Winqual Help

Table of Contents

Introduction

Welcome to Winqual Help

This document covers the end to end scenarios for obtaining and managing Windows Logo for your devices, systems, and applications.

Languages

Winqual site is available in English only.

Privacy & Security

Microsoft is committed to protecting your privacy. For more information, see the Microsoft privacy statement.

The Winqual site employs the following measures to protect your company from any unauthorized submissions:

- All submission packages must be code signed with a Class-3 digital certificate
    - This protection assures that any unauthorized users who compromise your Live ID would be unable to receive a signed catalog file or receive communications about the status of a submission.

Winqual Requirements

System Requirements

- Operating Systems: Microsoft Windows XP or later
- Browser: Microsoft Internet Explorer 6 or later
- Account Privileges: Administrators privileges

Membership/User Requirements

All members are required to have a Digital Certificate.

User is only authorized to make submission on behalf of his/her company. If a company needs help from a third party on a submission, the third party can only provide logs to the company that is making the submission to complete the submission.

Software Requirements

- Adobe Reader, for more information, please see the Adobe Reader FAQ.
- Microsoft XPS Viewer, for more information, please go to XML Paper Specification Overview.
- Microsoft Silverlight (ver.3.0.), for more information, please go to Microsoft Silverlight.

Logo Submissions Available on Winqual

The submission programs available on Winqual have changed. Go the **Windows Logo Program > Hardware** section of the Winqual Help for a complete overview of the new process.

See details for each submission type below:

First-time hardware and driver test submissions

This category includes all first-time hardware and driver submissions.

- This program has changed. Please read the Winqual Help: **Windows Logo Program > Hardware**.

Update hardware and driver test submissions

This category includes all hardware and drivers to be updated or retested.

- This option is no longer available. The process for Driver Update Acceptable submissions is described in the Post HCT 12 DTM Final Draft Global WHQLPOLICY v1.doc available for download at http://www.microsoft.com/whdc/winlogo/default.mspx.

Software application test submissions

This category allows you to submit software applications for the "Compatible with Windows XP" designation and the "Designed for Windows XP" logo.

- This submission site will support submissions for the existing Windows Server logo programs as well as the new Windows Vista Logo programs. To learn more about the upcoming Windows Vista Logo programs, please visit: http://www.innovateon.com/product_vista.aspx.

  Please contact xpswlogo@microsoft.com for more information.

Reseller program test submissions

This category is for hardware resellers.

- This program has changed. Please read the help: How to Resell a Submission.

Test signature test submissions

This category is for driver packages to be test signed for Windows 2000 and Windows XP.

- The test-signing services offered on the Winqual site were disabled on July 13th with the launch of the new Winqual submission services. Please email winqual@microsoft.com and include "Test Signature" in the Subject line for instructions on how to get test-signed. A new upgraded test-signing service will be launched this Fall.

Contact Us

Please send email to address below that best fits your need

.NET Connected Directory	netdirrv@microsoft.com
Billing Issues	whqlbill@microsoft.com
Certified Partner Program	mspp-na@microsoft.com
DDC Help issues	ddchelp@microsoft.com
Legal agreements	whqlegal@microsoft.com
Logo usage questions	whqlegal@microsoft.com
Software submissions	swlogo@microsoft.com
Windows Catalog (International)	wincat@microsoft.com
Windows Error Reporting (WER) on Winqual support	wer@microsoft.com
Windows Hardware Compatibility List (HCL)	winqual@microsoft.com
Windows Marketplace Listing Wizard Help	mlwhelp@microsoft.com
Windows Server Catalog	wscat@microsoft.com
Windows Update	whqlwu@microsoft.com
Winqual policy-related questions	logofb@microsoft.com
Winqual Submission process	winqual@microsoft.com
Winqual Web site	winqual@microsoft.com

Windows Logo Program for Hardware

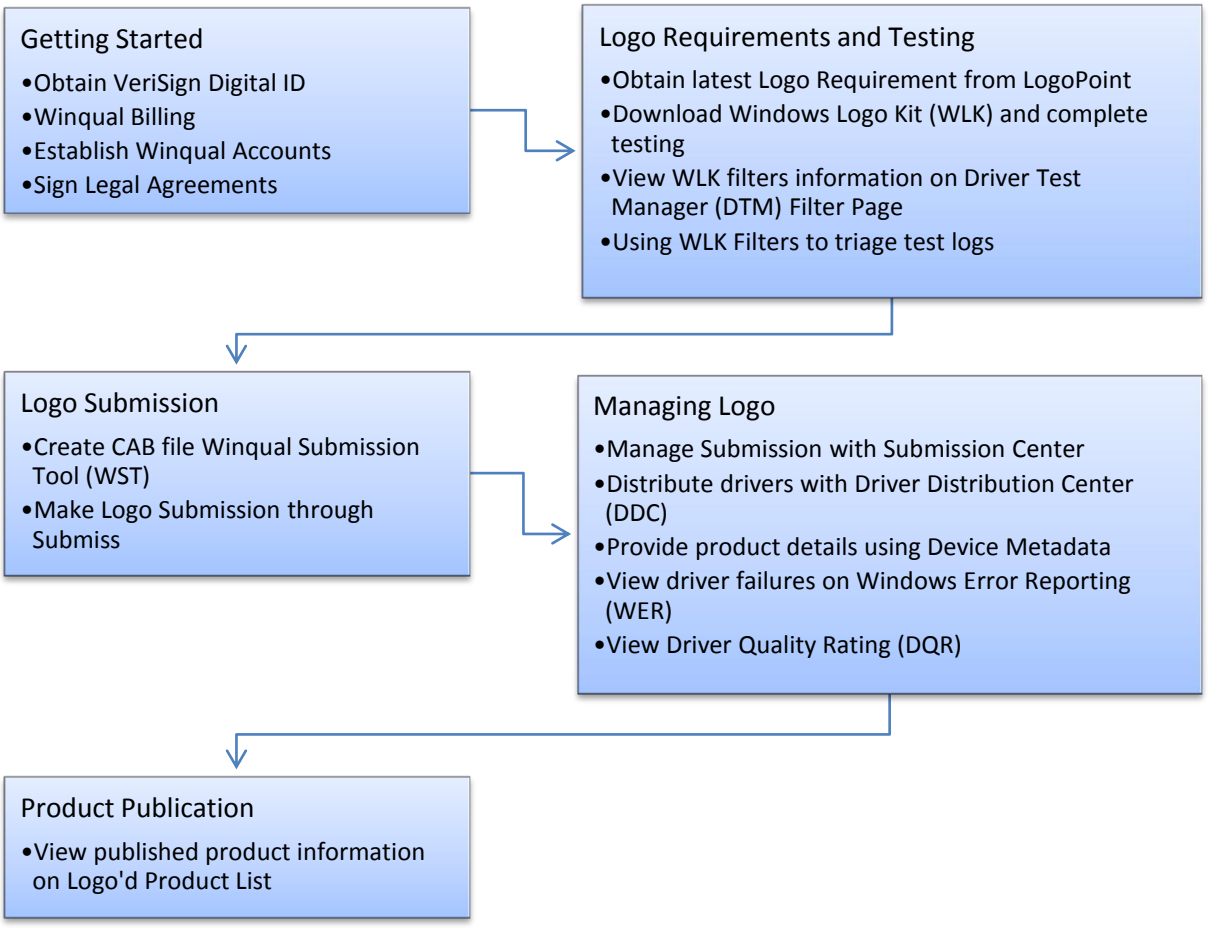
Overview

The Windows Logo Program enhances customer confidence in the Windows experience through active partner engagement in logo strategy, process, certification and online services.

The Windows Logo Program is designed to address the current and future market needs of customers using the Windows platform. This program emphasizes increasing the breadth and variety of devices and systems available, as well as enhancing the quality of the end-to-end experience of customers while ensuring compliance and fair play for partners.

The Windows Logo Program helps partners gain the ability to innovate and bring a premium experience to market, thereby improving their ability to increase market share. The program strives to continuously improve the process, responsiveness and satisfaction.

Logo Process Flowchart



Getting Started

To get started with Windows Logo for Hardware, customers need to a obtain Class 3 Digital Signature (Microsoft Authenticode Code Signing Digital ID) from VeriSign INC and establish a Winqual account on the Microsoft Winqual website.

Obtain VeriSign Digital ID

To establish a Winqual account for your company (a prerequisite for creating user accounts), you must establish your company's identity using a **VeriSign Certificate**. There are two Verisign certificates supported by Winqual for creating company accounts, and they are available at a discounted price through the links below:

1. VeriSign Organizational Certificate ($99 USD)
   This digital ID is only used by Winqual, and is only valid for establishing an account for your company in Winqual. Hardware submissions are **not** permitted with this digital ID.
   Users who wish to purchase a VeriSign Organizational Certificate after July 26, 2007 must first install a root certificate on the machine used for purchasing. Note the root certificate must also be installed on the code-signing machine in order to sign properly. Download the root certificate and instructions on how to install it here.

2. VeriSign 'Microsoft Authenticode' Code Signing Digital ID ($399 USD)
   The Code Signing digital ID is more versatile, and is the accepted standard for establishing ownership of code. Some applications within Winqual require the use of a Class 3 Code signing certificate (examples are: Hardware Logo signatures, Driver reliability signatures, and Driver Verification Testing). Using a code signing certificate enables you to digitally sign your 32-bit or 64-bit .exe (PE files), .cab, .dll and .ocx, files.

Code-sign files with your VeriSign ID

Adding the root certificate to the certificate store (Organizational Certificate only)

If you are planning on using a VeriSign Organizational Certificate, both the computer used for purchasing and the computer used for code-signing must have the root certificate installed in the computer's Trusted Root Certification Authorities certificate store before purchasing or signing can take place. The root certificate must be added to the Trusted Root Certification Authorities certificate store only once.

Follow these steps to add the root certificate to the certificate store of your machine:

1. Download the root certificate for the VeriSign Organizational Certificate here.
2. Click **Start**, click **Start Search**, type **mmc**, and then press **ENTER**.
3. On the **File** menu, click **Add/Remove Snap-in**.
4. Under **Available snap-ins**, double-click **Certificates**, select **Computer account**, click **Finish**, and then click **OK** to close the main 'Add or Remove Snap-ins' dialog box.
5. In the console tree, expand **Certificates** and then **Trusted Root Certification Authorities**.

6. Right-click the **Trusted Root Certification Authorities** store.
7. Click **Import** to import the certificates and follow the steps in the Certificate Import wizard

Alternatively, you can use the certmgr tool to add the root certificate to the certificate store of your machine.

Please click here for further documentation on how to use the certmgr tool.

Code Signing Files (Organizational & Authenticode Certificates)

Follow these steps to sign a file using signtool.exe which is shipped as part of the WDK. Note that signtool.exe replaces signcode.exe. The latter is no longer supported by Microsoft.

Option 1: Signing directly from the certificate store on a Windows machine. Note signtool.exe is not supported on Microsoft Windows NT, Windows Me, Windows 98 or Windows 95.

1. Put the following files in a folder called c:\keys
    - *signtool.exe*
    - *jbxxxxxx.cab or winqual.exe (this is the file that you want to sign)*
2. Click **Start**, **Run**, Type cmd.exe and then press **ENTER** to open a Command Prompt window.
3. In the Command Prompt Window enter the following…
    - Type: c: and press **ENTER**
    - Type: cd\ and press **ENTER**
    - Type: cd keys and press **ENTER**

    The prompt should now read c:\keys

4. Type in the following command on one line and press **ENTER**
    - signtool sign /a /t http://timestamp.verisign.com/scripts/timstamp.dll winqual.exe

Option 2: Signing from a .pfx file.

1. Using the Certificates snap-in for MMC, navigate to the VeriSign Organization Certificate, right-click and select All Tasks > Export… to open the Certificate Export Wizard.
2. Follow the steps to export the certificate and save the .pfx file taking care not to delete the private key if this is not desired.
3. Put the following files in a folder called c:\keys
    - *signtool.exe*
    - *jbxxxxxx.cab* or *winqual.exe* (this is the file that you want to sign)
    - *orgcert.pfx* (this is the exported VeriSign organizational certificate)
4. In the Command Prompt Window enter the following…
    - Type: c: and press **ENTER**
    - Type: cd\ and press **ENTER**
    - Type: cd keys and press **ENTER**

    The prompt should now read c:\keys

5. Type in the following command on one line and press ENTER
    - signtool sign /f orgcert.pfx /p password /t http://timestamp.verisign.com/scripts/timstamp.dll winqual.exe

Please click here for further documentation on how to use *signtool.exe*.

Updating your Digital Certificate

VeriSign IDs have a one-year duration and need to be renewed on the VeriSign website. After you renew your VeriSign ID, you must update the digital signature in your Winqual account using the Member Services section of the site.

To update your Digital Certificate on Winqual:

1. Sign in to the Winqual site at https://winqual.microsoft.com
2. In the top right navigation, click Member Services
3. Click Digital Certificate
4. Browse to, or type the path to your code signed Winqual.exe file, and then click Update

Note: If your company name has changed due to change of ownership, then you must create a new Winqual account. If your company has changed names but not ownership you may update it on the Billing Groups page by editing the Parent Company.

Winqual Billing

Billing Policies

Submission Fee

The latest information about Submission Fee and Billing Policies can be found on LogoPoint. Policy-0010

Invoice Details

Invoices are mailed once a quarter (four times per year) shortly after the following dates:

- First quarter invoices are mailed after March 31.
- Second quarter invoices are mailed after June 30.
- Third quarter invoices are mailed after September 30.
- Fourth quarter invoices are mailed after December 31.

All invoices are due 30 days from the date of the invoice.

Non-Payment

If there is a dispute with a charge the partner needs to contact whqlbill@microsoft.com immediately. The undisputed portion of the bill should be paid in the 30 day window, with the resolved disputed portion paid within 30 days of resolving the dispute. Delinquent accounts are blocked from further submissions. Non-payment is grounds to terminate the Logo License agreement and close the Winqual account.

Billing Information

Billing information will be sent to the contacts listed in the billing section of the Winqual Web site.

Invoices are billed to the division referred to as the “billing group” on the Winqual site for each organization. We use the billing group contact email and physical address for all invoices, along with the email addresses of the individuals that initiated the submission.

Companies that want billing information to be sent to more than one person may enter multiple addresses inside the billing group’s e-mail address field, separated by a semicolon, for example: “someone@example.com;tester@example.com”. Invoices are mailed to the physical address listed in this section (invoices are not sent by E-mail).

To update the billing group information on Winqual, follow these steps:

1. Winqual Administrator may login to the Winqual account
2. Click Member Services
3. Click Billing Groups
4. Change: Billing Group Information

Fee Payment Instructions

Testing fees for submissions made during each quarter are billed at the end of the quarter by Microsoft (there are no ongoing membership fees). Fees are for reviewing your submission, this work is done regardless of whether the submission passes or fails; therefore, a fee will be charged in either case. You must pay for all test submissions regardless of the final test result. Please send any questions regarding billing to whqlbill@microsoft.com.

Use the following information to pay invoices:

Send checks to:
Microsoft Corp.
PO Box 198208
Atlanta, GA 30384-8208

If you use a service that requires a signature on delivery (such as FedEx), send checks to:
Microsoft - Lock box 198208
6000 Feldwood Rd
Atlanta, GA 30349-3652

Send wire transfers to:
Microsoft Corporation
Account# 3751385314
ABA# 11100001-2
Tax ID: 91-1144442
c/o Bank of America
901 Main Street
Dallas, TX 75202
United States

Purchase Orders

Winqual does not require purchase order (PO) numbers. If your company requires a PO number to be referenced on your invoice, the person making the submission must enter the number when the submission is made. PO numbers that are entered will appear on the invoice. PO numbers are referenced for convenience only. Microsoft is not responsible for ensuring that the correct number is entered. Companies that require a PO to be completed for internal processes may make purchase orders payable to the Windows Logo Program for Hardware, as listed below:

Microsoft Corporation
Windows Logo Program for Hardware
One Microsoft Way
Redmond, WA 98052
Fax (425) 936-7329

Partners should not mail or fax copies of purchase orders to Microsoft. Purchase orders that are sent to this address or faxed to the Microsoft fax number will be discarded and no tracking will be done.

Establishing Winqual Accounts

Prerequisites

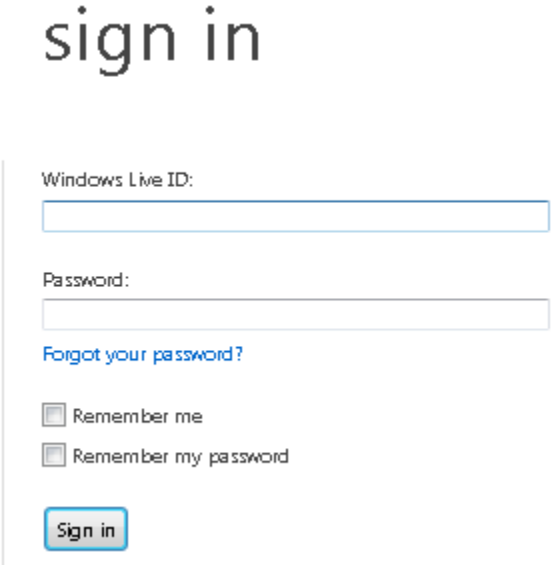
Winqual accounts are organized by company. To establish a Winqual account for your company, you will need to provide the following:

1. **Code signed Winqual.exe file**
   The VeriSign ID will be analyzed and the company name and ID number will be extracted from the file.
2. **Billing address**
   Because there are fees for some submission types, we require a billing address to set up an account.
3. **Live ID**
   Create a Live ID at www.Live.com or during sign-up with Winqual
4. **Contact data**
   Create a user profile for the company account administrator.

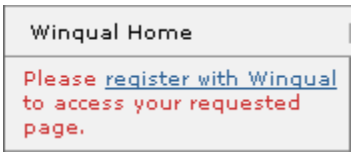
Establishing a Winqual Company Account

1. Go to Winqual site
2. Click on "Sign in to Windows Live ID"

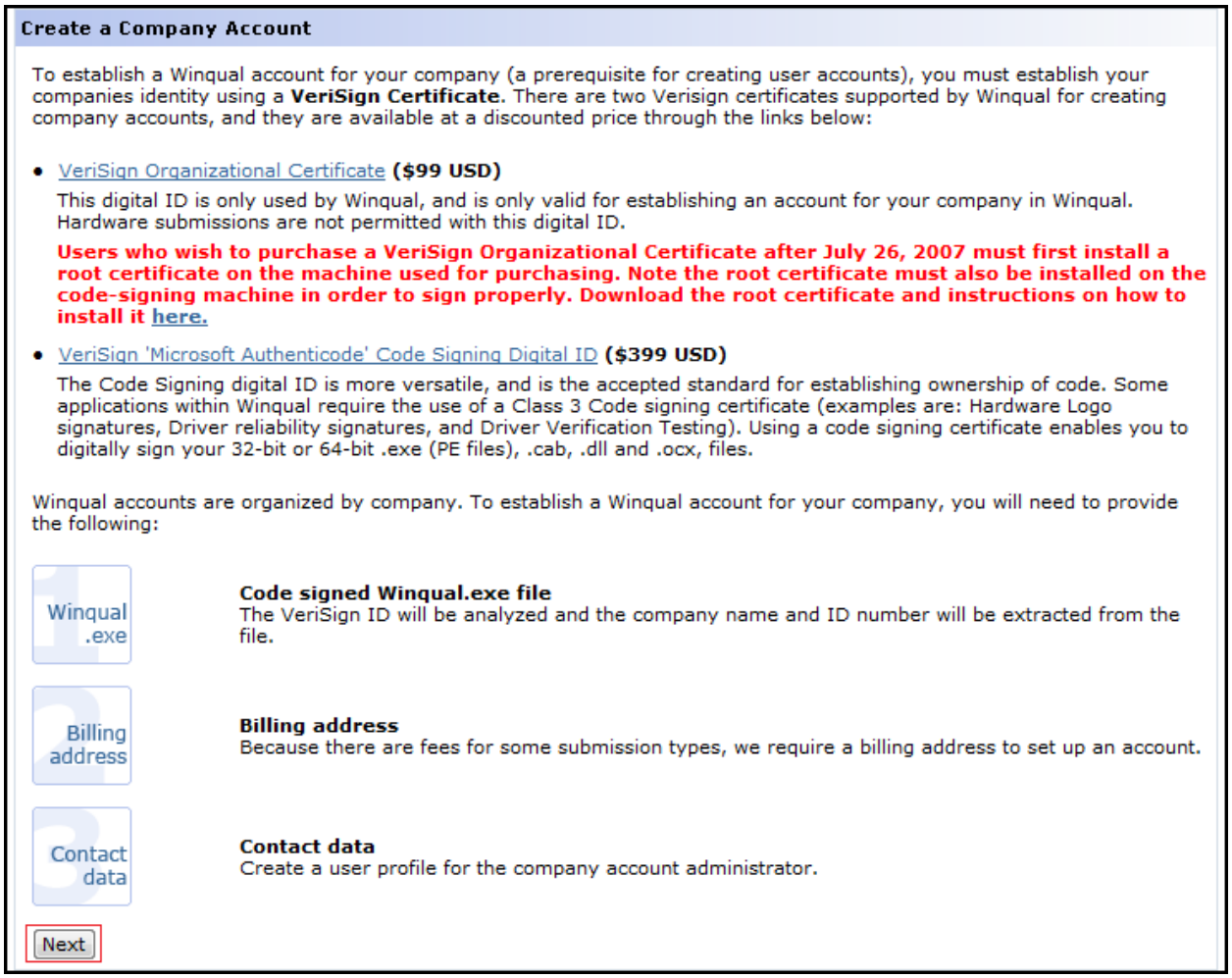
3. Enter your Live ID login credentials



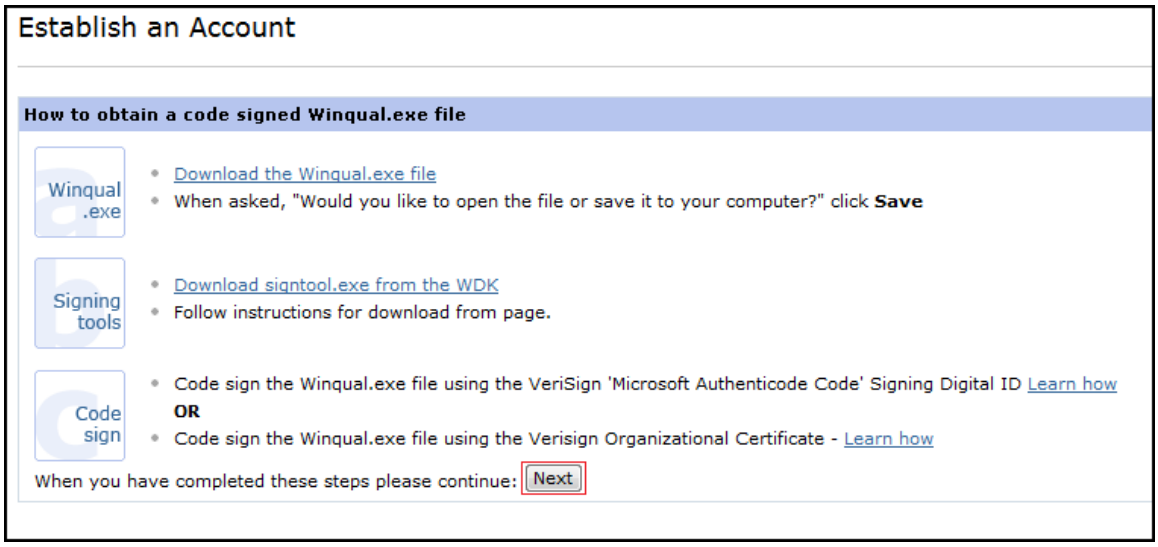
4. Click on “register with Winqual”



5. After purchasing a VeriSign certificate, click Next

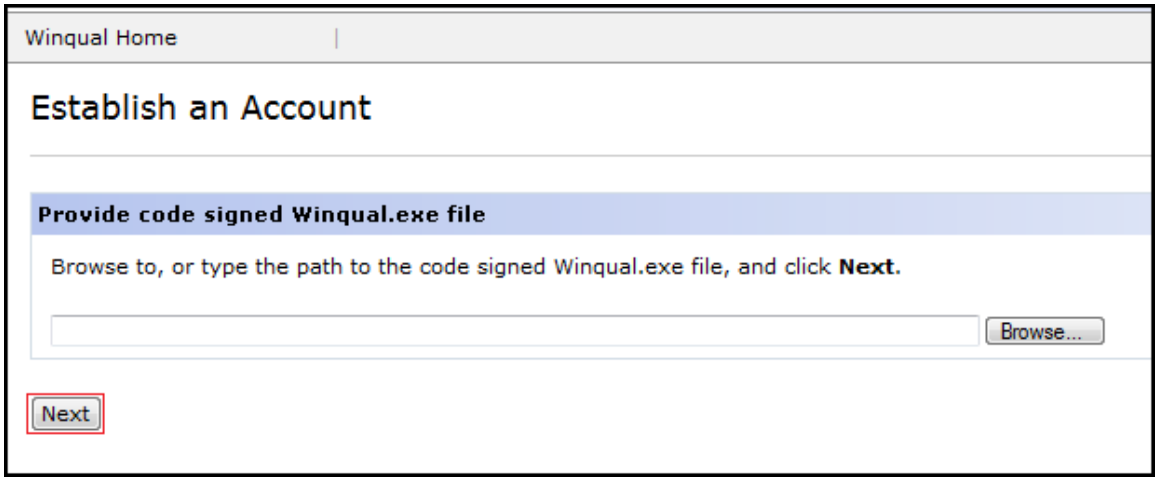


6. In this page, you may download the following before clicking on Next

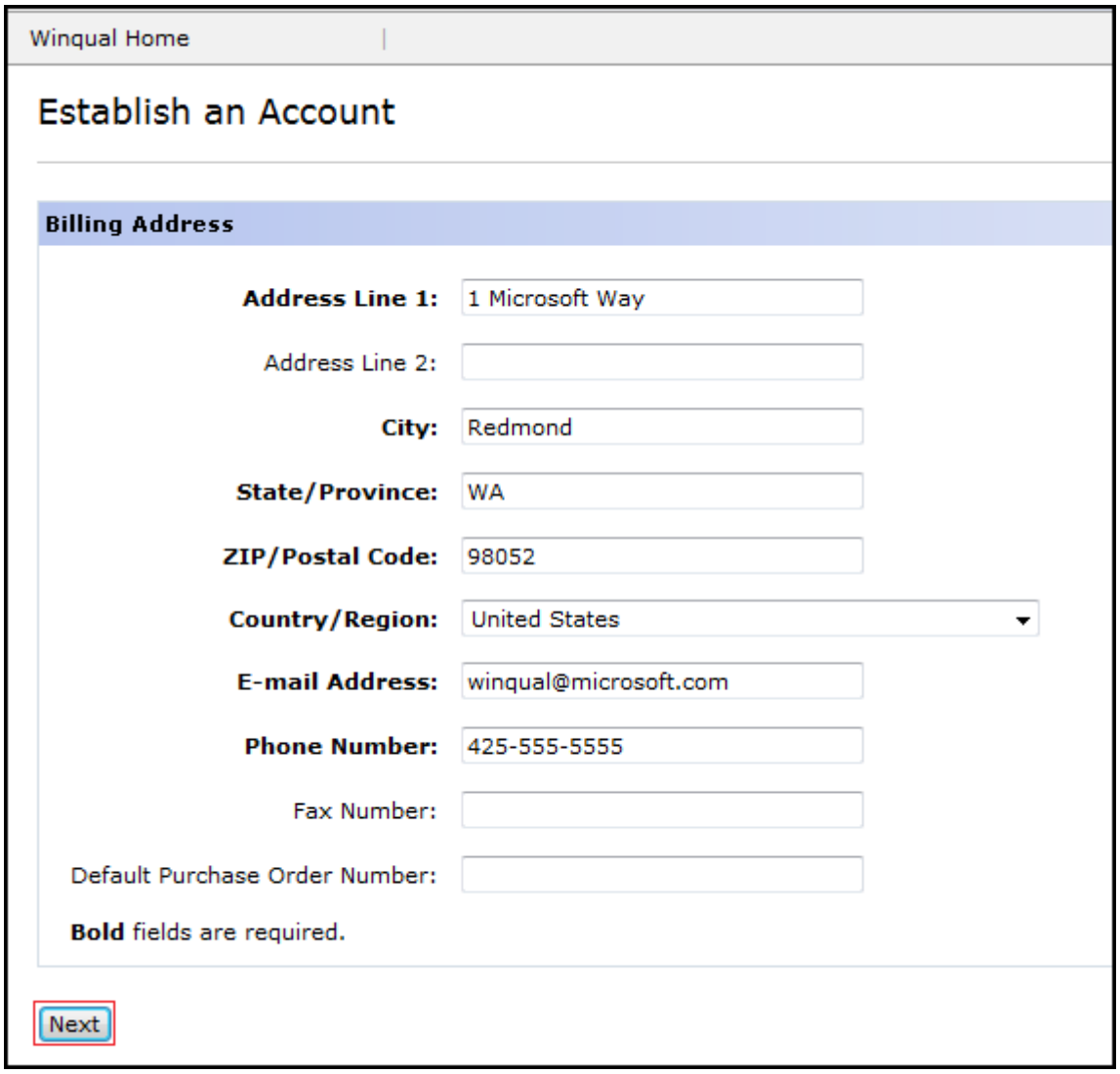


- The winqual.exe file that we require you to code-sign with your VeriSign cert
- Signtool.exe which is used for code-signing files

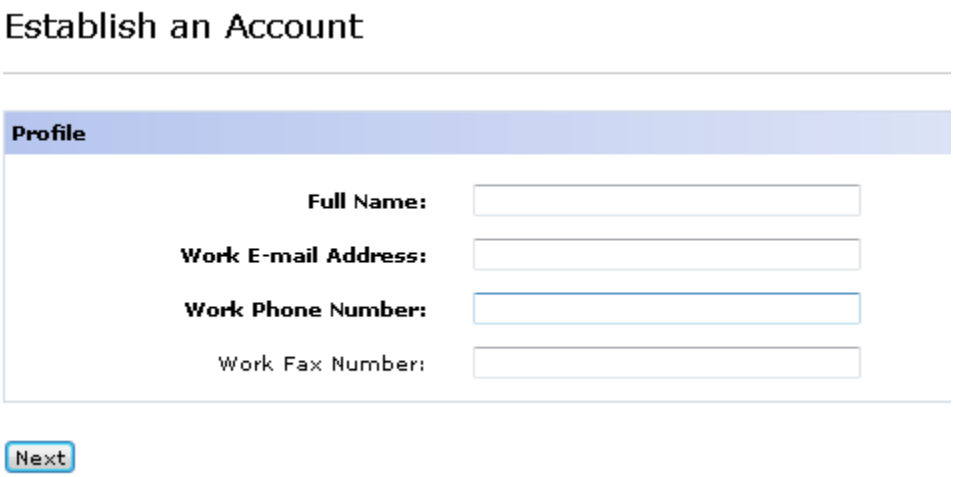
7. Upload your code-signed winqual.exe file



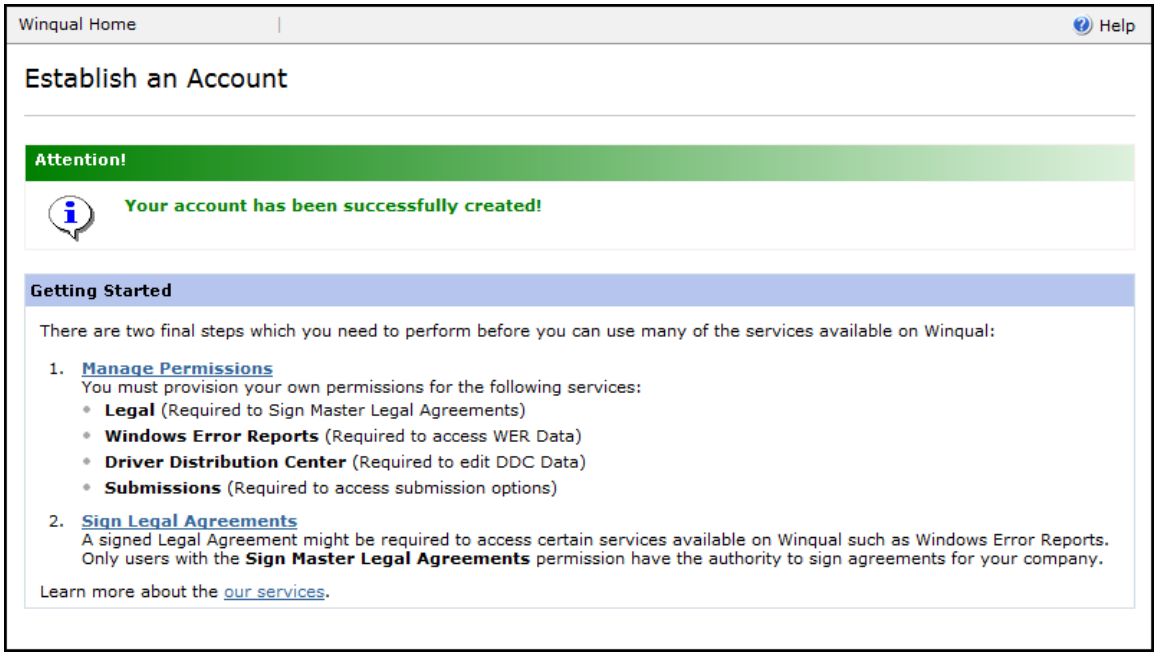
8. Fill in all required (bold) fields regarding your company and click on Next



9. Fill in all required (bold) fields regarding the Administrator account and click on Next



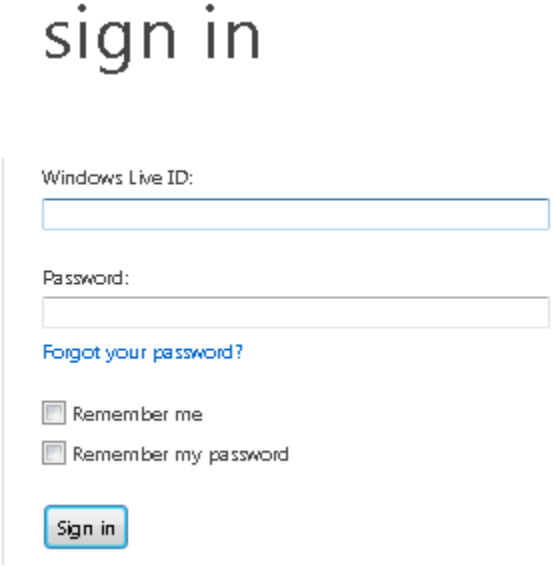
10. You are now ready to manage your Winqual account and engage in Winqual activities like making a logo submission.



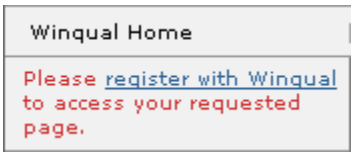
Establishing a Winqual User Account

1. Go to Winqual site
2. Click on "Sign in to Windows Live ID"

3. Enter your Live ID login credentials

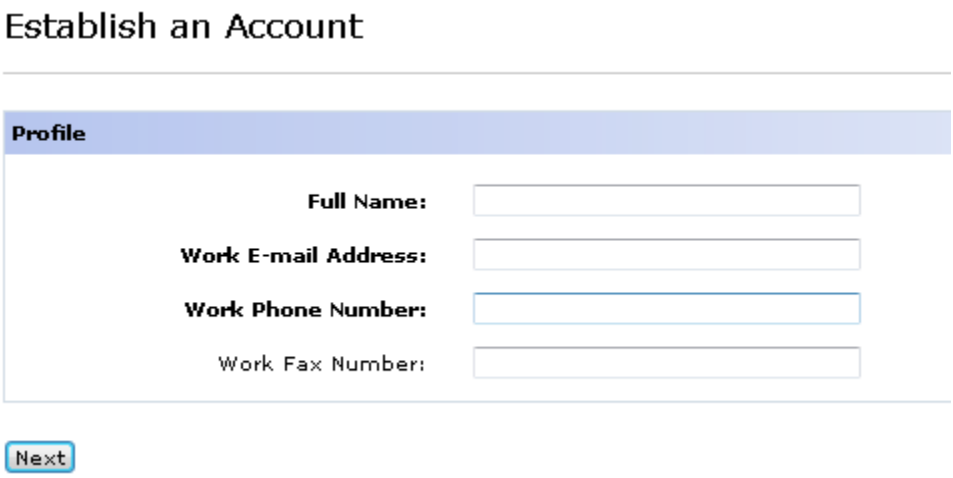


4. Click on “register with Winqual”

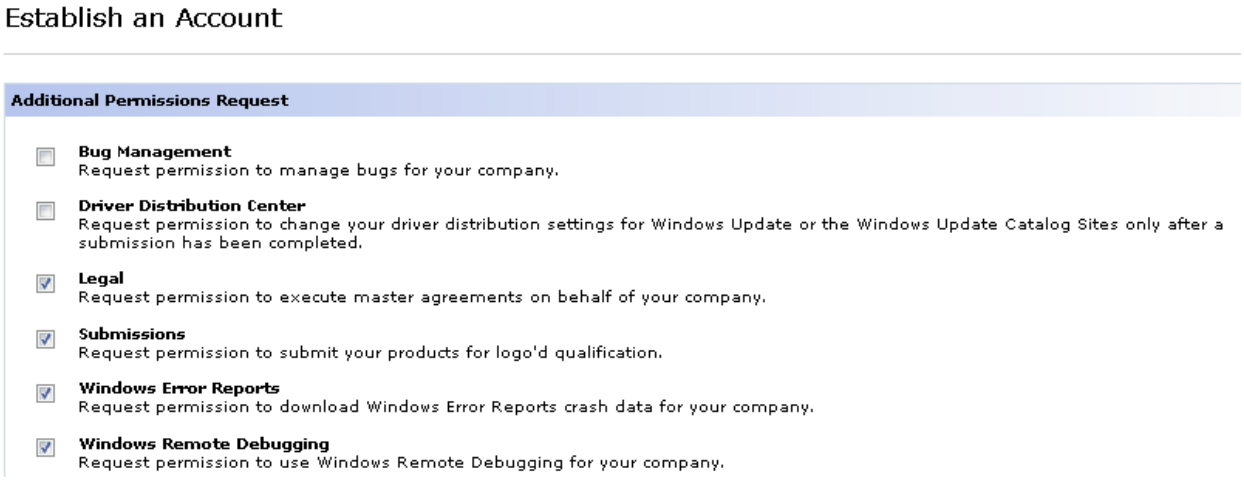


5. Pick your company/organization in the Request a User Account section and click Next

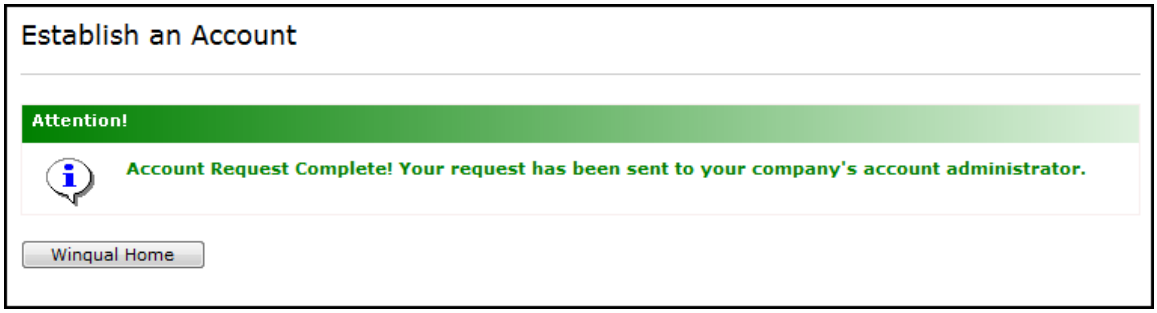
6. Fill in all required (**bold**) fields in the User Profile section and click Next



7. Check the permission(s) that you think you need and optionally type in comments/instructions to your administrator before clicking on Next



8. You are done! Your Winqual administrator will be notified of your request and will have to approve the request before you can log into the Winqual site

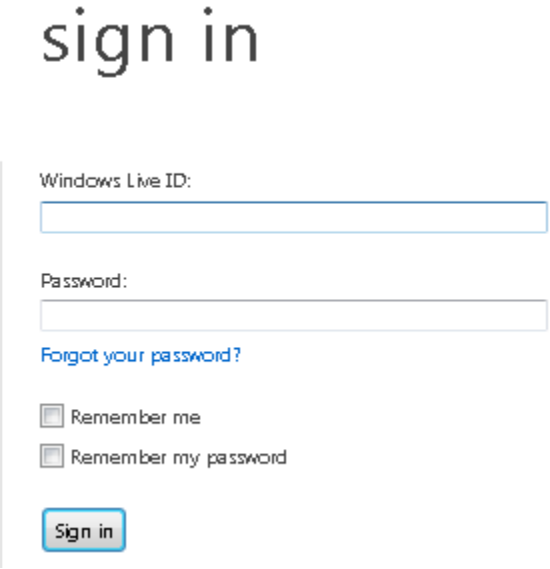


Migrating an Existing Winqual User Account to Live ID

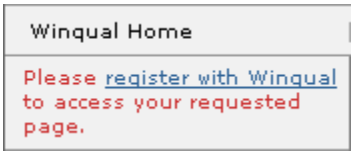
Note: *The new method of login for Winqual requires that all users have a Live ID. If you have an existing Winqual User Account, then migration will allow you to keep your permissions and settings.*

1. Go to Winqual site
2. Click on "Sign in to Windows Live ID"

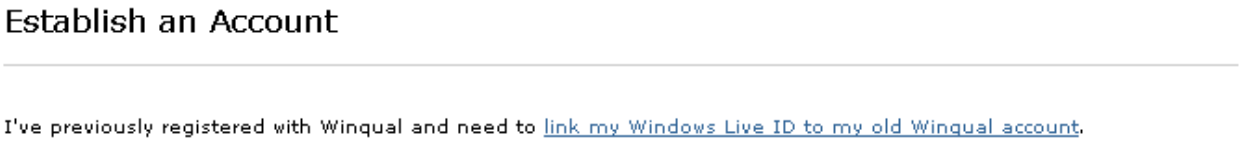
3. Enter your Live ID login credentials



4. Click on "register with Winqual"



5. Click on “link my Windows Live ID to my old Winqual account”



6. Enter your old Winqual credentials

Note: If you have lost your password, use the “Lost your password?” link to have your company administrator reset it.

7. You are done! You must use your Live ID to login to Winqual from now on. All your permissions and settings remain as they were when you had your Winqual account.

Legal Agreements

Submissions on the Winqual Web site require certain legal agreements to allow Microsoft to test, or list products on Microsoft catalogs and distribute drivers on Windows Update. There are three main types of legal agreements that are required before creating submissions:

1. Testing agreements: To participate in the logo program, a company must have a valid testing agreement on file with Microsoft.
2. Logo license agreements: To license the logo on a product, product packaging, or in related marketing materials, a company must have a valid logo license agreement on file and a corresponding product exhibit with Microsoft must be signed during each submission. Contingencies granted as considered as addendums to the Logo License Agreement.
3. Technology specific agreements: To license the Windows flag on a keyboard, a company must have a valid Windows Start Button Logo License Agreement in place. To receive a digital signature for Audio solutions, a valid WHQL Testing Agreement for Digital Rights Management (DRM) must be in place. Other license agreements may apply.

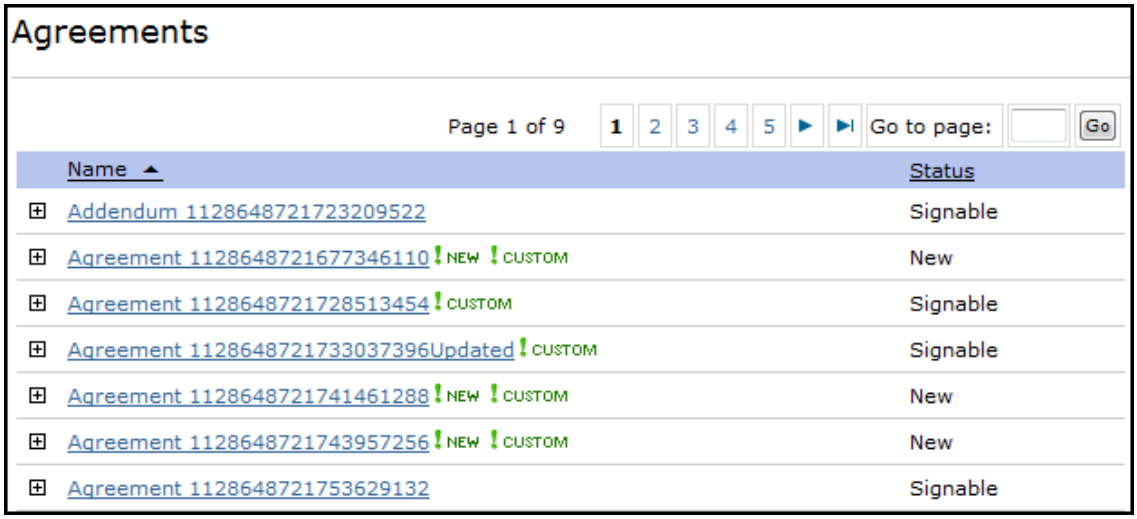
Companies participating in the logo program for hardware must review the specific terms of each legal agreement.

All agreements may be downloaded for review purposes from the menu on the Winqual website.

Getting Started with Legal Agreements

1. Login to the Winqual site.
2. Under Winqual Links, click “Legal Agreements”

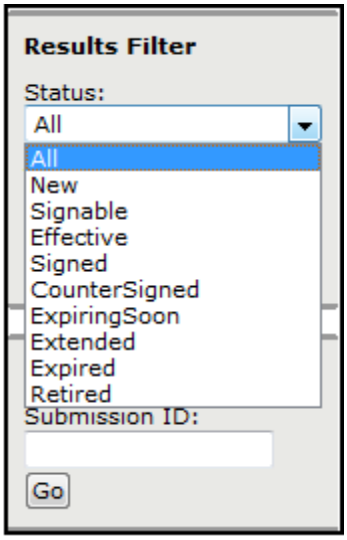
User can see legal agreements that are new, signed, counter-signed, expiring soon or expired.



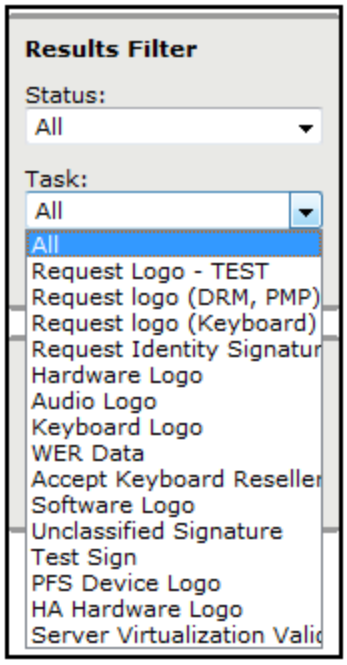
After user signs the agreements, the status of these agreements will remain “Signed” until they are reviewed and accepted (CounterSigned) by Microsoft.

New legal agreements are in one of following statuses:

- **Signable** *(default)* - the agreement has not yet been signed by the Winqual member
- **Signed** - the agreement has been signed by the Winqual member and is being reviewed by Microsoft
- **CounterSigned** - the agreement has been accepted by both the Winqual member and Microsoft making it effective and binding
- **ExpiringSoon** – The legal agreement is going to Expire in near future and Winqual user needs to resign the legal agreement.
- **Extended** – The agreement has been extended by Microsoft on the Winqual users request and now Winqual user needs to accept the extension to make the agreement effective.
- **Expired** – The agreement is expired and is no longer effective. User needs to resign the agreement to perform the relevant task on the Winqual site.

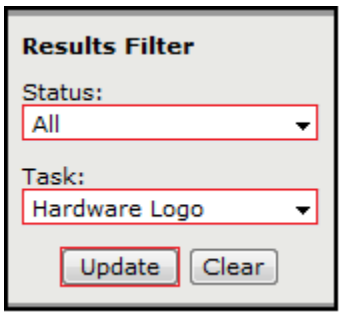


User can identify what legal agreements he/she needs to sign to be able to perform certain tasks. The list of all the Tasks can be viewed in the Task drop down of the Results Filter on the agreements page.



E.g. In order to make a Hardware submission, there needs to be a Logo License Agreement and a Test Agreement signed by the user's company and countersigned by Microsoft. User can find the required agreements for the specific task using the following steps.

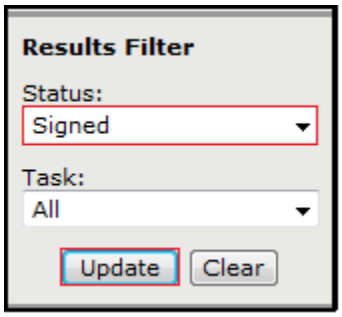
1. Select "All" in the Status dropdown, and "Hardware Logo" on Task dropdown.
2. Click "Update"



E.g. similarly, to find the legal agreements that have been signed by the user's company and not yet countersigned by Microsoft

1. User can change the Status to "Signed" and Task to "All"
2. Click on "Update".

3. The list of legal agreements that are signed by his/her company will be shown.



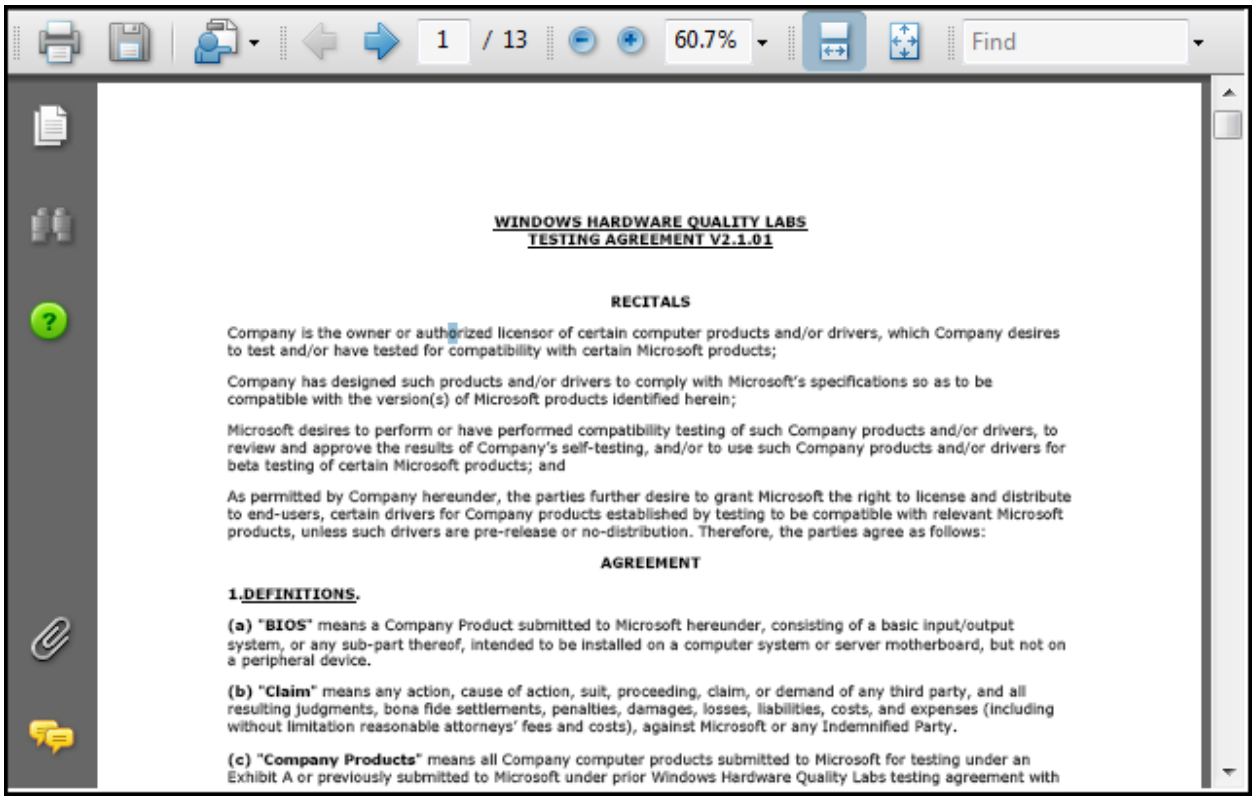
Legal Agreements Details

User can view the details of a Legal Agreement by clicking on the Legal Agreement Link. This takes user to the Agreement Details Page. User will see the following details of the agreement on this page.

Agreement

- **Title** – Title of the agreement
- **Description** – Description of the agreement
- **Status** – Current status of the agreement
- **Expiration** – The expiration date of the agreement
- **Organization** – Name of organization that sign or countersign the agreement
- **Accepted By** – Representative from the organization who signed or countersigned the agreement and the signature date

Agreement Terms



WINDOWS HARDWARE QUALITY LABS
TESTING AGREEMENT V2.1.01

RECITALS

Company is the owner or authorized licensor of certain computer products and/or drivers, which Company desires to test and/or have tested for compatibility with certain Microsoft products;

Company has designed such products and/or drivers to comply with Microsoft's specifications so as to be compatible with the version(s) of Microsoft products identified herein;

Microsoft desires to perform or have performed compatibility testing of such Company products and/or drivers, to review and approve the results of Company's self-testing, and/or to use such Company products and/or drivers for beta testing of certain Microsoft products; and

As permitted by Company hereunder, the parties further desire to grant Microsoft the right to license and distribute to end-users, certain drivers for Company products established by testing to be compatible with relevant Microsoft products, unless such drivers are pre-release or no-distribution. Therefore, the parties agree as follows:

AGREEMENT

1.DEFINITIONS.

(a) "BIOS" means a Company Product submitted to Microsoft hereunder, consisting of a basic input/output system, or any sub-part thereof, intended to be installed on a computer system or server motherboard, but not on a peripheral device.

(b) "Claim" means any action, cause of action, suit, proceeding, claim, or demand of any third party, and all resulting judgments, bona fide settlements, penalties, damages, losses, liabilities, costs, and expenses (including without limitation reasonable attorneys' fees and costs), against Microsoft or any Indemnified Party.

(c) "Company Products" means all Company computer products submitted to Microsoft for testing under an Exhibit A or previously submitted to Microsoft under prior Windows Hardware Quality Labs testing agreement with

Note: User can save the agreement, view the agreement and print the agreement from the Reader Pane.

Signature Block

User will see the following Signature Block if the agreement is already signed,

Signature Block

Accepted By: SpiralOrbit
123, Star Lane

Solar City, Galaxy
United States
12345

Signature: kiyosm2

Date: 4/23/2006

Accepted By: Microsoft Corporation
One Microsoft Way
Redmond, WA
98052
(425) 880-8080

Signature: REDMOND\whql_ops

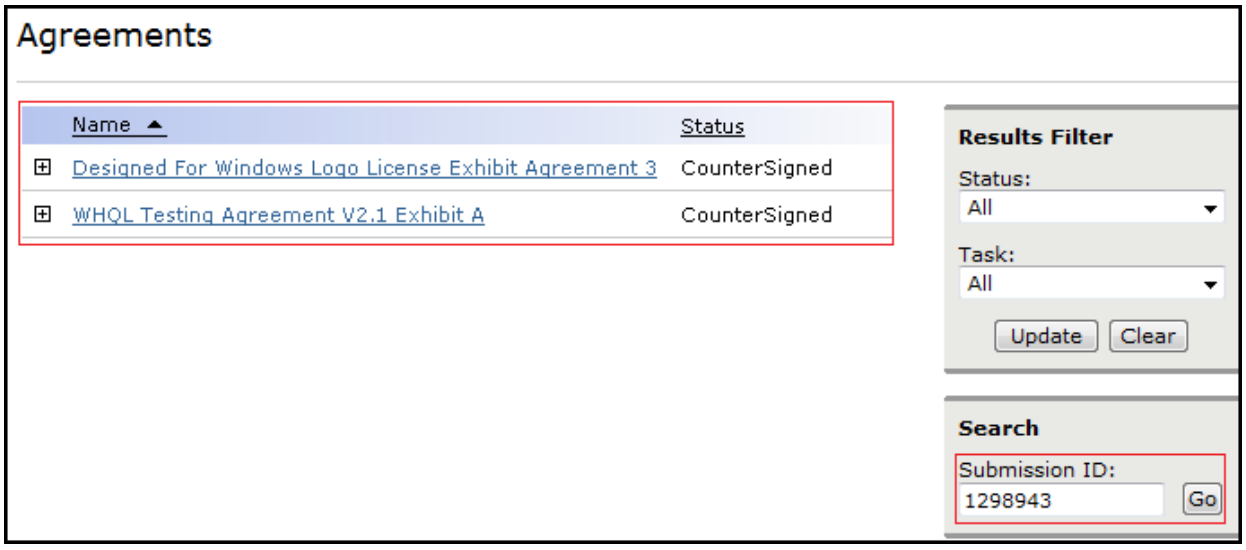
Date: 4/24/2006

or the following Signature Block if the agreements is pending to be signed.

User has to type his/her name and date as it appears on the page, then click “Submit”.

Exhibits

User can find the list of exhibits he/she signed while making a submission by providing the Submission ID in the Submission ID textbox in the Search area on the right-hand-side of the Agreement page and clicking “Go”. This lists all the exhibits that are created for this submission.



Logo Requirements and Testing

LogoPoint

About LogoPoint

LogoPoint is an application on Winqual site that enables our partners to review and contribute feedback to the Logo creation process. The belief is that this collaboration between our partners and Microsoft will lead to higher quality of technical specifications that are delivered in predictable cycles

Getting Started with LogoPoint

Accessing LogoPoint

1. Login to the Winqual site.
2. Under Logo Requirements on the left hand side navigation menu, click “LogoPoint Home”.

Users can do the following tasks in LogoPoint.

- View Logo Requirements
- View Feedback
- Provide Feedback on Requirements
- View Requirements Report

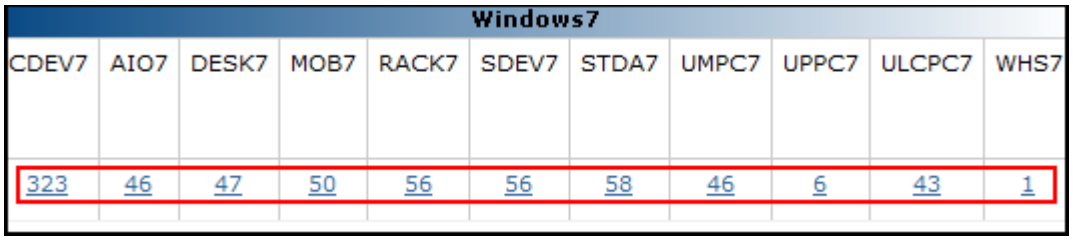
Viewing Requirements

Users can View Requirements in the following ways:

- Via Requirements Search
  - Requirements Search can be opened from Dashboard, or
  - can be opened from left-hand-side Navigation Menu
- Via View Feedback list

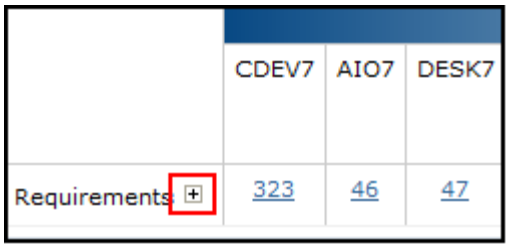
Navigating to Requirements Search page – from Dashboard

- Click on any non-zero number on the Requirements table to view the list of requirements for specific Form Factor.

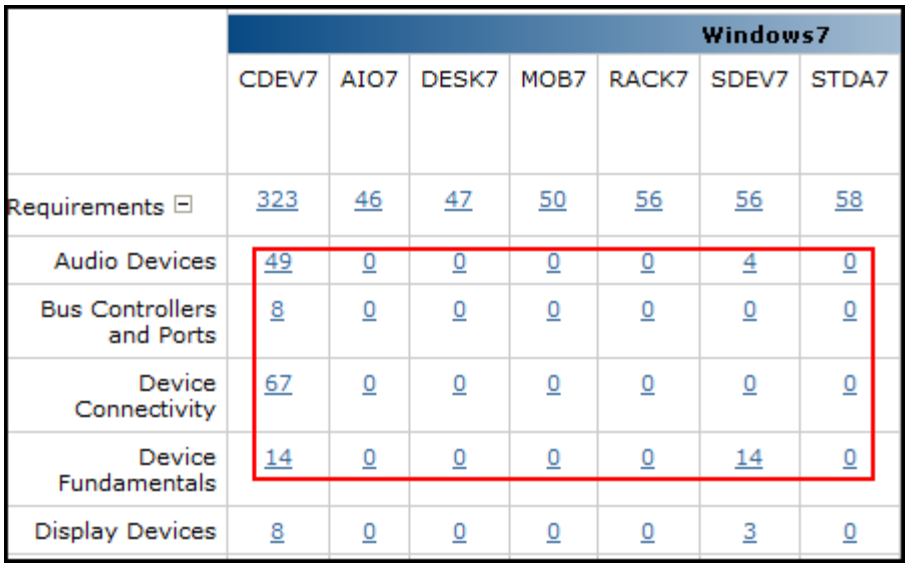


Windows7										
CDEV7	AIO7	DESK7	MOB7	RACK7	SDEV7	STDA7	UMPC7	UPPC7	ULCPC7	WHS7
323	46	47	50	56	56	58	46	6	43	1

- Expand the table by clicking (+) and click on any non-zero number on the Requirements table to view the list of requirements for specific Group and Form Factor.



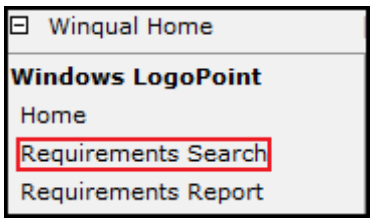
	CDEV7	AIO7	DESK7
Requirements ⊞	323	46	47



	Windows7						
	CDEV7	AIO7	DESK7	MOB7	RACK7	SDEV7	STDA7
Requirements ⊟	323	46	47	50	56	56	58
Audio Devices	49	0	0	0	0	4	0
Bus Controllers and Ports	8	0	0	0	0	0	0
Device Connectivity	67	0	0	0	0	0	0
Device Fundamentals	14	0	0	0	0	14	0
Display Devices	8	0	0	0	0	3	0

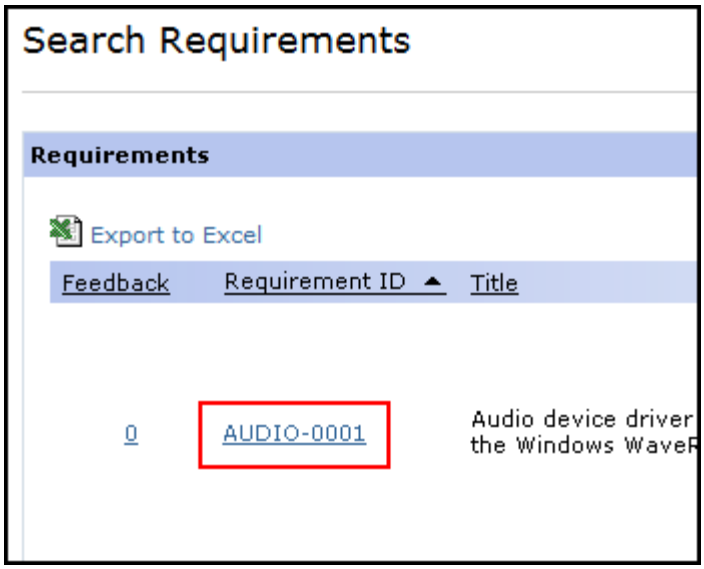
Navigating to Requirements Search page from left-hand-side Navigation Menu

- Click Requirements Search on the left-hand-side Navigation Menu to view the list of all requirements.



View Requirements via Requirements Search

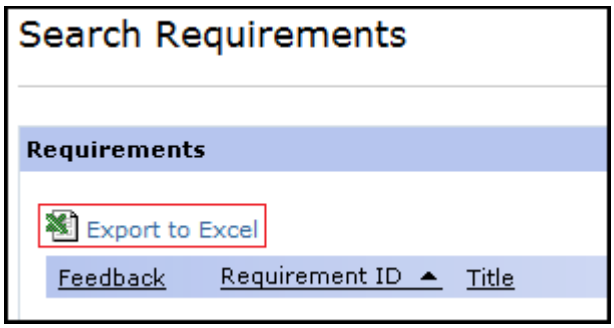
- Click on the Requirement ID to see the Requirement details.



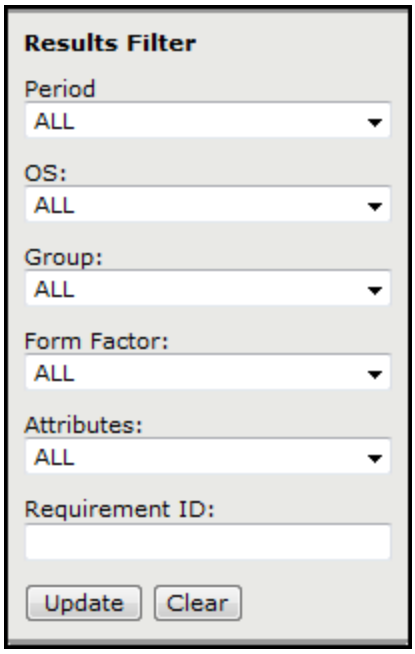
Details include:

  - Requirement Description/Details
  - Effective Date
  - Expiration Date if application
  - Table indicating Form Factors for which the Requirement applies

- Click "Export to Excel" can export the Requirement list to Excel



- Filter the list by using the Results Filter to the right of the list by selecting/entering filter parameters and clicking the 'Update' button. You can filter requirements by the following properties:

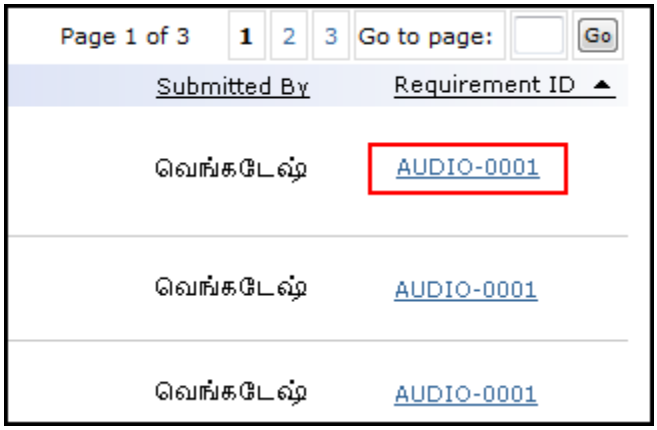


- Period – Year the requirement was published
- OS – Client or Server
- Group – Logical groupings of requirements such as 'Audio Devices'
- Form Factor - Description of type of system such as 'Desktop'
- Attributes – Logo Programs/Categories
- Requirement ID – ID that uniquely identifies a Logo requirement

View Requirements via View Feedback list

Any Feedback list includes a Requirement Id column that indicates requirement associated with the feedback

- Click on the Requirement Id the last column from the left (right-most column) of the Feedback list to see the Requirement details



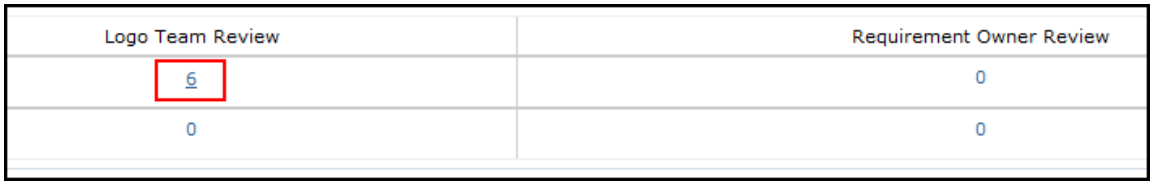
Viewing Feedback

Users can view feedback for a particular requirement in the following ways:

- Via View Feedback page
  - View Feedback page can be opened from Dashboard, or
  - can be opened from left-hand-side Navigation Menu, or
  - can be opened from Requirement list
- Via Requirement Details page

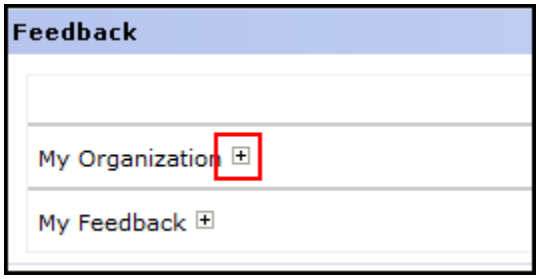
Navigating to View Feedback page from Dashboard

- Click on any non-zero number on the Feedback table to view the list of feedback in different status.



Logo Team Review	Requirement Owner Review
6	0
0	0

- Expand the table by clicking (+) and click on any non-zero number on the Feedback table to view the list of feedback for specific Group and Form Factor.



	Logo Team Review
	6
Audio Devices	0
Bus Controllers and Ports	0
Device Connectivity	0
Device Fundamentals	1
Display Devices	1
Graphics Device	0
Imaging Devices	0
Input Devices	1
Modem	0

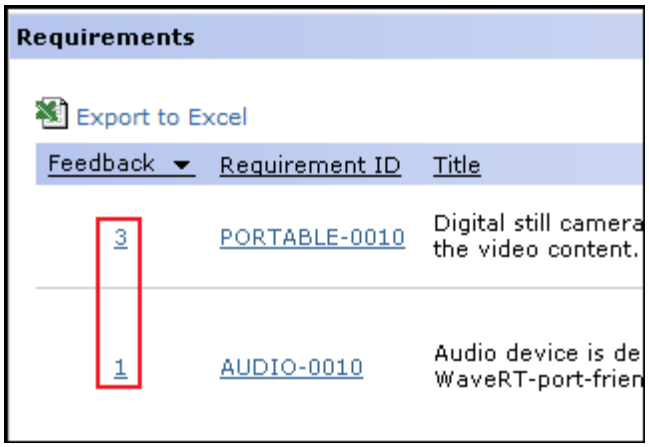
Navigating to View Feedback page from left-hand-side Navigation Menu

- Click View Feedback on the left-hand-side Navigation Menu to view the list of all feedback.

Navigating to View Feedback page from Requirement list

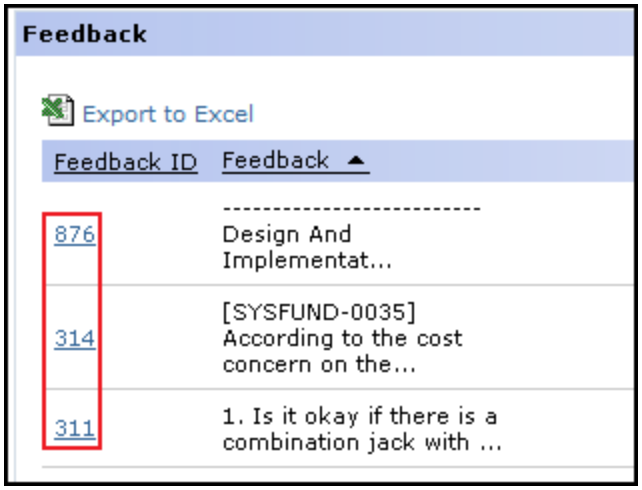
Any Requirement list includes a Feedback Count column that indicates the number of feedback associated with the requirement

- Click on the Feedback Count on the first column from the left (left-most column) of the Requirement list to see the Requirement details



Viewing Feedback via View Feedback page

- Click on the Feedback ID to see the Feedback details.

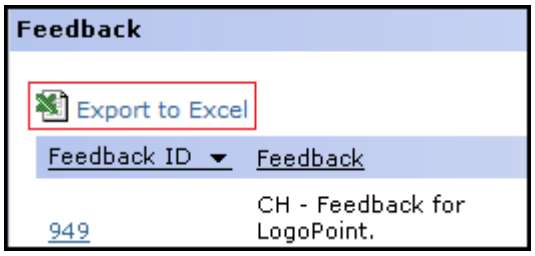


Details include:

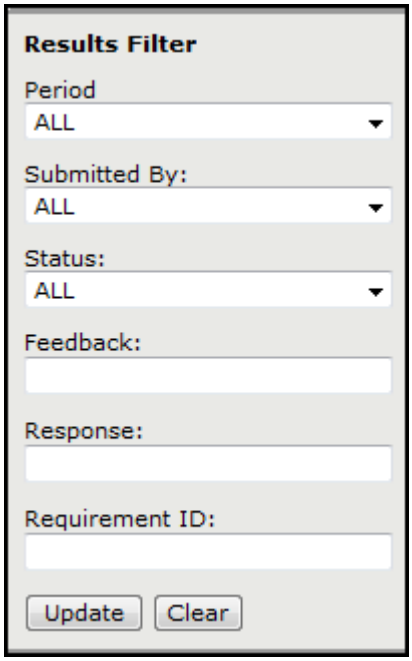
- Requirement Information (ID, Title)
- Feedback

- Response
- Reply Email Addresses
- Feedback Status
- Feedback Type
- Business Unit
- Owned By
- Upload

- Click “Export to Excel” can export the Feedback list to Excel



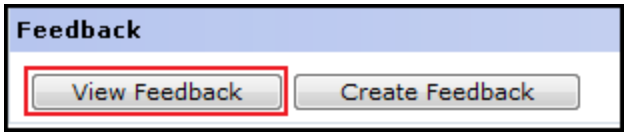
- Filter the list by using the Results Filter to the right of the list by selecting/entering filter parameters and clicking the ‘Update’ button. You can filter requirements by the following properties:



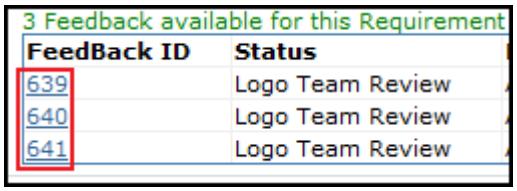
- Period – Year the feedback was submitted
- Submitted By – User who submitted the feedback
- Status – Current status of feedback such as “Logo Team Review” or “Closed”
- Feedback – Filters based on keywords entered here and found in the feedback
- Response – Filters based on keywords entered here and found in the response for the feedback
- Requirement ID – ID that uniquely identifies a Logo requirement

Viewing Feedback via Requirement Details page

- Click on View Feedback at the bottom of any Requirement Details page. All feedback for the user's organization will be displayed at the bottom of the page.



- Click on Feedback ID to see the Feedback details



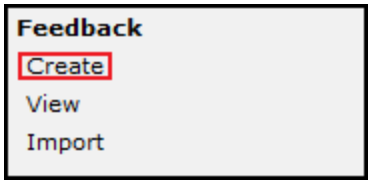
Providing Feedback on Requirements

Users can provide feedback on Logo Requirements in the following ways:

- Via Create Feedback page
    - Create Feedback page can be opened from left-hand-side Navigation Menu, or
    - can be opened from Requirement Details page
- Via Import Feedback page

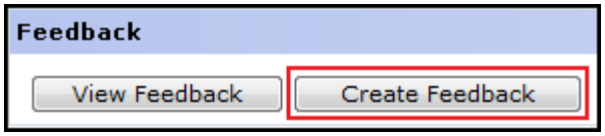
Navigating to Create Feedback page from left-hand-side Navigation Menu

- Click View Feedback on the left-hand-side Navigation Menu to view the list of all feedback.



Navigating to Create Feedback page from Requirement Details page

- Click Create Feedback at the bottom of any Requirement Details page. All feedback for the user's organization will be displayed at the bottom of the page.



Providing Feedback via Create Feedback page

- Fill out/ Select value for the following properties on the Create Feedback form
    - Requirement (No need to select if navigated from Requirement Details page)
    - Feedback (Required) – Feedback for the requirement
    - Reply Email Addresses (Optional) – Email Addresses for Logo Team to send responses
    - Business Unit (Optional) – Name of business unit that submitted the Feedback
    - Upload (Optional) – File attachments

File Attachments

Users can attach file to new or existing feedback. Multiple files can be attached to feedback with total size limited to 5MB.

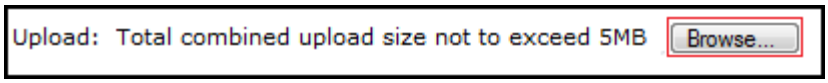
Allowable file types:

- Word (2000-2003 and 2007)
- Rich Text Format
- Adobe PDF
- PowerPoint
- Excel
- Visio

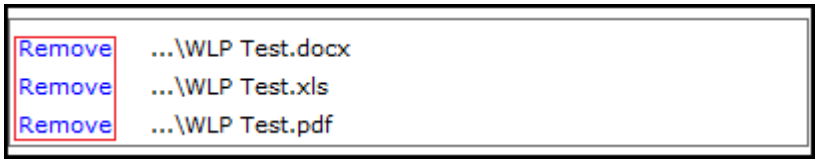
Attaching Files to Feedback

From Create Feedback or Update Feedback page

- Click “Browse”



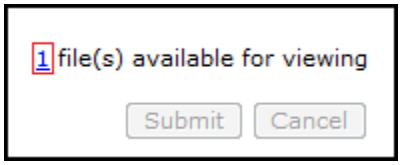
- Navigate to the file you would like to upload, and then click “Open”.
- You can upload multiple files by repeating the above steps
- The file to be uploaded will be displayed in a list like below. Click on “Remove” will remove the file from the upload list.



Viewing the Status of File Attachments

From Update Feedback page:

- Click the number (link) that indicates how many file(s) are “available for viewing”. This will open Uploaded Files status dialog.



- The Uploaded Files status dialog displays a table with the following information
  - Status – shows the overall status of the upload as below:
    - Passed – Successfully completed the virus-scan process
    - Pending – Uploaded successfully but has not completed virus-scan process
    - Failed – Failed virus-scan OR failed the file upload process
  - Feedback Resource – Name of the uploaded file. The Name will become a link when if the status of the upload is Passed.
  - Date Submitted – The date that the file was uploaded.
- The table can be sorted by any of the three columns mentioned above.
- Click “Close” to close the popup dialog and return focus back to Update Feedback page.

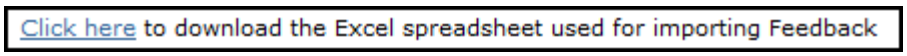
Providing Feedback via Import Feedback page

Users can provide feedback to multiple requirements by filling out and upload the custom spreadsheet through Import Feedback page. Once spreadsheet is uploaded, the spreadsheet will go through virus-scan. Feedback will be generated for the appropriate Requirements after the spreadsheet passed the virus-scan.

Importing Feedback

- Click "Import" under Feedback on the left-hand-side navigation menu.

- Download the Excel spreadsheet from the link on the page.



- Fill out appropriate columns in the spreadsheet and Save
    - Requirement Id (Required) – e.g. LOGOPOINT-0001
    - Business Unit (Optional) – Name of business unit within an organization that is submitting the feedback
    - Feedback Type (Optional) – Type of Feedback. Currently, the only option is Miscellaneous.
    - Comments – Feedback for the Requirement specified in the Requirement Id column
- Click "Browse". Navigate to the file you would like to upload, and then click "Open".
- Click "Upload Resources" to upload the spreadsheet

Viewing the Status of the Imported Feedback

From Import Feedback page:

- Click "Click here" as shown in below. This will open Import Feedback Status dialog.
- The Uploaded Files status dialog displays a table with the following information
    - Status – shows the overall status of the upload as below:
        - Passed – Successfully completed the virus-scan process
        - Pending – Uploaded successfully but has not completed virus-scan process
        - Failed – Failed virus-scan OR failed the file upload process
    - Feedback Resource – Name of the uploaded file. The Name will become a link when if the status of the upload is Passed.
    - Date Submitted – The date that the file was uploaded.
- The table can be sorted by any of the three columns mentioned above.
- Click "Close" to close the popup dialog and return focus back to Import Feedback page.

Viewing Requirement Report

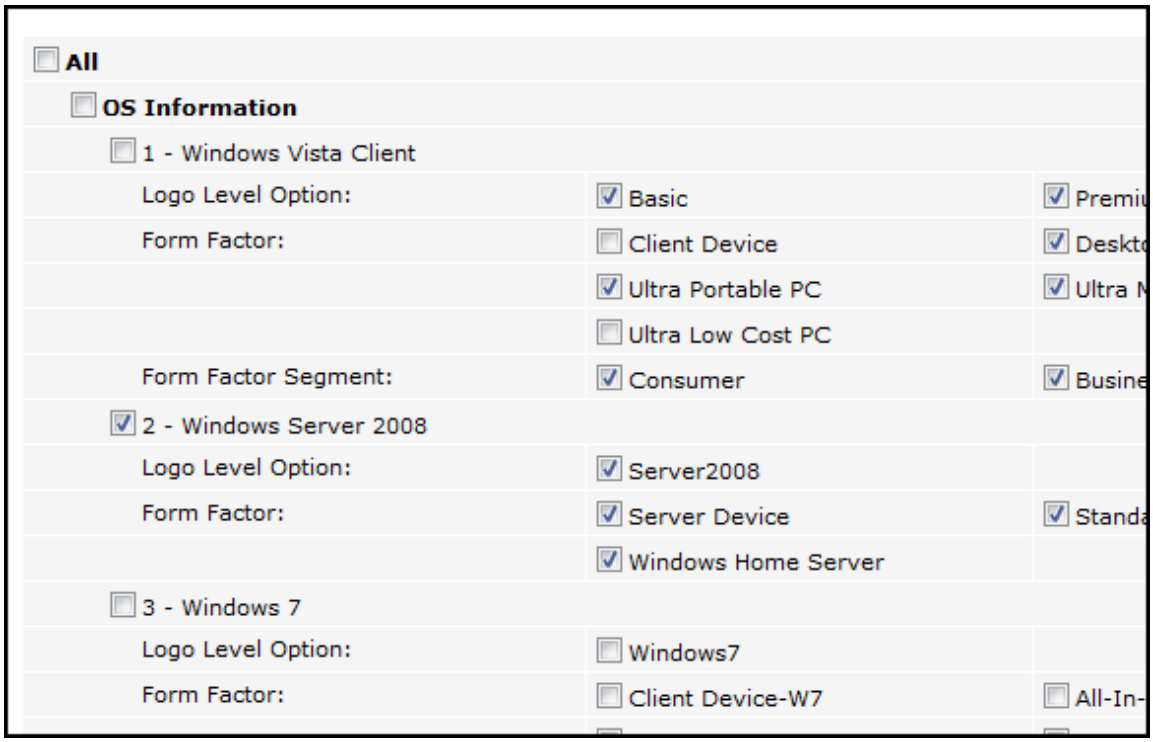
Users can view requirements in a report format by using Requirements Report

Navigating to Requirements Report page

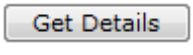
- Click Requirements Report on the left-hand-side Navigation Menu

Generating a Report

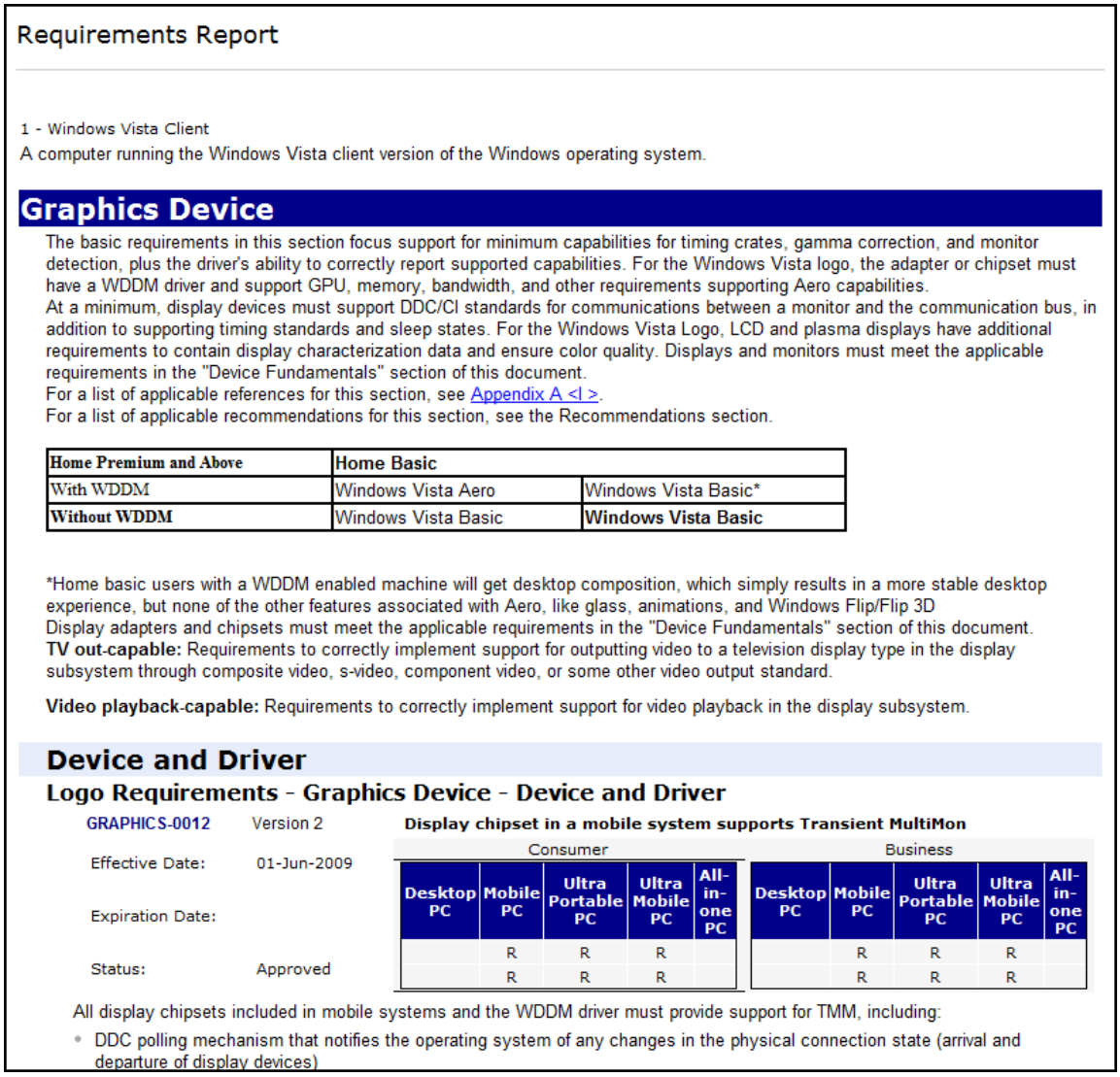
- Check any checkboxes on the page



- Or use any other criteria at the bottom of the page

- Then click “Get Details” at the bottom of the page to generate the report. 

- Or click “Reset” at the bottom of the page to reset all search criteria. Reset
- Users should see a report like the following after clicking “Get Details”



Requirements Report

1 - Windows Vista Client
A computer running the Windows Vista client version of the Windows operating system.

Graphics Device

The basic requirements in this section focus support for minimum capabilities for timing crates, gamma correction, and monitor detection, plus the driver's ability to correctly report supported capabilities. For the Windows Vista logo, the adapter or chipset must have a WDDM driver and support GPU, memory, bandwidth, and other requirements supporting Aero capabilities.
At a minimum, display devices must support DDC/CI standards for communications between a monitor and the communication bus, in addition to supporting timing standards and sleep states. For the Windows Vista Logo, LCD and plasma displays have additional requirements to contain display characterization data and ensure color quality. Displays and monitors must meet the applicable requirements in the "Device Fundamentals" section of this document.
For a list of applicable references for this section, see Appendix A <I >.
For a list of applicable recommendations for this section, see the Recommendations section.

Home Premium and Above	Home Basic	
With WDDM	Windows Vista Aero	Windows Vista Basic*
Without WDDM	Windows Vista Basic	**Windows Vista Basic**

*Home basic users with a WDDM enabled machine will get desktop composition, which simply results in a more stable desktop experience, but none of the other features associated with Aero, like glass, animations, and Windows Flip/Flip 3D
Display adapters and chipsets must meet the applicable requirements in the "Device Fundamentals" section of this document.
TV out-capable: Requirements to correctly implement support for outputting video to a television display type in the display subsystem through composite video, s-video, component video, or some other video output standard.

Video playback-capable: Requirements to correctly implement support for video playback in the display subsystem.

Device and Driver

Logo Requirements - Graphics Device - Device and Driver

GRAPHICS-0012 Version 2

Display chipset in a mobile system supports Transient MultiMon

Effective Date: 01-Jun-2009

Expiration Date:

Status: Approved

	Consumer					Business				
	Desktop PC	Mobile PC	Ultra Portable PC	Ultra Mobile PC	All-in-one PC	Desktop PC	Mobile PC	Ultra Portable PC	Ultra Mobile PC	All-in-one PC
		R	R	R			R	R	R	
		R	R	R			R	R	R	

All display chipsets included in mobile systems and the WDDM driver must provide support for TMM, including:

- DDC polling mechanism that notifies the operating system of any changes in the physical connection state (arrival and departure of display devices)

Contact Us

- Please submit feedback in the form of questions, comments, feature requests or issues with the LogoPoint application to the following requirement:
  - LOGOPOINT-0001 - LogoPoint beta program feedback tracking
- Please submit feedback in the form of questions or comments about Logo Specifications to the appropriate Logo Policy requirement. For Help, please refer to the instructions under ‘**Providing Feedback on Requirements**’.

Note: Users must login with a valid Winqual account to submit Feedback. Contact winqual@microsoft.com for problems accessing LogoPoint.

Test Signatures for Windows Drivers

Introduction

The WHQL Test Signature program for the Microsoft® Windows® 2000, Windows XP, and Windows Server 2003 operating systems enables original equipment manufacturers (OEMs) to test new or updated drivers on OEM Preinstallation Kit (OPK) installations before the drivers are submitted through Windows Quality Online Services. This process allows you to simultaneously test your group's internally developed drivers with drivers provided by independent hardware vendors (IHVs). The Test Signature Program does not replace the Windows Logo Program.

Unacceptable Uses for Test Signatures

Microsoft considers the following uses for test signatures unacceptable:

- Posting test-signed drivers for download by customers
- Including test-signed drivers in a factory-to-customer process

How to Use Test-signed Drivers

To prepare a system currently running a Microsoft Windows operating system for using test-signed drivers

1. Double-click the test root certificate file (Testroot.cer), and then click **Install Certificate** to add it to the system
2. Click **Place all certificates in the following store**, and then click **Browse**.
3. Select the **Show physical stores** check box, and then expand **Trusted Root Certification Authorities**.
4. Select the **Local Computer** folder, and then click **OK**.
5. Complete the Certificate Import wizard and accept all defaults to install the certificate.

After you complete this procedure, you can then install the driver with the **Add New Hardware Wizard** or by using **Device Manager**.

How to Use Test-signed Drivers and the OPK

Follow these procedures if you are using test signatures with the Microsoft OPK. The procedures vary depending on whether you are using a non-cloned (over the network), cloned (through hard drive duplication), or compressed clone system.

On non-cloned systems before running setup

(Use this procedure if the system is not a clone.)

To install the test root certificate

1. Copy the Distribution Folder structure from the production environment into a test environment.
2. Add the test-signed driver to the test distribution folders location representing the directory **%systemdrive%\<pnpdrvrs>\<type>**, as specified by the OemPnpDriversPath parameter in the OPK.

3. Add the test root certificate file (Testroot.cer) to the test source location representing **%systemdrive%\Privates**.
4. Modify the answer file that automates the Microsoft Windows Setup to include the following:
   [Unattended]
   TestCert = "%systemdrive%\Privates\Testroot.cer"
5. Run setup on each test computer.

On systems that use file-based cloned images

(Use this procedure if you are installing a file-based clone.)

To install the test root certificate

1. Replicate the file-based source to a test environment.
2. Add the test-signed driver to the test source location representing the directory specified by the OemPnpDriversPath parameter, equivalent to **%systemdrive%\<pnpdrvrs>\<type>**.
3. Add the test root certificate file (**Testroot.cer**) to the test source location representing **%systemdrive%\Privates**.
4. Create a **Sysprep.inf** to automate the Mini-Setup wizard that also includes:
   [Unattended]
   TestCert = "%systemdrive%\Privates\Testroot.cer"
5. Create a script used for building the test images that uses the Sysprep.inf test and then adds the test-signed driver to the list of copied files.
6. Run the script to copy the Microsoft Windows operating system image to the other test computers.

Systems that use compressed cloned images with packing and editing tools

(Use this procedure if the system uses compressed clone images and if the tools are available to unpack and edit the image on the destination computer without launching the Mini-Setup wizard.)

To install the test root certificate when you have the necessary unpacking and editing tools

1. Copy the factory image to a test computer.
2. Modify the Sysprep.inf typically used for the end user or factory process that also includes:
   [Unattended]
   TestCert = "%systemdrive%\Privates\Testroot.cer"
3. Copy the test-signed driver to the test computer folder specified by the OemPnpDriversPath parameter, equivalent to **%systemdrive%\<pnpdrvrs>\<type>**.
4. Add the test root certificate file (Testroot.cer) to the test computer folder, **%systemdrive%\Privates**.
5. Copy the **Sysprep.inf** to the **%systemdrive%\Sysprep** folder on the test computer.
6. At this point, you can re-image the computer's hard disk drive to replicate the same testing process on multiple, similar computers, or you can restart each computer in the test environment.

Systems that use compressed cloned images without unpacking and editing tools

(Use this procedure if the system uses compressed clone images when tools are not available to unpack and edit the image on the destination computer. To successfully complete this process, you must first run the Mini-Setup wizard.)

To install the test root certificate when you do not have unpacking and editing tools

1. Copy the factory image to a test computer.
2. Use a Sysprep.inf that automates the Mini-Setup wizard.
    - Copy the **Sysprep.inf** file to a floppy disk.
    - Turn on the computer.
    - When you see the **Boot** menu, place the floppy disk into the floppy disk drive.
3. Copy the Sysprep files that should be on an end-user's system (or in the initial factory process) to the **%systemdrive%\Sysprep** folder on the test computer.
4. Modify the **Sysprep.inf** that is used for the factory or end-user computer to include:
   [Unattended]
   TestCert = "a:\Privates\Testroot.cer"
5. Copy the test root certificate file (Testroot.cer) to the test computer folder: **%systemdrive%\Privates**.
6. Copy the test-signed driver to the test computer folder specified by the OemPnpDriversPath parameter, equivalent to **%systemdrive%\<pnpdrvrs>\<type>**.
7. Run **Sysprep.inf** with the same parameters used to create the master factory image.
8. Turn off the computer.
9. At this point, re-image the computer's hard disk drive to replicate the same testing process on multiple, similar computers or restart each computer in the test environment.

Windows Logo Kit

Help content for the Windows Logo Kit (WLK) is available online on the Microsoft Connect site.

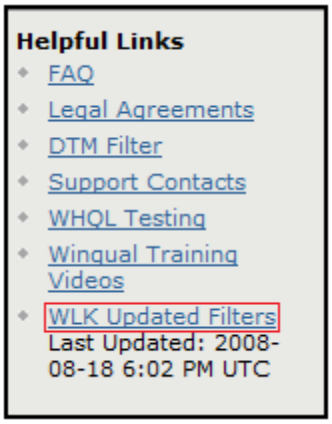
Steps to download:

- Navigate to http://connect.microsoft.com
- Log in with a valid Windows Live ID
- Click the “Connection Directory” link on the menu bar (near the top of the page)
- In the “Categories” list left-hand menu, select “Windows”
- Find the entry named “Windows Driver Kit (WDK), Windows Logo Kit (WLK) and Windows Driver Framework (WDF)” and click “Apply Now”
- Once enrolled, click the “Your Dashboard” link on the menu bar (near the top of the page)
- Click the ““Windows Driver Kit (WDK), Windows Logo Kit (WLK) and Windows Driver Framework (WDF)” link to navigate to the site page
- On the “WDK/WLK/WDF Site Info” page, click “Downloads” from the left-hand menu
- On the list of downloads available, find the most recent item beginning with “DTM Documentation” and click the title to download

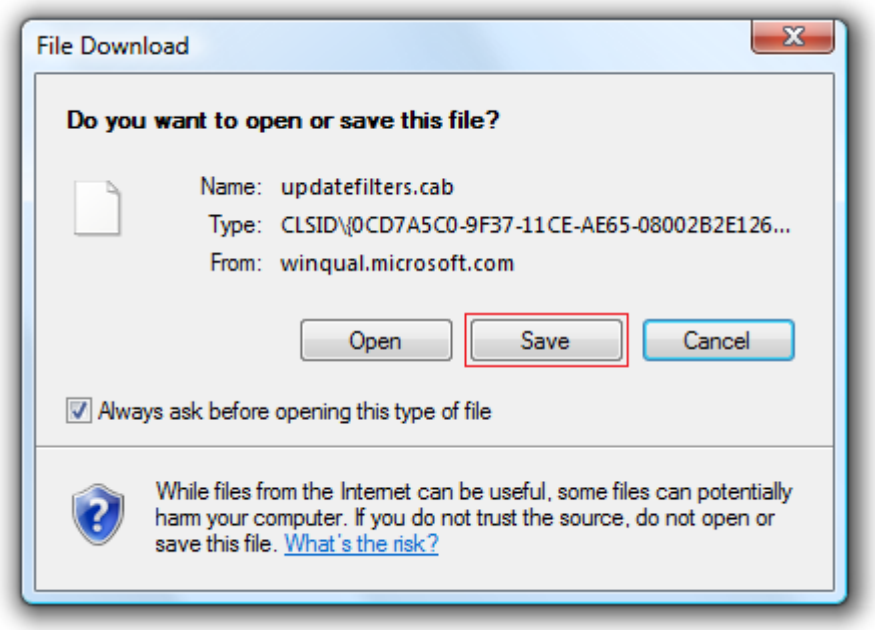
WLK Filters

Download WLK Filters

1. On the Winqual site, user can access DTM Filters page by clicking the link “WLK Updated Filters” under Helpful Links section.



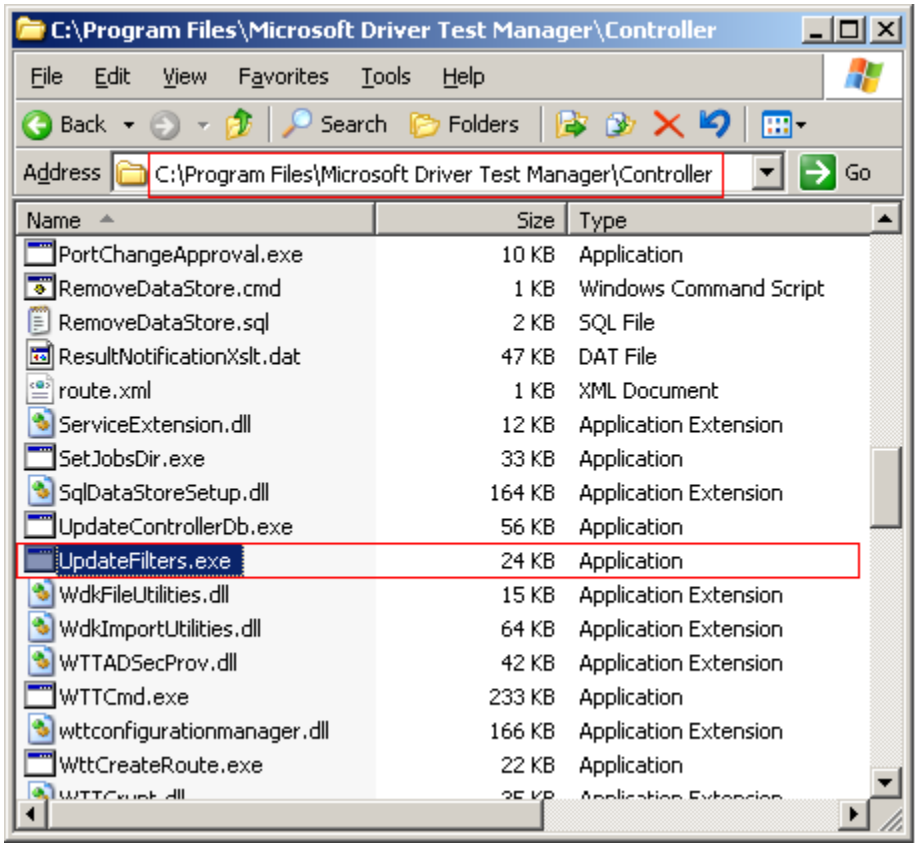
2. Click Save to save the CAB file to your local drive



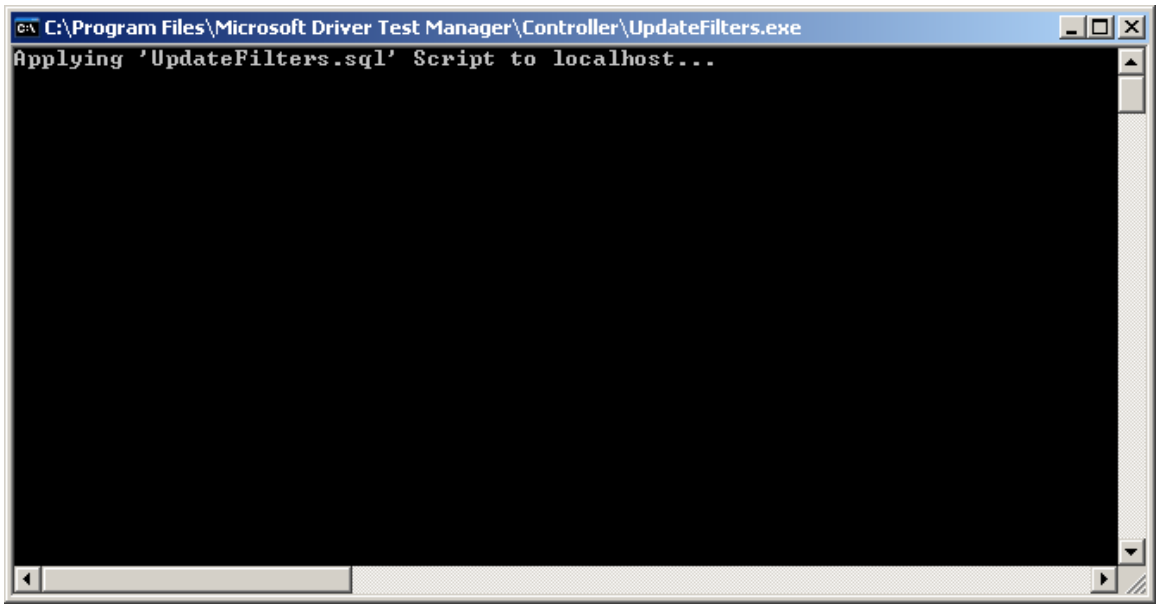
3. You should find the follow files when you open the CAB file
    - Readme
    - Updatefilters.sql

Applying WLK Filters

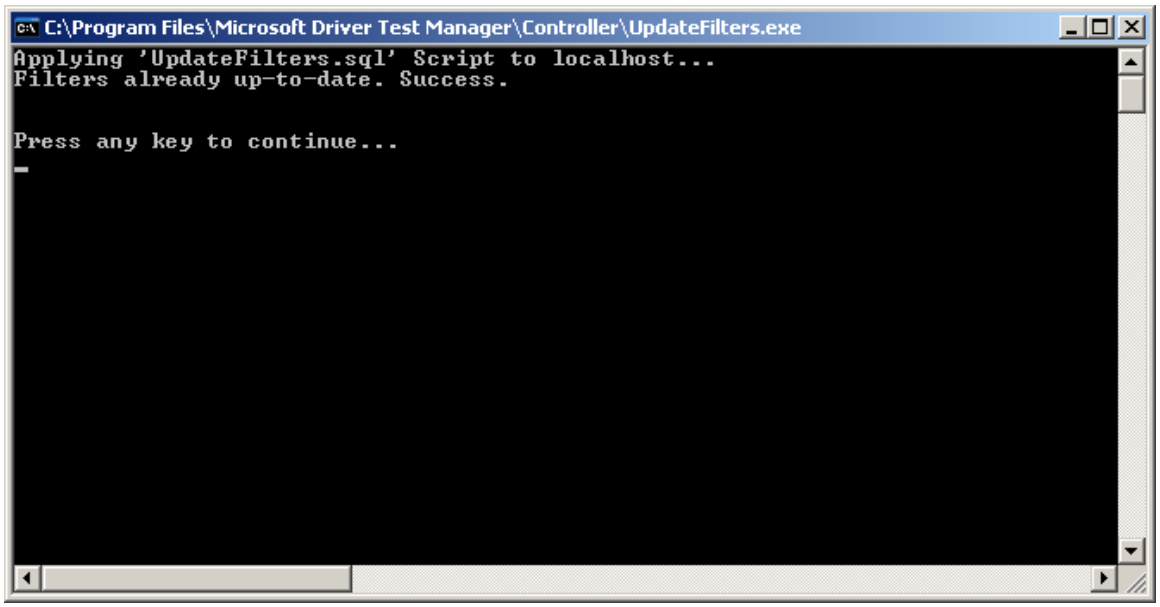
1. Click and drag UpdateFilters.sql from the cab file to the Controller directory



2. Run UpdateFilters.exe from the Controller directory. You will see an initial window while the filters are applied:



3. If you re-run the UpdateFilters.exe application after applying the filters, it will confirm the installation:


C:\Program Files\Microsoft Driver Test Manager\Controller\UpdateFilters.exe
Applying 'UpdateFilters.sql' Script to localhost...
Filters already up-to-date. Success.
Press any key to continue...

DTM Filters page

About DTM Filters page

DTM Filters page is a page on the Winqual site that provides DTM users with the list of Errata, Contingencies and Auto-Triage filters that are currently available.

Using DTM Filters page

Accessing DTM Filters page

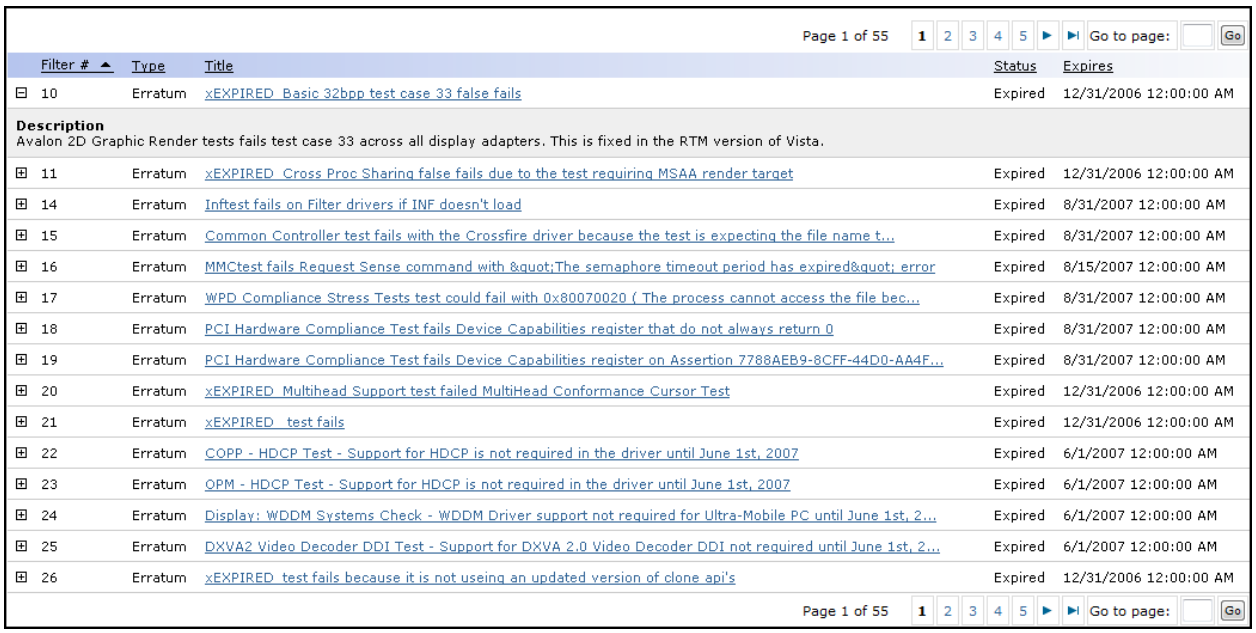
4. On the Winqual site, user can access DTM Filters page by clicking the link “DTM Filter” under Helpful Links section.

Users can do the following tasks in LogoPoint.

- View all types of DTM Filters (Errata, Contingency, AutoTriage)

DTM Filters main page

User will see a list of Filters ordered by Filter Number as shown below.



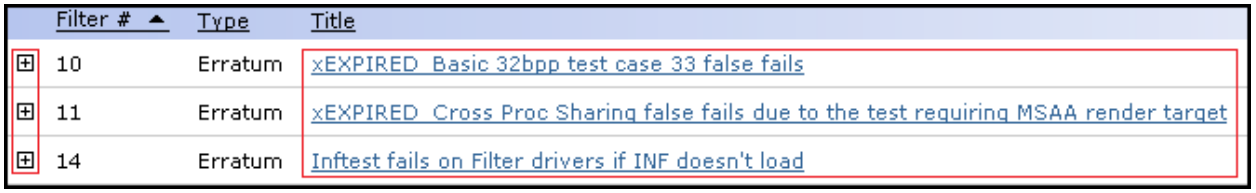
Page 1 of 55 1 2 3 4 5 ▶ ▶| Go to page: Go

	Filter # ▲	Type	Title	Status	Expires
⊟	10	Erratum	xEXPIRED_Basic 32bpp test case 33 false fails	Expired	12/31/2006 12:00:00 AM
	Description Avalon 2D Graphic Render tests fails test case 33 across all display adapters. This is fixed in the RTM version of Vista.				
⊞	11	Erratum	xEXPIRED_Cross Proc Sharing false fails due to the test requiring MSAA render target	Expired	12/31/2006 12:00:00 AM
⊞	14	Erratum	Inftest fails on Filter drivers if INF doesn't load	Expired	8/31/2007 12:00:00 AM
⊞	15	Erratum	Common Controller test fails with the Crossfire driver because the test is expecting the file name t...	Expired	8/31/2007 12:00:00 AM
⊞	16	Erratum	MMCtest fails Request Sense command with "The semaphore timeout period has expired" error	Expired	8/15/2007 12:00:00 AM
⊞	17	Erratum	WPD Compliance Stress Tests test could fail with 0x80070020 (The process cannot access the file bec...	Expired	8/31/2007 12:00:00 AM
⊞	18	Erratum	PCI Hardware Compliance Test fails Device Capabilities register that do not always return 0	Expired	8/31/2007 12:00:00 AM
⊞	19	Erratum	PCI Hardware Compliance Test fails Device Capabilities register on Assertion 7788AEB9-8CFF-44D0-AA4F...	Expired	8/31/2007 12:00:00 AM
⊞	20	Erratum	xEXPIRED_Multihead Support test failed MultiHead Conformance Cursor Test	Expired	12/31/2006 12:00:00 AM
⊞	21	Erratum	xEXPIRED_ test fails	Expired	12/31/2006 12:00:00 AM
⊞	22	Erratum	COPP - HDCP Test - Support for HDCP is not required in the driver until June 1st, 2007	Expired	6/1/2007 12:00:00 AM
⊞	23	Erratum	OPM - HDCP Test - Support for HDCP is not required in the driver until June 1st, 2007	Expired	6/1/2007 12:00:00 AM
⊞	24	Erratum	Display: WDDM Systems Check - WDDM Driver support not required for Ultra-Mobile PC until June 1st, 2...	Expired	6/1/2007 12:00:00 AM
⊞	25	Erratum	DXVA2 Video Decoder DDI Test - Support for DXVA 2.0 Video Decoder DDI not required until June 1st, 2...	Expired	6/1/2007 12:00:00 AM
⊞	26	Erratum	xEXPIRED_test fails because it is not useing an updated version of clone api's	Expired	12/31/2006 12:00:00 AM

Page 1 of 55 1 2 3 4 5 ▶ ▶| Go to page: Go

Note: Users can click a column title to sort the list.

On this page, users can click the (+) to view the issue description that the filter addresses/identifies, or users can click the title link to open the filter details page.

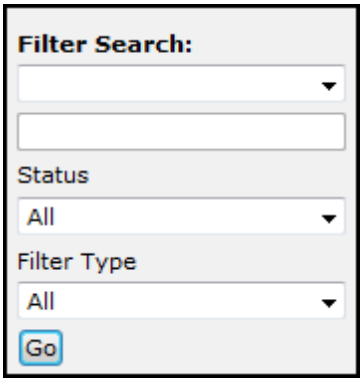


	Filter # ▲	Type	Title
⊞	10	Erratum	xEXPIRED_Basic 32bpp test case 33 false fails
⊞	11	Erratum	xEXPIRED_Cross Proc Sharing false fails due to the test requiring MSAA render target
⊞	14	Erratum	Inftest fails on Filter drivers if INF doesn't load

Filter Search

Users can search for DTM Filters by the following properties using the search control on the left-hand-side of the page

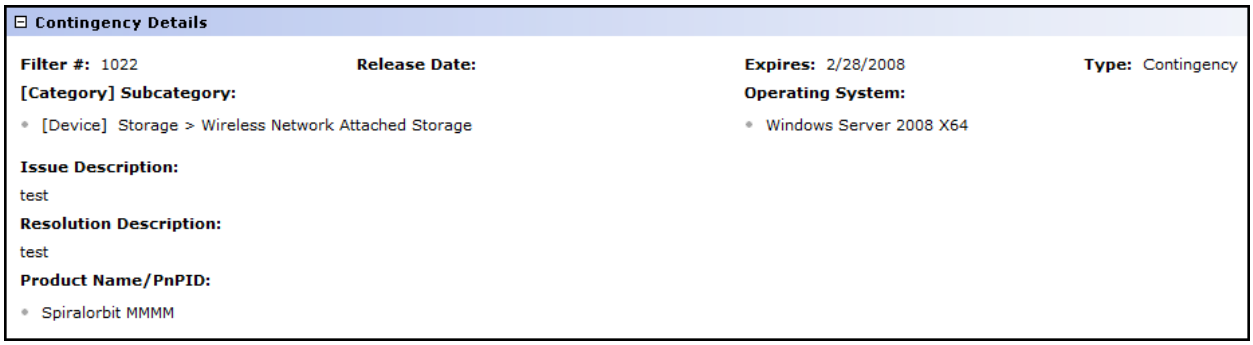
- ID – Filter ID
- Title – Any **Text** from the Filter Title
- Status – Current status of the Filter (Active, Expired, Expiring Soon)
- Filter Type – Errata, Contingency, AutoTriage



Filter Details

On this page, user can view the following information for the filter

- Filter # - Filter ID
- Release Date – Filter release date
- Expires – Filter expiration date
- Type – Filter Type
- [Category] Subcategory – Logo Category/Subcategory to which the filter applies
- Operation System – Operation System to which the filter applies
- Issue Description – Describes the issue that the filter addresses/identifies
- Resolution Description – Describes the resolution to the test failure (Applies AutoTriage)
- Product Name/PnPID - Product Name or PnPID the filter is created against (Only applies to Contingency type filters)



Logo Submission

Submission Prerequisites

The following steps must be fulfilled before making a Logo Submission

1. Establish a Winqual Account
2. Ensure that the “Logo Submission” permission is assigned to the user account with Member Services
3. Sign that all current Legal Agreements
4. Install the Winqual Submission Tool
5. Install Microsoft Silverlight
6. Install Adobe Acrobat Reader

Submission Requirements

You must include the following:

1. Tested Drivers
   Your drivers must pass testing before you submit them for logo qualification.
2. You must provide driver symbol files when making an "Unclassified" submission.
   Note: You can optionally provide driver symbol files for all other submissions. Driver symbol files can help provide better troubleshooting information when customers experience driver failures.
3. Passing Test Logs
   You must provide a complete set of passing test logs generated from the test kit for your hardware and/or driver. For more information, see the Windows Quality Online Services Test Kits and Procedures.

Driver Package Guidelines

Each hardware and/or driver submission completed through the Winqual website may include one or more driver packages. A driver package consists of a complete set of files that are required to install the driver for the test device. Each driver package included in the submission package must be selected separately using the Winqual Submission Tool.

When submitting a driver package, do **not** include:

- Test logs
- Multiple copies of the driver package in subdirectories
- Files from other driver packages
- Value-added applications
- Files to be excluded from the distribution package

Driver packages included with submissions should be submitted exactly as they will be distributed. All files in a designated directory, including files in subdirectories, are considered to be part of the same driver package. After a driver package has been submitted, file names, file locations, and directory

structures cannot be changed. Such changes can prevent the operating system from detecting a driver's digitally signed catalog file.

If a device requires separate drivers to support multiple operating systems, each driver must be submitted in a separate package, but may be included in the same submission. Each driver package must correspond to the operating systems selected.

Variations of the same driver, as in the case of multi-language submissions, can be submitted as separate driver packages within a submission package.

Virus Scanning Submission Packages

You must virus scan all submission package files that you send to Winqual. Your anti-virus software must have an up-to-date virus signature file prior to the scan and you must scan both compressed and uncompressed driver packages for viruses. You can use any of the virus scanners listed on the ICSA certified products page.

Winqual Submission Tool

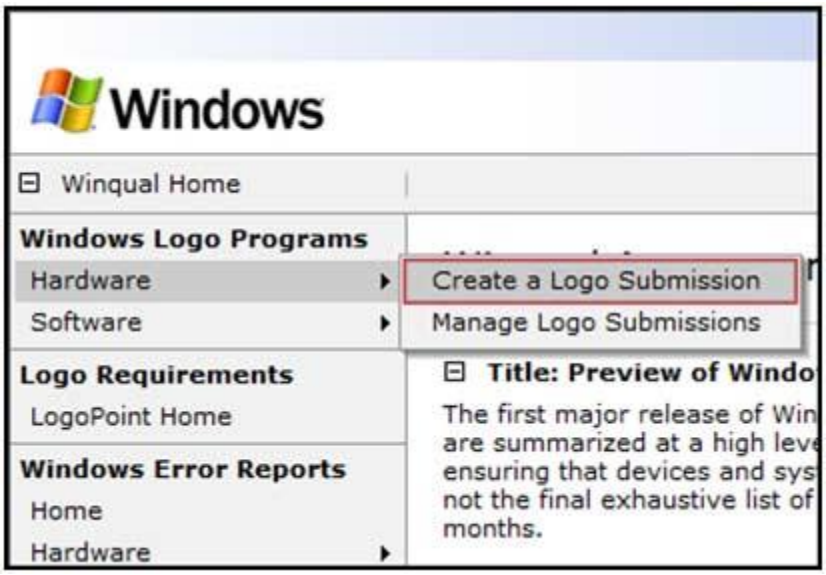
About Winqual Submission Tool

Winqual Submission Tool will assist you in creating a submission package for Microsoft Windows Hardware Logo qualification. This tool will collect information about the type of submission prepared and gather all logs, drivers, and symbols required for the submission.

Winqual Submission Tool only supports DTM testing.

How to Install Winqual Submission Tool

1. Go to the Winqual site and sign in
2. Click **Hardware > Create a Logo Submission** in the **Windows Logo Programs** section of the left navigation

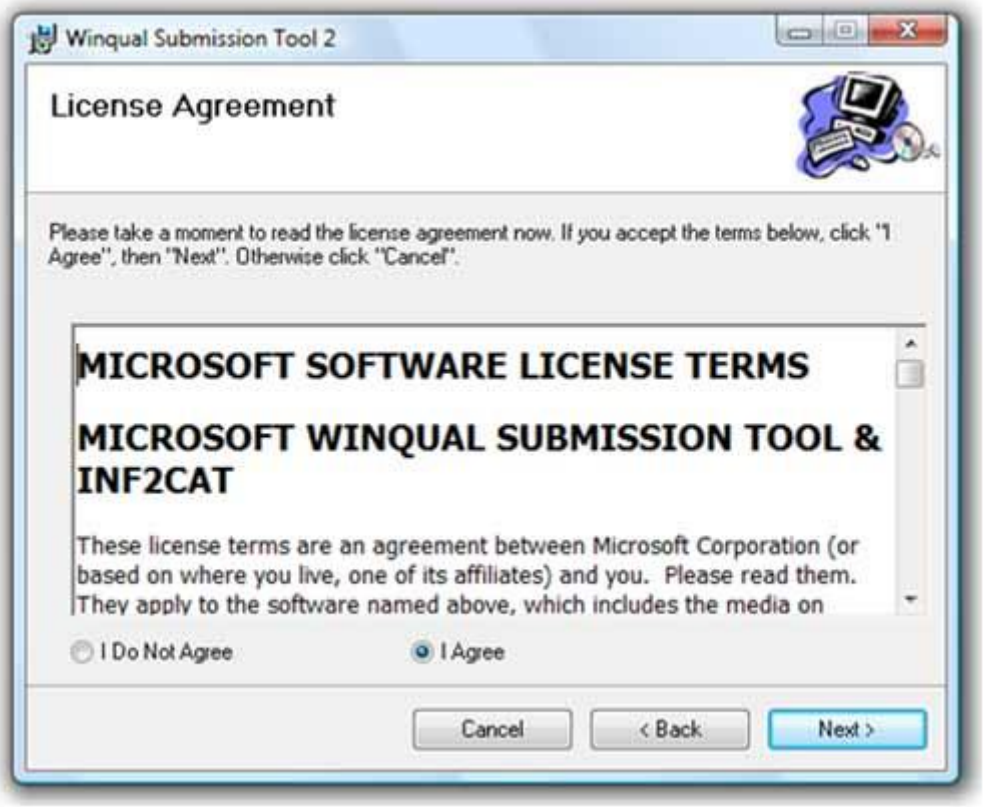


3. Click **Winqual Submission Tool** in the **Submission Tools** section on the right side of the page

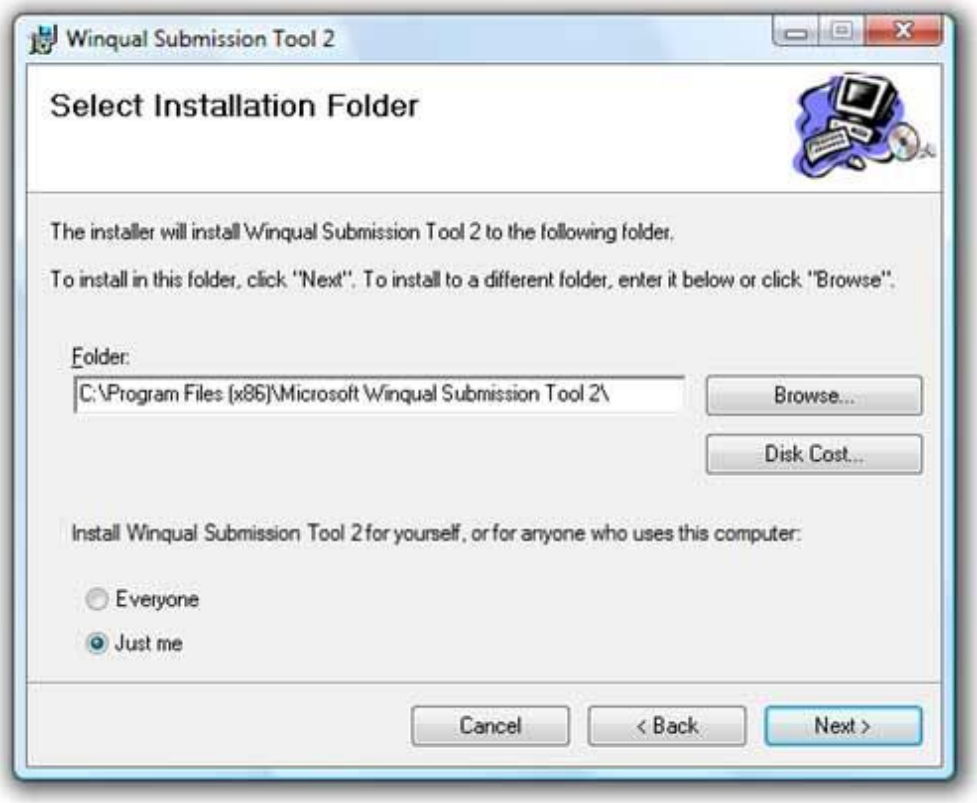
4. Click **Run** in the **File Download - Security Warning** dialog box
5. Click **Run** in the **Internet Explorer - Security Warning** dialog box

6. Click **Next**

7. Select **I agree** and click **Next**

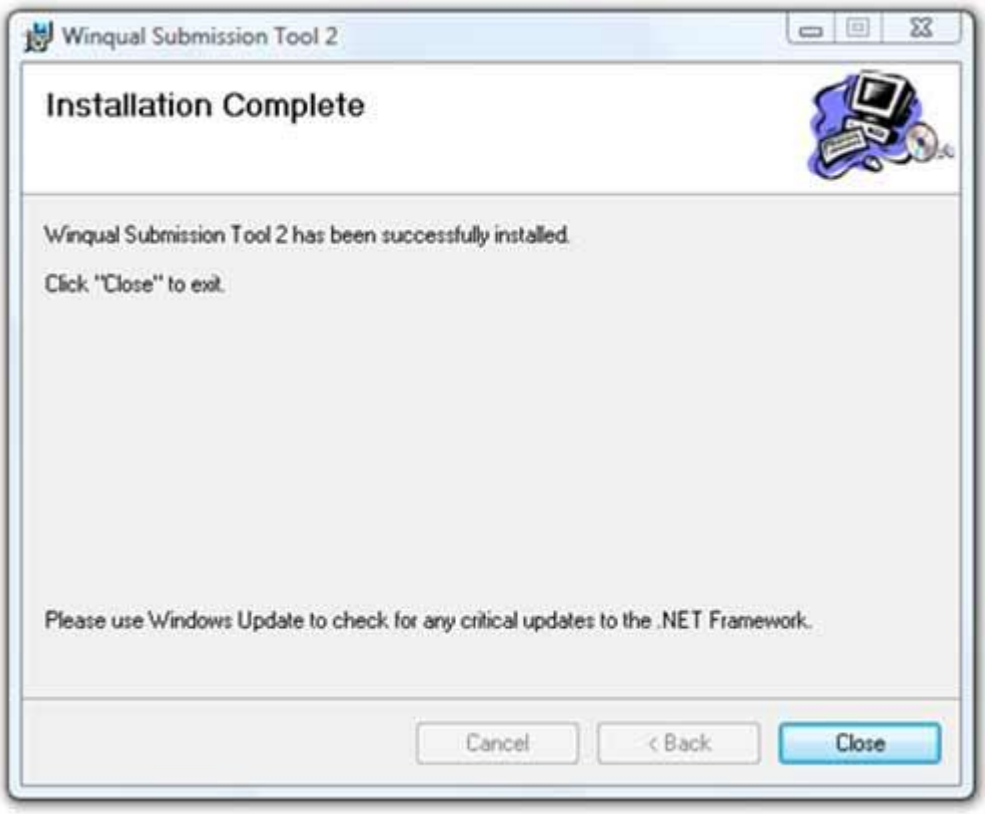


8. Click **Next**



9. Click **Next**

10. Click **Close** to exit the installation process

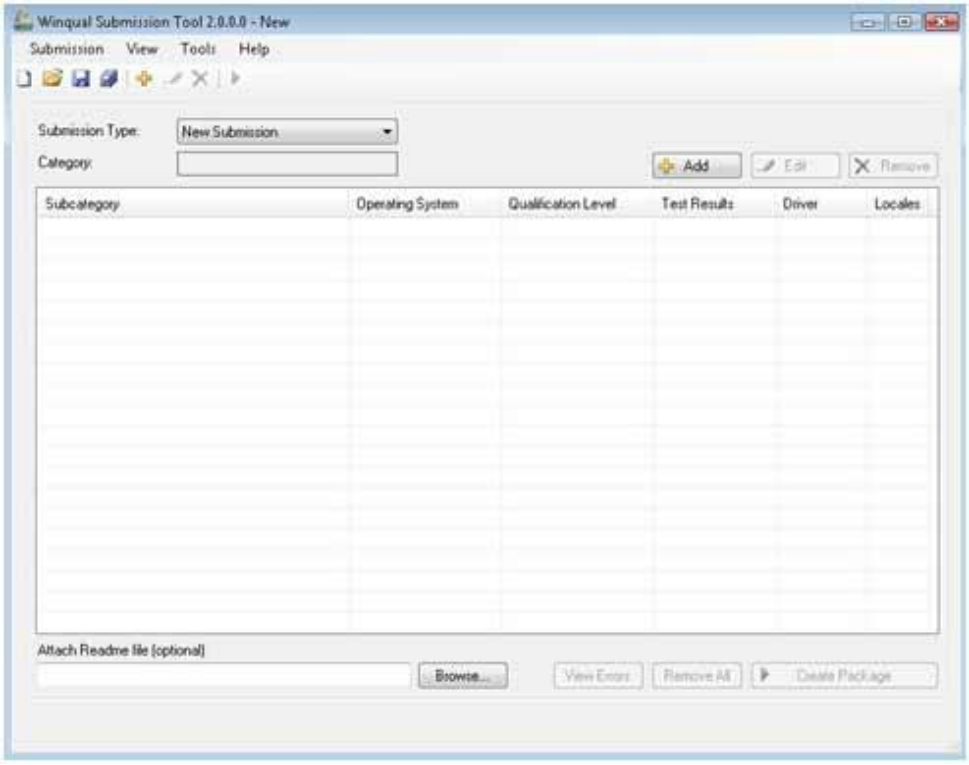


How to Use WST

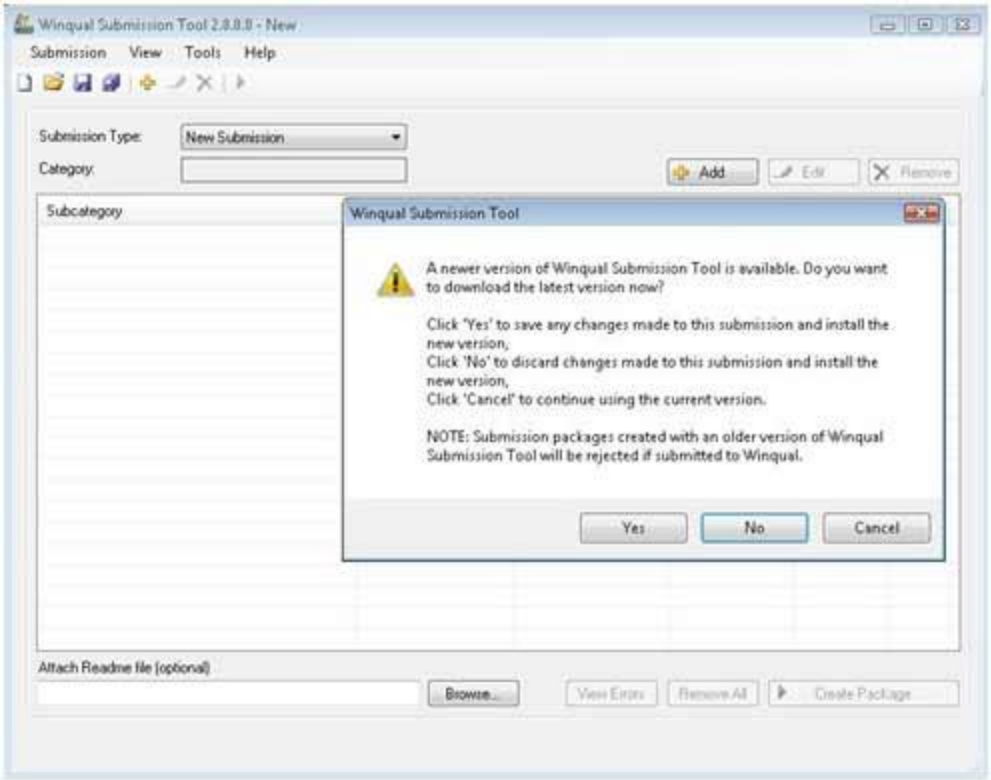
1. On opening the tool, you will see a *Welcome* screen.

You can choose to not show this dialog next time you open the tool by checking the 'Don't show this message again' check box.
To re-enable this dialog, go to Tools > Options and check the 'Show Welcome screen on startup' checkbox.

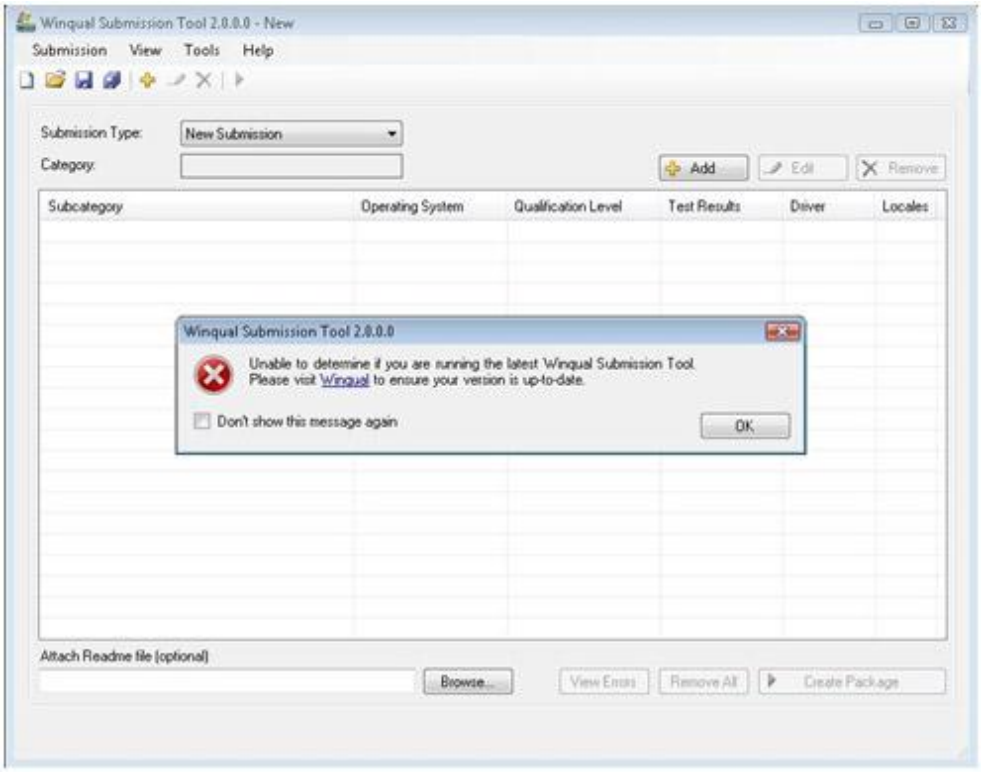
2. You'll see the main screen where test results and drivers can be added for creating the submission package after the *Welcome* screen.



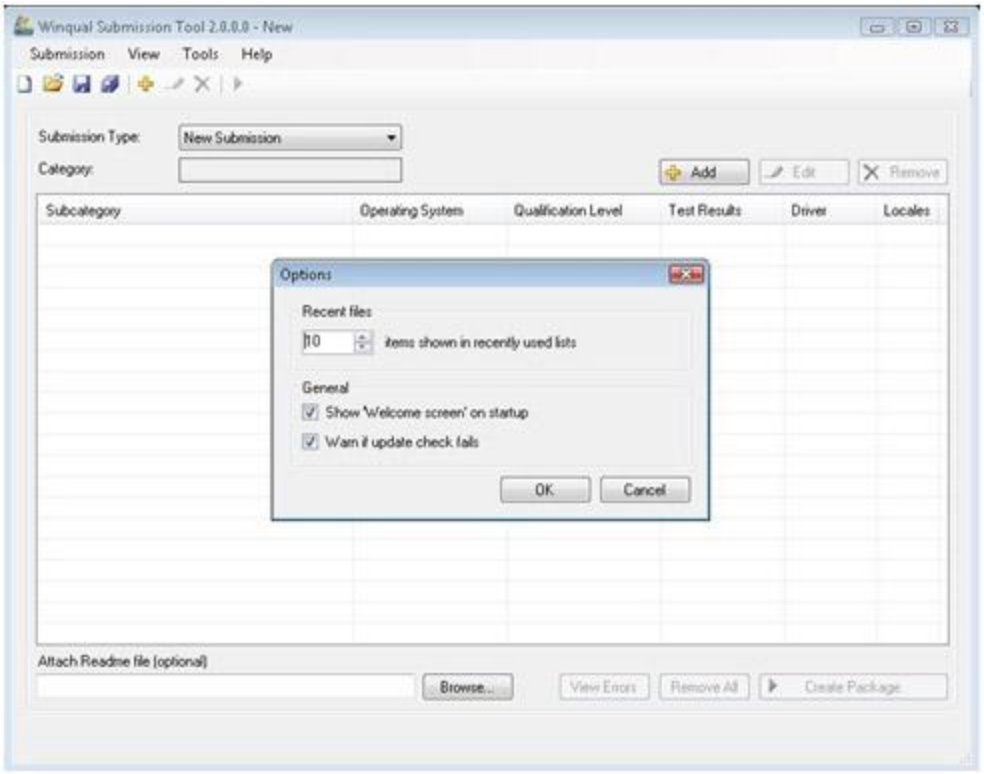
3. Check for the availability of a newer version of *Winqual Submission Tool* is done in the *background.* If a new version is available, you'll be asked to install the new version.



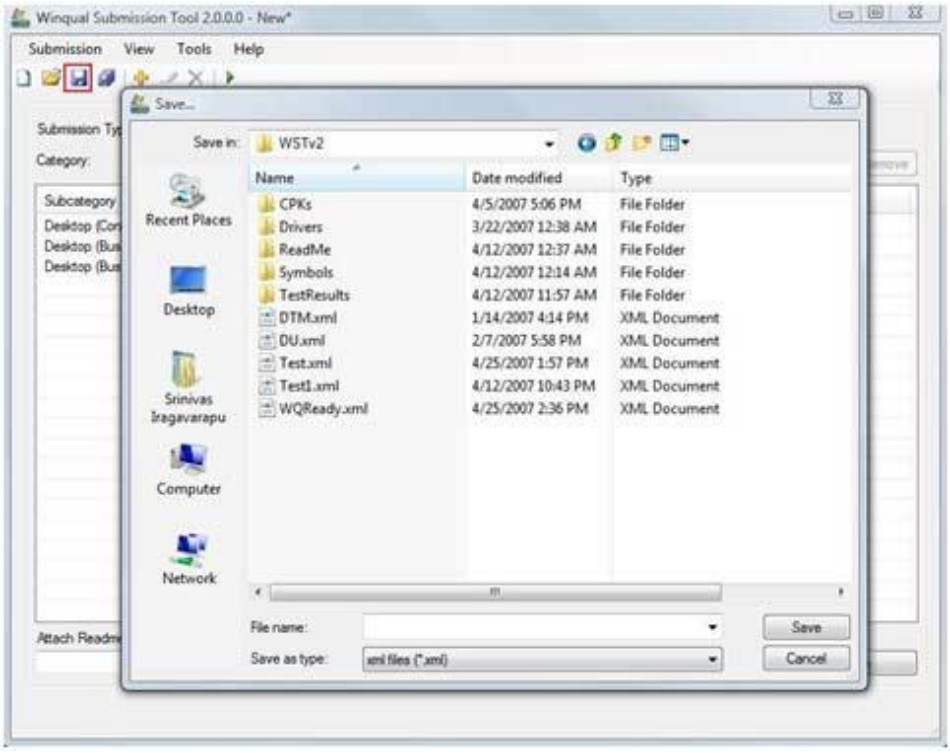
4. If the version check fails, you'll be warned with a message. This warning message can be disabled from displaying in the future by checking 'Don't show this message again' checkbox.



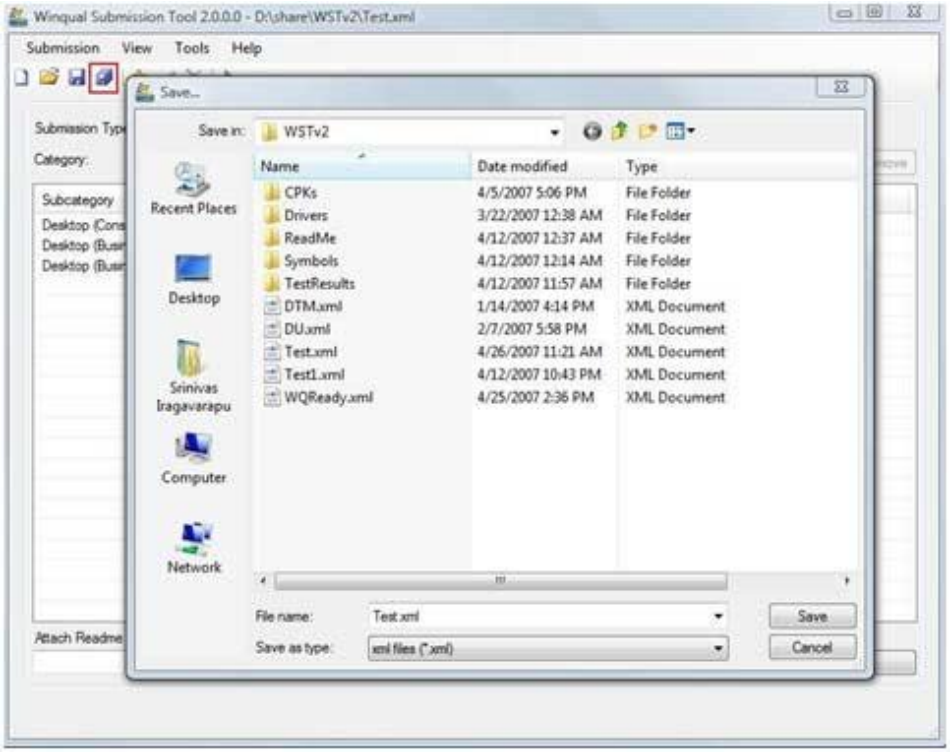
5. To re-enable this dialog, go to Tools > Options and check the 'Warn if update check fails' checkbox.



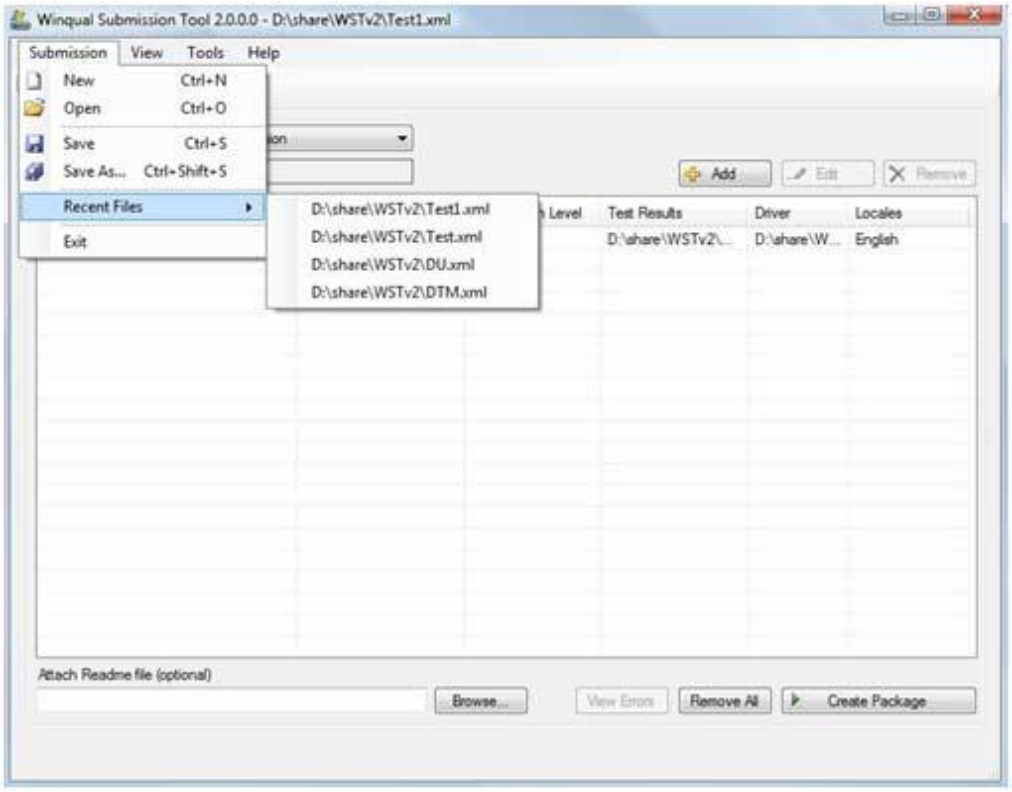
6. After adding test results to the submission package, you can choose to save the list for later use. An xml file (which you will later use for creating the submission) is created with all the submission information.



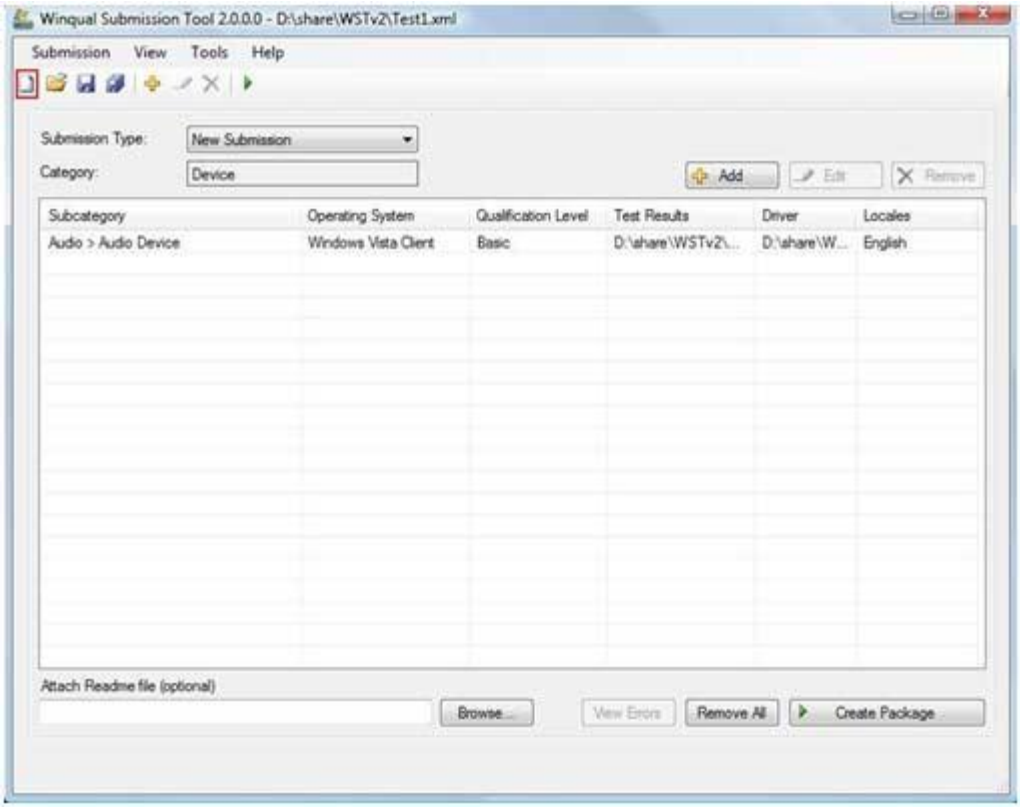
7. You can also save the file with a different file name, using the 'Save As' menu item or toolbar button



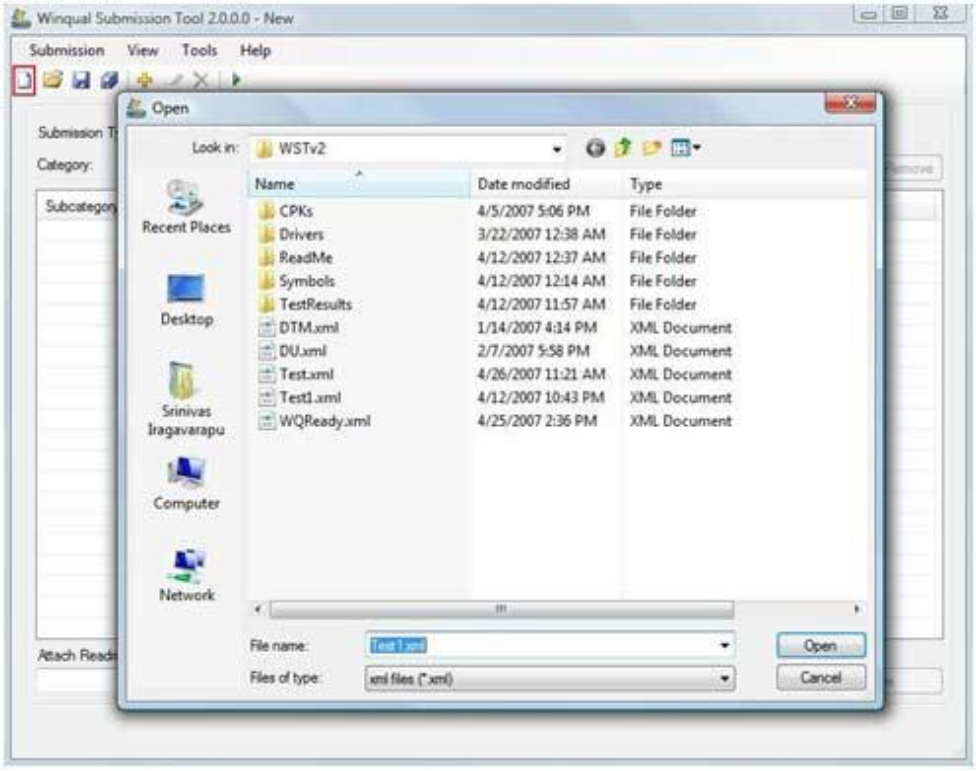
8. The files saved are added to the 'Recent Files' menu



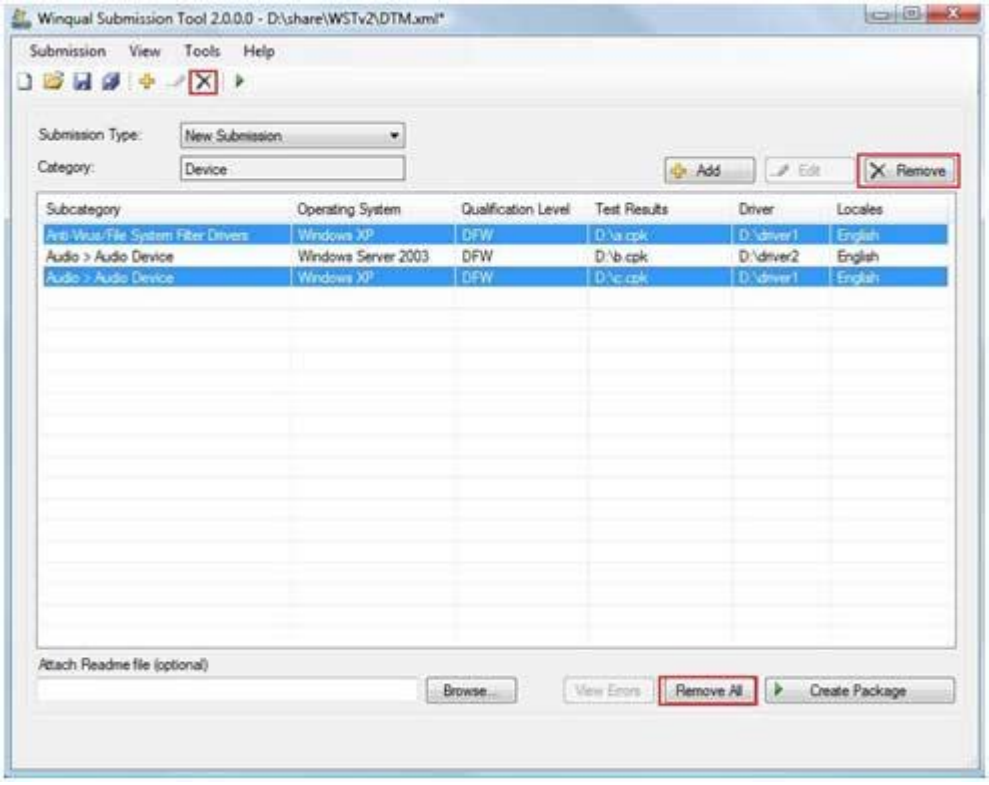
9. You can choose to start a new submission by click the 'New' menu item or toolbar button



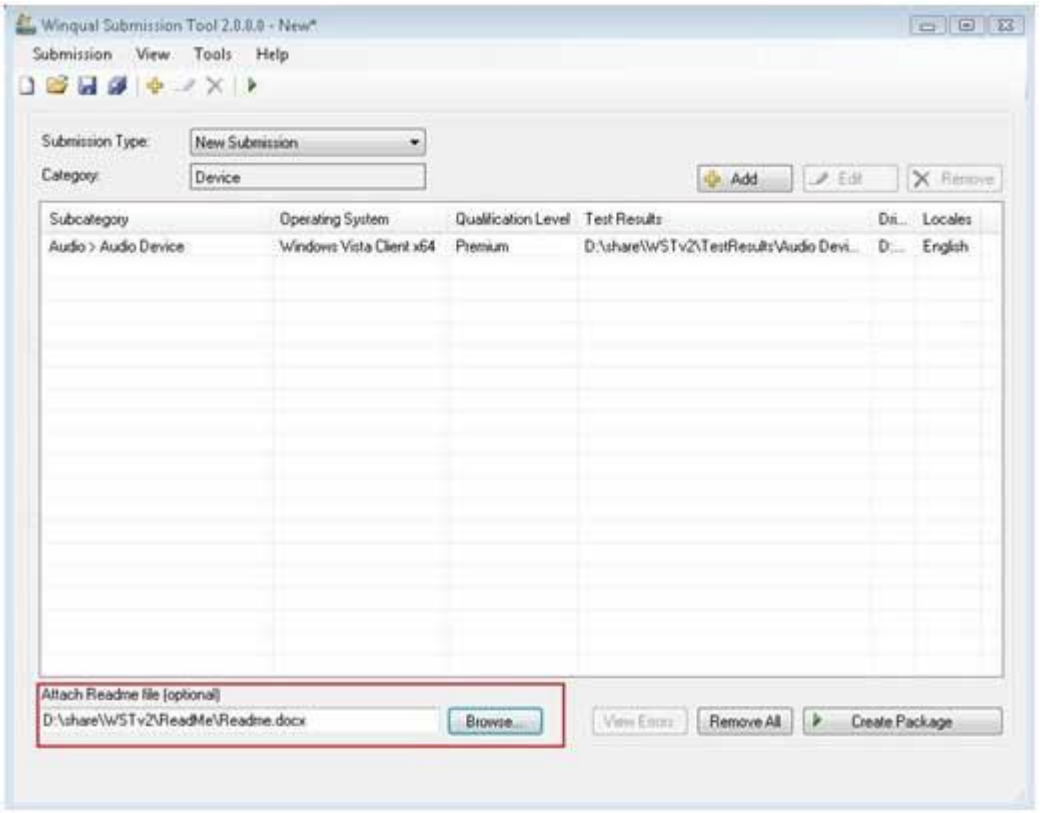
10. A file saved earlier can be opened using the 'Open' menu item or toolbar button. A file in the 'Recent Files' can also be opened by click the menu item.



11. Entries from the list can be removed individually by clicking the 'Remove' button, or all at once by clicking 'Remove All'



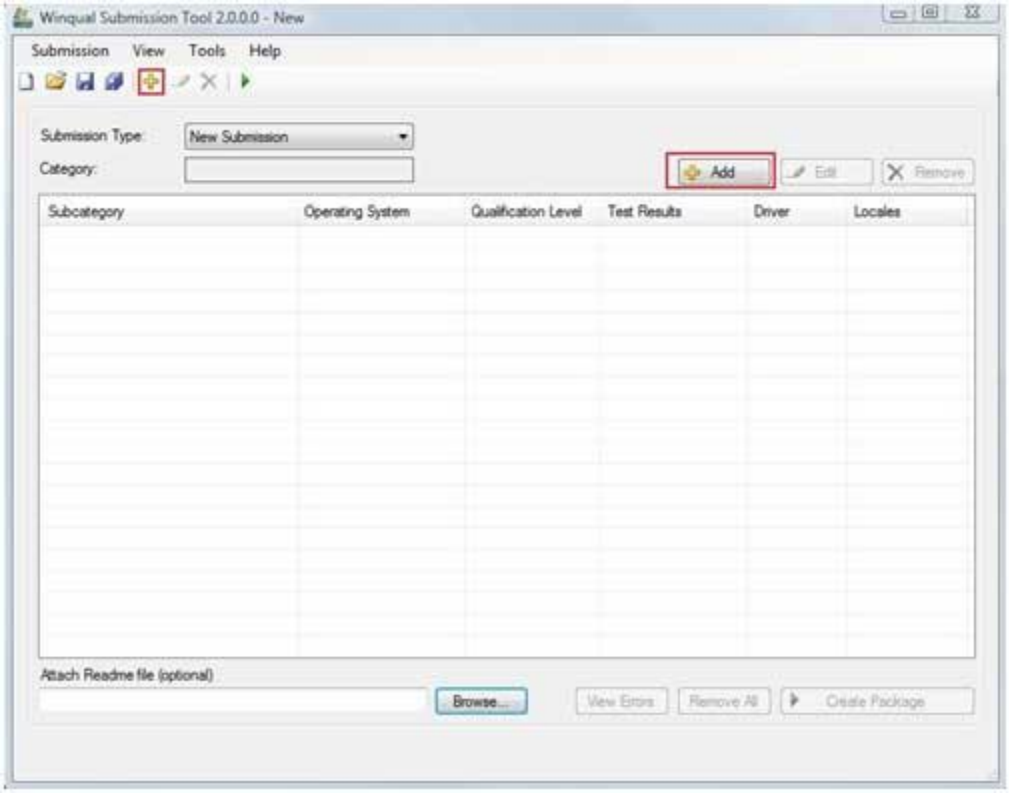
12. An optional 'Read me' file (.docx or .doc or .txt) file can be placed into the submission package



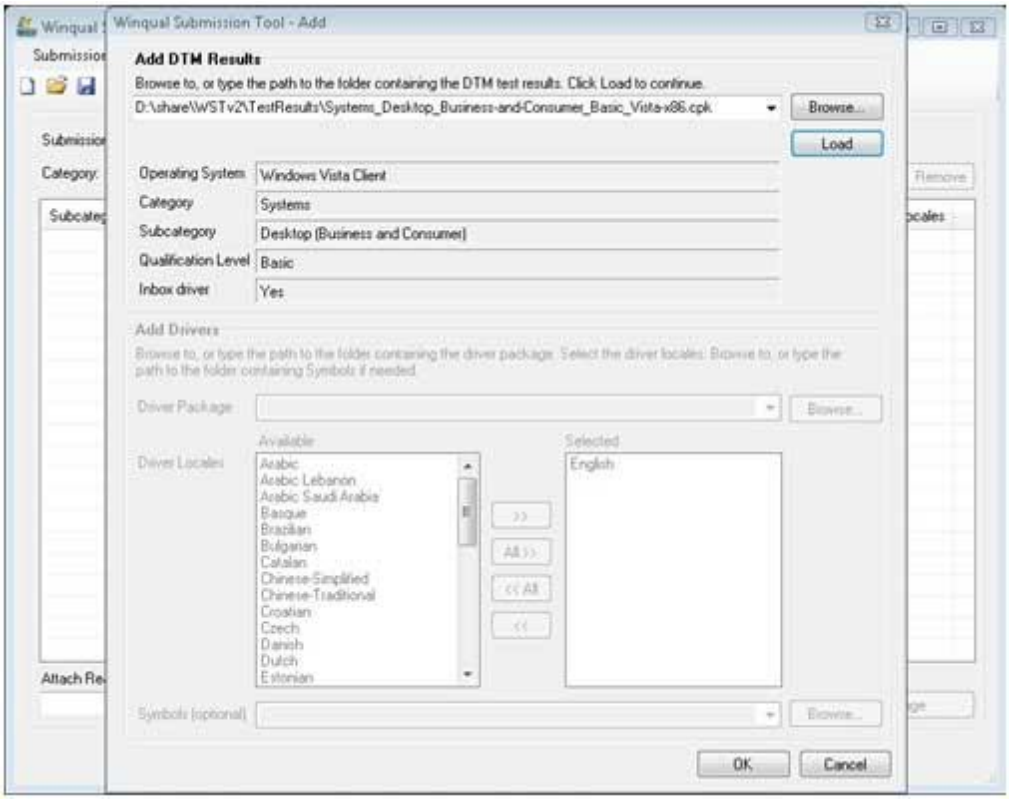
- Click here to see how to create a Systems submission package
- Click here to see how to create a Device submission package

How to Create a Systems Submission Package

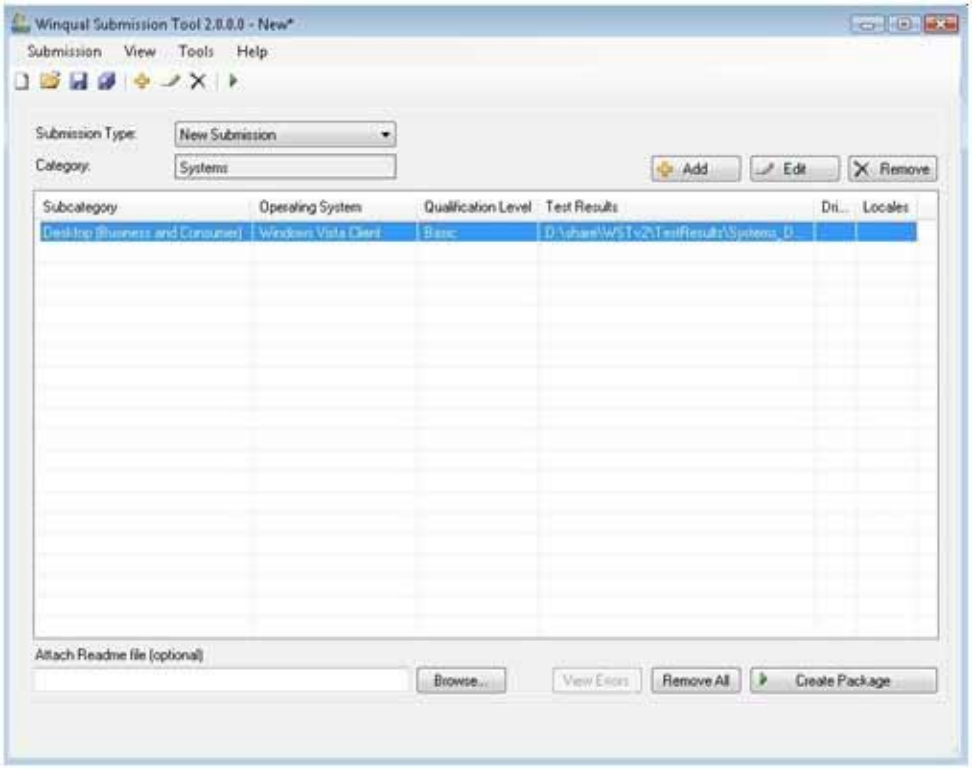
1. On the main screen click the 'Add' button



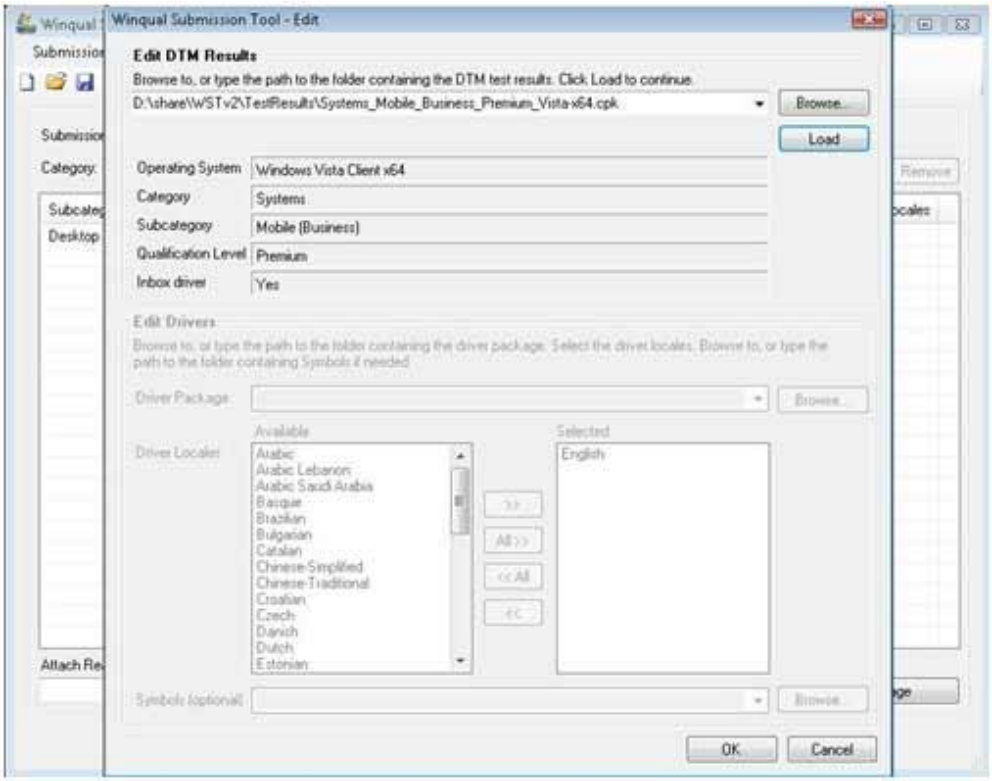
2. Browse to the .cpk file (DTM test results) and click load



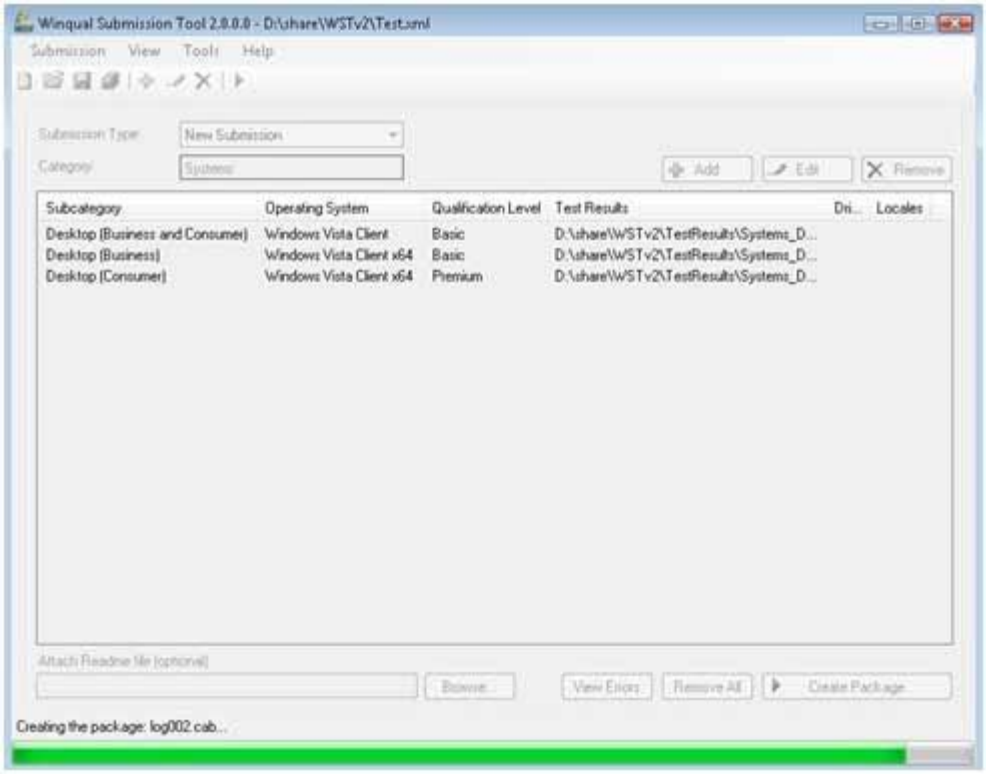
3. After the test results are added, closing the *Add DTM Results* dialog will add the information to the main screen.



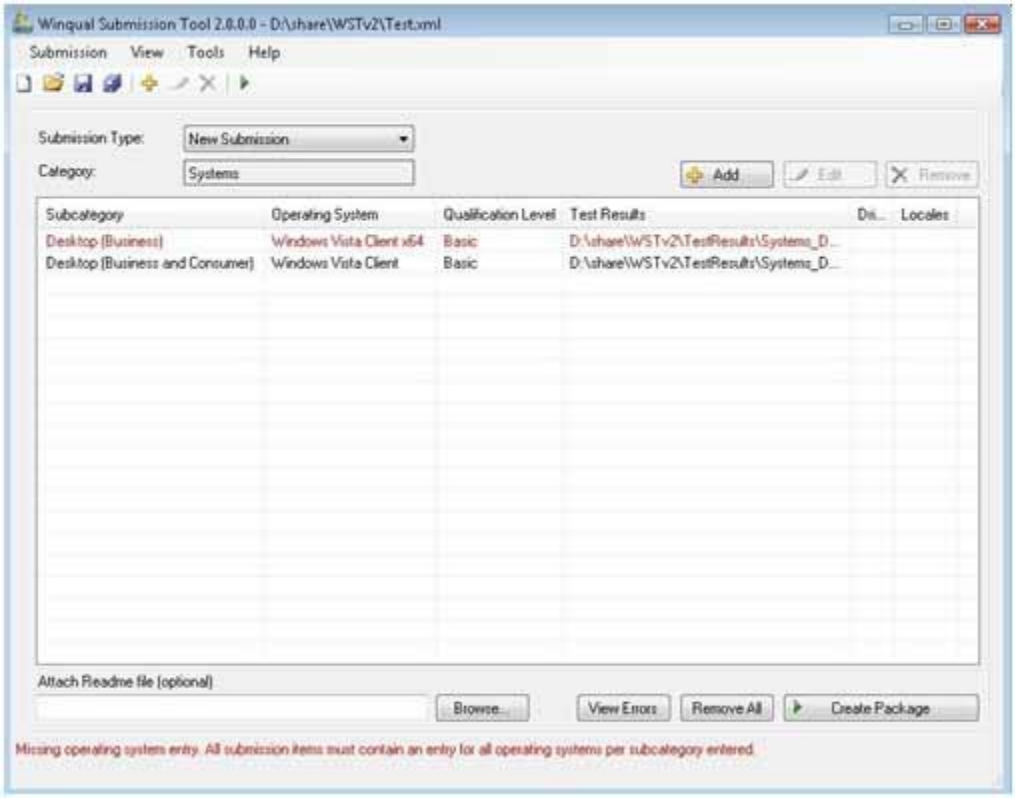
4. The entries made can be edited by clicking the 'Edit' button. This opens the *Edit DTM Results* dialog with all the information pre-populated



5. After all the entries have been added, you can create the submission package by clicking the 'Create Submission' button.



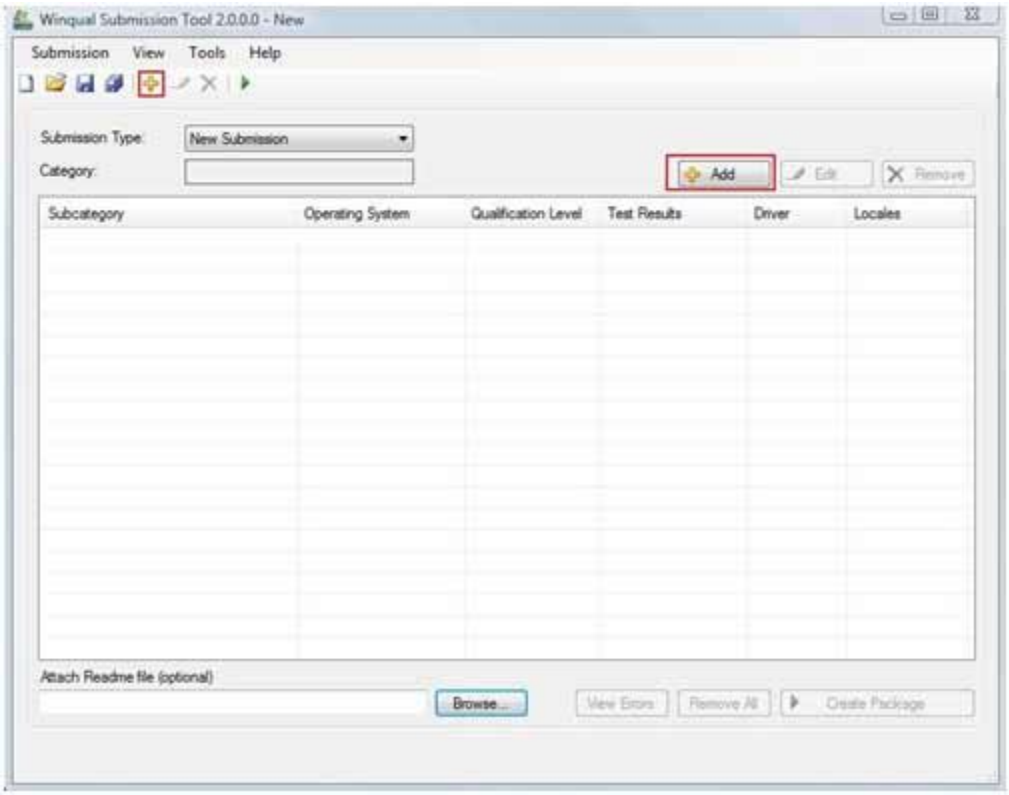
6. The tool can find errors while packaging. The packaging will stop if an error is encountered. The entry with the error(s) will be highlighted in red. To view the errors again, click 'View Errors' button on the main window.
   Before the package can be created, all errors must be fixed. You can fix errors by editing the entry (by updating driver or the test result)



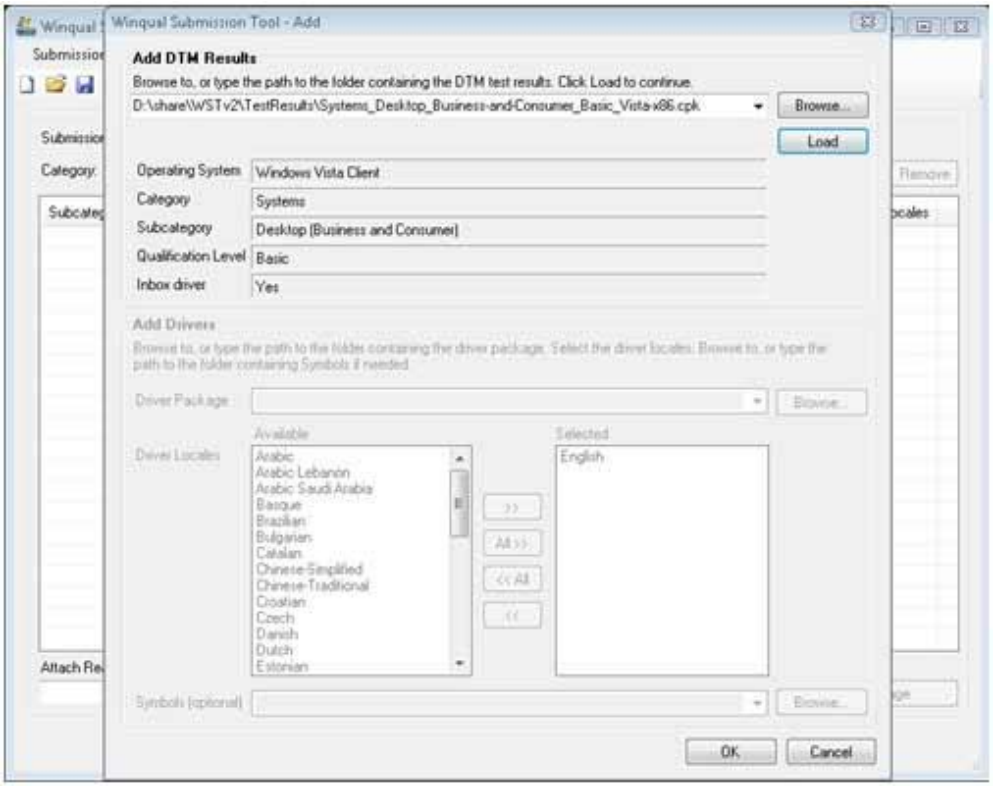
7. After all the errors are fixed, you can create a submission package. The submission package is created with the same name as the xml file at the same location

How to Create a Device Submission Package

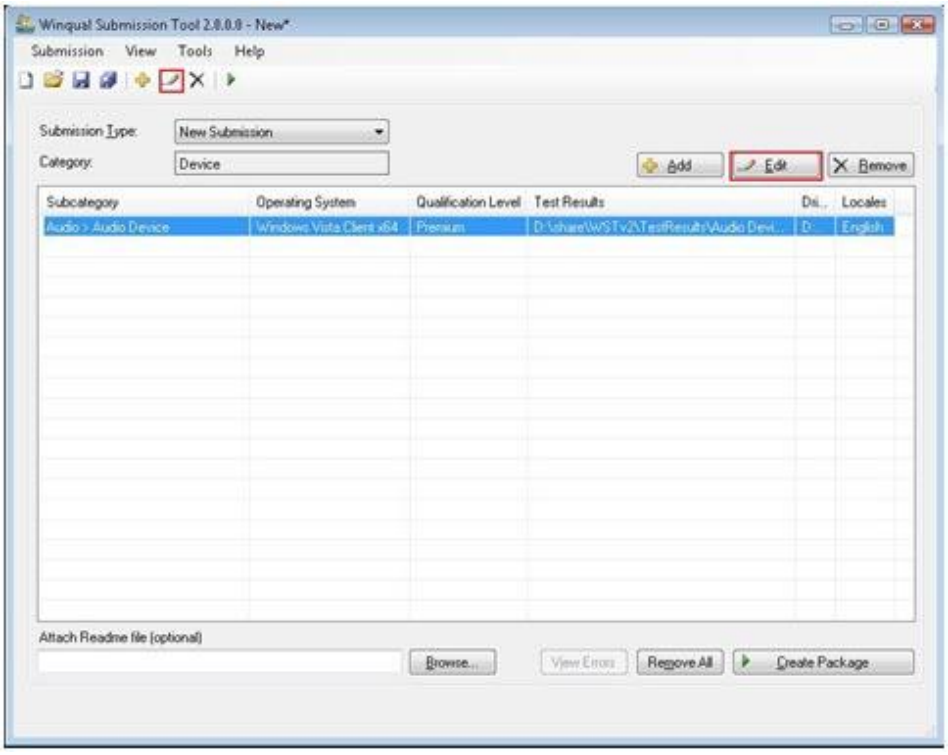
1. On the main screen click the 'Add' button



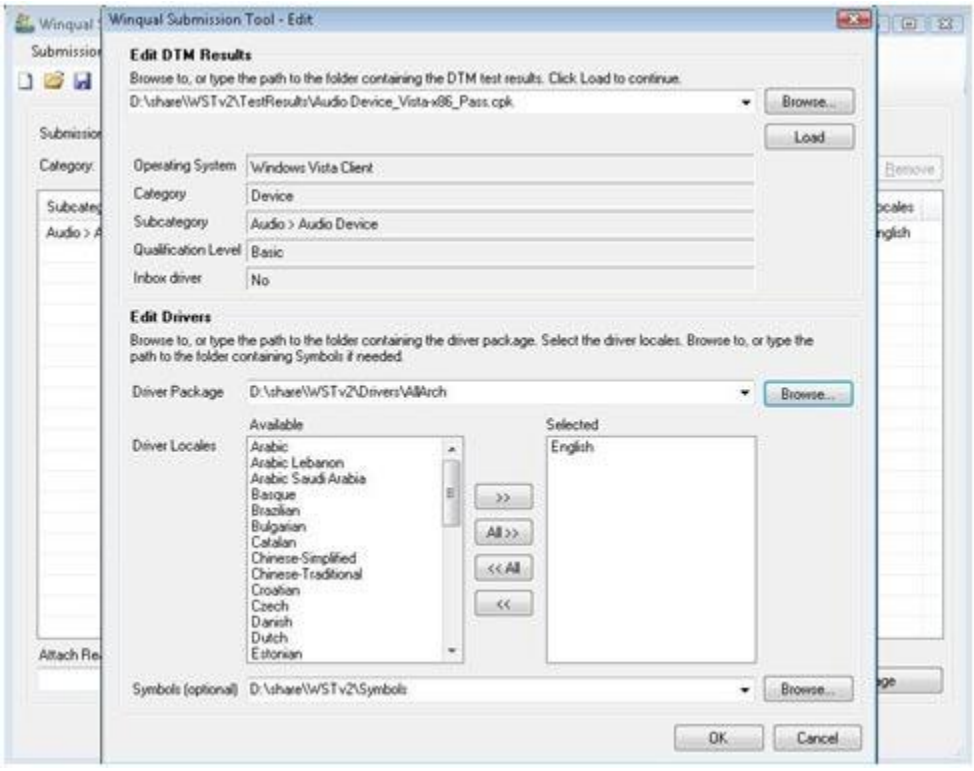
2. Browse to the .cpk file (DTM test results) and click load



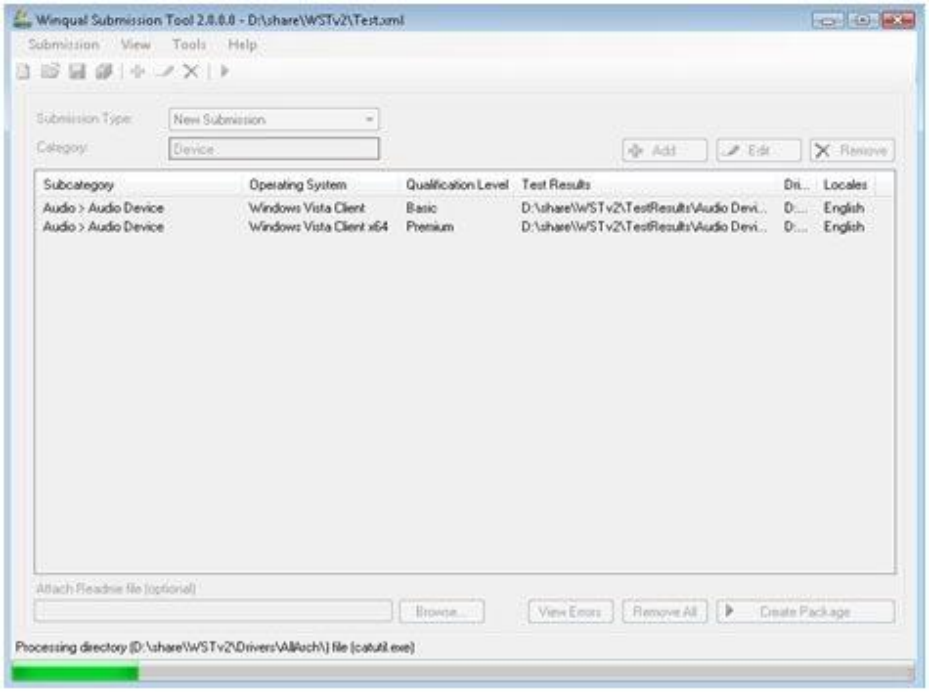
3. If the device is not inbox, you'll be asked to add a driver, locales and (optional) symbols
4. After the test results are added, closing the *Add DTM Results* dialog will add the information to the main screen.



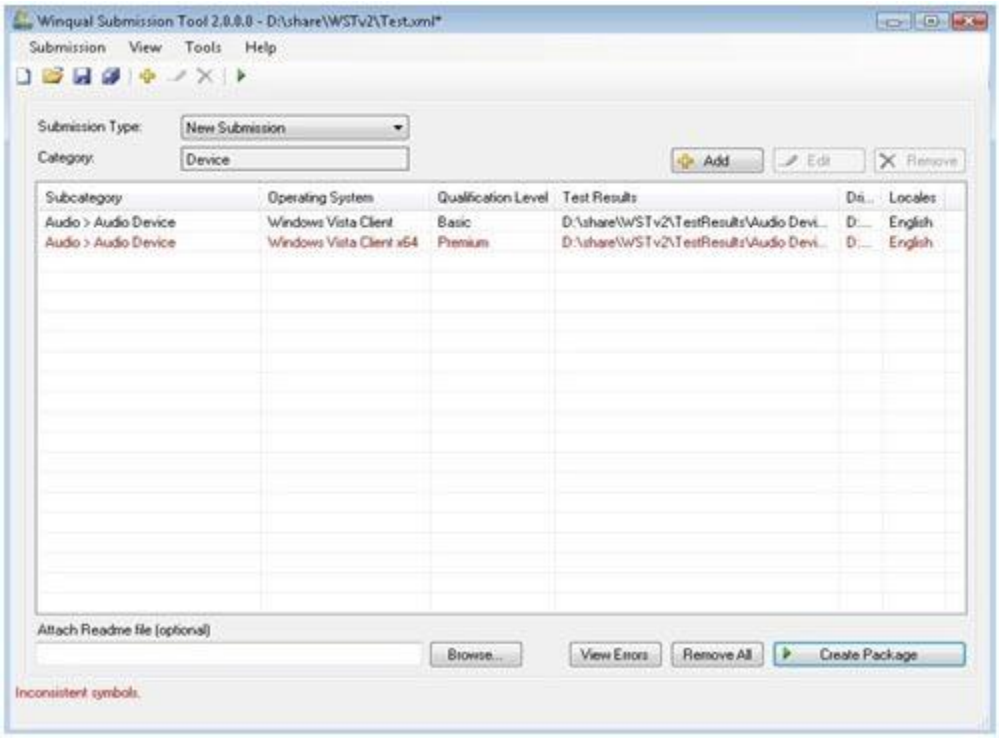
5. The entries made can be edited by clicking the 'Edit' button. This opens the *Edit DTM Results* dialog with all the information pre-populated



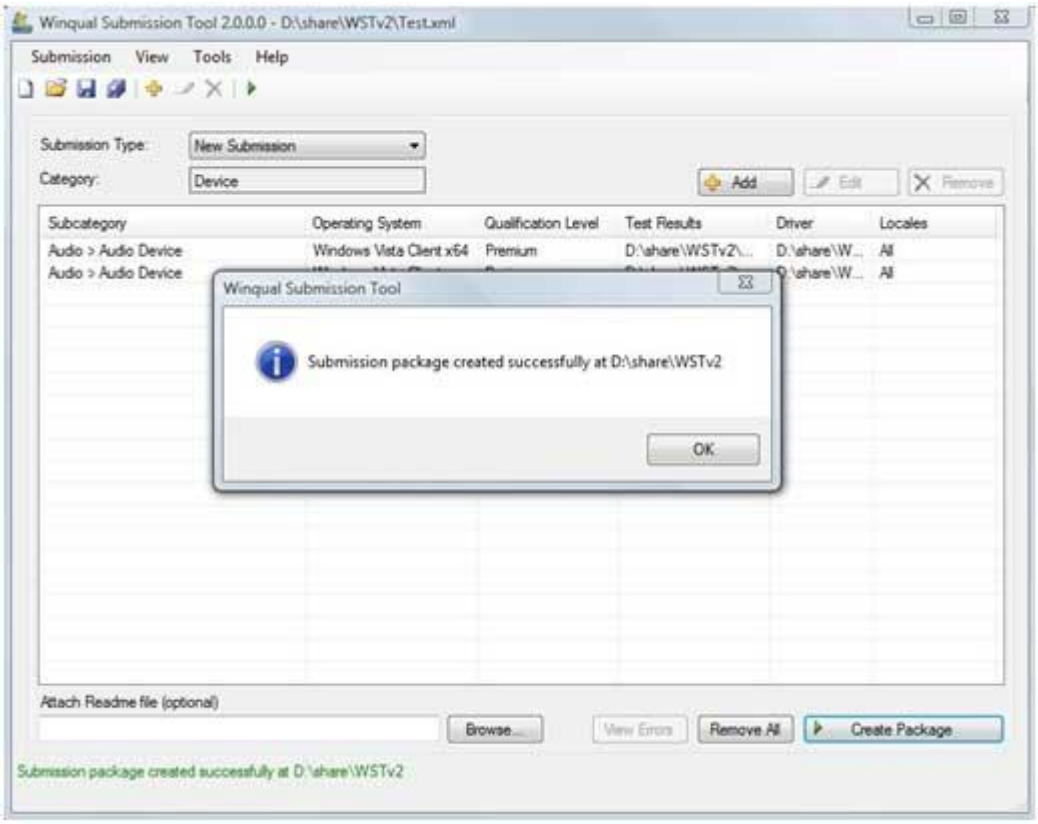
6. After all the entries have been added, you can create the submission package by clicking the "Create Package" button.



7. The tool can find errors while packaging. The packaging will stop if an error is encountered. The entry with the error(s) will be highlighted in red. To view the errors again, click 'View Errors' button on the main window.
   Before the package can be created, all errors must be fixed. You can fix errors by editing the entry (by updating driver or the test result)



8. After all the errors are fixed, you can create a submission package. The submission package is created with the same name as the xml file at the same location.



Microsoft Silverlight

About Microsoft Silverlight

More information about Microsoft Silverlight can be found at Microsoft Silverlight.

How to Install Microsoft Silverlight

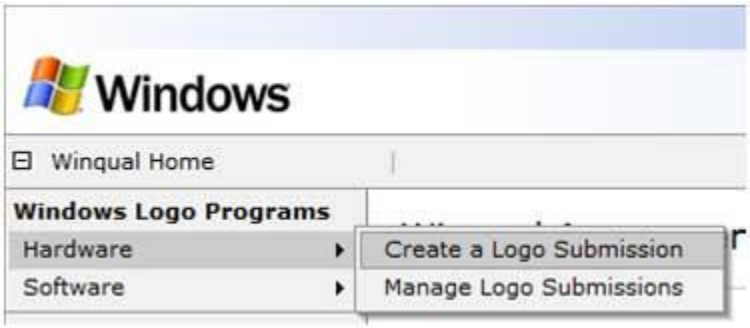
Please refer to Install Silverlight site for more information regarding installing Microsoft Silverlight

Note: You may need to restart your Internet Explorer Browser to complete the Microsoft Silverlight installation.

Creating a Logo Submission

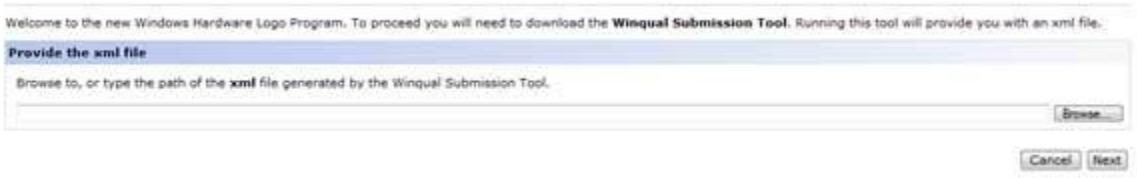
1. Go to Winqual site and sign in

2. Click **Hardware > Create a Logo Submission** in the **Windows Logo Programs** section of the left navigation.

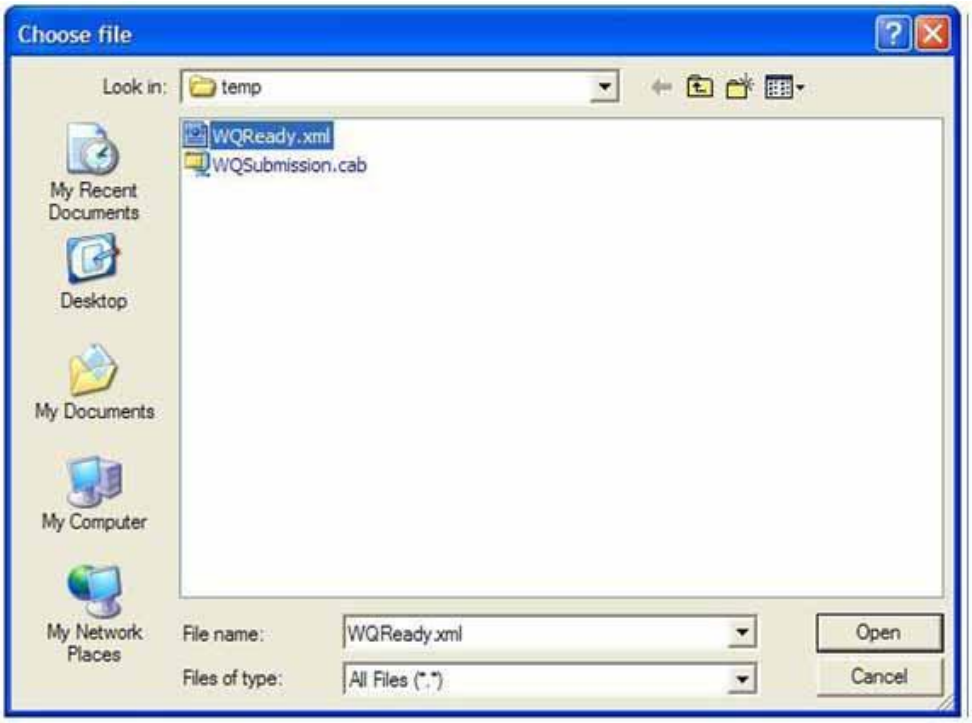


3. Click **Create a Logo Submission**

4. Click **Browse** to locate your WQReady.xml file. Click **Cancel** to quit the Winqual Submission Wizard

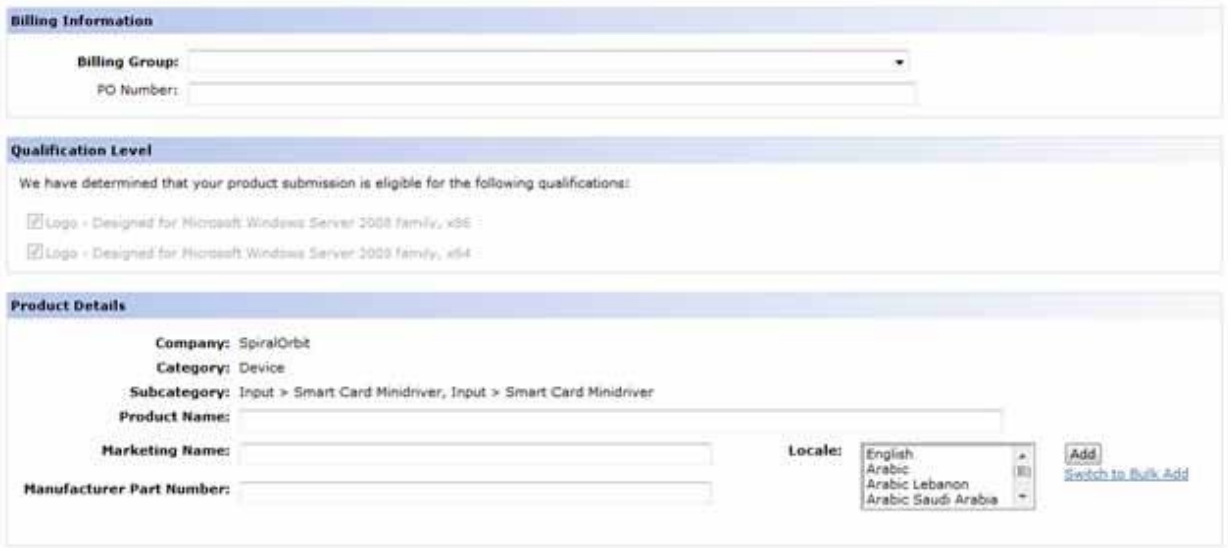


a. Browse to the location of your test files and click **Open**



b. Click **Next**

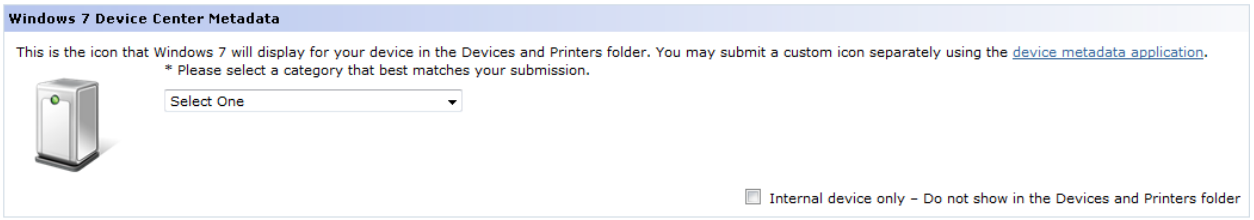
5. Enter the following information into the specified fields**: Billing Group, PO Number, Product Name, and optionally Marketing Name, Locale and Manufacturer Part Number**
    a. If your submission qualifies for a down level OS signature, you will be given the option to opt in



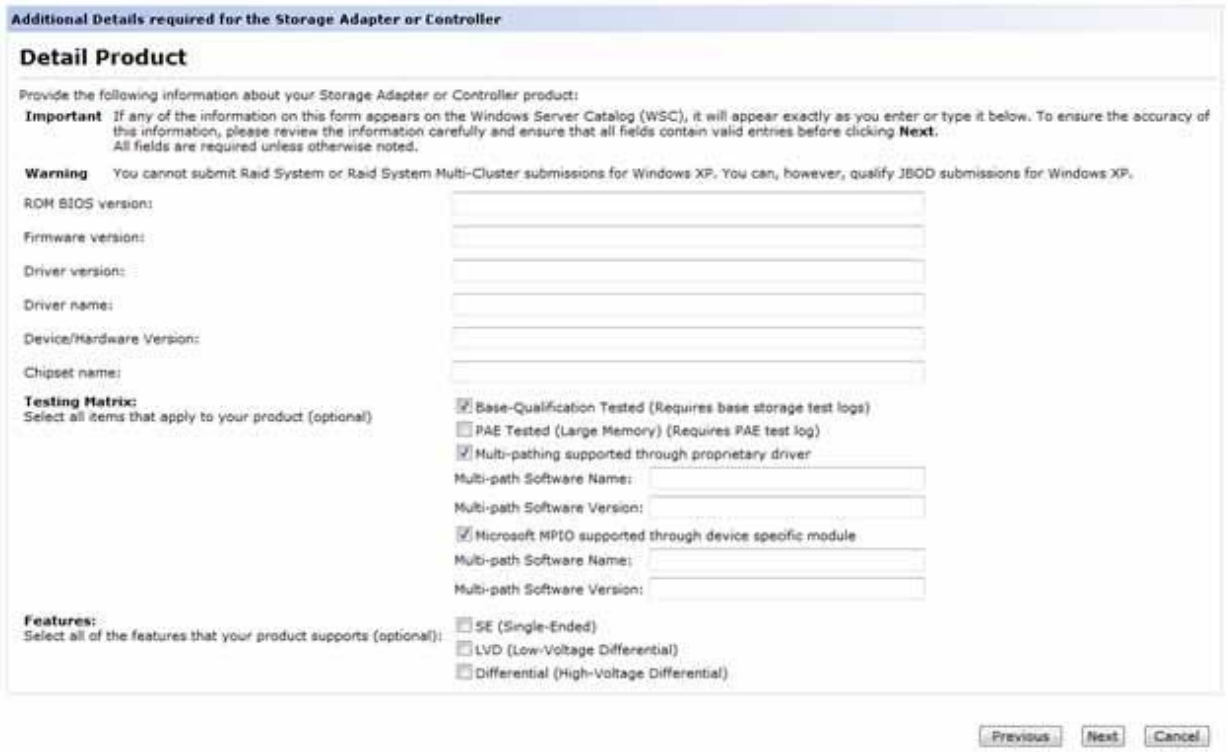
b. For submissions with drivers, you will be asked to select an announcement date via the calendar or manual entry.

c. Click **Next**

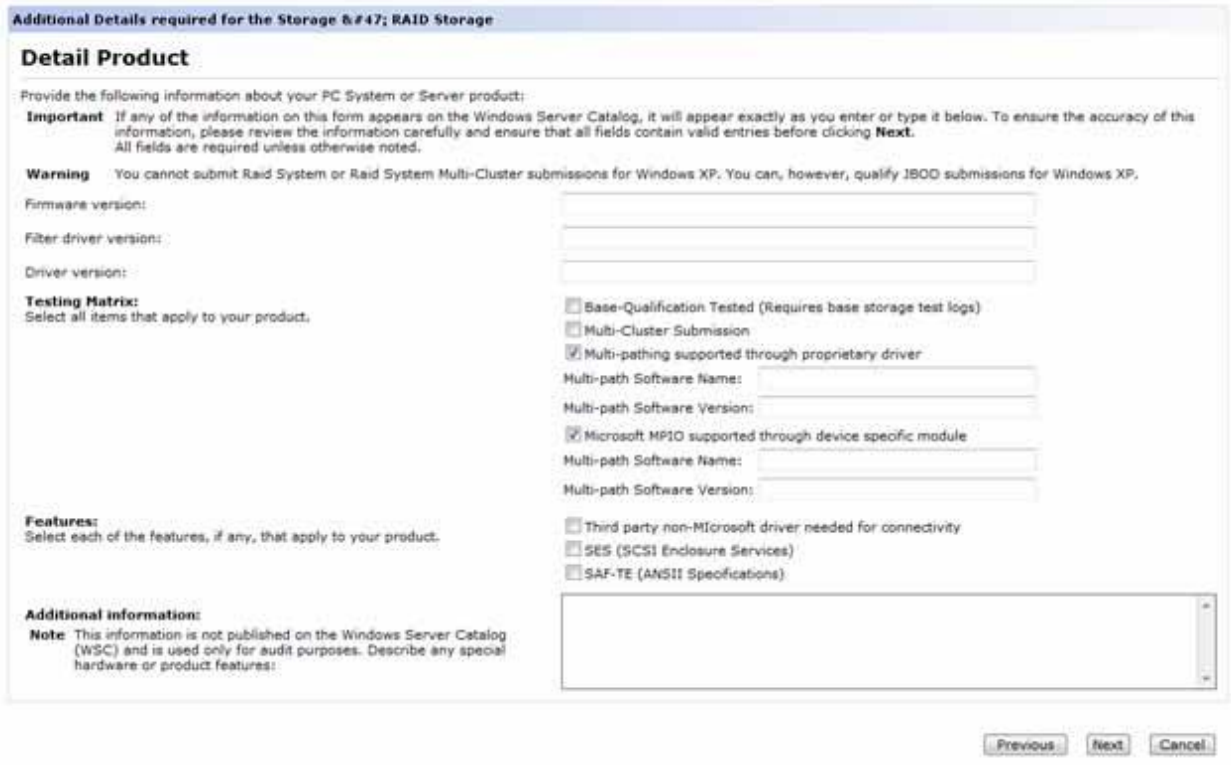
6. If the submission is for Windows 7 you will be asked to identify the Device Category for use in the Windows 7 Devices and Printers folder.



7. Depending on the type of submission you will be required to provide additional information:



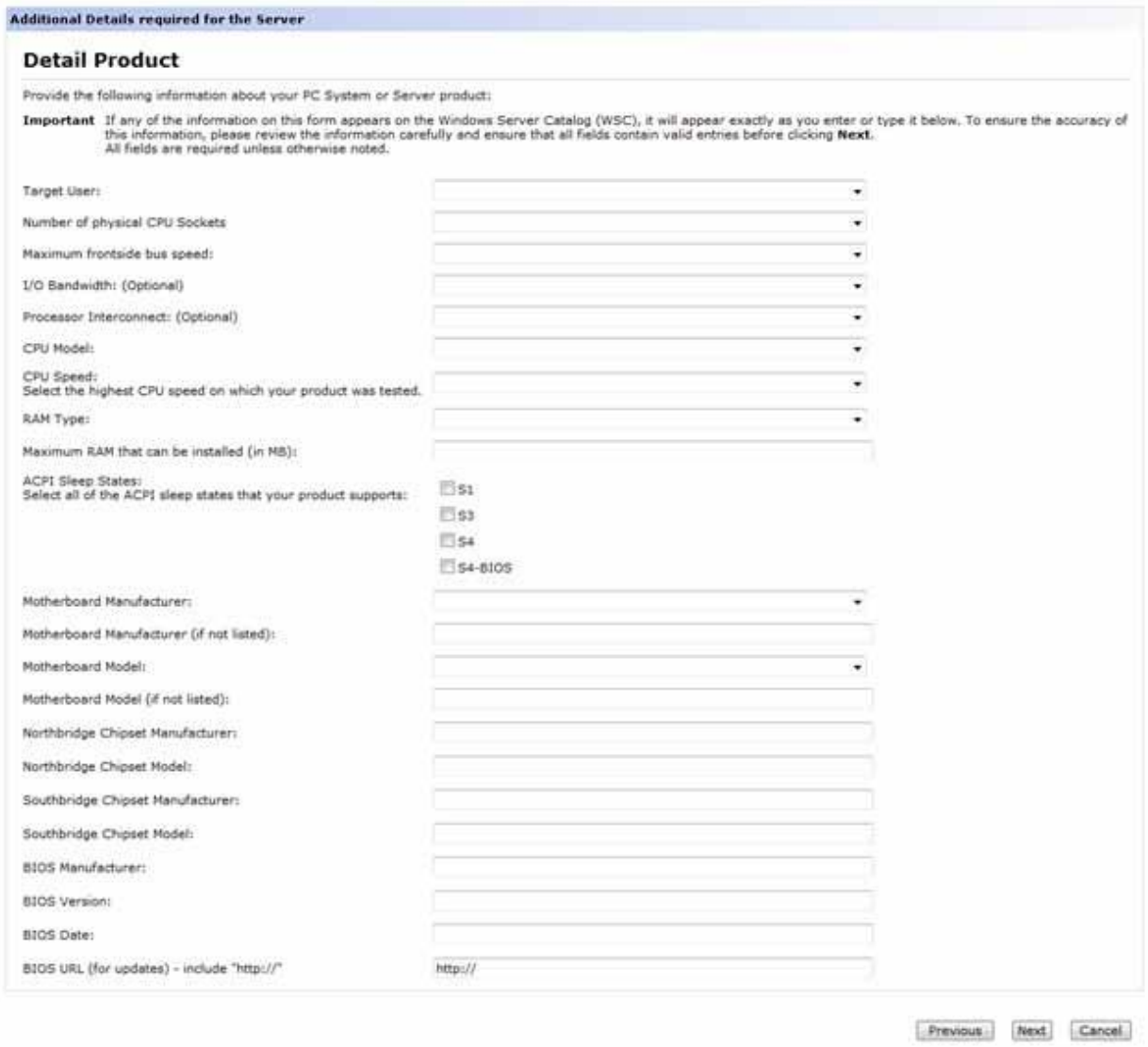
You should see the above screen for Storage Adapter or Controlle



You should see the above screen for RAID Storage

You should see the above screen for Routers

You should see the above for any System submissions



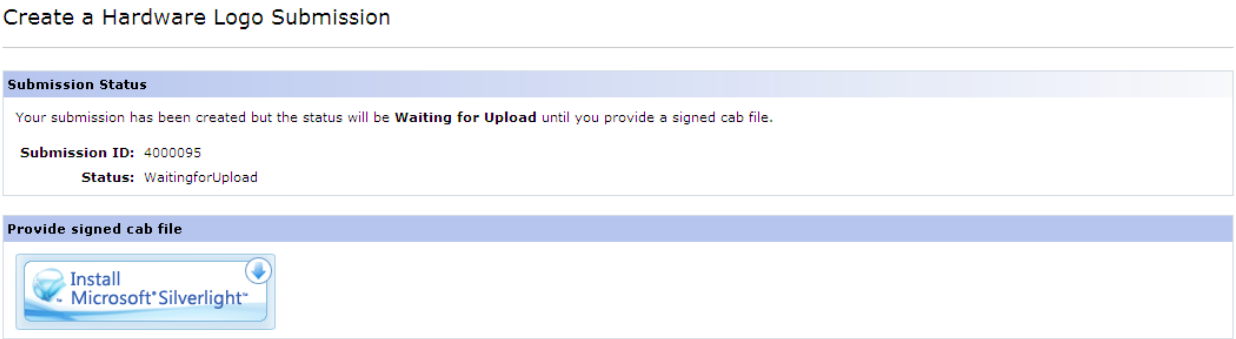
You should see the above screen for System Server submissions

If you are making a Server R2 Supported submission you will see the UI above. You must pick the Submission which was used to qualify the system for the Server 2008 logo.

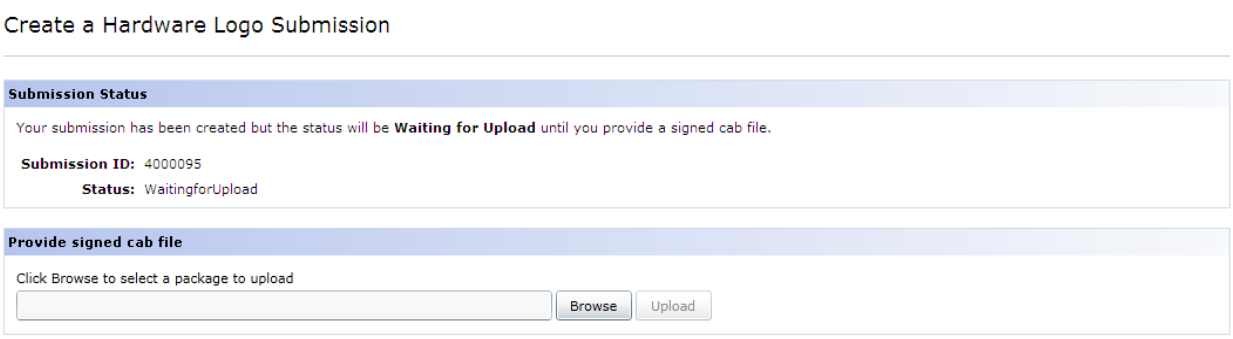
8. Read through the Legal Agreement and scroll to the bottom of the page. Enter your digital signature and date and click **Next** to continue.
   Note: There can be multiple legal agreements to sign depending on the type of submission you are making

9. Review the summary for errors. Click **Submit** to submit this file. Click **Previous** to return to a previous page. After this page, you will not be able to revert back to previous pages.

10. If Microsoft Silverlight is not installed on your machine, you will see a link to the installer.

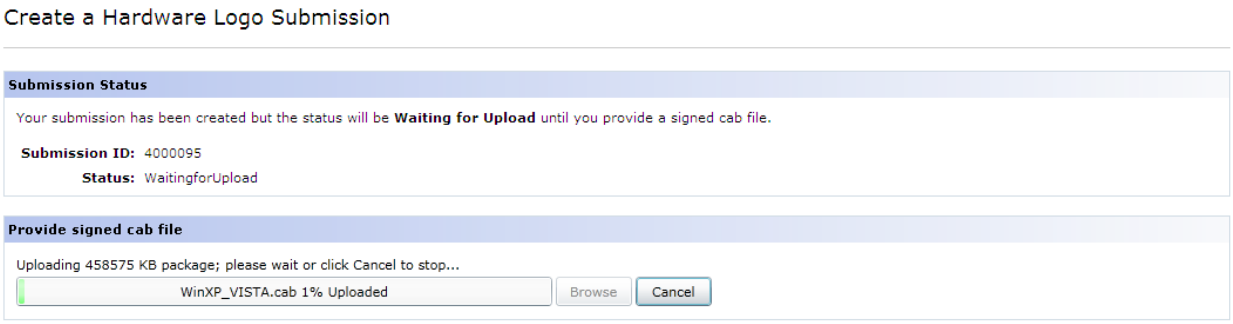


11. Click **Browse** to locate the .cab file**.** Click **Upload** to begin upload.



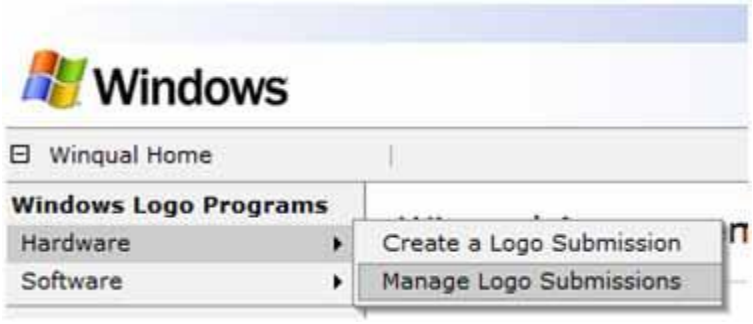
12. The specified file will begin to upload. Upload progress is displayed via a progress bar on the page.

    Note: You can also click **Cancel** and return later to upload the submission package.



13. When uploaded is completed, you will be redirected to the following page

Click **Hardware > Manage Logo Submissions** in the **Windows Logo Programs** section of the left navigation to exit this page. This submission will be at the top of the list.

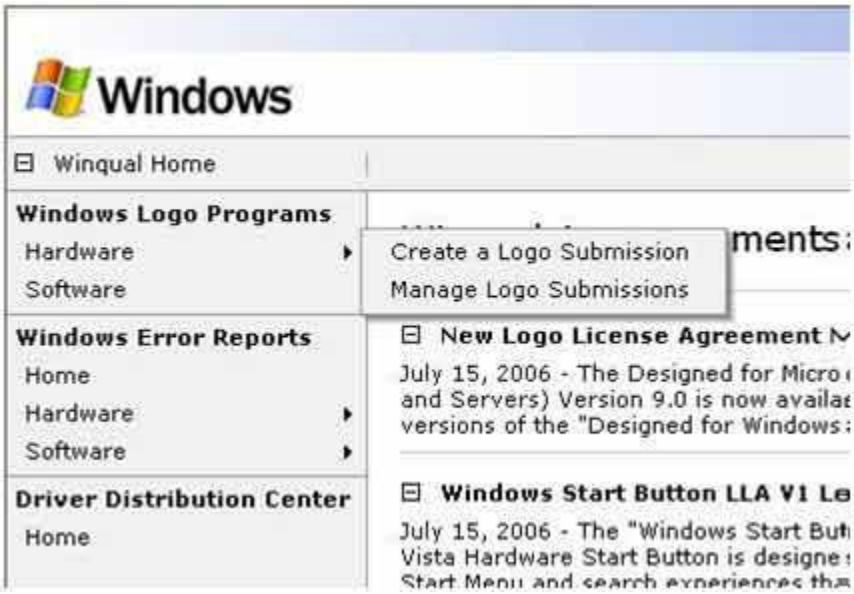


Managing Logo

Managing Logo Submissions with Submission Center

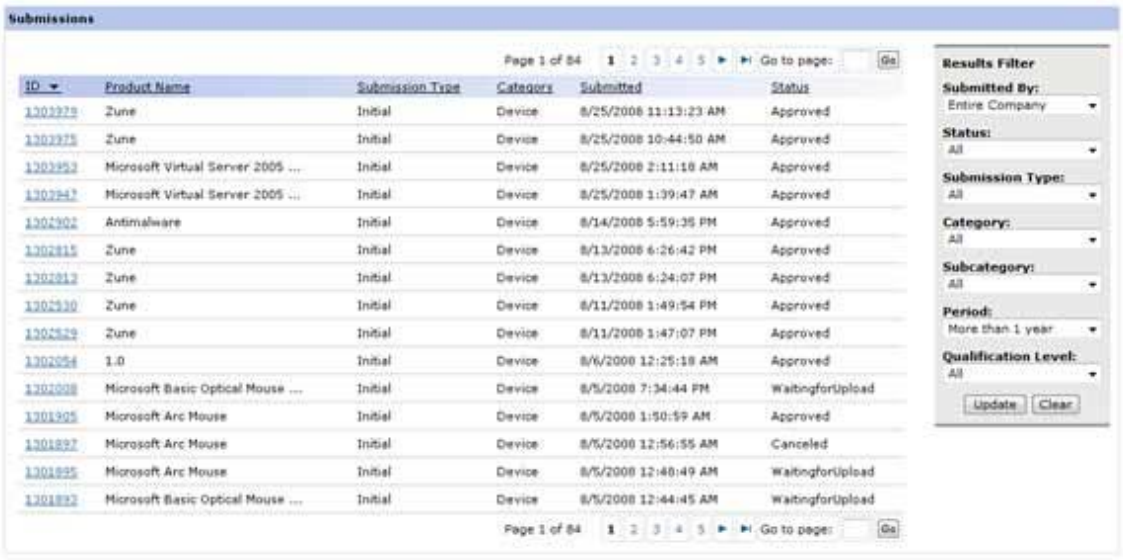
How to View Submissions

1. Go to the Winqual website and sign in
2. Click **Hardware > Manage Logo Submissions** in the **Windows Logo Programs** section of the left navigation.



3. The Manage Product Submission page allows access to your submission via a variety of methods. You can search submissions manually by using the scroll option. In addition, the information can be arranged according to ID, Product Name, Submission Type, Category, Submitted Date, and Status.
   Using the Results Filter, you can use the filers to shift through the database to find only the results you are looking for.

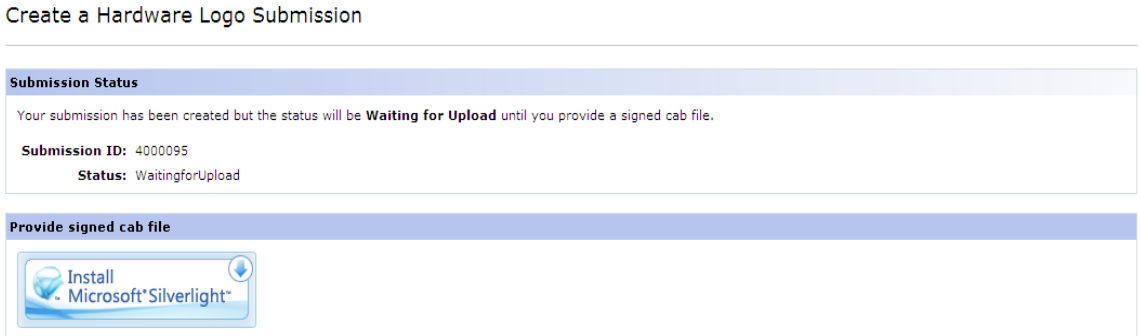
Click on the **ID** number of the submission to view more information.



How to Upload a Submissions Package

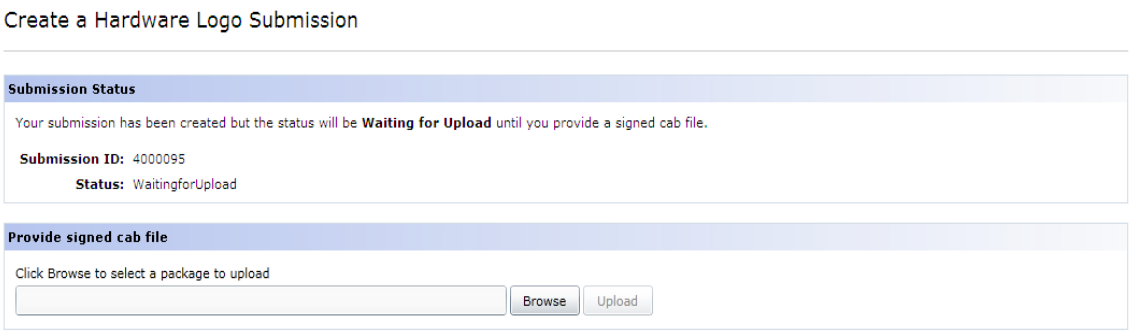
1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a submission with the status of "WaitingforUpload"
3. Click **Upload Package** in the **Additional Data** section on the right side of the page.

4. If Microsoft Silverlight is not installed on your machine, you will see a link to the installer.

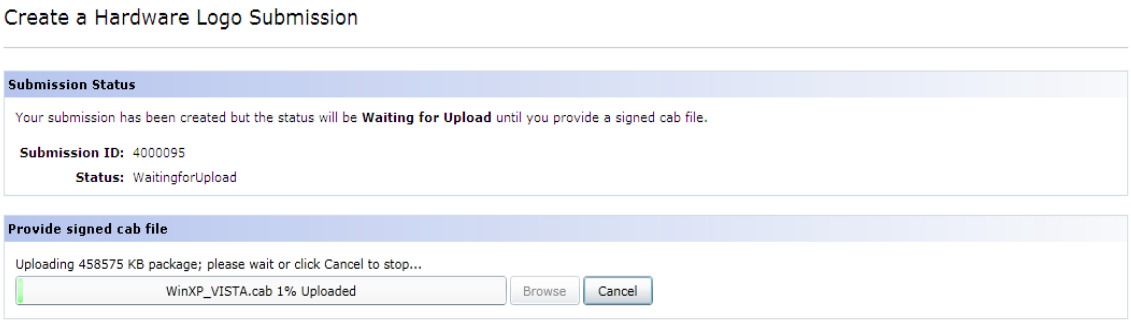


5.

7. Click **Browse** to locate the .cab file**.** Click **Upload** to begin upload.

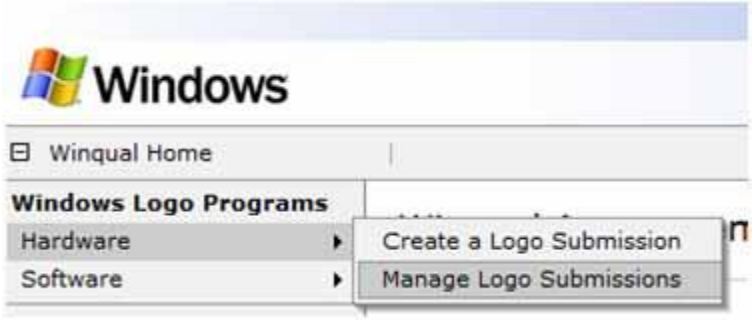


8. The specified file will begin to upload. Upload progress is displayed via a progress bar on the page.
9. **Note:** You can also click **Cancel** and return later to upload the submission package.



10. When uploaded is completed, you will be redirected to the following page

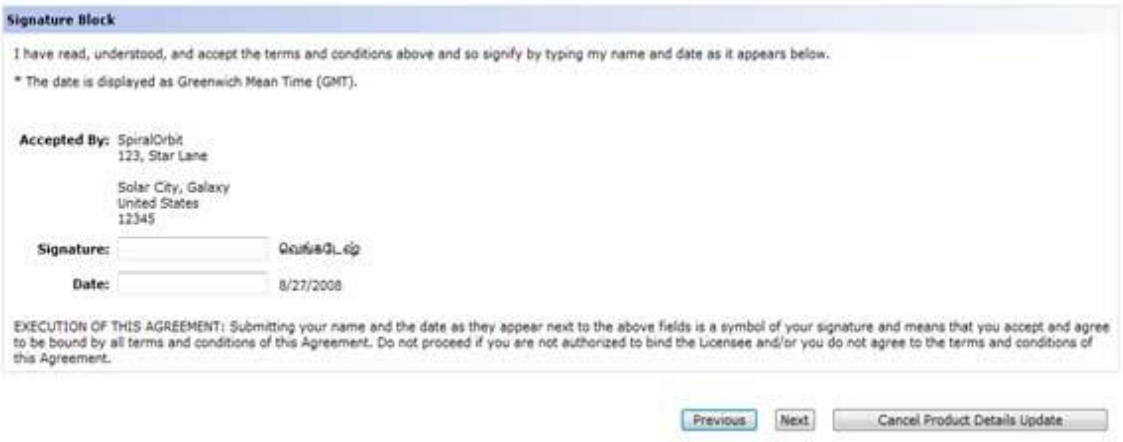
Click **Hardware > Manage Logo Submissions** in the **Windows Logo Programs** section of the left navigation to exit this page. This submission will be at the top of the list.



How to Add Marketing Names

1. Follow the instructions on How to View Submissions
2. Enter a new **Marketing Name** located in the **Product Details** section

3. Select the locale associated with this marketing name and click **Add**
4. Optionally, you may add a Manufacturer Part Number for your product
5. Click **Next** to continue
6. Read through the Legal Agreement and scroll to the bottom of the page. Enter your digital signature and date.
7. **Note:** There can be multiple legal agreements to sign



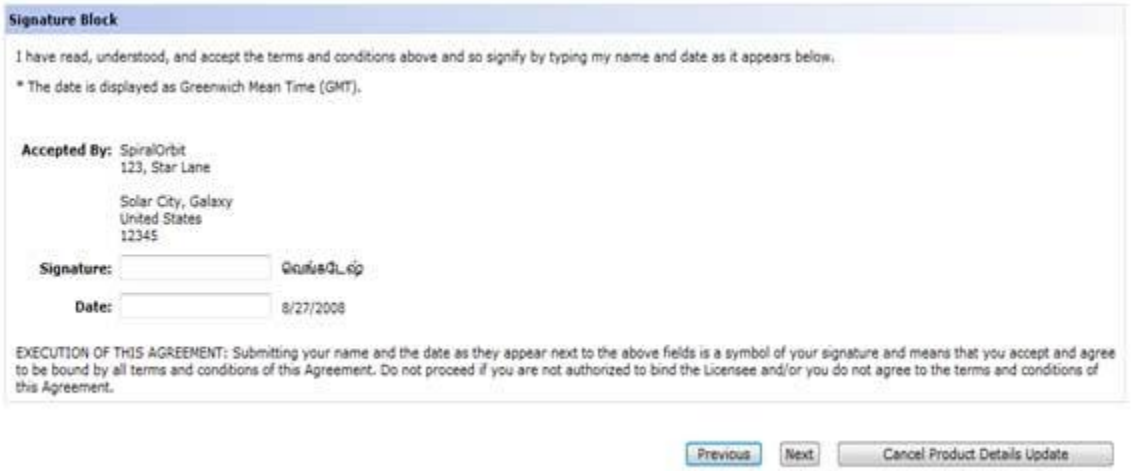
8. Click **Finish**

How to Delete Marketing Names

1. Follow the instructions on How to View Submissions
2. Find the **Marketing Name** that you would like to delete in the **Product Details** section and click **Delete**

3. Click **Next** to continue

4. Read through the Legal Agreement and scroll to the bottom of the page. Enter your digital signature and date.
5. **Note:** There can be multiple legal agreements to sign.

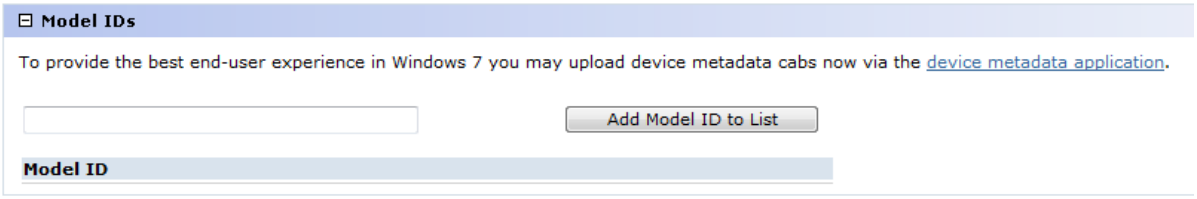


6. Click **Finish**

How to Add Model IDs

Model IDs are used in Windows 7 to differentiate devices which have “cosmetic” differences; for example, a black Zune and a Red Zune.

1. Follow the instructions on How to View Submissions
2. Enter the new Model ID and click Add Model ID to List.

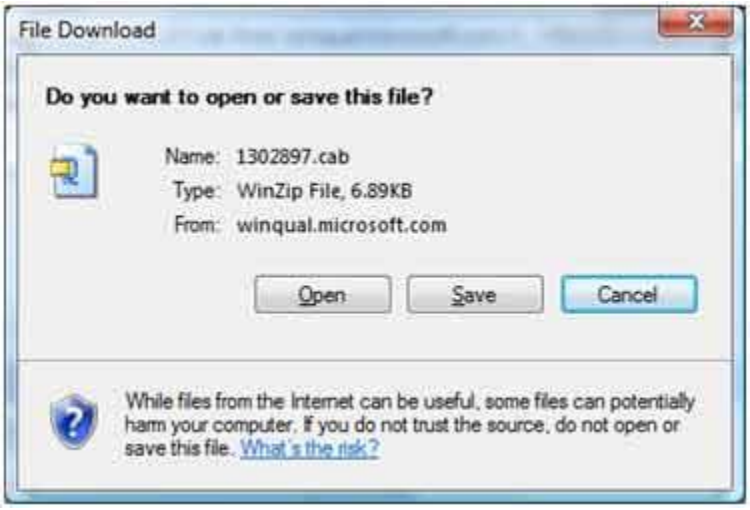


3. Click **Next** to continue.
4. Click **Finish**.

How to Download a Signed Catalog File

1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a driver submission with the status of "Approved" that you submitted with a driver
3. Click **Signed Catalog File** in the **Additional Data** section on the right side of the page.

4. This will prompt a **File Download** dialog



5. Take the action of your choice in the dialog

How to View the Contingency Status

1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a submission with the status of "Approved"
3. Click **Contingency Status** in the **Additional Data** section on the right side of the page.

How to Resell a Submission

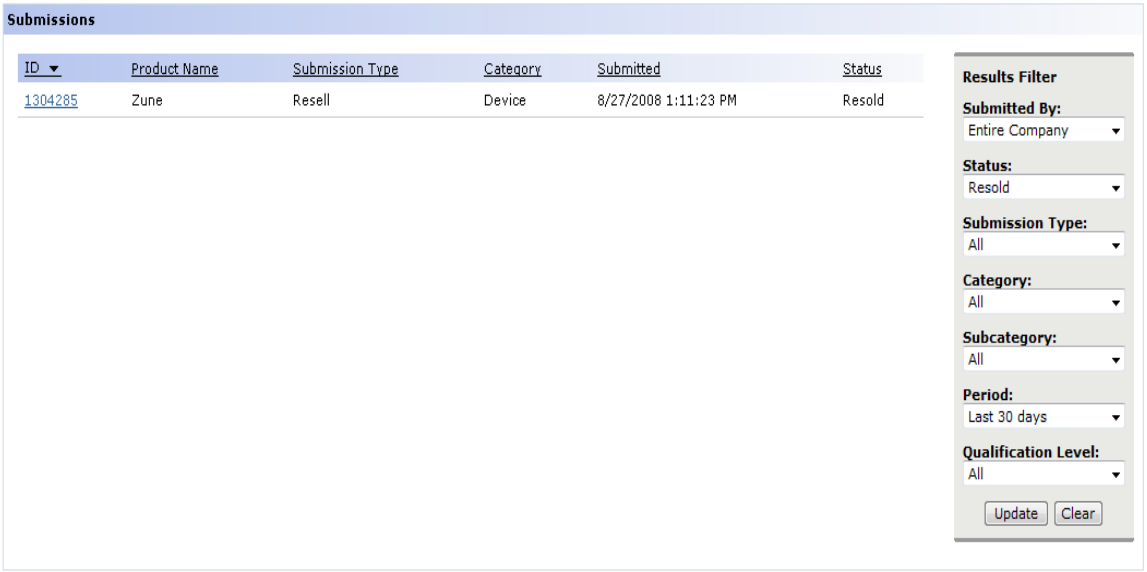
1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a submission with the status of "Approved"
3. Click **Resell this Product** in the **Additional Data** section on the right side of the page

4. Type the name of the company in the **Search Company** field or select the company name from the drop-down list

5. Click **Resell**

How to Accept Resold Submissions

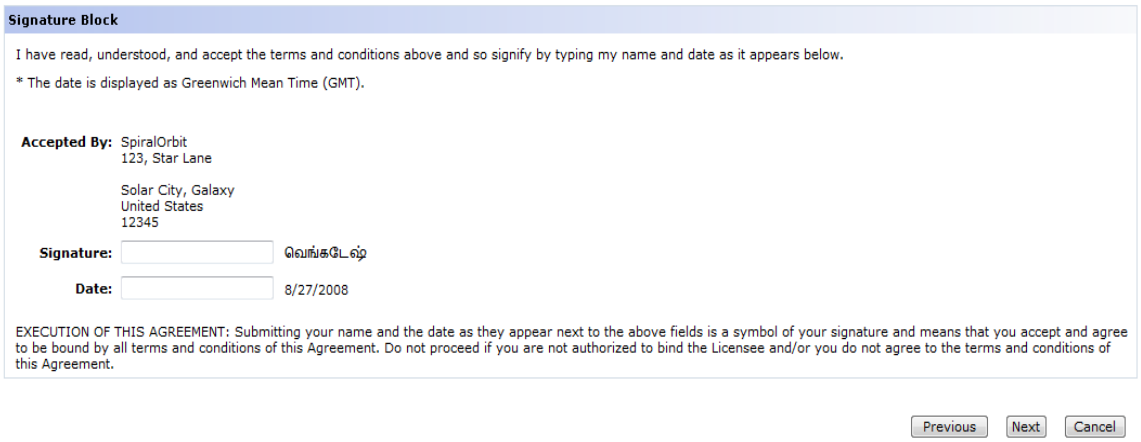
1. Follow the instructions on How to View Submissions
2. Select **Entire Company** in the **Submitted By** drop-down list in the **Results Filter** section on the right side of the page
3. Select **Resold** in the **Status** drop-down list in the **Results Filter** section on the right side of the page
4. Click **Update** in the **Results Filter** section on the right side of the page
5. Click on the **ID** number of the submission to view more information



6. Click **Accept**

7. Enter the following information into the specified fields: **Billing Group, PO Number** and **Product Name**. Click **Next**.

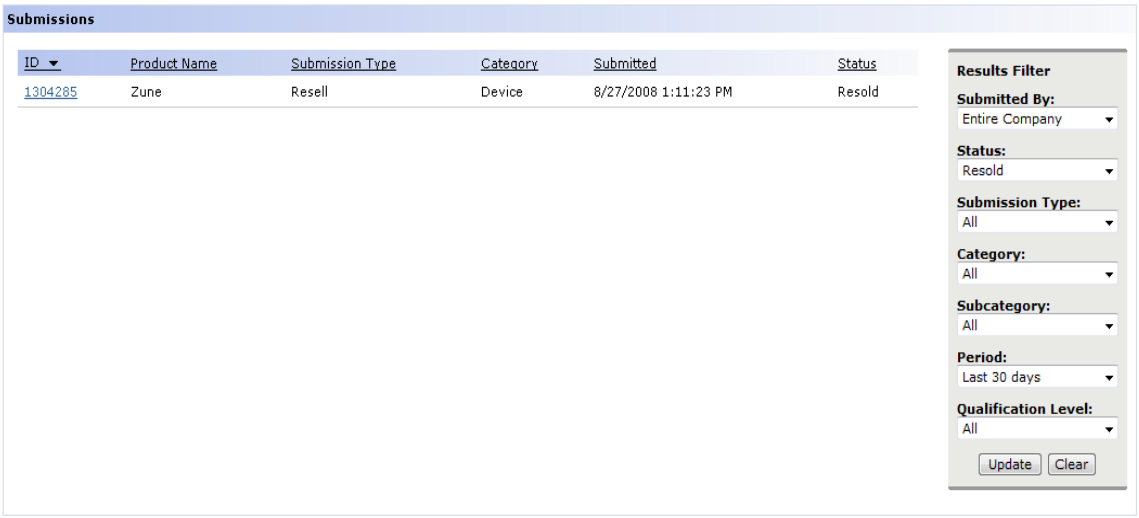
8. Read through the Legal Agreement and scroll to the bottom of the page. Enter your digital signature and date. Click **Cancel** to cancel the submission. Click **Back** to return to the previous page. Click **Next** to continue.
9. **Note:** There can be multiple legal agreements to sign.



10. Click **Finish** to accept

How to Decline Resold Submissions

1. Follow the instructions on How to View Submissions
2. Select **Entire Company** in the **Submitted By** drop-down list in the **Results Filter** section on the right side of the page.
3. Select **Resold** in the **Status** drop-down list in the **Results Filter** section on the right side of the page.
4. Click **Update** in the **Results Filter** section on the right side of the page
5. Click on the **ID** number of the submission to view more information.

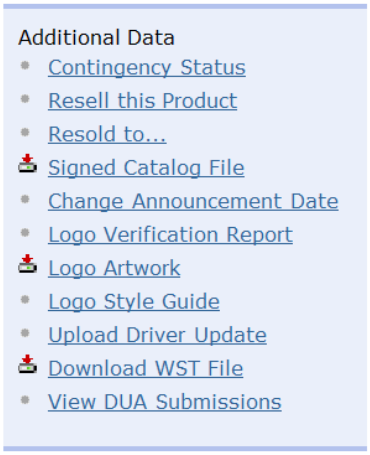


6. Click **Decline**

7. 

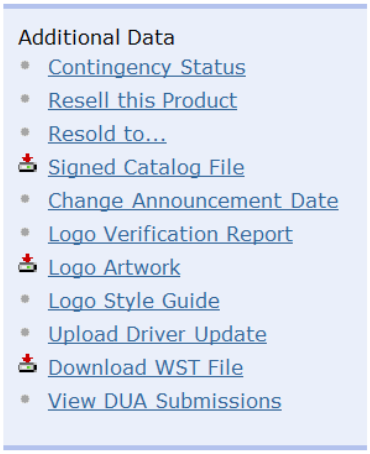
How to View Resold Submissions

1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a submission with the status of "Approved"
3. Click **Resold to…** in the **Additional Data** section on the right side of the page.



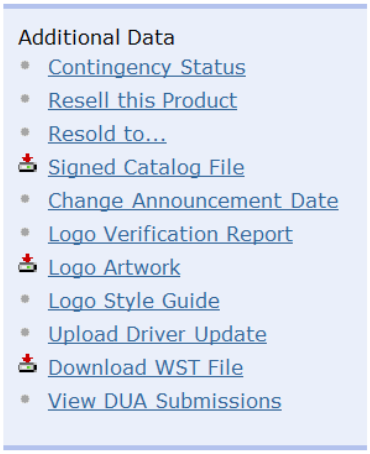
How to View Test Reports

1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a submission with the status of "Approved"
3. Click **Logo Verification Report** in the **Additional Data** section on the right side of the page.



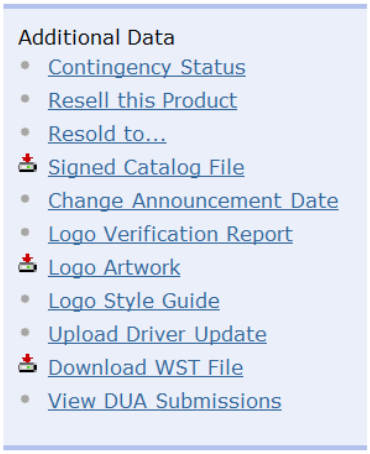
How to Download Logo Artwork and the Logo Style Guide

1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a submission with the status of "Approved"
3. Click **Logo Artwork** or **Logo Style Guide** in the **Additional Data** section on the right side of the page



How to Add or Change Announcement Date

1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a submission with the status of "Approved"
3. Click **Change Announcement Date** in the **Additional Data** section on the right side of the page



4. Choose the date desired and click Update

How to Create Driver Update Acceptable Submission

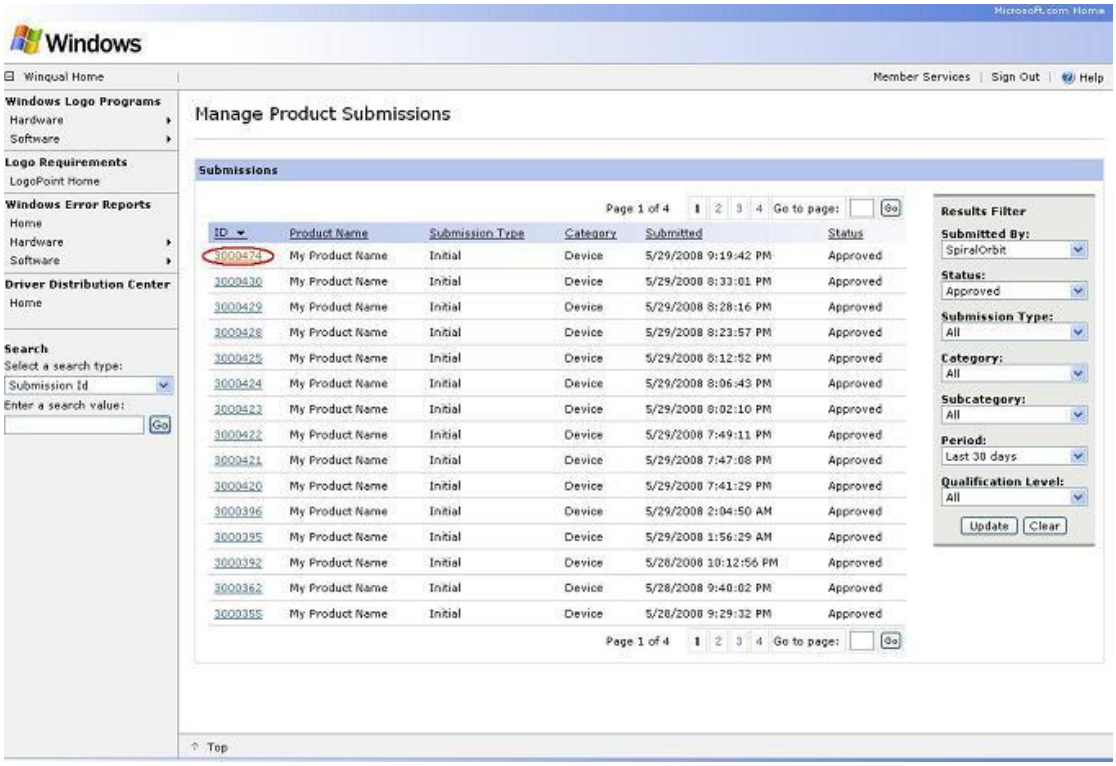
The purpose of this document is to instruct users how to make Driver Update Acceptable (DUA) submissions using WST. This document is not intended to communicate DUA policy requirements, i.e. acceptable/unacceptable allowances.

Driver Update Acceptable Defined:

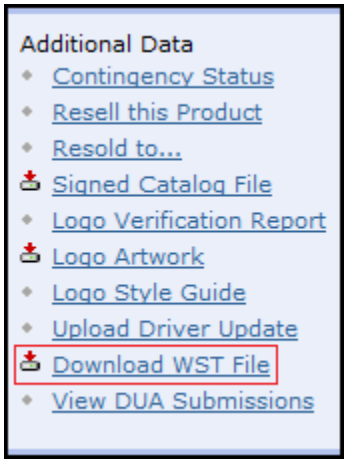
The Driver Update Acceptable process allows users to perform acceptable updates to logo'd/signed device drivers without DTM retesting.

Driver Update Acceptable Steps:

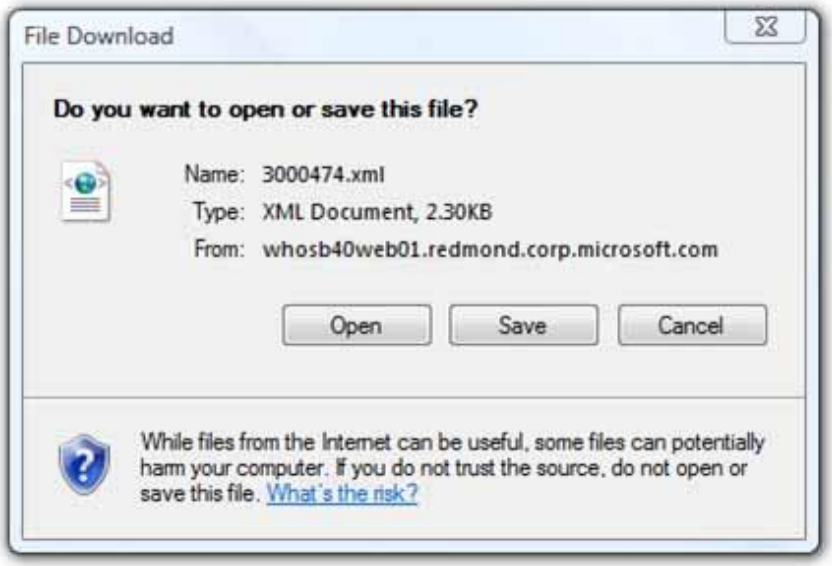
1. To perform a Driver Update Acceptable submission, download a WST file from Winqual in Submission Center by choosing the specific submission to perform a DUA on.



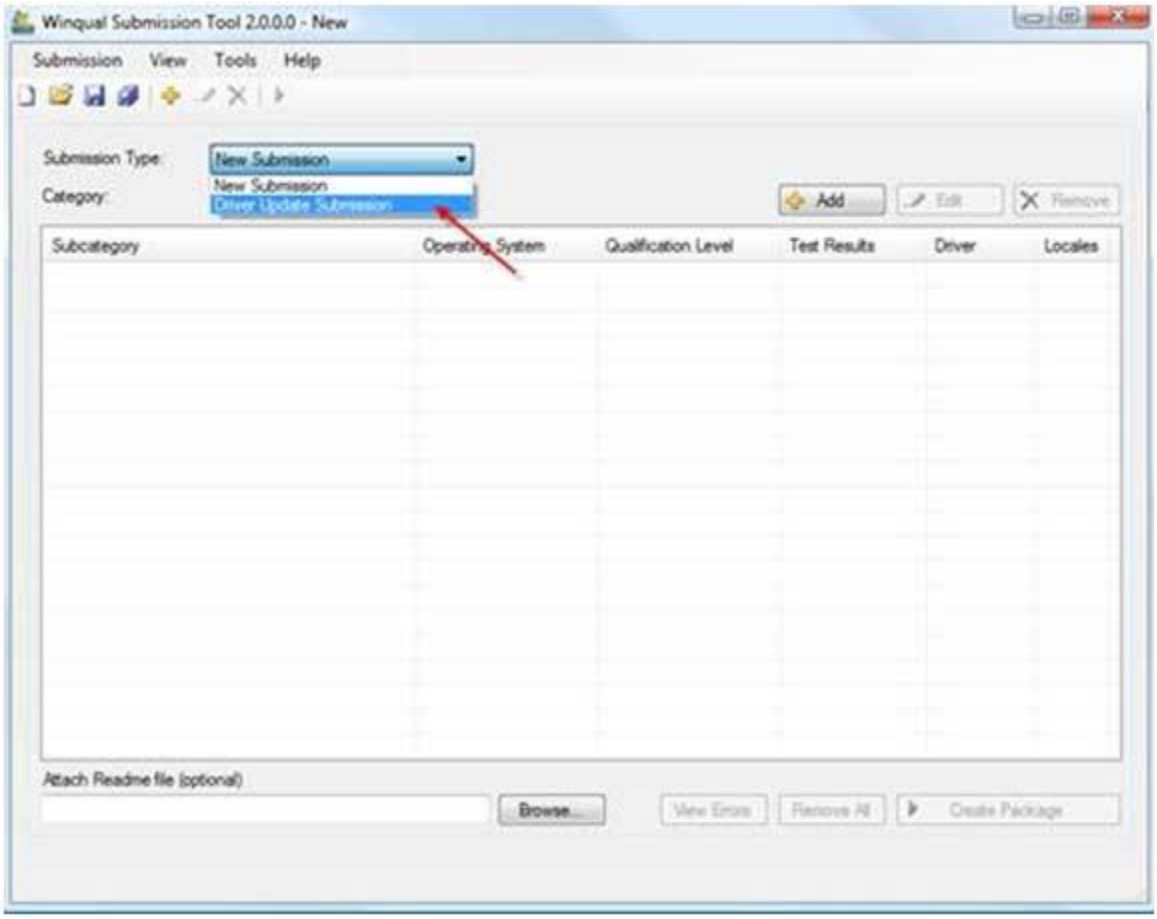
2. Click 'Download WST File.



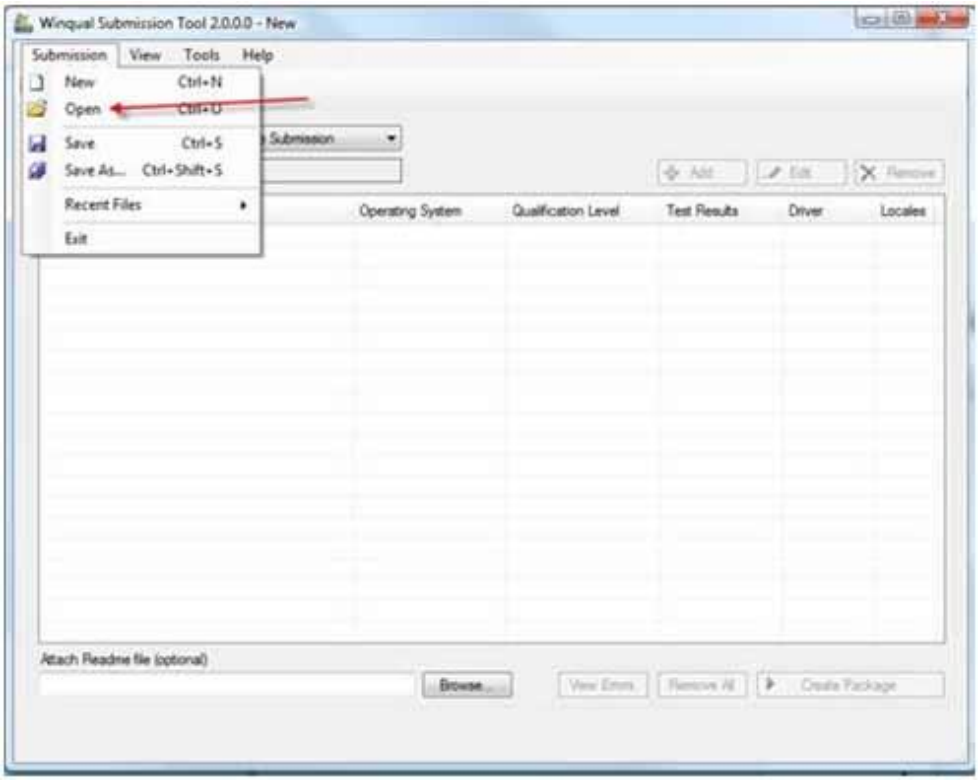
3. Save WST file.



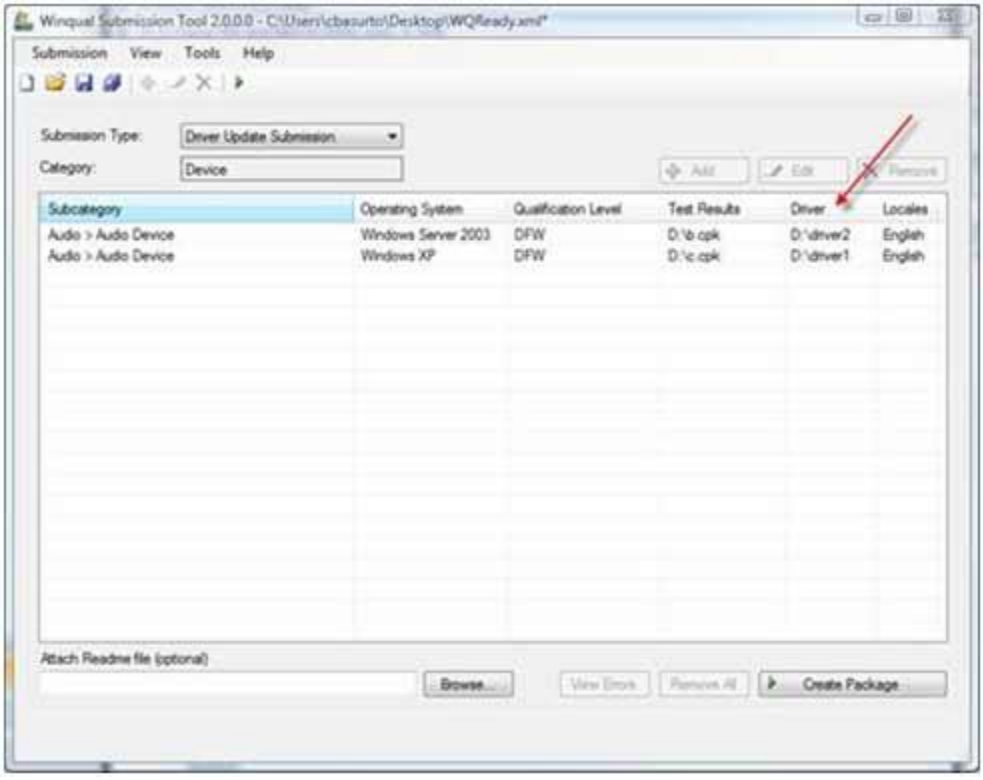
4. Open Winqual Submission Tool application. In the main page, select 'Driver Update Submission' in the Submission Type drop down.



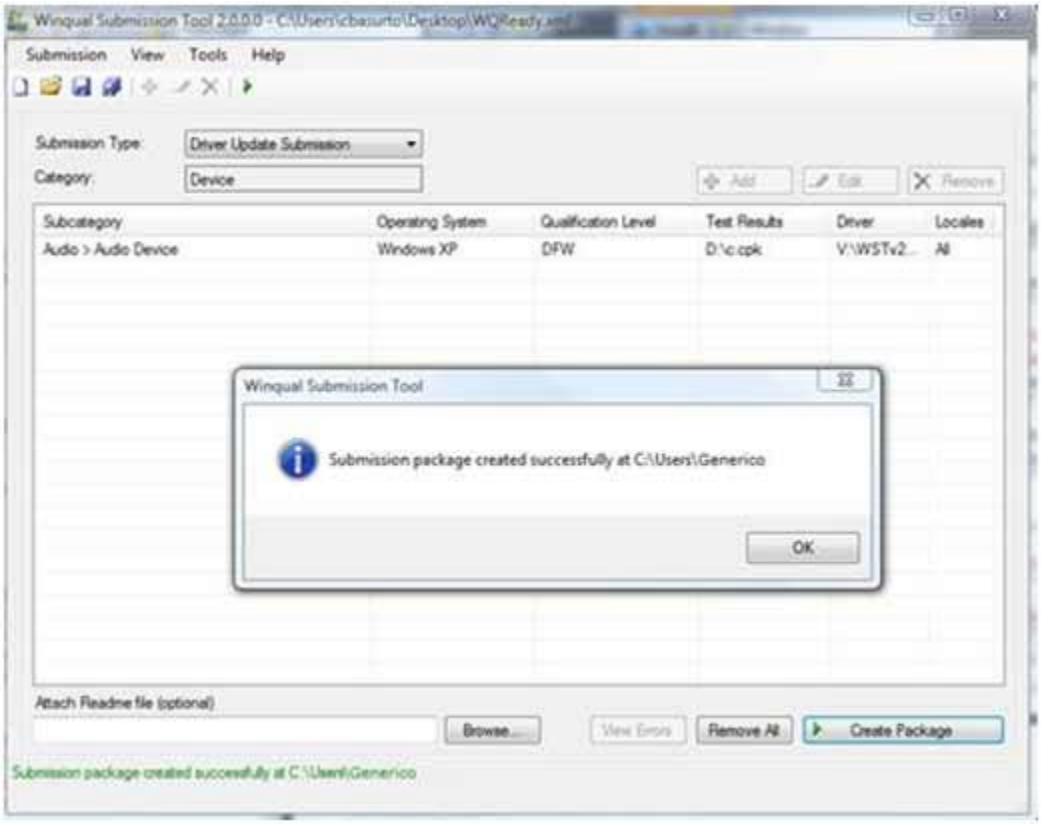
5. Click Submission > Open
   Select a WST (WQReady.XML) file for Driver Update



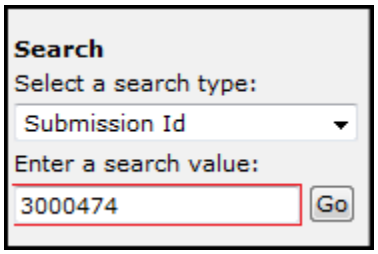
6. Ensure the driver folder location is correct. If not, point to correct driver file location. Then, click 'Create Package' button.



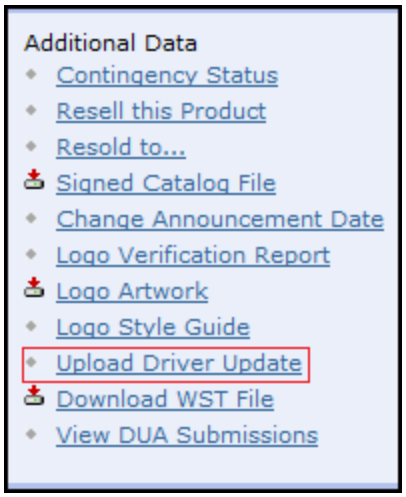
7. The .cab file package is created.



8. Go Back to Winqual submission center and find the specific submission to perform a DUA

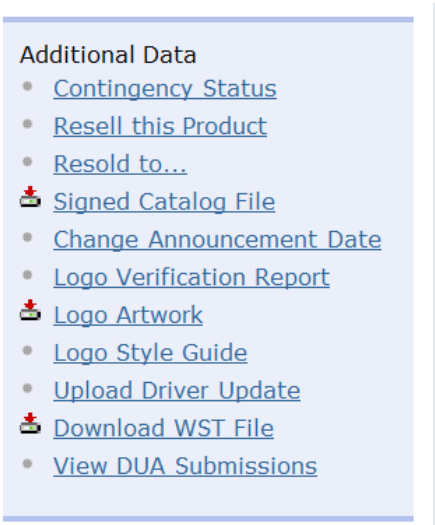


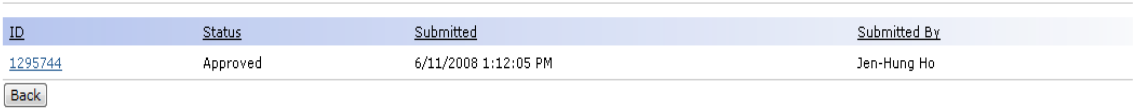
9. Upload Driver Update and follow the DUA wizard. Make sure to use the new DUA .xml and .cab file that was created by WST.



How to View Updates made to a Submission

1. Follow the instructions on How to View Submissions
2. Click on the **ID** number of a submission with the status of "Approved"
3. Click **View DUA Submissions** in the **Additional Data** section on the right side of the page.





Driver Distribution Center

About the Driver Distribution Center

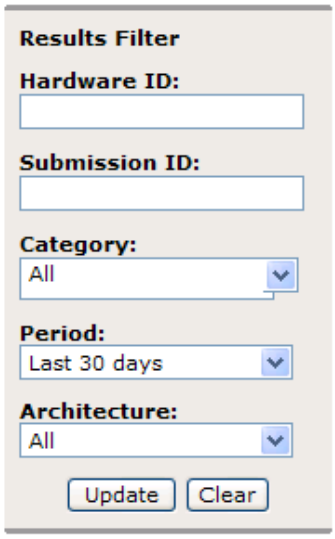
The Driver Distribution Center (DDC) allows you to change your driver distribution settings for Windows Update after a driver submission has been completed. Submission owners and Hardware ID owners can use the DDC to change driver distribution settings;

The Driver Distribution Center is divided into several sections

Devices without Drivers

This page lists devices that do not have an English driver available on Windows Update but do have a driver available that has passed WHQL testing for Windows Vista.

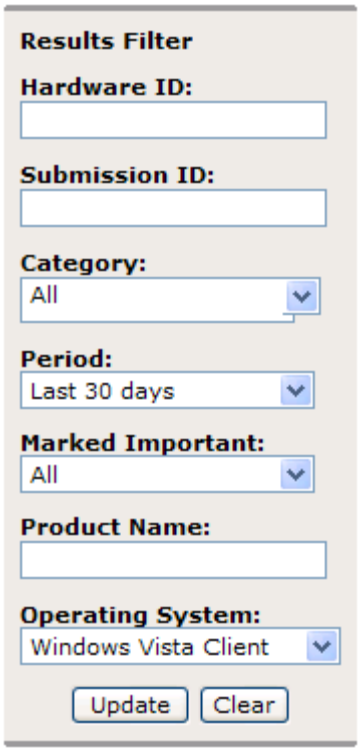
- Each column of data on this page is sortable. To change the sorting click the column name. By default page is sorted by DNF (Driver Not Found).
- DNF (Driver Not Found) column. This data is available for Windows Vista only and shows the number of times users have not been able to find a driver for their device (From users who have opted-in to providing error reporting data) The numbers shown are for the last 180 days
- Clicking the Submission ID will take you to the Submission ID Details Page where you can view the current distribution status for the submission and also change the driver publication date
- Clicking the “Click to distribute now” link will distribute the driver on Windows update only for that hardware ID for Vista.
- Clicking the Driver version link will download the driver package submitted to WHQL for that submission. This will allow to verify if it is the exact driver you wish to distribute.
- Driver date is taken from the DriverVer section in the submitted INF.
- By default the page lists devices from submissions made in the last 30 days. This can be changed to show submissions made in the different period of time and/or specific Category and/or Architecture. Also the filter allows to search for specific HardwareID and/or SubmissionID.



Driver statistics

This page allows you to compare several drivers for a single device and choose the best driver to post on Windows Update.

- The data on this page is based on hardware ID - you may see the same submission ID listed several times, once for each hardware ID.
- Each column of data is sortable. To change the sorting, click the column name.
- Clicking the Driver version link will download the driver package submitted to WHQL for that submission. This will allow you to verify it is the exact driver you wish to distribute.
- The “Is marked Important?” – “Yes” means that driver is published on Windows Update as Critical Updated.
- When “Driver is on Wu?” is marked “true,” the driver is being distributed on Windows Update.
- By default the page lists devices from submissions made in the last 30 days. This can be changed to show submissions made in the different period of time and/or specific Category and/or Architecture, Product Name, Marked Important, Operation System. Also the filter allows to search for specific HardwareID and/or SubmissionID.



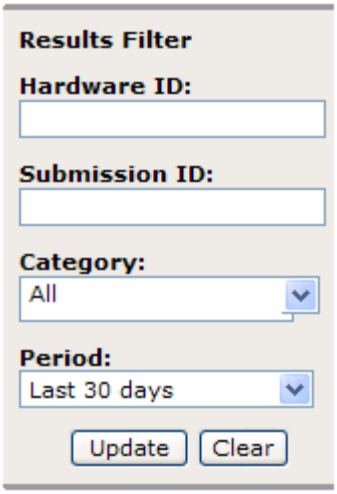
- Clicking the “+ “ sign next to a submission ID expands the page to show all submissions that have been made for the hardware ID (device). This allows you to compare the statistics data and choose the best driver to post for that device.
    - Data in this area is only for the one operating system selected in the results filter.
    - The product name shown in the from is the product name entered for the submission.
    - Driver date is taken from the DriverVer section in the submitted INF.

- Clicking the Driver version link will download the driver package submitted to WHQL for that submission. This will allow you to verify if it is the exact driver you wish to distribute.
- The “Is marked Important?” – “Yes” means that driver is published on Windows Update as Critical Updated
- Clicking “Go to Distribution Options” link will take you to the Submission Detail page where you can view the current distribution status for the submission and also change the driver publication date

Add/ remove Drivers

This page allows you to quickly change distribution settings for a submission.

- Each column of data is sortable. To change the sorting, click the column name.
- Clicking the Submission ID will take you to the Submission ID Details Page where you can view the current distribution status for the submission and also change the driver publication date
- Clicking the “+” sign next to the Submission ID will take you to a view that shows you the distribution settings for all submissions that have been made for that hardware ID and allows you to change distribution settings for that Hardware ID for any submission and Operation System. (only one of these views can be opened at one time)
- Clicking the Driver version will allow you to download the driver files for that submission
- Clicking on “Download data to Excel” allows to download the search result in excel format.
- By default the page lists devices from submissions made in the last 30 days. This can be changed to show submissions made in the different period of time and/or specific Category. Also the filter allows to search for specific HardwareID and/or SubmissionID.



Download data to Excel

Submission Details page

This page allows you to view current distribution settings, set a driver publication date and also select additional actions to take

- Driver publication date:
    - The driver for the submission you are viewing will not be made available on Windows Update until this date has passed even if the driver has been set to distribute in other areas. This allows you to set the distribution options you want for a submission and have them effective at a later date. For instance you can set the driver to be distributed on Windows Update for Windows Vista only now and set the publication date to two weeks from now. Today the driver will not be available on Windows Update but after the publishing date has passed the driver will automatically be offered according to the distribution options you set
- Actions section

  This area allows you to choose an action to take for the submission you are viewing
    - Standard Distribution
        - Select HardwareIDs from the submission to distribute/expire on Windows Update
    - Advanced distribution
        - Select HardwareIDs from the submission to distribute/expire on Windows Update
        - Add/remove special detection to the driver posting such as Test targeting
        - Download distribution settings data to Excel
    - Download driver
        - Download the driver file submitted

Standard Distribution

- You can quickly change the distribution settings for any Hardware ID in the submission.
- To distribute the driver for all Hardware IDs in the submission, click the checkbox “All” at the top of the listing then click the “Submit” button.
- If the HardwareID cannot be distributed you will be shown a message “Not Distributable” click on the text to see why
- If the HardwareID requires special targeting you will see the message “Requires targeting” click the message to go to the Advanced Distribution page
- If the HardwareID was distributed with special targeting, you will see a ‘Targeted’ link. Clicking on that link will take you the Advanced Distribution page for that HardwareID

Advanced distribution

This is a wizard you can use to distribute driver on Windows update and also to add special driver targeting such as test registry key or company targeting

Step 1

On this page you are able to select the Hardware IDs you would like to manage by using the check boxes on the left side of the page or using button “Check All”

- All columns on this page are sortable. By default the page is sorted by “Distribution Status”

- You are also able to filter the list you see in several ways (The submission ID is required for all searches other fields are optional)
    - By submission ID (this will change the submission ID you are viewing)
    - By hardware ID: you can enter a single ID or paste in a large list of Hardware IDs for a list you may have
    - By Operating System
    - By Distribution Status
    - By Requires Targeting

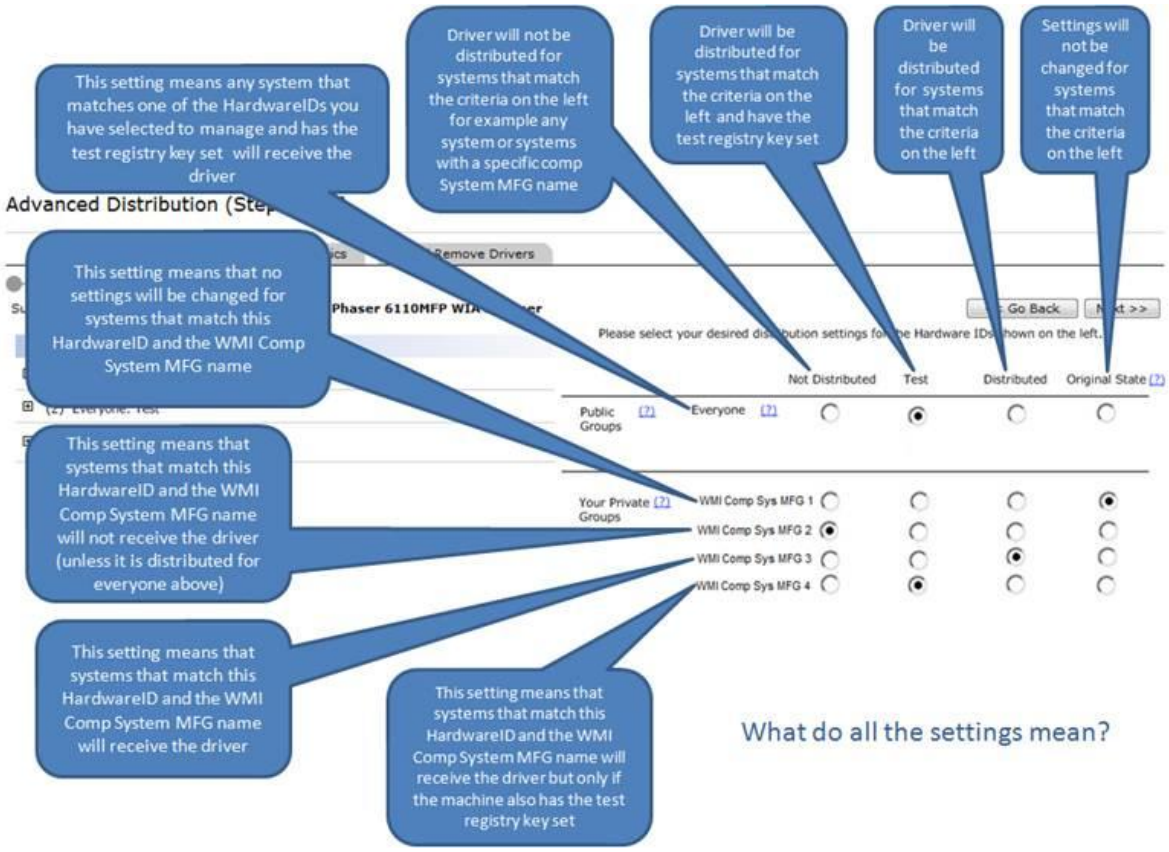
Download data to Excel

Step 2

On this page you are able to view current distribution settings and add/remove targeting.

- **Public groups:**
    - These settings are available to anyone who has access to the submission e.g. the submission owner or the HardwareID owner
- **Your private groups:**
    - This area will allow you to add detection based on your computer system manufacturer field in SMbios

- **Not Distributed:**
    - Means for systems that meet the requirements on the left e.g. “everyone” or a specific SMbios field the driver will not be available
- **Test:**
    - Means only systems with the test registry key: ‘HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\Test Drivers’ will receive the driver
- **Distributed:**
    - Means any system that has the device with Hardware ID you have selected to manage will receive the driver
- **Original state:**
    - Means no changes will be made to the settings for that group for example “Everyone”



Step 3

On this page you are able to review the changes you made to the driver distribution settings before you submit them.

- Click on any column to sort

General terms

Publication Date

- Your driver will not be posted to Windows Update until this date has passed. This allows you to set the driver for delayed distribution.
- Once this date has passed it can no longer be changed. This date applies to all hardware IDs in the submission.
- This date is set on the Standard Distribution page

Hardware IDs

- These are the Plug N Play IDs for each device submitted.
- You can select which hardware IDs you want to post a driver for.
- Hardware IDs that have not passed testing are not able to be distributed.
    - For instance, if your driver has been submitted for both X86 and X64 and one of the Hardware IDs is not listed in the X64 section of your INF, that hardware ID will not be able to be distributed for X64.

Operating Systems

- You can select which operating systems you want to post a driver for.
- For Operating systems that your driver did not pass testing for or was not submitted for, you will not see a checkbox for distribution.

Notes

- In the initial release of the Rich Targeting the company detectoids will be available to select companies only
- This type of detection can only be added or removed by your company
- Company detection will eventually be available to companies that have made a system submission in WinQual
- For questions about the availability of company detection please send mail to DDChelp@microsoft.com

Problems with the site

- If you experience problems with the DDC site please send mail to DDChelp@microsoft.com.
- Please include the following information in your request
    - Company name
    - WHQL Submission ID
    - WHQL Device category (List all if multifunction device)
    - Device name
    - Hardware ID(s)
    - Driver Version
    - Driver date
    - OS
    - Problem details and expected behavior

- Steps to reproduce problem
- Is driver on Windows Update?

Please review this list of known issues before contacting support:

- Large search results can cause the database to time out. If this occurs, narrow your search using the Advanced Search options.
- You may encounter some slow performance issues.
- Model name and .inf file name information are not yet available on DDC.
- Automated e-mails to inform you of status changes to your submissions do not yet include driver version information.
- Search results for "Only drivers on Windows Update" include all drivers marked for Windows Update and not just the most recent driver available on Windows Update.

Search

General Search

Search by Submission ID

You must enter the entire Submission ID; partial IDs will not return results. To see the status of your submissions, click **Hardware > Manage Logo Submissions** in the **Windows Logo Programs** section in the left navigation.

Search by Hardware IDs

You may select from the list of Vendor IDs that we have associated with your company.

Advanced Search

The user can use the Advanced Search for submissions on DDC by making the following selections:

Hardware ID

You can select values for the Vendor and Device Ids for PCI, HID, USB or HDAUDIO enumerators.

PCI Enumerator

Please select values for the vendor id and device id. Optionally, in the "Enter Search Value:" field; enter the subsystem device id followed by the subsystem vendor id.

Example: To search for *PCI\VEN_8086&DEV_24D6&SUBSYS_005F1025* make the following selections:

- Enumerator: PCI
- Vendor ID: 8086
- Device ID: 24D6
- Enter Search Value: 005F1025

HID and USB enumerators

Please select values for the vendor id and device id.

Example 1: To search for *HID\VID_06A3&PID_3509* make the following selections:

- Enumerator: HID
- Vendor ID: 06A3

- Device ID: 3509

Example 2: To search for *USB\VID_0546&PID_3273&MI_00* make the following selections:

- Enumerator: USB
- Vendor ID: 0546
- Device ID: 3273

HDAUDIO enumerators

Please select values for the vendor id and device id. Optionally, in the "Enter Search Value:" field; enter the subsystem vendor id followed by the subsystem device id.

Example: To search for *HDAUDIO\FUNC_02&VEN_1057&DEV_3055&SUBSYS_10573355&REV_1007* make the following selections:

- Enumerator: HDAUDIO\FUNC_02
- Vendor ID: 1057
- Device ID: 3055
- Enter Search Value: 10573355

All other enumerators listed in the Enumerator drop-down:

The user must enter the remaining part of the Hardware Id in the 'Enter Search Value:' field.

Example: To search for Root\EGENDSM, make the following selections:

- Enumerator: Root
- Enter Search Value: EGENDSM

For enumerators not listed in the Enumerator drop-down:

The user must select 'Other' for the enumerator and enter the Hardware Id in the 'Enter Search Value:' field.

Example: To search for **PNP0303* make the following selections:

- Enumerator: Other
- Enter Search Value: *PNP0303

Device Category

Optionally select the device category.

Operating Systems

Optionally select the operating systems that apply to the search.

Additional Search Criteria

- Select 'Only your company submissions' checkbox if you want to search for submissions made by user of your company
- Select 'Only drivers on Windows Update' checkbox if you want to search for submissions those are on Windows Update

About Windows Update Sites

The Windows Update consumer site provides a method for you to deliver driver updates to Windows users. Visit the Windows Update site for more information.

Windows Update Catalog

The Windows Update Catalog provides a comprehensive listing of updates that can be distributed over a corporate network. Visit the Windows Update Catalog site for more information.

Critical Updates

Critical Update drivers are those that eliminate or prevent system crashes, data corruption, security risks, and similar damaging events. If you have a driver that you want to mark as critical, contact winqual@microsoft.com for assistance.

For more information about publishing your drivers on Windows Update, see Windows Update Driver Publishing. For questions about driver testing, see WHQL support.

Device Metadata

Device Metadata Submission help content can be found at the Device Metadata home page.

Windows Error Reporting (WER)

About WER

WER allows you to view and download error reports associated with your company, map files to your company, and provide responses to errors. OEMs that include marker files on their systems can view the hardware crashes on those systems and download an XML data set.

What is WER?

WER is a set of technologies built into Microsoft Windows XP and the Microsoft Windows Server™ 2003 operating system families that captures product crash data, allows end users to report the information, and allows software and hardware vendors to analyze and respond to these problems. With Microsoft Windows Update and WER, you can identify problems and provide solutions.

Who can use WER?

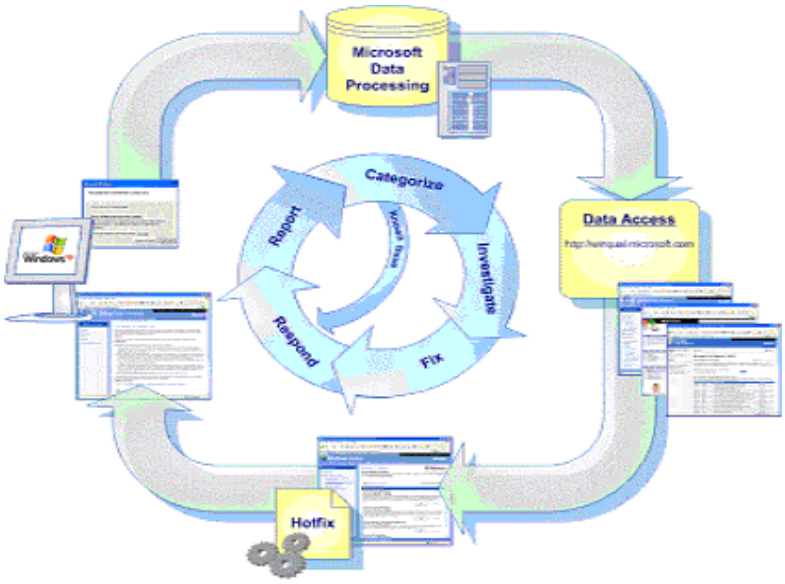
WER data is available to independent software vendors (ISVs), independent hardware vendors (IHVs), and original equipment manufacturers (OEMs). Microsoft does not charge for using the service, and your products do not need to have the "Designed for Windows" logo in order to use the WER service.

Why should I use WER?

With WER data, you can identify common real-world customer problems and provide a real-time solution to your customers. While customer support calls provide information about common issues, they do not always provide enough granular detail to debug the actual code. Further, support records indicate those problems which prompted calls— they do not indicate every instance of a crash.

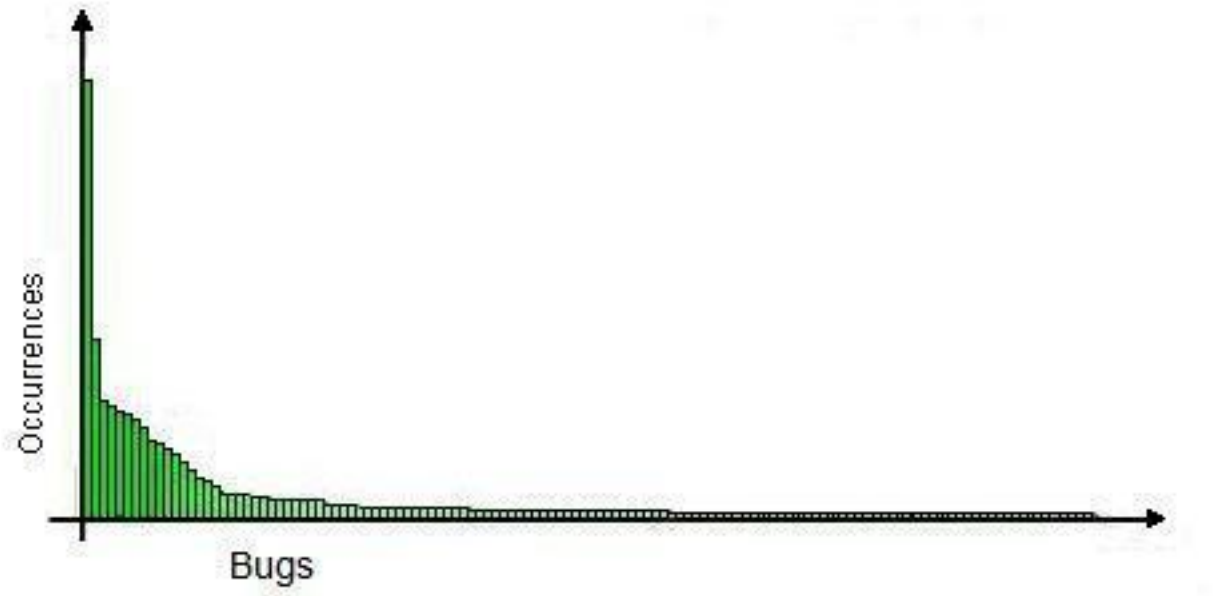
The Feedback Loop

As shown in the diagram below, WER allows you to establish a feedback loop with your customers where you can investigate the most frequently reported software crashes, resolve the software or hardware problems, and inform your customers of the fixes.



The Return on Investment (ROI) Curve

As shown in the graph below, broad-based trend analysis of error reporting data shows that across all the issues that exist on the affected Windows platforms and the number of incidents received, 80 percent of customer issues can be solved by fixing 20 percent of the top-reported bugs. Even addressing 1 percent of the top bugs would address 50 percent of the customer issues. The same analysis results are generally true on a company-by-company basis too.



How WER Works

When an end user experiences a crash, they are shown a dialog box which asks them if they want to send an error report to Microsoft. If they choose to send the report, then WER collects information on both the application and the module involved in the crash, and sends it over a secure server to Microsoft. This information is then sorted into buckets based on the contents. In some instances, .cab files are also collected and stored in the buckets. Microsoft maps each of the buckets to a particular independent hardware vendor (IHV), independent software vendor (ISV), or original equipment manufacturer (OEM).

The mapped vendor of a bucket can then access the data for their products, analyze it to locate the source of the problem, and provide solutions both through the end user error dialog boxes and by providing updated files on Windows Update.

What is Windows Update?

Windows Update helps address distribution issues by providing you with a channel for your users to automatically receive critical updates for your drivers. Automatic updates result in fewer support calls and decreased costs for your company. There is no charge to your company to use this service; the infrastructure cost of ensuring that your customers stay current with your latest driver software is financed by Microsoft.

Visit the Windows Update site for more information.

Even after you have identified major issues and developed fixes, the issues will not be resolved until your customers have installed the fix. Using the combination of WER and Windows Update provides you with a notification and distribution mechanism for preventing future failures.

Will WER and Windows Update fix all of my problems?

While using WER and Windows Update can help you to identify and respond to your biggest issues, it is still up to the users and your developers to close the loop. Data submission is voluntary, so not all crashes will be reported. Preventing crashes in the first place is still the best method—using driver and application verifiers as well as beta testing can also help you to build a stronger product.

Creating End Users Response

Overview

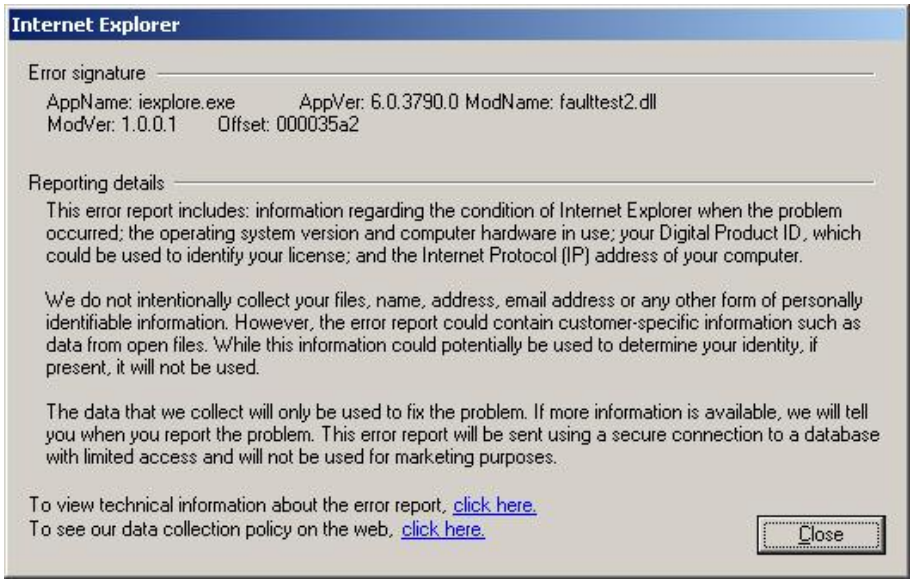
When an end user experiences a crash, they are shown a dialog box which asks them if they want to send an error report to Microsoft. If they choose to send a report, the Windows Error Reporting (WER) system checks to see if there is a user message associated with the error. At this point, there are several possible scenarios:

- If you have not provided a response, then the crash data will be collected, but the user will not be given any further information on how to handle the crash.
- If you have provided a response, the user will be shown that response.

Sequence of Events for Windows XP

An end user experiences a crash and the crash dialog box appears:

If the user wants to see what the error report contains, they click the link on the dialog box and see the error details:



After they send a report, the WER system checks to see if a response is associated with the error, and provides a link to the appropriate response:

When the user clicks the "**More information"** link, they see a crash response message similar to this:

Why Crash Responses are Important

If users don't see a response, they will stop sending error reports. Without a response, customers perceive the data is not being used by Microsoft or its partners. Even a simple message that the problem is being investigated or a fix will be released in the future tells the user that the data is being used and that their data submission is to their benefit.

If there is a fix to a bug, an upgrade to a product, or a workaround to a problem, providing a response can notify the users of the solution and prevent them from continually experiencing the same problem. This in turn will lower your support costs. Specifically, providing a response to a crash allows you to respond to your users at the time of the incident, reaching them on a large scale with minimal cost. You

can also use the WER system to obtain more information when you are unable to debug a bucket since the response can include a request for more information or a survey about the cause of the crash.

Sample Responses

- Upgrade from Beta product to retail
- Reference to a Knowledge base article
- Fix to a bug is available on Windows Update
- Fix is available on a non-Microsoft site
- Product is no longer supported

Requesting a Crash Response

You can specify the content of the end user response by using the forms on the Winqual site.
To provide responses to end users:

1. Sign in to the Winqual website
2. Click **Hardware** in the **Windows Error Reports** section in the left navigation
3. Click the **Bucket Name**, in the **Bucket List** section, for which you would like to request a crash response
4. Click **Create**, in the **Crash Overview** section, next to **Response:** and complete the form

When completing the response request form, please be as detailed and accurate as possible so we can provide the best possible information to your customers. If the form does not serve your needs, please let us know and we will work with you to improve it.

A few things to keep in mind about requesting responses:

- The response should provide the user with information on how to prevent the problem from happening again. This can include fixes, workarounds, or upgrades.
  Note: Do not recommend that they upgrade the product if they are likely to encounter the same error in the upgrade.
- Try to create responses that can be applied to more than one bucket. This allows us to create templates which provide a more consistent user experience.
- If the Bucket Details page on Winqual lists "hungapp" in the Module Name field, this usually indicates that the crashes in that bucket were caused by more than one bug. We cannot link more than one response to a single bucket; therefore, we cannot provide a response to "hungapp" errors unless all of the bugs are fixed.
- If the solution is a download, either on your own site or on Windows Update, please indicate which versions the download applies to so we can mark the buckets appropriately.
- If the response is to a Hardware crash and the solution is to download a new driver, please provide the hexadecimal date time stamp. To determine the hex date time stamp, at the command line, type Dumpbin.exe /headers DriveName.sys.
  Note: This requires DumpBin.exe, which comes with Visual Studio.
- If the response is for a beta program bug that has been fixed in the release version, we will inform users that the beta has expired and provide them with a link on how to purchase or

download the released version. To do this, we need to know the last beta version so we can tag the bucket appropriately.

How Microsoft Handles Requests

When we receive your request, we compare it to existing responses. Many crash responses fall into common categories, such as a bug existing in a beta version of a product that is now fixed in the released version. To provide a consistent user experience for crash responses, and to reduce the amount of localization work that is needed, we create templates for responses. For example, if a bug is fixed in a released product and the user is running the beta version, they would see the following message:

Thank you for submitting an error report. You are running a beta or pre-release version of <product name>.

The trial period for running the beta or pre-released version of this software has expired. The retail version of <product name> is now available. For more information on how to upgrade to the retail version of <product name>, see the <company name> site.

If your response matches one of our templates, then we attach that template to the bucket. If your response does not match any of our existing templates, then we create a new template.

Attaching Buckets to Responses

You can notify Microsoft if you want a response to be for a specific bucket or set of buckets. For example, you can point every user who crashes in a particular application version (e.g. sample.exe versions 0-a) to a support site. The more buckets you can apply to a single response, the better.

If a fix is available for a problem, either as a hotfix or as part of a new version, you should attach this response to the old versions and encourage users to upgrade.

Including Links in Responses

The response templates that we have created are designed to provide basic information with a link to a fix or more information. This allows us to create simple templates which can be applied to a wide variety of situations.

By providing a link to a support site, you can provide your customers with more detailed information about their specific error. The pages you create should include the following information:

- A message indicating that the page specifically addresses the crash that they encountered.
- A simple way for the user to determine which patch, QFE (Quick Fix Engineering) solution, or upgrade will solve their problem.
- Access to these patches, QFEs, and upgrades.

Localization

The responses that Microsoft provides are available in the following languages:

- Chinese Traditional
- Chinese Simplified

- Dutch
- English
- French
- German
- Japanese
- Korean
- Spanish

A single URL is used for all languages, and the site detects the user's browser language setting and redirects the user to the appropriate language. If we do not have a page that matches the user's setting, they will be directed to the English page.

The body of the response template is localized but the variables are not. For example:

Thank you for submitting an error report. You are running a beta or pre-release version of <product name>.

The trial period for running the beta or pre-released version of this software has expired. The retail version of <product name> is now available. For more information on how to upgrade to the retail version of <product name>, see the <company name> site.

The body text would be localized, but the product name and company name would appear in English. We select which languages we will support based on those languages (locale IDs) which make up the reported crashes. The nine languages listed above represent 95% of all reported crashes. If you would like the response to direct users to a page other than the Microsoft page, then it is your responsibility to ensure that your site supports the appropriate languages.

For example, if your product is used by users with German, Japanese, English, and Korean systems, it would be best if you generated web pages for each of these languages and provide a URL with locale detection and a redirect to the appropriate language.

Learn about Locating and Using Resources for a Specific Culture.

Developers Guide to WER

Types of Crashes

The WER service captures both hardware (operating system) and software (application) crashes including information on drivers and applications as well as on the modules (controls and plug-ins) that were running at the time of the crash. Information on drivers and applications as well as associated files is available on Winqual. An associated file maybe a plug-in or resources file for a parent application where you do not develop the parent file.

Sending a Report

When end users choose to send error reports to Microsoft over the Internet, the WER service collects technical information about the crash using an executable called Dwwin.exe. This data is used for quality control purposes only and is not used for tracking individual users or installations for any marketing purpose. If information is available that will help the end user solve the problem, Windows displays an error reporting dialog box with a link to that information.

For information on data collection and storage, see the data collection policy. For information about privacy, which applies to collecting WER data, see the Microsoft Online Privacy Statement.

Bucketing Crashes

A bucket is our way of categorizing a crash. When an error report is received, the WER system searches to see if a bucket for that bug already exists. If it does, then the report is added to the existing bucket. If not, then a new bucket is created.

Bucketing Schemas

The types of data collected and the schemas for defining a bucket are different for Software crashes and for Hardware crashes.

Bucketing Software Crashes

Software crashes are bucketed according to the following five parameters for Windows XP:

- Application name (for example, winword.exe)
- Application version (for example, 10.0.2627.0)
- Module name (for example, mso.dll)
- Module version (for example, 10.0.2613.1)
- Offset into module (for example, 00003cbb)

The .cab files for Software crashes include the above information as well as a minidump file. For most Software crashes, the five basic parameters provide enough information to categorize the failure. However, if we have access to symbolic data we can analyze the minidump and look for the symbol that caused the crash.

The minidump file for Software crashes contains the state of the process at the time the crash occurred—specifically the registers and stack for every thread in the application. This information is used to identify which application component generated the crash. Also in the minidump is a list of all

modules loaded in the application at the time of the crash. This list allows you to get information about each module loaded in the process and in turn to get symbols for each of these modules.

Bucketing Hardware Crashes

Hardware crashes are first grouped by stop codes and then by additional parameters, depending on the individual stop code. The bucket name is based on the type of error and the device. For example:

Bucket name	Error
OLD_IMAGE_SAMPLE.SYS_DEV_3577	Crash caused by an old version of sample.sys on device ID 3577.
0x44_BUGCHECKING_DRIVER_ SAMPLE	Driver sample.sys may have caused bugcheck 0x44.
POOL_CORRUPTION_ SAMPLE	Driver sample.sys may have caused pool corruption.
0xBE_sample!bar+1a	Driver sample.sys crashed in routine bar.

An error report for a Hardware crash consists of a small dump file generated at the time of the crash and an XML file generated when the computer reboots and is about to send the error report.

When the operating system stops responding, it reverts to a low-level troubleshooting mode. In this mode, a dump file is captured that contains low-level operating system data structures that identify what was happening in the computer at the time of the crash. These data structures include the functions being executed by the processor at the time of the crash, the CPU register state, and the stack, thread, and process information. This data can be viewed in a debugger and used to identify the faulting component.

Also stored in the dump file is the list of all drivers loaded in the computer at the time of the crash. This data serves two purposes: First, this list of modules is used by the debugger to determine which driver images and symbols need to be loaded to debug the crash. Second, the list of modules helps determine if known bad or old drivers are running on the computer.

In Windows XP Service Pack 1 (SP1), the dump files were enhanced to allow a driver to store information in the crash dump file that can be used for troubleshooting. Consult the Microsoft Windows Driver Development Kit (DDK) on MSDN for the KeRegisterBugCheckCallback routine for further details on collecting crash data from a driver.

In Windows XP SP1, a list of hardware devices present on the end user's computer was also added to the XML data. You can use this list to isolate the issue that is associated with the hardware device failure. The XML portion of the .cab file contains a list of all the images (binaries) in the drivers directory of the computer along with the manufacturers of those images. This information is used to correlate driver manufacturer information with drivers loaded by the operating system so that the correct vendor can be contacted to help analyze the failures.

To view low-level details about what is in the Hardware minidump files, see the Debugging and symbols section.

Multiple Bugs in a Single Bucket

While the goal of bucketing is to group like bugs, there are times when more than one type of bug can appear in a single bucket. When this happens, Microsoft can build more granular buckets if you provide more information.

Multiple Bugs in Hardware Buckets

If you receive a Hardware bucket that contains more than one type of bug, send an e-mail message to pfat@microsoft.com and provide the bucket name, stack trace, a description of the differences between the two bugs, and the dump files. With this information, PFAT can separate the unique failures by reprogramming our debugger tool to categorize the Hardware crashes differently.

Multiple Bugs in Software Buckets

In the case of Software buckets, separating different bugs requires looking at the symbolic data associated with the crash. Microsoft can use this symbolic information to analyze the functions in the stack and identify which function caused the crash. If we discover that the call stacks in the .cab files for all the crashes are the same, we can assume that the crashes are probably from one bug. However, if we discover that they are different, the bucket could contain more than one bug.

To aid with this process, we have declared certain known functions to be immune. Normally when we process a .cab file, we assume that the lowest function on the stack is the problem. That particular function becomes the .cab file's symbol (szSymbol). However, if the first function is immune, we walk up the stack until we find the first function that is not immune, and we declare that to be the szSymbol.

To assess the relative importance of various symbols for a particular bucket, take a sampling of the contents. For example, if a bucket has 1500 hits, we collect 100 of the .cab files and analyze them. If 80 percent have the symbol xxx and 20 percent have the symbol yyy, then we calculate that bucket as having 1200 hits in symbol xxx and 300 hits in symbol yyy. This bucket then has two rows in our raw crash table: one for xxx and one for yyy.

Multiple Buckets for a Single Bug

It is possible for a single bug to appear in multiple buckets. These cases are rare but they can exist. The best way to identify these instances is to examine the contents of all of your buckets.

Hardware Bugs

Bad computer memory can cause random Hardware crashes, and each of these could be sorted into different buckets.

Software bugs

Product revisions can cause Software bugs to appear in multiple buckets. If a bug is not fixed when a product is revised to the next version, a new category will be created because the application version changed.

Bucket Contents

In addition to the minidumps, WER also collects .cab files. By default, we collect .cab files for all Hardware crashes and for some Software crashes. For Software, we do not collect .cab files until you sign up for a Winqual account and request WER data. Once a request is made, we capture .cab files for the first few instances, and increment the hit count for additional crash reports. We can collect additional files on request if you find that you need more information for debugging. The contents of the buckets are retained for six months.

Mapping Buckets

We use two methods for mapping buckets to their respective vendors. The first and most accurate method uses logo information. The process of signing your driver or application and submitting it for a logo provides us with information which we can use to securely determine that your company is the responsible party for a given file.

If your product is not logo'd, there are additional steps you must take in order for Microsoft to successfully map the appropriate errors to your company. Use a unique file name and a version number for your application or driver. To ensure your file name is unique, consider using a trademarked or proprietary name rather than a common name such as install.exe.

You can use the Winqual site to request a specific mapping, or remapping. Remapping may take one to two days to propagate.

Accessing Reports

To protect companies from impersonation and to ensure that the information being sent and received goes to a representative from the correct company, the Winqual site requires a verifiable user logon account. To establish an account, you must have a valid VeriSign ID on file with the Winqual site.
The screen shot below shows sample IHV or ISV summary information available on the Winqual site.

BucketID	Hits	AppName	AppVersion	Module	ModuleVersion
699590	29911	iexplore.exe	6.0.2462.0	unknown	0.0.0.0
2198879	6392	iexplore.exe	6.0.2600.0	wmpui.dll	7.1.0.3055
599309	5809	excel.exe	10.0.2614.0	mso.dll	10.0.2625.0
1887119	5600	iexplore.exe	5.51.4807.2300	mshtml.dll	5.50.4807.2300
1845568	5459	iexplore.exe	5.51.4807.2300	pdm.dll	6.0.0.8169
631619	5377	OUTLOOK.EXE	10.0.2627.1	hangme.hng	0.0.0.0
2236861	4693	iexplore.exe	6.0.2600.0	kernel32.dll	4.10.0.1998
692856	4685	winword.exe	10.0.2627.0	msgrit32.dll	3.0.0.25
654694	4262	winword.exe	10.0.2627.0	mssp3es.dll	2.0.26.10
198249	4232	iexplore.exe	5.51.3020.2100	mshtmled.dll	5.50.4611.1300
2238862	3966	iexplore.exe	6.0.2600.0	unknown	0.0.0.0
1930968	3888	iexplore.exe	5.51.4807.2300	sbcie01f.dll	4.1.10.361

Note: If you do not see error reports for your company, it could be because either Microsoft does not have a mapping between your company and associated files or because end users of your products have not submitted error reports to Microsoft.

Providing Solutions

The WER service not only collects data, it also provides a vehicle for vendors to provide their users with a solution in real-time. When a user submits crash data, the WER system checks to see if there is a user message associated with the bucket. If there is, the message is shown to the user at the time of the crash. You can notify Microsoft if you want a response to be for a specific bucket or set of buckets. For example, you can tell Microsoft to point every user who crashes in a particular application version (e.g. sample.exe versions 0-a) to a support site. To provide a response to a particular error, use the response form on the WER on Winqual site, and a Microsoft representative will work with you to create a response based on the information you submit.

Combining WER with Windows Update

You can use your WER response to point to users to Windows Update. To host drivers on the Windows Update site, your product must qualify for the "Designed for Windows" logo. For more information, visit the Windows Logo Program and Driver Signing: Overview.

Debugging and symbols

How to analyze dump files

Dump files are a snapshot of the state of the computer (or process) at the time of the crash. To analyze this data, a developer must use a debugger that can read user minidump files. The debugger must also have access to both the images and symbols that match the contents of the dump file. Most developers are aware of the need to use matching symbols when debugging a live crash. However, when debugging a minidump, matching images must also be available for the debugger. Matching images must be available because minidump files store very little information; they only store some of the volatile information at the time of the crash. They do not store the basic code streams that the computer loaded into memory. Instead, to save space, the minidump file stores only the name and date of the images loaded on the crashing computer. To examine the code that was running on the crashing computer, the debugger must be given access to the same binaries that the crashing computer was running. The debugger uses the name and timestamp stored in the minidump file to uniquely match and load the binaries when the developer wants to debug the crash.

The best way to access matching images and symbols is to use the Microsoft Internet symbol server. See the Microsoft Internet symbol server section below.8

After the images and symbols are loaded in the debugger, you can fully analyze the state of the system at the time of the crash. Debugging options are still limited, and you can only look at the data that was saved after the crash occurred. Reproduction steps are generally not available, and it is sometimes difficult to identify what could have led to the specific failure. Finding the root cause requires analyzing the source code for the faulting routine or driver and determining what code path may have lead to the failure. This analysis can be hard investigative work, and it may not always lead to a solution. Our

experience has shown that a large percentage of failures can be understood and fixed by analyzing dump files and source code.

What are symbols?
Symbols are bits of data that enable the debugger to map the executable code back to the source code. When you build a program, the program's symbols are usually stored in symbol files, although some older compilers store certain symbols in the executable file. When a debugger analyzes a program, it needs to access the program's symbols.

Typically, symbol files can include any or all of the following symbols:

- The names and addresses of all functions.
- All data type, structure, and class definitions.
- The names, data types, and addresses of global variables.
- The names, data types, addresses, and scopes of local variables.
- The line numbers in the source code that correspond to each binary instruction.

The Microsoft Windows Driver Development Kit (DDK) includes tools that can be used to reduce the number of symbols in a symbol file. The symbol files that contain all of the source-level information are called full symbol files. The symbol files with reduced information are called stripped symbol files.

Microsoft Internet Symbol Server
Because symbol data is crucial for getting meaningful crash information from WER data, Microsoft encourages people to submit their symbols when they submit drivers to be signed. When symbols are submitted, they are stored on a server whose sole purpose is to synchronize symbol data with the associated WER processes. With this storage process, you can easily categorize the crashes that are reported in the minidump files and, ultimately, receive better data back from Microsoft.

Microsoft provides a symbol server on the internet that customers can use to analyze the Windows modules that are present in minidump files. The server includes stripped symbol files for Windows and a few other products, such as Microsoft Internet Explorer. Microsoft has recently added the binaries for Windows XP and plans to add the binaries for Windows Server 2003. With the addition of binaries to the Internet Symbol Server, customers with Internet access and the debuggers from the Debugging Tools for Windows package, can analyze minidump files by providing the necessary information to triage the Windows modules.

Information for OEMs

Currently, we allow OEMs to view the Hardware crashes that occur on their systems. This service is available for systems which include marker files. Windows Error Reporting looks for these files when reporting crashes to Microsoft. To request the specification for Marker files send e-mail to oemoca@microsoft.com.

To help OEMs work with and resolve issues related to Hardware data, Microsoft can provide the following assistance:

- Driver vendor and other developer support contacts.

- Facilitate discussions between vendors and manufacturers.
- Data mining and trend analysis, upon request.

Minidump files can also be made available on a case-by-case basis, based on the signed terms-of-use (TOU) agreement. Driver vendors may also choose to share their minidumps directly with specific OEMs. For more information, send mail to oemoca@microsoft.com.

Writing WER into Your Application

You can integrate Windows Error Reporting into your application. This process generally takes less than a day of development time and involves writing application handlers and implementing the ReportFault() API.

Writing Application Handlers

When writing applications for Microsoft Windows XP and later operating systems, top-level exception handlers should not be used since their use disables error report collection. Top-level exception handlers should only be used when the application implements its own recovery and exit code for graceful failure. For these applications, a new API was added in Windows XP that allows the application to generate a standard error report that can be sent to Microsoft, while preserving the recovery behavior of the applications. The ReportFault() API can be called from an application exception handler to generate the error report. See the code sample below to view implementation code for the ReportFault() API.

Implementing the ReportFault() API

The process for launching WER from a custom application experiencing a fatal event is called the Application/Windows Error Reporting conversation. This process consists of determining if WER should be invoked and by calling the ReportFault() API.

Passing the Assertion to WER

While there are several ways to implement exception handling, Microsoft recommends the use of the SetUnhandledExceptionFilter function, registered at boot. This way you get protection for all the threads running in your process regardless of whose code actually started the threads. For example, the Wininet module starts several threads that cannot be wrapped. Your ExceptionFilter will be called for any exception which would cause a crash and which your application does not otherwise handle. There are some exception codes that should not be wrapped, such as BREAKPOINT and SINGLE_STEP, because they are required by normal debugging and are unlikely to be the exception code of anything that would actually cause your application to have otherwise crashed. Your exception filter is responsible for launching WER.

Calling the Report Fault () API in the faultrep.dll

With the **ReportFault** function, an application can perform its own exception handling to report faults to Microsoft. For more information on **ReportFault**, see MSDN.

Code Sample

In order to use WER, your application must have an exception handler and the exception handler must be modified to call the WER code. WER handles all protocol issues, corporate reporting mode, queuing, and so on. The following sample shows how to modify your exception handler code to take advantage of WER. This code sample works with the versions of WER on Windows XP and Windows Server 2003 and will fail gracefully if faultrep.dll is not present.

```
#include <windows.h>
#include "errorrep.h"

static WCHAR szPath[MAX_PATH+1];
static WCHAR szFr[] = \\System32\\FaultRep.dll;

WCHAR * GetFullPathToFaultrepDll(void)
{
    WCHAR *lpRet = NULL;
    UINT rc;

    rc = GetSystemWindowsDirectory(szPath, ARRAYSIZE(szPath));
    if (rc == 0 || rc > ARRAYSIZE(szPath) - ARRAYSIZE(szFR) - 1)
        return NULL;

    wcscat(szPath, szFR);
    return szPath;
}
static LONG WINAPI ExceptionFilter( struct _EXCEPTION_POINTERS *
pExceptionPointers )
{
LONG lRet = EXCEPTION_CONTINUE_SEARCH;
TCHAR * psz = GetFullPathToFaultrepDll()
if ( psz )
{
HMODULE hFaultRepDll = LoadLibrary( psz ) ;
if ( hFaultRepDll )
{
pfn_REPORTFAULT pfn = (pfn_REPORTFAULT)GetProcAddress( hFaultRepDll,
_T("ReportFault") ) ;
        if ( pfn )
{
            EFaultRepRetVal rc = pfn( pExceptionPointers, 0) ;
            lRet = EXCEPTION_EXECUTE_HANDLER;
            }
        FreeLibrary(hFaultRepDll );
        }
    }
    return lRet ;
}
int __cdecl main(int argc, char **argv)
{
    DWORD  *pdw = NULL;
    BOOL   fUseGlobalExceptionFilter = FALSE;

    // There are two ways to handle unexpected exception in applications.
    //  Either
    //   define a global unhandled exception filter that will get called
    //    if nothing else handles the exception.
    //   use a __try / __except block to catch exceptions and define your
    //    own filter function.
    //  Both methods will be demonstated below. If the user of this app passed
    //   "UseGlobalFilter" as an argument to this test application, we will
    //   use a global unhandled exception filter. Otherwise, we will use a
    //   __try / __except block.
```

```
    // Use a global unhandled exception filter
    if (argc > 1 && _stricmp(argv[1], "UseGlobalFilter") == 0)
    {
        // Set the global unhandled exception filter to the exception filter
        //  function we defined above.
        SetUnhandledExceptionFilter(MyExceptionFilter);

        // cause a fault
        *pdw = 1;
    }


    // Use __try / __except blocks
    else
    {
        __try
        {
            // cause a fault
            *pdw = 1;
        }

        // we need to pass the structure returned by GetExceptionInformation()
        //  to the filter.
        // Note that the pointer returned by this function is only valid during
        //  the execution of the filter (that is, within the parenthesis of the
        //  __except() statement). If it needs to be saved, you must copy the
        //  contents of the structure somewhere else.
        __except(MyExceptionFilter(GetExceptionInformation()))
        {
            // we don't do anything interesting in this handler
        }
    }

    return 0;
}
```

Best Practices

While fixing errors in released products is important, finding errors before you ship is critical. Therefore, Microsoft recommends that you test your drivers using the Driver Verifier. With the verifier, you can turn on "Special Pool" tracking when testing the driver to see if it is writing beyond its allocated space. Driver Verifier can also detect a number of driver faults, most notably pool corruption, which can be virtually impossible to detect, let alone debug. These performance hits are disabled by default.

For applications, use the Microsoft Windows Application Verifier (AppVerifier).

Future Directions

Microsoft continues to improve the WER service and the information on the Winqual site, and is scaling the service to allow more robust search options, improve notification, and add additional options for vendors to receive crash data.

WER for Hardware

Bucket Details

Bucket ID	Unique identifier for this bucket.
Bucket Name	Unique name based on stop code, module name and other parameters.
Total Hits	Total number of hits that this bucket has received for all operating systems. The number of hits shown is approximate. Due to the time it takes to process and update the database, the .cab file may contain more hits than shown.
Windows XP SP1 Hits	Number of hits that this bucket has received for computers running Windows XP Service Pack 1. The number of hits shown is approximate. Due to the time it takes to process and update the database, the .cab file may contain more hits than shown.
Windows Server 2003 Hits	Number of hits that this bucket has received for computers running Windows Server 2003. The number of hits shown is approximate. Due to the time it takes to process and update the database, the .cab file may contain more hits than shown.
Windows 2000 Hits	Number of hits that this bucket has received for computers running Windows 2000. The number of hits shown is approximate. Due to the time it takes to process and update the database, the .cab file may contain more hits than shown.
Response	The response shown to end users when they encounter this error. If the value of this field is 0, then there is no response. To provide a response for this error, or to edit the current response, use the Bucket response/fix notification form.
Module File Name	Module that may have caused the error.

Searching for Buckets

You can use the **Find bucket** functions in the left navigation of the WER on Winqual site to search for specific buckets. Please note the following search functions.

Bucket ID	Entire word	You must include the entire Bucket ID
Bucket Name	Entire word	You must include the entire Bucket Name
File Name	Begins with	You must include the beginning of the file name and end the string with a *. E.g. Photo*- will return Photo.dll and Photograph.exe but NOT MyPhoto.dll. *Photo – will not return any results.

Driver Quality Rating

About Driver Quality Rating

Driver Quality Rating (DQR) is a key indicator of how a driver is performing in terms of relative crash stability. DQR utilizes Online Crash Analysis data (OCA) and is calculated by comparing a driver's crash ratio to the average ratio of other drivers in the same device area. A DQR is assigned based on the driver's proximity to the device areas average.

Ratings can range from 1 – 5 stars (1-5 numeric on Excel export page). Per area, those drivers with 1 star rating crashed with the greatest frequency (the highest ratio), and as scores move toward 5 stars they crash with a lesser frequency (lower ratio). Details on the exact breakpoints and baseline averages used per device area are included as a tab with any DQR Excel data export page. Since Windows Vista is a relatively new OS the baseline averages will be reviewed quarterly and will be updated if significant variance is found.

DQR scores are updated monthly and tracked for trending. DQR is calculated following month end using data for the previous calendar month (report available on or about the 5th). Data can be viewed and sorted in the DQR web UI. Data can also be exported into Excel where tools can be used to view trends, performance, scores, and filter using other criteria that is specific to customer needs.

The basis of DQR is the driver crash to install ratios. Driver installs (or install base) is the total number of times a driver was seen by OCA in the loaded module list across all systems. Note: This is based on tallying all drivers loaded, not just the driver that crashed. Crashes are the number of times OCA flagged the driver as having caused the crash.

The baseline average used for comparison is based on data from Windows Vista systems (both Windows XP and Windows Vista drivers). Driver files with low counts (under 500) are shown in reporting, but are they are excluded from DQR scoring since ratios tend to stabilize when install counts have more significant volume.

WER for Software

About WER for Software

Windows Error Reporting (WER) for Software provides access to end-user crash and hang data reported to Microsoft from Windows Platforms. The ability to report crash and hang data from Windows Platforms was introduced in Windows XP.

For more information send e-mail to wer@microsoft.com.

WER Software Service Features and Enhancements on Winqual

- We publish information about enhancements on our blog http://blogs.msdn.com/wer

For information on how to register non-fatal events or custom events used by your products, please contact wer@microsoft.com.

Software Home

The Software Home page helps you quickly access data and information on distinct software crashes at a company level (across all products) and is accessible by Clicking “Software Home” on the Windows Error Reports menu.

Alerts (Conditionally Displayed)

There are three types of alerts that can be displayed:

- **Security Alerts**
  The alert "Security related events require attention!" is displayed when Buffer Overrun event(s) occur without an attached response. To address this security issue, see the Buffer Overrun help.
- **Response Registration Alerts**
  This alert displays the message "Response registration requests require attention!" It is displayed if and when a response request has been denied. The alert will remain active until the status of the response has changed or the response request has been deleted.
- **File Mapping Alerts**
  The alert "File mappings have been denied and require attention!" is displayed when there is a problem with files mappings uploaded to Windows Error Reporting. This event results when two or more companies map the same file name and version. A collision occurs on the Windows Error Reporting system and must be resolved. To resolve file mapping issues, please contact support at email address wer@microsoft.com.

Company Hotlist

The software homepage displays the top 20 WER Events (Buckets) across all of your mapped products. You can view individual top 20 lists by viewing the Product Rollup page located in the left hand menu.

Note: There are two ways to filter your data: by end-user operating system and by language. The filters are useful for analyzing your data in more depth. MORE

- **Events by Volume**
  A hotlist of the top 20 issues affecting your company across all product lines. Here you will see which issues are affecting the most end-users within the last 90 days. By targeting the issues in this list you can fix the issues that cause the most problems for your end-users.

Product Rollups

The Product Rollups view organizes your error events by product name and version and provides a summary for each product. You can quickly access your error data and view the events by a particular product version.

Product and version are defined at Product Mapping time by using the Microsoft Product Feedback Mapping Tool. With this tool, you can group a selection of mapped files into a friendly product name and version that is meaningful to you.

This page includes:

- **Eventlists** that show you all the error events for a product version

- Clicking on the  icon in the Eventlist column transfers you to a separate page with all the events for the product. MORE

- **Hotlists** for examining the most critical issues on a product version by volume and growth.
  - Click on the  icon to view the top 20 reports for end-user events by volume and growth over the last 90 days. MORE

Export as XML (button)
This action converts the events list into XML formatting for further analysis in a spreadsheet, database, etc. For instance, the list of product and version entries may be too large to view effectively. By exporting the list to a spreadsheet application, you can sort, filter, and apply statistical formulas. MORE

Event List

The Event List page displays all end-user Events for a specified product or search criteria. This page is useful for reviewing the complete list of Events. Whereas the Hotlist displays only the top 20 Events, the Event List displays the full list of Events for a specific product or search. Every column on the page is has a sort control to help you search the list quickly. For instance, by clicking on the Application Name column, the data will be sorted ascending by application name. Click the same column again to sort descending.

Additional details about a specific event are viewable on the Event Details page. Click an Event ID link to navigate to the Event Details page. MORE

Features

Filter Control
There are two ways to filter your data: by end-user operating system and by language. The filters are useful for analyzing your data in more depth. MORE

Export as XML (button)
This action converts the events list into XML formatting for further analysis in a spreadsheet, database, etc. For instance, the list of product and version entries may be too large to view effectively. By exporting the list to Excel, you can sort, filter, and apply statistical formulas. MORE

Table Column Descriptions:

Event ID (BucketID)
The linked numbers in the column represent distinct event errors. (The Event is known as a Bucket in the WindowsOD). An Event ID refers to an event type that happened to an end user. It is a fatal event such as a crash or a hang on the user's machine.

A signature is recorded on the event to categorize it and determine the owner. An event's signature is based on several parameters, of which four are listed on this page. The first two are the Application name and its version number. For example, winword.exe is an application name with a version number 11.0.6359.0. The next two parameters are the Module name and the module's version number.

The unique combination of the all parameters is called an Event on Windows Error Reporting. The Event helps categorize the issue and determine who owns it. The events on software applications are made available to their software vendors through this online web portal.

Clicking the an ID link (Ex. 136110901) opens the Event Details page for that Event. MORE

Cabs
The icon in the Cabs column represents whether a Cab is ready for download on the event. (A Cab is a compressed data file that contains end-user minidumps).

 The blue "file cabinet" icon means the .cab data is ready for your use. By clicking the icon, you will download the Cab file.

 The red "x" icon means you must request data collection for the event. Click here to begin the Cab collection. When end-users experience the event, Microsoft will ask to collect minidump data. After the data has been collected, the icon will change to the "download ready" icon (above). While in process, the icon will become the "clock" icon.

 The "clock" icon means .cab data has been requested and is not yet ready for download.

Total Hits
This is the total number of reports received from end users for the given Event for the lifespan of the event.

Average Hits
This is the average hits per day within the last 90 days. Calculated as:

Total Hits / Number of days that have hits (bounded by 90 days)

Average Hits include only the days within the last 90 that have collected data on the Event.

Growth Percent
Growth percent is calculated as:

*[(A-B) / B]*5 + [(C-A) / A]*1*

Where: A = Average Hits on the Event from 21 to 14 days ago
B = Average Hits for your company
C = Average Hits on the Event over the last two days

Note: The Growth Percent is calculated as an absolute value.

Event Type
This column lists the type of event experienced. The main event types are:

- **Crashes**
  The end-user experienced a fatal error in an application on Windows.

- **Hangs**
  The application stopped responding for the end-user on Windows.
- **Mobile Device Events**
  The end-user had a fatal event on a mobile device with a mobile version Windows. MORE

Application Name
The name of the executable file affected by the crash.

Application Version
The version number of the executable file.

Module Name
The module at the top of the stack at the time of the crash.

Module Version
The version number of the module.

Event Details

The Event Details page provides in depth information on a specific error event. This page is useful for thorough analysis of the selected event.

New features have been added to the Event Details page including:

- **Time Trend Graph**
  With the graph, you can view an Event's progression. For example, if you provided a response to the Event (such as a fix), the time trend will show you the effect of the response. If the Event is trending down after the response, the response has a positive reaction in the user community. If the event is not trending down, the response may need a revision.
- **Filter**
  In addition to Operating System and Language filters, the Event Details page also has a time period filter.
- **Breakouts Section**
  View statistics by operating system and language.

Features

Event Signature
The event signature is displayed with all parameters. The signature's parameters help categorize the event. The parameters also provide insight into the application affected by the crash or hang event. Note: depending on the Event Type (for example Crash32) the signature's parameters can change. MORE

Time Trend Graph
A Time Trend is provided to show the hits on the Event over time.

Note: The bottom axis (date) is not always readable in the preview version. If the Event has many days of activity, the dates may overwrite each other. To view dates in this case, select a smaller time period in the Filter control (see below).

Second Note: The Preview Release does not have a response interface built in. Responses will be included in the full version. In the meantime, please manage your responses on the original version of Windows Error Reporting at
https://winqual.microsoft.com/member/wer/user/responsemanagement.aspx

Filter Control
The Filter control has an added feature: time period. You can filter the results by weeks, months, or all time (the default). MORE

Show Event Platform Details
The bottom of the page displays a breakdown of the Event by operating system and language. Hits over all time on the Event are broken out.

Note: This feature is unaffected by changes in the Filter control.

Second Note: It is possible to display "Unknown" as an entry in the breakout. Error reports that are collected from end-users running legacy operating systems (such as Windows 98) will display as "Unknown" in the operating system breakout. Similarly, an end-user running Windows in an unrecognizable language will show "Unknown" in the language breakout.

Hotlist

The Hotlist page displays graphs and lists of your top application error events. This view is useful for a quick snapshot of your company's most active events. The left side list is based on event volume. Growth is represented in the right side.
There are two versions of the Hotlist:

1. **Company Wide**
   The Hotlist on the home page spans all products mapped to your company. It is a top-level report.
2. **Product Specific**
   Product specific Hotlists are available from the Product Rollups and Mobile Product Rollups menu options.

Features

Reports by Volume

This report lists the top 20 events by volume in the last 90 days. Review this information to understand which events affect the most users.

As a general rule, the top 1% of events cause 50% of the crashes by volume. By fixing the top events listed on the volume hotlist, you can address 50% of the user pain. Similarly, the top 20% of events cause 80% of the crashes by volume.

The number of hits shown in the graph corresponds to the number of reports received from end-users in the last 90 days. On average about one-third of end-users submit error reports to Microsoft. By multiplying the hit counts by 3 you can get an estimate of the actual number of users affected by the error event.

Export as XML (button)

This action converts the events list data into an XML file for further analysis in Excel, SQL, etc. MORE

Mobile Product Rollups

The Mobile Product Rollups view organizes error events by product name and version reported from Mobile Devices. You can quickly access your error data and view the events of a particular product version.

Open the Mobile Product Rollups page for a summary listing of your issues by product. Product and version are defined at Product Mapping time by using the Microsoft Product Feedback Mapping Tool. With this tool, you can group a selection of mapped files into a friendly product name and version that is meaningful to you.

This page includes:

- **Eventlists** that show you all the error events for a product version
  - Clicking on the  icon in the Eventlist column transfers you to a separate page with all the events for the product. MORE
- **Hotlists** for examining the most critical issues on a product version by volume and growth.
  - Click on the  icon to view the top 20 reports for end-user events by volume and growth over the last 90 days. MORE

Note: Mobile pages are viewable only if mobile device files are mapped to your company. The mobile pages will not appear on the menu if your company does not have mobile events.

Export as XML (button)

This action converts the events list into XML formatting for further analysis in a spreadsheet, database, etc. For instance, the list of product and version entries may be too large to view effectively. By exporting the list to a spreadsheet application, you can sort, filter, and apply statistical formulas. MORE

Mobile Event List

The Mobile Event List page displays all end-user Events for a specified mobile product or search criteria. This page is useful for reviewing the complete list of Events. Whereas the Hotlist displays only the top 20 Events, the Event List displays the full list of Events for a specific product or search.

Note: Mobile pages are viewable only if mobile device files are mapped to your company. The mobile pages will not appear on the menu if your company does not have mobile events.

See the Event List documentation for details.

Mobile Event Details

The Mobile Event Details page provides in depth information on a specific error event. This page is useful for thorough analysis of the selected event.

Features in the Mobile Event Details page include:

Time Trend Graph

With the graph, you can view an Event's progression. For example, if you provided a response to the Event (such as a fix), the time trend will show you the effect of the response. If the Event is trending down after the response, the response has a positive reaction in the user community. If the event is not trending down, the response may need a revision.

Filter

Event Details page offers a time period filter to adjust the Time Trend Graph.

See Event Details documentation for details.

Mobile Hotlist

The Mobile Hotlist page displays graphs and lists of your top Mobile Device error events over the last 90 days. This view is useful for a quick snapshot of your company's most active Mobile events. The left side list is based on event volume. Growth is represented in the right side.

Note: Mobile pages are viewable only if mobile device files are mapped to your company. The mobile pages will not appear on the menu if your company does not have mobile events.

Manage Product Mappings

Windows Error Reporting – Software provides two ways to view your file mappings: by the files themselves, and by product.

The Manage Product Mappings page (from Administration on the navigation menu) lists all your company's products that have been mapped. Alternatively, the Manage File Mappings page displays all the files that are related to your company's mapped products.

Both the File Mappings page and the Product Mappings page have a "circular" navigation. Each page has controls for opening a data subset on the other page. For instance, you can choose a product listed on the Product Mappings page and view the files that are related to that product. Then from the File Mappings page, you can choose a particular file and view the products with the file mapped.

When you choose Manage File Mappings or Manage Product Mappings from the navigation menu, you will always view the full list of files / products for your company.

Related information:
Your products and application files are mapped using the Microsoft Product Feedback Mapping Tool. The files are uploaded to Windows Error Reporting using the Upload File Mappings option on the Administration menu.

Manage File Mappings

The new version of Windows Error Reporting – Software provides two ways to view your uploaded file mappings: by the files and by the products.

The Manage File Mappings page (under Administration on the left navigation menu) displays all the files that are related to your company's products. Alternatively, the Manage Product Mappings page lists all your company's products that have files related to them.

Both the File Mappings page and the Product Mappings page have a "circular" navigation. Each page has controls for opening a data subset on the other page. For instance, you can choose a file listed on the File Mappings page and view all the products that the file is mapped to. Then from the Product Mappings page, you can choose a particular product and view the files that are mapped to the product.

When you choose Manage File Mappings or Manage Product Mappings from the navigation menu, you will always view the full list of files / products for your company.

Related information:
Your products and application files are mapped using the Microsoft Product Feedback Mapping Tool. The files are uploaded to Windows Error Reporting using the Upload File Mappings option on the Administration menu.

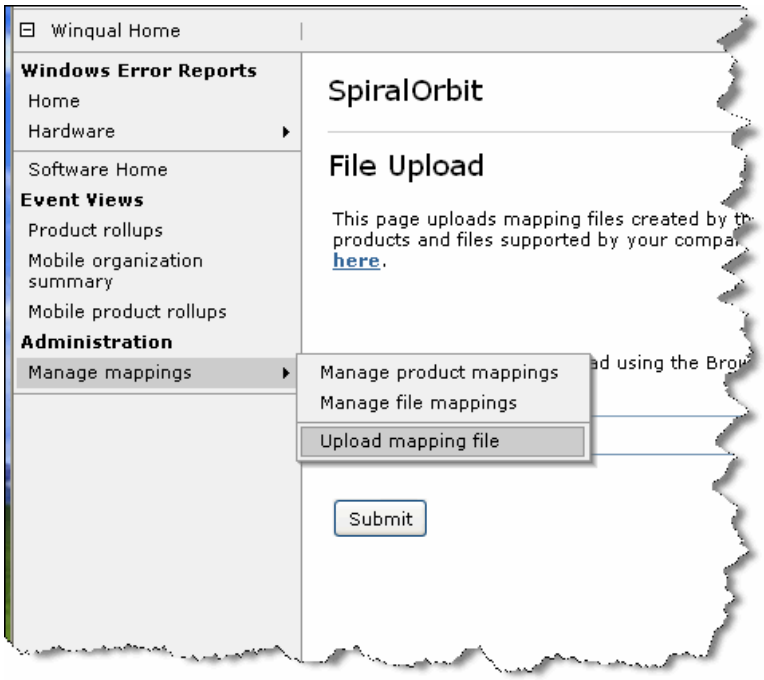
Upload File Mapping

File mapping is an integral part of Windows Error Reporting (WER). It is the process of associating your developed files with your applications. After mapping your files, if end-users have a problem in your applications, WER links the reports and data to your company.

There is a new tool for mapping your files in bulk. It is called the Microsoft Product Feedback Mapping Tool and is downloadable from the "Upload File Mapping" page.

The File Mapping Process in the new version of WER works as follows:

1. Organize your development files by Product and version.
2. Run the Microsoft Product Feedback Mapping Tool on the folder(s) containing the files. This creates an XML file containing the mapping of your files to your product.
3. Upload the XML file to WER using the Upload File Mapping page.



Limitations of the Preview Version

File Uploads are Limited to 3 Megabytes

The XML files uploaded on this page cannot exceed 3 megabytes. The upload control will display a message when the size of the file exceeds the limit.

If your XML file is over 3 megabytes, please follow these steps:

1. Split your binary folder into smaller folders.
2. Run the Microsoft Product Feedback Mapping Tool on each folder
    a. Be sure to use the exact same Product Name and Version (if either is different, WER will map your files to separate product entries).

Or contact the WER support staff at wer@microsoft.com.

Binary Exclusions
Binary files that do not belong to your product can be uploaded to Windows Error Reporting (WER). The WER backend will notice a conflict if two or more identical binaries are claimed by different companies. A Microsoft support representative may contact you to research such conflicts.

Re-mapping Files
When reloading mapping files to Windows Error Reporting (for the same product name and version), the product name and product version must be exactly the same. If not, WER will map the binaries separately as belonging to different products.

Editing Mapping File
Manual editing of the XML mapping file is not recommended. An editing feature is built in to Microsoft Product Feedback Mapping Tool for this purpose.

Manage Responses
Windows Error Reporting includes a response feature to provide solutions to end-users. Once problems are resolved, you can submit responses that direct your customers to a fix. These responses can be patches, updates, workarounds, or surveys; and these responses will be displayed to users the next time the same failure occurs.

How Responses Work
ISVs can register a response to be displayed when a crash event occurs for their end-users. There are two ways to apply a response to Windows Error Reporting events: for a **single event** and for a given **Filename and File Version range**.

You should create a response for a single event when fixing an isolated issue that will not be incorporated into a product update. For instance, you may create a response that contains a fix for event #12345678.

You should create a rules-based response for a file name and version (or version range) when you want all users who have a crash with that file to pick up the response. For example, you may have an upgrade available. You can use a rule to attach an upgrade response to all events collected from an older application version. Rules-based responses correspond to all events for a file name and version (or version range).

Response Templates
Responses are created based on templates. There are several templates available for creating a response. They are as follows:

- **Currently Invetigating**
  Communicates information about the issue to your customers before the fix is ready.
- **Fix**
  Provides a URL with a patch for the problem.
- **Workaround**

Offers instructions to end-users for avoiding the problem.

- **Update**
  An update is available for the application at the URL provided in the response.
- **Upgrade**
  A software upgrade is available that addresses the issue.
- **End of Life**
  Explains the application is outdated and can point the user to a new version.
- **Beta / Test Version**
  Explains that the problem occurred in a test version and will be addressed in the final release.
- **Survey**
  Informs the end-user that more information is requested on the event. A URL links to the ISV's survey.
- **Custom**
  Creates a custom message for your customers. For example, you may need to recommend a third party solution for an issue.

Note: Language designation is not required. As a service to you, all Responses are automatically localized into eight Windows languages: English, German, French, Dutch, Korean, Japanese, Chinese Simplified, and Spanish.

Response Management

The Response Management page provides a list of all your company's response registrations and their current status. From this page you can create new responses. Additionally, you can view summary response information about an existing response and click a link for more details. To delete a response, you must first open the response details page (see below).

- **ID**
  The linked numbers in the column represent the response registration ID. Click a link to open the response details page.
- **Event Affected**
  This column displays the link for the events that the response is attached to. A link number refers to a single event. Click the link to open the event's details page. A "rule" icon refers to a rules-based response. The rules-based response covers a range of events, which are described in the file, min version, and max version columns.
- **Status**
  This column describes the status of a response in the review process.
  - **Pending**
    The response is being reviewed by the Microsoft support team.
  - **Accepted**
    The response has been approved and is active for end-users.
  - **Declined**
    There is a problem with the response that needs to be addressed by the ISV.
  - **Unregistered**

The response is not currently active on Windows Error Reporting.

- **File**
  The file column lists the application or module for a rules-based response.
- **Min & Max Version**
  The minimum & maximum version numbers of the file for a rules-based response.
- **Date Requested**
  This column identifies the date the response registration was requested.
- **Requested By**
  This column identifies the registered Winqual user who requested the response registration.

Response Details

The Response Details page is used for viewing, editing, and deleting existing responses. It is accessible from the Response Management page when selecting the 'ID' link on the left of the view.

Search

The search control located on the left enables the ability to search on a keyword across all products and events within a selected view, or filtered by a specific product.

All searches are "AND" searches, meaning that we search for content based on every word that you type. You do not have to type the word **and** between your search words.

Search Enabled Views

The following is a list of the views that support a returned search result set:

- Events
- Responses
- File Mappings
- Mobile Events

Note: When the current view is based on a specific product (such as an Eventlist, Hotlist, etc.) a searh result can be limited to with the current product by checking the box marked "Search Within Product".

Wildcard Search

To search using a partial term, add the * as a wildcard for 1 or more characters. Use an underscore (_) only for a '1' character wildcard. For example, to search for all event ID's that start with 123, input "123*" (without the quotes) in the search box.

To search using more than one term, add space between them. The results will contain all search terms. For example, to search for an application named sample.exe with a version 1.1.0.0, input "sample.exe 1.1.0.0" (without the quotes) in the search box.

General Help for WER Software

Event Types

Windows Error Reporting records many types of end-user errors. Below is a complete list of Event Types and their descriptions.

Crash and Hang Events

Crash32

An application crash on a 32 bit Windows operating system

Crash64

An application crash on a 64 bit Windows operating system

Managed Crash

A crash on a managed code application. Managed code applications are created on the .NET platform.

Buffer Overrun

A buffer overrun error (32 or 64 bit operating system)

Mobile Events

Windows CE 5.0

An error on Windows CE 5.0 Operating System

Windows Mobile 5.0

An error on Windows Mobile 5.0 Operating System

Windows Mobile 5.0 AKU1

An error on Windows Mobile 5.0 AKU1 Operating System

Microsoft Product Feedback Mapping Tool (AppMap.exe) Beta v1.0

About AppMap.exe

The **Microsoft Product Feedback Mapping Tool** (***AppMap.exe***) is a tool that automates mapping binary files for Windows Error Reporting by generating an XML manifest file containing file information such as filename, version, and link date. AppMap.exe can scan a selected folder and subfolders for files in the Portable Executable (PE) file format (example: .exe and .dll). This resulting list is written to an XML file that contains the mapping information used with Windows Error Reporting on https://winqual.microsoft.com.

The Microsoft Product Feedback Mapping Tool can be found here.

Features

- **Bulk File Mapping**
  AppMap.exe allows multiple files to be marked for mapping for a given product.
- **Unique Attributes**

Currently, there are five attributes are used by AppMap.exe to uniquely categorize each file mapping. These attributes are Product Name, Product Version, with are custom defined, and Binary Name, Binary Version, and Link Date which are identified by the file scan.

- **GUI and Command Line Interfaces**
  AppMap.exe has a GUI Wizard to step you through the mapping process. More importantly, a command line interface is also available to assist in automation (include in a build process).
- **Editing Capability**
  The user interface has the option to select/unselect binaries for an existing XML mapping file. XML files generated by AppMap.exe can be opened in the tool and files can be filtered out of the mapping list.

Current Scope of AppMap.exe

- **User Mode Support**
  AppMap.exe Beta v1.0 searches only for Usermode PE files. AppMap.exe does not search for kernel mode PE files.
- **Windows XP and Server 2003 Support**
  AppMap.exe currently runs on the Windows XP and Server 2003 platforms. AppMap is not supported on prior Windows versions of Windows Operating Systems or the new version, Windows Vista.

How does it work?

AppMap.exe scans a selected folder and subfolders (optional) for Portable Executable (PE) file format files (.exe & .dll). A log file will be displayed containing a list of binaries that could not be mapped and the reason why. Microsoft PE files are automatically excluded.

AppMap.exe will display a list of files by name, version, link date, product name, and product version. Files that should not be mapped can be removed from the list by removing the check next to the file name.

Finally, AppMap.exe writes an XML mapping file containing the mapping information. This file can then be later edited in AppMap.exe or be uploaded in the new file Mapping management pages of WER (Beta version only) for bulk file mapping.

Requirements

AppMap.exe requires Windows XP or Server 2003 to operate properly. Vista Beta is not fully supported at this point. Future releases of AppMap.exe will support Windows Vista.

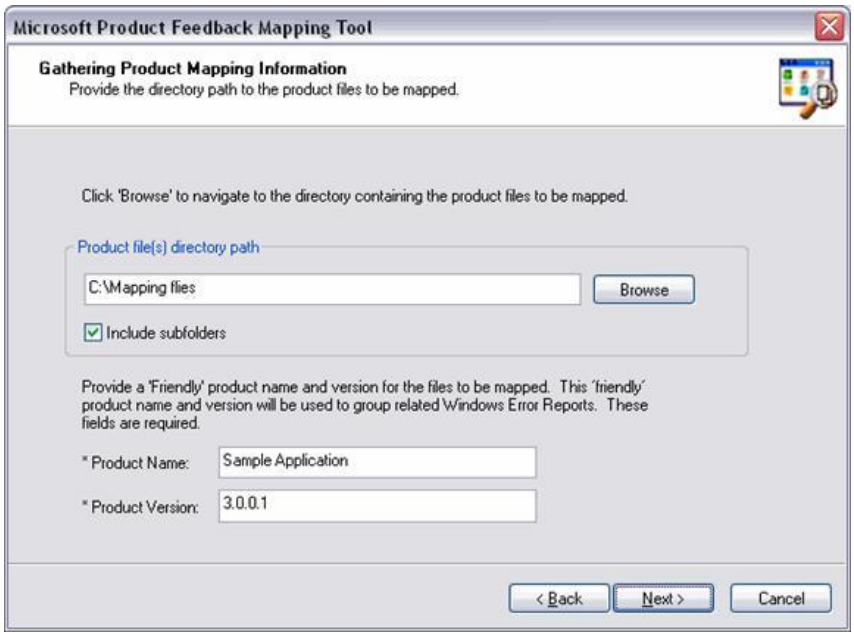
Instructions

User Interface Wizard

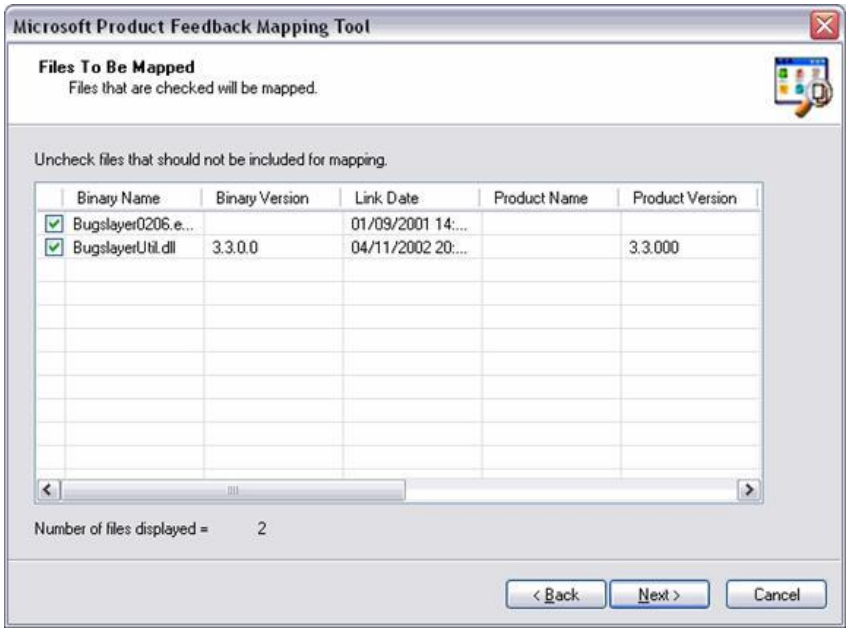
Create New Mapping File

1. Run AppMap.exe. (Default install location: Start – Programs – Microsoft Product Feedback Mapping Tool - Microsoft Product Feedback Mapping Tool).
2. Choose Create new mapping file – Next.

3. Enter the path to the product file to be mapped. Optionally, check Include subfolders.
4. Add the Product Name and Version corresponding to the files in the folder.



5. AppMap.exe scans the directories. A message box will appear if some files were not included in the mapping. A log file describes which files were not mapped with an explanation. Next, AppMap.exe displays a list of binaries found. Uncheck any files that should not be mapped.



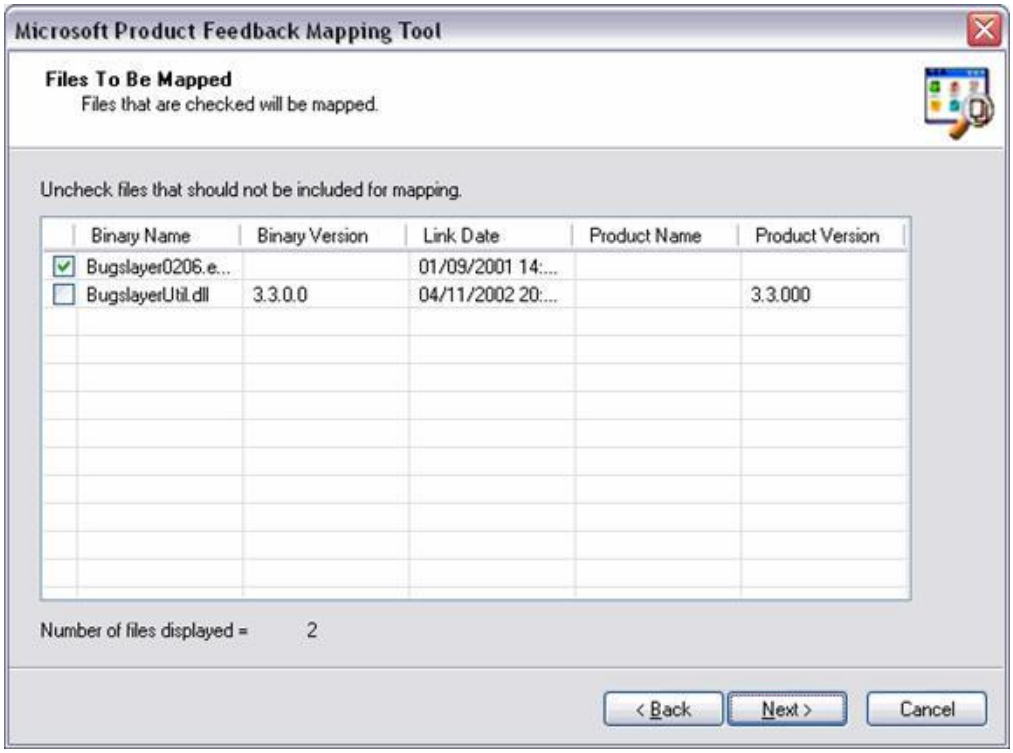
6. Next, select a destination for the new mapping file. Name the file.
7. Check/Uncheck "Include unmapped file information for future editing." If checked, the XML output file from AppMap.exe will include entries for files names that are not to be mapped. This is useful for editing a mapping file. AppMap.exe will remember which files are unchecked in the list of scanned binaries. If the box is not checked, the XML output file will not contain unmapped file names.
8. Click next if path and file name are correct. Optionally, select Launch Windows Error Reporting Services.
9. Click Finish.

If launch Windows Error Reporting chosen, Internet Explorer opens the website.

Edit Existing Mapping File

Start AppMap.exe (as shown above) and select Edit an existing mapping file.

1. Browse to the mapping file, click “Next”.
2. Check/Uncheck the binaries listed, click “Next”.



3. Browse to the path and add the file name.

4. Choose the existing file if you wish to overwrite. If overwrite chosen, a warning box appears. Optionally, choose Launch Windows Error Reporting.
5. Click finish.

Command Line
AppMap.exe can also be used from the command line.

Browse to the AppMap.exe file on the machine and add parameters.

Important Note: Use -f (Allow file overwrite) if output file already exists. Appmap.exe will fail without the -f parameter if the file already exists.

The parameters are listed below:

- -h or /? [For help]
- -s [(Required) Path to search for the binary files info]
- -d [(Required) Destination for the output XML file]
- -n [(Required) Product name]
- -v [(Required) Product version]
- -l [(Optional) Log file name]
- -e [(Optional) Do not include subfolders]
- -f [(Optional) Allow file overwrite]

Command line Example:

appmap.exe –h \\server\share -d C:\Documents_and_Settings\USER\Desktop\outputfile.xml –n -v -l c:\Logfile.log –e

Note: The XML file created must contain the "Unmapped" attribute. If it does not, you may have an outdated version AppMap.exe. Download the latest version online.

Uploading File Mappings
The next step after creating a file mapping is to upload the file mapping to our new version of WER. A preview of the new version will be available to you in January. In the meantime, please email your file mappings to wer@microsoft.com. We will apply the mappings for you in Windows Error Reporting until the WER preview is available.

Known Issues

Binary Exclusions
PE files that do not belong to your product (or Microsoft) may be mapped accidentally and uploaded to Windows Error Reporting (WER). The new Mapping Management service of the WER Preview will manage conflict if two or more identical PE files are claimed by different companies. A Microsoft support representative may contact you to research such conflicts.

Permissions

AppMap.exe does not require Administrator permissions to run. However, you will need appropriate permissions to the product folders that store the PE files to be mapped.

Editing Mapping File

Manual editing of the XML mapping file is not recommended or supported. An editing feature is built in to AppMap.exe for this purpose.

Path and File Name Size

MAXPATH of 256 characters is the maximum size of the combined path and file name used in AppMap.exe for File Open and File SaveAs.

Maximum Number of Files

AppMap.exe has a limitation on the total number of files in a folder that can be scanned by AppMap.exe. This limitation is approximately 1 Million files per gigabyte of RAM. For example, if your machine has a half gigabyte of RAM, then the maximum number of files in a folder that can be scanned by AppMap.exe is 500,000. It is recommended that each product SKU is mapped separately.

Note: This limitation is not on the total number of files – it is on the total of all file types. For example, a folder of extraordinary footprint with only 1 or 2 PE files can be problematic.

Duplicate Files

AppMap.exe's scan may result in fewer binaries than contained in your product folder. Multiple binaries that have identical parameters (Binary Name & Version, Product Name & Version, and link Date) will appear only once in the scan results regardless if they are found in multiple instances nested in the scanned directory.

Old Binaries

Some legacy binaries are DOS based and will not load in AppMap because there is no Link Date.

File Version Format

The binary version must be in the format #.#.#.# (for example 3.1.0.0). AppMap.exe will process binaries that do not have the correct version format, but the Windows Error Reporting backend will reject the binary. Additionally, if the File Version is left empty, Windows Error Reporting will set the version to 0.0.0.0.

Re-mapping Files

When reloading mapping files to Windows Error Reporting (for the same product name and version), the product name and product version must be exactly the same. If not, WER will map the binaries separately as belonging to separate products.

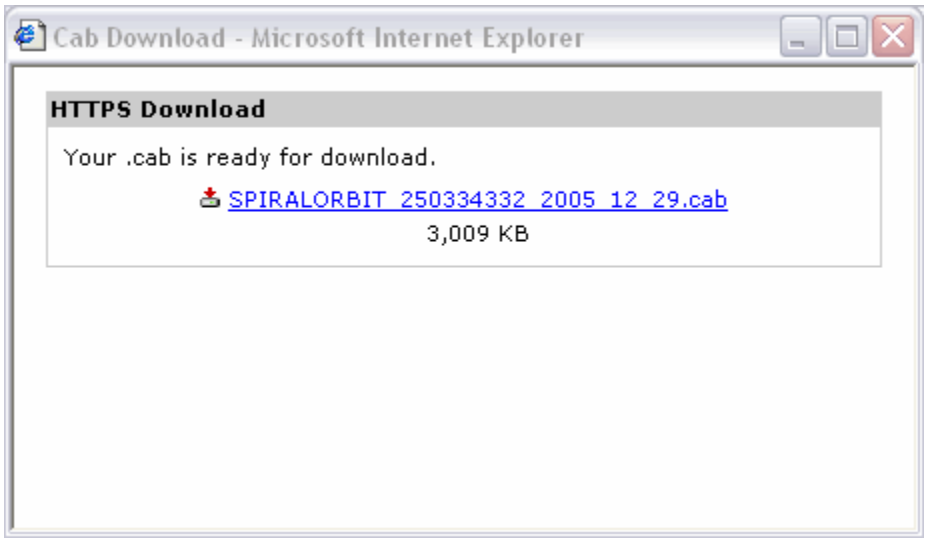
The XML output file from AppMap.exe will include entries for files names that are not to be mapped. This is useful for editing a mapping file because mapped.

Cab Download Control

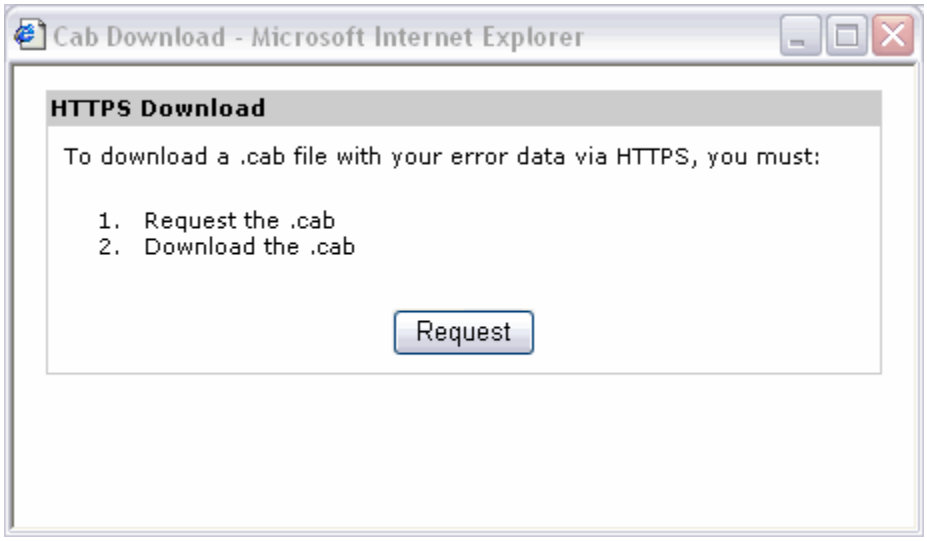
Download Cabs

This pop-up box contains the cab downloads. Cabs are available for Events that show the "Cab Available" symbol ( ) in the Cabs column. (A Cab is a compressed data file that contains end-user minidumps. It is useful for debugging error events).

1. Click on the icon to open the request box:



2. Click the Request button. The Cab link appears in the box:



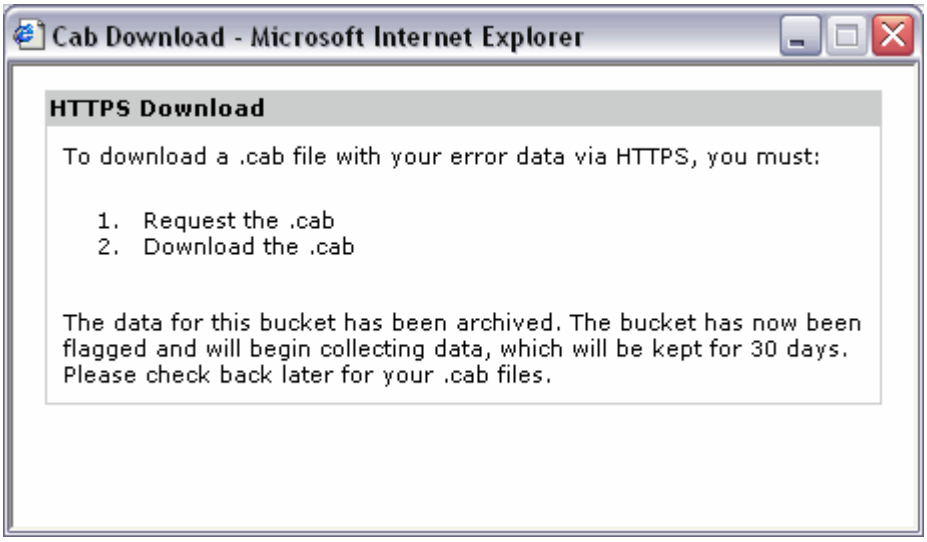
3. Click on the link and save the file.

Request Cabs

If the "Request Cabs" symbol is displayed ( ), you must first request the Cabs by clicking the Request button:

The box then displays the message below:

Windows Error Reporting will begin collecting Cabs for the event from end-users. While processing, the event displays the ( ) symbol.



Note: The collection process can take a few days. The Cab collection depends on how soon actual users experience the error and agree to send data.

When ready, the Cabs symbol will change to the download symbol ( )

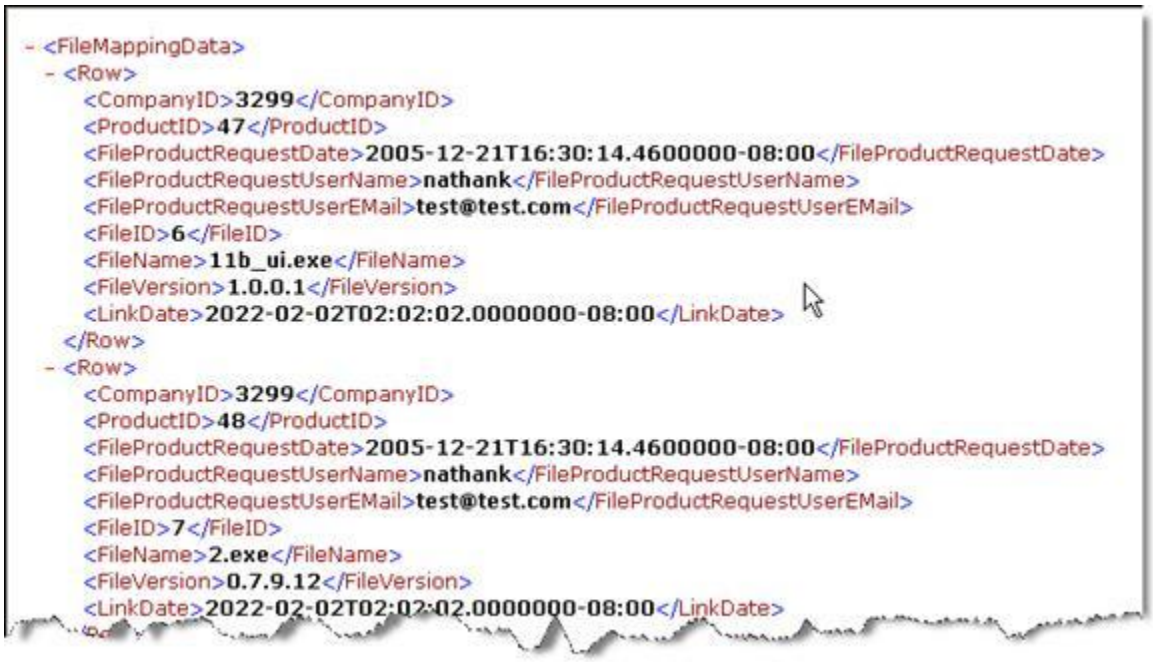
Export as XML (Button)

This action converts the data in the page table into an XML file. It is useful for further analysis in spreadsheets, databases, etc. The entries in the XML file differ for each page type (i.e. Software Home Page versus Eventlist), but correspond to the data in the table.

Please note:

1. Save the file before opening it. If you open the XML file without saving it, it will open in your default XML viewer. In most cases the default XML viewer is Internet Explorer.
2. The XML file can be very large, depending on the number of entries in the table.

Sample XML Export File



Filter Control

Click the + symbol to open the filter. The filter control has two states: Show and Hide.

There are two ways to filter your Hotlist data: by end-user operating system and by language. The filters are useful for analyzing your data in more depth. For example, you can view which issues are most prevalent in Chinese language versions of Windows.

The Filter control on the Event Details page also has a Time Period filter (15 days, 30 days, etc.).

Important Notes

1. The filter displays only Operating Systems that are included in your data. If the data changes, the filter list may change also.
2. It is possible to get "Unknown" as an Operating System choice. Data collected from operating systems prior to Windows XP may be displayed in the filter with the "Unknown" descriptor.
3. It is possible to get zero results returned after applying a filter. A combination of Operating System and Language may not have any collected data. For instance, there may be an event on Windows XP in Arabic, but not in Bulgarian.

To use: Click "All" (the default) to view data by all operating systems and/or languages, or click a specific operating system and/or language. To choose more than one choice, hold the CTRL button down as you click in the box.

Debug Help

Buffer Overruns

Buffer Overruns occur when a program writes outside its allocated block of memory. Buffer Overruns can cause software vulnerability and should be addressed as soon as possible.

For more information about debugging Buffer Overruns, see the MSDN article on the topic.

The home page on Windows Error Reporting provides alerts for these events. To investigate and resolve buffer overruns, use Windows Error Reporting to request and download minidump data. Then analyze the minidump with a debug application. Both Windows Debugger and Visual Studio .NET support Buffer Overrun debugging.

Product Publication

Windows Logo’d Product List

About the Windows Logo'd Products List

The Windows Logo'd Products List is a comprehensive list of logo'd Devices and Systems.

This list is part of the 'Devices Just Work' effort at Microsoft to ensure that your hardware experience with Windows Vista is excellent. Please use this list to confirm hardware logo for upgrades, purchases or simply to explore the wealth of devices that 'Just Work' with Windows Vista!

LPL Requirements

The Windows Logo'd Products List is currently only compatible with Internet Explorer 6 and above. We apologize for the inconvenience and plan to remedy this situation in a future release.

Getting Started

The Windows Logo'd Products List can be easily navigated via the hardware categories on the left-hand menu. Alternatively, you can execute a free-text search for a specific product name. Follow the steps below to get started:

Using the Windows OS Tabs

The Windows Vista and Windows XP tabs at the top of the LPL provide a filtered view of Windows products as follows:

- Windows Vista - This is the default view presented in the LPL. It provides a list of all Windows products that are logo'd with either the x86 or x64 versions of Windows Vista.
- Windows XP - Clicking on this tab provides a filtered view of all Windows products that are logo'd for Windows XP.

Navigating the LPL

To search for a product (in this case the 'Microsoft Digital Media Keyboard') via the hardware categories on the left-hand menu:

Windows Vista / Windows XP

1. Click on 'Input Devices > Keyboards' on the left-hand menu. A result set of all keyboards in the LPL will be returned.
2. You can filter this result set and narrow your selection by Company and/or Logo via the dropdowns at the top of the returned list of keyboards. Continuing our example, filter on company by selecting 'Microsoft' from the Company dropdown with the default and clicking the 'Go' button to execute the filter.
3. A list of Microsoft keyboards is returned. Note that the list will be sorted first by x86 Logo and second by Product Name only in Windows Vista mode. In Windows XP mode, the list will be

sorted by Product Name. Sort by other columns by clicking on the appropriate header at the top of the list.

4. Click on the product name to get further details about the product. The list of details includes: Product Name, Company, Logo Status, Category, Additional Product Names and Windows Logo Verification Reports.

* Note that the categories on the left-hand menu are sensitive to the currently active OS tab. Clicking on a category while in Windows XP mode will return only Windows XP logo'd products.

Searching the LPL

To search for a product (in this case the 'Microsoft Digital Media Keyboard') via the Search control on the left-hand side of the page:

Windows Vista / Windows XP

1. Type 'Microsoft Digital Media Keyboard' in the textbox under 'Enter a search value' and click on the 'Go' button to execute the search. A result set of all hardware devices that contain this text string will be returned.
2. You can narrow the scope of the search and lessen the number of records returned by selecting the type of device you are searching for via the Group and Category dropdowns. In our example, select 'Devices' from the Group dropdown and the subcategory 'Keyboards' under 'Input Devices' in the Category dropdown before or after entering the search term and click on 'Go' to execute the search.
3. A list of Microsoft keyboards is returned. Note that the list will be sorted first by x86 Logo and second by Product Name only in Windows Vista mode. In Windows XP mode, the list will be sorted by Product Name. Sort by other columns by clicking on the appropriate header at the top of the list.
4. Click on the product name to get further details about the product. The list of details includes: Product Name, Company, Logo Status, Category, Additional Product Names and Windows Logo Verification Reports.

- Search is limited to Product Name and Company
- Search will execute an AND operation on any word entered in the Search textbox
- Search considers multiple words enclosed in quotes as one word

* Note that search is sensitive to the currently active OS tab. Searches executed while in Windows XP mode will return only Windows XP logo'd products.

Filtering Your Results

You can filter any set of results via the dropdowns at the top of the list.

Windows Vista

1. Select any combination of Company and/or x86/x64 Logo from the filter dropdowns at the top of any set of results.
2. Click on 'Go' to execute the filter.

- The number of records in the Company dropdown will vary according to the result set that is returned. This dropdown is populated with a distinct list of all companies that exist for each result returned.
- The x86/x64 Logo dropdowns contain the following values.
    - Devices
        - All
        - Certified for Windows Vista
        - Works with Windows Vista
    - Systems
        - All
        - Windows Vista
        - Windows Vista Basic

* Please refer to the Glossary for an explanation of these terms.

Windows XP

1. Select any combination of Company and/or x86/x64/IA64 Logo from the filter dropdowns at the top of any set of results.
2. Click on 'Go' to execute the filter.

- The number of records in the Company dropdown will vary according to the result set that is returned. This dropdown is populated with a distinct list of all companies that exist for each result returned.
- Compatibility with either the x86, x64 or IA64 version of Windows XP is indicated by the existence or lack of a Windows XP logo as indicated by the following dropdown values.
    - Devices and Systems
        - All
        - Designed for Windows XP

* Please refer to the Glossary for an explanation of these terms.

Sorting Your Results

You can sort any set of results by Product Name, Company and/or Logo.

Windows Vista / Windows XP

1. Click on any header to sort the results by that attribute in ascending order.
2. Click the header again to sort the results by that attribute in descending order.

- Note that the sort order for Logo reflects the expected user experience. Thus, users can expect the best possible experience with products that are Certified for Windows Vista.
- Lists will be sorted first by x86 Logo and second by Product Name only in Windows Vista mode. In Windows XP mode, lists will be sorted by Product Name.

Explore Control

This control enables you to quickly find Windows Vista or Windows XP logo'd products for a particular Category and Architecture.

Windows Vista

1. Select the Windows Vista logo from the first set of radio buttons to specify Logo type.
2. Select x86 (32-bit) or x64 (64-bit) from the second set of radio buttons to specify the Windows Vista version.
3. Select a Category/Subcategory from the bottom dropdown.
4. Click on the 'Start' image to return a list of products according to the parameters specified.

Windows XP

1. Select Devices or Systems from the first set of radio buttons to specify type of product.
2. Select x86 (32-bit), x64 (64-bit) or IA64 (Itanium) from the second set of radio buttons to specify the Windows XP version.
3. Select a Category/Subcategory from the bottom dropdown.
4. Click on the 'Start' image to return a list of products according to the parameters specified.

Windows Logo Verification Report

To view a Windows Logo Verification Report for any product...

Windows Vista / Windows XP

1. From the Details page of a product, expand the 'Windows Logo Verification Report' section at the bottom of the page by clicking on the '+' sign if it is not already expanded.
2. Click on any of the links in the 'Windows Logo Verification Report' section to open a separate window and view the Logo Verification report in PDF format.

- This section contains links to the 'Windows Logo Verification Report' for all submissions that have been aggregated under this product. The link is comprised of Submission ID and Logo Completion Date.

Getting Listed on the LPL

The only way for vendors to ensure a listing on the LPL is to get their products Logo'd. Products must be submitted for Logo to the Windows Quality Online Services (Winqual) team for review. Please refer to the Winqual site for details on how to get your product Logo'd.

Contact Us

For questions or comments about the site and its contents, please contact Winqual support at: winqual@microsoft.com. Please include 'LPL Feedback' at the beginning of the Subject line for all email correspondence with Winqual about this site.

Glossary

Results Page

Windows Vista / Windows XP

- Product Name – Name of the product
- Company – Name of company

Windows Vista

- x86/x64 Logo – Indicates logo with the x86 (32-bit) or x64 (64-bit) version of Windows Vista. Values are:
    - Devices
        - Certified for Windows Vista – User can assume a premium experience expected of the Certified for Windows Vista logo
        - Works with Windows Vista – User can assume a basic standard of compatibility and reliability with products logo'd with Works for Windows Vista
    - Systems
        - Windows Vista – User can assume a premium experience expected of the Windows Vista logo
        - Windows Vista Basic – User can assume a basic standard of compatibility and reliability with products logo'd with Windows Vista Basic

Windows XP

- x86/x64/IA64 Logo – Indicates logo with the x86 (32-bit), x64 (64-bit) or IA64 (Itanium) version of Windows XP. Values are:
    - Devices and Systems
        - Designed for Windows XP - User can assume a great experience under the Designed for Windows logo

Details Page

Windows Vista / Windows XP

- Product Name – Name of the product
- Company – Name of company
- Logo Status – Describes which Logo qualifications the product has achieved
    - ✓ - Product has achieved the qualification indicated
    - – - Product has not achieved the qualification indicated
- Category – Lists the categories under which the product is listed

- Additional Product Names – List the additional names under which this product may be found
- Windows Logo Verification Report – Contains links to the 'Windows Logo Verification Report' for all submissions that have been aggregated under this product. The link is comprised of Submission ID and Logo Completion Date.

Windows Logo Program for Software

The Software Logo home page provides the basic information about obtaining Windows Logos for your software applications. The following logo programs are currently supported by this site:

- Works With Windows Vista
- Certified for Windows Vista
- Certified for Windows Server 2003
- Certified for Windows 2000 Server

General Logo Information

For more general information about software logo programs, visit the links in the 'Resources' box in the upper right portion of the screen.

Viewing Pages

The software logo pages are designed to be viewed at a resolution of 1024x768 or higher. If you are using large fonts, you may want to increase resolution even further.

This web application is supported on Microsoft Internet Explorer versions 6.0 and 7.0.

Additional Support

For additional support, send email to swlogo@microsoft.com.

New Certified for Windows Logo Submission

This wizard will take you through a set of steps to create a new Certified for Windows submission.

Upload a product signature of your application

- Answer questions about your application
- Download submission files to send to a testing authority

Uploading a Product Signature

If you have not run already done so, download the Product Identification Tool by following the link on the 'Product Signature Upload' page. Run the Product Identification Tool and follow the instructions to create a signature for your product.

After you can then use the browse control to select this product signature and click 'Next' to begin the upload.

Product Properties

Primary Product Name and Version - These should be friendly names that would normally appear on the product packaging.

Announcement Date - Your product will not appear in any Windows catalog until after this date has passed.

Alternate Marketing Names - If the same product is sold under multiple names, the alternate names should be listed here.

Operating Systems

Certified for Windows submissions are available in for seven different Operating System SKUs.

- Windows Vista (all SKUs)
- Windows Server 2003, Standard Edition
- Windows Server 2003, Enterprise Edition
- Windows Server 2003, Datacenter Edition
- Windows 2000 Server
- Windows 2000 Advanced Server
- Windows 2000 Datacenter Server

A new submission will be created for each operating system selected.

Test Authority XML Files

These files will be used to track the status of your submission. You should send these files to the testing authority when you submit your software for testing.

New Works with Windows Vista Logo Submission

This wizard will take you through a set of steps to create a new Works With Windows Vista logo submission.

Upload a product signature of your application

- Answer questions about the compatibility of your application
- Sign an exhibit to the Logo License Agreement

Uploading a Product Signature

If you have not run already done so, download the Product Identification Tool by following the link on the 'Product Signature Upload' page. Run the Product Identification Tool and follow the instructions to create a signature for your product.

After you can then use the browse control to select this product signature and click 'Next' to begin the upload.

Submitting for a Version Range

If you select 'This version and all newer versions' after uploading your product signature, this submission may apply to newer versions as well. For example, if you submit with version 2.1.1, the submission can also apply to 2.1.2 and 3.0.0. This will only work if the Product Name and Vendor Name are exactly the same between versions of your application.

Advising an Upgrade of Older Versions

If you decide to 'advise users to upgrade' when creating a submission for version 2.0 of your application, then a user with version 1.5 may be advised that there is a working version of your application

available. This will only work if the Product Name and Vendor Name are exactly the same between versions of your application.

Sign Exhibit

On this page you can sign an exhibit to the Logo License Agreement. Signing the exhibit for a submission is the last step in completing the submission.

Viewing the Agreement

To view the agreement, you must have Adobe Reader installed on your computer.

Certified for Windows Vista Logo Submission Management

This page is used for viewing all Certified for Windows logo submissions across your company. This includes submissions for Windows Vista, Windows Server 2003 and Windows 2000 Server. On the left pane of the page is a listing of all of the logo submissions. Clicking on an entry in that pane will highlight that submission and show the details for the submission in the right pane.

Submission Status

The status of a submission is denoted by a colored flag:

- Pending
- Passed
- Signed

Pending – Microsoft has is awaiting confirmation for a Testing Authority that this application has met all of the requirements for the associated logo program.

Passed – This has passed the testing requirements, but to complete the submission you should sign an Exhibit to the Logo License Agreement by clicking on 'Sign Exhibit' at the top of the right pane.

Signed – This submission is complete and no other actions are necessary.

Changing Submission Data

A limited number of submission details can be changed one a submission has been created.

Announcement Date – The announcement date for a submission can be changed in the right pane whenever the status of that submission is Pending or Passed.

Alternate Marketing Names – Alternate Marketing names can be added, removed or edited indefinitely.

You must always click 'Apply Changes' for the changes to take effect.

Downloading Artwork

At the top of the right pane, you can download the artwork for the associated logo program. Although you can download the artwork for any submission, the Logo License Agreement only permits you to use the artwork for submissions where an exhibit to the Logo License agreement has been signed.

Works with Windows Vista Logo Submission Management

This page is used for viewing all Works with Windows Vista logo submissions across your company. On the left pane of the page is a listing of all of the logo submissions. Clicking on an entry in that pane will highlight that submission and show the details for the submission in the right pane.

Submission Status

The status of a submission is denoted by a colored flag:

- Pending
- Signed

Pending – Microsoft has all of the information needed for this submission, but it is not yet complete. To complete the submission you should sign an Exhibit to the Logo License Agreement by clicking on 'Sign Exhibit' at the top of the right pane.

Signed – This submission is complete and no other actions are necessary.

Downloading Artwork

At the top of the right pane, you can download the artwork for the associated logo program. Although you can download the artwork for any submission, the Logo License Agreement only permits you to use the artwork for submissions where an exhibit to the Logo License agreement has been signed.

FAQ

General

Q: When I try to upload my submission package to Winqual, I receive an error that reads "The uploaded filed is signed with a different certificate than the one on file". What do I do now?

A: To correct this error, update the digital certificate that you have on file by following the instruction below:

1. Sign in to the Winqual site at https://winqual.microsoft.com
2. In the top right navigation, click **Member Services**
3. Click **Digital Certificate**
4. Browse to, or type the path to your code signed Winqual.exe file, and then click Update

After you update your VeriSign ID, close all Internet Explorer browser windows, and then revisit the Winqual Web site. You will now be able to upload your submission.

Q: Why am I asked to enter Marketing Names during the submission process?

A: The recent Winqual update has streamlined the submission process. Instead of making a submission, waiting for notification of it to be completed, then logging on a again to complete the submission by running the Product Listing Wizard, these steps have been combined. Now, when you make a submission, you are asked to sign the appropriate legal exhibits and provide the product and marketing names.

Q: I am experiencing "Database not available" or "Application error" messages or upload problems.

A: We have experienced some intermittent server problems that we are currently working to resolve. As a temporary work around you can use one of our alternate server sites:

- http://europe.winqual.microsoft.com
- http://americas.winqual.microsoft.com
- http://asia.winqual.microsoft.com

Q: If WQUploader gets http 407 error, please see the following details for resolution.

A: The HTTP 407 code only applies to users who are accessing the Internet behind a proxy server. This is common in government and corporate workplaces. The 407 code indicates that your computer must first authenticate itself with your company's proxy server. Check with your IT department or computer support group as to the exact reason why you may be getting this error. It may be possible that the proxy server does not allow downloads of specific files (exe, cab, com). You can also verify that your proxy server settings are valid.

Q: What do I do if I am unable to establish an account because my signed Winqual.exe file is not recognized?

A: Please retry establishing an account on one of the alternate sites listed above. Please use the sites farthest from your location. If you still experience trouble please send a signed Winqual.exe file in a zip file attachment to winqual@microsoft.com and we will investigate the issue.

Q: Who can make a reseller submission?

A: The Reseller Submission Policy lets a company that purchases a product from a manufacturer resell the hardware as its own and receive a listing in the Microsoft Online Catalog and Hardware Compatibility List (HCL). To repackage and re-label a device that previously earned the Windows logo, you must make a reseller submission. This submission does not require testing and has a reduced processing fee.

A reseller submission must meet the following requirements:

The reselling company cannot change the hardware or software when re-labeling or repackaging the product, except for branding or splash screen changes to identify the product under the new company name.

If the reselling company wants to change the driver, it must make a new submission. If the reselling company changes the INF file, it must make an entirely new driver submission package for driver signing and Windows Update distribution.

All reseller submissions are subject to audit.

Q: How do I sign a submission package with a VeriSign certificate?

A. You must sign the submission package with a VeriSign certificate before you upload the submission to Winqual.

A new signing tool (signtool.exe) has replaced the previous tool (signcode.exe).

You can download signtool.exe at
https://winqual.microsoft.com/download/signtool.zip

Q: Where do I download signtool.exe?

A: signtool.exe is part of WLK which can be downloaded from here

Q: What is the difference between a $99 and a $399 VeriSign digital ID, and which one is better for use with Winqual?

A: VeriSign Organizational Certificate Digital ID ($99 USD) is available at:
http://www.verisign.com/code-signing/content-signing-certificates/winqual-partners/index.html

This digital ID is used only by Winqual and is valid only for establishing an account for your company in Winqual. You cannot use this digital ID for hardware submissions.

VeriSign Microsoft Authenticode Code Signing Digital ID ($399 USD) is available at:
http://www.verisign.com/code-signing/content-signing-certificates/winqual-partners/index.html

This digital ID is more versatile and is the accepted standard for establishing ownership of code.

Some applications in Winqual (such as hardware logo and driver reliability signatures) require a Class 3 code signing certificate. Using a code signing certificate enables you to digitally sign your 32-bit or 64-bit .exe (PE files), .cab, .dll, and .ocx files.

Q: How can I register with a certificate that VeriSign did not provide?

A: Unfortunately, certificates that VeriSign did not provide are not compatible with the Winqual site. A VeriSign ID is required to establish an account and to upload any files to the site so that we can accurately verify that it is from your company.

You can find additional information at:
https://winqual.microsoft.com/help/default.htm#obtaining_a_verisign_class_3_digital_id.htm

Q: Why does it take so long for our submissions to be approved?

A; Winqual tries to provide a two-business-day turnaround. However, we are closed on the weekends, and submissions are not considered late until after seven days.

More information is available at:
http://www.microsoft.com/whdc/whql/policies/default.mspx
http://www.microsoft.com/whdc/winlogo/VistaLogofaq.mspx

Q: What is a signed catalog file?

A: A signed catalog file (.cat) is used as a digital signature for an arbitrary collection of files. A .cat file contains a collection of hashes or thumbprints that correspond to a file in the collection.

Device installation recognizes the signed .cat file of a driver package as the digital signature for the driver package. Each thumbprint in the .cat file corresponds to a file that the driver package installed, regardless of the intended operating system.

Q: What is a P.O. number, and must I fill in this field when I create a submission?

A: The Purchase Order field has no restrictions or format. The field is for your use only to help you identify individual submissions.

Q: What is Announcement Date and what happens if I do not fill in this field?
A: We use the Announcement Date to know when to announce your product in Windows Logo'd Products List. If you do not want to announce your product in Windows Logo'd Products List, leave this field blank.

You can check announced products at: https://winqual.microsoft.com/HCL

Q: Must I fill in the Firmware Version field?

A: Firmware Version is an optional field, but you can determine the version from one of the devices in the .inf file.

Q: What is the cost of a standard submission to Winqual?

A: The charge for a standard submission is $250 for each operating system family. For example, if you submit for Windows Vista x86 and Windows Vista x64, the charge is $250. If you submit for Windows XP x86 and Windows Server 2003 x86, the charge is $500. Note that there is no logo program for Windows 2000.

More information about billing policies is available at:
http://www.microsoft.com/whdc/winlogo/hwrequirements.mspx

Q. I cannot download signed .cat files though my submission is approved. Why?

A. It might be because you do not have the required permissions.

To download signed .cat files:

1. Log on to Winqual as an administrator.
2. Navigate to **Member Services** > **My Profile** > **Permissions**, and then select the **Download Signatures** check box.
3. Click **Update**.
4. Log off, and then log on to Winqual again as an administrator.
5. Navigate to **Windows Logo Programs** > **Hardware,** and then click **Manage Logo Submissions**.
6. Click the **Submission ID**.
   Under **Additional Data**, you can now see **Signed Catalog file**.

Q. How can I determine to which operating system my .cat file corresponds?

A. To view which folder corresponds to which operating system, double-click the .cat file in the driver folder and, on the **Security Catalog** tab, click a hash. Under **Entry details**, you will find the OSAttr, which means the following:

2.5.0 = Windows 2000
2.5.1 = Windows XP
2.5.2 = Windows Server 2003
2.6.0 = Windows Vista and Windows Server 2008

Q: Why Is a Digital Certificate Required for Winqual Membership?

A: A digital certificate helps protect your company from individuals who seek to impersonate members of your staff or who would otherwise commit acts of fraud against your company. Using a digital certificate enables proof of an identity for a user or an organization.

When you use your digital certificate establish an account, Winqual validates the registration is coming from an entity that has access to your company's digital certificate; an additional security check beyond a typical Live ID and password.

Note: Digital Certificates have expiration dates. Your Winqual account is still valid even if your digital certificate expires. You only need a current digital certificate if you are signing files.

Q: Why does Winqual say my Digital Certificate on file does not match the one in my uploaded file?

A: It appears that you need to update the digital certificate that you have on file. See Updating your Digital Certificate.

After the Verisign ID is updated, please close all Internet Explorer browser windows and then re-visit the Winqual website. You will then be able to upload your digital certificate.

Q: How to Download Logo Artwork?

A:

1. Follow the instructions on How to View Submissions
2. Click on the ID number of a submission with the status of "Approved"
3. Click Logo Artwork in the Additional Data section on the right side of the page

Q: How long does it take for my submission to get processed?

A: Typically a submission review takes anywhere from 2 to 7 business days to complete. If you have any reviewer related questions please contact appropriate groups directly by writing to:

- Hardware devices: whqldt@microsoft.com
- PC System/Server: whqlsys@microsoft.com
- Display: dcttest@microsoft.com

FAQ for Specific Winqual Contents

DDC

Q: How can I change a driver distribution date in an already-approved submission?

A: You can add or remove your submissions to Windows Update through the Driver Distribution Center by following these steps:

1. Log on to your Winqual account.
2. On the left navigation panel, select **Driver Distribution Center**.
3. On the **Add/Remove Drivers** tab, enter the **submission ID** in the **Submission ID** text box.
4. Update the → drop-down box to the time range when the submission was created.
5. Click →.
   Results that match your search criteria appear.
6. In the **submission** ID column, click a **submissionID** link.
   A table of HardwareIDs and operating systems for which you can distribute appears.
7. Select (or clear) the operating system for which you want to distribute. Note that you can select all the check boxes by selecting **All**.
8. On the bottom of the page, click **Submit.**
   The system displays the status of your settings.

Device Metadata

Q: My Metadata package has a status of "Error". What do I do?

A: The package is in "Error" status because one or more of the Device Metadata On-boarding Business Rules is not fulfilled. You may have to replace the package with the "Error" status. Please refer to Business Rules under Device MetaData section of this document. For further assistance, please contact Winqual support at Winqual@microsoft.com

Q: How long does it take for my Metadata package to be available for download by the end-user?

A: Please allow up to 48 hours for your packages to be available for download by the end-user.

DUA

Q: Which Submission can I update?

A: You may update any submission that satisfies all of the following conditions:

1. Must not be a Systems submission
2. Must not be a Failover Cluster submission
3. Must not be a Device – Inbox submission
4. Must not be a Multi-function submission
5. Must be an Approved submission
6. Must be of type Initial or Resell
7. Submission must have been made after 07/15/2006

Q: **What is the DUA submission, and how much does it cost?**

A: DUA means Driver Update Acceptable submission.

For an already-approved submission, this type of submission lets you make changes only to the INF file. You cannot change the driver binaries (such as .sys, .dll, and so on).

No test log files, and therefore no Readme.doc file, are required for a DUA submission. The Winqual Submission Tool (WST) tests some of the same things that ChkINF does. On the back end, the Winqual site performs a Windiff to make sure that no binaries have changed.

The charge for a DUA submission is $250 for each operating system family. We do not charge per driver package. For example, if you submit for Windows XP x86 and Windows XP x64, the charge is $250. If you submit for Windows Vista and Windows Server 2008 x86, the charge is $500.

Q: What changes can I make to the driver package when making an Update (DUA)?

A: Read Logo Policy 0015, Acceptable Device and Driver Update Policy, by logging into Winqual and using LogoPoint.

Q: How do I make an Update (DUA) submission?

A: See Driver Update Acceptable section in this document.

Inf2Cat

Q: What is Inf2Cat?

A: INF2CAT is a standalone tool that verifies driver packages are valid by executing signability tests. INF2CAT will transfer INF's into .CATalog format.

Q: How do I use Inf2Cat?

A: INF2CAT is executed using the Winqual Submission Tool, and can also run as a standalone tool. To run INF2CAT as a standalone tool following the instructions below:

INF2CAT is dependent on the following assemblies installed with the WINQUAL Submission Tool MSI.

- NonXmlDataReader
- InfReader
- Catalogs
- Cabinets
- SubmissionBuilder

INF2CAT has no dependency on the Winqual Submission Tool or WQUploader. These 5 assemblies must be together in a single directory.

Q: Where can I find Billing Policies information?

A: The policies for the Windows Logo Program for Windows Vista and Windows Server 2008 are maintained in the LogoPoint tool on the Winqual Web site. A Winqual account is required.
A document version of the current policies is available, download the Policies for Windows Hardware Logo Program.

Legal Agreements

Q: Why am I prompted to sign legal exhibits during the submission process?

A: Submissions on the Winqual Web site require certain legal agreements to allow Microsoft to test, or list products on Microsoft catalogs and distribute drivers on Windows Update. Companies participating in the logo program for hardware must review the specific terms of each legal agreement.

Q: How can I sign legal agreements? What permissions do I need to sign these agreements?

A: All legal agreements must be signed online.

Note: You are not required to send the agreement copy to Microsoft by fax.

To sign the agreement online at any time:

1. Log on with Sign Master Legal Agreements permissions.
2. Click **Member Services**, and then click **Legal Agreements**.

If you do not see the **Legal Agreements** link or a text box for signing a particular agreement, the appropriate permissions might not be enabled for your account.

To receive permission to sign legal agreements, ask your company's administrator to do the following:

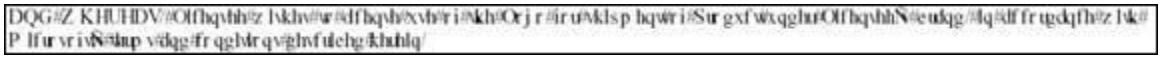
1. Click **Member Services**.
2. Click **Users**, and find your name on the **Permissions** tab.
3. Select the **Sign Master Legal Agreements** check box.
4. Save the changes.

You will now be able to sign the legal agreement.

Q: Legal agreement appears unreadable. What do I do?

A: If a legal agreement appears unreadable, you may need to install or reinstall Adobe Acrobat Reader.

See example below of unreadable PDF file.



Q: Why do the exhibits signed during the submission process contain no information?

A: The information is filled in after the agreement has been signed.

After your submission is complete, you can view the agreement by logging on to your Winqual account and navigating to **Member Services** > **Legal Agreements.** Use the submission ID search on the right side of the page.

Member Services

Q: Why it is important to have more than one account administrator?

A: Winqual used to require and limit each organization to two (2) account administrators. This limitation has been removed. It is now possible to create an account with only one account administrator. However we highly recommend that you have two (2) or more account administrators in your organization so that you may manage your Winqual account in the event that your primary account administrator is unable to access Winqual.

For example, the account administrator leaves the company. Another account administrator could remove the former account administrator's permissions, and manage permissions and account requests for other users, avoiding the need to wait for Winqual Support.

Q: How I can change my company name in Winqual?

A: You can change the company name associated with your Winqual account as long as the ownership of the company has not changed.

Have the administrator log on to your Winqual account and navigate to **Member Services** > **Billing Groups** > **Change: Billing Group Name**.

If company ownership changes, you must establish a new Winqual account. You can establish an account on the Winqual site by going to: https://winqual.microsoft.com/signup

Test Signatures

Q: How do I install a test-signed SCSI boot driver (F6) in Microsoft Windows 2000, Windows XP, and Windows Server 2003?

A: If the driver binaries have the same name as an existing driver in the Windows 2000, Windows XP, or Windows Server 2003 setup media, you must rename the driver you are submitting. If the driver is not rewritten, you will need to write a TXTSETUP.OEM file as discussed in *Installing a Mass-storage Driver via F6* in the Windows DDK (http://www.microsoft.com/whdc/ddk/winddk.mspx).

Q: What changes must be made to the DriverVer date to allow the Microsoft Windows 2000 and Windows XP operating systems to replace a driver?

A: The DriverVer date must be later than the date of the driver that was shipped with the operating system. The date 1/1/2000 will always be a later date than that of all drivers shipped with Windows 2000. The date 7/2/2001 will always be a later date than that of all drivers shipped with Windows XP.

Q: How do I test sign mass-storage adapters supplied to textmode setup by F6 (or for hardware abstraction layers [HALs] supplied by F5)?

A: You must supply a unattend.txt file that contains a TestCert entry in its [unattended] section.

Q. How do I use test-signed drivers?

A. To prepare a system to use test-signed drivers when that system is currently running a Windows operating system:

1. Double-click the test root certificate file (Testroot.cer), and then click **Install Certificate** to add it to the system.
2. Click **Place all certificates in the following store**, and then click **Browse**.
3. Select the **Show physical stores** check box, and then expand **Trusted Root Certification Authorities**.
4. Select the **Local Computer** folder, and then click **OK**.
5. To install the certificate, complete the Certificate Import Wizard, and accept all defaults.
6. After you complete this procedure, you can then install the driver by using Add New Hardware Wizard or Device Manager.
   Note: In Windows Vista, you must be logged on to the local administrator account.

Windows Error Reporting

Hardware

Q: I tried to upload a mapping file but received an error. What should I do?

A: If the error states the size of the file is too large, you can split your file folder. See the File Upload Page for instructions. For other errors, please contact our support team at wer@microsoft.com.

Q: I mapped my files. Why can't I see my data?

A: Windows Error Reporting must first process your upload. This process usually takes 24 hours, but can take 48 hours.

Q: What is File Mapping?

A: It is the process of associating your developed files with your applications. After mapping your files and uploading them, if end-users have a problem in your applications, Windows Error Reporting links the reports and data to your company.

Q: How do I map my files?

A: Use the Microsoft Product Feedback Mapping Tool, which is a new application that facilitates mapping files in bulk. It is downloadable by a link on the File Upload page.

Software

Q: Can I make a Hotlist for one product across all versions?

A: Yes. To create a hotlist for all versions of a product, run the Microsoft Product Feedback Mapping Tool on all of your files included in all versions. Label the Product Version in the Microsoft Product Feedback Mapping Tool wizard as text (e.g. “all versions”) instead of a number (e.g. 10.1.1.2). In the Products Rollup view, you will see a product entry with all versions mapped.

Q: Whom should I contact with questions?

A: Our support team is available to answer your questions via email at wer@microsoft.com. This email mailbox is reviewed 9am-5pm PST.

Q: Why do some filters have no results?

A: It is possible to get zero results returned after applying a filter. A combination of Operating System and Language may not have any collected data. For instance, there may be an event on Windows XP in Arabic, but not in Bulgarian.

Q: I have “Unknown” listed in my filter choices. Why?

A: It is possible to get “Unknown” as an Operating System choice. Data collected from operating systems prior to Windows XP may be displayed in the filter with the “Unknown” descriptor.

WLK

Q: What if I’ve already applied the FilterUpdates.cab to my WLK 1.0c controller, can I still use the new UpdateFilters.cab?

A: Yes, the new UpdateFilters.cab will add descriptions to your existing errata/contingencies, and also add the new Failure Information (AutoTriage) filters.

Q: How can I obtain technical help with the Windows Logo Kit (WLK)?

A: To obtain help with the WLK, open a support case with CSS. They will provide technical support.

Customers who have a Premier support contract should work with their Technical Account Manager (TAM) to open support incidents.

For customers who do not have a Premier support contract, professional support options, including telephone numbers and pricing information, are available at:
http://support.microsoft.com/oas/default.aspx?&prid=11880

If we determine that the support issue is related to Microsoft, you will not be charged for the services. We either do not charge for the service or credit your account if a charge has been made. Some examples of Microsoft-related issues are a test issue, errata being processed or errata filter not working, a documentation issue, or a WLK product issue.

Q: What are the differences among the various IDs that WLK support now uses to document WLK issues?

A:

ID type	Description
Incident ID	A temporary number that indicates a DTM failure whose root cause or solution

	is not yet determined. We usually use an incident ID to unblock customers while we continue our investigation.
Contingency ID	A number that indicates that a DTM failure is due to a hardware issue and the customer cannot fix the hardware for some reason. The customer negotiates with Winqual to receive a contingency ID that allows the customer to receive the logo if the customer promises to fix the hardware after a specified time period.
DTM errata ID	An internal number that indicates a DTM test failure. We write a filter so that DTM will overlook this error in the future.
DTM errata filter ID	A number that indicates that a filter has been written for a DTM errata ID. The list of filters at https://winqual.microsoft.com/EC/ contains errata filter IDs and contingency IDs, not errata IDs.

You should not place an incident ID or DTM errata ID number in the README file unless a DTM support staff person gave it to you for submission purposes. Referenced ID numbers are only for incidents that will become errata or for errata filters that are not working correctly.

Q: The latest release of DTM (1.0.c) is missing UpdateFilter.exe. What do I do?

A: This component is necessary to apply new result filters to your DTM controller. To work around this problem you will need to apply the filters to your controller using **SQLCmd.exe** installed on the DTM controller.

1. Download UpdateFilters.cab to your DTM Controller via the **WLK Updated Filters** link when creating a submission.
2. Open the "%ProgramFiles%\Microsoft Driver Test Manager\Controller" directory in Explorer.
3. Open the downloaded UpdateFilters.cab file.
4. Click and drag UpdateFilters.sql from the cab file to the Controller directory.
5. Open a CMD window on the controller and CD into your controller directory. Use SQLCmd.exe to apply the new filters to your controller
    a. Type "C:\Program Files\Microsoft SQL Server\80\Tools\Binn\SQLCmd.exe –d DTMJobs –i UpdateFilters.sql"
    b. The result will say "1 rows affected" however all rows have been updated.

How to install Errata/Contingency filters for WLK v1.0b or older:

1. Download FilterUpdates.cab to your local machine via the **DTM Filter Updates for v1.0.b or older builds** link when creating a submission.
2. (optional) Transfer .cab file to your DTM controller.
3. Double click to expand .cab file.
4. Extract files to local folder (filterupdater.exe and filterupdates.sql).

Run filterupdater.exe to update your DTM controller.