

EP-BB (Electronic Partnership Broad Band)

Security White Paper

EP-BB, Production Remote Services, and Other Services

Version 2.0 – February, 2019



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Document Revision

<u>Document Version</u>	<u>Key Updates</u>	<u>Date</u>
Version 2.0	Consolidation of all Version 1.xx documentation, combination of all product types into a single document, etc.	22 nd Feb 2019

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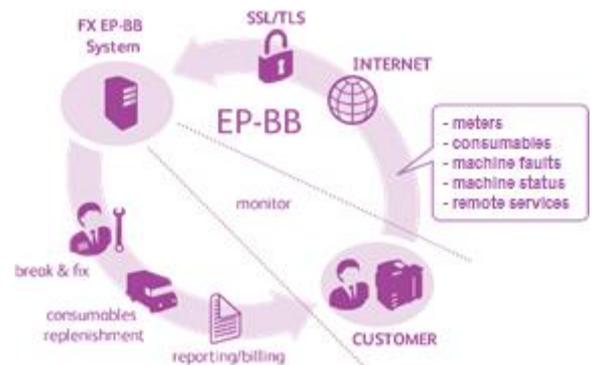
Introduction

Electronic Partnership Broad Band ('EP-BB') is a Remote Service developed by Fuji Xerox for Fuji Xerox Devices.

This document aims to explain EP-BB capabilities to users and administrators of Fuji Xerox devices and a customer environment.

Specific focus is on the network specifications and data transmission, as well as high level detail of how that data is consumed by a range of value adding services.

This document describes the incremental EP activity on an EP capable device



OBJECTIVES AND SCOPE

EP-BB is intended to enhance service and support capabilities with the intention of increasing device up time, productivity, and reliability.

Features of EP-BB cover all Fuji Xerox product classes (Printers, Multi-Function Devices, Production Printers, etc.) however they do vary depending on the device and its capabilities.

The focus of this document is on the network specification of EP-BB, devices connecting to EP-BB, and the network infrastructure required to enable EP-BB. Any information that relates to technical detail of EP-BB function and capability are also offered where appropriate.

EP-BB services capability commenced in 2009 and features associated therewith have been incremental based on new and evolving technologies and device capabilities. As such detailed information on current device capability can be made available on request from a Fuji Xerox Sales representative.

EP-BB technology evolution means that the documentation supporting it is likely to be similarly changing and dynamic. As such it should be noted that because of this dynamic landscape... this document is Evergreen with content being changed or updated on a undetermined and unfixed periodic basis. To acquire the most current EP-BB security whitepaper document please contact your Fuji Xerox Sales representative.

DEFINITIONS

EP-BB – Electronic Partnership Broad Band

EP – Electronic Partnership

EP Centre – Core Fuji Xerox system responsible for incoming data and information from connected devices

RS – Remote Service

Device – the Fuji Xerox equipment connecting to EP-BB

CSE – Customer Service Engineer

Backend Systems – Fuji Xerox infrastructure outside of the EP Centre that performs ancillary functions such as, but not limited to, contract management, billing and accounting, CSE dispatch, consumable delivery, quality control, etc.

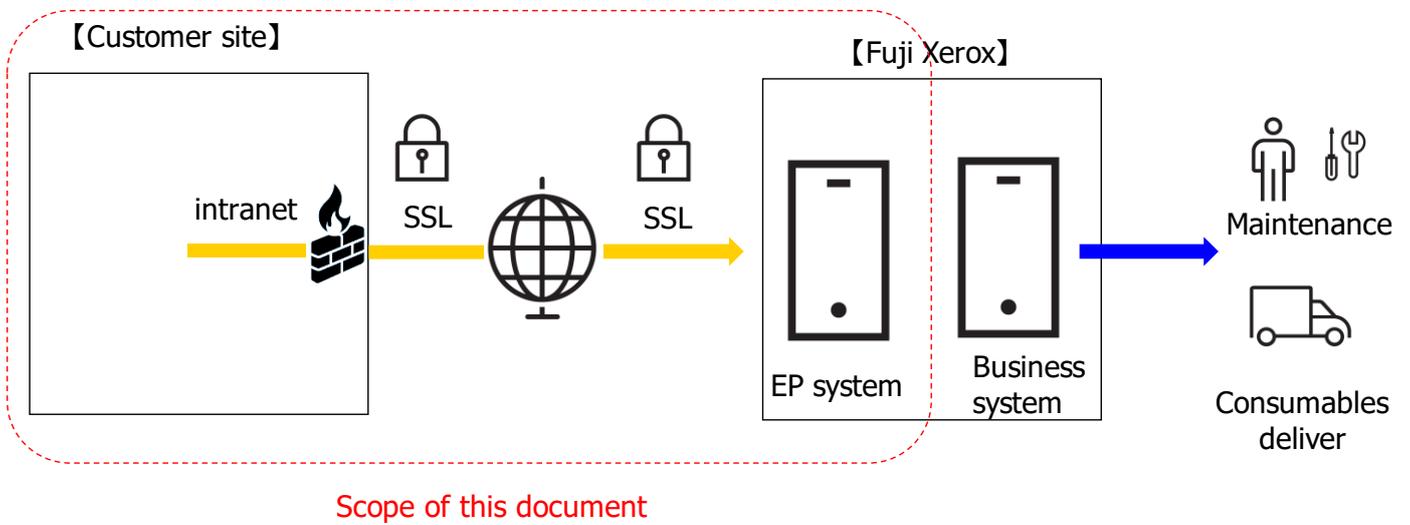
CA – Certification Authority (organization that publishes and manages encryption certificates)

Device Alert – Any fault condition occurring on the device that requires some kind of service interaction or intervention.

Consumable Alert – A device message indicating that a replacement consumable (toner, waste toner bottle, etc.) is required.

SYSTEM DESCRIPTION SUMMARY

This release of the Version 2.0 Security Whitepaper is based on information current as of December 2018.



The EP-BB Security Whitepaper Document is intended to cover and address all interactions between an installed Fuji Xerox device, all necessary customer network infrastructure, and internet connectivity. Fuji Xerox business systems and processes are briefly discussed where appropriate however they are covered in limited detail.

Continual development of EP-BB services and technologies allow Fuji Xerox to build and deliver value added services and tools that ensure our devices meet or exceed customer expectations.

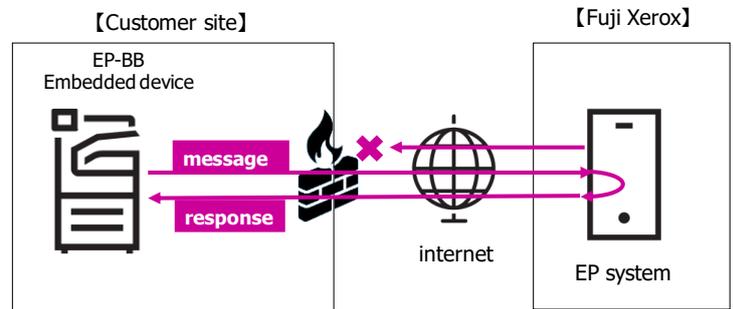
1. EP-BB Service Introduction

SERVICE APPLICABILITY

EP-BB has been designed and developed with the intent to enhance customer and Fuji Xerox interactions with connected devices via a secure internet connection.

This document aims to make it easier for administrators of customers, who are reviewing or considering EP – BB enablement, to introduce EP-BB, including the tools and services associated with it, with confidence.

The described content is based on published EP-BB network specifications and adds additional information where appropriate.



1.1 EP-BB BASIC FUNCTIONS

1.1.1 - Automatic Billing Functions (Automated Meter Reading)

This function automates the submission of billing meters to reduce the demand on customers to manually check device counters.

A meter report is sent from the device automatically with submission timing being set to a random time during the initial EP-BB configuration on the device.

The submission timing of device meter information is set to between 9:00 and 18:00 each day (local time).

Automatic Meter Reading consists of the following functions...

- a.) **Billing meter submission on monthly closing date**
EP Enabled devices will send the device meters on the monthly closing date as specified by the customer
- b.) **Billing meter submission daily**
EP devices send the billing meter once a day at randomly determined times between 9AM-6PM. Fuji Xerox may calculate the FSMA charge on recent 5 times' daily meter data when a device is unable to send the billing meter due to some kind of technical issue like a network communication problem.

1.1.2 - Consumable Alert Notification

The Consumable Alert Notification enables the automation of consumable replenishment.

This function includes support for toner cartridges, drum cartridges, and toner waste bottles

FX will dispatch consumables at defined intervals based on the remaining volume of toner, print volume, etc, in the proper volume required by the device. The device sends detail to EP including remaining consumable volume, exchange event history, along with billing meter details which allow for accurate prediction of toner life expectation.

NOTE:

Delivery timing can vary depending on the device type and the device usage behavior.

1.1.3 – Device Fault Alert Notification

The Device fault alert notification is provided to minimize the downtime of a device.

Device alert notification is triggered instantly, with the following exceptions: paper jam, door open, tray open and device offline. These device alerts are only reported if they remain unresolved for a predefined time (typically 30 minutes). Device alert triggers include the following...

- a.) **Callback Service**
The device will send an alert when it finds device failure automatically. For example, the device will send an alert when the same paper jam failure continues over 30 min.
If customer call to our call center to require the technical support, our technical operator will call back the customer, and offer support to resolve the problem.

- b.) **CSE Dispatch Service**
FX will dispatch a CSE when a problem cannot be solved with the callback service, or if the result of data analysis from the device shows an issue that cannot be resolved remotely
- c.) **One-touch maintenance request service**
Customers can request onsite maintenance by pushing “Maintenance Request” button on the device User Interface. This service is used to request image quality problem resolution which can be difficult to analyse and resolve by using the device itself, or for preventive maintenance before a larger workload print job.
- d.) **Remote Diagnostic Service**
The device sends diagnostic data to the EP centre at the timing of daily billing meter sending and alert sending. The EP centre then analyses the diagnostic data, in conjunction with a knowledge-base system, and offers a smart, and more accurate solution, for device maintenance.
- e.) **Automatic Replacement of Periodic Parts Service (HFSI)**
EP-BB device detects the exchange timing of periodic replacement items and sends this information to the EP centre. The EP center proactively arranges part change to avoid the device hard stop resulting from parts life end as well as extended down time when multiple items are due simultaneously.

NOTE:

Content of EP-BB device information Does Not include any user information, customer document information, scanned or printed images.

1.1.4 – Feature Usage & Environmental Reporting (Green Report)

This information reflects the usage patterns of the device and allows customers to fully optimise all product capabilities and features.

This report is sent from the device once a month as a total value and does not reflect daily usage details. This report is available to the customer via the appropriate customer accessible portal once completed, in the FXAP case – FX Direct.

Key points regarding the Feature Usage counter include...

- Feature Usage counter contents are function-specific total counter information. (Copy, Print, Fax, Scanned images, User ID, document names, registered user information are not included in this data.)
- Feature Usage counters are different from billing meter information., Function counters are resettable by the Key operator. In order to effectively use the Environmental Reporting function, the Feature Usage counter should NOT be reset
- Feature Usage counters on the device may be lost when the device experiences some hardware trouble, or a significant Firmware version-up occurs.

For more information Contact a Fuji Xerox sales person about Environmental Reporting.

1.2 PROGNOSTIC ANALYSIS

Using daily device logs from customer device, Fuji Xerox’s support and development teams can proactively predict potential problems and schedule onsite service to resolve the problem before it occurs to ensure maximum machine uptime for customer.

1.2.1 – Diagnostics

This information is collected and sent to allow service personnel to view the state of the device before travelling to the customer site. This saves time, for customers and FX by reducing the need to make extra trips to the customer site. Service data is proactively analysed to prevent potential problems before they occur.

1.2.2 – Engineering

Detailed engineering logs allow timely responses to critical customer problems and to reduce machine down time.

1.3 REMOTE FIRMWARE UPGRADE

The Firmware Upgrade button on the device UI enables the device to immediately retrieve the latest firmware from the firmware download server, and install it without any service interaction.

1.4 SCHEDULED FIRMWARE UPGRADE

This function allows an FX operator to set a firmware upgrade request against a desired date and time on the EP server which then enables a device to action the request and excuse at the specified date and time.

1.5 NVM READ/WRITE

NVM Read/Write is typically limited to interaction at the device by a Key Operator or a CSE. EP-BB allows an FX operator to set an NVM read or write request on the EP server and at the next device polling interval the device reads the pending request and executes an NVM read or write, then reports the result to EP server.

1.6 PRODUCTION REMOTE SERVICES (OPTIONAL FEATURE OF SPECIFIED MACHINES)

FX Production Remote Service is designed for high end devices for sharing extended data with the EP-BB service.

1.7 DEVICE LOG SERVICE (OPTIONAL FEATURE OF SPECIFIED MACHINES)

FX device log service is designed to analyse individual usage of devices, and sharing the data with the native EP-BB service

2. Device Interactions with EP-BB

This chapter describes the interactions between EP-BB enabled devices relative to EP function – how does EP communication work.

2.1 EP COMMUNICATION FUNCTION

All device communication functions are incorporated in the device for capable devices. Depending on the device type the function can be embedded in the device controller, or as a software module on a connecting PC, for provision of EP functions.

Communication with the EP center is performed via the LAN port on the controller board or connected PC. Image information (printed, copied, or otherwise) is not included in the communication between an EP connected device and the EP center.

2.2 MEMORY AND IMAGE DATA HANDLING

For hard disk equipped devices, all image data is stored on the hard disk. EP data is stored in Non Volatile Memory (NVM) of the device.

For devices without a hard disk NVM is used to store the address book and temporary image data used during device functions. These functions can include copy, fax, print and scan. NVM is also used to store EP data, but in a separate logical area, and again, it is important to clarify that no image data is transmitted to the EP Centre from the device.

2.3 EP CLIENT TYPE OVERVIEW

There are 4 types of EP Client type that enable the EP-BB service on a wide variety of devices.

2.3.1 EP-BB Native Features

EP-BB Native, or EP Native, devices have the ability to communicate with EP-BB server directly at the device.

EP-BB capable devices communicate with the EP center directly through hardware and software functions that are embedded in the device.

EP-BB communication is handled by the embedded device firmware, and sent and received through LAN port of device.

While the connection is the same, there are some small functional differences between different FX devices (Color 1000/800/1000i Press and Iridesse Production Press).

These devices use a software module installed on the PCUI to communicate with EP-BB. Data is retrieved from the device using other installed software modules on the PCUI that function in concert with the device and pass relevant data to the EP-BB module for communication to the EP Server.

2.3.2 EP-BB Light Features

EP-BB light is another implementation from EP-BB Native using light weight protocol.

The functionality of EP-BB light is smaller than EP-BB native.

This type of devices has the ability to communicate with the EP-Gateway server, which then the EP-Gateway server transfers data to EP server.

2.3.3 EP Net Box 3 Features

EPnet-BOX 3 enables NON-EP native devices to communicate in the same way as those that connect natively to EP-BB. EPnet-BOX 3 reads device information with SNMP, and converts the read information to the EP-BB protocol. The information sent via EP Netbox3 is typically smaller in size and contains less device information than an EP native device.

2.3.4 Meter Collection Tool

The Meter Collection Tool (MCT) enables devices to communicate the same way as an EP-BB light device. The MCT reads only meter count information from a device with SNMP, converts the information to the appropriate data format, and sends it to EP-BB light server.

2.4 FUNCTIONAL DIFFERENCE BETWEEN EP CLIENT TYPES

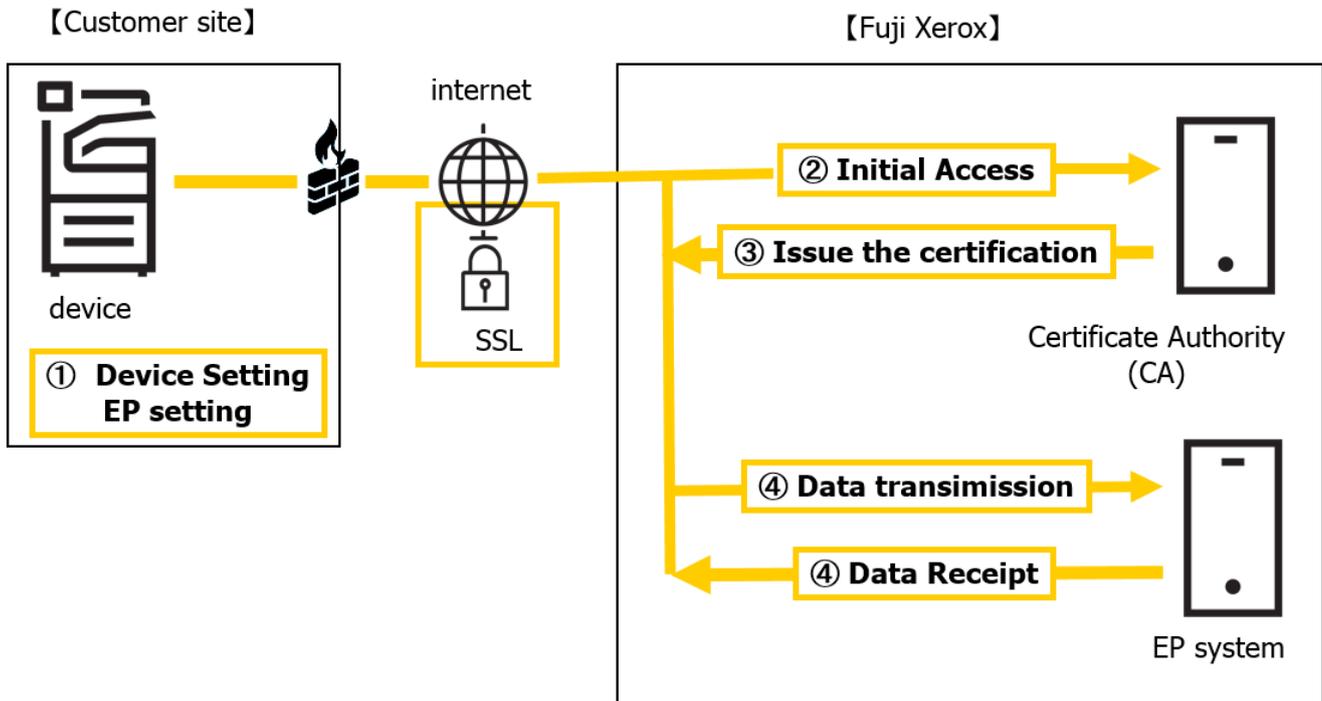
The following table outlines the key differences between the 4 EP-BB client types.

Function name	EP-BB native	EPnet-BOX 3	EP-BB light	MCT
Automatic Billing Function	Supported	Supported	Supported	Supported
Consumable Alert Notification	Supported	Supported	Supported	Unsupported
Device Fault Alert Notification	Supported	Supported	Unsupported	Unsupported
Feature Usage & Environmental Reporting	Supported	Unsupported	Unsupported	Unsupported
Diagnostics	Supported	Supported	Supported	Unsupported
Engineering	Supported	Unsupported	Unsupported	Unsupported
Remote Firmware Upgrade	Supported	Unsupported	Unsupported	Unsupported
Schedule Firmware Upgrade	Supported	Unsupported	Unsupported	Unsupported
NVM Read/Write	Supported	Unsupported	Unsupported	Unsupported
Production Remote Service	Supported	Unsupported	Unsupported	Unsupported
Device Log Service	Supported	Unsupported	Unsupported	Unsupported

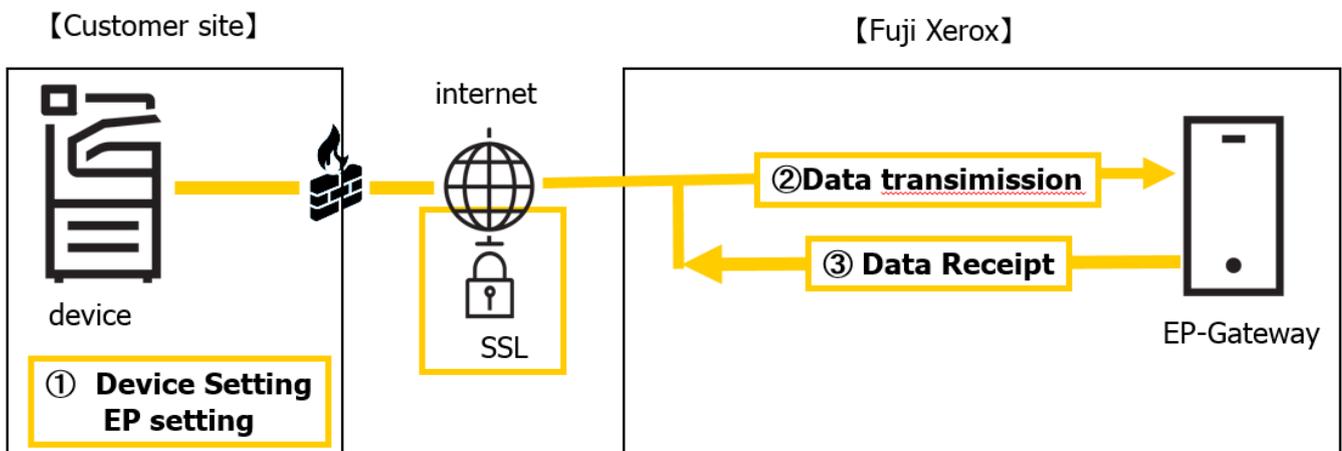
3. Overall System Architecture

EP-BB communication is always instigated from the device to the EP center and activation of communication from the EP center to the device is not implemented.

In addition, when it is necessary to obtain EP-BB setting information from the EP center, the EP-BB device receives inbound data as the part of return value the EP center is polled once a day by the device. Device polling communication occurs during events such as notification of occurrence of a failure from the EP-BB, consumable alerts, etc.



EP-BB Architecture



EP-BB light Architecture

3.1 COMMUNICATION METHOD

The device communicates with the EP center using SOAP over an encrypted HTTPS (SSL) link to protect the data. The standard port 443/TCP is used in HTTPS communication and the port used cannot be altered. Only the device firmware is retrieved with 80/TCP, which again cannot be altered for this function.

The EP center is addressed by URL and requires DNS resolution on the customers' site.

The EP-BB device support basic authentication and NTLM authentication.

The EP-BB device (*1) selects basic authentication or NTLM authentication automatically and the EP-BB device (*1) supports automatic proxy server configuration and automatic detection (WPAD) with automatic configuration script (PAC file).

However... some devices do not support this function, and CSE has to set the IP address or FQDN of the customer proxy server manually.

*1 NTLM authentication, automatic proxy server configuration, and automatic detection are not supported by models released before April 2010, as follows...

- ApeosPort-IV/DocuCentre-IV C5570/C4470/C3370/C2270 (released 21st July 2009),
- DocuCentre-IV C2260 (Released 25th November 2009),
- DocuPrint C3350 (Released 2nd April 2010),
- ...and products released previously, except EP-BB light devices.

NOTE:

Content filtering by Proxy Server or SSL decryption by Enterprise Firewall

If HTTPS and HTTP standard ports are blocked by the customer's network, Content filtering to inspect EP communication by Proxy Server or Enabled SSL decryption by Enterprise Firewall to inspect the outbound traffic to internet, the EP communication between the customer network and the EP center is not established due to your security policy.

If you have any security setting to inspect outbound traffic on this kind of security device, please make sure the security rules are set so as not interrupt EP communication.

3.2 COMMUNICATION SEQUENCE

Communication is initiated daily by the device at a scheduled time between 9:00 and 18:00 (based on the time zone set on the device).

This time is randomly allocated during installation. Communication to the device cannot be initiated by the EP center.

Only consumable and device alerts will initiate real-time transmission to EP center.

3.3 CONTENT, FREQUENCY, AND SIZE OF OUTBOUND AND INBOUND DATA

The EP-BB device and EP center are designed to handle data that is only EP-BB service related. The volume and the frequency of data transmitted to the EP center are described in the table below. (accurate as of November, 2017)

Note: Communication cannot be initiated from the EP center. Any outbound communication is only in response to communication initiated by the device.

Each EP-BB communication includes the header information including timestamp, product code, serial number to identify the data source.

EP-BB communication does not include customer information (company name, User information, document name, job name), information set by customer (Fax number, user ID), or information that can be estimated by the customer (IP address, proxy server name, FQDN).

EP-BB enabled devices do not have the ability to send job data received from client PC, or image data created with COPY, FAX, Print jobs.

* Items in this notation are as of January 2019, and may be added / changed without advance notice.

EP Standard Features

Activity	Data	From	To	Frequency	Data Fields	Size (Kb)		EP Client Type				Note
						EP-BB Native	EP-BB Lite	EP-BB Native	EPnet Box3	EP-BB Lite	MCT	
Activation	Installation request	Device	EP center	Only at installation and cancellation	Install request	10.0	2.0	Yes	Yes	Yes	Yes	(EP-BB Native) At the initial installation, device gets the client certification from FX CA. Then, the device starts the TLS handshake process. (EP-BB light, MCT) At the initial installation, client sends the unique digital ID to EP-gateway, then the client and EP-gateway communicate with the common encryption key create for each client.
Billing	Billing meters	Device	EP center	Once per day	Daily billing meters sending	5.0	1.0	Yes	Yes	Yes	Yes	Send billing meter every day.
	Monthly closing meters	Device	EP center	Monthly	Monthly closing meters	4.1	-	Yes	Yes	Yes	Yes	EP-BB device will send monthly closing meters to EP center at the customer specified date and time.
Automatic consumables delivery	Notification of consumable changing	Device	EP center	After Replacing Consumables	Consumables information	5.5	1.2	Yes	Yes	Yes	No	EP-BB device notifies the consumable changing to EP center, FX carries out the replenishment delivery.
	Notification of only consumables remaining	Device	EP center	When the device detects the only a few remaining	Consumables information	5.5	-	Yes	Yes	No	No	EP-BB device notifies toner near empty to EP center, FX carries out the replenishment delivery.
Remote Maintenance ※1	Diagnostics information	Device	EP center	Once per day	Diagnostics information	116.0 (Max)	15.0	Yes	Yes	Yes	No	To perform and preventive maintenance of the fault location with wear situation of parts, error history
	Failure notification	Device	EP center	After detecting failure	Diagnostics information	116.0 (Max)	-	Yes	Yes	No	No	EP-BB device notifies alert after detecting failure, FX call back the customer or dispatch the CSE.
	Key operator call	Device	EP center	After KOC button pushed by customer	Diagnostics information	116.0 (Max)	-	Yes	Yes	No	No	When the customer pushes the KOC button, Device sends the diagnostic data to EP center.
	Notification of diagnosis request EP-BB	Device	EP center	After diagnosis button pushed	Diagnostics information	116.0 (Max)	-	Yes	Yes	No	No	The EP-BB device send diagnostic data to Ep center when CSE pushes the diagnostic request button.
	Debug log notification	Device	EP center	After detection debug log full	Debug log	280 (Max)	-	Yes	Yes	No	No	To grasp the device status, perform a specific and preventive maintenance of the fault location.
	Notification of device maintenance setting	Device	EP center	On Demand	Device maintenance setting	25.0 (Avg.)	-	Yes	Yes	No	No	EP-BB device send device setting information for maintenance application, or notice the failure of changing device maintenance setting
Operating status	Device usage counter (※2)	Device	EP center	Monthly	Device usage counter	32.0 (Max)	-	Yes	Yes	No	No	EP-BB device sends the device usage counter to EP center.

Other	Device polling to EP center	Device	EP center	Daily	Daily polling to Device EP	1.0	0.5	Yes	Yes	Yes	Yes	Acquisition of request queue at EP center (See detail on "device service parameter"
	Notification of the device service parameter (※3)	Device	EP center	After the device service parameter has changed.	Device service parameter	10.0	-	Yes	Yes	No	No	EP-BB device send the device service parameter when it detects the parameter has changed. The device service parameter includes the device configuration, FW V-Up information, and so on.
Device service parameter ※4	Acquisition of device service parameter (at EP-BB installation)	Device retrieves the device service parameter with return value of device access to EP center.		EP-BB installation	Device service parameter	3.5	-	Yes	Yes	No	No	EP device retrieved the initial device service parameter decided on a contract
	information of notification function when the device service parameter change occurs			On Demand	Device service parameter	4.0	-	Yes	Yes	No	No	Service parameter information. OFF / ON setting information of notification function when change occurs
	Acquisition of Monthly Closing information			On Demand	Monthly Closing information	1.6	-	Yes	Yes	No	No	Closing date and time information. FX business system adjust this parameter to avoid holiday.
	Device Maintenance information			Irregular	Device Maintenance information	25.0 (Avg.)	-	Yes	Yes	No	No	Cumulative occurrence count threshold for implementing a fault notification. Lifetime threshold of periodic replacement parts. Mechanical adjustment applications will change this information
	※5 Device firmware Version UP (OPTIONAL)			KeyOperator, CE, Remote activation	Device firmware	Approx. 550Mbyte (Max)	-	Yes	Yes	No	No	Update device firmware to newest one.
	Acquisition of the firmware update date and time (OPTIONAL)			Irregular	Date and time	2.0	-	Yes	Yes	No	No	Date and time information on firmware update

* Refer to appendix

※1 - EP-BB communication does not include customer information (user information, document name, print data)

※2 - EP Enabled device send the device usage counters to EP center depend on the service parameter setting. Device usage counter information includes

1.) The number of used sheets by function (COPY/FAX/Printer/Scanner)

2.) Output format (Both side/N-UP), etc.

a. The device usage counter is not equal to billing meter.

b. The device usage counters do not include user information (login user name, print file name.)

* Limitations on device usage counters

I.) EP device can't send the device usage counters when the data sending failed for any reason.

II.) Key operator can reset the device usage counters., however reset should be avoided while using the FX green report service, as the outcome of Green Report data may be inaccurate.

III.) The device usage counter may be cleared when the device usage counter function updates, or a bug fix is implemented.

※3 - Notification of Device service parameter

EP-BB device send the information required for EP-BB service. Device service parameter has three categories shown below.

- 1.) Parameter setting in Multifunction devices. (Notify timing, Notify items, Monthly closing date and time)
- 2.) Configurate information (Product code, Serial number, Firmware version, Option configuration etc.)
- 3.) Operation mode information (KO/CE identifier on Firmware update, CSE name of EP-BB installation etc.)

※4 - Retrieving the device service parameter

The device retrieves the device service parameter as a part of return value from the EP center. This means that the device starts accessing to the EP center, and the EP center server starts accessing the device.

※5 - Device firmware Version up

There are two type of firmware Version up service...

- 1.) Firmware Update Service - Key operator can update the device firmware without FX CSE visiting.
- 2.) Automatic firmware update service - device execution of firmware update automatically at specified date and time

4. EP-BB System Security

This chapter describes system security of the EP Centre and its management.

4.1 INFORMATION SECURITY MANAGEMENT OF THE EP CENTRE

Fuji Xerox is committed to information security. For details, please refer to the following URL on information security:
https://www.fujixerox.com/eng/company/public/i_security.

Fuji Xerox is constantly working to improve security awareness for organizations and individuals by implementing security education for employees, implementing disciplinary punishment for security violators, and others.

As for these efforts, it is published as "Fuji Xerox Information Security Report". "Fuji Xerox Information Security Report" contains information that we deem appropriate to disclose to stakeholders so far as the information security effect is not hindered.

(Information security regulations are treated as confidential and are not disclosed.)

4.2 PHYSICAL PROTECTION OF THE EP CENTRE

Fuji Xerox EP server infrastructure is installed in an exclusive sphere, isolated physically in a data center.

Entry in the data center is limited to Fuji Xerox staff only.

Where entry is required by a third party prior written permission by Fuji Xerox is required and Fuji Xerox personnel will monitor all activities conducted by the third party.

4.3 LOGICAL PROTECTION OF THE EP CENTRE

The EP center is on a network separated from the in-company network of Fuji Xerox and is connected with the Internet through a firewall.

All Communication, other than communication required through the port required for EP-BB communication is blocked to prevent illegal access.

Communication between customer devices and the EP center is encrypted by SSL to prevent eavesdropping on data transmission.

Communication from the Internet to the EP center is limited to communication from our device using the EP-BB service, and is secured with high security by authenticating individual devices using the digital certificate issued by FX CA.

The digital certificate issued here is issued only to the FX device. It will not be issued to other clients. As a result, other clients cannot use this digital certificate to spoof and access the EP center.

When accessing the EP center from the FX in-house network for maintenance, etc., the EP center operator apply for issuing one-time password to the operation department and access the server system with that password.

In applying for one-time password issuance, approval by the system administrator is necessary, and only those who are responsible for maintenance activities can obtain it.

4.4 DATA COLLECTION IN THE EP CENTRE

The data, which is sent from the device installed in a customer's environment, is stored in the EP center according to the following guidelines:

4.4.1 - To provide various EP services, the system processes collected data automatically. Collected data is transmitted automatically to the backend system.

4.4.2 - For device diagnostic investigation, only when required, the personnel in charge of operation or maintenance, who was given the right to access in advance, may peruse diagnostic data and its log.

4.4.3 - The collected diagnostic data and the logs are saved for three months, except for "feature counter" information, and deleted after that.

4.4.4 - To "report feature data and calculate a comparison to the previous year", the "feature counter information" is saved for a minimum of two years.

Fuji Xerox's privacy policy can be viewed at http://www.fujixerox.co.jp/eng/common/privacy_policy/

4.5 REMOTE FIRMWARE UPGRADE AND SCHEDULED FIRMWARE UPDATE SECURITY

4.5.1 User Authentication

All FX integrated authentication is used to access the firmware version up (FW V-UP) server. FW V-UP server administrator must register the operator ID to FW V-Up server.

4.5.2 Protection between FX Operator and the Firmware Version Up Server

The operator must use login name and password to login FW V-Up server. FW V-UP server allows accessing only from FX proxy server IP address. The device FW will send to the FW V-Up server with FTP(non-encryption).

4.5.3 Protection between the Device and the Firmware Version Up Server

1st step of FW V-UP process, the device receives the URL where the FW is stored and Hash value calculated from the FW through EP-BB data communication path (protected with SSL).

2nd step, the device retrieves the FW from FW V-UP server with ftp (non-encryption), then the device calculates the hash value of the retrieved FW, and verifies it with 1st step Hash value.

3rd step: If the comparison of hash value is successful, the device starts FW V-Up.

4.6 DEVICE SECURITY

Fuji Xerox devices have acquired ISO/IEC 15408* for all products listed at the following URL....

<https://www.fxap.com.sg/product/security.jsp>

*ISO/IEC 15408 provides independent, objective, validation of the reliability, quality, and trustworthiness of IT products.

It is the only international standard that customers can rely on to help them make informed decisions about their IT purchases.

Common Criteria sets specific information assurance goals including strict levels of integrity, confidentiality, and availability for systems and data, accountability at the individual level, and assurance that all goals are met.

Common Criteria Certification is a requirement of hardware and software devices used by many governments across Asia Pacific

Regarding unauthorized access attempting intrusion via the external IF possessed by devices such as LAN, the following evaluation is carried out within the company to confirm that there is no problem...

- Port scan on unnecessary port release from the device LAN port
- Unauthorized access attempt from USB port of device
- Unauthorized trial from the web browser of the system administrator client of the device
- Replacement of storage medium recording device setting data
- Illegal from web browser of general user client of device
- Non-secure communication when SSL / TLS or IPSec communication negotiation fails

5. Fuji Xerox Security Practices

We use the information sent via the Device to improve our service to you.

The information may be shared among our employees, agents or other related Fuji Xerox entities and/or business partners acting on our behalf.

We will not share this information with non-Fuji Xerox companies, except to the extent necessary to meet your request for services, and with the understanding that it will not be used for any purposes other than to provide services to you.

5.1 ***OUR COMMITMENT FOR DATA SECURITY***

Fuji Xerox strives to ensure that our IT systems are secure and that they meet industrial standards. To prevent unauthorized access, maintain data security, and ensure the proper use of information, we have put in place appropriate physical, electronic, and managerial procedures to safeguard and secure the information we collect via Electronic Partnership. We will continue to assess new technology to evaluate its ability to provide additional protection of your information.

6. Customer Responsibility

In order to utilize EP-BB, and all services associated with it, the device communicates with the EP center.

In addition, the device will access FX CA when doing the first communication to obtain the client certificate.

In Preparation for EP-BB installation customers are asked to...

- Complete the EP-BB install parameter sheet and then send it to the FX sales person, or pass it to a CSE when they visit the customer site.
- We ask that customer accommodate their network settings to allow for consistent and reliable communication of EP enabled devices and Fuji Xerox (customer's network can reach FX EP center and CA).

When required the EP-BB callback operator will call the phone number written in the EP-BB install parameter sheet so please ensure that the correct number is recorded for the callback destination.

It is recommended not to turn-off the main power switch for EP enabled devices.

FX may not be able to provide the services described in this document when the daily EP-BB communication failed.

FX will call the Key Operator if EP-BB communication continues to fail for 8 consecutive days.

7. Independent Verification and Compliance

LAC (<https://www.lac.co.jp/english/>) corporation has carried out security inspection on the EP-BB service with ApeosPort-IV C5570 and ApeosPort-III C3300, in March 2011.

8. Conclusion

Through the above description, the security of the EP-BB service has been determined to sufficiently meet the needs of all internet and data transmission security requirements to ensure integrity of data and all information transacted between EP enabled devices and Fuji Xerox.

Appendix

A1 – DIAGNOSTIC DATA

Diagnostic data contains two basic components.

1. HFSI counters

HFSI is the abbreviation for High Frequency Service Items. These counters indicate the usage of internal components of the device. This includes major components like Fuser assemblies and Image Transfer belt assemblies but also small components like Feed Rollers in the trays and your document feeder. Most of these items have a fixed life and require periodic replacement.

Receiving HFSI counters allow us to estimate when these might need replacing and reduce the potential down time of your equipment.

2. Sub component transaction log

As a piece of paper travels through the device from the tray to the exit, it passes through different subsystems of the device. This subsystem transaction log will allow us to analyse, for example, what happens just before a paper jam.

Further detailed information on diagnostic data may be made available to a customer upon signing our standard Non Disclosure Agreement.

A1 – ENGINEERING DATA

Engineering Activity in Outbound data consists of engineering data which contains device configuration data such as device and device software setting.



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The contents described herein are correct as of January, 2019.