NetBioMonitor Software Engineering Testing Document

8.6.2024

Goals of this document

The goal of this document is to detail your efforts towards testing and debugging your application. In addition to completing this document, you will need to complete the specification of the Unit testing in the ADD. Some of the sections may not be applicable to your project. For example, if your project doesn't require a user interface, then obviously there is nothing to say on the section on testing the user interface. For such sections, simply specify N/A ("Not Applicable") and carry on.

1 Testing functional requirements

No	Unit	Goal	Preconditions	Input Action	Expected Result	Role
1	HealthChecker	Add new websites to the agent to monitor	Agent application need to be up, the website is not existing in the agent monitor list	"url": "http://google.com", "name": "goggle", "health_check": {"path": "http://google.com", "method": "POST", "body": "{}"}, }	agent monitoring "https.ex.com" as well and the new website added to the current list.	lab programer
2		Add new websites to the agent to monitor	Agent application need to be up, the website is existing in the agent monitor list	"url": "http://google.com", "name": "goggle", "health_check": {"path": "http://google.com", "method": "POST", "body": "{}"}, }	Nothing changed	lab programer
3		Edit website of agent's monitor	Agent application need to be up, the website is existing in the agent monitor list	"url": "http://google.com", "name": "goggle", "health_check": {"path": "http://google.com", "method": "GET", "body": "{}"}, }	The details of the website changed	lab programer
4		Delete	Agent application need to be up, the website is	id = 1	The website with the specific Id is	lab programer

			existing in the agent monitor list		removed from the agent's health check list	
5		Perform health check on all agent's website	Agent application need to be up, and have some sites to monitor	No input	All new information from the current check needs to be saved to each website information by date.	System
6	Errors	validate API request arguments	Agent applications need to be up.	sending api request with good arguments	API request should passed this validation and perform her in the Agent API	System
7		validate API request arguments	Agent applications need to be up.	sending api request with bad arguments	API request should failed and return a message with appropriate code error to the user	System
8	Auth	Validate authentication of the user via google.	Aggregator application needs to be up and db need to be connected	user with authorize to the aggregator tries to send a request to the API	The auth should pass the request to the API	system
9		Validate authentication of the user via google.	Aggregator application needs to be up and db need to be connected	user with no authorize to the aggregator tries to send a request to the API	The auth should decline the request and send an appropriate message with the right error code.	system
10		register to the system using google	Aggregator applications need to be up and have connection to the network.	user with legitimate google user	Succeeded to register to the system and creating a new session token to this user to pass auth in future requests	all
11		LogIn to the system using google	Aggregator application needs to be up	user with legitimate google user	Succeeded to login to the system and	all

					creating a new session token to this user to pass auth in future requests	
12		LogIn to the system using google	Aggregator application needs to be up	user with no legitimate google user	Can't log in to the system	all
13		Logout	Aggregator application needs to be up and a user logged in	User's token	User's token needs to be deleted.	all
14	BearerAuth	Validate authentication of the agent	Aggregator and agent application needs to be up and	agent with authorize to the aggregator tries to send a request to the API	The auth should pass the request to the API	System
15		Validate authentication of the agent Faiure	Aggregator and agent application needs to be up	Unknown software trying to send API request	The auth should decline the request and send an appropriate message with the right error code.	System
16	WebsiteSubscription	Adding new website to monitor	Aggregator application needs to be up and parameters are valid, url contains api call with the specific path Website registered to the aggregator	new_config=,url="https .ex.com" path="v1/" request="get" body=""	The website should be added to the user's monitored websites list	all
17		View monitored websites	Aggregator application needs to be up and some sites are registered to the aggregator And the member is logged in	None	View all websites in the aggregator's website list.	all
18		View monitored websites	Aggregator application needs to be up and no sites are registered to the aggregator. And the member is logged in.	None	Return empty list.	all
19		Deleting website from subscription list	Aggregator application needs to be up and the	id=5	Deletes the website from the	all

			website is registered to the aggregator. website need to be in the user's subscription list		user's subscription list	
20		Deleting website from subscription list	Aggregator application needs to be up and the website is not registered to the aggregator.	id=5	Operation should failed and returned an error message	all
23	Location Map	View users location for monitored websites .	Members must be logged in.	None	Deploy all location for monitored websites on the member's UI	all
24	Notifications	Receive notification email of downtime event	Member must be logged in, Registered to a website.	Disabled communication with one of registered websites	Sent a notification about the disconnection to all registered members.	all
25		Receive notification email of cronjob	Member must be logged in, Registered to a website.	Fail one of cronjob in one of the sites.	Sent a notification about the failure to all registered members.	all
26	WebsiteManager	Adding new website to monitor to the aggregator	Aggregator application needs to be up and parameters are valid, url contains api call with the specific path	"url": "http://google.com", "name": "goggle", "health_check": {"path": "http://google.com", "method": "POST", "body": "{}"}, }	The website should be added to the aggregator's website to monitor list.	lab programer
27		Adding new website to monitor to the aggregator	Aggregator application needs to be up and parameters are valid, url does not contains api call with the specific path	"url": "http://google.com", "name": "goggle", "health_check": {"path": "http://google.com", "method": "POST", "body": "{}"}, }	The website should be added to the aggregator's website to monitor list.(later we might delete him from the list)	lab programer
28		Getting all website to	Aggregator application	None	Return all	lab programer

		monitor	needs to be up and some sites are registered to the aggregator		websites in the aggregator's website list.	
29		Getting all website to monitor	Aggregator application needs to be up and no sites are registered to the aggregator.	None	Return empty list.	lab programer
30		Getting website with specific id	Aggregator application needs to be up and the website is registered to the aggregator.	id=5	Returns the specific website with the request body and his url.	lab programer
31		Getting website with specific id	Aggregator application needs to be up and the website is not registered to the aggregator.	id=5	Operation should failed and returned an error message	lab programer
32		Deleting website from aggregator list	Aggregator application needs to be up and the website is registered to the aggregator.	id=5	Deletes the website from the monitor list and stops health checks of this website(need to notify all agents that the website deleted).	lab programer
33		Deleting website from aggregator list	Aggregator application needs to be up and the website is not registered to the aggregator.	id=5	Operation should failed and returned an error message	lab programer
34		Editing website from aggregator list	Aggregator application needs to be up and the website is registered to the aggregator.	id=5 url =”https.ex.com” and request = “post”	Editing the website in the monitor list(need to notify all agents that the website edited).	lab programer
35		Editing website from aggregator list	Aggregator application needs to be up and the website is not registered to the aggregator.	id=5 new config	Operation should failed and returned an error message	lab programer

2 Testing non-functional requirements

For the load test we will use the locust library.

We will use the manual tools(chrome as a build in tool or others) to test the UI load time.

To test DR we will cause a disaster(can be restart) to the system and than reload and run all regression tests.

For testing the authentication we wrote several different automation tests using pytest.

3 Test-Driven Development

No, Our project had complexities that made it challenging to start with TDD without a solid understanding and experience in the methodology. furthermore Without prior experience, we anticipated that this could hinder our productivity in the short term as we adjusted to the new workflow.

4 Random & automatically-generated tests

We don't expect to use any random or automatically generated tests.

5 Testing the user interface

- Describe how you tested the UI. Did you automate these tests?

  We wrote several tests using the playwright framework.
  Playwright is a framework that demo click on the screen, In order to test the notification system we used aiosmtpd in order to create local smtp server and then we are able to test the text we are sending.

6 Testing build, integration & deployment

Describe what measures/tests that verify that the application builds cleanly, that its components integrate well with each other and with any outside modules. **Hint:** Think about GNU configure.

Describe the measures/tests that take place during installation of your application. For example:

- How do you verify that your application is installed properly?
- How do you verify that your application uninstalls properly?
- How do you verify that your application has all the resources & prerequisite software that it needs to run?

The answer for all these questions is we are using containers so we will use

docker compose to test all the above.

In addition every new code that pushed to the main need to passed CI tests.