



# BigFix Non-Functional Requirements: Inventory and Compliance

*an HCL Product*



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# REVISION HISTORY

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Date	Version	Comments
February 1 <sup>st</sup> , 2022	10.x.1	First draft.
March 10 <sup>th</sup> , 2022	10.x.2	Added SEC-INV-06, SEC-INV-07, SEC-SCA-02, SEC-SCA-03, SEC-SCA-04, SEC-SCA-05
March 22 <sup>nd</sup> , 2022	10.x.3	PERF-INV-02 & PERF-SCA-01 added recommendation for maximum Custom Computer Properties  Added PERF-INV-03 & PERF-SCA-02 to describe network connectivity requirements.  Added SEC-INV-08: Use dedicated BigFix User
March 31 <sup>st</sup> , 2022	10.x.4	Grammar review and rewording.
June 6 <sup>th</sup> , 2022	10.x.5	Removed SEC-INV-01

Figure 1: Revision History

# 1 Introduction

Non-functional Requirements (NFRs) define the attributes of a system, versus a strict definition of the capability of the system. Two classic NFRs are performance (e.g., system utilization and throughput) and security (e.g., system protections).

This document will provide a set of NFR checklists for BigFix Inventory and Compliance. It is positioned as a “bonus pack” on top of the NFR checklist for the base BigFix Platform. The same methodology is employed for the bonus pack and will not be repeated.

Some notes on the prescribed approach follow.

- The base NFR type of PRF (for performance) and SEC (for security) will be reused.
- The base component classification of INF (infrastructure) and BIG (BigFix) will also be referenced.
- Additional component classifications of INV (Inventory) and SCA (Compliance) will be introduced.
- The reference template is provided in the below figure. Once again, this is reused from the base document.
- The checklist is meant to complement the product reference documentation and is not intended to replace it. The product documentation is still the master reference for procedures and capability.

• ID: PRF-INF-XX	TITLE	MANDATORY
Detail:		
Verification:		

Figure 2: Sample Entity Template

For the verification methods, the following resources will be referenced liberally. The associated URLs are provided in the References section, where applicable.

- The BigFix 10 Knowledge Center  
The product provided reference documentation.
- The BigFix 10 Platform NFR reference.  
The base document supporting this bonus pack.
- The BigFix 10 Common Criteria Certification Guide  
A set of reference standards for the security and deployment of BigFix.

**Note:** This document is considered a work in progress. Recommendations will be refined and updated as new BigFix releases are available. While the paper in general is considered suitable for all BigFix Version 9.5.x releases, with new content as noted, it is best oriented towards BigFix Version 10.0.x onwards.

## **2 Architecture Overview**

### **2.1 BigFix Inventory Architecture**

Additionally, to the BigFix Platform components when deploying BigFix Inventory following components are added:

1. BigFix Inventory Server
2. BigFix Inventory Database
3. BigFix Inventory VM Manager Tool
4. BigFix Inventory Scanner
5. BigFix Inventory Actions (as BigFix Content)

### **2.2 BigFix Compliance Architecture**

Additionally, to the BigFix Platform components when deploying BigFix Compliance following components are added:

1. BigFix Compliance Server
2. BigFix Compliance Database
3. BigFix Compliance Checklists (as BigFix Content)

## 3 Checklist Summary

The following tables provides the summary set of NFR checklist items for performance and security.

### 3.1 Inventory NFR Checklist

#### 3.1.1 Inventory NFR Checklist – shared checks

Below checks description can be found in [BigFix Non-Functional Requirements: A Checklist Approach](#).

	ID: Reference	Date Pre-Production	Date: Production
<input type="checkbox"/>	PRF-INF-01: Storage Queue Depth		
<input type="checkbox"/>	PRF-INF-02: Storage Latency		
<input type="checkbox"/>	PRF-INF-03: Storage Operations/Second		
<input type="checkbox"/>	PRF-INF-04: CPU Utilization		
<input type="checkbox"/>	PRF-INF-05: CPU Latency		
<input type="checkbox"/>	PRF-INF-06: CPU Privileged Time		
<input type="checkbox"/>	PRF-INF-07: Network Health		
<input type="checkbox"/>	PRF-INF-08: Network Topology		
<input type="checkbox"/>	PRF-INF-09: Memory Health		
<input type="checkbox"/>	PRF-INF-10: Hypervisor Latency		
<input type="checkbox"/>	PRF-INF-11: Hypervisor vCPU Allocation		
<input type="checkbox"/>	PRF-INF-12: Hypervisor vCPU Health		
<input type="checkbox"/>	PRF-INF-13: Hypervisor Snapshots		
<input type="checkbox"/>	PRF-INF-14: Linux IO Scheduler		
<input type="checkbox"/>	PRF-INF-15: Linux Ulimit		
<input type="checkbox"/>	PRF-INF-16: Linux Swappiness		
<input type="checkbox"/>	PRF-INF-17: Windows Port Management		
<input type="checkbox"/>	PRF-INF-18: DBMS Anti-Collocation		
<input type="checkbox"/>	PRF-INF-19: DBMS Maximum Degree of Parallelism		
<input type="checkbox"/>	PRF-INF-20: DBMS Cost Threshold for Parallelism		



<input type="checkbox"/>	SEC-INF-01: OS Currency		
<input type="checkbox"/>	SEC-INF-02: DBMS Currency		
<input type="checkbox"/>	SEC-INF-03: DBMS Force Encryption		
<input type="checkbox"/>	SEC-INF-04: DBMS Common Criteria		
<input type="checkbox"/>	SEC-INF-05: DBMS Service Protection		
<input type="checkbox"/>	SEC-INF-07: Nmap Port Scan		
<input type="checkbox"/>	SEC-INF-08: Nmap Security Scan		
<input type="checkbox"/>	SEC-BIG-09: BigFix Currency		

Figure 3: NFR Performance Checklist

### 3.1.2 Inventory NFR Checklist – specific checks

SEC-INV-01 is removed in 10.x.5

	ID: Reference	Date Pre-Production	Date: Production
<input type="checkbox"/>	SEC-INV-02: LDAP/SAML Integration		
<input type="checkbox"/>	SEC-INV-03: Password Complexity		
<input type="checkbox"/>	SEC-INV-04: Account Locking		
<input type="checkbox"/>	SEC-INV-05: VM Manger Tool KeyStore Password		
<input type="checkbox"/>	SEC-INV-06: Use trusted SSL certificate		
<input type="checkbox"/>	SEC-INV-07: Session Timeout		
<input type="checkbox"/>	SEC-INV-08: Use dedicated BigFix User		
<input type="checkbox"/>	PERF-INV-01: Number of Reporting Computer Groups		
<input type="checkbox"/>	PERF-INV-02: Number of Custom Computer Properties		
<input type="checkbox"/>	PERF-INV-03: Network Topology		

## 3.2 Compliance NFR Checklist

### 3.2.1 Compliance NFR Checklist – shared checks

	ID: Reference	Date Pre-Production	Date: Production
<input type="checkbox"/>	PRF-INF-01: Storage Queue Depth		
<input type="checkbox"/>	PRF-INF-02: Storage Latency		
<input type="checkbox"/>	PRF-INF-03: Storage Operations/Second		
<input type="checkbox"/>	PRF-INF-04: CPU Utilization		
<input type="checkbox"/>	PRF-INF-05: CPU Latency		
<input type="checkbox"/>	PRF-INF-06: CPU Privileged Time		
<input type="checkbox"/>	PRF-INF-07: Network Health		
<input type="checkbox"/>	PRF-INF-08: Network Topology		
<input type="checkbox"/>	PRF-INF-09: Memory Health		
<input type="checkbox"/>	PRF-INF-10: Hypervisor Latency		
<input type="checkbox"/>	PRF-INF-11: Hypervisor vCPU Allocation		
<input type="checkbox"/>	PRF-INF-12: Hypervisor vCPU Health		
<input type="checkbox"/>	PRF-INF-13: Hypervisor Snapshots		
<input type="checkbox"/>	PRF-INF-14: Linux IO Scheduler		
<input type="checkbox"/>	PRF-INF-15: Linux Ulimit		
<input type="checkbox"/>	PRF-INF-16: Linux Swappiness		
<input type="checkbox"/>	PRF-INF-17: Windows Port Management		
<input type="checkbox"/>	PRF-INF-18: DBMS Anti-Collocation		
<input type="checkbox"/>	PRF-INF-19: DBMS Maximum Degree of Parallelism		
<input type="checkbox"/>	PRF-INF-20: DBMS Cost Threshold for Parallelism		
<input type="checkbox"/>	SEC-INF-01: OS Currency		
<input type="checkbox"/>	SEC-INF-02: DBMS Currency		
<input type="checkbox"/>	SEC-INF-03: DBMS Force Encryption		
<input type="checkbox"/>	SEC-INF-04: DBMS Common Criteria		

<input type="checkbox"/>	SEC-INF-05: DBMS Service Protection		
<input type="checkbox"/>	SEC-INF-07: Nmap Port Scan		
<input type="checkbox"/>	SEC-INF-08: Nmap Security Scan		
<input type="checkbox"/>	SEC-BIG-09: BigFix Currency		

### 3.2.2 Compliance NFR Checklist – specific checks

	ID: Reference	Date Pre-Production	Date: Production
<input type="checkbox"/>	SEC-SCA-01: LDAP/SAML Integration		
<input type="checkbox"/>	SEC-SCA-02: Use trusted SSL certificate		
<input type="checkbox"/>	SEC-SCA-03: Session Timeout		
<input type="checkbox"/>	SEC-SCA-04: Password Complexity		
<input type="checkbox"/>	SEC-SCA-05: Account Locking		
<input type="checkbox"/>	PERF-SCA-01: Number of Custom Computer Properties		
<input type="checkbox"/>	PERF-SCA-02: Network Topology		

Figure 4: NFR Security Checklist

## 4 Checklist Detail: Inventory

The BigFix Inventory detail items will be provided.

SEC-INV-01 has been removed in 10.x.5 version.

### 4.1 SEC-INV-02: LDAP/SAML Integration

ID: SEC-INV-02	LDAP/SAML Integration	Recommended
Detail: Authentication for BigFix Inventory should be secured through either a Lightweight Directory Access Protocol (LDAP) server or SAML V2.0 authentication.		
<ul style="list-style-type: none"> <li>Reference(s):  <a href="#">Authenticating users with LDAP (hcltechsw.com)</a>  <a href="#">Configuring and enabling single sign-on (SSO) (hcltechsw.com)</a> </li> <li>Procedure: Enablement based on enterprise directory standards.</li> </ul>		

### 4.2 SEC-INV-03: Password Complexity

ID: SEC-INV-03	Password Complexity	Recommended
Detail: Password rules and associated parameters should be reviewed and adjusted to conform to your organization's policies.		
<a href="#">Configuring security policy for user passwords (hcltechsw.com)</a>		

### 4.3 SEC-INV-04: Account Locking

ID: SEC-INV-04	Account Locking	Recommended
Detail: Account Locking rules should be reviewed and adjusted to conform to your organization's policies.		
<a href="#">Configuring user account lockout (hcltechsw.com)</a>		

### 4.4 SEC-INV-05: VM Manger Tool KeyStore Password

ID: SEC-INV-05	VM Manger Tool KeyStore Password	Recommended
Detail: VM Manager Tool is installed with a default keystore password. This password should be changed to a new password that conforms to your organization's policies.		
<a href="#">Improving security of storing VM manager passwords (hcltechsw.com)</a>		

## 4.5 SEC-INV-06: Use trusted SSL certificate

ID: SEC-INV-06	Use trusted SSL certificate	Recommended
Detail: BigFix Inventory is delivered with a self-signed certificate. This certificate should be replaced with a trusted SSL certificate.		
<a href="#">Configuring secure communication (hcltechsw.com)</a>		

## 4.6 SEC-INV-07: Session Timeout

ID: SEC-INV-07	Session Timeout	Recommended
Detail: The default session timeout for BigFix Inventory is set to one hour. This should be adjusted to conform to your organization's policies.		
<a href="#">Setting session timeout (hcltechsw.com)</a>		

## 4.7 SEC-INV-08: Use dedicated BigFix User

ID: SEC-INV-8	Use dedicated BigFix User	Mandatory
Detail: Create a dedicated BigFix Inventory user with the following attributes: <ul style="list-style-type: none"> <li>Assigned <b>Reader</b> access to the BigFix Inventory v10 site</li> <li>Administered Computers includes all computers that will be managed by BigFix Inventory, plus the BES Root Server</li> <li>Has the following permissions: Can use REST API, Can use Console, Custom Content, Can Create Actions</li> </ul> <p>** This user will be used to configure the DataSource for BigFix Inventory.</p>		
<a href="#">Performing initial configuration on Windows (hcltechsw.com)</a> <a href="#">Performing initial configuration on Linux (hcltechsw.com)</a>		

## 4.8 PERF-INV-01: Number of Reporting Computer Groups

ID: PERF-INV-01	Number of Reporting Computer Groups	Recommended
Detail: Number of computer groups impacts the duration of the Data Import. <ol style="list-style-type: none"> <li>1) Disable <b>license usage calculations</b> for groups which will not be used for license usage reports</li> <li>2) Limit <b>Aggregate last X days</b> to 1 day when only current use is required It is possible to generate on-demand reports covering any custom time period. <a href="#">Creating snapshots of license metric utilization for auditing purposes (hcltechsw.com)</a></li> </ol>		

3) Limit the number of computer groups to 20 if possible
<a href="http://hcltechsw.com">Setting up computer groups (hcltechsw.com)</a>

## 4.9 PERF-INV-02: Number of Custom Computer Properties

ID: PERF-INV-02	Number of Custom Computer Properties	Recommended
Detail: Number of custom computer properties impacts the duration of the Data Import.		
<ol style="list-style-type: none"> <li>1) Limit the number of computer properties to maximum of 20</li> <li>2) Avoid frequently changing fields. Last Report / Last Seen is already available.</li> <li>3) Avoid large fields. Limit is 1MB, however best practice is to only create new properties that would be displayed in inventory reports.</li> </ol>		
<a href="http://hcltechsw.com">Setting up computer properties (hcltechsw.com)</a>		

## 4.10 PERF-INV-03: Network Topology

ID: PERF-INV-03	Network Topology	Recommended
Follow the recommendations in <b>PRF-INF-08: Network Topology</b> for BigFix Inventory Server connectivity to:		
<ul style="list-style-type: none"> <li>• BigFix Inventory Database</li> <li>• BigFix Platform Server</li> <li>• BigFix Platform Database</li> </ul>		
<a href="#">BigFix Non-Functional Requirements: A Checklist Approach.</a>		

## 5 Checklist Detail: Compliance

The BigFix Remote Control detail items will be provided.

- **add some recommendation around management of active sites and site subscriptions**
- **Was the above bullet left here by accident?**

### 5.1 SEC-SCA-01: LDAP/SAML Integration

ID: SEC-INV-02	LDAP/SAML Integration	Recommended
Detail: Authentication for BigFix Compliance should be secured through either a Lightweight Directory Access Protocol (LDAP) server or SAML V2.0 authentication.		
<ul style="list-style-type: none"> <li>• Reference(s):  <a href="#">Directory Servers (hcltechsw.com)</a>  <a href="#">Single Sign-On Settings (hcltechsw.com)</a> </li> <li>• Procedure: Enablement based on enterprise directory standards.</li> </ul>		

### 5.2 SEC-SCA-02: Use trusted SSL certificate

ID: SEC-SCA-02	Use trusted SSL certificate	Recommended
Detail: BigFix Compliance Analytics Server is delivered with a self-signed certificate. This certificate should be replaced with a trusted SSL certificate.		
<a href="#">Server Settings (hcltechsw.com)</a>		

### 5.3 SEC-SCA-03: Session Timeout

ID: SEC-SCA-03	Session Timeout	Recommended
Detail: The default session timeout for the BigFix Compliance Analytics server is set to one hour. This should be adjusted to conform to your organization's policies.		
<a href="#">Session Settings (hcltechsw.com)</a>		

### 5.4 SEC-SCA-04: Password Complexity

ID: SEC-SCA-04	Password Complexity	Recommended
Detail: Password rules and associated parameters should be reviewed and adjusted to conform to your organization's policies.		

[Session Settings \(hcltechsw.com\)](http://hcltechsw.com)

## 5.5 SEC-SCA-05: Account Locking

ID: SEC-SCA-05	Account Locking	Recommended
Detail: Account Locking rules should be reviewed and adjusted to conform to your organization's policies.		
<a href="http://hcltechsw.com">Session Settings (hcltechsw.com)</a>		

## 5.6 PERF-SCA-01: Number of Custom Computer Properties

JUST CHECKING – THIS ONE APPLIES TO SCA? IT REFERENCES INVENTORY REPORTS

ID: PERF-SCA-01	Number of Custom Computer Properties	Recommended
Detail: Number of custom computer properties impacts the duration of the Data Import.		
<ol style="list-style-type: none"> <li>1) Limit the number of computer properties to maximum of 20</li> <li>2) Avoid frequently changing fields. Last Report / Last Seen is already available.</li> <li>3) Avoid large fields. Limit is 1MB, however best practice is to only create new properties that would be displayed in inventory reports.</li> </ol>		
<a href="http://hcltechsw.com">Computer Properties (hcltechsw.com)</a>		

## 5.7 PERF-SCA-02: Network Topology

ID: PERF-SCA-02	Network Topology	Recommended
Follow the recommendations in <b>PRF-INF-08: Network Topology</b> for BigFix Compliance Server connectivity to:		
<ul style="list-style-type: none"> <li>• BigFix Compliance Database</li> <li>• BigFix Platform Server</li> <li>• BigFix Platform Database</li> </ul>		
<a href="#">BigFix Non-Functional Requirements: A Checklist Approach.</a>		



# REFERENCES

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[BigFix Knowledge Center](#)

[BigFix Resource Center](#)

[BigFix Capacity Planning Guide](#)

[BigFix Maintenance Guide](#)

[MX Performance Toolkit for BigFix](#)

[Blog: BigFix 10 Capacity Planning](#)

[Blog: BigFix 10 Infrastructure Monitoring](#)

[Blog: BigFix FillDB Performance](#)

[Blog: BigFix MLE Enablement](#)

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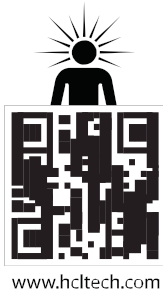
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