SYSTEM INSTALLATION

GETTING STARTED WITH HC3

Version 5.2 - 05/2020

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IMPORTANT SAFETY AND USAGE INFORMATION

1. Please disconnect **ALL** power and network cords before servicing or moving the unit.

2. Please note all chassis manufacturers' safety instructions for proper node lifting and transport.

3. This product is intended for installation in a restricted access location or equivalent area. Please ensure appropriate precautions are taken as confidential and/or sensitive data may be stored on this product after installation.

4. This product's BIOS configuration may use replaceable batteries as a backup power source in the event that a power outage occurs. If you suspect the batteries have failed, **DO NOT** attempt to replace them yourself due to risk of injury if an improper replacement is used. Contact your hardware support provider for proper replacement steps.

5. **Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

6. **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

7. **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

8. **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

9. **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

NETWORKING PREPARATIONS

Reference the **Networking Guidelines and Recommendations** guide for the most up-to-date information on networking best practices and recommended configurations, as well as references for port requirements, physical NIC layouts, and more.

SYSTEM PREPARATIONS AND CONFIGURATIONS

Reference the **HyperCore Hardware Support Matrix** and **HyperCore Software Support Matrix** for the latest on supported node configurations, system limitations and best practices, virtual drivers, supported web browsers, and much more.

RACK INSTALLATION

Watch the **2 minute video** for your purchased model for step-by-step assistance when racking the node. And yes, it's really that easy!

If you're utilizing an HC3 Software Only node model purchased from one of our Partners, please see your hardware manufacturer's documentation and/or resources for information on proper mounting, racking, and installation of your hardware lines.

HC3 PRE-INSTALLATION CHECKLIST

WHAT TO EXPECT AFTER PURCHASE

Our experienced Customer Success Coordinator will be in touch regarding project planning for the new HC3 system. They can walk through using the Partner Portal, answer general, non-technical questions, provide necessary documentation, and all-in-all make sure every tool is available for a successful implementation.

If the preference is to schedule the installation with the Professional Services team, follow the instructions **here.**

> **NOTE**
>
> If this is the first time installing an HC3 system, we highly recommend scheduling in order to experience the proper installation process with a trained ScaleCare Engineer.

If scheduling the installation, an assigned ScaleCare Professional Services engineer will be in touch at the scheduled date and time with the provided contact number to walk through the purchased professional services.

> **NOTE**
>
> If self-installing the HC3 system, contact ScaleCare Support once the system is initialized for a system health check, any applicable software updates, and to make sure that the system is properly registered to the account.

You will need the following equipment and information available and/or configured prior to the scheduled installation time.

- Review the **Networking Guidelines and Recommendations** for all of your networking environment requirements.
  - 1 LAN IP address for each node
  - 1 Backplane IP address for each node
  - Network Subnet mask for the LAN IP
  - LAN network Gateway IP address
  - All applicable cables for your node series (1 GbE, 10GBase-T, 10 GbE SFP+)
  - Any other VLAN information or networking information unique for your environment
- Reference the **HyperCore Hardware Support Matrix** and **HyperCore Software Support Matrix** for supported configurations, supported operating systems, supported drivers, and more for your HC3 system implementation plans.
- Understand how to **safely and properly rack** your new HC3 nodes.
- Schedule your purchased professional services in the Customer or Partner Portal.
  - Sign up for Portal access under the appropriate Portal, Customer or Partner.
- Hardware installation tools.

  - A Phillips-head screwdriver for installing the rail kit if needed
  - A standard VGA monitor and USB keyboard to hook to the nodes for configuration
    - A KVM may be used but is not recommended for initial configuration
- A machine local to the HC3 system network for HC3 web interface access after configuration (VPNs, port forwarding, etc have been seen to block HC3 web interface access in the field)

> **NOTE**
>
> If you have made the decision to self-install the HC3 system, please contact ScaleCare Support once the system is initialized for a system health check, any applicable software updates, and to make sure that the system is properly registered to your account.
>
> Choosing to self-install may delay your deployment in the event of any issues. ScaleCare Support reserves the right to take the necessary corrective actions on the system post self-install on a first-come, first-served basis with preference given to previously scheduled professional services.

NODE CONFIGURATION

Prior to configuring the individual nodes be sure to verify network and cabling setup has been completed. The node configuration process confirms connectivity between nodes during IP configuration, as well as the ability to connect to a gateway before allowing node configuration to continue.

In order to configure your nodes you must have serial or graphical console access to the physical nodes. Serial access is VT100 at 115,200 baud. Any standard VGA monitor and USB keyboard will work as a graphical console and are recommended.

CONFIGURE THE NODES

All installations should be scheduled at least 24 hours in advance. The ScaleCare engineer assisting you will provide the necessary credentials for command line access during the scheduled installation time.

> **NOTE**
>
> It is now possible to deploy a Single Node System (SNS). The commands provided below are applicable to a single node or multiple node installation. For a single node installation, proceed through Steps 1 to 4, and then skip to the next section, System Initialization.

All configuration of the nodes is done from the command line using a monitor and keyboard. Systems are configured in a top-to-bottom configuration, with the top node in the rack being the designated 'first' node. The 'first node' classification has no bearing on system operations outside of the installation configuration.

1. Hook the monitor and keyboard to the top node in the system. Access the node command line using the provided credentials.

> **NOTE**
>
> If the login prompt is not shown try pressing SHIFT to disable console blanking. If the login prompt is still not shown press CTRL+ALT+F1 to ensure the correct console session is active.

2. Run the command to begin node configuration.

```
sudo scnodeinit
```

3. You may be prompted for a password. Use the same password as the node login.
4. You will be prompted for each piece of IP and network information. Once the LAN IP, LAN Netmask, LAN Gateway, Backplane IP of this node, and Backplane IP of first node in system (which will be the same as Backplane IP of this node on the first node). See below for an example of the first node's IP configuration.

```
LAN IP: 10.100.13.15
LAN Netmask: 255.255.255.0
LAN Gateway: 10.100.13.1
Backplane IP of this node: 192.168.13.15
Backplane IP of first node in cluster: 192.168.13.15
Unique Software Serial:
```

5. You will be required to enter a unique serial number for the appliance. The serial number should have been shipped along with the appliance hardware. It is a unique 16 digit serial number that is required for node initialization.

> **NOTE**
>
> **Lenovo OEM hardware may place the Scale Computing serial number on the underside of the slide out tag if XClarity was purchased. The XClarity licensing information will be placed on the top of the slide out tag.**
>
> If you enter an invalid serial number, the node initialization will not proceed. If you enter a valid but non-unique serial number, cluster initialization will fail and you will be required to reinitialize the node with a unique serial number. Serial numbers should be included in the paperwork provided with your nodes' shipping box.
>
> Contact ScaleCare Support if you need assistance locating your unique serial number.

6. **NODES UTILIZING BACKPLANE-OVER-VLAN -** This configuration will request an extra input line for the Backplane VLAN number. This VLAN should be unique to the HC3 system. The information given in the image is only an example; use a VLAN appropriate for the local network environment.

```
LAN IP: 192.168.55.10
LAN Netmask: 255.255.255.0
LAN Gateway: 192.168.55.1
Backplane IP of this node: 172.16.55.10
Backplane IP of first node in cluster: 172.16.55.10
Unique Software Serial: 001000000000008b
Backplane VLAN ID (enter no for Single Node Cluster): 387_
```

7. The node configuration process is complete when it either returns to the command line or the output says Entering forwarding state. The configuration process generally takes 3-5 minutes.

```
LAN IP: 10.100.13.23
LAN Netmask: 255.255.255.0
LAN Gateway: 10.100.13.1
Backplane IP of this node: 192.168.13.23
Backplane IP of first node in cluster: 192.168.13.23
Unique Software Serial: 0000000000000000
Checking parameters.  Complete
Checking LAN IP and initializing node for conflicts/availability.  Complete
Setting up local networking.  Complete
Checking initializing node and gateway after network restart.  Complete
Waiting for hardware to complete node initialization.  Complete
```

COMMON NODE CONFIGURATION TROUBLESHOOTING

Here are some common troubleshooting steps for node configuration issues.

- Verify the node IPs were typed correctly.
- Verify the chosen LAN and Backplane IP for the node configuration are not already in use elsewhere on the network.
- The LAN and Backplane IPs must be on separate networks. The Backplane IP cannot be a publicly routable IP and cannot be in the assigned LAN IP network.
- Verify the serial numbers are unique for each node of the cluster. See below for an example of a cluster initialization failure due to non-unique serial numbers.

```
Nodes ready for induction into the cluster:
New node: 10.100.13.24
New node: 10.100.13.25
New node: 10.100.13.23
Enter 'yes' to confirm: yes
Checking HyperCore versions and branding.  Complete
Checking Software Serial Number branding.  Complete
Checking Software Serial Number uniqueness. /[192.168.13.23 (c4cb7c88) root 14:58:39]$ Complete
     /'  Complete
     10.100.13.24 0000000000000001  Complete
     10.100.13.25 0000000000000003  Complete
     10.100.13.23 0000000000000001  Incomplete.
Software Serial Numbers are not unique.
```

You can use the following commands to re-initialize and/or bypass some network verification if needed for a test environment.

WARNING

ScaleCare Support advises against bypassing the built-in network checks unless this is for a test or lab environment and/or ScaleCare Support has specifically advised bypassing the checks as part of a troubleshooting process.

Use of the bypass command outside of these instances has the potential to lead to networking issues within the initialized HC3 nodes and system that may require ScaleCare Support intervention and/or a system wipe and reset.

Node Initialization Failure

If the node initialization failed for any reason, use this command to re-configure the node.

```
REINITIALIZE=yes sudo scnodeinit
```

Network Inaccessible

If a LAN gateway is not accessible or not responding to ICMP requests, use this command.

```
BYPASS_NETWORK_CHECK=yes sudo scnodeinit
```

Combine Remedial Commands

As used here, the options to re-configure a node and bypass LAN network checks can be combined.

```
BYPASS_NETWORK_CHECK=yes REINITIALIZE=yes sudo scnodeinit
```

SYSTEM INITIALIZATION

Prior to initializing the system **ensure all nodes have been successfully configured.**

INITIALIZE THE SYSTEM

All installations should be scheduled at least 24 hours in advance. The ScaleCare engineer assisting you will provide the necessary credentials during the scheduled installation time.

NOTE

The commands provided below are applicable to a single node or multiple node installation. Choose the proper option for your configuration.

All system initialization is done from the command line using a monitor and keyboard. Systems are configured in a top-to-bottom configuration, with the top node in the rack being the designated 'first' node. The 'first node' classification has no bearing on system operations outside of the installation configuration.

1. Hook the monitor and keyboard to the top node in the system. Log in to the node using the provided credentials.
   a. If you are utilizing the **SNS configuration** run the command to initialize the single node.

   ```
   sudo singleNodeCluster=1 scclusterinit
   ```

   b. If you are utilizing the **cluster configuration**, this command will initialize a system composed of all the previously configured nodes.

   ```
   sudo scclusterinit
   ```

2. You may be prompted for a password. Use the same password as the node login.
3. Configured nodes will be listed on the screen. Verify all nodes that were configured are displayed on the list for system initialization, as seen below. If utilizing the SNS configuration only the single node will be shown.

   ```
   Waiting for nodes.  Press ctrl-C to exit or when all nodes intended for this cluster are shown below:
   New node: 10.205.13.32
   New node: 10.205.13.31
   ```

4. When all nodes are shown follow the prompt and press `CTRL+C` to proceed.
5. Enter `yes` to complete the system initialization as seen in the example below.

   ```
   Nodes ready for induction into the cluster:
   New node: 10.205.13.32
   New node: 10.205.13.31
   Enter 'yes' to confirm:
   ```

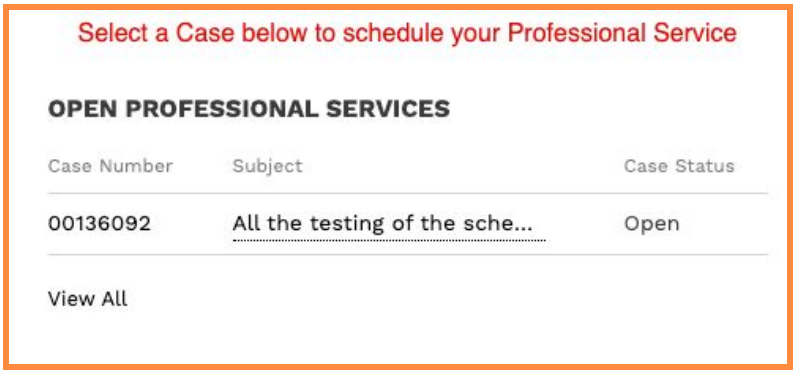
6. It will take approximately 15-20 minutes for the nodes to initialize in a cluster configuration. It will take approximately 10-15 minutes for a node to initialize in a SNS. Once complete the HC3 web interface will be accessible using the configured LAN IP of the node(s).
7. See the applicable User Guide for your software version for information on first-time system configuration if needed.

SCHEDULING YOUR PROFESSIONAL SERVICES

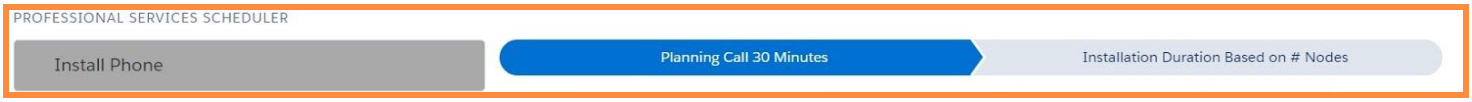
When you are ready to begin scheduling your professional services engagements, including your HC3 system installation, follow these steps.

> **WARNING**
>
> Professional services can only be scheduled in their completion order. For example, the Networking Configuration Service will be required to be scheduled and completed before the HC3 System Installation Service can be scheduled.

1. Open a web browser and log in to the **User Community**.
2. Click the Onboard button on the Home Page.
3. To the right of the Support Documents, you will see all Open Professional Services, click on the Professional Service case number you would like to schedule for shown below.



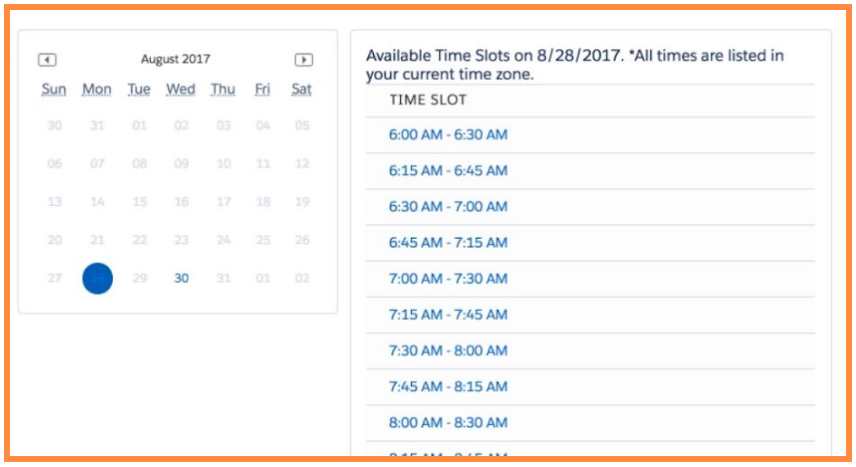
4. The details of the case you click on will appear and above the case information in the upper left hand corner click Schedule Services.
5. The Professional Services Scheduler will appear. All of the purchased and/or included professional services will be listed to the left of the page in the order they are required to be completed.
6. Confirm the listed time zone is correct. If not, select the correct time zone from the drop down list and click Update Time Zone before scheduling any events.
7. Complete the Contact Info section as applicable for each professional service engagement. Some professional service engagements have more than one step, as shown by the transitional arrows at the top of the scheduling details.



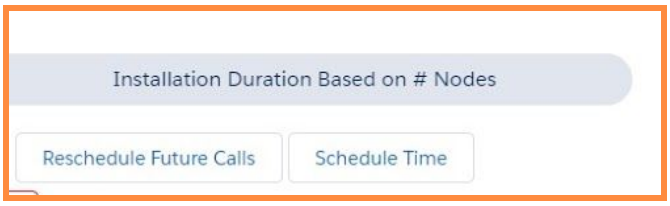
NOTE

All steps of a single professional service type can be scheduled in a single session, but will only allow each piece to be scheduled in order (the Planning Call cannot be scheduled after the Installation, for example). Each part of the current professional service will need to be completed before the next professional service engagement can be accessed.

8. Click an available date and time on the calendar and the appointment block below the Contact Info.



9. Confirm the selected date and time by clicking Schedule Time. If there is ever need to reschedule any upcoming events the Reschedule Future Calls button can be used. It cannot reschedule events in the past, however.



10. A confirmation email will be sent to the email address on record with the Community User.

WHAT NEXT?

VIDEOS

- HC3 Features
- HC3 "How To"

TECHNICAL HELP

- Scale Computing Networking Guidelines and Recommendations
- HyperCore Hardware Support Matrix
- HyperCore Software Support Matrix
- VProfessional Services Scheduling FAQs

FEEDBACK & SUPPORT

DOCUMENT FEEDBACK

Scale Computing welcomes your suggestions for improving our documentation. Please send your feedback to documentation@scalecomputing.com.

TECHNICAL SUPPORT AND RESOURCES

There are many technical support resources available for use. Access this document, and many others, at http://www.scalecomputing.com/support/login/.

- Partner Portal - Partner and Distributor use only.
- User Community - Customer focused, including our online Forum.

Online Support	You can submit support cases and view account information online through the Scale Computing Customer and Partner Portals at **http://www.scalecomputing.com/support/login/**. You can also Live Chat with support through **www.scalecomputing.com** during standard hours Monday-Friday from 8-8 local time.
Telephone Support	Support is available for critical issues 24/7 by phone at +1 877-SCALE-59 (+1 877-722-5359) in the US and at +44 (0) 808 234 0699 in Europe. Telephone support is recommended for the fastest response on priority issues, and the only response after standard Support hours.