Agenda

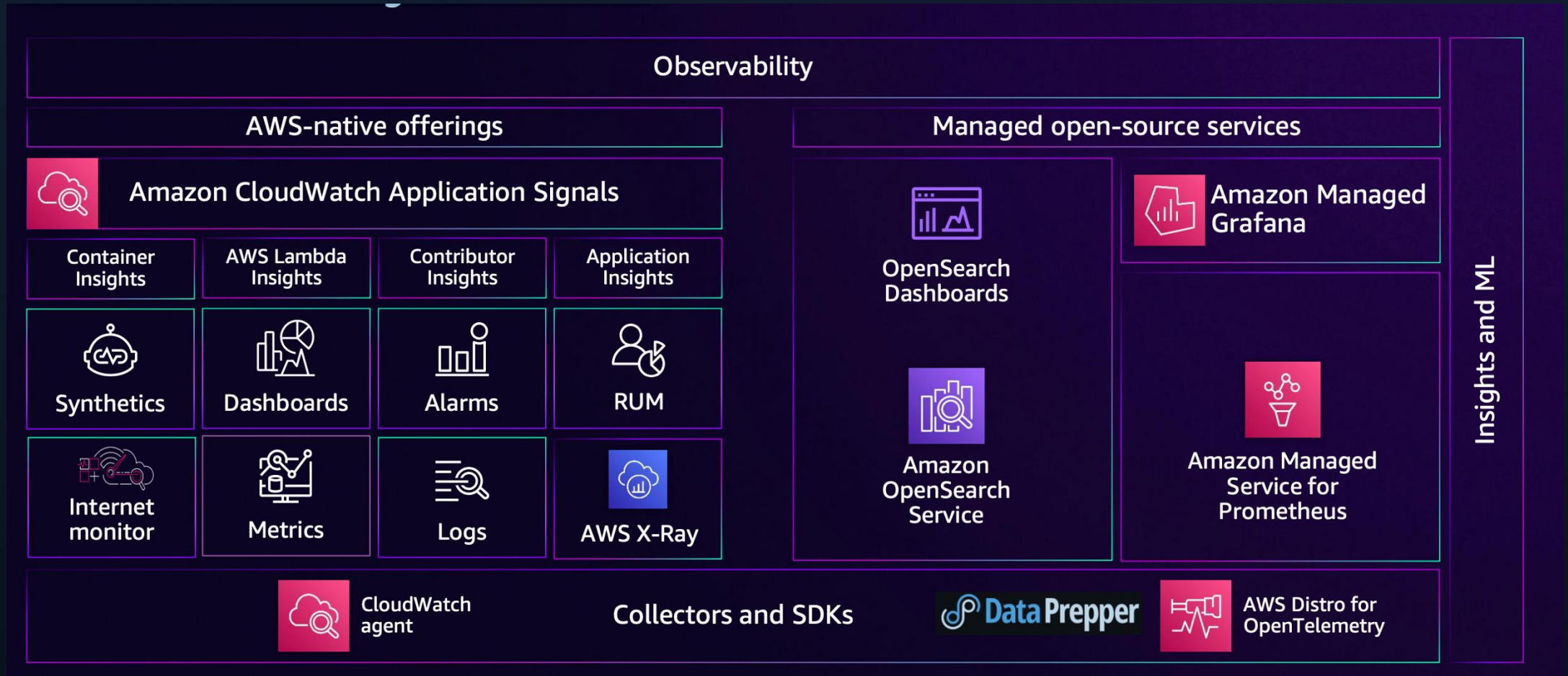# Quick Recap TGW, Direct Connect, and VPN
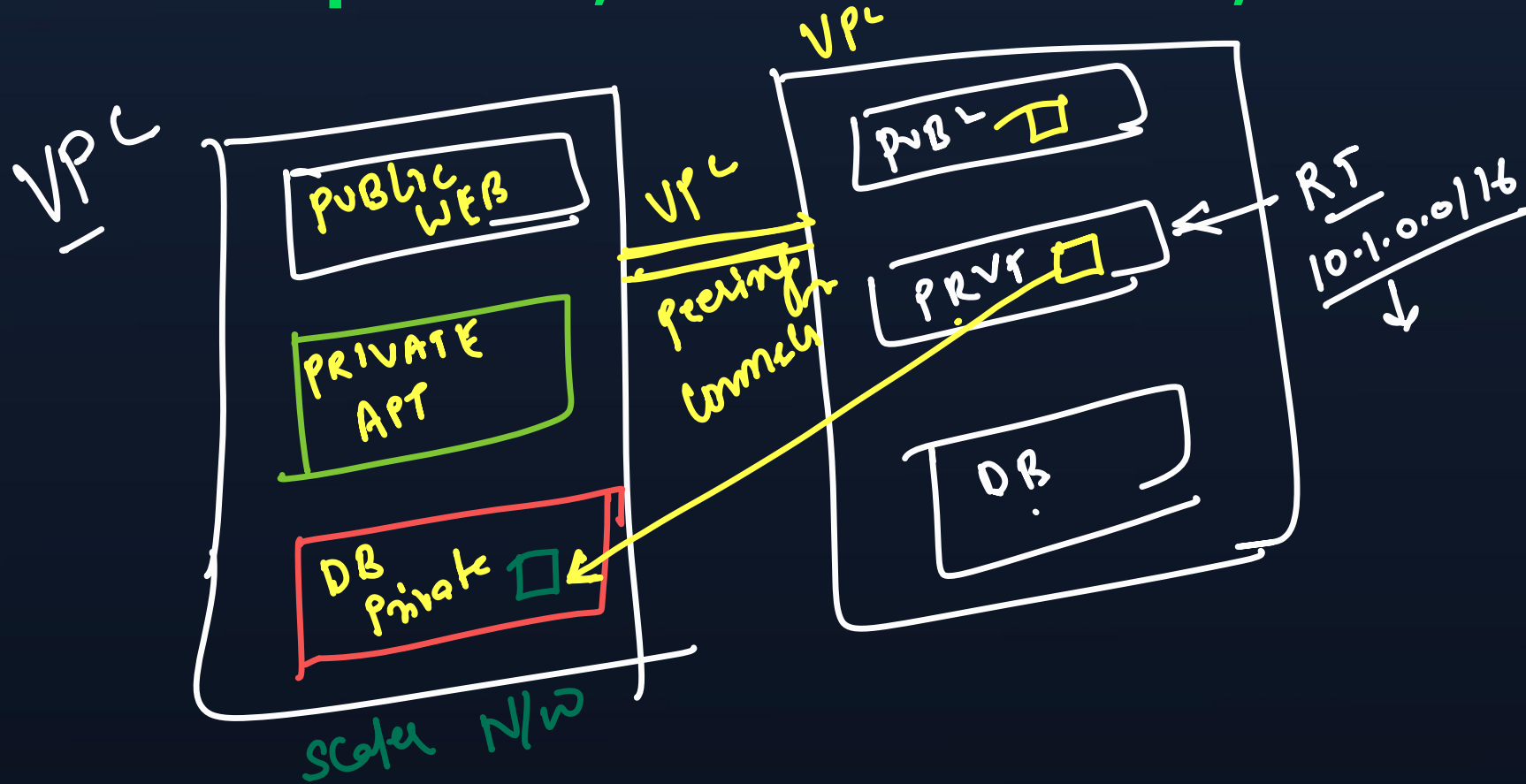
TGW Demo

What is observability?

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Observability at AWS

What is Amazon Cloudwatch

What is CloudWatch?

Amazon CloudWatch is a monitoring and observability service that provides data and actionable insights for AWS, hybrid, and on-premises applications and infrastructure resources. You can collect and track metrics, collect and monitor log files, and set alarms.

✓ Key Components

- CloudWatch Metrics
- CloudWatch Alarms
- CloudWatch Logs
- CloudWatch Events/EventBridge
- CloudWatch Dashboards

⚙ Core Capabilities

- Collect metrics and logs
- Monitor applications
- Set alarms and create automated actions
- Visualize logs and metrics
- Troubleshoot issues

- ⓘ CloudWatch automatically collects metrics from many AWS services
- ⓘ Standard metrics are collected at 5-minute intervals by default
- ⓘ Detailed monitoring provides 1-minute metrics (additional charges apply)
- ⓘ Custom metrics can be published at minimum 1-minute intervals

Metrics in Cloudwatch

CloudWatch Metrics

CloudWatch Metrics

Time-series data points that represent the behavior of your resources and applications.

Understanding CloudWatch Metrics

Metrics are data about the performance of your systems. By default, many services provide free metrics for resources. You can also publish your own custom metrics.

✅ Default Metrics

- EC2: CPU Utilization, Network, Disk I/O
- S3: Bucket Size, Number of Objects
- RDS: Database Connections, CPU
- Lambda: Invocations, Duration, Errors
- ELB: Request Count, Latency

⚙ Metric Properties

- Namespace (e.g., AWS/EC2)
- Metric Name (e.g., CPUUtilization)
- Dimensions (e.g., InstanceId)
- Resolution (Standard or High)
- Statistics (Average, Min, Max, Sum)

- ⓘ Metrics exist only in the region in which they are created
- ⓘ Metrics cannot be deleted but expire after 15 months if no new data is published
- ⓘ Up to 10 dimensions can be assigned to a metric

What is Cloudwatch Logs

CloudWatch Logs

CloudWatch Logs

Centralize logs from all your systems, applications, and AWS services.

Log Management with CloudWatch

CloudWatch Logs enables you to centralize the logs from all of your systems, applications, and AWS services in a single, highly scalable service.

✓ Key Concepts

- Log Groups - Collection of log streams
- Log Streams - Sequence of log events
- Log Events - Records of activity
- Metric Filters - Extract metrics from logs
- Subscription Filters - Real-time processing

⚙ Log Analysis Tools

- CloudWatch Logs Insights - Query logs
- Contributor Insights - Top contributors
- Live Tail - Real-time log viewing
- Export to S3 - Long-term storage
- Integration with Athena - SQL queries

- ⓘ Log data can be retained for as long as needed with configurable retention
- ⓘ CloudWatch Logs Insights uses purpose-built query language for log analysis
- ⓘ Logs can be encrypted using KMS for enhanced security

CloudWatch agent sample architecture