

March 16, 2023

Japanese Banks' Payment Clearing Network

Building of the API Gateway and the Formulation of the Basic Policy for the Next-generation Zengin System

Japanese Banks' Payment Clearing Network (Zengin-Net, Chairperson: Matsuo Tsuji) determined to build a new connection method using an application programming interface (API Gateway). The new method is expected to start in July 2025.¹ This determination was made from the perspective of improving the convenience and raising the cost efficiency of both the existing member banks and funds transfer service providers willing to participate in the Zengin System.²

In addition, the “Task Force for the Next-Generation Payment Systems” and its working group have discussed agenda including the direction to the future Zengin System during this year, to prepare for the 2027 upgrade deadline of the current 7th Generation Zengin System. Based on the results of the discussions and other relevant inputs, the Basic Policy for the next-generation Zengin System has been formulated (see the Attachment).

As an operator of the Domestic Funds Transfer System, which is part of the social infrastructure, Zengin-Net will maintain the appropriate and stable operation of the Domestic Funds Transfer System and the Zengin System. Zengin-Net will also continue to work on improving the Systems in response to the needs of payment users, participants in the Zengin System, and the society.

End

¹ Based on the progress of preparations by member banks, the detailed schedule of starting services will be determined separately.

² In principle, the costs for building and operating the API Gateway will be allocated proportionately to all participants in the Zengin System, except for certain expenses.



Background of Formulating the Basic Policy for the Next-Generation Zengin System

- The Zengin System has generally been upgraded every eight years since its launch in 1973. Six upgrades have been made to date, and the current system is the 7th Generation Zengin System, which started operation in 2019.
- In preparation for the upgrade deadline of the current system arriving in November 2027, Zengin-Net has discussed the direction of the 'to-be' Zengin System in a forward-looking manner this year at meetings of the Task Force for the Next-Generation Payment Systems (the "Task Force") composed of external stakeholders and member banks and those of a working group established under the Task Force (the "WG").
- Based on such discussions and other relevant inputs, Zengin-Net has formulated the Basic Policy for the Next-Generation Zengin System.

[History of the Zengin System upgrades]

	Key changes
1st Generation (1973-)	-
2nd Generation (1979-)	• Added payroll transfers to the telecommunication items; Allowed the participation of additional business types in the system
3rd Generation (1987-)	• Added MT data file transmissions; The Zengin Center divided into two centers
4th Generation (1995-)	• Extended the operating hours of telegraphic transfers; Expanded the range of the send date for post-dated transactions
5th Generation (2003-)	• A paperless approach introduced to providing information via the information server system
6th Generation (2011-)	• Introduced a new file transfer facility; Introduced RTGS to large-amount domestic fund transfers * In the intervening period (2018), the Zengin System initiated a 24/7 operation.
7th Generation (2019-)	• Strengthened cybersecurity; Terminated MT data file transmissions, Reduced electricity consumption

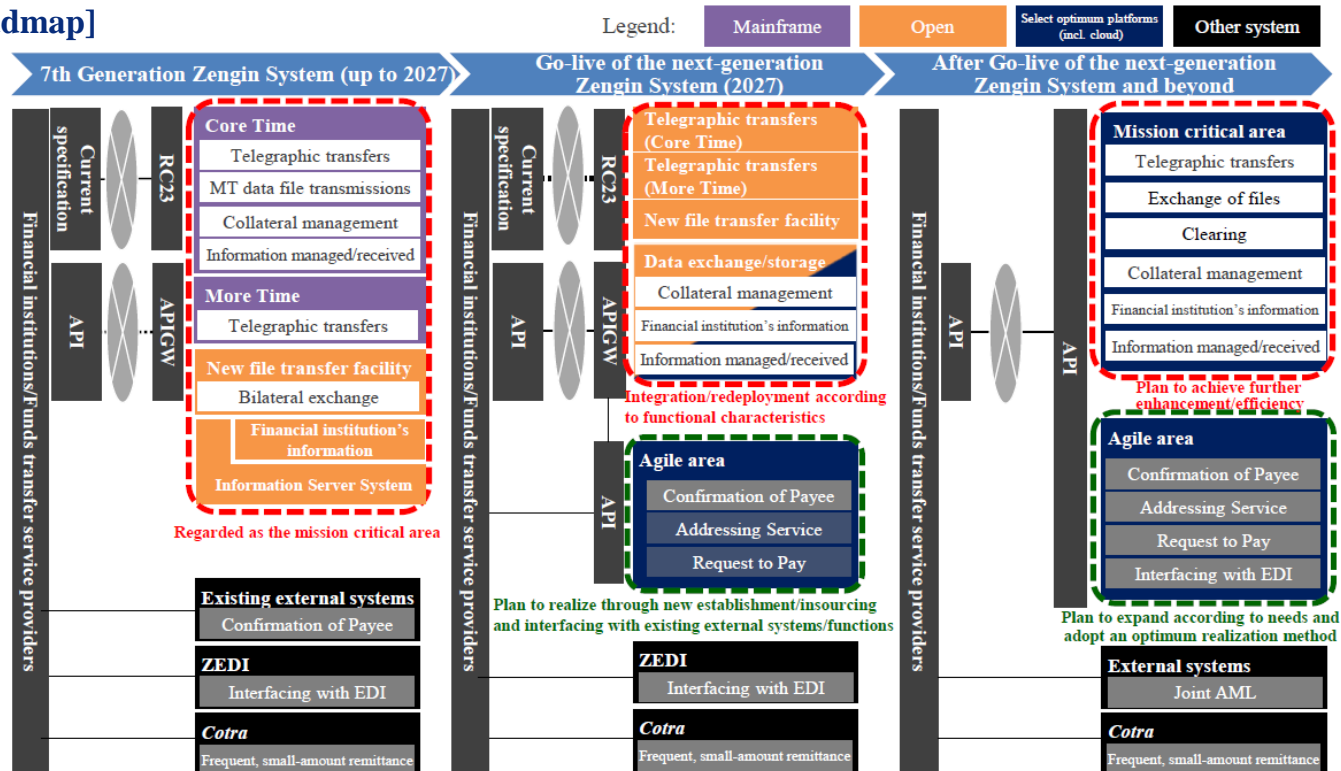


Basic Policy for the Next-Generation Zengin System (Overview) ①

Concept and future roadmap

- Given that the Zengin System is a critical infrastructure for Japan's payment system and thus needs to be sustainable, the next-generation Zengin System is expected to adopt a new architecture in a forward-looking manner.
- The next-generation Zengin System will contribute to further improving the convenience for participants and users by simultaneously achieving at a high level (a) "safety" to maintain a high level of safety and service of the current system, (b) "efficiency" to improve the cost efficiency of participants by terminating or streamlining unused/excessive functions and enjoy cost-related benefits over the medium to long term, and (c) "flexibility" to be capable of responding to future changes in the environment.

[Future roadmap]





Basic Policy for the Next-Generation Zengin System (Overview) ②

Basic matters/Assumptions

	Mission critical area	Agile area
Grand design	<ul style="list-style-type: none"> Realize a layered structure interfacing the “mission critical area” that assumes the Zengin System’s main operations (e.g. domestic fund transfers, funds clearing) and the “agile area” that provides functions and services ancillary to the main operations. In addition to delivering the agile area’s functions and services through implementing the functions into the Zengin System, another potential option is to deliver them through interfacing with external systems. 	
Core technology	<ul style="list-style-type: none"> Open technology* will be used while maintaining the on-premises in consideration of the following: the discontinuation of sales/maintenance service of the mainframe used by the Zengin System is already determined; there would be a concern about a cost increase arising from future changes in supply and demand; and hiring/retaining engineers is expected to become difficult. <p>* Hardware and OS/MW will be shifted to the open platform and general-purpose SW (open source/vendor products), respectively. The programming language used is will be changed from COBOL to Java, etc.</p>	<ul style="list-style-type: none"> If functions are delivered in the Zengin System, plan to adopt open technology (on-premises or cloud system). If functions are delivered through interfacing with external systems, the core technology used by those systems would be taken into account in the selection of systems, assuming the agile area’s roles depending on the Zengin System’s core technology.
Connection method	<ul style="list-style-type: none"> When the next-generation Zengin System goes live, both connections methods (i.e., via RC or API Gateway) will be available. However, RC will be terminated by 2035 to make the API Gateway an only available option. 	<ul style="list-style-type: none"> If functions are delivered in the Zengin System, API connection will be used as the connection method for both the agile area and the participants’ systems, etc. If functions are delivered through interfacing with external systems, the connection method (API connection) would be taken into account in the selection of systems.
	<ul style="list-style-type: none"> Seek to further control or reduce electricity consumption as part of ongoing initiatives to reduce greenhouse gas emissions for achieving carbon neutrality. 	



Basic Policy for the Next-Generation Zengin System (Overview) ③

Operational, functional and non-functional requirements for existing operations/functions in the mission critical area

- In principle, functions, etc. that ensure the safety and service level of payments will continue to be used.
- From the perspective of improving efficiency, infrequently-used/excessive functions will be integrated or streamlined as much as practicable in consideration of the importance of such functions and their effects on participants' systems.

New functions/services in the agile area

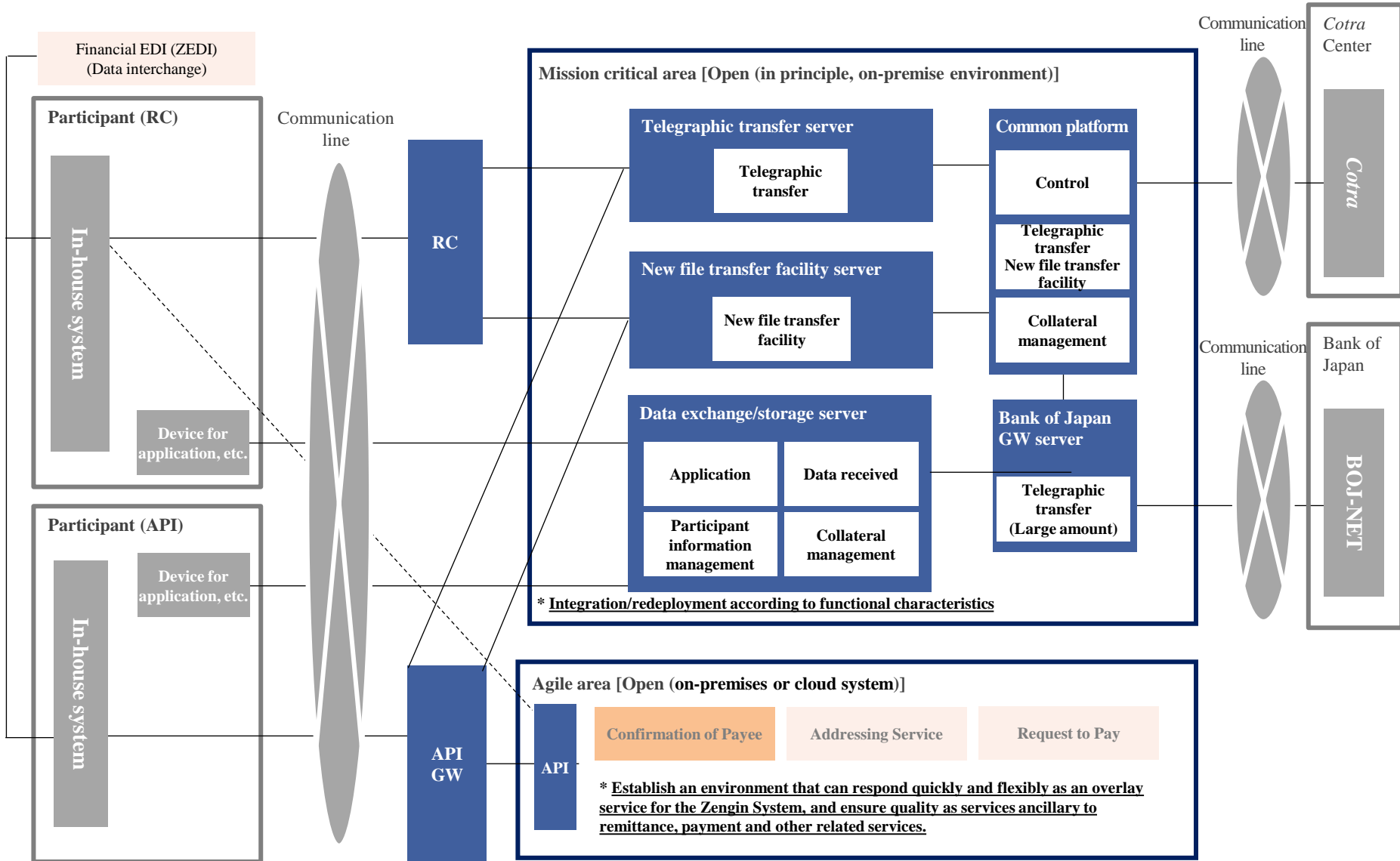
- Among the new functions/services, such as the Confirmation of Payee, Addressing Service, and Request to Pay, priorities will be selected and necessary preparations will be made so that these additional functions can be implemented in a phased manner in consideration of changes in user needs during the next-generation Zengin System's operation period.
- Taking into factors including usability for existing and new participants, Zengin-Net aims to make the Confirmation of Payee available from the go-live of the next-generation Zengin System.

[Overview and action plan for new functions/services]

New functions, etc.	Overview	Action plan
Confirmation of Payee	<ul style="list-style-type: none"> • A function that automatically displays the payee's name when the payer enters the payee's account number and other information in IB, etc. 	<ul style="list-style-type: none"> • From the perspective of improving usability for users, aim to make this function available from the go-live of the next-generation Zengin System. • It is necessary to compare and consider possible action options mainly based on the system impact and cost.
Addressing Service	<ul style="list-style-type: none"> • A function that enables credit transfers without entering deposit account information if the user enters information such as a mobile phone number or e-mail address 	<ul style="list-style-type: none"> • It is useful to start discussing matters including the delivery method as part of the preparation for its implementation initiative in consideration of factors such as future changes in environment and user needs.
Request to Pay	<ul style="list-style-type: none"> • A function that realizes a payee-initiated remittance flow 	<ul style="list-style-type: none"> • It is useful to start discussing matters including the delivery method as part of the preparation for its implementation initiative in consideration of factors such as future changes in environment/user needs. • However, as this differs from the traditional remittance flow, it is necessary to sufficiently consider the impact on participants in terms of systems, operation and other elements.



(Reference) Grand Design of Next-Generation Zengin System





Timeline

- Based on the Basic Policy, Zengin-Net plans to **conduct an RFP in the first half of the next fiscal year, select a development vendor, and start working on the requirements definition from the second half of FY2023.**
- The approach to new functions and services in the agile area will continue to be discussed with external stakeholders.

[Timeline of the next-generation Zengin System development]

	FY2023				FY2024		FY2025		FY2026		FY2027	
	Q1	Q2	Q3	Q4	1 st half	2 nd half	1 st half	2 nd half	1 st half	2 nd half	1 st half	2 nd half
Development/implementation of an RFP	■	■										
RFP assessment/Vendor selection		■	■									
Requirement definition			■	■	■							
Design					■	■						
Production/Unit test – System test							■	■	■	■		
User acceptance test/System operations test										■	■	■
Transition												■

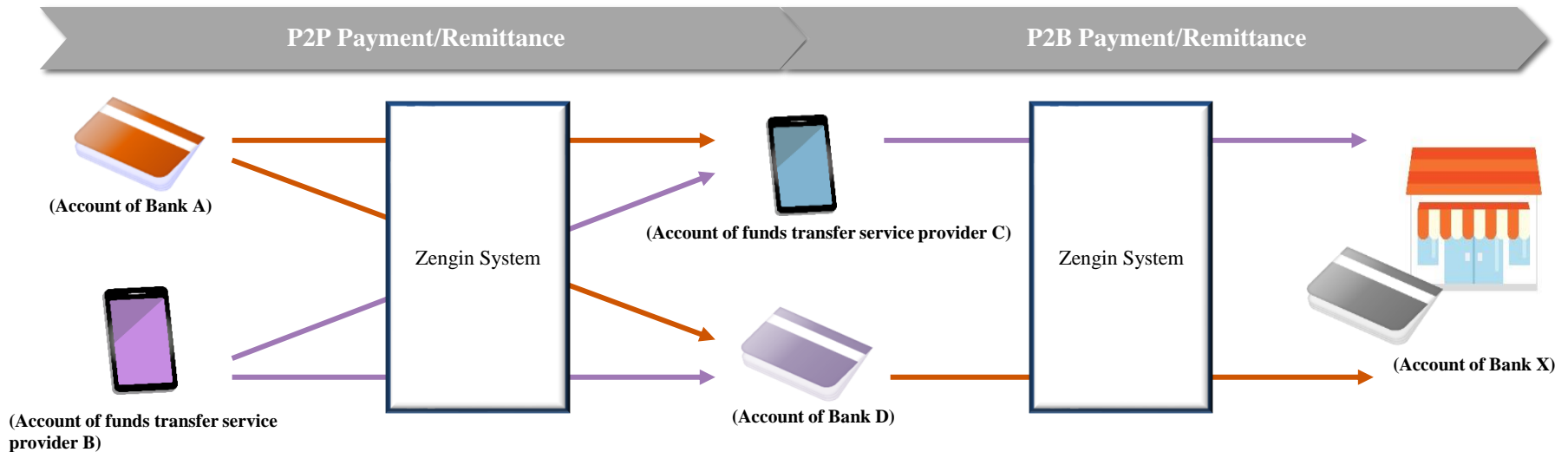
(Note) The timelines for the design and subsequent processes are tentative and will be refined based on proposals from the vendor, etc.



(Reference) Realizing Expansion of Qualification for Participation in the Zengin System

- On October 7, 2022, the Operational Procedures was revised to expand the qualification for participating in the Zengin System to include funds transfer service providers.
- Upon the participation of a funds transfer service provider in the Zengin System, money transfers from a bank account to the account of the funds transfer service provider, from the account of the funds transfer service provider to a bank account, and between accounts of different funds transfer service providers will be made possible via the Zengin System.
- By ensuring interoperability in the Zengin System, seamless payment services will be delivered. This will solve potential issues currently faced by users and other stakeholders, and contribute to further promotion of cashless payments.
- Zengin-Net plans to continue engaging in dialogue with relevant bodies and individual funds transfer service providers in order to enhance the understanding of the funds transfer service providers as a whole and to encourage their participation.

[Illustrated Structure after Participation of Funds Transfer Service Providers]





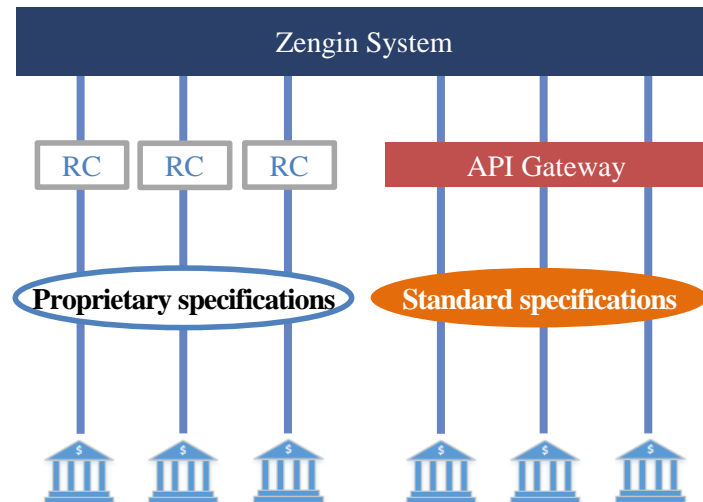
(Reference) Building the API Gateway

- In September 2022, from the perspective of reducing the burden on both existing financial institutions and funds transfer service providers, Zengin-Net determined a policy to build a new connection method using an application programming interface (API Gateway) during the period the current 7th Generation Zengin System is in operation (up to 2027), assuming that certain conditions such as ensuring the maintenance of the current level of service are met.
- In response, the Task Force for the Next-Generation Payment Systems (the “Task Force”) and a working group established under the Task Force have discussed agenda including the expected start date of providing services and cost allocation rules in detail. Taking into account factors including the intention of member banks and funds transfer service providers for using the API Gateway, and the timeline for developing the next-generation Zengin System, Japanese Banks' Payment Clearing Network (Zengin-Net) **decided to build the API Gateway, setting the expected timing for starting the provision in July 2025**, which is the earliest possible time to complete. ^{*1, 2}

*1 The start date of providing will be finalized in consideration of factors including the progress of development and the status of system operation test participated by existing member banks and new applicants seeking to use the API Gateway from the start of the service.

*2 In principle, the cost allocation rules will be applied to all members based on the beneficiary-pays approach (depending on the volume of payments), except for certain expenses.

[What is API Gateway?]



- The API Gateway intends to achieve the standardization of connection specifications by utilizing API instead of connection via a relay computer (RC).
- The API Gateway aims to achieve cost reduction, enhanced flexibility of member banks' systems, and encouragement of new applicants to participate in the system both from funds transfer service providers and banks by transitioning from RC (proprietary specifications) to API (standard specifications), while ensuring the same service level as RC (e.g. performance, security).
- Unlike an open API used in the financial sector (connect to financial institutions' systems to activate applications, and reference and update data), the aimed role of the API Gateway is only to send/receive fund transfer data by a simplified method (API) using standard connection protocols (e.g. HTTPS).