THE FEDERAL RESERVE
Financial Services

FedNow® 24|7
INSTANT PAYMENTS

The FedNow® Service Readiness Guide

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Welcome to the FedNow Service Readiness Guide

The Federal Reserve Banks have designed the FedNow Service, a safe and efficient instant payments infrastructure that helps modernize the U.S. payments system.

Financial institutions of all sizes across the United States that are eligible for Federal Reserve Financial Services can use the FedNow Service to enable their customers to instantly send and receive money any time of day, any day of the year.

With the FedNow Service, financial institutions, their service providers and others in the payments industry can unlock a range of innovative instant payment use cases that offer benefits all around.

FINANCIAL INSTITUTIONS
Remain competitive, create new products and meet the needs of customers

INDIVIDUALS
Instantly send and receive money with confidence and reduce the risk of overdraft and late fees

BUSINESSES
Gain better control of cash flow management, improve efficiency of corporate payments and streamline reconciliation processes

We invite you to start preparing now for the FedNow Service. And this guide is here to help.

How to Use This Guide

No matter where your organization is on the road to instant payment adoption, this guide is for you.

The Readiness Guide is a collection of topics offering financial institutions and service providers information to consider as they prepare for the FedNow Service.

Start your journey — Learn the basics of the FedNow Service and determine how to begin preparing for the adoption of instant payments. Check out **Getting Started** (p. 4-5) and **Planning for the FedNow Service** (p. 11-16) for more.

Ready to get on board? — Think through the key choices you will need to make to begin the FedNow Service onboarding process. Explore **Jumpstarting the Onboarding Process** (p. 17-29) for more.

Learn about operations — This deep dive illustrates how some aspects of the FedNow Service will operate. Prepare your organization for 24x7x365 instant payments by reviewing **Preparing for Real-time Processing** (p. 30-39) and **Preparing for 24x7 Operations** (p. 40-51).

Even more details — Review the **Spotlight** sections (p. 52-61) for more information on specific areas of interest.

Get to Know the FedNow Service

With the FedNow Service, funds settle between participating financial institutions (FIs) in real time, which means there's no buildup of interbank obligations or short-term credit risk. And end users have access to their money immediately. Initial features of the FedNow Service include:

- *Service level*
  - Instant payments, 24x7x365 availability
  - Core clearing and settlement capabilities with credit transfers completing in seconds
  - A FedNow interface via FedLine® Solutions for participating FIs or their service providers to support reports and queries, and manage configurations
  - Access to balance information around the clock, activity reports available on demand or end of day

- *Flexibility*
  - FIs can settle using their own master account or a correspondent's master account
  - Adjustable participation options including support for the use of service providers and correspondents
  - Configurable features for each routing transit number (RTN) enabled, such as the ability to receive customer transfers, send and receive customer transfers, receive requests for payment, support FI liquidity management transfers, support settlement services for other FIs
  - An FI can connect to the FedNow Service through a FedLine Solution directly or through an FI's service provider as its agent
  - Support for a variety of credit transfer use cases, such as account-to-account transfers and consumer bill payment

- *Security and risk mitigation*
  - Encryption of all data flows
  - Features to support message integrity and data security
  - Tools to help FIs combat fraud, such as a transaction value limit and the ability to reject transactions for specific accounts
  - Network-level maximum transaction value limits, which may be adjusted over time (FIs may configure transaction limits that are equal to or below the network limit)

- *Efficiency and transparency*
  - Use of the widely accepted ISO® 20022 standard and other industry best practices to support interoperability
  - Rich data supported within ISO 20022 messages (for example, the option to include remittance information in payment messages and request for payment messages)
  - FI-to-FI liquidity management transfers in support of instant payments
  - Broadcast messages notifying of changes to participant availability to receive credit transfers, as well as a list of participating RTNs

Back to Top

Who Can Use the FedNow Service?

Financial institutions (FIs) eligible for Federal Reserve Financial Services and service providers acting as an agent to these participating FIs, can connect to the FedNow Service. However, other organizations may want to understand how they too can leverage this new service for innovation in partnership with FIs.

FedNow 24|7 INSTANT PAYMENTS

FIs can connect directly to the FedNow Service or connect through their service provider.

FINANCIAL INSTITUTION SERVICE PROVIDERS
- Payment Hubs/Payment Processors
- Core Banking Providers
- Corporate Credit Unions
- Bankers' Banks

Service providers can connect directly to the FedNow Service on behalf of a FedNow participant/FI.

FINANCIAL INSTITUTIONS
- Banks
- Credit Unions
- Savings & Loans
- Corporate Credit Unions
- Bankers' Banks

END-USER SOLUTION PROVIDERS
- Digital Payment Services
- Challenger Banks
- Big Tech
- Fintechs
- Online/Mobile Banking Providers
- Bill Pay/Accounts Receivable/ Accounts Payable Providers

Other industry providers can work together with FIs to create and offer a variety of instant payment solutions.

END USERS
- Consumers
- Businesses
- Merchants/Retailers

End users can enjoy the benefits of instant payments offered by their FIs or end-user solution providers.

PREPARING FOR 24X7 OPERATIONS

Third Parties and the FedNow Service

The Federal Reserve can only provide the FedNow Service to depository institutions and other organizations specifically authorized by law. However, these financial institutions have the option to partner with a third party to support their participation in the FedNow Service.

Partnering with an external partner may be advantageous for some financial institutions by reducing technical and administrative burdens, simplifying the onboarding process, or leveraging offerings that the participating institution is not equipped to provide on its own.

Partnering with a third party for the delivery of the FedNow Service also comes with its own set of risks. An FI is responsible for the actions of their partner in connection with services offered by Federal Reserve Financial Services (FRFS). It is important that FIs understand this allocation of liability and engage in sound third-party risk management with any vendor they select.

The decision of whether and how to use an external partner likely depends on the key capabilities of a given organization. It makes sense to understand the roles external parties can play and the requirements of the FedNow Service before weighing the strategic and risk considerations on a case-by-case basis.

Please note: Federal Reserve Financial Services does not recommend or endorse any particular service provider or vendor.

SUPPORTING THE FEDNOW SERVICE ECOSYSTEM AS A THIRD PARTY

Organizations that are interested in serving as a third party should consider the role(s) that they would like to play, as well as the eligibility prerequisites required.
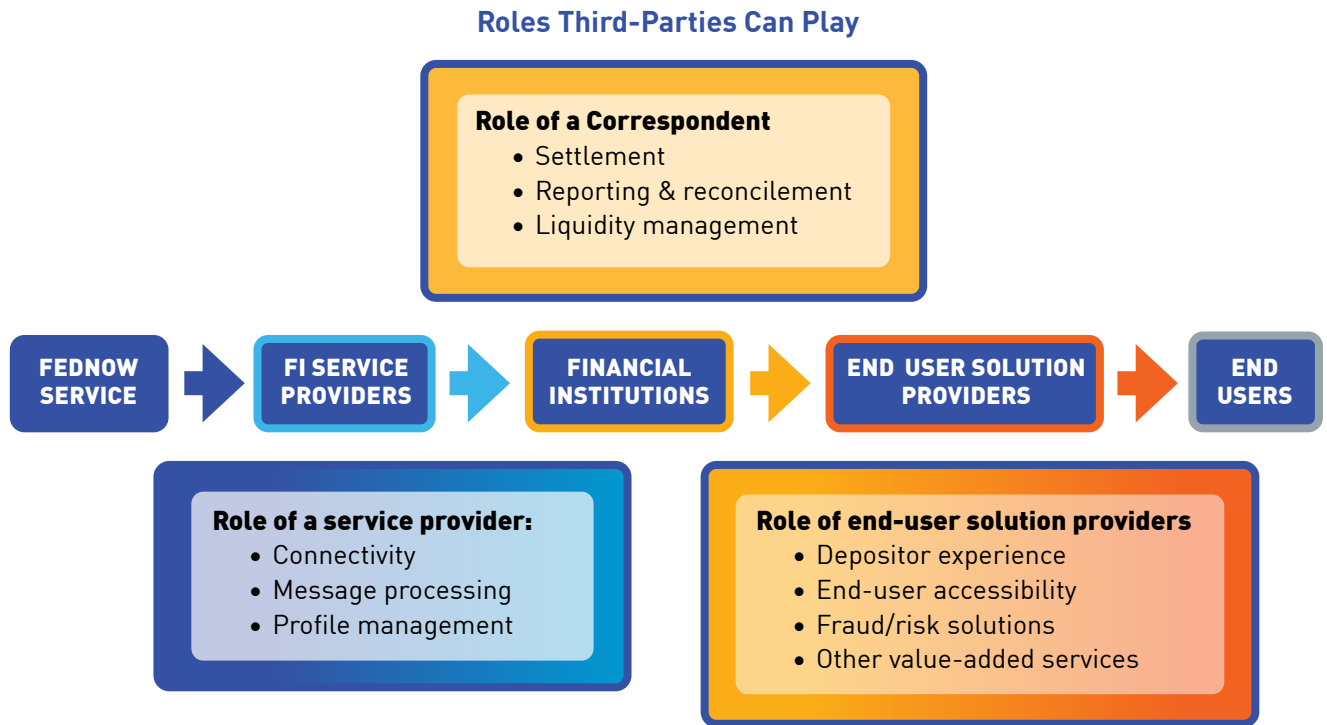
Potential third-party roles include:

1) **Service providers:** Eligible organizations can support FedNow Service participants by connecting to the FedNow Service as an entity authorized to conduct activities on behalf of a participant, provided they comply with the terms and conditions required by the Federal Reserve related to service providers. If a non-FI is considering acting as a service provider, a financial institution must provide express authority for it to act in such capacity.

2) **End-user solution providers:** Those that are interested in supporting the FedNow Service ecosystem but do not meet the eligibility requirements to become a service provider or a correspondent may be able to partner with participating FedNow financial institutions to offer value-added services. For example, financial institutions may decide to leverage an end-user solution provider for user experience support or fraud solutions. Vendors, fintechs, and other industry providers may also be able to serve in this role to drive innovation in the marketplace.

3) **Correspondents:** Eligible organizations can act as settlement banks for FedNow participants that do not have a Federal Reserve master account.

For more information about FedNow Service eligibility, visit **FRBservices.org**.

The Payments Value Chain and the FedNow Service

Many financial institutions look to the broader payments ecosystem for support in implementing the FedNow Service. External parties can offer financial institutions a range of products, services and support. There are a few broad categories of providers that can support access to instant payments, each with a role to play, as detailed below.

Roles Third-Parties Can Play

Role of a Correspondent
- Settlement
- Reporting & reconcilement
- Liquidity management

FEDNOW SERVICE → FI SERVICE PROVIDERS → FINANCIAL INSTITUTIONS → END USER SOLUTION PROVIDERS → END USERS

Role of a service provider:
- Connectivity
- Message processing
- Profile management

Role of end-user solution providers
- Depositor experience
- End-user accessibility
- Fraud/risk solutions
- Other value-added services

Check out our **helpful infographic** for more information about the FedNow Service ecosystem.

The Role of a Service Provider

Service providers, such as processors, core banking providers and aggregators, are entities authorized by FedNow Service participants to send and receive payment transactions on their behalf. A financial institution can designate a service provider to act as its agent and establish a direct connection to the FedNow Service. A financial institution can also designate a service provider to manage its FedNow Service participant profile information, which can include anything from configuring its profile settings to managing its security procedures. Service providers play a unique role compared to other third parties, in that the Federal Reserve can act upon information and instructions received by a properly authorized service provider in their role as agent.

Financial institutions have choices when it comes to working with a service provider. Financial institutions may choose to use a single service provider to provide comprehensive coverage and access to the FedNow Service, or they may solicit multiple service providers to send payments on their behalf based on how they plan to use the rail. (Note: While multiple service providers can be used to send payments, only one service provider can be used to receive payments). Others may opt not to use a service provider at all, preferring to process payments internally. The FedNow Service is designed to flexibly allow for a variety of configurations and help meet the needs of a variety of financial institutions.

For more information on connecting through a service provider, please see **FedNow Service Connectivity at a Glance.**

The Role of an End-User Solution Provider

Beyond the world of service providers, there is an entire ecosystem of end-user solution providers dedicated to helping financial institutions integrate instant payment functionality into their products.

These organizations serve a pivotal role as solution providers for financial institutions. In partnership with financial institutions, these third parties may help financial institutions drive instant payment adoption and unlock the potential of the FedNow Service by providing offerings such as technological expertise, intuitive user interfaces or other value-added services.

Some of the many services these vendors offer include:
- Bill pay/presentment
- Mobile applications
- Risk and fraud services
- Back-end systems such as accounts payable/receivable, enterprise resource planning (ERP) or treasury management systems

The Role of a Correspondent

Correspondents are financial institutions that can settle funds on behalf of a participating FI. They may also offer other services to participating financial institutions, such as reporting/reconcilement and liquidity management.

The FedNow Service's correspondent model is similar to what is in place with FedACH® Services. When a financial institution chooses to use a correspondent bank, its funds settle within the master account of the correspondent in seconds.

More information on settlement and correspondents/respondents can be found in **Settlement Through the FedNow Service.**

Considerations for Financial Institutions in the Selection of a Third-Party Partner

When it comes to selecting a third party to support instant payments, it is important to take both strategic considerations and risk mitigation factors into account.

Below is a list of some of the things that a participating FedNow Service financial institution may find helpful to consider when selecting a third party:

Strategic considerations

From a strategic perspective, participating FedNow Service financial institutions should consider how the instant payment capabilities of a prospective third party match their strategic needs. Taking an internal inventory may be a good place to start.

The financial institution's broader payment strategy

It is important for a participating FedNow Service financial institution to decide how instant payments will fit into its broader payment strategy. Financial institutions that already access other Federal Reserve Financial Services, such as FedACH and Fedwire® Funds Service, for example, may be interested in finding a service provider that offers payment hub capabilities to enable payments across multiple payment rails (e.g., FedACH, check, Fedwire Funds, etc.).

The financial institution's long-term plans

It is also important to select a partner that is equipped to support any use cases or functionality that the financial institution plans to enable, either now or in the future. Developing an instant payment roadmap early can help financial institutions identify up front what will be needed from a third party over time. For example, if a financial institution plans to start as a receive-only participant but expects to expand its instant payment offerings to enable send in the future, it makes sense to discuss both sending and receiving instant payments early on with any prospective service provider. Financial institutions that are planning to expand instant payment use cases over time should also discuss what user interface(s) they might need in the future with any solution providers responsible for their digital customer experience.

The prospective partner's capabilities

A detailed conversation with any prospective third party can help assess if they will be a good fit. Financial institutions should make sure to ask up front about the pricing, availability and timing of the various features any provider offers, well before signing on.

The **Readiness Roadmap** includes more details for financial institutions on how to approach working with a service provider.

Risk considerations

A risk assessment should also be a critical part of selecting a third party to support the delivery of the FedNow Service. A sound third-party risk management framework should be appropriately tailored to a bank's level of risk, complexity and size. Not all third-party relationships pose the same risk, so it's important to take the nature of the relationship into account when considering how to best manage relevant third-party risks.

Regulatory compliance

It is ultimately the responsibility of the financial institution to ensure that its partners comply with any relevant legal and regulatory requirements. It is recommended that FedNow participants conduct due diligence with any external partner to better understand how they will handle issues of risk, information security, operational resilience and compliance, as well as other role-specific concerns, such as data privacy, anti-money laundering (AML) and know your customer (KYC), among others. A review of the prospective partner's ownership structure, legal authority and controls are just some of the many factors that should go into a proper investigation before the selection process.

Security

Security should also be top of mind for financial institutions when selecting any external partner. Robust security protocols, encryption and authentication mechanisms are essential to safeguard sensitive information from cyber threats. As intermediaries between users and payment systems, end-user solution providers may have an important role to play in mitigating security concerns and protecting the organization's reputation. Understanding how the third party has handled security concerns in the past or learning about its current policies may help to shine light on this critical issue.

Integration across platforms

Harmonizing technical and operational aspects across multiple vendors can be complex. Financial institutions' due diligence should include a detailed discussion with any prospective provider about data formats, protocols and security measures to ensure the provider can integrate with the FedNow Service and also with any other provider that the financial institution may be using.

This list of risk considerations mentioned above is not exhaustive. For more information on assessing third-party risk, please see the **Federal bank regulatory agencies' final joint guidance on third-party risk management.**

Third-party selection criteria varies by institution. For example, leveraging an existing partner or partners to facilitate their instant payment journey may be a good solution for some financial institutions, while others may find it makes sense to use a new provider. This decision is unique for every institution and depends on many factors, some of which may be included above.

More information on third parties and the services they support can be found in the **Service Provider Showcase** on FedNow Explorer.

Back to Top

Product and Capability Planning

Instant payments provide many benefits to financial institutions (FIs) and their customers. Yet, as with any new system, implementing the FedNow Service requires planning and preparation across multiple areas of an FI. It could also involve collaboration and coordination with third-party providers. FIs should consult with their legal counsel to determine compliance with applicable consumer protection laws and regulations.

This document provides high-level ideas and opportunities that FIs and service providers may want to consider when determining what products and services to support with the FedNow Service. Topics covered include:

- Understanding the ongoing advantages the FedNow Service can provide
- Identifying opportunities FIs can generate using the service
- Assessing the needs of customers and the critical problems instant payments can help solve

✔ Understanding the Ongoing Advantages

In addition to providing instant payments to support customer transactions and internal liquidity needs, the FedNow Service offers benefits to participating FIs such as:

- Opportunities to attract and retain customers by offering competitive instant payment services
- Potential to grow revenue (e.g., transaction fees, fees for new service or product offerings)
- Reduced costs through increased efficiency (e.g., automation and operations)
- Real-time settlement in central bank funds
- Reduced interbank settlement risk

✔ Identifying Opportunities

An important step in preparing for instant payments is to identify what benefits the service can generate and what problems it can solve. The FedNow Service offers opportunities for improvements, both internally for FIs and for their various customers:

- **Internal opportunities**
  - o Reimbursing employee expenses
  - o Providing payroll or incentive pay or corrections
  - o Disbursing 401(k) loans or investments
  - o Funding customer or member loans, such as auto loans, mortgages, home equity lines of credit (HELOCs), prepaid credit or debit cards
  - o Offering liquidity to other FIs

- **Retail customer or member opportunities**
  - Paying loans or other credit accounts, or funding health care savings accounts and more
  - Transferring funds between accounts at separate FIs, sometimes called "account-to-account" or "me-to-me" transfers
    - Funding a brokerage account to take advantage of an investment opportunity
    - Funding a newly opened account
    - Funding or cashing out a wallet (for example, a small business was paid through an online wallet or merchant account and needs to use that money somewhere that does not accept payments from the wallet)
  - Paying bills either as one-time or recurring payments, including presentation of bill details from request for payment (RFP) messages
  - Reloading prepaid cards
  - Paying another person (person-to-person payments)

- **Business customer or member opportunities**
  - Consolidating excess cash from different accounts in various subsidiaries into a centralized account in order to manage it more efficiently (i.e., cash concentration)
  - Transferring (sweeping) cash between accounts (for example, from a non-interest-bearing cash bank account that exceeds, or falls short of, a predetermined level into an interest-earning investment account at the close of the business day)
  - Sending bills or invoices using RFP capabilities
  - Paying bills, both recurring (e.g., utilities, leases, suppliers and loans) and one time, such as taxes
  - Disbursing payroll or payroll exceptions (e.g., errors, incentive pay and final paycheck)
  - Paying suppliers for inventory, services and rent
  - Paying one-time transactions, such as insurance claims and rebates

✔ Assessing the Needs of Customers

As FIs consider what services and products to offer and how they align with FedNow Service options, it's important to think about critical problems instant payments can solve for customers. For example:

- Are there specific reasons why business customers are interested in making payments instantly (e.g., they have trucks on the dock that need to be unloaded)?
- Are business and retail customers seeking confidence that funds are available to them, without concerns of insufficient funds or delays?
- Are customers looking to take advantage of opportunities an instant payment can provide that other payment channels may not support, such as sending funds immediately to a college student?
- Are customers especially interested in the transparency and confidence that an instant bill payment can provide?

Communication and Collaboration
Successful implementation of the FedNow Service requires forethought and planning. While the considerations listed above are not all-encompassing, they are meant to serve as an impetus for internal communication and collaboration within each participating FI.

Technology Planning

Financial institutions (FIs) considering the FedNow Service need to make decisions about any potential changes to their technology, services and software ahead of implementation. This includes internal systems and those managed by external partners. FIs should consult with their legal counsel to determine compliance with applicable consumer protection laws and regulations.

A participating FI needs to have a comprehensive understanding of how to manage its core and other systems while connected to the FedNow Service — from troubleshooting outages to ongoing monitoring.

The following series of questions and considerations is intended to prompt internal discussion and ultimately build effective partnerships within an FI as it prepares for adoption. This will help FIs develop a roadmap for a smooth launch and continued success. Information covered includes:

- Reviewing internal and vendor solutions
- Customer-facing and internal interfaces
- Internal and external systems
- FedNow Service connectivity and bandwidth considerations

✔ Existing Internal and Vendor Solutions

An FI should review its internal and vendor solutions to help promote a stronger alignment with current and future objectives for instant payments. This includes creating an end-to-end flow, including the function of each system and the timing of relevant activities.

Participants should consider which of their internal and external solutions may be impacted by instant payments and whether they would need to have 24x7x365 availability. Questions FIs need to answer about these solutions include:

- What additional capabilities, if any, are needed to handle real-time processing?
- Are systems set up to alert customers of payments received or other status messages and to meet anticipated requirement to make funds available immediately?
- What customer experiences and functionality are desired?
- What areas have security and resiliency implications to support around-the-clock activity?
- What data capabilities are needed for customers and internal needs? Participants should consider how they will manage data needs.
- Consider which systems that are dependent on batch files may be used as part of the instant payments ecosystem. Would these batch processing systems still be useful for instant payments?

While processing transactions around the clock, managing maintenance plays a pivotal role in customer satisfaction.

When going offline from the FedNow Service for maintenance, for example, FIs should consider how to manage related processes. This includes clearing messages from queues as needed, reconciliation processes and processes for signing back onto the system. FIs also need to review implications related to disaster recovery, business continuity, and incident response processes and related systems.

For more information, refer to the **Participant Availability** topic.

✔ Customer-facing and Internal Interfaces

FIs should consider how interaction points for customer-facing and internal staff might be impacted by the FedNow Service. This includes online banking, mobile banking, text banking and interactive voice response (IVR) systems. Teller or customer care interfaces for initiating transactions and accessing information about transactions, disputing investigations or requests for payments may also need updating.

Changes may be needed on statements, reports, data extracts or other information sources. FIs should also consider interfaces needed to support desired capabilities. Will systems that handle online opening and funding of accounts be enabled to send requests for payment or receive instant payments?

Further questions FIs should think about to create a positive customer experience include:

- What data is needed to support the desired capabilities and experience? For example, are additional authentication protocols needed that require additional data elements to support instant payments?
- Do current interfaces enable a user to report fraud or a mistake, like a duplicate payment?
- What are the reporting needs for customers? How can FedNow transactions be incorporated into this reporting?
- What alerts, notifications or other information relative to instant payments can be made available to customers?

✔ Risk Mitigation Systems

Instant payments may call for adjustments to risk mitigation systems. FIs should consult with their legal counsel for further guidance about their obligations under applicable law. In addition, review fraud mitigation solutions, Office of Foreign Asset Control (OFAC) and anti-money laundering (AML) solutions to determine if these capabilities can support instant payments.

✔ Connectivity and Bandwidth Requirements

Participants or their service providers can connect to the FedNow Service using FedLine® Solutions. Each FI should review connectivity and bandwidth requirements to ensure the connection will meet their forecasted needs. The FedNow Service supports different sending and receiving points for participating FIs and their service providers. For more information, refer to the **Connecting to the FedNow Service** topic.

24x7x365 Preparing in Advance

While the 24x7x365 nature of instant payments through the FedNow Service may present some new technological challenges, resources are in place to help streamline the onboarding process. Proper preparation is the best way to make a more seamless transition. Participating FIs should start proactive discussions with internal stakeholders, as well as any third-party vendors, to ensure that all systems are prepared for the potentially high volume of transactions and messages.

Back to Top

Treasury Operations Planning

With the implementation of the FedNow Service, participating financial institutions (FIs) may need to make adjustments to their current treasury operations to support instant payments. This includes back-office processes and how the Federal Reserve Banks' reporting can be used within current information flows. Topics covered in this document include:

- Settlement
- Volumes forecasting and back-office processes
- Liquidity management

✔ Settlement

It is important for participants to decide where their FedNow transactions will settle. Settlement may occur in an FI's own master account with a Federal Reserve Bank, or the FI may choose to designate a correspondent, such as a bankers' bank or corporate credit union.

If an FI decides to settle in their own Federal Reserve Bank account, the appropriate processes will need to be in place to manage account balances and ensure compliance with the Payment System Risk (PSR) policy under an expanded window to process transfers 24x7x365. When using a correspondent to handle settlement, an FI needs to consider the specific agreements that may be required for this settlement, such as thresholds or liquidity management considerations.

For more detailed information on what goes into settling payments through the FedNow Service, refer to the **Settlement** topic.

✔ Volumes Forecasting and Back-office Processes

Considering the potential for shorter processing times associated with instant payments, FIs should review back-office processes that require manual intervention. How might these operations be automated to help streamline relevant workflows?

Participants might also consider how the FedNow Service may impact processes and reports for accounting and reconciliation. Account balance management will also become more complex in a 24x7x365 environment where payments settle continuously in master accounts. FIs should consider how they will monitor balances around the clock or deal with issues during nonstandard business hours.

And when it comes to reconciliation, will current windows work with instant payments?

For more information, refer to the **Reporting and Reconcilement** topic.

Liquidity Management

FIs that send credit transfers or provide settlement services in the FedNow Service need a strategy to maintain liquidity for instant payments. As with settlement, this may involve either making internal adjustments, sourcing liquidity from the discount window, another FI or via a correspondent. FIs are expected to manage their master account in compliance with Federal Reserve policies, including the PSR policy on intra-day and overnight credit. To learn more about the FedNow Service cycle date, refer to the **Reporting and Reconcilement** topic.

The FedNow Service supports FI-to-FI liquidity transfers in support of instant payments. To learn more about the liquidity management transfers within the FedNow Service process and how this capability can support liquidity needs, refer to the **Liquidity Management** topic.

Working Together to Improve Implementation
FIs need a strategy for managing how transactions are settled, how their internal or third-party systems will function with the service and how they will maintain suitable liquidity for around-the-clock payments.

Proactive and ongoing communication is essential for a successful implementation. Making sure that everyone is on the same page — from end users to partnering providers — will help ensure a more seamless transition. More importantly, it will create the strongest possible customer experience.

JUMPSTARTING THE ONBOARDING PROCESS

Key Decisions

The FedNow Service is designed to be flexible and customizable in its setup. Before a financial institution can start the onboarding process, it will need to make a few key decisions about how it will support the FedNow Service.

Some of these decisions include:

Participation types: *How would you like to participate in the service? (page 18)*

All participant routing transit numbers (RTNs) are required to have a FedNow participant profile. Determine which profile best suits your organization:

- *Customer Credit Transfers*: Will you offer your customers the ability to both send and receive funds or only to receive payments?
- *Request for Payment:* Will you offer your customers the ability to initiate or respond to a request for payment?
- *Liquidity Management*: Will your institution need help managing liquidity for instant payments?
- *Settlement Only*: If you are planning to serve as a correspondent to other financial institutions, you can choose to only support settlement and receive enhanced reporting.

Connectivity: *How will you connect to the FedNow Service? (page 24)*

Financial institutions can connect to the FedNow Service directly via an existing or new FedLine Solution or through a third-party service provider. Consider which type of connection makes the most sense based on your projected volume and resiliency needs.

Settlement: *Where will you settle? (page 28)*

Your organization will also need to determine if it plans to settle transactions within its own master account or that of its correspondent.

Real-time Solutions: *Who will you work with to offer real-time solutions to your customers? (page 5)*

The right team can help your organization get ready to post funds in real time, (page 36) meet 24x7x365 availability requirements (page 40) and ease the transition to seven-day accounting (page 42). Determine whether your current core, vendors and internal teams are equipped to support you in the rollout and ongoing participant profile management of the FedNow Service and identify other partners that may be able to help.

The following sections contain more information on each of these topics. Learn more about the various options to help inform decision-making and ensure your organization is ready for onboarding.

Back to Top

Participation Types

The FedNow Service offers flexible participation options that allow financial institutions (FIs) to enable specific capabilities aligned with their business objectives and customers' needs.

FedNow participants set up profiles specifying their connectivity points, participation types and other configurations. Profiles are configured for each routing transit number (RTN) enabled in the service.

While setting up profiles, FedNow participants select participation types, which indicate the features the FI offers or supports. Generally, FIs are able to enable any combination of participation types, with a few exceptions.

This document reviews each participation type. Topics covered include:
- Overview of participation types
  - » Customer credit transfers and requests for payment
    - Receive credit transfers
    - Send and receive credit transfers
    - Receive requests for payment (RFPs)
  - » FI credit transfers and settlement
    - FI liquidity management transfers
      - Send and receive FI liquidity management transfers
      - Receive FI liquidity management transfers
    - Settlement services for FIs
- Tables of applicable ISO® 20022 messages for each participation type

Overview of Participation Types Within Profiles

The FedNow Service offers FIs the flexibility to choose almost any combination of participation types within the solution to meet their specific requirements. For example, a participant may be configured to receive customer credit transfers for their own RTN and/or configured as a settlement service provider for their respondents' RTNs.

These configurations are able to be modified as needed. For example, an FI may select to only receive payments initially but later expand their capabilities to send and receive payments.

The FedNow interface via FedLine® Solutions displays features configured for participants. The FedNow interface supports self-service management of settings. However, additional steps may be required prior to going live with certain configurations.

The FedNow Service identifies by RTN certain participation types enabled (receive customer transfers, send and receive customer transfers and receive requests for payment) and provides these lists at the end of each day via ISO message admi.998. These can also be pulled from the FedNow interface at any time.

As FIs prepare for implementation of the service, they should consider how they will use the service, including what capabilities they will leverage based on their current business needs and the needs of their customers.

The following provides a closer look at the participation types available within the FedNow Service.

Customer Credit Transfers and Requests for Payment

FIs are able to select from the below options to enable send and/or receive capabilities for customer credit transfers and RFPs.

Receive customer credit transfers (receive-only)
A FedNow Service receive-only participant is able to receive customer payments, but is not able to initiate customer payments (ISO message pacs.008), except to return payments (ISO message pacs.004) using the service.

Receive-only participants have the ability to send RFPs (ISO message pain.013), but are ineligible to receive RFPs because they cannot initiate customer credit transfers (pacs.008) as a response to a payment request.

By default, participants configured with a receive-only profile are able to send and receive FI credit transfers (ISO message pacs.009) for liquidity management of instant payments. They are able to disable this capability. Liquidity transfers are discussed in more detail later in this document.
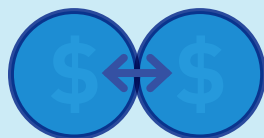
Send and receive customer transfers (send and receive)
A FedNow participant that chooses to enable this participation type is able to send and receive customer payment messages (pacs.008) and return customer payment messages (pacs.004).

An RTN set up to send and receive customer payment messages is able to send RFPs and may also choose to receive RFPs (pain.013).

These FedNow participants are automatically enabled to send and receive FI credit transfers (pacs.009). They are able to disable this capability. Liquidity transfers are discussed in more detail later in this document.

Receiving requests for payment
This participation type allows FIs to receive requests for payment via the FedNow Service. An FI enabled to send and/or receive customer credit transfers may send an RFP. However, only those enabled to send a customer payment are eligible to receive an RFP.

Financial Institution Transfers

The FedNow Service also supports transfers between participating FIs — either on behalf of their respondents or for their own internal purposes, such as liquidity management.

Liquidity management transfers (LMT)

FI credit transfers (pacs.009) that support instant payment liquidity needs are available at certain times to be determined. These transfers can take place between the master accounts of two participants, or between a participant's master account and a joint account that backs another private-sector instant payment service.

FIs can choose to participate in the FedNow Service for the sole purpose of supporting liquidity management transfers. This allows FIs to transfer funds to support certain payment system interbank liquidity needs as a stand-alone service without enabling other capabilities within the FedNow Service.

For more in-depth details regarding these transfers, refer to the **Liquidity Management** topic.

Settlement services for financial institutions

As with some other Federal Reserve Financial Services, the FedNow Service supports correspondent/respondent relationships. Respondents are able to settle transactions in the master account of their correspondent.

Correspondent FIs with RTNs enabled for the settlement participation type are able to receive real-time notices of debits or credits. They are also able to query the FedNow Service for reports.

A correspondent is not required to have a FedNow participant profile to provide settlement services to their respondents. Such FIs can settle their FedNow Service-enabled respondents' activity against their own master accounts. These correspondents can access their respondents' FedNow activity in intra-day and end-of-day reports of existing Federal Reserve Banks' systems. However, enabling a FedNow profile allows access to real-time transaction information and FedNow reports.

To learn more, refer to the **Settlement** and **Reporting and Reconcilement** topics.

Customization and Implementation

Flexible configuration of participant profiles is one of the key aspects of the FedNow Service. Participating FIs are able to control the capabilities and messaging assigned for each RTN, with the ability to make adjustments to match their evolving needs over time.

Customer Credit Transfers and Requests for Payment

Below is a table indicating which ISO 20022 messages are needed for each participation type.

Note: "Conditional" is in response to "Optional" messages. If a financial institution supports or sends one of the optional messages, they are required to also support the response message.

Customer Credit Transfer Messages	Credit Transfer Receive Only		Credit Transfer Send/Receive		Send/Receive with Receive RFP	
	Send	**Receive**	**Send**	**Receive**	**Send**	**Receive**
pacs.008 – Customer Credit Transfer	Prohibited	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
pacs.002 - Payment Status Report	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
pacs.028 – Payment Status Request	Optional	Mandatory	Optional	Mandatory	Optional	Mandatory
Payment Returns	Credit Transfer Receive Only		Credit Transfer Send/Receive		Send/Receive with Receive RFP	
	Send	**Receive**	**Send**	**Receive**	**Send**	**Receive**
camt.056 – Return Request	Optional	Mandatory	Optional	Mandatory	Mandatory	Mandatory
camt.029 – Return Request Response	Mandatory	Conditional	Mandatory	Conditional	Mandatory	Mandatory
pacs.004 – Payment Return	Optional	Optional	Mandatory	Mandatory	Mandatory	Mandatory
Requests for Payment	Credit Transfer Receive Only		Credit Transfer Send/Receive		Send/Receive with Receive RFP	
	Send	**Receive**	**Send**	**Receive**	**Send**	**Receive**
pain.013 – Request for Payment (RFP)	Optional	Prohibited	Optional	Prohibited	Optional	Mandatory
pain.014 – Request for Payment Response	N/A	Conditional	N/A	Conditional	Mandatory	Conditional
camt.055 – RFP Cancellation Request	Optional	Prohibited	Optional	Prohibited	Optional	Mandatory
camt.029 – RFP Cancellation Request Response	N/A	Conditional	N/A	Conditional	Mandatory	Conditional
Information Request Messages	Credit Transfer Receive Only		Credit Transfer Send/Receive		Send/Receive with Receive RFP	
	Send	**Receive**	**Send**	**Receive**	**Send**	**Receive**
camt.026 – Information Request	Optional	Mandatory	Optional	Mandatory	Optional	Mandatory
camt.029 – Information Request Response	Mandatory	Conditional	Mandatory	Conditional	Mandatory	Conditional
camt.028 – Additional Payment Information	Optional*	Conditional	Optional	Conditional	Optional	Conditional

*FIs should use the camt.028 when providing additional information to another participant.

Account Reporting Messages	Credit Transfer Receive Only		Credit Transfer Send/Receive		Send/Receive with Receive RFP	
	Send	Receive	Send	Receive	Send	Receive
camt.060 – Account Reporting Request	Optional	N/A	Optional	N/A	Optional	N/A
camt.052 – Account Balance Report	N/A	Optional	N/A	Optional	N/A	Optional
camt.052 – Account Activity Totals Report	N/A	Optional	N/A	Optional	N/A	Optional
camt.052 – Account Activity Details Report	N/A	Optional	N/A	Optional	N/A	Optional
camt.054 – Account Debit/Credit Notification	N/A	Optional	N/A	Optional	N/A	Optional
System Messages	Credit Transfer Receive Only		Credit Transfer Send/Receive		Send/Receive with Receive RFP	
	Send	Receive	Send	Receive	Send	Receive
admi.002 – Message Reject	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
admi.007 – Receipt Acknowledgement	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
admi.004 – FedNow Broadcast	N/A	Mandatory	N/A	Mandatory	N/A	Mandatory
admi.004 – Participant Broadcast	Mandatory	N/A	Mandatory	N/A	Mandatory	N/A
admi.011 – FedNow System Response	N/A	Mandatory	N/A	Mandatory	N/A	Mandatory
admi.006 – Retrieval Request	Optional	N/A	Optional	N/A	Optional	N/A
admi.998 – FedNow Participant File	N/A	Mandatory	N/A	Mandatory	N/A	Mandatory

Financial Institution Credit Transfers

Below is a table indicating which ISO 20022 messages are needed for each participation type. These include:

FI Credit Transfers Messages	Settlement		Liquidity Management Transfers (LMT) Receive Only		LMT Send/Receive	
	Send	**Receive**	**Send**	**Receive**	**Send**	**Receive**
pacs.009 – Financial Institution Credit Transfer	Prohibited	Prohibited	Prohibited	Mandatory	Mandatory	Mandatory
pacs.002 – Payment Status Report	Prohibited	Prohibited	N/A	N/A	N/A	Mandatory
pacs.028 – Payment Status Request	Prohibited	Prohibited	Prohibited	N/A	Optional	N/A

Account Reporting Messages	Settlement		LMT Receive Only		LMT Send/Receive	
	Send	**Receive**	**Send**	**Receive**	**Send**	**Receive**
camt.060 – Account Reporting Request	Optional	N/A	Optional	N/A	Optional	N/A
camt.052 – Account Balance Report	N/A	Optional	N/A	Optional	N/A	Optional
camt.052 – Account Activity Totals Report	N/A	Optional	N/A	Optional	N/A	Optional
camt.052 – Account Activity Details Report	N/A	Optional	N/A	Optional	N/A	Optional
camt.054 – Account Debit/Credit Notification	N/A	Optional	N/A	Optional	N/A	Optional

System Messages	Settlement		LMT Receive Only		LMT Send/Receive	
	Send	**Receive**	**Send**	**Receive**	**Send**	**Receive**
admi.002 – Message Reject	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
admi.004 – FedNow Broadcast	N/A	Mandatory	N/A	Mandatory	N/A	Mandatory
admi.004 – Participant Broadcast	Prohibited	N/A	Mandatory	N/A	Mandatory	N/A
admi.011 – FedNow System Response	N/A	N/A	N/A	Mandatory	N/A	Mandatory
admi.006 – Retrieval Request	Prohibited	N/A	Optional	N/A	Optional	N/A
admi.998 – FedNow Participant File	N/A	Mandatory	N/A	Mandatory	N/A	Mandatory
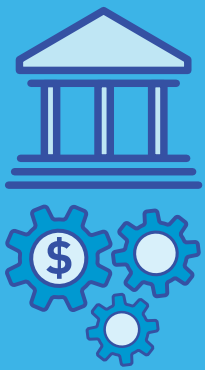
FedNow Service
Reserve Banks

FedNow Service Connectivity at a Glance

An overview of options and key considerations for participating financial institutions

The FedNow Service offers flexible and familiar options for connectivity, so your financial institution can connect to the instant payment service in a way that best suits your business objectives and customers' needs.

Connectivity to the FedNow Service allows your organization to perform key functions, including:

- **Sending and receiving messages,** including ISO® 20022 messages. This occurs using an application interfacing with an **IBM® MQ client**, which connecting parties need to install.

- **Accessing the participant profiles** in the FedNow interface via FedLine® Solutions to manage configurations, view reports, run ad-hoc queries and more.

What are the connectivity options?

Your financial institution can choose to connect:

1. **Directly using a FedLine Solutions connection** (WAN or VPN) to send and receive FedNow ISO 20022 messages and perform FedNow Service profile administration.

2. **Through a third-party service provider(s)** such as a payment processor, bankers' bank or corporate credit union.

OPTIONS

Connecting directly to the Federal Reserve to send/receive ISO messages and perform FedNow Service administration using a FedLine Solution connection

If your financial institution wishes to exchange FedNow ISO 20022 messages and access the FedNow interface via FedLine Solutions, you'll need to connect directly to the Federal Reserve.

If your financial institution does not currently connect to the Federal Reserve, you'll need to:	If your financial institution has an existing connection to the Federal Reserve, you'll need to:
• Establish a new WAN (FedLine Direct®) or VPN (FedLine Advantage® or FedLine Command®) connection to support FedNow Service activity and other Federal Reserve services, if applicable	• Configure an existing WAN (FedLine Direct) or VPN (FedLine Advantage or FedLine Command) connection to support FedNow Service activity; OR • Install a new WAN (FedLine Direct) or VPN (FedLine Advantage or FedLine Command) connection exclusively for FedNow Service activities

Considerations

- To exchange FedNow ISO 20022 messages, IBM MQ client middleware and a FedNow Service server certificate must be installed on a local server.
- The WAN router (FedLine Direct) or VPN device (FedLine Advantage or FedLine Command) must be configured to send and receive FedNow Service traffic.
- Your financial institution needs to buy or build a payment application that interfaces with an IBM MQ client and takes FedNow ISO messages all the way through to your core banking system. The Federal Reserve does not provide banking applications for the FedNow Service.
- To help you decide whether to leverage or upgrade an existing connection, install a new connection, or add an additional connection, think about your:
  - » Resiliency and contingency plans
  - » Anticipated volume and bandwidth needs
  - » Monitoring and alerting capabilities
  - » Whether you'd like to have a dedicated connection exclusively for FedNow Service traffic

View the **FedNow Service Guide to FedLine Connectivity** for detailed information on the various connectivity options and scenarios.
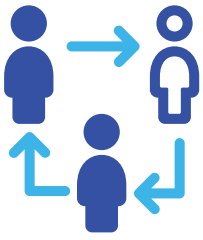
SERVICE PROVIDER CONNECTIVITY

Are you a service provider that will help financial institutions implement the FedNow Service?

Service providers may connect to the FedNow Service via a FedLine Solution on behalf of participating financial institutions. These service providers can process for multiple financial institutions through the same connection — either WAN (FedLine Direct) or VPN (FedLine Command or Advantage). Participating financial institutions authorize the service provider to send or receive FedNow Service messages.

Are you a fintech that will provide instant payment solutions to end customers?

If your organization is a fintech company or other provider that offers instant payment solutions to consumers and businesses only — such as payroll providers, payables and receivables vendors or treasury management platform enablers — you'll need to partner with a FedNow-participating financial institution. You cannot leverage the connection from another service provider to directly access the FedNow Service on behalf of your end customers. Download the **Readiness Roadmap for Payment Service Providers** for tips on preparing for the FedNow Service and sample questions to ask your financial institution partner. Have questions? Contact us at SYSFedNowCommunity@chi.frb.org.

Participating through a third-party service provider

If your financial institution will have a third-party service provider(s) exchange FedNow ISO 20022 messages on your behalf, you may or may not need a direct connection to the Federal Reserve.

| If you will outsource all FedNow Service activities, including ISO message exchange and FedNow profile administration to a service provider(s), you:	If your financial institution will rely on a service provider(s) for some FedNow Service activities (e.g., exchanging ISO messages), but would like to retain responsibility for other FedNow activities (e.g., profile administration), you:
• Do not need to establish a direct connection with the Federal Reserve • Will need to authorize your service provider(s) to manage FedNow Service activities on your behalf during the onboarding process	• Will need to authorize your service provider(s) to send and receive FedNow ISO messages on your behalf during the onboarding process • Will need to configure an existing connection or install a new WAN (FedLine Direct) or VPN (FedLine Advantage or FedLine Command) connection to access the FedNow interface

Considerations

- Consider whether your organization would like to configure or install a backup WAN (FedLine Direct) or VPN (FedLine Advantage/FedLine Command) connection for additional resiliency.
- Have conversations early with service providers to understand their plans, requirements and timing. The **Readiness Roadmap: For Financial Institutions Working with Service Providers resource** can help you prepare for those discussions.
- If your financial institution is working with multiple service providers for connection, have discussions with those organizations to identify which party is responsible for certain activities. It may be useful to have a communication plan across parties connecting to the service so that all are aligned to any changes made to the participant profile.
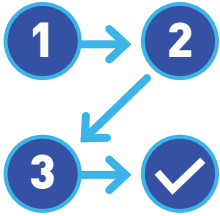
Important steps as your organization begins to consider your connection options

As your organization thinks through how you'll connect to the FedNow Service and gets ready for FedNow Service onboarding, here are a few tips:

- Gather an internal team at your organization to consider and determine how you'll connect. Team members could include project managers, application owners, network or firewall staff, information security, End User Authorization Contact (EUAC) and an executive sponsor.
- Review your organization's current connection solutions and portfolio of Federal Reserve services, along with your instant payment plans, to help you determine if existing capabilities can support the FedNow Service.
- Contact your Federal Reserve relationship manager (account executive) to help you understand your options and next steps, and assess your FedNow Service readiness. You can **find your relationship manager on FRBservices.org**.
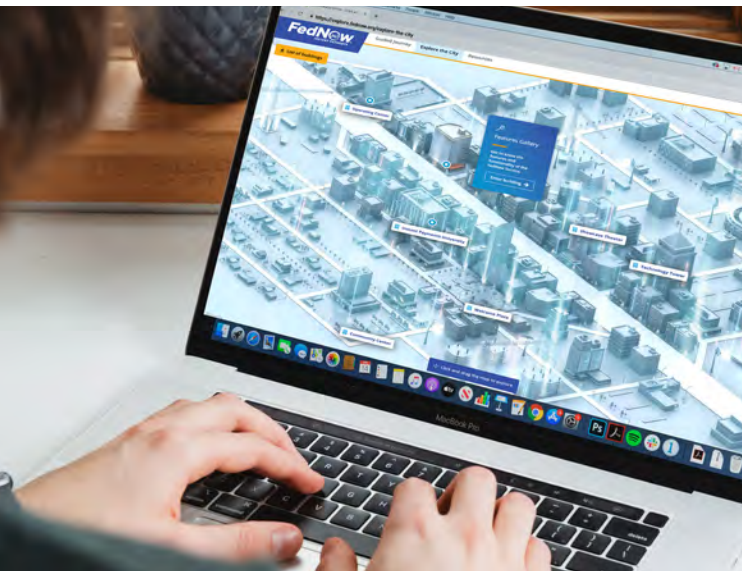
Ready for more information?

For more details on connectivity, including a comparison chart of available options and additional considerations, download the **FedNow Service Guide to FedLine Connectivity**.

Learn more

Choosing your connection approach is just one step to enabling the FedNow Service. Get more details on instant payments and how to prepare for the FedNow Service at **FedNowExplorer.org**.

Settlement Through the FedNow Service

One of the benefits of the FedNow Service is that payment messages clear and settle between financial institutions (FIs) in real time.

The FedNow Service settles payments to a participating FI's Federal Reserve Bank master account — or the master account of its correspondent (including bankers' banks and corporate credit unions). Settlement through the service is final.

This document includes information about settlement through the FedNow Service including:

- Designating routing transit numbers (RTNs) to send and receive messages and to settle transactions
    - ο Mapping to a master account RTN for settlement
    - ο Using primary/master account RTNs, subaccount RTNs or other secondary RTNs for FedNow activity
- Managing account balances and reconciling activity
    - ο FedNow Service-specific reports that are available
    - ο The Federal Reserve Banks' standard reports that are updated to include FedNow activity
- Correspondent/respondent relationships
    - ο Settlement configurations
    - ο Reporting options for all parties

Designating RTNs to Send and Receive Messages and to Settle Transactions

During the FedNow Service onboarding process, FIs can designate the specific RTN(s) enabled to send messages and the RTN(s) enabled to receive messages, including the master account RTN, primary RTN (for those who do not maintain a master account) or secondary RTNs (either subaccount RTN or other secondary RTN).

Each FedNow-enabled RTN is mapped to a single settlement point — the master account of either the participating FI or that of a correspondent — based on instructions from the participating FI (and agreement by its correspondent, if any) and using the Federal Reserve Banks' accounting applications. FedNow Service participants do not need to fund a separate account to settle FedNow activity.

Managing Account Balances and Reconciling FedNow Activity

FedNow participants are expected to manage their account in compliance with Federal Reserve policies, including the Payment System Risk (PSR) Policy on intra-day credit and avoiding negative balances at the close of the FedNow cycle date.

Near real-time reconciliation may be accomplished using the advice/acknowledgement message (ISO message pacs.002) for participants, or the notification of debits/credits (ISO message camt.054) for correspondents who have enabled the feature within their FedNow profile.

For tracking and reporting purposes, each transaction is recorded using the RTNs included within the transaction message.

FedNow participants can perform balance inquiries at the master account RTN or subaccount RTN levels. Other secondary RTNs are ineligible for balance inquiries.

Available Reports and Balance Inquiries

The Federal Reserve Banks provide a variety of tools and reports to help participating FIs manage their account balances and reconcile FedNow activity.

FedNow Service-specific reports include Account Balance, Activity Totals, Activity Details, Message Status and Message Retrieval.

Additionally, the Federal Reserve Banks' standard accounting reports have been revised to include FedNow activity and are generated seven days a week.

FedNow Reports	Account Balance	Activity Totals *summary level*	Activity Details *detail level*
Standard Reports	Daily Statement of Account *summary level*	Financial Institution Reconcilement Data (FIRD) *detail level*	Statement of Account in Spreadsheet File (SASF) *detail level*

For more in-depth information about detailed reports and accounting, please reference the **Reporting and Reconcilement** topic.

Settlement and Correspondents/Respondents

The FedNow Service uses a correspondent model similar to that of FedACH® Services. This means that the FedNow Service clears transactions directly between Sender FI and Receiver FI and settlement takes place in the designated master account. Below are other key details correspondents and respondents should know about settlement:

- Correspondents do not need to have a FedNow profile for their respondents to settle against the correspondent's master account. Correspondents may use Account Management Information reports — Daily Statement of Account, FIRD and SASF — to review activity related to FedNow transactions.
- Correspondents that establish a FedNow profile that enables them to send or receive messages through the service can obtain transaction-level detail reports or totals reports using the FedNow Service.
- Correspondents set up to send or receive messages should also consider whether they wish to receive real-time notices and reports from the FedNow Service. If a correspondent requests a notice of real-time activity that settles in its account, the FedNow Service provides a notification of such debits or credits (camt.054).

FIs that wish to establish a correspondent/respondent relationship should refer to Operating Circular 1 and its Appendix 2: Accounting Transaction Settlement and Service Fee authorization form.

Back to Top

Customer Payment Flow

One of the primary advantages of the FedNow Service is its ability to clear and settle transactions in real time — allowing financial institutions (FIs) of all sizes to enable their customers to instantly send and receive money.

Below is a step-by-step overview of the FedNow Service payment process in which the Federal Reserve Banks settle and execute and the Receiver FI accepts a customer payment message.

Follow the Payment Flow

For this sample flow, the Sender FI or Receiver FI may either send and receive messages to and from the service or designate a service provider to act as its agent (e.g., a processor, core solution or other payment hub) to perform those functions on its behalf. A participating FI may settle using its own Federal Reserve Bank master account or it may designate a correspondent for that purpose. See the **Settlement** topic for more information.
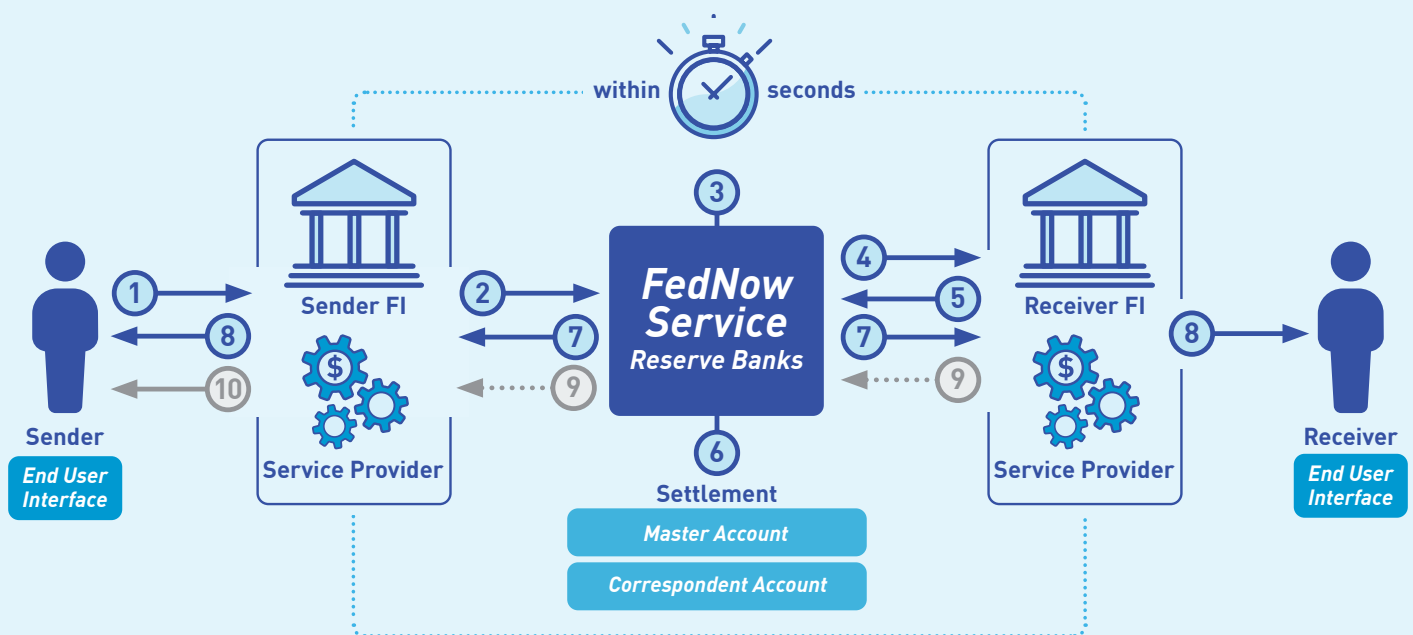
Step 1: Initiation: The sender (an individual or business) initiates a payment with their FI through an end-user interface outside of the FedNow Service. The FedNow Sender FI is responsible for validating the payment according to its internal processes and requirements.

Step 2: The Sender FI submits a payment message (ISO® message pacs.008) to the FedNow Service.

Step 3: The FedNow Service validates the payment message — for example, by verifying that the message meets proper format specifications and complies with applicable controls.

Step 4: The FedNow Service sends the contents of the payment message to the recipient's FI to seek confirmation that the Receiver FI intends to accept the payment message. At this point, the Receiver FI will determine how it will handle the message (accept, reject or accept without posting (ACWP)). Among other things, the Receiver FI should use this step to ascertain whether it maintains an account for the recipient identified in the contents of the payment message. See the **Funds Availability** topic for more details on each of the ways the Receiver FI may respond.

Step 5: Confirmation: In this example flow, the Receiver FI sends a positive response of "accept" to the FedNow Service, confirming it intends to accept the payment message. **Note:** *Steps 4 and 5 are intended to reduce the number of misdirected payments and resulting exception cases that can occur in high-volume systems.*

Step 6: The FedNow Service settles the payment, debiting and crediting the designated master accounts of the Sender FI and Receiver FI (or of their correspondents), respectively. Steps 2-6 complete within a few seconds but take no more than 20 seconds. See the **Understanding the Payment Timeout Clock** topic for a deeper look at the timing of a payment.

Step 7: The FedNow Service sends an advice to the Receiver FI and an acknowledgement to the Sender FI, executing the payment order and notifying each that the Federal Reserve Banks settled the payment message. Correspondents enabled within a FedNow profile may choose to receive a notification of debit/credit entries (ISO message camt.054).

Step 8: Funds availability and notification to customer: As a term of participation in the FedNow Service, the Federal Reserve Banks require the Receiver FI to make funds available to the recipient immediately after step 7.

Participants should consider what processes they need to have in place to respond to the request for confirmation, make funds available to recipients, provide notice to senders and recipients, and respond to a request for payment status (ISO message pacs.028) sent from the Sender FI with a payment status report (ISO message pacs.002). For more information on ISO 20022 messages, please see the **ISO Overview** topic.

In communicating with the recipient, the Receiver FI should notify its customers immediately following receipt of an advice, and may use any reasonable means of communication that is consistent with their customer agreements, including standard channels for which the recipient is enabled.

Note: If the Receiver FI responds with "ACWP," it is not required to make funds available after receiving the advice through the service. Instead, the Receiver FI is required to do so if it accepts the payment (see the ACWP spotlight in the **Funds Availability** topic).

The Sender FI should use information in the acknowledgement (pacs.002) from the FedNow Service to notify its sending customer that the payment to the Receiver FI is complete.
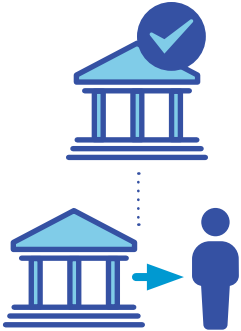
Step 9: Confirmation of posting: In general, the Receiver FI has the option of sending a message through the FedNow Service to the Sender FI indicating that the payment has been posted to the recipient's account. See the ACWP spotlight in the **Funds Availability** topic for the circumstances in which the Receiver FI is required to send a confirmation of posting.

Step 10: If the Receiver FI sends a confirmation of posting message through the service, the Sender FI should notify its customer that the funds have been made available to the recipient.

Setting a Time Limit
The FedNow Service limits processing of messages to within 20 seconds and settles in this set amount of time or not at all. While the Federal Reserve Banks expect most payment messages to settle in a few seconds, well below the maximum allowable limit, the payment timeout clock sets expectations for FIs that transactions submitted to the service are settled or rejected almost immediately.

Please refer to the **Understanding the Payment Timeout Clock** topic for further information, including how time is allotted and how messages are exchanged throughout this process.

Understanding the Payment Timeout Clock

The FedNow Service uses a payment timeout clock to provide predictability to participants and their end-customers that payments will complete (or reject) within a specified time period.

While the Federal Reserve Banks expect most payment messages to settle in just a few seconds, well below the maximum allowable limit configured by the FedNow Service, the payment timeout clock sets expectations for financial institutions (FIs) and service providers that credit transfers submitted to the service are settled or rejected within a defined time frame.

This document provides details on the payment timeout clock. Topics covered include:

- An overview of the timeout clock including when it starts and stops
- A step-by-step explanation of how the timeout clock fits into the overall FedNow payment flow
- Payment rejections — what happens when the timeout clock is exceeded
- Submitting a request to check on the status of a payment after the timeout clock expires

An Overview of How the Payment Timeout Clock Operates

The timeout clock creates a defined process for each step in a transaction that clears and settles through the FedNow Service. This establishes clarity on how settlement is completed and outlines expectations for processing speed and capability for both the Sender and Receiver FIs.

The timeout clock applies to credit transfers — customer payments (ISO® message pacs.008), customer return of funds (ISO message pacs.004) — and FI liquidity management transfers (ISO message pacs.009). The timeout clock has two main features:

- First, the timeout clock is 20 seconds in length. It is configurable within the FedNow Service by the Federal Reserve Banks and stops counting down just before settlement takes place.
- Second, the timeout clock expires prematurely if, based on a setting configured by the Receiver FI, there is insufficient time (i.e., "reserved" time) remaining for the Receiver FI to provide a response to a request for confirmation from the service. A Receiver FI can reserve up to five seconds of the clock that will be guaranteed to them as part of the flow. FIs are able to configure this reserved response time downward from five seconds in increments of one second, with one second being the lowest setting.

A Look at the Payment Timeout Clock Within the Payment Flow

Below is a step-by-step examination of how the timeout clock fits into the overall flow of a settled customer payment within the FedNow Service.
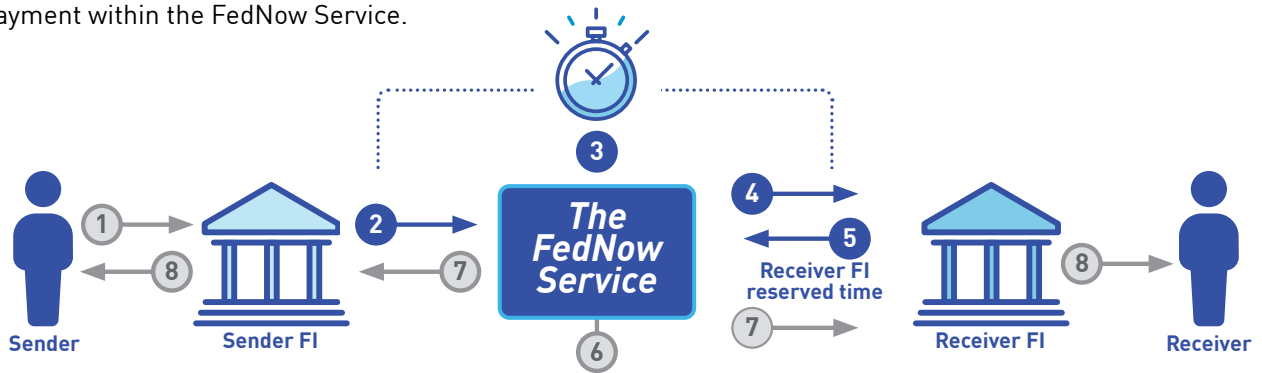
Step 1: The sender (an individual or business) initiates a payment with their FI.

Step 2: Start of clock: The Sender FI or their service provider submits the validated payment message (pacs.008) to the FedNow Service. The payment timeout clock starts based on the "creation date" timestamp included in the business application header of this message *regardless of when the FedNow Service receives the message.*

Step 3: The FedNow Service authenticates the payment message — for example, by verifying that the message meets proper format specifications and complies with applicable controls. If the elapsed time between the creation date timestamp and receipt timestamp by the FedNow Service exceeds the clock limit or does not allow sufficient reserved time for the Receiver FI, the message will be rejected.

For example, given a timeout clock of 20 seconds and a default reserved time of five seconds, if 16 seconds have passed, the message would be rejected.

Step 4: If there is sufficient time, the FedNow Service sends the contents of the message to the Receiver FI to seek confirmation that the Receiver FI intends to accept the payment message. At this point, the Receiver FI determines how it will handle the message — accept, reject or accept without posting (ACWP).

Step 5: Stop of clock: The Receiver FI sends an "accept" response to the FedNow Service, confirming it intends to accept the payment message. If the positive response is received by the FedNow Service before the clock has expired, the clock will stop when the FedNow Service receives this message and just before the service's settlement processes begin.

For customer credit transfers, if the FedNow Service receives a positive response — either accept or ACWP — from the Receiver FI before the timeout clock has expired, the **clock will stop** just before the service's settlement processes begin.

Step 6: The FedNow Service settles the payment, debiting and crediting the designated master accounts of the Sender FI and Receiver FI (or of their correspondents), respectively.

Step 7: The FedNow Service sends an advice to the Receiver FI and an acknowledgement to the Sender FI, executing the payment order and notifying each that the Federal Reserve Banks settled the payment message.

Step 8: Funds availability and notification to customer: As a term of participation in the FedNow Service, the Federal Reserve Banks anticipate requiring the Receiver FI to make funds available to the recipient immediately after step 7.

For a more complete overview of the flow process, refer to the **Customer Payment Flow** topic.

A few things to note:

- At each step in the payment flow, the FedNow Service determines whether processing should continue. This is done by validating that the seconds elapsed since the time included in the message timestamp has not exceeded the timeout clock's allowable limit.

- The timeout clock is solely based on a set number of seconds. Therefore, changes to the calendar day or the FedNow Service cycle date are irrelevant.

- In order to support accurate tracking of time, the Federal Reserve Banks recommend that FIs refer to a reliable time server.

When the Payment Timeout Clock Runs Out Before Settlement Begins

If the process outlined on the previous page exceeds the timeout clock's time limit prior to settlement — for example, if 20 seconds lapse without a response from the Receiver FI — the FedNow Service rejects the payment message with the applicable reason indicated. Below are essential points to know about payment rejection scenarios in connection with the timeout clock:

- If a payment is rejected, the FedNow Service sends a message (ISO message pacs.002) to the Sender FI notifying it that the payment was rejected.
- If the Receiver FI has received the contents of a payment message in a request for confirmation but does not respond before the timeout clock expires, the Receiver FI also receives a notice that the payment has been rejected.
- If the Sender FI resubmits a payment message that the FedNow Service already received, it needs to include a new unique message identification number. Otherwise, the service rejects the message based on the duplicate identification number.

Where messages are rejected because they exceeded the timeout clock, participants need to initiate a new payment request if they wish to complete the transfer of funds.

Requesting a Status of Payment

If an FI does not receive an advice (pacs.002), an acknowledgement (pacs.002) or a rejection message (ISO message admi.002/pacs.002), it must submit a request for payment status (ISO message pacs.028).

The Federal Reserve Banks recommend that each FI wait a few seconds longer than the stated timeout clock limit. For example, with a 20-second timeout clock limit, an FI should wait until 25 seconds have passed to submit a status request. This provides time for the FedNow Service to finish processing and deliver the applicable messages.

FIs that submit request for payment status messages (pacs.028) before resending a payment message through the service are able to limit their risk of sending duplicate payments.

**PREPARING FOR
REAL-TIME PROCESSING**

FedNow Payment Flow Process & Funds Availability

One of the primary advantages of the FedNow Service is its ability to clear and settle transactions instantly, allowing financial institutions (FIs) of all sizes to enable their customers to send and receive money in seconds.

To meet the funds availability requirement for the FedNow Service, participating FIs are required to make funds available to the recipient immediately, 24 hours a day, seven days a week, 365 days a year, except as described in the *Understanding Accept Without Posting* section below.

This section covers the following topics:

- Making funds available immediately to customers
- Responding to payment messages
- Understanding Accept Without Posting (ACWP)
- Notifying FI customers

Note: The topic of funds availability is governed by Regulation J and the Federal Reserve Banks' Operating Circular 8. FedNow participants should consult their legal counsel regarding Regulation J, other applicable laws and terms governing the FedNow Service.

Making Funds Available Immediately

As noted, participant FIs are expected to make funds available immediately following receipt of an advice of credit. Under Regulation J and Operating Circular 8, this means that a Receiver FI is required to make funds available as soon as is practicable and no more than a few seconds after receipt of an advice, with one exception (see *Understanding Accept Without Posting* below). The Federal Reserve Banks will not prescribe how FIs should make the funds available to their customers from an operational standpoint. A participant FI could meet the availability standard, for example, by memo-posting (where the funds are not yet posted but the funds are included in the customers' balance) or by opting to post the funds to a customer account directly, so long as the funds are available for their customer to use.

Identifying the Recipient

Inside the payment messages (ISO® 20022 messages: pacs.008, pacs.004, pacs.009), the recipient is expected to be identified by name, account number and FI via the routing transit number (RTN) of the Receiver FI.

(See the **FedNow Service ISO 20022 specifications** for further details on how each party is identified in a message.)

Responding to Payment Messages

Once the Receiver FI receives a customer credit transfer message (pacs.008) or payment return (pacs.004), it is required to submit one of these responses by sending a payment status (pacs.002):

1. **Accept (ACTC):** The Receiver FI can indicate it intends to accept the payment message by responding with the code "ACTC" to a customer credit transfer (pacs.008) or payment return (pacs.004). Following receipt of an accept response, the FedNow Service settles the funds in the respective master accounts of the Sender FI and Receiver FI and delivers a payment status report (pacs.002) to each of the FIs. An acknowledgement is sent to the Sender FI and an advice of credit is sent to the Receiver FI. Payment by the Federal Reserve Banks to the Receiver FI is final at the earlier of time of settlement or the time that advice is provided to the Receiver FI.

   Upon receipt of the advice from the FedNow Service, the Receiver FI is required to make funds available immediately to the recipient's account and should provide immediate notice to the recipient. Immediate funds availability is required by participants of the FedNow Service on a 24x7x365 basis.

   The FedNow Service communicates an acknowledgement of settlement to the Sender FI using the code "ACSC" which stands for "accepted settlement complete." If the Receiver FI does not receive an advice or rejection notice from the FedNow Service for a message to which it responded with "ACTC," it should submit a Request for Payment Status (pacs.028). It is recommended to wait 25 seconds from the message start of clock before sending the inquiry to provide time for the FedNow Service to finish processing and deliver the applicable messages. (See **Understanding the Payment Timeout Clock** for more details).

2. **Reject (RJCT):** If the Receiver FI does not accept the payment message — for example, it cannot confirm it maintains an account for the recipient — it sends a reject response (with code "RJCT") in the pacs.002 to the FedNow Service. Following receipt of a reject response, the Federal Reserve Banks reject the payment message and notify (pacs.002) the Sender FI and Receiver FI. The Federal Reserve Banks do not settle rejected messages.

3. **Accept Without Posting (ACWP)**: If the Receiver FI has reasonable cause to believe that the recipient is not permitted or entitled to receive a payment, the recipient's bank may notify its Federal Reserve Bank that it requires additional time to determine whether to accept payment using the code "ACWP" (see *Understanding Accept Without Posting* below for details). Following receipt of an ACWP response, the FedNow Service settles the transaction and send an advice/acknowledgement to its respective FIs. The Federal Reserve Banks' Operating Circular 8 and FedNow Service Operating Procedures also establish requirements and expectations for participants if a Receiver FI delivers an ACWP response, as described on the next page.

Understanding Accept Without Posting (ACWP)

What might trigger an ACWP response?

ACWP is a response option that a Receiver FI may use when there is reasonable cause to believe that the recipient is not entitled or permitted to receive payment. For example, if the Receiver FI has reasonable cause to believe that making funds available to the recipient may violate applicable U.S. sanctions, the Receiver FI may notify its Federal Reserve Bank that it requires additional time to determine whether to accept the payment order, including to investigate if the recipient is subject to applicable sanctions. As an additional example, if the Receiver FI has reasonable cause to believe that a particular payment order may be related to fraudulent activity, the Receiver FI may notify its Federal Reserve Bank that it requires additional time to determine whether to accept the payment order, including to investigate the suspected fraudulent activity. In both examples, in the event the Receiver FI gives such notice, the Receiver FI would not be deemed to have accepted the payment order at the time it receives payment from its Federal Reserve Bank.

How ACWP works

Once an ACWP response has been sent, the FedNow Service continues to process the message. The FedNow Service settles the transaction and communicates the ACWP status by sending an acknowledgement to the Sender FI and an advice message to the Receiver FI. However, the Receiver FI is not required to post funds to its customer's account immediately after receiving an advice through the service. Instead, if the Receiver FI accepts after completing its investigation, it is required to make funds available to its customer immediately after it determines that the recipient is entitled and permitted to receive the payment.

The Federal Reserve Banks are not able to cancel payment messages confirmed by the Receiver FI with an ACWP response because they settle and execute those messages in real time. The Sender

FI is able to request a return from the Receiver FI and, depending on the timing and other factors and circumstances, the Receiver FI may be able to cancel the payment message or otherwise initiate a return. Even then, the Receiver FI likely needs to resolve the issue that caused it to hold the payment before processing the return and it may need to seek authorization from its customer.

FedNow Receiver FI process:

A. Investigation

The Receiver FI is required to complete its investigation and act on the payment message as soon as possible — no later than midnight Eastern Standard Time of the next business day that is not a weekend day or holiday, unless at that time the Receiver FI continues to have concerns that accepting the payment and making funds available would be impermissible under applicable law.

B. Payment Status Update

At the time of the deadline, the Receiver FI must provide a payment status update (pacs.002) to the Sender FI in all cases. The status update options are either "**final**" or "**pending**":

- **Final status**
    - *Posted* – The Receiver FI accepted the payment order and posted funds to its customer's account.
    - *Blocked* – The Receiver FI blocked the payment order (i.e., the funds are held by the Receiver FI pursuant to applicable law; funds are not posted to the receiver nor returned to the sender).
    - *Rejected* – The Receiver FI rejected the payment order (or it has been canceled by operation of law) and will send a return payment to the Sender FI.
      Note: The Receiver FI may process a return payment related to a payment order it rejected through the FedNow Service or use another channel.

- **Pending status –** The transaction requires further investigation. After the midnight deadline, the Receiver FI may only use this status if it continues to be concerned that the recipient is not entitled or permitted to receive payment. **In this case, the Receiver FI is also required to provide a final status once the investigation is complete and to respond to any status update requests (pacs.028) submitted by the Sender FI.** A Sender FI may send a payment status request message to the Receiver FI when a payment order has a "pending" status and the Receiver FI is expected to provide an update.

C. Final Determination
The Receiver FI takes the following steps once a final determination is made on whether it will accept the payment.

- **Funds Made Available –** If the Receiver FI determines it will accept the payment and make funds available to the recipient, then the Receiver FI must do so and should send a confirmation of posting message through the FedNow Service to the Sender FI indicating that funds are available to the recipient.

- **Funds Not Made Available –** If the Receiver FI determines it will not accept the payment order and accordingly will not make funds available, the Receiver FI must promptly refund the amount of the payment, unless the Receiver FI is legally prohibited from doing so.
  - o If the Receiver FI is enabled to send credit transfers through the FedNow Service, such refund may be made by initiating a return of funds. This message should reference the original FedNow payment message in accordance with FedNow Service Technical Specifications.
  - o If the Receiver FI is not able to send customer payments through the FedNow Service, such refund may be made by sending a payment through another payment mechanism. Refunded payments through other channels should reference the original payment message ID number in the return payment.

- **Funds Not Made Available and Not Refunded –** If the Receiver FI determines not to make funds available to the recipient and is legally prohibited from refunding the payment, the Receiver FI must inform the Sender FI that the amount of the payment order has been blocked under applicable law. This is communicated via the **"blocked"** final message status (pacs.002) described on the previous page.

FedNow participants should consult their legal counsel for more information regarding Regulation J, other applicable laws and terms governing the FedNow Service.

Notifying Your Customers
Consistent communication is essential for an optimal customer experience with instant payments. The Receiver FI should notify the recipient that the funds are available. The Sender FI should also notify the sender that the transfer was successfully processed.

The Federal Reserve Banks strongly encourage Receiver FIs to use a "Confirmation of Posting" status for optimal customer experience, which increases transparency and potentially reduces customer inquiries regarding status of transactions. Where it receives a confirmation of posting status, the Sender FI should also communicate the confirmation of posting to the sender.

FIs are responsible for establishing their own disclosure requirements in compliance with applicable law. As noted above, the Federal Reserve Banks do not prescribe how FIs provide notice to their customers; however, it is best practice for FIs to establish an approach that results in consistent and immediate communication to their customers across the channels and access points that their customers have enabled (e.g., online banking, mobile banking, branch tellers, call center, interactive voice response (IVR), etc.).

Back to Top

Participant Availability

Due to the around-the-clock nature of payments processed and settled through the FedNow Service, the Federal Reserve Banks have established availability requirements for participating financial institutions (FIs) and their service providers.

Participants and their service providers are expected to be capable of sending or receiving messages as close to the service's 24x7x365 operational availability as possible. As FIs begin their instant payments journey, the Federal Reserve Banks understand that planned and unplanned maintenance windows will occur for FIs, which may result in the need to sign off from the service for a period of time.

This topic goes into more detail about each of these expectations and the processes that the service has in place around them, including:

- Striving for continuous availability
- Handling availability interruptions
- How the FedNow Service communicates changes in routing transit number (RTN) availability
- Requesting lists of active RTNs

Striving for Continuous Availability

Using the FedNow Service may require participants to make changes to current operations and support structures to achieve continuous availability. The Federal Reserve Banks encourage FIs to review their internal and third-party systems to verify that they are prepared for the continuous availability required — or are as close as possible.

As FIs and their service providers work to support continuous availability, the Federal Reserve Banks work together with the industry to manage acceptable downtime of participants, while balancing a network that is available for end customers to send and receive money. Over time, it is expected that FIs increase their availability to the service, reducing the need to go offline for maintenance and other reasons. As expectations evolve over time, the Federal Reserve Banks will communicate changes to give participants and service providers time to prepare.

FIs need to ensure they establish appropriate monitoring and alerting capabilities to resolve issues that may arise. Participating FIs are required to notify the Federal Reserve Banks if for any reason they are unable to send or receive messages to and from the service, or if they are unable to meet the anticipated requirement to make funds available to the recipient immediately.

When Disruptions Happen

During maintenance or other disruptions, participants are expected to sign off from receiving credit transfer messages from the FedNow Service.

A participating FI is able to request to sign off, or sign on to, the FedNow Service by using ISO® message admi.004, by using the FedNow interface via FedLine® Solutions or by contacting FedNow Service operations. Participants and service providers are able to identify each RTN impacted, and with respect to service providers, the message may cover all participants' profiles associated with that service provider. The FedNow Service will respond to the request and confirm the status.

While the receiver's RTN is offline, the FedNow Service rejects payment messages (ISO messages pacs.008 and pacs.004) sent to the RTN. However, while the status of an RTN is set to signed off, the FedNow Service continues to send all other service messages to the relevant queue for the FI to retrieve. Participants may still initiate messages to the FedNow Service while signed off from receiving credit transfer messages. The Sender FI is responsible for screening all payments according to its internal processes and requirements.

The Federal Reserve Banks are exploring how the FedNow Service will monitor participant queues and are considering applicable next steps if a queue that is used to receive payment messages is unresponsive. For a more detailed discussion of ISO 20022 messages, refer to the **ISO Overview** topic.

Communicating Changes in RTN Availability

The FedNow Service sends a broadcast message (admi.004) to all participants communicating changes in availability for each impacted RTN. Such changes may involve RTNs going offline or coming online. This information is also available via the FedNow interface.

Sender FIs should check outbound messages against the list of offline RTNs prior to submitting a message to the system. The FedNow Service confirms that a Receiver FI is available to receive credit transfer messages as part of its validation in step 3 of the payment flow (see the **Customer Payment Flow** topic for details). If the Receiver FI's RTN is signed off, the service rejects transactions and notifies the Sender FI using the status message (pacs.002).

List of FedNow Service-enabled RTNs

FedNow Service participants are able to request a complete list of RTNs with indicators of enabled participation type (receive customer credit transfers, send and receive credit transfers or receive requests for payment) via the FedNow interface or receive at the end of day via ISO message admi.998. To learn more about the flexibility that the service offers for enabling specific roles and capabilities, refer to the **Participation Types** topic.

Ensuring Proper Preparedness

With the FedNow Service processing and settling payments in near real time, continuous availability is essential for participating FIs. Participants are expected to operate 24x7, however if unexpected situations arise that require a participant to be offline, the FedNow Service provides capabilities that allow clear communication between the participant and the service.

Reporting and Reconcilement

Because the FedNow Service processes payments 24x7x365, the Federal Reserve Banks have given careful consideration to defining the timing of end-of-cycle activities for accounting purposes. As participating financial institutions (FIs) determine their internal procedures to accommodate FedNow activity, they can choose from account reconciliation options and a report schedule that best suits their needs.

This document offers an overview of how the FedNow Service provides reports that allow FIs to conduct reconcilement functions. Key takeaways include:

- The FedNow Service's cycle day (i.e., its funds transfer business day) is generally 7 p.m. to 7 p.m. ET the next day, every day of the week
- Participating FIs can use real-time advices/acknowledgements and notifications of debits/credits to support real-time reconcilement functions
- FedNow reports include:
  - o Intra-day and end-of-day Activity Totals reports by routing transit numbers (RTNs)
  - o Intra-day (for prior cycle dates) and end-of-day Activity Details reports by transaction
  - o On-demand Account Balance reports
- The Federal Reserve Banks have revised standard accounting reports to include FedNow activity and generate these reports seven days a week
  - o Daily Statement of Account – summary level
  - o Financial Institution Reconcilement Data (FIRD) – detail level
  - o Statement of Account in Spreadsheet Format (SASF) – detail level

Defined Cycle Dates

The FedNow Service processes payments around the clock, every day of the year. However, for accounting and reporting purposes, the FedNow cycle date differs from the calendar date for a period of time (from close until midnight) because it aligns with the Fedwire® Funds Service business day, which generally has a closing time of 7:00:59 p.m. ET. If the Fedwire Funds Service business day is extended, the FedNow cycle date extends along with it. For consistency, the FedNow Service aligns to the same time frame for weekends and holidays.

Cycling Forward

The FedNow Service continues to process and settle messages in real time as it rolls over to the next cycle date.
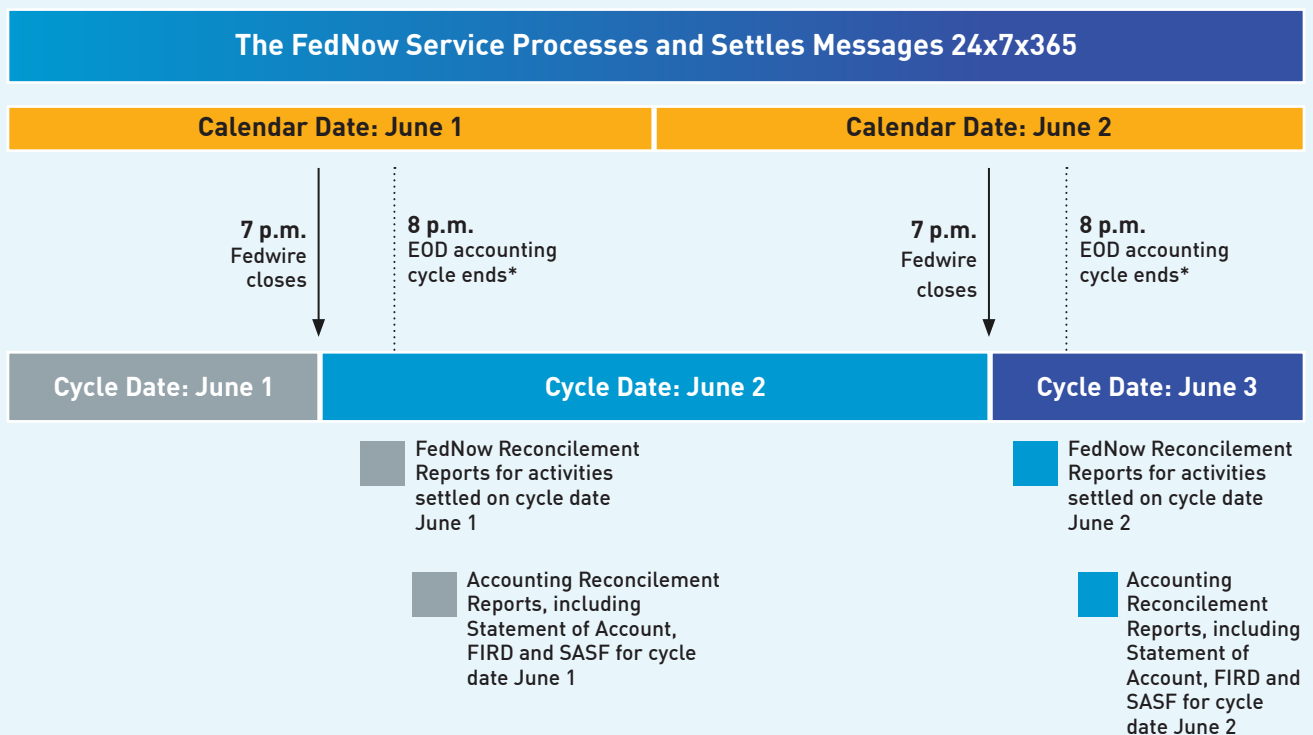
Upon rolling, the FedNow Service processes payments and other messages on the new cycle date even though that date differs from the calendar date until midnight ET. For example, a payment that is received on June 1 at 7:00:55 p.m. and settles on June 1 at 7:01:00 p.m. ET, would have a cycle date of June 2.

The FedNow Service assigns the applicable cycle date to the transaction includes it in the advice of settlement message (ISO® message pacs.002) and notifications (ISO message camt.054). See the **Customer Payment Flow** topic for more details.

The FedNow Service also sends a daily broadcast message to participants advising them of the change in cycle date (ISO message admi.004). This broadcast message creates awareness for participants and their service providers on those relatively rare instances when the closing time might be extended.

Understanding FedNow cycle dates
All times are based on a typical day, but subject to change if the cycle date is extended.

The FedNow Service Processes and Settles Messages 24x7x365	
Calendar Date: June 1	**Calendar Date: June 2**

| **7 p.m.**
Fedwire closes | **8 p.m.**
EOD accounting cycle ends* | **7 p.m.**
Fedwire closes | **8 p.m.**
EOD accounting cycle ends* |

Cycle Date: June 1	Cycle Date: June 2	Cycle Date: June 3

FedNow Reconcilement Reports for activities settled on cycle date June 1

Accounting Reconcilement Reports, including Statement of Account, FIRD and SASF for cycle date June 1

FedNow Reconcilement Reports for activities settled on cycle date June 2

Accounting Reconcilement Reports, including Statement of Account, FIRD and SASF for cycle date June 2

*FedNow participants can retrieve Account Balances at any time. At the start of a new cycle date, if the final balance has not been calculated, the provisional balance will be provided.

Note: Participants have the ability to view Account Balances via AMI or FedNow Service.

Reports and Statements

The Federal Reserve Banks provide a variety of report options to participating FIs and their service providers to support reconcilement and general ledger posting functions.

The FedNow Service provides reports of payments and non-value messages (such as request for payment, request for information, request for return of funds) sent or received by participating FIs.

The Federal Reserve Banks' standard accounting reports such as Daily Statement of Account, FIRD and SASF have been revised to include FedNow activity and are provided seven days a week. Participating FIs need to determine how frequently they will perform their reconcilement functions.

As part of the FedNow onboarding process, organizations determine initial settings for reports to ensure these are appropriately enabled. These configurations may be updated as needed.

FedNow-specific reports and information

While settlement only occurs within master accounts, any FedNow-enabled RTN may be identified within payment messages. The FedNow Service provides reports containing information about service activities for all RTNs included within payment messages and non-value messages. These include transactions at the master/primary RTN, subaccount RTN and other secondary RTN levels. Correspondents can receive reports for their respondents' RTNs. These reports are distinct from reports and statements that other Federal Reserve applications (e.g., AMI balance inquiries) generate.

Activity Totals and Details reports are available on demand or are automatically provided end of day if desired. The current approach allows detailed reports to be requested at any time for a previous cycle date. The Totals report can be requested for prior cycle dates as well as for current cycle date. For current cycle date reports, it shows current up to the last minute of processing. The FedNow reports are accessible using ISO® messaging (request is camt.060 and returned report is camt.052) or the FedNow interface via FedLine® Solutions.

The Federal Reserve Banks anticipate offering 90 days of historical available content for these reports.

Activity Totals report

The Activity Totals report contains the FedNow Service summary at the RTN level for payments and non-value messages. By default, this is automatically sent at the end of each cycle date via ISO messaging (camt.052). FedNow Service correspondents may receive reports for each of their respondents' RTNs if they desire. The example shown below shows the details within this report:

ACTIVITY TOTALS REPORT	
Credit Transfers (pacs.008/009) and Returns (pacs.004)	
Total Amount of Successful Debit Transactions	Total Amount of Successful Credit Transactions
Total Number of Successful Debit Transactions	Total Number of Successful Credit Transactions
Total Number of Debit Transactions Rejected	Total Number of Credit Transactions Rejected
Non-Value Messages: Request for Payment, Request RFP Cancellation, Request for Information, Request for Returns	
Total # of Non-Value Messages Received	Total # of Non-Value Messages Sent

Activity Details report

The Activity Details report lists individual FedNow Service transactions and non-value messages. For a full list of content, please see the FedNow ISO 20022 Implementation Guide on the **MyStandards®site**. Selected content for this report is as follows:

ACTIVITY DETAILS REPORT	
Account	Routing number used to determine information in the report
Total Credit Entries	Specifies the total number and sum of successfully processed value messages received by the participant
Total Debit Entries	Specifies the total number and sum of successfully processed value messages sent by the participant
Total Entries Per Bank Transaction Code	Non-value messages sent by participant, non-value messages received by participant, value messages received from participant that were rejected, value messages sent by participant but rejected by FedNow Service
Message Identification	Unique message identification assigned by the sending party (e.g., FI, service provider or FedNow Service)
Message Name Identification	Message identification that defines the business message using ISO 20022 identifiers (e.g., pacs.008, pacs.004, pain.014, etc.)
Message Create Date/Time	The calendar date and time the message was created (ET)
Acceptance Date/Time	The calendar date/time the message was settled within the FedNow Service
Cycle Date	The FedNow cycle date (funds transfer business day) the message was settled in
Sender RTN	The RTN of the account who FedNow Service debited
Receiver RTN	The RTN of the account who FedNow Service credited
Amount	The transaction dollar amount. If it is a non-value message the amount will be left blank.
Bank Transaction Code	Codes which indicate type of message and ultimate status of the message.

Messages supporting near real-time reconciliation

To support near real-time reconcilement functions, the FedNow Service provides real-time settlement messages to Sender and Receiver FIs (pacs.002). Correspondents who have a FedNow participation type for settlement services may enable real-time receipt of notifications of a debit or credit (camt.054) for respondent activity in their master accounts.

Standard reports updated with FedNow information

The Federal Reserve Banks generate end-of-day accounting statements and include FedNow Service detail activity for master and subaccount RTNs in the FIRD file (an end-of-day report). To help automate reconcilement functions, a FIRD file is provided in a machine-readable format and is also available through AMI. With the AMI application, FIs can get a Daily Statement of Account in PDF format or in spreadsheet format using SASF.

Balance inquiries available from the FedNow Service and AMI

Access to 24x7x365 intra-day credit supports the smooth functioning of the FedNow Service. Accordingly, access to intra-day credit is provided for participants under the same terms and conditions as are available for other Federal Reserve Services. FedNow participants are expected to manage their master account in compliance with the Federal Reserve policies, including the Payment System Risk Policy on intra-day and overnight credit.

Master account balance inquiries may be requested through the FedNow Service using ISO 20022 messages (request is camt.060 and returned report is camt.052) or can be accessed through the FedNow interface.

The AMI application, available via FedLine Web®/FedLine Advantage® Solutions, may also be used to view real-time account balance information.

Summary of Reports

Below is a summary table of available reports and messages to support reconciliation for real-time payments.

Report title	Source	Format	Description	Real-time push	Near real-time pull	Historical on-demand pull	End of day push/pull
Activity Totals	FedNow	ISO, CSV, PDF	FedNow Service summary totals of value and non-value messages at the RTN level.		●	●	●
Activity Details	FedNow	ISO, CSV, PDF	Lists individual FedNow Service value and non-value messages.			●	●
Advice/ Acknowledgement (pacs.002) **Notification of Debit/Credit Available (camt.054)**	FedNow	ISO	Real-time settlement messages sent by the FedNow Service to Sender and Receiver FIs. Real-time debit or credit notifications for respondent activity sent to correspondents.	●			
Account Balance	FedNow, AMI	ISO, CSV, PDF	Information for RTN account balance at the Federal Reserve Banks.		●		
Daily Statement of Account	AMI	PDF	FedNow Service summary totals by RTN will be included.			●	●
Data Files: FIRD and SASF	AMI	FIRD - Machine readable SASF	FedNow Service summary totals by transaction code and RTN will be included by default. Individual transaction detail can be included by request.			●	●

Managing Liquidity in an Instant Payments World

Because the FedNow Service processes and settles payments individually and continuously on a 24x7x365 basis, participating financial institutions (FIs) need adequate funds or available credit (liquidity) in their accounts at all times.

The FedNow Service enables FIs to transfer funds to each other to support instant payment liquidity needs. The Federal Reserve Banks anticipate implementing specific controls for liquidity transfers.

This document covers key information about liquidity management transfers including:

- Liquidity expectations
- How liquidity management transfers work
- Controls for liquidity management transfers
- Configuring liquidity management transfer capabilities
- Other considerations for managing liquidity

Liquidity Expectations

There are a few key points to keep in mind when thinking about liquidity management and the FedNow Service:

- FedNow participants or their correspondents are expected to maintain balances in their master accounts to settle FedNow transactions, consistent with the Federal Reserve's Policy on Payment System Risk.
- Participants <u>should not expect</u> the FedNow Service, at initial launch, to reject payments based on a participant's insufficient balance or overdraft capacity, even if the Federal Reserve Banks do so for other services. However, standard intra-day and overnight overdraft fees apply.
- The Federal Reserve Banks do not intend to open the Discount Window outside of standard hours. During its business day, the Federal Reserve Banks provide intra-day credit to FedNow participants under the same terms and conditions as its other services.

How FedNow Liquidity Management Transfers Work

The following is a step-by-step look at how FIs transfer liquidity to one another using FedNow liquidity management transfers (LMT).
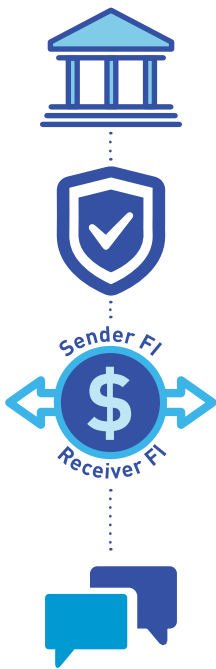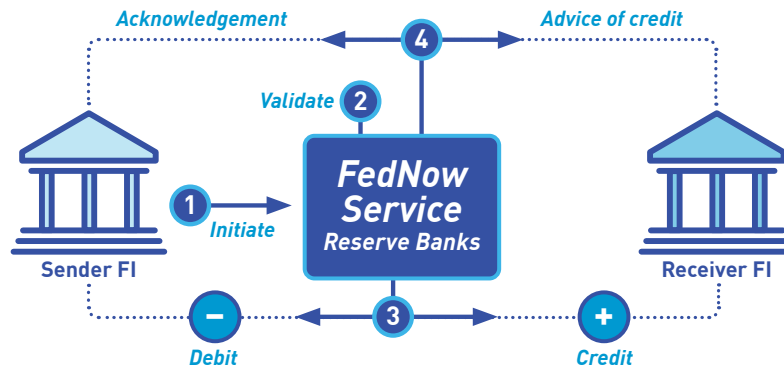
Step 1: The Sender FI initiates a liquidity transfer through a FedLine® Solutions channel and sends a payment message (ISO® message pacs.009) to the FedNow Service.

Step 2: The FedNow Service validates the payment message — for example, by verifying the message meets format specifications.

Step 3: The FedNow Service debits and credits the designated master accounts of the Sender and Receiver FIs. **Note:** The FedNow Service does not seek confirmation from the Receiver FI — as it does with customer credit transfers — before settling the liquidity management transfers and delivering an advice of credit to the Receiver FI. For FIs using a correspondent for settlement, the debit or credit settles in the correspondent's master account.

Step 4: The FedNow Service sends an advice of credit to the Receiver FI and sends an acknowledgement to notify the Sender FI that the settlement is complete.

Liquidity management transfers are subject to the same 20-second (or less) payment timeout clock as standard customer transfers received by the FedNow Service. For more information on how the payment timeout process works, refer to the **Understanding the Payment Timeout Clock** topic.

FedNow Service Controls on Liquidity Management Transfers

The Federal Reserve anticipates implementing specific controls for liquidity management transfers (pacs.009), including transaction value limits, daily volume limits (enforced by the terms of service) and limits on available hours of operation.

FedNow participants are able to route liquidity transfers using master account/primary routing transit numbers (RTNs), subaccount RTNs or other secondary RTNs, as long as they are enabled in the FedNow Service.

FedNow participants can disable sending or receiving liquidity transfers within the customer profile. The FedNow Service rejects liquidity transfers that include either a Sender FI or Receiver FI who is disabled for the service.

Configuring FedNow Liquidity Management Transfer Capabilities

FedNow participants that are set up to send or receive customer payments (ISO messages pacs.008 and pacs.004) are automatically enabled to send and receive liquidity management transfers (pacs.009). If they wish, participants can opt out of either sending or receiving liquidity management transfers.

FIs are also able to choose to participate in the FedNow Service for the sole purpose of supporting FedNow liquidity management transfers. For example, FIs are able to separately enable and transfer funds to support certain payment system interbank liquidity needs as a stand-alone service without enabling other capabilities within the FedNow Service.

Please refer to the **Participation Types** topic to learn more about these participant configuration options.

Supporting Correspondents/Respondents
A FedNow participant that uses a correspondent to settle FedNow activity is allowed to receive liquidity transfers. In this case, liquidity management transfer messages (pacs.009) are posted to the designated correspondent's master account.

Supporting Participants in Other Instant Payment Services Backed by a Joint Account
FIs who participate in a private-sector instant payment service backed by a joint account maintained by the Federal Reserve Banks are able to use the FedNow Service for sending and receiving transfers to and from a master account and the joint account.

The joint account agent needs to enable the liquidity management transfers feature of the FedNow Service in order to send, receive and settle liquidity management transfer messages sent through the FedNow Service.

FIs in the private-sector service need to enable their master accounts to send and receive FedNow liquidity management transfers in the FedNow profile.

SPOTLIGHT ON:
ADVANCING SAFE PAYMENTS

Information Security

Protecting the confidentiality, integrity and availability of data that the FedNow Service stores and processes is critical. That's why the Federal Reserve Banks have designed the service with an emphasis on security and resiliency. Data protections put in place are consistent with industry benchmarks set by organizations such as the National Institute of Standards and Technology (NIST).

Establishing and maintaining strong information security practices for the FedNow Service is a collaborative effort. In addition to implementing best practices in the design and processes of the service, the Federal Reserve Banks provide participating financial institutions (FIs) and their service providers information on security standards and requirements. This document provides an overview of these security measures, including:

- Operating Circular compliance
- Establishing physical and logical security system components
- Message signing and public/private key pairs
- Data encryption and authentication expectations
- Information access prerequisites

The Federal Reserve Banks also provide participants with specific requirements related to information security for the FedNow Service.

Operating Circular Compliance

All FedNow Service participating FIs and their service providers must comply with security obligations generally outlined in Operating Circular 8 and Operating Circular 5. These circulars include information about accessing Federal Reserve Financial Services and sending and receiving data.

FIs should consult their legal counsel for other applicable laws and regulations that may apply.

Participant System Security Framework

Because participants access the FedNow Service using FedLine® Solutions, they are expected to have an information security program for physical and logical system components. As part of the *FedLine Solutions Security and Resiliency Assurance Program*, participants are expected to conduct and attest to the completion of an annual assessment of compliance with the Federal Reserve's FedLine security requirements.

Message Signing and Key Pairs

The FedNow Service uses message signatures as one of multiple layers of security controls to help verify the integrity and authenticity of messages sent and received through the service. Message signing occurs point-to-point (between the FedNow Service and participants) and not end-to-end between participants. All messages exchanged through the FedNow Service require a digital signature, which participating FIs, their service providers or the service can generate.

Participants or their service providers are required to use public/private key pairs to support digital message signing. During onboarding, participants receive tools and instructions on message signing, including details on how to create and manage a key pair.

Encryption and Authentication

FedNow data is encrypted at rest within the Federal Reserve Banks and in transit, requiring participants to manage multiple encryption keys and digital certificates. These requirements may differ based on several factors, including the connectivity method and features being leveraged. Credentials for the service are provisioned as part of the FedNow onboarding process.

Information Access

The FedNow Service is designing a new user interface via FedLine® Solutions for participants connecting to the service via certain FedLine Solutions. The FedNow interface leverages the FedLine Solutions authentication process to enable a consistent user experience.

ISO® 20022 Messages Overview

The FedNow Service uses the internationally accepted messaging standard for the financial industry, ISO 20022, which provides a common language for participants of global systems and networks to communicate with each other. This messaging format enables rich data exchanges, automated end-to-end processing and can help facilitate interoperability with other instant payment services. These messages help create a strong foundation for future growth and innovation around the FedNow Service.

This document describes the ISO 20022 messages the FedNow Service uses.

Additional Resources on MyStandards®

The **MyStandards platform** houses current ISO 20022 message specifications, an implementation guide and message flows for the FedNow Service.

The FedNow ISO 20022 Readiness Portal on MyStandards offers a place to test compliance of messages.

It's easy to set up a free account and available to anyone who registers. A **step-by-step guide** is available to help you access **MyStandards**.

Quick Guide to ISO 20022 Messages Supported by the FedNow Service

Customer Credit Transfers	
pacs.008 – *Customer Credit Transfer*	Sender financial institution (FI) initiates it to instruct a customer credit transfer (i.e., send a payment order).
pacs.002 – *Payment Status Report*	Used by the FedNow Service[1] and participant FIs to indicate the processing status of a previously sent customer credit transfer message or payment return message (e.g., accepted or rejected) and used by the FedNow Service to send advices of credit and acknowledgments in connection with payment orders the Federal Reserve Banks have settled. Either the FedNow Service or the participant FI may send this in response to a pacs.028 payment status request regarding a credit transfer.
pacs.028 – *Payment Status Request*	Sender FI or Receiver FI requests the processing status of a previously sent credit transfer or request for payment message (pacs.008, pacs.004, pacs.009, pain.013).
Liquidity Management Transfers	
pacs.009 – *Financial Institution Credit Transfer*	Instructs payment between financial institutions in support of instant payment liquidity needs. Also serves as advice of credit to the Receiver FI.

[1] In this document references to the FedNow Service sending or receiving messages are references to the Federal Reserve Banks sending or receiving those message through the FedNow Service.

Payment Returns	
camt.056 – *Return Request*	Sender FI requests a refund of a previously sent credit transfer.
camt.029 – *Return Request Response*	Receiver FI response to a return request.
pacs.004 – *Payment Return*	Used by Receiver FI when initiating a credit transfer to return funds associated with a previously sent credit transfer.
Requests for Payment	
pain.013 – *Request for Payment (RFP)*	End customer or FI initiates a request for funds from another party.
pain.014 – *RFP Response*	Receiver FI response to an RFP or to a payment status request (pacs.028) on an RFP. This is a non-value message, not a credit transfer message.
camt.055 – *RFP Cancellation Request*	Sender FI, on behalf of itself or its customer, requests to cancel a previously sent RFP message.
camt.029 – *RFP Cancellation Request Response*	Receiver FI response to an RFP cancellation request.
Information Requests	
camt.026 – *Information Request*	Participant requests information on a previously received customer credit transfer or RFP.
camt.029 – *Information Request Response*	Sender FI response to an information request.
camt.028 – *Additional Payment Information*	Sender FI (or their end customer who initiated the transfer or RFP) provides additional information on a previously sent customer credit transfer or RFP.
Account Reporting	
camt.060 – *Account Reporting Request*	Participants request an account balance, activity totals or activity details report.
camt.052 – *Account Balance Report*	FedNow Service provides account balance information to requesting FI.
camt.052 – *Account Activity Totals Report*	FedNow Service provides summary account activity information by RTN to requesting FI and/or at the end of each cycle date. Available for direct participant or its correspondent.
camt.052 – *Account Activity Details Report*	FedNow Service provides detailed account activity information to requesting FI and/or at the end of each cycle date, if enabled. Available for direct participant or its correspondent.
camt.054 – *Account Debit/ Credit Notification*	FedNow Service provides a correspondent, if enabled for these messages, with a notification of respondent debit or credit entries to the correspondent's master account.
System Messages	
admi.002 – *Message Reject*	FedNow Service or Receiver FI indicates a message was rejected for technical reasons (e.g., invalid XML, exceeds allowable file size, digital signature issues).
admi.007 – *Receipt Acknowledgement*	The receipt acknowledgement indicates successful processing and forwarding by the FedNow Service or successful delivery and receipt by a Receiver FI of a nonvalue message exchanged between FedNow participants.
admi.004 – *FedNow Broadcast*	FedNow Service network notification to participants of system events (e.g., cycle date changes or RTNs that are signed off of the service).

admi.004 – *Participant Broadcast*	Participant request to sign off or sign on, or to ping the service to ensure connectivity is working as expected.
admi.011 – *FedNow System Response*	FedNow Service response to a participant requesting to sign off or sign on or ping.
admi.006 – *Retrieval Request*	Participant FI requests a copy of previously sent or received credit transfer or LMT messages from the FedNow Service.
admi.998 – *FedNow Participant File*	FedNow Service informs participants of RTNs enabled for capabilities associated with customer credit transfer message, payment return message, and/or requests for payment message.
Business Application Header	
head.001 – *Business Application Header*	Message accompanying all ISO 20022 messages sent through the FedNow Service.

More Details on the ISO 20022 Messages

Customer Credit Transfers:
Customer Credit Transfer (pacs.008)
A customer credit transfer message is used to transfer funds between end users who maintain accounts with FedNow Service participants or between a FedNow Service participant and an account holder at another FI. Please refer to the **Customer Payment Flow** topic for details on a standard payment flow.

Within the customer credit transfer message, optional remittance information may be provided via a short free form text field, or detailed with designated elements, such as specific fields for invoice number, amount due, due date and others. The FedNow Service also supports reference remittance information that has been made available separately, e.g., including a hyperlink to a document posted on a web portal.

Payment Status Report (pacs.002)
An FI or the FedNow Service sends a status report in response to:
- Credit transfers (pacs.008, pacs.004 or pacs.009)
- Payment status request (pacs.028) of a credit transfer

Here are examples of when this message is used:
- The FedNow Service rejects a credit transfer due to business validation failures, such as a message that is future-dated or exceeds the maximum amount.
- A Receiver FI indicates it intends to accept or reject a credit transfer. In case of rejection, the pacs.002 message indicates the reason, such as an invalid or closed account.
- The FedNow Service sends an advice or acknowledgement to the Receiver FI and Sender FI, respectively, after the FedNow Service settles credit transfer message (pacs.008, pacs.004), and acknowledgement to the Sender FI for a financial institution credit transfer (pacs.009).
- The FedNow Service or FedNow participant uses the pacs.002 in response to a payment status request (pacs.028) for a credit transfer (pacs.004, pacs.008, pacs.009). Multiple payment status report messages may be sent regarding a single credit transfer. For example, pacs.002 messages are used when a Receiver FI initially responds to a request for confirmation with an "accept without post" response and then with a final confirmation of posting to the recipient's account, if applicable.

Please refer to the **Funds Availability** topic for more details on payment statuses.

Payment Status Request (pacs.028)

Once a transaction has been initiated through the FedNow Service, a payment status request message may be used to get updates on credit transfers (pacs.004, pacs.008, pacs.009). It may also be used to get updates on a previously sent RFP (pain.013). This request may be made of either the FedNow Service or another participant.

Examples of when a payment status request would be used:
- An FI does not receive an acknowledgement or advice of credit from the FedNow Service.
- A FedNow Receiver FI received a credit transfer by responding with an "accept without posting" response and the original Sender FI wanted an update on the status.
- There was no response to the RFP (pain.013).

The payment status report (pacs.002) is the response to the payment status request for a credit transfer. Similarly, a pain.014 would be used to respond to a payment status request related to an RFP (pain.013).

Payment Returns:

Return Request (camt.056)

While FedNow credit transfers are final and irrevocable, there may be situations when a Sender FI requests funds to be returned (e.g., in case of a duplicate or fraudulent payment).

In these situations, the Sender FI of the credit transfer message sends a return request to the Receiver FI to return the funds. This request might be triggered by the customer or on the Sender FI's own behalf. The ISO 20022 message supports specific codes to indicate the reason for the return request.

Return Request Response (camt.029)

In response to the return request, the Receiver FI of the original credit transfer message sends a return request response message indicating whether or not they will return funds. If it decides to effect the return, this Receiver FI must also initiate a return of funds (pacs.004) message for the amount.

Payment Return (pacs.004)

Payment return messages are used to refund the amount of a payment previously sent. This may occur when the Receiver FI either cannot apply the funds from the original credit transfer or chooses to return the amount to the Sender FI.

Liquidity Management Transfers:

Financial Institution Credit Transfer (pacs.009)

The FedNow Service offers a funds transfer mechanism to support the instant payment liquidity needs of FIs and help them avoid shortfalls. These messages may be used to effect transfers between two FedNow participants' master accounts, or between a FedNow participant's master account and a joint account held at a Federal Reserve Bank that backs another private-sector instant payment service. Upon settlement, the FedNow Service sends the pacs.009 to the Receiver FI as advice of credit.

Please review the **Liquidity Management** topic for more information on these transfers.

Requests for Payment:

Request for Payment (pain.013)

These messages allow one party to request a payment from another, such as for bill payment or reimbursement. These requests may include an expiry date, indicating by when the recipient must accept or reject the request for payment (RFP). As with customer credit transfers (pacs.008), the FedNow Service supports several options for remittance information within an RFP message, allowing senders to choose the desired level of detail.

RFP Response (pain.014)

The Receiver FI of an RFP responds to the Sender FI with this message to indicate the RFP was received or accepted. It does not include all details from the original RFP; rather, it includes a reference to the original message.

The FedNow participant uses the pain.014 to respond to a payment status (pacs.028) for a request for payment message (pain.013).

RFP Cancellation Request (camt.055)

The Sender FI of an RFP may request that a Receiver FI cancel an RFP (pain.013), perhaps because of a duplicate request or an incorrect amount.

RFP Cancellation Request Response (camt.029)

In response to the RFP cancellation request (camt.055), the Receiver FI uses this message to indicate whether the cancellation request will be honored.

Information Requests:

Information request messages can be used to request additional details about a previously exchanged payment or RFP message.

Information Request (camt.026)

When the Receiver FI requires additional information from the Sender FI regarding a previously sent payment (pacs.008, pacs.004) or RFP (pain.013) message, it can initiate a camt.026 message to request additional information or missing information (such as to clear an anti-money laundering investigation).

Information Request Response (camt.029)

In response to an information request (camt.026), an FI sends this message to indicate whether additional information is available.

Additional Payment Information (camt.028)

Where more information is to be provided in response to an information request (camt.026), an additional payment information message is sent by a participant. The camt.028 may provide clarification, correction or information that was missing from a previously sent payment (pacs.008, pacs.004) or RFP (pain.013). This message is sent in addition to the information request response (camt.029).

Account Reporting:

The FedNow Service provides reports for reconciliation purposes:
- Account balances
- Account activity details
- Account activity totals
- Account debit/credit notifications (for correspondents)

Participating FIs and their service providers can get these reports by sending an account reporting request (camt.060) or by accessing the FedNow interface via FedLine® Solutions.

Correspondent FIs which establish a FedNow Service profile can request reports for their respondents' routing transit numbers (RTNs), as well as real-time notifications of respondent transactions (camt.054). These correspondent reports and notifications reflect settlement activity only.

Refer to the **Reporting and Reconcilement** topic for more information about reports and FedNow cycle dates.

Account Reporting Request (camt.060)
This message is used to solicit any of the FedNow Service accounting reports. The FedNow Service responds with a camt.052 message specific to the report requested.

Account Balance Report (camt.052)
This report provides a report of a participant's master account balance, or for reports generated at the subaccount RTN level, a report of a subset of debit and credit transactions processed using the subaccount RTN. It also includes summary information for the FedNow Service, Fedwire® Funds Service, Fedwire Securities Service, National Settlement Service and prefunded ACH. Participants can request it using the camt.060 message.

Account Activity Details Report (camt.052)
The Account Activity Details report provides participants with specific information associated to each RTN for all value and non-value messages the FedNow Service processed for a given cycle date. Participants can get this report automatically at end of day or request it for prior cycle dates using the camt.060 message.

The correspondent activity details report provides details for settled transactions for each respondent RTN enabled on the service, with each RTN's activity on an individual report.

Account Activity Totals Report (camt.052)
The Account Activity Totals Report provides summary totals of messages sent and received across the FedNow Service for a given cycle date and associated with a given RTN. Participants can receive this report automatically at end of day or request it intra-day using the camt.060 message.

The correspondent activity totals report provides summary totals for settled transactions for each respondent's RTN and includes all respondents' RTNs associated to the correspondent in a single report.

Account Debit/Credit Notification (camt.054)
Correspondent financial institutions that have a FedNow participant profile may receive real-time notifications of debit and credit entries that settle on their master account as a result of respondent activity.

System Messages:

Both the FedNow Service and FedNow participants use system messages to communicate system or FI operational statuses, changes to FedNow Service parameters, or message rejections due to technical issues.

Message Reject (admi.002)

The FedNow Service or FedNow participants use this message to reject an incoming ISO 20022 message for a technical reason (e.g., invalid XML, message signature issues).

Receipt Acknowledgement (admi.007)

In response to a non-value message, the FedNow Service sends an acknowledgement to inform the Sender FI that its message was successfully processed by the FedNow Service and forwarded to the Receiver FI. On its turn the Receiver FI sends an acknowledgement to inform the Sender FI that its message was successfully received. Messages for which the admi.007 is sent include payment status request (pacs.028), return request (camt.056) and return request response (camt.029), request for payment (pain.013), request for payment response (pain.014), RFP cancellation request (camt.055) and RFP cancellation request response (camt.029), information request (camt.026), information request response (camt.029) and additional payment information (camt.028) messages.

In response to industry feedback, the Federal Reserve Banks require all Send or Receive FedNow participants to support the ability to send the admi.007 in response to non-value messages. The purpose of this is for the FI who sent the non-value message to have confidence the Receiver FI received the message.

FedNow Broadcast (admi.004)

The FedNow Service uses a broadcast message to notify participants of a FedNow Service or participant event (e.g., to advise of a participant sign-on or sign-off, a FedNow Service change to transaction limits, or to notify that the FedNow Service has rolled over to the next cycle date).

Participant Broadcast (admi.004)

FedNow participants use this administrative message to notify the FedNow Service of a participant event (e.g., sign-on or sign-off of the FedNow Service, or to check their connection status, also known as a "ping"). For more information, please refer to the **Participant Availability** topic.

The FedNow Service responds to participant status request changes and connection status queries with a FedNow System Response (admi.011).

FedNow System Response (admi.011)

The FedNow Service sends this message to a participant to acknowledge the occurrence of a participant event, such as a participant request to sign on to or off of the FedNow Service. The FedNow Service responds to a participant's query regarding their connection to the FedNow Service (i.e., a ping (admi.004)).

Retrieval Request (admi.006)

A participant uses the retrieval request for the FedNow Service to send a copy of one or more credit transfer messages (pacs.004, pacs.008, pacs.009) or non-value messages (e.g., pain.013, camt.056, etc.) the participant previously sent or received.

FedNow Participant File (admi.998)

Each day, the FedNow Service automatically distributes to all participants and service providers a complete list of RTNs enabled for customer credit transfer and payment return messages with indicators of each's enabled participation type (receive customer credit transfers, send and receive credit transfers, or receive requests for payment). Participants may also access the list through the FedNow interface via FedLine Solutions.

Business Application Header Message:

Business Application Header (head.001)

The business application header message is required for all ISO 20022 messages sent across the FedNow Service, whether sent by FedNow participants or by the FedNow Service application. It includes, for example, the connection party identifier of the sender and receiver of the message, message identifier, and the message creation Date/Timestamp.

ISO 20022 Business Areas

The Federal Reserve Banks have identified the ISO 20022 messages that are in scope for the FedNow Service. Each message begins with four letters that identify its business area or functional domain.

BUSINESS AREA CODE	FUNCTIONAL DOMAIN	USES
pacs	Payments clearing and settlement	Interbank clearing and settlement of credit transfers (e.g., customer or FI credit transfers).
pain	Payment initiation	Support initiation of payments in the customer to bank space, including relay of these messages in the interbank space, e.g., request for payment.
camt	Cash management	Ancillary functions for payment processing, such as reconciliation or investigations (e.g., account reports, statements or information requests).
admi	Administrative	Communication between a system and its participants (e.g., network broadcasts, participant sign on or sign off).
head	Business application header	The exchange of business messages between applications.

Glossary

Description of terms are in the context of the FedNow® Service.

TERM	DESCRIPTION	RELATED TOPIC
Accept without posting	Payment status where the receiving financial institution (Receiver FI) requires additional time to determine whether it will accept the payment because it has reasonable cause to believe that the recipient is not entitled or permitted to receive the payment (e.g., if the recipient payment might be subject to U.S. sanctions). The FedNow Service will process and settle a payment with this status.	Funds Availability
Account Management Information (AMI)	AMI is available via FedLine Web® and FedLine Advantage® Solutions and provides comprehensive Account Balance, Daylight Overdraft Balance and Available Funds Balance information to assist financial institutions (FIs) with account management and reconcilement functions. AMI provides a variety of accounting intra-day and end-of-day inquiry and reporting services.	Reporting and Reconcilement
Acknowledgement	Notification to the sending financial institution (Sender FI) of debit to the Sender FI's designated master account following settlement of a payment message the Sender FI sent through the service.	Payment Flow
Advice of credit	Notification to the Receiver FI indicating that a payment message through the FedNow Service has been processed and settlement of a credit to the Receiver FI's designated master account has occurred.	Payment Flow
Alias	Reference identification, such as an email address or phone number, used to indicate an FI's customer and its related account at an FI.	
Application Programming Interface (API)	A set of protocols that enable software to interact and systems to exchange data electronically via a streamlined interface.	
Clearing	The exchange of information and related activities that take place to correctly route and process payment instructions among FIs.	
Correspondent financial institution (correspondent)	A correspondent is an FI that has authorized a Federal Reserve Bank to settle certain transactions and service fees to its master account for a respondent financial institution.	Settlement, Participation Types
Electronic Transaction Identifiers (ETI)	Special purpose number designated for use as electronic address of organizations that are not FIs but process payment transactions on behalf of FIs.	

TERM	DESCRIPTION	RELATED TOPIC
FedNow cycle date	Date indicating the funds transfer business day for the FedNow Service. This date indicates the FedNow business day on which a payment message is processed and settled. The scheduled end of the FedNow cycle date aligns on all calendar days with the scheduled close of the Fedwire® Funds Service, which is currently 7 p.m. ET. (Extensions of the Fedwire Funds Service would also extend the FedNow Service close.) The start of each cycle date immediately follows the end of the previous cycle date, with no disruption in processing.	Settlement, Reporting and Reconcilement
FedNow interface via FedLine® Solutions	User interface where participants or their service providers are able to configure settings, download lists, research messages and run reports.	
FedNow participants	FIs who have enabled one or more routing transit numbers (RTNs) to send or receive messages or to settle transactions over the FedNow Service.	
Financial Institution Reconcilement Data (FIRD)	Daily Statement of Account in a machine readable format designed to interface with an institution's internal accounting system to assist with automated reconcilement and posting functions.	Reporting and Reconcilement
Intra-day credit	Credit that is extended during the course of a business day and is repaid by the debtor before close of business on that day.	
Irrevocability	Not reversible. In the context of the FedNow Service, where interbank settlement is final, the Sender FI cannot cancel or recall the payment, nor can the Federal Reserve Banks.	
ISO® 20022	ISO 20022 is an ISO messaging standard for electronic data interchange between FIs.	
Joint account	An account at a Federal Reserve Bank where the rights and liabilities are shared among multiple account holders (joint account holders), each of which is an institution that is eligible to open an account with a Federal Reserve Bank.	Liquidity Management Transfer
Key pairs	A public key and a private key that are a set of security credentials used to verify identities.	Information Security
Master account	The record of financial rights and obligations of an account holder and the administrative Federal Reserve Bank with respect to each other, where opening, intra-day and closing balances are determined. A master account is identified by a primary RTN.	Reporting and Reconcilement
Message signatures	Security protocols that serve to verify the integrity and authenticity of the message sent and received through the service, providing confidence the message received was the same as what was sent. Digital signatures do this by generating a unique hash of the message or document and encrypting it using the sender's private key.	Information Security

TERM	DESCRIPTION	RELATED TOPIC
MQi	Messaging solution used to send and receive data as messages between applications, services and systems.	Connecting to the FedNow Service
Other secondary account RTN	A secondary RTN assigned to an FI to segregate debit and credit transaction activity.	Settlement, Reporting and Reconciliation
Participation type	Set of features, including ISO 20022 message requirements to which an FI has enabled for the FedNow Service. For example, receive credit transfers, send and receive credit transfers, send and/or receive liquidity management transfers and settlement services.	Participation Types
Payment timeout clock	Maximum allowable time for a transaction to complete processing or be rejected.	Understanding the Clock
Primary RTN	An RTN that is associated with an FI's principle office.	Reporting and Reconcilement
Real-time gross settlement (RTGS) system	A payment system that settles payment instructions immediately on a transaction-by-transaction basis.	
Respondent financial institution (respondent)	A respondent is an FI that settles debit and credit transaction activity for some or all of its transactions in the master account of a correspondent.	
Routing transit number (RTN)	A nine-digit number assigned by the American Bankers Association (ABA) Registrar of Routing Numbers to identify an FI.	
Secondary RTN	An RTN, other than the primary RTN, that has been assigned to an FI by the Registrar of Routing Numbers. There are two types of secondary RTNs: subaccount and other secondary RTN.	Settlement, Reporting and Reconciliation
Statement of Account Spreadsheet File (SASF)	Daily Statement of Account which can be downloaded using spreadsheet software to perform internal reconcilement and posting functions.	Reporting and Reconcilement
Subaccount RTN	A secondary RTN which is used to identify information that is reported directly to the FI's master account. These accounts may be used to initiate certain types of transactions.	Settlement, Reporting and Reconciliation

Quick Links to Additional Resources

- **Operating Circular No. 8 - Funds Transfers Through the FedNow Service (FRBservices.org)**
- **FedNow® Service Operating Procedures (FRBservices.org)**
- **Readiness Roadmap for Financial Institutions Working with Service Providers**
- **ISO® 20022 MyStandards® Readiness Portal and Accessing the MyStandards Portal**

The FedNow® Service Readiness Guide is a collection of topics offering information to help participants, service providers and others as they prepare for the FedNow Service.

This guide may and is likely to change from time to time, including as the Federal Reserve Banks obtain feedback from various stakeholders. The Readiness Guide is not an agreement with the Federal Reserve Banks and is not necessarily reflective of the final terms, operating procedures, or other documentation for the FedNow Service. The FedNow Service will be governed by applicable law and the terms of an operating circular issued by each of the Federal Reserve Banks. Other Federal Reserve Banks operating circulars applicable to the Federal Reserve Banks provision of financial services, including operating circulars that govern the account relationships and electronic connection with the participants, will also apply. This guide does not create new obligations on the Federal Reserve Banks and the standards outlined in it do not confer or connote legal status or responsibilities of any party to a funds transfer through the service under applicable law. Nothing in this guide otherwise modifies or supersedes requirements imposed on FedNow participants under applicable law.

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Back to Top