Aerohive Networks Inc.

L7 Application Custom App Test Case

Revision History

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| --- | --- | --- | --- |
| Version | Date | Author | Description |
| 0.1 | 2013-07-17 | Lei Xu | Initial version |
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Glossary and Abbreviations

# Introduction

We are adding a framework that enables our AVC module to support custom applications and classification rules. Extensible classification is made possible by creating custom applications, and adding rules into custom applications. Once rules are bound to a custom application, all subsequent classification will be performed using these rules in additional to built-in rules, and custom applications will be classified when rules are matched against incoming traffic.

# Test Objectives

As per HiveOS Custom Application function specification, design test case and verify custom application creation, rule association. And make sure custom application is subject to existing AVC policy enforcements such as reporting, QoS and Firewall.

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# Test Acceptance Criterion from Development

* Approved – MRD

<https://aerohive.jiveon.com/docs/DOC-5769>.

* Approved – Functional Specifications

<https://wiki.aerohive.com/wiki/display/~ywu/AVC+custom+defined+applications>

* Approved – Unit Test Plans

<https://wiki.aerohive.com/wiki/display/~ywu/AVC+custom+application+UTP>

# Product Pass Criterion

Meet all objects in marketing requirement or function spec which may include key function objectives, capacity objectives, and performance objectives and so on.

# Test Bed/Topo Design

# Test Case

## Solution

### Custom\_App\_Solution\_01

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Solution\_01 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify custom application is subject to existing AVC policy enforcements such as reporting, QoS and Firewall. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application. 2. Associate rule with custom application. 3. Enable application reporting and add custom application into watchlist. 4. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 5. Associate custom application QoS classifier profile, and set Aerohive QoS class of custom application. 6. Laptop accesses outside network as custom application definition. | | |
| Expect result | Step 6. HiveOS reports custom application correctly.  Check FE syslog, HiveOS permit custom application after DPI identifies it correctly.  Check FE/QoS syslog, HiveOS set correct Aerohive QoS class for custom application after DPI identifies it. | | |
| Test Result |  | | |
| Comment |  | | |

## Function Test Case

### Custom\_App\_Function\_01

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Funtion\_01 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module TCP\_1 signle IP | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1 cdp-module TCP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_02

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_02 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module TCP\_IP range | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule** 192.168.0.1-192.168.255.255 **cdp-module TCP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application rule definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment | HM Geneva release does not support IP range rule, QA can ignore this case for Geneva release verification. | | |

### Custom\_App\_Function\_03

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_03 | | |
| Priority | Low | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module TCP\_port number | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule** :80 **cdp-module TCP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_04

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_04 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module TCP\_signle IP and Port Number | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1**:80 **cdp-module TCP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_05

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_05 | | |
| Priority | High | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module TCP\_IP range and Port Number | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1-192.168.255.255**:80 **cdp-module TCP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment | HM Geneva release does not support IP range rule, QA can ignore this case for Geneva release verification. | | |

### Custom\_App\_Function\_06

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_06 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module UDP\_1 single IP | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1 cdp-module UDP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_07

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_07 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module UDP\_IP range | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule** 192.168.0.1-192.168.255.255 **cdp-module UDP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application rule definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment | HM Geneva release does not support IP range rule, QA can ignore this case for Geneva release verification. | | |

### Custom\_App\_Function\_08

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_08 | | |
| Priority | Low | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module UDP\_port number | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule** :80 **cdp-module UDP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_09

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_09 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module UDP\_signle IP and Port Number | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1**:80 **cdp-module UDP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_10

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_10 | | |
| Priority | High | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module UDP\_IP range and Port Number | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1-192.168.255.255**:80 **cdp-module UDP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment | HM Geneva release does not support IP range rule, QA can ignore this case for Geneva release verification. | | |

### Custom\_App\_Function\_11

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_11 | | |
| Priority | High | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module HTTP\_http Host without wildcard | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule** host=www.somedomain.com **cdp-module HTTP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application rule definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_12

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_12 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module HTTP\_http Host with wildcard at beginning | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule** host=\*.somedomain.com **cdp-module HTTP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application rule definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_13

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_13 | | |
| Priority | Low | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module HTTP\_http Host with wildcard at end | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule** host=www.somedomain.\* **cdp-module HTTP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application rule definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_14

|  |  |  |  |
| --- | --- | --- | --- |
| ~~Case ID~~ | ~~Custom\_App\_Function\_14~~ | | |
| ~~Priority~~ | ~~High~~ | ~~Automation Flag~~ | ~~No~~ |
| ~~Topology to use~~ | ~~For AP~~  ~~Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM~~  ~~|~~  ~~|~~  ~~Internet~~  ~~For BR~~  ~~Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM~~  ~~|~~  ~~|~~  ~~Internet~~  ~~Or we can meger AP and BR into same one topology.~~ | | |
| ~~Description~~ | ~~Verify define a custom application with module HTTP\_http Get~~ | | |
| ~~PlatformDependence~~ | ~~AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,~~  ~~BR: BR200,BR200-WP,BRAP330,BRAP350~~  ~~Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope.~~ | | |
| ~~Pre-condition~~ | ~~AP and BR are managed by HM.~~  ~~Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.~~  ~~Create a SSID and bind it with AP’s sub-interface, which is set as access mode.~~  ~~Laptop1 connects with SSID, or with BR.~~ | | |
| ~~Test procedure~~ | 1. ~~Define a custom application:~~   **~~application identification cdp-index 19000 cdp-name qa-test~~**   1. ~~Add custom application rule:~~   **~~application identification cdp-index 19000 cdp-rule~~** ~~GET=/products/\*~~ **~~cdp-module HTTP~~**   1. ~~Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging.~~ 2. ~~Laptop accesses outside network as custom application definition.~~ 3. ~~Check IP sessions which are related with laptop access.~~ 4. ~~Change IP session to deny custom application.~~ 5. ~~Repeat step 4 again.~~ | | |
| ~~Expect result~~ | ~~Step 5. The L7 ID of associated IP sessions should be 19000~~  ~~Step 7. HiveOS denys laptop access.~~ | | |
| ~~Test Result~~ |  | | |
| ~~Comment~~ | ~~HM only supports hostname rule like “host=\*.somedomain.com” for module HTTP and HTTPS in Geneva release.~~  ~~So QA will suspend other rule types’ verification in Geneva release.~~ | | |

### Custom\_App\_Function\_15

|  |  |  |  |
| --- | --- | --- | --- |
| ~~Case ID~~ | ~~Custom\_App\_Function\_15~~ | | |
| ~~Priority~~ | ~~High~~ | ~~Automation Flag~~ | ~~No~~ |
| ~~Topology to use~~ | ~~For AP~~  ~~Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM~~  ~~|~~  ~~|~~  ~~Internet~~  ~~For BR~~  ~~Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM~~  ~~|~~  ~~|~~  ~~Internet~~  ~~Or we can meger AP and BR into same one topology.~~ | | |
| ~~Description~~ | ~~Verify define a custom application with module HTTP\_http POST~~ | | |
| ~~PlatformDependence~~ | ~~AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,~~  ~~BR: BR200,BR200-WP,BRAP330,BRAP350~~  ~~Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope.~~ | | |
| ~~Pre-condition~~ | ~~AP and BR are managed by HM.~~  ~~Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.~~  ~~Create a SSID and bind it with AP’s sub-interface, which is set as access mode.~~  ~~Laptop1 connects with SSID, or with BR.~~ | | |
| ~~Test procedure~~ | 1. ~~Define a custom application:~~   **~~application identification cdp-index 19000 cdp-name qa-test~~**   1. ~~Add custom application rule:~~   **~~application identification cdp-index 19000 cdp-rule POST=/service/upload/\*~~****~~cdp-module HTTP~~**   1. ~~Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging.~~ 2. ~~Laptop accesses outside network as custom application definition.~~ 3. ~~Check IP sessions which are related with laptop access.~~ 4. ~~Change IP session to deny custom application.~~ 5. ~~Repeat step 4 again.~~ | | |
| ~~Expect result~~ | ~~Step 5. The L7 ID of associated IP sessions should be 19000~~  ~~Step 7. HiveOS denys laptop access.~~ | | |
| ~~Test Result~~ |  | | |
| ~~Comment~~ | ~~HM only supports hostname rule like “host=\*.somedomain.com” for module HTTP and HTTPS in Geneva release.~~  ~~So QA will suspend other rule types’ verification in Geneva release.~~ | | |

### Custom\_App\_Function\_16

|  |  |  |  |
| --- | --- | --- | --- |
| ~~Case ID~~ | ~~Custom\_App\_Function\_16~~ | | |
| ~~Priority~~ | ~~High~~ | ~~Automation Flag~~ | ~~No~~ |
| ~~Topology to use~~ | ~~For AP~~  ~~Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM~~  ~~|~~  ~~|~~  ~~Internet~~  ~~For BR~~  ~~Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM~~  ~~|~~  ~~|~~  ~~Internet~~  ~~Or we can meger AP and BR into same one topology.~~ | | |
| ~~Description~~ | ~~Verify define a custom application with module HTTP\_http content-type~~ | | |
| ~~PlatformDependence~~ | ~~AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,~~  ~~BR: BR200,BR200-WP,BRAP330,BRAP350~~  ~~Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope.~~ | | |
| ~~Pre-condition~~ | ~~AP and BR are managed by HM.~~  ~~Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.~~  ~~Create a SSID and bind it with AP’s sub-interface, which is set as access mode.~~  ~~Laptop1 connects with SSID, or with BR.~~ | | |
| ~~Test procedure~~ | 1. ~~Define a custom application:~~   **~~application identification cdp-index 19000 cdp-name qa-test~~**   1. ~~Add custom application rule:~~   **~~application identification cdp-index 19000 cdp-rule content-type=audio~~****~~cdp-module HTTP~~**   1. ~~Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging.~~ 2. ~~Laptop accesses outside network as custom application definition.~~ 3. ~~Check IP sessions which are related with laptop access.~~ 4. ~~Change IP session to deny custom application.~~ 5. ~~Repeat step 4 again.~~ | | |
| ~~Expect result~~ | ~~Step 5. The L7 ID of associated IP sessions should be 19000~~  ~~Step 7. HiveOS denys laptop access.~~ | | |
| ~~Test Result~~ |  | | |
| ~~Comment~~ | ~~HM only supports hostname rule like “host=\*.somedomain.com” for module HTTP and HTTPS in Geneva release.~~  ~~So QA will suspend other rule types’ verification in Geneva release.~~ | | |

### Custom\_App\_Function\_17

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_17 | | |
| Priority | High | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module HTTPS\_host without wildcard | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule host=www.mysecureserver.com cdp-module HTTPS**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_18

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_18 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module HTTPS\_host with wildcard at beginning | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule host=\*.mysecureserver.com** **cdp-module HTTPS**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_19

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_19 | | |
| Priority | Low | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify define a custom application with module HTTPS\_host with wildcard at end | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule host=www.mysecureserver.\*** **cdp-module HTTPS**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_20

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_20 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify custom application takes precedence over any built-in L7 application. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule like:   **application identification cdp-index 19000 cdp-rule 192.168.0.1:80 cdp-module TCP**   1. Set IP policy to permit custom application but deny L7 application HTTP, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application and permit L7 application HTTP. 5. Repeat step 4 again. | | |
| Expect result | Step 5. HiveOS permits laptop access, and the L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_21

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_21 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify lower layer custom application rule takes precedence over higher layer rules. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define 2 custom applications:   **application identification cdp-index 19000 cdp-name qa-test1**  **application identification cdp-index 19001 cdp-name qa-test2**   1. Add 2 custom application rules like:   **application identification cdp-index 19000 cdp-rule host=www.somedomain.com cdp-module HTTP**  **application identification cdp-index 19001 cdp-rule 192.168.0.1-192.168.255.255 cdp-module TCP**  **Assuming IP of** [www.somedomain.com](http://www.somedomain.com) **is 192.168.0.1**   1. Set IP policy to deny the 1st custom application but permit the 2nd one, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. For this case, laptop accesses 192.168.0.1 with http session. 3. Check IP sessions which are related with laptop access. 4. Change IP session to permit the 1st custom application and deny the 2nd one. 5. Repeat step 4 again. | | |
| Expect result | Step 5. HiveOS permits laptop access, and the L7 ID of associated IP sessions should be 19001  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_22

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_22 | | |
| Priority | High | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify more specific custom application takes precedence over less specific one\_Module TCP1. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define 2 custom applications:   **application identification cdp-index 19000 cdp-name qa-test1**  **application identification cdp-index 19001 cdp-name qa-test2**   1. Add 2 custom application rules like:   **application identification cdp-index 19000 cdp-rule 192.168.0.1 cdp-module TCP**  **application identification cdp-index 19001 cdp-rule 192.168.0.1:80 cdp-module TCP**   1. Set IP policy to deny the 1st custom application but premit the 2nd one, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. For this case, laptop accesses 192.168.0.1 with http session. 3. Check IP sessions which are related with laptop access. 4. Change IP session to premit the 1st custom application and deny the 2nd one. 5. Repeat step 4 again. | | |
| Expect result | Step 5. HiveOS permits laptop access, and the L7 ID of associated IP sessions should be 19001  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_23

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_23 | | |
| Priority | Low | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify more specific custom application takes precedence over less specific one\_Module TCP2. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define 2 custom applications:   **application identification cdp-index 19000 cdp-name qa-test1**  **application identification cdp-index 19001 cdp-name qa-test2**   1. Add 2 custom application rules like:   **application identification cdp-index 19000 cdp-rule 192.168.0.1-192.168.255.255:80 cdp-module TCP**  **application identification cdp-index 19001 cdp-rule 192.168.0.1 cdp-module TCP**   1. Set IP policy to deny the 1st custom application but premit the 2nd one, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. For this case, laptop accesses 192.168.0.1 with http session. 3. Check IP sessions which are related with laptop access. 4. Change IP session to premit the 1st custom application and deny the 2nd one. 5. Repeat step 4 again. | | |
| Expect result | Step 5. HiveOS permits laptop access, and the L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment | Confirmed with vendor team, the single IP rule (with or without a port) will be picked in this case.  QA designs this case for function verification. | | |

### Custom\_App\_Function\_24

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_24 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify more specific custom application takes precedence over less specific one\_Module UDP. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define 2 custom applications:   **application identification cdp-index 19000 cdp-name qa-test1**  **application identification cdp-index 19001 cdp-name qa-test2**   1. Add 2 custom application rules like:   **application identification cdp-index 19000 cdp-rule 192.168.0.1 cdp-module UDP**  **application identification cdp-index 19001 cdp-rule 192.168.0.1:69 cdp-module UDP**   1. Set IP policy to deny the 1st custom application but premit the 2nd one, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. For this case, laptop accesses 192.168.0.1 with TFTP session. 3. Check IP sessions which are related with laptop access. 4. Change IP session to premit the 1st custom application and deny the 2nd one. 5. Repeat step 4 again. | | |
| Expect result | Step 5. HiveOS permits laptop access, and the L7 ID of associated IP sessions should be 19001  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_25

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_25 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify more specific custom application takes precedence over less specific one\_Module HTTP. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define 2 custom applications:   **application identification cdp-index 19000 cdp-name qa-test1**  **application identification cdp-index 19001 cdp-name qa-test2**   1. Add 2 custom application rules like:   **application identification cdp-index 19000 cdp-rule host=\*.somedomain.com cdp-module HTTP**  **application identification cdp-index 19001 cdp-rule host=www.somedomain.com cdp-module HTTP**   1. Set IP policy to deny the 1st custom application but premit the 2nd one, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. For this case, laptop accesses www.somedomain.com with http session. 3. Check IP sessions which are related with laptop access. 4. Change IP session to premit the 1st custom application and deny the 2nd one. 5. Repeat step 4 again. | | |
| Expect result | Step 5. HiveOS permits laptop access, and the L7 ID of associated IP sessions should be 19001  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_26

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_26 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify more specific custom application takes precedence over less specific one\_Module HTTPS. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define 2 custom applications:   **application identification cdp-index 19000 cdp-name qa-test1**  **application identification cdp-index 19001 cdp-name qa-test2**   1. Add 2 custom application rules like:   **application identification cdp-index 19000 cdp-rule host=\*.somedomain.com cdp-module HTTPS**  **application identification cdp-index 19001 cdp-rule host=www.somedomain.com cdp-module HTTPS**   1. Set IP policy to deny the 1st custom application but premit the 2nd one, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. For this case, laptop accesses www.somedomain.com with HTTPS session. 3. Check IP sessions which are related with laptop access. 4. Change IP session to premit the 1st custom application and deny the 2nd one. 5. Repeat step 4 again. | | |
| Expect result | Step 5. HiveOS permits laptop access, and the L7 ID of associated IP sessions should be 19001  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_27

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_27 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify custom applications are subject to existing AVC policy enforcements such as QoS and Firewall. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1 cdp-module TCP**   1. Set IP policy to deny custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. 3. Change IP policy to permit custom application. 4. Edit QoS classifier profile to set custom application Aerohive QoS class as 0. 5. Laptop accesses outside network as custom application definition | | |
| Expect result | Step 4. HiveOS denys laptop access.  Step 7. Check HiveOS FE/QoS syslog, HiveOS set Aerohive QoS class of laptop custom application traffic as 0. | | |
| Test Result |  | | |
| Comment |  | | |

### Custom\_App\_Function\_28

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_28 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify Statistics of custom applications will be reported to HM just as any other built-in applications, with app-id set to "cdp-index" defined by users, existing high resolution reports, low resolution reports as well as all-app activity stats are all supported\_\_Custom App is in watchlist. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1:23 cdp-module TCP**   1. Enable application reporting and add custom application 19000 and L7 built-in application Telnet into watchlist. 2. Capture live traffic at laptop 3. Laptop accesses outside network as custom application definition. 4. Check HiveOS application minutely report and hourly report 5. Check minutely and hourly part of “show application reporting app-stats”. | | |
| Expect result | Step 6. HiveOS application minutely report and hourly report should be consistent with live traffic. And all TLVs of report record should be correct.  Step 7. Minutely and hourly part of “show application reporting app-stats” should be consistent with live traffic. | | |
| Test Result |  | | |
| Comment | As interaction of HM and HiveOS, we should verify HM can get all-app activity daily stats, including custom application stats, from source of “show application reporting app-stats”.  If not verify it after step 7, we should verify it during HM test. | | |

### Custom\_App\_Function\_29

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_29 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify Statistics of custom applications will be reported to HM just as any other built-in applications, with app-id set to "cdp-index" defined by users, existing high resolution reports, low resolution reports as well as all-app activity stats are all supported\_Custom App is not in watchlist. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add custom application rule:   **application identification cdp-index 19000 cdp-rule 192.168.0.1:23 cdp-module TCP**   1. Enable application reporting. Does not add custom application 19000 into watchlist. 2. Enable original application reporting. 3. Laptop accesses outside network as custom application definition. 4. Check HiveOS application minutely report and hourly report 5. Check minutely and hourly part of “show application reporting app-stats”. | | |
| Expect result | Step 6. HiveOS application minutely report and hourly report should be consistent with live traffic. And all TLVs of report record should be correct.  Step 7. Minutely and hourly part of “show application reporting app-stats” should be consistent with live traffic. | | |
| Test Result |  | | |
| Comment | As interaction of HM and HiveOS, we should verify HM can get all-app activity daily stats, including custom application stats, from source of “show application reporting app-stats”.  If not verify it after step 7, we should verify it during HM test. | | |

### Custom\_App\_Function\_30

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_Function\_30 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use | For AP  Laptop1-----(wifi0/wifi1)AP(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  For BR  Laptop1-----(eth1/WiFi)BR(eth)\_\_\_\_\_\_Switch\_\_\_\_\_HM  |  |  Internet  Or we can meger AP and BR into same one topology. | | |
| Description | Verify more than one custom application rule can be attached to one custom application, and they form a logical OR, meaning match to any of the rules will result in the classification of the custom application. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition | AP and BR are managed by HM.  Set BR eth1 mode as bridge-802.1q, AP eth as backhaul.  Create a SSID and bind it with AP’s sub-interface, which is set as access mode.  Laptop1 connects with SSID, or with BR. | | |
| Test procedure | 1. Define a custom application:   **application identification cdp-index 19000 cdp-name qa-test**   1. Add 2 custom application rules:   **application identification cdp-index 19000 cdp-rule 192.168.0.1:2001 cdp-module TCP**  **application identification cdp-index 19000 cdp-rule 192.168.0.1:2002 cdp-module TCP**   1. Set IP policy to permit custom application, and assign IP policy to user profile to which laptop is belonging. 2. Laptop accesses outside network as custom application definition. For this case, laptop access 192.168.0.1:2001 and 192.168.0.1:2002 with TCP session. 3. Check IP sessions which are related with laptop access. 4. Change IP session to deny custom application. 5. Repeat step 4 again. | | |
| Expect result | Step 5. The L7 ID of associated IP sessions should be 19000  Step 7. HiveOS denys laptop access. | | |
| Test Result |  | | |
| Comment | In order to verify customer scenario, we’d better change custom application rule definition.  The rule in test procedure is really simple.  We may set it like following:  **application identification cdp-index 19000 cdp-rule 192.168.0.1:8080 cdp-module TCP**  **application identification cdp-index 19000 cdp-rule :4418 cdp-module TCP**  **application identification cdp-index 19000 cdp-rule :4418 cdp-module UDP**  **application identification cdp-index 19000 cdp-rule host=www.somedomain.com cdp-module HTTP**  **application identification cdp-index 19000 cdp-rule host=www.somedomain.com cdp-module HTTPS** | | |

## Stress Test Case

NA

## Longevity Test Case

NA

## Performance Test Case

NA

## Capacity Test Case

NA

## Compatibility Test Case

NA

## Negative Test Case

NA

## Other Test Case

NA

## CLI Management (Automation Status: Yes/No)

### [no] application identification cdp-index <number> (range 19000 - 19099) cdp-name <string> (up to 8 characters)

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_CLI\_01 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | CLI verification: [no] application identification cdp-index <number> (range 19000 - 19099) cdp-name <string> (up to 8 characters) | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition |  | | |
| Test procedure | 1. Define a custom application with index as 18999   application identification cdp-index 18999 cdp-name qa-test1   1. Define a custom application with index as 19000   application identification cdp-index 19000 cdp-name qa-test2   1. Define a custom application with index as 19099   application identification cdp-index 19099 cdp-name qa-test3   1. Define a custom application with index as 19100   application identification cdp-index 19100 cdp-name qa-test4   1. Define a custom application, its name length is 8 characters   application identification cdp-index 19001 cdp-name qa-test5   1. Define a custom application, its name length is 9 characters   application identification cdp-index 19002 cdp-name qa-test01   1. Delete a custom application:   no application identification cdp-index 19000 | | |
| Expect result | Step 1, 4, and 6 Fail to define a custom application.  Step 2, 3, and 5 Check running config, success to define a custom application.  Step 7. Check running config, success to remove custom application. | | |
| Test Result |  | | |
| Comment |  | | |

### [no] application identification cdp-index <number> (range 19000 - 19099) cdp-rule <string\_256> cdp-module <TCP|UDP|HTTP|HTTPS>

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_CLI\_02 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | CLI verification: (no) application identification cdp-index <number> (range 19000 - 19099) cdp-rule <string\_256> cdp-module <TCP|UDP|HTTP|HTTPS> | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition |  | | |
| Test procedure | 1. Define a custom application with index as 18999, and associates a rule with it.   application identification cdp-index 18999 cdp-name qa-test1  application identification cdp-index 18999 cdp-rule 192.168.0.1 cdp-module TCP   1. Define a custom application with index as 19000, and associates a rule with it   application identification cdp-index 19000 cdp-name qa-test2  application identification cdp-index 19000 cdp-rule 192.168.0.1-192.168.255.255 cdp-module UDP   1. Define a custom application with index as 19099, and associates a rule with it.   application identification cdp-index 19099 cdp-name qa-test3  application identification cdp-index 19099 cdp-rule 192.168.0.1:80 cdp-module TCP   1. Define a custom application with index as 19100, and associates a rule with it.   application identification cdp-index 19100 cdp-name qa-test4  application identification cdp-index 19100 cdp-rule 192.168.0.1-192.168.255.255:80 cdp-module UDP   1. Define a custom application whoes cdp-rule length is 256 characters. 2. Define a custom application whoes cdp-rule length is 257 characters. 3. Delete a custom application rule 4. Try to create a custom application rule without a valid custom application. | | |
| Expect result | Step 1, 4, 6 and 8 Fail to define a custom application rule.  Step 2, 3, and 5 Check running config, success to define a custom application rule.  Step 7. Check running config, success to remove custom application rule. | | |
| Test Result |  | | |
| Comment | A custom application rule cannot be created without a valid custom application (meaning the cdp-index has been valid before a rule can be created and attached). | | |

### Deleting a custom application will also delete all classification rules attached to it if applicable, and rules can be deleted individually

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_CLI\_03 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | CLI verification: Deleting a custom application will also delete all classification rules attached to it if applicable, and rules can be deleted individually. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition |  | | |
| Test procedure | 1. Define a custom application with index as 19000, and associates 2 rules with it   application identification cdp-index 19000 cdp-name qa-test1  application identification cdp-index 19000 cdp-rule 192.168.0.1-192.168.255.255 cdp-module UDP  application identification cdp-index 19000 cdp-rule 192.168.0.1:80 cdp-module TCP   1. Delete custom application rule   no application identification cdp-index 19000   1. Repeat step 1 again. 2. Delete a custom application rule | | |
| Expect result | Step 2 Check running config, success to delete application custom and rules associated with it.  Step 4. Check running config, success to remove a custom application rule, but application custom and another rule still exists. | | |
| Test Result |  | | |
| Comment |  | | |

### Same custom application rule (defined by the text string that goes to "cdp-rule") cannot be attached to more than one custom application

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_CLI\_04 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | CLI verification: Deleting a custom application will also delete all classification rules attached to it if applicable, and rules can be deleted individually. | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition |  | | |
| Test procedure | 1. Define 2 custom applications:   application identification cdp-index 19000 cdp-name qa-test1  application identification cdp-index 19001 cdp-name qa-test2   1. Associate same custom application rule to these 2 custom applications   application identification cdp-index 19000 cdp-rule 192.168.0.1 cdp-module TCP  application identification cdp-index 19001 cdp-rule 192.168.0.1 cdp-module TCP | | |
| Expect result | Step 2 Success to associate rule with custom application 19000  Fail to associate rule with custom application 19001 | | |
| Test Result |  | | |
| Comment |  | | |

### show application identification

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | Custom\_App\_CLI\_05 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | CLI verification: show application identification | | |
| PlatformDependence | AP: AP110,AP120,AP121,AP141,AP170,AP320,AP340,AP330,AP350,  BR: BR200,BR200-WP,BRAP330,BRAP350  Note: Draft this test case for Custom App which is new feature of Geneva. AP370/390 is out of Geneva release, so they are not in test scope. | | |
| Pre-condition |  | | |
| Test procedure | 1. Issue “show application identification” | | |
| Expect result | Display all configured custom applications and their rules | | |
| Test Result |  | | |
| Comment |  | | |

## GUI Management-HiveManager

<List HM test case or test log>

## GUI Management-HiveUI

<List HiveUI test case or test log>

## Typical issue Test Case