



# B+B SmartWorx IXM™ TECHNOLOGY, the Master to Network Deployment

## What is IXM technology from B+B SmartWorx® powered by Advantech?

In traditional networking management, it can take a lot of time to configure each network device with duplicate settings, as well as perform firmware synchronization. If, after deployment, an issue appears without an obvious method of solving, it can quickly affect the efficiency of the network.

B+B SmartWorx IXM technology is a base protocol designed for the eWorx SE500 Series of Ethernet switches. Its design approach was based on the knowledge that devices negotiate with each other for specific purpose. With this in mind, two directions were defined to implement IXM: synchronization and supervision. It also benefits different phases of device deployment: installation and maintenance. IXM partially accomplishes the concept of connection with the Internet of Things (IoT) — it aids in the control of everything remotely and utilizes Big Data collected from other network devices. IXM fulfills the expectations we applied to the network: simple, quick installation and operation reliability.

## Unpacking the current situation of firmware and software upgrades and configuration:

In an IT network, administrators need to configure each device based on his or her knowledge. With several devices, this isn't usually an issue. But with multiple groups of switches, it's a time consuming and challenging task. There are, of course, software utilities that can help with this, but they are installed on a PC that needs to be connected directly to the switch. Each time there's a software upgrade or firmware upgrade, the computer — once again — needs to be connected. This isn't an ideal situation. So, how about using a NMS (Network Management System)? Compared to the utility software, a NMS runs on the concept of central management and is designed to rapidly deploy anything on any device that can be discovered. But it's still a server-based solution, and that means an extra server-level device

is needed, therefore increasing the cost.

The new way to firmware and software upgrades and configuration with IXM technology:

Based on the previously discussed information, a better solution is proposed: one that is portable and easy to install. It's also best if it's embedded in network devices without extra cost, and is simple to use.

IXM technology from B+B SmartWorx powered by Advantech fulfills these requirements with the following advantages:

- Portable
- Embedded in network devices
- Upgrades with firmware
- No extra cost
- Easy to use
- Quick for deployment and troubleshooting

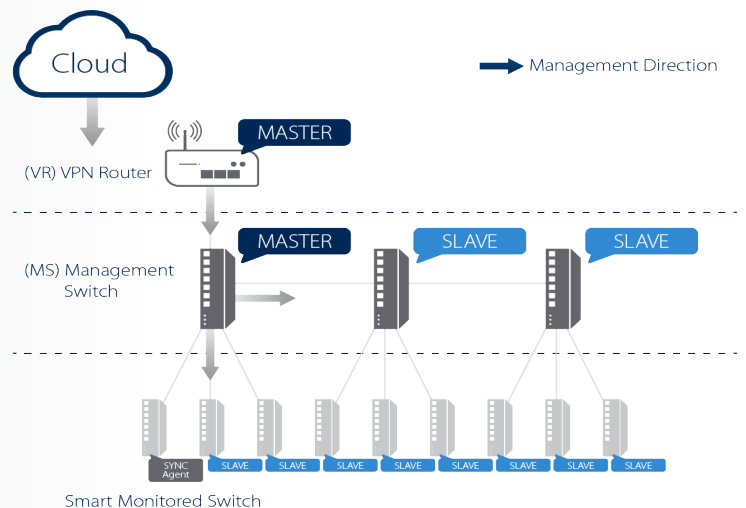


Figure 1: IXM topology



Usually, a fixed configuration is provided to establish a closed topology. For the purposes of stability, the configuration of each device is static.

IXM technology allows the assignment of a fixed range of IP address to many devices at the same time, which is often the top benefit for an administrator. Without IXM, administrators have to install the network utility first, and then check to make sure there are no extra issues, such as operating system dependence or revision issues.

After assigning IP addresses, the administrator may need to deploy a fixed configuration to each device individually. This may take time and often cannot be avoided. With IXM-supported devices, the administrator can copy the configuration from one device to the others. All devices joined in the synchronization process should be the same series and model.

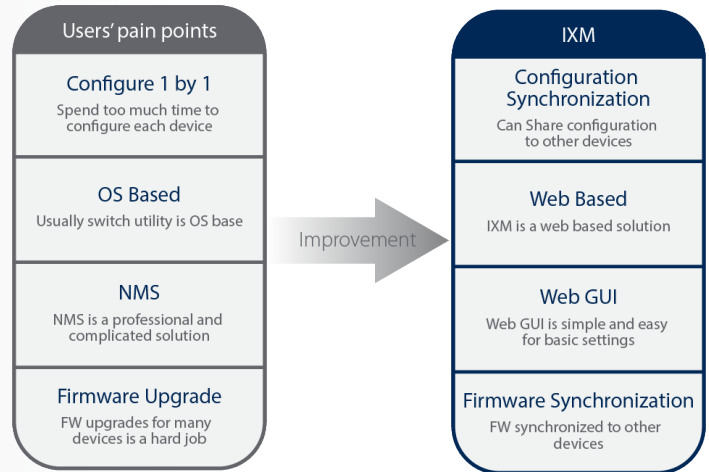


Figure 2: Advantages IXM technology offers at setting

### Main benefits of IXM technology from B+B SmartWorx powered by Advantech

#### 1. Time-saving advantages

The SYNC mode, allows the synchronization of device configurations and firmware from one to many. A batch process is performed automatically with the press of a button and saves a great deal of installation time.

In the SUPERV mode, it monitors the status of many devices, utilization and statistics at the same time. All useful RAW data is collected by the supervisor, which provides an informative, friendly dashboard to the administrator. This saves time when having to perform unexpected troubleshooting or routine maintenance.

According to lab testing completed by B+B SmartWorx powered by Advantech, the configuration time is reduced by 90%.

#### 2. Increased simplicity

In either SYNC or SUPERV mode, a step-by-step wizard will lead the administrator to complete all operations in the installation and maintenance phase.

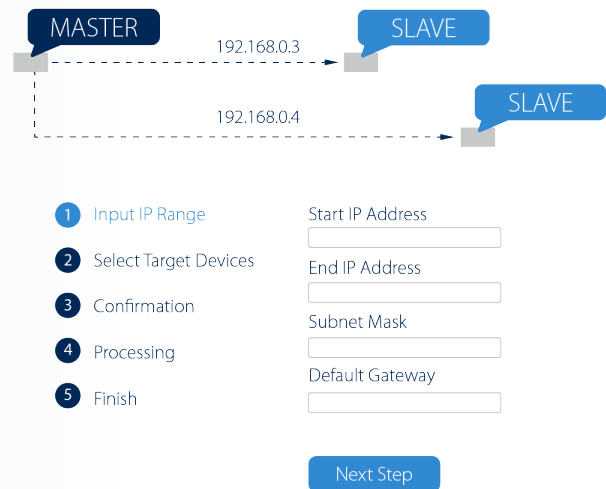


Figure 3: IP range assignment



### 3. Mobility and flexibility

IXM is designed in a standard LINUX daemon, which can easily be installed in any embedded LINUX device.

### 4. Easier configuration and synchronization

IXM also allows the synchronization of either its own configuration or any device's configuration to the others. It will not restrict the administrator's use of IXM on a specific device due to the source of the chosen configuration.

IXM is easily understood since it works in the same manner as synchronizing an iPhone or iPad with iTunes. Deployment is quicker, easier and more efficient. It benefits the administrator (or service provider) by offering the quick establishment of a network topology. Also, the establishment of a distinct device list can be achieved by pressing the "Scan" button. This obtains the system information and important function parameters of each device.

### 5. Firmware synchronization becomes efficient

Another benefit of deployment with IXM technology is firmware synchronization. You simply choose the firmware location and the target devices, and then perform the firmware upgrade. Without countlessly revising utilities and a clunky NMS, IXM accomplishes the quick installation of any topology, especially when dealing with a messy combination of network devices.

## Conclusion

In conclusion, B+B SmartWorx IXM technology improves efficiency, both time-wise and cost-wise.

IXM™ technology in the eWorx SE500 Series of managed switches benefits administrators who perform network

installation and maintenance. They perform more than a utility and a little less than an NMS. But the main advantage is that they allow upgrades at any time, and are independent from operating systems or physical server devices.

In addition to providing all the features you're already looking for in a fully-managed switch, such as support for Telnet, IPv4/IPv6, SNMP v1, V2c and v3, VLAN, IGMP snooping, the SE500 Series helps save significant time and money with embedded IXM™ software.



Figure 4: Master applies its firmware to Slave

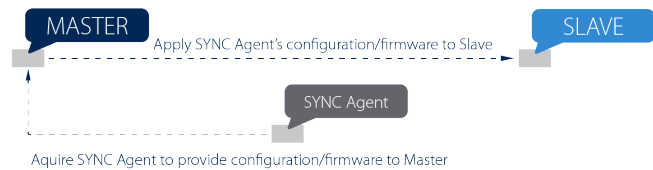


Figure 5: Master asks SyncAgent to provide configuration/firmware, and then apply to Slave

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