

Wireless Access Point Expansion Pack Quick Installation Guide

The Xirrus XI -AC3470 802.11ac Wave 2 Wireless Access Points (APs) are modules that enable you to evolve the wireless capacity of your XR Series Arrays as your needs grow.



Features

- ◆ Each AP includes four high gain directional antennas focusing the RF signal for maximum range and reliability.
- ◆ The modular design fitting Xirrus XR-2000/4000/6000 Series Arrays enables future in-place upgrades and network designs that aim RF coverage where needed.
- ◆ Configurable to operate in 2.4GHz or 5GHz bands.

Basic Installation Requirements

- ◆ Wave 2 radios require ArrayOS (AOS) Release 8.0 or higher. **You must upgrade the Array to at least Release 8.0 BEFORE you install any Wave 2 modules.** You must have a Xirrus license for your AOS release (8.0 or higher) and for the enhanced capabilities for this specific Array (802.11ac Wave 2, higher software release). See “[Licensing New Modular APs](#)” on page 10.
- ◆ **You may not mix Wave 2 radios** with different radio types on the same XR Array. If you have 802.11ac Wave 2 radios and other types of radios on the same Array, all of the non-Wave 2 radios will be ignored.
- ◆ Xirrus highly recommends that the upgraded Array have a radio count that matches one of our standard Arrays (e.g., XR-4000 with 4 or 8 radios, XR-2000 with 2 or 4).
- ◆ No. 2 Phillips head screwdriver
- ◆ Sharp cutting tool (box-cutter, etc.)—only needed for XR Arrays with removable gaskets (models XR-2000 and above that end in “0”), if you will move modules within the Array.
- ◆ Computer with a terminal emulator such as PuTTY for using the Array CLI via SSH. You may also use the Xirrus Xircon utility to connect to the Array. Download Xircon from Download Central at support.xirrus.com.
- ◆ A Cat 5e/Cat 6 connection to a powered switch port or a Power over Ethernet injector that is appropriate for this Array model. The Array must have a data connection to your network. If you are using Xircon to communicate with the Array, the Array must be on the same local subnet as your workstation.

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- ◆ Recommended: Anti-static workstation (anti-static mat and anti-static wrist strap)

Open the Array

1. Make sure that you have installed a license that supports both Wave 2 802.11ac radios (i.e., 4x4 radios) and the required AOS release as described above, then upgrade the Array **before** installing the Wave 2 modules. Otherwise, the Array may not boot up when the installation is complete.
 - a. Log in to the Array's WMI and open the **System Tools** page. In the **Configuration Management** section, click **Start** on the **Auto-provisioning** line to install the latest license for this Array.
 - b. In the **System** (top) section, on the **Operating System Software Upload** line, click **Choose File** and browse to the AOS software image that you have already downloaded to your file system from your account at support.xirrus.com. Click the **Upload** button when it appears. When the **Status** information at the bottom of the page informs you that the file transfer is complete, set the **Active Software Image** to this new image. Click the **Save & Reboot** button to complete the upgrade.
2. Prepare a location for performing the upgrade. Xirrus recommends using an anti-static work station with an anti-static wrist strap attached to an anti-static mat per the manufacturer's directions. Wear the wrist strap while working with the Array.

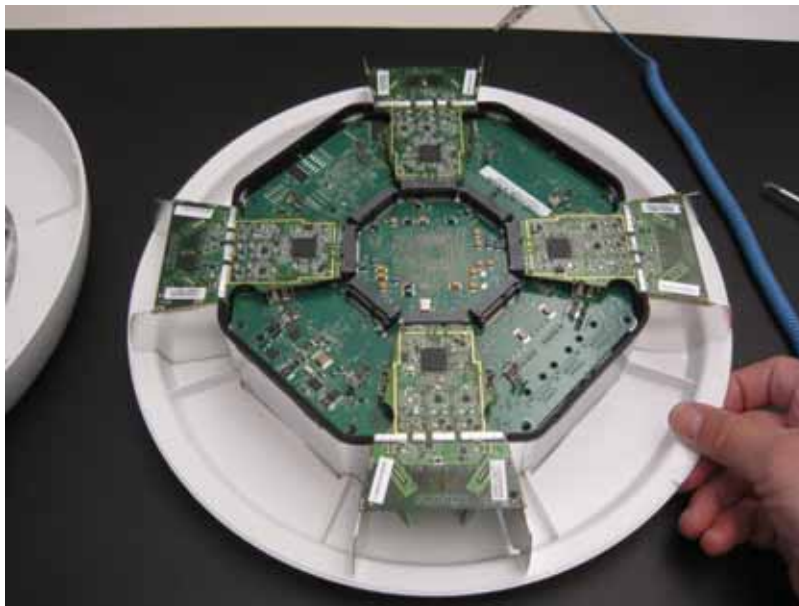


3. Remove screws from the bottom of the Array with a No. 2 Phillips screwdriver as shown. To save the screws for later, it is most convenient to lift the back away from the front cover and let the screws drop into the cover as you turn the back over.

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4. Carefully turn the unit over. Remove the top cover of the Array and set it aside.



5. Continue to one of the following sections:
 - ◆ “Add Modular APs” on page 5 to install modular APs in empty slots.
 - ◆ “Upgrade APs” on page 7 to change modular APs.
 - ◆ “Test and Close the Array” on page 9 to move APs to different slots.

Add Modular APs

1. If you have an Array model with removable gaskets, remove the gasket from the desired target location. Some Arrays (typically, those whose model numbers end in a 5 or 6) do not have this kind of gasket.

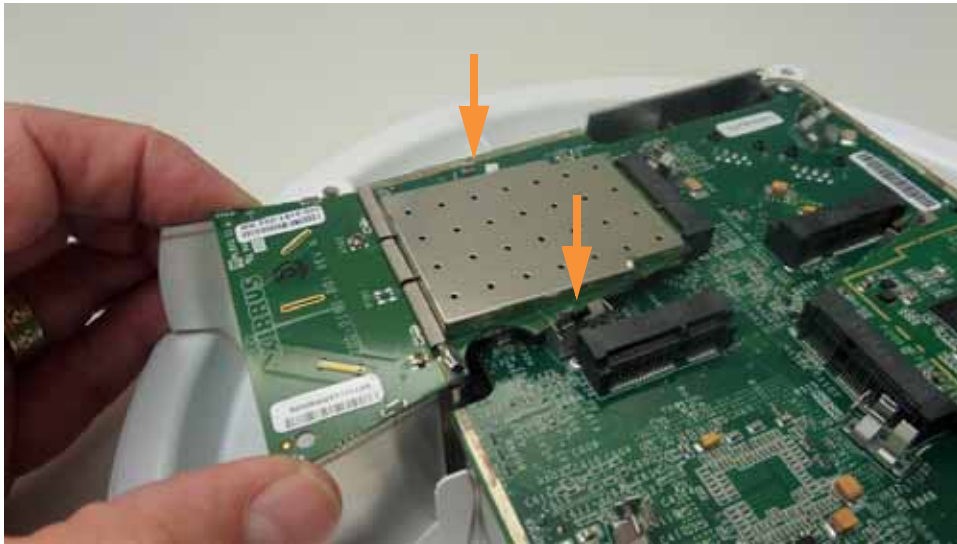


2. Insert the new modular AP into the connector as shown below for an XR-2225.



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- Carefully push the modular AP down until it latches on both sides.



- Repeat for each new modular AP.
- Proceed to “Test and Close the Array” on page 9.



Important: For XR Arrays that have movable gaskets, there must be a gasket installed in all slots that have no radio card!

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Upgrade APs

If you are upgrading your APs to Wave 2 modular APs, use this procedure to switch APs. (XR-4836 shown below)

1. Push apart both spring clips (indicated below) with one hand, then carefully lift the old modular AP with other hand.



2. Gently pull the old modular AP out of the connector.



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3. Insert the new modular AP into the same connector.



4. Carefully push the modular AP down until it latches on both sides.



5. Repeat for each new modular AP.
6. Proceed to “Test and Close the Array” on page 9.

Test and Close the Array

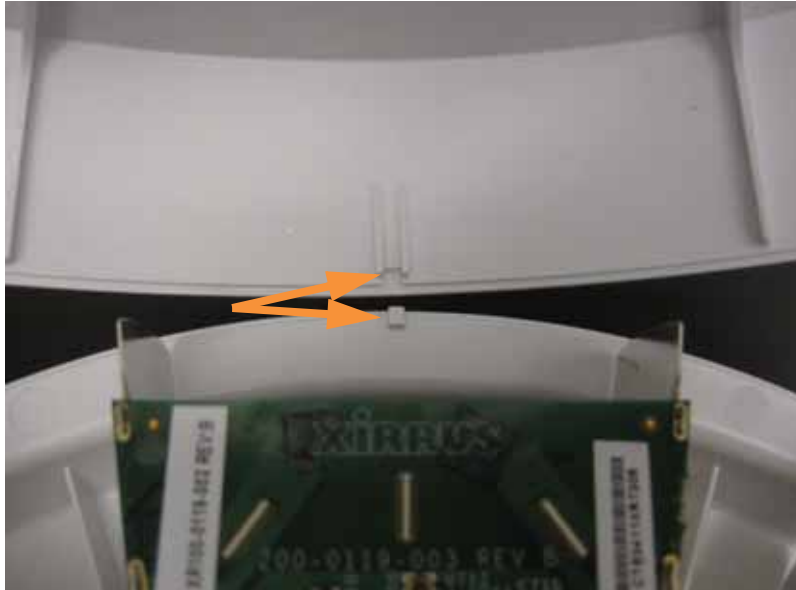
After adding or changing radio modules, the Array determines its own model number based on the number and type of radios that it now contains. For example, suppose you modify an XR-4426 that initially has four 2x2 802.11ac Wave 1 APs. If you remove the existing radio modules and fill all eight slots with Wave 2 802.11ac 4x4 radios, the Array will identify itself as a model that has eight Wave2 radios.

Use the following steps to check the installation of the AP modules before closing the Array.

1. With the Array still open on the workbench, supply data and appropriate power to the Gigabit1 port using a Cat 5e/Cat 6 connection.
2. Verify that the fan works and that the Gigabit1 LED is flashing with data traffic on its connection. If this fails, make sure that you are using a power supply recommended by Xirrus for this Array, and check your power and data connections.
3. The Array LEDs will light, and after a while the LEDs for the radios will blink in a rotating sequence. When this sequence stops, the Array has finished booting.
4. Verify that the new and old radio modules are properly connected:
 - ◆ Open a session to the Array CLI:
 - ◆ Using SSH via a terminal emulator, connect to the hostname of the Array. The factory default hostname is the Array's serial number, found on a label on the back of the Array and on the shipping box.
 - ◆ Or, using Xircon, make sure that the Array is on the same local subnet as the computer on which Xircon is running. The Array should be found automatically.
 - ◆ Log in to CLI using the username/password for this Array (the factory defaults are **admin/admin**).
 - ◆ Enter the CLI command **show array-info**. This displays (among other things) a list of all the modular APs that are seated properly and operational.
 - ◆ Enter the CLI command **show iap**. This lists the radio type and settings of each AP.
5. If any of the APs are not working properly, they will not show up in the **show array-info** list. In this case, power down the Array and then re-seat the faulty APs. Power up the Array and perform the tests again. If all APs are still not functioning properly please review [“Troubleshooting ” on page 12](#).

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6. Once all APs are functional, reinstall the Array's plastic cover by aligning the interior tab on the bottom with the notch on the top cover. Then reinstall the screws, being careful not to over-tighten them.



Licensing New Modular APs

The Array requires a new license from Xirrus to enable expanded capabilities if you have added 11ac Wave 2 radios where there were none before. Please make sure that you have purchased a license for the enhanced capabilities for this specific Array, based on its serial number.

Most customers employ the Xirrus Management System (XMS) for continuing management of Xirrus devices. XMS simplifies installing the upgraded license on the Array, and in some cases will automatically install it.

- ◆ XMS Cloud Next Generation (XMS-CL-9500-x)
Soon after the upgraded Array has Internet connectivity, the new license will automatically be installed.
- ◆ XMS Enterprise
(Also available as a cloud-deployed solution: XMS-9000-CL-x) You may use the XMS **Configure > Import Licenses** menu option to update the licenses of all Arrays to be modified in one step. Note that if you are upgrading modified Arrays to a new minor or major software release, and if the software upgrade is being performed for a profile network, then XMS will automatically install the latest available licenses on the profile's member Arrays before the software upgrade occurs.

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If you are not using XMS, new licenses are provided by Xirrus in the form of an Excel file (.xls). Each license is keyed to an individual Array's serial number, and may only be used on that Array. Using the Array WMI on your browser, go to the **System Tools** page. You may either click the **Auto-provisioning Start** button to automatically fetch a new license from the Xirrus license server and install it (if the Array has Internet connectivity), or enter this Array's new **License Key** manually. Please see the *ArrayOS User Guide* for more information. The User Guide is available from <http://support.xirrus.com> (login required). Select the Libraries tab and click the *ArrayOS - XR Platform Latest Release* link on the left.

To verify the features supported by the newly installed license, go to the WMI's **Array Information** page. The **License Features** section (under **Software**) will show how many APs and what type are authorized by the new license.

Troubleshooting

Modular AP not operating

1. Re-seat the modular APs that are not functioning.
2. If a modular AP still is not functioning properly, power down the Array.
3. Swap the location of the non-functioning modular AP to a slot that was functioning (see “Test and Close the Array” on page 9) and perform the tests again.
4. If the same modular AP is still not functioning in the new slot, there may be a problem with that modular AP. If the same modular AP is now working in the new slot, re-install it in the original slot. If the original slot is still not functioning, there may be a problem with that slot on the Array.
5. If everything works, then reinstall the cover as shown on page 10.

Fan not operating

1. Verify that you are using a power injector or powered switch port that Xirrus recommends for this Array.
2. Remove all of the modular APs. Remove the four (4) screws holding the CPU board in the chassis and lift the CPU board. Verify that the fan connector is plugged into the CPU board (the fan might have come unplugged).
3. If the fan still does not operate, disconnect the power injector or powered switch port, and connect a different one (the power source may be bad).
4. If the fan still does not operate, call Xirrus Customer Support.

Customer Support

The Xirrus Customer Support web site provides online documents and tools for troubleshooting and resolving technical issues with Xirrus products and technologies. Access to all tools on the Xirrus Customer Support Website requires a login user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at:

<http://support.xirrus.com>.

To request additional assistance, please contact Xirrus Customer Support via:

- ◆ Email at: support@xirrus.com.
- ◆ Live chat with one of the Xirrus Customer Support Representatives at: <http://support.xirrus.com>.
- ◆ Call Xirrus at the following numbers:

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United States and Canada	+1.800.947.7871 (US Toll Free) or +1.805.262.1600 (Direct)
Europe, Middle East, and Africa	+44.20.3239.8644
Australia	1300.947.787 (within Australia Only)
Asia and Oceania	+61.2.8006.0622
Latin, Central, and South America	+1.805.262.1600

Hardware Warranty Agreement

PLEASE READ THIS AGREEMENT CAREFULLY BEFORE USING THIS PRODUCT

BY USING THIS PRODUCT, YOU ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTOOD ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT AND THAT YOU ARE CONSENTING TO BE BOUND BY THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL OF THE TERMS OF THIS AGREEMENT, RETURN THE UNUSED PRODUCT TO THE PLACE OF PURCHASE FOR A FULL REFUND.

LIMITED WARRANTY. Xirrus warrants that for a period of one year from the date of purchase by the original purchaser ("Customer"): (i) the Xirrus Equipment ("Equipment") will be free of defects in materials and workmanship under normal use; and (ii) the Equipment substantially conforms to its published specifications. Except for the foregoing, the Equipment is provided AS IS. This limited warranty extends only to Customer as the original purchaser. Customer's exclusive remedy and the entire liability of Xirrus and its suppliers under this limited warranty will be, at Xirrus' option, repair, replacement, or refund of the Equipment if reported (or, upon request, returned) to the party supplying the Equipment to Customer. In no event does Xirrus warrant that the Equipment is error free or that Customer will be able to operate the Equipment without problems or interruptions.

This warranty does not apply if the Equipment (a) has been altered, except by Xirrus, (b) has not been installed, operated, repaired, or maintained in accordance with instructions supplied by Xirrus, (c) has been subjected to abnormal physical or electrical stress, misuse, negligence, or accident, or (d) is used in ultra-hazardous activities.

DISCLAIMER. EXCEPT AS SPECIFIED IN THIS WARRANTY, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS, AND WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A

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PARTICULAR PURPOSE, NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE, ARE HEREBY EXCLUDED TO THE EXTENT ALLOWED BY APPLICABLE LAW.

IN NO EVENT WILL XIRRUS OR ITS SUPPLIERS BE LIABLE FOR ANY LOST REVENUE, PROFIT, OR DATA, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL, OR PUNITIVE DAMAGES HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY ARISING OUT OF THE USE OF OR INABILITY TO USE THE EQUIPMENT EVEN IF XIRRUS OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In no event shall Xirrus' or its suppliers' liability to Customer, whether in contract, tort (including negligence), or otherwise, exceed the price paid by Customer.

The foregoing limitations shall apply even if the above-stated warranty fails of its essential purpose. SOME STATES DO NOT ALLOW LIMITATION OR EXCLUSION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES.

The above warranty DOES NOT apply to any evaluation Equipment made available for testing or demonstration purposes. All such Equipment is provided AS IS without any warranty whatsoever.

Customer agrees the Equipment and related documentation shall not be used in life support systems, human implantation, nuclear facilities or systems or any other application where failure could lead to a loss of life or catastrophic property damage, or cause or permit any third party to do any of the foregoing.

All information or feedback provided by Customer to Xirrus with respect to the Product shall be Xirrus' property and deemed confidential information of Xirrus.

Equipment including technical data, is subject to U.S. export control laws, including the U.S. Export Administration Act and its associated regulations, and may be subject to export or import regulations in other countries. Customer agrees to comply strictly with all such regulations and acknowledges that it has the responsibility to obtain licenses to export, re-export, or import Equipment.

This Agreement shall be governed by and construed in accordance with the laws of the State of California, United States of America, as if performed wholly within the state and without giving effect to the principles of conflict of law. If any portion hereof is found to be void or unenforceable, the remaining provisions of this Warranty shall remain in full force and effect. This Warranty constitutes the entire agreement between the parties with respect to the use of the Equipment.

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