

Overview

HPE Synergy Image Streamer

HPE Synergy the first Composable Infrastructure -- empowers IT to create and deliver new value instantly and continuously. This single infrastructure reduces operational complexity for traditional workloads and increases operational velocity for the new breed of applications and services. Through a single interface, HPE Synergy composes compute, storage, and fabric pools into any configuration for any application. It also enables a broad range of applications and operational models such as virtualization, hybrid cloud, and DevOps. With HPE Synergy, IT becomes the internal partner to rapidly launch new businesses.

HPE Synergy delivers Composable Infrastructure with:

- **Fluid pools of resources**, where a single infrastructure of Compute, Storage, and Fabric boots up ready for workloads and demonstrates self-assimilating capacity,
- **Software-defined intelligence**, with a single interface that precisely composes logical infrastructures at near-instant speeds; and demonstrates template-driven, frictionless operations, and
- **Unified API access**, which enables simple line-of-code programming of every infrastructure element; easily automates IT operational processes; and effortlessly automates applications through infrastructure deployment.

Managing Composable Infrastructure

HPE Synergy Composer provides the enterprise-level management to compose and deploy system resources to your application needs. This management appliance uses software-defined intelligence with embedded HPE OneView to aggregate Compute, Storage and Fabric resources in a manner that scales to your application needs, instead of being restricted to the fixed ratios of traditional resource offerings.

HPE Synergy Image Streamer is a new approach to deployment and updates for composable infrastructure. This management appliance works with HPE Synergy Composer for fast software-defined control over physical compute modules with operating system provisioning. HPE Image Streamer enables true stateless computing combined with instant-on capability for deployment and updates. This management appliance deploys and updates infrastructure at extreme speed.

What's New

HPE Synergy Image Streamer works with HPE Synergy Composer to deploy and update infrastructure at extreme speed.

- Redundant HPE Image Streamer appliances with failover and high-availability
- HPE Image Streamer with 'stateless' and 'instant-on' capability to deploy and update at extreme speed
- Software-defined integration with profiles and templates and auto-discovery by HPE Composer
- True 'stateless' operation
- Highly-available (HA) boot and run environment
- Deployment and updates at extreme speed
- Private-cloud-ready with VMware ESXi and Docker-enabled Linux
- Template control to ensure image compliance
- Golden Image editing capabilities
- User privacy
- Programmatic access via the Unified API

Overview

Image Streamer

HPE Image Streamer is a new approach to deployment and updates for composable infrastructure. This product option works with HPE Composer for fast software-defined control over physical compute modules and with operating system (OS) provisioning. HPE Image Streamer enables true stateless computing combined with instant-on capability for deployment and updates.

HPE Image Streamer provides a highly-available appliance pair that can capture/edit/store images, create stateless boot images, and deploy or update compute modules quickly. Profiles are combined with golden images and personalities for stateless operation. Stateless boot images are stored in an image repository for fast implementation onto compute hardware at any time. These stateless capabilities can deploy and/or update multiple compute nodes with extreme speed.

True stateless computing combines the following elements using software-defined intelligence:

- **Profile** – Software-defined intelligence which defines compute modules
- **Golden Image** -- Operating environment (Bootable OS and Application) and I/O driver version
- **Personality** – Operating system (OS) and Application configuration (Hostname, IP config, etc.)

Capabilities in HPE Image Streamer provide:

- IP addresses assigned to Bootable Images for true stateless operation
- Highly-available image archive
- Secure access with rights and privileges (from HPE Composer)
- Compliance to the latest verified image(s)
- Image capture and editing
- Software-defined integration
- Accessibility via GUI and Unified API
- Performance

HPE Image Streamer is private-cloud-ready for VMware ESXi and Docker-enabled Linux images. These capabilities will be of great benefit to IT areas needing fast changeovers, security update compliance, HA image storage, or programmatic access and control over infrastructure.

True Stateless operation

Stateless protocols treat each request as an independent transaction and unrelated to any previous request.

Stateless operation does not require a compute module to retain session information or status. Common examples of stateless protocols are the Internet Protocol (IP) and Hypertext Transfer Protocol (HTTP).

Stateless systems have advantages. They can simplify compute node designs by eliminating local hard disks and RAID controllers. Systems can also be pre-planned, for fast implementation later. And stateless systems can also switch to a different personality much faster and easier than with a local installation. These advantages of stateless systems can result in CAPEX savings on server-local hardware (e.g. local disks, local RAID controller), and in highly cost-effective operations when compared to traditional 'boot from SAN' or local storage volumes.

HPE Image Streamer provides true 'stateless' operation by combining Profiles (from HPE Composer) with your golden images (OE and I/O driver) and with your personalities (OS and application). The resulting stateless images can be pre-planned for your environment and remain in your control in a highly-available image repository. These stateless images are available on-demand for rapid implementation onto hardware when needed – for initial deployment or for fast updates!

High-Availability Boot and Run Environment

HPE Image Streamer provides a high-availability (HA) configuration of two physical management appliances. These redundant physical appliances are automatically set up as a repository to manage and deploy your images on remote storage volumes. This provides a highly-available boot and run environment for your compute modules.

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Software-defined Integration Tight integration of HPE Image Streamer with HPE Composer allows simple setup and use. Configurations and integration with Composer and its profiles and templates are set up automatically.

Deploy and Update HPE Image Streamer uses similar processes for initial deployments and image updates. This is a new paradigm in how to manage images for compute modules. This paradigm improves administrator control over multiple nodes and multiple virtual machine hosts while improving operating efficiencies and dramatically increasing agility. Deployments are performed from your golden images, with operating environments and personalities, at extreme speed. The image payload consists of the compute module's Profile (from HPE Composer), and your Golden Image (or operating environment with a bootable OS and application, and the I/O driver version) and your Personality (or operating system and application configuration, which includes the hostname, IP config, etc.) In HPE Composer, the deployment plan and image parameters are specified, which results in a REST API call to the Image Streamer appliance. The Image Streamer appliance then provisions boot/run storage volume and deploys the operating system image to it. It then personalizes the operating system per the deployment plan, and generates iSCSI target for the boot/run volume. HPE Composer automatically configures the compute node with an iSCSI boot target so that when the system administrator turns on the compute module, it boots into a running operating system.

Updates can be performed by capturing revised images and re-deploying them at extreme speed. HPE Image Streamer works with HPE Composer to provide a simple user experience to accomplish server boot/run storage provisioning and operating system deployment.

Rollbacks can also be quickly performed by pointing to the previous image and streaming it to nodes.

Ensure Compliance Because HPE Image Steamer is part of the profile and template capabilities of HPE Composer, it can also enforce image compliance by using the 'monitor, flag, and remediate' capabilities of templates. Profiles created from the template can be monitored for configuration compliance. When inconsistencies are detected, an alert is generated indicating that the profile is out-of-compliance with its template. When updates are made at the template level, all profiles derived from that template are flagged as inconsistent. The user then has complete control over the remediation process to bring individual modules or multiple systems back into compliance. HPE Image Streamer updates the out-of-compliance images by streaming (or re-deploying) updated images to specified nodes at extreme speed.

Golden Images HPE Image Streamer supports a variety of operations for flexibility in how you handle golden images. You can capture golden images for your use, import images from another location, or to edit some of your 'known good' images for re-use. This easy manipulation of images allows you to establish your desired golden images for use. This capability is private-cloud-ready with VMware ESXi and Docker-enabled Linux images.

Extreme Speed HPE Image Streamer leverages a highly-available redundant set of physical appliances and iSCSI protocols to blast bootable images out to compute modules. The image is deployed and configured on a boot volume provisioned in the HPE Image Streamer appliance, simultaneously with HPE Composer provisioning of the compute module hardware and firmware. Therefore, the compute module is "ready-to-run" once HPE Composer provisioning is complete. Without HPE Image Streamer the compute module would need to complete a lengthy operating system and software deployment process to be ready to run.

'Extreme speed' means that you can deploy and/or update compute modules in a few minutes. 'Extreme speed' means you can deploy and update at 'the speed of need'.

User Privacy HPE Image Steamer works as a complement to HPE Composer and leverages its profile and template capabilities. User access control is also leveraged from integrated with HPE Composer to maintain user privacy. Deployment and update processes utilize the HPE Image Streamer HA image repository volume storage and do not directly involve the compute modules. (The processes are contained within the appliance only).

Unified API A Unified API enables access to the full power of HPE Image Streamer, assuming appropriate permissions, via the

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access HPE Composer REpresentational State Transfer (REST) API and State-Change Message Bus. RESTful APIs are the standard of the modern IT industry because they are widely used, simple, and efficient. You can integrate, automate, and customize your use of HPE Image Streamer to control its activities using the Unified API. This software-defined intelligence enables partners, developers, and users to have programmatic control with fast responses for their applications, processes, and devices.

Software developer kits (SDK) for the REST-based Unified API are available for several languages:

- **Python:** <https://github.com/HewlettPackard/python-hpOneView>
- **PowerShell:** <https://github.com/HewlettPackard/POSH-HPOneView>
- **Java:** <https://github.com/HewlettPackard/oneview-sdk-java>

Other documents to assist your custom integrations using the REST APIs can be found at:

- <http://h17007.www1.hp.com/docs/enterprise/servers/oneviewhelp/oneviewRESTAPI/content>
 - [HPE OneView technical documentation](#)
 - [HPE OneView Community forum](#)
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Service and Support

Service and Support HPE Technology Services offers you a rich portfolio of consulting and support services designed to add value to our core products and solutions. We have the know-how and experience to put technology to work for you. We work closely with you, as your strategic partner, leveraging our full services portfolio to make sure that everything works to help optimize your enterprise.

Choose from services aligned to our product offerings and lifecycle. From proactive onsite services to innovative support when your products are connected to Hewlett Packard Enterprise, you choose the precise level of attention and support your business demands.

HPE Technology Services for HPE Synergy

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HPE Support Services

Hewlett Packard Enterprise support services offer complete care and support expertise with committed response choices that are designed to meet your IT and business needs.

HPE Foundation Care services offer scalable reactive support-packages for HPE Synergy and software. You choose the type and level of service that is most suitable for your IT and business needs.

HPE Proactive Care keeps your system stable and reliable helping to prevent problems and reduce outages through proactive service management and enhanced technical response.

Advise, transform, integrate, support, automate, and flex

HPE Technology Services helps you get the most out of what you have today and transition to HPE Synergy, a composable infrastructure, at your pace and from wherever you are on the journey.

Start with the HPE Transformation Workshop to ensure that your business and IT organizations collaborate, define the topline strategy for composable, software-defined, cloud-ready infrastructure and kick-start your projects confidently. This workshop clarifies your business requirements and the issues that IT and operations teams must resolve in order to meet these requirements. A detailed executive briefing or high-level report summarizes the strategies, high-level plan and functional requirements.

HPE Modernization and Migration Services helps you choose the right platform for the right workload at the right cost and evolve your IT infrastructure, processes and organization taking advantage of “on-hybrid infrastructure” innovations such as composable, converged, software-defined, technologies. Hewlett Packard Enterprise experts advise, transform, integrate and implement for platform refresh, datacenter consolidation virtualization, migration and automation projects.

HPE Flexible Capacity is a pay per use model for on premise infrastructure. This offers needed HPE Synergy capacity in the datacenter, plus a buffer of additional capacity. As HPE Synergy will be a dynamic environment, this provides enough room to grow your environment, but only pay for actual metered use. Technology transitions and refresh can be built in, infrastructure and services are billed monthly, enabling you to align costs to business use.

HPE Datacenter Care-Infrastructure Automation (DC-IA) is an extension to HPE Datacenter Care and delivers enterprise-grade support, advice, guidance and best practices for infrastructure automation. The service also includes Enterprise editions of automation tools including Enterprise Chef and selected others. The DC-IA Center of Excellence (CoE) is staffed with highly trained experts who have specific expertise on integrating

Service and Support

Chef with HPE OneView.

Choose the right support to maximize uptime, free up your resources, and achieve improved value—as you get the most out of the existing IT assets while accelerating time-to-revenue.

Optimized Support **HPE Proactive Care Advanced - 24x7 coverage, three-year Support Service**

Builds and incorporates on Proactive Care and also gives customers personalized technical and operational advice from an assigned, local Account Support Manager for personalized technical collaboration, flexible access to specialist skills to help optimize business critical IT, and Critical Incident Management to help so the business is not affected if there is a system or device outage. This recommendation provides 24x7 coverage with four-hour response for hardware and Basic Software Support and Collaborative Call Management for selected non-HPE software that offers two-hour callback for supported software issues.

<http://www8.hp.com/h20195/v2/GetPDF.aspx/4AA5-3259ENW.pdf>

Standard Support **HPE Proactive Care - 24x7 coverage, three-year Support Service**

Hardware and software support services designed specifically for your technology with rapid access to Advanced Solution Center specialists for start to finish case management plus proactive reports and recommendations for firmware and software management and best practice advice. This recommendation provides 24x7 coverage with four-hour response for hardware and Basic Software Support and Collaborative Call Management for selected non-HPE software that offers two-hour callback for supported software issues.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Deploy and integrate **HPE Synergy First Frame Installation and Startup**

Provides for hardware installation (HPE Synergy compute modules, Storage Modules, Virtual Connect modules, Interconnect Link Modules, Frame Link Modules, and HPE Synergy D3940 Storage Modules) and software startup for the first frame of your HPE Synergy deployment. Additional frames can be added using the HPE Synergy Additional Frame Installation and Startup Service.

HPE Synergy Additional Frame Installation and Startup Service

Add additional frames to your HPE Synergy First Frame Startup service or expand your existing HPE Synergy Infrastructure.

HPE Education Services Training your IT staff is critical to help drive the value of HPE Synergy with increased efficiencies and better business outcomes. Training is key to the transformation and management of HPE Synergy.

Parts and Materials Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

For more information Additional Support Services can be found at HPE Support Services Central

<http://ssc.hp.com>

Models

HPE Image Streamer HPE Synergy Image Streamer is a hardware option for use with HPE Composer

HPE Synergy Image Streamer

HPE Synergy Image Streamer is a management appliance that provides fast image/workload changes to compute resources to meet your Composable Infrastructure needs. It integrates software-defined intelligence from embedded HPE Composer to deploy and update physical compute nodes with operating systems and software at extreme speed for fast virtualized image changeovers, secure boot, and image compliance.

NOTE: HPE Synergy Image Streamer units are always implemented as redundant pairs.

NOTE: No direct license is required. Supports any HPE Synergy Compute module and other installed module options.

NOTE: HPE Synergy Image Streamer requires a minimum of three (3) Synergy Frames with redundant Synergy Composers for operation and must be implemented as redundant pairs. This minimal system requires four (4) cables, two (2) transceivers and one (1) Interconnect Module listed below for complete operation.

HPE VC SE 40Gb F8 Module (2 redundant modules per solution)

HPE Dual 10GBASE-T QSFP+ 30m RJ45 Transceiver

NOTE: Two (2) transceivers required for redundant connection to Interconnect Modules above.

10 Ft CAT6A Cable (CBL: CAT6A, GRAY 10 FT 2159610-6 MP-6ARJ45SLGY-010)

NOTE: Four (4) cables are required for the Synergy Image Streamer connection from the Frame Link Modules (MGMT port) to the Transceiver.

Configuration Rules for Image Streamer Rule #1

The first Logical Enclosure (LE) in a Frame Link Network must have three (3) frames (minimum). Additional Logical Enclosures in a Frame Link Network need only have two (2) frames.

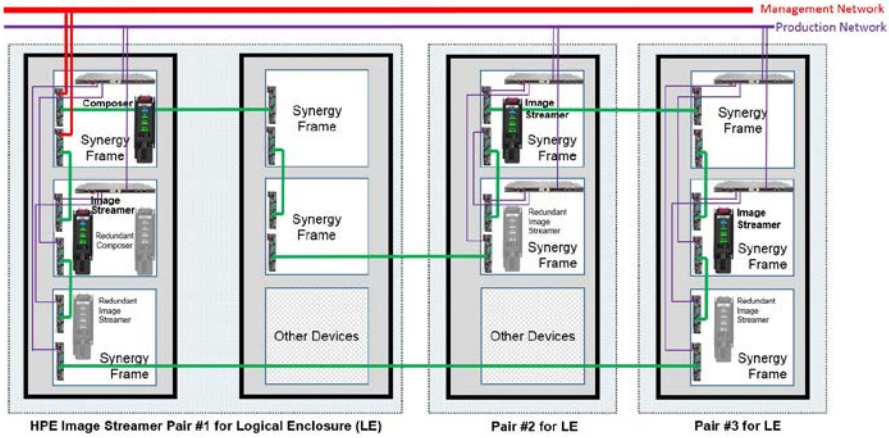
Rule #2

Additional Logical Enclosures in the same Frame Link Network need only have two (2) frames. Configuration examples are shown in figures below to illustrate these configuration rules.

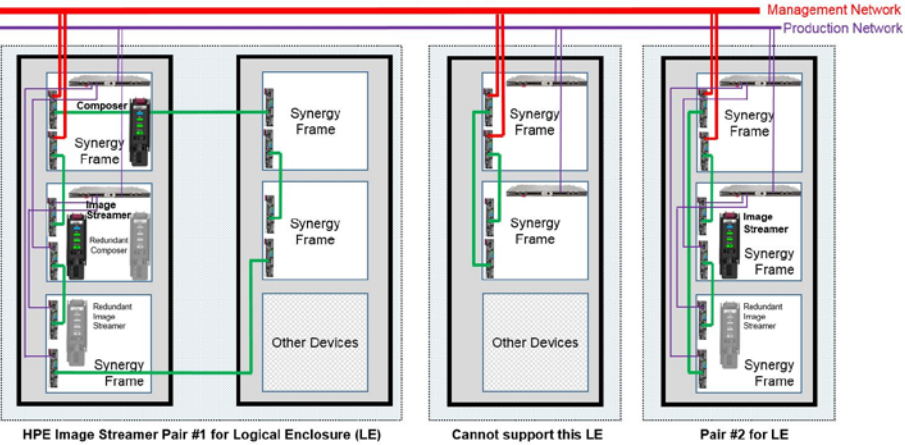
- The first case shows HPE Image Streamer use for three 'logical enclosures' in a single frame link network.
- The second case shows HPE Image Streamer use in three frame link networks, but only two of the three 'logical enclosures' can be supported.
- A final example shows HPE Image Streamer use in a 3-frame configuration with cables.

Models

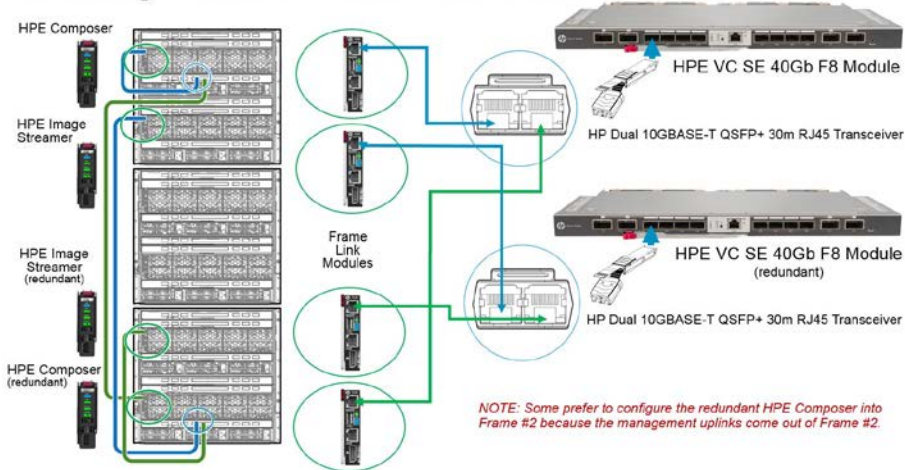
HPE Image Streamer with one (1) Frame Link Network



HPE Image Streamer with multiple (3) Frame Link Networks



HPE Image Streamer – 3 frames with cables



Related Options

HPE Support Services

NOTE: Additional Support Services can be found at HPE Support Services Central <http://ssc.hp.com>

Proactive Care Services

Installation & Start-up Services

Technical Specifications

Environmental-friendly Products and Approach

End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
1-Dec-2015	Version 1	Created	New QuickSpecs



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