# Synthetic Monitoring

Dynatrace Training Module

# Agenda

- Architecture
  - Browser Monitor
  - HTTP Monitor
- Creating a Synthetic Test
- Analysis
- Reports
- Settings
- HTTP Monitors

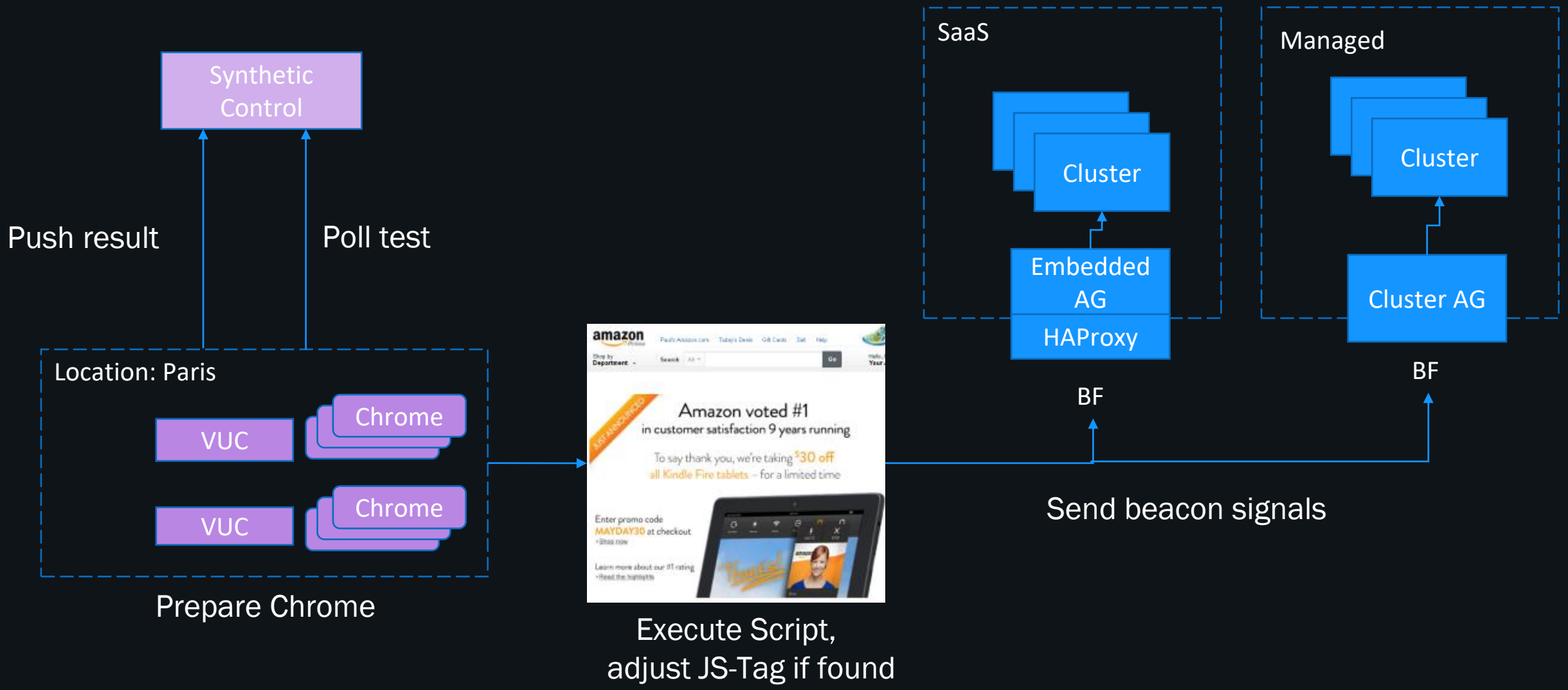
# Synthetic Monitoring



## Architecture

- VU Controller
  - 40+ production locations
  - Script caching
  - Node monitored by Dynatrace
  - KPI - 20 or more concurrent browser executions
- VU Player
  - Chrome based
  - JS agent management – replace RUM tag, inject more in-depth synthetic tag
  - “Login-Sense” like capability to traverse the login by locating form fields and auto-filling
  - Screen Capture

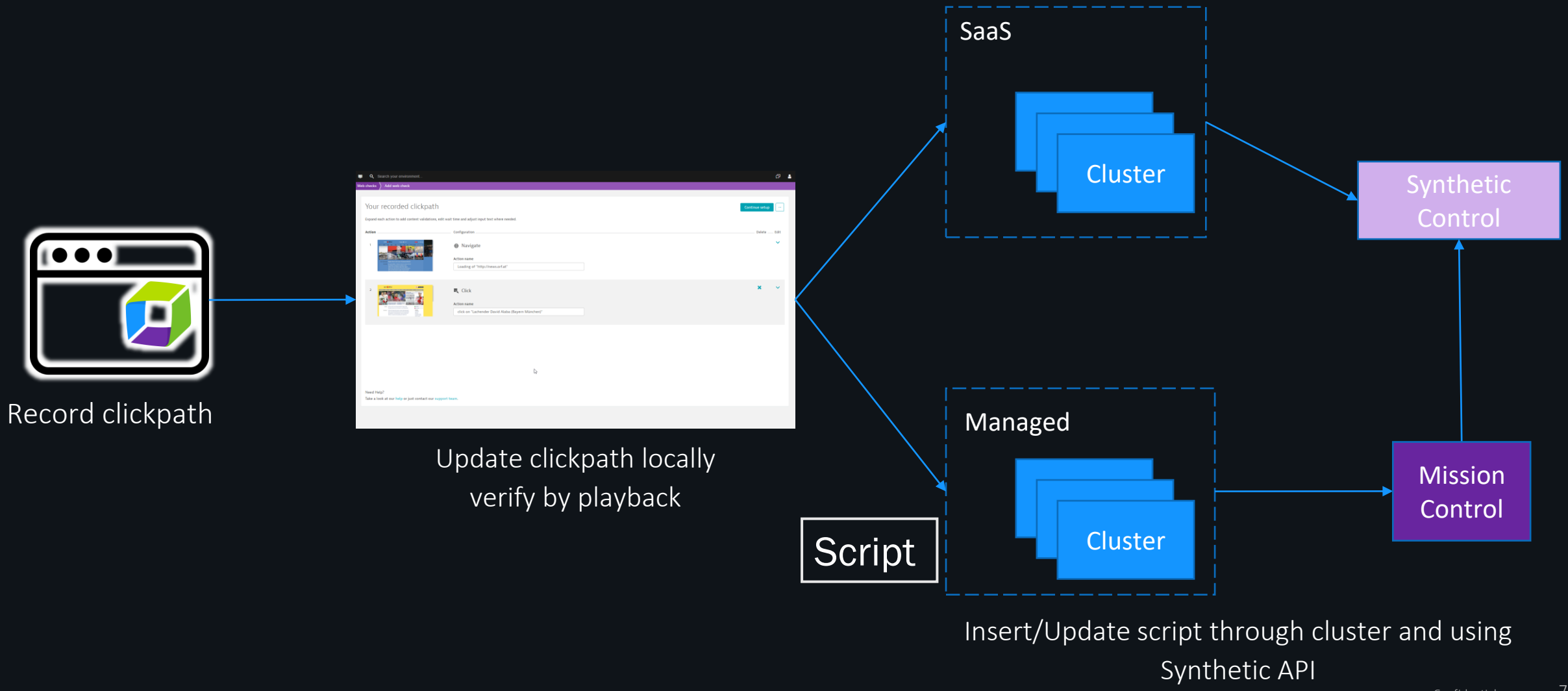
# Summary of Test Execution



# Determine endpoint for Synthetic Beacon-Signal

- SaaS
  - https://*.live.dynatrace.com/bf
- Managed
  - Cluster is using the Domain/IP of the configured Cluster AG
  - https://myclusterag.gateway.org.com:9999/bf
- Both approaches end up in the Beacon-Forwarder of an AG
  - Special component simply proxying beacon signals to the cluster

# Synthetic Recorder - Plugin



# Synthetic Monitoring

Architecture

Browser Monitor

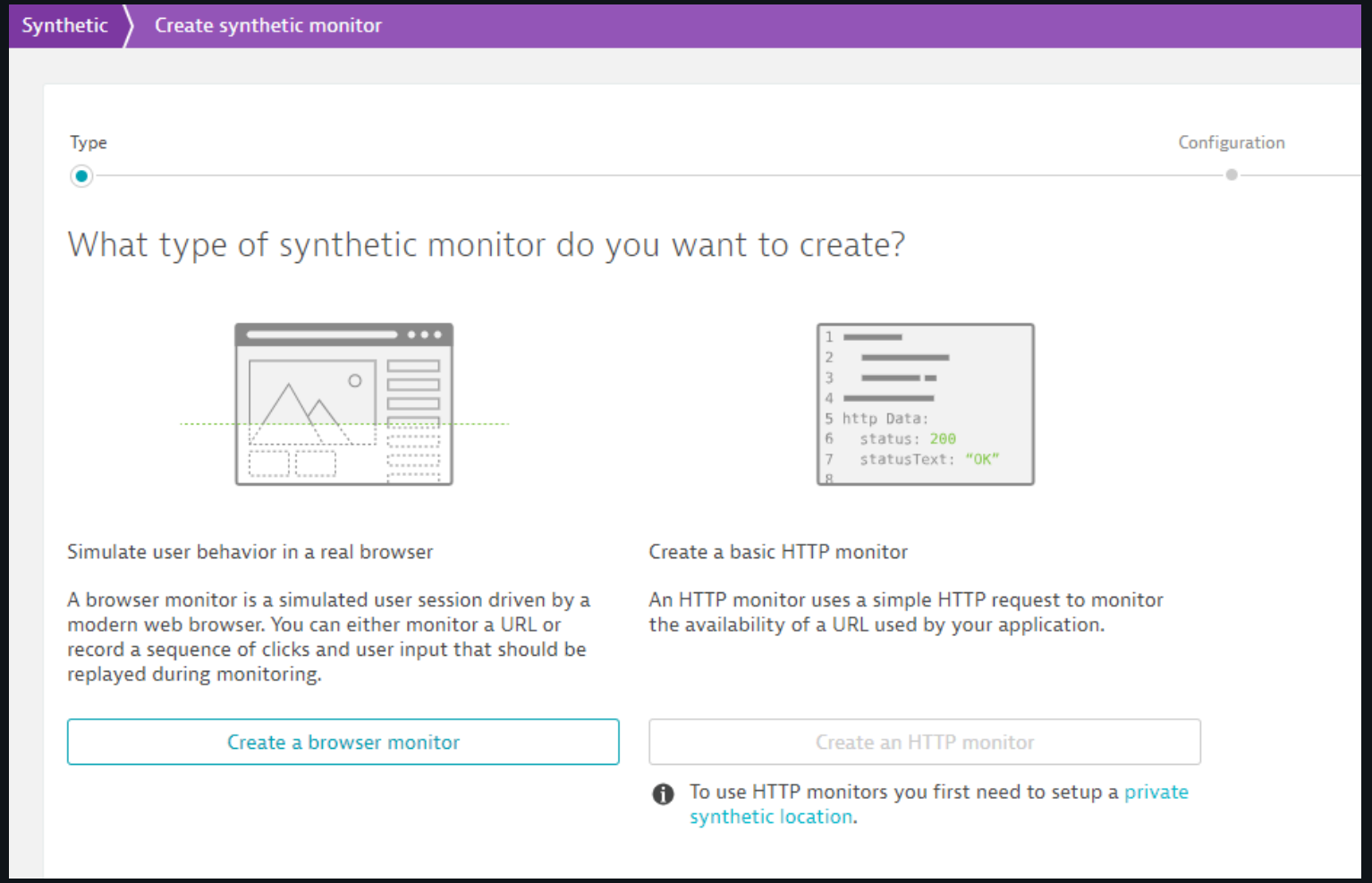
Analysis

Reports

Settings

HTTP Monitor

## Creating a Synthetic Test



# Execution in real browser

- Chrome browser used
  - Constantly updated to current version
- Empty browser caches on execution

# Synthetic Monitoring

Architecture

Browser Monitor

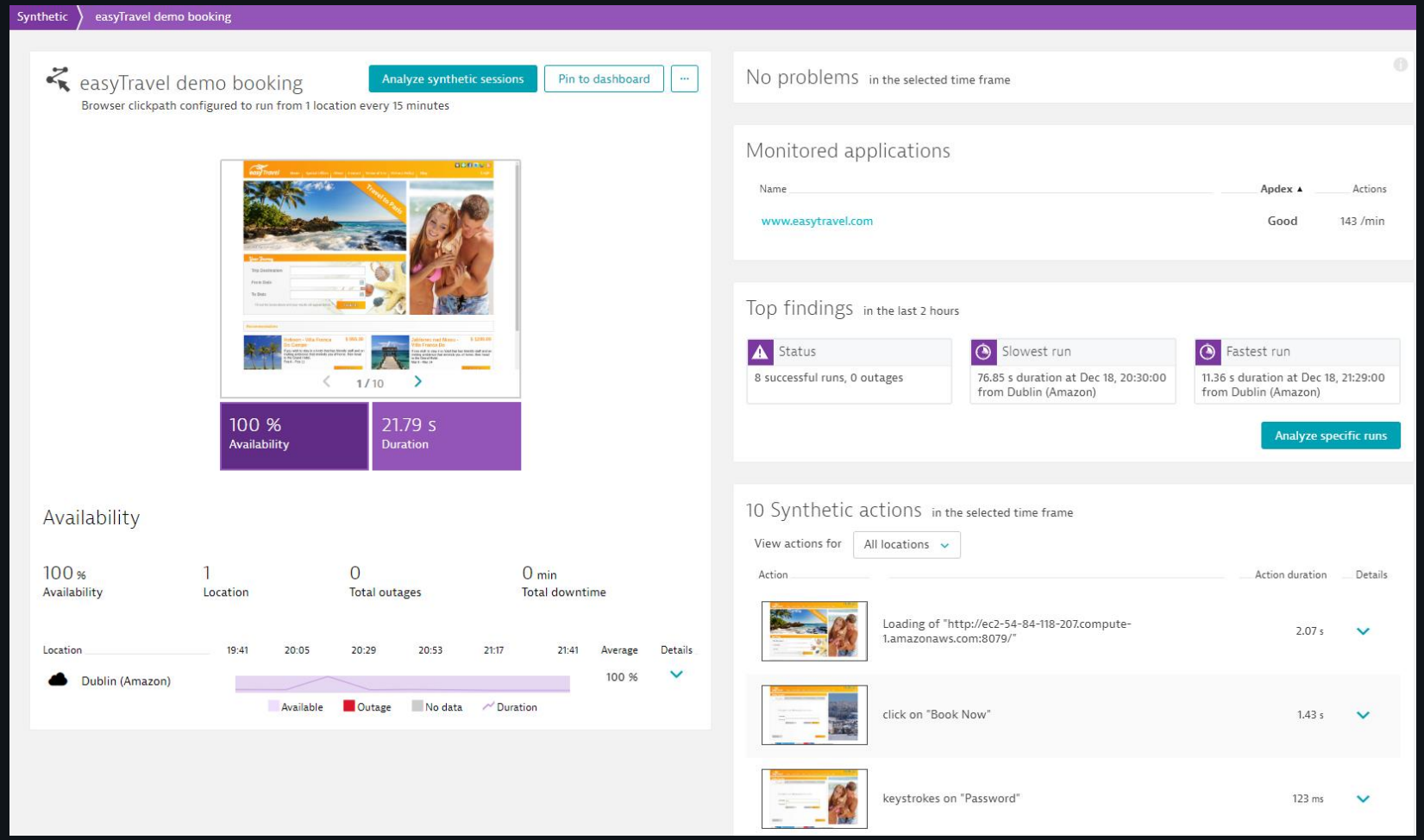
Analysis

Reports

Settings

HTTP Monitor

## Analysis



# Synthetic Monitoring

Architecture

Browser Monitor

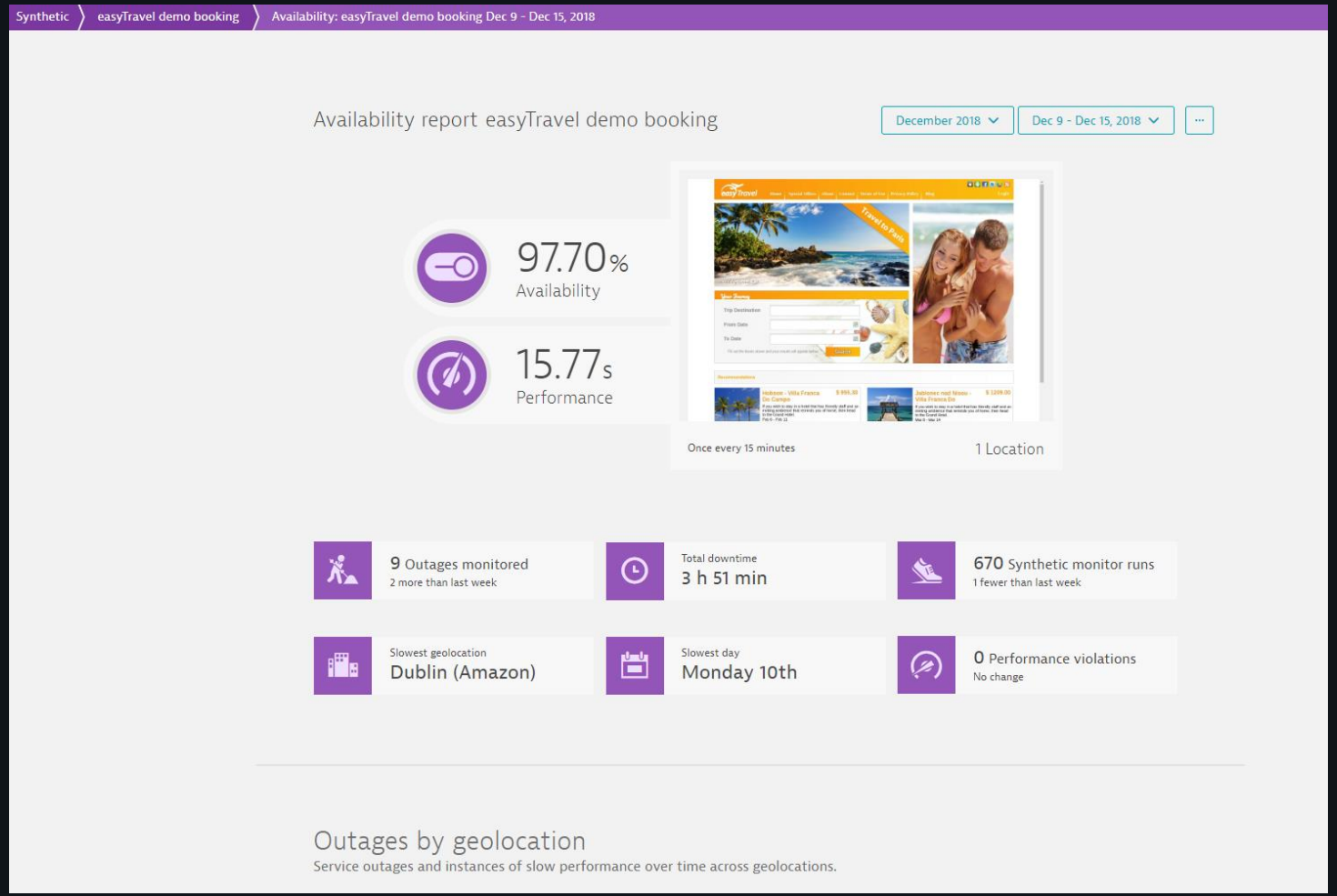
Analysis

Reports

Settings

HTTP Monitor

## Reports



# Synthetic Monitoring

Architecture

Browser Monitor

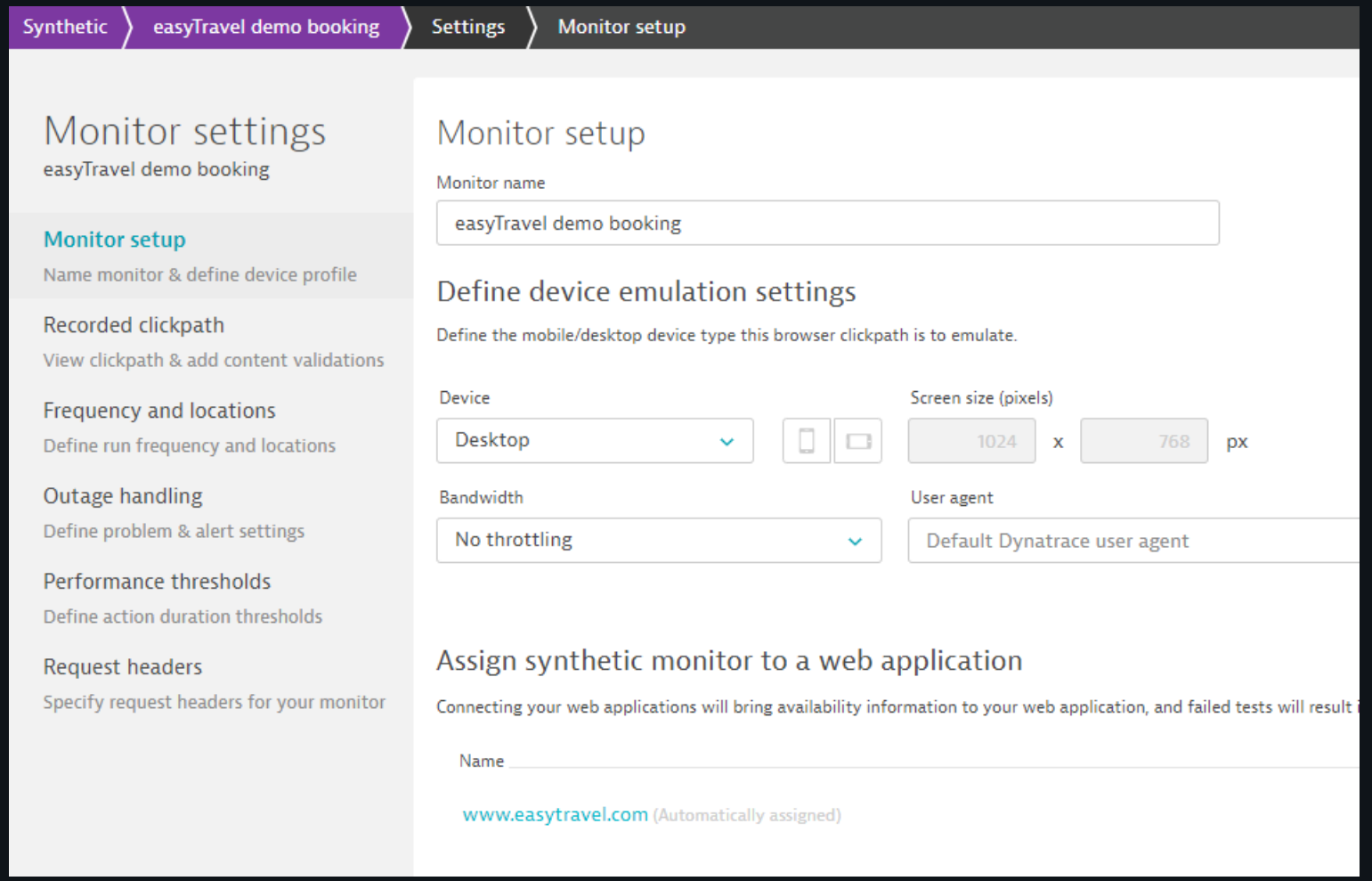
Analysis

Reports

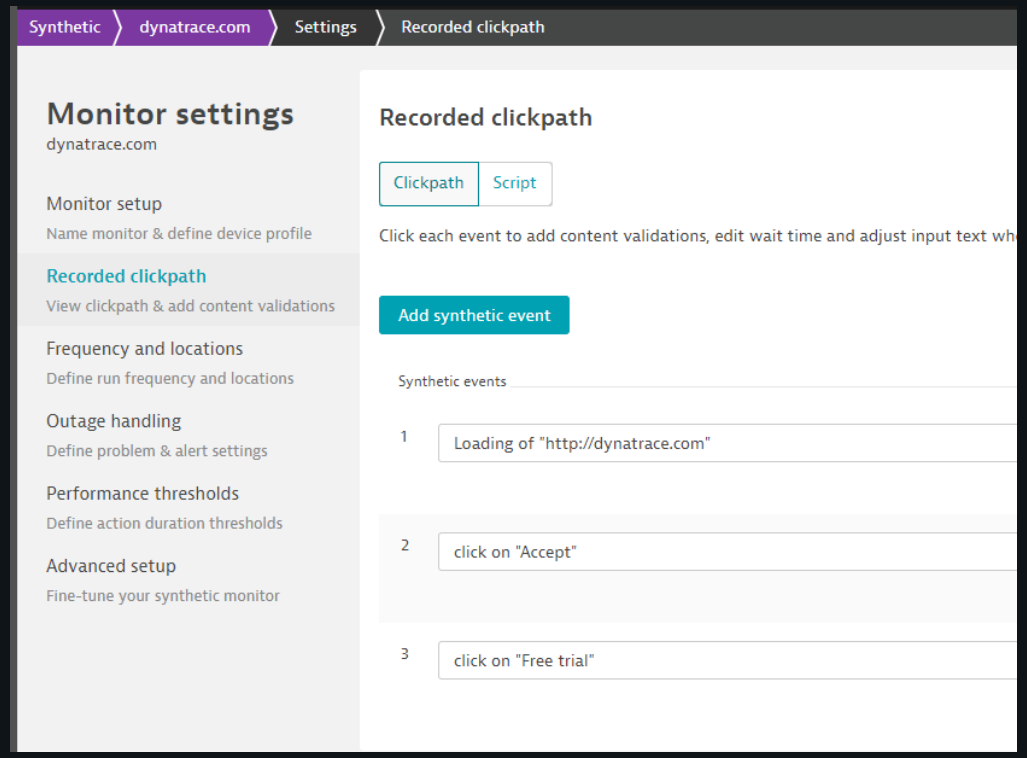
Settings

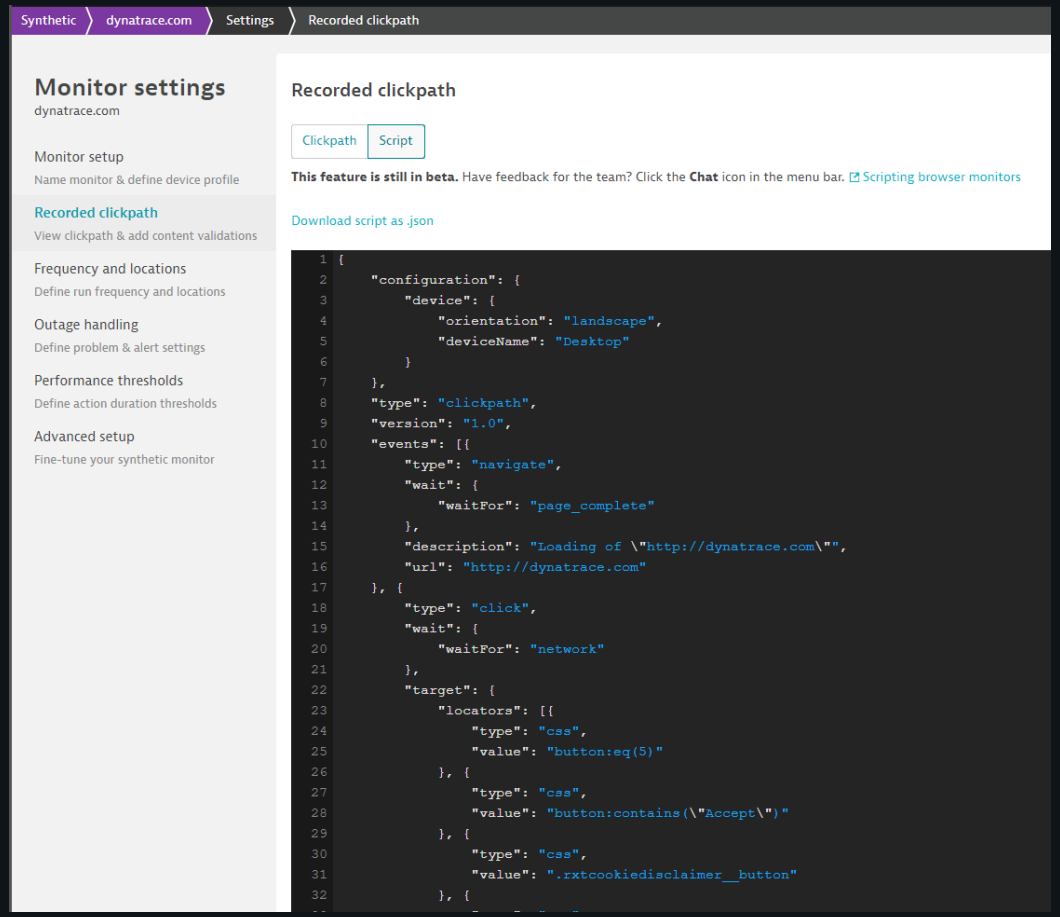
HTTP Monitor

## Settings

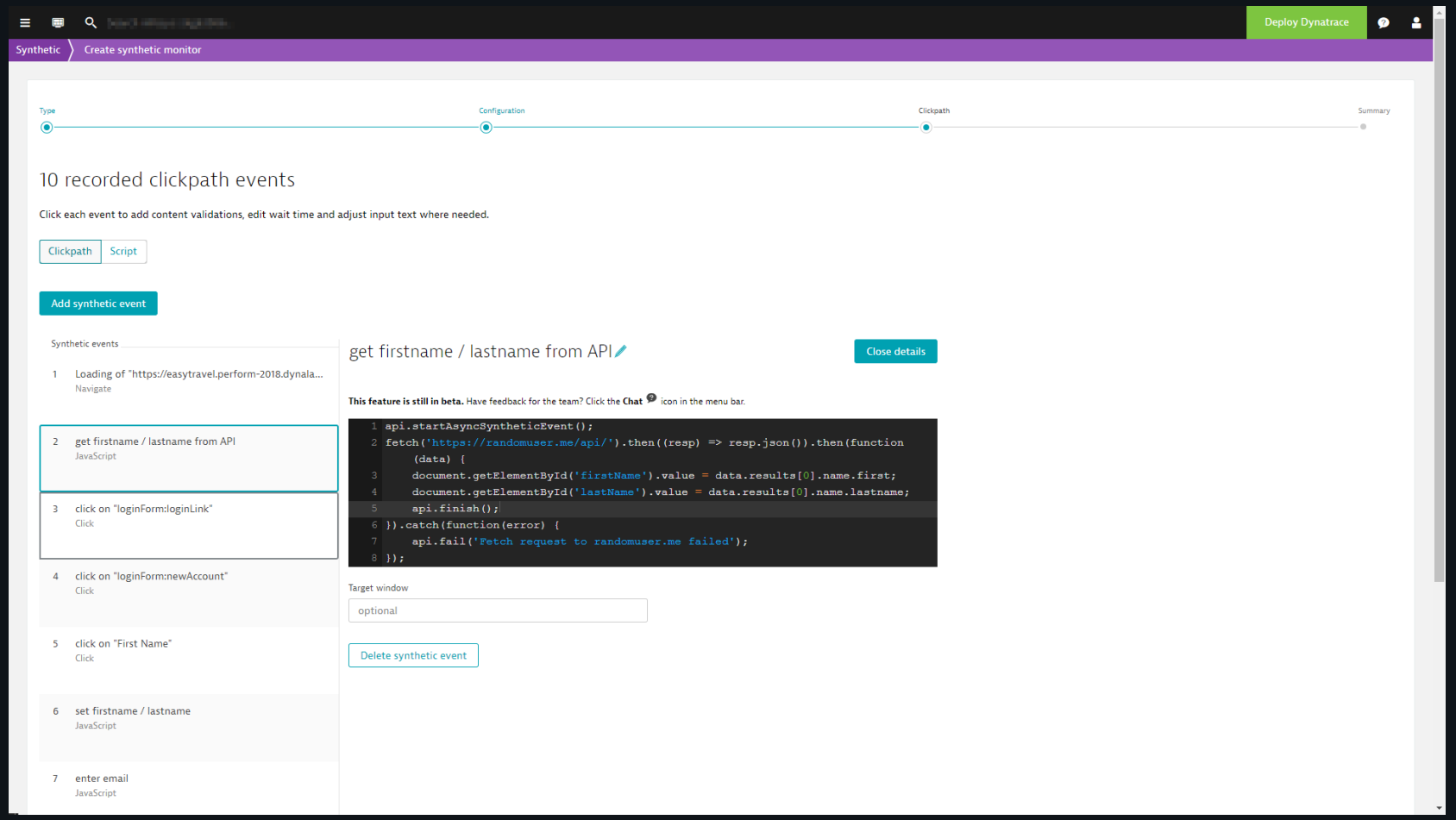


# Edit test as clickpath or as JSON script

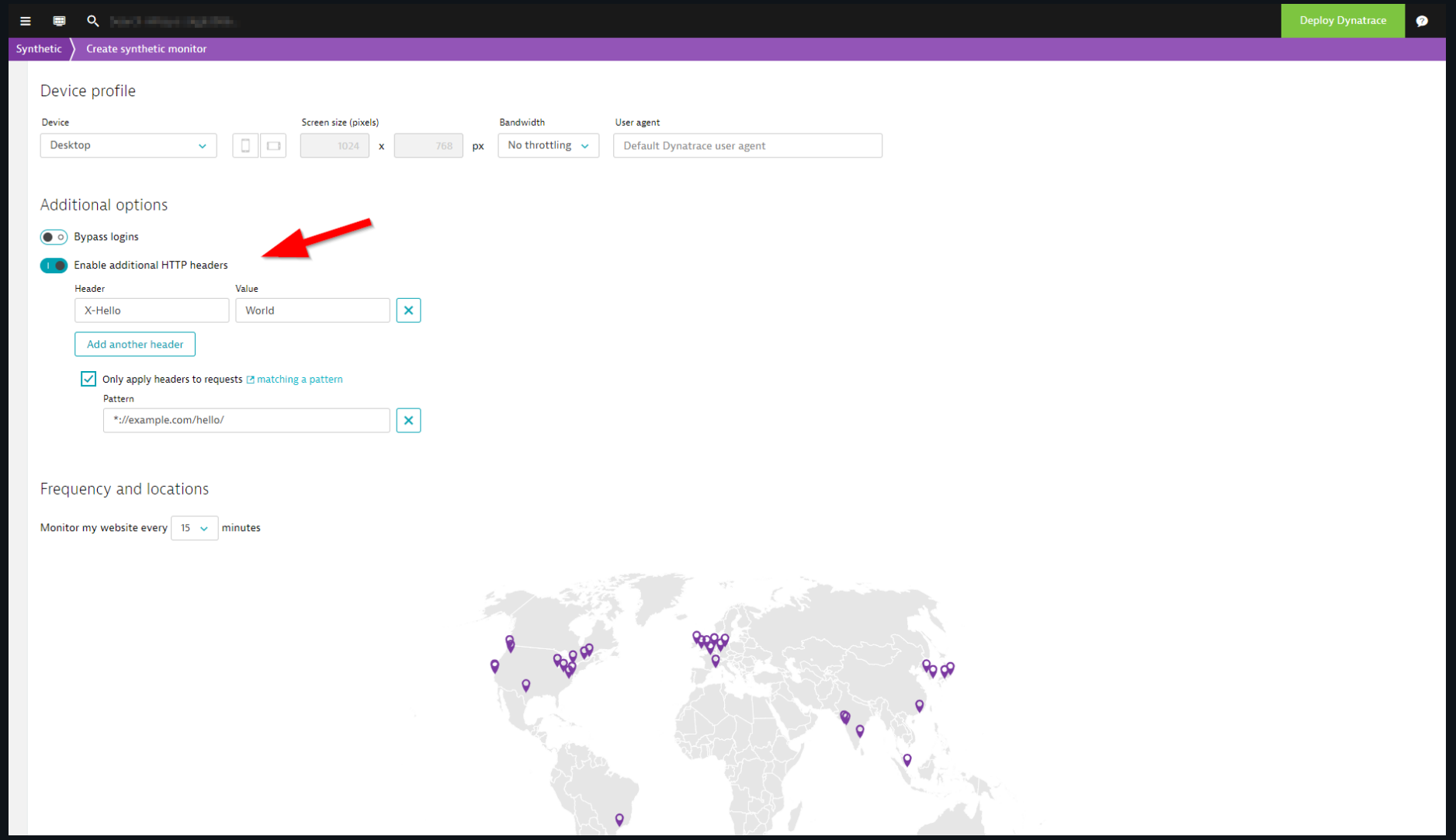


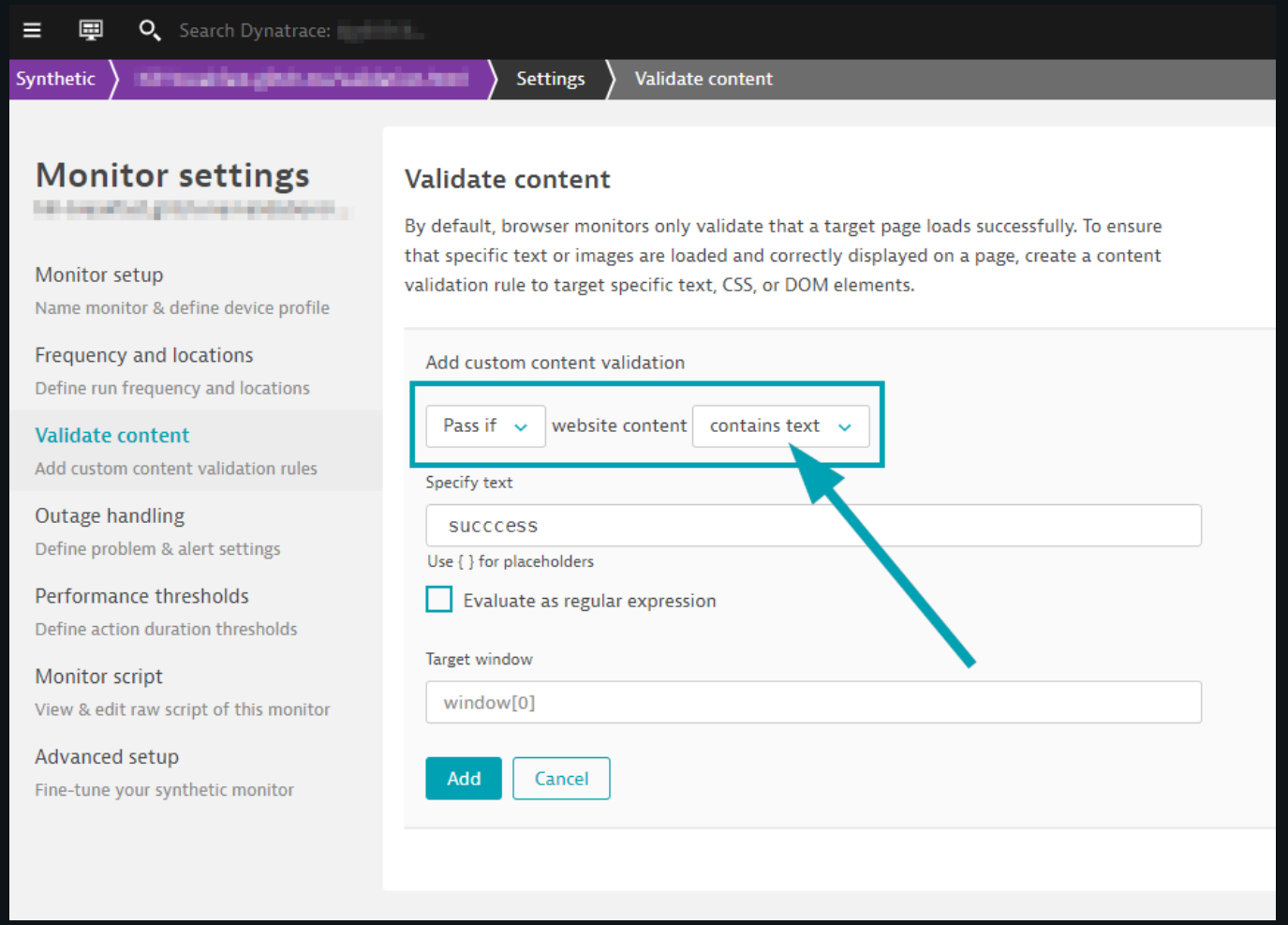
# Custom JavaScript events



# Custom request headers



# Validate Content



# Synthetic Monitoring

Architecture

Browser Monitor

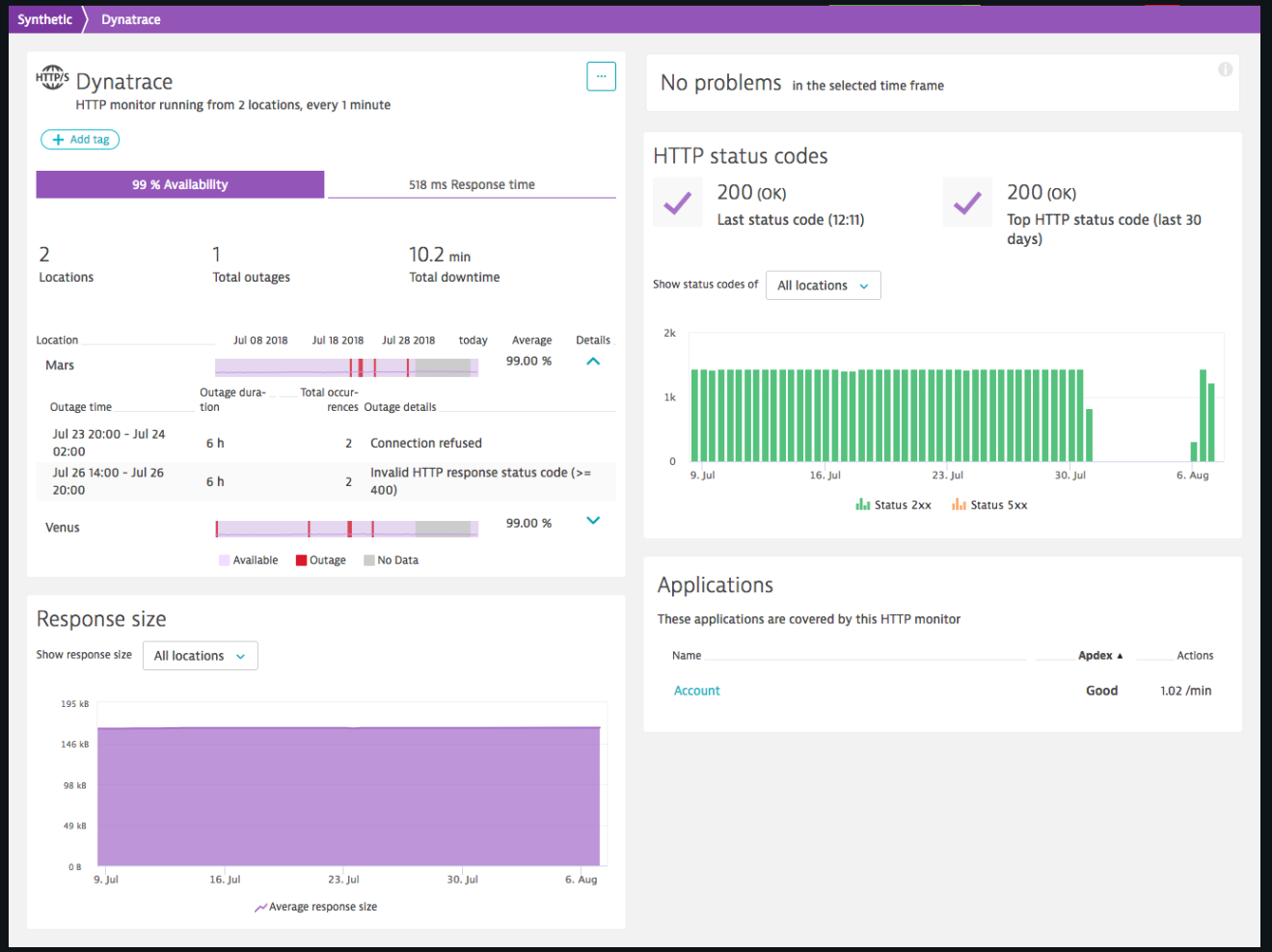
Analysis

Reports

Settings

HTTP Monitor

# HTTP Monitors



# HTTP Monitors

- An HTTP monitor uses a simple HTTP request to monitor the availability of a given URL or multi-step APIs
- Leverage for automated SLO/SLA monitoring
- Built for API/REST testing
- Can run from Dynatrace cloud locations or private synthetic locations (Environment ActiveGate)

# HTTP Monitors vs Browser Monitors

- Both have their optimal use-cases

## HTTP Monitors

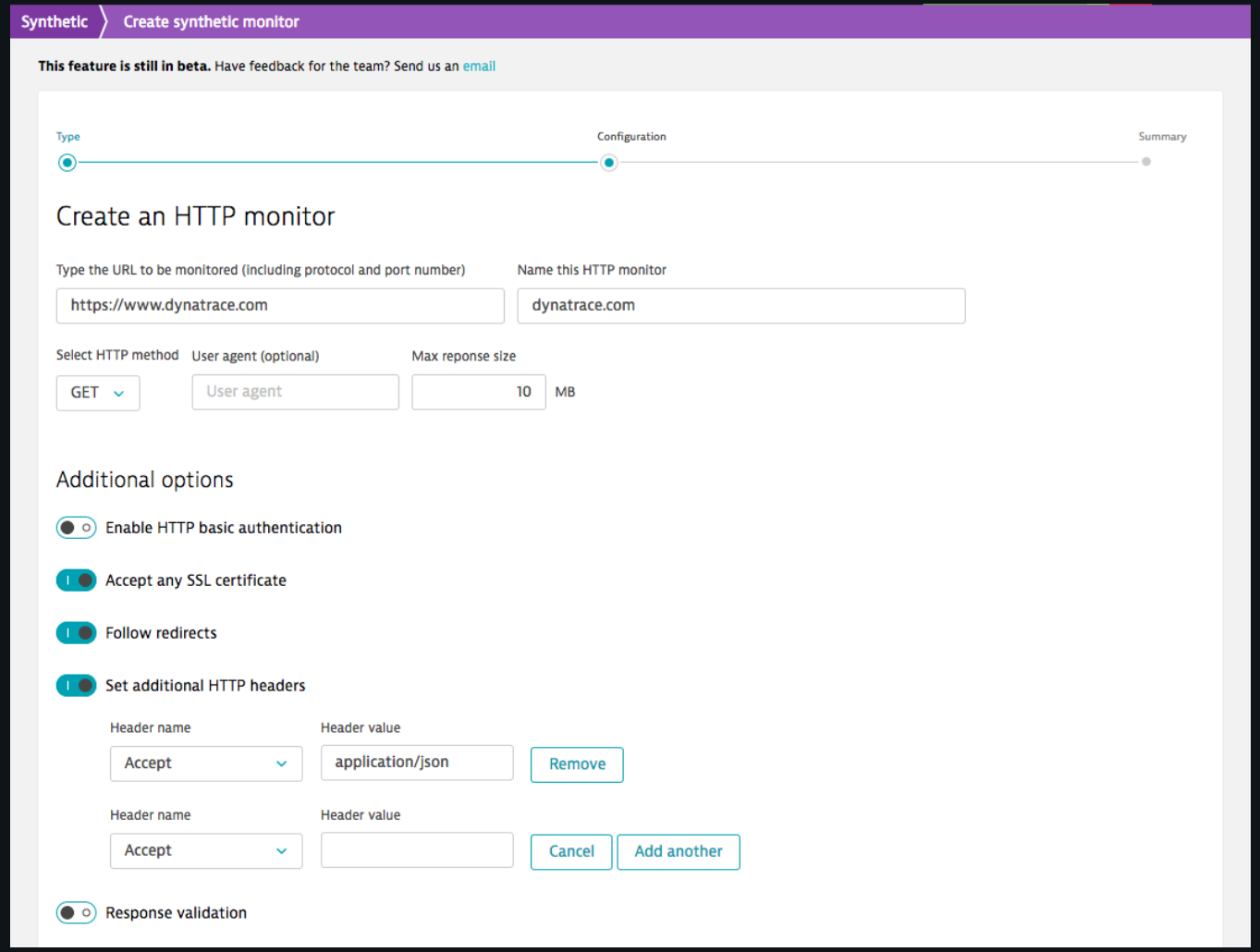
- Health-check endpoints
- API endpoints
- API transactions (CRUD scenarios, etc.)

## Browser Monitors

- Web applications
- Clickpaths (important user-facing workflows)

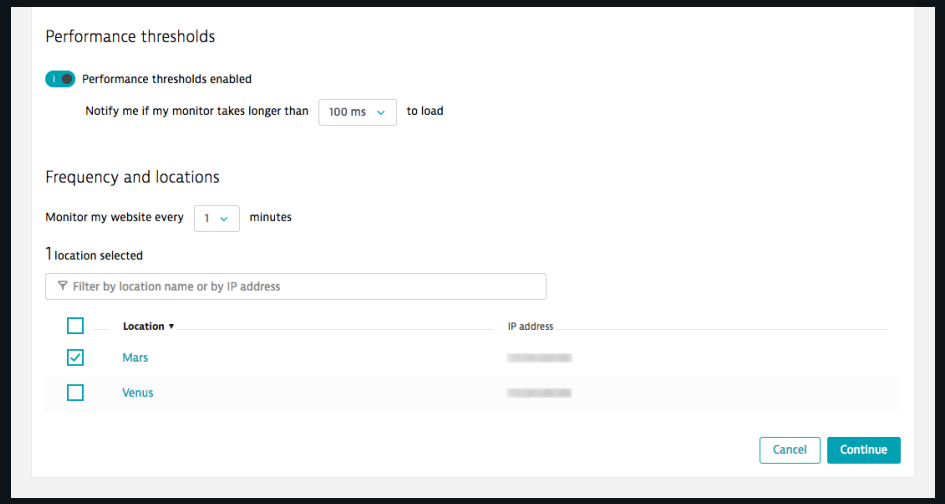
# Create an HTTP Monitor

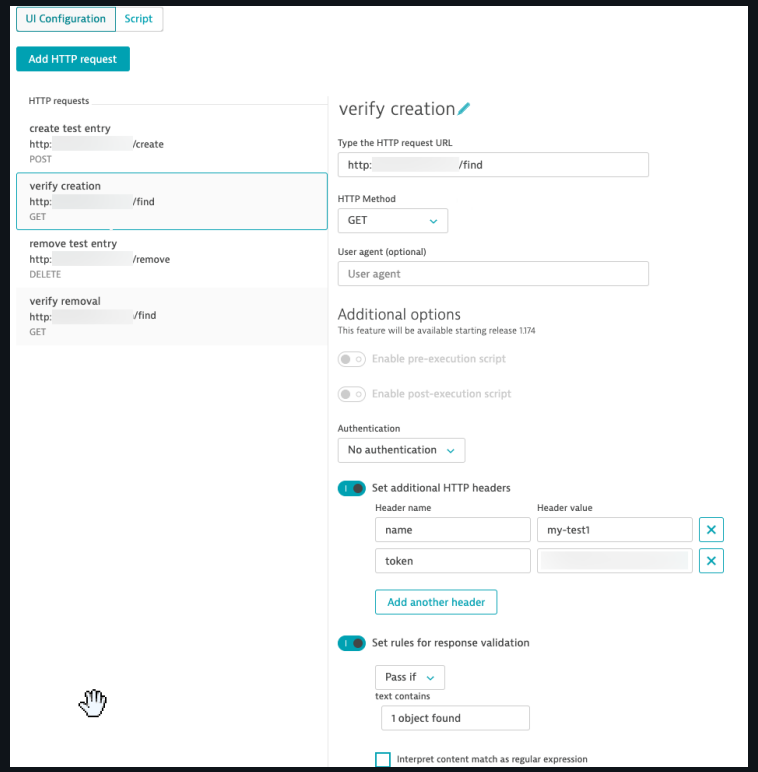
- The request is executed with a set of parameters:
  - HTTP headers
  - HTTP method
  - User agent
- Also available are:
  - Response validation
  - Basic authentication
  - Different HTTP method types
  - Redirect follows
  - SSL certificate acceptance
  - Assignment to specific applications



# Additional configurations

- Performance threshold that will be displayed along with response time analysis
- Max response size configuration available
- Frequency and internal locations selector
- Multi-request HTTP Monitors
  - Add additional requests to be made within a single monitor.
  - Flexibility to fully exercise an API!



# Dynatrace

HTTP monitor running from 2 locations, every 1 minute

+ Add tag

99 % Availability | 518 ms Response time

| 2 | 1 | 10.2 min |
|---|---|---|
| Locations | Total outages | Total downtime |

| Location | Jul 08 2018 – Jul 18 2018 – Jul 28 2018 – today | Average | Details |
|---|---|---|---|
| Mars | | 99.00 % | |

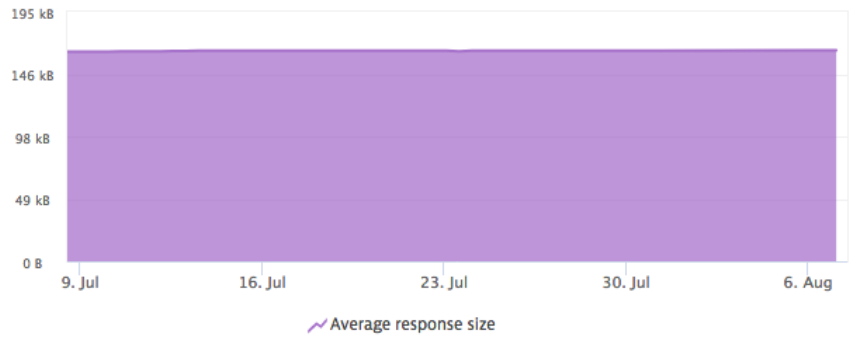
| Outage time | Outage duration | Total occurrences | Outage details |
|---|---|---|---|
| Jul 23 20:00 - Jul 24 02:00 | 6 h | 2 | Connection refused |
| Jul 26 14:00 - Jul 26 20:00 | 6 h | 2 | Invalid HTTP response status code (>= 400) |

| Location | Jul 08 2018 – Jul 18 2018 – Jul 28 2018 – today | Average | Details |
|---|---|---|---|
| Venus | | 99.00 % | |

Available | Outage | No Data

## Response size

Show response size: All locations



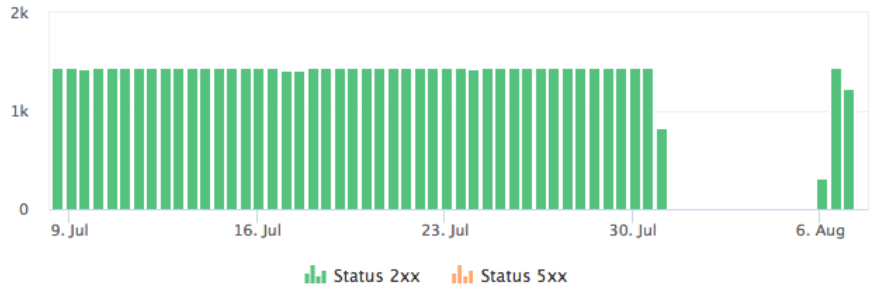

## No problems in the selected time frame

## HTTP status codes

200 (OK)
Last status code (12:11)

200 (OK)
Top HTTP status code (last 30 days)

Show status codes of: All locations




## Applications

These applications are covered by this HTTP monitor

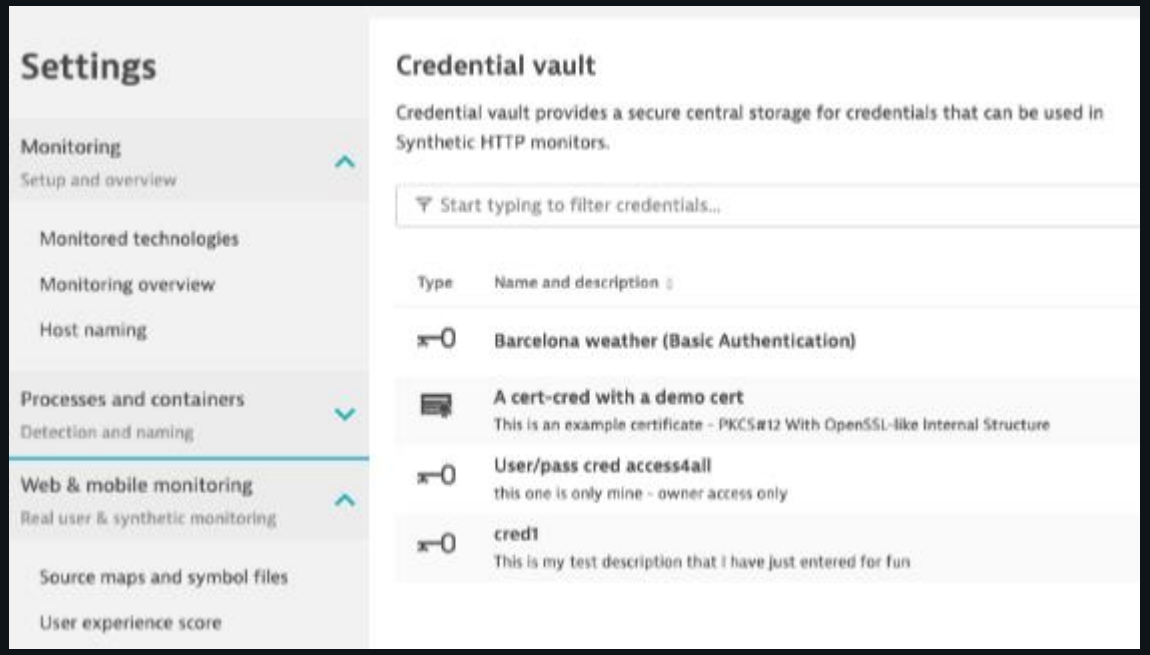
| Name | Apdex ▲ | Actions |
|---|---|---|
| Account | Good | 1.02 /min |

# Synthetic Testing Locations

- For externally available applications Synthetic tests can be executed from the Dynatrace synthetic network. To view all available locations, begin creating a synthetic monitor in the Dynatrace UI.
- Private Synthetic Locations:
  - Both HTTP Monitors and Browser monitors can be executed from customer defined locations
  - Internal synthetic testing requires the use of a Dynatrace ActiveGate.
  - The network location of a Dynatrace ActiveGate becomes the testing location for internal Synthetics
  - Private Synthetic Locations required a dedicated Environment ActiveGate – can't be used for OneAgent traffic

# Credential vault

- A secure way to create, control access to, and easily rotate credentials used in synthetic monitors
- Easy to reuse credentials you have access to
- Enter credentials accessible to others or just the owner
  - Non-owners can still manage the monitors to a limited extent (e.g. name, frequency, etc...).
- Certificate based authentication also supported
- Token based authentication supported
- Supported for both HTTP and Browser monitors



# Questions?


Simply smarter clouds