




Faster and easier server installation with Dell ProDeploy Factory Configuration or ProDeploy for Infrastructure

IT solutions providers face a variety of requirements to meet. Some organizations want large scale data center operations or server refreshes while others want smaller operations that require hardware, on-premise deployments and just a few servers. Dell Technologies™ can meet those requirements and anything in between for Dell™ PowerEdge™ servers via Dell ProDeploy Infrastructure Suite. For large server realizations where organizations that have IT staff available to rack and stack servers, Dell ProDeploy Factory Configuration configures servers at the factory and ships those ProDeploy for Infrastructure racks a Dell Technologies™ rack engineer to deploy hardware and software on-site.

To understand how much IT admin time the two ProDeploy options can save, we loaded one of our servers with configurations and installing a Dell PowerEdge R550 server in two different scenarios. Each of the following two sections provides an overview of one of those scenarios.

Scenario 1: Server configuration - ProDeploy Factory Configuration
We ordered a PowerEdge R550 server with specific settings via Dell ProDeploy Factory Configuration. We then had our rack engineer rack the server and manually configure it for deployment, which took 1 hour and 45 minutes total for all operations (load time not included) if they used ProDeploy by transferring the data to a 100-server installation, we found that an organization could save over 133 hours.

Scenario 2: Server deployment - ProDeploy for Infrastructure
We loaded our server with existing hardware in our data center. For one PowerEdge R550, our admin needed only two hours and 12 minutes to complete the deployment. Using Dell ProDeploy for Infrastructure for your on-site deployment, how can that address time per server for other business-critical initiatives? It also can save your organization the additional overhead of getting and shipping resources for new data center deployments. By bypassing the data to a 100-server installation, we found that an organization could save over 223 hours.

Save over 69m configuring one PowerEdge server
or over 115h configuring 100 PowerEdge servers
Using ProDeploy Factory Configuration
vs. an in-house admin

Save over 133m installing one PowerEdge server
or over 223h installing 100 PowerEdge servers
Using ProDeploy for Infrastructure
vs. an in-house admin

Faster and easier server installation with Dell ProDeploy Factory Configuration or ProDeploy for Infrastructure June 2023

The science behind the report:

Faster and easier server installation with Dell ProDeploy Factory Configuration or ProDeploy Infrastructure

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 **Faster and easier server installation with Dell ProDeploy Factory Configuration or ProDeploy Infrastructure**.

We concluded our hands-on testing on March 27, 2023. 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 January 26, 2023 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: In-house admin time and steps for ProDeploy Factory Configuration comparison.

Task	Admin time (hh:mm:ss)/steps
Asset tracking	
Attended time	00:04:03
Steps	26
iDRAC settings	
Attended time	00:02:10
Steps	21
BIOS settings	
Attended time	00:02:43
Steps	22
RAID settings	
Attended time	00:00:46
Steps	8
Firmware freeze	
Attended time	00:07:11
Unattended time	00:31:48
Total time	00:38:59
Steps	29
OS install	
Attended time	00:05:50
Unattended time	00:14:56
Total time	00:20:46
Steps	9
Totals	
Attended time	00:22:43
Unattended time	00:46:44
Total time	01:09:27
Steps	115

Table 2: In-house admin time and steps for ProDeploy for Infrastructure comparison

Task	Our admin (hh:mm:ss)
Physical setup	
Unboxing server and confirming contents	00:01:58
Racking server	00:02:52
Initial cabling	00:00:58
Server setup	
Updating firmware	00:55:57
Applying iDRAC settings	00:06:26
ESXi setup	
Installing ESXi	00:10:39
Configuring ESXi	00:05:41
vCenter setup	
Deploying vCenter	00:43:05
Adding host	00:06:22
Totals	
Total time	02:13:58

System configuration information

Table 3: Detailed configuration information for the server under test.

Server configuration information	Dell PowerEdge R750
BIOS name and version	1.9.2
Operating system name and version/build number	Microsoft Windows Server 2022 Datacenter 10.0.203348
Date of last OS updates/patches applied	01/03/2023
Power management policy	Balanced
Processor	
Number of processors	2
Vendor and model	Intel® Xeon® Silver 4309Y CPU
Core count (per processor)	8
Core frequency (GHz)	2.8
Stepping	M1
Memory module(s)	
Total memory in system (GB)	16
Number of memory modules	2
Vendor and model	Micron MTA9ASF1G72PZ-3G2R1
Size (GB)	8
Type	PC4-25600
Speed (MHz)	3,200
Speed running in the server (MHz)	2,666
Storage controller	
Vendor and model	Dell PERC H745 Front
Cache size	4GB
Firmware version	51.14.0-3900
Driver version	7.721.03.00
Local storage	
Number of drives	2
Drive vendor and model	Micron® MTFDDAK480TDT
Drive size (GB)	480
Drive information (speed, interface, type)	6Gbps SATA SSD
Embedded network adapter	
Vendor and model	Broadcom® BCM5720
Number and type of ports	2 x 1GbE
Firmware version	21.81.3
Driver version	218.0.300.0

Server configuration information		Dell PowerEdge R750
Integrated network adapter		
Vendor and model	Broadcom BCM57414	
Number and type of ports	2 x 25GbE	
Firmware version	22.00.07.60	
Driver version	222.1.78.0	
Cooling fans		
Vendor and model	Dell JF857	
Number of cooling fans	6	
Power supplies		
Vendor and model	Dell 6C11W	
Number of power supplies	2	
Wattage of each (W)	1,400	

How we tested

Upon receiving the pre-configured server from ProDeploy Factory Configuration, we first verified that the service completed each item in the configuration request correctly. We then reverted each setting to its default and performed the necessary steps to recreate the configuration.

Performing the asset tracking tasks

Creating labels

1. Turn on the label maker.
2. Enter the asset tag onto the label.
3. Print the labels.
4. Trim the labels.

Labeling the server

1. Peel off non-adhesive backing.
2. Apply the label to the server.

Labeling the box

1. Peel off non-adhesive backing.
2. Apply the label to the box.

Compiling and emailing the asset reporting

1. Draft an email with the following information:
 - Order number
 - PO number
 - Asset tag
 - Manufacture date
 - Dell Service Tag
 - Dell Express Service Code
 - Model
 - Chassis description
 - Chassis style
 - Ship date
 - Ship address
 - Ship zip
 - Ship country
 - Ship company name
 - Ship city
 - Ship state
 - Customer name
 - Customer number

Performing the iDRAC settings tasks

Setting the iDRAC IP address

1. In iDRAC, click iDRAC Settings.
2. Click Connectivity.
3. Expand the Network settings.
4. Expand the IPv4 Settings.
5. Enter the desired settings, and click Apply.

Setting the time zone and enabling NTP

1. In iDRAC, click iDRAC Settings.
2. Click Settings.
3. Expand the time zone and NTP Settings.
4. Enter the desired settings, and click Apply.

Creating maintenance user with administrator privileges

1. In iDRAC, click iDRAC Settings.
2. Click Users.
3. Expand Local Users.
4. Click Add.
5. Enter the desired settings, and click Save.

Setting exhaust temp limit (60°C)

1. In iDRAC, click Configuration.
2. Click System Settings.
3. Expand Hardware settings.
4. Expand Cooling Configuration.
5. Enter the desired settings, and click Apply.

Setting power supply units to non-redundant

1. In iDRAC, click Configuration.
2. Enter the desired settings, and click Apply.

Performing the BIOS settings tasks

Disabling memory testing

1. In iDRAC, click Configuration.
2. Click BIOS Settings.
3. Expand Memory Settings.
4. Enter the desired settings, and click Apply.

Enabling boot on RAID controller only

1. In iDRAC, click Configuration.
2. Click BIOS Settings.
3. Expand Boot Settings.
4. Enter the desired settings, and click Apply.

Disabling the internal and back USB ports

1. In iDRAC, click Configuration.
2. Click BIOS Settings.
3. Expand Integrated Devices.
4. Enter the desired settings, and click Apply.

Setting the system profile to Performance-per-watt (OS)

1. In iDRAC, click Configuration.
2. Click BIOS Settings.
3. Expand System Profile Settings.
4. Enter the desired settings, and click Apply.

Entering the asset tag and disabling F1/F2 prompt on error

1. In iDRAC, click Configuration.
2. Click BIOS Settings.
3. Expand Miscellaneous Settings.
4. Enter the desired settings, and click Apply.

Rebooting to apply changes

1. In iDRAC, click Dashboard.
2. Reset the system.

Configuring RAID1 on the PERC card

1. In iDRAC, click Storage.
2. Click Virtual Disks.
3. Click Create Virtual Disk → Advanced Configuration.
4. Enter the desired RAID settings, and click Next.
5. Select the physical disks, and click Next.
6. Enter the desired capacity settings, and click Next.
7. Review the settings, and click Add to Pending.
8. Click Apply Now.

Completing the custom disk image tasks

Attaching and booting to virtual media

1. Open the iDRAC virtual console.
2. Click Attach Media.
3. Boot the system to the virtual media.

Installing Microsoft Windows Server 2022

1. Select the language, and click Next.
2. Click Install Now.
3. Select the Windows Server 2022 Datacenter (Desktop Experience), and click Next.
4. Accept the terms of the license agreement, and click Next.
5. Select Custom: Install Windows only (advanced), and click Next.
6. Select the PERC RAID group, and click Next.

Freezing the firmware

Downgrading the BIOS

1. Navigate to the Dell Drivers and Downloads website.
2. Download the desired firmware installer package.
3. Run the firmware installer package.
4. Click Install.
5. Click Yes to continue.
6. Click Yes to reboot.

Downgrading iDRAC9

1. Navigate to the Dell Drivers and Downloads website.
2. Download the desired firmware installer package.
3. Run the firmware installer package.
4. Click Install.
5. Click Yes to continue.

Downgrading integrated NIC

1. Navigate to the Dell Drivers and Downloads website.
2. Download the desired firmware installer package.
3. Run the firmware installer package.
4. Click Install.
5. Click Yes to continue.
6. Click Yes to reboot.

Downgrading embedded NIC

1. Browse to the Dell Drivers and Downloads website.
2. Download the desired firmware installer package.
3. Run the firmware installer package.
4. Click Install.
5. Click Yes to continue.
6. Click Yes to reboot.

Downgrading PERC controller

1. Browse to the Dell Drivers and Downloads website.
2. Download the desired firmware installer package.
3. Run the firmware installer package.
4. Click Install.
5. Click Yes to continue.
6. Click Yes to reboot.

Read the report at <https://facts.pt/N4jK0vu>



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