Anatomy of a Modern Node.js Application Architecture

WEB SERVER

CONFIGURE & VIEW
- Navigate to AppDynamics Exchange
- Search for your server
- Download and Install extension
- Navigate back to AppDynamics Controller
- Analyze > Metric Browser
- Find your extension

CACHE

CONFIGURE & VIEW
- Navigate to AppDynamics Exchange
- Search for your server
- Download and Install extension
- Navigate back to AppDynamics Controller
- Analyze > Metric Browser
- Find your extension

VIEW
- Navigate to Application Flowmap
- View latency to your cache server

END USER EXPERIENCE

SET HEALTH RULES
- Alert & Respond > Health Rules

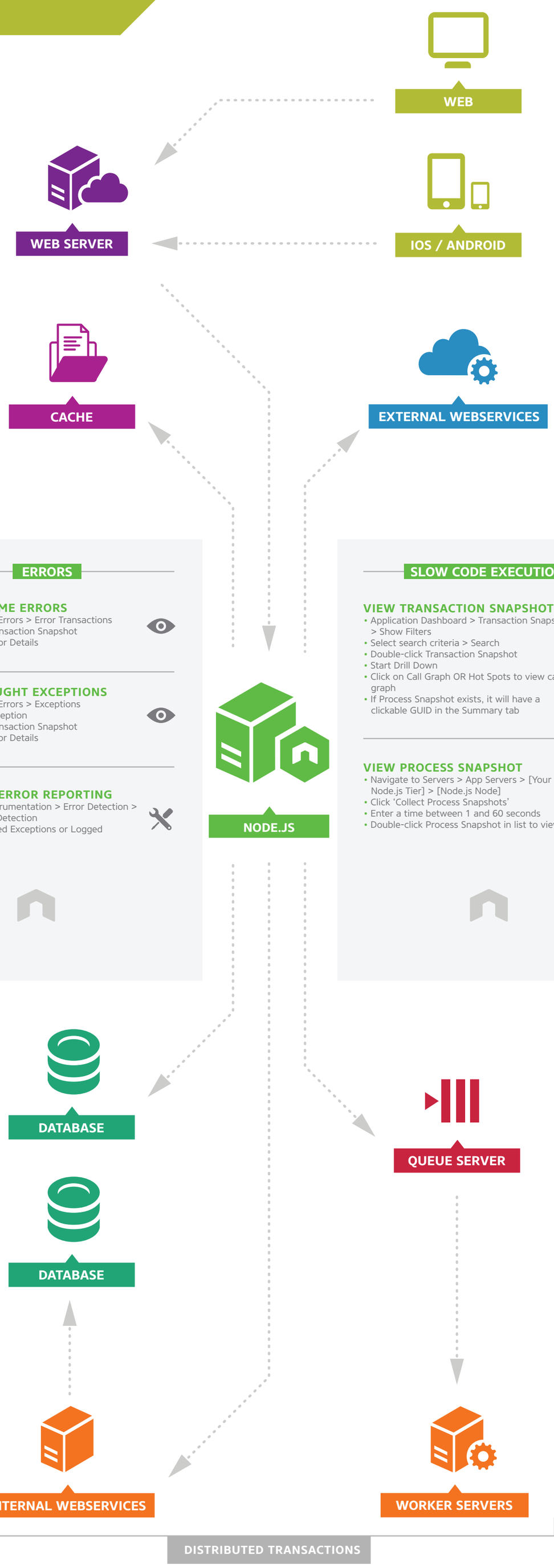
CONFIGURE
- End User Experience > Web > Pages & AJAX Requests
- Double-click on selected Page
- View Summary Timeline to locate bottleneck

VIEW
- End User Experience > Web > Analyze
- Focus on location, browser type, device type, and other combinations to analyze performance.

EXTERNAL WEBSERVICES

VIEW
- Servers > remote services
- Double-click remote service

VIEW
- Troubleshoot > Slow Response Times > Slowest DB & Remote Service Calls
- Select HTTP



NODE.JS

TRANSACTIONS

CONFIGURE BUSINESS TRANSACTIONS
- Navigate to Business Transactions
- Right-click Transaction
- Choose configuration options to organize transactions

CONFIGURE TRANSACTION DISCOVERY
- Configure > Instrumentation > Select Node.js Tier
- Scroll down to Custom Rules
- Create rules to group, match and exclude your transactions

CONFIGURE TRANSACTION API
- Use the custom API functions to manually define the beginning and ending of a transaction from within your code
- Navigate to Business Transactions to view

Hint: This is useful in cases where you have a transaction executing jobs in an infinite loop and want to register each job as a transaction.

ERRORS

VIEW RUNTIME ERRORS
- Troubleshoot > Errors > Error Transactions
- Double-click Transaction Snapshot
- Drill Down > Error Details

VIEW UNCAUGHT EXCEPTIONS
- Troubleshoot > Errors > Exceptions
- Double-click Exception
- Double-click Transaction Snapshot
- Drill Down > Error Details

CONFIGURE ERROR REPORTING
- Configure > Instrumentation > Error Detection > Node.js - Error Detection
- Configure Ignored Exceptions or Logged Messages

SLOW CODE EXECUTION

VIEW TRANSACTION SNAPSHOT
- Application Dashboard > Transaction Snapshots > Show Filters
- Select search criteria > Search
- Double-click Transaction Snapshot
- Start Drill Down
- Click on Call Graph OR Hot Spots to view call graph
- If Process Snapshot exists, it will have a clickable GUID in the Summary tab

VIEW PROCESS SNAPSHOT
- Navigate to Servers > App Servers > [Your Node.js Tier] > [Node.js Node]
- Click 'Collect Process Snapshots'
- Enter a time between 1 and 60 seconds
- Double-click Process Snapshot in list to view

ANALYSIS

VIEW APPDYNAMICS MACHINE AGENT
- Download & Install Machine Agent
- Navigate to Servers > App Servers > [Your Node.js Tier] > [Node.js Node]
- Select Hardware

VIEW HARDWARE
- Application Dashboard > Transaction Snapshots > Show Filters
- Select search criteria > Search
- Double-click Transaction Snapshot
- Start Drill Down > Hardware

COMPARE RELEASES
- Analyze > Compare Releases
- Select time ranges to compare

VIEW NODE.JS METRICS
- Analyze > Metric Browser > Application Infrastructure Performance
- Expand [Node.js tier] > Expand Node.js metrics
- View specific additional Node.js metrics

DATABASE

VIEW
- Navigate to Servers > Databases
- Double-click your DB
- Select your Node.js Tier
- View slow queries

VIEW
- Application Dashboard > Transaction Snapshots > Show Filters
- Select search criteria > Search
- Double-click Transaction Snapshot
- Start Drill Down > SQL Calls

VIEW
- Navigate to Application Dashboard > Flowmap
- Right-click on Database
- Select 'View in Database Monitoring'

QUEUE SERVER

VIEW
- Navigate to your Application Dashboard > Flowmap
- Find Queue Server
- View latency to your queue server

VIEW
- Application Dashboards > Transaction Snapshots
- Find transactions that speak to your Queue server
- Double-click > Start Drill Down > Call Graph
- Find method call that sends job, click to correlate to downstream worker server for associated call graph

INTERNAL WEBSERVICES

INFO
In a service-oriented environment the performance indicators of the distributed nature of the transaction is an integral aspect of characterizing transaction performance. AppDynamics applies distributed transaction tracing to for all business transactions as well as for the entire application. Using a tag, trace, and learn approach, AppDynamics traces the transaction context across all tiers, including JVMs, CLRs, Node.js servers, and calls to HTTP, SOAP, databases, third party web services, etc.

WORKER SERVERS

INFO
When a Node.js application communicates with an external component that is not being monitored as part of the same business application, such as a database or a message queue, you can monitor the performance data for the communication.

AppDynamics displays distributed communication performance in the business application and business transaction flow maps.

APPDYNAMICS