

dynatrace

Современный подход к управлению
качеством и производительностью
приложений

Igor Kosenko | Territory manager



Figure 1. Magic Quadrant for Application Performance Monitoring Suites



Source: Gartner (December 2015)

Figure 1. Magic Quadrant for Application Performance Monitoring Suites



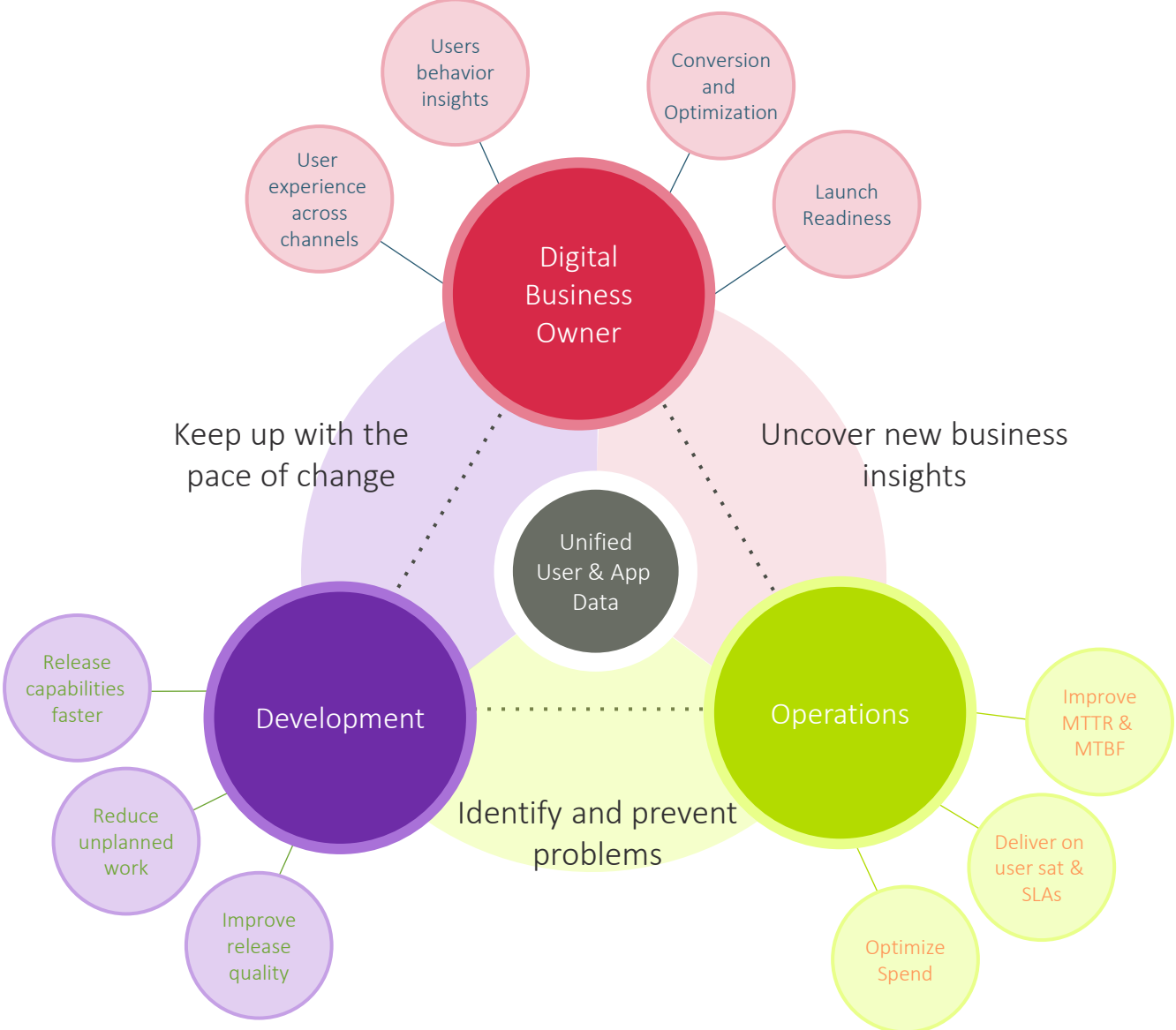
Source: Gartner (December 2016)

It's who we are at Dynatrace

2016... The 3 Dimensions of APM:

- 1 Digital Experience Monitoring
- 2 Application discovery, tracing and diagnostics
- 3 Application analytics

DYNATRACE DIGITAL PERFORMANCE PLATFORM

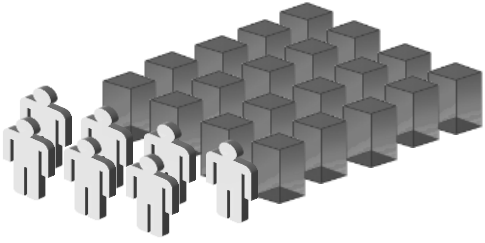


3 complementary monitoring approaches:

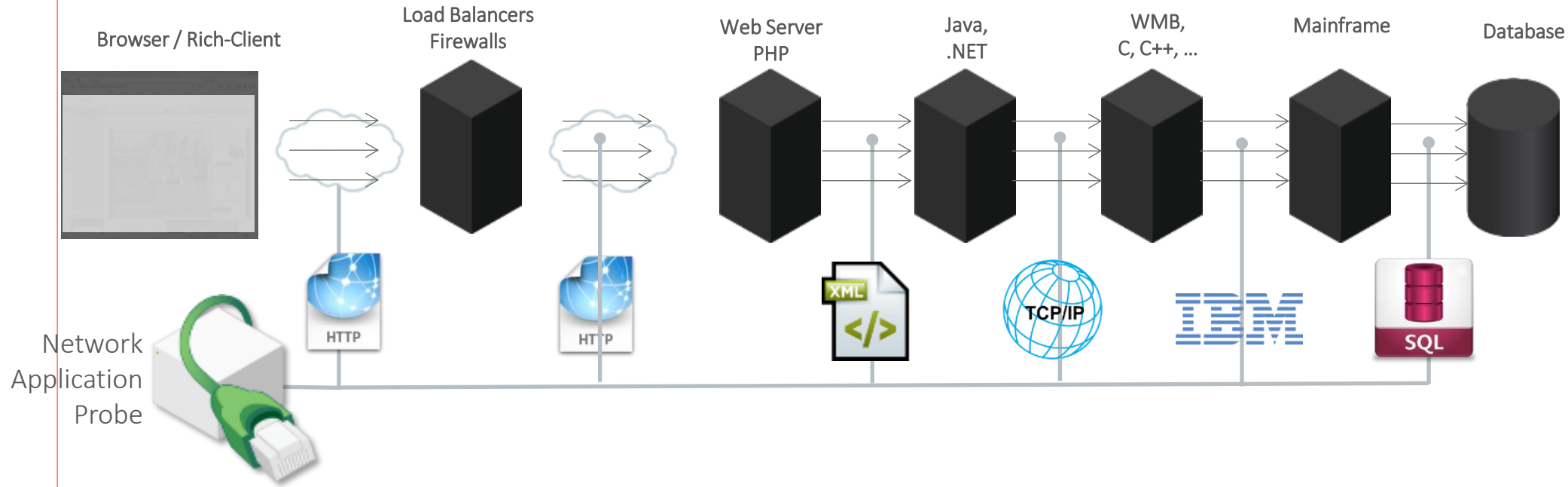
- Application Monitoring and UEM (dynaTrace)
- Application Aware Network Performance Monitoring (DC-RUM)
- Synthetic (Enterprise, Backbone, Last mile, Mobile)

Application-Aware Network Performance Monitoring

(DC-RUM)



Dynatrace DataCenter RUM



Analysys Modules by Data Center RUM

WWW (HTTP, HTTPS)

Databases

- Oracle
- Informix
- MS SQL Server
- DB2
- MySQL

ICA (Citrix) + WTS

Oracle Forms (HTTP, HTTPS)

Tuxedo JOLT

MQ (server2server)

WCF (HTTP, TCP, Net.TCP)

SOAP (HTTP, HTTPS)

Siebel (HTTP, HTTPS)

Oracle Applications (HTTP, HTTPS)

XML (HTTP, HTTPS, TCP, SSL, IBM MQ)

SAP R3

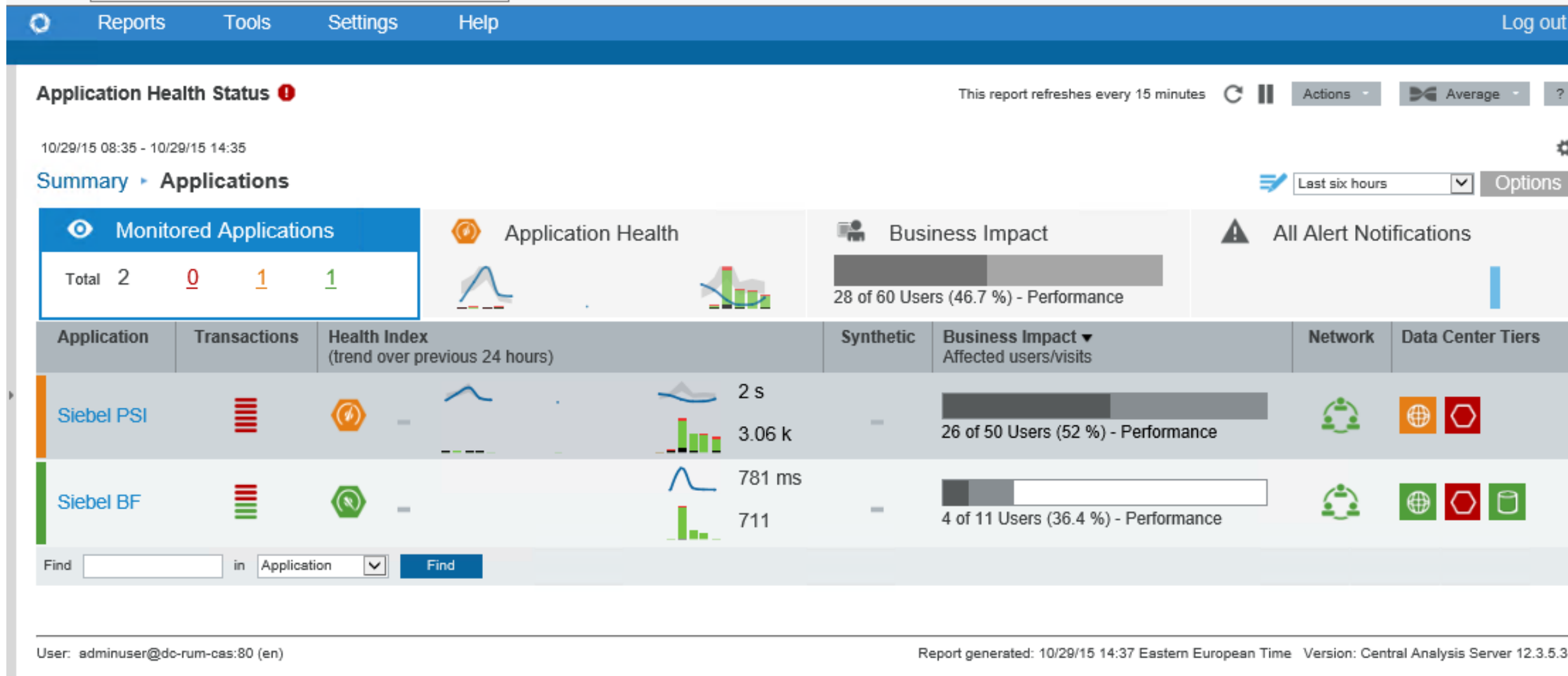
MS Exchange

VoIP

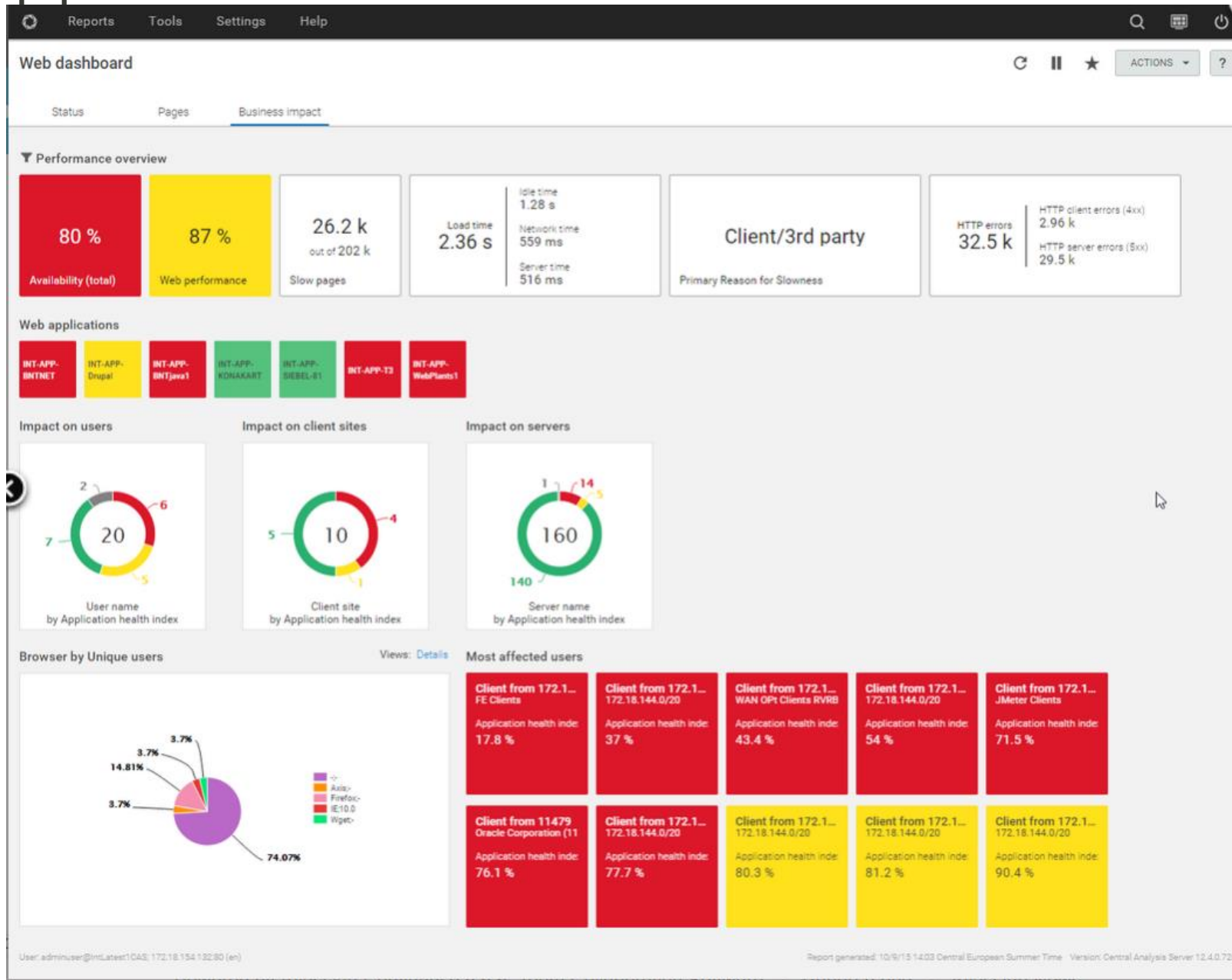
LDAP, DNS

SMB, SMTP, TCP

Operational dashboard for Siebel applications

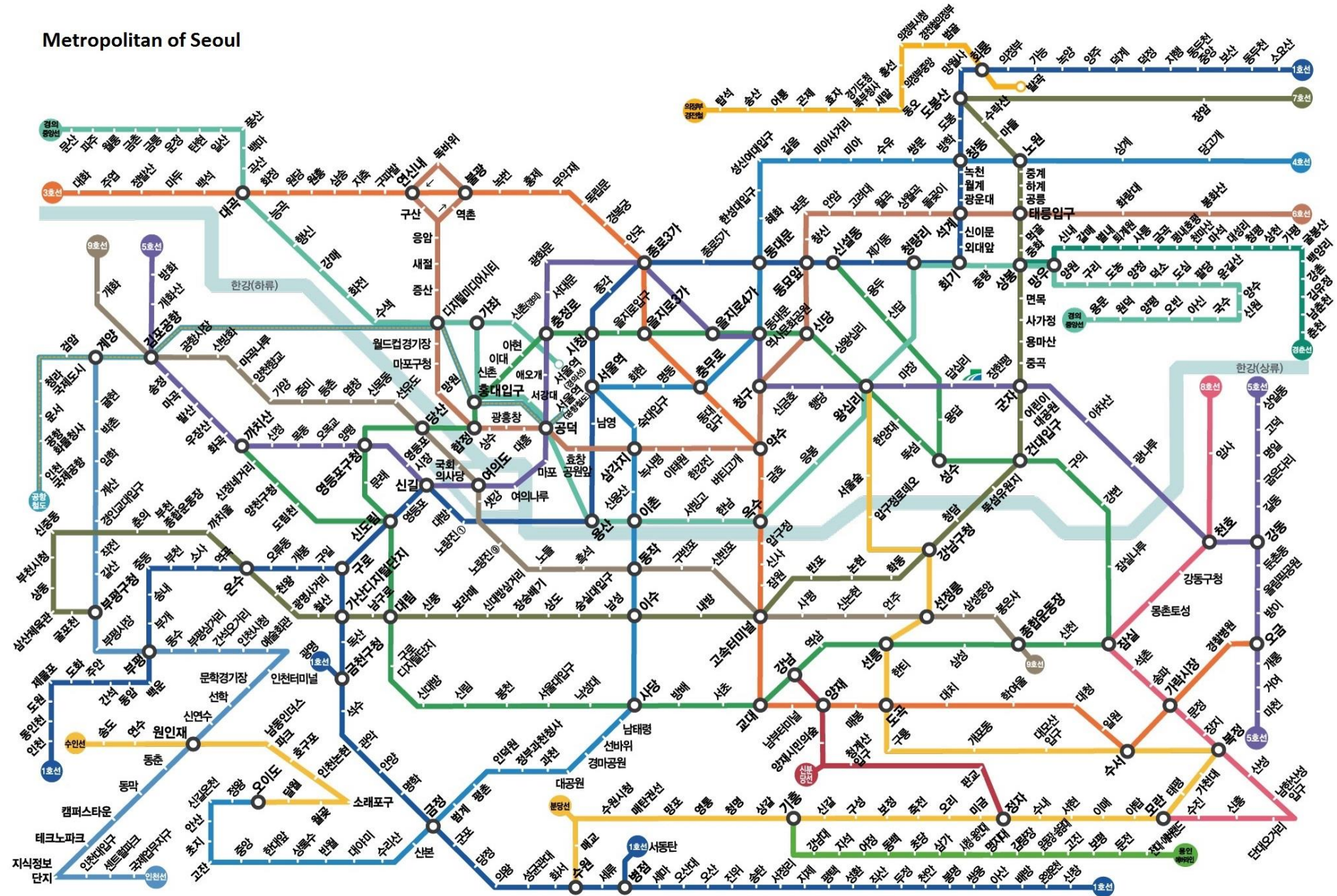


New application-oriented dashboards are coming!

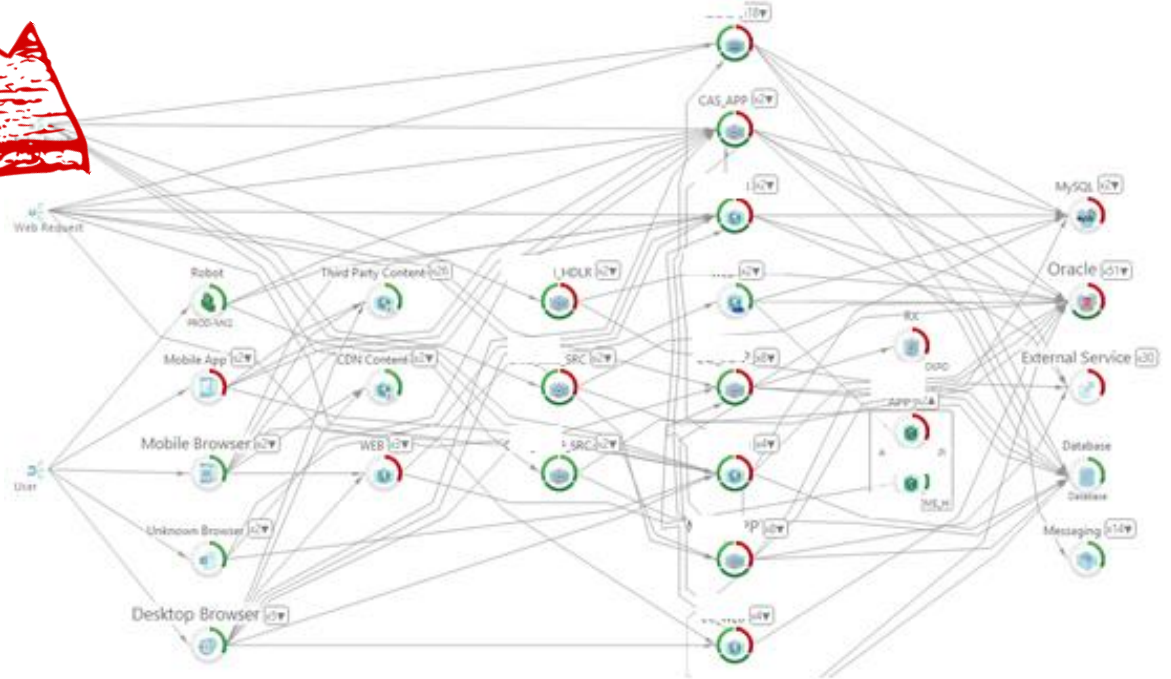
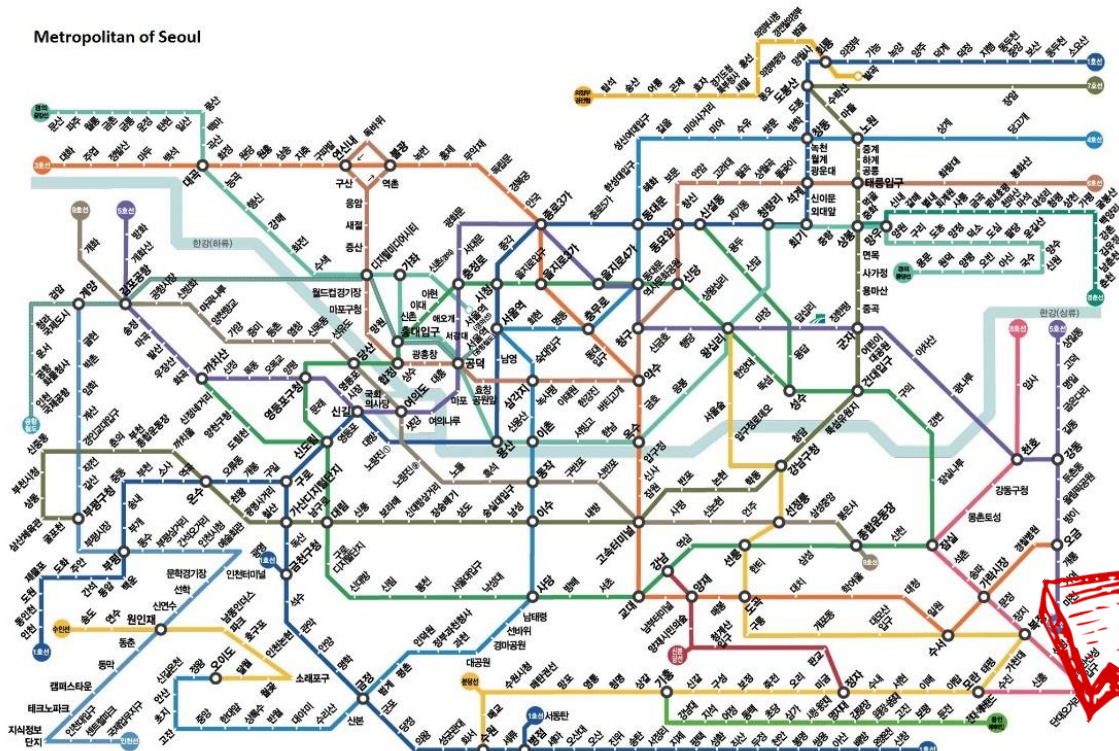


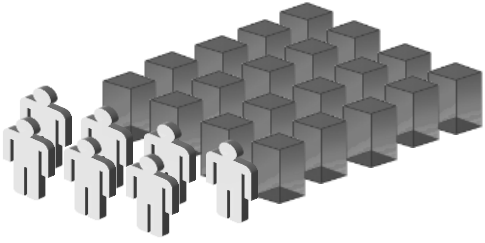
Application Monitoring and UEM

Metropolitan of Seoul



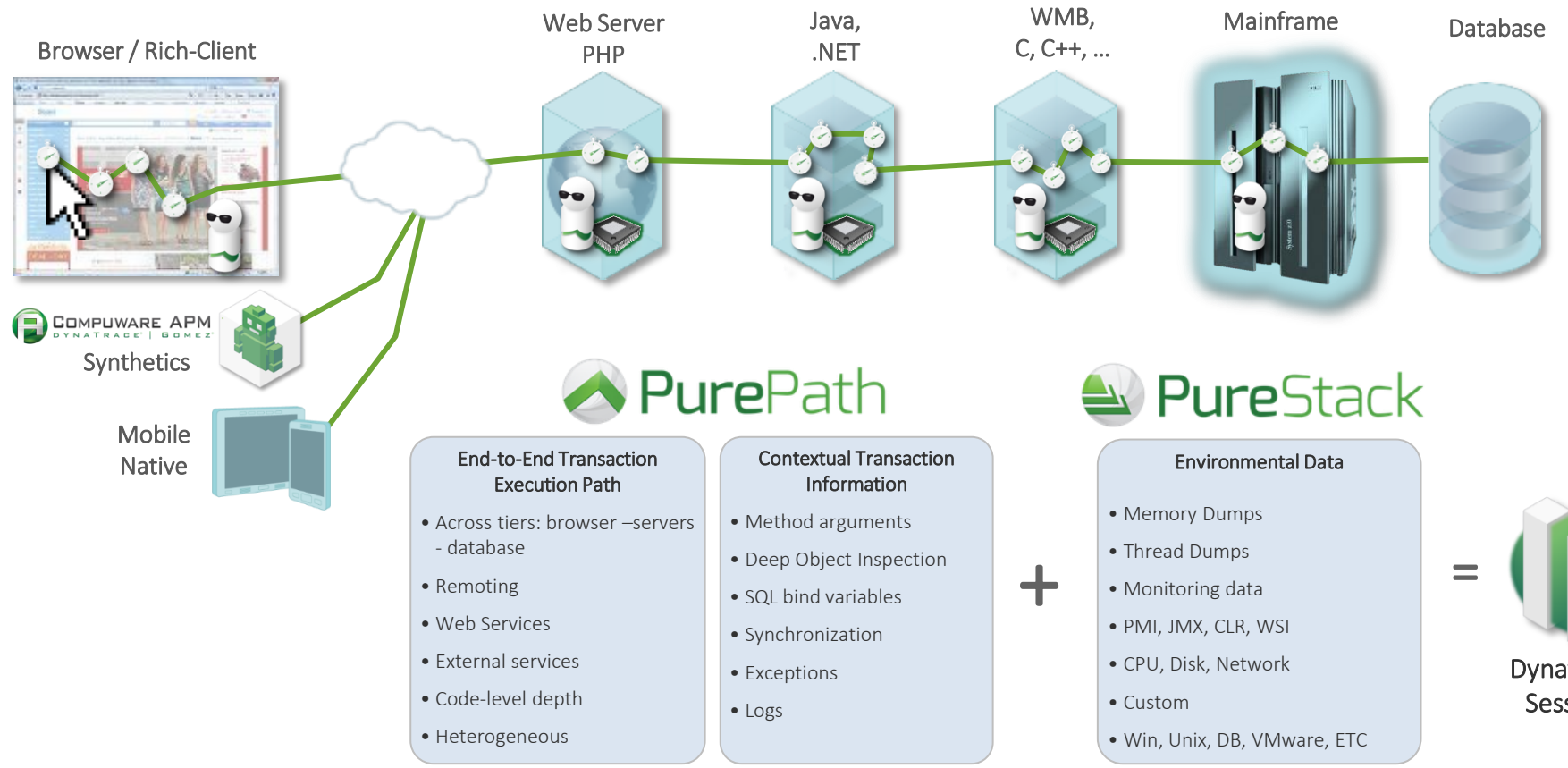
Metropolitan of Seoul





Dynatrace

UEM + Application Monitoring



Dynatrace All User Experience

144
Visits

6.42 s
Resp. time

35.1
Actions /min

1.07 s
3rd party

0 ms
CDN

2.85 %
Failure rate

0 %
Crash rate

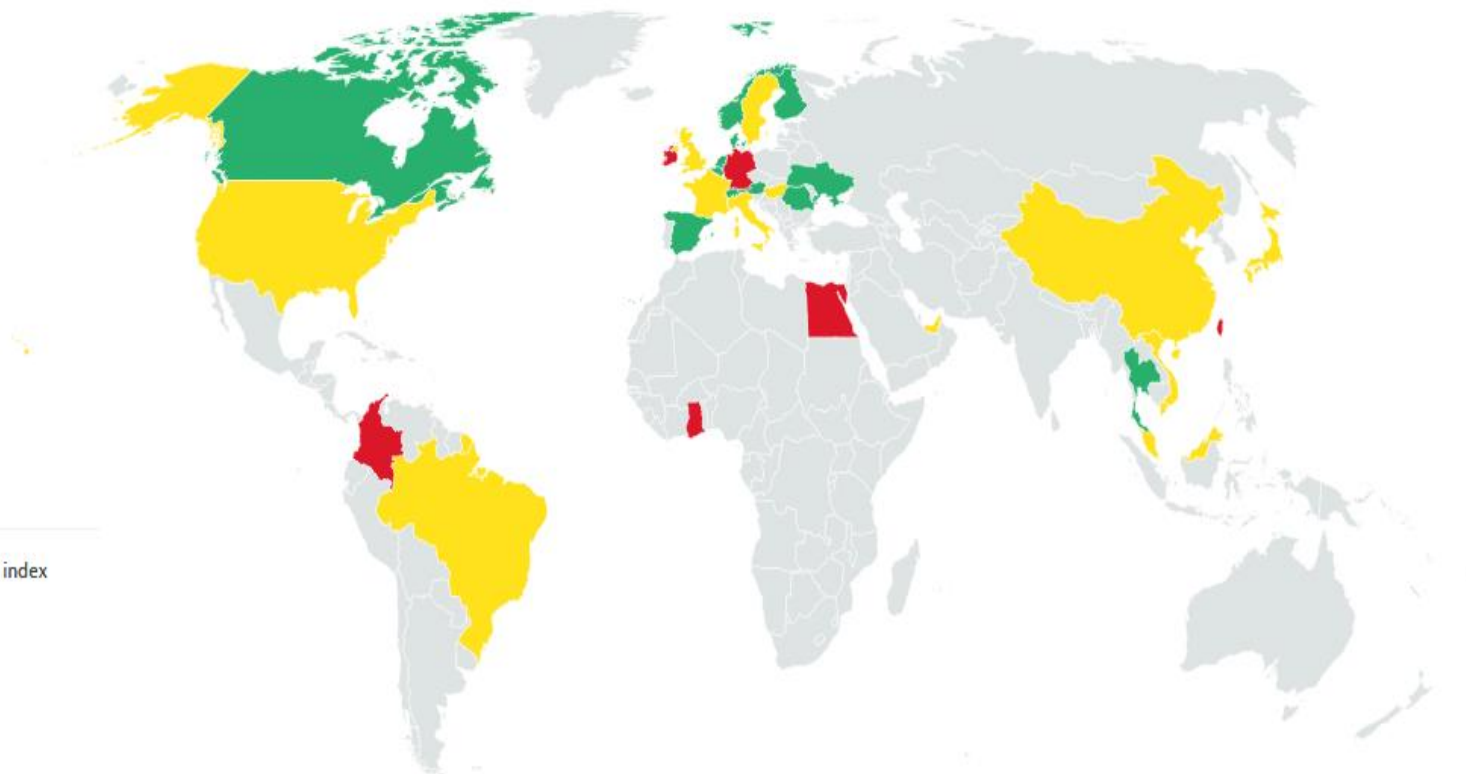
7.64 %
Bounce rate

8.33 %
Conversion rate

User experience

User actions

User experience table



End-to-end
Full Coverage

All Visits

All Actions

All Users

All Browsers

All Devices

3rd Party Content

24x7

NO Sampling

Dynatrace

All User Experience



Visits by ClientType, ClientFamily

UE Index: 0.73* Visits: 60

Selecting a single visit shows a detailed view of its user actions. Grouped visits display average values.

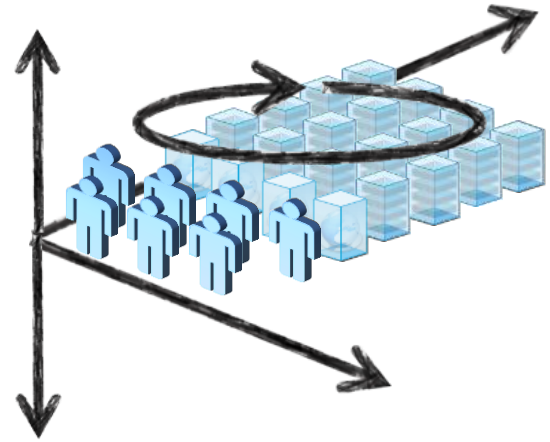
Visit	Count	User Experience	UE Index	User Actions	Application	Client Family	Client IP
▶ Robot	3	-	1.0	5	-	-	-
▲ Mobile App	12	-	0.88	77	-	-	-
▶ Samsung	6	-	1.0	34	-	-	-
▶ HTC	1	-	0.5	7	-	-	-
▶ Apple	5	-	0.8	36	-	-	-
▲ Desktop Browser	22	-	0.66	76	-	-	-
▲ Chrome	2	-	1.0	9	-	-	-
▲ Chrome 38.0	2	-	1.0	9	-	-	-
👤 Visit of 'dariusz' from United States usir	-	satisfied	-	8	easyTravel portal	Chrome 38.0	68.18.181.163
👤 Visit from United States using Chrome	-	satisfied	-	1	easyTravel portal	Chrome 38.0	8.115.248.213
▶ Firefox	13	-	0.77	48	-	-	-

User Action	Response Ti...	Server Contribution [ms]	Network Contribution [ms]	User Experience	Start-Time	Size	User Actio...	Client E
🟢 📄 Loading of Page /orange.jsf	257.00	87.37	169.63	satisfied	2016-03-29 19:52:59.747	23	1	
🟢 🖱️ click on "Login" on /orange.jsf	223.00	168.98	54.02	satisfied	2016-03-29 19:53:02.949	7	2	
🟢 🖱️ click on "Search" on /orange.jsf	648.00	173.57	474.43	satisfied	2016-03-29 19:53:06.176	10	3	
🟢 🖱️ click on "Book Now" on /oran...	245.52	42.05	203.47	satisfied	2016-03-29 19:53:09.836	21	4	
🟢 🖱️ click on "Next" on /orange-bo...	394.48	88.55	305.94	satisfied	2016-03-29 19:53:12.993	24	5	
🟢 📄 Loading of Page /legal-orang...	228.00	35.44	192.56	satisfied	2016-03-29 19:53:16.295	20	6	
🟢 📄 Loading of Page /privacy-ora...	262.00	45.92	216.08	satisfied	2016-03-29 19:53:19.479	21	7	
🟢 📄 Loading of Page /j_invalidate_...	248.00	53.78	194.22	satisfied	2016-03-29 19:53:22.673	21	8	

- End-to-end
- Full Coverage
- All Visits
- All Actions
- All Users
- All Browsers
- All Devices
- 3rd Party Content
- 24x7
- NO Sampling

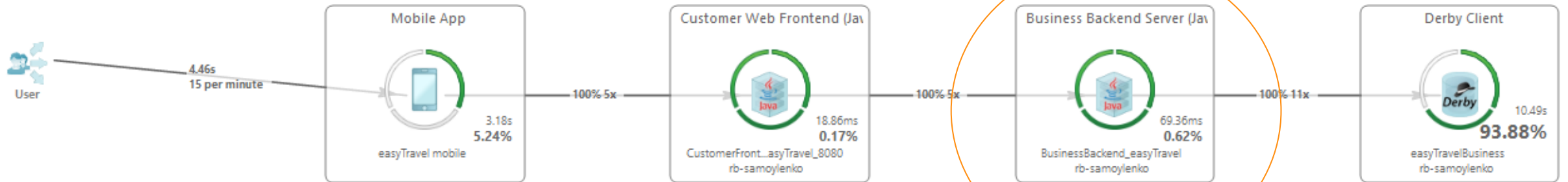
Dynatrace

100% of Transactions



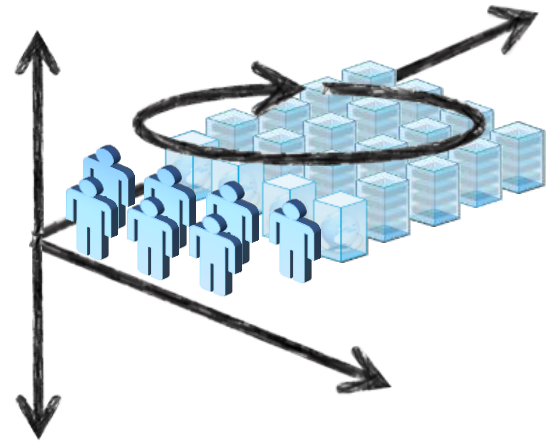
End-to-end
Full Coverage
Deep

Total Transactions : 1 (15 per minute) | Failed Transactions : 0 (0 %) ⓘ | Inter Tier Time Per Transaction: 9.82ms (0.09%) [\(show\)](#)



Dynatrace

Deep analytic



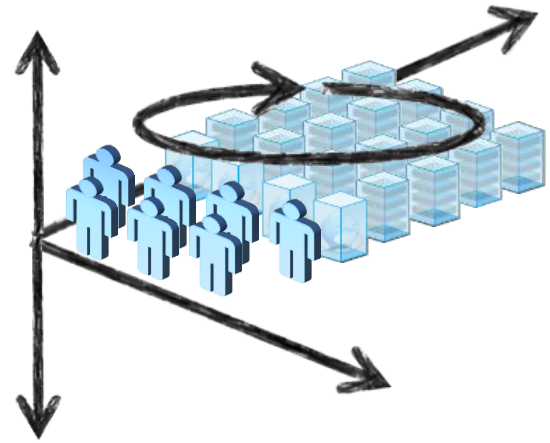
End-to-end
Full Coverage
Deep
Business
Lifecycle
Communicate
Automate
Proactive
Document

PurePath Tree (showing only relevant nodes) [Show all nodes](#)

	Argument	Exec Total [ms]	Breakdown	Class	API
request request, HttpServletResponse response)	/special-offers.jsp	4155.80	wait (89.0%) io	JspServlet	Servlet
ServletRequest, HttpServletResponse, String, boolean)		4154.04	wait (89.0%) io	JspServlet	JSP
Request, ServletResponse)		4154.04	wait (89.0%) io	HttpServlet	Servlet
HttpServletRequest request, HttpServletResponse response)	/special-offers.jsp	4154.04	wait (89.0%) io	special_002doffers...	Servlet
ommendations())		1651.86	wait (91.0%) io	Recommendation...	easyTravel...
te(boolean)		1651.86	wait (91.0%) io	OperationClient	Java Web ...
nd(MessageContext msgContext)		1651.86	wait (91.0%) io	AxisEngine	Java Web ...
executeMethod(HostConfiguration hostConfiguration, HttpMethod method)	/services/Journey...	1651.30	wait (91.0%) io	HttpClient	Web Requ...
SocketTimeoutException: Read timed out	Read timed out	-		SocketTimeoutExc...	Exception
Synchronous Invocation		-			
Synchronous Path (partly asynchronous) (HTTP)		-			
doFilter(ServletRequest request, ServletResponse response, FilterChain filterChain)	/services/Journey...	1649.12	wait (91.0%) io	OncePerRequestFi...	Servlet
doPost(HttpServletRequest request, HttpServletResponse response)	/services/Journey...	1648.80	wait (91.0%) io	AxisServlet	Servlet, Jav...
processHTTPPostRequest(MessageContext, InputStream, OutputStream, Stri		1646.62	wait (91.0%) io	HTTPTransportUtils	Java Web ...
findLocations(String name, int maxResultSize, boolean checkForJourney:	a	1637.29	wait (91.0%) io	JourneyService	easyTravel
setFlushMode(FlushMode flushMode)		0.02	cpu (85.0%) io	SessionImpl	Hibernate
setCacheMode(CacheMode cacheMode)		0.01	cpu (85.0%) io	SessionImpl	Hibernate
getLocations(String, boolean, LocationProvider)		1496.74	wait (100.0%)	JourneyService	easyTravel...
begin()		1496.74	wait (100.0%)	TransactionImpl	Hibernate
beginTransaction()		1496.74	wait (100.0%)	SessionImpl	Hibernate

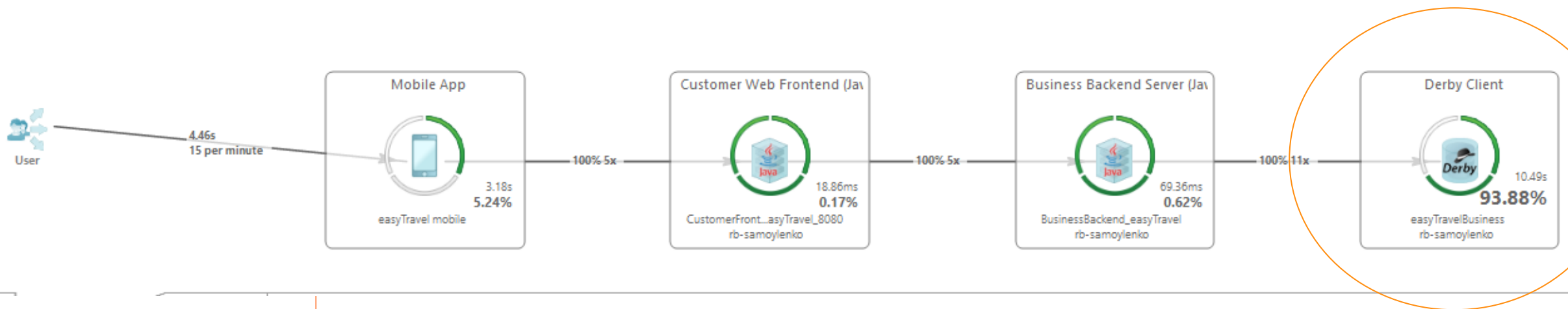
Dynatrace

100% of Transactions

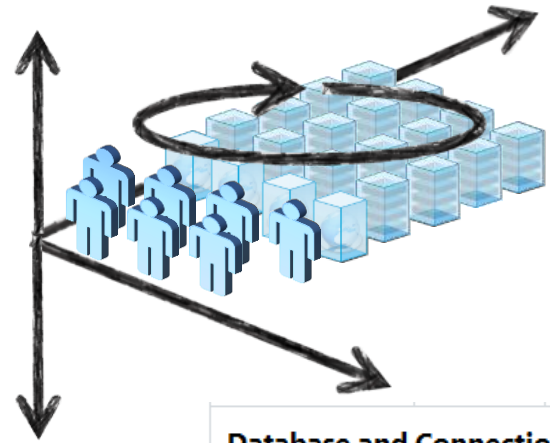


End-to-end
Full Coverage
Deep

Total Transactions : 1 (15 per minute) | Failed Transactions : 0 (0 %) ⓘ | Inter Tier Time Per Transaction: 9.82ms (0.09%) [\(show\)](#)



Dynatrace Database drilldown



Deep

Database and Connection Pool

app@rb-samoylenko:easyTravelBusiness (Tomcat)
[\(Show history in new dashboard\)](#)

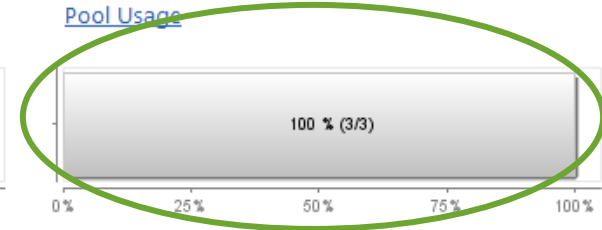
Transaction Response Time Contribution



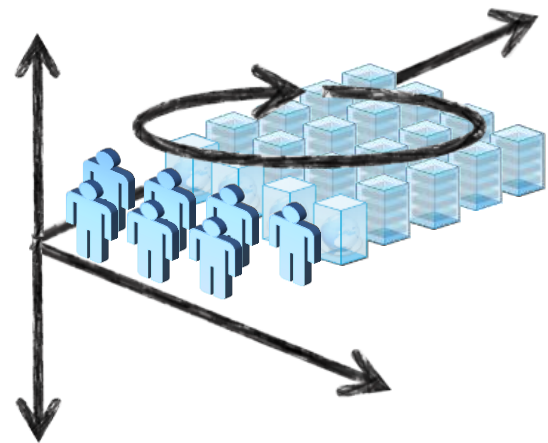
Percentage of Transactions Calling



Pool Usage



Database and Connection Pool	RT/Trans [ms]	Acqu Time/Trans [...]	Executions/Trans	Exec Avg [ms]	Exec Min [ms]	Exec Max [ms]	Exec Total [ms]	Executions	Failed %
app@rb-samoylenko:easyTravelBusiness (Tomcat)	2097.32	398.68	2.20	771.71	0.30	1996.19	8488.82	11	0 %
call verify_location(?)	1595.48	-	0.80	1993.88	1989.39	1996.19	7975.52	4	0 %
select location0_.name as name6_ from Loca	102.57	-	0.60	170.50	97.38	260.50	511.49	3	0 %
select location0_.name as name6_0_ from Lo	0.27	-	0.40	0.45	0.30	0.61	0.91	2	0 %
select journey0_.id as id1_ journey0_.amount	0.16	-	0.20	0.42	0.42	0.42	0.42	1	0 %
select tenant0_.name as name0_0_ tenant0_.	0.16	-	0.20	0.47	0.47	0.47	0.47	1	0 %



Dynatrace

Share data

Transaction Flow Visits User Action PurePaths Database

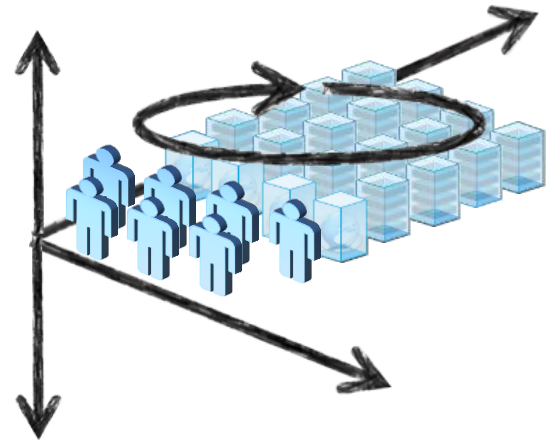
PurePath	Response Time [ms]	Server Contribution [ms]	Network Co
perfo	3182	2412	

- Details...
- Drill Down >
- Show in Dashboard >
- Add Snapshot to Dashboard >
- Export...
- Store Session...
- Result Limit >
- Find... Ctrl+F
- Select all
- Deselect all
- Copy Ctrl+C
- Refresh Dashlet Ctrl+F5
- Dashlet Properties... Alt+Enter
- Toggle Header Ctrl+H
- Transaction Flow
- Agent Breakdown
- API Breakdown
- Database
- Database Hotspots
- Entry Points
- Methods
- PurePaths
- Response Time Hotspots
- Sequence Diagram
- Web Requests
- Web Services
- Runtime Suspensions
- User Action PurePaths
- User Actions
- Visits

Customer Web Frontend (Java) 18.86ms 0.17%
CustomerFront_asyTravel_8080 rb-samoylenko

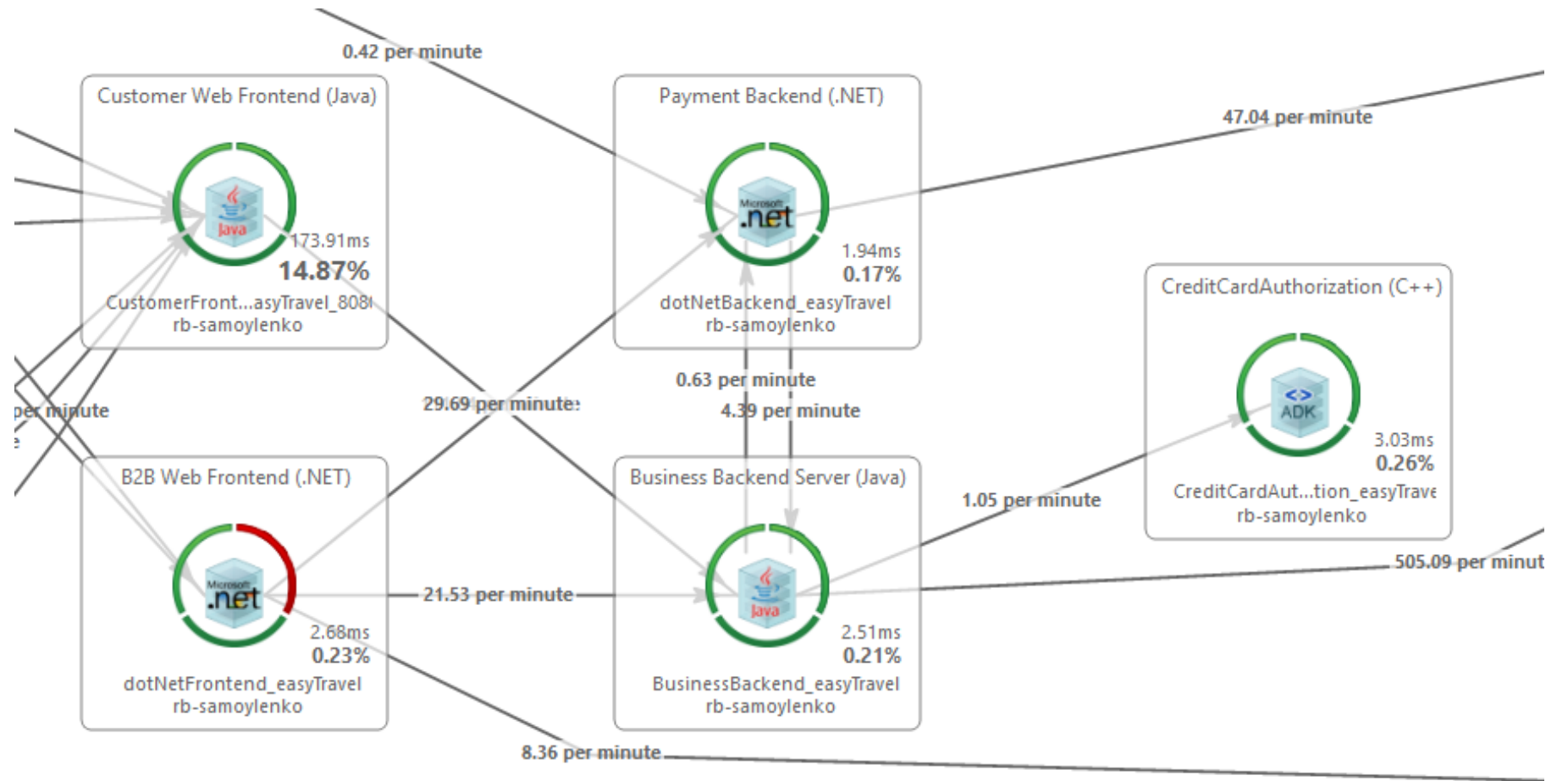
Tree Transaction Flow API Distribution

End-to-end
Full Coverage
Deep
Business
Lifecycle
Communicate
Automate
Proactive
Document

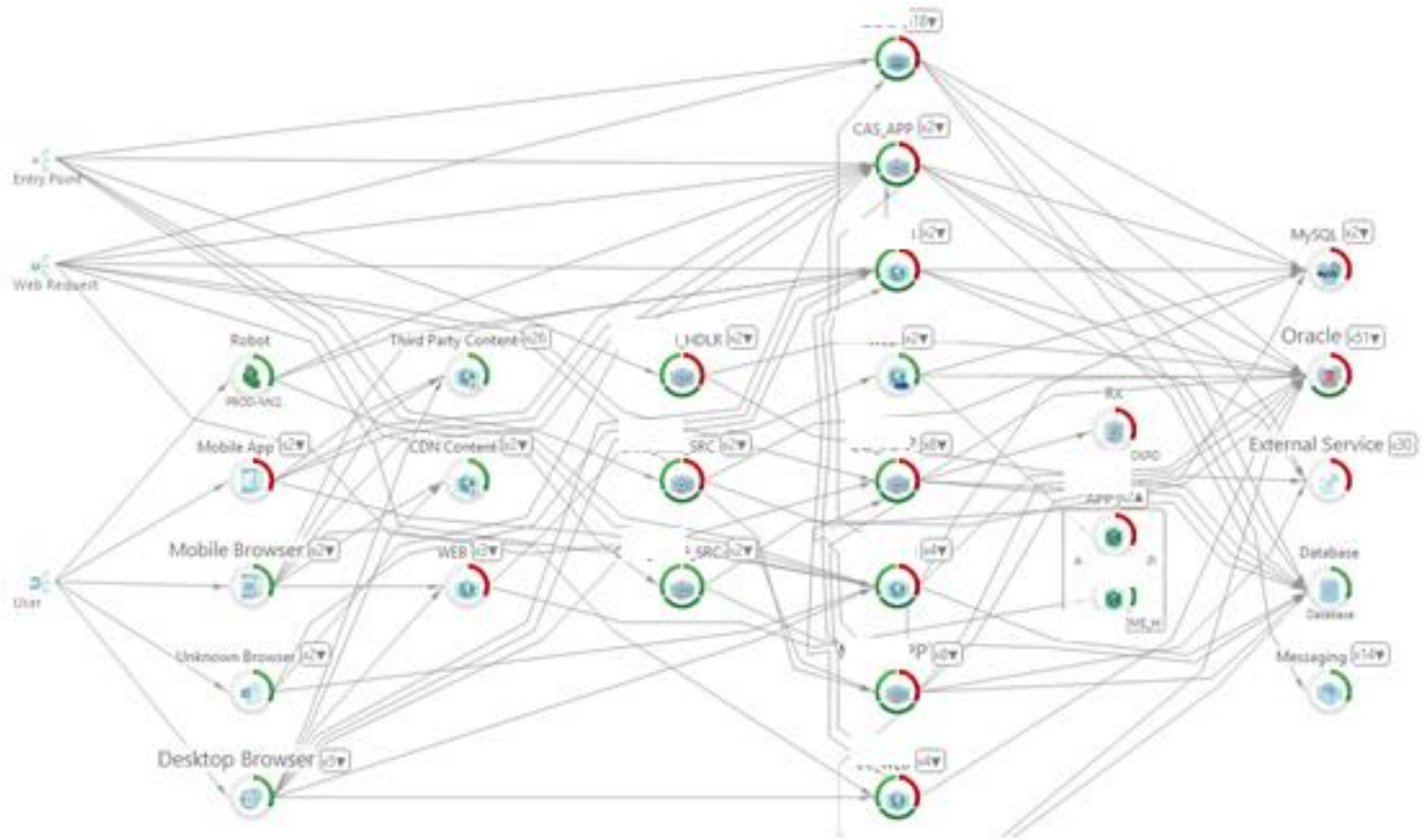


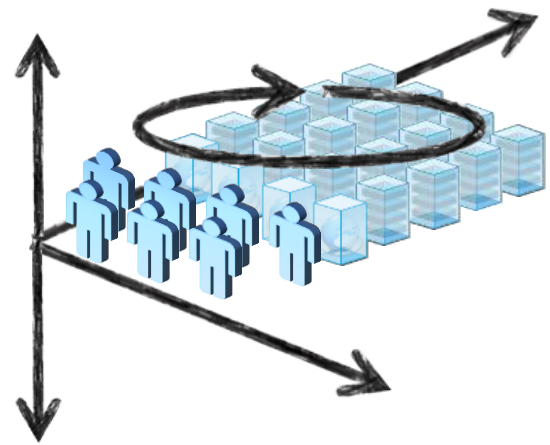
Dynatrace

Full coverage



End-to-end
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Dynatrace

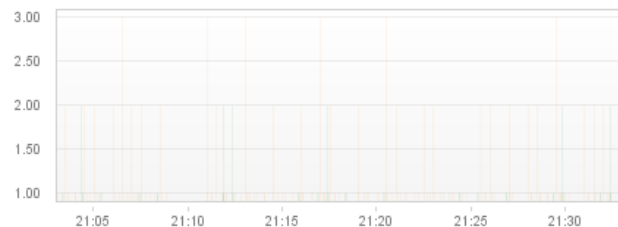
Business ready information

Business Dashboard

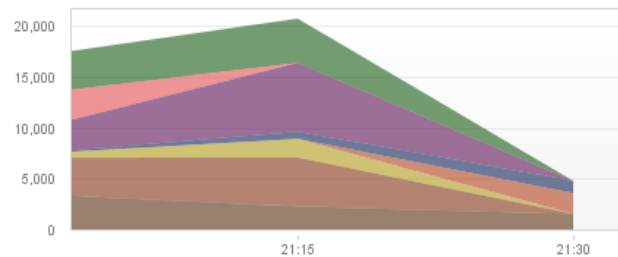
This dashboard shows an overview of bookings and revenue per tenant and destination.

Conversion Rate: Logins vs. Bookings

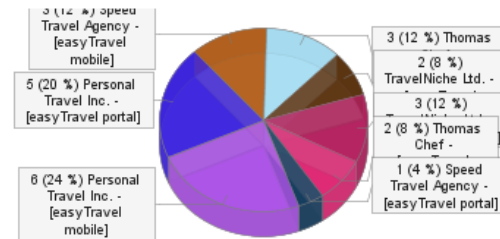
Compares logins (orange) to actual bookings (green)



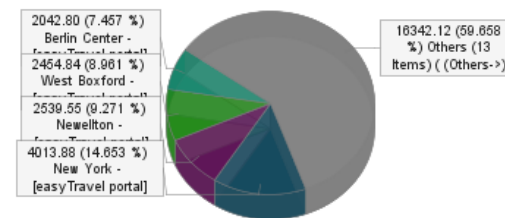
Revenue per 15 minutes



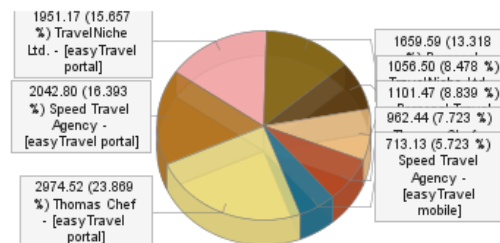
Bookings by Tenant



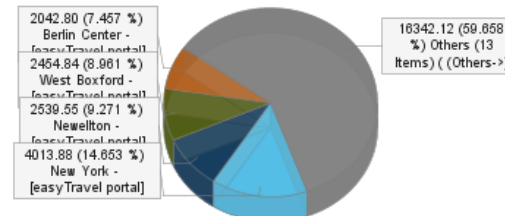
Bookings by Destination



Revenue by Tenant



Revenue by Destination



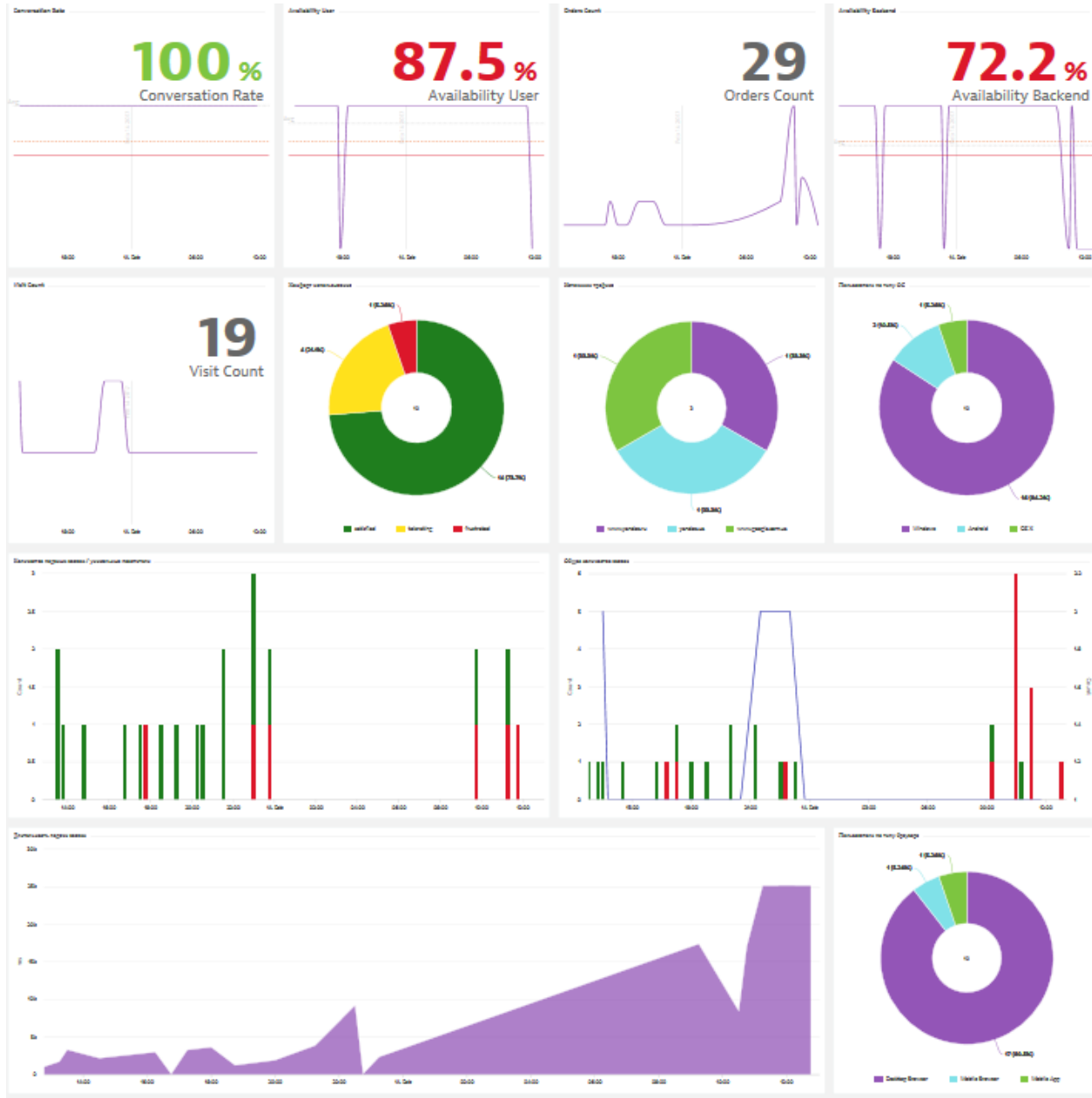
Bookings by Location - Comparison

Name	last 24 hours				last 7 days			
	Incident...	Violatio...	Failed %	Revenu...	Incident...	Violatio...	Failed %	Revenu...
Albury	0.00	100.00	0 %	1651.40	0.00	100.00	0 %	2532.15
Bagdad	0.00	100.00	0 %	2668.82	0.00	100.00	0 %	2584.10
Berlin Center	0.00	100.00	0 %	2042.80	0.00	100.00	0 %	2196.01
Boxford	0.00	100.00	0 %	1626.20	0.00	100.00	0 %	1626.20
Bugojno	0.00	100.00	0 %	310.00	0.00	100.00	0 %	333.25
Miami Beach	0.00	100.00	0 %	586.65	0.00	100.00	0 %	586.65
Nestor	0.00	100.00	0 %	1040.75	0.00	100.00	0 %	1040.75
Newell	0.00	100.00	0 %	907.30	0.00	100.00	0 %	907.30

easyTravel Trip Search by Destination

Application	Splittings	PurePath Response ...	Pur
easyTravel portal	Valparaiso	●	-
easyTravel portal	Shizunai	●	-
Default Applicat...	null	●	-
easyTravel portal	null	●	-
easyTravel portal	Kabul	●	-
easyTravel portal	Jerusalem	●	-
easyTravel portal	Jasper	●	-
easyTravel portal	Bodensdorf	●	-

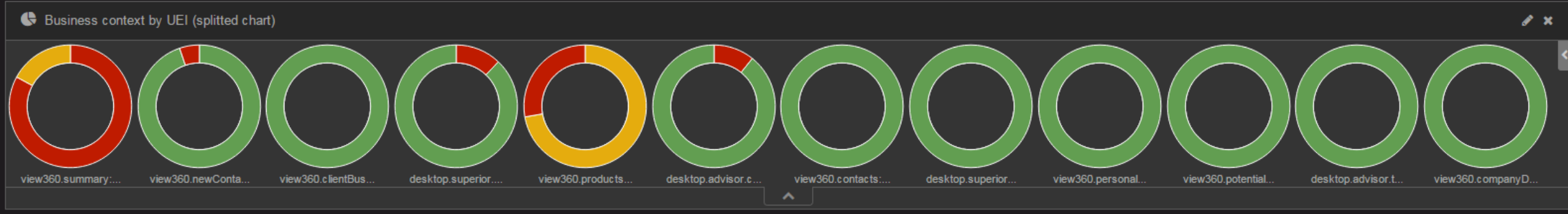
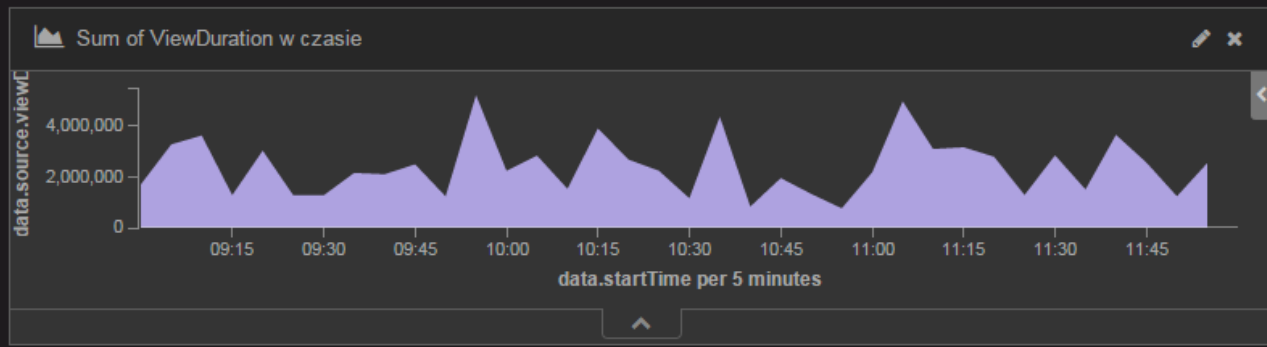
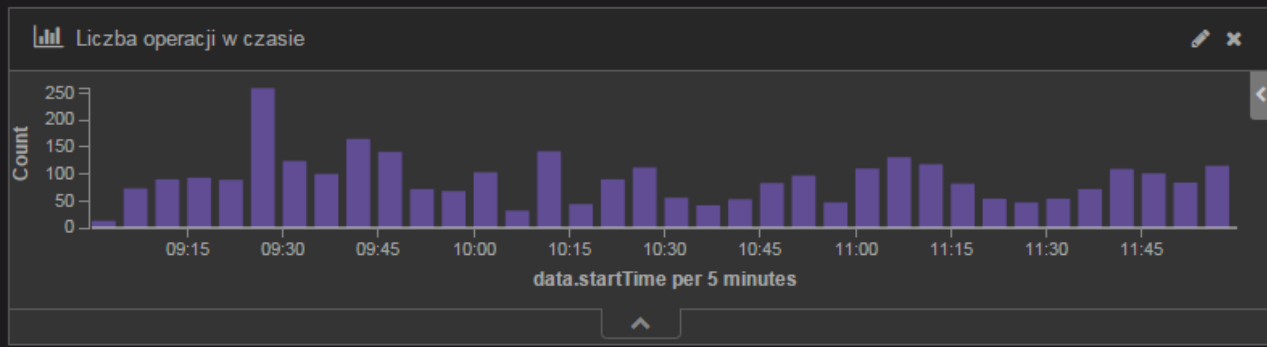
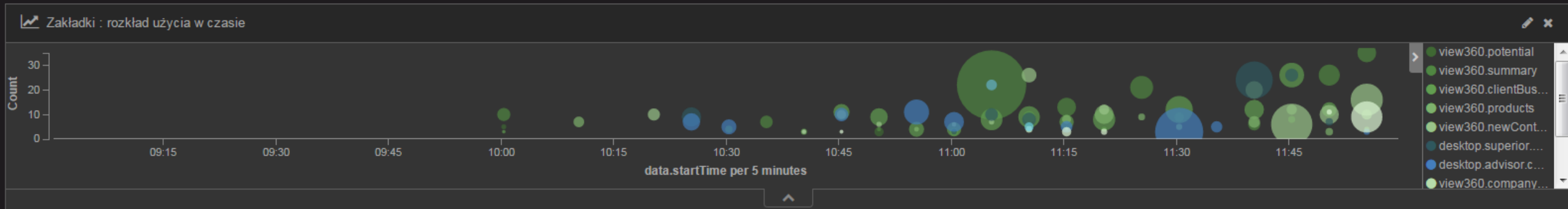
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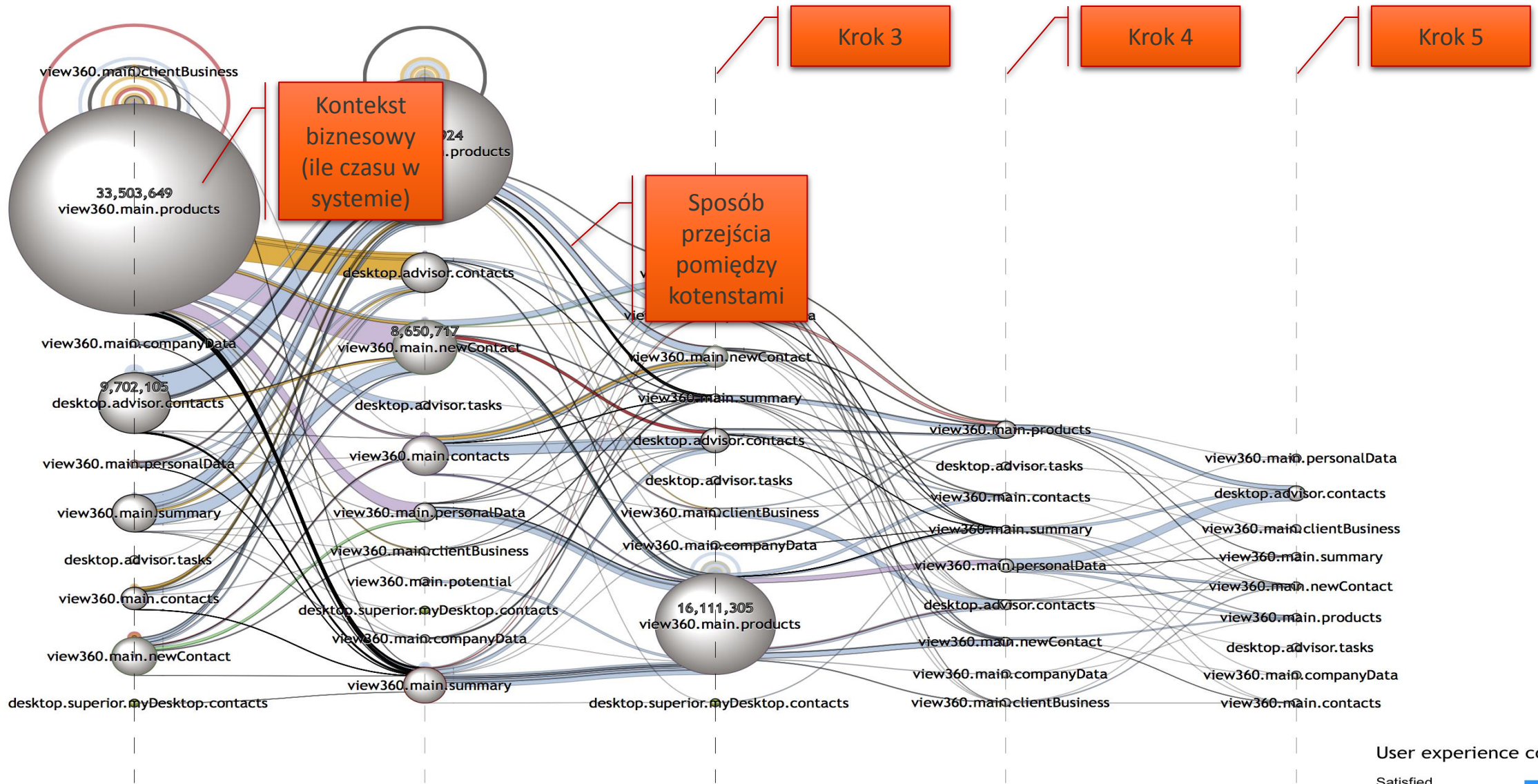


Purelytics: Aktywność Doradców w czasie


NC+ Użycie w czasie

*





User experience colours:

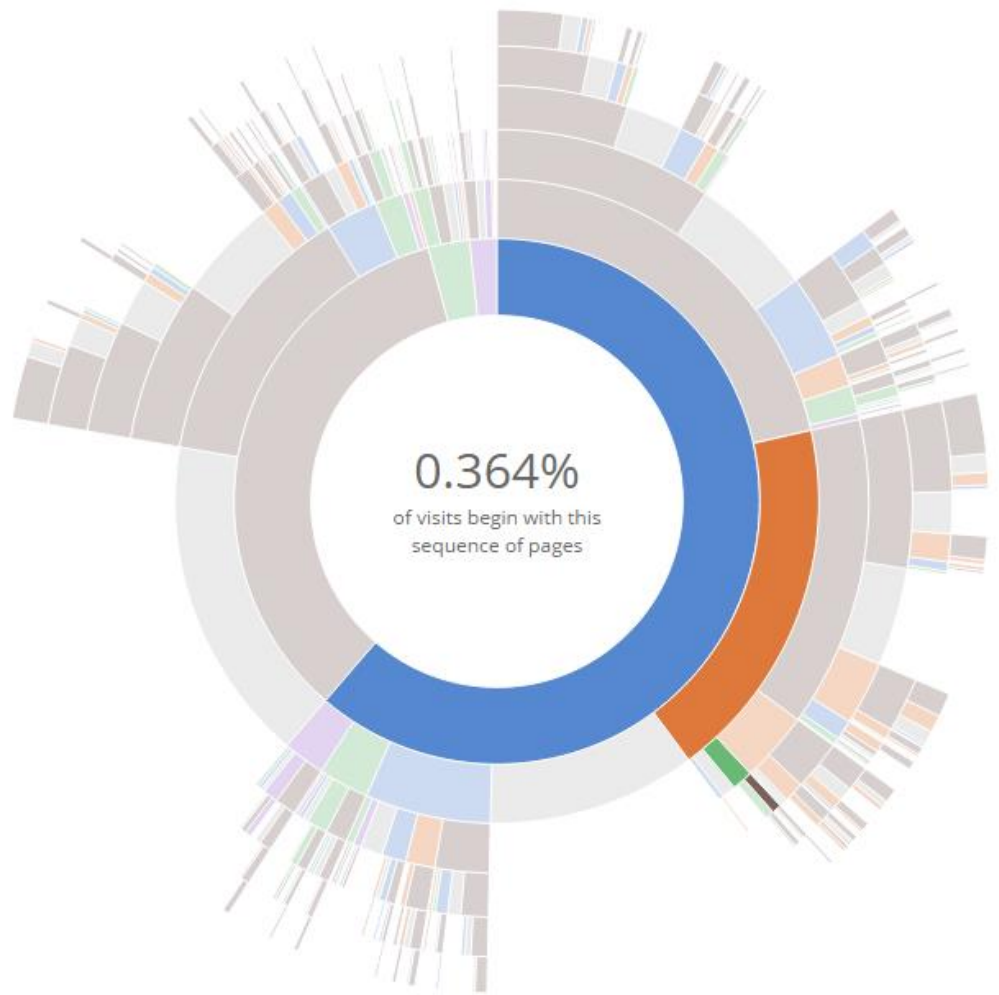
- Satisfied 
- Tolerating 
- Frustrated 

Other Informations:



Purelytics: Ścieżki przejść i mapa użycia systemu



Purelytics: przykłady do kustomizacji. Ścieżki przejść



Dynatrace UEM & Google Analytics

Top Metrics		
Visitors (unique and returning)	✓	✓
Traffic Sources (Referrals)	✓	
Content	✓	✓
Conversions	✓	
Exit Pages	✓	✓
Bounce Rate	✓	✓
Integrated view of Web, native mobile, HTML5 & hybrid apps		✓
Usage statistics (across browsers, devices, geos, carriers & connections)		✓
Client-side errors		✓
User behavior and root cause analysis		✓
Third party and cloud services impact		✓
All hosts, 1 st and 3 rd parties		✓
SLA management		✓

Google Analytics are about “what” happened.

Dynatrace helps you find out “why”

Google Analytics reports on an interval basis.

Dynatrace let’s you see things in real time

More cool things

IDE integration

Visual Studio 2015 Extension



- Agent injection from Visual Studio 2015
- Source Code Look-up Integration with Dynatrace Client

Dynatrace Eclipse Integration Plugin

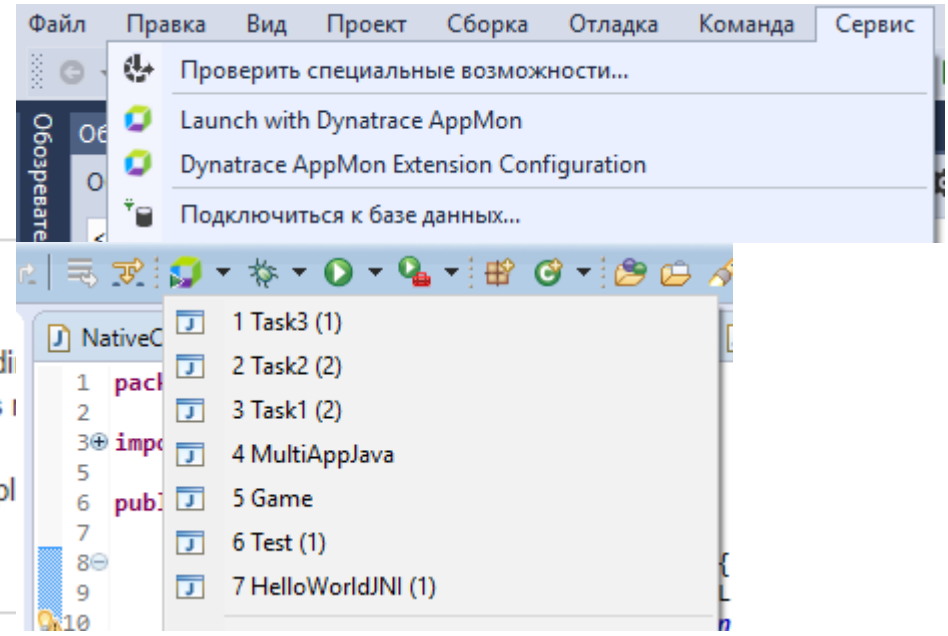


- launch applications with an injected Dynatrace Agent di
- retrieve & display the key architectural metrics (such as i calls, exceptions and log messages) from your tests
- perform look-ups of sources files and methods from appl Application Monitoring


dynaTrace IntelliJ IDEA Integration Plugin



The IntelliJ IDEA Plugin integrates dynaTrace advanced profiling capabilities to the [IntelliJ IDEA IDE](#).



IDE Integration



Build, optimize, test and operate highly-scalable applications with Dynatrace.
[Help and Troubleshooting](#)
www.dynatrace.com

Agent

Collector host:

Collector port:

Agent name:

Build before launch

Launch delay for Web [ms]:

CodeLink

Enable CodeLink

Client port:

PurePath	Response Time [ms]	Breakdown	Size	Agent
/	31490.16	io (83.0%)	15	dotnet[1]@rb-samoyl
/About.aspx	25110.53	io (88.0%)	11	dotnet[1]@rb-samoyl
/Contact.aspx	478.37	cpu (60.0%) suspension	11	dotnet[1]@rb-samoyl
/About.aspx	450.76	cpu (55.0%) suspension	11	dotnet[1]@rb-samoyl
/Contact.aspx	431.69	cpu (57.0%) suspension	11	dotnet[1]@rb-samoyl
/	403.33	cpu (62.0%) suspension	13	dotnet[1]@rb-samoyl
/_browserLink/requestData/a1d0a37052ac44738e5d...	227.03	cpu (84.0%) io	2	dotnet[1]@rb-samoyl
/_browserLink/requestData/2577d357cddb40d4b34...	163.44	cpu (63.0%) io (37.0%)	2	dotnet[1]@rb-samoyl
/_browserLink/requestData/f713e1636e9c4c4ab83c6...	9.03	cpu (88.0%) io	2	dotnet[1]@rb-samoyl
/_browserLink/requestData/8632c972e7ae49559c62f...	5.79	cpu (83.0%) io	2	dotnet[1]@rb-samoyl
/_browserLink/requestData/15271b15bc76467eac8a...	4.67	cpu (92.0%) io	2	dotnet[1]@rb-samoyl
/_browserLink/requestData/...	4.54	cpu (94.0%) io	2	dotnet[1]@rb-samoyl

PurePaths Contributors Errors

PurePath Tree (showing only relevant nodes)

Method	Argument	Exec Total [ms]	Breakdown	Class	API
ProcessRequestNotificationHelper	/Contact.aspx	478.37	cpu (60.0%) suspension	PipelineRuntime	ASP.I
Exception Summary					
3,483 × JScriptException: Always use full sta...	Always use full sta...	-		JScriptException	Excep
1,207 × UndefinedReferencel	Exception of type '...	-		UndefinedReferen...	Excep
53 × JScriptException: <mult	<multiple thresho...	-		JScriptException	Excep
2 × JScriptException: 'f' is alr	'f' is already defin	-		JScriptException	Excep
2 × JScriptException: 'e' is alr	'e' is already defin...	-		JScriptException	Excep
2 × JScriptException: 'a' is alr	'a' is already defin...	-		JScriptException	Excep
JScriptException: Always use ful	Always use full sta...	-		JScriptException	Excep
JScriptException: Always use ful	Always use full sta...	-		JScriptException	Excep

Tree Transaction Flow API Distribution

Source lookup

The screenshot shows a performance monitoring tool interface with a list of transactions. A context menu is open over the 'WriteEC2ReservationsPerRegion' transaction. The menu items include 'Details...', 'Drill Down', 'Show in Dashboard', 'Add Snapshot to Dashboard', 'New Business Transaction...', 'Create Measures...', 'Source Lookup', 'Add Sensor Rules', 'Define API...', 'Show SQL Execution Plan', 'Find...', 'Select all', 'Deselect all', 'Expand All', 'Collapse All', 'Copy', 'Refresh Dashlet', 'Dashlet Properties...', and 'Toggle Header'. The 'Source Lookup' option is highlighted, and a sub-menu is open showing 'Open in IDE', 'Decompile Byte Code', 'Decompile IL Code', 'Decompile Source Code', 'Open in Reflector', and 'Save Byte Code...'. A blue arrow points from the 'Source Lookup' option to the code editor in the adjacent screenshot.

Transaction Name	Duration (ms)	IO (%)	Type
WriteEC2ReservationsPerRegion	249.02	io (100.0%)	UnsafeNclNative...
DescribeReserve...	229.26	io (90.0%)	EC2Reservation
DescribeReserve...	227.55	io (91.0%)	AmazonEC2Client
WriteRDSInstancesP...	173.09	io (100.0%)	HttpWebRequest
DescribeDBInsta...	154.10	io (97.0%)	RDSInstance
DescribeDBInsta...	99.44	io (91.0%)	AmazonRDSClient
CheckDefe...	887.41	io (100.0%)	HttpWebRequest
rcv(Int...	887.41	io (100.0%)	HttpWebRequest
ListTagsForResou...	887.41	io (100.0%)	UnsafeNclNative...
GetResponse...	887.41	io (100.0%)	AmazonRDSClient
GetResponse...	21.52	io (100.0%)	HttpWebRequest
GetResponse...	20.61	io (100.0%)	HttpWebRequest
GetResponse...	18.28	io (98.0%)	HttpWebRequest
GetResponse...	18.28	io (100.0%)	HttpWebRequest
GetResponse...	17.12	io (99.0%)	HttpWebRequest
GetResponse...	17.12	io (99.0%)	HttpWebRequest
GetResponse...	11.67	io (100.0%)	HttpWebRequest
GetResponse...	11.67	io (100.0%)	HttpWebRequest
GetResponse...	36.88	io (100.0%)	HttpWebRequest
GetResponse...	36.88	io (100.0%)	HttpWebRequest
GetResponse...	14.03	io (100.0%)	HttpWebRequest
GetResponse...	14.03	io (100.0%)	HttpWebRequest
WriteRDSReservationsPerRegion	116.35	io (100.0%)	HttpWebRequest
DescribeReservedDBInstance	120.47	io (96.0%)	RDSReservation
DescribeReservedDBInstance	110.44	io (100.0%)	AmazonRDSClient

The screenshot shows the Microsoft Visual Studio IDE with the source code for the 'WriteRDSReservationsPerRegion' method. The code is in C# and is located in the 'InstanceReservation.RDSReservation' class. The method signature is 'public static void WriteRDSReservationsPerRegion(regionEndpoint region, string account)'. The code includes comments, variable declarations, and logic for calling the 'DescribeReservedDBInstances' API and logging the results. A blue arrow points from the 'Source Lookup' option in the previous screenshot to this code editor.

```
public static void WriteRDSReservationsPerRegion(regionEndpoint region, string account)
{
    // DescribeReservedInstancesListings
    StringBuilder sb = new StringBuilder(1024);
    using (StringWriter sr = new StringWriter(sb))
    {
        AmazonRDSClient rds = new AmazonRDSClient(region);
        DescribeReservedDBInstancesRequest request = new DescribeReservedDBInstancesRequest();

        try
        {
            DescribeReservedDBInstancesResponse response = rds.DescribeReservedDBInstances(request);
            Console.WriteLine(response.ReservedDBInstances.Count + " reservations found");
            foreach (ReservedDBInstance reservedInstance in response.ReservedDBInstances)
            {
                if (reservedInstance.State == "active")
                {
                    sr.WriteLine(account + "," + reservedInstance.ReservedDBInstanceId + "," + reservedInstance.DBInstanceClass + ","
                        + reservedInstance.DBInstanceCount + "," + region.ToString() + ","
                        + reservedInstance.ProductDescription + "," + reservedInstance.MultiAZ + "," + reservedInstance.StartTime + ","
                        + reservedInstance.Duration);
                }
            }
            File.AppendAllText("rds_reserved_instances" + account + ".csv", sr.ToString());
        }
        catch (AmazonEC2Exception ex)
        {
            if (ex.ErrorCode != null && ex.ErrorCode.Equals("AuthFailure"))
            {
                Console.WriteLine("The account you are using is not signed up for Amazon EC2.");
                Console.WriteLine("You can sign up for Amazon EC2 at http://aws.amazon.com/ec2/");
            }
            else
            {
                // ...
            }
        }
    }
}
```

Build server \ CI

Build Server / CI

Dynatrace Test Automation Plugin for Atlassian Bamboo



This plugin displays performance metrics captured by the Dynatrace Test Center Edition (for Unit, Performance, Web API and Browser-based tests) in Bamboo.

Test Automation Plugin for Jenkins



Jenkins

- Extend your delivery pipeline with **architectural metrics captured on top of your functional/integration tests** (such as Unit Test based Framework or HTTP based tests)
- **Register Test Run** from Jenkins (build action)
- **Retrieve Dynatrace Test Results and push to Jenkins** (post-build action)

Jenkins

Jenkins [?](#)

Jenkins > junit-example-dt [ENABLE AUTO REFRESH](#)

- Back to Dashboard
- Status
- Changes
- Workspace
- Build Now
- Delete Project
- Configure
- Test Result Trend
- Move

Project junit-example-dt

[add description](#)
[Disable Project](#)

Test Result Trend

Build	Failed	Degraded	Volatile	Improved	Passed
#1	0	0	3	0	6
#2	0	0	3	0	6
#3	0	0	3	0	6
#4	0	0	3	0	6
#5	0	0	3	0	6
#6	0	0	3	0	6
#7	0	0	3	0	6
#8	0	0	3	0	6
#9	0	0	3	0	6
#10	0	0	3	0	6
#11	0	0	3	0	6
#12	0	0	3	0	6
#13	0	0	3	0	6
#14	2	1	1	0	5
#15	1	0	2	0	6
#16	0	0	2	1	6
#17	0	0	2	0	7

Build History [trend](#)

find

Build	Time
#17	May 27, 2016 9:56 AM
#16	May 27, 2016 9:55 AM
#15	May 27, 2016 9:54 AM
#14	May 27, 2016 9:51 AM
#13	May 27, 2016 9:44 AM
#12	May 27, 2016 9:36 AM
#11	May 18, 2016 3:16 PM
#10	May 18, 2016 3:14 PM
#9	May 18, 2016 3:12 PM
#8	May 18, 2016 3:08 PM
#7	May 18, 2016 3:05 PM
#6	May 5, 2016 5:18 PM
#5	May 5, 2016 5:03 PM
#4	Apr 21, 2016 2:44 PM

Workspace

Recent Changes

Test Result Trend
Latest Test Result (4 passed, 1 improved, 2 volatile, 1 degraded, 1 failed)

Latest Test Result (1 failure / ±0)

Permalinks

- [Last build \(#17\). 50 sec ago](#)
- [Last stable build \(#13\). 13 min ago](#)
- [Last successful build \(#17\). 50 sec ago](#)
- [Last failed build \(#14\). 5 min 41 sec ago](#)
- [Last unstable build \(#17\). 50 sec ago](#)
- [Last unsuccessful build \(#17\). 50 sec ago](#)
- [Last completed build \(#17\). 50 sec ago](#)

World-class Customers

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Telco



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ISV



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Other





Performance management for the digital customer age