

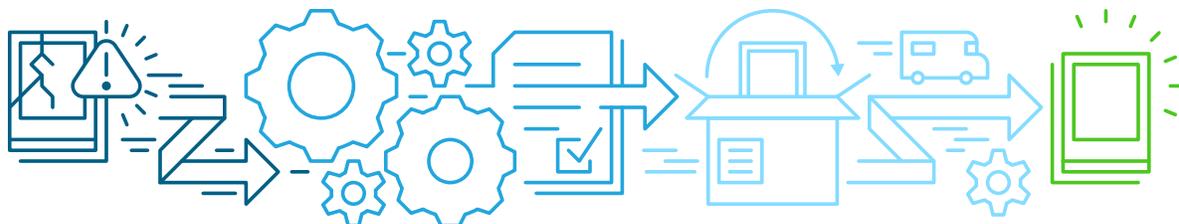


Save time and IT effort resolving server hardware issues with ProSupport Plus and SupportAssist

ProSupport Plus with SupportAssist resolved our simulated hard drive failure with only 8 minutes of administrator time, 72% faster than with Basic Hardware Warranty alone

Sometimes, a hard drive can fail, threatening your data's safety. When these kinds of things happen, how soon can your IT staff solve the problem and return your systems to optimal performance? For an issue with our Dell EMC™ PowerEdge™ server, we found that ProSupport™ Plus with SupportAssist proactively resolved it, identifying the problem and creating a support case in just one minute.

In the Principled Technologies datacenter, we simulated a hard drive failure on a Dell EMC server to test three levels of support: Basic Hardware Warranty without SupportAssist, ProSupport Plus without SupportAssist enabled in the environment, and ProSupport Plus with SupportAssist enabled. Using ProSupport Plus with SupportAssist automated proactive and predictive technology got the server back to operational status faster and required less time from an administrator than the two other support scenarios. Unexpected hardware failures can interrupt applications and administrators' schedules, so a rapid response support service keeps organizations moving and administrators working.

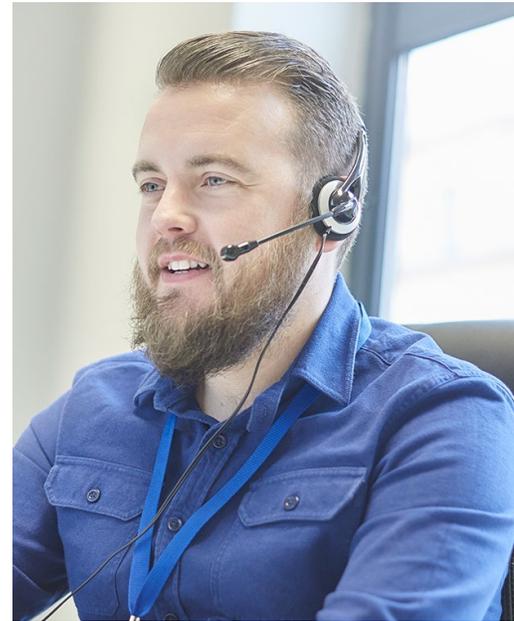


ProSupport Plus with SupportAssist reduced the amount of IT administrator involvement by up to 72% compared to Basic Hardware Warranty

Get a jump on resolution with proactive support from ProSupport Plus and SupportAssist

Your organization can choose to back Dell EMC PowerEdge servers with optional ProSupport Plus service and proactive, data-driven SupportAssist technology. ProSupport Plus combined with SupportAssist technology allows your IT staff to get a jump on hardware issue resolution by proactively identifying a failure, creating a support case, notifying you, and initiating contact from the Dell EMC technical support. A friendly, knowledgeable tech support person requests contact information and asks how your IT staff member would like to handle the replacement. Without ProSupport Plus and SupportAssist, your IT administrator would have to monitor the server, notice a failed component, and then spend time troubleshooting the problem.

As previously noted, we compared our experiences seeking help from Dell EMC with and without SupportAssist Technology enabled under ProSupport Plus coverage. We also tested a scenario with only Basic Hardware Warranty. Each scenario began with the simulated hard drive failure and ended when Dell EMC confirmed that we would receive a replacement hard drive. For details on our test system, see [System configuration information](#). For details on our test procedure, see [How we tested](#).



Replacing a hard drive on your Dell EMC PowerEdge R740 server: Exploring your options

Depending on the size of your organization, a hard drive failure can cause anything from an inconvenience to a major setback. In any instance, replacing the hard drive and minimizing downtime requires someone identifying and resolving the problem quickly. For Dell EMC servers, we tested three different paths to resolution after such an incident.

Option 1: Basic Hardware Warranty without SupportAssist

Under Basic Hardware Warranty, your IT administrator can't start fixing a problem until they have noticed there is an issue and spent time troubleshooting and identifying the cause. If something fails over the weekend, it could be days before an administrator detects the issue. Once aware, the administrator may have to reschedule meetings and delay other tasks to make time to call Dell EMC. However, the administrator wouldn't know how long the call might take or if additional troubleshooting and communication would be necessary.

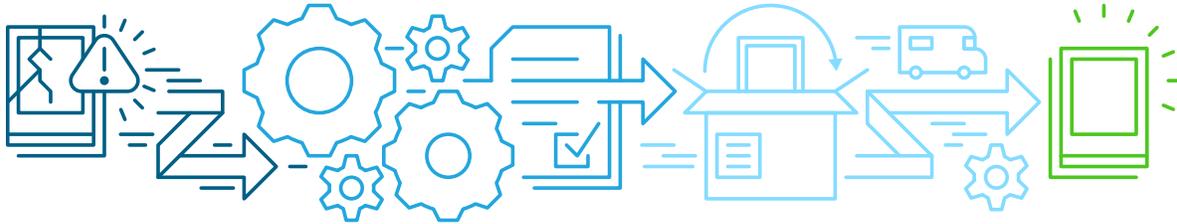
Option 2: ProSupport Plus without SupportAssist

Choosing to operate without SupportAssist automated proactive and predictive technology enabled means your IT administrator won't be immediately notified of a server problem such as a hard drive failure. After identifying the problem, the administrator will have to call Dell EMC, create a support case, and likely send troubleshooting logs to their support technician. However, ProSupport Plus alone does expedite issue resolution more quickly than Basic Hardware Warranty.

Option 3: ProSupport Plus with SupportAssist

SupportAssist's data-driven technology automatically identifies component failures or issues and immediately opens a support case with the ProSupport Plus technical support team.¹ Your support technician will already have troubleshooting information before they even contact you.

In this situation, your IT administrator can rest easy, knowing a replacement is on its way from Dell EMC. The ProSupport Plus technical support expert would even know the correct model of the hardware to ship without contacting your administrator, thanks to SupportAssist's ability to automatically gather and send system hardware logs.



Save time for administrators by choosing ProSupport Plus with SupportAssist

Using Basic Limited Hardware Warranty without SupportAssist, it took a mix of phone calls and email to diagnose the problem and reach resolution. One of our administrators spent almost half an hour communicating with Dell EMC via phone and email.

We found that ProSupport Plus without SupportAssist did a good job handling the hard drive failure once we identified the issue. Although Dell EMC recommends the use of SupportAssist to proactively identify issues, in this scenario we opted not to enable the technology. As before, having to identify the failure ourselves delayed our response to the situation. When our test team noticed the drive failure, one of our administrators contacted the technical support team and needed 16 minutes and 47 seconds of call and email time to resolve the issue.

Required involvement from in-house admin in each scenario

Less time is better

ProSupport Plus with SupportAssist²



ProSupport Plus without SupportAssist



Basic Limited Hardware Warranty without SupportAssist



- 1 According to Dell EMC, SupportAssist automatically detects and proactively alerts Dell EMC to: operating system issues, software upgrades, driver updates and patches, malware, virus infected files, and failures of hard drives, batteries, memory, internal cables, thermal sensors, heat sinks, fans, solid state drives, and video cards.
- 2 Total IT administrative time does not include time for automated problem identification and support case creation.

In the scenario featuring ProSupport Plus with SupportAssist, the technology quickly identified the problem and created a case for it in just one minute. Dell EMC then emailed us to let us know that they were resolving the problem. With SupportAssist, getting the replacement hard drive did not require us to call Dell EMC because they already had our troubleshooting logs and system state information. The ProSupport Plus technical support staff reached out to us when necessary and required only eight minutes of involvement via email from one of our IT administrators.

ProSupport Plus with SupportAssist reduced the amount of IT administrator involvement by 72 percent compared to Basic Hardware Warranty without SupportAssist. It also reduced the amount of IT administrator involvement by 52 percent compared to ProSupport Plus without SupportAssist enabled.



Conclusion

Keeping your organization moving requires responding swiftly and accurately when a problem arises. ProSupport Plus with SupportAssist automated proactive and predictive technology required little effort from us when dealing with a simulated hard drive failure. Dell EMC technical support contacted us to resolve our issue with information SupportAssist had already collected and sent. When we enabled SupportAssist, Dell EMC also provided a good overall experience for our IT administrator by accurately identifying and resolving the issue and shipping necessary replacement parts, reducing active IT administrator time by up to 72 percent. ProSupport Plus with SupportAssist can make it easier for IT administrators to manage your datacenter and solve server issues more quickly.

On May 8, 2018, we finalized the hardware and software configurations we tested. Updates for current and recently released hardware and software appear often, so unavoidably these configurations may not represent the latest versions available when this report appears. For older systems, we chose configurations representative of typical purchases of those systems. We concluded hands-on testing on May 25, 2018.

System configuration information

Server configuration information	Dell EMC PowerEdge R740xd
BIOS name and version	1.1.7
Operating system name and version/build number	VMware ESXi™ 6.5
Date of last OS updates/patches applied	9/27/17
Power management policy	Balance
Processor	
Number of processors	2
Vendor and model	Intel® Xeon® Platinum 8170M
Core count (per processor)	26
Core frequency (GHz)	2.1
Memory module(s)	
Total memory in system (GB)	768
Number of memory modules	24
Vendor and model	Samsung® M393A4K40BB2-CTD
Size (GB)	32
Type	DDR4
Speed (MHz)	2,666
Speed running in the server (MHz)	2,666
Storage controller	
Vendor and model	Dell PERC H740P Mini
Cache size (GB)	4
Firmware version	50.0.1-0537
Driver version	7.700.50.00
Local storage (type A)	
Number of drives	4
Drive vendor and model	Toshiba PX05SVB096Y
Drive size (GB)	960
Drive information (speed, interface, type)	12GB/s, SAS, SSD

Server configuration information		Dell EMC PowerEdge R740xd
Local storage (type B)		
Number of drives		19
Drive vendor and model		Seagate® ST1200MM0198
Drive size (GB)		1,200
Drive information (speed, interface, type)		12GB/s, SAS, HDD
Local storage (type C)		
Number of drives		1
Drives vender and model		HGST HUC101812CSS200
Drive size (GB)		1,200
Drive information (speed, interface, type)		12GB/s, SAS, HDD
Local storage (type D)		
Number of drives		8
Drives vender and model		Samsung MZILS400HEGR0D3
Drive size (GB)		400
Drive information (speed, interface, type)		12GB/s, SAS, SSD
Network adapter		
Vendor and model		Broadcom Limited BCM57800 10-Gigabit Ethernet
Number and type of ports		4
Driver version		QLogic 577xx/578xx 10.01.00
Cooling fans		
Number of cooling fans		6
Power supplies		
Vendor and model		Dell PWR SPLY, 1100W
Number of power supplies		2
Wattage of each (W)		1,100

How we tested

We simulated a drive failure by removing a functioning drive from the target server and replacing it with a damaged drive provided by Dell EMC. For Basic Hardware Warranty and ProSupport Plus testing, we captured the administrator involvement starting when our test staff noticed the failure and took actions to address the issue and included only the time when the tester worked on the issue. For ProSupport Plus with SupportAssist testing, we recorded the administrator involvement that started when the first email arrived and included only the time when the tester worked on the issue. We did not measure the total elapsed time. For all three support scenarios, we stopped the timing process when our interactions with the support technicians concluded: either when we ended the phone call with the technician after receiving a shipping confirmation number or when we received the confirmation via email. With that confirmation number, we considered the issue resolved. We included the time for the replacement hard drive to arrive in the results but did not include it in the total admin time.

Our results

The information in the following tables depicts our experiences with each support offering. Organizations inevitably will have different experiences depending on their IT admin's experience, the severity of their issue, and the time of day among other factors.

Basic Hardware Warranty without SupportAssist

The total admin time at the bottom of the table includes time for looking up support information and retrieving the Technical Support Report (TSR).

Steps	Action
1	We opened a web browser and accessed the Dell EMC Support website.
2	We input the service tag of the server with the bad drive (31H5XK2).
3	On the right side of the page, we clicked Contact Us and selected Technical support.
4	A pop-up window about the equipment being registered in another country appeared. For support from the registered country, we clicked Okay. Alternatively, we could have clicked Cancel for international support or ignored the pop-up window to make it disappear after 10 seconds.
5	We clicked Hard Drive and RAID controllers.
6	In the drop-down menu, we selected Failed disk error message. A phone number appeared (1-800-624-9896).
7	We called the number and reached the automated voice-recognition operator.
8	We verbally provided and confirmed the service tag. The automated system transferred us to a Dell EMC Support Technician.
9	When asked, we provided our name, phone number, email, and location.
10	When asked, we provided the service tag info.
11	When the technician inquired about our issue, we informed them of the failed hard drive. They asked how many potential users the failure affected, what OS the system was running, and what was the system's purpose and location. We provided this information, and the technician created a case for our issue.
12	The technician transferred us to a Dell EMC Engineer. When asked, we informed the Dell EMC Engineer of the failed hard drive and provided the slot location.
13	When the Engineer asked for an iDRAC IP, we informed the Engineer that it was not connected.
14	When the Engineer asked for the SupportAssist Log, we informed them that we were unfamiliar with the process for acquiring it. The Engineer provided the instructions to retrieve the SupportAssist Log.
15	When the Engineer asked for the drive's part number, we provided it.
16	The engineer processed the claim and informed us that the replacement drive would arrive the next day. We acquired the TSR from the iDRAC and emailed it to the Engineer.
Total call time (mins:seconds)	24:00
Total admin time (mins:seconds)	29:14

ProSupport Plus without SupportAssist

The total admin time at the bottom of the table includes time for looking up support information and retrieving TSR.

Steps	Action
1	We opened a web browser and accessed the Dell EMC Support website.
2	We input the service tag of the server with the bad drive (31H4XK2).
3	On the right side of the page, we clicked Contact Us, and selected Technical support.
4	A pop-up window about the equipment being registered in another country appeared. For support from the registered country, we clicked Okay. Alternatively, we could have clicked Cancel for international support or ignored the pop-up window to make it disappear after 10 seconds.
5	We clicked Hard Drive and RAID controllers.
6	In the drop-down menu, we selected Failed disk error message. A phone number appeared (1-855-305-9057).
7	We called the number and reached the automated voice-recognition operator.
8	We verbally provided and confirmed the service tag. The automated system transferred us to a Dell EMC Support Technician.
9	When asked, we provided our name, phone number, email, and location.
10	When asked, we provided the service tag info.
11	When the technician inquired about our issue, we informed them of the failed hard drive. They asked how many potential users the failure affected, what OS the system was running, and what was the system's purpose and location. We provided this information, and the technician created a case for our issue.
12	The technician transferred us to a Dell EMC Engineer. When asked, we informed the Dell EMC Engineer of the failed hard drive and provided the slot location.
13	When the Engineer asked for an iDRAC IP, we informed them that it was not connected.
14	When the Engineer asked for the Support TSR, we acquired it from the iDRAC and emailed it to the Engineer.
15	When the Engineer asked for the drive's part number, we provided it. The engineer processed the claim and informed us that the replacement drive would arrive in four hours.
Total call time (mins:seconds)	15:00
Total admin time (mins:seconds)	16:47

ProSupport Plus with SupportAssist

All admin actions in this scenario occurred during email communication.

Steps	Action
1	We received an email from Dell EMC Support informing us of a failed disk. The email stated that Dell EMC Technical Support would contact us again via email. Soon thereafter, we received an email from a Support technician requesting a TSR.
2	We collected the TSR from the server iDRAC.
3	We sent the TSR to the Support technician.
4	We received an email from the Support technician verifying and reviewing the TSR and asking for shipping information. We responded to those questions via email.
5	The Support technician informed us via email of an additional issue found in the TSR regarding a power supply. We responded via email that we had unplugged the power supply, which mitigated the issue.
6	The Support technician emailed us a dispatch number for four-hour delivery of the failed hard drive.
Total call time (mins:seconds)	N/A
Total admin time (mins:seconds)	8:00

This project was commissioned by Dell Technologies.



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