

Description of Overall Test Plan

The test plan prioritizes functional verification of core features through unit tests, giving priority to isolated components such as PID display, packet information, process listing, etc. The test cases relating to these components are TC-001, TC-002, TC-003, TC-004, and TC-006. The included integration tests cover complex scenarios involving memory access and network monitoring, which by nature interact with other components of the system. The test cases relating to these components are TC-005, TC-007, TC-008, TC-009, and TC-010. All tests will be Blackbox testing with the exception of TC-007.

Test Case Descriptions

Test Case Identifier	Purpose	Description	Inputs	Expected Results	Normal / Abnormal / Boundary Case Indication	Blackbox / Whitebox Test Indication	Functional / Performance Test Indication	Unit / Integration Test Indication
TC-001	Verify the system can display all running processes	YAHOS displays a list of running processes	None (system state observation)	Complete list of running processes including system processes	Normal	Blackbox	Functional	Unit
TC-002	Verify process selection and detailed display functionality.	The user can select and display a running process	Selected process (i.e notepad.exe)	Detailed view of selected process showing relevant information including name and PID	Normal	Blackbox	Functional	Unit
TC-003	Verify ability to start a new process	The user can select a binary (.exe) to start a process	Path to binary to execute (i.e calculator.exe)	Process starts and appears in the process list	Normal	Blackbox	Functional	Unit
TC-004	Verify correct process PID display	YAHOS displays the PID of running processes	System state observation and selected process	Correct PID number matching Task Manager	Normal	Blackbox	Functional	Unit
TC-005	Verify memory offset information display	YAHOS displays memory offsets for a specific process (start and end)	Selected process	Start and end memory addresses in hex format	Normal	Blackbox	Functional	Integration
TC-006	Verify absolute path display	YAHOS displays the absolute path of a selected process	Selected process	Complete path (i.e C:\Program Files\...\process.exe)	Normal	Blackbox	Functional	Unit

TC-007	Verify process imports display	YAHOS displays imports of a selected process	Selected process	List of all DLLs imported by process	Normal	Whitebox	Functional	Integration
TC-008	Verify open ports display	YAHOS displays open ports of a selected process	Selected process	List of all open ports associated with process	Normal	Blackbox	Functional	Integration
TC-009	Verify packet capture functionality	YAHOS captures packets received and sent from the associated port	Port number and duration of capture	Raw packet data captured for specified port	Normal	Blackbox	Functional	Integration
TC-010	Verify packet information display	YAHOS displays captured packet information	Captured packet data from TC-009	Formatted display showing protocol, addresses, payload size, timestamp	Normal	Blackbox	Functional	Integration

Test Case Matrix

Test Case Identifier	Normal/Ab.	Black/Whitebox	Funct/Perform	Unit/Integr.
TC-001	Normal	Blackbox	Functional	Unit
TC-002	Normal	Blackbox	Functional	Unit
TC-003	Normal	Blackbox	Functional	Unit
TC-004	Normal	Blackbox	Functional	Unit
TC-005	Normal	Blackbox	Functional	Integration
TC-006	Normal	Blackbox	Functional	Unit
TC-007	Normal	Whitebox	Functional	Integration
TC-008	Normal	Blackbox	Functional	Integration
TC-009	Normal	Blackbox	Functional	Integration
TC-010	Normal	Blackbox	Functional	Integration

Test Results

All test cases were successful in their execution, with the exception of TC-005. The reason for this is not that its implementation didn't work. We decided not to include that feature directly in our final product. All other tests resulted in the correct output.