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# Understanding Your Data

> **Series:** ONBRD | **Notebook:** 7 of 10 | **Created:** December 2025

## Exploring What Dynatrace Discovered

With OneAgent deployed, Dynatrace has automatically discovered your
infrastructure, processes, and services. This notebook helps you understand
what's been found and how to explore your data.

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## Prerequisites

- OneAgent deployed on at least one host (ONBRD-05)
- Environment organized with tags (ONBRD-06)
- 15-30 minutes elapsed since deployment for full discovery
- DQL query permissions

## 1. The Dynatrace Data Model

Dynatrace organizes data into a unified model:

![Grail Data Model]
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V4dD4KPC9zdmc+Cg==)

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### Key Concepts

| Concept | Description | Example |
|---------|-------------|--------|
| **Entity** | Any monitored component | Host, Service, Process |
| **Metric** | Numeric measurement over time | CPU usage, response time |
| **Log** | Textual event record | Application log entry |
| **Span** | Single operation in a trace | HTTP request, DB query |
| **Event** | Point-in-time occurrence | Deployment, config change |
| **Problem** | DAVIS-detected issue | Service slowdown |

## 2. Entities and Relationships

Dynatrace automatically discovers and relates entities:

![Entity Hierarchy]
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ciIHZpZXdCb3g9IjAgMCA1MDAgMzQwIj4KICA8ZGVmcz4KICAgIDxsaW5lYXJHcmFkaWVudCBpZD0
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iIj5rOHNfY2x1c3RlcjwvdGV4dD4KPC9zdmc+Cg==)


### Common Entity Types

| Entity Type | DQL Name | What It Represents |
|-------------|----------|--------------------|
| **Host** | `dt.entity.host` | Physical or virtual machine |
| **Process Group** | `dt.entity.process_group` | Set of identical processes
|
| **Service** | `dt.entity.service` | Logical backend service |
| **Application** | `dt.entity.application` | Frontend application |
| **K8s Cluster** | `dt.entity.kubernetes_cluster` | Kubernetes cluster |
| **K8s Namespace** | `dt.entity.cloud_application_namespace` | K8s namespace
|
| **K8s Workload** | `dt.entity.cloud_application` | Deployment, DaemonSet,
etc. |

## 3. Exploring Topology

The topology view shows the visual representation of your environment.

**Location:** Infrastructure app → Hosts → Select any host → Dependencies

### Understanding Topology Layers

| Layer | Shows | Use Case |
|-------|-------|----------|
| **Applications** | Frontend apps, user sessions | User experience |
| **Services** | Backend services, APIs | Service dependencies |
| **Processes** | Running processes | Process mapping |
| **Hosts** | Servers, VMs, containers | Infrastructure view |

### Reading Topology Views
```

- **Nodes** = Entities
- **Lines** = Relationships (calls, runs on)
- **Line thickness** = Traffic volume
- **Colors** = Health status (green/yellow/red)

Navigation Tips

- Click any entity to see details
- Use filters to focus on specific services
- Hover over connections to see traffic metrics
- Use the Services app for service-to-service dependencies

4. Data Types in Grail

Grail stores different data types with different retention and query patterns.

Data Type	DQL Fetch	Typical Use
Logs	`fetch logs`	Troubleshooting, audit
Spans	`fetch spans`	Distributed tracing
Metrics	`timeseries`	Performance monitoring
Events	`fetch events`	Change tracking
Problems	`fetch dt.davis.problems`	Incident management
Entities	`fetch dt.entity.*`	Topology queries
Bizevents	`fetch bizevents`	Business transactions

Data Retention

Default retention varies by data type and license:

Data Type	Typical Retention
Metrics	5 years (aggregated)
Logs	35 days (configurable)
Spans	35 days
Events	35 days
Entity state	Real-time

5. Discovery Queries

Use these queries to understand what Dynatrace has discovered in your environment.

Infrastructure Discovery

```dql
```

```
// Count all entity types in your environment
fetch dt.entity.host | summarize hosts = count()
// Run separately for other types:
// fetch dt.entity.service | summarize services = count()
// fetch dt.entity.process_group | summarize process_groups = count()
```

```dql
// List all hosts with key details
fetch dt.entity.host
| fields entity.name,
         state,
         monitoringMode,
         osType,
         cpuCores,
         physicalMemory
| sort entity.name
| limit 100
```

```dql
// Group hosts by OS type
fetch dt.entity.host
| summarize count = count(), by: {osType}
| sort count desc
```

Service Discovery

```dql
// List all discovered services
fetch dt.entity.service
| fields entity.name, serviceType
| sort entity.name
| limit 100
```

```dql
// Group services by type
fetch dt.entity.service
| summarize count = count(), by: {serviceType}
| sort count desc
```

```dql
// Find services with recent traffic (spans)
fetch spans, from: now() - 1h
| filter span.kind == "server"
```

```
| summarize request_count = count(), by: {service.name}
| sort request_count desc
| limit 20
```

Process Discovery

```dql
// List process groups
fetch dt.entity.process_group
| fields entity.name
| sort entity.name
| limit 50
```

```dql
// Count process groups
fetch dt.entity.process_group
| summarize count = count()
```

Log Discovery

```dql
// Check log volume by source
fetch logs, from: now() - 1h
| summarize log_count = count(), by: {log.source}
| sort log_count desc
| limit 20
```

```dql
// Check log volume by severity
fetch logs, from: now() - 1h
| summarize log_count = count(), by: {loglevel}
| sort log_count desc
```

```dql
// Sample recent logs
fetch logs, from: now() - 15m
| fields timestamp, loglevel, log.source, content
| sort timestamp desc
| limit 25
```

Kubernetes Discovery (if applicable)

```dql
// List Kubernetes clusters
fetch dt.entity.kubernetes_cluster
| fields entity.name
| sort entity.name
```

```dql
// List namespaces
fetch dt.entity.cloud_application_namespace
| fields entity.name
| sort entity.name
| limit 50
```

```dql
// List workloads (deployments, etc.)
fetch dt.entity.cloud_application
| fields entity.name
| sort entity.name
| limit 50
```

Problems Discovery

```dql
// Check for recent problems
fetch dt.davis.problems, from: now() - 7d
| fields timestamp, display_id, title, status, affected_entity_types
| sort timestamp desc
| limit 20
```

```dql
// Problem summary by status
fetch dt.davis.problems, from: now() - 30d
| summarize problem_count = count(), by: {status}
| sort problem_count desc
```

6. Next Steps

Now that you understand your data:

1. **ONBRD-08: Your First Queries** - Learn DQL fundamentals
2. Explore topology for dependency visualization
3. Review any detected problems
4. Plan which additional hosts to instrument

```
### Discovery Checklist

- [ ] Hosts discovered and showing data
- [ ] Services detected and mapped
- [ ] Process groups visible
- [ ] Topology showing relationships
- [ ] Log ingestion working (if applicable)
- [ ] Kubernetes entities visible (if applicable)

---

## Summary

In this notebook, you learned:

- The Dynatrace data model (entities, metrics, logs, spans)
- How entities relate to each other
- How to navigate topology views
- Different data types stored in Grail
- Discovery queries for infrastructure, services, and logs

---

## References

- [Entities](https://docs.dynatrace.com/docs/discover-dynatrace/explore-data/entities)
- [Topology and Dependencies](https://docs.dynatrace.com/docs/observe-and-explore/services/service-analysis/service-flow)
- [Grail Data Model](https://docs.dynatrace.com/docs/platform/grail)
- [Entity Types Reference](https://docs.dynatrace.com/docs/discover-dynatrace/references/entity-types)
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