Deploying Fullstack Web App to AWS & integrating Dynatrace

Dynatrace Integration Guide 🛠️

Key Dynatrace components we'll connect & use:

- **OneAgent** + **Hosts Classic app** - EC2 backend monitoring
- **Agentless Real User Monitoring (RUM)** - detailed user experience monitoring & analytics
- **Session Segmentation** - User experience *Aggregated* analytics
- **Digital experience -> Web** + **Frontend app** - real user monitoring (RUM)
- **Distributed Traces Classic** + **Distributed Tracing** - tracing endpoint calls & backend performance
- **Dashboards** - putting together customised reports & data views

1. Server-side monitoring & Observability (EC2) 🤖

1. Dynatrace -> Apps -> "Deploy OneAgent" -> Follow the guide (don't forget to save the token) on your EC2 instance as root (`sudo su -`) -> Show deployment status (new record should pop up there). Dynatrace app you'll be taken to by default (after deploying OneAgent) is "Infrastructure & Operations": a newer development forked from "Hosts classic"
2. EC2: restart Node process with:

```
pm2 delete all
kill -9 NODE_PID # get NODE_PID from Dynatrace -> Hosts App -> Process Analysis
pm2 start ecosystem.config.js
```

This way OneAgent will get access to the insides of your Web App's performance

3. Apps -> Hosts Classic -> Explore our EC2 instance's performance metrics
4. Apps -> Hosts Classic -> Process Analysis -> Node.js (server) Enable "Disk analytics" extension (Add to environment) + "Net Tracer Traffic monitoring" in Hosts Classic
5. Check out updated server monitoring experience with "Infrastructure & Monitoring" app

2. Real User Monitoring (RUM) 👫

1. Dynatrace -> Apps -> "Agentless Real User Monitoring" -> "inventorymanagement" Add web application
2. Copy JavaScript tag -> Modify Dynatrace's javascript contents:
   - "crossorigin" ->> "crossOrigin"
   - add "strategy="afterInteractive"" before "src=..."
   - "<script...>" & "" ->> "<Script...>" & ""
   -
3. Add modified javascript to client/src/app/layout.tsx

The code snippet should go between: "HERE" after "" and before "<body className=..."

4. Commit & push changes to Github

```
git add client/src/app/.
git commit -m"integrated Dynatrace agentless rum"
git push origin master
```

5. Make sure that the new Deployment goes through in AWS Amplify & Web App keeps working normally. Open your Web App's URL in different browsers, from your phone, share with friends & family: we want to collect different user sessions to explore later!

6. Checkout out Dynatrace: Agentless real user monitoring -> Monitored web applications -> View application (a tiny button)

7. Your Web App's performance analysis now lives under "Dynatrace -> Apps -> Web"

3. Backend performance Analysis (Tracing API calls) 🛜

1. Apps -> Distributed Traces Classic & Distributed Tracing

4. Dashboards: a comprehensive performance overview 📊

We'll be using a preconfigured set of Dynatrace Dashboards to cover all major areas of interest related to our Web App's & OneAgent's performance

1. Apps -> Dashboards Classic ->
    - Real User Monitoring
    - OneAgent Traces

2. Apps -> Dashboards