

ZABBIX

SUMMIT
2024

Browser monitoring workshop



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Training technical administrator

There are three key elements (information boxes) in the workshop slides:

- ▶ Linux virtual machine CLI (command-line interface)
 - You need to enter the commands specified here in your Linux SSH terminal or using the web interface <http://student-XX-zbxtr-YYYY.zabbix.training:9090>, without the # symbol:

```
# systemctl enable zabbix-server --now
```

- ▶ Text on the screen after a command execution (output may differ slightly)

```
Created symlink /etc/systemd/system/multi-user.target.wants/zabbix-server.service
```

- ▶ Linux editor screen – here, change the specified parameters to get required functionality

```
### Option: DBPassword
# Database password.
# Comment this line if no password is used.
DBPassword=P455w0RD
```



Browser monitoring



Browser monitoring or Browser Synthetic Monitoring

A way to constantly checks **website** or **application** performance by simulating **user actions**, ensuring the production site runs smoothly regardless of user activity.

- ▶ Early issue detection during development or in a live environment
- ▶ Simulates user interactions with scripted tests
- ▶ Ensures a proactive check on application health
- ▶ Long-term and relevant health statistics
- ▶ Constant quality control

Types of browser monitoring

▶ **Single-URL Monitors**

- Simulate a user visiting a specific URL and provide information such as availability and performance metrics.

▶ **Browser Clickpaths**

- Simulated user navigation through a site, automatically testing availability and performance at scheduled intervals. This approach can be used to detect and report UI bugs or unexpected functionality.

▶ **Mobile Simulation**

- Simulates mobile interactions to assess the availability and performance of mobile versions of websites.

▶ **HTTP(S) monitors**

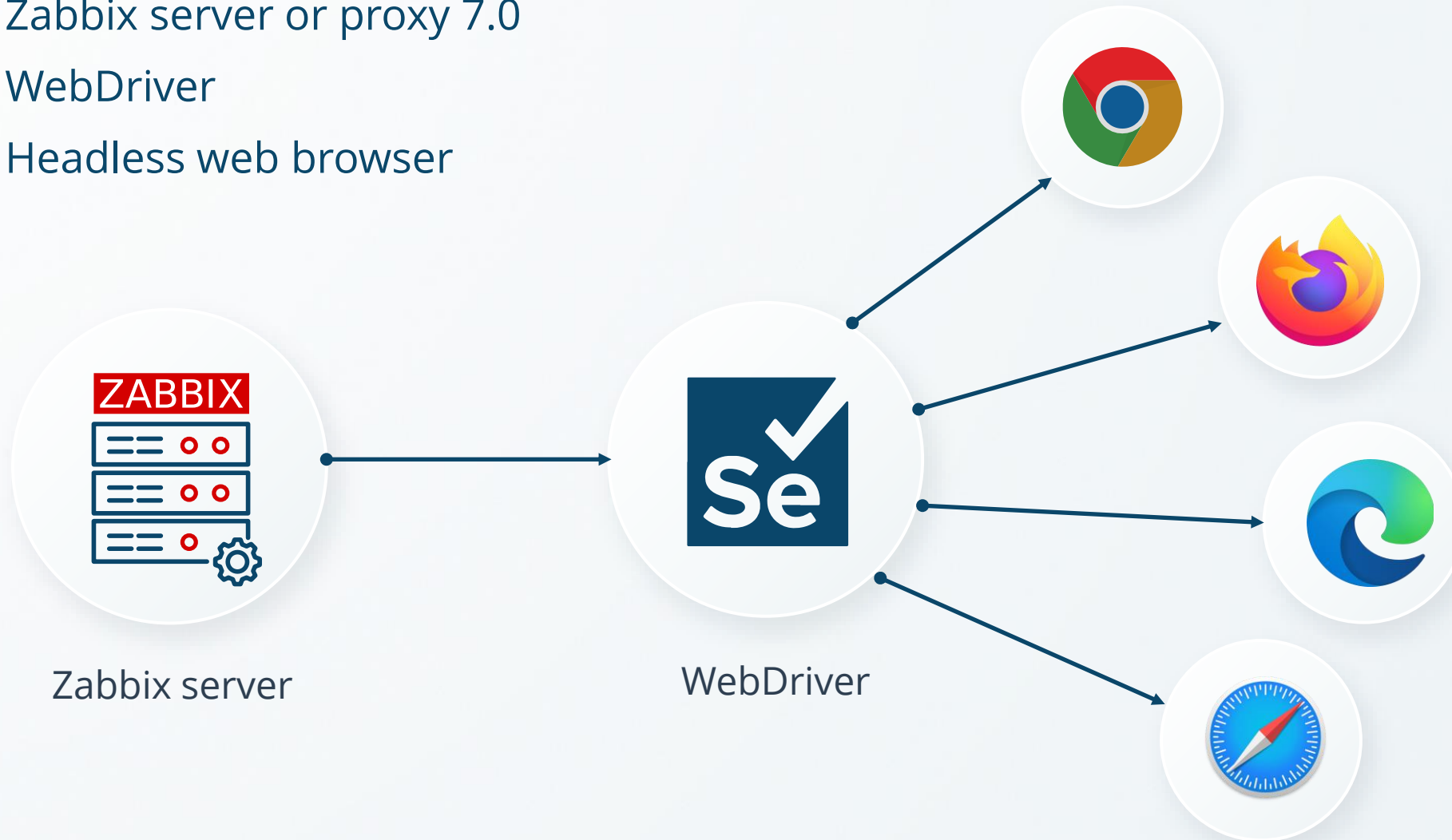
- Simple HTTP requests. You can use them to monitor the availability of your API endpoints or perform simple HTTP checks for single-resource availability



Website monitoring setup

There are several components required for browser monitoring:

- ▶ Zabbix server or proxy 7.0
- ▶ WebDriver
- ▶ Headless web browser



The most convenient way, to get the webdrivers is to use containers:

- ▶ To install the containers, login via SSH and execute this command on you VM

```
# podman run --name webdriver -d \  
-p 4444:4444 \  
-p 7900:7900 \  
--shm-size="2g" \  
--restart=always -d docker.io/selenium/standalone-chrome:latest
```

- ▶ Check if the container is now running

```
# podman ps
```

```
e4e... docker.io/selenium/standalone-chrome:latest :4444->4444/tcp, :7900->7900/tcp, 4444/tcp, 5900/tcp webdriver
```

The installed container includes:

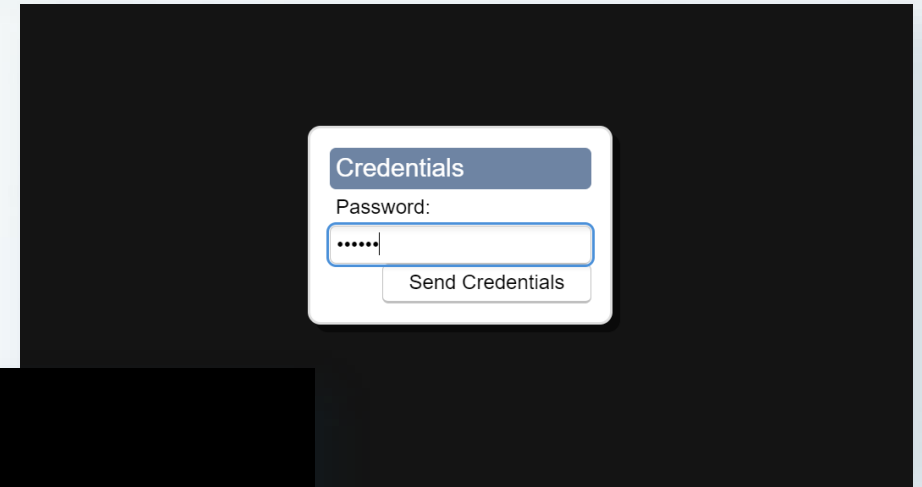
- ▶ Latest version of Standalone Chrome (for Browser item type)
- ▶ noVNC (to inspect visually container activity with browser)

- ▶ Open the address <http://<your-ip-address>:7900> using browser
- ▶ Check that noVNC page is accesible



- ▶ Press connect

- ▶ After pressing connect, there will be a prompt for password
- ▶ Password is "secret"
- ▶ After entering password, press Send Credentials
- ▶ You will see the Selenium Grid
- ▶ This can be later used to confirm browser behaviour



- ▶ Now edit the Zabbix server configuration file `/etc/zabbix/zabbix_server.conf`
 - change as shown below

```
# nano /etc/zabbix/zabbix_server.conf
```

```
### Option: WebDriverURL
#   WebDriver interface HTTP[S] URL. For example http://localhost:4444 used with
#   Selenium WebDriver standalone server.
#
# WebDriverURL=
WebDriverURL=http://localhost:4444

### Option: StartBrowserPollers
#   Number of pre-forked instances of browser item pollers.
#
# Range: 0-1000
# StartBrowserPollers=1
StartBrowserPollers=5
```

- ▶ Save the changes and restart Zabbix server to apply them

```
# systemctl restart zabbix-server
```

- ▶ Now we can use Browser items



Browser item



In Zabbix 7.0, a new item type is introduced: Browser

- ▶ Based on JavaScript
- ▶ Supports the browser class
- ▶ Support various new methods to work with pages

New item

Item Tags Preprocessing

* Name

Type

* Key

Type of information

Name	Value	Action
<input type="text"/>	<input type="text"/>	<input type="button" value="Remove"/>

[Add](#)

* Script

* Update interval

JavaScript

```
1 var browser = new Browser(Browser.chromeOptions());
2
3 try {
4     browser.navigate("http://example.com");
5     browser.collectPerfEntries();
6 }
7 finally {
8     return JSON.stringify(browser.getResult());
9 }
```

65346 characters remaining

The browser item can take screenshots of the monitored pages:

Item

Item Tags 1 Preprocessing 1

* Name

Type

* Key

Type of information

* Master item

* History

Description

Enabled

- ▶ To take a screenshot of the page – use the **getScreenshot()** method
- ▶ Screenshot is included in the JSON object in base64 format
- ▶ It is extracted into a **binary dependent item**
- ▶ Can be viewed on the dashboards or sent via media type

Screenshot size: up to 8K.

- ▶ Default screenshot size 1920x1080px.
- ▶ Screenshot can be displayed using the "Item history" widget.
- ▶ Screenshot size is specified by the ***setScreenSize(x,y)*** method.

The image displays two overlapping screenshots of the Zabbix website. The background screenshot shows a promotional banner for the Zabbix event in Riga, October 3-5, 2024. The text on the banner includes "The most important Zabbix event of 2024 is almost here!", "Join us in Riga on October 3-5 for Zabbix Summit 2024! You can expect presentations, workshops, networking, and a chance to meet and learn from each other.", a green "Register Now!" button, and a "See Agenda" button. Below the banner, it says "Top companies trust Zabbix" and lists logos for NEXON, ESA, ICANN, SEAT, and orange. At the bottom, it says "Monitor anything" and "Get a single pane of glass view of your whole IT infrastructure stack".

The foreground screenshot shows a table with two columns: "Timestamp" and "Screenshot". The table contains five rows of data, each with a timestamp and a corresponding screenshot of the Zabbix dashboard. The timestamps are: 2024-05-22 01:46:28 PM, 2024-05-22 01:44:28 PM, 2024-05-22 01:43:26 PM, 2024-05-22 01:42:28 PM, and 2024-05-22 01:41:28 PM.

Timestamp	Screenshot
2024-05-22 01:46:28 PM	[Screenshot of Zabbix dashboard]
2024-05-22 01:44:28 PM	[Screenshot of Zabbix dashboard]
2024-05-22 01:43:26 PM	[Screenshot of Zabbix dashboard]
2024-05-22 01:42:28 PM	[Screenshot of Zabbix dashboard]
2024-05-22 01:41:28 PM	[Screenshot of Zabbix dashboard]

BROWSER OBJECTS AND METHODS



Browser object - manages WebDriver session through out the whole item execution.

- ▶ (initialize session => execute all actions in script => close session).

Element - an element that is found on the opened webpage.

Cookie - a cookie returned by the ***getCookies()*** method.

Alert - a webpage alert returned by the ***getAlert()*** method.

Result - represents the collected statistics data gathered by ***getResult()*** method. Contains the following:

- ▶ Session statistics (in example total session duration)
- ▶ Error information (if such occurred)
- ▶ Performance data (if such collected)
- ▶ Any collected data that is written directly to the result object

Browser object methods:

Retrieving predefined browser options	chromeOptions() firefoxOptions() edgeOptions() safariOptions()	Error related operations	getError() setError(message) discardError()
Timeout management	setScriptTimeout(timeout) setSessionTimeout(timeout) setElementWaitTimeout(timeout)	URL and page related operations	navigate(url) getUrl() getPageSource() getAlert() getCookies() addCookie(cookie)
Collecting data	collectPerfEntries(mark) getRawPerfEntries() getResult() getScreenshot()	Locating elements on page	findElement(strategy, selector) findElements(strategy, selector)

Element object methods:

getAttribute(name)	Return the value of the given attribute of the object, for example: class, id, style, display e.t.c.	click()	Click on element.
getProperty(name)	Return the value of the given property of the object, for example: className, baseUrl.e.t.c.	sendKeys(keys)	Send keys to element. Method is used for filling data into editable elements.
getText()	Return element text.	clear()	Remove the content of editable element



Out-of-the-box approach

- ▶ Open Zabbix user interface in your web browser
 - Address: `http://<your-ip-address>/zabbix`
 - Login: Admin
 - Password: zabbix (you should change the password, but don't lose it)
 - Press 'Sign in'

The image shows a screenshot of the Zabbix login page. At the top center, the word "ZABBIX" is displayed in white text on a red rectangular background. Below this, there are two input fields: "Username" with the text "Admin" entered, and "Password" with a masked password of six dots. Under the password field, there is a checked checkbox labeled "Remember me for 30 days". At the bottom of the form is a blue button with the text "Sign in". Three callout boxes with blue borders and white backgrounds provide instructions: one on the left points to the "Admin" username field with the text "Use the default administrator login: **Admin**"; one on the right points to the masked password field with the text "Use the default password for Admin: **zabbix**"; and one at the bottom left points to the "Sign in" button with the text "Press **Sign in**".

Create a new host:

- Name: Summit agenda page
- Templates: Website by Browser
- Host groups: Summit pages (new)

Host

Host IPMI Tags Macros 3 Inventory Encryption Value mapping

* Host name

Visible name

Templates	Name	Action
	Website by Browser	Unlink Unlink and clear

* Host groups

Interfaces No interfaces are defined.
[Add](#)

Description

Monitored by Server Proxy Proxy group

Enabled

Adjust user macros ('Inherited and host macros'):

- { \$WEBSITE.DOMAIN } zabbix.com
- { \$WEBSITE.PATH } /events/zabbix_summit_2024#agenda
- { \$WEBSITE.SCHEME } https

Host macros Inherited and host macros

Macro	Value	Description
{ \$WEBSITE.DOMAIN }	zabbix.com	The domain name Remove
{ \$WEBSITE.PATH }	/events/zabbix_summit_2024#agenda	The path to resource Remove
{ \$WEBSITE.SCHEME }	https	The request scheme Remove

[Add](#)

Go to configuration of items on the **Summit agenda page** host:

► Test the **Website {\$WEBSITE.DOMAIN} Get data** item:

Test item

Get value from host

Host address Port

Test with **Server** Proxy

Value Time

Error

Previous value Prev. time

End of line sequence **LF** CRLF

Macros

{\$WEBSITE.BROWSER}	⇒	chrome
{\$WEBSITE.DOMAIN}	⇒	zabbix.com
{\$WEBSITE.PATH}	⇒	/events/zabbix_su
{\$WEBSITE.SCHEME}	⇒	https
{\$WEBSITE.SCREEN.HEIGHT}	⇒	1080
{\$WEBSITE.SCREEN.WIDTH}	⇒	1920

Preprocessing steps

Name	Value
1: Check for not supported value	{"duration":7.1453468799591064,"perf

```

{"duration":0.6685476303100586,"performance_data":{"details":{"navigation":
{"entry_type":"navigation","dom_content_loaded_event_start":0.23880000000074506,"domain_lookup_start":0.042,"tls_negotiation_time":0.0453000
0000074506,"request_start":0.04530000000074506,"redirect_start":0,"load_event_start":0.25330000000074504,"name":"http://student-01-zbxtr-
8888.zabbix.training/zabbix/","connect_end":0.042,"dom_content_loaded_event_end":0.23880000000074506,"critical_ch_restart":0,"decoded_body_
size":3914,"response_end":0.1505,"secure_connection_start":0,"initiator_type":"navigation","encoded_body_size":3914,"render_blocking_status":"no
n-
blocking","not_restored_reasons":null,"worker_start":0,"unload_event_start":0,"response_status":200,"dom_interactive":0.23860000000149012,"start
_time":0,"fetch_start":0.042,"activation_start":0,"redirect_end":0,"unload_event_end":0,"first_interim_response_start":0,"next_hop_protocol":"http/1.1"
,"delivery_type":"","load_event_end":0.25330000000074504,"response_start":0.1485,"domain_lookup_end":0.042,"redirect_count":0,"transfer_size":
4214,"dom_complete":0.25330000000074504,"connect_start":0.042,"duration":0.25330000000074504,"type":"navigate"},"resource":
{"dom_content_loading_time":0,"load_event_handler_time":0,"unload_event_handler_time":0,"response_time":0.01909999999776482,"encoded_siz
e":302736,"load_finished":0,"redirect_count":0,"redirect_time":0,"total_size":302736,"tcp_handshake_time":0,"count":3,"transferred_size":303636,"dn
s_lookup_time":0,"resource_fetch_time":0.027799999997019764,"request_time":0.004600000001490134,"min_protocol":"http/1.1"}},{"summary":
{"navigation":

```

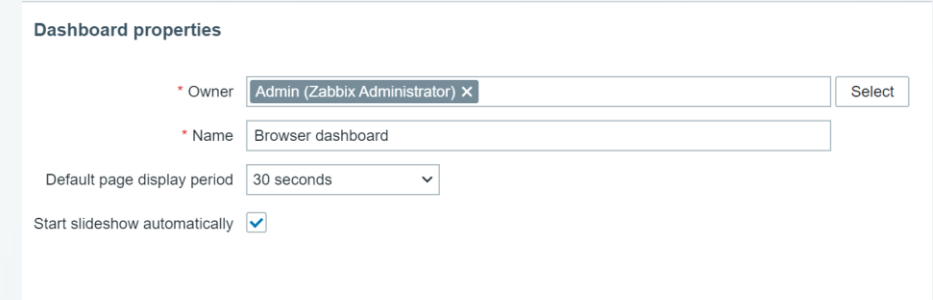
Go to the **Latest data** view for the host **Summit agenda page**:

- ▶ If the page is empty, select any item and press Execute now
- ▶ By executing any of the dependent items, the master item is executed

<input type="checkbox"/>	Host	Name ▲	Last check	Last value	Change	Tags	Info
<input type="checkbox"/>	Summit agenda page	get item id	20s	iVBORw0KGgoAAAA...			History
<input type="checkbox"/>	Summit agenda page	Get metrics check [?]	8m 53s			component: status	History
<input type="checkbox"/>	Summit agenda page	Get screenshot	15s	iVBORw0KGgoAAAA...			History
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Get data [?]				component: raw	
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation decodedBody size [?]	8m 53s	389.4 KB		component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation DNS lookup time [?]	8m 53s	0		component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation domContentLoaded time [?]	8m 53s	0.069ms	-0.088ms	component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation encodedBody size [?]	8m 53s	38.76 KB	-20 B	component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation load event time [?]	8m 53s	6.19ms	-3.94ms	component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation request time [?]	8m 53s	0.2ms	-0.12ms	component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation resource fetch time [?]	8m 53s	0.26ms	-0.16ms	component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation response time [?]	8m 53s	0.048ms	-0.037ms	component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation service worker processing time [?]				component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation TCP handshake time [?]	8m 53s	0		component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation TLS negotiation time [?]	8m 53s	0.0093ms	-0.0038ms	component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Navigation transfer size [?]	8m 53s	39.05 KB	-20 B	component: application performance: navigat...	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Resource decodedBody size [?]	8m 53s	853.81 KB		component: application performance: resource	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Resource DNS lookup time [?]	8m 53s	0.02ms	+0.0063ms	component: application performance: resource	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Resource domContentLoaded time [?]	8m 53s	0		component: application performance: resource	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Resource encodedBody size [?]	8m 53s	243.8 KB		component: application performance: resource	Graph
<input type="checkbox"/>	Summit agenda page	Website zabbix.com Resource fetch time [?]	8m 53s	203.19ms	-147.64ms	component: application performance: resource	Graph Debug

Go to Dashboards:

- ▶ Press **Create dashboard** and fill in the required fields:
 - Name: Browser dashboard
 - Default page display period: 30 seconds
 - Start slideshow automatically: checked
- ▶ Press 'Apply'



The screenshot shows the 'Dashboard properties' configuration form in Zabbix. It includes the following fields and values:

- Owner:** Admin (Zabbix Administrator) [Select]
- Name:** Browser dashboard
- Default page display period:** 30 seconds
- Start slideshow automatically:**

Add item history widget:

- ▶ This is the only way how to display screenshots from the browser item
 - Type: Item history
 - Name: Training frontend
 - Layout: Horizontal
 - Columns
 - Name: Screenshot
 - Item: Website zabbix.com screenshot
 - Show thumbnail: Checked
- ▶ Advanced configuration:
 - Show timestamp

Results

Website zabbix.com Get data ?		
Website zabbix.com Navigation decodedBody size ?	2m 2s	331.62 KB
Website zabbix.com Navigation DNS lookup time ?	2m 2s	0
Website zabbix.com Navigation domContentLoaded time ?	2m 2s	0
Website zabbix.com Navigation encodedBody size ?	2m 2s	3
Website zabbix.com Navigation load event time ?	2m 2s	3
Website zabbix.com Navigation request time ?	2m 2s	0
Website zabbix.com Navigation resource fetch time ?	2m 2s	0
Website zabbix.com Navigation response time ?	2m 2s	0
Website zabbix.com Navigation service worker processin... ?		
Website zabbix.com Navigation TCP handshake time ?	2m 2s	0
Website zabbix.com Navigation TLS negotiation time ?	2m 2s	0
Website zabbix.com Navigation transfer size ?	2m 2s	3
Website zabbix.com Resource decodedBody size ?	2m 2s	8

Item history

Timestamp
Summit agenda

2024-09-11 15:52:41 AM
2024-09-11 14:...
2024-09-11 13:...
2024-09-11 12:...
2024-09-11 11:...

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Agenda

Day 1: Oct 4, 2024
Riga (GMT+3) MAIN STAGE

09:00 Registration

09:30 Summit Opening

09:40 **KEYNOTE**
Alexei Vladishev, CEO & Founder, ZABBIX, Latvia

10:20 **When Zabbix Meets AI - Enhancing Zabbix monitoring workflows with AI features**
Tomas Hermanek, CEO & Founder, inRMAX s.r.o., Czech Republic

10:50 **TBA**
Dmitrijs Lamberts, Head of Technical Support, Zabbix, Latvia

11:10 **Browser monitoring in Zabbix 7.0: use case overview**
Aleksandrs Petrovs-Gavrilovs, Technical Support Engineer, Trainer, Zabbix, Latvia

11:30 Lunch

12:30 Zabbix meets AI - Leverage machine learning for

Day 1: Oct 4, 2024
Riga (GMT+3) BUSINESS TRACK

14:30 **The evolution of IT monitoring landscape**
Luciano Alves, Country Manager, Zabbix Latam, Brazil

15:00 **When two OpenSource projects meet**
Evgeny Yurchenko, Founder & Tech lead, BGMot, Canada

15:30 **Zabbix for MSPs**
Andre Morton, AGM Network Consultancy, United Kingdom

16:00 Coffee break

16:30 **Business impact of root cause problem detection**
Steve Destivelle, CEO, I2I-T, France

^



Authenticate and screenshot

Potential variables - user macros

- ▶ You may need to monitor multiple pages
- ▶ Credential (hopefully) will be different
- ▶ Various strategies may need to be applied
 - CSS selector
 - Link text
 - Partial link text
 - Tag name
 - Xpath

Template macros		Inherited and template macros
Macro	Value	
{ \$LINK }	https://support.zabbix.com/	T v
{ \$LOGIN.FORM.BUTTON.PATH }	input#login	T v
{ \$LOGIN.FORM.FIELD.PATH }	input#login-form-username	T v
{ \$LOGIN.FORM.PASS.FIELD.PATH }	input#login-form-password	T v
{ \$LOGIN.FORM.STRATEGY.TYPE }	css selector	T v
{ \$PAGE.PASSWORD }	🗑 v
{ \$PAGE.USERNAME }	🗑 v

Create an account on Zabbix support portal, if you don't have one yet:

- ▶ if you have one, skip this step 😊

The image shows two overlapping forms from the Zabbix support portal. The background form is the 'Login' page, and the foreground form is the 'Sign up' page.

Login Form:

- Header: Login
- Username: lagavazzz
- Password: [masked]
- Remember my login on this computer
- ~~Not a member?~~ [Sign up for an account.](#)
- Buttons: Log In, Login SSO, Can't access your account?

Sign up Form:

- Header: Sign up
- Email*: E.g. charlie@atlassian.com
- Full name*: Your full name
- Username*: Desired username
- Password*: Password
- Please enter the word as shown below
- [Input field]
- safover
- Buttons: Sign up, Cancel

Create a new host:

- ▶ Name: Zabbix support portal
- ▶ Host groups: Zabbix pages (new)

Host

Host IPMI Tags Macros 7 Inventory Encryption Value mapping

* Host name

Visible name

Templates

* Host groups

Interfaces No interfaces are defined.

[Add](#)

Switch to Macros tab and create macros:

- {\$LINK} https://support.zabbix.com/
- {\$LOGIN.FORM.BUTTON.PATH} input#login
- {\$LOGIN.FORM.FIELD.PATH} input#login-form-username
- {\$LOGIN.FORM.PASS.FIELD.PATH} input#login-form-password
- {\$LOGIN.FORM.STRATEGY.TYPE} css selector
- {\$PAGE.PASSWORD} <your password>
- {\$PAGE.USERNAME} <your username>

Host

Host IPMI Tags **Macros 7** Inventory Encryption Value mapping

Host macros Inherited and host macros

Macro	Value		Description	
{\$LINK}	https://support.zabbix.com/	T	Page link	Remove
{\$LOGIN.FORM.BUTTON.PATH}	input#login	T	Login field	Remove
{\$LOGIN.FORM.FIELD.PATH}	input#login-form-username	T	Username field	Remove
{\$LOGIN.FORM.PASS.FIELD.PATH}	input#login-form-password	T	Password field	Remove
{\$LOGIN.FORM.STRATEGY.TYPE}	css selector	T	Strategy to find form field	Remove
{\$PAGE.PASSWORD}	🔒	Your login	Remove
{\$PAGE.USERNAME}	lagavazzz	T	Your password	Remove

[Add](#)

Add the host

► Create a new item on

- Name Storage Support portal authentication
- Type Browser
- Key support.auth
- Type of information Text
- Parameters

button	{ \$LOGIN.FORM.BUTTON.PATH }
loginfield	{ \$LOGIN.FORM.FIELD.PATH }
password	{ \$PAGE.PASSWORD }
passwordfield	{ \$LOGIN.FORM.PASS.FIELD.PATH }
strategy	{ \$LOGIN.FORM.STRATEGY.TYPE }
url	{ \$LINK }
username	{ \$PAGE.USERNAME }
- Update interval 5m
- History 1d

► Continue to the next slide

Item

Item Tags Preprocessing

* Key Select

Type of information

Parameters	Name	Value	Action
	<input type="text" value="button"/>	<input type="text" value="{ \$LOGIN.FORM.BUTTON.PATH }"/>	Remove
	<input type="text" value="loginfield"/>	<input type="text" value="{ \$LOGIN.FORM.FIELD.PATH }"/>	Remove
	<input type="text" value="password"/>	<input type="text" value="{ \$PAGE.PASSWORD }"/>	Remove
	<input type="text" value="passwordfield"/>	<input type="text" value="{ \$LOGIN.FORM.PASS.FIELD.PAT }"/>	Remove
	<input type="text" value="strategy"/>	<input type="text" value="{ \$LOGIN.FORM.STRATEGY.TYPI }"/>	Remove
	<input type="text" value="url"/>	<input type="text" value="{ \$LINK }"/>	Remove
	<input type="text" value="username"/>	<input type="text" value="{ \$PAGE.USERNAME }"/>	Remove
	Add		

* Script ✎

* Update interval

► In the item script field paste the script and save the item:

```
var browser, result;
var opts = Browser.chromeOptions();
opts.capabilities.alwaysMatch['goog:chromeOptions'].args = []
browser = new Browser(opts);
browser.setScreenSize(Number(1980), Number(1020));
screens = [];
const screenshot = '';
try {

var params = JSON.parse(value); // Parse the JSON string containing parameters passed from Zabbix.

browser.navigate(params.url);
screens.push(browser.getScreenshot());

// enter username
var el = browser.findElement(params.strategy, params.loginfield);
if (el === null) {throw Error("cannot find name input field");}
el.sendKeys(params.username);
screens.push(browser.getScreenshot());

// enter password
el = browser.findElement(params.strategy, params.passwordfield);
if (el === null) { throw Error("cannot find password input field"); }
el.sendKeys(params.password);
screens.push(browser.getScreenshot());

// login
el = browser.findElement(params.strategy, params.button);
if (el === null) { throw Error("cannot find login button"); }
el.click();
screens.push(browser.getScreenshot());
browser.collectPerfEntries("login");

result = browser.getResult();
}
catch (err) {
  if (!(err instanceof BrowserError)) {
    browser.setError(err.message);
  }
  result = browser.getResult();
  result.error.screenshot = browser.getScreenshot();
}
finally {
  return JSON.stringify(result);
}
```

► The item screenshot

Item

Item Tags Preprocessing

* Name

Type

* Key

Type of information

Parameters

Name	Value	Action
<input type="text" value="button"/>	<input type="text" value="{ \$LOGIN.FORM.BUTTON.PATH }"/>	Remove
<input type="text" value="loginfield"/>	<input type="text" value="{ \$LOGIN.FORM.FIELD.PATH }"/>	Remove
<input type="text" value="password"/>	<input type="text" value="{ \$PAGE.PASSWORD }"/>	Remove
<input type="text" value="passwordfield"/>	<input type="text" value="{ \$LOGIN.FORM.PASS.FIELD.PAT }"/>	Remove
<input type="text" value="strategy"/>	<input type="text" value="{ \$LOGIN.FORM.STRATEGY.TYP }"/>	Remove
<input type="text" value="uri"/>	<input type="text" value="{ \$LINK }"/>	Remove
<input type="text" value="username"/>	<input type="text" value="{ \$PAGE.USERNAME }"/>	Remove

[Add](#)

* Script

* Update interval

Custom intervals

Type	Interval	Period	Action
<input type="text" value="Flexible"/> <input type="text" value="Scheduling"/>	<input type="text" value="50s"/>	<input type="text" value="1-7,00:00-24:00"/>	Remove

[Add](#)

* Timeout

* History

Populates host inventory field

Description

Enabled

[Latest data](#)

- ▶ If you wish, you can open noVNC tab (<https://<your-IP-address>:7900>)
- ▶ Press test in the item and observe the visualisation in noVNC

The screenshot displays the ZABBIX System Dashboard in a web browser. The page is titled "System Dashboard" and features a navigation bar with "Dashboards", "Projects", and "Issues" menus. The main content area is divided into several sections:

- Introduction:** A welcome message for ZABBIX Support System users, including a disclaimer about JIRA tickets and data privacy.
- Login:** A form for user authentication with fields for "Username" (containing "lagavazzj") and "Password", along with a "Remember my login" checkbox and "Log In" and "Login SSO" buttons.
- Projects:** A list of three project categories, each with a lead name:
 - ZABBIX BUGS AND ISSUES (ZBX) - Lead: Zabbix Support Team
 - ZABBIX CONTRIBUTION (ZBXCTR) - Lead: Aleksandre Sebiskveradze
 - ZABBIX FEATURE REQUESTS (ZBXNEXT) - Lead: Rostislav Palvoda
- Quick Links:** A section with "Navigation" links for "Browse Projects" and "Search for Issues".

The footer includes the Atlassian logo and text: "Atlassian Jira Project Management Software · About Jira · Report a problem. Powered by a free Atlassian Jira open source license for SIA Zabbix. Try Jira - buy tracking software for your team."

► Confirm in the frontend, that test was successful

The screenshot displays the Zabbix 'Test item' configuration interface. The 'Test item' window is open, showing the following configuration:

- Get value from host:**
- Host address:** [Empty text field]
- Port:** [Empty text field]
- Test with:** **Server** (selected), Proxy
- Value:** `{duration":17.9746356010437,"performance_data":{"details":{"mark":"login...`
- Time:** now
- Not supported:**
- Error:** error text
- Previous value:** [Empty text field]
- Prev. time:** [Empty text field]
- End of line sequence:** **LF** (selected), CRLF
- Macros:**
 - `{$LINK}` → `https://support.zabbix.com/`
 - `{$LOGIN.FORM.BUTTON.PATH}` → `input#login`
 - `{$LOGIN.FORM.FIELD.PATH}` → `input#login-form-username`
 - `{$LOGIN.FORM.PASS.FIELD.PATH}` → `input#login-form-password`
 - `{$LOGIN.FORM.STRATEGY.TYPE}` → `css selector`
 - `{$PAGE.PASSWORD}` → `*****`
 - `{$PAGE.USERNAME}` → `lagavazz`
- Result:** Result converted to Text
- Result value:** `{duration":17.9746356010437,"performance_data":{"details":{"mark":"login","navigat`

Below the configuration window, a detailed JSON response is visible, indicating a successful navigation:

```
{
  "duration": 17.9746356010437,
  "performance_data": {
    "details": {
      "mark": "login",
      "navigation": {
        "entry_type": "navigation",
        "dom_content_loaded_event_start": 7.712099999904632,
        "domain_lookup_start": 0.008,
        "tls_negotiation_time": 0.00169999998092651365,
        "request_start": 0.0096999999809265137,
        "redirect_start": 0,
        "load_event_start": 7.767799999713898,
        "name": "https://support.zabbix.com/secure/Dashboard.jspa",
        "connect_end": 0.008,
        "dom_content_loaded_event_end": 7.725,
        "critical_ch_restart": 0,
        "decoded_body_size": 91791,
        "response_end": 0.1742999997138977,
        "secure_connection_start": 0.008,
        "initiator_type": "navigation",
        "encoded_body_size": 19816,
        "render_blocking_status": "non-blocking",
        "not_restored_reasons": null,
        "worker_start": 0,
        "unload_event_start": 0.23439999961853028,
        "response_status": 200,
        "dom_interactive": 0.6957999997138977,
        "start_time": 0,
        "fetch_start": 0.008,
        "activation_start": 0,
        "redirect_end": 0,
        "unload_event_end": 0.23489999961853028,
        "first_interim_response_start": 0,
        "next_hop_protocol": "h2",
        "delivery_type": "",
        "load_event_end": 7.781099999904632,
        "response_start": 0.09869999980926514,
        "domain_lookup_end": 0.008,
        "redirect_count": 0,
        "transfer_size": 20116,
        "dom_complete": 7.767599999904633,
        "connect_start": 0.008,
        "duration": 7.781099999904632,
        "type": "navigate",
        "resource": {
          "dom_content_loading_time": 0,
          "load_event_handler_time": 0,
          "unload_event_handler_time": 0,
          "response_time": 4.349299999713898,
          "encoded_size": 4890402,
          "load_finished": 0,
          "redirect_count": 0,
          "redirect_time": 0,
          "total_size": 20861940,
          "tcp_handshake_time": 0,
          "count": 47,
          "transferred_size": 4524772,
          "dns_lookup_time": 0,
          "resource_fetch_time": 21.166599999427795,
          "request_time": 15.661499999523159,
          "min_protocol": "h2",
          "user": {
            "detail": null,
            "start_time": 0.5728999996185302,
            "entry_type": "mark",
            "duration": 0,
            "name": "app-header-skeleton"
          }
        }
      }
    }
  }
}
```

Now there is a host with exactly one potential master item, what's next?

- ▶ Go to Data collection > Templates
- ▶ Find template **Website by Browser** and click on items

<input type="checkbox"/> Name ▲	Hosts	Items	Triggers	Graphs	Dashboards	Discovery	Web	Vendor	Version
<input type="checkbox"/> Website by Browser	Hosts 1	Items 27	Triggers 3	Graphs 2	Dashboards 1	Discovery	Web	Zabbix	7.0-0

0 selected Export ▼ Mass update Delete Delete and clear

- ▶ Select all the item, press copy at the bottom of the page copy them to the **Zabbix support portal** host

HISTORY
0 1 4w 3d 26

<input checked="" type="checkbox"/>	Name ▲	
<input checked="" type="checkbox"/>	Website {\$WEBSITE.DOMAIN} Get data: Get metrics check	
<input checked="" type="checkbox"/>	Website {\$WEBSITE.DOMAIN} Get data	
<input checked="" type="checkbox"/>	Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation decodedBody size	
<input checked="" type="checkbox"/>	Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation DNS lookup time	website.navigation.dns_lookup_time
<input checked="" type="checkbox"/>	Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation domContentLoaded time	website.navigation.dom_content_loaded_time

Copy 27 items

Target type: Template groups Host groups Templates Hosts

* Target:

Now, back at the Zabbix support portal host

- ▶ Select all dependent items and click mass update

<input type="checkbox"/>	Name ▲	Triggers	Key	Interval
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Get metrics check		website.metrics.check	
<input type="checkbox"/>	*** Support portal authentication		support.auth	1d
<input type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data		website.get.data	{WEBSITE.GET.DATA.INTERVAL}
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation decodedBody size		website.navigation.total_size	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation DNS lookup time		website.navigation.dns_lookup_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation domContentLoaded time		website.navigation.dom_content_loaded_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation encodedBody size		website.navigation.encoded_size	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation load event time		website.navigation.load_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation request time		website.navigation.request_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation resource fetch time		website.navigation.resource_fetch_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation response time		website.navigation.response_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation service worker processing time		website.navigation.service_worker_processing_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation TCP handshake time		website.navigation.tcp_handshake_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation TLS negotiation time		website.navigation.tls_negotiation_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Navigation transfer size		website.navigation.transferred_size	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource decodedBody size		website.resource.total_size	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource DNS lookup time		website.resource.dns_lookup_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource domContentLoaded time		website.resource.dom_content_loaded_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource encodedBody size		website.resource.encoded_size	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource fetch time		website.resource.fetch_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource load event time		website.resource.load_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource request time		website.resource.request_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource response time		website.resource.response_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource service worker processing time		website.resource.service_worker_processing_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource TCP handshake time		website.resource.tcp_handshake_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource TLS negotiation time		website.resource.tls_negotiation_time	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Resource transfer size		website.resource.transferred_size	
<input checked="" type="checkbox"/>	*** Website {\$WEBSITE.DOMAIN} Get data: Website {\$WEBSITE.DOMAIN} Screenshot		website.screenshot	

26 selected

- ▶ Change master item for all the items to Support portal authentication
- ▶ Delete the **Website** {\$WEBSITE.DOMAIN} **Get data** item

Mass update ? ×

Item Tags Preprocessing

Public key file Original

Private key file Original

Password Original

Update interval Original

Timeout Original

History Original

Trends Original

Status Original

Log time format Original

Value mapping Original

Enable trapping Original

Allowed hosts Original

Master item

Description Original

- ▶ Execute now the any of the items on the host
- ▶ Confirm on the latest Monitoring > Latest data page, that data is collected

<input type="checkbox"/> Host	Name ▲	Last check	Last value	Change	Tags	Info
<input type="checkbox"/> Zabbix support portal	Get metrics check [?]	2m 3s			component: status	History
<input type="checkbox"/> Zabbix support portal	Support portal authentication	2m 3s	{"duration":24.649171...			History
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation decodedBody size [?]	2m 3s	89.9 KB		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation DNS lookup time [?]	2m 3s	0		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation domContentLoaded ... [?]	2m 3s	0.016ms		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation encodedBody size [?]	2m 3s	19.37 KB		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation load event time [?]	2m 3s	10.48ms		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation request time [?]	2m 3s	0.11ms		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation resource fetch time [?]	2m 3s	0.25ms		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation response time [?]	2m 3s	0.12ms		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation service worker proc... [?]	2024-09-19 12:41:42 PM			component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation TCP handshake time [?]	2m 3s	0		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation TLS negotiation time [?]	2m 3s	0.022ms		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Navigation transfer size [?]	2m 3s	19.66 KB		component: application performance: navigat...	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Resource decodedBody size [?]	2m 3s	19.9 MB		component: application performance: resource	Graph
<input type="checkbox"/> Zabbix support portal	Website {\$WEBSITE.DOMAIN} Resource DNS lookup time [?]	2m 3s	0		component: application performance: resource	Graph

Now, back again at the Zabbix support portal host

- ▶ Open and clone the **Support portal authentication** item
 - Item name Support portal screenshots
 - Key support.screens
 - Script Modify the line 46, by replacing:
return **JSON.stringify(result);** with
return **JSON.stringify(screens);**

The image shows a screenshot of the Zabbix 'New item' configuration form. The form is titled 'New item' and has three tabs: 'Item', 'Tags', and 'Preprocessing'. The 'Item' tab is selected. The form contains the following fields:

- * Name: Support portal screenshots
- Type: Browser (dropdown menu)
- * Key: support.screens (with a 'Select' button)
- Type of information: Text (dropdown menu)

To the right of the form, there is a code snippet showing the modification of line 46 in a script:

```
45 finally {  
46     return JSON.stringify(screens);  
47 }
```

- ▶ Apply, Test and Add the item
- ▶ Note how the output now contains only screenshots

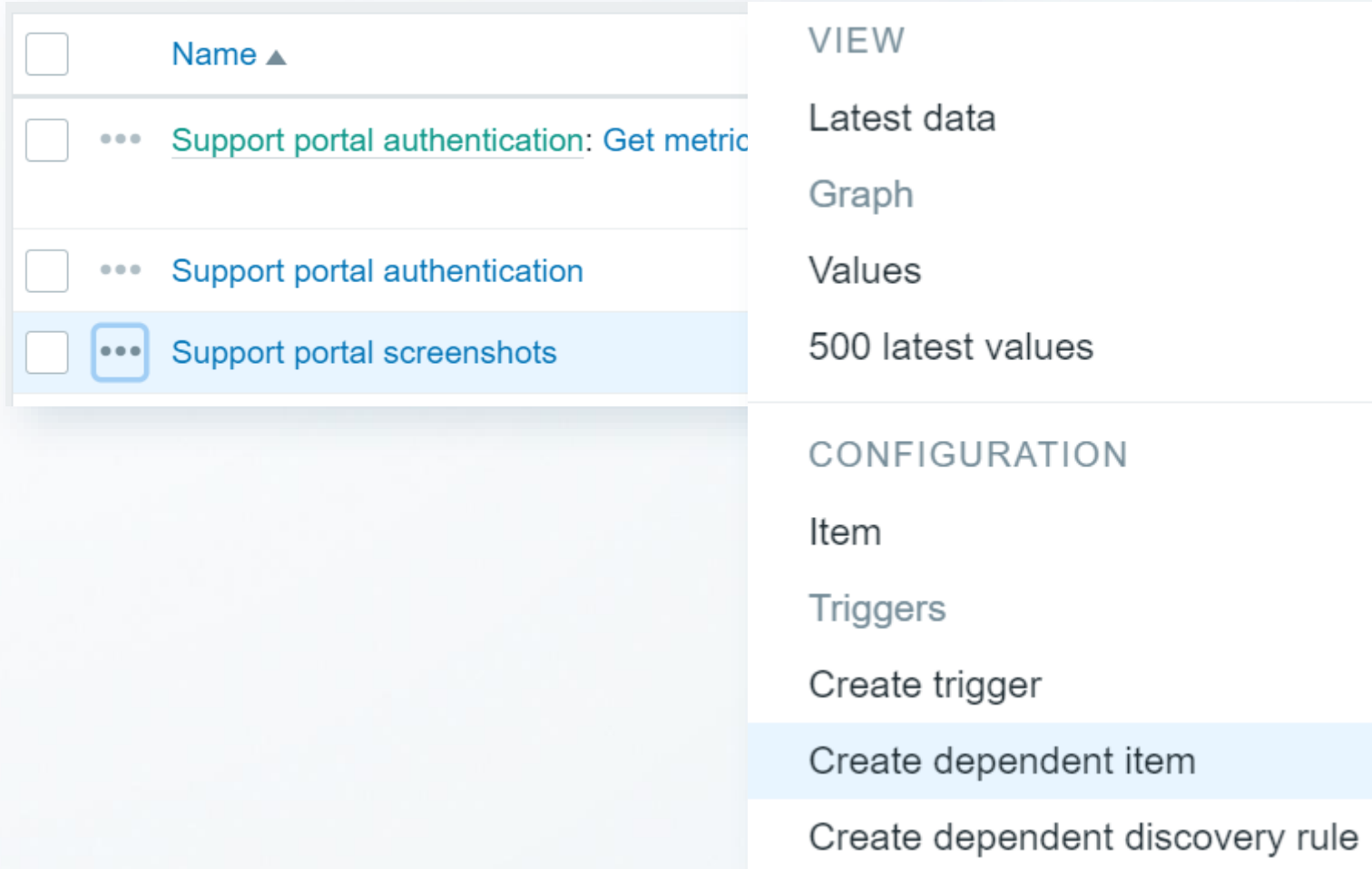
Screenshot is created for each step as can be seen in the script:

- ▶ Using that information we will create dependant items

```
15 |
16 | // enter username
17 | var el = browser.findElement(params.strategy, params.loginfield);
18 | if (el === null) {throw Error("cannot find name input field");}
19 | el.sendKeys(params.username);
20 | screens.push(browser.getScreenshot());
21 |
22 | // enter password
23 | el = browser.findElement(params.strategy, params.passwordfield);
24 | if (el === null) { throw Error("cannot find password input field"); }
25 | el.sendKeys(params.password);
26 | screens.push(browser.getScreenshot());
```


Click on the three dots, near the new Support portal screenshots item

▶ Select create dependent item



The screenshot shows a Zabbix interface with a list of items. The item 'Support portal screenshots' is selected, and a context menu is open over it. The menu is divided into two sections: 'VIEW' and 'CONFIGURATION'. The 'VIEW' section includes options for 'Latest data', 'Graph', 'Values', and '500 latest values'. The 'CONFIGURATION' section includes options for 'Item', 'Triggers', 'Create trigger', 'Create dependent item', and 'Create dependent discovery rule'. The 'Create dependent item' option is highlighted in blue.

Item Name	Context Menu Options
Name ▲	VIEW
Support portal authentication: Get metric	Latest data
Support portal authentication	Graph
Support portal authentication	Values
Support portal screenshots	500 latest values
	CONFIGURATION
	Item
	Triggers
	Create trigger
	Create dependent item
	Create dependent discovery rule

First screenshot will be

- ▶ Name Support portal screenshot
- ▶ Key login.screenshot
- ▶ Type of information Binary (allowed only for dependent item)

New item

Item Tags Preprocessing

* Name

Type

* Key

Type of information

* Master item

* History

Description

Enabled

- ▶ Add the item

Add preprocessing step

- ▶ JSONPath

Item Tags Preprocessing 1

Preprocessing steps ?

Name	Parameters	Custom on fail
1: JSONPath	<input type="text" value="\$[0]"/>	<input checked="" type="checkbox"/>

Custom on fail

[Add](#)

Type of information

Make screenshots for each step

<input type="checkbox"/>	Name ▲	Triggers	Key
<input type="checkbox"/>	... Authenticate to Jira		authenticate
<input type="checkbox"/>	... Authenticate to Jira: Authentication screenshot		step4
<input type="checkbox"/>	... Authenticate to Jira: Enter password screenshot		step3
<input type="checkbox"/>	... Authenticate to Jira: Enter username screenshot		step2
<input type="checkbox"/>	... Authenticate to Jira: Landing page screenshot		step1

This screenshot shows the 'Projects' section of the Zabbix Jira integration. It lists three projects: 'ZABBIX BUGS AND ISSUES (ZBX)' with lead 'Zabbix Support Team', 'ZABBIX CONTRIBUTION (ZBXCTR)' with lead 'Aleksandre Sebiakveratze', and 'ZABBIX FEATURE REQUESTS (ZBXNEXT)' with lead 'Rostislav Palivoda'. At the bottom, it mentions 'Atlassian Jira Project Management Software' and 'Powered by a free Atlassian Jira open source license'.

This screenshot shows the 'Login' page of the Zabbix system. It features a 'Username' field with 'logavazz' entered, a 'Password' field with masked characters, and a 'Remember my login on this computer' checkbox. Below the fields are links for 'Log in', 'Login SSO', and 'Can't access your account?'. The page header includes a search bar and a 'Log in' button.

This screenshot shows the 'System Dashboard' of the Zabbix system. The main content area is titled 'Introduction' and contains a 'Welcome to ZABBIX Support System' message. It includes a disclaimer about data collection and a note about support contracts. On the right side, there are sections for 'Favorite Filters', 'Assigned to Me', 'Issues in progress', and 'Quick Links'. A notification bubble at the top right states: 'Your computer's time zone does not appear to match your Jira time zone preference of (GMT+02:00) Riga. Update your Jira preference'.



Navigate and fill in any form

Download .yaml file from [here](#)

- ▶ Import as a host
- ▶ Check out the explanation

First name *

Last name *

Company *

Country / Territory *

Phone number *

Business email address *

Comments

By clicking below, you are agreeing to the Zabbix [Privacy Policy](#)

JavaScript

```
34 // enter name
35 var el = browser.findElement("xpath", "//*[label[text()='First name']/following::input");
36 if (el === null) {throw Error("cannot find name input field name");}
37 el.sendKeys("Aleksandrs");
38
39 // enter last name
40 var el = browser.findElement("xpath", "//*[label[text()='Last name']/following::input");
41 if (el === null) {throw Error("cannot find name input field last name");}
42 el.sendKeys("Petrovs-Gavrilovs");
43
44 // enter company name
45 var el = browser.findElement("xpath", "//*[label[text()='Company']/following::input");
46 if (el === null) {throw Error("cannot find name input field company name");}
47 el.sendKeys("SIA Zabbix");
48
49 // select country
50 var el = browser.findElement("css selector", "select#country");
51 if (el === null) {throw Error("cannot find country selection");}
52 el.sendKeys("Latvia");
```

Filling form


Click one

Navigate

The key Zabbix event of 2024 is coming right
Click one
Documentation
English (US)
Customer Login

ZABBIX

PRODUCT
SOLUTIONS
SUPPORT & SERVICES
TRAINING
PARTNERS



TRAINING OVERVIEW
Master Zabbix under the guidance of the best Zabbix trainers in the world

Schedule


Trainers

Testimonials

Training FAQ

Certificate Check

Training Application Form



CORE COURSES
Follow our training path to become a Zabbix Certified Expert


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Certified Specialist

Certified Professional

Certified Expert

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EXTRA COURSES
Participate in a depth course to specific monitoring

Automation and with Zabbix API

Advanced Zabbix Processing

Advanced Zabbix Administration

Advanced Zabbix Anomaly Detection

Advanced Zabbix monitoring New

```

11 //var el = browser.findElement("xpath", "//a[@href='/training']//span");
12 if (el === null) {
13     throw Error("cannot find traininglink");
14 }
15 el.click();
16
17 el = browser.findElement("link text", "Training Application Form");
18 if (el === null) {
19     throw Error("cannot find application link");
20 }
21 el.click();
22
23 el = browser.findElement("xpath", "//span[text()='Certified Specialist']");
24 if (el === null) {
25     throw Error("cannot select training");
26 }
27 el.click();
28
29 el = browser.findElement("xpath", "//td[text()='GMT+9 (Asia & Oceania)']");
30 if (el === null) {
31     throw Error("cannot find specific training");
32 }
33 el.click();
                
```

Mode	Date	Time	Location
Online	23 - 27 Sep, 2024	09:00-18:00	GMT+8 (Asia & Oceania)

Click two

Click three and four

Zabbix certificate granted

We hereby certify that Aleksandrs Petrovs-Gavrilovs has passed Zabbix Certified Trainers course 7.0 exam on 2024-04-21 and received a certificate CT-2404-003.



Download certificate

Download badge

Perform

JavaScript

```
10 // enter name
11 var el = browser.findElement("xpath", "//label[text()='First Name']/following::input");
12 if (el === null) {throw Error("cannot find name input field");}
13 el.sendKeys("Aleksandrs");
14
15 // enter last name
16 var el = browser.findElement("xpath", "//label[text()='Last name']/following::input");
17 if (el === null) {throw Error("cannot find name input field");}
18 el.sendKeys("Petrovs-Gavrilovs");
19
20 // enter cert number
21 var el = browser.findElement("xpath", "//label[text()='Certificate number']/following::input");
22 if (el === null) {throw Error("cannot find name input field");}
23 el.sendKeys("CT-2404-003");
24
25 // select version
26 var el = browser.findElement("xpath", "//div[@class='form-validation']>fieldset>div:nth-of-type(5)>select");
27 if (el === null) {throw Error("cannot find name input field");}
28 el.sendKeys("7.0");
29
30 // check certificate
31 var el = browser.findElement("xpath", "//button[text()='Check Certificate']");
32 if (el === null) {throw Error("cannot find name input field");}
33 el.click();
34
35 result = browser.getResult();
36 screenshot = browser.getScreenshot();
37 result.screenshot = browser.getScreenshot();
38 }
```

Filling diferrent form

Selecting version



Get data - detect problems

Discover the elements

Download .yaml file from [here](#)

- ▶ Import as a host
- ▶ Update the macro values
- ▶ Check the host ID and write it down
- ▶ Create yourself an API token and save it somewhere

<code>{\$PAGE.PASSWORD}</code>	your-password	↶	T ▾
<code>{\$PAGE.USERNAME}</code>	<your-login>	↶	T ▾
<code>{\$ZABBIX.DOMAIN}</code>	<your-vm-ip>		T ▾

Discover the elements

Trainer will explain the script

<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9413	Get.data[ZBXNEXT-9413]	l.sendKeys("project = ZBXNEXT AND resolution = Unresolved ORDER BY created DESC");
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9414	Get.data[ZBXNEXT-9414]	/ click search
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9415	Get.data[ZBXNEXT-9415]	l = browser.findElement("css selector", "textarea#advanced-search");
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9417	Get.data[ZBXNEXT-9417]	if (el === null) { throw Error("cannot find login button"); }
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9419	Get.data[ZBXNEXT-9419]	el.clear();
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9420	Get.data[ZBXNEXT-9420]	l.click();
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9421	Get.data[ZBXNEXT-9421]	/ wait for page to load
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9422	Get.data[ZBXNEXT-9422]	zabbix.sleep(1000);
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9423	Get.data[ZBXNEXT-9423]	/get the ZBXNEXT
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9424	Get.data[ZBXNEXT-9424]	l = browser.findElements("xpath", "//*[contains(text(), 'ZBXNEXT')]");
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9425	Get.data[ZBXNEXT-9425]	var links = [];
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9426	Get.data[ZBXNEXT-9426]	for (var n = 0; n < l.length; n++) {
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9427	Get.data[ZBXNEXT-9427]	links.push(l[n].getAttribute('href'));
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9428	Get.data[ZBXNEXT-9428]	links = uniq(links);
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9431	Get.data[ZBXNEXT-9431]	var lld = [];
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9432	Get.data[ZBXNEXT-9432]	for (i = 0; i < links.length; i++) {
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9433	Get.data[ZBXNEXT-9433]	if (links[i].match(/.ZBXNEXT.*/) {
<input type="checkbox"/>	... Discover latest ZBXNEXT: Get ZBXNEXT-9434	Get.data[ZBXNEXT-9434]	var row = {};
			// Remove the '/browse/' string from the link
			var modifiedLink = links[i].replace('/browse/', '');
			row["#ZBXNEXT"] = modifiedLink;
			lld.push(row);

JIRA search query

Looking for elements

Getting the info about elements

Item prototype

Item prototype [Tags](#) [Preprocessing 1](#)

* Name

Type

* Key

Type of information

Parameters

Name	
url	
web	
Add	

```
browser.navigate(params.web + params.url);
var el = browser.findElements("css selector", "span#created-val>time");
var date= [];
for (var n = 0; n < el.length; n++) { date.push(el[n].getAttribute('datetime')); }
date = uniq(date);
return (date);
```

* Script

Units

<input type="checkbox"/>	Zabbix support portal	ZBXNEXT-9473 creation date	41m 58s	2024-08-29 11:13:51 ...
<input type="checkbox"/>	Zabbix support portal	ZBXNEXT-9474 creation date	41m 53s	2024-08-30 07:49:52 ...
<input type="checkbox"/>	Zabbix support portal	ZBXNEXT-9475 creation date	41m 47s	2024-08-30 10:01:13 ...
<input type="checkbox"/>	Zabbix support portal	ZBXNEXT-9477 creation date	41m 42s	2024-08-31 03:19:00 ...
<input type="checkbox"/>	Zabbix support portal	ZBXNEXT-9479 creation date	41m 36s	2024-08-31 07:40:56 ...
<input type="checkbox"/>	Zabbix support portal	ZBXNEXT-9481 creation date	41m 31s	2024-09-01 05:34:41 ...

Getting the attribute

Creating the trigger

Trigger prototype

Trigger prototype [Tags](#) [Dependencies](#)

* Name

Event name

Operational data

Severity

* Expression

<input type="checkbox"/>	Time ▼	Severity	Recovery time	Status	Info	Host	Problem	Operational data
<input type="checkbox"/>	09:43:00 AM	Information		PROBLEM		Zabbix support portal	A new ZBXNEXT-9487 has been created	2024-09-17 12:33:03 PM
<input type="checkbox"/>	09:42:32 AM	Information		PROBLEM		Zabbix support portal	A new ZBXNEXT-9486 has been created	2024-09-17 04:28:44 AM



Send screenshots

Get the screenshots

► Host id must be updated to correct one

Name ▲	Triggers	Key	Interval	History	Trends	Type	Status		
... Discover latest ZBXNEXT: Most recent ZBXNEXT-9484 screenshot	Triggers 1	extract.screen[ZBXNEXT-9484]	12h	31d		HTTP agent	Enabled		
... Discover latest ZBXNEXT: Most recent ZBXNEXT-9485 screenshot	Triggers 1	extract.screen[ZBXNEXT-9485]	12h	31d		HTTP agent	Enabled		
... Discover latest ZBXNEXT				36]		12h	31d	HTTP agent	Enabled
... Discover latest ZBXNEXT				37]		12h	31d	HTTP agent	Enabled

Request body type: Raw data | **JSON data** | XML data

Request body

```
{
  "jsonrpc": "2.0",
  "method": "item.get",
  "params": {
    "output": ["itemid"],
    "hostids": "10651",
    "search": {
      "key_": "screenshot[#{#ZBXNEXT}]"
    }
  },
  "auth":
"f2b116aec1e9a5262ec9244f0ee36df63f0de369f16c0761ee4e422d0e68927c",
  "id": 1
}
```

JavaScript

```
function (value) {
1 | var test = (value)
2
3 | // Create a new HttpRequest object
4 |   var req = new HttpRequest();
5
6 | // Define the data to be sent in the request
7 |   var requestData = {
8 |     "jsonrpc": "2.0",
9 |     "method": "history.get",
10 |    "params": {
11 |      "output": "extend",
12 |      "history": 5,
13 |      "itemids": test,
14 |      "sortfield": "clock",
15 |      "sortorder": "DESC",
16 |      "limit": 1
17 |    },
18 |     "auth": "f2b116aec1e9a5262ec9244f0ee36df63f0de369f16c0761ee4e422d0e68927c",
19 |     "id": 1
20 |   };
21
```

Send them using email media type

Message template

Message type: Problem

Subject: Problem: {EVENT.NAME}

Message:

```
<!DOCTYPE html>
<html>
<head>
<title>Base64 Image Example</title>
</head>
<body>
<h1>Base64 Image Example</h1>

</body>
</html>
```

Base64 Image Example

ZABBIX Dashboards Projects Issues

ZABBIX FEATURE REQUESTS / ZBXNEXT-9487

Option to include hostname in "root cause" for services

ZABBIX Dashboards Projects Issues

ZABBIX FEATURE REQUESTS / ZBXNEXT-9485

Allow for complex filters for tags in Problems/Latest data

ZABBIX Dashboards Projects Issues

Issues Reports Components

ZABBIX FEATURE REQUESTS / ZBXNEXT-9484

Problems > Show tags

Open

Details

Type: Change Request

Priority: Trivial

Resolution: Unresolved

Fix Version/s: None

Thank you

Aleksandrs Petrovs-Gavrilovs

Training Technical Administrator