Supported Operating Systems, Spectrometers and which Software works where – TopSpin – ParaVision –

1. Content

2. Overview

Software versions:
TopSpin[1]:   1.3/1.5/2.0/2.1/3.0/3.1/3.2/3.5
ParaVision[2]:   3.0/3.0.1/3.0.2/3.0.2pl1/4.0/5.0/5.1/6.0

Spectrometer type: D*X / AV-I / AV-II / AV-III / AV-IIIHD / Fourier 300

Operating system:
Windows: 2000 / XP / Vista / 7 / 8.1 / 10
Linux: Red Hat 7.1 / 7.3 / Enterprise WS 3 - WS 4 / CentOS 5 / CentOS 7
Mac: Apple Mac OS X 10.6 / 10.7 / 10.8 / 10.9 / 10.10 / 10.11 / 10.12

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[1] This document contains support information regarding TopSpin. A separate document for XWIN-NMR is available on the Bruker BioSpin homepage.
[2] The following pages describe the support of ParaVision 3.0 and later versions

3. NMR: Supported operating systems – Acquisition

A special patch level (e. g. 1.3pl10) is only listed if necessary. In case any patch level will work, only the version number (e. g. 1.3) is given.

Acquisition support for **32-bit** operating systems

Operating system	Version	TopSpin	ParaVision
Windows	7 Professional	-	-
	Vista Business	-[3]	-
	XP Professional	2.1, 2.0, 1.3, 1.2, 1.1	-
	2000 Professional	1.3, 1.2, 1.1	-
Linux	CentOS 5	2.1 $\geq$ pl6, 2.0pv[5], 1.3pl10[4]	5.1, 5.0 $\geq$ pl3
	RHEL WS 4	2.1, 2.0pv[5], 2.0, 1.5[5], 1.3 $\geq$ pl6	5.0, 4.0
	RHEL WS 3	2.1 $\leq$ pl5, 2.0, 1.5[5], 1.3, 1.2	5.0, 4.0, 3.0.2pl1
	Red Hat 7.3	1.2, 1.1	3.0.2pl1, 3.0.2, 3.0.1, 3.0
	Red Hat 7.1	1.1	

Acquisition support for **64-bit** operating systems

Operating system	Version	TopSpin	ParaVision
Windows	10	3.5 $\geq$ pl6, 3.2 $\geq$ pl7	-
	7 Professional	3.5, 3.2, 3.1, 3.0	-
Linux	CentOS 5	3.5, 3.2, 3.1, 3.0, 2.1 $\geq$ pl6, 2.0pv[5], 1.3pl10[4]	6.0, 5.1, 5.0 $\geq$ pl3
	CentOS 7	3.5, 3.2 $\geq$ pl7	6.0.1

Note: So far all Windows service packs and all Linux updates are supported by the respective TopSpin versions. Bruker BioSpin cannot guarantee that a future operating system update will work correctly with TopSpin. Therefore, the optimal compatibility will be achieved by renouncing internet access and operating system updates. Nevertheless, if a computer is connected to the internet despite this compatibility risk, it needs critical system updates downloaded and installed as soon as possible. Otherwise the Computer is a security risk!

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[3] Tested and validated up to 2.1pl4, but not for newer patchlevel versions. The current version 2.1pl8 for AV-I spectrometers (e.g. mandatory for Prodigy-Support) is only validated for Windows XP and CentOS5. NOT recommended to use with Vista!

[4] Topspin 1.3pl10 supports CentOS5 only with additional software patches, see Bruker Knowledge base, item #9585

[5] These versions are distributed only as part of the ParaVision software (Bruker MRI division), see chapter 8. They can be used for normal NMR operation only in connection with their associated ParaVision software.

4. NMR: Supported operating systems – Processing

Operating system	Version	TopSpin	ParaVision
Windows	10 64-bit	3.5, 3.2	-
	8.1 64-bit	3.5	-
	8.1 32-bit	3.5	-
	7 Professional 64-bit	3.5, 3.2, 3.1, 3.0	-
	7 Professional 32-bit	3.5, 3.2, 3.1, 3.0	-
	Vista Business 32-bit	3.5, 3.2, 3.1, 3.0, 2.1	-
	XP Professional 32-bit	3.2pl6[6], 3.1, 3.0, 2.1, 2.0, 1.3, 1.2, 1.1, 1.0	-
	2000 Professional	2.1, 2.0, 1.3, 1.2, 1.1, 1.0	-
Linux	CentOS 7 64-bit	3.5, 3.2 $\geq$ pl7	6.0.1
	CentOS 5 64-bit	3.5, 3.2, 3.1, 3.0, 2.1, 2.0pv[7], 1.3pl10[8]	6.0, 5.1, 5.0 $\geq$ pl3
	CentOS 5 32-bit	3.5, 3.2, 3.1, 3.0, 2.1, 2.0pv[7], 1.3pl10[8]	5.1, 5.0 $\geq$ pl3
	RHEL WS 4	3.1, 3.0, 2.1, 2.0pv[7], 2.0, 1.5[7], 1.3 $\geq$ pl6	5.0, 4.0
	RHEL WS 3	2.1, 2.0, 1.5[7], 1.3, 1.2	5.0, 4.0, 3.0.2pl1
	7.3	1.3, 1.2, 1.1, 1.0	3.0.2pl1, 3.0.2, 3.0.1, 3.0
	7.1	1.1, 1.0	
Mac[9]	OS X 10.12	3.5, 3.2	-
	OS X 10.11[10]	3.5, 3.2	-
	OS X 10.10[10]	3.5, 3.2	-
	OS X 10.9	3.5, 3.2	-
	OS X 10.8	3.5, 3.2	-
	OS X 10.7	3.2, 3.1	-
	OS X 10.6	3.1	-

Note: So far all Windows service packs and all Linux updates are supported by the respective TopSpin versions. Bruker BioSpin cannot guarantee that a future operating system update will work correctly with TopSpin. Therefore, the optimal compatibility will be achieved by renouncing internet access and operating system updates. Nevertheless, if a computer is connected to the internet despite this compatibility risk, it needs critical system updates downloaded and installed as soon as possible. Otherwise the Computer is a security risk!
In the past, Bruker BioSpin has made the experience that critical operating system updates work well in most cases.

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[6] Last software version which supports this type of operating system

[7] These versions are distributed only as part of the ParaVision software (Bruker MRI division) see chapter 8. They can be used for normal NMR operation only in connection with their associated ParaVision software.

[8] Topspin 1.3pl10 supports CentOS5 only with some additional software patches, see Bruker Knowledge base, item #9585

[9] CPU must be capable of executing 64bit instructions ("Intel Core 2 Duo" processor type or newer. Note that "Intel Core Duo" processors used in the first Intel Macs are not running 64bit instructions).

[10] The NMRSim application (including graphical pulse program display) requires the X11 graphical subsystem which is not installed by default. Please download and install the XQuartz 2.7.2 package from the following link before starting NMRSim: http://xquartz.macosforge.org/landing/a

5. TopSpin NT Toolkit CD (Windows only, "D*X / AV-I / AV-II" only):

TopSpin	Windows 2000	Windows XP	Windows Vista	Windows 7	Windows 10
3.5	-	-	-	-	-
3.2	-	-	-	TopSpin NT Toolkit 2 for AV II only	TopSpin NT Toolkit 2 for AV II only
3.1	-	-	-	TopSpin NT Toolkit 2 for AV II only	-
3.0	-	-	-	TopSpin NT Toolkit 2 for AV II only	-
2.1	-	TopSpin NT Toolkit for AV and AV II only	TopSpin NT Toolkit 2 for AV only. Only up to 2.1pl4, not re-commended to use with current version 2.1pl8!	-	-
2.0	-	TopSpin NT Toolkit for AV and AV II only	-	-	-
1.3	TopSpin NT Toolkit	TopSpin NT Toolkit	-	-	-
1.2	TopSpin NT Toolkit	TopSpin NT Toolkit	-	-	-
1.1	TopSpin NT Toolkit	TopSpin NT Toolkit	-	-	-
1.0	-	-	-	-	-

TopSpin NT Toolkit: licensed Hummingbird NFS Server 7.1

TopSpin NT Toolkit 2:   licensed Hummingbird NFS Server 14 (plus Hummingbird NFS Server 7.1)

6. Supported Spectrometer Hardware - operating system related

		Windows	Linux
Fourier 300	TopSpin	3.2pl7, 3.1pl7	Not supported
AV-IIIHD, Fourier HD	TopSpin	3.5pl7, 3.2pl7	3.5pl7, 3.2pl7
	ParaVision	Not supported	6.0.1
AV-III	TopSpin	3.5pl7, 3.2pl7, 3.1pl7, 3.0pl4, 2.1pl6, 2.0	3.5pl7, 3.2pl7, 3.1pl7, 3.0pl4, 2.1pl6, 2.0pv[11], 2.0
	ParaVision	Not supported	6.0, 5.1, 5.0
AV-II	TopSpin	3.2pl7[12], 3.1pl7, 3.0pl4, 2.1pl6, 2.0, 1.3	3.2pl7[12], 3.1pl7, 3.0pl4, 2.1pl6, 2.0pv[11], 2.0, 1.5[11], 1.3
	ParaVision	Not supported	6.0, 5.1, 5.0, 4.0
AV-I	TopSpin	2.1pl8[12], 2.0 1.3, 1.2, 1.1	2.1pl8[12], 2.0 1.5[11], 1.3, 1.2, 1.1
	ParaVision	Not supported	5.1, 5.0, 4.0, 3.0.2pl1 3.0.2, 3.0.1, 3.0
DRX, DPX, DMX	TopSpin	1.3[12,13]	1.3[12,13]
	ParaVision	Not supported	3.0.2pl1[12], 3.0.2, 3.0.1, 3.0
DMX[14], DSX	ParaVision	Not supported	3.0.2pl1[12], 3.0.2, 3.0.1, 3.0
DBX	ParaVision	Not supported	4.0[12], 3.0.2pl1, 3.0.2 3.0.1, 3.0
A*X	TopSpin	Not supported	Not supported
A*X MSLX	ParaVision	Not supported	Not supported

AV-IIIHD: AVANCE spectrometer with AQS/3-Rack, IPSO, DRU and SGU/3   AV-I: AVANCE spectrometer with AQS-Rack, CCU, RCU and SGU
AV-III: AVANCE spectrometer with AQS-Rack, IPSO, DRU and SGU   D*X: AVANCE spectrometer with AQX/R-Rack
AV-II: AVANCE spectrometer with AQS-Rack, CCU, DRU and SGU   A*X: AMX, ARX, ASX type spectrometer

[11] These versions are distributed only as part of the ParaVision software (Bruker MRI division) see chapter 8. They can be used for normal NMR operation only in connection with their associated ParaVision software.

[12] Last software version which supports this type of spectrometer

[13] Upgrade possibilities of D*X spectrometer to TopSpin cannot be guaranteed and must be checked with your local Bruker representative. Old D*X spectrometer with RX22 ECL 00, 01or 02 cannot be upgraded.

[14] No TopSpin support for DMX if a 4-phase modulator is available. If in doubt send the file 'hardware_list' from your spectrometer configuration directory to nmr-support@bruker.com

7. Supported Spectrometer Hardware – Bruker software related

TopSpin

	1.3	2.0	2.1	3.0	3.1	3.2	3.5
Fourier HD	-	-	-	-	-	+	+
Fourier 300	-	-	-	-	+	+	-
AV-IIIHD	-	-	-	-	-	+	+
AV-III	-	+	+	+	+	+	+
AV-II	+	+	+	+	+	+[16]	-
AV-I	+	+	+[16]	-	-	-	-
DRX, DPX, DMX	+[15,16]	-	-	-	-	-	-
DMX[17], DSX	-	-	-	-	-	-	-
A*X	-	-	-	-	-	-	-

ParaVision

	3.0	3.0.1	3.0.2	3.0.2pl1	4.0	5.0	5.1	6.0
AV-IIIHD	-	-	-	-	-	-	-	+
AV-III	-	-	-	-	-	+	+	+
AV-II	-	-	-	-	+	+	+	+
AV-I	+	+	+	+	+	+	+[16]	-
DSX	+	+	+	+[16]	-	-	-	-
DBX	+	+	+	+	+[16]	-	-	-

8. Dependencies of ParaVision to XWIN-NMR / TopSpin

ParaVision 6.0 / 6.0.1	TopSpin 3.1pv[18]
ParaVision 5.1	TopSpin 2.0pvPL5[18]
ParaVision 5.0pl3	TopSpin 2.0pvPL3[18]
ParaVision 5.0	TopSpin 2.0pv[18]
ParaVision 4.0	TopSpin 1.5[18]
ParaVision 3.0.2pl1	XWIN-NMR 3.2pl3[18]
ParaVision 3.0.2	XWIN-NMR 3.2pl2[18]
ParaVision 3.0.1	XWIN-NMR 3.2pl1[18]
ParaVision 3.0	XWIN-NMR 3.2[18]

[15] Upgrade possibilities of D*X spectrometer to TopSpin cannot be guaranteed and must be checked with your local Bruker representative. Old D*X spectrometer with RX22 ECL 00, 01or 02 cannot be upgraded.

[16] Last software version which supports this type of spectrometer

[17] No TopSpin support for DMX if a 4-phase modulator is available. If in doubt send the file 'hardware_list' from your spectrometer configuration directory to nmr-support@bruker.com

[18] These versions are distributed only as part of the ParaVision software (Bruker MRI division). They can be used for normal NMR operation only in connection with their associated ParaVision software.

9. Spectrometer not supported with current software versions

AV II spectrometer type[19]

➢ The latest software version for spectrometer control of AV II spectrometer is Topspin 3.2. The latest operating systems which are supported by this software version are Windows 10 and CentOS 7.

AV I spectrometer type[19]

➢ The latest software version for spectrometer control of AV I spectrometer is Topspin 2.1. The latest operating systems which are supported by this software version are Windows XP and CentOS 5.

D*X spectrometer type[19]

➢ Upgrade possibilities of D*X spectrometer to TopSpin cannot be guaranteed and must be checked with your local Bruker representative. Old D*X spectrometer with RX22 ECL 00, 01or 02 cannot be upgraded.
➢ If the D*X spectrometer can be upgraded to TopSpin it is limited to TopSpin version 1.3.
➢ The latest software version for spectrometer control of D*X spectrometer is Topspin 1.3. The latest operating systems which are supported by this software version are Windows XP and CentOS 5.
➢ Acquisition on D*X type spectrometer is always supported by Bruker BioSpin only for a well-defined combination of:
  PC / operating system version / TopSpin 1.3.
  For any other combinations that are not tested and supported by Bruker BioSpin see next page.

A*X spectrometer type[19]

➢ A*X Spectrometer are only supported with SGI computers.
➢ Last software version is XWIN-NMR 2.6

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[19]

AV-IIIHD: AVANCE spectrometer with AQS/3+-Rack, IPSO, DRU and SGU/3   AV-I: AVANCE spectrometer with AQS-Rack, CCU, RCU and SGU
AV-III: AVANCE spectrometer with AQS/3-Rack, IPSO, DRU and SGU   D*X: AVANCE spectrometer with AQX/R-Rack
AV-II: AVANCE spectrometer with AQS-Rack, CCU, DRU and SGU   A*X: AMX, ARX, ASX type spectrometer

10. PC hardware / operating systems not supported by Bruker BioSpin

10.1. PC hardware

Bruker BioSpin offers pre-configured HP computers for spectrometer control (can be used also as data station). The HP-PC model will be changed on a regular base to offer always up-to-date hardware. New Bruker software versions will be tested always with the current PC hardware[20]. Other PC hardware might also work properly with Bruker BioSpin software but they are not tested and therefore not supported.

10.2. Operating systems

Bruker BioSpin tests and supports several operating systems. Details are described within this document. Other operating systems might also work properly with Bruker BioSpin software but they are not tested and therefore not supported.
Customers can use non-supported operating systems for processing on their own risk. Bruker BioSpin cannot offer any support for non-supported operating systems.

10.3. General information

There will be a charge associated with each service if a non-supported operating system / PC hardware is used for acquisition. If acquisition problems seem to be caused by the PC hardware or the operating system (configuration), Bruker BioSpin will take an own PC for testing and debugging.

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[20] For this PC hardware Bruker BioSpin offers hard disk images which can be used for configuration or restoring the PC. For more details see chapter 12.

11. Support of additional Bruker BioSpin software

11.1. AMIX / AURELIA

Windows: Windows NT, 2000, XP, Vista as 32-bit system.
            Windows 7 as 32- and 64-bit system, Windows 10
Linux: Red Hat Linux 7.3 and higher, CentOS 5, CentOS 7
SGI: Irix 5.2 and higher

11.2. Dynamics Center 2.x

Windows: Windows XP, Vista as 32-bit system.
            Windows 7, 8.1 as 32- and 64-bit system, Windows 10
Linux: CentOS 5, CentOS 7

11.3. Sample Track

Sample Track can be used in general on all kind of 32-bit Windows systems. It is especially tested on:

- Windows 2000   -   Windows Server 2003
- Windows XP   -   Windows Server 2003 R2

With Sample Track Version V2.60.18.0 and higher also Windows 7 32- and 64-bit is supported

Sample Track stores information into an Oracle database. This database can be installed on all kind of operating systems which are supported by Oracle (several Windows, Linux and UNIX systems). For more details please refer to the Oracle support information.
A free version of Oracle with limitations will be installed by Bruker as default. Other versions than the free Oracle Database are not offered by Bruker BioSpin; in many cased an Oracle database is already available at the customer site; otherwise it must be purchased by the customer himself.

11.4. BEST-NMR

BEST-NMR comes as part of XWIN-NMR / TopSpin. The same support information for the respective version of these programs can be used.

11.5. SamplePro Control

The program for the control of the Bruker LiquidHandler SamplePro Tube is designed for windows computers only. The basic packages of the SamplePro tube does not contain a control computer. The installation of the Software is supported on the following computers

- Dedicated BRUKER Controlunit for special applications
- BRUKER Workstation for LC-NMR or LC/MS-NMR applications
- NMR workstation
- Customer supplied computer

	Windows 7 32/64 bit	Windows 10	Linux, Mac
SamplePro Control 1.0	+	-	-
SamplePro Control 1.1	+	-	-
SamplePro Control 1.2	+	+	-

11.6. Profiler 2.0

The Profiler 2.0 is the successor of the Profiler configuration. Main difference is the replacement of the BRUKER LiquidHandler 215 by the SamplePro Tube, the restriction to Tube preparation (no flow injection NMR) and the limited support of newer LC-MS software. Up to three different computers may be used for this configuration and need to run SampleTrack, TopSpin, SamplePro Control and optionall Compass 1.7.
For the computer the individual specifications of software packages apply.

11.7. PREP GILSON ST

The program for the control of the Bruker LiquidHandler 215 is designed for Windows computers only. Three solutions are supported for the computer.
- Dedicated Bruker Controlunit (H9447_01)
- Customer provided computer
- Installation and parallel usage on existing NMR/TopSpin[21] or LC-NMR/HyStar[22] computer

	supported Operating System		
	Windows 2000 professional sp4	Windows XP professional sp2/sp3	Windows 7 Professional 64-bit
PrepGilsonST 1.2	+	+	no
PrepGilsonST 1.3	no	+	+

11.8. PROFILER

The Profiler setup contains 2 to 3 different computers. All must run under Windows.
The NMR computer runs the following programs:
TopSpin, BEST-NMR and PREP GILSON ST
The required operating system is Windows because PREP GILSON ST runs under Windows only (see chapter 11.7).
The LC-MS computer runs HyStar and the MS software which are both only compatible with Windows (see chapter 12).
If Sample Track is not installed on one of the above computers, then a computer according to chapter 11.3 is required.

11.9. HyStar – standard installation

For most applications[23] the HyStar software is installed on a 2nd, independent computer system. This means, that the operating system of the NMR computer and the HyStar computer is independent, therefore a HyStar PC can be combined with a NMR computer with Windows, Linux or IRIX.
A preconfigured HyStar PC (H9447_01 Controlunit) is available from Bruker BioSpin.

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[21] In a Profiler configuration with BEST-NMR the installation on the NMR computer is even **mandatory**
[22] In a SPE-TT setup the installation on the HyStar computer is even **mandatory**.
[23] For one specific application (SPE-transfer only) HyStar can be installed on the NMR computer. In this case the NMR computer must have a compatible operating system for HyStar.

	supported Operating System				supported NMR software	
	Windows 2000 professional sp4	Windows XP Professional sp2/sp3	Win 7 Professional 32-bit	Win 7 Professional 64-bit	XWIN-NMR	TopSpin
HyStar 3.2 SR4	-	+	+	+	3.x[24]	1.x[24]. 2.x[24] – 3.2 3.5
HyStar 3.2	+	+	+	-	3.x[24]	1.x[24] – 3.2 3.5
HyStar 3.1	+	+	-	-	3.x	1.x – 3.2 3.5

11.10.   HyStar on NMR PC

For transfer of SPE cartridges into the NMR spectrometer, the Software HyStar acts as Sample changer for the NMR, i.e. it has a very reduced functionality.

In this case the HyStar Software **can** be installed on the NMR PC. In this case the NMR computer must fulfil the requirements for HyStar listed in the Table above.

Note, that HyStar will require at least 2 free COM ports at the computer (Prospekt2, Communication to Console), whereas most NMR computer have only one COM ports which is occupied by the NMR console.

12. Disk image management

Bruker offers in most countries the same HP PC as a host computer for its spectrometers and as post processing workstation.

To simplify the setup of these computer systems Bruker BioSpin Germany creates an image for Linux as well as Windows. This image is copied to the PCs hard disk immediately before the PC is used for the first time (either on a spectrometer or as a standalone workstation).

The Bruker Image Management team creates individual images with the help of experts from the respective departments for:

High Resolution NMR	TopSpin (Windows and Linux)
MRI	ParaVision and a TopSpin version for high resolution NMR (Linux)
Bruker ControlUnit for "special" applications	HyStar, PrepGilsonST, SamplePro Control, SampleTrack (Windows)

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[24] HyStar 3.2 has some minor limitations with this NMR software version

13. Available disk images

The following lists show the images which are available for the supported HP PCs.

HP z440		
High Resolution NMR	Windows 10	TopSpin 3.5
		TopSpin 3.2
	Windows 7 64-bit	TopSpin 3.5
		TopSpin 3.2
	CentOS 7	TopSpin 3.5
		TopSpin 3.2
		TopSpin 2.1
Bruker ControlUnit for "special" applications	Windows 7 64bit	HyStar 3.2SR4 PrepGilsonST 1.3 SamplePro Control 1.2 SampleTrack 2.61 TopSpin
MRI	CentOS 7	ParaVision 6.0.1 (TopSpin 3.1pv)

HP z420		
High Resolution NMR	Windows 7 64-bit	TopSpin 3.5
		TopSpin 3.2
	Windows XP	TopSpin 2.1
		TopSpin 1.3pl10
	CentOS 5	TopSpin 3.5
		TopSpin 3.2
		TopSpin 2.1
		TopSpin 1.3pl10
LC-NMR	Windows 7 32-bit	HyStar 3.2SR2
Bruker ControlUnit for "special" applications	Windows 7 64-bit	HyStar 3.2SR4 PrepGilsonST 1.3 SamplePro Control 1.0 SampleTrack 2.61 TopSpin 3.2
MRI	CentOS 5	ParaVision 6.0 (TopSpin 3.1pv)
		ParaVision 5.1 (TopSpin 2.0pv pl5)
		ParaVision 5.0pl3 (TopSpin 2.0pv pl3)