FBA HBSS Test Summary

FBA 3.3.2 AND ABOVE

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THIS ITEM IS SUBJECT TO THE EXPORT CONTROL LAWS OF THE U.S. GOVERNMENT. EXPORT, RE-EXPORT OR TRANSFER CONTRARY TO THOSE LAWS IS PROHIBITED.

Document Conventions

The following typographic conventions are used in this guide:

Typography

Format	Description
Bold font	Used to identify Graphical User Interface (GUI) elements, buttons, fields, and list labels. Example: Type your IP address in the **ip address** field and click **OK**.
Italic font	Used to identify book titles or words that require emphasis. Example: Read the *User's Guide*.
Monospaced font	Used to identify names of commands, files, and directories. Example: Use the `ls -a` command to list all files.
Monospaced bold font	When inline, this is used to identify text that users need to type. Example: Type **`SYSTEMHIGH`** in the **Network** field.
Shaded monospaced font	Used to identify screen output. Example: A network device must exist; otherwise, the following warning message displays `Warning: device [DEVICE] is not a valid network device`
Shaded monospaced bold font	Used to identify text that users need to type. Example: Specify your network configuration. Type: **`$ sudo ip addr show`**

This guide makes use of the following elements:

Note
Contains important information, suggestions or references to material covered elsewhere in the guide.

Tip
Provides helpful suggestions or alternative methods to perform a task.

Warning
Alerts you to an activity that may cause permanent loss of data or product functionality. Failure to heed a warning could result in permanent consequences to your data or system.

Caution
Alerts you to anything that could result in a security breach or temporary loss of data or product functionality. You may also see a caution when a particular action may have an adverse impact that is not readily apparent.

Important
Highlights critical tasks, information or actions that may be damaging to your system or security.

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Introduction

Forcepoint Behavior Analytics (FBA) was fully tested with the most current packages available for the McAfee® Host Based Security System (HBSS) suite.

Testing included the following policies: Endpoint Security Common, Endpoint Security Firewall, Endpoint Security Threat Prevention, McAfee Agent, and Policy Auditor Agent. Refer to the "Policy Set" section on the next page for details.

In addition, the Endpoint Security Firewall was enabled and tested with custom firewall policies put in place for the specifically used ports within the FBA system.

Caution

Testing was performed using a supported configuration policy set. Do not deviate from this policy set. Refer to the "Policy Set" section on the next page for the policies included in the policy set.

Test Summary

FBA functioned as expected with some directory and process exclusions. Refer to the "FBA Ports and Exclusions" section on the next page for details.

STIG Checklists

The following Security Technical Implementation Guide (STIG) checklists were used in the test:

Note

To download the STIG checklists, click:

https://cdn.websense.com/downloads/files/UEBA/v3.3.2/hbss/FBA-HBSS-Stig-Checklist.zip

Note

The latest STIGViewer version is 2.10. The checklists list below are in the STIGViewer 2.7.1 format.

- HBSS McAfree STIG v5R3
- HBSS Policy Auditor V4R7
- ENS 10 STIG V2R4

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Policy Set

The following policies are included in the policy set:

Note

To download the FBA HBSS Policies file, click:

https://cdn.websense.com/downloads/files/UEBA/v3.3.2/hbss/FBA-HBSS-Policies.zip

Table 1. Policy Set Contents

Policy Category	Policy Filename
Options	`Policies_For_Endpoint_Security_Common.xml`
Firewall	`Policies_For_Endpoint_Security_Firewall.xml`
On-Access Scan	`Policies_For_Endpoint_Security_Threat_Prevention.xml`
General	`Policies_For_McAfree_Agent.xml`
General	`Policies_For_Policy_Auditor_Agent.xml`

FBA Ports and Exclusions

The following tables list ports and exclusions labeled per system.

Note

To download the FBA Ports and Exclusions spreadsheet, click:

http://cdn.websense.com/downloads/files/UEBA/v3.3.2/hbss/FBA-Ports-And-Exclusions.xlsx

PORTS

Table 2. FBA Ports

Server	Protocol	Port	Application	Direction	Information
api	tcp	22	ssh	in	
api	tcp	25	smtp	in	
api	tcp	9000	api	in	Port for other services to access FBA Application Programming Interface (API)
api	tcp	9001	api	in	Port for other services to access FBA API
api	tcp	22	ssh	out	
api	tcp	2003	collectd	out	Collectd metric reporting port
api	tcp	5671	rabbit	out	Port for API service to connect to Rabbit

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Server	Protocol	Port	Application	Direction	Information
api	tcp	9093	kafka	out	Added by Development team
api	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
api	tcp	9300	es	out	Access elasticsearch data
api	udp	123	ntp	in	
api	udp	323	chronyd	in	
api	udp	123	ntp	out	
cont	tcp	22	ssh	in	
cont	tcp	25	smtp	in	
cont	tcp	9700	cont	in	Allows access to content service API
cont	tcp	9701	cont	in	Allows access to content service API
cont	tcp	22	ssh	out	
cont	tcp	2003	collectd	out	Collectd metric reporting port
cont	tcp	5671	rabbit	out	Make requests to rabbit API
cont	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
cont	tcp	9300	es	out	Access elasticsearch data
cont	udp	123	ntp	in	
cont	udp	323	chronyd	in	
cont	udp	123	ntp	out	
conv	tcp	111	rpc	in	
conv	tcp	22	ssh	in	
conv	tcp	25	smtp	in	
conv	tcp	9080	conv	in	Allows access to conversion service API
conv	tcp	9081	conv	in	Allows access to conversion service API
conv	tcp	22	ssh	out	
conv	tcp	2003	collectd	out	Collectd metric reporting port
conv	tcp	2049	nfs	out	
conv	tcp	5671	rabbit	out	Make requests to rabbit API
conv	tcp	9200	es-filebeat	out	Reports back elasticsearch log data

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Server	Protocol	Port	Application	Direction	Information
conv	tcp	9300	es	out	Access elasticsearch data
conv	udp	111	rpc	in	
conv	udp	123	ntp	in	
conv	udp	323	chronyd	in	
conv	udp	123	ntp	out	
jenkins	tcp	22	ssh	in	
jenkins	tcp	25	smtp	in	
jenkins	tcp	111	rpc	in	
jenkins	tcp	80	jenkins	in	Jenkins yum repo access
jenkins	tcp	8443	jenkins	in	Allows access to Jenkins UI
jenkins	tcp	8300-8302	consul	in	Credential storage
jenkins	tcp	8200-8201	vault	in	Credential storage
jenkins	tcp	8600	consul	in	Credential storage
jenkins	tcp	22	ssh	out	LOOPBACK
jenkins	tcp	2003	collectd	out	Collectd metric reporting port
jenkins	tcp	2049	nfs	out	
jenkins	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
jenkins	tcp	8500	vault	out	Vault UI
jenkins	tcp	8300	consul	out	Credential storage
jenkins	tcp	9093	kafka	out	Accessing kafka queue info via Jenkins jobs
jenkins	udp	111	rpc	in	
jenkins	udp	123	ntp	in	
jenkins	udp	323	chronyd	in	
jenkins	udp	8600	consul	in	Allow credential storage requests
jenkins	udp	8301-8302	consul	in	Allow credential storage requests
jenkins	udp	123	ntp	out	
kafka	tcp	22	ssh	in	

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Server	Protocol	Port	Application	Direction	Information
kafka	tcp	25	smtp	in	
kafka	tcp	9093	kafka	in	Allows API access
kafka	tcp	2181	zookeeper	in	LOOPBACK
kafka	tcp	33833		in	
kafka	tcp	33854		in	
kafka	tcp	22	ssh	out	
kafka	tcp	2003	collectd	out	Collectd metric reporting port
kafka	tcp	2181	zookeeper	out	kafka data synchronization
kafka	udp	123	ntp	in	
kafka	udp	323	chronyd	in	
kafka	udp	123	ntp	out	
es	tcp	22	ssh	in	
es	tcp	25	smtp	in	
es	tcp	111	rpc	in	
es	tcp	5601	kibana	in	Server metric reporting
es	tcp	9200	es	in	Access elasticsearch data
es	tcp	9300	es	in	Access elasticsearch data
es	tcp	9600	es	in	Access elasticsearch data
es	tcp	22	ssh	out	
es	tcp	2003	collectd	out	Collectd metric reporting port
es	tcp	5671	rabbit	out	Reports back to rabbit info requests
es	tcp	9200	es-Filebeat	out	Reports back elasticsearch log data
es	tcp	9300	es	out	Access elasticsearch data
es	udp	123	ntp	in	
es	udp	111	rpc	in	
es	udp	323	chronyd	in	
es	udp	123	ntp	out	
mds	tcp	22	ssh	in	

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Server	Protocol	Port	Application	Direction	Information
mds	tcp	25	smtp	in	
mds	tcp	111	rpc	in	
mds	tcp	8080	mds	in	Master Data Service primary port
mds	tcp	8081	mds	in	Master Data Service primary port
mds	tcp	22	ssh	out	
mds	tcp	2003	collectd	out	Collectd metric reporting port
mds	tcp	2049	nfs	out	
mds	tcp	5432	postgres	out	pgsql database access
mds	tcp	6379	redis	out	Access to redis API
mds	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
mds	tcp	9300	es	out	Access elasticsearch data
mds	udp	123	ntp	in	
mds	udp	111	rpc	in	
mds	udp	323	chronyd	in	
mds	udp	123	ntp	out	
mon	tcp	22	ssh	in	
mon	tcp	25	smtp	in	
mon	tcp	5601	kibana	in	
mon	tcp	80	grafana	in	Server metric UI
mon	tcp	2003	carbon	in	Server metric reporting API
mon	tcp	2004	carbon	in	Server metric reporting API
mon	tcp	8000	graphite	in	Server metric reporting API
mon	tcp	3000	grafana	in	Server metric reporting API
mon	tcp	7002	carbon	in	Server metric reporting API
mon	tcp	443	grafana	in	Server metric reporting API
mon	tcp	9600	es	in	Access elasticsearch data
mon	tcp	9200	es	in	Access elasticsearch data
mon	tcp	9300	es	in	Access elasticsearch data
mon	tcp	22	ssh	out	

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Server	Protocol	Port	Application	Direction	Information
mon	tcp	2003	collectd	out	Collectd metric reporting port
mon	tcp	5671	rabbit	out	Report information back to rabbit
mon	tcp	7002	carbon	out	Server metric reporting API
mon	tcp	8000	graphite	out	Server metric reporting API
mon	tcp	9093	kafka	out	Report information back to Kafka
mon	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
mon	udp	123	ntp	in	
mon	udp	323	chronyd	in	
mon	udp	123	ntp	out	
nifi	tcp	22	ssh	in	
nifi	tcp	25	smtp	in	
nifi	tcp	111	rpc	in	
nifi	tcp	80	nifi	in	Nifi UI/API
nifi	tcp	443	nifi	in	Nifi Proxy port
nifi	tcp	8080	nifi	in	Nifi UI/API
nifi	tcp	22	ssh	out	
nifi	tcp	1521	UAM DB	out	
nifi	tcp	2003	collectd	out	Collectd metric reporting port
nifi	tcp	2049	nfs	out	
nifi	tcp	9000	API	out	Return data to API
nifi	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
nifi	tcp	389	ldap	out	
nifi	tcp	636	ldaps	out	
nifi	udp	123	ntp	in	
nifi	udp	323	chronyd	in	
nifi	udp	111	rpc	in	
nifi	udp	20622	may be processor	in	
nifi	udp	10250	may be processor	in	

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Server	Protocol	Port	Application	Direction	Information
nifi	udp	123		out	
nifi	udp	389	ldap	out	
postgres	tcp	22	ssh	in	
postgres	tcp	25	smtp	in	
postgres	tcp	5432	postgres	in	Allow API requests from pgsql service
postgres	tcp	111	rpc	in	
postgres	tcp	33512		in	Likely unneeded
postgres	tcp	48332		in	
postgres	tcp	22	ssh	out	
postgres	tcp	2003	collectd	out	Collectd metric reporting port
postgres	tcp	5432	postgres	out	Allow API requests from pgsql service
postgres	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
postgres	udp	123	ntp	in	
postgres	udp	323	chronyd	in	
postgres	udp	111	rpc	in	
postgres	udp	726		in	
postgres	udp	858		in	
postgres	udp	42125		in	
postgres	udp	43247		in	
postgres	tcp	123	ntp	out	
qw	tcp	22	ssh	in	
qw	tcp	25	smtp	in	
qw	tcp	9090	qw	in	FBA Queue Worker API
qw	tcp	9091	qw	in	FBA Queue Worker API
qw	tcp	22	ssh	out	
qw	tcp	2003	collectd	out	Collectd metric reporting port
qw	tcp	5432	postgres	out	Make requests to pgsql databases
qw	tcp	5671	rabbit	out	Communicate with rabbit server

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Server	Protocol	Port	Application	Direction	Information
qw	tcp	9093	kafka	out	Communicate with kafka service
qw	tcp	9300	es	out	Access elasticsearch data
qw	tcp	9501	rose	out	Communicate with FBA Rose service
qw	udp	123	ntp	in	
qw	udp	323	chronyd	in	
qw	udp	123	ntp	out	
rabbit	tcp	22	ssh	in	
rabbit	tcp	25	smtp	in	
rabbit	tcp	4369	rabbit	in	Rabbit API
rabbit	tcp	5671	rabbit	in	Rabbit API
rabbit	tcp	15672	rabbit ui	in	Rabbit UI
rabbit	tcp	25672	rabbit	in	Rabbit UI
rabbit	tcp	22	ssh	out	
rabbit	tcp	2003	collectd	out	Collectd metric reporting port
rabbit	tcp	4369	rabbit	out	Rabbit API
rabbit	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
rabbit	udp	123	ntp	in	
rabbit	udp	323	chronyd	in	
rabbit	udp	123	ntp	out	
redis	tcp	22	ssh	in	
redis	tcp	25	smtp	in	
redis	tcp	6379	redis	in	Redis API
redis	tcp	22	ssh	out	
redis	tcp	2003	collectd	out	Collectd metric reporting port
redis	tcp	6379	redis	out	Redis API
redis	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
redis	udp	123	ntp	in	
redis	udp	323	chronyd	in	

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Server	Protocol	Port	Application	Direction	Information
redis	upd	123	ntp	out	
rose	tcp	22	ssh	in	
rose	tcp	25	smtp	in	
rose	tcp	9500	rose	in	FBA Rose API
rose	tcp	9501	rose	in	FBA Rose API
rose	tcp	22	ssh	out	
rose	tcp	2003	collectd	out	Collectd metric reporting port
rose	tcp	5432	postgres	out	Communicate with Rose database on PG
rose	tcp	9090	qw	out	Communicate with queue worker service
rose	tcp	9093	kafka	out	Communicate with kafka service
rose	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
rose	tcp	9300	es	out	Communicate with elasticsearch service
rose	udp	123	ntp	in	
rose	udp	323	chronyd	in	
rose	udp	123	ntp	out	
ui	tcp	22	ssh	in	
ui	tcp	25	smtp	in	
ui	tcp	80	http	in	UI for FBA
ui	tcp	443	https	in	Secure port for UI for FBA
ui	tcp	111	rpc	in	
ui	tcp	22	ssh	out	
ui	tcp	2003	collectd	out	Collectd metric reporting port
ui	tcp	2049	nfs	out	
ui	tcp	5432	postgres	out	Communication with user database on PG
ui	tcp	6379	redis	out	Communication with redis
ui	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
ui	udp	123	ntp	in	
ui	udp	111	rpc	in	

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Server	Protocol	Port	Application	Direction	Information
ui	udp	323	chronyd	in	
ui	udp	123	ntp	out	
ups	tcp	22	ssh	in	
ups	tcp	25	smtp	in	
ups	tcp	9600	ups	in	UPS service API
ups	tcp	9601	ups	in	UPS service API
ups	tcp	22	ssh	out	
ups	tcp	2003	collectd	out	Collectd metric reporting port
ups	tcp	9093	kafka	out	Communication with kafka service
ups	tcp	9200	es-filebeat	out	Reports back elasticsearch log data
ups	udp	123	ntp	in	
ups	udp	323	chronyd	in	
ups	udp	123	ntp	out	

EXCLUSIONS

Table 3. Exclusions

Whitelist	Type	Explanation
/etc/ro-api/*	Directory	Config directory for FBA API service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/var/log/ro-api/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/run/ro-api/*	Directory	Runtime information storage directory for FBA API service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/usr/lib/java/ro-api/*	Directory	Contains the Java Archive file used by the FBA API service. The jar file(s) here contain many java class files necessary to run the FBA API service.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.

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Whitelist	Type	Explanation
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/sbin/ro-api	Process	Binary file for FBA API service Service runtime engine binary. It is critical for this to run for the API service to operate.
/etc/ro-content/*	Directory	Config directory for FBA Content service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/run/ro-content/*	Directory	Runtime information storage directory for FBA Content service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/usr/lib/java/ro-content/*	Directory	Contains the Java Archive file used by the FBA Content service. The jar file(s) here contain many java class files necessary to run the FBA Content service.
/var/log/ro-content/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/sbin/ro-content	Process	Binary file for FBA Content service Service runtime engine binary. It is critical for this to run for the Content service to operate.
/etc/ro-conv/*	Directory	Config directory for FBA Conversion service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/run/ro-conv/*	Directory	Runtime information storage directory for FBA Conversion service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/usr/lib/java/ro-conv/*	Directory	Contains the Java Archive file used by the FBA Conversion service. The jar file(s) here contain many java class files necessary to run the FBA Conversion service.

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Whitelist	Type	Explanation
/var/log/ro-conv/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/usr/sbin/ro-conv	Process	Binary file for FBA Conversion service Service runtime engine binary. It is critical for this to run for the API service to operate.
/data/nfs/attachments/*	Directory	Mounted primary storage directory for Conversion Service. Because of the data stored in these files and the need for accessibility, this is location is extremely critical to FBA data and reporting.
/data/nfs/natives/*	Directory	Mounted primary storage directory for Conversion Service. Because of the data stored in these files and the need for accessibility, this is location is extremely critical to FBA data and reporting.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/sysconfig/ro-conv	Process	System configuration files for conversion service optimization. Sets the TIKA_CONFIG value.
/etc/elasticsearch/*	Directory	Config directory for FBA ElasticSearch service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/data/elasticsearch/*	Directory	Contains the data stored in ElasticSearch. Vendor best practices to exclude. FBA depends on ES data as a base critical function. This location is critical to FBA performance and functionality.
/data/nfs/snapshots/*	Directory	Contains the ElasticSearch snapshot data. Vendor best practices to exclude. FBA depends on ES data as a base critical function. This directory is critical to maintaining backups and restoring ES data from backup when necessary.
/etc/logstash/*	Directory	Config directory for FBA Logstash service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/kibana/*	Directory	Config directory for FBA Kibana service. Contains kibana.yml, a file critical for maintaining Kibana service and FBA stack integrity through certificates and configuration variables.
/usr/share/logstash/*	Directory	Home directory of Logstash installation. Contains base logstash installation files, modules, plugins, etc. Critical for logstash functionality.

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Whitelist	Type	Explanation
/usr/share/kibana/*	Directory	Home directory of Kibana installation. Contains base kibana installation files, modules, plugins, etc. Critical for Kibana functionality.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/var/lib/jenkins/*	Directory	Default jenkins home/working directory. Contains the Jenkins installation and associated users, jobs, configs, etc. Jenkins is responsible for maintaining many systems and services within the FBA stack. This is a critical location because of that.
/usr/share/ro-ansible/*	Directory	Directory full of custom FBA-centric jenkins jobs. Because the stack maintaining jenkins jobs pull data/jobs from this location, it is a critical location for FBA integrity and functionality.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/ansible/*	Directory	Config directory for ansible service. Files in this directory set various keystores, variables, and client connection information. These files are critical for Jenkins to be able to properly run jobs and is highly critical.
/etc/jenkins/*	Directory	Config directory for Jenkins Service. Contains keystore and truststore information critical to the functionality of the Jenkins service.
/etc/vault/*	Directory	Config directory for FBA Vault Service. Vault is the primary credential/certificate manager used by FBA. Stack node inter-connectivity depends on the functionality of Vault, making this a critical directory.
/etc/consul/*	Directory	Config directory for FBA Consul Service. Consul is used as the data storage backend for Vault. Because of this, it is a critical service and this is a critical directory.

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/usr/lib/jenkins/*	Directory	Directory holding jenkins related binaries in the jenkins.war file. The binaries and libraries associated with Jenkins are critical to its use, so this is a critical directory.
/usr/share/kafka*	Directory	Kafka-manager configuration directory. Kafka-manager maintains kafka state and provides a UI interface. It is necessary as a running piece of Kafka.
/usr/lib/kafka/*	Directory	Installation Binary and config directory for kafka. Links to /var/log/ and /etc/kafka/, directories referenced by other services and APIs. Because it has critical files for those locations, this directory is critical.
/home/kafka/*	Directory	Kafka user home directory. Created during Kafka installation and used by Kafka user, the owner of the service and kafka data directory.
/var/lib/kafka/*	Directory	Contains logs for kafka data state. The logs in this directory are used by the kafka service itself for maintain data state and integrity. It is a critical part of the data ingestion pipeline.
/var/log/kafka/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/etc/kafka/*	Directory	Config directory for FBA Kafka service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintining the FBA stack integrity and inter-node communication.
/data/kafka/*	Directory	Data directory for Kafka service Contains relevant and in use data for the Kafka service. FBA performance depends highly on this directory being available, so it is critical.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.

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Whitelist	Type	Explanation
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/etc/ro-mds/*	Directory	Config directory for FBA Master Data Service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintining the FBA stack integrity and inter-node communication.
/var/log/ro-mds/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/run/ro-mds/*	Directory	Runtime information storage directory for FBA Master Data Service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/usr/lib/java/ro-mds/*	Directory	Contains the Java Archive file used by the FBA MDS service. The jar file(s) here contain many java class files necessary to run the FBA MDS service.
/usr/sbin/ro-mds	Process	Binary file for FBA MDS service Service runtime engine binary. It is critical for this to run for the API service to operate.
/etc/elasticsearch/*	Directory	Config directory for FBA ElasticSearch service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/data/elasticsearch/*	Directory	Contains the data stored in ElasticSearch. Vendor best practices to exclude. FBA depends on ES data as a base critical function. This location is critical to FBA performance and functionality.
/data/nfs/snapshots/*	Directory	Contains the ElasticSearch snapshot data. Vendor best practices to exclude. FBA depends on ES data as a base critical function. This directory is critical to maintaining backups and restoring ES data from backup when necessary.
/etc/logstash/*	Directory	Config directory for FBA Logstash service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/kibana/*	Directory	Config directory for FBA Kibana service. Contains kibana.yml, a file critical for maintaining Kibana service and FBA stack integrity through certificates and configuration variables.

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Whitelist	Type	Explanation
/usr/share/logstash/*	Directory	Home directory of Logstash installation. Contains base logstash installation files, modules, plugins, etc. Critical for logstash functionality.
/usr/share/kibana/*	Directory	Home directory of Kibana installation. Contains base kibana installation files, modules, plugins, etc. Critical for Kibana functionality.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/etc/carbon/*	Directory	Config directory for Carbon service. Contains service configuration, storage aggregation configuration, and storage schema configurations critical to Carbon.
/var/lib/carbon/*	Directory	Data directory for Carbon service. Because Carbon writes to this directory, it is considered critical to the FBA stack monitoring server and system.
/var/log/carbon/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.

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/data/ro-nifi/*	Directory	Main data directory for FBA Nifi service. Contains the installation data, configuration resources, and various repository information for ro-nifi service. As such, this directory is critical for data ingestion and manipulation.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/usr/pgsql*	Directory	Postgres Database binary and runtime directory. Postgres is critical to FBA data storage and coordination. As one of the backends of FBA, Postgres functionality is critical to FBA functionality as a whole.
/var/lib/pgsql/*	Directory	Postgres config directory. Contains Postgres WAL archive data when configured. Critical for base postgres functionality.
/data/ro-postgres/*	Directory	Postgres data and backup directory. Contains many tools, logs, and general data relating to the postgres server. Also contains the default location for postgres backups. Critical for maintaining FBA stability and functionality.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/usr/lib/java/ro-qw/*	Directory	Contains the Java Archive file used by the FBA Queue Worker service. The jar file(s) here contain many java class files necessary to run the FBA Queue Worker service.

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/run/ro-qw/*	Directory	Runtime information storage directory for FBA Queue Worker service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/etc/ro-qw/*	Directory	Config directory for FBA Queue Worker service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/var/log/ro-qw/*	Directory	System log files for FBA Queue Worker service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/data/ro-qw/*	Directory	Main data directory for FBA Queue Worker service. Maintains and records the state of the QW server(s) through rocksdb. Critical to FBA infrastructure.
/usr/sbin/ro-qw	Process	Binary file for FBA Queue Worker service Service runtime engine binary. It is critical for this to run for the API service to operate.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/data/mnesia/*	Directory	Rabbit Storage Directory. Contains plugin data and feature flags used by the Rabbit service. This directory is critical to the functionality of FBA.
/usr/lib/rabbitmq/*	Directory	Rabbit Binary and Library Storage Contains the binary files and library files critical to the functionality of the Rabbit service used by FBA. This is a critical directory.
/var/log/rabbitmq*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/etc/rabbitmq/*	Directory	Config directory for FBA Rabbit service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.

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/run/rabbitmq/*	Directory	Runtime information storage directory for FBA Rabbit service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/var/log/redis/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/var/lib/redis/*	Directory	Redis database dump location. The location Redis dumps its database. Critical for debugging any issues that may arise in the redis service.
/run/redis/*	Directory	Runtime information storage directory for FBA Redis service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.

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/run/ro-rose/*	Directory	Runtime information storage directory for FBA Rose service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/var/log/ro-rose/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/usr/lib/java/ro-rose/*	Directory	Contains the Java Archive file used by the FBA Rose service. The jar file(s) here contain many java class files necessary to run the FBA Rose service.
/etc/ro-rose/*	Directory	Config directory for FBA Rose service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/sbin/ro-rose	Process	Binary file for FBA Rose service Service runtime engine binary. It is critical for this to run for the API service to operate.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/var/log/ro-ui/*	Directory	System log files for FBA critical service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/usr/sbin/ro-ui	Process	Binary file for FBA UI service Service runtime engine binary. It is critical for this to run for the API service to operate.
/usr/lib/node_modules/ro-ui/*	Directory	Directory containing UI related Node Modules. Node modules used in the building/running of FBA front end UI are critical to accessing FBA related data. This directory is critical to the functionality of the main UI.

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Whitelist	Type	Explanation
/etc/ro-ui/*	Directory	Config directory for FBA UI service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/run/ro-ui/*	Directory	Runtime information storage directory for FBA UI service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/usr/share/doc/ro-ui/*	Directory	Documents available through UI API/GUI. This directory provides critical documentation for navigating and using the FBA UI. Performance of this directory is not critical, but it is critical to FBA's end user experience.
/etc/collectd*	Directory	Config directory for FBA Collectd service. Files in this directory set various variables and plugin information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/etc/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/filebeat/*	Directory	Config directory for FBA Filebeat (elasticsearch related) service. Files in this directory set various configuration files in json. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/usr/share/collectd/*	Directory	Directory for Collectd database file(s). Necessary for maintaining collectd database integrity when collecting server metrics.
/run/ro-ups/*	Directory	Runtime information storage directory for FBA Publisher service Services related to FBA use the /run/ directory as a temporary file system and stores volatile runtime data there. Because of this, the location is critical for successful FBA operations.
/usr/lib/java/ro-ups/*	Directory	Contains the Java Archive file used by the FBA Rose service. The jar file(s) here contain many java class files necessary to run the FBA Content service.
/etc/ro-ups/*	Directory	Config directory for FBA Publisher service. Files in this directory set various keystores, variables, and client connection information. These files are critical for maintaining the FBA stack integrity and inter-node communication.
/var/log/ro-ups/*	Directory	System log files for FBA Publisher service. The services running on FBA servers rely on this directory to hold log files needed for evidence and troubleshooting, including audit logs. Because output must be written here, this location is critical.
/usr/sbin/ro-ups	Process	Binary file for FBA Publisher service Service runtime engine binary. It is critical for this to run for the API service to operate.

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