Windows XP won't install on new machines since 2016

Installing windows XP on newer Intel machines (as of 2016) is no longer practical, or even possible. Also, don't use SSD drives with WinXP. Link to AMD-related info sub-page, too.

This page presents a few challenges and this post aims to be a compilation of the challenges that were faced and explored solutions.

See also

- Windows 7 won't work on (most) NVMe hard drives, per Dell
- What is the Dell oldest computer we keep for reuse, and why?

Note

Note that all information on this page pertains to Intel machines only and documentation on AMD machines (although that option has not been tested) can be found at the link below. It seems however that new AMD machines may be easier to get a working install of Windows XP on as there are a few USB drivers available (these may also apply if you have an AMD, VIA, TI or Renesas controller on an Intel machine (unlikely)):

- Windows XP on AMD machines (2011-2016)

Summary

XP will not install properly or at all on Skylake (6 Gen) Intel processors, due to drivers. Presumably anything newer will present these problems, too.

Also, using SSD drives with XP requires lengthy workarounds and thus generally "not a good idea".

- Symptom: Initial install works. But SSD dies within 6 months or so since XP doesn't have the tools to "trim" SSD cells (memory storage locations).
- The exact procedure will vary by exact hardware used, so nothing written up below. Simply not worth doing!

General Notes:

1) It is highly recommended to choose computers up to and including the Optiplex 780 (and equivalent; ~2010) as the BIOS has legacy compatibility modes for the HDDs which makes installing XP much simpler.

2) Although the method below will get you a working install of Windows XP, device drivers are still hard to come by. Although basics functions of the display adapter should work with generic drivers, any advanced features will not work unless you get an old external dedicated graphics card with XP drivers. In the same way USB controllers, the sound card and networking WILL have issues (probably be unusable with the onboard controllers on newer machines.)

3) If you do decide to settle on a slightly older machine for XP, try and find one that was built for Windows 7 (no problems with xHCI) or for Windows 8 (**with out** a BIOS update) as these will use the old EHCI standard (or have compatibility modes that disable xHCI in their BIOS as long as it hasn't been updated) instead of the newer xHCI standard for USB contollers. No working xHCI driver for XP could be found.

- If any of the ports are USB 3.x (depending on the xHCI controller), then NONE of the USB ports will work.

Method tried, but don't bother

Below are Abhi's notes on each error found and what was required to get a system work, but alas without USB or networking capabilities.

ACPI:

1) Most modern machines (and all desktops) will show up as non ACPI compliant for the XP installer due to the changing of ACPI standards and the BIOS lists not being updated.

2) For MOST cases the ACPI HAL is not required for the system, in this case you can press F7 at the start of setup while in text mode (at the point where setup asks you to press F5) to change the mode from 'ACPI compliant' to 'Standard Computer'.

3) In the rare case where ACPI disabling does not work in text mode(for some newer machines), the 'Txtsetup.sif' file in the setup for XP needs to be manually edited. The option for ACPIEnable need to be set to 0 instead of the default 2 (or 1 for some installers). For the sake of documentation, the options correspond to:

- 0: ACPI is disabled at installation, regardless of the system BIOS.
- 1: ACPI is enabled at installation if an ACPI BIOS is present
- 2: ACPI is enabled on the basis of the GoodACPIBios list and the ACPIBiosDate. (The list is not updated so any new BIOS would not be present on it).

4) In case you need functions that are provided by the ACPI HAL, these can be setup as individual scheduled system operations after the installation.

Hard Disk Drivers:

1) Due to Windows XP not having the drivers for SATA controllers, the installation results in a BSOD. Note that a stop in installation due to not having drivers for devices considered "mandatory" for booting the full setup after textmode, the error message will show something in the vein of:

STOP 0x0000007B (parameter1, parameter2, parameter3, parameter4)

If you do run into a different error code, it may be worth searching through what the error code means as it may be a completely unrelated issue.

2) Due to the change in Intel Rapid Storage drivers there are two types of drivers available online, one that consists of a single IAStor.sys file (which are older and come from the "classical" phase of RST) and ones that consist of two files, an IAStorA.sys file (which is the AHCI/RAID driver) and an IAStorF. sys (which is a bundled SCSI driver). ONLY the first variety is usable with XP (the second can be used with Windows 7 and up).

3) In order to find the correct drivers, it is necessary to have the hardware ID of the SATA controller, this can be done rather easily from an existing windows installation. However, the SATA controller mode (which can be accessed from the BIOS) must be set to AHCI (RAID is known to cause problems unless you are actually using a RAID drive configuration in which case it is necessary). (Note: If there is an IDE option, this entire process is unnecessary as XP has drivers present for AHCI drives running in IDE-compatible mode)

(WARNING: Changing the mode with an OS installed WILL cause problems with your existing installation sometimes causing an endless string of BSODs requiring a complete reinstallation, make sure you have everything important backed up)

a) Go to Device Manager

b) Find the SATA controller (this is usually under the IDE ATA/ATAPI controllers (for older machines) or Storage Controllers (for newer machines). Note: The controller will usually have IDE/AHCI/RAID in its name.

c) Go to properties (right click)

d) Under details check for hardware ID.

4) Note: You MUST make sure that the hard drive is connected to one of the Intel controllers as some computers may come with a third party SATA controller from companies like Marvell, these are usually grey in color (for Marvell) or black (for Jmicron). You can also check this in Harware IDs , VEN_8086 refers to Intel and these are the ports that you will want to use.

5) The drivers compatible for XP for all motherboards in the table below are stored on the T: drive (software drive under Windows drivers). If you require drivers for motherboards after the 100 series they may be available from http://www.win-raid.com/t2f23-Intel-RST-RSTe-Drivers-newest-v-WHQL-v-WHQL. html (a page on the WinRaid forums that is maintained by Fernando who keeps a list of (fairly) updated drivers for newer motherboards and a very comprehensive set of instructions). Make sure you download the classical drivers and you may want to look up the model of the motherboard and the southbridge (sometimes manufacturers modify components) to choose the best version(more info on this in the above link). In case you cannot find the drivers, a fallback is presented at the end of the document (in the additional info section, however, note that this is NOT guaranteed to work, Fernando's drivers have been tested and so would be the first choice when choosing between drivers.)

6) In case you cannot get a hold of the device id for the SATA controller, I have included a table at the end of the document that lists the most common controllers for common intel motherboards.

Creating the Setup:

1) You will want to start with a reliable windows XP setup disc.

2) Copy all of the files into a folder on your hard drive.

3) You will need to slipstream the drivers onto the setup disc for XP, it is recommended to use nlite for this process as it is free and well supported (available at http://www.nliteos.com/)

a)Point nlite to the directory with the Windows Xp setup files, it should automatically detect the installer.

b)Select the option to integrate Drivers and for Bootable ISO.

c)Choose the option to insert a driver and browse to the location where the extracted driver files for XP (from the winRAID forums) are located and select either iaAHCI or iaStor (they are identical and nlite will copy both regardless of which you select)

d) Choose the driver that matches the Device ID for your storage controller. (This will be in the DEV_XXXX part of the Hardware ID).

e)nlite will then give you the option of making a ISO or burning a disc directly. (It is recommended to make an ISO first and then burn the disc with disc verification on to make sure the burning of the disc doesnt cause any issues).

4) Note: You will probably want to use an optical drive for the installation of XP as USB installers have problems with some systems.

5) This should allow you to now access the hard drive for the installation of windows XP, any other required drivers may need to be hunted down online (Windows XP versions). NOTE: It is HIGHLY recommended that you do not use a SSD with XP (unless you are willing to set up a third party application to setup scheduled TRIM operations).

Table with Hardware IDs (Intel chipsets since 2007):

Intel Southbridge Chipset	for	AHCI Controller DeviceID (specific)	RAID Controller DeviceID (external, not specific)
ICH6R	Desktops	DEV_2652	???
ICH6M	Mobiles	DEV_2653	no RAID option
ESB2	Desktops	DEV_2681	DEV_2682
ICH7R	Desktops	DEV_27C1	DEV_27C3
ICH7M	Mobiles	DEV_27C5	no RAID option
ICH8R	Desktops	DEV_2821	DEV_2822
ICH8M	Desktops	DEV_2829	no RAID option
ICH8	Mobiles (natively not supported by Intel)	DEV_2824	no RAID option
ICH9R	Desktops	DEV_2922	DEV_2822
ICH9M	Mobiles	DEV_2929	no RAID option
ICH10R	Desktops	DEV_3A22	DEV_2822
ICH10D/DO	???	DEV_3A02	no RAID option?
ICH10 (Type A)	Mobiles (natively not supported by Intel)	DEV_3A03	no RAID option
ICH10 (Type B)	Mobiles (natively not supported by Intel)	DEV_3A23	no RAID option
5-Series / 3400	Desktops	DEV_3B22	DEV_2822
5-Series 4-Port	Mobiles?	DEV_3B29	no RAID option?
5-Series 6-Port	Mobiles?	DEV_3B2F	no RAID option?
6-Series Express	Desktops	DEV_1C02	DEV_2822
6-Series Express	Mobiles	DEV_1C03	no RAID option
7-Series / C216	Desktops	DEV_1E02	DEV_2822
7-Series	Mobiles	DEV_1E03	no RAID option
8-Series /C220 (Type A)	Desktops	DEV_8C02	DEV_2822
8-Series (Type A)	Mobiles	DEV_8C03	no RAID option
8-Series / C220 (Type B)	Desktops	DEV_9C02	DEV_2822
8-Series (Type B)	Mobiles	DEV_9C03	no RAID option
9-Series (Type A)	Desktops	DEV_8C82	DEV_2822
9-Series (Type A)	Mobiles	DEV_8C83	no RAID option
9-Series (Type B)	Desktops	DEV_9C82	DEV_2822
9-Series (Type B)	Mobiles	DEV_9C83	no RAID option
Baytrail systems	Mobiles (natively not supported by Intel)	DEV_0F23	no RAID option
Skylake systems (6th Generation CPUs)	Desktops	DEV_9D03	DEV_2822
100-Series / C230	Desktops	DEV_A102	DEV_2822
100-Series / C230	Mobiles?	DEV_A103	no RAID option?

(Please note that not all of these ids are verified (the entries with question marks could not be found at the time, so if you run into any of them please update the table) but the list should serve to narrow down the possibilities in case it is not possible to get the Hardware Ids any other way.)

(The Intel chipsets X99(2014-Haswell and Haswell EP) and X79(2011) run the enterprise versions of the RST drivers and though the packages drivers SHOULD work on them as well, no documentation or verification for these chipsets could be found. Possible DEVID = DEV_1D02 (X79) and DEV_1F22 (X99))

Additional Info on HDD drivers:

Note that the newest available drivers are not automatically the best drivers for a system. There are certain things to keep in mind when choosing drivers for a system:

- The newer Intel drivers are only meant to support the newest hardware on the (relatively) newer platforms so they are better optimized for these platforms and chipsets. Using an older version may yield an increase in performance if you notice the HDDs are particularly slow.
- The conventional (or legacy) Intel drivers with a single file DO NOT have support for TRIM operations (only applicable if you are using an SSD). The newer style drivers do not work on XP (though Windows 7 and up is supported along with limited functionality (there are known issues) with Vista)
- The Baytrail chipsets are not properly supported by Intel themselves so running anything that does not work out of the box on a Baytrail chipset may be a lengthy process of trial and error.
- In case you cannot find drivers for the specific system you are working on, it might be worth a try to unpack the supported version of the drivers (non-legacy) from both the files, and make an attempt to repackage and resign them in order to get them to a format recognizable by XP. A downgrade might also be possible if you know that the SCSI hasnt changed much (although in this case you would manually have to find the *.inf files with the device hardware Ids and add a line for the specific chipset that you are working on.) NOTE: Both these processes are only responsible for making the driver INSTALLABLE on the machine, they do not change the driver itself, so there is no guarantee that the repackaged and resigned drivers will work at all on the system(though they should give full support as long as the installer detects the hard drive). More information about using PkgSignTool can be found here https://msdn.microsoft.com/en-us/library/windows/hardware/dn789236(v=vs.85). aspx (For resigning drivers). You may also want to view this link: https://technet.microsoft.com/en-us/library/dd919238(v=ws.10).aspx for the process for signing new drivers.
- Instructions for importing the certificate for the WinRAID forum drivers (in case windows rejects them) can be found here http://www.win-raid.com /t1300f25-Tips-Discussion-Usage-of-quot-mod-signed-quot-Drivers.html

Further Support:

In case of need for further support (for both legacy and windows 7 drivers), the person who maintains the pages on the winRAID forums (Fernando) replies fairly promptly to both new posts on existing threads and messages (a couple of days) and should be able to help with any problems running legacy operating systems on newer machines (in terms of missing driver files). The information presented here is taken mainly from his guides and partly from various other sources on the web.