prepare, and practice for exam success CCNP Security IPS 642-627 Official Cert Guide is a best-of-breed Cisco exam study guide that focuses specifically on the objectives for the CCNP Security IPS exam. Senior security engineers David Burns, Odunayo Adesina, and Keith Barker share preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of exam topics. CCNP Security IPS 642-627 Official Cert Guide presents you with an organized test-preparation routine through the use of proven series elements and techniques. "Do I Know This Already?" quizzes open each chapter and enable you to decide how much time you need to spend on each section. Exam topic lists mak

referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. Well-regarded for its level of detail, assessment features, and challenging review questions and exercises, this official study guide helps you master the concepts and techniques that will enable you to succeed on the exam the first time. CCNP Security IPS 642-627 Official Cert Guide is part of a recommended learning path from Cisco that includes simulation and hands-on training from authorized Cisco Learning Partners and self-study products from Cisco Press. To find out more about instructor-led training, e-learning, and hands-on instruction offered by authorized Cisco Learning Partners worldwide, please visit www.cisco.com/go/authorizedtraining. The official study guide helps you master all the topics on the CCNP Security IPS exam, including Cisco IPS software, hardware, and supporting applications Network IPS and IDS deployment architecture Installing and maintaining Cisco IPS physical and virtual sensors Traffic analysis IPS signatures and responses Anomaly-based operations Improving alarm response and quality Managing and analyzing events High availability and performance IPS modules for ASAs, routers, and switches Includes Exclusive Offer for 70% Off Premium Edition eBook and Practice Test CCNP Security Category: Ci ...

The InfoSec Handbook Apr 17 2023 The InfoSec Handbook offers the reader an organized layout of information that is easily read and understood. Allowing beginners to enter the field and understand the key concepts and ideas, while still keeping the experienced readers updated on topics and concepts. It is intended mainly for beginners to the field of information security, written in a way that makes it easy for them to understand the detailed content of the book. The book offers a practical and simple view of the security practices while still offering somewhat technical and detailed information relating to security. It helps the reader build a strong foundation of information, allowing them to move forward from the book with a larger knowledge base. Security is a constantly growing concern that everyone must deal with. Whether it’s an average computer user or a highly skilled computer user, they are always confronted with different security risks. These risks range in danger and should always be dealt with accordingly. Unfortunately, not everyone is aware of the dangers or how to prevent them and this is where most of the issues arise in information technology (IT). When computer users do not take security into account many issues can arise from that like system compromises or loss of data and information. This is an obvious issue that is present with all computer users. This book is intended to educate the average and experienced user of what kinds of different security practices and

standards exist. It will also cover how to manage security software and updates in order to be as protected as possible from all of the threats that they face.

Intrusion Prevention and Active Response Sep 29 2021 Intrusion Prevention and Active Response provides an introduction to the field of Intrusion Prevention and provides detailed information on various IPS methods and technologies. Specific methods are covered in depth, including both network and host IPS and response technologies such as port deactivation, firewall/router network layer ACL modification, session sniping, outright application layer data modification, system call interception, and application shims. Corporate spending for Intrusion Prevention systems increased dramatically by 11% in the last quarter of 2004 alone Lead author, Michael Rash, is well respected in the IPS Community, having authored FWSnort, which greatly enhances the intrusion prevention capabilities of the market-leading Snort IDS

Proceedings of the 3rd International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA) 2014 Oct 11 2022 This volume contains 95 papers presented at FICTA 2014: Third International Conference on Frontiers in Intelligent Computing: Theory and Applications. The conference was held during 14-15, November, 2014 at Bhubaneswar, Odisha, India. This volume contains papers mainly focused on Data Warehousing and Mining, Machine Learning, Mobile and Ubiquitous Computing, AI, E-commerce & Distributed Computing and Soft Computing, Evolutionary Computing, Bio-inspired Computing and its Applications.

Defensive Security Handbook Aug 21 2023 Despite the increase of high-profile hacks, record-breaking data leaks, and ransomware attacks, many organizations don’t have the budget to establish or outsource an information security (InfoSec) program, forcing them to learn on the job. For companies obliged to improvise, this pragmatic guide provides a security-101 handbook with steps, tools, processes and ideas to help you drive maximum-security improvement at little or no cost. Each chapter in this book provides step-by-step instructions for dealing with a specific issue, including breaches and disasters, compliance, network infrastructure and password management, vulnerability scanning, and penetration testing, among others. Network engineers, system administrators, and security professionals will learn tools and techniques to help improve security in sensible, manageable chunks. Learn fundamentals of starting or redesigning an InfoSec program Create a base set of policies, standards, and procedures Plan and design incident response, disaster recovery, compliance, and physical security Bolster Microsoft and Unix systems, network infrastructure, and password management Use

segmentation practices and designs to compartmentalize your network Explore automated process and tools for vulnerability management Securely develop code to reduce exploitable errors Understand basic penetration testing concepts through purple teaming Delve into IDS, IPS, SOC, logging, and monitoring

Snort May 18 2023 This fully integrated book, CD, and Web toolkit covers everything from packet inspection to optimizing Snort for speed to using its most advanced features to defend even the largest and most congested enterprise networks.

Introduction to Information Security Jul 08 2022 Most introductory texts provide a technology-based survey of methods and techniques that leaves the reader without a clear understanding of the interrelationships between methods and techniques. By providing a strategy-based introduction, the reader is given a clear understanding of how to provide overlapping defenses for critical information. This understanding provides a basis for engineering and risk-management decisions in the defense of information. Information security is a rapidly growing field, with a projected need for thousands of professionals within the next decade in the government sector alone. It is also a field that has changed in the last decade from a largely theory-based discipline to an experience-based discipline. This shift in the field has left several of the classic texts with a strongly dated feel. Provides a broad introduction to the methods and techniques in the field of information security Offers a strategy-based view of these tools and techniques, facilitating selection of overlapping methods for in-depth defense of information Provides very current view of the emerging standards of practice in information security

The Best Damn Firewall Book Period Feb 03 2022 The Second Edition of the Best Damn Firewall Book Period is completely revised and updated to include all of the most recent releases from Microsoft, Cisco, Juniper Network, and Check Point. Compiled from the best of the Syngress firewall library and authored by product experts such as Dr. Tom Shinder on ISA Server, this volume is an indispensable addition to a serious networking professionals toolkit. Coverage includes migrating to ISA Server 2006, integrating Windows Firewall and Vista security into your enterprise, successfully integrating Voice over IP applications around firewalls, and analyzing security log files. Sections are organized by major vendor, and include hardware, software and VPN configurations for each product line. New to this Edition: Microsoft firewall protection, from Windows Firewall to ISA Server 2006 Cisco PIX Version 7, including VPN configuration and IDS Analyzing Firewall Logs and Reports VoIP and Firewall Bypassing

Mastering Kali Linux for Advanced Penetration Testing Jun 26 2021 A practical

guide to testing your infrastructure security with Kali Linux, the preferred choice of pentesters and hackers Key FeaturesEmploy advanced pentesting techniques with Kali Linux to build highly secured systemsDiscover various stealth techniques to remain undetected and defeat modern infrastructuresExplore red teaming techniques to exploit secured environmentBook Description This book takes you, as a tester or security practitioner, through the reconnaissance, vulnerability assessment, exploitation, privilege escalation, and post-exploitation activities used by pentesters. To start with, you'll use a laboratory environment to validate tools and techniques, along with an application that supports a collaborative approach for pentesting. You'll then progress to passive reconnaissance with open source intelligence and active reconnaissance of the external and internal infrastructure. You'll also focus on how to select, use, customize, and interpret the results from different vulnerability scanners, followed by examining specific routes to the target, which include bypassing physical security and the exfiltration of data using a variety of techniques. You'll discover concepts such as social engineering, attacking wireless networks, web services, and embedded devices. Once you are confident with these topics, you'll learn the practical aspects of attacking user client systems by backdooring with fileless techniques, followed by focusing on the most vulnerable part of the network – directly attacking the end user. By the end of this book, you'll have explored approaches for carrying out advanced pentesting in tightly secured environments, understood pentesting and hacking techniques employed on embedded peripheral devices. What you will learnConfigure the most effective Kali Linux tools to test infrastructure securityEmploy stealth to avoid detection in the infrastructure being testedRecognize when stealth attacks are being used against your infrastructureExploit networks and data systems using wired and wireless networks as well as web servicesIdentify and download valuable data from target systemsMaintain access to compromised systemsUse social engineering to compromise the weakest part of the network - the end usersWho this book is for This third edition of Mastering Kali Linux for Advanced Penetration Testing is for you if you are a security analyst, pentester, ethical hacker, IT professional, or security consultant wanting to maximize the success of your infrastructure testing using some of the advanced features of Kali Linux. Prior exposure of penetration testing and ethical hacking basics will be helpful in making the most out of this book.

Network Intrusion Prevention Design Guide: Using IBM Security Network IPS Jan 02 2022 Every organization today needs to manage the risk of exposing business-critical data, improve business continuity, and minimize the cost of managing IT

security. Most all IT assets of an organization share a common network infrastructure. Therefore, the first line of defense is to establish proper network security. This security is a prerequisite for a logical set of technical countermeasures to protect from many different attack vectors that use the network to infiltrate the backbone of an organization. The IBM® Security Network Intrusion Prevention System (IPS) stops network-based threats before they can impact the business operations of an organization. Preemptive protection, which is protection that works ahead of a threat, is available by means of a combination of line-speed performance, security intelligence, and a modular protection engine that enables security convergence. By consolidating network security demands for data security and protection for web applications, the IBM Security Network IPS serves as the security platform that can reduce the costs and complexity of deploying and managing point solutions. This IBM Redbooks® publication provides IT architects and security specialists a better understanding of the challenging topic of blocking network threats. This book highlights security convergence of IBM Virtual Patch® technology, data security, and Web Application Protection. In addition, this book explores the technical foundation of the IBM Security Network IPS. It explains how to set up, configure, and maintain proper network perimeter protection within a real-world business scenario.

Enterprise Cloud Security and Governance Dec 01 2021 Build a resilient cloud architecture to tackle data disasters with ease About This Book Gain a firm grasp of Cloud data security and governance, irrespective of your Cloud platform Practical examples to ensure you secure your Cloud environment efficiently A step-by-step guide that will teach you the unique techniques and methodologies of Cloud data governance Who This Book Is For If you are a cloud security professional who wants to ensure cloud security and data governance no matter the environment, then this book is for you. A basic understanding of working on any cloud platform would be beneficial. What You Will Learn Configure your firewall and Network ACL Protect your system against DDOS and application-level attacks Explore cryptography and data security for your cloud Get to grips with configuration management tools to automate your security tasks Perform vulnerability scanning with the help of the standard tools in the industry Learn about central log management In Detail Modern day businesses and enterprises are moving to the Cloud, to improve efficiency and speed, achieve flexibility and cost effectiveness, and for on-demand Cloud services. However, enterprise Cloud security remains a major concern because migrating to the public Cloud requires transferring some control over organizational assets to the Cloud provider. There

are chances these assets can be mismanaged and therefore, as a Cloud security professional, you need to be armed with techniques to help businesses minimize th risks and misuse of business data. The book starts with the basics of Cloud securit and offers an understanding of various policies, governance, and compliance challenges in Cloud. This helps you build a strong foundation before you dive deep into understanding what it takes to design a secured network infrastructure and a well-architected application using various security services in the Cloud environment. Automating security tasks, such as Server Hardening with Ansible, and other automation services, such as Monit, will monitor other security daemons and take the necessary action in case these security daemons are stopped maliciously. In short, this book has everything you need to secure your Cloud environment with. It is your ticket to obtain industry-adopted best practices for developing a secure, highly available, and fault-tolerant architecture for organizations. Style and approach This book follows a step-by-step, practical approach to secure your applications and data when they are located remotely.

Intrusion Prevention Fundamentals Oct 31 2021

Information Fusion for Cyber-Security Analytics Oct 19 2020 This book highlights several gaps that have not been addressed in existing cyber security research. It first discusses the recent attack prediction techniques that utilize one or more aspects of information to create attack prediction models. The second part is dedicated to new trends on information fusion and their applicability to cyber security; in particular, graph data analytics for cyber security, unwanted traffic detection and control based on trust management software defined networks, security in wireless sensor networks & their applications, and emerging trends in security system design using the concept of social behavioral biometric. The book guides the design of new commercialized tools that can be introduced to improve the accuracy of existing attack prediction models. Furthermore, the book advances the use of Knowledge-based Intrusion Detection Systems (IDS) to complement existing IDS technologies. It is aimed towards cyber security researchers.

NIST SP 800-94 - Guide to Intrusion Detection and Prevention Systems (IDPS) Aug 17 2020 NIST SP 800-94 February 2017 Printed in COLOR This publication describes the characteristics of IDPS technologies and provides recommendations for designing, implementing, configuring, securing, monitoring, and maintaining them. The types of IDPS technologies are differentiated primarily by the types of events that they monitor and the ways in which they are deployed. Why buy a book you can download for free? First you gotta find it and make sure it's the latest version, not always easy. Then you gotta print it using a network printer you share

with 100 other people - and its outta paper - and the toner is low (take out the toner cartridge, shake it, then put it back). If it's just 10 pages, no problem, but if it's a 250-page book, you will need to punch 3 holes in all those pages and put it in a 3-ring binder. Takes at least an hour. An engineer that's paid $75 an hour has to do this himself (who has assistant's anymore?). If you are paid more than $10 an hour and use an ink jet printer, buying this book will save you money. It's much more cost-effective to just order the latest version from Amazon.com This material is published by 4th Watch Books. We publish tightly-bound, full-size books at 8 by 11 inches, with glossy covers. 4th Watch Books is a Service Disabled Veteran Owned Small Business (SDVOSB) and is not affiliated with the National Institute of Standards and Technology. For more titles published by 4th Watch, please visit: cybah.webplus.net A full copy of all the pertinent cybersecurity standards is available on DVD-ROM in the CyberSecurity Standards Library disc which is available at Amazon.com. GSA P-100 Facilities Standards for the Public Buildings Service GSA P-120 Cost and Schedule Management Policy Requirements GSA P-140 Child Care Center Design Guide GSA Standard Level Features and Finishes for U.S. Courts Facilities GSA Courtroom Technology Manual NIST SP 500-299 NIST Cloud Computing Security Reference Architecture NIST SP 500-291 NIST Cloud Computing Standards Roadmap Version 2 NIST SP 500-293 US Governmer Cloud Computing Technology Roadmap Volume 1 & 2 NIST SP 500-293 US Government Cloud Computing Technology Roadmap Volume 3 DRAFT NIST SP 1800-8 Securing Wireless Infusion Pumps NISTIR 7497 Security Architecture Design Process for Health Information Exchanges (HIEs) NIST SP 800-66 Implementing the Health Insurance Portability and Accountability Act (HIPAA) Security Rule NIST SP 1800-1 Securing Electronic Health Records on Mobile Devices NIST SP 800-177 Trustworthy Email NIST SP 800-184 Guide for Cybersecurity Event Recovery NIST SP 800-190 Application Container Security Guide NIST SP 800-193 Platform Firmware Resiliency Guidelines NIST SP 1800-1 Securing Electronic Health Records on Mobile Devices NIST SP 1800-2 Identity and Access Management for Electric Utilities NIST SP 1800-5 IT Asset Management: Financial Services NIST SP 1800-6 Domain Name Systems-Based Electronic Mail Security NIST SP 1800-7 Situational Awareness for Electric Utilities DoD Medical Space Planning Criteria FARs Federal Acquisitions Regulation DFARS Defense Federal Acquisitions Regulations Supplement

Handbook of Information and Communication Security July 19 2023 At its core, information security deals with the secure and accurate transfer of information. While information security has long been important, it was, perhaps, brought more

clearly into mainstream focus with the so-called “Y2K” issue. Te Y2K scare was the fear that c- puter networks and the systems that are controlled or operated by sofware would fail with the turn of the millennium, since their clocks could lose synchronization by not recognizing a number (instruction) with three zeros. A positive outcome of this scare was the creation of several Computer Emergency Response Teams (CERTs) around the world that now work - operatively to exchange expertise and information, and to coordinate in case major problems should arise in the modern IT environment. Te terrorist attacks of 11 September 2001 raised security concerns to a new level. Te - ternational community responded on at least two fronts; one front being the transfer of reliable information via secure networks and the other being the collection of information about - tential terrorists. As a sign of this new emphasis on security, since 2001, all major academic publishers have started technical journals focused on security, and every major communi- tions conference (for example, Globecom and ICC) has organized workshops and sessions on security issues. In addition, the IEEE has created a technical committee on Communication and Information Security. Te ?rst editor was intimately involved with security for the Athens Olympic Games of 2004.

Artificial Intelligence Paradigms for Smart Cyber-Physical Systems Feb 15 2023

Cyber-physical systems (CPS) have emerged as a unifying name for systems wher cyber parts (i.e., the computing and communication parts) and physical parts are tightly integrated, both in design and during operation. Such systems use computations and communication deeply embedded in and interacting with human physical processes as well as augmenting existing and adding new capabilities. As such, CPS is an integration of computation, networking, and physical processes. Embedded computers and networks monitor and control the physical processes, with feedback loops where physical processes affect computations and vice versa. The economic and societal potential of such systems is vastly greater than what ha been realized, and major investments are being made worldwide to develop the technology. Artificial Intelligence Paradigms for Smart Cyber-Physical Systems focuses on the recent advances in Artificial intelligence-based approaches towards affecting secure cyber-physical systems. This book presents investigations on state of-the-art research issues, applications, and achievements in the field of computational intelligence paradigms for CPS. Covering topics that include autonomous systems, access control, machine learning, and intrusion detection an prevention systems, this book is ideally designed for engineers, industry professionals, practitioners, scientists, managers, students, academicians, and researchers seeking current research on artificial intelligence and cyber-physical

systems.

Malware Analysis and Detection Engineering May 26 2021 Discover how the internals of malware work and how you can analyze and detect it. You will learn not only how to analyze and reverse malware, but also how to classify and categorize it, giving you insight into the intent of the malware. Malware Analysis and Detection Engineering is a one-stop guide to malware analysis that simplifies the topic by teaching you undocumented tricks used by analysts in the industry. You will be able to extend your expertise to analyze and reverse the challenges that malicious software throws at you. The book starts with an introduction to malware analysis and reverse engineering to provide insight on the different types of malware and also the terminology used in the anti-malware industry. You will know how to set up an isolated lab environment to safely execute and analyze malware. You will learn about malware packing, code injection, and process hollowing plus how to analyze, reverse, classify, and categorize malware using static and dynamic tools. You will be able to automate your malware analysis process by exploring detection tools to modify and trace malware programs, including sandboxes, IDS/IPS, anti-virus, and Windows binary instrumentation. The book provides comprehensive content in combination with hands-on exercises to help you dig into the details of malware dissection, giving you the confidence to tackle malware that enters your environment. What You Will Learn Analyze, dissect, reverse engineer, and classify malware Effectively handle malware with custom packers and compilers Unpack complex malware to locate vital malware components and decipher their intent Use various static and dynamic malware analysis tools Leverage the internals of various detection engineering tools to improve your workflow Write Snort rules and learn to use them with Suricata IDS Who This Book Is For Security professionals, malware analysts, SOC analysts, incident responders, detection engineers, reverse engineers, and network security engineers "This book is a beast! If you're looking to master the ever-widening field of malware analysis, look no further. This is the definitive guide for you." Pedram Amini, CTO Inquest; Founder OpenRCE.org and ZeroDayInitiative

Snort Intrusion Detection 2.0 Jul 28 2021 The incredible low maintenance costs of Snort combined with its powerful security features make it one of the fastest growing IDSs within corporate IT departments. Snort 2.0 Intrusion Detection is written by a member of Snort.org. The book provides a valuable insight to the code base of Snort and in-depth tutorials of complex installation, configuration, and troubleshooting scenarios. The primary reader will be an individual who has a working knowledge of the TCP/IP protocol, expertise in some arena of IT

infrastructure, and is inquisitive about what has been attacking their IT network perimeter every 15 seconds. The most up-to-date and comprehensive coverage for Snort 2.0! Expert Advice from the Development Team and Step-by-Step Instructions for Installing, Configuring, and Troubleshooting the Snort 2.0 Intrusion Detection System.

Guide to Intrusion Detection and Prevention Systems (IDPS)May 16 2023 The National Institute of Standards and Technology (NIST) developed this document in furtherance of its statutory responsibilities under the Federal Information Security Management Act (FISMA) of 2002, Public Law 107-347. This publication seeks to assist organizations inunderstanding intrusion detection system (IDS) and intrusion prevention system (IPS) technologies and in designing, implementing, configuring, securing, monitoring, and maintaining intrusion detection and prevention systems (IDPS). It provides practical, real-world guidance for each of four classes of IDPS: network-based, wireless, network behavior analysis software, and host-based. The publication also provides an overview ofcomplementary technologies that can detect intrusions, such as security information and event management software. It focuses on enterprise IDPS, but most of the information in the publication is also applicable tostandalone and small-scale IDPS deployments.

Linux FirewallsFeb 20 2021 System administrators need to stay ahead of new security vulnerabilities that leave their networks exposed every day. A firewall and an intrusion detection systems (IDS) are two important weapons in that fight, enabling you to proactively deny access and monitor network traffic for signs of an attack. Linux Firewalls discusses the technical details of the iptables firewall and the Netfilter framework that are built into the Linux kernel, and it explains how they provide strong filtering, Network Address Translation (NAT), state tracking, and application layer inspection capabilities that rival many commercial tools. You'll learn how to deploy iptables as an IDS with psad and fwsnort and how to build a strong, passive authentication layer around iptables with fwknop. Concrete examples illustrate concepts such as firewall log analysis and policies, passive network authentication and authorization, exploit packet traces, Snort ruleset emulation, and more with coverage of these topics: –Passive network authentication and OS fingerprinting –iptables log analysis and policies –Application layer attack detection with the iptables string match extension –Building an iptables ruleset that emulates a Snort ruleset –Port knocking vs. Single Packet Authorization (SPA) –Tools for visualizing iptables logs Perl and C code snippets offer practical examples that will help you to maximize your deployment of Linux firewalls. If you're responsible for keeping a network secure,

you'll find Linux Firewalls invaluable in your attempt to understand attacks and use iptables—along with psad and fwsnort—to detect and even prevent compromis

CCNA Security 210-260 Official Cert Guide Sep 10 2022 Trust the best selling Official Cert Guide series from Cisco Press to help you learn, prepare, and practice for exam success. They are built with the objective of providing assessment, review, and practice to help ensure you are fully prepared for your certification exam. --Master Cisco CCNA Security 210-260 Official Cert Guide exam topics --Assess your knowledge with chapter-opening quizzes --Review key concepts with exam preparation tasks This is the eBook edition of the CCNA Security 210-260 Official Cert Guide. This eBook does not include the companion CD-ROM with practice exam that comes with the print edition. CCNA Security 210-260 Official Cert Guide presents you with an organized test-preparation routine through the use of proven series elements and techniques. “Do I Know This Already?” quizzes open each chapter and enable you to decide how much time you need to spend on each section. Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. CCNA Security 210-260 Official Cert Guide focuses specifically on the objectives for the Cisco CCNA Security exam. Networking Security experts Omar Santos and John Stuppi share preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hand on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of exam topics. Well regarded for its level of detail, assessment features, comprehensive design scenarios, and challenging review questions and exercises, this official study guide helps you master the concepts an techniques that will enable you to succeed on the exam the first time. The official study guide helps you master all the topics on the CCNA Security exam, including --Networking security concepts --Common security threats --Implementing AAA using IOS and ISE --Bring Your Own Device (BYOD) --Fundamentals of VPN technology and cryptography --Fundamentals of IP security --Implementing IPsec site-to-site VPNs --Implementing SSL remote-access VPNs using Cisco ASA --Securing Layer 2 technologies --Network Foundation Protection (NFP) --Securing the management plane on Cisco IOS devices --Securing the data plane --Securing routing protocols and the control plane --Understanding firewall fundamentals --Implementing Cisco IOS zone-based firewalls --Configuring basic firewall policies on Cisco ASA --Cisco IPS fundamentals --Mitigation technologies for e-mail- and web-based threats --Mitigation technologies for endpoint threats CCNA Security 210-260 Official Cert Guide is part of a recommended learning

path from Cisco that includes simulation and hands-on training from authorized Cisco Learning Partners and self-study products from Cisco Press. To find out more about instructor-led training, e-learning, and hands-on instruction offered by authorized Cisco Learning Partners worldwide, please visit http://www.cisco.com/web/learning/index.html.

Mastering ProxmoxAug 29 2021 Discover real world scenarios for Proxmox troubleshooting and become an expert cloud builder About This Book Formulate Proxmox-based solutions and set up virtual machines of any size while gaining expertise even on the most complex multi-cluster setups Master the skills needed to analyze, monitor, and troubleshoot real-world virtual environments This is the most up-to-date title on mastering Proxmox, with examples based on the new Linux Kernel 4.10.15 and Debian Stretch (9.x) Who This Book Is For This book is for Linux and system administrators and professionals working in IT teams who would like to design and implement an enterprise-quality virtualized environment using Proxmox. Some knowledge of networking and virtualization concepts is assumed. What You Will Learn Install basic Proxmox VE nodes and get to know the Proxmox GUI Get to know Proxmox's internal structure and mechanics Create and manage KVM or LXC-based virtual machines Understand advanced virtual networks Configure high availability Proxmox nodes Integrate Ceph big data storage with the Proxmox hypervisor Plan a large virtual environment for cloud-based services Discover real-world scenarios for Proxmox troubleshooting In Detail Proxmox is an open source server virtualization solution that has enterprise-class features for managing virtual machines, for storage, and to virtualize both Linux and Windows application workloads. You'll begin with a refresher on the advanced installation features and the Proxmox GUI to familiarize yourself with the Proxmox VE hypervisor. Then, you'll move on to explore Proxmox under the hood, focusing on storage systems, such as Ceph, used with Proxmox. Moving on, you'll learn to manage KVM virtual machines, deploy Linux containers fast, and see how networking is handled in Proxmox. You'll also learn how to protect a cluster or a VM with a firewall and explore the new high availability features introduced in Proxmox VE 5.0. Next, you'll dive deeper into the backup/restore strategy and see how to properly update and upgrade a Proxmox node. Later, you'll learn how to monitor a Proxmox cluster and all of its components using Zabbix. Finally, you'll discover how to recover Promox from disaster strikes through some real-world examples. By the end of the book, you'll be an expert at making Proxmox work in production environments with minimal downtime. Style and approach This book walks you through every aspect of virtualization using Proxmox using a practical,

scenario-based approach that features best practices and all the weaponry you need to succeed when building virtual environments with Proxmox 5.0.

Design of an Intrusion Detection System (IDS) and an Intrusion Prevention System (IPS) for the EIU Cybersecurity Laboratory Apr 24 2021

Network Intrusion Detection May 06 2022 This book is a training aid and reference for intrusion detection analysts. While the authors refer to research and theory, they focus their attention on providing practical information. New to this edition is coverage of packet dissection, IP datagram fields, forensics, and snort filters.

Guide to Intrusion Detection and Prevention Systems (IDPS) Nov 12 2022 Intrusion detection is the process of monitoring the events occurring in a computer system or network & analyzing them for signs of possible incidents, which are viol. or imminent threats of viol. of computer security policies, acceptable use policies, or standard security practices. Intrusion prevention is the process of performing intrusion detection to stop detected possible incidents. Intrusion detection & prevention systems (IDPS) record info. related to observed events, notify security admin. of important events, & produce reports. This pub. provides recommend. for designing, implementing, configuring, securing, monitoring, & maintaining IDPS¿s. Discusses 4 types of IDPS¿s: Network-Based; Wireless; Network Behavio Analysis; & Host-Based.

Practical Intrusion Analysis Dec 13 2022 “Practical Intrusion Analysis provides a solid fundamental overview of the art and science of intrusion analysis.” –Nate Miller, Cofounder, Stratum Security The Only Definitive Guide to New State-of-the-Art Techniques in Intrusion Detection and Prevention Recently, powerful innovations in intrusion detection and prevention have evolved in response to emerging threats and changing business environments. However, security practitioners have found little reliable, usable information about these new IDS/IPS technologies. In Practical Intrusion Analysis, one of the field’s leading experts brings together these innovations for the first time and demonstrates how they can be used to analyze attacks, mitigate damage, and track attackers. Ryan Trost reviews the fundamental techniques and business drivers of intrusion detection and prevention by analyzing today’s new vulnerabilities and attack vectors. Next, he presents complete explanations of powerful new IDS/IPS methodologies based on Network Behavioral Analysis (NBA), data visualization, geospatial analysis, and more. Writing for security practitioners and managers at all experience levels, Trost introduces new solutions for virtually every environment. Coverage includes Assessing the strengths and limitations of mainstream monitoring tools and IDS

technologies Using Attack Graphs to map paths of network vulnerability and becoming more proactive about preventing intrusions Analyzing network behavior to immediately detect polymorphic worms, zero-day exploits, and botnet DoS attacks Understanding the theory, advantages, and disadvantages of the latest Wel Application Firewalls Implementing IDS/IPS systems that protect wireless data traffic Enhancing your intrusion detection efforts by converging with physical security defenses Identifying attackers' "geographical fingerprints" and using that information to respond more effectively Visualizing data traffic to identify suspicious patterns more quickly Revisiting intrusion detection ROI in light of new threats, compliance risks, and technical alternatives Includes contributions from these leading network security experts: Jeff Forristal, a.k.a. Rain Forest Puppy, senior security professional and creator of libwhisker Seth Fogie, CEO, Airscanner USA; leading-edge mobile security researcher; coauthor of Security Warrior Dr. Sushil Jajodia, Director, Center for Secure Information Systems; founding Editor-in-Chief, Journal of Computer Security Dr. Steven Noel, Associate Director and Senior Research Scientist, Center for Secure Information Systems, George Mason University Alex Kirk, Member, Sourcefire Vulnerability Research Team

CCNA Security 210-260 Certification Guide Jun 07 2022 Become a Cisco security specialist by developing your skills in network security and explore advanced security technologies Key Features Enhance your skills in network security by learning about Cisco's device configuration and installation Unlock the practical aspects of CCNA security to secure your devices Explore tips and tricks to help you achieve the CCNA Security 210-260 Certification Book Description With CCNA Security certification, a network professional can demonstrate the skills required to develop security infrastructure, recognize threats and vulnerabilities to networks, and mitigate security threats. The CCNA Security 210-260 Certification Guide will help you grasp the fundamentals of network security and prepare you for the Cisco CCNA Security Certification exam. You'll begin by getting a grip on the fundamentals of network security and exploring the different tools available. Then, you'll see how to securely manage your network devices by implementing the AAA framework and configuring different management plane protocols. Next, you'll learn about security on the data link layer by implementing various security toolkits. You'll be introduced to various firewall technologies and will understand how to configure a zone-based firewall on a Cisco IOS device. You'll configure a site-to-site VPN on a Cisco device and get familiar with different types of VPNs and configurations. Finally, you'll delve into the concepts of IPS and endpoint security to secure your organization's network infrastructure. By the end of this book,

you'll be ready to take the CCNA Security Exam (210-260). What you will learn Grasp the fundamentals of network security Configure routing protocols to secure network devices Mitigate different styles of security attacks using Cisco devices Explore the different types of firewall technologies Discover the Cisco ASA functionality and gain insights into some advanced ASA configurations Implement IPS on a Cisco device and understand the concept of endpoint security Who this book is for CCNA Security 210-260 Certification Guide can help you become a network security engineer, a cyber security professional, or a security administrator. You should have valid CCENT or CCNA Routing and Switching certification before taking your CCNA Security exam.

Intrusion detection system for Dos/DDoS Attack (IDS/IPS) Mar 04 2022

Cisco Firepower Threat Defense (FTD) Apr 05 2022 The authoritative visual guide to Cisco Firepower Threat Defense (FTD) This is the definitive guide to best practices and advanced troubleshooting techniques for the Cisco flagship Firepower Threat Defense (FTD) system running on Cisco ASA platforms, Cisco Firepower security appliances, Firepower eXtensible Operating System (FXOS), and VMware virtual appliances. Senior Cisco engineer Nazmul Rajib draws on unsurpassed experience supporting and training Cisco Firepower engineers worldwide, and presenting detailed knowledge of Cisco Firepower deployment, tuning, and troubleshooting. Writing for cybersecurity consultants, service providers, channel partners, and enterprise or government security professionals, he shows how to deploy the Cisco Firepower next-generation security technologies to protect your network from potential cyber threats, and how to use Firepower's robust command-line tools to investigate a wide variety of technical issues. Each consistently organized chapter contains definitions of keywords, operational flowcharts, architectural diagrams, best practices, configuration steps (with detailed screenshots), verification tools, troubleshooting techniques, and FAQs drawn directly from issues raised by Cisco customers at the Global Technical Assistance Center (TAC). Covering key Firepower materials on the CCNA Security, CCNP Security, and CCIE Security exams, this guide also includes end-of-chapter quizzes to help candidates prepare. · Understand the operational architecture of the Cisco Firepower NGFW, NGIPS, and AMP technologies · Deploy FTD on ASA platform and Firepower appliance running FXOS · Configure and troubleshoot Firepower Management Center (FMC) · Plan and deploy FMC and FTD on VMware virtual appliance · Design and implement the Firepower management network on FMC and FTD · Understand and apply Firepower licenses, and register FTD with FMC · Deploy FTD in Routed, Transparent, Inline, Inline Tap,

and Passive Modes · Manage traffic flow with detect-only, block, trust, and bypass operations · Implement rate limiting and analyze quality of service (QoS) · Blacklist suspicious IP addresses via Security Intelligence · Block DNS queries to the malicious domains · Filter URLs based on category, risk, and reputation · Discover a network and implement application visibility and control (AVC) · Control file transfers and block malicious files using advanced malware protection (AMP) · Halt cyber attacks using Snort-based intrusion rule · Masquerade an internal host's original IP address using Network Address Translation (NAT) · Capture traffic and obtain troubleshooting files for advanced analysis · Use command-line tools to identify status, trace packet flows, analyze logs, and debug messages

Wireshark for Security Professionals Dec 21 2020 Master Wireshark to solve real-world security problems If you don't already use Wireshark for a wide range of information security tasks, you will after this book. Mature and powerful, Wireshark is commonly used to find root cause of challenging network issues. This book extends that power to information security professionals, complete with a downloadable, virtual lab environment. Wireshark for Security Professionals covers both offensive and defensive concepts that can be applied to essentially any InfoSec role. Whether into network security, malware analysis, intrusion detection, or penetration testing, this book demonstrates Wireshark through relevant and useful examples. Master Wireshark through both lab scenarios and exercises. Early in the book, a virtual lab environment is provided for the purpose of getting hands-on experience with Wireshark. Wireshark is combined with two popular platforms: Kali, the security-focused Linux distribution, and the Metasploit Framework, the open-source framework for security testing. Lab-based virtual systems generate network traffic for analysis, investigation and demonstration. In addition to following along with the labs you will be challenged with end-of-chapter exercises to expand on covered material. Lastly, this book explores Wireshark with Lua, the light-weight programming language. Lua allows you to extend and customize Wireshark's features for your needs as a security professional. Lua source code is available both in the book and online. Lua code and lab source code are available online through GitHub, which the book also introduces. The book's final two chapters greatly draw on Lua and TShark, the command-line interface of Wireshark. By the end of the book you will gain the following: Master the basics of Wireshark Explore the virtual w4sp-lab environment that mimics a real-world network Gain experience using the Debian-based Kali OS among other systems Understand the technical details behind network attacks Execute exploitation and grasp offensive and defensive activities, exploring them through Wireshark Employ

Lua to extend Wireshark features and create useful scripts To sum up, the book content, labs and online material, coupled with many referenced sources of PCAP traces, together present a dynamic and robust manual for information security professionals seeking to leverage Wireshark.

Intrusion Detection & Prevention Apr 12 2020 This volume covers the most popular intrusion detection tools including Internet Security Systems' Black ICE and RealSecurity, Cisco Systems' Secure IDS and Entercept, Computer Associates eTrust and the open source tool Snort.

Automatic Intrusion Prevention Technique to Improve Network Security Jan 22 2021

Network Intrusion Detection and Prevention Jan 14 2023 Network Intrusion Detection and Prevention: Concepts and Techniques provides detailed and concise information on different types of attacks, theoretical foundation of attack detection approaches, implementation, data collection, evaluation, and intrusion response. Additionally, it provides an overview of some of the commercially/publicly available intrusion detection and response systems. On the topic of intrusion detection system it is impossible to include everything there is to say on all subjects. However, we have tried to cover the most important and common ones. Network Intrusion Detection and Prevention: Concepts and Techniques is designed for researchers and practitioners in industry. This book is suitable for advanced-level students in computer science as a reference book as well.

Snort For Dummies Nov 19 2020 Snort is the world's most widely deployed open source intrusion-detection system, with more than 500,000 downloads-a package that can perform protocol analysis, handle content searching and matching, and detect a variety of attacks and probes Drawing on years of security experience and multiple Snort implementations, the authors guide readers through installation, configuration, and management of Snort in a busy operations environment No experience with intrusion detection systems (IDS) required Shows network administrators how to plan an IDS implementation, identify how Snort fits into a security management environment, deploy Snort on Linux and Windows systems, understand and create Snort detection rules, generate reports with ACID and other tools, and discover the nature and source of attacks in real time CD-ROM includes Snort, ACID, and a variety of management tools

Implementing Cisco IOS Network Security (IINS) Aug 09 2022 Implementing Cisco IOS Network Security (IINS) is a Cisco-authorized, self-paced learning tool for CCNA® Security foundation learning. This book provides you with the knowledge needed to secure Cisco® routers and switches and their associated networks. By

reading this book, you will gain a thorough understanding of how to troubleshoot and monitor network devices to maintain integrity, confidentiality, and availability of data and devices, as well as the technologies that Cisco uses in its security infrastructure. This book focuses on the necessity of a comprehensive security policy and how it affects the posture of the network. You will learn how to perform basic tasks to secure a small branch type office network using Cisco IOS® security features available through the Cisco Router and Security Device Manager (SDM) web-based graphical user interface (GUI) and through the command-line interface (CLI) on Cisco routers and switches. The author also provides, when appropriate, parallels with Cisco ASA appliances. Whether you are preparing for CCNA Security certification or simply want to gain a better understanding of Cisco IOS security fundamentals, you will benefit from the information provided in this book. Implementing Cisco IOS Network Security (IINS) is part of a recommended learning path from Cisco that includes simulation and hands-on training from authorized Cisco Learning Partners and self-study products from Cisco Press. To find out more about instructor-led training, e-learning, and hands-on instruction offered by authorized Cisco Learning Partners worldwide, please visit www.cisco.com/go/authorizedtraining. Develop a comprehensive network security policy to counter threats against information security Configure routers on the network perimeter with Cisco IOS Software security features Configure firewall features including ACLs and Cisco IOS zone-based policy firewalls to perform basic security operations on a network Configure site-to-site VPNs using Cisco IOS features Configure IPS on Cisco network routers Configure LAN devices to control access, resist attacks, shield other network devices and systems, and protect the integrity and confidentiality of network traffic This volume is in the Certification Self-Study Series offered by Cisco Press®. Books in this series provide officially developed self-study solutions to help networking professionals understand technology implementations and prepare for the Cisco Career Certifications examinations.