Enterprise Deployment Verification Service

Introduction

Dell EMC is pleased to provide Enterprise Deployment Deployment Verification Service for Certified Channel Partners in accordance with this Service Description ("Service Description"). This document outlines general offers, scope and deliverables for Service(s). Your quote, order form or other mutually-agreed upon form of invoice or order acknowledgment (as applicable, the “Order Form”) will include the name of the service(s) and available service options that you purchased. Additionally, upon purchase, you will receive a document with a more detailed scope of services specific to your purchase.

For additional assistance or to find out whether a specific service in this document is available in your region or country contact your sales representative about Dell EMC’s Partner programs.

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Deployment Verification Service of a Dell EMC SAN, DAS or Network Switch

This service provides for the remote verification of a single Dell EMC storage area network ("SAN"), Direct Attached Storage ("DAS") or a Dell EMC Networking environment (the "Supported Product" or "Supported Products"), as set forth more specifically in this Service Description (the "Service" or "Services"). This Service includes the verification of the storage hardware such as storage array, disk enclosures, stand-alone iSCSI Ethernet switches, stand-alone Fibre Channel switches, and physical or virtual hosts running supported operating systems. This verification service is available for Dell EMC Storage SAN or DAS solutions.

This service is a remote verification service and as such, requires the Partner engineer to gather ‘as installed’ configuration using the Dell EMC Service tools and validate specific hardware deployed. An off-line maintenance window may be required if configuration changes are recommended.

Key Service steps

• Planning:
  • Review the site environmental and technical readiness requirements.
  • Review Dell EMC provided Planning Document completed by Partner.
  • Confirm readiness review and verification dates and highlight dependencies on complete site readiness to meet the planned verification schedule.
  • Ensure that Partner reviews, accepts, and abides by the terms and conditions of this Service Description.

• Verification – Storage Area Network (SAN) and Direct Attached Storage (DAS)
  • Storage:
    • Provide log collection tool(s), and instructions on making them accessible to Dell EMC for analysis.
    • Storage Verification:
      • Verify Dell EMC storage array and/or disk enclosure(s) for hardware faults.
      • Verify Dell EMC storage array and/or disk enclosure(s) for required configuration.
      • Verify Dell EMC storage array and/or disk enclosure(s) for basic Dell EMC-recommended best practice configuration.
      • Verify Dell EMC storage array and/or disk enclosure(s) firmware version.
      • Verify Storage Interconnect.
      • Verify Switch for required configuration.
      • Verify Switch firmware version
      • Verify Host for required configuration.
      • Verify Host driver and firmware version for HBA/NIC

• Ethernet Interconnection:
  • Ethernet Switch:
    • Provide log collection tool(s), and instructions on making them accessible to Dell EMC for analysis.
• Review Dell EMC Networking switches for approved versions and verify standalone iSCSI SAN fabric configuration for Dell EMC-recommended best practices. If needed, Dell EMC will provide access to the update, and the end customer and Partner will provide a maintenance window to complete this Service.
• For non-Dell EMC branded switches or non-standalone SAN fabrics, Dell EMC will make recommendations to Partner for Dell EMC iSCSI SAN best practices.

• Ethernet attached Host:
  • Provide log collection tool(s), and instructions on making them accessible to Dell EMC for analysis.
  • Verify each server iSCSI HBA Firmware and Driver Versions per Dell EMC validated software interoperability support matrix; provide access to the update as necessary:
    • Verify the iSCSI initiator version.
    • Verify iSCSI host bus adapter ("HBA") driver version and provide access to the update as necessary.
    • Verify the iSCSI network interface card ("NIC") internet protocol addresses.
    • Verify NIC network configuration, such as:
      • Jumbo Frames
      • Flow Control
    • If installed, Verify Dell EMC EqualLogic Host Integration Toolkit ("Hit Kit") version, and provide access to the update as necessary.
  • Verify multipath failover software configuration:
    • Document any configuration adjustments as necessary for hosts, including an estimated maintenance windows timeframe per host.
    • Advise Partner of Dell EMC-recommended best practices options if not currently implemented, as applicable.
      (a) Jumbo Frame configuration on vSwitches.
      (b) VMkernel port mapping.
      (c) VMware Multipath Extension Module ("MEM").
  • Verify server to storage connectivity, including:
    • Redundant path connectivity configuration.

• Fibre Channel Interconnection:
  • Fibre Channel Switch:
    • Provide log collection tool(s), and instructions on making them accessible to Dell EMC for analysis.
    • Review Brocade™ standalone Fibre Channel SAN fabric configuration for hardware faults, Dell EMC-recommended best practices, approved Fabric OS versions and recommend changes/updates as necessary. If needed, Dell EMC will provide access to the update, and the Partner will provide a maintenance window and complete this Service.
  • Fibre Channel Host:
    • Provide log collection tool(s), and instructions on making them accessible to Dell EMC for analysis.
    • Verify each server HBA Firmware and Driver Versions per Dell EMC validated software interoperability support matrix; provide access to the update as necessary:
      • Verify Fibre Channel host bus adapter ("HBA") driver version and provide access to the update as necessary.
      • Verify multipath failover software configuration:
• Document any configuration adjustments as necessary for hosts, including an estimated maintenance windows timeframe per host.
• Verify server to storage connectivity, including:
  • Redundant path connectivity configuration.

**Verification – Standalone Networking:**
- Provide log collection tool(s), and instructions on making them accessible to Dell EMC for analysis.

**Network Switch Verification:**
- Basic Configuration:
  • Host name, Service Tag, Firmware
  • Out of band management or VLAN IP
  • Password encryption
  • DNS name server
- Stacking:
  • Validate stacked switches Firmware
  • Ensure stack functionality, priority and configuration
  • Verify stack ports are online
- MLAG/VLT:
  • MLAG or VLTi Peer establishment
  • Heartbeat
- Ports:
  • Verify configured ports
  • Review MTU and Duplex configuration
  • Flow Control
- VLANs:
  • IP Addresses and descriptions
  • Tagged and Untagged ports
- Link Aggregation Groups (LAGs):
  • Lag number and type
  • Number of links
- Spanning Tree:
  • Review STP configuration (if enabled)
  • Portfast/edgeport
  • Ports enabled or blocked
  • Desired Rootbridge

**Project closeout:**
- Provide documentation to the end customer and Partner, reflecting the Services performed.

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**Deployment Verification Service of Dell EMC PowerEdge Servers**

This service provides for the remote verification of two Dell EMC PowerEdge Servers ("Server"), as set forth more specifically in this Service Description (the “Service” or “Services”). This Service includes the
verification of the chassis, verification of firmware levels, and verification of hardware status. This verification service is available for Dell EMC PowerEdge Servers.

This service is a remote verification service and as such, requires the Partner engineer to gather ‘as installed’ configuration using the Dell EMC Service tools and validate specific hardware deployed. An off-line maintenance window may be required if configuration changes are required and the hardware is already in production.

**Key Service steps**

- **Planning:**
  - Review the site environmental and technical readiness requirements.
  - Review Dell EMC provided Planning Document completed by Partner.
  - Confirm readiness review and verification dates and highlight dependencies on complete site readiness to meet the planned verification schedule.
  - Ensure that Partner reviews, accepts, and abides by the terms and conditions of this Service Description.

- **Verification**
  - **Chassis verification**
    - Verification of the hardware confirms all major hardware components are currently operating within their expected ranges and the System Event Log (SEL) does not indicate any other current hardware issues.
      - Validate CMC
      - Validate fan speed
      - Validate temperature
      - Validate power supply
      - Validate system event log
  - **Firmware levels**
    - Verification of the firmware level confirms that all major hardware components are currently running at the latest approved versions.
      - Validate CMC
      - Validate PERC / SAS
  - **Hardware status**
    - Verification of the hardware confirms all major hardware components are currently operating within their expected ranges and the System Event Log (SEL) does not indicate any other current hardware issues.
      - CPU
      - Memory
      - Fan Speed
      - Temperature
      - Voltage
      - Power Supply
      - Internal Storage
      - System Event Log

- **Product awareness:**
• Provide links to Dell EMC-recommended best practice documentation and whitepapers.

• **Project closeout:**
  • Provide documentation to the end customer and Partner, reflecting the Services performed.

### Delivery Methodologies

Dell EMC will work with the Partner to review the configuration of the end user's hardware. Phone technicians will review the partner's deployed configuration to ensure that it is configured to Dell EMC Engineering recommended best practices. Configuration logs will be supplied by the partner by leveraging the Dell EMC Lasso and/or SupportAssist tools.

### Standard Project Deliverables

- **Project management**
  - Dell EMC will assign a single point of contact to coordinate resources with the Partner to facilitate scheduling of the deployment verification.

- **Delivery Steps**
  - A Dell EMC engineer will discuss
    - The results of the log verification
    - Any changes required to remediate misconfigured hardware
  - Documentation will be uploaded into the Dell EMC support database

- **Project closeout**
  - At completion the Partner technician will provide the relevant ‘as-delivered’ solution documentation to the Dell EMC remote engineer when the configuration has passed the verification process.

Refer to the specific scope of services documentation for details on levels of the above.

### Partner Responsibilities

- Installation and configuration of the Dell EMC hardware.
- Provide the configuration logs from Dell EMC's Lasso and/or Support Assist tools for hardware verification purposes. If Partner's end customer has not enabled the Lasso and/or Support Assist tools, Partner will work with end customer to ensure the Lasso and/or Support Assist tools are enabled unless Dell EMC determines in its sole discretion that the Lasso and/or Support Assist tools are not necessary to perform the Services.
- Configuration updates necessary in order for the hardware to pass the verification process.

### Service Exclusions

For the avoidance of doubt, the following activities are not included in the scope of this Service Description.

- Configuration changes required to obtain verification from Dell EMC.
• Dell EMC working directly with Partner’s end customer to collect any log information from the end user.
• Any activities other than those specifically noted in this Service Description.

This Service Description does not confer on Partner any warranties which are in addition to the warranties provided under the terms of your master services agreement or Agreement, as applicable.
Dell EMC Services Terms & Conditions

This Service Description is entered between you, the channel partner purchasing the Service ("you" or "Partner"), and the Dell EMC entity identified on your invoice for the purchase of this Service. This Service is provided subject to and governed by Partner’s separate signed master services agreement with Dell EMC that explicitly authorizes the sale of this Service. In the absence of such agreement, depending on Partner’s location, this Service is provided subject to and governed by either Dell EMC’s Commercial Terms of Sale or the agreement referenced in the table below (as applicable, the “Agreement”). Please see the table below which lists the URL applicable to your Partner location where your Agreement can be located. The parties acknowledge having read and agree to be bound by such online terms.

<table>
<thead>
<tr>
<th>Partner Location</th>
<th>Terms &amp; Conditions Applicable to Your Purchase of Dell EMC Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td><a href="http://www.Dell">www.Dell</a> EMC.com/CTS</td>
</tr>
<tr>
<td>Canada</td>
<td><a href="http://www.Dell">www.Dell</a> EMC.ca/terms (English)</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.Dell">www.Dell</a> EMC.ca/conditions (French-Canadian)</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean Countries</td>
<td>Local <a href="http://www.Dell">www.Dell</a> EMC.com country-specific website or <a href="http://www.Dell">www.Dell</a> EMC.com/servicedescriptions/global *</td>
</tr>
<tr>
<td>Asia-Pacific-Japan</td>
<td>Local <a href="http://www.Dell">www.Dell</a> EMC.com country-specific website or <a href="http://www.Dell">www.Dell</a> EMC.com/servicedescriptions/global *</td>
</tr>
<tr>
<td>Europe, Middle East, &amp; Africa (EMEA)</td>
<td>Local <a href="http://www.Dell">www.Dell</a> EMC.com country-specific website or <a href="http://www.Dell">www.Dell</a> EMC.com/servicedescriptions/global *</td>
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<tr>
<td></td>
<td>In addition, Partners located in France, Germany and the UK can select the applicable URL below:</td>
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<tr>
<td></td>
<td>France: <a href="http://www.Dell">www.Dell</a> EMC.fr/ConditionsGeneralesdeVente</td>
</tr>
<tr>
<td></td>
<td>Germany: <a href="http://www.Dell">www.Dell</a> EMC.de/Geschaeftsbedingungen</td>
</tr>
<tr>
<td></td>
<td>UK: <a href="http://www.Dell">www.Dell</a> EMC.co.uk/terms</td>
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</tbody>
</table>

* Partners may access their local www.Dell EMC.com website by simply accessing www.Dell EMC.com from a computer connected to the Internet within their locality or by choosing among the options at Dell EMC’s ‘Choose a Region/Country’ website available at http://www.Dell EMC.com/content/public/choosecountry.aspx?c=us!l=en&s=gen.

Partner further agrees that by renewing, modifying, extending or continuing to utilize the Service beyond the initial term, the Service will be subject to the then-current Service Description available for review at www.Dell EMC.com/servicedescriptions/global.

To the extent that any terms of this Service Description conflict with any terms of the Agreement, the terms of this Service Description will prevail, but only to the extent of the specific conflict, and will not be read or deemed to replace any other terms in the Agreement which are not specifically contradicted by this Service Description.

By placing your order for the Services, receiving delivery of the Services, utilizing the Services or associated software or by clicking/checking the "I Agree" button or box or similar on the Dell EMC.com website in connection with your purchase or within a Dell EMC software or Internet interface, you agree to be bound by this Service Description and the agreements incorporated by reference herein. If you are entering this Service Description on behalf of a company or other legal entity, you represent that you have authority to bind such entity to this Service Description,
in which case “you” or “Partner” shall refer to such entity. In addition to receiving this Service Description, Partners in certain countries may also be required to execute a signed Order Form.

**Service Delivery Considerations**

**Service Hours**

A Dell EMC representative will contact the Channel partner to schedule Service, allowing for a reasonable lead time prior to the start of the Service based upon mutually agreed upon resource availability. Service will be provided during normal Dell EMC business hours Monday through Friday (8:00am to 6:00pm Partner or end customer local time, as applicable) unless specified otherwise below. Any activities outside of normal Dell EMC business hours will be subject to an additional charge. No activities shall take place during local, state and/or country holidays unless other arrangements have been made through the sales team and the Dell EMC project manager.

Exceptions to Normal Dell EMC Business Hours Service Hours.

<table>
<thead>
<tr>
<th>1 Country</th>
<th>2 Normal Dell Business Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Kitts, St. Lucia, St. Vincent, Trinidad, Virgin Islands, Rest of English speaking Caribbean</td>
<td>Monday through Friday from 7:00 AM to 4:00 PM</td>
</tr>
<tr>
<td>Barbados, Bahamas, Belize, Costa Rica, Denmark, El Salvador, Finland, Grand Cayman, Guatemala, Honduras, Jamaica, Norway, Panama, Puerto Rico, Rep. Dominicana, Suriname, Sweden, Turks and Caicos</td>
<td>Monday through Friday from 8:00 AM to 5:00 PM</td>
</tr>
<tr>
<td>Australia, Bermuda, China, Haiti, Hong Kong, Japan, Korea, Malaysia, Netherland Antilles, New Zealand, Singapore, Taiwan, Thailand</td>
<td>Monday through Friday from 9:00 AM to 5:00 PM</td>
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<tr>
<td>Argentina, France, India, Paraguay, Uruguay</td>
<td>Monday through Friday from 9:00 AM to 6:00 PM</td>
</tr>
<tr>
<td>Bolivia, Chile</td>
<td>Monday through Friday from 9:00 AM to 7:00 PM</td>
</tr>
<tr>
<td>Middle East</td>
<td>Sunday through Thursday from 8:00 AM to 6:00 PM</td>
</tr>
</tbody>
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No Service activities will take place outside normal business hours or during local holidays unless other arrangements have been made in advance in writing. Partner may request delivery of services outside of Normal Dell EMC Business Hours i.e. on weeknights, weekends or holidays. If Dell EMC is able to accommodate the request an additional fee will be charged. Contact your account representative for further information.