ICE Server Upgrade Guide

Product guide for prerelease

Document version 1841, produced on Friday, September 06, 2024.

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Contents

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1 Document History

Publication Date	Product Release	Notes
May 28, 2024	3.5.1	Updated ICE version reference to 3.5.41629.
April 15, 2024	3.5.0	Updated ICE version reference to 3.5.41160. The 'ICE OS terminal screens' and 'ICE OS Configuration Wizard' have been significantly updated.
October 27, 2023	3.4.0	Added *'ICE Desktop: Delete RallyPoint (DC2)'* section.
October 23, 2023	3.4.0	Updated airgap version to `iceos-airgap-release-3.4.0-3.4.31412-652`.
October 11, 2023	3.4.0	For geo-redundancy: Updated steps to make clear that DC1 and DC2 are upgraded concurrently.
September 27, 2023	3.4.0	Updated 'Kubernetes' sections (both DC1 and DC2) in regards to which 'Status' dropdown components are relevant.
September 20, 2023	3.4.0	Updated ICE Server version reference to 3.4.30527. The 'ICE OS terminal screens' and 'ICE OS Configuration Wizard' have been significantly updated.
July 27, 2023	3.3.0	Updated ICE Server version reference to 3.3.28975. Telephony no longer needs to be disabled prior to the upgrade, so deleted references to disabling and re-enabling telephony from the 'Pre-upgrade', 'Telephony', and 'Telephony (DC2) sections. Added guidance to wait 5 minutes between powering DC1 and DC2 VMs.
July 24, 2023	3.3.0	Updated for ICE Server 3.3.28856. The 'Virtualization Guidance' and 'ICE OS Configuration Wizard' have been significantly updated.
April 25, 2023	3.2.0	Updated ICE Server version reference to 3.2.26273. Updated expected timeframes for updates to complete.
March 17, 2023	3.2.0	Updated instructions to identify, download, and mount the correct ISO file(s) for the VM.

Publication Date	Product Release	Notes
February 23, 2023	3.2.0	Updated ICE Server version reference to 3.2.24516. Added step to refresh browser to new wizard UI, as well as description of it. Updated and reordered the process flow for geo-redundant upgrades.
January 13, 2023	3.2.0	Added pre/post-upgrade steps to disable/enable Telephony, updated screenshots to reflect current UI, updated installation and configuration steps to reflect current UI
December 1, 2022	3.2.0	Document created. This new document focuses on ICE OS deployments. The prior version of this document was renamed to ***ICE Server Upgrade for Kubernetes Deployments***.

2 Overview

This document walks through the process for upgrading your ICE Server installation from versions 3.3.x or 3.4.x to the current 3.5.1 release.

- Please be aware that the 'ICE OS Configuration Wizard' has been significantly updated from prior releases, so pay close attention to the information on each screen as you progress in order to ensure a successful upgrade.
- Other upgrade considerations:
  - Initial RallyPoints are created and registered automatically.
  - When a RallyPoint or static reflector is deleted via ICE Desktop, whether intentionally or on accident, they will reappear after ~30 seconds.
  - If the ICE Server IP address is updated, then refer to the *'Update RallyPoint(s) when the ICE Server IP address changes'* section of the **'ICE Desktop User Guide'** for additional steps to perform.

3 Pre-upgrade

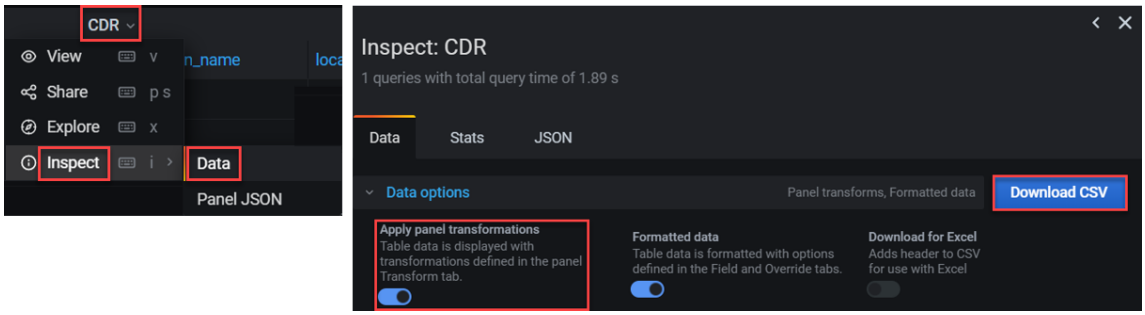
In preparation for the upgrade, please complete the following checklist:

1. Have the following information from the current deployment readily available, in case re-entry is necessary during the upgrade:

    - TLS certificates
    - LDAP certificates
    - Cluster Ingress Hostname

    > **For geo-redundancy:** This applies to both DC1 and DC2.

2. Deactivate all existing patches on both DC1 and DC2 patch servers.
3. From Grafana, export the call data records (CDR) (if using them):



    1. From the **CDR** dropdown, select **Inspect**.
    2. From the **Data** tab of the resulting **Inspect** screen, enable **Apply panel transformations**.
    3. Select the **Download CSV** button to download the CDR dashboard data as a CSV file. The file contains the data currently displayed, reflecting any filters in effect.

4. From Grafana, download all existing dashboards: Export a dashboard as JSON
5. Download the latest ISO files from the Instant Connect Support Portal:

    1. Navigate to: https://support.instantconnectnow.com/s/downloads
    2. Select the 'Instant Connect Enterprise Software' folder.
    3. Select the 'ICE 3.5.1 Software' folder.
    4. Select the 'Download' button for `3.5.1 ICE Server Installer`. The downloaded ZIP folder is named `iceos-3499-release-3.5.1.zip`.

        For air gap: Also select the 'Download' button for `3.5.1 ICE Server for Airgap Installation`. The downloaded 'airgap' ZIP folder is named `iceos-airgap-release-3.5.1-3.5.41629-41630.zip`.

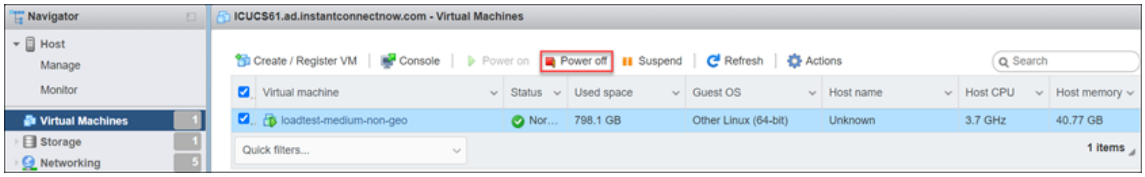
    5. Extract the `iceos-release-3-5-1-git-3641870-3499.iso` file from the ZIP folder and upload it to the appropriate datastore.

For air gap: Also extract the `iceos-airgap-release-3-5-1-41629.41630.iso` file from the 'airgap' ZIP folder and upload it to the appropriate datastore.

6. **For geo-redundancy:** Be prepared for additional steps, since there are two synchronized data centers (DC1 and DC2) to upgrade.

4 Power off the ICE Server VM

1. In VMware, navigate to the ICE Server virtual machine (VM).
2. Select the 'Power off' button.



> **For geo-redundancy:** You will power off both the DC1 and DC2 VMs.

5 Review the VM configuration

Once the VM is powered off, review its configuration to verify it meets ICE Server 3.5.1 requirements, which are summarized below. Update the configuration as necessary to meet these requirements. For more information, please see the 'Virtualization Guidance' and 'Create a VM' sections of the *ICE Server Installation Guide*.

- CPU = 4, 8, 12 , or 16 (minimum based on lite, small, medium, or large deployment size)
  - Cores per Socket = Same as for 'CPU' or as close as possible.
  - Reservation = Select the highest available value.
  - Limit = Unlimited
  - Shares = High
- Memory = 16Gb, 32Gb, 48Gb, or 64Gb (minimum based on lite, small, medium, or large deployment size)
  - Reservation = Same as for 'Memory'. Also select 'Reserve all guest memory (All locked)'.
- Hard disk = 250Gb, 500Gb, 750Gb, or 1Tb (minimum based on lite, small, medium, or large deployment size)

  - Disk Provisioning = Thick Provisioned Eager Zeroed (recommended), Thick Provisioned Lazy Zeroed (acceptable)
  - Shares = High. If 'Limit - IOPS' is configured, then set 'Shares' to the maximum allowed.
- Network Adapter 1 = The selected network must have a working DNS server. Also select 'Connect At Power On'.
- VM Options > Advanced > Latency Sensitivity = Medium

> **For geo-redundancy:** Review the configurations for both the DC1 and DC2 VMs.

6 Mount the new ISO to the VM drive

1. Right-click on the VM and select 'Edit Settings'.
2. From the 'Edit settings' screen:
   - 'CD/DVD Drive 1' > 'CD/DVD Media' = Select 'Browse'. From the 'Datastore browser', select `iceos-release-3-5-1-git-3641870-3499.iso`. Also select 'Connect At Power On'.
   - **For air gap:** 'CD/DVD Drive 2' > 'CD/DVD Media' = Select 'Browse'. From the 'Datastore browser', select `iceos-airgap-release-3-5-1-41629.41630.iso`. Also select 'Connect At Power On'.

     > **Note:** VMware may list the drives in reverse order, so check the drives' details. One drive is designated as 'master' and the other as 'slave'. The 'iceos-git' ISO is for the 'master' drive and the 'airgap' ISO is for the 'slave' drive.
3. When complete, select 'Save'.
4. From the 'Ready to complete' screen, click 'Finish'.

> **For geo-redundancy:** You will perform the steps above for both the DC1 and DC2 VMs.

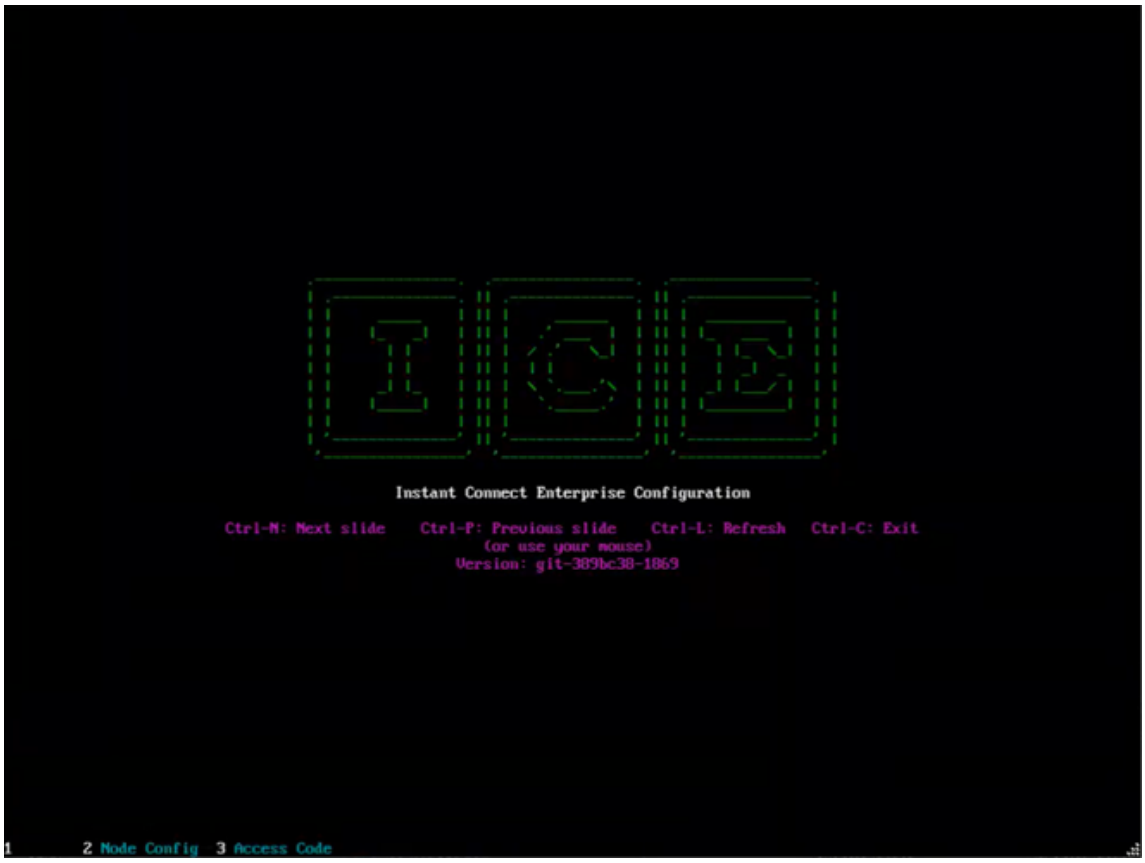
7 Power on the ICE Server VM

> **Note:** For version 3.5.1 (as compared to version 3.4.0), the following update was made to the 'NodeConfig' screen:

> • Eth0 = In addition to IPv4, also allows IPv6.

1. From the VM details screen, select ‘Power on’ to start up the VM.
2. The VM opens a new terminal window displaying the ICE OS terminal screens.

> **For geo-redundancy:** Power on the DC1 VM first, then wait at least 1 minute before powering on DC2. There will now be two terminal windows, one for each DC. Leave BOTH open.

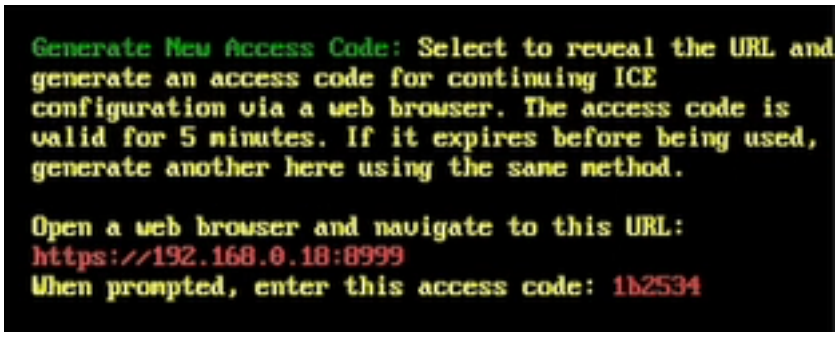


8 Get a browser access code

In the terminal window, use ‘tab’ or ‘Ctrl+N’ to advance past the ‘Start’ and ‘Node Config’ screens to get to the ‘Access Code’ screen.

> **For geo-redundancy:** Advance both DC1 and DC2 terminals.

- Generate Browser Access Code = Hit the 'Enter' key to generate a URL (`https://[IP address of the VM]:8999`) and an access code. Both are displayed in the top, right corner of the screen.



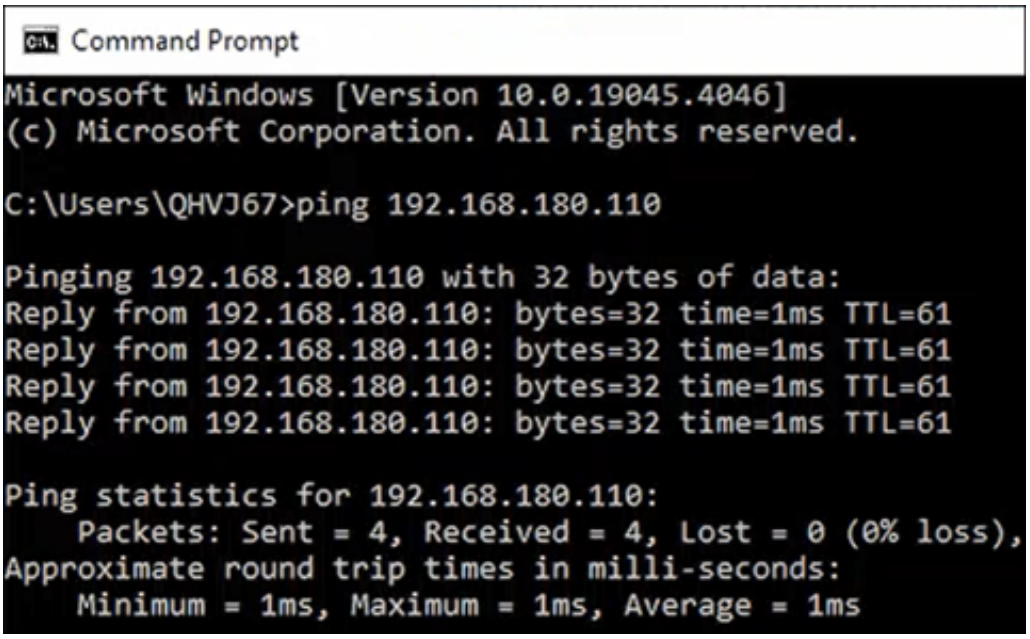
  The access code is valid for 5 minutes. If it expires before being used, simply return to the above page and generate a new browser access code. The URL will remain the same.

- Open a web browser and navigate to the URL to access the 'ICE OS Configuration Wizard' for the VM.

> **Note:** From the browser, you may get a 'Your connection is not private' warning, please advance past that.
>
> **For geo-redundancy:** Generate access codes for both DC1 and DC2, and keep both terminal windows open. Even though the DC2 access code is not required yet, generating it now initiates some required processes.
>
> At this point we recommend verifying the network connection.

1. Open a third terminal window.
2. Enter the following command for DC1: `ping [IP address of the DC1 VM]`

   Here is an example of a command and successful results:



3. Enter the following command for DC2: `ping [IP address of the DC2 VM]`
4. If either `ping` commands do not succeed, then troubleshoot the network connection before proceeding.

   If both `ping` commands do succeed, proceed to the 'ICE OS Configuration Wizard' section.

9 ICE OS Configuration Wizard

For version 3.5.1 (as compared to version 3.4.0), the following updates were made to the 'ICE OS Configuration Wizard':

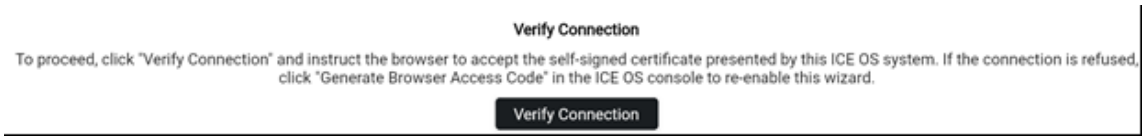
- Overall 'dark mode' appearance.
- **Toolbar** ( ):
  - Display advanced questions = Enabling this tool adds fields to certain screens:
    - Server: 'Install Headlamp' and 'Install KafkaUI' fields will display.
    - Telephony: 'SIP Ports Specification' fields will display.
  - Allow slow DNS resolution

  - **For geo-redundancy:** Re-sync database and Re-index Elasticsearch
  - Collect debug logs
  - Run database backup
  - Restart helm operator

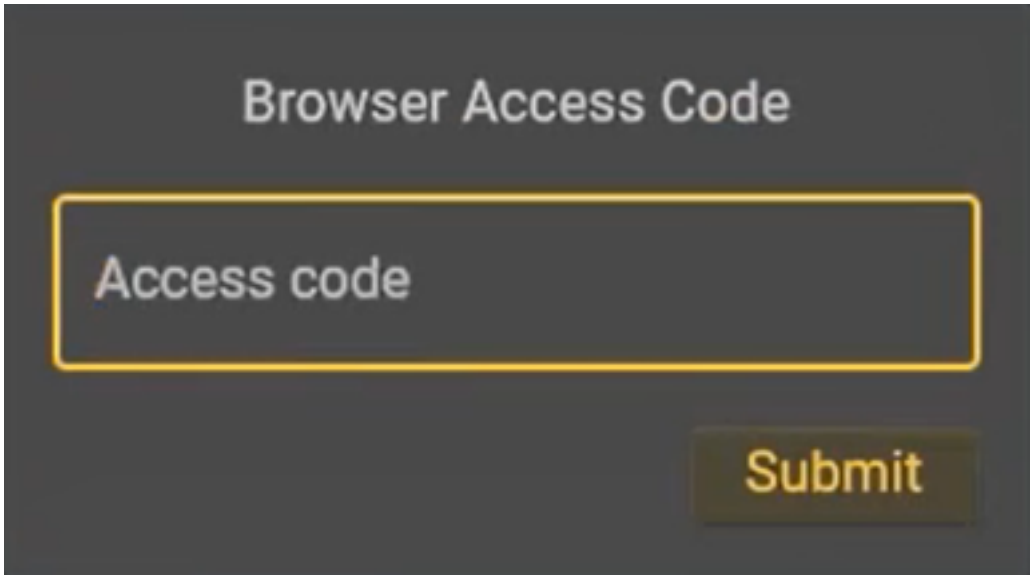
- Some field names were slightly updated for clarity.

9.1 Verify connection

1. Select 'Verify Connection'.



2. From the resulting popup, enter the access code, then select 'Submit'.



3. You now see the 'ICE OS Configuration Wizard' user interface. For more information, see the 'Wizard UI overview' section of the *ICE Server Installation Guide*.
4. As you advance through the wizard configuration screens, review them to verify their configuration. Most configurations will remain unchanged, but some will need updates to meet ICE 3.5.1 requirements. Some information may need to be re-entered, e.g., certificates.

9.2 Profile

- **Toolbar** ( )

1. Select the **Toolbar** () button to open the 'Tools' popup.
2. Select 'Display Advanced Questions'. Some additional tools are now available.
3. In the 'Shutdown Server' field, enter: `AllowHelmUpgradeOnPreviouslyBrokenSystem`
4. Select 'Close'.

- Verify the configurations on the screen are correct, then select 'Apply' to proceed.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens. In addition, for DC2:
>
> - Deployment Profile (DC2) = Verify it displays 'GeoDc2'.
> - The following is expected behavior for both DCs:
>   - `ice-release-ice-cassandra-ice-cassandra-cassandra-operator` displaying a `CrashLoopBackOff` status.
>   - `ice-monitoring` helm release displaying a `Failed` status.

9.3 Network

Verify the configurations on the screen are correct, then select 'Apply' to proceed.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens. In addition, for DC2:
>
> - SSH Login Message (DC2) = Update any DC1-specific references to reflect DC2 instead.

9.4 Storage

Verify the configurations on the screen are correct, then select 'Apply' to proceed. A 'Requested Storage allocation [XXX GB] within provisioned size [YYY GB]' notification displays.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens.

9.5 Kubernetes

- 'Status' > 'Kubernetes helm release output' > 'ice-monitoring helm release' will show as 'Failed'. This is expected.
- Verify the configurations on the screen are correct, then select 'Apply' to proceed.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens. In addition, for DC2:
>
> - Node Name (DC2) = The prepopulated name should end with '-dc2'. This suffix should appear automatically. If it does not, then add that suffix. Do *NOT* make any other edits to this field.

9.6 Version

- For version 3.5.1 (as compared to version 3.4.0), the following fields were added to this screen:
  - Reload Options = Follow the instructions if this button appears.
- Both the 'Installation Package' and 'Installation Package Version' fields, still display the prior release values, so manually update both fields with the new release values indicated below.
  - Installation Package = From the dropdown, select the following value: `ice-release-helm/ice-helm-operator-release-3-5-1`
  - Installation Package Version = From the dropdown, select the following value: `3.5.41629`
- Verify the configurations on the screen are correct, then select 'Apply' to proceed.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens.

9.7 TLS Certs

- Re-enter the certifications, if needed.
- Verify the configurations on the screen are correct, then **check the 'Status' dropdown and wait for 'Node Status' to turn green *before* proceeding to the next screen.**

  > **Note:** If you advance to the next screen *before* 'Node Status' turns green, an error message may display. If this occurs, wait for 'Node Status' to turn green, and the error will resolve itself.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens.

9.8 Server

- For version 3.5.1 (as compared to version 3.4.0), the following fields were added to this screen:
  - Concurrent AI Transcribers = Select the desired number of concurrent AI transcribers.
  - Install Swagger (OpenAPI) = Enable for API documentation.
  - Install KafkaUI = Only displays if the 'Advanced Questions' tool is enabled.
  - Install Headlamp = Only displays if the 'Advanced Questions' tool is enabled.
  - Enable MinIO Console = Enable to manage backups via this web app.
- Verify the configurations on the screen are correct, then select 'Apply' to proceed.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens. In addition, for DC2:
>
> - Install Archive Server (DC2) = This can only be enabled on either DC1 or DC2, but not both. So if it was enabled on DC1, it will show as disabled on DC2. This is expected behavior. If you did *NOT* enable it on DC1, and you are licensed to use the feature, then you can enable it on DC2.

9.9 Telephony

- For version 3.5.1 (as compared to version 3.4.0), the following fields were added to this screen:
  - SIP Ports Specification = Allows SIP ports to be specified. Only displays if the 'Advanced Questions' tool is enabled.
    - SIP TCP Port
    - SIP UDP Port
    - SIP TLS Port
    - SIP TCP6 Port
    - SIP UDP6 Port
    - SIP TLS6 Port
- Install Telephony Server = If enabled, an 'Assigned node XXX for telephony' notification displays, also the following fields appear:
  - Use TLS with Telephony = If enabled, the following fields appear:
    - Telephony Certificate Private Key = Required.
    - Telephony Certificate Chain = Required.

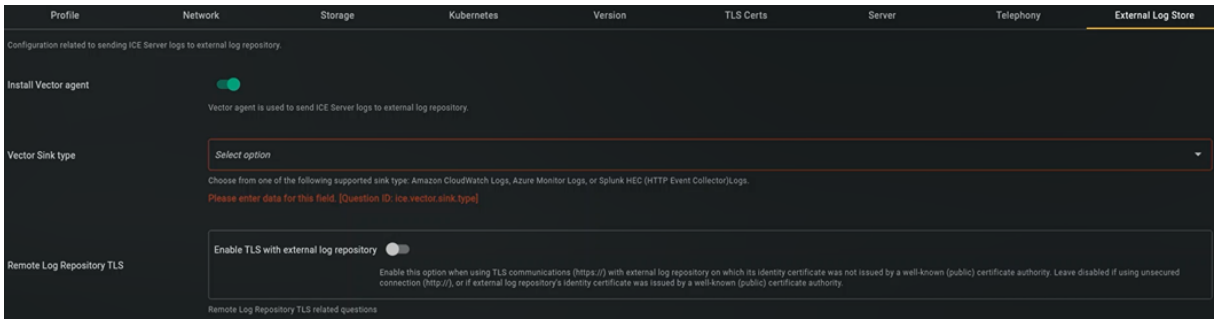
  - Assigned Telephony Node = Prepopulated with the ICE host name, which is pulled from the value entered in the ‘Node Name’ field on the ‘Network’ screen.

- Verify the configurations on the screen are correct, then select ‘Apply’ to proceed.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens. In addition, for DC2:
>
> - Install Telephony Server (DC2) = This can only be enabled on either DC1 or DC2, but not both. So if it was enabled on DC1, it will show as disabled on DC2. This is expected behavior. If you did *NOT* enable it on DC1, and you are licensed to use the feature, then you can enable it on DC2.

9.10 External Log Store

> **Note:** For version 3.5.1 (as compared to version 3.4.0), this new screen was added.



- Install Vector Agent = If enabled, the following fields appear:
  - Vector Sink Type = Select the appropriate value, then the following fields appear:
    - Endpoint = The URL for the server type selected above.
    - Access Token = The token for the server type selected above.
  - Remote Log Repository TLS = Enable if using TLS with the external log repository.
- Verify the configurations on the screen are correct, then select ‘Apply’ to proceed.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens.

9.11 Monitoring

Verify the configurations on the screen are correct, and then click ‘Apply’ to proceed.

> **For geo-redundancy:** Perform the same steps for the DC1 and then DC2 screens.

9.12 Sync (geo-redundancy)

> **For geo-redundancy:** The 'Sync' screen only appears for geo-redundant installations and only for DC1.

Select 'Apply' to proceed.

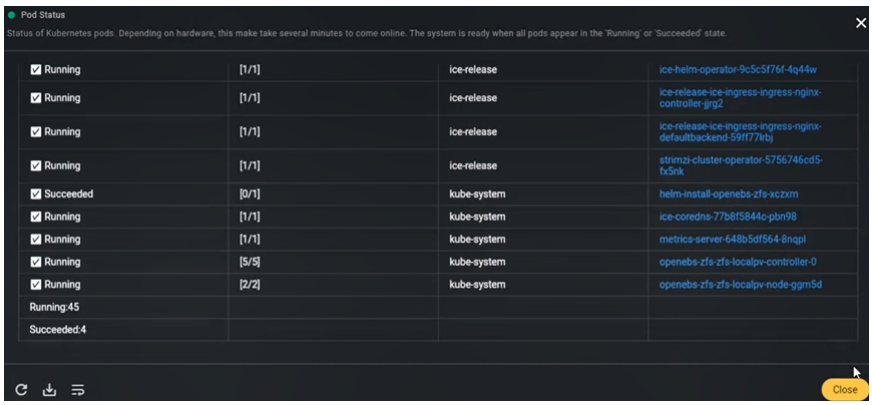
9.13 Finish

1. Before doing *anything* on this screen, open the 'Status' dropdown and verify that *all* of the following are green:
   - DNS Status
   - Network
   - Node Status
   - NTP Status
   - Pod Status
   - **For air gap:** Air-gapped Extraction Status

     > **Note:** If you accidently select 'Install/Upgrade' before the air gap extraction completes, then wait for the extraction to complete, then re-select 'Install/Upgrade'.
     >
     > **Note:** If you open 'Air-gapped Extraction Status' to track its progress, you may notice some files notated as 'Skipping', this means the existing file from installation remains unchanged for the upgrade, so it does not need to be extracted again.

   If any of the above are *NOT* green, wait until they are. Select their 'Refresh' button, to get their latest status, or open their status window to see their progress. Do *NOT* use the web browser refresh.
2. Select **Install/Upgrade ICE Server** to apply all the configuration settings. A 'Beginning System setup' notification displays. Track progress by opening the 'Status' dropdown. Depending on server and internet speeds, upgrades may take up to 30 minutes to complete. **For air gap:** Air gap upgrades may take up to 45 minutes to complete, due to extracting the additional ISO file.

   The process is complete when 'Pod Status' returns to green, expanding it will show the following:



Congratulations! The ICE Server single node upgrade is now complete.

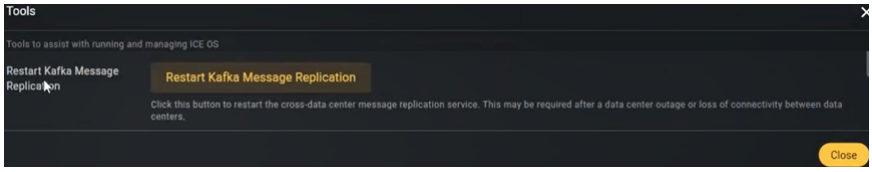
> **For geo-redundancy:**
>
> 1. Perform the above steps for 'Finish' (DC1) **NOTE: Pod Status** will not return to green until both DC1 and DC2 are upgraded.
> 2. Once installation of DC1 begins, wait a minimum of 2 minutes, but no longer than 5 minutes, before clicking install on DC2. **IMPORTANT:** Do not wait longer than 5 minutes before initiating the DC2 installation.
> 3. Perform the above steps for 'Finish' (DC2).
> 4. Continue with the *Additional steps for geo-redundancy section* below.

10 Additional steps for geo-redundancy

Continue with the steps below, which consist of going back-and-forth between the DC1 and DC2 wizards. Please follow the steps in order to successfully upgrade your geo-redundant ICE Server.

10.1 Tools (DC1): Restart Kafka Message Replication

1. Go to the **DC1** 'Finish' screen and open the 'Tools' popup by clicking on the wrench icon ( ) in the top, right of the wizard.
2. From the 'Tools' popup, scroll through the list of tools, and select 'Restart Kafka Message Replication'. A message will display indicating when the tool has begun and when it has finished.



3. Open the ‘Status’ dropdown and verify the ‘Geo Kafka mirror Replication’ pod is green.

> **Note:** If the pod does not turn green, then rerun the ‘Restart Message Replication’ tool (repeat step 2 above). If the pod still does not turn green, then halt the upgrade process and contact Instant Connect Technical Support.

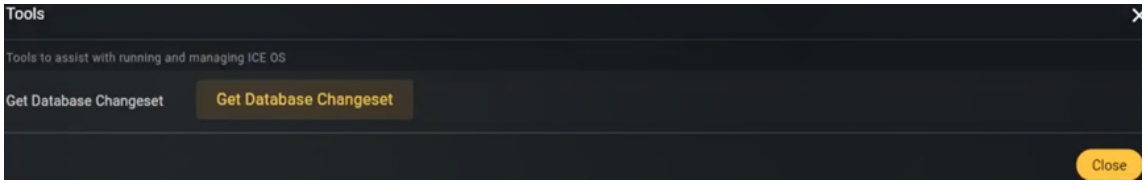
10.2 Tools (DC2): Restart Kafka Message Replication

Go to the **DC2** ‘Finish’ screen and run the ‘Restart Kafka Message Replication’ tool, just as you did for DC1, including verifying the ‘Geo Kafka mirror Replication’ pod is green.

> **Note:** If the pod does not turn green in DC2, *first* return to DC1 and rerun the tool, *then* return to DC2 and rerun the tool. If the pod still does not turn green, then halt the upgrade process and contact Instant Connect Technical Support.

10.3 Tools (DC1): Get Database Changeset

1. Go to the **DC1** ‘Finish’ screen and open the ‘Tools’ popup by clicking on the wrench icon () in the top, right of the wizard.
2. From the ‘Tools’ popup, scroll through the list of tools, and select ‘Get Database Changeset’.



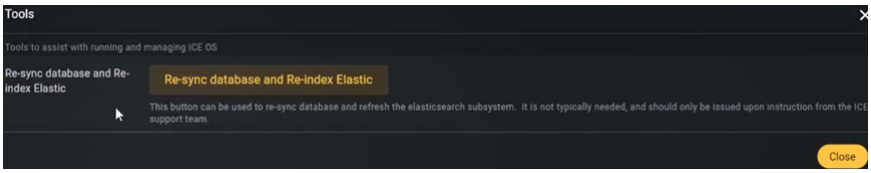
3. On completion a message will display. Take note of the count.

10.4 Tools (DC2): Get Database Changeset

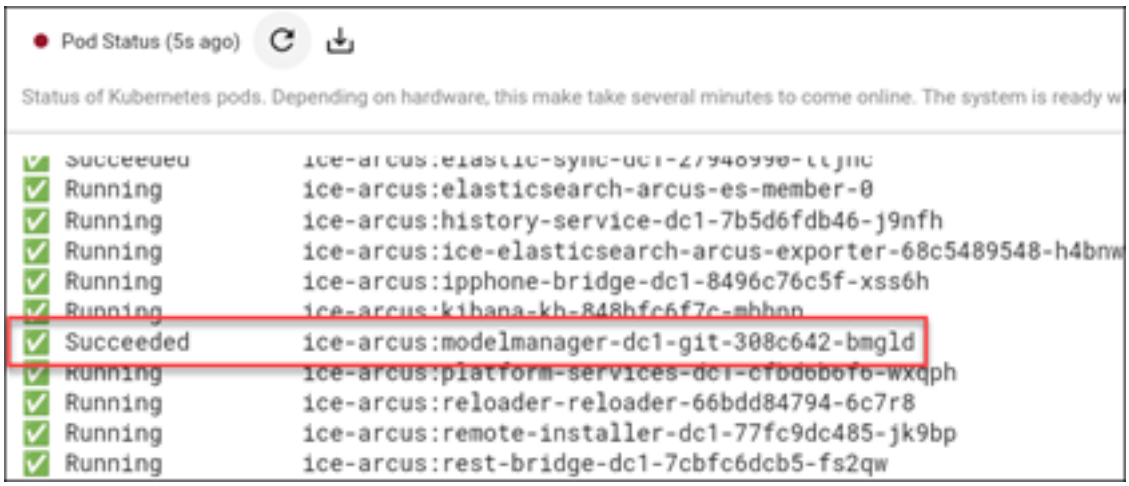
1. Go to the **DC2** 'Finish' screen and select 'Get Database Changeset', just as you did for DC1, including taking note of the count.
2. The counts for DC1 and DC2 *must* match. If they do, then proceed with the next step. If they do not, then halt the upgrade process and contact Instant Connect Technical Support.

10.5 Tools (DC1): Re-sync database and Re-index Elastic

1. Go to the **DC1** 'Finish' screen and open the 'Tools' popup by clicking on the wrench icon ( ) in the top, right of the wizard.
2. From the 'Tools' popup, scroll through the list of tools, and select 'Re-sync database and Re-index Elastic'.



3. Open the 'Status' dropdown, then open the 'Pod Status' pod and verify the 'modelmanager' job status is 'Succeeded'.



10.6 Tools (DC2): Re-sync database and Re-index Elastic

Go to the **DC2** 'Finish' screen and select 'Re-sync database and Re-index Elastic', just as you did for DC1, including verifying the 'modelmanager' job status is 'Succeeded'.

Congratulations! The geo-redundant ICE Server upgrade is now complete.

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11 Post-upgrade

11.1 Grafana: Dashboards and CDRs

From the Instant Connect Support Portal (https://support.instantconnectnow.com/s/downloads), download the latest Grafana dashboards and then import them to Grafana.

Also import the CDRs and other dashboards which were exported as part of the 'Pre-upgrade' process.

Any additional customizations, such as alert definitions, must be reconfigured.