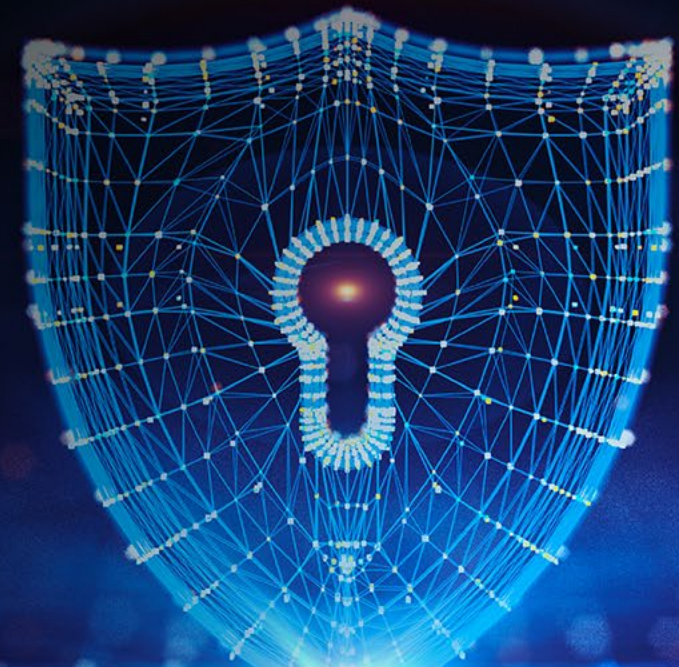


TECHNOLOGY & SECURITY GUIDE

Document System Products



TECHNOLOGY & SECURITY GUIDE

DOCUMENT SYSTEM PRODUCTS

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Refer to the IT Compatibility Charts for additional information.

IT MANAGERS: SIMPLIFYING YOUR LIFE

As an **Information Technology** professional, you are no doubt faced with a unique set of challenges that pull you in many different and often conflicting directions. For example, you are forced to do more with less – supporting disparate assets throughout the sprawling enterprise with maximum interoperability and minimal resources. Internal policies and government regulations impose strict requirements on protecting the confidentiality of personal information. You also aspire to reduce the impact of your operations on the environment through reduced energy consumption and recycling.

At Sharp, we understand your goals and the issues that impede your ability to focus on strategic organizational objectives. **Our focus is to make your workplace smarter with technology that is simple to use**, whether you are working remotely or in the office. We help customers resolve collaboration struggles and close cybersecurity gaps, all while helping to drive efficiency in printing environments and using technology to help bring workers back to the office safely. Our technology solutions include advanced multifunction printers, laptops, displays and interactive whiteboards so you can work simply smarter.



SHARP OFFERS A BROAD RANGE OF OFFICE TECHNOLOGY

Sharp offers a diversified line of office solutions to help businesses run smoothly. From a full line of document systems to a full line of Dynabook laptop computers, interactive white boards, professional displays and video walls. Ask your Sharp representative about how they can help you enhance workflow and communication in the office.



MICAS



SYNAPPX
MANAGE

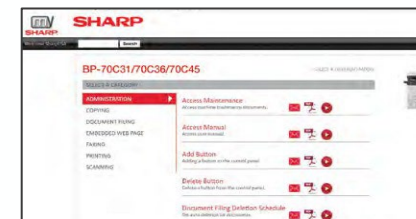
CLOVER
IMAGING GROUP

SHARP'S DEDICATION TO SALES AND CUSTOMER SUPPORT

Nationwide Coverage

Your relationship with Sharp does not end after your purchase. To ensure the highest level of satisfaction and support, Sharp stands behind every product through its nationwide network of professionals that are eager to work with you and address your specific needs. With both local representation and national reach, Sharp resellers provide a high level of service and support to customers throughout the United States.

We take pride in supporting the relationships forged by our direct sales team and local authorized dealers. These relationships help Sharp develop products that continually add value and help enhance productivity. With nationwide reach, we can support large corporate installations with offices throughout a region or spanning the country. This combination of responsive local management and nationwide support delivers an outstanding experience for customers.



Online Support and Training with My Sharp

My Sharp is a dedicated 24/7 customized website providing how-to videos and PDF documents that demonstrate features of the customer's specific MFP devices. With the intuitive web support, users can find the information they need for scan, copy, print, fax, administrative functionalities and supplies replacement, helping to reduce downtime and enhance productivity.

SHARP'S UNWAVERING COMMITMENT TO THE ENVIRONMENT

Sharp is committed to environmental sustainability and corporate responsibility. Sharp MFPs and printers adhere to the Sharp Corporation Green Products Guidelines, which requires designing products that consume less power, use recycled materials and reduce materials used in packaging.

Responsible Approach to Product Design



Most Sharp document systems utilize advanced micro-fine toner technology, which offers a lower consumption rate and produces less waste than conventional toners, resulting in longer replacement intervals. Sharp supplies are packaged using fully recyclable materials. Long-life consumable parts help minimize service intervals and down time, resulting in lower operating costs. With two different energy-saving modes, power can be reduced or shut off at set intervals. Sharp offers document systems that are ENERGY STAR® qualified and RoHS compliant to restrict the use of hazardous substances.

Toner Recycling Program



As part of our commitment to helping preserve the environment, Sharp offers our customers zero-waste-to-landfill recycling – for all Sharp consumables, including cartridges, bottles, toner collection containers and drum units – at no additional cost. Sharp encourages customers to recycle their used Sharp toner cartridges in bulk by providing a pre-paid Recycling Kit for their return to our facility. Visit www.sharpusa.com/recycle to learn more.

EPEAT® (Electronic Product Environmental Assessment Tool)



is a 3rd party global rating system for greener electronics. It is a resource for purchasers, manufacturers and resellers to use to identify environmentally preferable electronic devices, including Imaging Equipment. The EPEAT testing criteria are strict, comprehensive criteria for design, production, energy use and recycling that requires ongoing independent verification of manufacturer claims.

Printing and Output Management



EXTENSIVE INTEROPERABILITY

Sharp understands that IT administrators must ensure MFP compatibility across complex networks of computers, devices, applications and platforms. Sharp MFPs are compatible across a broad spectrum of environments, further helping to maximize your investment in technology. From defining output settings to specifying finishing options, are able to reliably produce professional quality printed materials.

Microsoft Windows Support

Sharp drivers are compatible with the latest Microsoft Windows operating systems. Most Sharp drivers have passed Microsoft's Windows Hardware Quality Labs (WHQL) testing for maximum compatibility and reliability. To support growing Microsoft 365 adoption, users can intuitively access their documents for printing and scanning right from Sharp MFP operation panels.

Apple® OS X® and iOS Support

Apple not only maintains a strong presence in marketing, advertising and design departments, but Mac adoption is also growing across the enterprise. To ensure productivity of Mac users, most Sharp MFPs are compatible with the latest Mac OS X operating systems through OS X print drivers. Sharp MFPs and printers also support effortless AirPrint mobile printing via popular iOS devices.

Google Support

Google is rapidly emerging in business environments of all sizes. Sharp MFPs help Google users through an optimized document printing and scanning experience by supporting Android devices and apps including Google Drive™.



EXTENSIVE INTEROPERABILITY

Citrix®

Sharp tests all print drivers to ensure consistent and accurate printing in Citrix XenApp®, XenDesktop®, and Citrix Virtual App environments.

Compatibility with SAP Solutions

Sharp ensures compatibility of MFPs and printers through SAP device types. Device types are files that store printer information so users can seamlessly access print features such as paper tray selections, orientation and duplex options directly from SAP.

Supported Page Description Languages

All network capable Sharp MFPs support the PCL® page description language. Adobe® PostScript® 3™ support is available for environments that require these industry standards.

Linux® and UNIX® Support

Computers running on Linux and UNIX operating systems can also access the functionality of Sharp MFPs. To access these features, simply install the correct PostScript Printer Description (PPD) or PCL support file to deliver optimized printing.



FLEXIBLE PRINTING: EASY TO USE DRIVERS

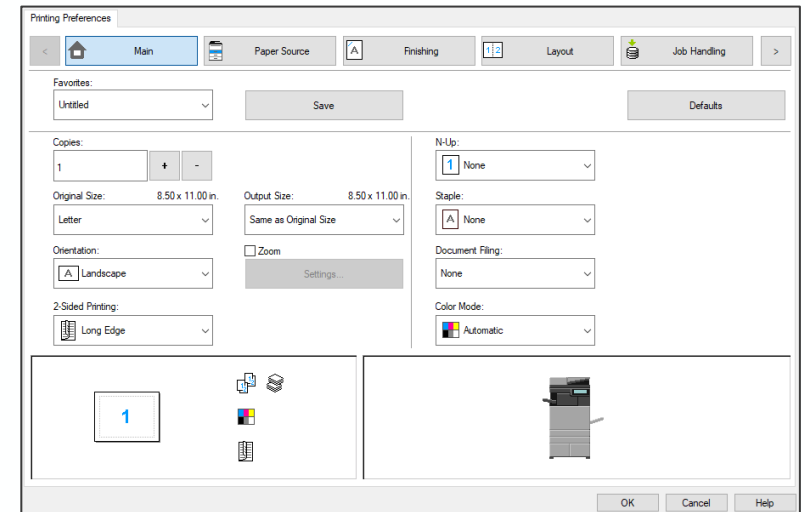
Printing is one of the most common everyday tasks at any type of organization. The challenge for IT managers is to deliver an efficient and flexible yet structured printing environment. Sharp MFPs help ensure all phases of printing and document management are easy, for both IT managers and end-users. Easy to use PCL 6 and Adobe PostScript 3 printing helps users speed through their work. An integrated solid-state drive processes jobs quickly.

Sharp Print Driver

Sharp print drivers are seamlessly integrated with Microsoft Windows OS and their popular applications such as Microsoft Office for a seamless printing experience. Specific features are available through a user-friendly interface that helps meet each user's unique output requirements. Most Sharp drivers are Microsoft WHQL certified to deliver the best printing results.

Key features include, but are not limited to:

- **Print retention** to reduce waste and protect confidential information via secured release with a PIN code or via user authentication.
- **Image quality** options to meet each user's various output needs.
- Print to **document filing** folders for convenient document retention and retrieval.
- **User authentication** to ensure only authorized users can access the device.
- When registered to Active Directory, establishes secure **Single Sign-On (SSO)** via Kerberos token.
- **Watermarks** to help identify sensitive documents.
- **Print and Send** documents to registered destinations in a single step.



Sharp PCL Windows Driver

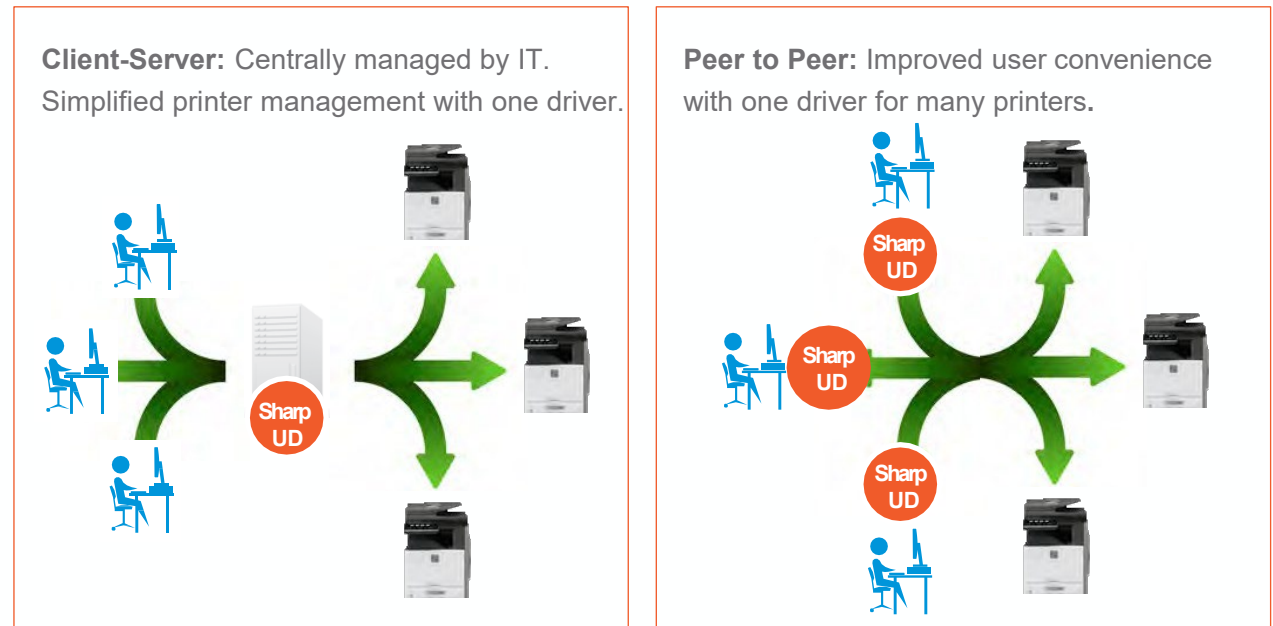
FLEXIBLE PRINTING: SHARP UNIVERSAL PRINT DRIVER

Sharp Universal Driver (Sharp UD)

The Sharp Universal Driver is designed to facilitate easy printer and print driver management for IT managers.* With one driver providing a consistent printing experience for all end-users in the organization, the Sharp UD helps IT managers increase efficiency by simplifying support, management, installation and setup.

Key features include, but are not limited to:

- **Basic Mode** and **Enhanced Mode** for your optimal printer driver deployment and management.
- Quick **device discovery** to find Sharp MFPs on the network.
- Versatile **finishing support** to maintain productivity with convenience.
- **Printer list** feature to always keep your favorite printers accessible.
- Verified and trusted **Citrix Ready** print driver.
- **Client-server** and **peer-to-peer print environment** for IT managers to provide flexible networking options.



* Note: This is not Microsoft Universal Print (MSUP). See next page.

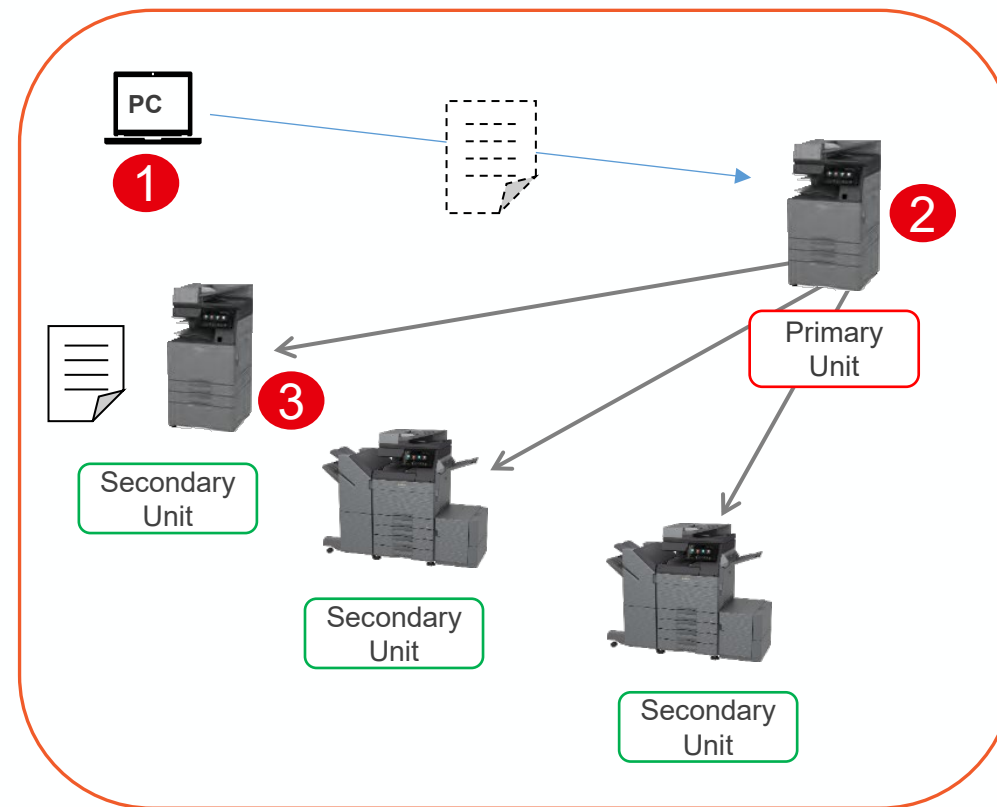
FLEXIBLE PRINTING: PULL PRINTING

Serverless Print Release

With Serverless Print Release, admins can designate up to three primary Sharp MFPs on the same network as "print servers", enabling users to securely print a job and release it on up to eight supported MFPs in a group.* Up to ten groups can be configured on most models. This convenience feature can also be used with authentication providing users with secure print output.

How Serverless Print Release Works:

1. User sends a job to a primary unit from a PC.
2. Primary unit receives job and holds it.
3. User can release the job from any secondary unit on the same network.



- Up to ten units can be configured in group.
- Up to three of the units can be primary and the remainder can be secondary.
- Up to 10 groups can be configured on the same network

* Requires Sharp models in same product family

FLEXIBLE PRINTING: DRIVERLESS PRINTING

Windows Protected Print (WPP)

The current line of Sharp MFPs and printers support WPP. When enabled, WPP eliminates conventional print drivers and uses an alternate method such as IPP (Internet Printing Protocol). WPP prevents vulnerabilities associated with legacy drivers. However, since it eliminates all conventional print drivers that offer comprehensive print options, IT administrators should determine if it should be used.

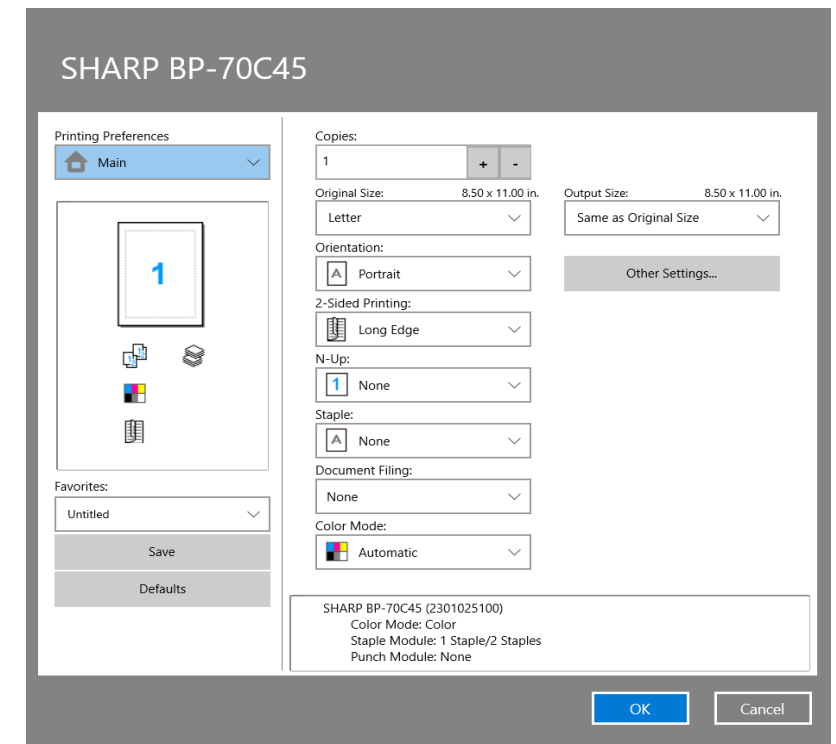
Sharp Print Support App (PSA)

Sharp PSA is an application supported on most Sharp MFPs that enhances the printing experience in Windows by customizing generic IPP Class Drivers. Sharp PSA provides advanced printing features for a more customized user experience as well as provides strong security. Sharp PSA adds features that are not available with the generic IPP Class Driver or when using WPP, such as advanced paper handling, media selection, and device-specific settings.

Direct Print

Sharp devices provide faster printing and accurate rendering with the Adobe Embedded Print Engine when printing from:

- USB devices
- Popular cloud services with the Cloud Connect feature
- Mobile devices



Sharp Print Support App

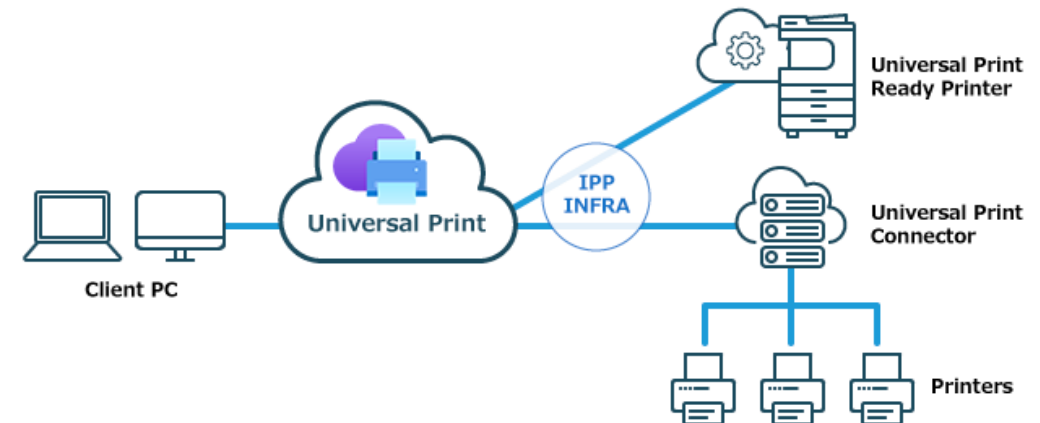
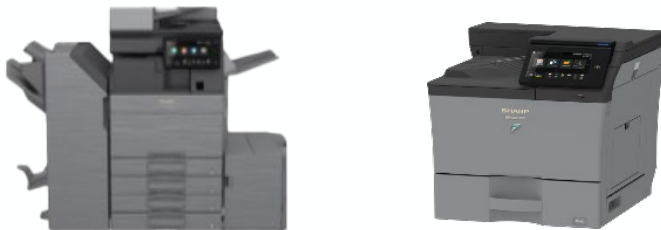
FLEXIBLE PRINTING SOLUTIONS: MICROSOFT UNIVERSAL PRINT

Microsoft Universal Print (MSUP)

Sharp MFPs and printers also support Microsoft Universal Print Service. Universal Print is a modern print solution that organizations can use to manage their print infrastructure through cloud services from Microsoft. This Microsoft 365 subscription-based service delivers simple, rich, and secure printing experiences while reducing time and effort for IT administrators. Universal Print runs on Microsoft Azure and is fully integrated with Azure Active Directory, providing secure and efficient printing. Universal Print is supported natively on most Sharp models, while others are supported with a connector from Microsoft.



All current Sharp desktop, workgroup and departmental MFP and printer models are Universal Print Ready, meaning they can connect to cloud services from Microsoft without a middleware connector.



FLEXIBLE PRINTING: APPLICATION COMPATIBILITY

Healthcare EHR/EMR Application Compatibility

Within the healthcare industry, there are a few solution providers that are setting the standard for Electronic Health/Medical Records (EHR/EMR). Each EHR/EMR system provider has their own unique set of requirements and/or certifications for any device to be utilized with their system. Certifications are an objective, measurable way to mitigate the risks of implementing new technology into a specialized environment. Customers can seamlessly integrate their networked Sharp printers and MFPs with leading solutions such as Cerner Millennium and others with confidence. View the [Healthcare Compatibility Sheet](#) for more information.



MEDITECH

Epic



FLEXIBLE PRINTING: OUTPUT MANAGEMENT

Output Management for Organizations of All Sizes

Sharp offers print management solutions for all types of organizations, regardless of size, to help manage and allocate print costs. In addition to built-in billing code and print release features, Sharp MFPs and printers are compatible with various output management applications such as Job Accounting II software, which offer simplified access control, print release and cost recovery features.

Job Accounting II Software

As organizations grow, managing the cost of print, scan, copy and fax activities becomes more important and allows companies to streamline budget allocation and cost recovery. Job Accounting II software is an option for organizations looking to incorporate the benefits of authentication along with authorization to account for MFP usage by their employees. Job Accounting II software suite offers a solution ideal for small to medium business environments with rules-based printing policies to minimize waste.

Key benefits:

- Easy authentication options include network username and password, ID card or PIN.
- Track all activities. Manage and monitor print/copy/scan activities on Sharp MFPs and select non-Sharp printers to track spending and to optimize resources.
- Manage MFP function and feature access by user and department, as well as set rules-based print policies for the organization to minimize waste.
- Cost recovery by billing back clients or projects using the client matter option.
- Secure print/copy/scan activities and allow users flexibility by enabling print release with optional settings from any network-connected MFP.



FLEXIBLE PRINTING: COST CONTROL

Job Accounting II Software Components

- **Job Accounting: MX-SW310** – Tracks print and scan activities within the organization. Manage access to specific MFPs and set usage limits by users, department or groups.
- **Pull Printing Option: MX-SW311** – Allows jobs to be stored in a secure print queue rather than printed immediately. Jobs can be printed on demand at any Sharp MFP on the network minimizing waste so you can print what you need, when you need it.
- **Client Billing Option: MX-SW312** – Makes it easy to bill back clients, cost centers and projects and download reports.

Sharp Partner Program Member Applications

Sharp and the Sharp Partner Program community offer a broad selection of tightly integrated print release, cost accounting and access control software. Whether your needs are simple or complex, Sharp Partner Program Members can provide the right products to help meet your print security and productivity needs.

For more information on products available from the program members, visit [Sharp Partner Program Portal](#)



Job Accounting II interface at the MFP panel

Scanning and Content Management

SIMPLIFIED CONTENT MANAGEMENT

Multifunction products have evolved to efficiently handle several complex tasks in one unit—copy, print, scan, fax and more—helping organizations reduce costs and increase productivity. Sharp offers a variety of software applications that can help streamline document management in any size office environment.

Integrated and Secure Document Scanning and Sending

With Sharp's powerful ImageSend™ technology, you get one-touch access to features that allow users to efficiently communicate, collaborate and manage documents.

- Easily send scanned documents to your desktop, network folders (SMB), FTP folders, USB, email, fax and more. Select models also support convenient and secure destinations including “Scan to Home” and “Scan to My Address” to maximize productivity while reducing IT administration.
- Select models support Distributed File System (DFS) to help ensure information security and integrity, minimizing data redundancy.



Easily scan documents to multiple destinations with ImageSend technology from Sharp.

SIMPLIFIED CONTENT MANAGEMENT (CONTINUED)

Unified Electronic and Physical Documents

Most Sharp MFPs enable users to convert printed documents into different types of digital formats using optical character recognition (OCR) capability, which makes a scanned document editable. By converting a hard-copy document into a Microsoft Office or text file format, the scanned image can be instantly accessed for editing and searching. When printing, most Sharp MFPs allow users to directly print Microsoft Office and text files without requiring a print driver. This can dramatically improve productivity for mobile users, allowing them to print various types of files from their mobile devices, USB memory devices, or Sharp OSA-developed integrated applications.

Integrated Scan to Email

In addition to the traditional scan to email feature, select Sharp MFPs offer an integrated scanning experience with the **Email Connect** feature. **Email Connect** can integrate with Exchange Server (On-premises), Exchange Online/Microsoft 365, and Gmail™ Web Mail Service.

The **Email Connect** feature brings both security and convenience to organizations:

- Scan and send email from logged in users.
- Access to global and personal contact lists.
- Sent history for Outlook or Gmail clients.
- Applies Exchange server rules and security (e.g. size limit, destination restrictions).
- Single sign-on with OAuth or Kerberos token.
- Synappx Go offers contactless scan-to-email and scan to cloud storage such as Microsoft Teams.



CLOUD CONNECTIVITY

Access to Popular Cloud Services from the MFP Panel

Through the **Cloud Connect** feature on most Sharp multifunction products, organizations can seamlessly integrate their paper-based document workflows with popular cloud services.* Without requiring external applications or additional installations, these MFPs offer you a built-in ability to connect to the cloud.

Easy to Setup and Use

With simple configuration, your IT team can extend cloud services to efficiently manage paper-based documents. In addition, employees can conveniently access and print their cloud-stored documents directly from the user-friendly MFP operation panel. For optimal user experience, single sign-on is supported.

Users can login once and conveniently scan documents or access cloud-stored documents directly from the Sharp MFP. Currently supported cloud services include **Dropbox**, **Gmail™**, **Google Drive**, **Microsoft Teams**, **OneDrive for Business**, **SharePoint® Online**, **box** and **Outlook/Microsoft 365**.



** Some models require optional equipment.*

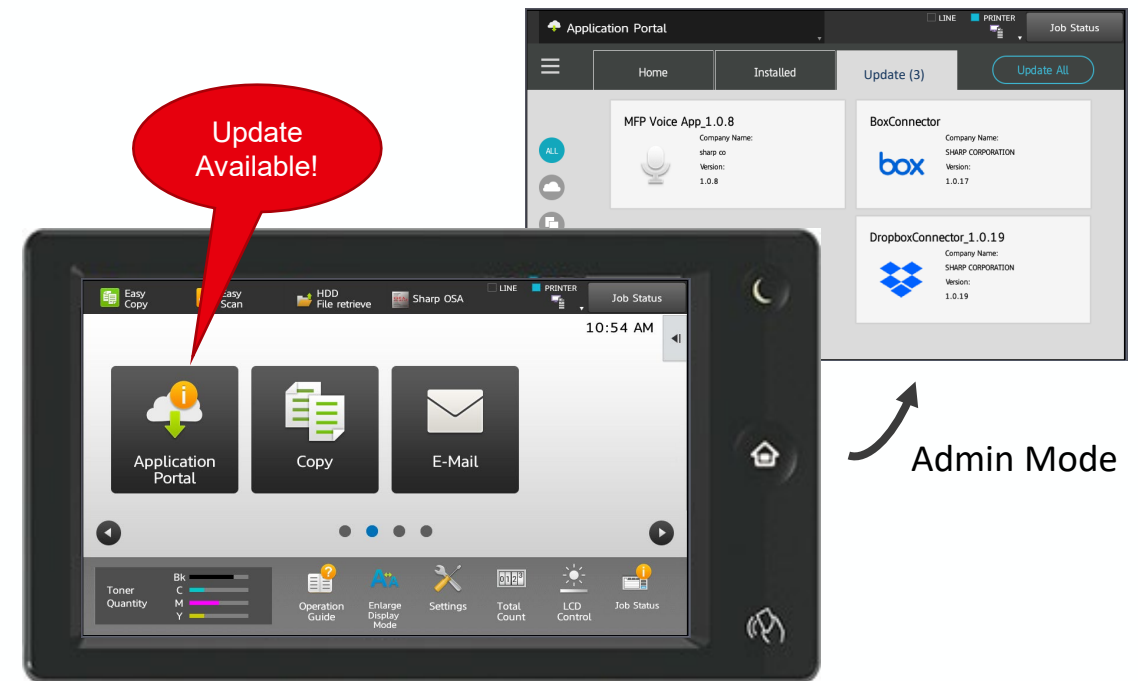
CLOUD CONNECTIVITY

Sharp Application Portal

The Sharp Application Portal enables IT administrators and service support teams to easily update current applications including SharePoint® Online, OneDrive™ for Business, Google Drive™, Gmail and Exchange/Microsoft 365 directly from the touchscreen panel of the MFP.* You can also add new applications including MFP Voice, Box and Dropbox. The Application Portal dynamic menu key conveniently displays a notification when a new application or application update is available. These important updates help maintain the operational security and stability of the Applications installed on the MFP.

Key Benefits of the Application Portal:

- Download applications right from the MFP touchscreen.
- Easily update current applications.
- Easily add new applications.
- Notifications for new apps and app updates.



* Some models require optional equipment.

STREAMLINE DOCUMENT WORKFLOWS WITH AIP CORE

AIP Core is a suite of connectors available through Sharp authorized dealers enrolled in the Authorized Integrator Program (AIP). AIP Core connectors are designed to support organizations looking to simplify and streamline their business workflows to provide a secure, integrated document scanning and printing experience. Centrally managed to simplify IT administrator tasks, the AIP Core suite of connectors include:

Blackboard Connector - The Sharp integration with Anthology's flagship learning management system, Blackboard, will enable students to print and scan assignments from any connected Sharp MFP directly to the students' Blackboard courses. This streamlined process can ultimately help increase the timeliness and flexibility of student assignment submissions. Institutions can optimize their technology investment by leveraging the Blackboard connector as part of the AIP Core suite to help increase classroom engagement and experience the integrated solutions from Sharp and Anthology.

Email Connector - Supporting both on-premises Exchange® Server or Exchange Online® cloud environments, the Email Connector for Sharp OSA-enabled MFPs provides authenticated users with access to all the features normally associated with Microsoft Outlook. Scan to email messages take on the identity of the authenticated user who sent it, not unknown sources. Scanned emails appear in the senders sent messages folder. Added enhancements for the Email Connector offer a default setting option for users to copy themselves as well as the intended recipient as well as support for SMTP webmail services.

STREAMLINE DOCUMENT WORKFLOWS WITH AIP CORE

Network Connector - With the Network Connector, your Sharp MFP now becomes a convenient way to scan and save routine hardcopy documents to any network share. Seamless integration to Microsoft Active Directory networks provides authenticated users with access to their home folder as well as shared network folders right from the Sharp OSA-enabled MFP's control panel.

Dropbox Connector - The Dropbox connector helps meet the increased demand for the popular cloud storage services. This connector allows users to scan documents to and print from their Dropbox account directly from the Sharp MFP. Seamless integration with Dropbox cloud services brings additional convenience and productivity for organizations that have adopted cloud-enabled solutions.

Google Drive Connector - The Google Drive connector helps to support organizations that have adopted Google Drive cloud storage services. This connector allows users to scan documents to and print from their Google Drive account directly from the Sharp MFP. Seamless support for Google Drive brings additional convenience and flexibility for organizations leveraging Google Drive cloud services.

Fax Connector - The Fax connector allows organizations to provide support for users to send scanned documents via a fax gateway, including cloud-based fax gateways. This connector supports the specific needs of customers in key industries such as healthcare, education, and local government with convenience.

STREAMLINE DOCUMENT WORKFLOWS WITH AIP CORE

Solarity Connector - This connector offers organizations that adopted the patented technology platform from EDCO to allow healthcare providers, hospitals, and clinics to automate inefficient indexing processes and helps to audit electronic health records (EHR) to minimize errors, missing and/or misfiled records. With the Solarity connector, healthcare organizations can scan documents from Sharp MFP and audit the scanned file before routing the document to a content management solution such as Hyland's OnBase application.

OnBase® Connector - With the OnBase connector, Sharp MFPs provide seamless integration with OnBase enterprise content management software by Hyland Software®. This enables users to upload scanned physical documents into OnBase as well as enter keywords right from the MFP. The OnBase connector will help establish critical industry-specific business processes in the enterprise, healthcare, education and more.

OneDrive® Connector - The OneDrive connector helps meet the increased demand for and adoption of Microsoft cloud services. The OneDrive Connector allows users to scan documents to and print from their Microsoft OneDrive for business account directly from the Sharp MFP. Seamless integration with Microsoft OneDrive brings additional convenience and productivity for cloud-enabled workplaces.

SharePoint® Connector - With the SharePoint Connector, Sharp MFPs provide seamless integration with the Microsoft SharePoint server, enabling users to upload scans of hardcopy documents and enter keywords right from the MFP. Users can also browse SharePoint document libraries at the MFP and select where to store scanned documents.

Wireless and Mobile Connectivity

A graphic on the right side of the slide featuring a shield shape composed of a network of blue lines and dots, with a glowing blue light source at the bottom center.

WIRELESS LAN CONNECTIVITY

Transform your Sharp MFP into a wireless-enabled imaging product. Select Sharp MFPs and printers are equipped with wireless LAN capability to help your organization maximize productivity among mobile users. In alignment with your organization's security and wireless network policies, the following modes are available on select Sharp MFPs and printers:

Infrastructure Mode

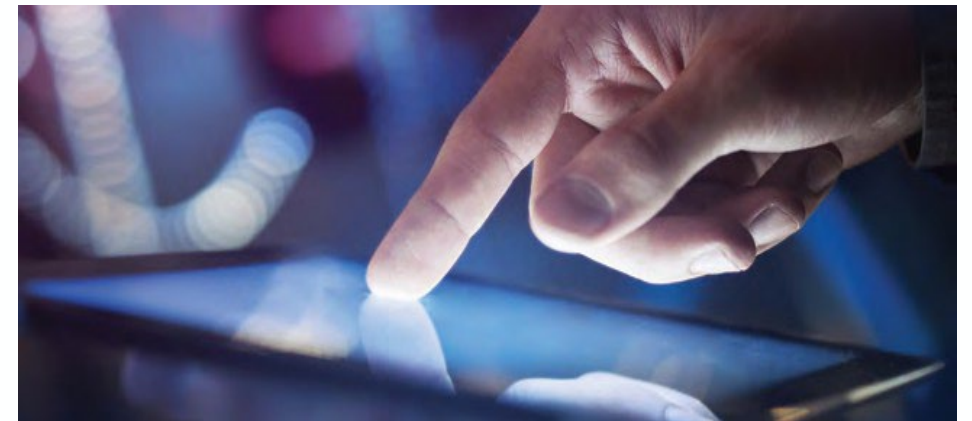
Sharp MFPs installed on the corporate wireless network can be placed wherever a wireless router is within range. Eliminating physical cables and hubs, Infrastructure Mode increases the options to locate devices and improve accessibility.

Access Point Mode

This mode is ideal for organizations that adhere to a BYOD (Bring Your Own Device) policy. With a wired network, this mode will create an instant point-to-point wireless network connecting mobile devices to printing resources. Segregated from the corporate network, IT managers can prevent unwanted access to corporate resources while allowing mobile users to access basic printing and scanning. This enables convenient wireless usage without compromising security policies.

USB Direct Printing and Scanning

Most Sharp MFPs allow users to scan to and print from a USB flash drive. This feature helps by minimizing extra steps. For security-conscious organizations, this feature can be disabled to maintain compliance with the security policy and avoid misuse of the MFP.



MOBILE PRINTING AND SCANNING FOR THE WORKPLACE

Sharp Print Service Plug-in is a native printing plug-in supporting Android 4.4 and above with framework that consists of multiple print service plug-ins to enable printing from an Android platform mobile device. The Sharp Print Service Plug-in allows you to print a variety of files with enhanced print settings, directly from Android platform devices to Sharp MFPs and printers.

AirPrint™ permits printing of Web pages, photos, email and more with AirPrint-enabled Sharp devices. Select Sharp MFPs and printers have built-in AirPrint technology enabling users to print from their iPad®, iPhone® and iPod® touch mobile digital devices or Mac® computers without requiring a print driver.

Adobe® Embedded Print Engine (AEPE) is a next-generation RIP technology from Adobe to natively process PDF and PostScript files on the MFP for direct printing. Available on most Sharp MFPs, the Adobe Embedded Print Engine delivers fast, accurate rendering of PDF files and is the closest representation to the market-proven PDF gold standard, Adobe Acrobat® Reader® DC.



 POWERED BY
Adobe Embedded Print Engine

MOBILE PRINTING AND SCANNING FOR THE WORKPLACE

Sharpdesk Mobile offers a convenient touchless option for iOS® and Google Android users to easily print documents from their smartphones or tablets to a Sharp MFP. Users can also scan hardcopy documents from a Sharp MFP directly to their mobile devices for flexible storage and sharing.

- Select models support instant pairing with mobile devices via QR code or NFC.
- Scanned files can be shared with other applications or sent as email attachments.
- Sharpdesk Mobile is available at no cost from Apple App Store®, and Google Play™ store for their respective users.



MOBILE PRINTING AND SCANNING FOR THE WORKPLACE

Synappx Go

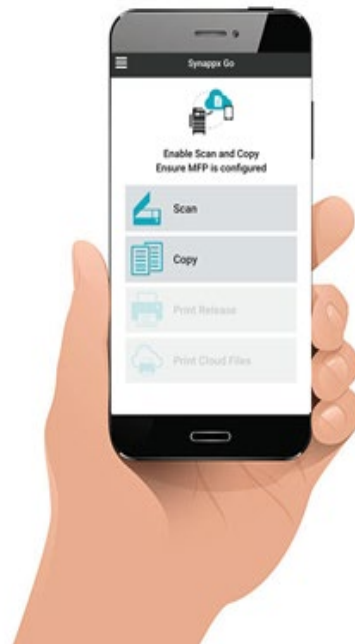
Synappx Go for MFPs helps your content move with you throughout the workplace. With your phone, you can initiate copies, scan documents to email or cloud folders, and print. Synappx Go enables you to work more efficiently throughout your day.

The free version, Synappx Go Lite, allows you to copy and scan from an MFP using the mobile app. The paid version adds more functionality and enables collaboration features to truly make your office environment move faster and smarter.

Synappx MFP Lite

- Copy
- Scan to me
- Scan to email

QR Code



Synappx Go

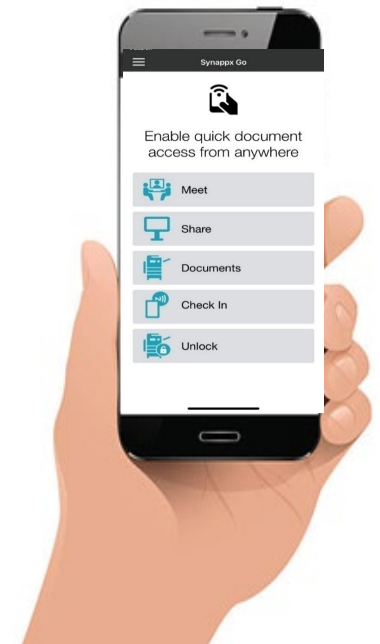
- Copy
- Scan to me
- Scan to email
- Print release
- Print cloud files, email attachments, Sc cloud storage

NFC Tag



Collaboration

- **Content share on display**
(cloud storage, web page, email/text attachm
- **Synappx Go for Collaboration**
(start/end meetings, share cloud files, control web conference)



Device Management

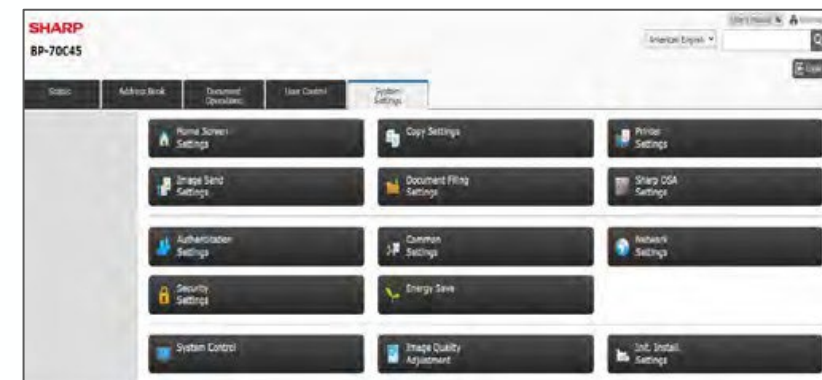


MFP MONITORING AND MANAGEMENT

In today's business world, an immense amount of business information is still communicated on paper. This information must be printed, copied and scanned as a part of the document workflow process. As a result, uninterrupted uptime of MFPs and printers is important to keep up with the speed of business communications. The Sharp device management suite delivers unparalleled control over the administration of Sharp MFPs through intelligent tools. MFPs and printers in your network are effortlessly managed and monitored to maximize uptime and ensure the continuous flow of important business communications.

Sharp MFP Web User Interface

The Sharp MFP Web user interface (aka "Web Page") is an embedded device configuration site that makes it easy for users and IT managers to administer the MFP through a standard web browser. Once authenticated, users can change their profiles and document filing folder settings, as well as maintain their one-touch address keys to quickly distribute scanned documents. From anywhere on the network, IT managers can log in and access the device's status, system, cloud connect, security and network settings, as well as maintain user accounts, specify diagnostic email alerts, clone settings and more. Administrator access can be protected via complex password.



Sharp MFP Home Page

MFP MONITORING AND MANAGEMENT (CONTINUED)

Sharp Remote Front Panel

Sharp Remote Front Panel is a powerful tool that enables users and support staff to remotely view the MFP's operation panel and control its features and functions from anywhere on the network. IT managers can see the same exact screen that the end user is viewing, allowing them too quickly understand issues and take the appropriate actions to solve them. Since IT managers can control the device remotely, this capability helps eliminate a costly visit to provide support, thereby reducing users' wait time.

Sharp Printer Status Monitor

The Sharp Printer Status Monitor is an easy-to-use utility that provides users with real-time information from each MFP directly on their desktop. Prior to sending a job, users can review the device's status, paper supply and toner levels. Information on the progress and completion of each user's print job, as well as preventive maintenance warnings also help to increase device uptime.

Remote Email Diagnostics

Putting timely and relevant information into the hands of key operators, IT managers and Sharp-authorized service providers is a breeze with Sharp Remote Email Diagnostics. IT managers can easily configure event-driven or scheduled alerts such as low consumable levels, maintenance reminders or click counts and specify the list of recipients for each. This helps bring attention where it is needed, when it is needed, for increased device availability and reduced costs (R.E.D).



MFP MONITORING AND MANAGEMENT

Sharp Remote Device Manager (SRDM) – On premises, server-based device monitoring and management tool

SRDM assists IT administrators to remotely manage and configure Sharp devices on their networks. For MFPs and printers, SRDM obtains information such as paper tray details, toner levels, copy/print/fax output counts and scan/fax counts. SRDM allows IT administrators to expedite troubleshooting and centrally monitor and manage an organization's MFPs and printers from the SRDM web console. Now SRDM allows IT administrators to remotely manage, and monitor select Sharp display products.

Key Features (MFPs and Printers)

- Manual or automated device discovery
- Remote status and consumables monitoring
- Scheduled meter count reporting
- Remote Front Panel access for quick user assistance
- Remote security, network and system configuration
- Device storage data backup
- Device cloning for faster device setup
- Email notification to IT administrators or IT service ticketing system
- Remote firmware updates to minimize deployment time
- Remote service delivery for optimized device uptime
- Security policy management including force reset, alerts and SIEM integration
- On-demand and scheduled power management to minimize energy consumption

Key Features (Display Products)

- Display device registration
- Access to device web pages
- Scheduled and remote power/input management
- Remote device status monitoring:
 - Power
 - Input
 - Run-time hour
 - Temperature
 - Serial number

MFP MONITORING AND MANAGEMENT



OPTIMIZE DEVICE UPTIME

Synappx Manage cloud service enables IT administrators and service providers to remotely manage Sharp MFPs from a single portal. Proactive monitoring and remediation helps minimize administrator burden, as well as provide insight for optimized investments.

Manage Devices From Anywhere

Device configuration, status, and security are managed remotely via a cloud-based solution – perfectly suited for today's distributed and flexible work environments.

Do More with Less

Automate tasks like power management to minimize time on devices and increase device-readiness through central control.



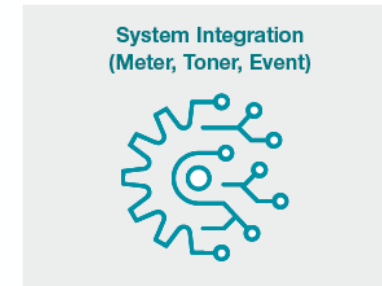
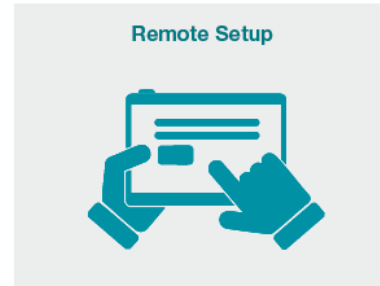
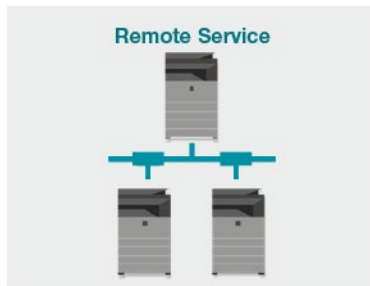
Keep Your Printers Secure

Deploy consistent security policies for MFPs and printers, monitor device security and firmware status, and auto remediate issues in real time.

Enhance Employee Experience

Maximize device uptime to help ensure uninterrupted employee productivity and allow focus on critical tasks.

With **Synappx Manage**, service providers can resolve issues and reduce downtime with remote monitoring and remediation.



MFP MONITORING AND MANAGEMENT

Sharp MFPs and printers offer exclusive integration with ConnectWise SIEM network monitoring.



**** For Sharp devices installed in environments that are monitored by ConnectWise SIEM***

- Sharp and ConnectWise Strategic Collaboration
- Exclusive integration with ConnectWise SIEM *
- Captures 60+ alerts
- 24/7 alerts with ConnectWise monitoring
- Supports current Sharp MFPs and printers

Security



PRINTER AND MFP SECURITY – WHY IT'S IMPORTANT

Malicious Attackers Are Always Out There

Organizations are under constant threat from malicious attackers to steal and/or modify business data or gain unauthorized access to their networks. In these environments, MFPs and printers are just as vulnerable as other endpoint devices, such as servers, routers and workgroup computers. Hackers know that in many organizations, MFPs and printers are not as well protected as other devices. Therefore, failing to protect them can result in devastating damage to a company.

Today's Corporate Environments

In the early days of the Internet before MFPs were the communication hub of the office, businesses had few endpoint devices to worry about. Most users didn't even have access to the Internet. Today, businesses have many endpoint devices, and most users have access to the Internet, which is flooded with malicious intruders looking for ways to infiltrate a corporate network.



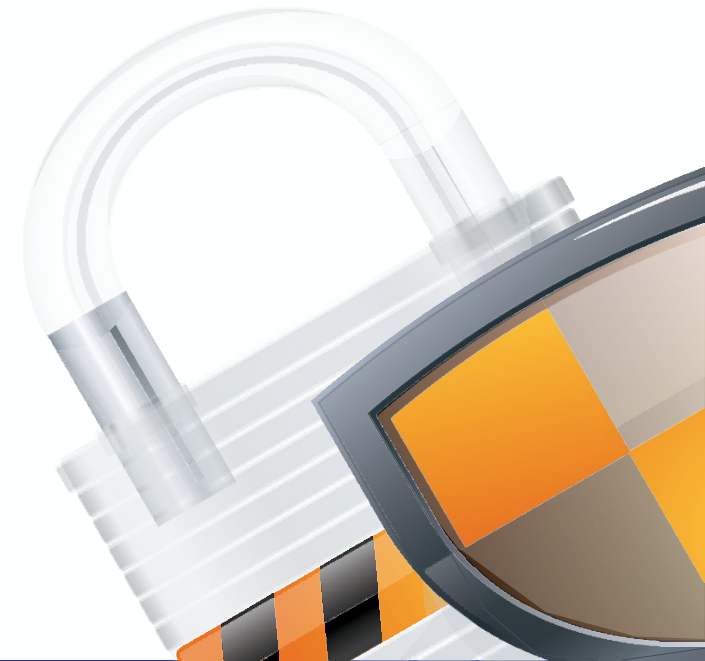
PRINTER AND MFP SECURITY – THE TWO TYPES OF THREATS

1. Physical Security Threats

In most office environments, MFPs typically placed in common areas accessible by multiple people. Unauthorized personnel can potentially access and enter corporate networks when devices are not fully protected. In addition, any information stored on a local desktop computer or a server accessible through the network can be printed without authorization. Meanwhile, at the MFP device, confidential information can be accidentally or even purposely copied from stored documents, taken from the output tray or faxed without authorization.

2. Network Security Threats

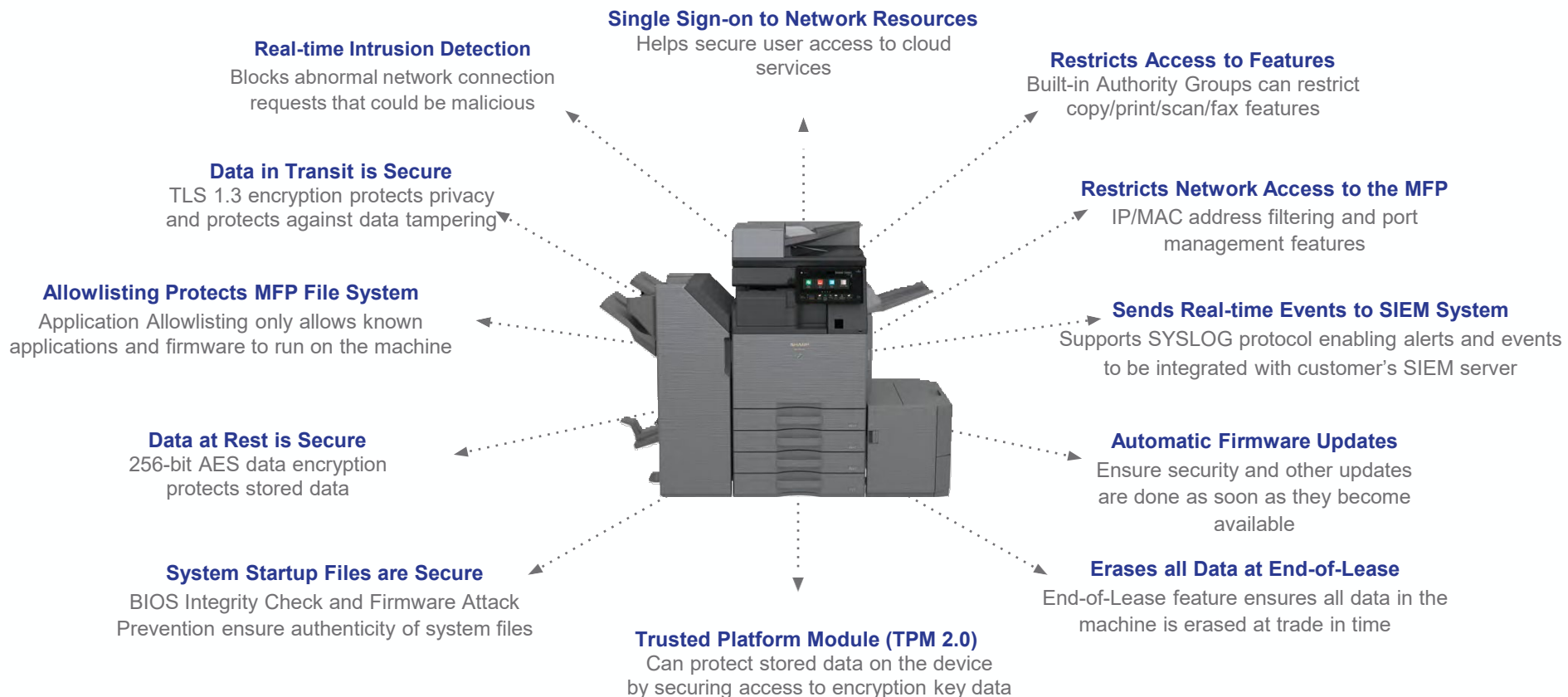
Unsecured access to your company's stored data makes you vulnerable to having it stolen or altered. Furthermore, cyber criminals may obtain confidential information by unleashing a Denial-of-Service (DoS) attack, a phishing attack, or a virus via the network to launch an advanced cyberattack. Phone line communications or network data could easily be intercepted when proper security measures are not implemented. Even MFP data stored on a hard disk drive or in memory could be compromised or stolen if not protected. Sharp addresses these concerns and others by providing a multi-layered security approach to help protect your data and personal information.



SHARP'S MULTI-LAYERED SECURITY HELPS PROTECT YOUR BUSINESS

A Leader in MFP Security

Sharp was the first to address security in digital imaging and received the first Common Criteria validation for an MFP in 2001. Since then, businesses and government agencies worldwide have come to depend on Sharp's level of assurance. Features shown below are standard on most Sharp models in our lineup.



SHARP'S MULTI-LAYERED SECURITY HELPS PROTECT YOUR BUSINESS

Flexible Security Feature Settings That Provide Comprehensive Protection

Sharp MFPs are armed with many advanced security features and settings to help businesses safeguard their data and protect against unauthorized network intrusions and malware attacks. Businesses can achieve optimal protection by following good IT practices and utilizing these features.

Achieve Optimal Security: Check Your MFP's Security Configuration!

- ✓ Use secure access control (Active Directory® or LDAP authentication).
- ✓ Apply more complex administrator password rules.
- ✓ Install Virus Detection Kit powered by Bitdefender.
- ✓ Close unused ports and disable unneeded network services and protocols.
- ✓ Use IP and MAC address filtering to limit MFP access to only necessary PCs.
- ✓ Limit users who have administrator's rights.
- ✓ Enable TLS protocol to secure all communications.
- ✓ Ensure that users are assigned to properly configured Authority Groups.
- ✓ Install a Data Security Kit (DSK) for highly secure environments.
- ✓ Periodically check job and audit logs for suspicious activity.
- ✓ Enable POP3 and SMTP authentication if possible.
- ✓ Change the MFP's SNMP community name from its default "public."
- ✓ Do not "publish" an MFP's IP address outside your organization's firewall.
- ✓ Ensure Wi-Fi and mobile security are properly configured.
- ✓ Disable unused device functions.

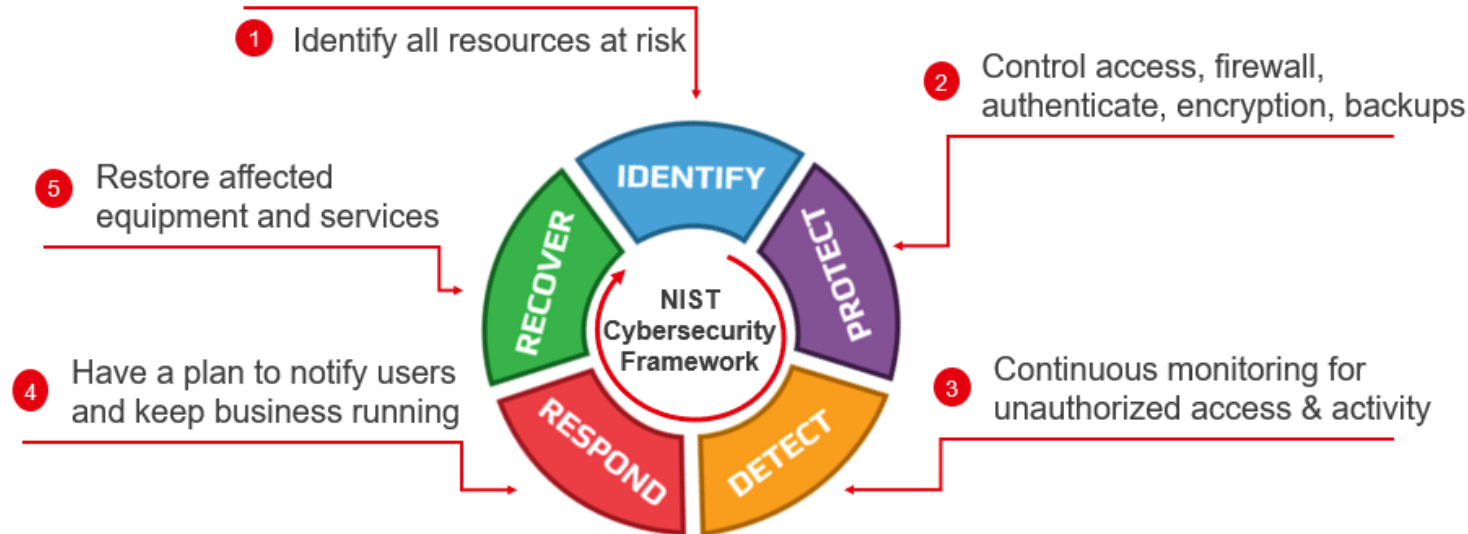
**Some features not available on all models.*

SHARP'S MULTI-LAYERED SECURITY HELPS PROTECT YOUR BUSINESS

The NIST Security Framework (National Institute of Standards and Technology)

More businesses are adopting the NIST Security Framework, which is a recommended set of standards that when implemented correctly will help protect organizations from malicious activity. This is a continuous 5 step process to achieve Zero Trust – means trust no one!

- NIST is a US government organization
- Involves protecting every aspect of your network – complete end-to-end protection!
- This involves protecting data that comes in from the Internet, to protecting the connection to the device, protecting walk-up access with multifactor authentication, having a firewall and creating backups.

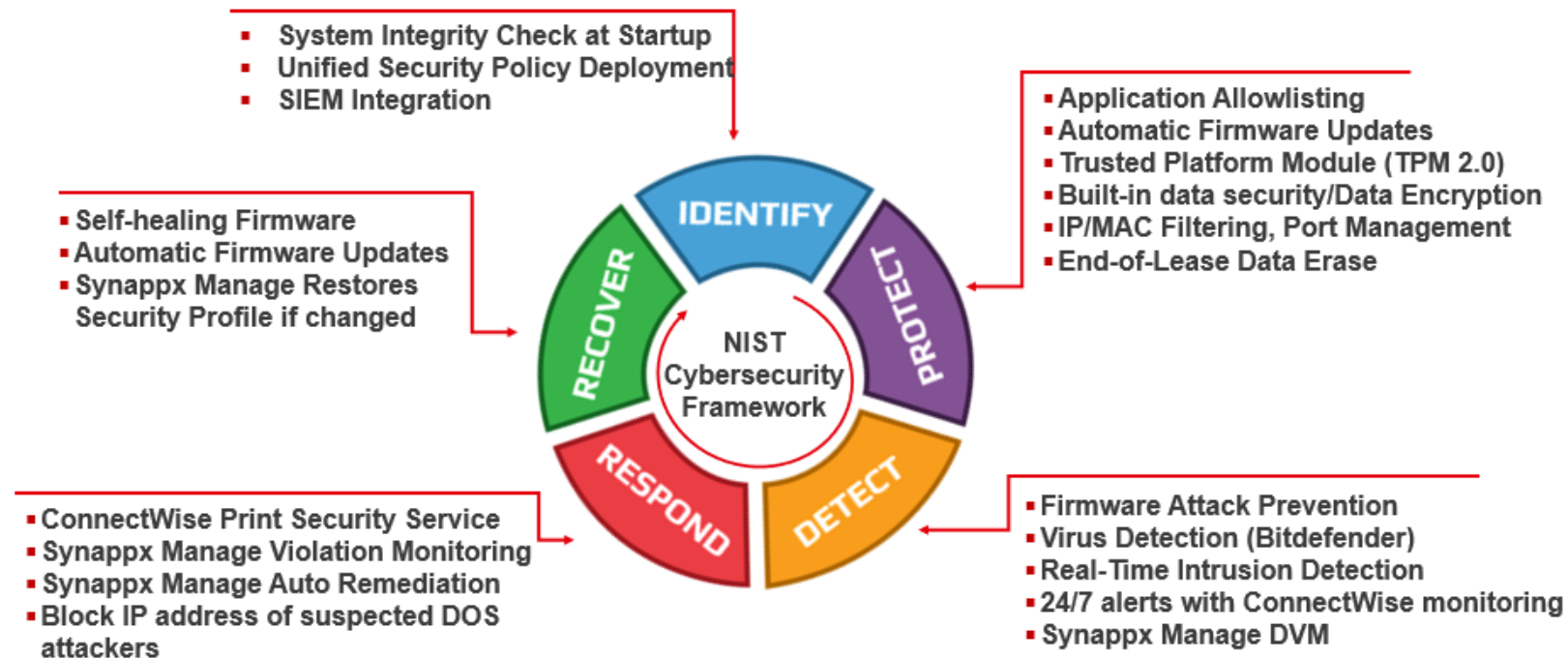


Zero Trust : Never Trust, Always Verify

SHARP'S MULTI-LAYERED SECURITY HELPS PROTECT YOUR BUSINESS

How Sharp MFPs Help Keep Organizations Safe

Sharp MFPs provide a strong set of security features that can help organizations achieve zero trust. Many of the features shown below have been available on Sharp MFPs for years. Features like system integrity check, firmware attack prevention, application allowlisting and others shown help keep customer's safe. Exclusive integration with ConnectWise SIEM enables customers to get quick notifications of more than 60 security alerts from Sharp MFPs and printers. Also, Synappx Manage, cloud-based device management and monitoring provides leading edge security management through the cloud.



INFORMATION SECURITY IN KEY VERTICAL MARKETS

Security for Private Sector and Corporate Organizations

Sharp MFPs provide robust control over information access, transmission and tracking to facilitate compliance with stringent mandates. This can mitigate risk and help avoid any penalties or lawsuits for noncompliance. By implementing the Sharp Security Suite, Sharp MFPs can help many types of organizations reach and maintain compliance:

- **Educational Institutions** can meet the requirements of the Family Educational Rights and Privacy Act (FERPA) to protect student education records.
- **Healthcare and Insurance Providers** can achieve and sustain **Health Insurance Portability and Accountability Act (HIPAA)** compliance with confidence.
- **Financial Institutions** can maintain the privacy requirements of the Gramm-Leach-Bliley Act (GLBA).
- Businesses across all industries can benefit from the strict controls over financial information required under the **Sarbanes-Oxley (SOX) Act**.



INFORMATION SECURITY IN KEY VERTICAL MARKETS

Education

The need for student privacy continues to grow as education records are digitized and shared electronically. Educational institutions must act responsibly, safeguarding students' records and personal data. Institutions must meet requirements of the Family Educational Rights and Privacy Act (FERPA) as well as the Health Insurance Portability and Accountability Act (HIPAA).

Local Government

Government agencies maintain various types of data including social security numbers, credit card numbers, driver's license numbers, Federal Tax Information (FTI) and more. As the e-Government movement progresses, local government offices are under great pressure to protect sensitive information such as citizen information, police reports, court records etc. Cybersecurity is one of the most critical components of IT for government agencies. Local agencies, department entities, and courts, have strict data security mandates as outlined in several security standards, specifications and directives. Among the most stringent and applicable standards for MFPs and printers is ISO 15408/Common Criteria (CC) directed by National Information Assurance Partnership (NIAP).

Libraries
College Campuses
Public Organizations



Defense Contractors
Government Agencies
Department of Defense
Local Governments



INFORMATION SECURITY IN KEY VERTICAL MARKETS

Law Offices
Service Organizations



Legal Services

Law firms need to protect client's data and information such as contracts, case information, client personal data and others. In reaction to the rate of cloud and mobile adoption as well as the growing trend in data conversion requirements for e-discovery, companies offering legal services are forced to meet new regulations and compliances such as the EU General Data Protection Regulation (GDPR) and US Personally Identifiable Information (PII). Proper data classification ensuring only authorized users can access confidential data will be critical to minimize the impact on legal practices.

Hospitals
Pharmacies
Healthcare Facilities



Healthcare

The Health Information Technology for Economic and Clinical Health Act (HITECH) and Meaningful Use execution enabled rapid adoption of Electronic Health Record (EHR) systems. The privacy and security of individually identifiable health information is strengthened under the rule and national standards of the Health Insurance Portability and Accountability Act (HIPAA). Doctors, hospitals, insurance companies, nursing facilities and others must follow HIPAA to protect patient information, health histories, medication records, billing and insurance information and other electronic healthcare transactions.

INFORMATION SECURITY IN KEY VERTICAL MARKETS

Financial / Corporate

Financial institutions and business organizations are constantly under threat of information leakage by internal and external sources. All organizations, regardless of size, that are “significantly engaged” in providing financial products or services, such as banks, mortgage lenders, brokerage houses and investment organizations, are guided by the Gramm-Leach-Bliley (GLB) Act to protect confidential records, transactions and customer information. In addition, all public companies need to comply with the Sarbanes-Oxley Acts (SOX), which require organizations to store and track business information including electronic communications and hard copy documents. Businesses are also required to meet newer regulations such as GDPR.

Private Companies
Financial Institutions



SECURITY FEATURES DETAILS

Protecting Data in Transit and Data at Rest

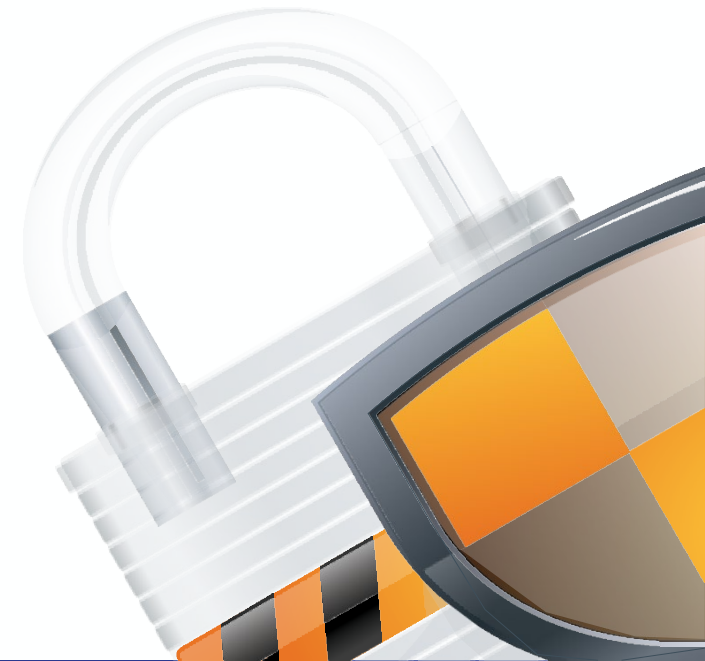
Data security is a fundamental component for MFP and printer security. Sharp MFPs and printers include standard and/or optional security features that protect data stored on the device or in transit.

- **Data Encryption**

When data encryption is enabled on select Sharp MFPs, Advanced Encryption Standard (AES) algorithm 256-bit method is used in communication and on the data before it is written to RAM and the hard disk drive.

- **Data Overwrite**

Up to 10 times programmable overwrite is used to maximize the data erase efficiency. The data is overwritten by random numbers. In addition, the data overwrite method can be customized to meet each organization's security requirements or it can be set as it is specified in DoD 5220.22-M.



SECURITY FEATURES DETAILS

Access Control Security

To limit unwanted access to each device, most Sharp MFPs can utilize account codes, user/group profiles, passwords, or external user accounts contained in the local device address book or global user directory. All user credentials are transferred using a proven combination of Kerberos, Transport Layer Security (TLS) or AES 256-bit encryption to help avoid interception. In addition, select Sharp MFPs can be registered as a computer with the Microsoft Active Directory® domain, providing strong Kerberos token-based authentication and authorization. IT administrators can securely and conveniently manage devices and access to “scan-to folders” and “scan-to emails” with an advanced level of control.

User Authentication, Authorization, and Restriction

Most Sharp MFPs can limit unwanted access with user authentication. All user credentials are transferred using a combination of Kerberos and Transport Layer Security (TLS) to help avoid interception. In addition, select models can be registered with Active Directory® domain offering Kerberos token-based Active Directory authentication. “Secure mode” to request a user password upon logon is also supported for ID card authentication, minimizing the risk of passwords being compromised.

User authentication types:

- Local user list
- LDAP
- Active Directory / Group Policy
- External authority with Sharp
- OSA® - enabled applications

User authentication methods:

- PIN number
- Username and password
- ID card

SECURITY FEATURES DETAILS

User Authentication, Authorization, and Restriction

Once the user is authenticated, access to certain features are either granted or restricted. IT administrators can securely and conveniently manage devices and access to specific features with an advanced level of control.

Key features for authorization and access restriction:

- Password protected admin access
- Print, scan, copy and fax function control
- Access control
- Page limit control
- Confidential Printing
- Color printing restriction
- Domain restriction
- Forced scan to logged-in users' email address
- Forced scan to logged-in users' home folder
- Security control and default setting using Active Directory Group Policy
 - with Sharp ADM template files (Device settings and Print Driver settings)



SECURITY FEATURES DETAILS

Single Sign-on (SSO) to Network and Cloud Resources

IT administrators often face challenges sustaining productivity while maintain security. Select Sharp MFPs offer options for single sign-on to add operational convenience while validating user access to the device and network.

When an MFP joins a domain, the MFP establishes trusted relationships with network resources. IT administrators can provide secure Kerberos token-based SSO to network and home folders as well as Microsoft® exchange server.

For Google Drive™ online storage service, Gmail™ webmail service and select cloud services, an OAuth token is used to establish SSO. Sharp provides IT administrators greater flexibility and options to provide convenience to users while maintain organization's data and information security.

Single sign-on supported resources:

- Network folders and home folders
- Exchange server
- Gmail webmail service
- Cloud services (such as Box™, Google Drive™, OneDrive® for Business and SharePoint® Online)
- Sharp OSA® applications

SECURITY FEATURES DETAILS

Network Security

Sharp MFPs feature an intelligent network interface that can limit access to specific computers on a network by IP or MAC address and selectively enable or disable any protocol or service port on each device. All communications to and from the MFP can utilize TLS for secure transmission over the network, and most devices also support SMB, IPv6, IPsec, 802.1X and SNMPv3.

Network security is fundamental in protecting organizations' network and resources from improper use, intrusions, denial-of-service (DoS) attacks and unauthorized access and modification. Sharp MFPs help IT administrators and security officers design comprehensive security environments to ensure only authorized parties and protocols are allowed to access their network with Sharp MFPs and printers. Most Sharp MFPs offer these key features below:

- Network communication protection via TLS
- SHA-2 certificate
- Wireless LAN communication protection
- Secure protocols such as Kerberos, IPv6, and SMBv3
- IP address and MAC address filtering
- Port management
- Disable/enable features and functions
- SNMPv3 communication
- Device certificates
- CA Certificates
- IEEE802.1X™ authentication

SECURITY FEATURES DETAILS

Document and Email Security

Protection for sensitive documents can be assured through Sharp-encrypted Adobe PDF files for scanning and printing, or access control and encryption using TLS protocols for scanning, printing, email and setup. In addition, S/MIME email encryption can be enabled for secure email communications.

For more integrated email security, select Sharp MFPs offer the Email Connect feature which establishes a direct connection with Exchange servers/Microsoft 365 or Gmail. This also ensures the email is sent by the logged in user (not via the generic MFP address). The email containing the scanned document is then stored in the user's sent folder. For the Exchange server, all server rules and security (e.g. size limit, destination restrictions) are applied to maintain the organization's email security policy.

Document security at the device:

- Encrypted PDF
- Secure document filing features
- Pull printing/PIN printing
- Secure watermarks

Document security with Synappx Go:

- Secure print release
- Printing from cloud storage
- Scanning to self or the cloud
- NFC tag for optimized security

SECURITY FEATURES DETAILS

Fax Security

The architecture of Sharp MFPs provides a logical separation between the fax telephone line and LAN. It is, therefore, virtually impossible for attackers to gain access to the internal systems of the MFP or the local network from the MFP fax board. Additional security features are incorporated such as disabling broadcasting, allowing and rejecting reception from specific numbers, user authentication and more.

The architecture of Sharp MFPs provides a logical separation between the fax telephone line and LAN, helping to prevent attackers from gaining access to the internal systems of the MFP or the local network. Additional security features are incorporated such as disabling broadcasting, allowing and rejecting reception from specific numbers, user authentication and more.

- Logical separation between the fax telephone line and LAN
- Only fax protocol is permitted in the fax modem
- MFP architecture is designed to minimize the risk of transmitting malicious data (virus, etc.) to the main system.
- QUART (Universal Asynchronous Receiver/Transmitter) communication on fax controller cannot control MFP controller.
- Image transmission between fax controller and MFP controller is also separated from UART communication.



SECURITY FEATURES DETAILS

Audit Trail Security

Tracking user activities and events are important and helpful to maintain proper security measures. Granular audit log and job log features from Sharp provide comprehensive auditing of all user activities and device events.

The Sharp granular **audit log** and **job log** feature provides comprehensive auditing of all user activity. Certain federal regulations parameters, such as “to,” “from,” “when” and “file name” can be logged, reviewed and archived for conformance. In addition, IT managers can monitor and review event logs such as when and what setting changes were made, or what IP addresses access the device. Real-time events can be sent to an organization’s Syslog or SIEM system for integrated security management. The Sharp event log utilizes industry standard Syslog protocol RFC 5424/3164, allowing for integration with many systems.

Event Log (Supports RFC 5424/3164 Standard Syslog Protocol)

With select Sharp MFPs, the IT team can monitor events such as when/what setting changes were made, which IP address have accessed the device, and when firmware is updated. The MFP’s real-time event log can be integrated with the organization’s syslog or SIEM (Security Information and Event Management) to trigger immediate security alerts to IT administrators.

SECURITY FEATURES DETAILS

Firmware Attack Prevention and Self Recovery

The Firmware Attack Prevention and Self Recovery feature on select Sharp MFPs helps protect the main unit firmware system files from malicious attacks *. The machine stores a backup copy of the main unit firmware in a hidden partition of the MFP hard disk drive. Each time the MFP is turned on, or wakes from auto-off mode, the main unit firmware running in the machine is compared to the backup copy stored on the hard disk drive. If the two versions do not match, the machine will display a message prompting the user to turn off the power and turn it back on. This action triggers the machine to restore the main unit firmware with the backup copy stored on the SSD. This event is recorded in the machine event log and can also be sent to the administrator via email or included in the customer's syslog or SIEM (System Information and Event Management) system. This feature is standard on most Sharp MFPs.

** If a data security kit is installed on the machine, a higher level of protection is available with the Trusted Platform Module, which supersedes the Firmware Attack Prevention and Self Recovery feature.*

Application Allowlisting

To mitigate risks, the Sharp Application Allowlisting feature, available on select Sharp MFPs, protects against unofficial software and application updates by detecting access attempts to the MFP's file system and denying access if the source data is not on the allowlist.

- IT administrators can be notified of allowlisting events via email or integrated with the organization's Syslog or SIEM using the MFP's audit log feature.

SECURITY FEATURES DETAILS

Data Security Kit (DSK) and Common Criteria Certification/ISO-15408

Organizations may require enhanced security features to meet regulatory requirements or mitigate specific threats. The optional Sharp Data Security Kit available on most models brings device security to a higher level with features such as manual data overwrite and auto data overwrite at power-up, hidden pattern printing and detection, and more.

Common Criteria

The Common Criteria (CC) is a set of guidelines used to evaluate information technology equipment. It is the technical basis for an international agreement and the specification is tested by independent laboratories. Sharp has always aimed to achieve a secure and productive office environment through the development of our digital MFPs. Meeting evolving security standards, such as Common Criteria, is important to ensure organizations confidently handle the most sensitive data on Sharp devices. Most Sharp devices meet the requirements for Common Criteria against the latest Protection Profile for Hardcopy Devices v1.0 (HCD cPP v1.0e).

Trusted Platform Module

The Trusted Platform Module (TPM) is an industry standard computer chip that uses cryptographic technology to protect access to hardware such as hard disk drives and solid-state drives inside most Sharp MFPs and printers. When enabled, TPM chip inside the machine initiates a cryptographic key that cannot be accessed by software. A matching cryptographic key is encoded during the boot-up process. If the two keys do not match, access to the device is denied. TPM is an important component of a customer's network strategy and can help protect them from data storage attacks.



SECURITY FEATURES DETAILS

Setting Different Layered Security

Sharp standard MFP security features coupled with the optional Data Security Kit protect and control the major MFP systems and subsystems (print, copy, scan, fax jobs, network settings, memory components and local user interface). The Sharp data encryption method uses the Advanced Encryption Standard (AES) algorithm 256-bit on all data before it is written to RAM and the hard disk drive. It also can provide up to 10 times data overwriting routines to minimize information leakage. Select Sharp MFPs support DoD 5220.22-M data overwrite for optimal data security.

SHARP STANDARD FEATURES		WITH OPTIONAL DATA SECURITY KIT (DSK)	
Level 1 Standard Security Features	Level 2 Standard Security Features	Level 3 DSK Standard Security Mode	Level 4 DSK CC Security Mode
Includes User Authentication, Active Directory Integration, IP/MAC Address Filtering, Port Management, Audit Logs, BIOS Integrity Check, Firmware Attack Prevention, Application Allowlisting, Intrusion Detection, and others. <i>(Some features must be enabled)</i>	Includes Level 1 Standard Security Features plus Data Encryption, Data Overwrite Protection and Trusted platform Module (TPM) protection. <i>(Some features must be enabled)</i>	Includes Level 1 and 2 Standard Security Features plus manual data overwrite capability, disabling document filing and list printing as well as other optional feature restrictions.	Includes Level 3 DSK Standard Security Mode features, plus meets requirements for Common Criteria HCD Protection Profile v1.0 compliance. Incorporates specific forced security settings and feature restrictions. ID card readers not allowed.
Additional Security Layers (optional): Virus Detection Kit powered by Bitdefender, Sharp Partner Program Member products and applications.	Additional Security Layers (optional): Virus Detection Kit powered by Bitdefender, Sharp Partner Program Member products and applications.	Additional Security Layers (optional): Virus Detection Kit powered by Bitdefender, Sharp Partner Program Member products and applications.	Additional Security Layers (optional): Virus Detection Kit powered by Bitdefender, Sharp Partner Program Member products and applications.

Encryption level and security features vary per model. Please see the Security Compatibility Charts for more details.

SECURITY FEATURES DETAILS

Data Security at End-of-Lease

When the device is retired, it is important that the data retained within the device be removed or rendered in an unreadable format. Select Sharp document systems offer standard End-of-Lease features to ensure that all confidential data is overwritten before the device leaves the facility.

When the End-of-Lease feature is executed, the data is overwritten. If a DSK is installed or standard MFP security feature is enabled, the data is overwritten with random numbers. While data is being erased, the data deletion progress will be displayed. After erasing is completed, the MFP will be rebooted automatically. Sharp’s latest MFPs meet the requirements for NIST SP800-88 data erase. The data erase completion report will then be printed out. The following data will be erased using End-of-Lease data overwrite feature:

Setting Values	Job Image	User Input Data		System Data
<ul style="list-style-type: none"> • System Setting/Web Settings • Admin Password • Network Setting • Soft Switch 	<ul style="list-style-type: none"> • Job (image) Data on Each Mode • Unprinted Fax/Internet Fax/Direct SMTP Data • Document Filing Data • Data Stored in NAS area • Image Data in Memory Box • Print Release Job Data 	<ul style="list-style-type: none"> • Address Book • User Information (including User Index/User Count) • Job Program • Organization/Group List/Page Limit Group List/ Authority Group List/ Favorite Operation Group List • Billing Codes • Words Registered in Software Keyboard • Scanner Default Sender • Scanner Default Destination • Fax/I-Fax Forwarding Destination/ Sender/ Allow/Reject Sender 	<ul style="list-style-type: none"> • Pulling Protection Number • Dial-in Number • Auto Forward Table • Destination for Document Admin • Fixed Phrase (Text/Image Printing/ Subject/File Name/Body Text/Email Footer/Tracking Information) • Metadata Set • Custom Links • Sharp OSA Embedded Application • Custom Stamp/ Custom Watermark • Color Profile • Download Font 	<ul style="list-style-type: none"> • Job Status • Completion Queue Data • Job Log • Encrypted Communication Control Information • Keyboard Input Character Translation Information

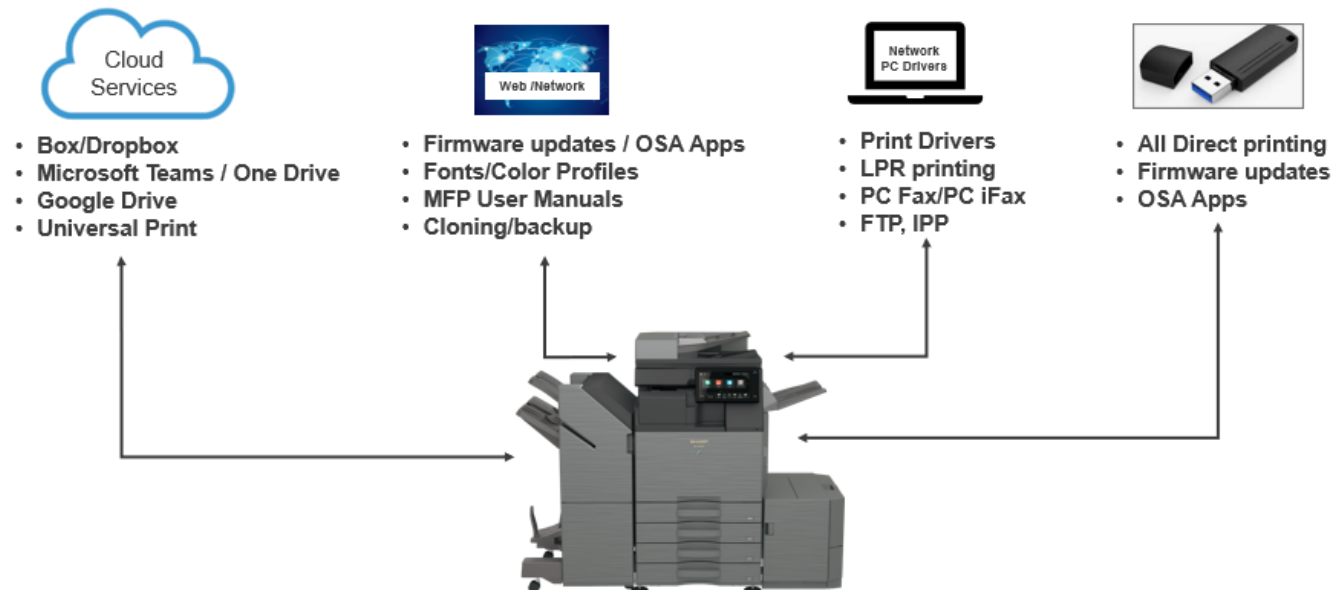
SECURITY FEATURES DETAILS

Bitdefender Antivirus (Optional)

The optional BP-VD10L Virus Detection Kit for the BP series complements the native security features by adding an extra layer of protection to help identify both current and emerging security threats.

The Bitdefender antivirus engine scans all data going in and out of the machine, including USB memory. Data is scanned in real time and can also be scanned on-demand. All activity is recorded in the MFP Audit Log. The virus definition patterns are updated daily. There is no subscription--it's a one-time purchase.

Scans All Inbound/Outbound Data For Malicious Code



SECURITY FEATURES AT A GLANCE

Protects Your Data

- Automatic Data Overwrite
- Manual Data Overwrite (requires DSK)
- Custom and DoD 5200.22-m
- End-of-Lease Data Erase
- Power-up Data Overwrite (requires DSK)
- 256-Bit AES Data Encryption
- Trusted Platform Module (TPM)
- BIOS Integrity Check at Startup
- Real-time Intrusion Detection
- Bitdefender Antivirus (BP-VD10L)
- Application Allowlisting
- Self-recovery Firmware
- Data Back Up

Protects Your Email

- User Authentication
- S/MIME encryption and digital signing
- Set device to only send to Logged-in User's Email Address
- Send from Logged in User (Email Connect)
- Store Sent Email on Sent Item Folder
- Apply Exchange Email Rules for Send- to-Email functions
- Single-Sign-On (SSO) (Kerberos and OAuth token)

Protects Access to Your Device

- User Authentication / ID Card (Local / LDAP / AD)
- Active Directory Group Policy
- Page Limit Control / Group Authorization / User Mgt.
- Password Protected Access to Device Web Page
- User Authority Setting
- Single-Sign-On (Kerberos and OAuth Token)
- USB Card Reader Support
- Scan-to-Home and Scan-to-Me
- Restrict List Printing
- Disable Destination Selection
- Disable Address Book Registration
- Receipt Rejection from Specified Sender(s)

Protects Your Network

- TLS 1.3 Encryption (2048 bit Key)
- Security Policy Management
- SNMPv3 Support
- SNMP Community Name Support
- Kerberos
- IPv6 and IPsec
- Device Certificates
- IP Address Filtering
- MAC Address Filtering
- Port Control
- IEEE 802.1X™ Authentication

Protects Your Data Trail

- Job Log and Usage Tracking
- Image Log (by job)
- Reporting and Data Export
- Administrator System Audit Logs
- Syslog Protocol RFC 5424/3164 for Syslog / SIEM Integration
- Program Partner Applications
- SRDM Security Policy Management Features

Protects Your Documents

- Secure Print Release with a PIN Number
- Encrypted PDF (AES 256-bit Encryption)
- Encrypted PDF Lockout
- Tracking Information Print
- Hidden Pattern Print and Detection

Protects Fax Communication

- Segregated Fax Line
- Prevention of Junk Fax
- Confidential Fax

Protects Your Print Jobs

- User Authentication
- TLS Encryption
- Secure Print / Serverless Print Release
- Sharp OSA Applications

Protects Access From Unauthorized Mobile Devices

- User Authentication
- Print Retention
- PIN Printing
- Access Point Wi-Fi Mode

Sharp OSA Technology



INTEGRATED BUSINESS PROCESSES

Sharp OSA Technology Enables Integration, Customization and Personalization with Enhanced Security

Sharp OSA technology is a software development platform for Sharp A3 MFPs and select A4 MFPs. It is based on industry standard Web-services/ Web API technology and delivers integrated and customized interfaces which help streamline your business processes. Sharp OSA technology helps provide extended access to mission critical business information while your IT network and security policies are maintained.

Sharp OSA Technology for Your Organization

Sharp OSA technology can help employees at every level of your organization by optimizing your IT investment, reducing costs, enhancing productivity and simplifying IT management:

Business Owners, CEOs, COOs and CFOs

- Optimized investments in imaging systems.
 - Improved employee performance.
 - Compliance with industry regulation.
 - Cost reductions and optimized Sharp MFP capability.

IT Managers and Administrators

- Integrated document and information security.
 - Improved access control and user management and usage tracking.
 - Integrated corporate IT assets and security policies.
 - Simplified management and support.



INTEGRATED BUSINESS PROCESSES

Sharp OSA Technology for Your Organization (continued)

End-Customers and Business Process Owners

- Optimized investments in imaging systems.
 - Improved employee performance.
 - Compliance with industry regulation.
 - Cost reductions and optimized Sharp MFP capability.

Application Developers and System Integrators

- Extensive support and resources to accelerate development.
 - One of the strongest programs and developer networks in the industry.
 - Variety of resources available, including MFP simulator, documentation, developer hotline and more.
 - Wide range of programming languages supported on Web services/web API and Webkit browser-based platform.



INTEGRATED BUSINESS PROCESSES

Industry Leader in Web Service-based MFP Technology Platform

Sharp pioneered the first web services-based MFP technology platform. Since the birth of Sharp OSA technology, Sharp has been playing an important role in creating the industry's ecosystem. Developing strong connections among independent software vendors, solution providers and IT customers, Sharp has been helping organizations become more competitive in the marketplace.

Cloud-ready Platform for Intelligent IT Decision Making

Sharp OSA technology is cloud ready, enabling your IT department to make intelligent and informed decisions when it comes to solution deployment. With RESTful Web API, Sharp OSA technology supports Software as a Service (SaaS) or cloud-enabled environments by efficiently assisting communications involving intermediaries such as firewalls. Enabling secure and scalable communications, Sharp OSA cloud-ready technology further expands flexibility in how the document workflow and security solutions are implemented.



SHARP OSA AND LICENSE TYPES

PLATFORM	STANDARD SHARP OSA SDK (SUPPORTED ON ALL SHARP OSA VERSIONS)	EXTENDED SHARP OSA SDK (AVAILABLE ON SHARP OSA4 AND ABOVE PLATFORM)
Functions	<ul style="list-style-type: none"> On-Premises Communication Support 	<ul style="list-style-type: none"> Cloud/SaaS On-Premises Communication Support
	<ul style="list-style-type: none"> UI Customization 	<ul style="list-style-type: none"> UI Customization (Web kit-based browser available for Sharp OSA 5 platform)
	<ul style="list-style-type: none"> Job Control <ul style="list-style-type: none"> Scan Print 	<ul style="list-style-type: none"> Job Control <ul style="list-style-type: none"> Scan / Print / Copy Fax and Internet Fax Document Filing
	<ul style="list-style-type: none"> EAM Account Control 	<ul style="list-style-type: none"> EAM Account Control
	<ul style="list-style-type: none"> USB Device Control 	<ul style="list-style-type: none"> USB Device Control

The following modules enable Sharp OSA technology on the device. Select MFP models include these modules as standard.*

- MX-AMX2L/BP-AM10L Application Communication Module (ACM).
 - Allows Sharp OSA applications to control jobs and functions of scan, print, copy, and fax.
- MX-AMX3L/BP-AM11L External Accounting Module (EAM).
 - Allows Sharp OSA applications to control accounting features.

* Please refer to the Sharp OSA compatibility charts to view supported MFP models.

Sharp Partner Program



ALIGN WITH TECHNOLOGY LEADERS

Sharp Partner Program

Sharp is committed to meeting the ever-changing demands of the market and has fostered an active and extensive Sharp OSA Developer community whose products help add value and functionality to our award-winning MFPs. As one of the most inclusive in the industry, membership in the Sharp Partner Program is open to qualified software and hardware vendors, authorized dealers and Sharp customers.

Working with Sharp technology, including the Sharp OSA platform, Sharp Partner Program members can deliver highly customized solutions that enable MFPs to reach deeper into the organization than ever before. They are also able to develop unique and engaging user interfaces on the LCD display that help facilitate operation and can help increase productivity and overall efficiency. Customers can choose to leverage an existing Sharp OSA-developed application, or they can join the program to develop their own custom integrations.



ALIGN WITH TECHNOLOGY LEADERS (CONTINUED)

Sharp Partner Programs

All members of the Sharp Partner Program, Sharp OSA Developers and companies with compatible applications, are given the option to join the Marketing Program to have their products validated by Sharp and gain access to joint marketing tools. There are two types of validation:



Sharp OSA Validation

Sharp OSA Validation tests the developer's application against a set of criteria to help ensure that the connection between Sharp OSA-enabled MFPs and the developer's application works as specified. Upon successful completion of testing, the integration earns the recognition of being Sharp OSA Validated and is promoted with the use of the Sharp OSA Validation icon, providing you with assurance of successful operation on the supported Sharp OSA-capable MFPs.



Sharp Compatible Validation

In addition to developers of Sharp OSA applications, the Sharp Marketing Program is also open to qualified software and hardware vendors with products complementary to Sharp MFPs. To qualify, vendors must submit their product for Sharp Compatible Validation. Once validated, the compatible product is promoted with a unique Sharp Compatible Validation icon, providing confidence that they will work with supported Sharp MFPs.

Below you can choose to search the entire list of Sharp Partner Program Members or only view the profiles of those with validated product(s).

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