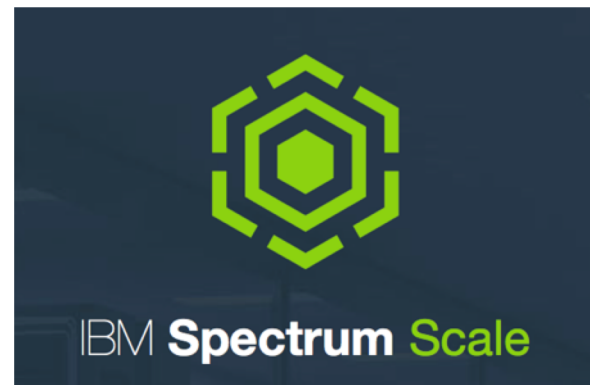


Spectrum Scale Installation Toolkit Overview

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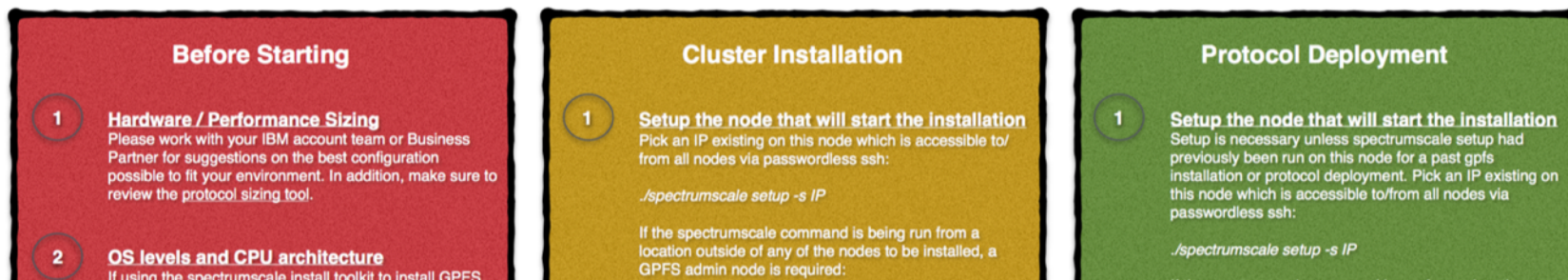


- The installation toolkit automates the steps that are required to
 - Install Spectrum Scale
 - Deploy protocols
 - Upgrade existing clusters to newer levels
- The install toolkit enables the following tasks:
 - Perform verification before installing, deploying, or upgrading.
 - Install and configure GPFS.
 - Configure Performance Monitoring consistently across all nodes
 - Deploy the Spectrum Scale GUI
 - Deploy and configure SMB, NFS, Object, and performance monitoring tools over GPFS.
 - Create new NSDs and File systems
 - Enable and configure call home and file audit logging functions.
 - Adding protocol nodes to an ESS
 - Simplify upgrade with a single command to upgrade all components on all nodes

- **Where can I get it?**
 - Spectrum Scale Protocols Standard package
 - Spectrum Scale Protocols Advanced package
 - Spectrum Scale Protocols Data Management package
- **Where is the Install Toolkit extracted?**
 - /usr/lpp/mmfs/5.0.0.2/installer/
- **How do I first use it?**
 - Type: /usr/lpp/mmfs/5.0.0.2/installer/spectrumscale -h

- Is there a quick overview showing how to use the Install Toolkit?

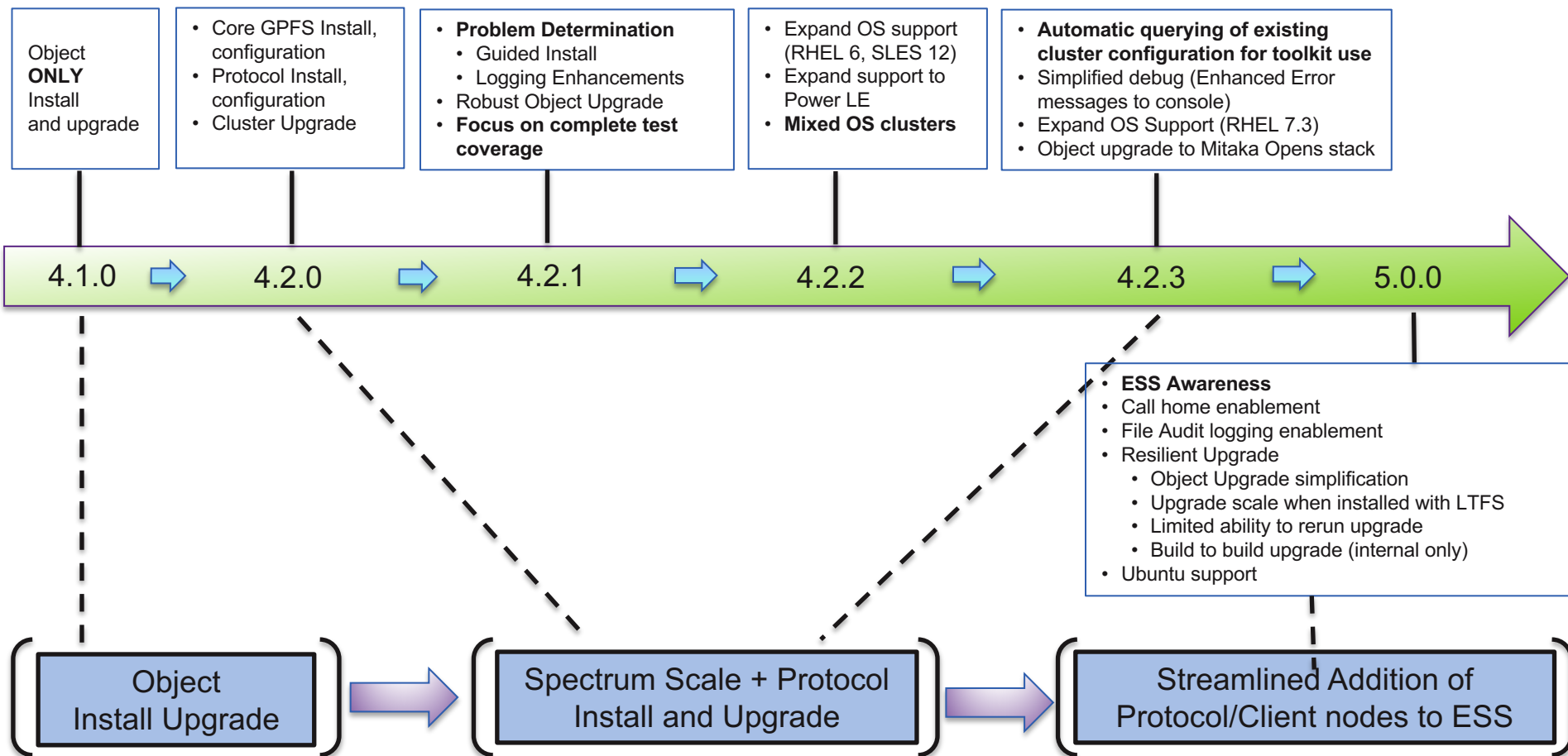
[Spectrum Scale Protocols Quick Overview on the GPFS Wiki](#)

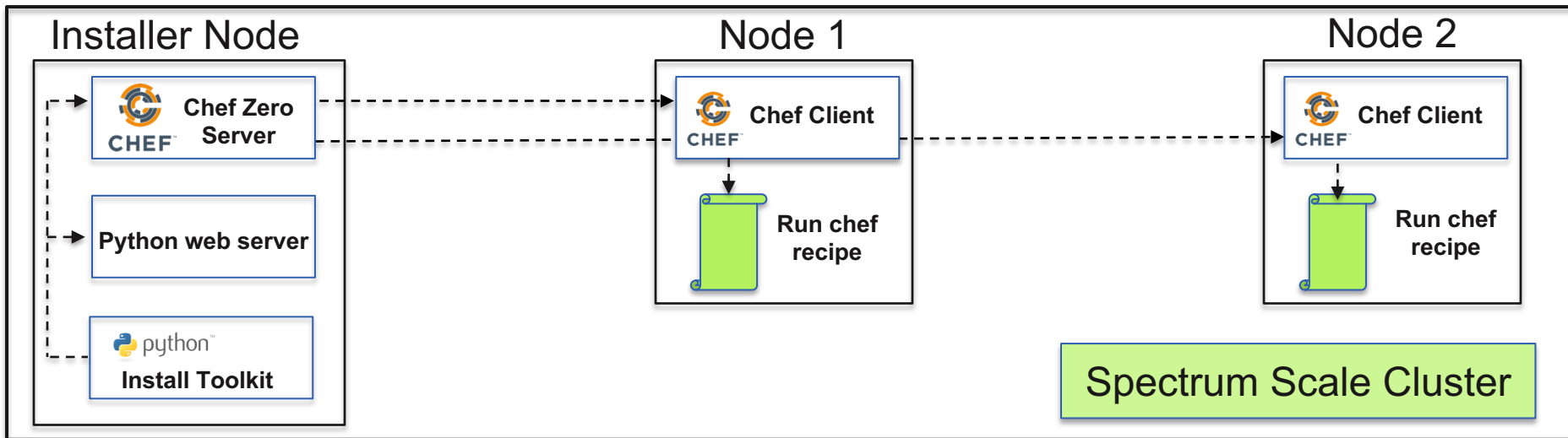


the self extracting package will give a URL link to this guide as well

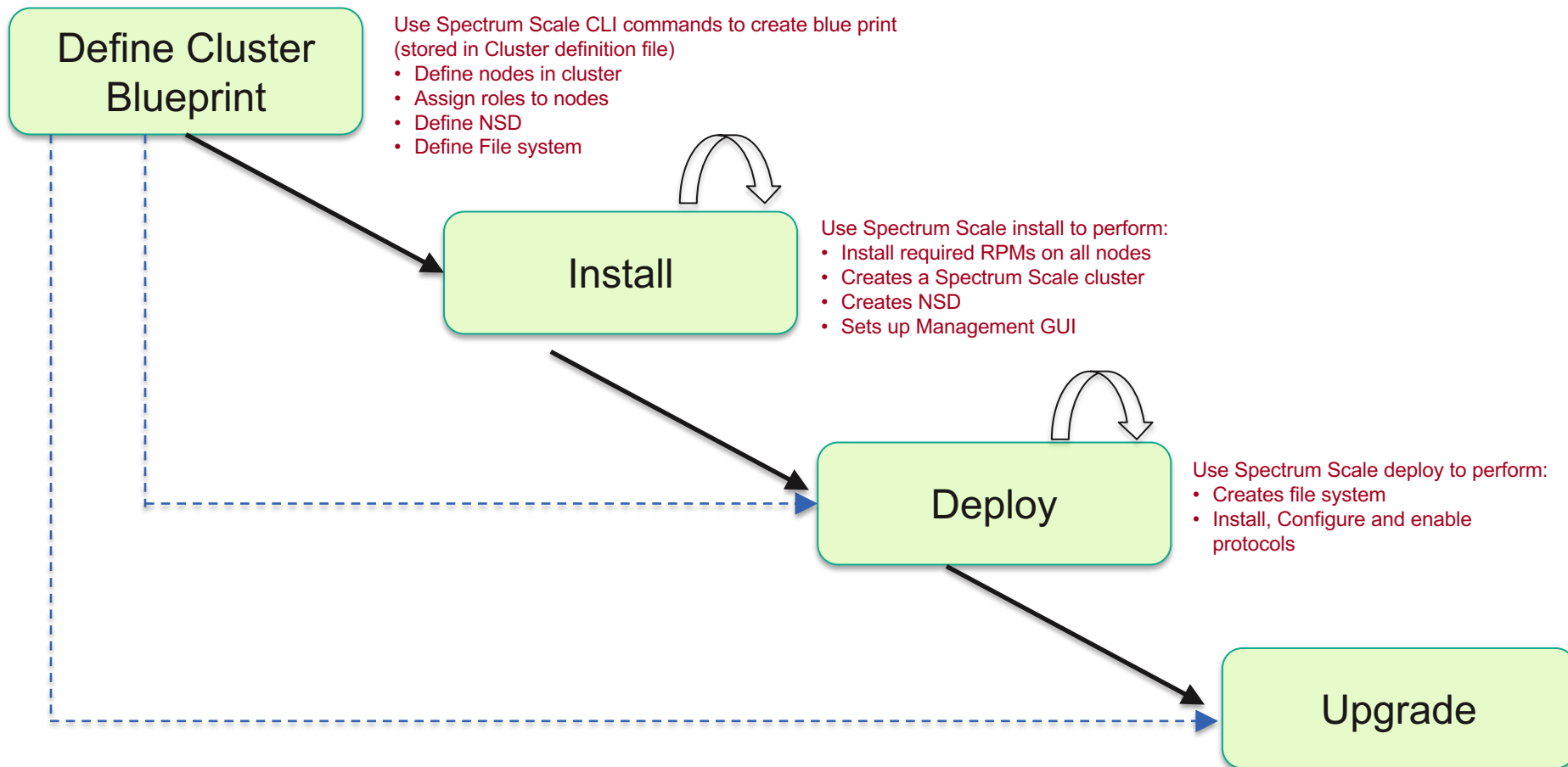
- Is the Install Toolkit documented in the Knowledge Center?

See the Knowledge Center sections for installing GPFS on Linux nodes





- Install toolkit consists of
 - A driver (written in Python)
 - A configuration management tool (Chef) that orchestrates and runs individual units of recipes
 - A light weight webserver that acts as a package repository
- A chef zero instance (light weight chef server) runs on the installer node
- A chef client is invoked to run a set of recipes on each node in the cluster during the install/deploy/upgrade
- Recipes consists of OS, package manager and mm commands sequenced to perform a install/deploy or upgrade action



- **What happens and when?**
- Creating the cluster Blue print:
 - User input via ‘spectrumscale’ commands:
 - a) All user input is recorded into a clusterdefinition.txt file in /usr/lpp/mmfs/5.0.0.2/installer/configuration/
 - b) Optionally the, *./spectrumscale config populate -N <node in cluster>*, command can be used to traverse an existing cluster and automatically populate the clusterdefinition.txt file.

Define Cluster Topology

```
- spectrumscale node add
  [--quorum, --manager, --admin, --nsd, --protocol, --gui, --callhome]
- spectrumscale nsd add
  [--primary, --secondary, --filesystem, --pool, --usage, --failuregroup]
- spectrumscale config [protocols, gpfs, object, ntp, perfmon]
  o [protocols: --filesystem, --mountpoint, --export-ip-pool]
  o [gpfs: --clustername, --profile, --remote_shell, --remote_file_copy ...]
- spectrumscale enable/disable [object, smb, nfs]
```

- **What happens and when?**
- A 'spectrumscale install' phase:
 - a) Install will act upon all nodes inputted into the clusterdefinition.txt file
 - b) GPFS and perfmon rpms will be installed
 - c) GPFS portability layer will be created
 - d) GPFS will be started
 - e) A cluster will be created
 - f) Server and Client licenses will be applied
 - g) GUI nodes may be created and the GUI may be started on these nodes
 - h) NTP, perfmon, FAL, callhome, ephemeral ports, cluster profile... may be configured
 - i) NSDs may be created - **note** filesystems are not created during install

Install

```
- spectrumscale install [--precheck, --postcheck]
```

- **What happens and when?**
- A 'spectrumscale deploy' phase:
 - a) Deploy will act upon all nodes inputted into the clusterdefinition.txt file
 - b) File systems will be configured - **note** it is possible to only configure file systems during deploy if you do not want protocols
 - c) File Audit Logging (*FAL*) may be enabled
 - d) SMB, NFS, Object protocol rpms will be copied to all protocol nodes
 - e) SMB, NFS, Object services may be started
 - f) Authentication may be configured

Deploy

```
- spectrumscale deploy [--precheck, --postcheck]
```

What happens and when?

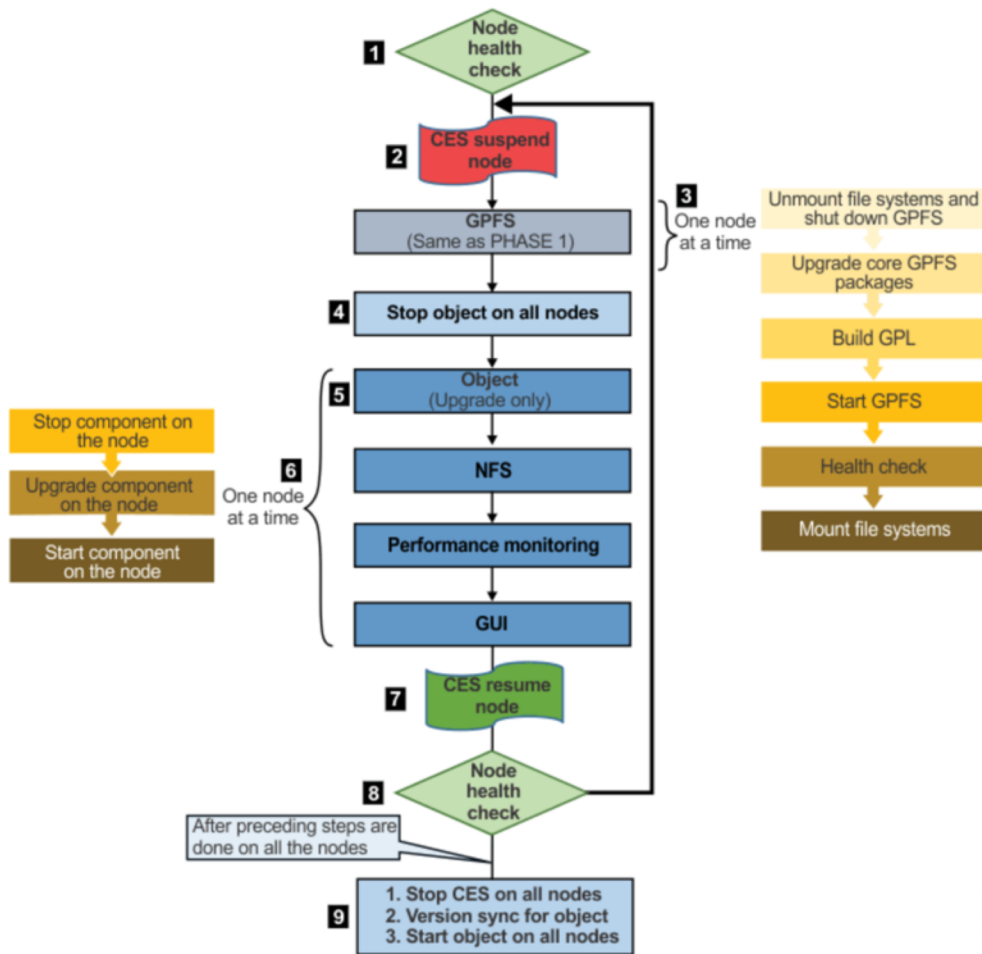
[See this KC link for details on the upgrade flow](#)

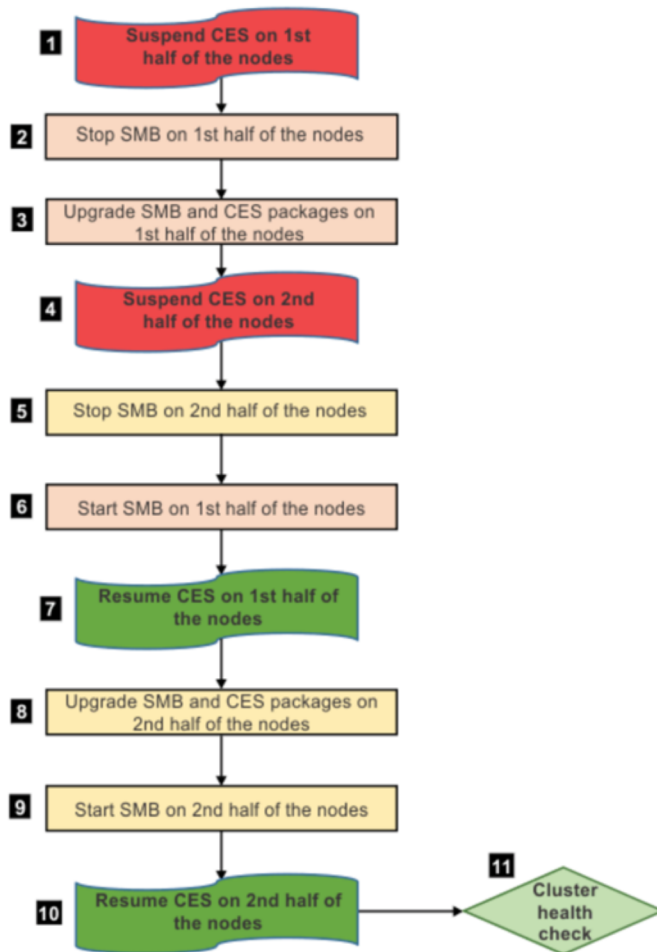
A 'spectrumscale upgrade' phase:

- a) Upgrade will act upon all nodes inputted into the clusterdefinition.txt file
- b) All installed/deployed components will be upgraded
- c) Upgrades are sequential with multiple passes
- d) Pass 1 of all GPFS only nodes will upgrade GPFS sequentially
- e) Pass 2 of all Protocol nodes will upgrade GPFS, NFS sequentially
- f) Pass 3 of all Protocol nodes will upgrade Object sequentially
- g) Pass 4 of all Protocol nodes will upgrade SMB sequentially

Upgrade

```
- spectrumscale deploy [--precheck, --postcheck -showversions]
```





Adding protocol nodes to an ESS

- From Spectrum Scale 5.0, Install toolkit is **aware** of the ESS
- Ensure ESS is protected when adding protocols nodes to it.
- **Grab the Spectrum Scale Quick Overview pdf matching your code level**

[Spectrum Scale Protocols Quick Overview on the GPFS Wiki](#)

Before Starting	Cluster Installation	Protocol Deployment
1 Hardware / Performance Sizing Please work with your IBM account team or Business Partner for suggestions on the best configuration possible to fit your environment. In addition, make sure to review the protocol sizing tool. 2 OS levels and CPU architecture If using the spectrumscale install toolkit to install GPFS,	1 Setup the node that will start the installation Pick an IP existing on this node which is accessible to/ from all nodes via passwordless ssh: <pre>./spectrumscale setup -s IP</pre> If the spectrumscale command is being run from a location outside of any of the nodes to be installed, a GPFS admin node is required:	1 Setup the node that will start the installation Setup is necessary unless spectrumscale setup had previously been run on this node for a past gpfs installation or protocol deployment. Pick an IP existing on this node which is accessible to/from all nodes via passwordless ssh: <pre>./spectrumscale setup -s IP</pre>