Dynatrace Day 3: AI, Database, Synthetic, Cloud & Dashboards – Detailed Notes

# 17. Database Monitoring

Dynatrace provides deep visibility into database performance using OneAgent instrumentation. This allows for real-time observation of database calls as part of end-to-end transaction tracing.  
  
- DB Visibility via OneAgent:  
 - OneAgent detects all database calls automatically, without requiring code changes.  
 - Supported for various technologies including Oracle, MySQL, PostgreSQL, SQL Server, MongoDB, etc.  
  
- Top Queries & Slow Transactions:  
 - Identify top-consuming queries by response time and frequency.  
 - Spot long-running queries and their impact on services.  
 - Useful for root cause analysis of slow user transactions.  
  
- DB Service Overview and Tuning:  
 - DB Service screen shows query throughput, failures, and latency.  
 - PurePath traces provide context of query origin (user → service → DB).  
 - Highlight connection pool bottlenecks, lock contention, and inefficient query patterns.

# 18. Synthetic Monitoring

Synthetic monitoring simulates user actions to validate availability and performance in real time.  
  
- HTTP and Browser Monitors:  
 - HTTP monitors test REST APIs, endpoints, status codes, and performance.  
 - Browser monitors simulate full browser interactions, user journeys, and JavaScript rendering.  
  
- Setting Up Tests and Locations:  
 - Choose from 70+ public locations or deploy private ActiveGates for internal URLs.  
 - Define frequency, timeout, retries, and validations.  
 - Use clickpaths to mimic multi-step business flows (login, search, checkout).  
  
- Use Cases:  
 - SLA and uptime validation.  
 - Performance benchmarking.  
 - Alerting for broken flows or unavailability.

# 19. URL Monitoring via Synthetic

Dynatrace enables precise monitoring of specific endpoints using synthetic tools.  
  
- Specific Endpoints/Transaction Checks:  
 - Track health of login APIs, payment endpoints, database-backed calls.  
 - Enable service-level endpoint monitoring without real traffic.  
  
- Validations and Error Reporting:  
 - Status code match (200 OK, 404, etc.).  
 - Text match or JSON field validation in response.  
 - Capture full error context including screenshots and request/response headers.

# 20. DAVIS AI – Foundation

DAVIS (Dynatrace AI Causation Engine) automates root cause analysis.  
  
- AI Engine Overview:  
 - Consumes logs, metrics, events, traces, and topology.  
 - Identifies patterns and anomalies without thresholds.  
  
- Problem Cards and Event Correlation:  
 - Problem cards unify related events (CPU spike + thread lock + failed request).  
 - Automatically detect cause and scope (e.g., service, process, host).  
  
- Root Cause Analysis Automation:  
 - Zero-configuration AI.  
 - Integrates context (dependency maps, code-level insights).  
 - Alerts are focused, preventing alert fatigue.

# 21. DAVIS AI – Advanced Use

Advanced use of DAVIS allows proactive and customizable alerting.  
  
- Davis Assistant (Chat/Voice Interface):  
 - Ask in Slack/MS Teams: "Why is checkout slow?"  
 - Voice integration possible with Alexa/Google Assistant.  
  
- Custom Event Rules & Thresholds:  
 - Set dynamic/static thresholds on any metric.  
 - Combine with management zones and tags.  
  
- Anomaly Detection Tuning:  
 - Adjust sensitivity per metric, service, or host.  
 - Suppress alerts during deployments or maintenance windows.

# 22. Dashboards

Dashboards provide rich visualization of observability data for different audiences.  
  
- Creation and Tiles:  
 - Tile types include: metrics, problems, heatmaps, markdown, USQL, alerts.  
 - Drag-and-drop UI for quick layout creation.  
  
- Custom Charts and Filters:  
 - Filter by host group, environment, tag, service, application.  
 - Show multiple metrics over time, by scope.  
  
- Dashboards for Stakeholders:  
 - Dev: Performance and error rates.  
 - Ops: Host health, throughput, anomalies.  
 - Management: SLAs, KPIs, business impact.

# 23. Cloud Monitoring

Dynatrace integrates with AWS, Azure, and GCP.  
  
- Azure Integrations:  
 - Use Azure APIs to ingest metrics (VMs, Functions, App Service, AKS).  
 - Resource discovery via ARM metadata.  
  
- Cloud Service Visibility:  
 - Cross-cloud views: EC2, AKS, GKE, App Engine.  
 - Tags and management zones unify monitoring.  
  
- Tag-Based Discovery and Monitoring:  
 - Use Azure/AWS tags (e.g., Environment=Prod).  
 - Automate dashboard creation, alert rules, access control.

# 24. Licensing & Consumption

Understanding usage is key to cost control in Dynatrace.  
  
- Licensing Models:  
 - Davis Data Units (DDUs) – for metrics, logs, traces.  
 - Host Units (HU) – based on host size (RAM/CPU).  
 - DEM Units – Real User Monitoring (RUM), Synthetic, Mobile.  
  
- Strategies & Cost Control:  
 - Disable unused services.  
 - Set retention per log/metric type.  
 - Avoid duplicate ingestion (e.g., AWS CW metrics + OneAgent).

# 25. Deployment Status Monitoring

Track and troubleshoot deployments of OneAgents and ActiveGates.  
  
- Tracking Deployment:  
 - See agent status (connected, monitored, unmonitored).  
 - Check ActiveGate versions, health, connection latency.  
  
- Troubleshooting:  
 - Agent logs at /var/log/dynatrace/oneagent/.  
 - Firewall/proxy checks for endpoint connectivity.  
 - Review deployment logs, installation tokens, expired certificates.