DevOpsSchool
Lets Learn, Share & Practice DevOps

New Relic Advance Training

Curriculum 5 Days

Day - 1

Day 1: Observability & Infrastructure Monitoring

- **Observability Fundamentals**
  - Introduction to Observability: Definitions and Importance
  - The Three Pillars of Observability: Metrics, Logs, and Traces
  - Difference Between Observability and Monitoring
  - Overview of Observability Tools and Platforms
  - Case Studies: Real-World Observability Implementations
  - Introduction to Metrics: Types, Collection, and Aggregation
  - Tools and Techniques for Metrics Collection and Visualization
  - Fundamentals of Logging: Best Practices and Patterns
  - Introduction to Distributed Tracing and Its Importance
  - Correlating Metrics, Logs, and Traces for In-depth Analysis
  - Developing an Observability Roadmap for Your Organization
  - Correlating Metrics, Logs, and Traces for In-depth Analysis
  - Anomaly Detection and Performance Benchmarking
  - Observability in Cloud-Native and Kubernetes Environments
  - Developing an Observability Roadmap for Your Organization
  - Implementing Observability in DevOps and Agile Environments
  - Observability Data Management and Security Considerations

- # Newrelic: Infrastructure Monitoring & Collecting Metrices
- ## Introduction to New Relic Infrastructure
  - Overview of New Relic Infrastructure features and capabilities.
  - Introduction to the New Relic Infrastructure agent: Installation and configuration basics.
- ## Monitoring Linux and Windows Systems with New Relic
  - Setting up New Relic Infrastructure agents on Linux and Windows.
  - Key metrics and events to monitor for system health and performance.
- ## Web Servers and Database Monitoring
  - Configuring New Relic to monitor Apache and Tomcat servers.
  - Setting up monitoring for MySQL databases: Key metrics and performance indicators.
- ## Container and Orchestration Monitoring
  - Overview of Docker and Kubernetes monitoring in New Relic.
  - Hands-on setup for monitoring Docker containers.
  - Integrating New Relic with Kubernetes for cluster and application monitoring.
- ## AWS Infrastructure Monitoring with New Relic
  - Connecting New Relic to AWS for comprehensive cloud monitoring.
  - Monitoring EC2, RDS, and other key AWS services: Configuration and key metrics.
- ## Advanced Features and Custom Instrumentation
  - Exploring advanced monitoring features in New Relic Infrastructure.
  - Custom metrics, events, and dashboard creation for tailored monitoring solutions.

- **Best Practices for New Relic Infrastructure**
  - Strategies for scalable and efficient monitoring.
  - Best practices for alerting, threshold setting, and incident response.
- **Q&A, Troubleshooting, and Wrap-Up**
  - Open session for questions, troubleshooting tips, and review of key concepts.
  - Discussion on next steps for deeper exploration and mastery of New Relic monitoring.

Day - 2

NewRelic APM

- **Introduction to Advanced New Relic APM Features**
  - Overview of advanced features and capabilities in New Relic APM
  - Understanding the New Relic APM architecture and data flow
- **Deep Dive into APM Agents**
  - Advanced configuration of APM agents
  - Custom instrumentation for detailed monitoring
  - Managing and optimizing agent performance
- **Custom Instrumentation and Advanced Data Collection**
  - Implementing custom instrumentation to monitor specific application functionalities
  - Using New Relic's APIs for custom data reporting and event tracking
- **Application Performance Analysis and Troubleshooting**
  - Analyzing application performance using transaction traces
  - Identifying and diagnosing common performance bottlenecks
  - Utilizing thread profiler and error analytics for deep diagnostics
- **Service Maps and Dependencies**
  - Analyzing application performance using transaction traces
  - Identifying and diagnosing common performance bottlenecks

- **Advanced Querying and Dashboarding**
  - Using NRQL (New Relic Query Language) for advanced data querying
  - Building custom dashboards for comprehensive monitoring views
- **Alerting and Applied Intelligence**
  - Configuring advanced alerting strategies for proactive monitoring
  - Leveraging New Relic Applied Intelligence for anomaly detection and incident response
- **Performance Optimization Techniques**
  - Best practices for application performance tuning using New Relic data
  - Case studies on performance improvements and optimization strategies
- **Integrating New Relic with DevOps and Agile Workflows**
  - Incorporating New Relic into continuous integration and continuous deployment (CI/CD) pipelines
  - Using New Relic to support agile development and operations methodologies
- **Open Discussion and Q&A**
  - Open session for questions, troubleshooting tips, and sharing experiences
  - Discussion on the latest trends and future directions in APM

Day - 3

NewRelic Log Monitoring

- **Advanced Overview of New Relic Log Monitoring**
  - Deep dive into the features and capabilities of New Relic Log Monitoring
  - Understanding log data ingestion, storage, and management at scale
- **Configuring Log Data Sources**
  - Best practices for configuring and optimizing log data sources
  - Advanced setup for logs in context with APM, Infrastructure, and other New Relic products
- **Custom Parsing and Log Data Enrichment**
  - Techniques for custom log parsing to extract meaningful data
  - Enriching log data with additional context for deeper insights
- **Advanced Querying with NRQL**
  - Utilizing New Relic Query Language (NRQL) for complex log data queries
  - Creating powerful queries to uncover hidden issues and trends in log data
- **Creating and Managing Log-based Alerts**
  - Analyzing application performance using transaction traces
  - Identifying and diagnosing common performance bottlenecks
- **Creating and Managing Log-based Alerts**
  - Configuring alerts based on log data patterns and thresholds
  - Best practices for managing alert noise and ensuring alert relevance

- **Integrating Logs with APM and Infrastructure Monitoring**
  - Techniques for correlating log data with APM and Infrastructure metrics for holistic observability
  - Case studies on using integrated data for troubleshooting and root cause analysis
- **Dashboarding and Visualization**
  - Building custom dashboards to visualize log data alongside other observability data
  - Advanced visualization techniques for log data analysis
- **Log Management Strategies and Best Practices**
  - Strategies for efficient log data management and retention policies
  - Best practices for securing log data and ensuring compliance
- **Troubleshooting and Analysis Workflows**
  - Hands-on exercises focusing on troubleshooting common scenarios using log data
  - Analyzing logs to identify performance bottlenecks, errors, and security issues
- **Advanced Use Cases and Integrations**
  - Exploring advanced use cases for log monitoring, including security monitoring and compliance reporting
  - Integrating New Relic Log Monitoring with third-party tools and services
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  - Exploring advanced use cases for log monitoring, including security monitoring and compliance reporting

    Integrating New Relic Log Monitoring with third-party tools and services
- **Discussion and Q&A**
  - Open discussion on challenges, tips, and strategies for effective log monitoring
  - Q&A session to address specific questions and scenarios

Day - 4

NewRelic Synthetic & Browsers & Nework & Security

- **Advanced Synthetic Monitoring**
  - Deep dive into Synthetic Monitoring: Scripted browsers and API tests
  - Writing and managing synthetic scripts for complex workflows
  - Best practices for synthetic monitoring: Scheduling, locations, and maintenance
  - Analyzing synthetic data for performance trends and outage detection
- **Advanced Browser Monitoring**
  - Understanding the full capabilities of New Relic Browser
  - Advanced configuration for real user monitoring (RUM)
  - Utilizing Browser Monitoring for SPA (Single Page Application) frameworks
  - Custom instrumentation in Browser Monitoring for detailed insights
- **Correlation Techniques**
  - Integrating Synthetic and Browser data with APM and Infrastructure monitoring
  - Correlating user experience data with backend application performance
  - Advanced querying with NRQL (New Relic Query Language) to uncover insights across data types
  - Building comprehensive dashboards that combine data from multiple sources
- **Performance Analysis and Optimization**
  - Using Synthetic and Browser monitoring data to identify and diagnose performance bottlenecks
  - Implementing frontend performance optimization strategies
  - Leveraging Browser and Synthetic insights for improving Core Web Vitals

- **Alerting and Anomaly Detection**
  - Configuring advanced alerting strategies for Synthetic and Browser monitoring
  - Setting up NRQL alerts based on custom queries for comprehensive coverage
  - Leveraging New Relic's Applied Intelligence for anomaly detection and proactive issue resolution
- **Practical Exercises and Case Studies**
  - Hands-on labs for creating and managing Synthetic tests and Browser monitoring setups
  - Analyzing real-world scenarios to apply best practices in monitoring and optimization
  - Interactive case studies to explore troubleshooting and performance improvement strategies
- **Integration with DevOps Practices**
  - Embedding Synthetic and Browser monitoring into CI/CD pipelines for automated testing and monitoring
  - Utilizing monitoring insights for agile development and operational decision-makin
- **Introduction to New Relic for Networking Monitoring**
  - Overview of New Relic's capabilities for network monitoring
  - Setting up New Relic for network performance tracking
  - Key metrics and events for network health analysis
- **Advanced Networking Monitoring Techniques**
  - Utilizing New Relic Synthetics for network endpoint testing
  - Analyzing network performance trends and identifying issues
  - Custom alerts for network performance degradation

- **Introduction to Vulnerability Management with New Relic**
  - Overview of New Relic's security monitoring features
  - Integrating New Relic with vulnerability assessment tools
  - Setting up dashboards for vulnerability metrics and insights
- **Managing and Mitigating Vulnerabilities**
  - Prioritizing vulnerabilities using New Relic insights
  - Automating alerts for new vulnerabilities
  - Best practices for ongoing vulnerability management

Day - 5

NewRelic Alerts, Dashboard, Reports, NRQL

- **Advanced Alerting Techniques**
  - Deep dive into New Relic's alerting capabilities
  - Best practices for setting up dynamic and targeted alerts
  - Utilizing NRQL for complex alert conditions
  - Managing and organizing alert policies for scalability and efficiency
- **Mastering Dashboards and Visualization**
  - Advanced dashboard creation: Custom visualizations and widgets
  - Leveraging dashboard functions for real-time monitoring and analysis
  - Tips for effective dashboard organization and management
  - Using dashboards for cross-team collaboration and communication
- **NRQL for Deep Data Insights**
  - Advanced NRQL syntax and functions for complex queries
  - Analyzing time-series data, cohorts, and funnel analysis with NRQL
  - Creating custom NRQL-based charts and adding them to dashboards
  - Performance optimization techniques for NRQL queries
- **Creating and Managing Reports**
  - Generating custom reports for business insights
  - Automating report generation and distribution
  - Integrating New Relic data with external reporting tools
  - Case studies on leveraging reports for decision-making

- **Practical Exercises and Workshops**
  - Hands-on labs for creating advanced alerts and configuring alert conditions with NRQL
  - Interactive sessions for building complex dashboards and visualizations
  - Workshops on writing and optimizing NRQL queries for specific use cases
  - Real-world scenarios for generating and interpreting reports
- **Alerts and Applied Intelligence**
  - Leveraging New Relic's Applied Intelligence for automatic anomaly detection and incident correlation
  - Setting up and customizing AIOps features for smarter alerting
- **Integration and Automation**
  - Automating alerting and reporting processes using APIs
  - Integrating New Relic alerts and data into DevOps and ITSM tools