The science behind the report:

Stop a power zombie apocalypse

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report Stop a power zombie apocalypse.

We concluded our hands-on testing on February 28, 2021. During testing, we determined the appropriate hardware and software configurations and applied updates as they became available. The results in this report reflect configurations that we finalized on February 22, 2021 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

Our results

To learn more about how we have calculated the wins in this report, go to http://facts.pt/calculating-and-highlighting-wins. Unless we state otherwise, we have followed the rules and principles we outline in that document.

Table 1: Admin time and steps required to identify a zombie server using Dell EMC™ OpenManage™ Enterprise (OMEnt) with the Power Manager plugin versus the estimated time and steps needed for a manual Dell iDRAC search. We recorded time and steps on day one and extrapolated the 180-day numbers from those results.

	OMEnt Power Manager		iDRAC-only search		Difference			
	Time (sec.)	Steps	Time (sec.)	Steps	Time saved (sec.)	Percentage less time	Steps saved	Percentage fewer steps
Effort required on the first day of power zombie identification	31	7	69	9	38	55.0	2	22.2
Total estimated effort required in Power zombie identification after 180 days of power and I/O history collection	31	7	12,420	1,620	12,389	99.8	1,613	99.6

System configuration information

Table 2: Detailed information on the system we tested.

System configuration information	Dell EMC PowerEdge™ R740 server
Operating system name and version/build number	ESXI 6.7.0 Update 3 Build-14320388
Power management policy	Performance
Processor	
Number of processors	2
Vendor and model	Intel® Xeon® Platinum 8168
Core count (per processor)	24
Core frequency (GHz)	2.70
Stepping	4
Memory module(s)	
Total memory in system (GB)	128
Number of memory modules	4
Vendor and model	Samsung® M386A4G40DM0-CPB
Size (GB)	32
Type	DDR4
Speed (MHz)	2,133
Speed running in the server (MHz)	2,133
Storage controller	
Vendor and model	Dell PERC H740P
Cache size (GB)	8
Driver version	7.710.07.00
Local storage	
Number of drives	2
Drive vendor and model	Toshiba® THNSF8120CCSE
Drive size (GB)	120
Drive information (speed, interface, type)	SATA SSD
Network adapter	
Vendor and model	Broadcom® Gigabit Ethernet BCM5720
Number and type of ports	4 x 1 Gigabit

System configuration information	Dell EMC PowerEdge™ R740 server
Cooling fans	
Vendor and model	Nidec UltraFlo 4VXP3-X30
Number of cooling fans	6
Power supplies	
Vendor and model	Delta - Dell PN: 0Y26KXA02
Number of power supplies	2
Wattage of each (W)	1,100

How we tested

Finding power zombies in OMEnt with the Power Manager plugin vs. manually

OMEnt and Power Manager

1. In OMEnt, click Devices.
2. Select the static group of servers assigned to Power Manager (we selected PT – Power Managed).
3. In the list of servers to the right, click the entry under the name of the suspected zombie server.
4. Select Power Management and Monitoring.
5. Change the duration to the length of time you want to review (we selected 3 months).
6. Record the Minimum, Maximum, and Average for Power utilization and I/O utilization. Make note of any spikes, and the date it last occurred.
7. Close the window.

Manually

1. Open a browser and enter the IP address of the iDRAC on the suspected zombie server.
2. Log into the iDRAC with administrator credentials (we used root/calvin).
3. Navigate to System→Overview.
4. Under Overview, click Power.
5. Under Power, use the drop-down to select Last Day, and record the Average Usage, Max Peak, and the Time of the last peak.
6. Click System→Performance.
7. Scroll down to IO Usage, and use the drop-down menu to select Last Day.
8. Record the Peak Value and Peak Time.
9. Close the window. Repeat this process each day for 90 or 180 days to collect sufficient data to determine if the server has been utilized over 90 or 180 days.

Read the report at http://facts.pt/fJ2TOT0 ▶

This project was commissioned by Dell EMC.

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