



# New in 2.3:

Synthetic Monitoring has arrived!



**Simon Meggle**

Senior Product Manager  
Checkmk GmbH



## Week's Special

Save money with our current bargains!




# What has happened?

Imagine this is your company.



Total products (excl. tax)	217,65 €
plus 19% tax, amount:	Nan! €
Total products (incl. tax):	Nan! €
<b>Grand total:</b>	<b>Nan! €</b>



Continue to the next step ▶

# What has happened?

Imagine this is your company.

- **Visible:** Bug in the tax module  
⇒ **Price calculation broken** ⚡

Total products (excl. tax)	217,65 €
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# What has happened?

Imagine this is your company.

- **Visible:** Bug in the tax module  
⇒ **Price calculation broken** ⚡
- **Invisible:**  
⇒ **Customer annoyed**  
⇒ **Bad review**

Total products (excl. tax)	217,65 €
plus 19% tax, amount:	Nan! €
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<b>Grand total:</b>	<b>Nan! €</b>

Continue to the next step ▶

# What has happened?

Imagine this is your company.

- **Visible:** Bug in the tax module  
⇒ **Price calculation broken** ⚡
- **Invisible:**  
⇒ **Customer annoyed**  
⇒ **Bad review**

● **REVENUE LOSS**

Total products (excl. tax)	217,65 €
plus 19% tax, amount:	Nan! €
Total products (incl. tax):	Nan! €
Grand total:	Nan! €

Continue to the next step ▶



Setup

Looks good to me! No problem here.

Basic OS monitoring



...ence for prediction yet), 15 min load per core: 0.21 (8 cores)

OK	Disk IO Summary	Read: 0.00 B/s, Write: 1.05 MB/s, Latency: 771 microseconds
OK	Interface tun0	[2], (up), Speed: 10 GBit/s, In: 532 B/s (<0.01%), Out: 208 B/s (<0.01%)
OK	Interface wlo1	[3], (up), MAC: 74:D8:3E:D3:7D:7C, Speed: unknown, In: 7.75 kB/s, Out: 3.65 kB/s
OK	Kernel Performance	Process Creations: 42.68/s, Context Switches: 21800.16/s, Major Page Faults: 0.00/s, Page Swap in: 0.00/s, Page Swap Out: 0.00/s
OK	Memory	Total virtual memory: 30.52% - 10.1 GiB of 33.1 GiB, 9 additional details available
OK	Systemd Socket Summary	Total: 22, Disabled: 1, Failed: 0
OK	Systemd Service Summary	Total: 181, Disabled: 6, Failed: 0
OK	Uptime	Up since 2024-06-04 11:27:53, Uptime: 1 day 7 hours
OK	Number of threads	1548, Usage: 0.61%
OK	TCP Connections	Established: 80



Help



User



Sidebar



Setup

**Still, all good here!**Basic **service** monitoring

...ence for prediction yet), 15 min load per core: 0.21 (8 cores)

OK	Disk IO Summary	Read: 0.00 B/s, Write: 1.03 MB/s, Latency: 771 microseconds
OK	Interface tun0	[2], (up), Speed: 10 GBit/s, In: 532 B/s (<0.01%), Out: 208 B/s (<0.01%)
OK	Interface wlo1	[3], (up), MAC: 74:D8:3E:D3:7D:7C, Speed: unknown, In: 7.75 kB/s, Out: 3.65 kB/s
OK	Kernel Performance	Process Creations: 42.68/s, Context Switches: 21800.16/s, Major Page Faults: 0.00/s, Page Swap in: 0.00/s, Page Swap Out: 0.00/s
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OK	Systemd Service Summary	Total: 181, Disabled: 6, Failed: 0
OK	Uptime	Up since 2024-06-04 11:27:53, Uptime: 1 day 7 hours
OK	Number of threads	1548, Usage: 0.61%
OK	TCP Connections	Established: 80
OK	Apache [::1]:80 Status	Uptime: 1 day 7 hours, Idle workers: 48, Busy workers: 2, Total slots: 150
OK	Systemd Service apache2	Status: active, The Apache HTTP Server



Help



User



Sidebar



Setup

# Nope, everything green here!

## Basic **web services** monitoring



...ence for prediction yet), 15 min load per core: 0.21 (8 cores)

OK	Disk IO Summary	Read: 0.00 B/s, Write: 1.03 MB/s, Latency: 771 microseconds
OK	Interface tun0	[2], (up), Speed: 10 GBit/s, In: 532 B/s (<0.01%), Out: 208 B/s (<0.01%)
OK	Interface wlo1	[3], (up), MAC: 74:D8:3E:D3:7D:7C, Speed: unknown, In: 7.75 kB/s, Out: 3.65 kB/s
OK	Kernel Performance	Process Creations: 42.68/s, Context Switches: 21800.16/s, Major Page Faults: 0.00/s, Page Swap in: 0.00/s, Page Swap Out: 0.00/s
OK	Memory	Total virtual memory: 30.52% - 10.1 GiB of 33.1 GiB, 9 additional details available
OK	Systemd Socket Summary	Total: 22, Disabled: 1, Failed: 0
OK	Systemd Service Summary	Total: 181, Disabled: 6, Failed: 0
OK	Uptime	Up since 2024-06-04 11:27:53, Uptime: 1 day 7 hours
OK	Number of threads	1548, Usage: 0.61%
OK	TCP Connections	Established: 80
OK	Apache [::1]:80 Status	Uptime: 1 day 7 hours, Idle workers: 48, Busy workers: 2, Total slots: 150
OK	Systemd Service apache2	Status: active, The Apache HTTP Server
OK	HTTPS Homepage	Version: HTTP/2.0, Status: 200 OK
OK	CERT Homepage	OK - Certificate obtained in 2293 ms, Verification: OK, Certificate expires in 290 day(s) (Mar 22 23:59:59 2025 +00:00)






Help



User



Sidebar

<input type="checkbox"/>	 Wetsuit NFX ASSASSIN Item # 3101	add	1	209,00 €	19%	209,00 €
<input type="checkbox"/>	 Kite CORE RIOT XR Item # 1209 kite, backpack, repair kit, Freeride	add	1	791,10 € <del>879,00 €</del>	19%	791,10 €
<input type="checkbox"/>	 Kite CORE GT Item # 1205 kite, backpack, repair kit, Freeride, Wakestyle, Wave	add	1	629,10 € <del>699,00 €</del>	19%	629,10 €

All

Your web shop is broken ...  
... and **only your customers** know about it.



Enter coupon n

(incl. tax)	217,65 €
plus 19% tax amount:	<b>Nan! €</b>
Total products (incl. tax):	<b>Nan! €</b>
<b>Grand total:</b>	<b>Nan! €</b>

◀ Continue shopping

Continue to the next step ▶

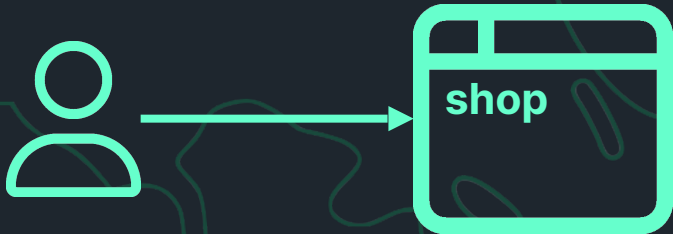
# The need for **Synthetic** Monitoring

**Synthetically** mimic interactions of users  
with target systems



# The need for **Synthetic** Monitoring

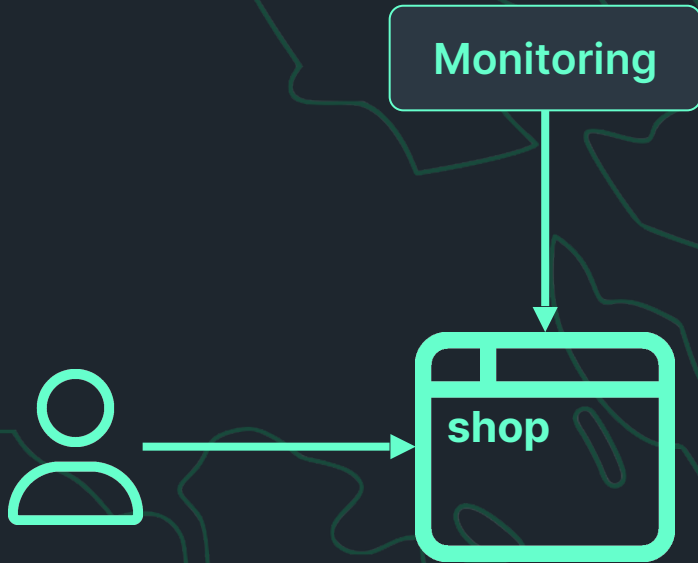
**Synthetically** mimic interactions of users with target systems





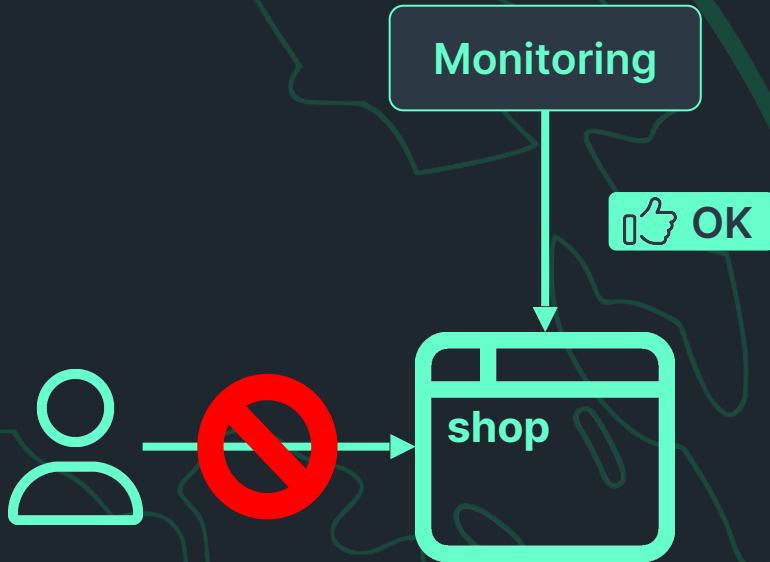
# The need for **Synthetic** Monitoring

**Synthetically** mimic interactions of users with target systems



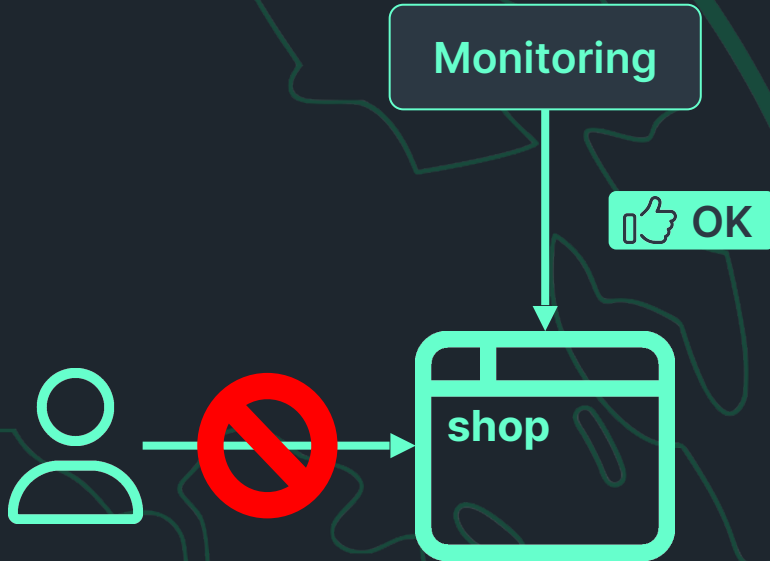
# The need for **Synthetic** Monitoring

**Synthetically** mimic interactions of users with target systems



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**Synthetically** mimic interactions of users with target systems

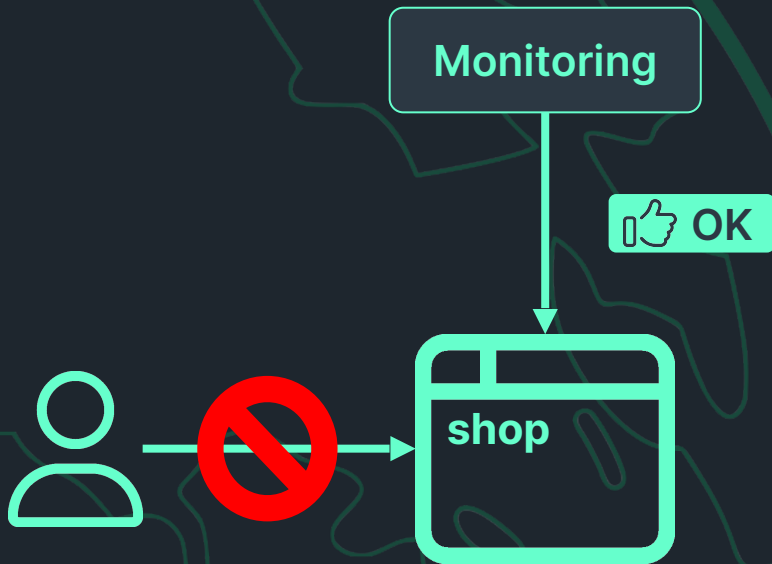


## Key dimensions for services

# The need for **Synthetic** Monitoring



**Synthetically** mimic interactions of users with target systems



## Key dimensions for services

**Availability**

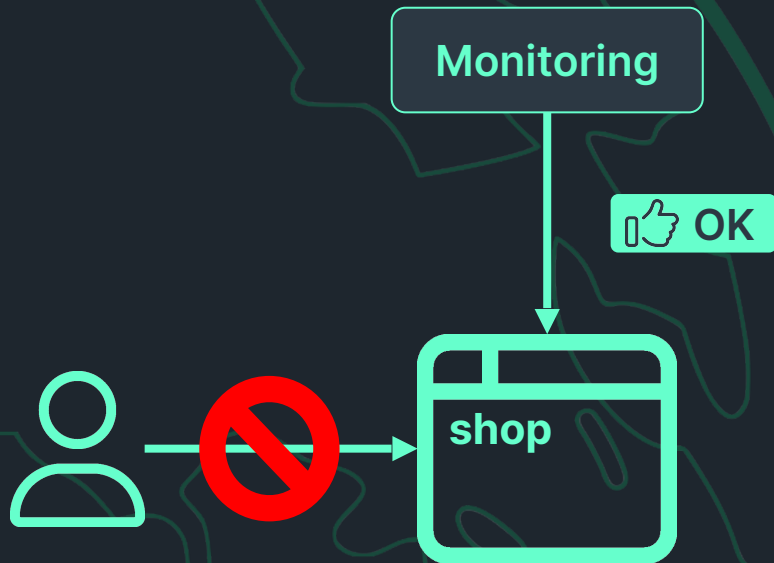


Do the services respond?

# The need for **Synthetic** Monitoring



**Synthetically** mimic interactions of users with target systems



## Key dimensions for services

### Availability



Do the services respond?

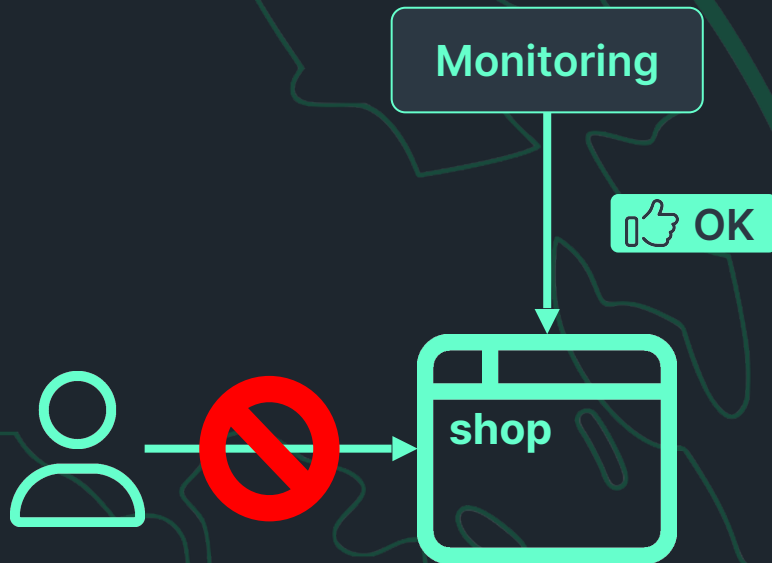
### Performance



How is the response quality?

# The need for **Synthetic** Monitoring

**Synthetically** mimic interactions of users with target systems



## Key dimensions for services

### Availability



Do the services respond?

### Performance

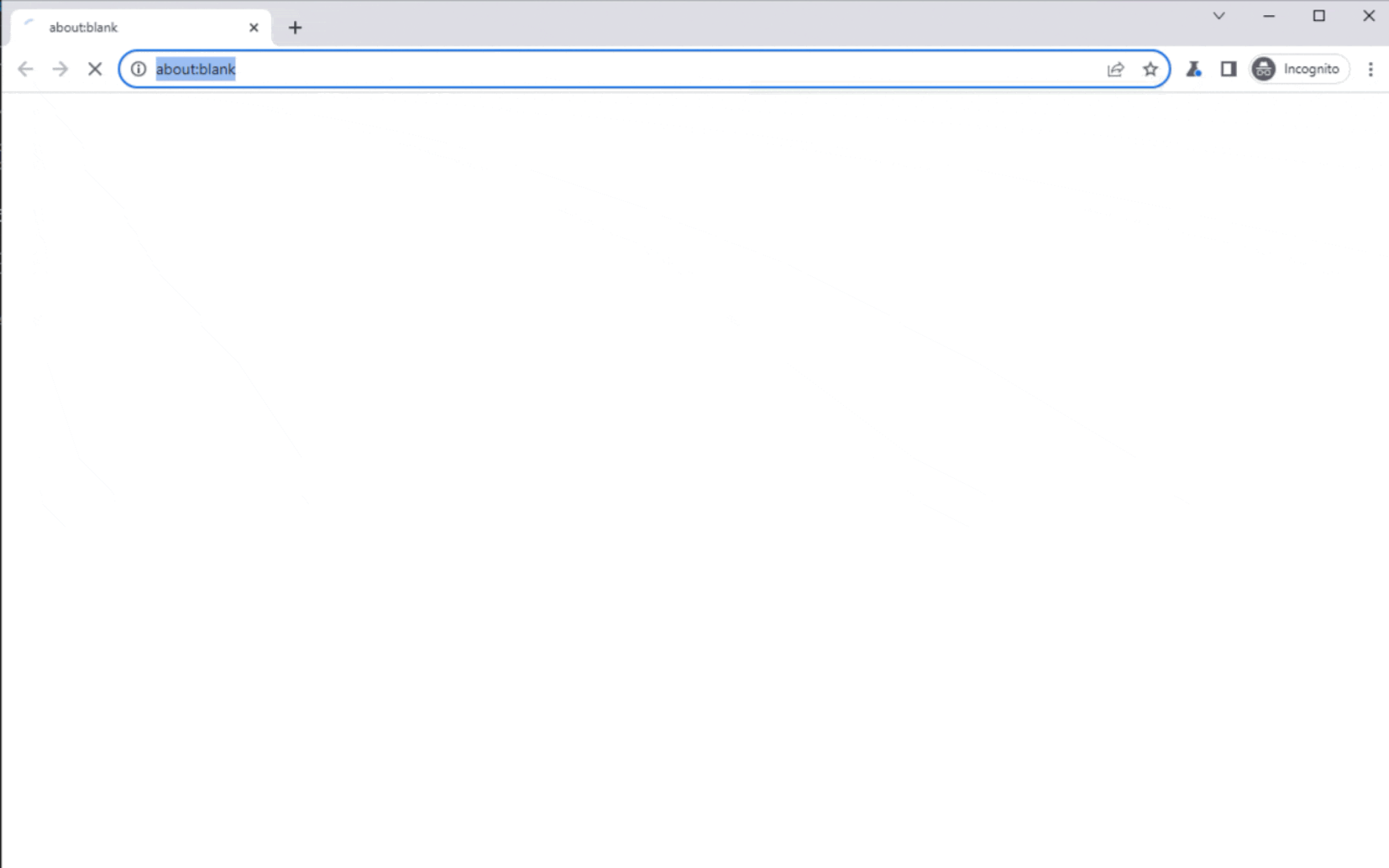


How is the response quality?

### Functionality



Does the system provide the expected functionality?



# Detect functional issues with synthetic monitoring



OK	CERT OXID	☰	OK - Certificate obtained in 72 ms, Verification: OK, Certificate expires in 89 day(s) (Aug 21 15:26:40 2024 +00:00)
OK	CPU utilization	☰	Total CPU: 4.78%
OK	Filesystem C:/	☰	Used: 87.74% - 47.0 GB of 53.6 GB, trend per 1 day 0 hours: +309 GB, trend per 1 day 0 hours: +576.00%, Time left until disk full: 30 minutes 39 seconds
OK	HTTPS OXID	☰	Version: HTTP/2.0, Status: 200 OK
OK	Interface 1	☰	[Google VirtIO Ethernet Adapter], (up), MAC: 42:01:0A:9C:00:02:00:00, Speed: 100 GBit/s, In: 2.36 kB/s (<0.01%), Out: 15.0 kB/s (<0.01%)
OK	Memory	☰	RAM: 59.76% - 2.69 GiB of 4.50 GiB, Virtual memory: 48.11% - 2.64 GiB of 5.50 GiB
OK	RMK OXIDWebshop_checkout Plan	☰	Runtime: 12 seconds, Limit: 1 minute 0 seconds, Ratio: 20.00%, Last execution: 2024-05-22 17:48:00 (UTC+00:00)
CRIT	RMK OXIDWebshop_checkout Test: Search Item And Add To Basket	☰	FAIL





checkmk



Monitor



Customize



Setup



Help



User



Sidebar

# With all the details for troubleshooting


## Built-in logs with screenshots



Download

Last error log

Services of Host

	Artikel	Verpackung	Menge	Einzelpreis	MwSt	Gesamtbetrag							
<input type="checkbox"/>	 <b>Bindung LIQUID FORCE TRANSIT BOOT</b> Art. Nr. 2402	<input type="button" value="hinzufügen"/>	<input type="text" value="1"/>	259,00 €	19%	259,00 €							
<input type="checkbox"/>	<input type="button" value="Alle"/> <input type="button" value="Entfernen"/> <input type="button" value="Aktualisieren"/>												
<input type="text" value="Gutscheincode eingeben"/> <input type="button" value="Gutschein einlösen"/>				<table border="1"> <tr> <td>Summe Artikel (netto)</td> <td>217,65 €</td> </tr> <tr> <td>zzgl. 19% MwSt., Betrag:</td> <td>Nan! €</td> </tr> <tr> <td>Summe Artikel (brutto):</td> <td>259,00 €</td> </tr> <tr> <td><b>Gesamtbetrag:</b></td> <td><b>Nan!</b></td> </tr> </table>		Summe Artikel (netto)	217,65 €	zzgl. 19% MwSt., Betrag:	Nan! €	Summe Artikel (brutto):	259,00 €	<b>Gesamtbetrag:</b>	<b>Nan!</b>
Summe Artikel (netto)	217,65 €												
zzgl. 19% MwSt., Betrag:	Nan! €												
Summe Artikel (brutto):	259,00 €												
<b>Gesamtbetrag:</b>	<b>Nan!</b>												

17:50:11.374

INFO

See also file:///C:/ProgramData/checkmk/agent/robotmk\_output/working/plans/OXIDWebshop\_checkout/2024-05-23T17.50.00.160730200%2B0000/playwright-log.txt for additional details.

17:50:11.375

FAIL

msg=ERROR: Did not find the expected price 259,00 € for article ID 2402 (Bindung LIQUID FORCE TRANSIT BOOT)!



TEARDOWN

Browser. Take Screenshot EMBED selector=div#content

00:00:00.188



checkmk



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<input type="text" value="Gutscheincode eingeben"/> <input type="button" value="Gutschein einlösen"/>			<b>Summe Artikel (netto)</b>		217,65 €
			<b>Summe Artikel (brutto):</b>		259,00 €
<b>Gesamtbetrag:</b>					<input type="text" value="Nan!"/>

**FAIL** msg=ERROR: Did not find the expected price 259,00 €

17:50:11.374 INFO See also file:///C:/ProgramData/checkmk/agent/robotmk\_output/working/plans/OXIDWebshop\_checkout/2024-05-23T17.50.00.160730200%2B0000/playwright-log.txt for additional details.

17:50:11.375 **FAIL** msg=ERROR: Did not find the expected price 259,00 € for article ID 2402 (Bindung LIQUID FORCE TRANSIT BOOT)!

+ TEARDOWN Browser. Take Screenshot EMBED selector=div#content

00:00:00.188



# Checkmk Synthetic Monitoring

A seamless integration of ...



# Checkmk Synthetic Monitoring

A seamless integration of ...





# Checkmk Synthetic Monitoring

A seamless integration of ...

**Develop**  
the test

**Run**  
the test



# Checkmk Synthetic Monitoring

A seamless integration of ...

**Develop**  
the test

**Run**  
the test

**Monitor**  
the test



**Develop**  
the test

**Run**  
the test

**Monitor**  
the test

# Our synthetic monitoring technology should be ...



## Easy to use

Also accessible for non-programmers.

Low code.



# Our synthetic monitoring technology should be ...



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## Test anything

All use cases possible.

From web applications to legacy software.

# Our synthetic monitoring technology should be ...



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From web applications  
to legacy software.

## Future-proof

No 3rd party risk. No  
commercial dependency.

# Many options to write functional tests



Python



JavaScript



Python



# Selenium

```
5 from selenium.webdriver.support import expected_conditions as EC # type: ignore
6
7 # Configuration
8 url = "https://oxid.robotmk.org"
9 browser_type = "chromium"
10 article_id = "2402"
11 article_title = "Bindung LIQUID FORCE TRANSIT BOOT"
12 article_price = "259,00 €"
13
14 # Initialize WebDriver
15 driver = webdriver.Chrome() # Use Chromedriver or the appropriate driver for your browser
16 driver.get(url)
```

```
18
19 def search_and_select_article():
20     search_input = driver.find_element(By.ID, "searchParam")
21     search_input.send_keys(article_id)
22     search_input.send_keys(Keys.RETURN)
23
24     # Wait for the search results to appear and select the first result
25     WebDriverWait(driver, 10).until(
26         EC.text_to_be_present_in_element((By.CSS_SELECTOR, "div.list-container div.row:first-child div.produ
27     ))
28     first_result = driver.find_element(By.CSS_SELECTOR, "div.list-container div.row:first-child div.produ
29     first_result.click()
30
```

Programming functional tests  
Selenium (Python)



```
7 browser = await p.chromium.launch(headless=False)
8 context = await browser.new_context(locale='de-DE')
9
10 # Open the webshop page
11 page = await context.new_page()
12 await page.goto("https://oxid.robotmk.org")
13
14 # Login function
15 async def login():
16     await page.click("div.service-menu > button")
17     await page.fill("input#loginEmail", "mail@robotmk.org")
18     await page.fill("input#loginPassword", "your_decrypted_password_here") # Replace this with the
19     await page.click("div.service-menu form button")
20
21 # Search and select article function
22 async def search_and_select_article():
23     await page.fill("input#searchParam", "2402")
24     await page.click("form.search button")
25     await page.click("div.list-container div.row:first-child div.productData:first-child div.action")
26     await page.click("button#toBasket")
27     await page.click("a[title='Warenkorb']")
28
29 # Check the basket for correct price
30 async def check_basket():
31     price = await page.text_content("td#basketGrandTotal")
32     assert "259.00 €" in price, "ERROR: Did not find the expected price"
```

Playwright

Programming functional tests  
Playwright (JavaScript)



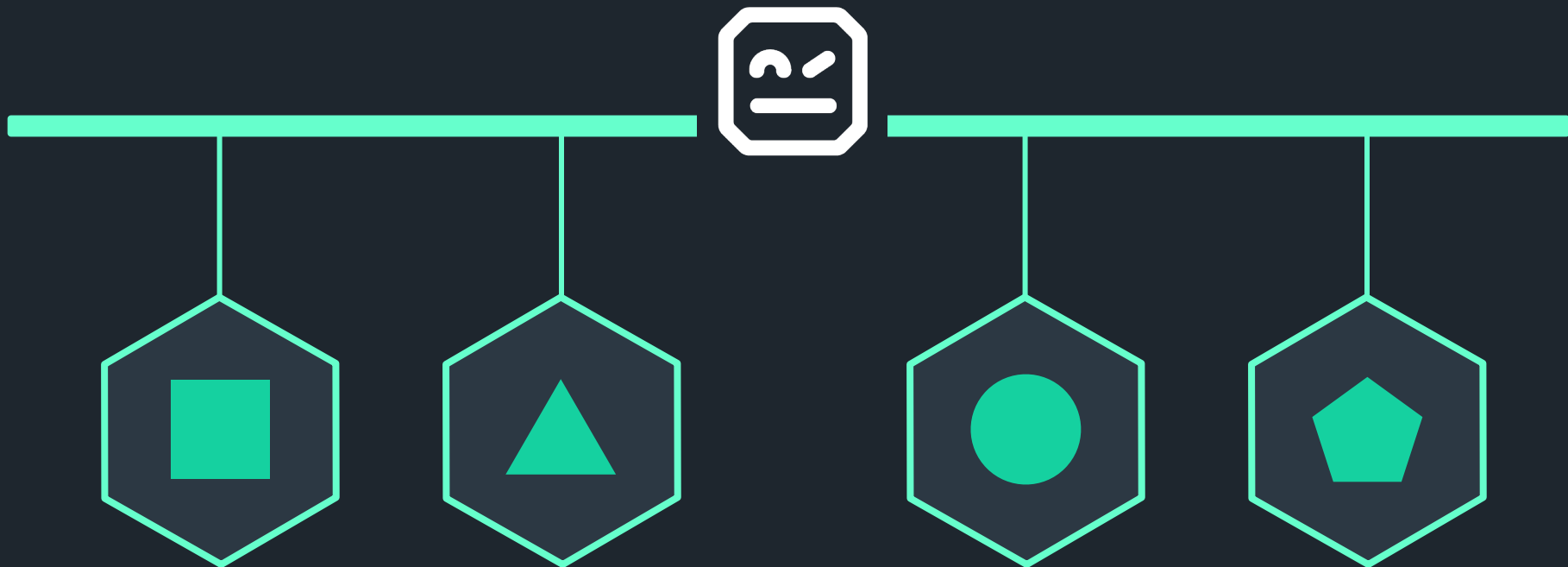


```
time.sleep(sleep)
move_to_et_click(dimension['draw_on_map'])
time.sleep(sleep)
start_point = dimension['map_point']
direction = 80
move_right = (start_point[0] + direction, start_point[1])
move_down = (move_right[0], move_right[1] - direction)
move_left = (move_down[0] - direction, move_down[1])
move_up = (move_left[0], move_left[1] + direction)
move_to_et_click(dimension['map_point'])
move_to_et_click(move_right)
move_to_et_click(move_down)
move_to_et_click(move_left)
move_to_et_click(move_up)
gui.click(move_up)
time.sleep(plot_render_sleep)
gui.alert('Conducting test...', 'Wait', timeout=4000)
image_loc = gui.locateCenterOnScreen(
    paths['line_index'], confidence=0.3, grayscale=True)
if image_loc is None:
    gui.alert(text='Line index not found!', title='Line index not found')
    retry_location_test(paths['line_index'], 'Line index not found')
else:
    gui.alert(text='Line UI test complete!', title='UI test', button='Close', timeout=box_timeout)
time.sleep(.30)
gui.click(dimension['close_index'])
```

## Programming functional tests Desktop/PyAutoGUI (Python)

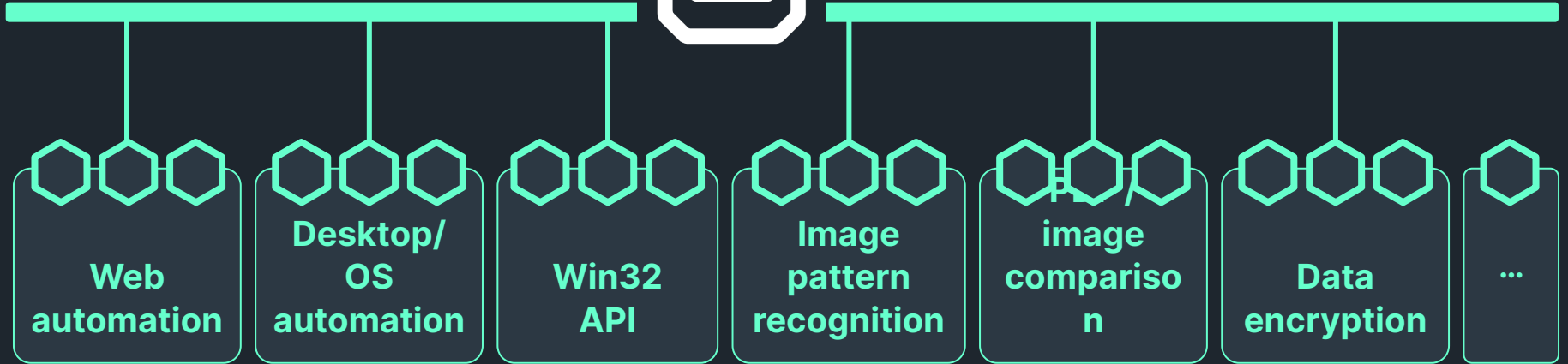


# Simplify test creation with a low code layer



# Powered by huge number of libraries

Test anything





```
1  ✓ *** Settings ***
2  Documentation      This suite verifies that the checkout process shows the correct final price.
3  Resource          webshop_oxid.resource
4  Library           Browser
5  ...   enable_presenter_mode={"duration": "0.5 seconds", "width": "4px", "style": "dotted", "color": "red"}
6  Test Setup       Open Webshop
7
8  ✓ *** Variables ***
9  _${BROWSER}      chromium
10 _${ARTICLE_ID}   2402
11 _${ARTICLE_TITLE} Binding LIQUID FORCE TRANSIT BOOT
12 _${ARTICLE_PRICE} 259,00 €
13
14 ✓ *** Test Cases ***
15 ✓ Search Item And Add To Basket
16   [Documentation] Searches an article, adds it to the basket and tries to navigate to the checkout page.
17   [Teardown] Take Screenshot EMBED selector=div#content
18   Empty Basket
19   Search And Select Article
20   ...   article_id=${ARTICLE_ID}
21   ...   article_title=${ARTICLE_TITLE}
22   ...   article_price=${ARTICLE_PRICE}
23   Get Text id=basketGrandTotal *= 259,00 €
24   ...   msg=ERROR: Did not find the expected
```



Functional testing made simple

Robot Framework with browser library

# The right framework for Checkmk

Future-proof



- ◆ Robot Framework, a **generic test automation framework**
- ◆ **Open source project** since 2008 (Python)
- ◆ Large, vibrant **community** (20k+ users on Slack)
- ◆ **Robot Framework Foundation** (non-profit), with > 60 other companies as members
  - ◇ Support developers, events, certifications...
  - ◇ Goal is to ensure that it remains an accessible open-source project
- ◆ **Checkmk is part of the foundation**, co-financing the project

# Our synthetic monitoring technology should be ...



## Easy to use

Also accessible for non-programmers.  
Low code.



## Test anything

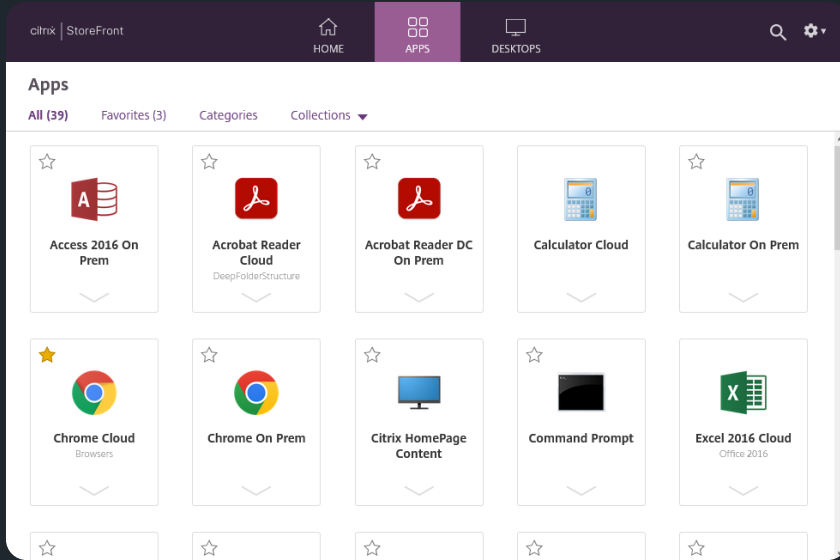
All use cases possible.  
From web applications  
to legacy software.



## Future-proof

No 3rd party risk. No  
commercial dependency.

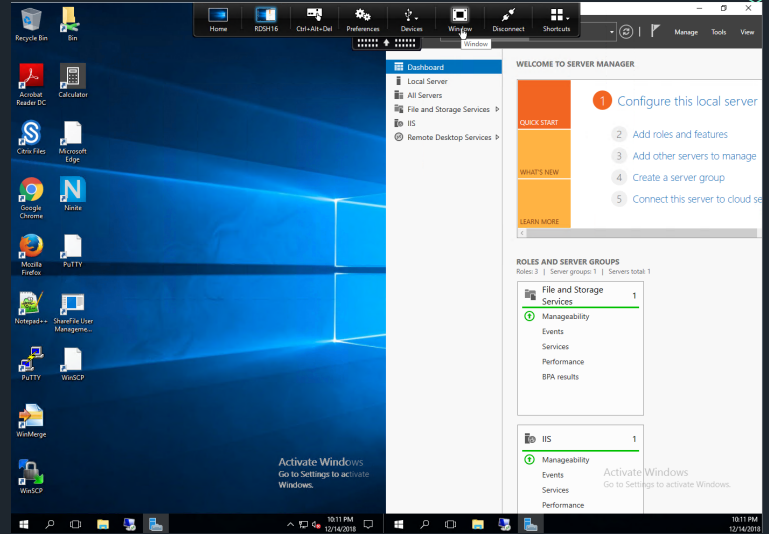
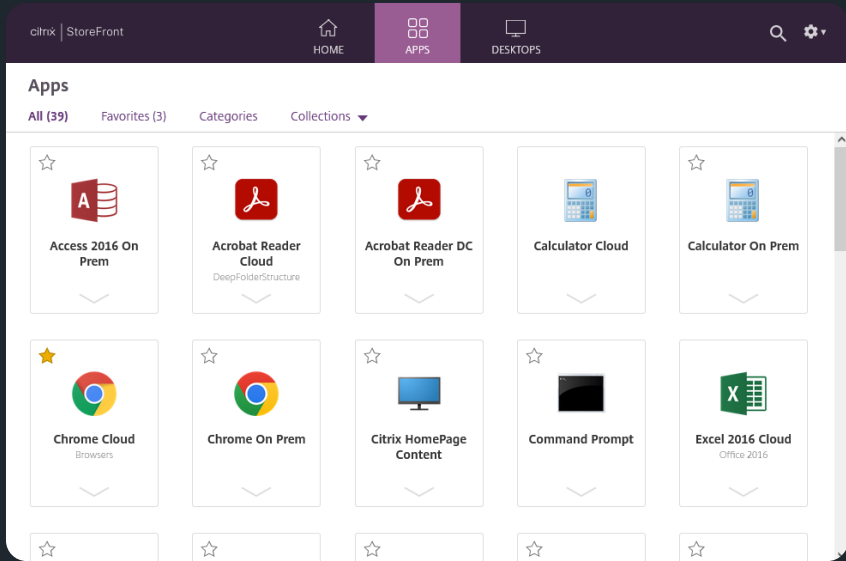




## Establishing a Citrix session



Browser = web based



**Establishing** a Citrix session

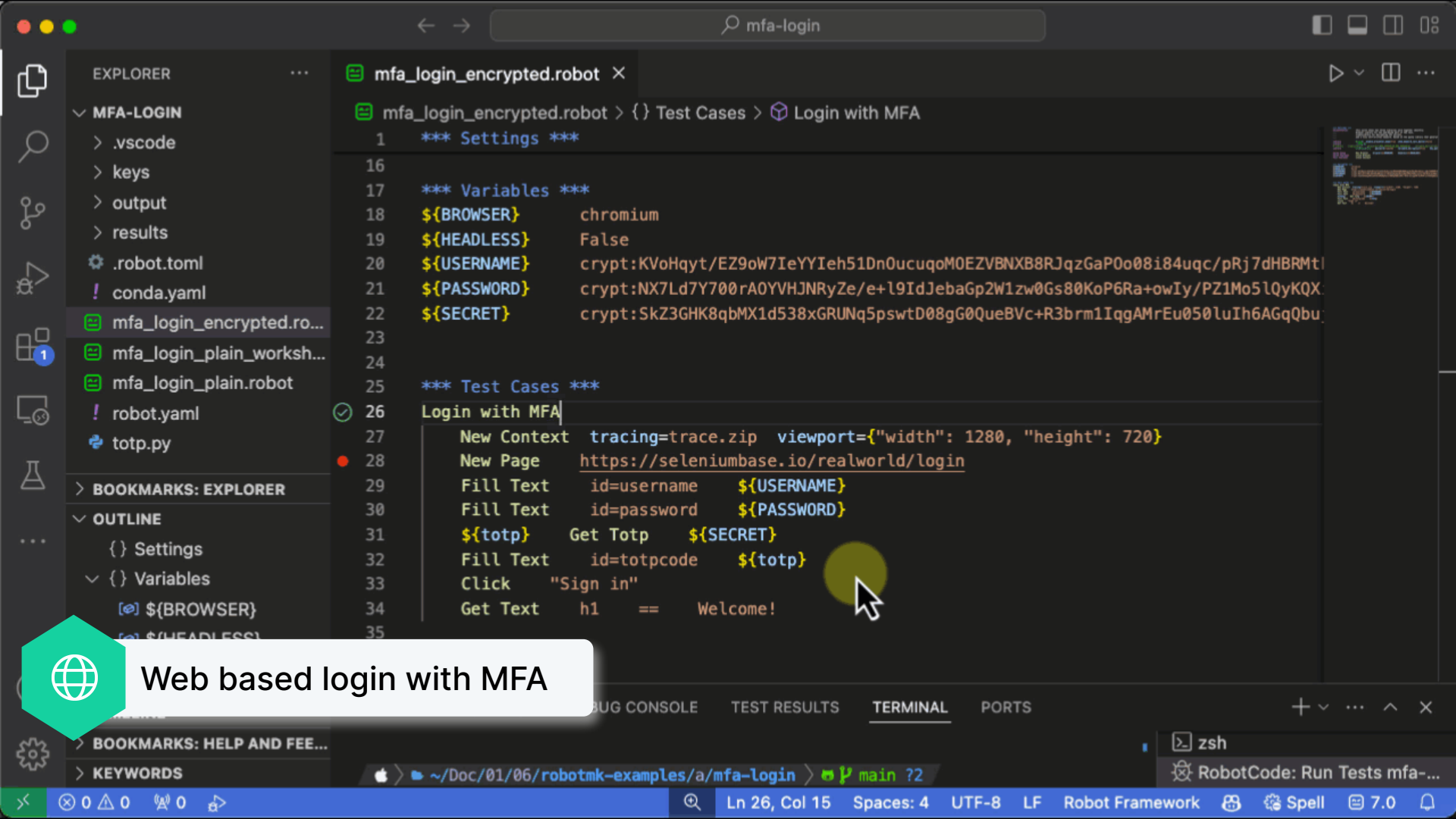
**Automating** a Citrix session



**Browser = web based**



**Citrix = image comparison**



mfa\_login\_encrypted.robot

mfa\_login\_encrypted.robot > {} Test Cases > Login with MFA

```
1  *** Settings ***
16
17  *** Variables ***
18  ${BROWSER}      chromium
19  ${HEADLESS}     False
20  ${USERNAME}     crypt:KVoHqyt/EZ9oW7IeYYIeh51Dn0ucuoqoM0EZVBNXB8RJqzGaP0o08i84uqc/pRj7dHBRMtI
21  ${PASSWORD}     crypt:NX7Ld7Y700rA0YVHJNRyZe/e+l9IdJebaGp2W1zw0Gs80KoP6Ra+owIy/PZ1Mo5lQyKQX
22  ${SECRET}       crypt:SkZ3GHK8qbMX1d538xGRUNq5pswtD08gG0QueBVc+R3brm1IqgAMrEu050luIh6AGqQbu
23
24
25  *** Test Cases ***
26  Login with MFA
27      New Context  tracing=trace.zip  viewport={"width": 1280, "height": 720}
28      New Page     https://seleniumbase.io/realworld/login
29      Fill Text    id=username  ${USERNAME}
30      Fill Text    id=password  ${PASSWORD}
31      ${totp}     Get Totp      ${SECRET}
32      Fill Text    id=totpcode  ${totp}
33      Click       "Sign in"
34      Get Text    h1           ==  Welcome!
35
```

# Web based login with MFA

DEBUG CONSOLE TEST RESULTS TERMINAL PORTS

zsh  
RobotCode: Run Tests mfa-...

TESTING

viewer.robot M

Filter (e.g. text, !exclude, @tag)

No test results yet.

- viewer
  - Viewer
    - Tests
      - Viewer
        - Ortssuche
        - Routenplanung
        - Digitales Geländemodell
        - Drucken

Tests > viewer.robot > Test Cases > Drucken

```

1  *** Settings ***
2  Documentation      Viewer
3
4  # Data
5  Resource            global_vars.resource
6  Variables           cfg_variables.yaml
7  # Common local resources
8  Resource            Common_local.resource
9  # Common shared resources
10 Resource            playwright_shared.resource
11 # Shared Application Resources
12 Resource            viewer/suche/Suche.resource
13 # Local Application Resources
14 Resource            werkzeuge/Werkzeuge.resource
15 Resource            routing/Routing.resource
16 Resource            dgm/DGM.resource
17 Resource            drucken/Drucken.resource
18
19 Suite Setup         Common_local.Suite Initialization    ${VIEWER}    ${ENVIRONMENT}
20 Test Setup          Common_local.Test Initialization     ${URL}
21 Test Teardown       Common_local.Test Finalization
22
23
24 *** Variables ***
25 ${URL}              ${EMPTY}
26 ${BROWSER}         firefox
27 ${ENVIRONMENT}     PROD
  
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

zsh  
RobotCode: Run Tests viewer

```
32  *** Test Cases ***
33  Location Search
34      [Documentation]    Search Potsdam using search term, suggestion and match.
35      ... The test is successful as soon as the API has returned the expected match.
36      Search.Search Location
37      ...   search=Potsdam
38      ...   suggestion=Potsdam
39      ...   match=Potsdam [[kreisfreie Stadt]]
40      Search.Clear Search
41
42  Route Planning
43      [Documentation]    Opens the route planning and plans a sample route.
44      ... Checks whether the elevation profile layer can then be displayed.
45      Tools.Open Route Planning Tool
46      Routing.Enter Routing Data    ${ROUTING_START}    ${ROUTING_ZIEL}
47      Routing.Open Elevation Profile
48
49  Digital Terrain Model
50      [Documentation]    Opens the DTM layer and clicks on the map to check the
51      ... "GetFeatureInfo" function.
52      Show Layer DGM
53      DGM.Open DGM Popup
54
```





**Develop**  
the test

**Run**  
the test

**Monitor**  
the test



**Develop**  
the test

**Run**  
the test

**Monitor**  
the test



checkmk



# Where do my tests run?

- ◆ All such tests have to be run somewhere: **Test nodes**
- ◆ For internal applications: monitored test nodes in your infrastructure
- ◆ Tests need a Python environment running on
- ◆ You need to take care of scheduling

All of this can get very complex as soon as you scale your tests with more and more tests



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**Our goal: automate as much as possible of test runs, so that you can focus on creating and monitoring tests**

# Our paradigm: hands-free test execution

Don't worry about Python and more



**Checkmk  
server via  
bakery**

**Windows host**



**Checkmk  
agent**

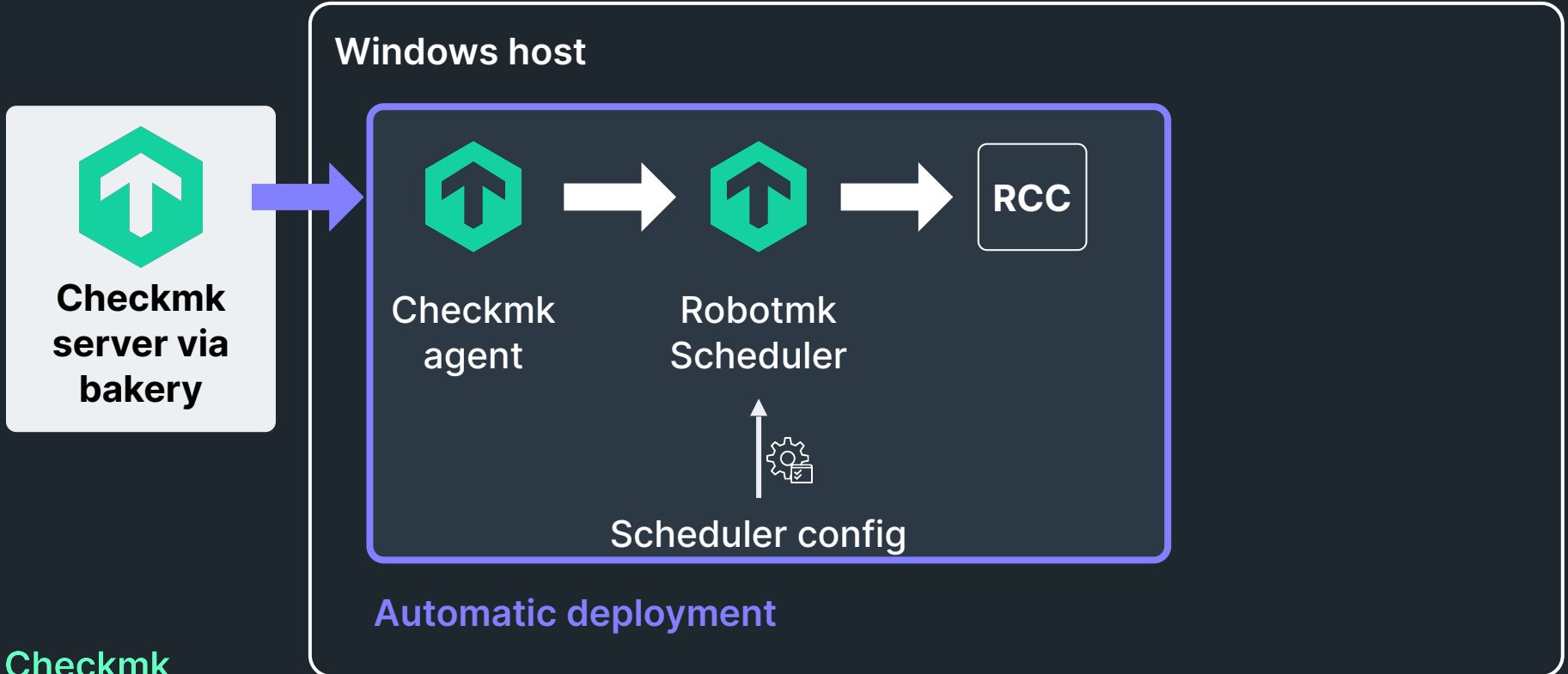


**Robotmk  
Scheduler**

**Automatic deployment**

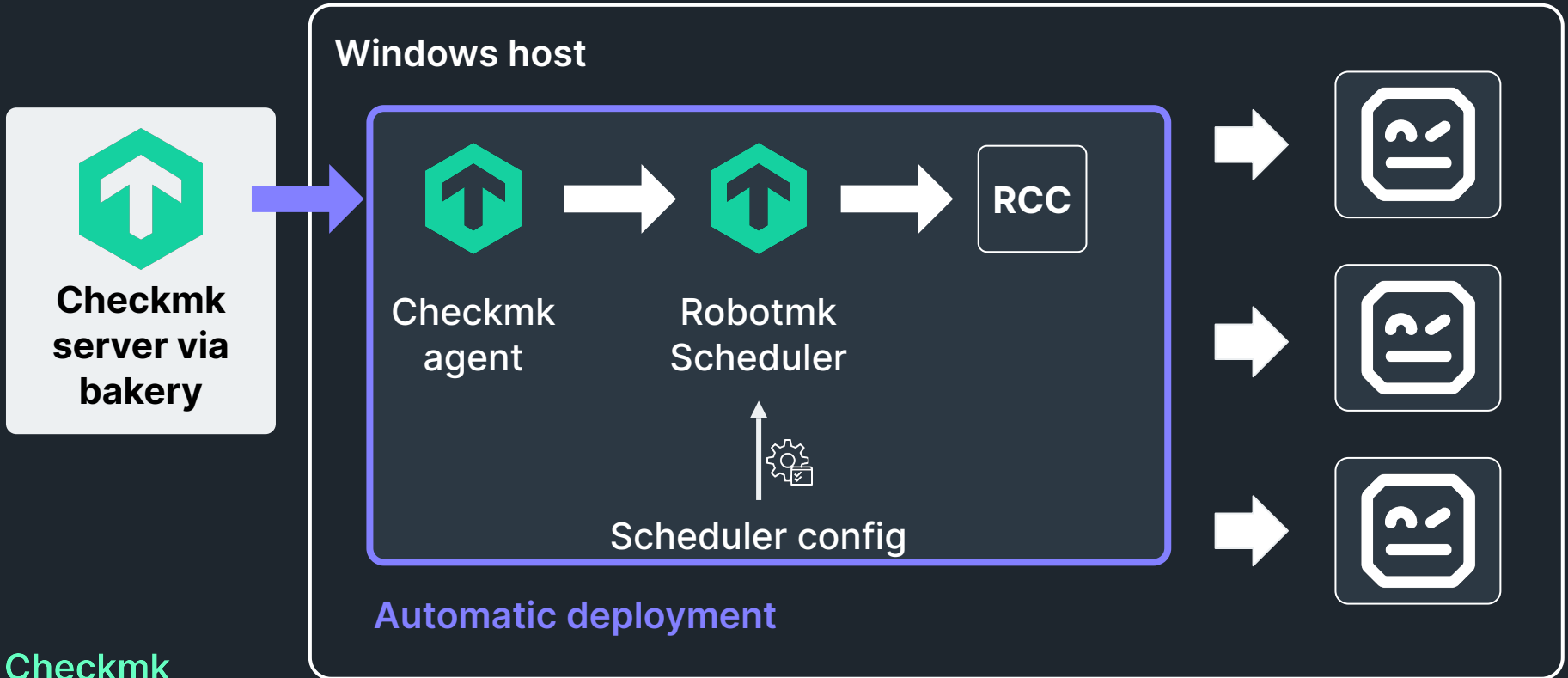
# Our paradigm: hands-free test execution

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# Our paradigm: hands-free test execution

Don't worry about Python and more



## Powerful control via bakery

## Scheduler configuration

- **Individual intervals** for **Parallel Plan Group** execution

Deploy Robotmk Scheduler and Agent Plugin ▾

Base directory of Robot Framework projects (required)

c:/robots

Parallel plan groups (required)

Group execution interval

0 hours 2 mins 0 secs

Sequential plans (required)

Application name (required)

OXIDWebshop

Variant

Relative path to test suite file or folder (required)

oxid/checkout.robot

Execution configuration

Limit per attempt

0 hours 1 mins 0 secs

Robot Framework re-executions

No re-executions ▾

Automated environment setup (via RCC)

Relative path to robot.yaml (required)

oxid/robot.yaml

Environment build timeout

10 mins 0 secs

Robot Framework parameters



## Powerful control via bakery

## Scheduler configuration

- **Individual intervals** for **Parallel Plan Group** execution
- **Sequential** execution of **Plans** inside **Groups**

Deploy Robotmk Scheduler and Agent Plugin ▾

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✗ Robot Framework parameters

Top level suite name (

# Powerful control via bakery

## Scheduler configuration

- **Individual intervals** for **Groups** (parallel execution)
- **Sequential** execution of **Plans** inside **Groups**
- **Full Control** over **Robot Framework Parameters**

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c:/robots

Parallel plan groups (required)

Group execution interval  
0 hours 2 mins 0 secs

Sequential plans (required)

Application name (required)  
OXIDWebshop

Variant

Relative path to test suite file or folder (required)  
oxid/checkout.robot

Execution configuration

Limit per attempt  
0 hours 1 mins 0 secs

Robot Framework re-executions  
No re-executions ▾

✗ Automated environment setup (via RCC)

Relative path to robot.yaml (required)

oxid/robot.yaml

Environment build timeout

10 mins 0 secs

✗ Robot Framework parameters

Top level suite name (

# Powerful control via bakery

## Scheduler configuration

- **Individual intervals** for **Groups** (parallel execution)
- **Sequential** execution of **Plans** inside **Groups**
- **Full Control** over **Robot Framework Parameters**
- **User Context** for **Desktop based tests**

Deploy Robotmk Scheduler and Agent Plugin

Base directory of Robot Framework projects (required)

c:/robots

Parallel plan groups (required)

Group execution interval

0 hours 2 mins 0 secs

Sequential plans (required)

Application name (required)

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Variant

Relative path to test suite file or folder (required)

oxid/checkout.robot

Execution configuration

Limit per attempt

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Automated environment setup (via RCC)

Relative path to robot.yaml (required)

oxid/robot.yaml

Environment build timeout

10 mins 0 secs

Robot Framework parameters

**Develop**  
the test

**Run**  
the test

**Monitor**  
the test



**Develop**  
the test

**Run**  
the test

**Monitor**  
the test



checkmk



### Test nodes

# 2/2

### Scheduler status

State	Test node	Summary
OK	munich	Plan scheduling
OK	atlanta	Plan scheduling

### OK tests

# 12/14

### Plans

State	Test node	Application	Variant	Summary	Runtime-limit ratio
OK	munich	Webshop	DE	Runtime: 18 seconds, Limit: 1 minute 0 seconds, Ratio: 30.00%, Last execution: 2024-06-08 13:13:00 (UTC+00:00)	30 %
OK	atlanta	Webshop	DE	Runtime: 18 seconds, Limit: 1 minute 0 seconds, Ratio: 30.00%, Last execution: 2024-06-08 13:13:00 (UTC+00:00)	30 %
OK	munich	Webshop	EN	Runtime: 17 seconds, Limit: 1 minute 0 seconds, Ratio: 28.33%, Last execution: 2024-06-08 13:12:00 (UTC+00:00)	28.33 %
OK	atlanta	Webshop	EN	Runtime: 17 seconds, Limit: 1 minute 0 seconds, Ratio: 28.33%, Last execution: 2024-06-08 13:12:00 (UTC+00:00)	28.33 %
OK	munich	checkmk.com		Runtime: 10 seconds, Limit: 1 minute 0 seconds, Ratio: 16.67%, Last execution: 2024-06-08 13:13:00 (UTC+00:00)	16.67 %
OK	atlanta	checkmk.com		Runtime: 10 seconds, Limit: 1 minute 0 seconds, Ratio: 16.67%, Last execution: 2024-06-08 13:13:00 (UTC+00:00)	16.67 %

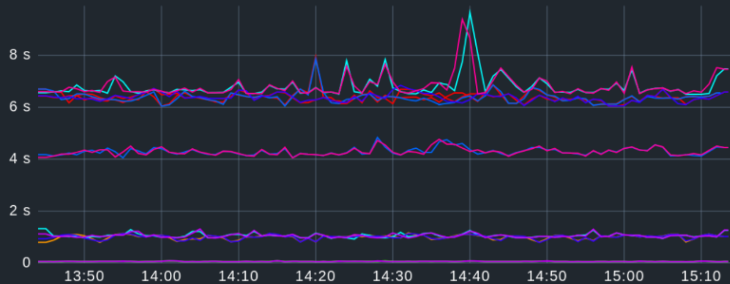
### Top 5: Test runtime

Host	Service	Test runtime
munich	RMK play.checkmk.com_demo Test: Open Dashboards	7.03 s
atlanta	RMK play.checkmk.com_demo Test: Open Dashboards	7.03 s
munich	RMK Webshop_checkout_EN Test: Search Item And Add To Basket	6.59 s
atlanta	RMK Webshop_checkout_EN Test: Search Item And Add To Basket	6.59 s
munich	RMK play.checkmk.com_demo Test: Open Host Details	4.36 s

### Tests

State	Test node	Application	Variant	Test	Summary	Runtime
CRIT	munich	Webshop	DE	Search Item And Add To Basket	FAIL	
CRIT	atlanta	Webshop	DE	Search Item And Add To Basket	FAIL	
OK	munich	Webshop	EN	Search Item And Add To Basket	PASS, Runtime: 7 seconds	6.59 s
OK	atlanta	Webshop	EN	Search Item And Add To Basket	PASS, Runtime: 7 seconds	6.59 s
OK	munich	checkmk.com		Download software	PASS, Runtime: 1 second	1.04 s
OK	atlanta	checkmk.com		Download software	PASS, Runtime: 1 second	1.04 s
OK	munich	checkmk.com		Open Homepage	PASS, Runtime: 61 milliseconds	61 ms
OK	atlanta	checkmk.com		Open Homepage	PASS, Runtime: 61 milliseconds	61 ms
OK	munich	play.checkmk.com		Open Host Details	PASS, Runtime: 4 seconds	4.36 s

### Test runtime



**Synthetic Monitoring Dashboard**  
All key information in one place





# Synthetic Monitoring tests

Monitor > Synthetic Monitoring > Synthetic Monitoring tests

Commands Export Display Help ^

## Webshop

State	Test node	Application	Suite name	Variant	Test	Actions	Summary
CRIT	munich	Webshop	checkout	DE	Search Item And Add To Basket		FAIL
CRIT	atlanta	Webshop	checkout	DE	Search Item And Add To Basket		FAIL
CRIT	munich	Webshop	checkout	EN	Search Item And Add To Basket		FAIL
CRIT	atlanta	Webshop	checkout	EN	Search Item And Add To Basket		FAIL

## checkmk.com

State	Test node	Application	Suite name	Variant	Test	Actions	Summary
OK	munich	checkmk.com	website		Download software		PASS, Runtime: 1 second
OK	atlanta	checkmk.com	website		Download software		PASS, Runtime: 1 second
OK	munich	checkmk.com	website		Open Homepage		PASS, Runtime: 74 milliseconds
OK	atlanta	checkmk.com	website		Open Homepage		PASS, Runtime: 74 milliseconds
OK	munich	checkmk.com	website		Open Pricing		PASS, Runtime: 1 second
OK	atlanta	checkmk.com	website		Open Pricing		PASS, Runtime: 1 second

## play.checkmk.com

State	Test node	Application	Suite name	Variant	Test	Actions	Summary
OK	munich	play.checkmk.com	demo				
OK	atlanta	play.checkmk.com	demo				

### Comprehensive test overview

### Structured per application



Open Dashboards

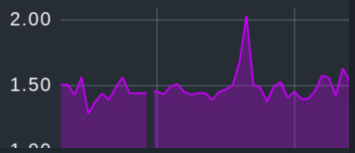


PASS, Runtime: 7 seconds



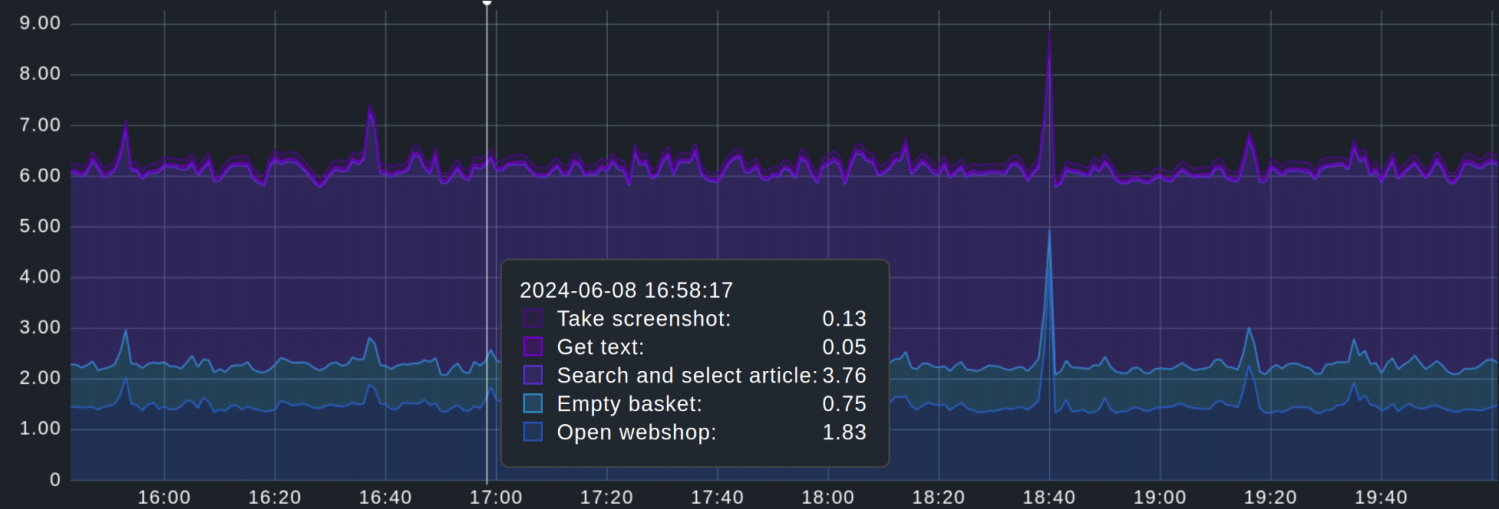


Test runtime



Surfshop checkout

Custom created graph



- Take screenshot
- Get text
- Search and select article
- Empty basket
- Open webshop

Minimum

0.72	1.07	0.82	0.85	0.75
1.31	4.18	1.48	1.48	1.83

**Powerful visualizations**  
 Built-in + create your graphs





Statistics by Suite	Total	Pass	Fail	Skip	Elapsed	Pass / Fa
Checkout	1	1	0	0	00:00:12	<div style="width: 100%; height: 10px; background-color: #28a745;"></div>

## Test Execution Log

### **SUITE** Checkout

**Full Name:** Checkout

**Documentation:** This suite verifies that the checkout process shows the correct final price.

**Source:** <C:\Robots\tests\oxid.robotmk.org\checkout.robot>

**Start / End / Elapsed:** 20240608 15:20:03.136 / 20240608 15:20:15.554 / 00:00:12.418

**Status:** 1 test total, 1 passed, 0 failed, 0 skipped

### **TEST** Search Item And Add To Basket

**Full Name:** Checkout.Search Item And Add To Basket

**Documentation:** Searches an article, adds it to the basket and tries to navigate to the checkout page.

**Start / End / Elapsed:** 20240608 15:20:04.363 / 20240608 15:20:10.504 / 00:00:06.141

**Status:** **PASS**

+ **SETUP** webshop\_oxid.Open Webshop

+ **KEYWORD** webshop\_oxid.Empty Basket

+ **KEYWORD** webshop\_oxid.Search And Select Article article\_id=\${ARTICLE\_ID} article\_title=\${ARTICLE\_TITLE} article\_pri

### Built-in logs for tests

Directly troubleshoot within Checkmk





# Robot Framework: Last log

Monitor > Overview > All hosts > webshop > Services of Host > Service

## Including screenshots for failures

Directly troubleshoot within Checkmk




Robotmk logs Display Help ^

Download

Last error log

Services of Host

Artikel	Verpackung	Menge	Einzelpreis	MwSt	Gesamtbetrag
<input type="checkbox"/>  <p><b>Bindung LIQUID FORCE TRANSIT BOOT</b> Art. Nr. 2402</p>	<input type="button" value="hinzufügen"/>	<input type="text" value="1"/>	259,00 €	19%	259,00 €
<input type="checkbox"/> <span>Alle</span> <span>Entfernen</span> <span>Aktualisieren</span>					

Gutscheincode eingeben	<input type="button" value="Gutschein einlösen"/>
------------------------	---

Summe Artikel (netto)	217,65 €
zzgl. 19% MwSt., Betrag:	Nan! €
Summe Artikel (brutto):	259,00 €
<b>Gesamtbetrag:</b>	<b>Nan!</b>

17:50:11.374 **INFO** See also file:///C:/ProgramData/checkmk/agent/robotmk\_output/working/plans/OXIDWebshop\_checkout/2024-05-23T17.50.00.160730200%2B0000/playwright-log.txt for additional details.

17:50:11.375 **FAIL** msg=ERROR: Did not find the expected price 259,00 € for article ID 2402 (Bindung LIQUID FORCE TRANSIT BOOT)!

+ **TEARDOWN** Browser. Take Screenshot EMBED selector=div#content

00:00:00.188



# Robot Framework: Last log

Monitor > Overview > All hosts > webshop > Services of Host > Service

## Including screenshots for failures

Directly troubleshoot within Checkmk




Robotmk logs Display Help

Download

Last error log

Services of Host

Artikel	Verpackung	Menge	Einzelpreis	MwSt	Gesamtbetrag	
<input type="checkbox"/>  Bindung LIQUID FORCE TRANSIT BOOT Art. Nr. 2402	<input type="button" value="hinzufügen"/>	<input type="text" value="1"/>	259,00 €	19%	259,00 €	
<input type="checkbox"/> Alle <input type="button" value="Entfernen"/> <input type="button" value="Aktualisieren"/>						
<input type="text" value="Gutscheincode eingeben"/> <input type="button" value="Gutschein einlösen"/>			Summe Artikel (netto)		217,65 €	
			Summe Artikel (brutto)		259,00 €	
<b>FAIL</b> msg=ERROR: Did not find the expected price 259,00 €					Gesamtbetrag:	<input type="text" value="Nan!"/>

17:50:11.374 INFO See also file:///C:/ProgramData/checkmk/agent/robotmk\_output/working/plans/OXIDWebshop\_checkout/2024-05-23T17.50.00.160730200%2B0000/playwright-log.txt for additional details.

17:50:11.375 **FAIL** msg=ERROR: Did not find the expected price 259,00 € for article ID 2402 (Bindung LIQUID FORCE TRANSIT BOOT)!

+ TEARDOWN Browser. Take Screenshot EMBED selector=div#content

00:00:00.188

# Monitor performance in-depth

- Alert on overall test runtime
- Alert on individual segments of your test

Test runtime: 6 seconds

Test steps (Keywords):

- Open Webshop: 1 second

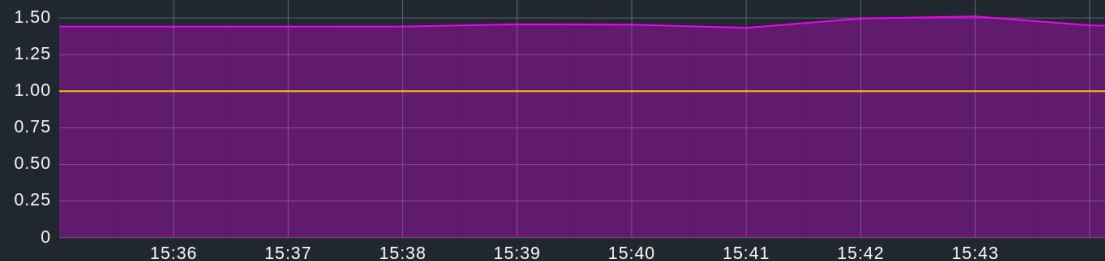
Keyword Open Webshop runtime: 1 second (warn/crit at 1 second/2 seconds) **WARN**

- Empty Basket: 731 milliseconds

- Search And Select Article: 4 seconds

- Get Text: 49 milliseconds

- Take Screenshot: 133 milliseconds



✘ Maximum test runtime

Fixed levels ▾

Warning at 1 mins 0 s

Critical at 2 mins 0 s

Enable metrics for high-level keywords

✘ Maximum **Keyword** runtime

Keyword pattern (required)

Open homepage

✘ Keyword runtime

Fixed levels ▾

Warning at 0 mins 2 s

Critical at 0 mins 5 s

Keyword pattern (required)

Download

✘ Keyword runtime

Fixed levels ▾

Warning at 0 mins 20 s

Critical at 0 mins 30 s



## 2.3 is just the beginning of our journey

What's next for Checkmk Synthetic Monitoring

**Develop** the test

**Faster, simpler test  
authoring**



## 2.3 is just the beginning of our journey

What's next for Checkmk Synthetic Monitoring

**Develop** the test

**Run** the test

**Faster, simpler test  
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**Robot manager**



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**Linux support; Windows headless desktop tests**





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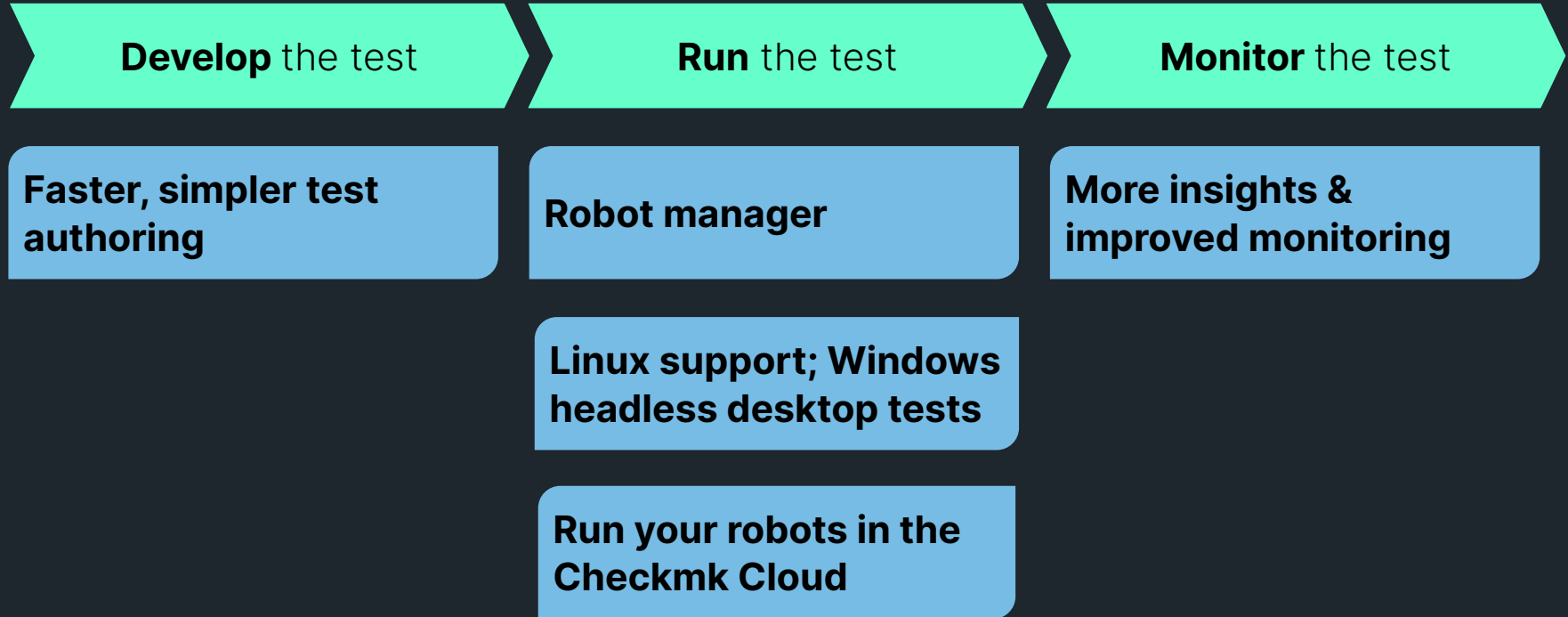
**Linux support; Windows headless desktop tests**

**Run your robots in the Checkmk Cloud**



# 2.3 is just the beginning of our journey

What's next for Checkmk Synthetic Monitoring





# How to get started?

Your journey with Synthetic Monitoring begins here

- **Try now:** Up to 3 tests for free
- **Resources:**
  - Checkmk Synthetic Monitoring **documentation:**  
<https://docs.checkmk.com/latest/en/robotmk.html>
  - Checkmk **YouTube** Channel:  
<https://www.youtube.com/@checkmk-channel>
  - Checkmk **blog**  
<https://checkmk.com/blog>
  - **Robotmk Homepage:**  
<https://www.robotmk.org>
  - Sign up for the **Robotmk** Academy **Online Course:**  
<https://www.robotmk.org/academy>

slido



## Audience Q&A Session

- ① Click Present with Slido or install our [Chrome extension](#) to show live Q&A while presenting.

