

# PTC® Live Global

## PTC 318 – Pro-Active Monitoring through PTC System Monitor

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Director of Product Management

6/2/2015



- PTC System Monitor 4.0 Overview
- Pro-Active Monitoring
  - URL Monitor
  - Synthetic testing and advanced filtering
  - Auto-baselines
  - Automated Reports



Powered by Dynatrace Production Edition Release 6.1

Supported Products	Release
PTC Windchill PDMLink	10.0+
PTC Windchill ProjectLink	10.0+
PTC Windchill FlexPLM	10.1 M040+
PTC Integrity	9.6 +
Service Center	10.1+
New in PSM 4.0	
PTC Windchill Partslink/MPMLink/ATO	10.0+
Service Knowledge Management	5.4+
PTC Windchill Quality Solutions	10.2 M040+
InService	6.0+

RTM: February 10<sup>th</sup> 2015

## New Business Transactions



### ProjectLink Transactions

- Convert to PDM Checkout
- Convert to Share
- Edit Multiple Assignments
- Edit Selected Objects
- Export / Import Plan
- Insert Activity
- New / Multiple Activities
- Send to PDM
- Update Project
- Update Selected Shares
- View in Gantt Explorer



### PartsLink Operations

- Classification Search
- Classify Part
- Create Classification Node
- Edit Classification



### MPMLink Operations

- Part Allocation
- Rename Operation
- Search in Tree Picker
- Work Instruction



### Options and Variants Operations

- Assign Expression
- Configure Option Filter
- Create Rule
- Delete Operation
- Edit Option Filter
- Option Pool Structure
- Option Set Structure
- Preview Variant Structure
- View Conditional Rules
- View Enable Rules
- View Exclude Rules
- View Include Rules

PTC® Windchill®

**BT SLA**

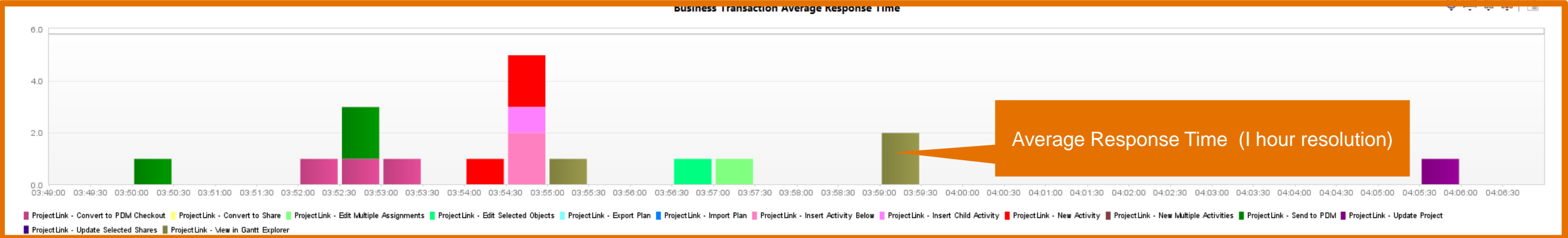
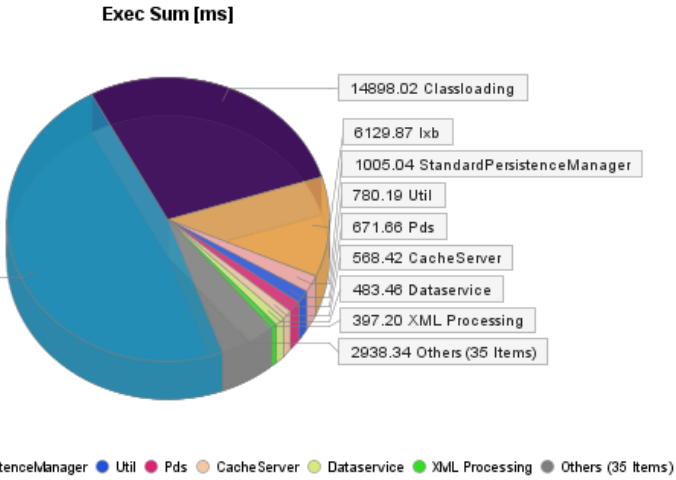
ProjectLink Operations  
 Green - Avg Response time < 3 seconds  
 Yellow - Avg Response time 3 - 5 seconds  
 Red - Avg Response time > 5 seconds



**UserIDs**

Name	Count	Violatio...	Failed %	PurePath Response Tim...
ProjectLink - View in Gantt Explorer (split by Return Value of *.getRemoteUser)	3	0.00	0.00	0 %
ProjectLink - Update Selected Shares (split by Return Value of *.getRemoteUser)	0	-	-	0 %
ProjectLink - Update Project (split by Return Value of *.getRemoteUser)	1	0.00	0.00	236.20 ms
ProjectLink - Send to PDM (split by Return Value of *.getRemoteUser)	3	0.00	33.33	3631.56 ms
ProjectLink - New Multiple Activities (split by Return Value of *.getRemoteUser)	0	-	-	0 %
ProjectLink - New Activity (split by Return Value of *.getRemoteUser)	3	0.00	0.00	502.99 ms
ProjectLink - Insert Child Activity (split by Return Value of *.getRemoteUser)	1	0.00	0.00	611.12 ms
ProjectLink - Insert Activity Below (split by Return Value of *.getRemoteUser)	2	0.00	0.00	563.49 ms
ProjectLink - Import Plan (split by Return Value of *.getRemoteUser)	1	0.00	100.00	31614.42 ms
ProjectLink - Export Plan (split by Return Value of *.getRemoteUser)	0	-	-	0 %
ProjectLink - Edit Selected Objects (split by Return Value of *.getRemoteUser)	1	0.00	0.00	656.50 ms
ProjectLink - Edit Multiple Assignments (split by Return Value of *.getRemoteUser)	1	0.00	0.00	20.49 ms
ProjectLink - Convert to Share (split by Return Value of *.getRemoteUser)	0	-	-	0 %
ProjectLink - Convert to PDM Checkout (split by Return Value of *.getRemoteUser)	3	0.00	33.33	3553.21 ms

**Count, Response Time, etc...**





## Unique Login Graph

### PTC® Windchill®

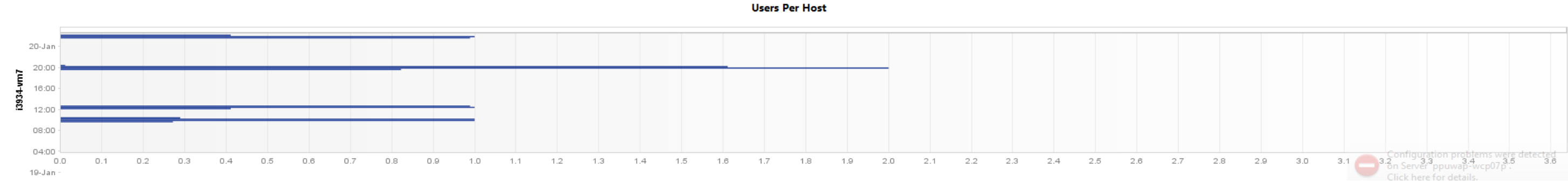
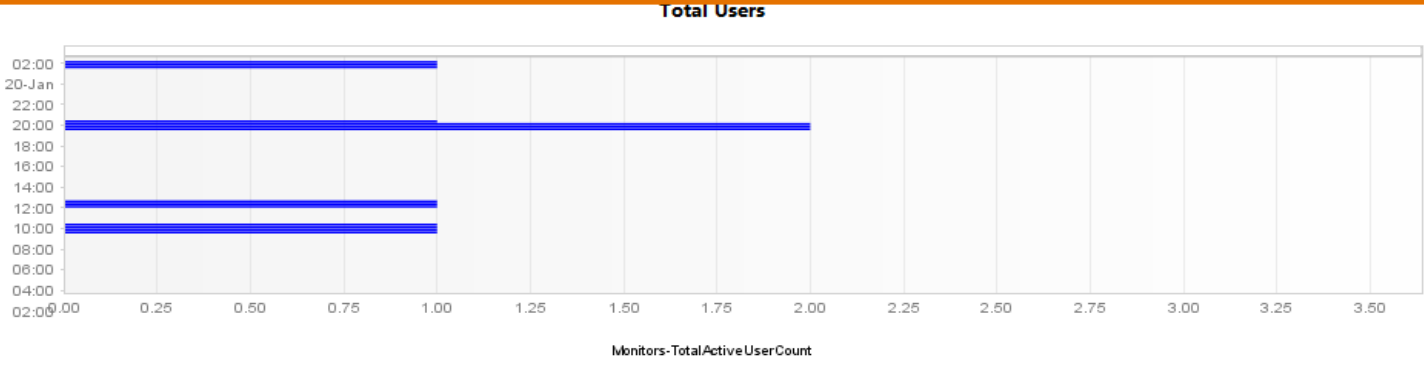
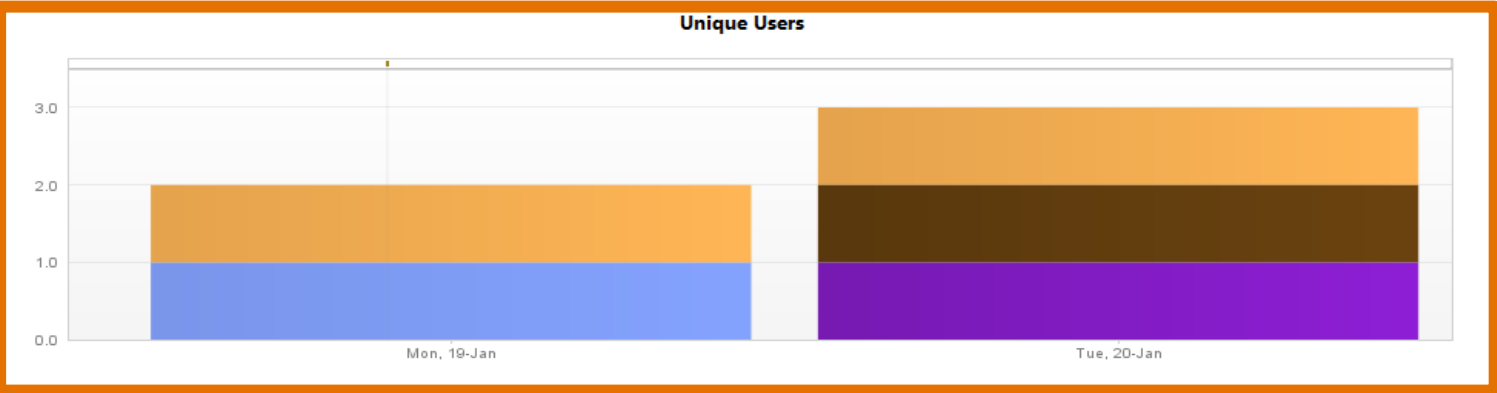
#### User Activity

To extend PSM visibility into browser - see [www.ptc.com/WCMS/files/142899/en/UEM\\_ForWindchill.mp4](http://www.ptc.com/WCMS/files/142899/en/UEM_ForWindchill.mp4) for more information on User Experience Management (UEM), a Compuware add-on component to PSM.

**User Activity Breakdown**

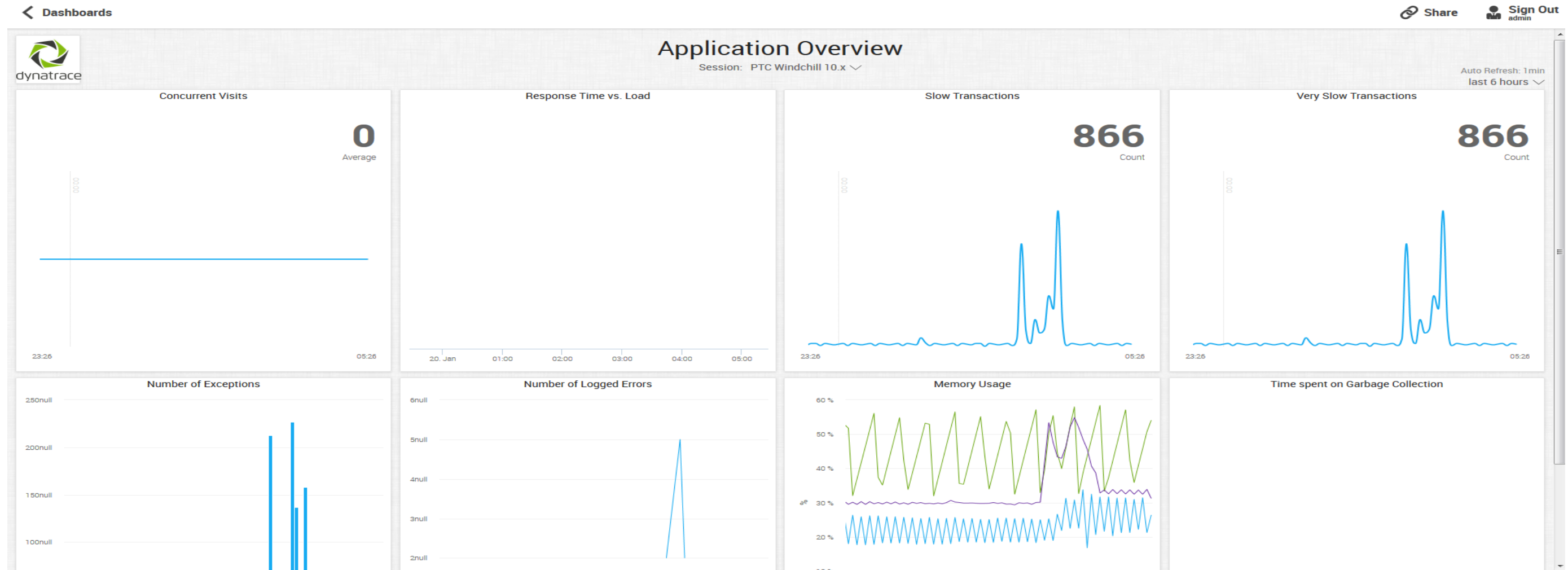
Use ctrl-F to find a user by name, and right-click to drill down to PurePaths and other diagnostic information.

Splittings	Count	Sum	Time [ms] Avg	Filter
wcadmin	128	66460.90	519.79	type=Web Requests,name=Count; [FUNC: filter; AGGR: c...
demo	117	62249.35	563.42	type=Web Requests,name=Count; [FUNC: filter; AGGR: c...
u1	87	28624.55	354.00	type=Web Requests,name=Count; [FUNC: filter; AGGR: c...
u2	10	717.72	71.77	type=Web Requests,name=Count; [FUNC: filter; AGGR: c...



## Create and Share Dashboards

- `<PSMServer_Hostname>:9911`



- **High availability**

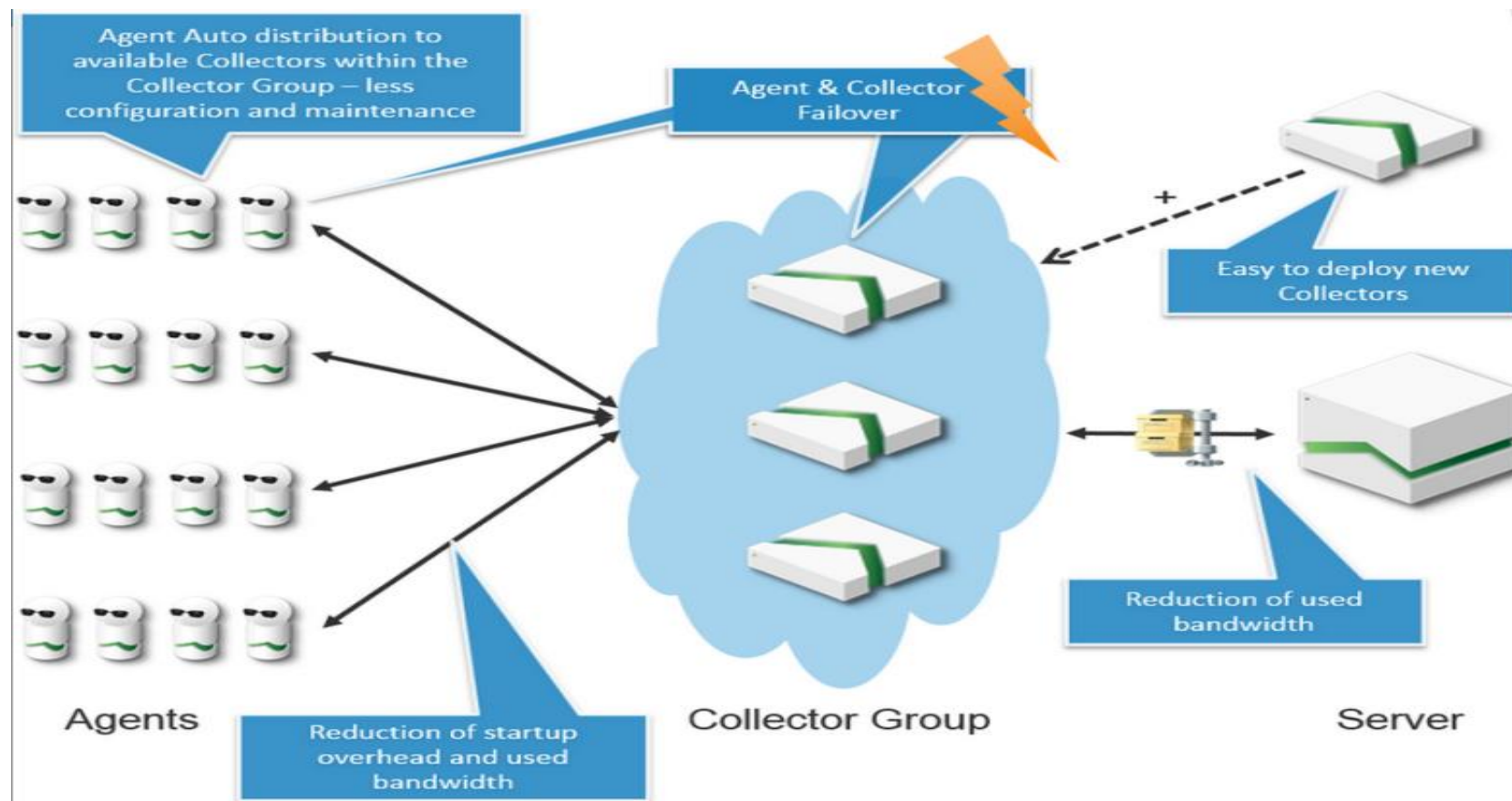
- Automatic failover of Agents and Collectors

- **Server Architecture Changes**

- Front End Server processes client requests
- Improves client responsiveness

- **Performance Improvements**

- Handling **30% more transactions** => up to 5,000 transactions/sec
- Serving **30% more agents** => up to 1,600 agents on 1 Dynatrace server

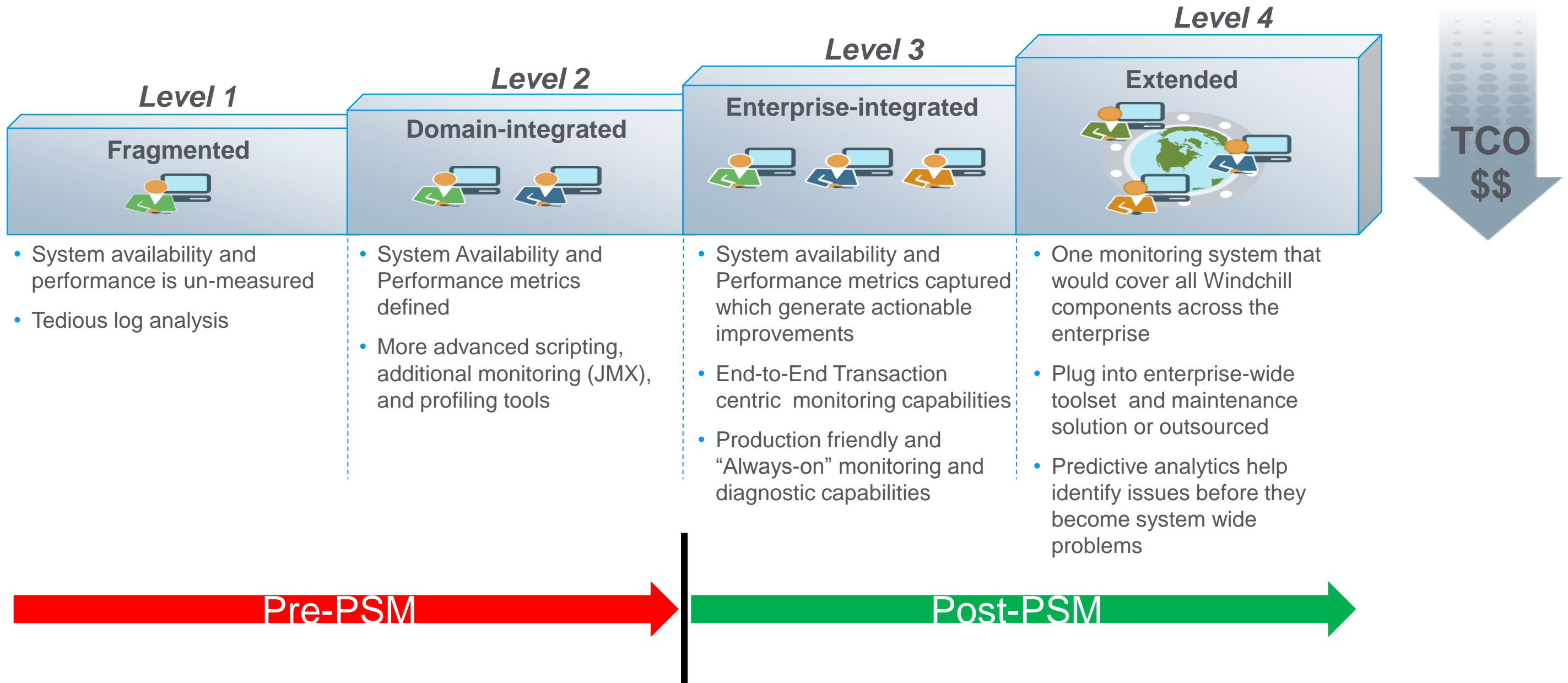




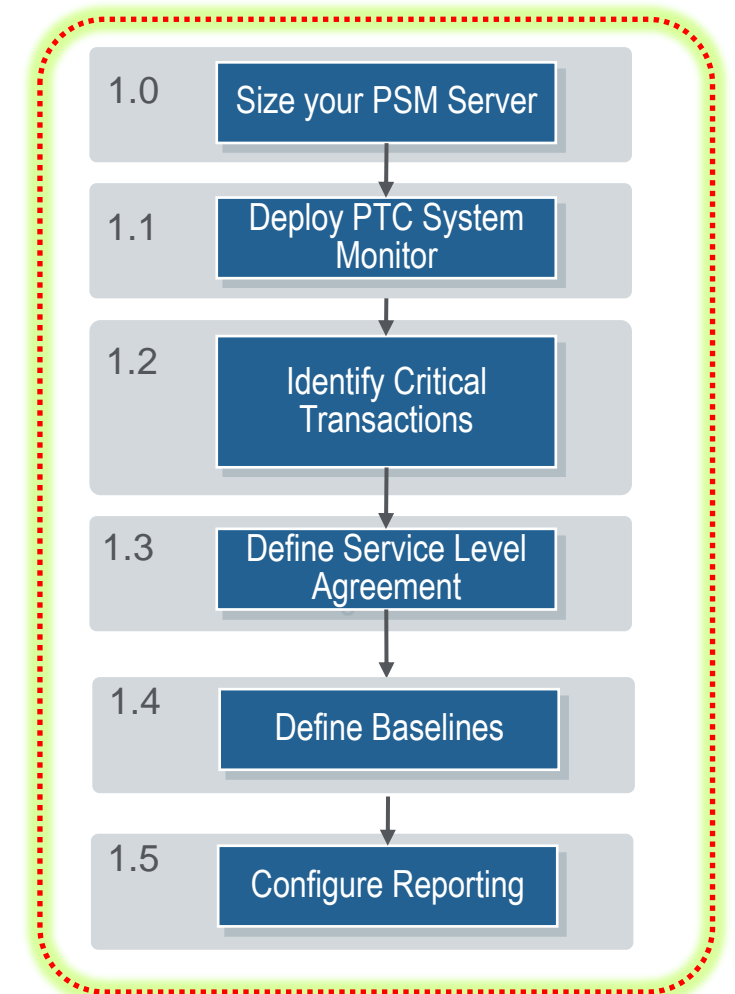
# Pro-Active Monitoring With PSM



## Maturity Model for System Monitoring and Maintenance



- **Step 1.1 – Deploy PTC System Monitor**
  - Not happy if you don't do this - Check the [PSM Sizing Calculator](#) to ensure you have the proper resources allocated PSM server
  - Install and configure PSM in your Test and Production Environments. Follow instructions in the [Install Guide](#) for detailed steps.
  - Configure PSM to use Oracle or SQL Server for Performance Warehouse and not embedded database
  - Configure the Mail Server settings to receive notifications on important Infrastructure and Application incidents.
- **Step 1.2 – Identify Critical Business Transactions**
  - Use OOTB Business Transaction Dashboards to identify common and slow transactions
  - Engage your Business Unit leadership to identify critical set of end-user transactions, based on the following metrics
    - Frequency of Use
    - Business critical transactions
    - Historically Slow running transactions
- **Step 1.3 – Define Service Level Agreement**
  - Based on feedback from Business Unit define what are the acceptable thresholds for your system from a Business Transaction and System availability perspective
    - Make adjustments to the OOTB incidents and thresholds as needed
- **Step 1.4 – Define Baselines**
  - Configure PSM to create a rolling average for any Business Transactions identified as critical from Step 1.3
  - Identify top locations, Users and Business Transactions
  - Deploy synthetic tests
- **Step 1.5 – Configure Reporting**
  - Based on output from Step 1.3, create custom report dashboards, set frequency for reporting and define target audience for reports.



## Edit System Profile and Create URL Monitor

Monitors for PTC Windchill 10.x

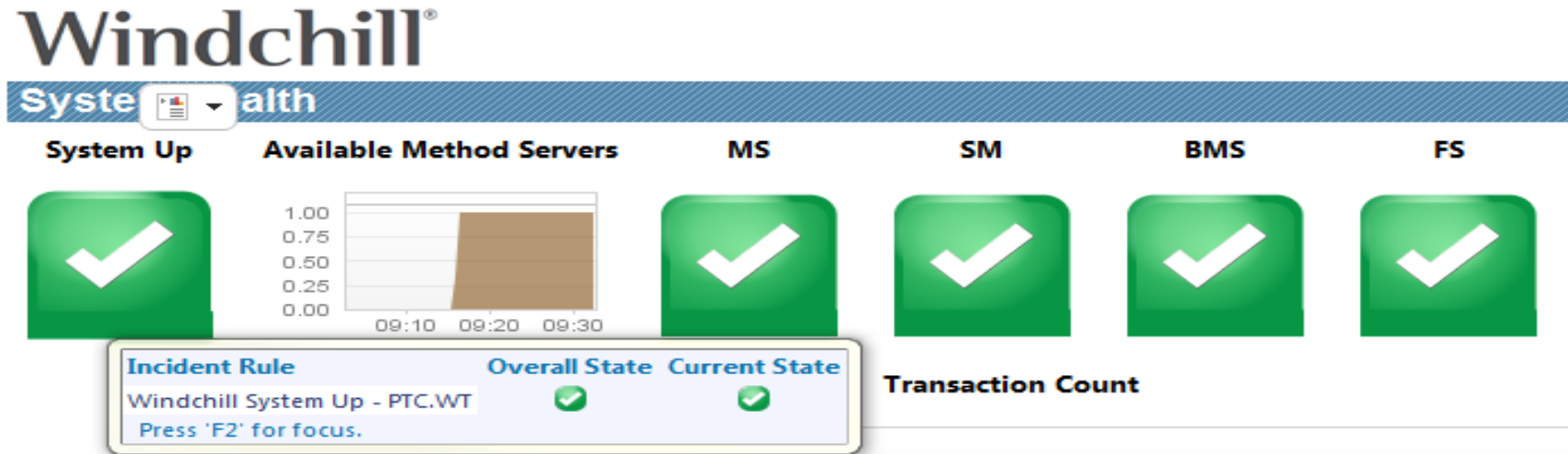
Name	Type	Value
Protocol	list	http
Port	long	80
Path	string	/Windchill/servlet/WindchillGW/wt.httpgw.HTTPServer/ping
Method	list	GET
HTTP version	list	1.1
User-Agent	string	dynaTrace/4
Max. redirects	long	3
Match content	list	Disabled
Server authorization	boolean	<input type="checkbox"/>
Timeout	long	60000
Proxy	boolean	<input type="checkbox"/>
dynaTrace Tagging	boolean	<input checked="" type="checkbox"/>
timer name	string	
Disable certificate validation	boolean	<input type="checkbox"/>

Measure	Agent Group or Monitor	Threshold
HostReachable	Windchill Ping URL	severe

## Add Windchill Server as the host

Hosts
i3934-vm8

Dashboard Indicator “System Up” (?!)



Tasks/Monitors Dashlet shows current status of all monitors

Name	Last Run	Next Run	Schedule	Execution Target
dynaTrace Self-Monitoring	-	-	-	-
Windchill 10.0 System Profile	-	-	-	-
URL Monitor	-	-	-	-
Windchill Authorization Check	-	-	5 min Schedule	Embedded dynaTrace Collector
atwood01	09:34:56 (EST)	09:38:32 (EST)	5 min Schedule	Embedded dynaTrace Collector
Windchill Ping URL	-	-	Every Minute	Embedded dynaTrace Collector
localhost	08:34:18 (CST)	08:35:18 (CST)	Every Minute	Embedded dynaTrace Collector
Windchill Remote Ping URL	-	-	Every Minute	dynaTrace Collector@bl-pd0.ptcne...
Web Transaction Monitor	-	-	-	-



# Synthetic Testing and Advanced Filtering

**Problem:** Is there any way to automatically check and record performance of CAD transactions from various sites?

**Solution:** Configure the PTC Windchill Single User Performance Synthetic Tests for PTC Creo – [Link to Documentation](#)

- Download the Single User Performance Tester automated scripts

- Deploy and execute them on remote sites on a regular basis

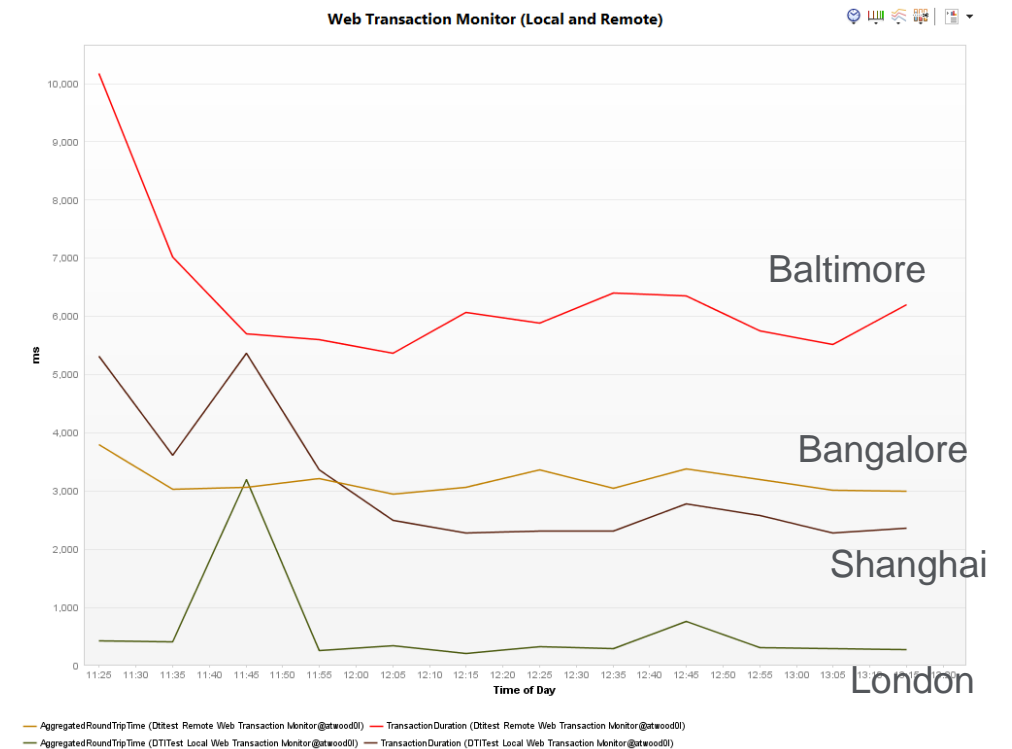
  - Supported operations

    - Create Workspace
    - Import / Export
    - Check-in / Check-out / UndoCheckout
    - Upload / Download
    - Delete Workspace
    - Remove

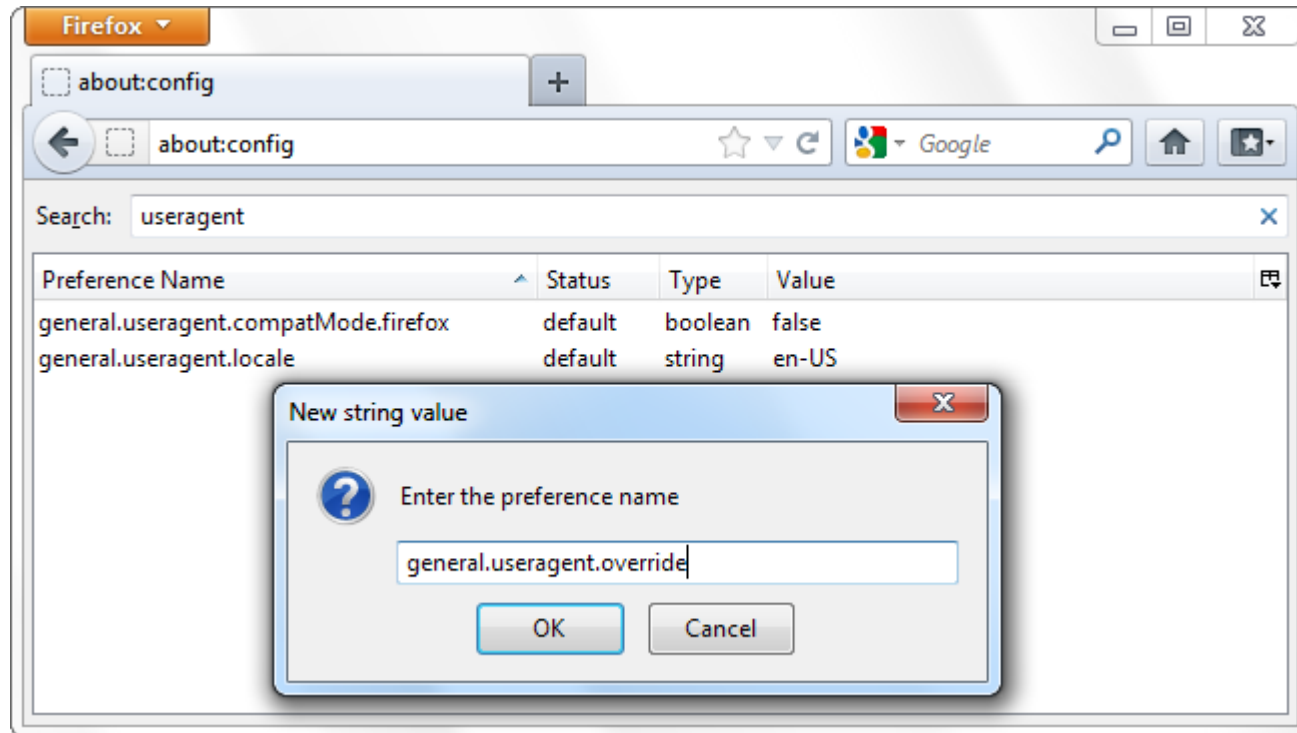
- Create dashboard with above business transactions

- Filter results on 'test' user(s) or custom 'useragent'

- Schedule periodic report generation

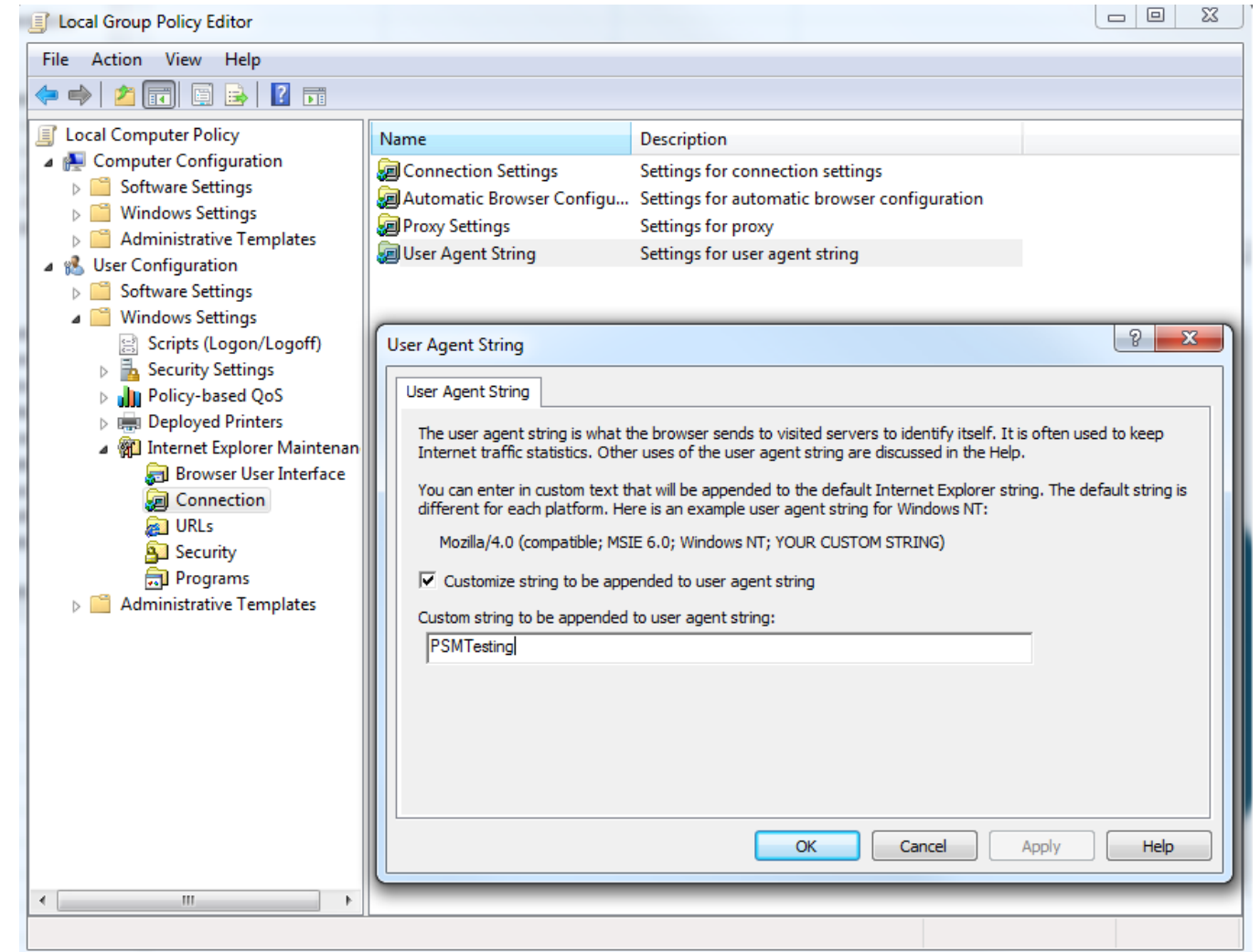


## Edit useragent String



### Firefox User Agent

1. `about:config`
2. Create useragent preference
3. Set a custom string in user agent

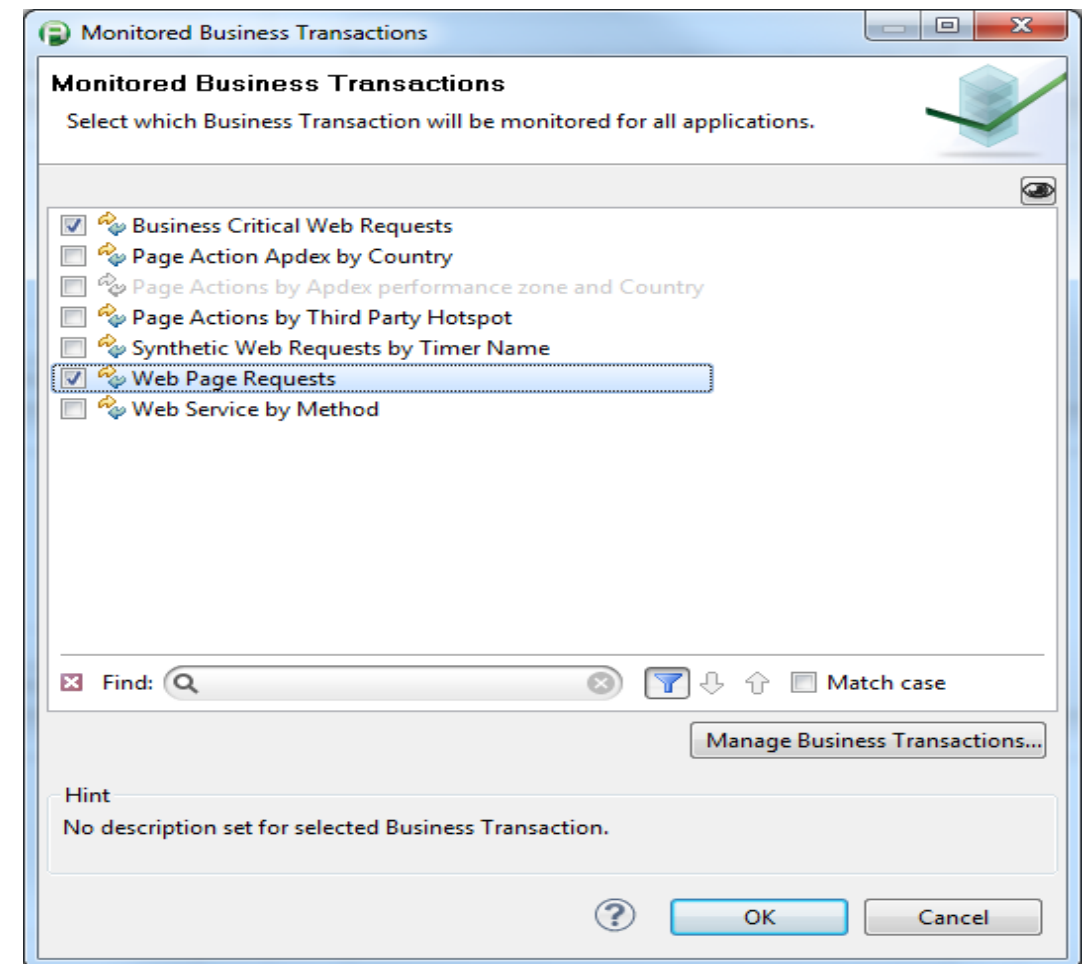
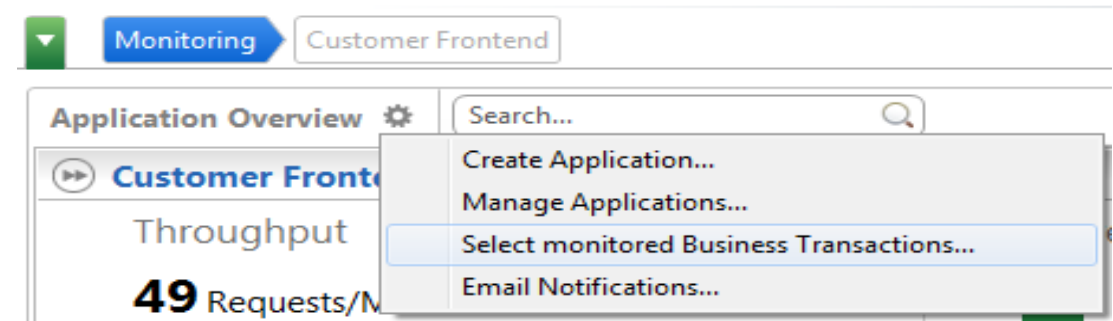


### Internet Explorer User Agent

1. Run `gpedit.msc`
2. Set a custom string in user agent
3. Logoff/logon

# Automatic Baselines

- What gets baselined?
  - All Business Transactions selected in Application Overview
- Required Conditions
  - Must either be Server-Side or Page Action based
  - Must only have 1 Splitting (besides Application)
  - Must return Failure Rate and Response Time





## In Application Overview

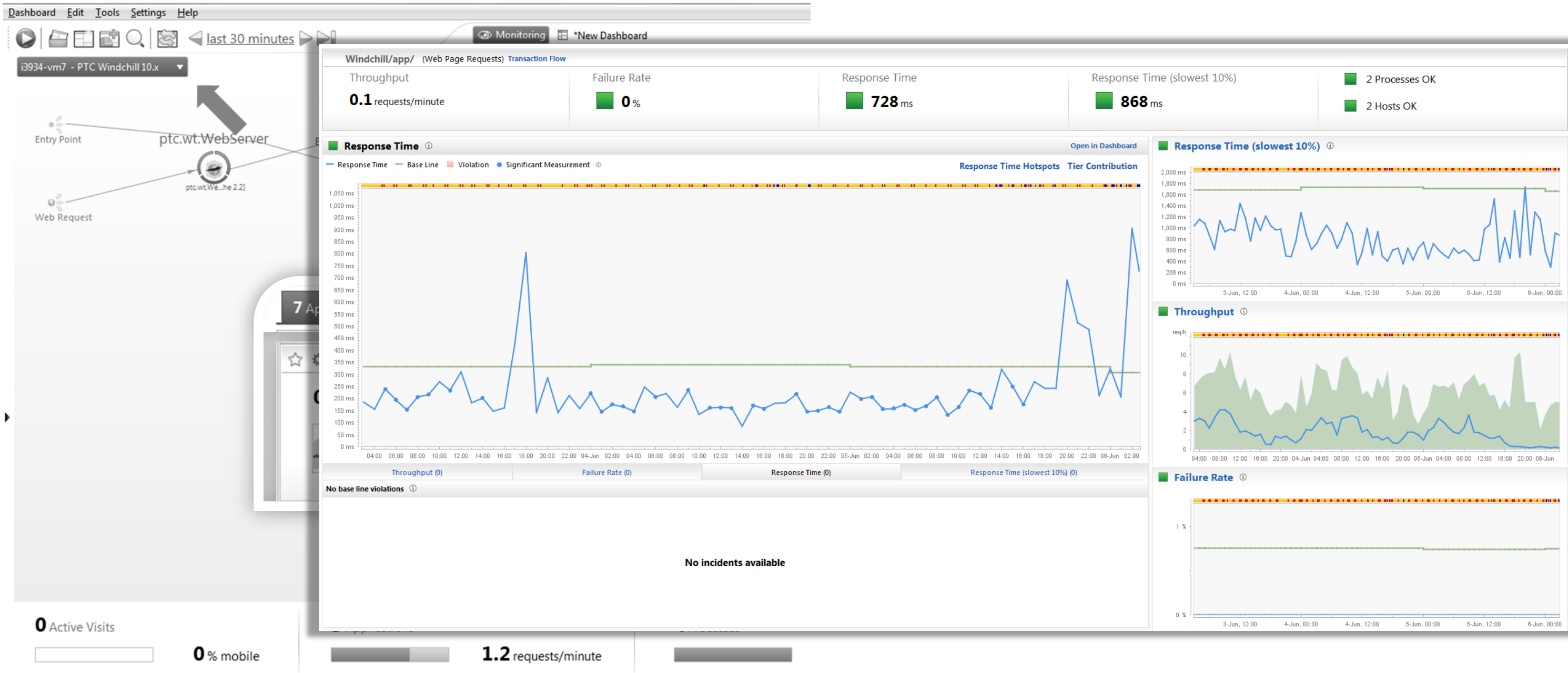
The screenshot displays the PTC Windchill monitoring interface. At the top, a navigation bar includes 'Dashboard', 'Edit', 'Tools', 'Settings', and 'Help'. Below this, a toolbar shows a play button, a folder icon, a magnifying glass, and a refresh icon, along with a 'last 30 minutes' time range selector and a 'Monitoring' button. The main area features a service flow diagram with components: 'Entry Point', 'Web Request', 'ptc.wt.We...he 2.2]', 'ptc.wt.Bac...chill-1', 'ptc.wt.Me...dchill-2', and 'Oracle wind'. An orange arrow points to the 'Monitoring' button, and another points to the 'ptc.wt.We...he 2.2]' component.

Below the diagram is a summary bar with four status boxes: '7 Applications', '5 ok', '0 critical', and '2 no data'. A detailed view for 'Create Document (Web Page Requests)' is shown, featuring three charts: '0 Requests / Minute' (with an orange arrow pointing to the chart), a percentage chart showing '- %', and a response time chart showing '207 ms [294 ms]'. The x-axis for all charts spans from 'Thu, 4-Jun' to 'Sat, 6-Ju'.

At the bottom, a dashboard summary shows: '0 Active Visits', '0 % mobile', '3 Applications' (with a green progress bar), and '1.2 requests/minute' (with a green progress bar). A final box shows '4 Processes' with a green progress bar. An orange arrow points to the '3 Applications' box.

# Where do we see baselines?

## In Application Overview

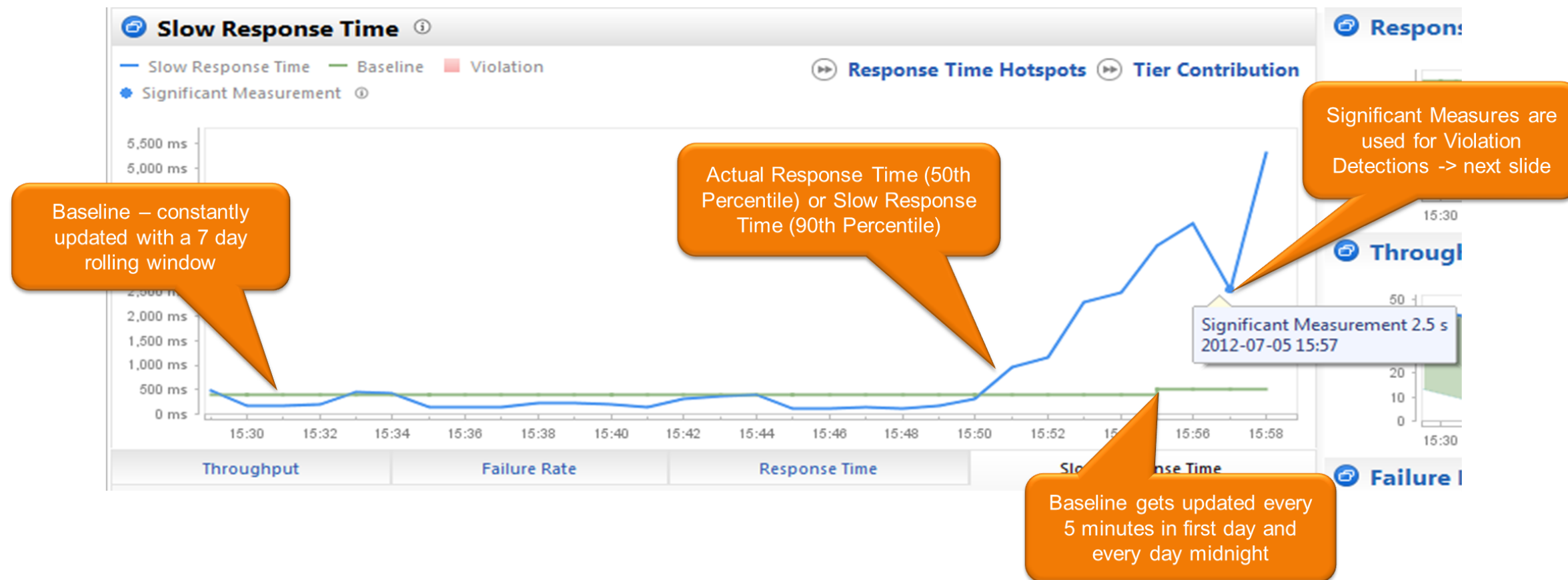


0 Active Visits

0 % mobile

1.2 requests/minute

- Factors That Affect the Response Time Baseline
  - Calculated for the 50th percentile (median) and 90th percentile (Slowest 10 %)
  - every day at midnight through the previous 7 days
  - Violations are identified if at least two significant measurements are above the threshold.
  - Baseline automatically adapts to changes in your application.

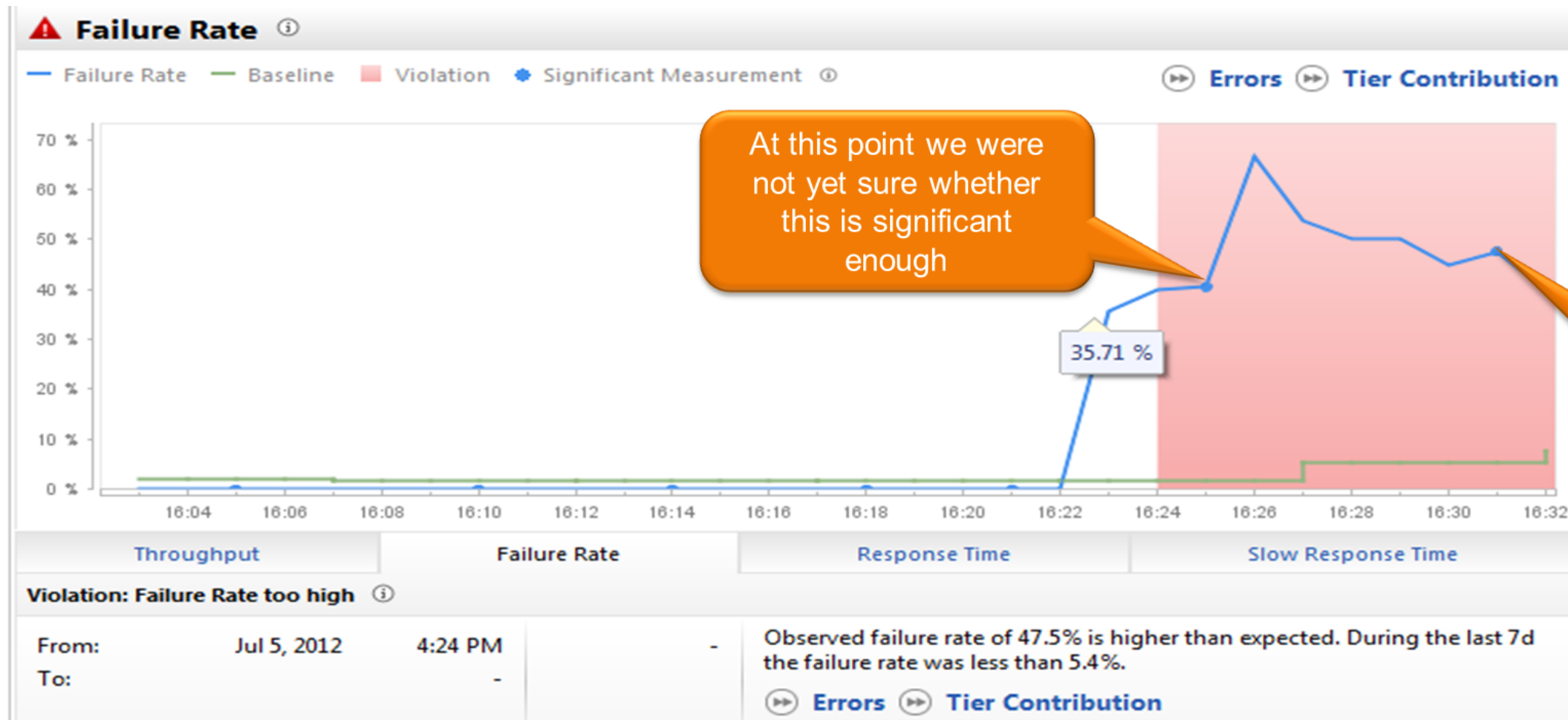


- Overview

- Violations are detected when two or more significant measurements violate the baseline.
- A violation ends when at least one of the violating significant measurements falls below the baseline.



- Using a different statistical approach to calculate baseline than for response time
  - During low traffic night hours 1 out of 5 failing requests would mean 20% failure rate – but – is this significant with that low traffic?
  - 100 failing out of 1000 requests during high load is significant – therefore we alert



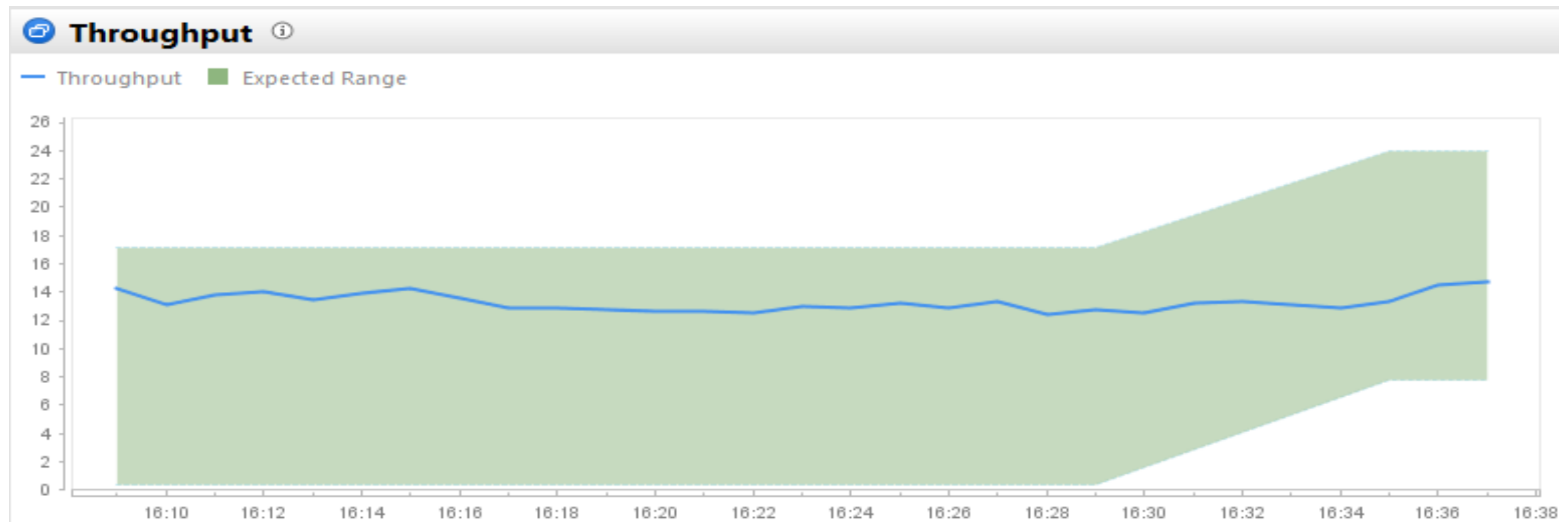
At this point we were not yet sure whether this is significant enough

35.71 %

At this point we had 2 significant enough measures to identify a violation

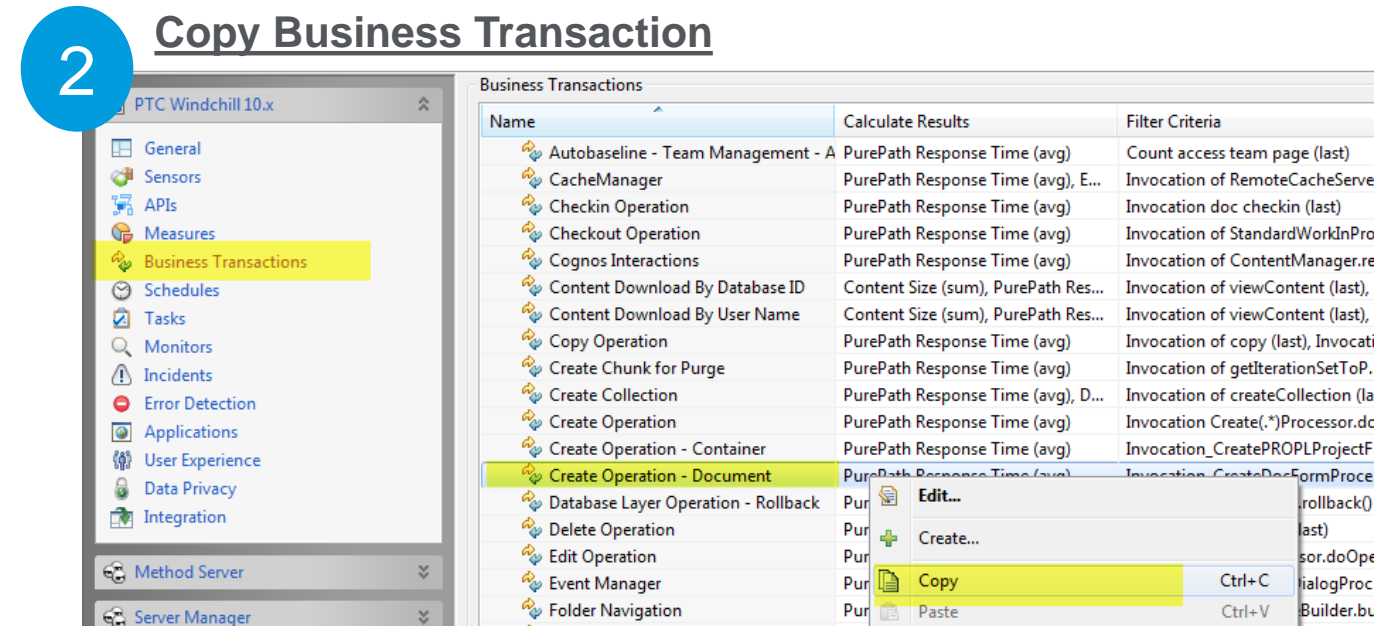
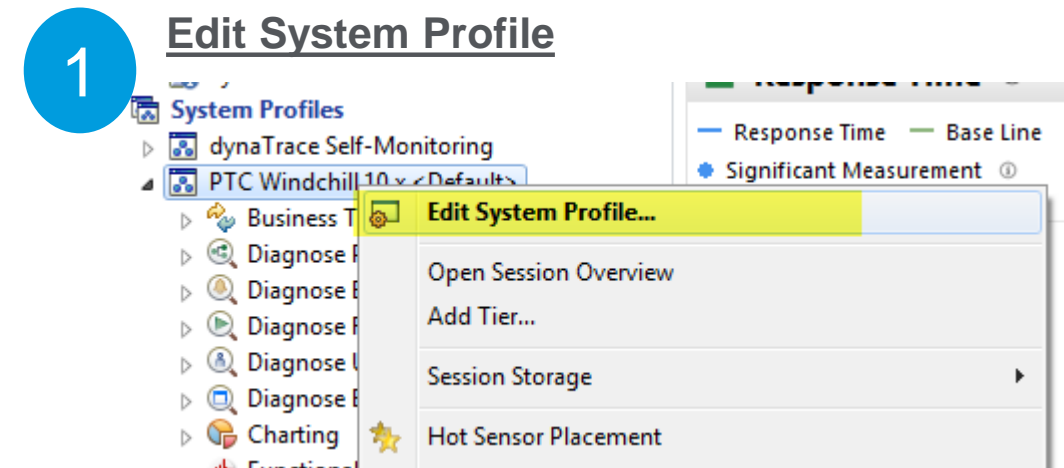


- **Calculates an Expected Throughput based on**
  - the same 15 Minute Interval 7 days ago OR
  - The same 15 minutes Interval 1 day ago OR
  - The same 15 minutes Interval 1 hour ago OR
  - The previous 15 minutes for the first hour when we start baselining
- **NO VIOLATIONS** are identified for Throughput

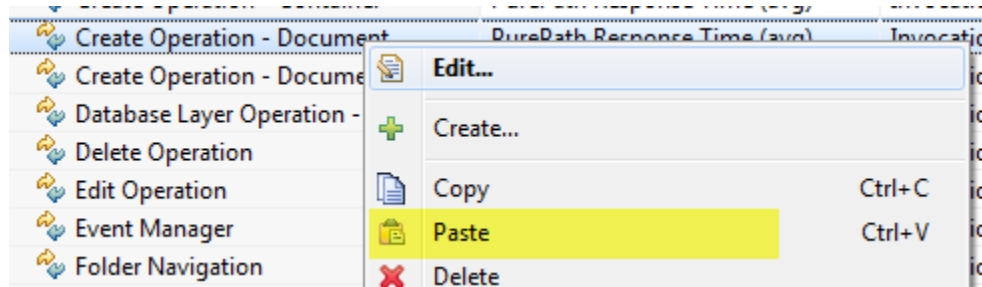


## Overview

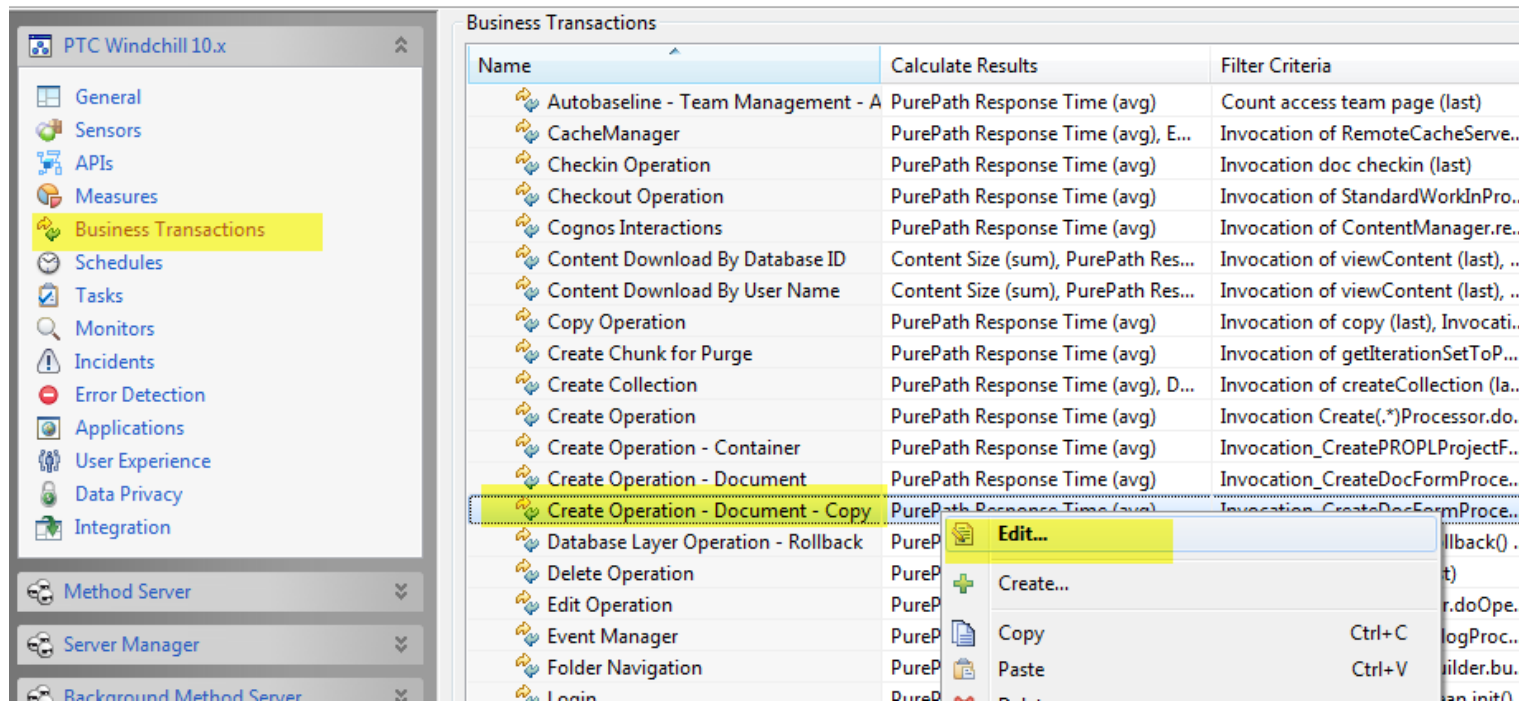
- Identify which Business Transactions to Auto-Baseline
- Create a copy of the BTs
  - Edit the Splittings and ensure only splitting is set to Application
- Add Business Transaction to Monitoring Dashboard



### 3. Paste the Copied Business Transaction

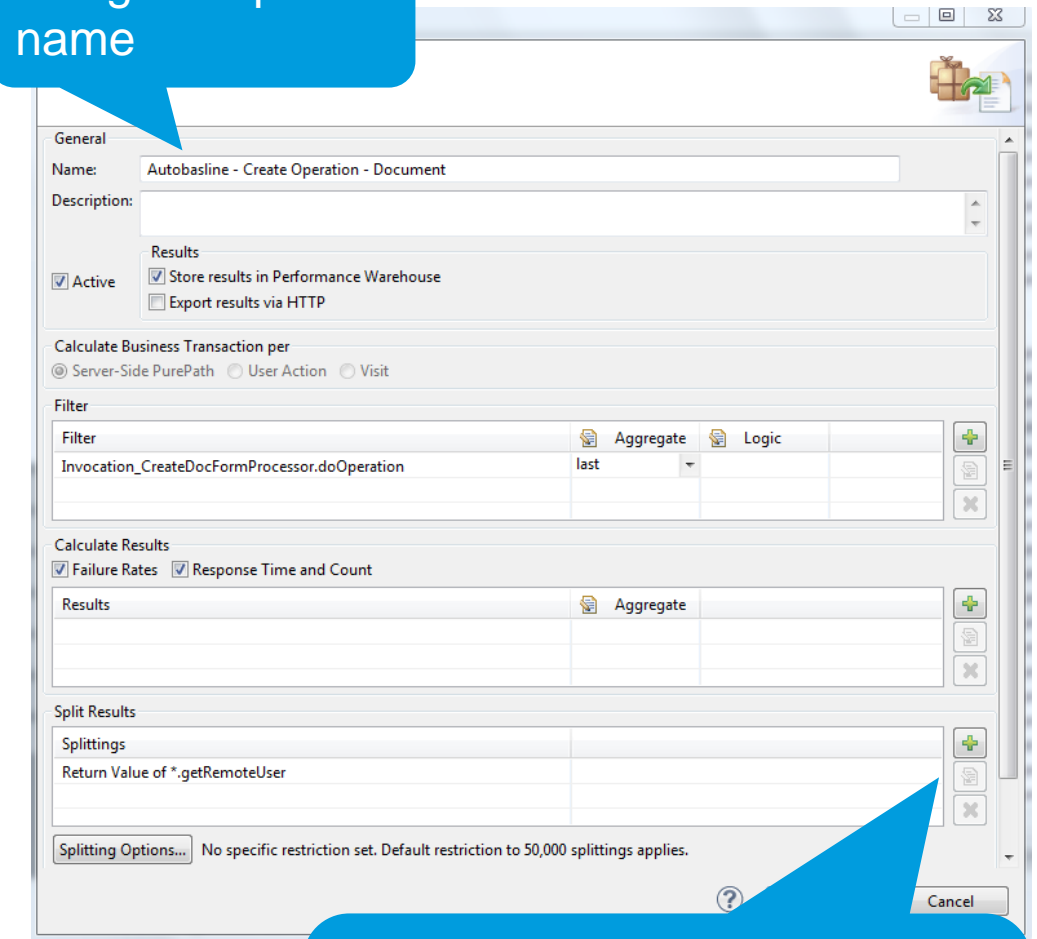


### 4. Edit Business Transaction



### 5. Set 'Application' splitting and Delete user splitting

Assign unique name



Delete getRemoteUser splitting  
Add 'Application' splitting

# How to Enable Auto-Baselines

The screenshot shows the PTC Windchill monitoring interface. At the top, there is a navigation bar with 'Dashboard', 'Edit', 'Tools', 'Settings', and 'Help'. Below this is a toolbar with icons for play, folder, document, search, and refresh, along with a 'last 72 hours' time range selector and a 'Monitoring' button. The main area displays the application 'pun-w08-utf508.ptcnet.ptc.com:2080' with three performance metrics: Throughput (0.4 requests/minute), Failure Rate (0%), and Response Time (383 ms). A 'Configure' button is visible in the top right. A context menu is open over the 'Configure' button, listing options: 'Configure Environment', 'Advanced Configuration', 'Agent Status', 'Reset Base Lines for this Application...', 'Select monitored Business Transactions...' (highlighted), and 'Configure Business Transactions...'. On the left, a sidebar shows 'Cockpits' and 'Dashlets' for 'i3934-vm7', including 'Status Overview', 'Incidents', 'Tasks and Monitors', 'Agents Overview', 'System Information', and 'System Profiles'.

The screenshot shows the 'Monitored Business Transactions' dialog box. The title bar reads 'Monitored Business Transactions'. The main text says 'Select which Business Transaction will be monitored for all applications.' Below this is a checkbox for 'Show only selected Business Transactions'. A list of business transactions is shown with checkboxes: 'ATO - Edit Option Filter', 'ATO - Option Pool Structure', 'ATO - Option Set Structure', 'ATO - Preview Option Set', 'ATO - Preview Variant Structure', 'ATO - View Conditional Rules', 'ATO - View Enable Rules', 'ATO - View Exclude Rules', 'ATO - View Include Rules', 'Autobaseline - Create Operation - Container' (checked), 'Autobaseline - Create Operation - Document' (checked), 'Autobaseline - Team Management - Access Team Page' (checked), 'CacheManager', 'Checkin Operation', 'Checkout Operation', and 'Cognos Interactions'. A 'Manage Business Transactions...' button is at the bottom right. A 'Hint' section at the bottom contains the text 'No description set for selected Business Transaction.' and 'OK' and 'Cancel' buttons.

# Demo – Database Statements

# Demo Web Request and BT Dashboards



# Automated Reporting

- **Why Automated Reporting?**

- With automated reporting, you can present accumulated data to stakeholders or deliver the daily KPI status update to your inbox. Reporting is mandatory, and you don't want to spend too much time to gather the data, format the report, and process it. If you run a report twice, you should automate it with dynaTrace's reporting features.
- Format reports.
- Customize the necessary information.
- Test the report via the dynaTrace Client.
- Create a reporting schedule.
- Access reports with your browser.
- Automate report generation based on these schedules.

## dynaTrace Server



task schdeule & on demand

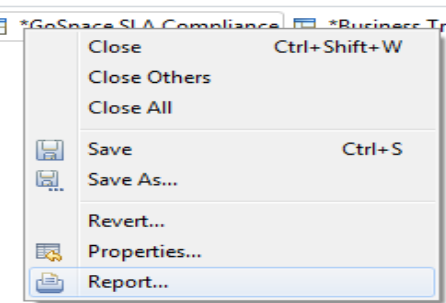
E-Mail



Folder



## dynaTrace Client



<CTRL> + P

Folder



## Web Browser & REST



Define Time Filters on-the-fly

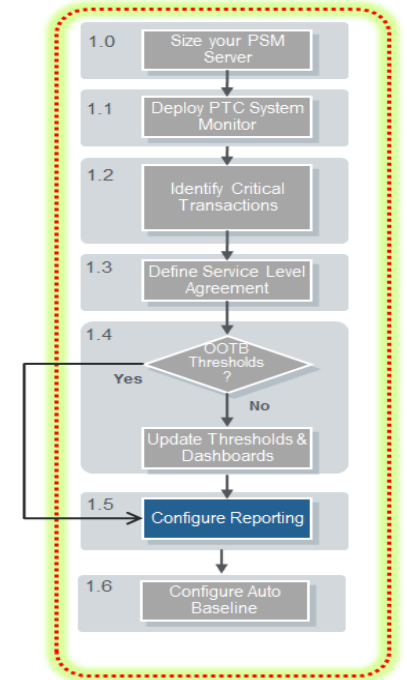


Download



Reports are generated based on dashboards

- **Improving ROI from deploying PSM**
  - Show throughput and trends for key Business Transactions
  - Show utilization and/or adoption of system over time
  - Show which locations are critical to business
  - Show trends for future growth: users, hardware resources, disk space, etc
- **Keep your managers informed 😊**
- **Generate on demand or from a schedule (uses last saved version of dashboard)**
- **Tip: use a custom “\_report” dashboard for best formatting as pdf or xls**
  - Add legends and details to charts that are not on regular dashboard
  - May not display properly in client without really large screen
  - Can have multiple layers of dashlets that are covered in client but shown on separate pages in a report.
- **Tip: Use excel format to allow for further formatting or data manipulation**



# Example: Dashboard Created for Reporting

Too busy for viewing on regular screen, but contains lots of information

**PTC® Windchill®**  
User Activity

Reporting version of User Activity 10.x shows data of PTC Windchill 10.x in timeframe: last 1 hour

### User Activity Breakdown

Use ctrl-F to find a user by name, and right-click to drill down to PurePaths and other diagnostic information.

Splittings	Count	Failed %	Sum	Time [ms] Avg	Cpu Time [ms] ...
plink-admin	470	0 %	324825.54	691.47	63.16
falbert	234	1.28 %	46995.22	369.29	70.71
gprabhah	173	0 %	47752.55	287.41	208.73
null	164	0 %	2470510.40	15064.79	683.33
bmuttonen	152	0 %	34536.99	354.38	81.81
sameer.deodha...	126	0 %	23193.40	260.96	98.95
nsawarka	123	0 %	16663.72	190.66	77.85
edonovan	121	0 %	56496.02	1277.41	80.63
stucker	121	0 %	32117.34	332.34	94.86
leandro.fraceto...	114	0 %	20511.54	283.48	105.71
enicolosi	97	0 %	26374.49	434.15	152.22
yelouali	93	0 %	28995.28	355.87	136.37
ebraghieri	93	0 %	19022.06	301.09	126.05
jah	92	0 %	45619.16	1112.01	96.82
cschneider	87	0 %	48270.68	1010.58	96.83
smuppidthi	86	0 %	14270.72	305.54	84.51
tpare	84	0 %	4152.69	49.89	30.18
mkangas	80	0 %	68910.14	1271.94	157.56
blarroque	80	0 %	20655.78	325.48	129.46
amaury.soubey...	79	7.59 %	18095.83	279.09	46.76
snohte	72	0 %	17193.49	338.15	109.42
iirwan	66	0 %	7276.36	199.30	67.83

### Total Users

Monitors-TotalActiveUserCount

### Response Time Hotspots

PTC Winc Percentile Filter: no percentile

Analyze the transaction response time and its distribution

Server Transaction  $\xi$  Show Method Hotspots

Transaction Average Re Failed Tran:

Hotspots by Show API Breakdown

### System Load

### Functional Health

### Error Hotspots by Application ( pds.ptc.com )

42

### Error Hotspots (Last 1 hour)

HTTP 4xx Response on Transaction Entry

Report successfully generated in D:\Users\atwood\dynaTrace\dynaTrace 5.5.0\client\reports\report\_2014-05-23\_13-40-45.xls

# Example: Generate Report from Dashboard

Tip: Use Excel (XLS) for easiest formatting & customization with macros or templates

The image displays three overlapping Microsoft Excel spreadsheets generated from a dashboard report. The leftmost spreadsheet is a table of contents with the following items:

- Users Per Host
- Total Users
- User Activity Breakdown
- Functional Health
- Response Time Hotspots
- System Load

The middle spreadsheet, titled "Users Per Host - Agent Group 'Server Mana...", shows a horizontal bar chart. The y-axis represents time intervals from 12:45 to 13:40. The x-axis represents the number of users, ranging from 0.0 to 30.0. The chart uses green bars for the top half and brown bars for the bottom half.

The rightmost spreadsheet, titled "Functional Health", shows a summary of system performance. It includes a stacked bar chart and a line chart. The stacked bar chart shows the percentage of successful (green) and failed (red) transactions over time. The line chart shows the number of transactions per hour. The data is summarized in the following table:

Time Interval	Failed Transactions	Failure Rate
Last 1 hour	42	0.55 %
From 11:40 to 12:40	1	0.22 %



- PTC System Monitor Reference Page
  - [www.ptc.com/go/psm](http://www.ptc.com/go/psm)
  - How-To Videos
  - Training Material
- Dynatrace 6.1 Documentation
  - <https://community.compuwareapm.com/community/display/DOCDT61/dynaTrace+Documentation?from=cpstartpage>
- Sizing Calculator
  - <https://community.compuwareapm.com/community/display/DOCDT61/Use+the+Deployment+Sizing+Calculator>
- PTC System Monitor Documentation
  - [https://support.ptc.com/appserver/cs/doc/refdoc.jsp?p=browse\\_results&Product=PTC+System+Monitor&Release=4.0&DocType=&Role=](https://support.ptc.com/appserver/cs/doc/refdoc.jsp?p=browse_results&Product=PTC+System+Monitor&Release=4.0&DocType=&Role=)

- Your feedback is valuable
- Don't miss out on the chance to provide your feedback
- Gain a chance to win an instant prize!
- Complete your session evaluation now

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