



Building trust
in eHealth
interoperability

Connectivity testing



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- Connectivity testing
 - Objectives and requirements
 - Test process

CONNECTIVITY TESTS OBJECTIVES AND REQUIREMENTS

Online Connectathon : network over internet

- In the objectives of connectivity-tests:
 - Verify if nodes and machines from different test participants can see each other and access ports
 - Verify if firewall configuration does not block access, adjust it eventually
 - Verify DNS registration
- Out of scope
 - Verify IHE Transaction

Pre-requisites

- All Systems up and running on internet with a public IP address
- Must be registered in Gazelle TM
 - All nodes as hosts
 - All Configurations of implemented actors
- See previous training about Configurations for an online event:
<https://gazelle.ihe.net/training#ConnectathonTraining>

CONNECTIVITY TEST PROCESS

Process overview


- STEP 1: Get the host white-list for firewall configuration
- STEP 2: Get the configuration list to verify
- STEP 3: Perform connectivity-test on each entry
- STEP 4: Report connectivity status to the technical manager

- The process is driven by operators of consumer actors
- However operator of responding actors can also be pro-active and also ask for connectivity-tests to operators of system they would like to test with at the event.

STEP 1: Get the host white-list for Firewall configuration

- Get the host white-list from Gazelle Test Management
 - Menu **Configurations > Network configuration overview**, then click on the button **Download the hosts file**.
 - It will list all nodes that are part of the « online-test-network » for the event.
 - Can be used as data source to configure your firewall
 - Can be used as hosts file in case of DNS delay or issue.
- Update or verify your Firewall configuration

STEP 2: Get the Configuration list to verify

- Get the list of all listening actors for the event
 - Menu **Configurations > All configurations**
 - remove the filter on the organization
 -  [Click here](#)
 - Click on the button **Download as Excel file**.
- It is recommended to focus on test partners you have identified that will or may be be involved in the tests you have to perform
 - To see your test plan, go to menu **Connectathon > Connectathon > Connectathon** (or the shortcut **CAT** button on the top right)
 - Filter the configurations either before or after the excel export

STEP 2: Warning

- NOTE: If systems have not completed and validated their configuration in Gazelle Test Management, the referential for the connectivity test will be unstable or incomplete.
- If your organization is in this situation, please fix it as soon as possible, otherwise you expose yourself as having no test partners trying to check connectivity with your system ahead of the event.

STEP 3 : Perform connectivity-tests for each Configuration

- For each entry in the configuration sheet
 - perform a connectivity test from the running system's environment to verify if the described configuration is reachable by your system.
 - Test with IP address
 - Test with Host name to also verify DNS resolution
- Either perform a real IHE Transaction
 - no expectation on the functional result at this stage
 - The connection must have been established
- Either use tools from the machine/environment on which your system is deployed
 - Telnet, nmap, nc, ping (for host), etc.

STEP 3 : Connectivity-tests Communication

- Use the live environment to contact test partners
- One channel dedicated for exchanges about the the Connectivity-tests : #connectivity-tests
- Contact other vendors by joining their company channel (virtual table)
 - #XX-systemkeyword-vendorkeyword (XX stands for the table label in TM)
 - either to ask them to test with you
 - either to solve connectivity issues

STEP 3 : Tips

- IHE Europe has made a script to help you performing the connectivity-tests:
 - <https://gitlab.inria.fr/gazelle/specific-tools/connectivity-test-scripts>
 - Able to process the Configuration CSV file as input
 - Based on nc command, run on Bash, Linux
 - Feel free to try and contribute
 - May be working on Windows Cygwin or Windows-Linux-Subsystem.
 - Complete documentation is available in the README

STEP 4 : Report to the technical management team

- Why ?
 - Aggregate test results and share them to the participants
 - Give to all a more precise appreciation of
 - the issues faced
 - the overall network status.
 - Identify issue patterns
 - Technical management can arbitrate on connectivity conflicts

STEP 4 : Report to the technical management team

- Report your connectivity results to the technical management team
 - One CSV file per system, list all test entries with result PASSED or FAILED
 - Columns

System	actor	Configuration type	host	IP	port	IP test result	Host test result
...	PASSED	FAILED
...	PASSED	PASSED

Identical to the Gazelle Configuration Table

The connectivity script is able to generate this output for you



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