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Titolo	Small drinking water systems handbook : a guide to "packaged" filtration and disinfection technologies with remote monitoring and control tools / / U.S. Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, Water Supply and Water Resources Division
Pubbl/distr/stampa	[Cincinnati, Ohio] : , : U.S. Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, Water Supply and Water Resources Division, , 2003
Descrizione fisica	1 online resource (iv, 64 pages) : color illustrations
Soggetti	Water-supply, Rural - United States Drinking water - Purification Water-supply, Rural United States
Lingua di pubblicazione	Inglese
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Autore	Raj Pethuru
Titolo	Cloud-native computing : how to design, develop, and secure microservices and event-driven applications / / Pethuru Raj, Skylab Vanga and Akshita Chaudhary
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ISBN	1-119-81479-0 1-119-81477-4
Descrizione fisica	1 online resource (354 pages)
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Soggetti	Application software - Development Cloud computing Application software
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Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- About the Authors -- Preface -- Acknowledgments -- Chapter 1 The Dawning of the Digital Era -- Demystifying the Digitization Paradigm -- Delineating the Digitalization Technologies -- Trendsetting Technologies for the Digital Era -- Why Digitization Is Indispensable -- The Connectivity and Integration Options -- The Promising Digital Intelligence Methods -- The Technological Approaches Toward Smarter Environments -- Briefing the Brewing Idea of Digital Twin -- Envisioning the Digital Universe -- Cloud-Native Applications (CNAs) -- Conclusion -- References -- Chapter 2 The Cloud-Native Computing Paradigm for the Digital Era -- Introduction -- The Onset of the Digital Era -- The Maturity of Software-defined Cloud Environments -- The Hybrid Model of Microservices Architecture (MSA) and Event-driven Architecture (EDA) -- The Aspect of Containerization -- The Emergence of Container Lifecycle Management Platforms -- Tending Toward Cloud-Native Computing -- Demystifying the Cloud-Native Architecture Style -- Distinguishing Cloud-Native Infrastructure -- Cloud-Native Security -- Cloud-Native Computing Advantages --

Conclusion -- References -- Chapter 3 Kubernetes Architecture, Best Practices, and Patterns -- Introduction -- The Emergence of Containerized Applications for IT Portability -- Microservices Architecture (MSA) Applications for IT Agility and Adaptivity -- The Onset of Containerized Cloud Environments -- The Need for Container Orchestration Platform Solutions -- The Significance of Kubernetes for Cloud-Native Systems -- Kubernetes for Edge Cloud Environments -- Kubernetes for Multi-Cloud Implementations -- Delineating the Kubernetes' Master-Slave Architecture -- The Special Features of the Kubernetes Platform -- Best Practices for Efficient and Effective Kubernetes -- Kubernetes Patterns.
Conclusion -- References -- Chapter 4 The Observability, Chaos Engineering, and Remediation for Cloud-Native Reliability -- Introduction -- The Emergence of Cloud-Native Observability -- The Key Motivations for Cloud-Native Applications -- Cloud-Native Applications: The Realization Technologies -- DevOps for Cloud-Native Applications (CNAs) -- Container Orchestration Platforms -- The Cloud-Native Application Challenges [1, 2] -- Cloud-Native Resiliency -- Cloud-Native Chaos Engineering -- Cloud-Native Observability [3-5] -- Cloud-Native Observability: The Benefits -- Cloud-Native Observability for Chaos Engineering -- AIOps-Enabled Cloud-Native Observability -- Building System Resilience Through AIOps -- Cloud-Native Remediation -- Conclusion -- References -- Chapter 5 Creating Kubernetes Clusters on Private Cloud (VMware vSphere) -- Introduction -- Purpose -- Scope -- Deployment Pre-requirements -- Prerequisites -- vCenter Requirements -- Cluster Resources -- Required IP Addresses -- DNS Records -- Create Local Linux Installer VM on VMware vSphere -- Generating an SSH Private Key and Adding it to the Agent -- Create DHCP Server -- Download OpenShift Installation for vSphere -- Procedure -- Adding vCenter Root CA Certificates to your Installer VM -- Deploying the OCP Cluster on VMware vSphere -- Installing the CLI on Linux -- Uninstall OpenShift Cluster -- Considerations When you Delete OpenShift for VMware (https://cloud.ibm.com/docs/vmwaresolutions) -- Conclusion -- Further Reading -- Chapter 6 Creating Kubernetes Clusters on Public Cloud (Microsoft Azure) -- Introduction -- Prerequisites -- Configuring a Public DNS Zone in Azure -- DNS Creation -- Prerequisites -- Create a DNS Zone -- Required Azure Roles -- Creating a Service Principal -- Azure CLI Setup -- Manually Create IAM -- Start Installation of OCP -- Uninstall Cluster -- Conclusion.
Further Reading -- Chapter 7 Design, Development, and Deployment of Event-Driven Microservices Practically -- Introduction -- Technology Stack to Build Microservices -- Express Framework -- Steps to Set Up Your Project -- Blog Post Microservice -- Comments Microservice -- Implementation of Event-Driven Model -- Event Bus -- Deployment Strategies -- Conclusion -- Chapter 8 Serverless Computing for the Cloud-Native Era -- Introduction -- The Key Motivations for Serverless Computing [1, 2] -- Briefing Serverless Computing -- The Serverless Implications -- The Evolution of Serverless Computing [3, 4] -- Serverless Application Patterns -- Containers as the Function Runtime -- Serverless Computing Components [5, 6] -- Advantages of Using a Serverless Database -- Disadvantages of Using Serverless Databases -- Top Benefits of Serverless Computing -- Overcoming Serverless Obstacles -- The Future of Serverless Computing -- Conclusion -- Appendix -- Knative for Serverless Computing -- References -- Chapter 9 Instaling Knative on a Kubernetes Cluster -- Introduction -- Knative Serving Resources -- Further Reading -- Chapter 10 Delineating Cloud-Native Edge Computing -- Introduction -- Briefing

Cloud-Native Computing -- Technical and Business Cases for Cloud-Native Computing [3, 4] -- The Emergence of Edge Computing -- Cloud-Native Technologies for Edge Computing -- Benefits of Bringing the Cloud-Native Principles to the Edge -- The Deployment Scenarios at the Edge -- Kubernetes Deployment Options for Edge Computing -- Cloud-Native at the Edge: The Use Cases -- Navigating Heterogeneous Environments at the Edge -- Monitoring Kubernetes-Enabled Edge Environments -- Edge Analytics for Real-Time Video Surveillance -- Describing Edge AI -- Conclusion -- References -- Chapter 11 Setting up a Kubernetes Cluster using Azure Kubernetes Service -- Introduction.
Benefits of Azure Kubernetes Service -- Purpose -- Scope -- An Introduction to Azure Kubernetes Service -- Features of Azure Kubernetes Services -- Azure Kubernetes Service Use Cases -- Common Uses for Azure Kubernetes Service -- High-Level Architecture -- Architecture Design -- Deployment Pre-Requisites -- Conclusion -- Further Reading -- Chapter 12 Reliable Cloud-Native Applications through Service Mesh -- Introduction -- Delineating the Containerization Paradigm -- Demystifying Microservices Architecture -- Decoding the Growing Role of Kubernetes for the Container Era -- Describing the Service Mesh Concept [1-3] -- Demystifying Service Mesh -- The Service Mesh Contributions -- The Leading Service Mesh Solutions -- Why Service Mesh is Paramount? -- Service Mesh Architectures -- Monitoring the Service Mesh -- Service Mesh Deployment Models -- Conclusion -- Appendix -- Deploying the Red Hat OpenShift Service Mesh Control Plane -- References -- Chapter 13 Cloud-Native Computing: The Security Challenges and the Solution Approaches -- Introduction to Cloud Capabilities -- Delineating the Cloud-Native Paradigm -- Why Cloud-Native Computing -- About Cloud-Native Applications -- Beginning of Cloud-Native Application Security -- Cloud-Native Security Challenges -- Capabilities of Cloud-Native Security Solutions -- Cloud-Native Application Security Procedures -- Securing Cloud-Native Applications -- Pillars of Cloud-Native Security -- Cloud-Native Security: Best Practices -- Kubernetes Security Best Practices -- Container Security Best Practices -- Cloud-Native Security Best Practices -- The Emergence of Cloud-Native Security Products and Platforms -- Key Properties of Cloud-Native Security Platforms -- Cloud Workload Protection Platforms -- Kubernetes Security Products -- AIOps for Cloud-Native Security -- Conclusion -- Reference.
Chapter 14 Microservices Security: The Concerns and the Solution Approaches -- Microservice Security Challenges and Concerns -- Best Practices to Secure Microservices -- How to Implement Fundamental Authentication and Authorization Strategies -- Dive Deeper into API Gateway -- APACHE APISIX -- Configuring APISIX -- Conclusion -- Further Reading -- Chapter 15 Setting Up Apache Kafka Clusters in a Cloud Environment and Secure Monitoring -- Introduction -- Introspecting Kafka -- Kafka Component Overview -- Guide to Set Up a Kafka Cluster -- Prerequisites -- Steps to Install -- Step 1: Setup virtual machines for Kafka -- Step 2: Configure Zookeeper and Kafka on both the machines -- zookeeper.service -- kafka.service -- Step 3: Test Zookeeper and Kafka installation -- Kafka Command Line Features -- Set Up Your Monitoring Tools for Your Cluster: Prometheus and Grafana -- Fetch Metrics Using Prometheus -- Install JMX Exporter Agent on Kafka broker -- Create Prometheus as a service on the Admin machine -- Visualize using Grafana -- Secure your cluster -- Encryption -- Authentication -- Authorization -- Conclusion -- Further Reading -- Chapter 16 Installing Knative Serving On EKS --