



OFA-UNH-IOL Logo Program

Version 1.03



OFA-UNH-IOL Logo Program

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Version 1.02	February 7, 2008	Updated OFILG to OpenFabrics Interoperability Logo Group
Version 1.03	January 15, 2009	Updated Arbitration Notification Period section to clarify resolution timeframe.

Abbreviations

OFA-IWG	Open Fabrics Alliance Interoperability Work Group
UNH-IOL	University of New Hampshire Interoperability Lab
OFILG	OpenFabrics Interoperability Logo Group
OFILP	OpenFabrics Interoperability Logo program
OFIL	OpenFabrics Interoperability IOL Logo

OFA-UNH-IOL Logo Program

1 Introduction

To deliver on the promise of end-user readiness, the OpenFabrics Alliance (OFA) software running on servers or hosts needs to support interoperability in many ways – between different supported transports that run the same OFA software, and with switches, gateways, servers, and storage targets that contain external (e.g., OEM provided) software elements that work in conjunction with OFA software to provide fabric wide functionality.

The OFA Interoperability Work Group (OFA-IWG) was formed to address the above interoperability requirements in collaboration with the industry-renowned and trusted UNH-IOL (University of New Hampshire Interoperability Labs). The result is the OpenFabrics Alliance & UNH-IOL Interoperability Program, referred to henceforth in this document as the Interoperability Program.

It is envisioned that to make the Interoperability Program effective for end users and suppliers alike, it will be useful if end users can quickly gauge the interoperability of equipment and associated software using a trusted name and source, and suppliers can add value to their offering by claiming interoperability using a third party trusted source. With UNH-IOL operating as such a trusted third party source, the OFA-UNH-IOL Logo program (OFILP) has been created to meet the above end user and supplier goals. OFILP is part of the OFA-IWG. Through increased value provided to supplier vendors, OFILP also has a secondary goal of raising Interoperability Program membership and funding levels.

2 Purpose/Scope of this Document

This document has three key areas that define the OFILP:

1. The Interoperability Program developed by OFA-IWG will enable vendors to apply for grant of the OFA-UNH-IOL Tested Logo (OFIL). The process of logo grant application is defined in this document.
2. The Interoperability Program will enable supplier vendors to claim and market interoperability by using the OFIL in their products or in their product marketing collateral. The use of the OFIL is defined in this document.
3. The OFIL will cover different aspects of interoperability for different product families. This includes what aspects of the [OFA-IWG Interoperability Test Plan](#) and test cases that are applicable to different equipment types and what constitutes passing or failing of such tests.

3 Logo Grant Application Process

Vendors who are paid OFILG members (i.e., have paid the OFILG dues as defined in the [OFA-IWG Charter Agreement](#)) and have participated in an OFA-UNH-IOL Interoperability Event are eligible to apply for the OFIL grant under the following conditions:

1. Membership renewals must be paid within three months or membership will be suspended.
2. If a vendor is three months overdue on the payment for a previous event, that vendor is not eligible for the current event.
3. A default will result in being removed from the Logo List.

See [Section 4.1.3](#) on how to renew an Expired Logo

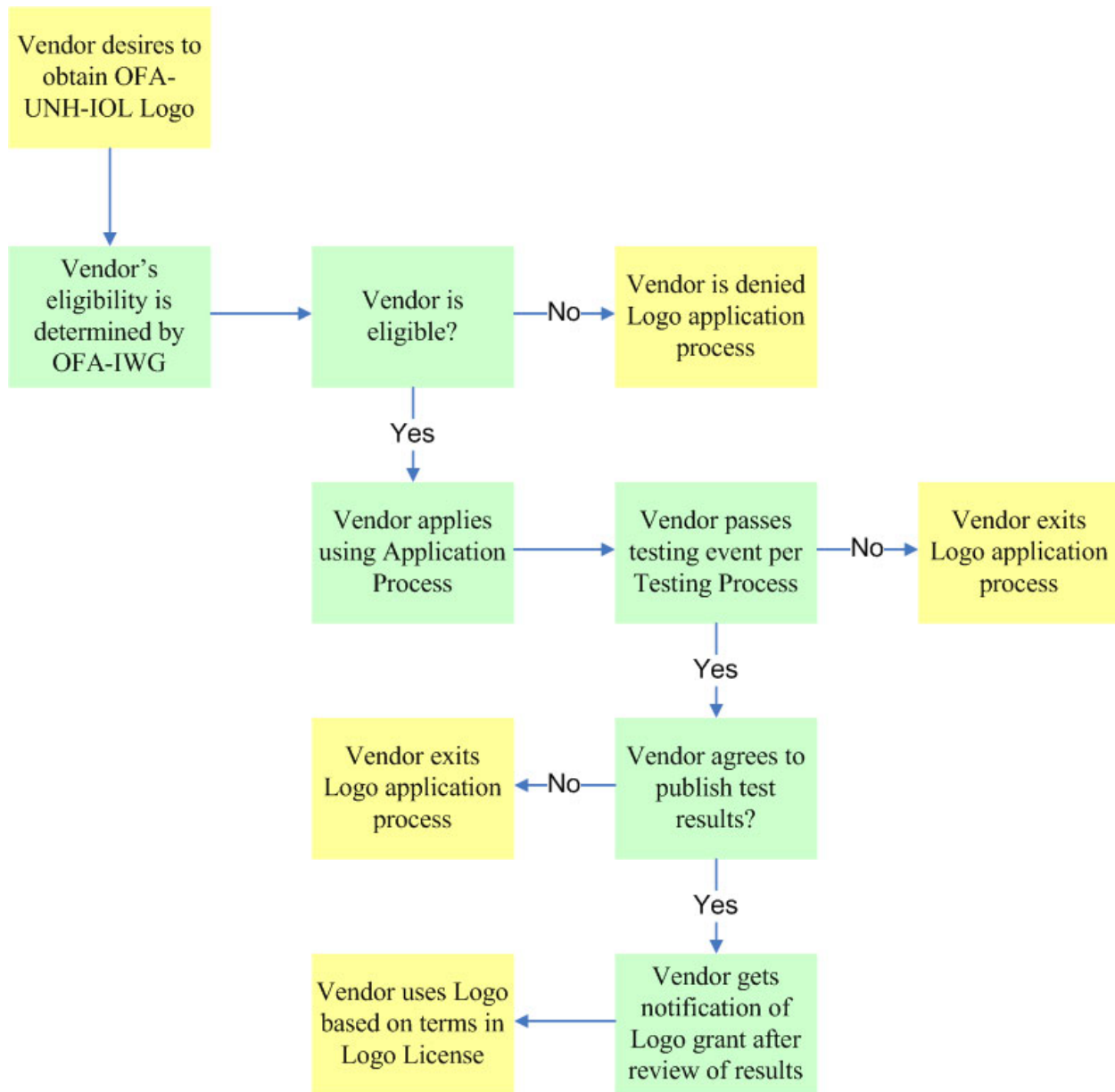
This section provides specifics on Logo eligibility criteria and the application process.

3.1.1 Scope of the OFIL

The OFIL process comprises the following steps:

1. Verification of the vendor's eligibility based on criteria defined in section 3.1.2.
2. Request from vendor to obtain the OFIL using Application Process defined in section 3.1.3.
3. Follow Test Process defined in section 3.1.4.
4. Vendor must authorize OFA IWG and UNH-IOL to publish the test results (as specified in section 3.1.5) using the email alias: iwg@lists.openfabrics.org or whatever is current. If the vendor chooses not to authorize the publishing of test results during the process, the vendor must withdraw from the Logo application process. In such a case, steps 5 and 6 below are not applicable.
5. Await notification of OFIL Grant by OFA-IWG as specified in section 3.1.6.
6. Use OFIL per terms in OpenFabrics Logo Agreement.

The following figure depicts the above process (green boxes show processes defined in this document):



3.1.2 Application Process

The application process for Logo grant comprises the following steps:

- Meet Eligibility Criteria outlined above.
- Execute the [OpenFabrics Logo Agreement](#).

3.1.3 Testing Process

The vendor must follow the following testing process as a step toward grant of the Logo:

- Participate in an OFA-UNH-IOL Interoperability Event. These could be regularly scheduled events by OFA and UNH-IOL, or on demand testing requested by the vendor.
- Execute all required tests for the equipment type for grant of OFIL – see section 5.
- Pass all tests required for grant of OFIL – see section 5.

3.1.4 Agreement to Publish Test Results

In order to avoid liability related costs to OFA and UNH-IOL, it is worthwhile to note that the OFIL does not signify certification of any sort. The Logo is indicative of the vendors' successful participation in an OFA-UNH-IOL Interoperability Event (either regularly scheduled or on-demand). To ensure sanctity of the OFIL and OFA which grants the Logo, it is necessary that the vendor acquiring the OFIL meets certain minimum quality criteria for interoperability. These criteria are achieved by requiring the vendor acquiring the OFIL to publish the results of interoperability testing on the following public web site <http://www.iol.unh.edu/services/testing/ofa/interolist/interolist.php>.

Vendor must authorize placing results on the above public website. By default, vendor specific test results from OFA-UNH-IOL Interoperability Event are confidential to the vendors. The need to publish test results is optional and required only for an OFIL grant.

3.1.5 Notification of Logo Grant

Once a vendor completes the Application and Testing Processes identified above, UNH-IOL will review test results and make a recommendation to OFA-IWG on whether the vendor should be granted an OFIL based on "Specific Logo Terms" such as the following:

- Part numbers of vendor equipment to which OFIL is applicable.
- Firmware version (if applicable) to which OFIL is applicable.
- OFA software version to which Logo is applicable.
- Applicable [OFA-IWG Interoperability Test Plan](#) version.
- Validity period (defined in section 4) of the OFIL (if applicable).

In case of a positive recommendation, the vendor is granted the OFIL. The granting of the Logo comprises the following:

- Signed letter from OFA Chairman explaining grant and terms of the OFA-UNH-IOL Tested Logo, including "Specific Logo Terms".
- Copy of Signed Logo License Agreement.
- Electronic image of OFIL for use with vendors marketing collateral.

The Logo image granted may contain a validity period or Test Plan revision number to reflect the extent of interoperability and need for renewal or refresh of the Logo through additional testing. These are explained further in section 4 below.

4 OFIL Usage Guidelines

This section describes guidelines on OFIL usage. The terms specified herein are complementary to what is specified in the OpenFabrics Logo Agreement.

4.1.1 Tied to Validity Period or Test Plan Revision Number

An OFIL grant is associated with a validity period or a Test Plan Revision Number.

For example, during the initial grants of the Logo, it is possible that the test plan and test cases relevant to a Logo grant need further extensions or enhancements. In such a case, vendors may be required to apply for a logo refresh within a certain period to maintain usability of the OFIL with the applicable vendor equipment. In this case, the Logo signage supplied will also contain an expiration date.

An alternate way to ensuring that vendors refresh their OFIL grants through new testing is to associate the applicable Test Plan version number with the Logo signage. That way, as new revisions of Test Plans become available, it will become necessary for vendors to refresh their Logo grants with new/additional testing at UNH-IOL.

It is envisioned that once the Interoperability Test Plan has been updated to address needed extensions or enhancements, OFIL grants will not be tied to validity periods in the future.

4.1.2 Logo Grant Conditions

This section describes the procedures that must be followed if an interoperability issue is discovered in a vendor product or an interoperability test after the conclusion of an OFA-UNH-IOL Interoperability Event. Vendors will have a six month grace period (after the defect is announced) to address the issue in their product or in the revised interoperability test. After this time they must attend the next scheduled OFA-UNH-IOL Interoperability Event and adhere to the conditions described in the Logo Program and the OFA-IWG Interoperability Test Plan in effect for that event. Failure to qualify for the Logo Grant will result in the vendor not being included in the current Logo Program List. However any failures discovered in the device or the interoperability test, after the conclusion of an OFA-UNH-IOL Interoperability Event, will not affect the results of any previous OFA-UNH-IOL Interoperability Event.

4.1.3 How to Renew Expired Logo

If a granted Logo has expired or has been revoked (because of reasons specified in section 4.1.1 and 4.1.2), vendors can refresh the OFIL grant for their equipment by participating in upcoming and regularly scheduled OFA-UNH-IOL Interoperability Event or requesting on-demand testing at UNH-IOL. It is necessary that the vendor's paid status is valid at the time of such requests and throughout any testing. Once the vendor completes the needed testing, the vendor can follow the process outlined above to apply for a new OFIL grant.

4.1.4 Using OFIL in Marketing Collateral

Vendors can use the electronic image of the OFIL (that they receive when they are granted the Logo) in their marketing promotional materials. Vendors must follow the terms outlined in the OpenFabrics Logo Agreement.

4.1.5 Using Logo Sticker on Vendor's Equipment

Vendors can use the electronic image of the OFIL to produce OFIL stickers for use in their equipment that they sell to end users. Vendors must follow the terms outlined in the OpenFabrics Logo Agreement.

5 Applicable Interoperability Tests

5.1.1 By Vendor Equipment Types

The following table lists test cases from the OFA-IWG Interoperability Test Plan (available in www.openfabrics.org) that are applicable for OFIL testing and grant by vendor equipment type. Depending on completeness of test cases in each category, Logo grants for different equipment types may be supported in a staggered way. Beta level tests will not be eligible for OFIL usage. The following table and related OFA-IWG Interoperability Test Plan applicable for OFIL testing will be made available at least one month in advance of an OFA-UNH-IOL Interoperability Event.

Table 1

Applicable Test Description	Applicable Test Cases From Test Plan version 1.2	Relevant vendor equipment type
Interoperability between InfiniBand HCAs (DUT – device under test) running OFA software and the following equipment (TD-tested device): <ul style="list-style-type: none"> • InfiniBand Switches with and without OEM SM • Other HCAs with OFA software • InfiniBand SRP Targets • InfiniBand iSER Targets • InfiniBand NFS-RDMA Servers • InfiniBand-Ethernet Gateways • InfiniBand-Fibre Channel Gateways 	IB Link Tests IB IPoB Tests TI iSER Tests IB SRP Tests TI SDP Tests IB SM Tests TI MPI Tests TI uDAPL Tests TI NFS-RDMA Tests	InfiniBand HCA
Interoperability between Ethernet R-NIC (DUT) running OFA software and the following equipment (TD): <ul style="list-style-type: none"> • Ethernet 10GigE Switches • Other R-NICs • Ethernet iSER Targets • Ethernet NFS-RDMA Servers 	R-NIC Connections Tests TI iSER Tests TI SDP Tests TI MPI Tests TI uDAPL Tests TI NFS-RDMA Tests	Ethernet R-NIC
Interoperability between InfiniBand Switch (DUT) running OEM SM, PM and other supported managers and the following equipment (TD): <ul style="list-style-type: none"> • InfiniBand HCA with OFA software • InfiniBand SRP Targets • InfiniBand iSER Targets • InfiniBand NFS-RDMA Servers The same tests using Open SM (running on host with OFA software) instead of OEM SM.	IB Link Tests IB IPoB Tests TI iSER Tests IB SRP Tests TI SDP Tests IB SM Tests	InfiniBand Switch (if available, with OEM SM, PM and other supported managers running on the switch)
Interoperability between InfiniBand Switch (DUT) (not running OEM SM, PM and other supported managers) and the following	IB Link Tests IB IPoB Tests TI iSER Tests	InfiniBand Switch (if available, with OEM

Applicable Test Description	Applicable Test Cases From Test Plan version 1.2	Relevant vendor equipment type
equipment (TD): <ul style="list-style-type: none"> • InfiniBand HCA with OFA software • InfiniBand SRP Targets • InfiniBand iSER Targets • InfiniBand NFS-RDMA Servers A dedicated management node is used that uses Switch OEM supplied software (example, driver, access layer, SM, PM and other supported managers)	IB SRP Tests TI SDP Tests IB SM Tests	SM, PM and other supported managers running on a dedicated management node)
Interoperability between InfiniBand SRP Target (DUT) and the following equipment (TD): <ul style="list-style-type: none"> • InfiniBand HCA with OFA software • InfiniBand Switch with OEM SM • InfiniBand Switch without SM (that is, using Open SM) 	IB Link Tests IB SRP Tests IB SM Tests	InfiniBand SRP Target
Interoperability between InfiniBand iSER Target (DUT) and the following equipment (TD): <ul style="list-style-type: none"> • InfiniBand HCA with OFA software • InfiniBand Switch with OEM SM • InfiniBand Switch without SM (that is, using Open SM) 	IB Link Tests TI iSER Tests IB IPoIB Tests IB SM Tests	InfiniBand iSER Target
Interoperability between Ethernet iSER Target (DUT) and the following equipment (TD): <ul style="list-style-type: none"> • Ethernet R-NIC with OFA software • 10GigE Ethernet Switch 	R-NIC Connections Tests TI iSER Tests	Ethernet iSER Target
Interoperability between InfiniBand NFS-RDMA Server (DUT) and the following equipment (TD): <ul style="list-style-type: none"> • InfiniBand HCA with OFA software including NFS-RDMA Client • InfiniBand Switch with OEM SM • InfiniBand Switch without SM (that is, using Open SM) 	IB Link Tests TI NFS-RDMA Tests IB SM Tests	NFS-RDMA Server over InfiniBand
Interoperability between Ethernet NFS-RDMA Server (DUT) and the following equipment (TD): <ul style="list-style-type: none"> • Ethernet R-NIC with OFA software including NFS-RDMA Client • 10GigE Ethernet Switch 	R-NIC Connections Tests TI NFS-RDMA Tests TI iSER Tests	NFS-RDMA Server over Ethernet
Interoperability between InfiniBand-to-Ethernet Gateway (DUT) running OEM SM, PM and other supported managers and the following equipment (TD): <ul style="list-style-type: none"> • InfiniBand HCA with OFA software (using IPoIB or VNIC as applicable) 	IB Link Tests IB IPoIB Tests (if applicable) IB VNIC Tests (if applicable) IB SM Tests	InfiniBand-to-Ethernet Gateway

Applicable Test Description	Applicable Test Cases From Test Plan version 1.2	Relevant vendor equipment type
The same tests using Open SM instead of OEM SM.		
Interoperability between InfiniBand-to-Fibre Channel Gateway (DUT) running OEM SM, PM and other supported managers and the following equipment (TD): <ul style="list-style-type: none"> • InfiniBand HCA with OFA software (using SRP or iSER as applicable) The same tests using Open SM instead of OEM SM.	IB Link Tests TI iSER Tests (if applicable) IB SRP Tests (if applicable) IB SM Tests	InfiniBand-to-Fibre Channel Gateway
Interoperability between Server Systems using InfiniBand HCAs (DUT – device under test) running OFA software and the following equipment (TD-tested device): <ul style="list-style-type: none"> • InfiniBand Switches with and without OEM SM • Other Servers and HCAs with OFA software • InfiniBand SRP Targets • InfiniBand iSER Targets • InfiniBand NFS-RDMA Servers • InfiniBand-Ethernet Gateways • InfiniBand-Fibre Channel Gateways 	IB Link Tests IB IPoIB Tests TI iSER Tests IB SRP Tests TI SDP Tests IB SM Tests TI MPI Tests TI uDAPL Tests TI NFS-RDMA Tests	Server Systems using InfiniBand HCA and running OFA software
Interoperability between Server Systems using InfiniBand HCAs (DUT – device under test) running non-OFA software and the following equipment (TD-tested device): <ul style="list-style-type: none"> • InfiniBand Switches with and without OEM SM • Other Servers and HCAs with OFA software • InfiniBand SRP Targets • InfiniBand iSER Targets • InfiniBand NFS-RDMA Servers • InfiniBand-Ethernet Gateways • InfiniBand-Fibre Channel Gateways Note: The TD (tested device) must not include servers running non OFA software	IB Link Tests IB IPoIB Tests TI iSER Tests IB SRP Tests TI SDP Tests IB SM Tests TI MPI Tests TI uDAPL Tests TI NFS-RDMA Tests	Server Systems using InfiniBand HCA and running non-OFA software such as for Sun Solaris, Apple Mac, HPUX, IBM AIX and other operating systems
Interoperability between Server Systems using Ethernet R-NIC (DUT) running OFA software and the following equipment (TD): <ul style="list-style-type: none"> • Ethernet 10GigE Switches • Other Servers and R-NICs with OFA software • Ethernet iSER Targets • Ethernet NFS-RDMA Servers 	R-NIC Connections Tests TI iSER Tests TI SDP Tests TI MPI Tests TI uDAPL Tests TI NFS-RDMA Tests	Server Systems using Ethernet R-NIC and running OFA software

Applicable Test Description	Applicable Test Cases From Test Plan version 1.2	Relevant vendor equipment type
<p>Interoperability between Server Systems using Ethernet R-NIC (DUT) running non-OFA software and the following equipment (TD):</p> <ul style="list-style-type: none"> • Ethernet 10GigE Switches • Other R-NICs • Ethernet iSER Targets • Ethernet NFS-RDMA Servers <p>Note: The TD (tested device) must not include servers running non-OFA software</p>		<p>Server Systems using Ethernet R-NIC and running non-OFA software such as for Sun Solaris, Apple Mac, HPUX, IBM AIX and other operating systems</p>
<p>Interoperability between InfiniBand-based Multi-protocol Storage Target (DUT) and applicable equipment (TD) based on storage protocols supported (SRP, iSER, NFS-RDMA) as listed above.</p>	<p>IB Link Tests IB SM Tests</p> <p>Following as applicable: TI NFS-RDMA Tests TI iSER Tests IB IPoIB Tests IB SRP Tests</p>	<p>InfiniBand-based Multi-protocol Storage Target (SRP, iSER, and/or NFS-RDMA)</p>
<p>Interoperability between R-NIC-based Multi-protocol Storage Target (DUT) and applicable equipment (TD) based on storage protocols supported (SRP, iSER, NFS-RDMA) as listed above.</p>	<p>R-NIC Connections Tests</p> <p>Following as applicable: TI NFS-RDMA Tests TI iSER Tests</p>	<p>Ethernet-based Multi-protocol Storage Target (SRP, iSER, and/or NFS-RDMA)</p>

Note: TI NFS-RDMA Tests are not in the OFA-IWG Interoperability Test Plan because NFS-RDMA is currently not part of OFED releases from OFA. When those tests become available, the above NFS-RDMA test requirements will become applicable.

5.1.2 OFIL Test Pass Criteria

The Logo test pass criteria for a vendor equipment type is the same as the individual test pass criteria defined in the Interoperability Test Plan. Prior to each testing event, OFA-IWG will decide and publish what percentage of the applicable tests vendors and their equipment types need to pass for OFIL grant, the minimum being about 90% of the applicable tests.

In case of disagreement between parties as to what constitutes pass or fail of specific test cases, the following arbitration procedure (see section 6) will be used to address the matter.

6 Arbitration

6.1.1 Arbitration Procedure

- OFA IWG will institute, if required, a review board for a period of 30 days after the Interoperability Event to deal with objections and review technical issues. Test accuracy and vendor specific claims can both be investigated.
- If a vendor wants to contest the result of a test, the vendor must prove that a defect in the test or test process caused the device to fail that test. Traces and log files must be submitted.
- Resolution of the contest allows possible granting of the OFIL.
- The review board is chosen by the members of the OFA IWG and will consist of members from OFA and UNH IOL who do not have products that are being evaluated for a Logo. After reviewing the issues, the review board will vote to arrive at a decision. Should a vendor disagree, they may appeal to the OFA BoD.
- If the vendor chooses to contest the results and is not successful in the contest, there will be an Appeal Fee charged which will consist of a minimum of \$500 and a maximum of \$1000. OFA IWG reserves the right to change the billing rate at any time.

6.1.2 Arbitration Notification Period

- Vendors will be notified of their status within 30 days of the conclusion of the Interoperability Event. Notification will also go out to any vendor whose tests results might be affected by the appeal of other vendors. Notification will include all supporting materials such as traces and log files.
- A vendor who wishes to contest a result must notify the OFA IWG in writing of its intent to contest within 14 days after the notification of the results. All contests must be resolved within 30 days after the vendor receives their results..
- It is the vendor's responsibility to present their case in detail and in sufficient time for the review board to complete the review in 30 days.