**Network Configuration Guidelines for OceanDirect Devices**

**Overview**

This document outlines best practices for configuring OceanDirect-compatible spectrometer units on a network. It provides guidance for both dynamic and static IP setups, and offers considerations for ensuring proper multicast communication between the control software and devices.

💡 **Tip**: You can configure these settings easily using **OceanView (OV)**. While it’s possible to do this programmatically, it requires more effort—so using OV is the simpler and recommended approach. Screenshots are at the bottom of the document.

**1. Configuring Devices with Dynamic IP Addresses (DHCP)**

For quick setup and ease of access—especially in environments where memorizing individual IP addresses is impractical—dynamic addressing is recommended.

**Steps:**

1. **Enable** the following settings:
   * Network interface
   * Gigabit Ethernet
   * **DHCP**
   * **Multicast**
2. Click **"Save Settings"** to apply changes.

✅ **Recommendation**: Dynamic IP is ideal for testing environments where flexibility and quick deployment are desired.

**2. Configuring Devices with Static IP Addresses**

Static IPs offer more control and reliability, especially in networks with a high number of connected units, such as OceanHDX and OceanFX spectrometers.

**Steps:**

1. **Enable** the following settings:
   * Network interface
   * Gigabit Ethernet
   * **Multicast**
2. **Disable** DHCP.
3. Enter the **Static IP Address** and **Gateway** values.
4. Ensure the **Static IP is unique** on the network.
5. Click **"Save Settings"** to apply changes.

✅ **Recommendation**: Static IP configuration is preferred for production environments or customer deployments involving multiple devices.

**3. Network Isolation Warning**

Do **not** place your OceanDirect network devices and Python control scripts on **separate or isolated networks**.

* Multicast messages used for dynamic device discovery **may not function across different network segments or subnets**.
* If multicast communication fails in your environment, dynamic probing will not work reliably.

⚠️ **Suggested Solution**: Use **static IP addressing** in such cases to ensure consistent device connectivity.

**Conclusion**

Choosing the appropriate network configuration—dynamic or static—depends on your specific use case:

* **Use DHCP for** rapid testing and minimal configuration.
* **Use Static IP for** scalability, reliability, and multi-unit deployments.

Ensure that both your control system and devices reside on the **same network segment** to maintain proper multicast functionality.  
  
  
Screenshots:

A screenshot of a computer

AI-generated content may be incorrect.

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AI-generated content may be incorrect.