

BizOps –Bridging the Gap to the Business / Advanced Dashboarding

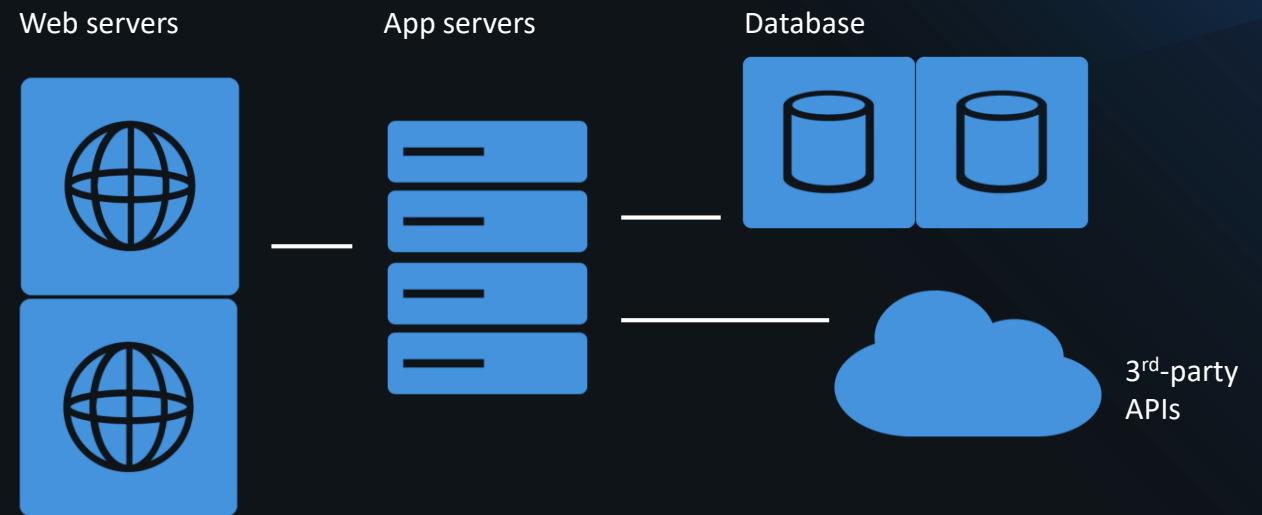
Overview of this Workshop

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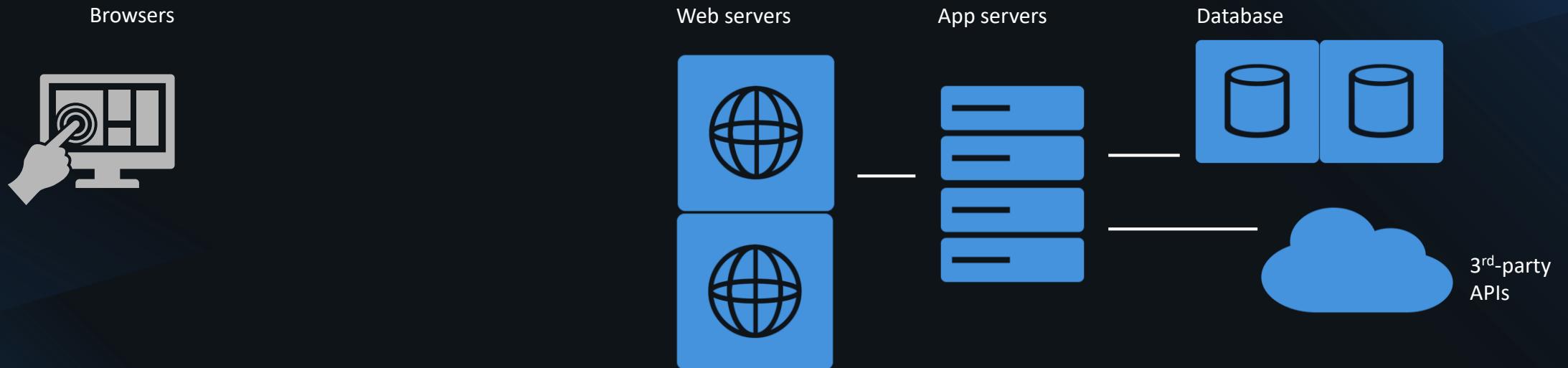
- Overview of Real User Monitoring
- Overview of the environment: easyTravel
- Overview of Dynatrace Dashboards
- User Action Naming
- Key User Actions
- Tuning Your Environment
- Overview of Dynatrace Dashboards
- Conversion Rates
- User Session Properties
- User Session Query Language (USQL)
 - Basic Dashboard
 - Business Dashboard
 - Sales Dashboard
- Create / Share Dashboards via API
- Export Data to Excel / Power Query
- Digital Business Analytics

Quick Overview of Real User Monitoring

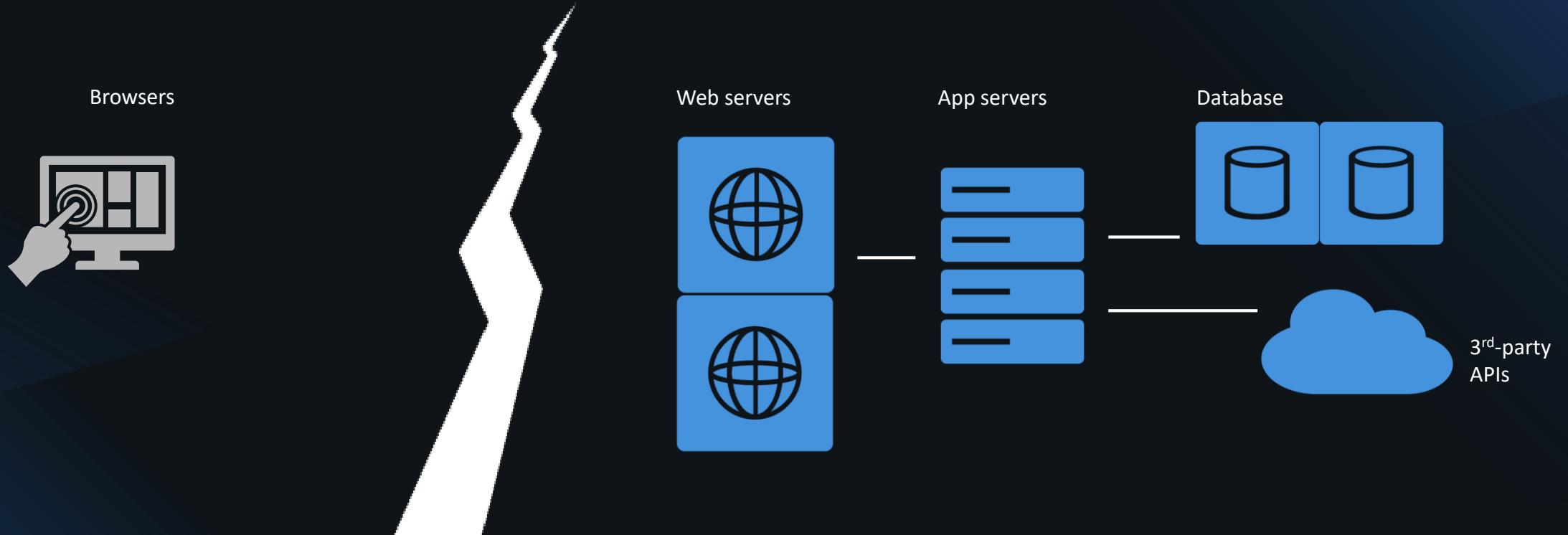
Traditional monitoring = focus on server-side



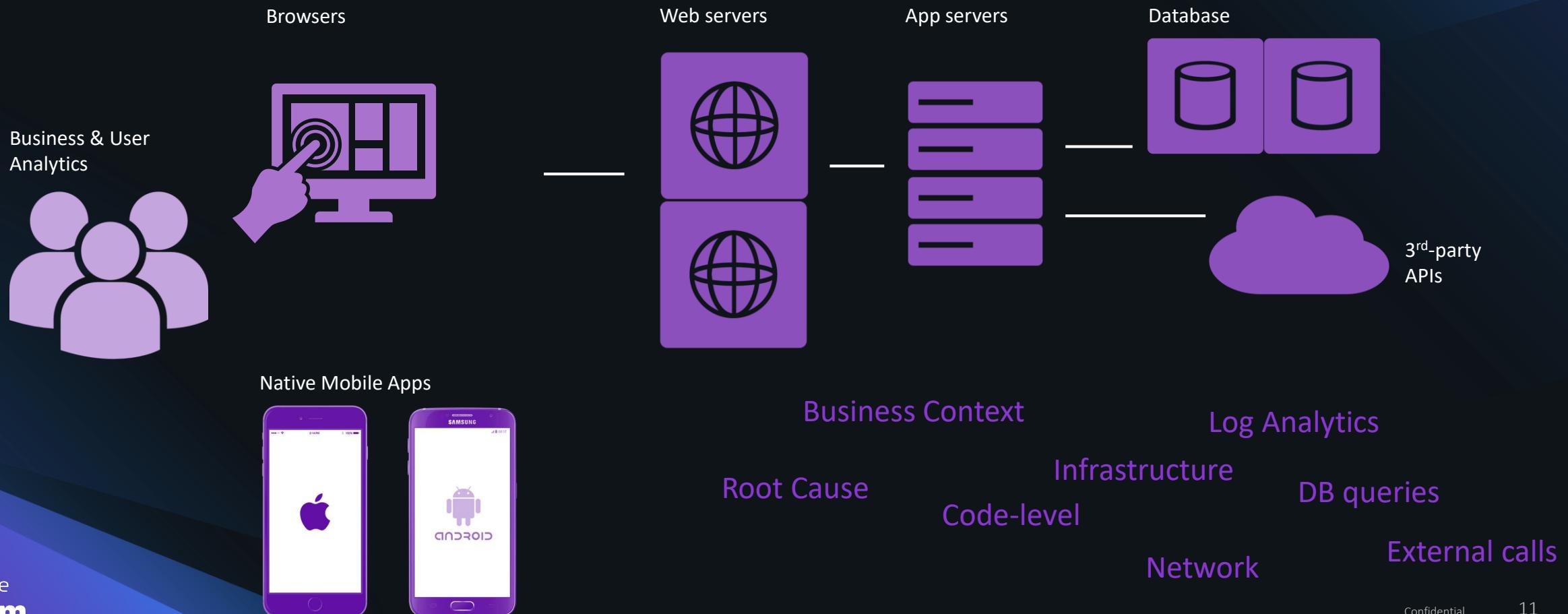
Traditional monitoring = focus on server-side w/ some browser metrics



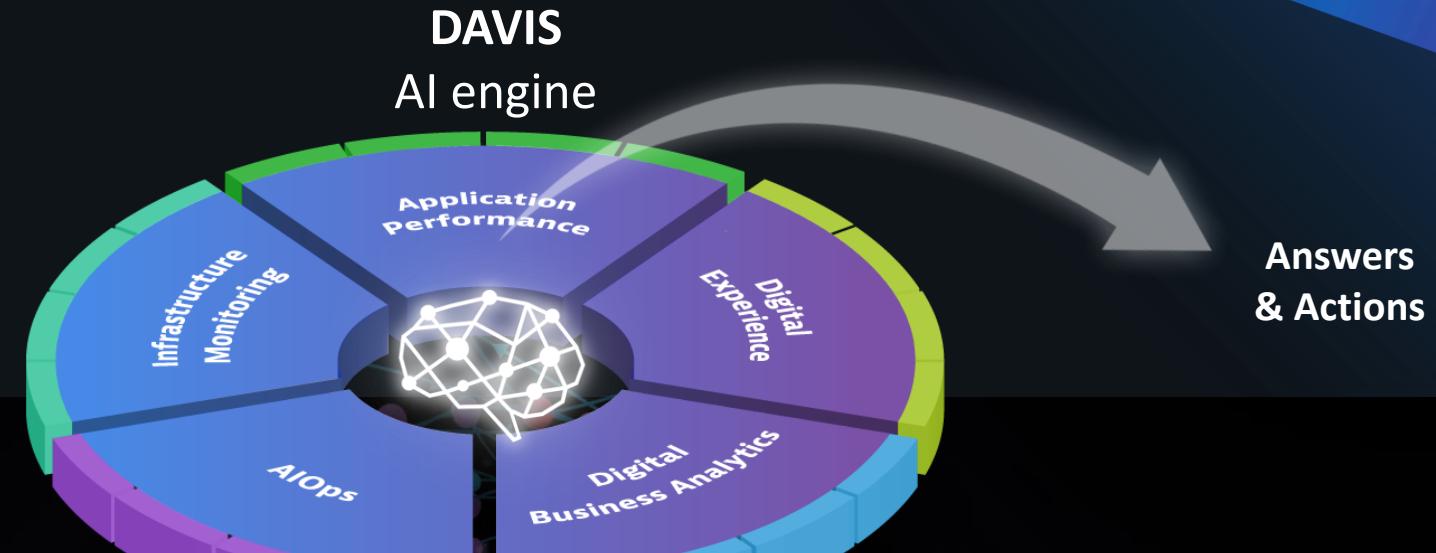
Traditional monitoring = focus on server-side w/ some browser metrics



Dynatrace Real User Monitoring: in-depth and connected end-to-end



Davis is at the core



topology



traces



events



metrics



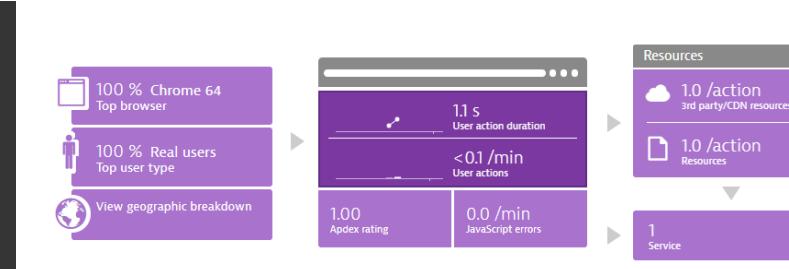
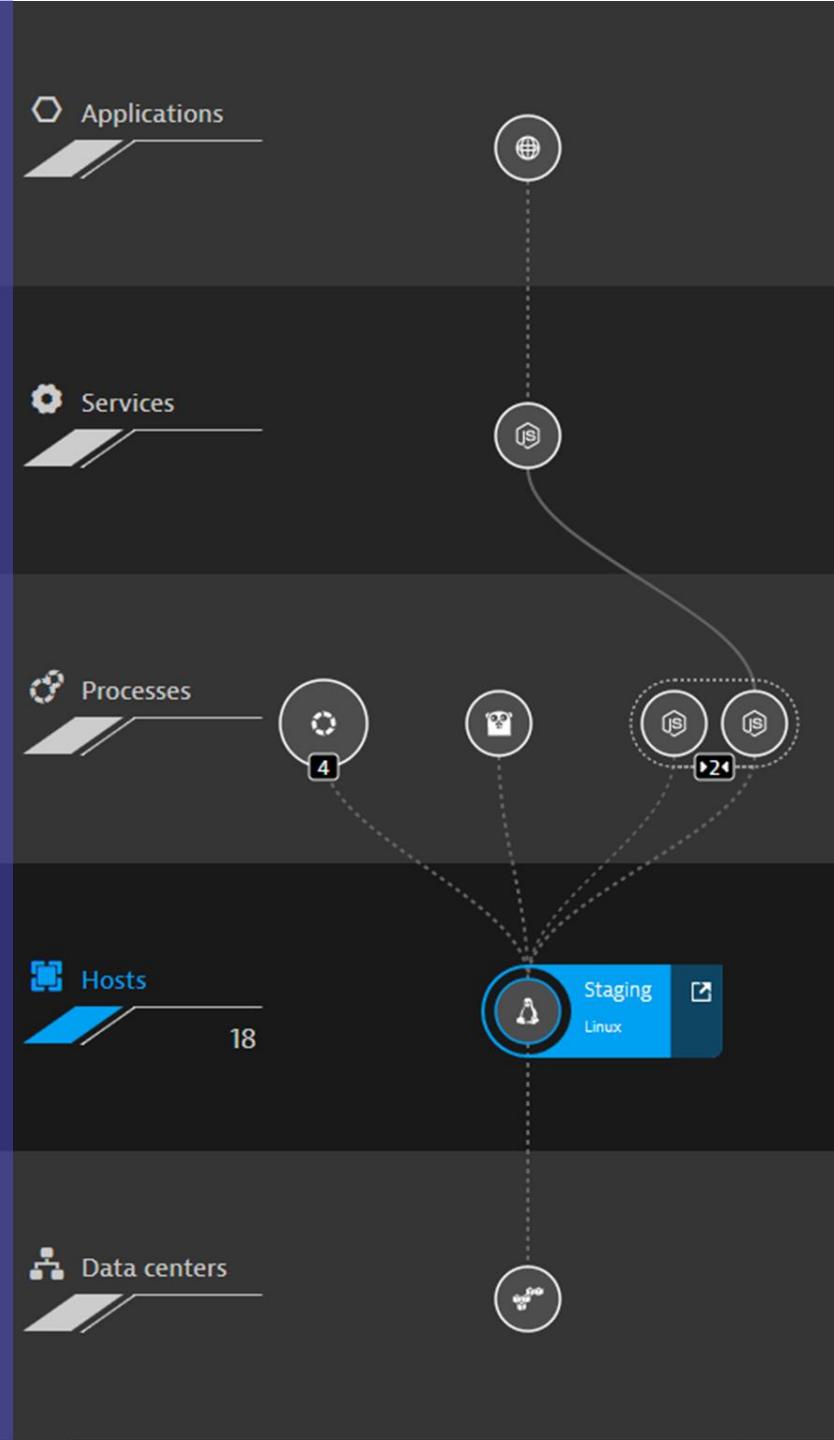
logs



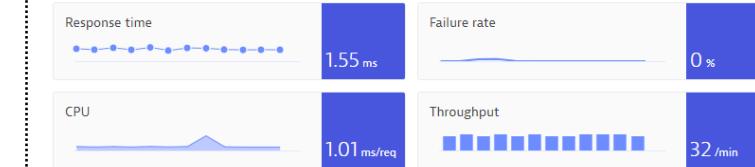
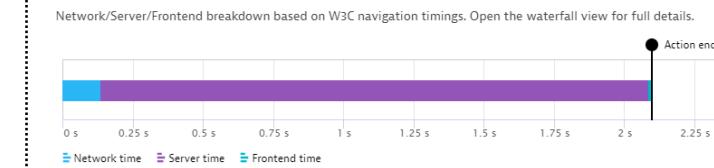
behavior



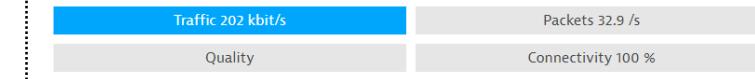
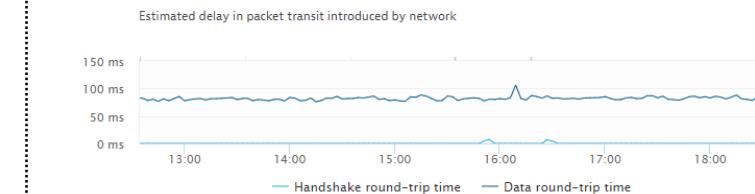
Full Stack - Powered by Dynatrace One Agent



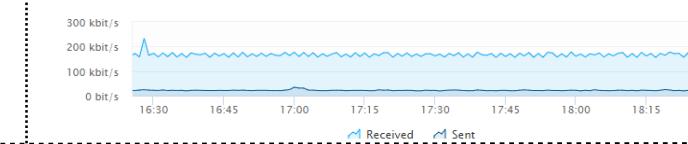
Contributors breakdown



Round-trip time



Average rate at which data was transmitted during the interval. Right axis represents percentage of bandwidth usage.



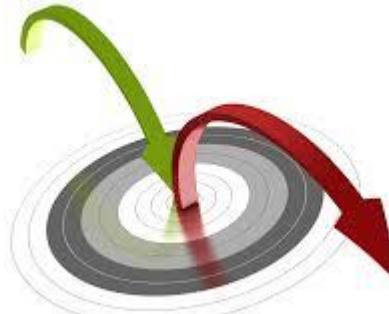
Latency



What about the business?



Revenue



Bounce Rates



Sales-funnels



Conversion rates



Drop-off / abandonment rates

Digital Business Analytics ties Dynatrace's full-stack monitoring data to business metrics to get real-time, precise answers to quickly remediate issues and drive better business outcomes



Business Impact

Real-time business health insights to identify the most impactful issues.



Conversion Optimization

Analyze business milestone metrics in conversion journeys such as abandons, errors, and response time.



Release Validation

Measure and validate that new application features meet key business goals.



Experience Reporting

Understand Service Level Agreement (SLA) compliance across internal and external metrics to meet business objectives.

Quick Overview of the environment: easyTravel

easyTravel

Travel to Paris

Your Journey

Trip Destination

From Date

To Date

Fill out the boxes above and your results will appear below.

Search

Booking Transaction

① Log In ② Review ③ Payment ④ Finish

Please Log In or create a New Account to book your journey.

Username

Password

New Account Cancel **Login**

Back **Next**

Booking Transaction

① Log In ② Review ③ Payment ④ Finish

Credit Card Information
(Secure SSL Encrypted Transaction)

Visa

Card Owner's Name * Armelle Pellerier (As it appears on your credit card)

Expiration Date * December 2022 (Please ensure expiration date is correct)

Verification Number * 1847 (3 or 4 digit number from your card)

Privacy Policy **Back** **Next**

Booking Transaction

① Log In ② Review ③ Payment ④ Finish

The booking procedure is almost complete. Press the **Finish** button to actually perform the booking.

Back **Finish**

Booking Transaction

① Log In ② Review ③ Payment ④ Finish

Trip details

Journey Meriden - Gold Coast
Destination Gold Coast
Tenant TravelNiche Ltd.
Travellers 2 adults

Flight price
Round-trip ticket **\$1034.31**

Hotel price
1 room, 5 nights **\$2413.39**
Taxes and fees **\$29.90**
Total **\$3477.60**
Avg/person **\$1738.80**

New Search To look for a different journey please press the **New Search** button.

Back **Next**

URL for your site will be the public hostname of your server – please check you can access your easyTravel website

Confidential

easyTravel

easyTravel in your Dynatrace tenant:

- Application Name: [easyTravel Website](#)
 - JavaScript framework support: ICEFaces, jQuery, Backbone.js, Prototype
- Synthetic Name: [easyTravel Booking](#)

easyTravel Website

Tags, and JavaScript frameworks

Performance analysis

Actions /min, Action duration, Apdex rating, JavaScript errors, 3rd party provider

| | | |
|---------------------------------|-------------------|-----------------------|
| 56% Chrome Top browser | Load actions | 100 % Availability |
| 93% Real users Top user type | Visually complete | 0 min Total downtime |
| View geolocation breakdown | 0.96 Apdex rating | 2 Monitored locations |

Load actions

Visually complete

0.96 Apdex rating

0.58 s Visually complete for load actions

0.37 s Visually complete for XHR actions

5.34 s Total duration

Availability (Average) ▲

| Location | Cloud | 08:23 | 08:40 | 08:57 | 09:14 | 09:31 | 09:49 | 10:06 | 10:23 |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Sydney | AWS | 100 % | | | | | | | |
| Victoria | Azure | | 100 % | | | | | | |

easyTravel Booking

Browser clickpath [+ Add tag](#)

The infographics show an average of all user actions captured during the synthetic monitor execution. [Read more about metrics...](#)

1 / 15

| Location | Cloud | 08:23 | 08:40 | 08:57 | 09:14 | 09:31 | 09:49 | 10:06 | 10:23 |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Sydney | AWS | 100 % | | | | | | | |
| Victoria | Azure | | 100 % | | | | | | |

User Action Naming

User Action Naming Options

- By default, load action names are based on the underlying HTML page name (for example, *Loading of page index.html*).
- XHR action names are based on the XHR URL (for example, *http://example.com/api/login*).
- Alternatively, you can specify that action names be based on user input + element caption (for example, *click on user-input*).
- For single page applications (AngularJS, Ember.js, VUE.js ..) you can use anchors (the part of the URL after the #) to distinguish among the different views (for example, *settings* taken from URL *http://example.com/#settings*)
- URL cleanup rule, naming rule or extraction rules can also be defined
 - Use cleanup rules to remove unique session IDs that are sometimes appended to URLs.
 - Naming rules can instruct Dynatrace on how to distinguish between various user action types and how to name user actions.
 - Another option for generating auto-detected user action names is extraction rules based on Java regular expressions syntax.

User Action Naming

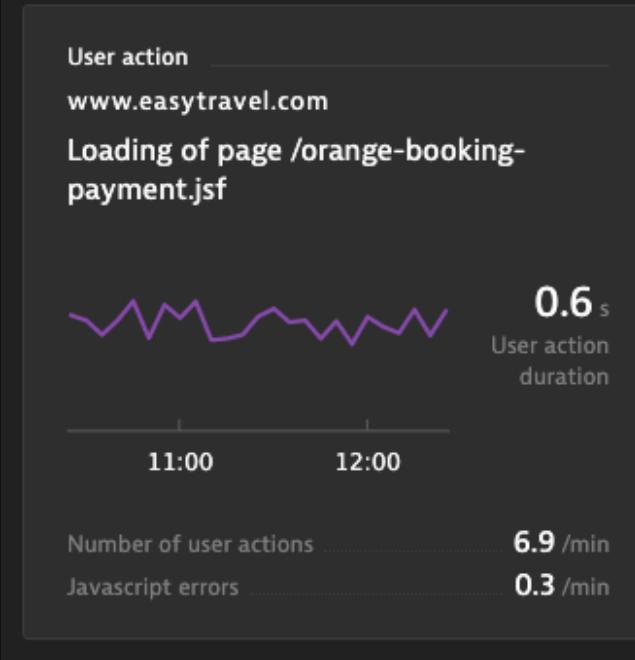
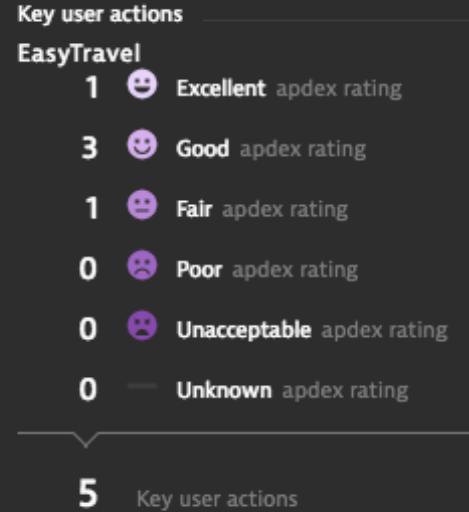
| Order | Type | User action |
|-------|----------------|---|
| 1 | Load action | loading of page /easytravel/search |
| 2 | XHR action | /easytravel/rest/journeys/?match=zurich&from=&to= |
| 3 | XHR action | /easytravel/rest/journeys/3394 |
| 4 | XHR action | /easytravel/rest/journeys/3394 |
| 5 | XHR action | /easytravel/rest/login |
| 6 | User tag ev... | Harihar Mahadeo |
| 7 | XHR action | /easytravel/rest/validate-creditcard |

| User action |
|---|
| loading of page /easytravel/home |
| /easytravel/rest/journeys/?match=albury&from=&to= |
| click on slovan - albury (xhr: /easytravel/rest/journeys/7856) |
| click on book now (xhr: /easytravel/rest/journeys/7856) |
| click on sign in (xhr: /easytravel/rest/login) |
| Harihar Mahadeo |
| click on book journey (xhr: /easytravel/rest/validate-creditcard) |

Key User Actions

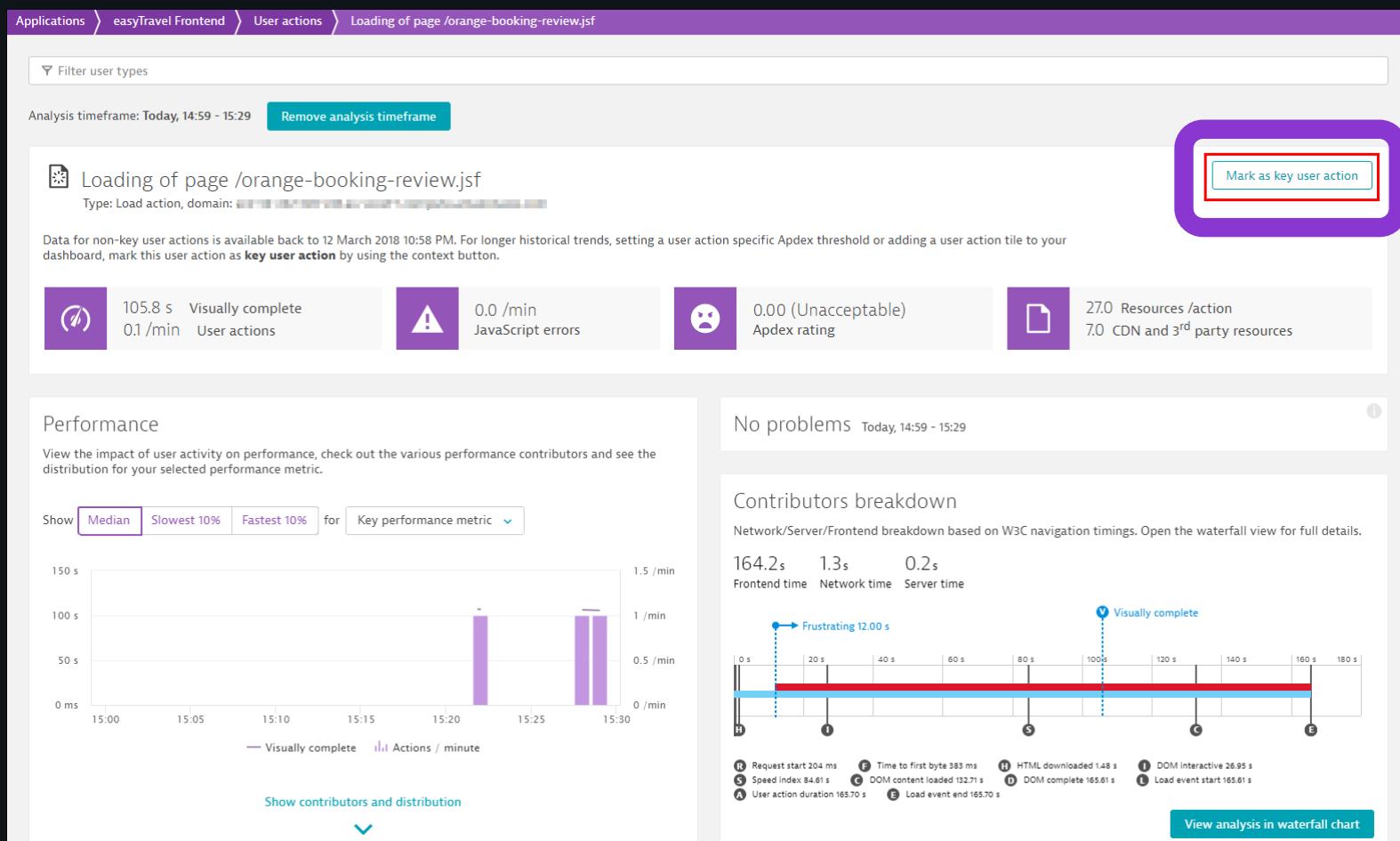
Key User Actions

- Not every user action has the same importance to the success of your digital business.
 - Payment or login pages are particularly vital to your business operations and your customers' experience with your application
- To give such critical user actions the attention they deserve, mark certain user actions as key user actions.
- Key user actions enable:
 - Custom anomaly detection rule
 - Lower key performance thresholds for business critical actions
 - Fixed thresholds for SLAs
 - Pinning key user actions tiles to dashboards
 - Ensures performance data is stored long term, even on infrequently seen actions.



Configure A User Action As Key

- From the performance analysis screen select 'top user actions'
- In the list of actions select the action you'd like to make 'key' and filter on it.
- When analyzing a single user action, you can select the button 'mark as key user action'



Hands On – Key User Actions

Hands On – Hands On Key User Actions

<https://github.com/Dynatrace-APAC/Workshop-BizOps>

Follow Steps in Hands On - Key User Actions

Add the following as key user actions

loading of page /

loading of page /orange.jsf

loading of page /orange-booking-finish.jsf

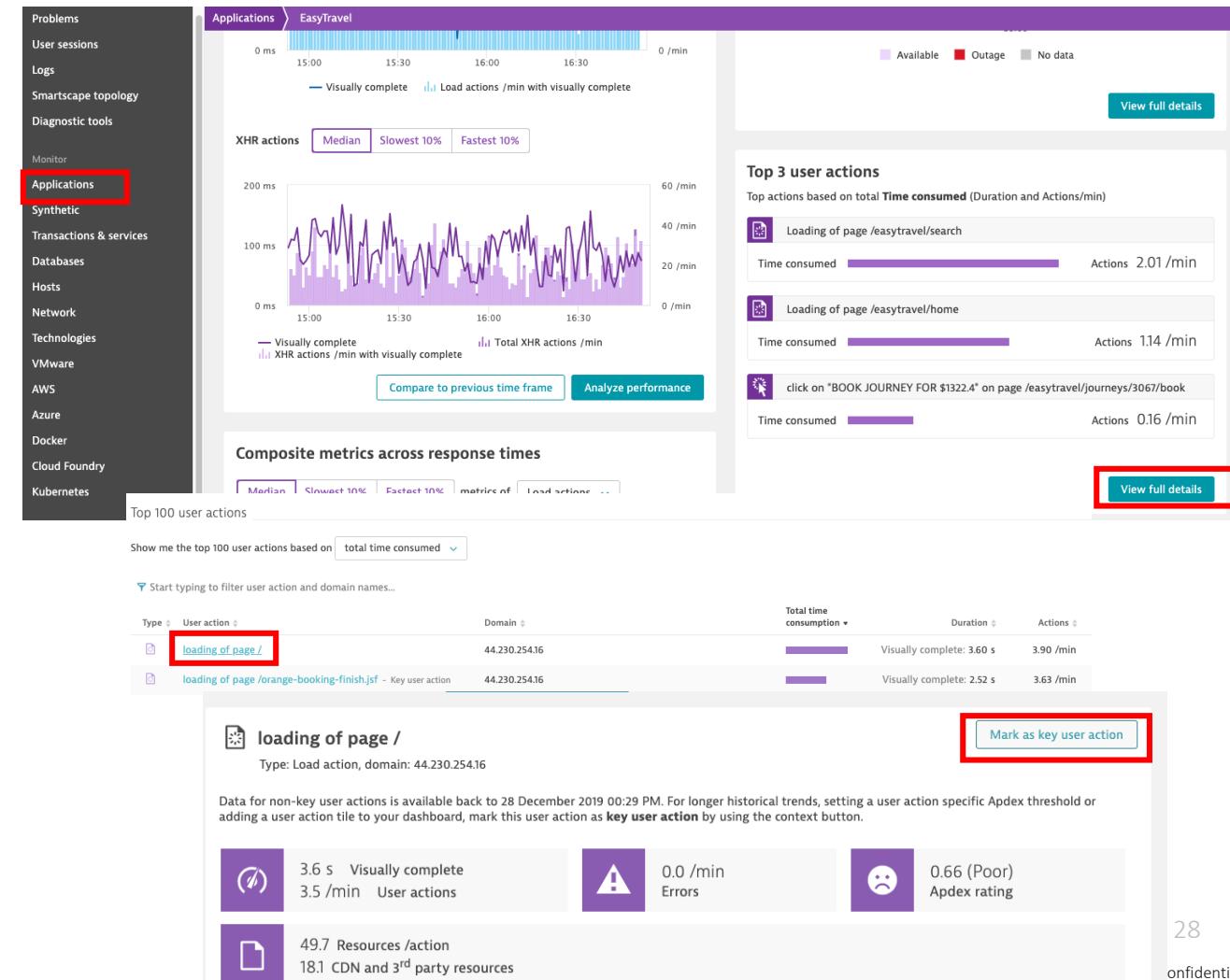
loading of page /orange-booking-review.jsf

loading of page /orange-booking-payment.jsf

click on login

click on search

loading of page /special-offers.jsp



Tips for Tuning your environment

Tips for Tuning your environment

- Enable [JavaScript framework support](#)
- Configure [User Tagging](#)
- Configure [User Action Naming](#)
- Add [Key User Actions](#)
- Usability analytics

Quick Overview of Dynatrace Dashboards

Dashboards

- Dashboards > Create Dashboard
- Name your dashboard
- Drag and drop the following OOTB tiles:
 - Host Health
 - Application Health
 - Top Web Applications

The screenshot shows the Dynatrace interface for creating a new dashboard. On the left, a sidebar menu is open with the 'Dashboards' option highlighted by a green box. The main area displays a list of existing dashboards, with one titled 'Hands On - Sales Funnel Dashboard' shown in detail. A modal window for creating a new dashboard is open, prompting the user to enter a 'Dashboard name' (set to 'Application Overview') and a 'Create' button, also highlighted with a green box. Below this, the 'Edit dashboard' panel is visible, featuring a 'Tiles' tab selected. Under the 'Applications' section, the 'Application health' tile is highlighted with a green box.

Dashboards

Reports

Analyze

Problems

User sessions

Logs

Smartscape topology

Diagnostic tools

Monitor

Dashboards

Overview of all dashboards you are permitted to view or edit.

Please provide feedback and find planned enhancements at [Dynatrace answers](#).

Filter by

7 Dashboards

Favorite ▾ Name ▾ Modified at ▾

Hands On – Sales Funnel Dashboard Jun 24 09:35

Done

Application Overview Create

Hands On – Basic Dashboard

+ Add tag

Overview

Application health

All fine 2

Action count (by Apdex category)

Action count (by Apdex category)

Top web applications | 3 most active

EasyTravel Angular 19.5 / min

easyTravel Website 11.9 / min

Edit dashboard

Tiles Settings

Filter tiles

Services

Service health Service or request

Applications

Top web applications Application health

User behavior User breakdown

Hands On – Basic Dashboard

Basic Dashboard

Completed

<https://github.com/Dynatrace-APAC/Workshop-BizOps>

Follow Steps in Hands On – Basic Dashboard

Create a basic overview dashboard using:

OOTB tiles

Custom Charts

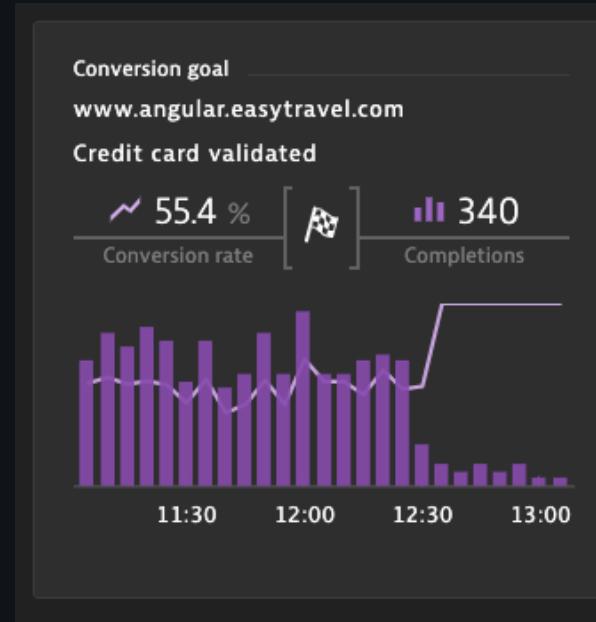


Conversion Goals



What are Conversion Goals

- Configure conversion goals for specific user actions to understand how successfully you're meeting your conversion milestones
 - Ex: Successful checkouts, newsletter signups, demo signups
- Goals can be defined for reaching specific user actions, destination URLs, session duration, and number of actions per session
- Visualized in conversion goal tiles and in the user behavior section of your applications



Conversion Goals

- Compare conversion analysis over different timeframes, releases, etc.



Conversion Goals– How to..

- Conversion Goals are defined against an Application ([Settings > Conversion goals > Add goal](#)).
- (Current) Limits – Per Application:
 - 20 goals
- Available Types:
 - User Action
 - Session Duration
 - Number of User Actions
 - Destination

Application settings

easyTravel Website

General

See your application setup

Data privacy

Adjust data-capture & storage settings

User actions

Generate consistent user action names

Conversion goals

Measure success against business goals

User tag

Add user tags to identify your session

Session and user action properties

Use metadata to analyze user sessions

Async requests and single page apps

Select your frameworks

Content capture

Define resource monitoring

Session Replay

Configure session replay settings

Usability analytics

Configure usability analytics settings

Anomaly detection

Fine-tune the sensitivity and thresholds

Errors

Configure how errors are captured

Advanced setup

Fine-tune your real user monitoring

Conversion goals

Conversion goals are a versatile way of measuring how well your application fulfills your conversion goals. You can define goals based on a user's first visit to your site, their last visit, or even a specific page they visit (e.g., a signup page), session length, or number of actions per session. You can then compare the conversion rate across different segments of your users.

Name:

Successful Bookings - Open Final Page

Type of goal:

User Action

Rule applies to:

Load actions

Rule:

Action name ends with

/orange-booking-finish.jsf

3.1% of the user actions reached this goal in the last 30 minutes. Case sensitive

Add goal

Cancel

Conversion Goals

Live Demo

Conversion Rates

Completed

<https://github.com/Dynatrace-APAC/Workshop-BizOps>

Follow Steps in Hands On – Conversion Rates

Remember! Results will only show for completed user sessions!

Create a conversion rates for easyTravel Website

Confirm you have results be running:

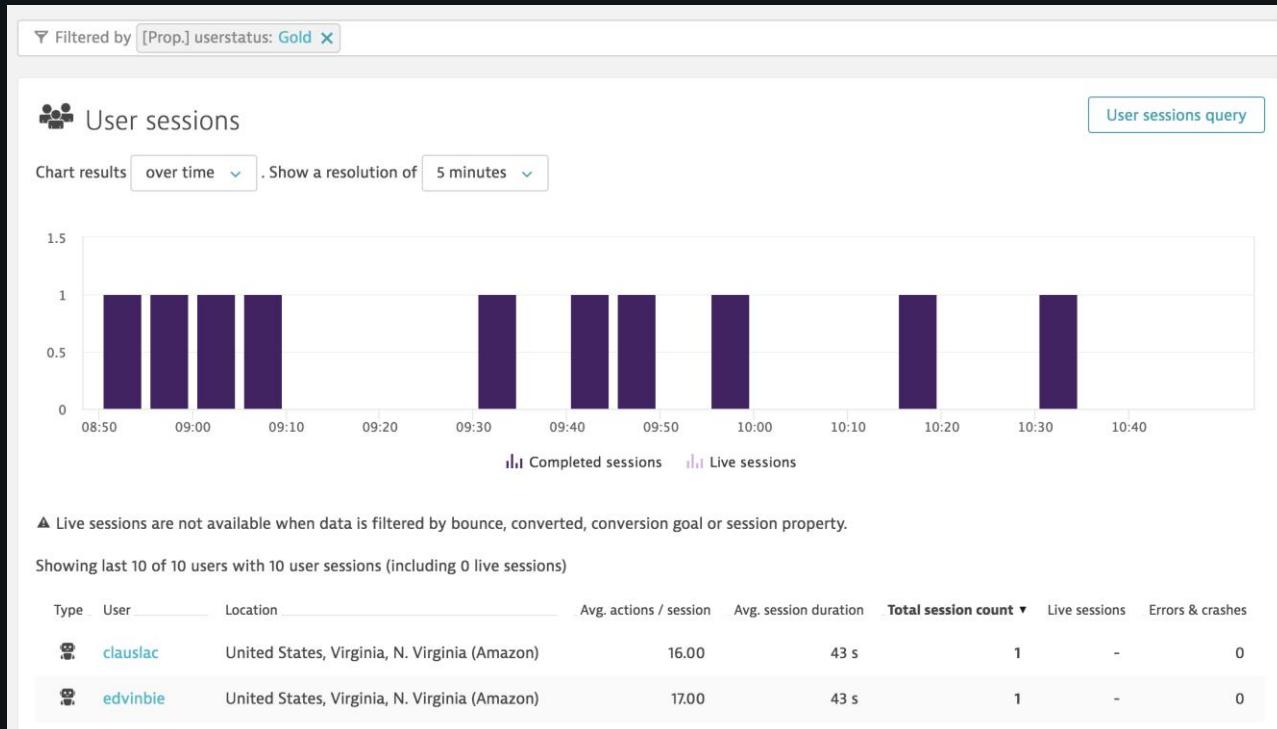
(It may take up to 5 mins for the results to appear)



User Session Properties

What are User Session Properties?

- Session properties can be leveraged for deep visibility into all the details of your users' interactions with your application.
- Key/value pairs captured as part of each of your users' journey to enrich session data with additional details for fine-grained user session and performance analysis
 - Cart value, Member Status, Trip Location, etc.
- Used for filtering monitoring results across many analysis views
- Also included in user session export
- Example: Analyze sessions only from **Gold** customers



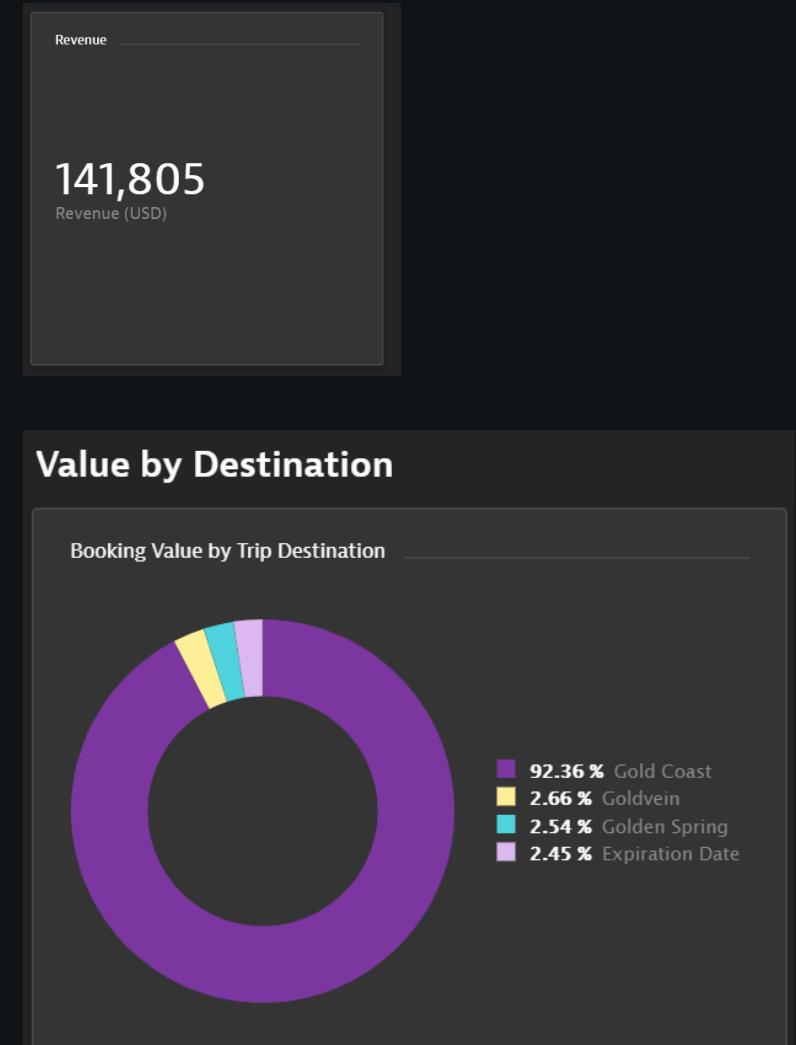
User Session Properties – How do they work?

The screenshot shows the easyTravel booking transaction interface. At the top, there's a navigation bar with links for Home, Special Offers, About, Contact, Terms of Use, Privacy Policy, and a user status indicator (Hello Amaro Okonjo! Gold status! Logout). Below the navigation is a yellow header bar titled "Booking Transaction". The main content area has four tabs: ① Log In, ② Review (which is active), ③ Payment, and ④ Finish. To the left, there's a sidebar with sections for "Your Trip From To" and a large image of a multi-story hotel with a pool. The central part displays "Trip details" for a journey from Meriden to Gold Coast, Gold Coast, booked by TravelNiche Ltd. for 2 adults. It lists "Flight price" as \$1034.31 and "Hotel price" as \$2413.39, totaling \$3477.60 per person. A note says "To look for a different journey please press the New Search button." At the bottom are "New Search" and "Back" buttons, and an orange "Next" button.

Revenue:

Destination:

Status:



Define Session Properties – Types

- Configure session properties on:
 - Meta Tag
 - JavaScript Variable
 - Cookie Value
 - CSS Selector
 - Server-side request attributes
- Data Types:
 - String
 - Number
 - Date

The screenshot shows the Dynatrace interface for defining session properties. The left sidebar navigation includes: Dashboards & reports, Dashboards, Create custom chart, Reports, Analyze, Problems, User sessions, Log files, Smartscape topology, Diagnostic tools, Monitor, Applications (selected), Synthetic, Transactions & services, Databases, Hosts, Network, Technologies, VMware, AWS, Azure, Docker, Manage, Deploy Dynatrace, Deployment status, Settings, Devops, Debug UI, and UI Feature Flags.

The main content area is titled "Session properties" under "easyTravel Frontend > Settings". It displays the following information:

- Quota amounts used:**
 - 3 of 10 string properties
 - 2 of 5 number properties
 - 0 of 5 date properties
- Defined session property rules:**

| Key * | Data type | Expression type | Capture expression | Delete | Edit |
|--------------------|-----------|---------------------|----------------------------------|--------|------|
| appversion | String | JavaScript variable | eVersion | X | V |
| author | String | Meta tag | author | X | V |
| averagepersonprice | Number | CSS selector | #iceform3a j.idt113-12-1 span | X | V |
| member_status | String | CSS selector | div.orangeHeaderLogin a span | X | V |
- Select the expression type that includes the metadata you want to use for this user tag rule. More...**
- Expression type:** CSS selector
- Data type:** String, max 100 chars
- Key:** member_status
- CSS selector:** div.orangeHeaderLogin a span
- Apply cleanup rule:** A button with a circular arrow icon.
- Type an extraction rule to clean up the captured value:** Input field containing "(*) status!"
- Additional row (partially visible):**

| totalprice | Number | CSS selector | #iceform3a j.idt113-11-1 span | X | V |
|------------|--------|--------------|----------------------------------|---|---|
|------------|--------|--------------|----------------------------------|---|---|

User Session Properties - Increased Visibility

The screenshot shows the Dynatrace interface for managing user sessions. On the left, a sidebar lists various monitoring categories like Dashboards & reports, Problems, User sessions, and Log files. The main area displays session details for an anonymous user profile with ID 1531815771385B1DCNLF3KE15A8RA7LUHUL8QINGPIGOP. It highlights that 1 application was accessed ('easytravel Frontend (Web)'). A map indicates the session originated from Linz, Austria. The session used a Desktop browser and device type. Below this, a timeline shows two sessions: one starting at 16:12:50 with a duration of 1 min 58 s, and another starting at 14:57:52 with a duration of 32 s. Both sessions are labeled 'Silver Low!' under the 'User tag' column. At the bottom, 'Live session details' show a duration of Today, 16:12 - 16:36 (1 min 58 s), and a note that the user session has not ended. A red box highlights the 'memberstatus: Gold' tag in the session details. A callout bubble points to this status with the text 'Additional Properties for this user session'. The footer includes links for Other, Chrome 67, Level 3 Parent, LLC, and Silver Low!, along with achievement and problem notifications.

dynatrace

Search Dynatrace: [redacted]

Achievement unlocked! Problem 919: Today, 16:06 – Now 1

Problems > Problem 919 > User sessions > Anonymous

Filtered by [Prop.] memberstatus: Gold X Impacted users by problem: 919

1531815771385B1DCNLF3KE15A8RA7LUHUL8QINGPIGOP

Session details related to this user profile are outlined below.

1 Application accessed
easytravel Frontend (Web)

Linz, Austria

1 Browser and device type used
Desktop

0 anonymous user sessions

Extended by 2 sessions from the same user (cookie) identifier [More...](#)

Analyze sessions based on [user tag](#) and [select a second category](#)

Started at User tag Duration Replay

| Started at | User tag | Duration | Replay |
|------------|-------------|-------------------|-------------|
| 16:12:50 | Silver Low! | (live) 1 min 58 s | [play icon] |
| 14:57:52 | Silver Low! | 32 s | [play icon] |

Additional Properties for this user session

totalprice: 3331.0 averagepersonprice: 1665.0 author: dynaTrace Softw... appversion: 2.0.0.2952 memberstatus: Gold

Other Chrome 67 Level 3 Parent, LLC Silver Low!

User Session Properties – How to..

- User Session Properties are defined against an Application ([Settings > Session and user action properties > Add property](#)).
- (Current) Limits – Per Application:
 - 10 strings
 - 10 numeric data type properties (Long, Double or Date)
- Key name cannot be changed once created!

The screenshot shows the 'easyTravel Website' application settings. The navigation path is Applications > easyTravel Website > Settings > Session and user action properties > Property details. On the left, a sidebar lists various settings categories: General, Data privacy, User actions, Conversion goals, User tag, Session and user action properties (which is currently selected), Metrics, Async requests and single page apps, Content capture, Session Replay, Usability analytics, and Anomaly detection. On the right, the 'Add property' form is displayed. It includes sections for 'Property packs' (selected 'Custom defined property'), 'Expression type' (set to 'CSS selector'), 'Data type' (set to 'String'), 'CSS selector' (input field), 'Property details' (with fields for 'Display name' and 'Key'), and 'Do Not Track' behavior (radio button set to 'Ignore').

The Easy Way to find the CSS Element

1

2

3

Booking Transaction

① Log In ② Review ③ Payment ④ Finish

Trip details

| Journey | Meriden - Gold Coast |
|---------------------|----------------------|
| Destination | Gold Coast |
| Tenant | TravelNiche Ltd. |
| Travellers | 2 adults |
| Flight price | \$ 1034.31 |
| Round-trip ticket | |
| Hotel price | \$ 2413.39 |
| 1 room, 5 nights | |
| Taxes and fees | \$ 29.90 |
| Total | \$ 3477.60 |
| Avg/person | \$ 1738.80 |

New Search To look for a different journey please press the New Search button.

Back Next

Privacy Policy

Back Forward Reload

Save as... Ctrl+S Print... Ctrl+P Cast... Translate to English

LastPass Take Webpage Screenshots Entirely with FireShot

View page source Ctrl+U Inspect Ctrl+Shift+I

`<tr class="icePnlGrdRow1 tripDetailsPanelRow1">...</tr>
<tr class="icePnlGrdRow2 tripDetailsPanelRow2">
 <td class="icePnlGrdCol tripDetailsPanelCol label" id="iceform:j_idt113-11-0">...</td>
 <td class="icePnlGrdCol tripDetailsPanelCol data" id="iceform:j_idt113-11-1">
 $ 3477.60
 </td>
</tr>
<tr class="icePnlGrdRow1 tripDetailsPanelRow1">...</tr>
<tr class="icePnlGrdRow2 tripDetailsPanelRow2">...</tr>
'tbody'
>
Back
Next
<div class="icePnlGrp orangeBanner" id="iceform:j_idt93">...</div>
<div class="icePnlGrp clearer" id="iceform:j_idt95"><iceformhdnFldsDiv>...</div>`

element.style { }
.tripDetailsPanel .data {
 position: relative;
 width: 100px;
 height: 100px;
 background-color: #ccc;
 border-radius: 50%;
 margin: auto;
}
.tripDetailsPanel .data::before {
 content: '';
 position: absolute;
 top: 0;
 left: 0;
 width: 100px;
 height: 100px;
 background-color: inherit;
 border-radius: inherit;
}
.tripDetailsPanel .data::after {
 content: '1';
 position: absolute;
 top: 50px;
 left: 50px;
 font-size: 20px;
 color: white;
 background-color: red;
 padding: 2px;
 border-radius: 50%;
 transform: translate(-50%, -50%);
}

Add attribute
Edit attribute
Edit as HTML
Delete element

Copy

Cut element
Copy element
Paste element

Hide element
Force state

Break on

Copy outerHTML
Copy selector

Copy JS path
Copy XPath

0 auto 0 auto;
0;

Confidential 47

User Session Properties

Live Demo

Hands On – Session Properties – Part 1

<https://github.com/Dynatrace-APAC/Workshop-BizOps>

Follow Steps in Hands On – Session Properties - Part 1

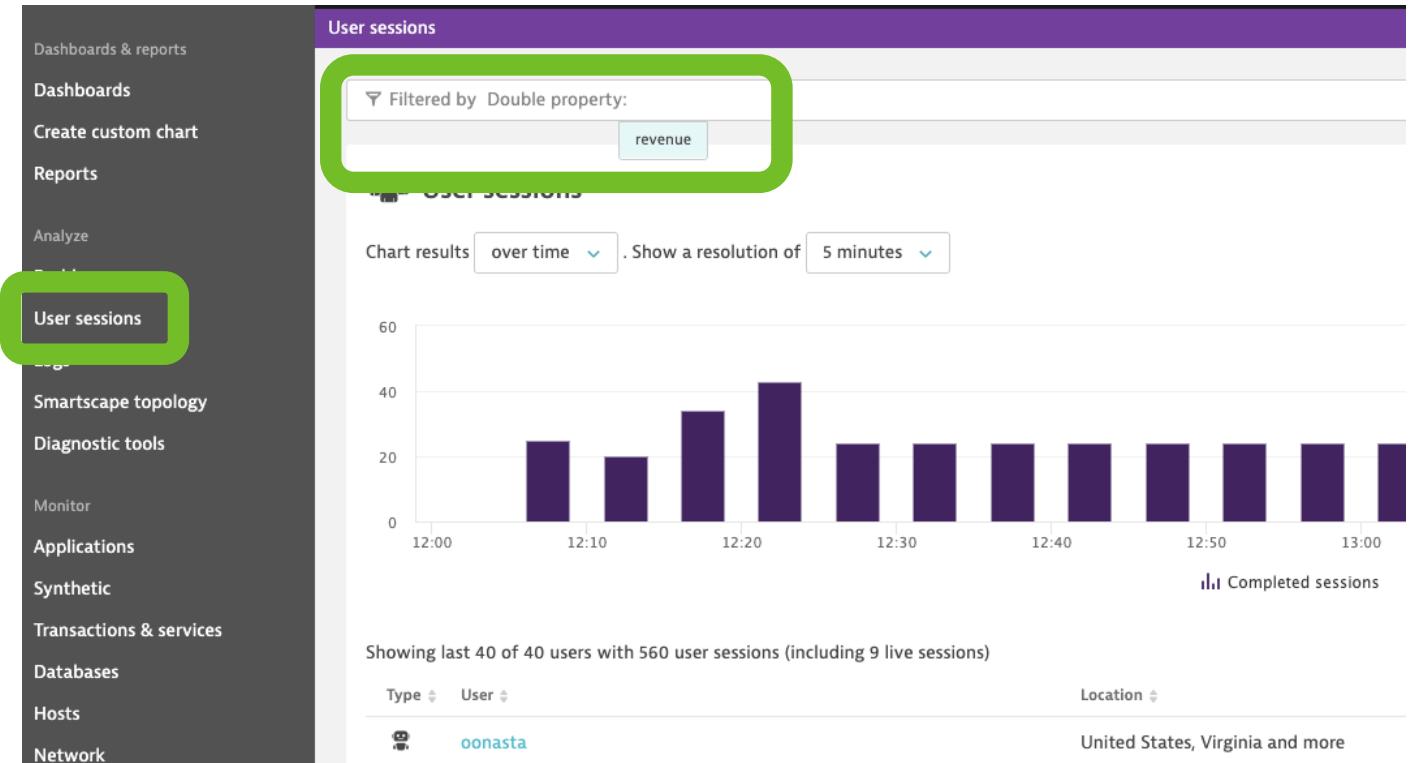
Remember! Results will only show for completed user sessions!

Create a session properties for :

Membership Status

Confirm you have results be running:

(It may take up to 5 mins for the results to appear)



User Session Properties

Live Demo

Hands On – Session Properties – Part 2

<https://github.com/Dynatrace-APAC/Workshop-BizOps>

Follow Steps in Hands On – Session Properties – Part 2

Remember! Results will only show for completed user sessions!

Create a session properties for :

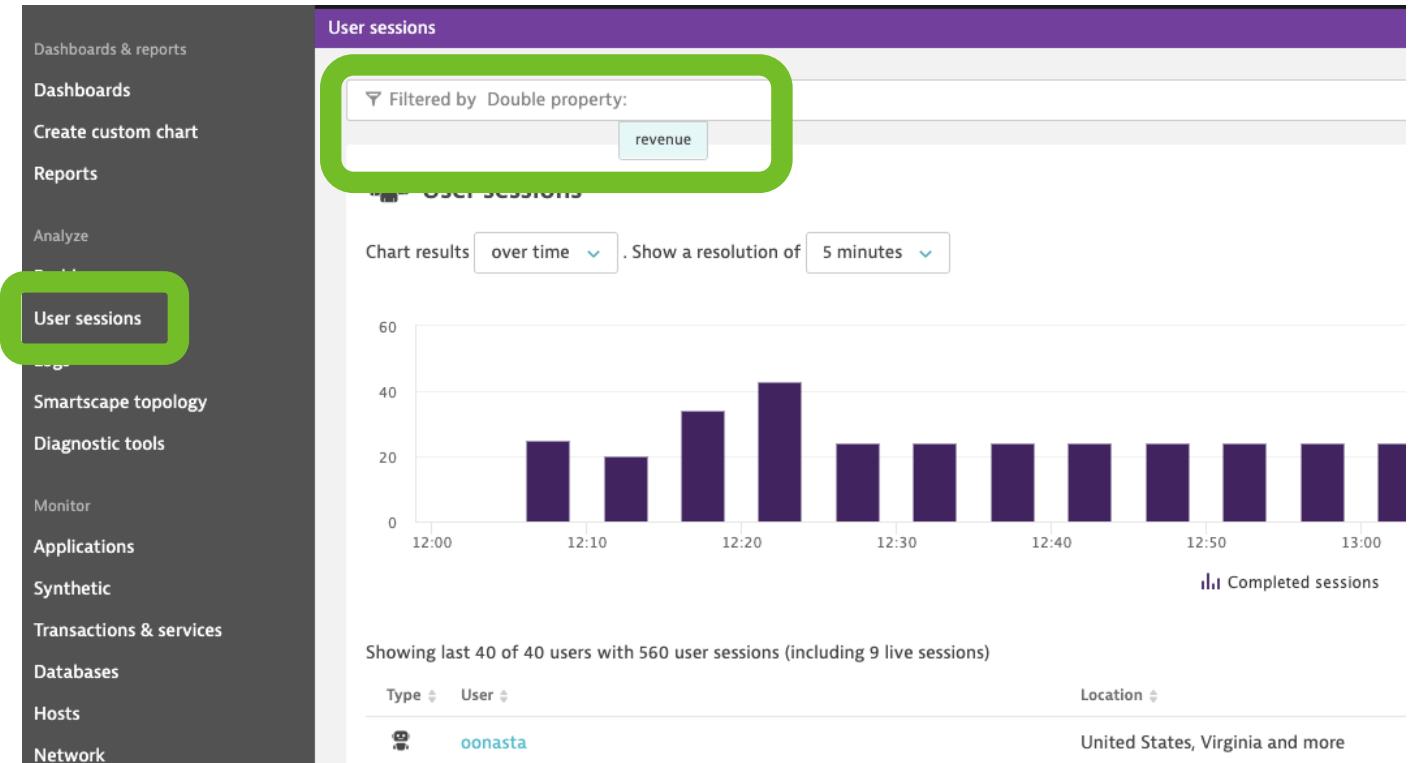
Booking Total

Trip Journey

You will need to use dev tools to identify the correct CSS selector.

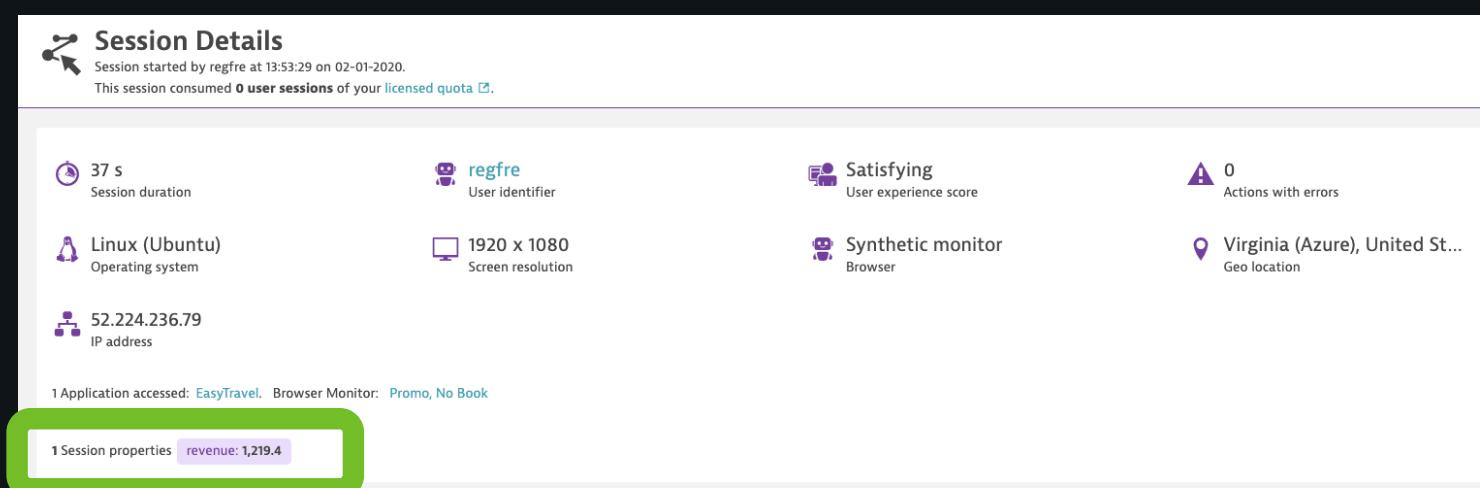
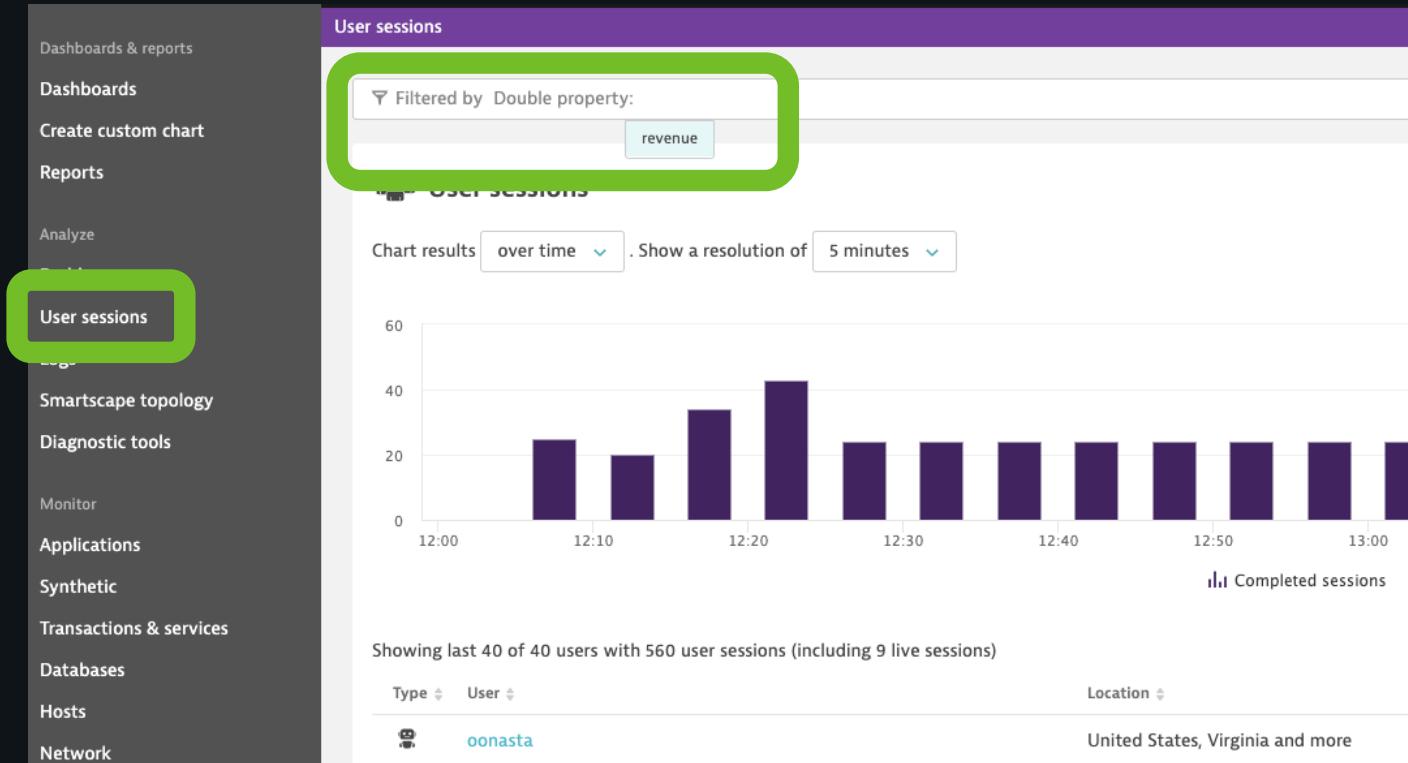
Confirm you have results be running:

(It may take up to 5 mins for the results to appear)



Pro Tip

- How do I know this is working?
- Navigate to User Sessions and select double property in the filter bar
- If revenue shows up, it works!
- Click on a value to show all the user sessions that booked with that trip total



User Session Properties with Adobe Analytics

User Session Properties - Adobe Analytics

- The Adobe Experience Cloud ID allows you to look up a session you believe to be of interest in Adobe

Applications > easyTravel Website > Settings > Session and user action properties > Property details

Application settings

easyTravel Website

General
See your application setup

Data privacy
Adjust data-capture and storage settings

User actions
Generate consistent user action names

Conversion goals
Measure success against business goals

User tag
Add user tags to identify your session

Session and user action properties
Use metadata to analyze user sessions

Metrics
Manage and create metrics

Async requests and single page apps
Select your frameworks

Content capture
Define resource monitoring

Session Replay
Configure session replay settings

Usability analytics
Configure usability analytics settings

Add property

Select the expression type that includes the metadata you want to use for this user tag rule. [More](#)

Property packs Custom defined property

1) Select templates 2) Finish configuration

Adobe Search property packs...

CLOUDFARE

DynamicYield

Google Needs configuration Already added

Improve Digital

Intercom

Kampyle

Opinion Lab

Optimizely

Parsely

Permutive

Transaction ID

visitorID

Campaign

Channel

Events

Property 1

User Session Properties - Adobe Analytics

- The page naming conventions are different for each solution. It makes sense to leverage the Adobe `pageName` in Dynatrace to focus analysis on those pages and not get lost in translation.
- See “[Mastering Dynatrace Session and User Action Properties for Enhanced Business Analytics](#)” YouTube video for more details

The screenshot shows the Adobe Analytics interface with the following navigation path: Applications > easyTravel Website > Settings > Session and user action properties > Property details. On the left, there is a sidebar titled "Application settings" for "easyTravel Website" with links to General, Data privacy, User actions, Conversion goals, User tag, Session and user action properties (which is currently selected), Metrics, and Async requests and single page apps. The main right-hand panel is titled "Add property" and "Select the expression type that includes the metadata you want to use for this user tag rule. More...". It features two tabs: "Property packs" (selected) and "Custom defined property". Below these tabs is a progress bar with two steps: "1) Select templates" and "2) Finish configuration". A table lists a single property pack named "Adobe" with a column header "Property pack". The row for "Adobe" contains "Name" (Page name), "Ignore DnT" (unchecked), "Storage" (empty), "Delete" (button), and "Edit" (button). Below the table, there are configuration options: "Define 'Do Not Track' browser behavior" (radio button selected for "Ignore 'Do Not Track'"), "Select at least one storage type" (checkbox checked for "Store as user action property"), "Enable only when your property doesn't contain any personal identifiable information (PII)" (radio button selected for "Store as session property"), and "Select at least one storage type" (checkbox checked for "Store as user action property"). At the bottom right are "Cancel" and "Create properties" buttons.

User Session Properties - Adobe Analytics - eVar

- Configure capturing of Adobe eVarN, propN, hierN and more

evar10_zipcode Long JavaScript variable s.eVar10 X ^

Select the expression type that includes the metadata you want to use for this user tag rule. [More...](#)

| | |
|---|---------------------|
| Expression type | Data type |
| JavaScript variable | Long |
| Key | JavaScript variable |
| evar10_zipcode | s.eVar10 |
| Specify a JavaScript variable. This variable must be available globally and the capture expression must use dot notation for property reference, i.e. 'someVar.version'. See documentation for details. | |
| Display name | optional |
| <input checked="" type="radio"/> <input type="radio"/> Apply cleanup rule | |

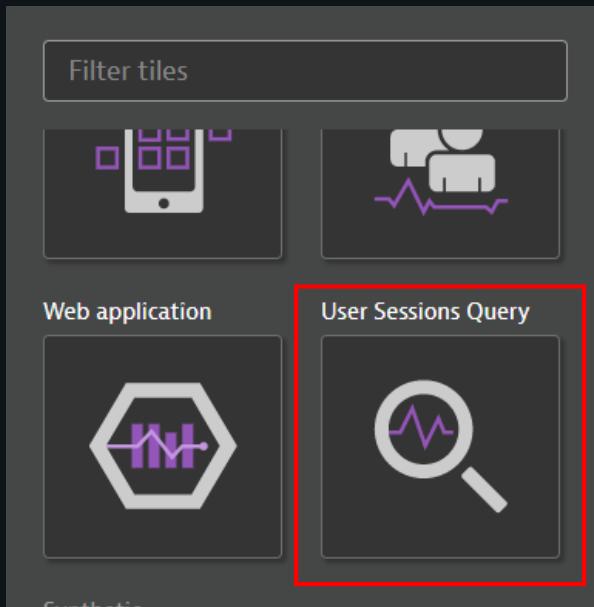
User Session Query Language (USQL)

What Is USQL?

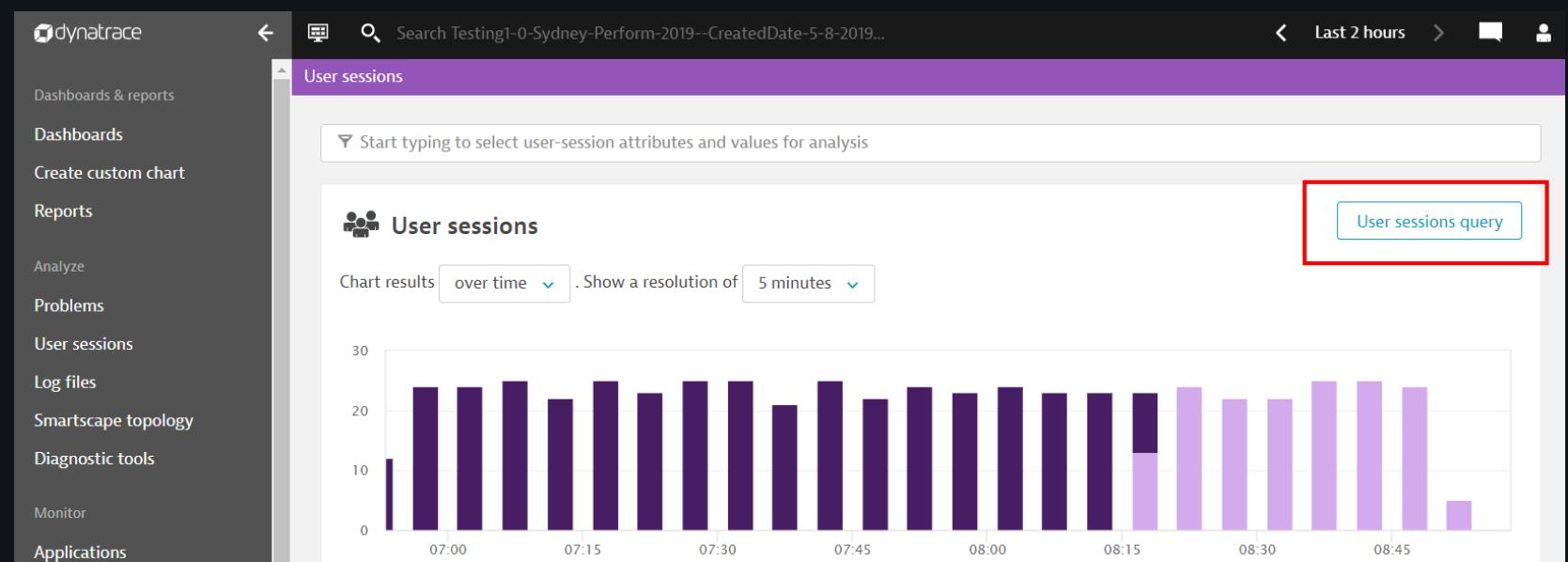
- Dynatrace captures user session data, which includes customer behaviour and high-level performance data
- User Session Query Language (USQL) provides an easy way to query analytics and performance data captured by Dynatrace's real-user monitoring sessions
- USQL makes it easy to segment, aggregate, and filter user session data in whatever way best meets your business requirements.
 - As a business owner, this may mean aggregating data to keep track of KPIs and business goals, such as shopping cart abandonment rates and conversions.
 - As a product owner, this may mean having the functionality to easily keep track of performance improvements following a new release or segmenting out a geographical region in which your company has just started doing business.
- The User Session Query Language is not SQL, as Dynatrace does not store the data in a relational database
 - The User Session Query Language does use many of the concepts of SQL and the syntax is similar to make it easy to get started.

Accessing USQL

Dashboard Tile for USQL



User Sessions > User sessions query





User sessions query

Create advanced queries on completed user sessions using user sessions query language. [View Documentation](#)

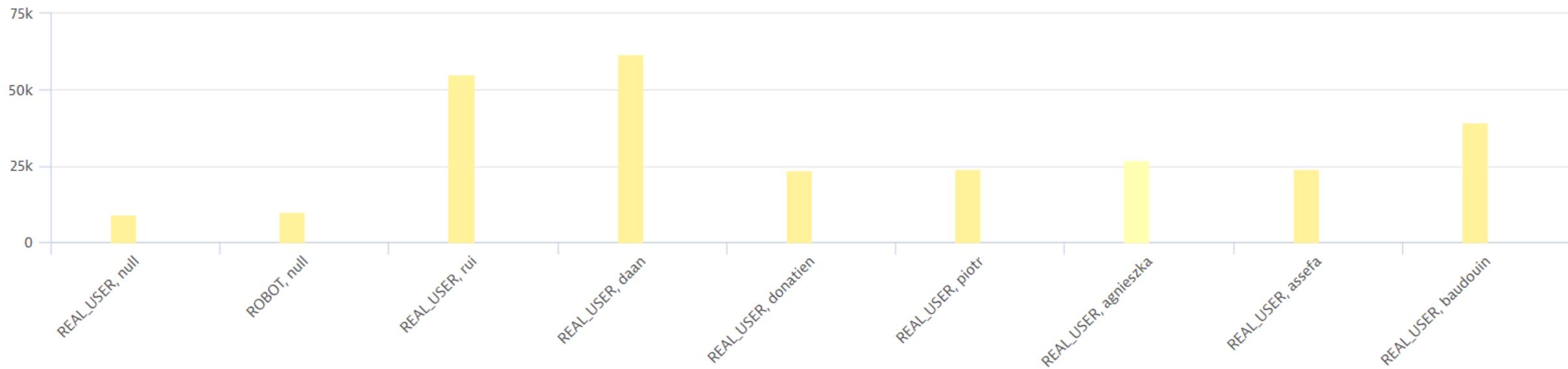
```
SELECT userId, AVG(userActionCount), userType, AVG(duration), COUNT(*), SUM(totalErrorCount) FROM usersession WHERE useraction.application='easyTravel' GROUP BY userType, userId ORDER BY COUNT(*) DESC
```

Run query

User sessions query results

Pin to dashboard

Visualization: Bar chart Line chart Pie chart Single value Table only



USQL Syntax

- A typical query is built from the following Keywords:

```
SELECT <columns> FROM <table> WHERE <condition> GROUP BY <grouping> ORDER BY <ordering>
```

- The only mandatory elements are SELECT <columns> and FROM <table>
- Examples:

```
SELECT userid, COUNT(*), AVG(userActionCount) FROM usersession WHERE country IN ('Australia') GROUP BY userid
```

```
SELECT userid, COUNT(*), AVG(userActionCount) FROM usersession WHERE country IN ('Australia') GROUP BY userid
```

User sessions query
Create advanced queries on completed user sessions using user sessions query language. [View Documentation](#)

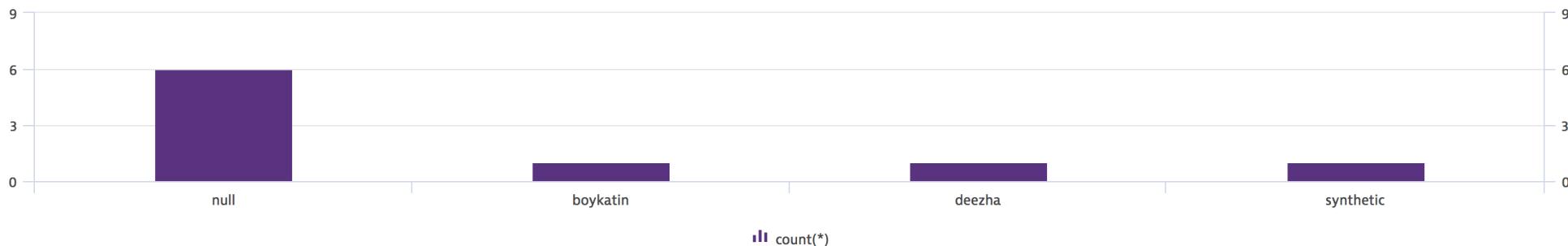
```
select userid, COUNT(*), AVG(userActionCount) FROM usersession where country IN ('Australia') GROUP BY userid
```

Run query

User sessions query results 

Pin to dashboard

Visualization: Bar Chart Line Chart Pie Chart KPI Table Only



| userid | count(*) | avg(userActionCount) |
|-----------|----------|----------------------|
| null | 6 | 4.83 |
| boykatin | 1 | 10 |
| deezha | 1 | 26 |
| synthetic | 1 | 11 |

Confidential 62

Using Timeframes With USQL

- User session data should always be accessed with a timeframe
 - You can use the time fields like `starttime` and `endtime`
 - You can also use these fields in functions, for example, to find out what time during the day most user sessions start, as in `HOUR(starttime)`
- It can be costly to access large timeframes because of the high number of potential single matches to queries
 - To query large volumes of data consider exporting the data to a BI tool (covered in this session)

Tip #1 – Use Limit

Allows you to limit the number of returned results. For example, you can select only the top 10 results when it is combined with ordering.

`SELECT city, starttime FROM usersession ORDER BY starttime DESC LIMIT 10`

The screenshot shows a user interface for querying data from a database. At the top, there is a search bar containing the SQL query: `SELECT city, starttime FROM usersession ORDER BY starttime DESC LIMIT 10`. To the right of the search bar is a teal-colored button labeled "Run query". Below the search bar, the title "User sessions query results" is displayed, followed by a small edit icon. On the right side of this title, there is a "Pin to dashboard" button. Underneath the title, there is a "Visualization" section with five options: "Bar Chart", "Line Chart", "Pie Chart", "KPI", and "Table Only". The "Table Only" option is currently selected, indicated by a purple border around its box. The main area displays a table with two columns: "Session details" and "starttime". The "Session details" column lists various session locations, each preceded by a magnifying glass icon. The "starttime" column lists the corresponding start times for each session. The table contains ten rows of data, corresponding to the limit specified in the query.

| Session details | starttime |
|----------------------|--------------------------|
| N. Virginia (Amazon) | January 27, 2019 - 13:41 |
| Gdańsk | January 27, 2019 - 13:41 |
| N. Virginia (Amazon) | January 27, 2019 - 13:40 |
| Dublin | January 27, 2019 - 13:38 |
| N. Virginia (Amazon) | January 27, 2019 - 13:38 |
| Virginia (Azure) | January 27, 2019 - 13:36 |
| Virginia (Azure) | January 27, 2019 - 13:35 |
| Virginia (Azure) | January 27, 2019 - 13:33 |
| Dublin | January 27, 2019 - 13:30 |

Tip #2 – You Can Access Data From Another Table

- Two main tables to query:

`usersession` – contains completed user sessions

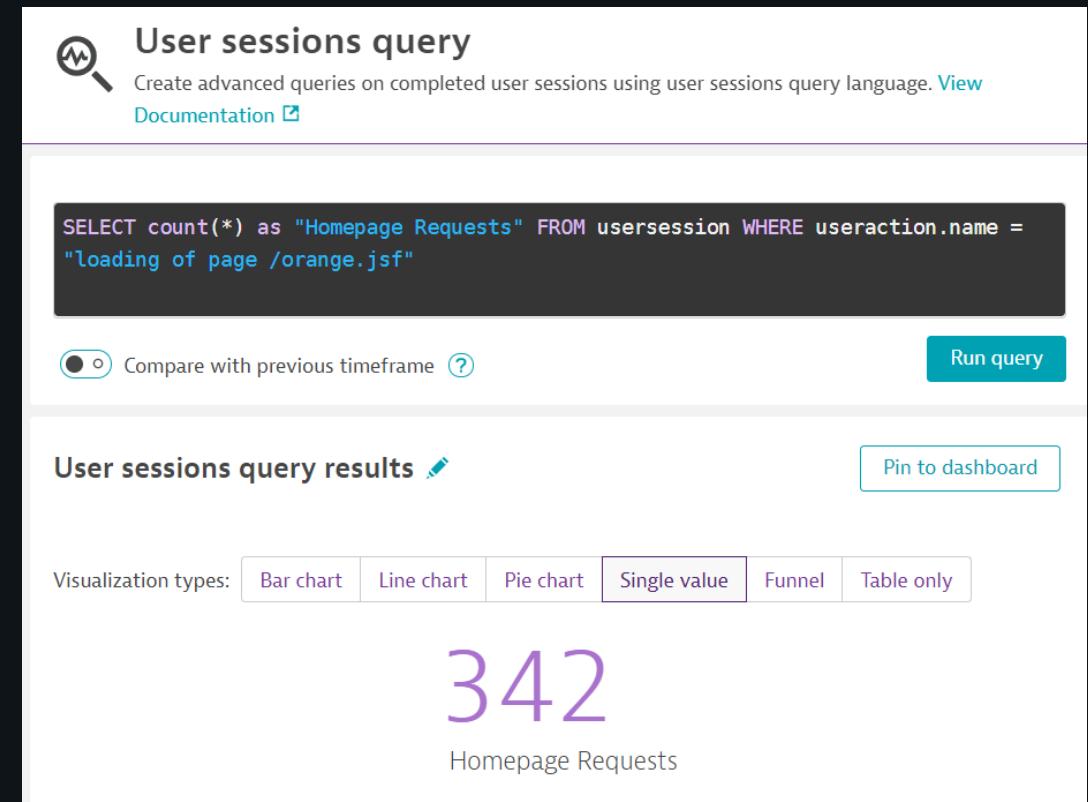
`useraction` – contains completed user actions

- Queries can combine tables:

`SELECT city, useraction.name FROM usersession`

`SELECT usersession.city, name FROM useraction`

`SELECT count(*) as "Homepage Requests" FROM usersession WHERE useraction.name = "loading of page /orange.jsf"`



Tip #3 – Cross Reference Table

FROM useraction WHERE useraction.name = "a" and useraction.name = "b"

Will be empty, because it can't have both names

FROM usersession WHERE useraction.name = "a" and useraction.name = "b"

Will return all usersessions where at least one useraction with name "a" and one with name "b" appears

Result set is dependent on which table you select from *** very important

Logic can use AND OR and parenthesis

Tip #4 – Make Use of Cloning

Search Dynatrace: bwg49630...

Tenant Overview

Host health: All fine

Active sessions: 1.95k Easy Travel

Top web applications: 3 most active | Easy Travel 138 / min

Session duration: 35.5 s Easy Travel

Duration: Duration ms (0-2000) over time intervals (18:10 to 20:10)

Visually Complete: Visually Complete ms (0-2000) over time intervals (18:10 to 20:10)

Speed Index: Speed Index (0-3k) over time intervals (18:10 to 18:50)

3,563ms
Duration 90th Percentile
+6.5% vs 2 hours before

2,852ms
Visually Complete 90th Percentile
+3.2% vs 2 hours before

3,32
Speed Index
+2.8% vs 2 hours before

User Sessions Query Done

Create advanced queries on completed user sessions with user sessions query language.

Configure tile

Tile filters
Tile filters override dashboard settings.

Custom timeframe

Custom management zone

javascript:

User Session Query Language (USQL)

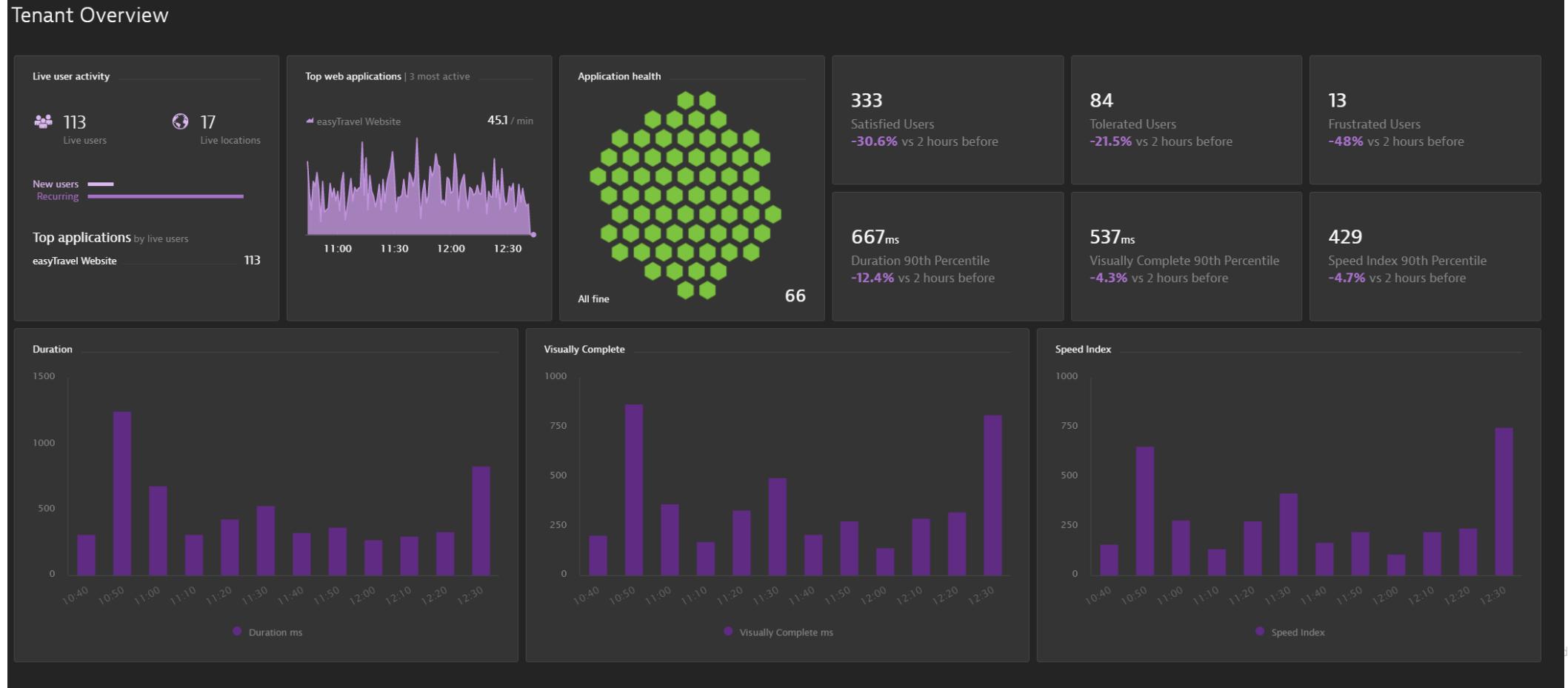
Live Demo

Hands On –USQL Dashboard

Hands On – Basic USQL Dashboard

<https://github.com/Dynatrace-APAC/Workshop-BizOps>

Follow Steps in Hands On - Basic USQL Dashboard



More...

User Session Query Language (USQL)

Session Properties With USQL

- Example query (determine status for a “Gold” member)

```
select userId, stringProperties.memberstatus from usersession where stringProperties.memberstatus="Gold"
```

- Example query (“Gold” members that hit a certain page)

```
select userId, stringProperties.memberstatus, useraction.targetUrl FROM usersession where  
stringProperties.memberstatus="Gold" AND userType="REAL_USER" AND useraction.application = "easyTravel  
Frontend" AND useraction.targetUrl="https://easytravel.perform-2018.dynalabs.io/special-offers.jsp"
```

Limitations and Considerations

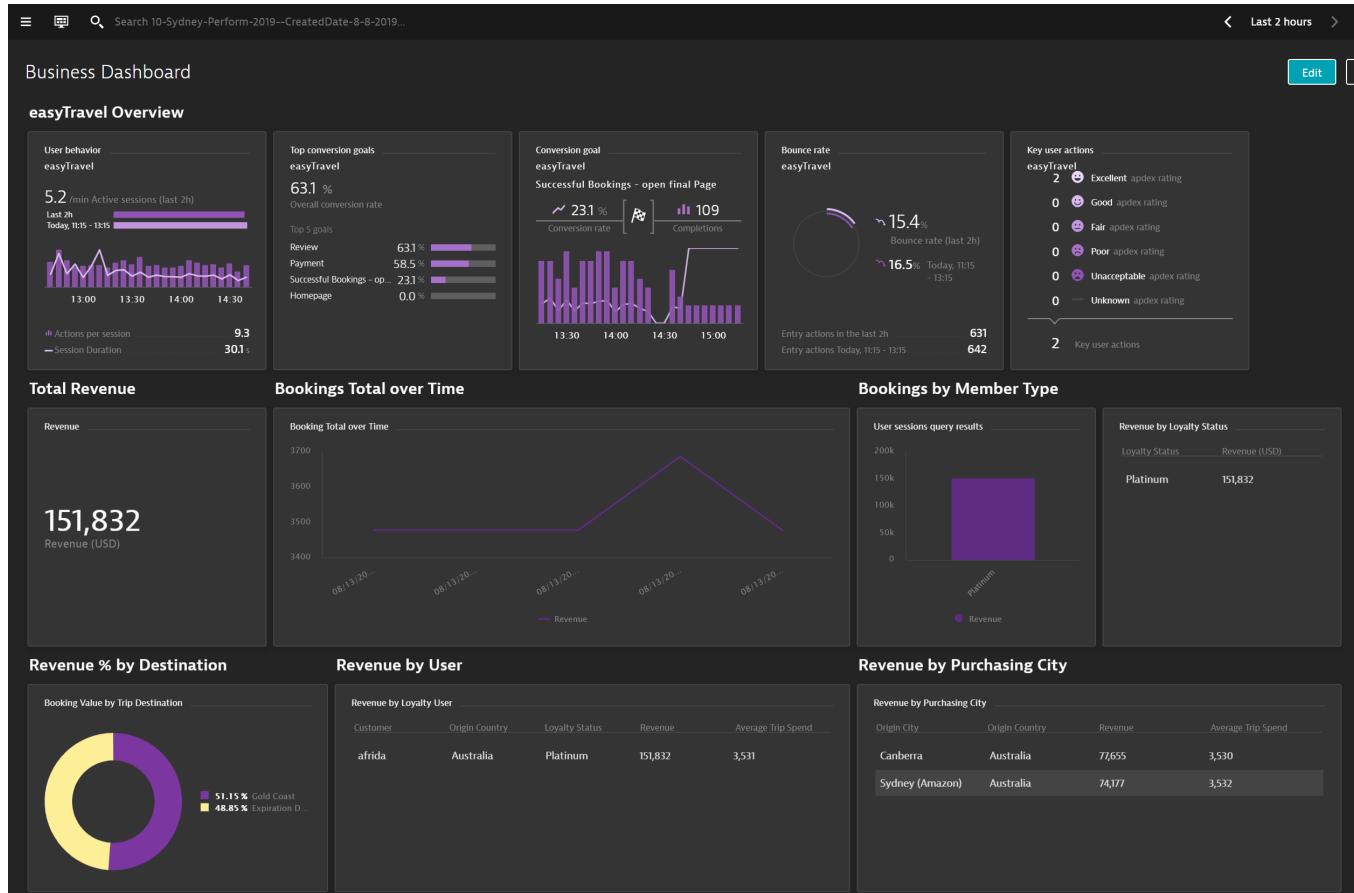
- Joins are not allowed
- Only one table is allowed per SELECT
- USQL cannot compare two fields (i.e. WHERE field1=field2)
- USQL works only on completed user sessions

Hands On – Session Properties

<https://github.com/Dynatrace-APAC/Workshop-BizOps>

Follow Steps in Hands On – Business Dashboard

Create a dashboard using the session properties and conversion goals we created

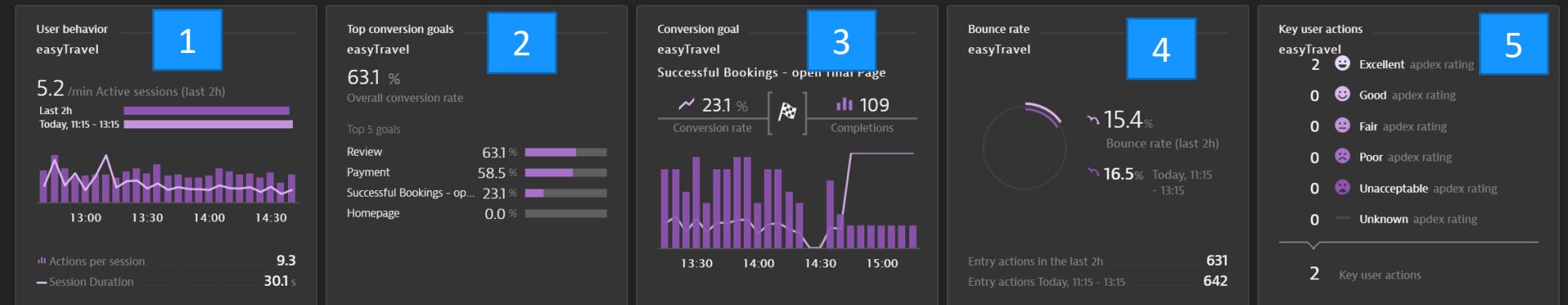


Business Dashboard

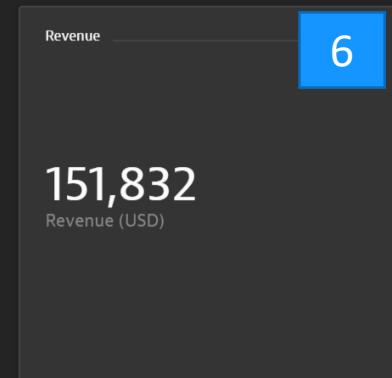
Edit



easyTravel Overview



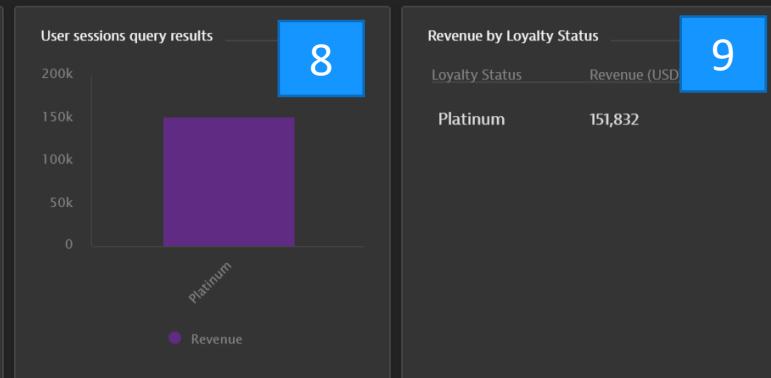
Total Revenue



Bookings Total over Time



Bookings by Member Type



Revenue % by Destination



Revenue by User

11 Revenue by Loyalty User

| Customer | Origin Country | Loyalty Status | Revenue | Average |
|----------|----------------|----------------|---------|---------|
| afrida | Australia | Platinum | 151,832 | 3,531 |

Revenue by Purchasing City

12 Revenue by Purchasing City

| Origin City | Origin Country | Revenue | Average Trip |
|-----------------|----------------|---------|--------------|
| Canberra | Australia | 77,655 | 3,530 |
| Sydney (Amazon) | Australia | 74,177 | 3,532 |

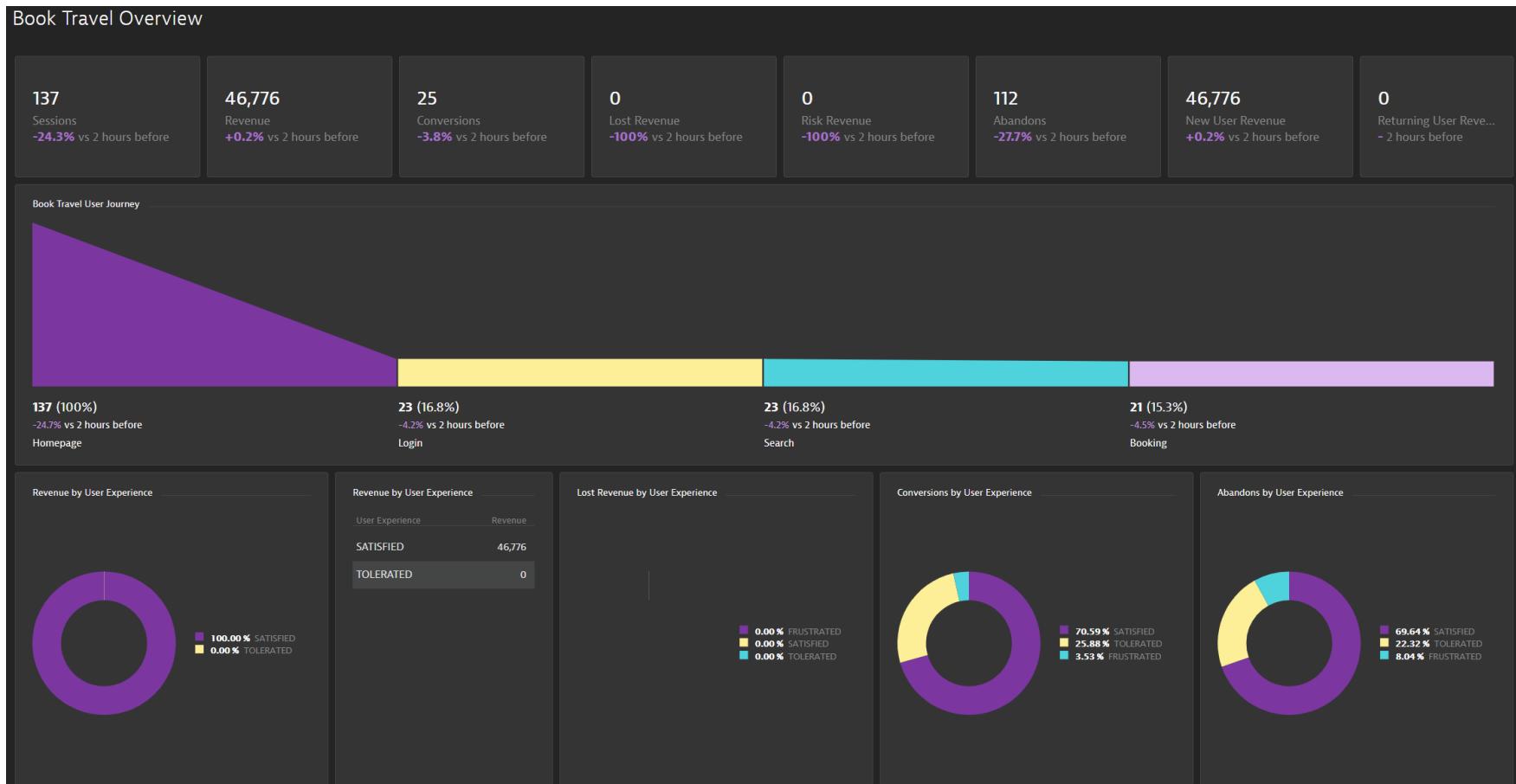
Sales Funnels

Hands On – Booking Experience Dashboard

Hands On – Session Properties

<https://github.com/KevLeng/BizOps-HandsOn>

Follow Steps in Hands On – Sales Funnel Dashboard



Dashboard API

Dashboards API

- We can export / import via API
- Custom Dashboards are in JSON format
- JSON contains all details needed for the new environment to build and display the dashboard

Dashboards Import and export dashboards

| | | |
|------|----------------------------|---|
| GET | /dashboards | Lists all dashboards |
| POST | /dashboards | Creates a dashboard |
| GET | /dashboards/{id} | Gets a specific dashboard |
| PUT | /dashboards/{id} | Updates a specific dashboard |
| POST | /dashboards/{id}/validator | Validates the update of a specific dashboard |
| POST | /dashboards/validator | Validates a new dashboard for the 'POST /dashboards' endpoint |

```
{  
  "metadata": {  
    "clusterVersion": "1.162.140.20190225-132002",  
    "configurationVersions": [  
      2  
    ]  
  },  
  "id": "cd3dbb72-bd6b-4d3a-966b-ca07741b669b",  
  "dashboardMetadata": {  
    "name": "Executive Overview",  
    "owner": "admin",  
    "timeframe": "1_2_HOURS",  
    "managementZone": null  
  },  
  "tiles": [  
    {  
      "name": "Top web applications",  
      "tileType": "APPLICATIONS_MOST_ACTIVE",  
      "configured": true,  
      "bounds": {  
        "top": 494,  
        "left": 0,  
        "width": 304,  
        "height": 304  
      },  
      "useComparisionTimeframe": false,  
      "managementZone": null  
    }  
  ]  
}
```

Example Script
JSON

Note: Your API token will need the following permissions:

- Read configuration
- Write configuration

Digital Business Analytics Dashboards

BizOps Configurator

[Prerequisites](#)[Begin](#)[Overview](#)[FAQ](#)

Welcome to Dynatrace BizOps Dashboards

Let's Begin!

Dynatrace API Connection

Tenant URL: <https://<tenant>.live.dynatrace.com>

API Token: abcd123

Use GitHub PAT

GitHub User: JohnSmith

GitHub PAT: abcd123

Connect

Token name

BizOpsConfigurator

Use the switches below to define the access scope of your Dynatrace API token.

- Access problem and event feed, metrics, and topology
- Access logs
- Configure maintenance windows
- Create and read synthetic monitors, locations, and nodes
- Read synthetic monitors, locations, and nodes
- Read configuration
- Write configuration
- Change data privacy settings
- Capture request data
- User sessions
- Anonymize user session data for [data privacy](#) reasons
- Mobile symbolication file management
- Log import
- Real user monitoring JavaScript tag management
- Token management
- ActiveGate certificate management
- Import data and events from external sources

bwg49630

Main Menu

Owner: techshadyjk@ruxitlabs.com

DBA Dashboards: 0

List Tenant Overviews

Deploy Tenant Overview

JSON

BizOps Dashboards

Prerequisites

Begin

Overview

FAQ



bwg49630 } Deploy Tenant Overview

Deploy Tenant Overview

MZ Filter: All ▾ BizOps

Upload

JSON



Prerequisites

Begin

Overview

FAQ

Tenant Overviews

 BizOps Tenant Overview [🔗](#) (techshadyjk@ruxitlabs.com)[List App Overviews](#)[Deploy App Overview](#)[Delete](#)[Deploy Another](#)[JSON](#)



Deploy App Overview

Tenant Overview: 🚀 BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App Overview

App: Easy Travel ▾ EasyTravel

Upload

Release Validation

Comparison App: Easy Travel ▾ EasyTravel

Time Comparison

Default time interval: Last 2 hours ▾

Comparison interval: -7d-2h to -7d ▾

JSON



Prerequisites

bwg49630 } Tenant Overviews } App Overviews

Begin

Overview

FAQ

App Overviews-

Tenant Overview: 🚀 BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

EasyTravel App Overview (techshadyjk@ruxitlabs.com)

[List Journeys](#)[Deploy Journey](#)[Update Forecast](#)[Delete](#)[Deploy Another](#)[JSON](#)

Begin

Overview

FAQ

Deploy Journey

Tenant Overview: 🚀 BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App Overview: 🎬 EasyTravel App Overview

ID: bbbbbbbb-0001-0001-0000-000000000000

App: Easy Travel

ID: APPLICATION-036DD229482C5FBB



Journey Name: Book Travel

Next

JSON

Begin

Overview

FAQ

Deploy Journey

Tenant Overview:  BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App Overview:  EasyTravel App Overview

ID: bbbbbbbb-0001-0001-0000-000000000000

App: Easy Travel

KPI:

Deploy Journey

Tenant Overview: BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App Overview: EasyTravel App Overview

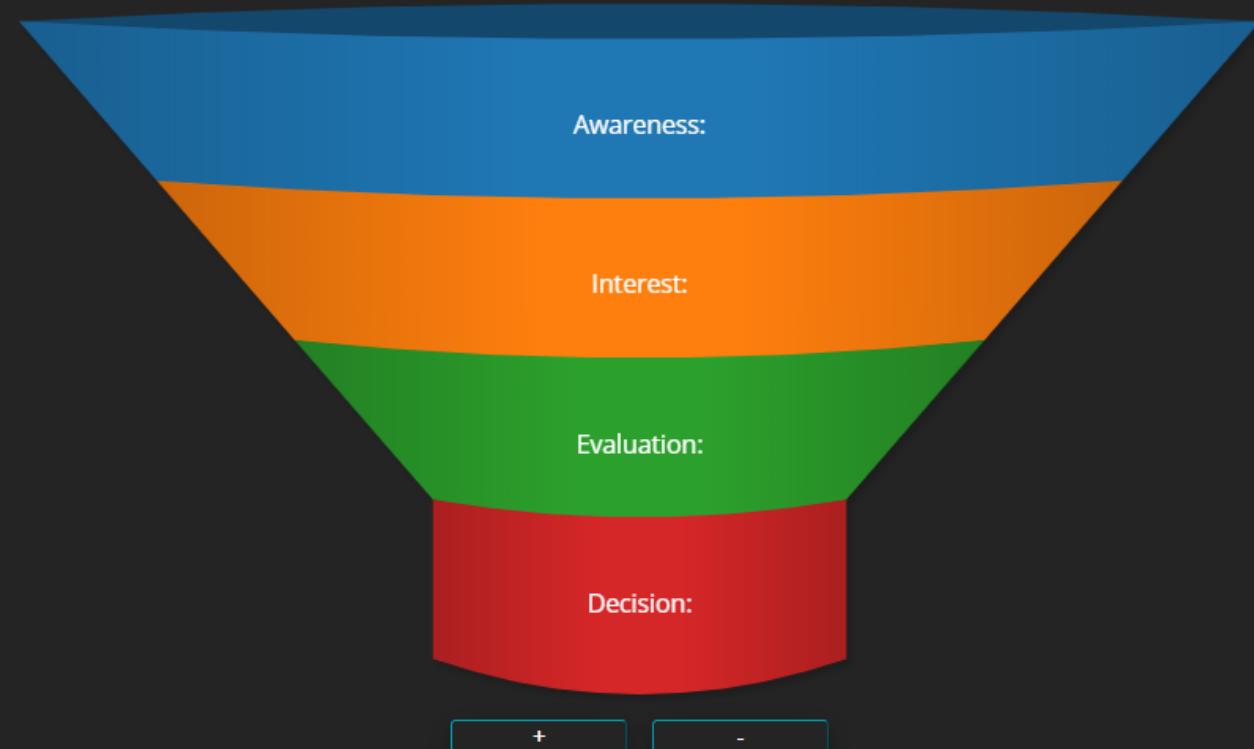
ID: bbbbbbbb-0001-0001-0000-000000000000

App: Easy Travel

Drag Key User Action over to funnel step:

KUA: Loading of page /
KUA: Loading of page /orange-booking-finish.jsf
KUA: Loading of page /orange-booking-payment.jsf
KUA: Loading of page /orange-booking-review.jsf
KUA: Loading of page /special-offers.jsp
KUA: click on ""Login"" on page /
KUA: click on ""Search"" on page /
KUA: keypress on ""Trip Destination"" on page /
Conv. Goal: Loading of page /orange-booking-finish.jsf

Click funnel band to edit Friendly Name:



Where: () AND () AND () AND ()

Deploy Journey

Tenant Overview: 🚀 BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App Overview: 🛣 EasyTravel App Overview

ID: bbbbbbbb-0001-0001-0000-000000000000

App: Easy Travel

Drag Key User Action over to funnel step:

KUA: Loading of page /
KUA: Loading of page /orange-booking-payment.jsf
KUA: Loading of page /orange-booking-review.jsf
KUA: Loading of page /special-offers.jsp
KUA: click on ""Login"" on page /
KUA: click on ""Search"" on page /
KUA: keypress on ""Trip Destination"" on page /
Conv. Goal: Loading of page /orange-booking-finish.jsf

Click funnel band to edit Friendly Name:

Awareness: Loading of page /

Interest: click on ""Login"" on page /

Evaluation: click on ""Search"" on page /

Decision: Loading of page /orange-booking-finish.jsf

+

-

Next

Clear Funnel

Where: (useraction.name="Loading of page /") AND (useraction.name="click on ""Login"" on page /") AND (useraction.name="click on ""Search"" on page /") AND (useraction.name="Loading of page /orange-booking-finish.jsf")



Deploy Journey

Tenant Overview: 🚀 BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App Overview: 🛌 EasyTravel App Overview

ID: bbbbbbbb-0001-0001-0000-000000000000

App: Easy Travel

KPI: Revenue

User Session Properties

Keys: USP Values:

Location

Country:

Region:

City:

Next

Filter clause:

JSON

Deploy Journey

Tenant Overview: BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App Overview: EasyTravel App Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App: Easy Travel

KPI: Revenue

A/B Testing / Canary

Comparison App:

1st Step:

Last Step:

KPI:

Time Comparison

Default time interval:

Comparison interval:

Campaign

Campaign Active:

Special entry point:

New Feature

Feature added:

User Action:

Deployed Journey

Tenant Overview:  BizOps Tenant Overview

ID: bbbbbbbb-0001-0000-0000-000000000000

App Overview:  EasyTravel App Overview

ID: bbbbbbbb-0001-0001-0000-000000000000

App: Easy Travel

KPI: Revenue

Where clause: (useraction.name="Loading of page /") AND (useraction.name="click on ""Login"" on page /") AND (useraction.name="click on ""Search"" on page /") AND ()

[Download Config](#)

[Return](#)

Uploaded:  Book Travel Overview 

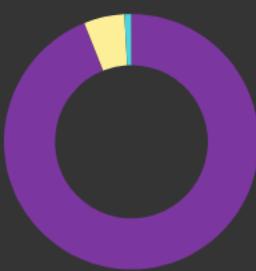
Book Travel Overview

[Edit](#)
...

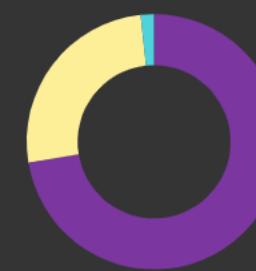
Book Travel User Journey



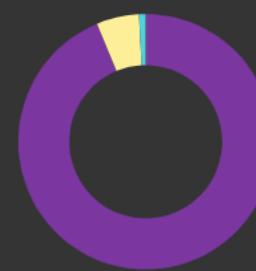
Revenue by User Experience



Lost Revenue by User Experience



Conversions by User Experience



Abandons by User Experience


1,891

Sessions

-3.9% vs 2 hours before

2,241,875

Revenue

-1.2% vs 2 hours before

135,006

Risk Revenue

+32.9% vs 2 hours before

920,383

Lost Revenue

-0.3% vs 2 hours before

2,241,875

New User Revenue

-1.2% vs 2 hours before

0

Returning User Revenue

- 2 hours before

1,796ms

Duration

+1.0% vs 2 hours before

1,073

Conversions

-1.5% vs 2 hours before

818

Abandons

-6.8% vs 2 hours before

2

Errors

-75% vs 2 hours before

0

Rage Clicks

- 2 hours before

3

Nonengaged Sessions

+∞% vs 2 hours before

[Overview Links ▾](#)
[Compare Links ▾](#)
[Analysis Links ▾](#)
[Forecast Links ▾](#)
[Utilization Links ▾](#)
[Book Travel User Journey](#)

BizOps Configurator

- <https://dynatrace.github.io/BizOpsConfigurator/>
- Please clone the [repository](#) or create a [Personal Access Token](#) if you plan to use the BizOps Configurator to avoid hitting GitHub API limits

Pulling RUM Data into BI Tools (i.e. Excel, Power BI)

Exporting Raw User Session Data

- Stream real user monitoring data from Dynatrace to an external data source.
- Configured at a tenant level ([Settings > Integration > User session export](#))
- Can be filtered by management zones

Settings > Integration > User session export

| Settings | User session export |
|---|--|
| Monitoring Setup and overview | User session export enables you to stream real user monitoring data from Dynatrace to an external data source where it can be leveraged as input for big data analytics. Streamed data includes all user sessions, user actions, and high-level timing and error data. More... |
| Monitored technologies | Endpoint URL <input type="text" value="eg. http://example.com:1234/mypath"/> |
| Monitoring overview | <input checked="" type="radio"/> Use POST method (instead of PUT) |
| Host naming | Basic authentication settings |
| Processes and containers Detection and naming | Dynatrace can automatically send bulk data to Elasticsearch. More... |
| Web & mobile monitoring Real user & synthetic monitoring | <input checked="" type="radio"/> Send data directly to Elasticsearch |
| Cloud and virtualization Connect cloud & virtualization types | <input checked="" type="radio"/> Restrict exported sessions to management zone |
| Server-side service monitoring Manage & customize service monitoring | Dev |
| Log Monitoring Set up management of logs | You can test the export by sending some sample documents via this button. |
| Anomaly detection Configure detection sensitivity | Test export |
| Alerting Configure alerting settings | <input checked="" type="radio"/> Enable user session export |
| Integration Integrate Dynatrace with 3rd party systems | Sample Data |
| Problem notifications | By using the link below you can request some sample data based on your user session data. |
| Dynatrace API | You will get up to 50 user sessions from the last week in order to see how the data looks like. |
| Platform as a Service | This will provide a JSON document per session, returned in bulk, one JSON document per line. |
| Dynatrace modules | Download sample snapshot from last week |
| User session export | |

Exporting Data to BI Tools

- APIs

Metrics

Read metric definitions and data points

GET </metrics> Lists all available metrics 

GET </metrics/{metricId}> Gets a complete schema for a single metric 

GET </metrics/query> Gets data points of the specified metrics 

User sessions

Obtain user sessions data

GET </userSessionQueryLanguage/table> Returns the result of the query as a table structure 

GET </userSessionQueryLanguage/tree> Returns the result of the query as a tree structure 

A photograph of a man in profile, facing right. He has dark hair and is resting his chin on his hand, looking thoughtful. The background is blurred.

Thank you