



Reserve Maintenance Manual

November 2019



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About this Archived Manual

As announced on March 15, 2020, the Board reduced reserve requirement ratios to zero percent effective March 26, 2020. This action eliminated reserve requirements for all depository institutions. This archived manual provides additional detail on how reserve requirements were administered prior to the change in reserve requirement ratios to zero. It was last updated on November 20, 2019, and will no longer be modified.

The Federal Reserve Act (as amended by the Monetary Control Act of 1980) and the International Banking Act of 1978 impose reserve requirements on all depository institutions and banking Edge and agreement corporations that have transaction accounts, nonpersonal time deposits, or Eurocurrency liabilities. U.S. branches and agencies of foreign banks that have such deposits or liabilities are also subject to reserve requirements if they are part of or affiliated with a foreign bank with total, worldwide consolidated assets in excess of \$1 billion.¹ Regulation D, Reserve Requirements of Depository Institutions, issued by the Federal Reserve Board, defines the institutions that are subject to reserve requirements; the liabilities that are reservable; and the associated reporting, reserve calculation, and maintenance requirements.

This archived manual provides information regarding reserve calculations and account maintenance relevant prior to the change in reserve requirement ratios to zero for depository institutions that filed the Federal Reserve (FR) 2900 form (Report of Transaction Accounts, Other Deposits and Vault Cash) with the Federal Reserve, either weekly or quarterly.² The Federal Reserve updated this manual when necessary, but in particular toward the end of each calendar year to reflect the annual indexation of values used in the calculation of reserve requirements on the FR 2900 form.

The archived manual consists of six main sections.

- The [Account Structure section](#) of the manual describes the types of accounts a depository institution may maintain at a Reserve Bank for reserves.
- The [Reporting Requirements section](#) presents the Federal Reserve's policy related to the different reporting requirements for institutions subject to reserve requirements.
- The [Calculation of Reserve Balance Requirements](#) and [Maintenance of Reserve Balance Requirements](#) sections provide information on the steps to calculate reserve requirements, the options for satisfying reserve balance requirements, and the interest an institution may earn for holding balances at the Federal Reserve.

¹ Any other foreign bank's branch located in the United States that is eligible to apply to become an insured bank under section 5 of the Federal Deposit Insurance Act (12 U.S.C. 1815) is required to maintain reserves as a nonmember depository institution. This provision applies to those foreign bank branches that were not affected by the deposit insurance provisions of the Foreign Bank Supervision Enhancement Act (12 U.S.C. 3104). That Act requires a foreign bank that wishes to accept or maintain deposit accounts of less than \$100,000 to do so through an insured U.S. bank subsidiary. Foreign bank branches that were insured as of December 19, 1991, may continue to accept or maintain deposit amounts of less than \$100,000.

² Federal Reserve reporting forms and instructions are available at www.federalreserve.gov/apps/reportforms/default.aspx.

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- The [Mechanics of Reserve Maintenance section](#) illustrates the calculations and concepts presented in previous sections through four examples.
- The [Effect of Mergers on Reserve Balance Requirements section](#) details the effect of mergers on reserve calculations and maintenance.

[Other Resources](#) provides useful websites, including a link to Reserve Bank contacts for questions on deposit reporting and reserve administration; this manual also includes a [Glossary](#).

Recent Revisions

This edition of the Reserve Maintenance Manual contains the following updates.

- **Reporting Requirements.** This [section](#) has been updated to reflect the annual indexation of the exemption amount, the low reserve tranche, the nonexempt deposit cutoff, and the reduced reporting limit. In addition, the detailed description of the four reporting categories has been updated to reflect when new reporting categories will take effect in 2020.
- **Calculation of Reserve Balance Requirements.** This [section](#) has been updated to reflect the annual indexation of the exemption amount and the low reserve tranche in [table 3.1](#).

1 Account Structure

The Federal Reserve has established an account structure that centralizes the account relationship between a depository institution and a Federal Reserve Bank through a single master account. The management of an institution's master account is centralized with one Reserve Bank, and the use of optional subaccounts provides an institution with flexibility to segregate its account information.

Master Accounts

Each separately chartered institution may have one master account at a designated Reserve Bank, with three exceptions (see [Exceptions to One Master Account Rule](#)). The master account is both a record of financial transactions that reflects the financial rights and obligations of an account holder and of the Reserve Bank with respect to each other, and the place where opening and closing balances are determined. For each institution, all credits and debits resulting from the use of Federal Reserve services at any Federal Reserve office are booked to this single master account at one Reserve Bank. All overnight and daylight credit is disbursed and repaid through this account, and the Reserve Bank holding the account manages the credit risk posed by the institution's use of Federal Reserve services.

Reserve administration is also managed through this account, unless an institution has entered into a pass-through agreement with a correspondent. All end-of-day balances maintained in a master account during the reserve maintenance period are used by the institution to satisfy its reserve balance requirement. Funds that an institution deposits in a term deposit with the Federal Reserve cannot be used to satisfy its reserve balance requirement. For information on term deposits, please visit the [Term Deposit Facility Resource Center](#) on the Federal Reserve Bank Services website.

If an institution is not required to maintain balances to satisfy a reserve requirement, it may still establish a master account with a Reserve Bank and earn interest on reserve balances at the interest rate paid on excess balances, provided the institution is eligible to receive interest payments. (See [Interest on Reserve Balances](#).)

Exceptions to One Master Account Rule

The following are the exceptions to the rule that each separately chartered institution may have only one master account:

- **Merger participants.** Multiple accounts are permitted under certain circumstances during a transition period following a merger (see [Effect of Mergers on Reserve Balance Requirements](#)).
- **Foreign-related institutions.** U.S. branches and agencies of the same foreign bank and banking Edge and agreement corporations will have, at most, a single master account for each group of offices located in the same state and same District.

- **Excess balance account.** An excess balance account is a limited-purpose master account under the direction of an agent through which participants may hold excess balances at the agent's Reserve Bank.

Subaccounts

From a depository institution's perspective, the account structure provides a single account management relationship with the Federal Reserve, while supporting access to Federal Reserve financial services from any location. The account structure replicates the features and flexibility of a multiple account structure through the use of subaccounts in which information on financial services can be segregated. Subaccounts are information subsets and can be organized to meet varying informational needs presented by different organizational structures. While they do not show balances, subaccounts provide totals for debit and credit activity.

Where the Master Account is Located

An institution's master account is held at the Reserve Bank in the District where the institution is located. In general, the Federal Reserve considers a depository institution to be "located" where specified in its charter, organizing certificate license, or articles of incorporation, or as specified by its primary regulator, or if no such location is specified, where its head office is located unless otherwise determined by the Federal Reserve Board. If an institution's location is uncertain or would impede the Federal Reserve Board's or the Reserve Bank's performance of their statutory functions or the ability of the depository institution to operate efficiently, the Federal Reserve Board, after consultation with the relevant Reserve Banks, may designate another location for account and membership purposes. If location in a particular District will impede an institution's operational efficiency, the institution may request determination of a different location.

2 Reporting Requirements

The Four Categories of Deposit Reporting

The Federal Reserve Board has established four categories of deposit reporting for administering Regulation D, Reserve Requirements of Depository Institutions, and for constructing, analyzing, and controlling the monetary and reserve aggregates. Every institution is placed into one of these four categories for deposit reporting purposes.¹ In general, the larger the institution, the more detailed and frequent its reporting.

Detailed vs. Reduced Reporting Categories

The first two reporting categories (categories one and two), characterized as “detailed reporting,” apply to institutions that are not exempt from reserve requirements (“nonexempt” institutions). Institutions subject to detailed reporting file the Report of Transaction Accounts, Other Deposits and Vault Cash (FR 2900). These institutions file the report either weekly or quarterly, generally depending on the level of the institution’s deposits.² The report is used to calculate reserve requirements. (See [Calculation of Reserve Balance Requirements](#).)

The last two reporting categories (categories three and four), characterized as “reduced reporting,” apply to institutions that are exempt from reserve requirements (“exempt” institutions). Institutions subject to reduced reporting either file the Annual Report of Deposits and Reservable Liabilities (FR 2910a) or no report at all, depending on their deposit levels.

Report forms and instructions can be found on the Board of Governors’ website. (www.federalreserve.gov/apps/reportforms/default.aspx.)

Reporting Category Definitions

The boundaries of the four deposit reporting categories are defined by three measures: the exemption amount, the nonexempt deposit cutoff, and the reduced reporting limit.

Exemption amount. The amount of an institution’s reservable liabilities that are subject to a 0-percent reserve requirement is used to make the distinction between detailed reporting

¹ Depository institutions that are required to maintain reserves are defined in section 204.1(c) of Regulation D. Classes of institutions subject to deposit reporting include commercial banks, industrial banks and similar institutions, mutual or stock banks, building or savings and loan associations, homestead associations, credit unions, banking Edge and agreement corporations and their branches, and U.S. branches and agencies of foreign banks.

² Deposit levels are measured at the close of business each day. The level of deposits recorded for any day on which the depository institution is not open is the end-of-day level from the preceding business day on which that institution was open.

and reduced reporting.³ In general, institutions with net transaction accounts greater than the exemption amount over prescribed periods are not exempt from reserve requirements and are subject to detailed reporting (categories one and two). Institutions with net transaction accounts equal to or less than the exemption amount over prescribed periods are exempt from reserve requirements and are subject to reduced reporting (categories three and four).

Nonexempt deposit cutoff. Categories one (weekly reporting) and two (quarterly reporting) are further defined by the nonexempt deposit cutoff.⁴

An institution with total transaction accounts, savings deposits, and small time deposits greater than or equal to the nonexempt deposit cutoff is assigned to weekly reporting, while an institution with total transaction accounts, savings deposits, and small time deposits less than the nonexempt deposit cutoff is assigned to quarterly reporting.

Reduced reporting limit. The reduced reporting limit provides an alternative means of defining category one (weekly reporting). Any institution with total transaction accounts, savings deposits, and small time deposits greater than or equal to the reduced reporting limit, regardless of the level of its net transaction accounts, is assigned to weekly reporting.

A depository institution's levels of net transaction accounts, total deposits, and total transaction accounts, savings deposits, and small time deposits as of prescribed periods, measured against the boundaries that separate the reporting categories, determine the deposit reporting category into which the institution is placed. The Federal Reserve reviews membership in the four reporting categories annually and reassigns institutions among categories each September.⁵ The Reserve Banks notify institutions of any change in their reporting status. These shifts reflect movements in depository institutions' net transaction accounts, total deposits, or total transaction accounts, savings deposits, and small time deposits across the prevailing category boundaries. [Annual Determination of Reporting Category](#) (also later in this section) describes the specific periods used to measure an institution's net transaction accounts, total deposits, and total transaction accounts, savings deposits, and small time deposits against the category boundaries to determine the institution's placement in the appropriate reporting category.

³ The Federal Reserve Act (as amended by the Garn-St. Germain Depository Institutions Act of 1982) established the exemption amount. It was set originally at \$2.0 million and is indexed annually by 80 percent of the percentage increase in total reservable liabilities of all depository institutions measured on an annual basis, as of June 30. No adjustment is made for a decrease in total reservable liabilities.

⁴ The Federal Reserve Board determines the nonexempt deposit cutoff. The Federal Reserve Board indexes the cutoff annually to grow at 80 percent of the June-to-June growth rate in total transaction accounts, savings deposits, and small time deposits at all depository institutions. Consistent with rules governing indexing the exemption amount, if total transaction accounts, savings deposits, and small time deposits decline in that period, the Federal Reserve Board will make no downward adjustment to the nonexempt deposit cutoff through the indexing process. On occasion, the Federal Reserve Board has increased the nonexempt deposit cutoff beyond its indexed level.

⁵ Toward the end of each year, the Federal Reserve Board publishes in the Federal Register the revised exemption amount, nonexempt deposit cutoff, and reduced reporting limit figures that will be used for determining the reporting category reassignments to take place in September of the next calendar year.

Detailed Description of the Four Reporting Categories (effective September 2020)

This section describes the four reporting categories. [Table 2.1](#) shows the exemption amount, the nonexempt deposit cutoff, and the level of the reduced reporting limit that will take effect with the September 2020 reporting category assignments.

Category one (weekly): Depository institutions (other than banking Edge and agreement corporations and U.S. branches and agencies of foreign banks) with net transaction accounts greater than the exemption amount and with a sum of total transaction accounts, savings deposits, and small time deposits greater than or equal to the nonexempt deposit cutoff, or with a sum of total transaction accounts, savings deposits, and small time deposits greater than or equal to the reduced reporting limit, regardless of the amount of net transaction accounts, will be required to submit the FR 2900 weekly.

Banking Edge and agreement corporations and U.S. branches and agencies of foreign banks, regardless of size, must also submit the FR 2900 weekly. They are not eligible for reporting categories two through four.

The weekly reporting period for the FR 2900 covers the seven-day period beginning on Tuesday and ending the following Monday.

Table 2.1. Deposit reporting categories, September 2020–September 2021			
Nonexempt Institutions (Detailed Reporting) Net transaction accounts > \$16.9 million ¹ OR Sum of total transaction accounts, savings deposits, and small time deposits ² ≥ \$2.208 billion ³		Exempt Institutions (Reduced Reporting) Net transaction accounts ≤ \$16.9 million ¹ AND Sum of total transaction accounts, savings deposits, and small time deposits < \$2.208 billion ³	
Category 1 (Weekly Reporters ²)	Category 2 (Quarterly Reporters)	Category 3 (Annual Reporters)	Category 4 (Nonreporters ⁴)
<ul style="list-style-type: none"> Sum of total transaction accounts, savings deposits, and small time deposits² ≥ \$1.058 billion⁵ File the 12-item FR 2900 report each week, and 3 annual items on each June 30 	<ul style="list-style-type: none"> Sum of total transaction accounts, savings deposits, and small time deposits < \$1.058 billion⁵ File the 12-item FR 2900 report one week, each quarter, and 3 annual items on Monday of the June report week 	<ul style="list-style-type: none"> Total deposits > \$16.9 million¹ File the 3-item FR 2910a report each June 30 	<ul style="list-style-type: none"> Total deposits ≤ \$16.9 million¹ Do not file an FR 2900 or FR 2910a
<p>¹ Exemption amount.</p> <p>² Banking Edge and agreement corporations and U.S. branches and agencies of foreign banks report weekly, regardless of size.</p> <p>³ Reduced reporting limit.</p> <p>⁴ If data on the level of an institution's deposits are not readily available on a condition report, the institution is required to submit the FR 2910a.</p> <p>⁵ Nonexempt deposit cutoff.</p>			

Category two (quarterly): Depository institutions with net transaction accounts greater than the exemption amount and with a sum of total transaction accounts, savings deposits, and small time deposits less than the nonexempt deposit cutoff are required to submit the FR 2900 once each quarter, in March, June, September, and December.

The quarterly reporting period for the FR 2900 covers the seven-day period beginning on the third Tuesday of the reporting month and ending the following Monday.

Category three (annual): Depository institutions with net transaction accounts less than or equal to the exemption amount and with total deposits greater than the exemption amount but with total transaction accounts, savings deposits, and small time deposits below the reduced reporting limit are required to submit the FR 2910a. This report is filed as of June 30 each year.

Category four (nonreporters): Depository institutions whose net transaction accounts and total deposits are less than or equal to the exemption amount are not required to submit any Federal Reserve deposit report as long as data on the level of an institution's deposits are readily available on a condition report.⁶

Institutions for which deposit data are not readily available on a condition report will be required to submit the FR 2910a report to determine the appropriate reporting category.

Federal Reserve Annual Determination of Reporting Categories

The Federal Reserve Board (with verification by the Reserve Banks) determines the placement of institutions in appropriate reporting categories, and the Reserve Banks inform each institution of its particular reporting requirement. These determinations are made each July and become effective in September, as described below.⁷

Institutions Currently Reporting the FR 2900 Weekly

For institutions that report weekly (described below), the reporting category is determined by an institution's net transaction accounts and total transaction accounts, savings deposits, and small time deposits (weekly averages of daily data) over a 13-week cycle that ends the last full reporting week in June of the current year.

1. An institution with total transaction accounts, savings deposits, and small time deposits greater than or equal to the reduced reporting limit for any one of the 13 weeks, regardless of their level of net transaction accounts, will continue to submit the FR 2900 on a weekly basis.
2. An institution with net transaction accounts greater than the exemption amount for any one of the 13 weeks and with total transaction accounts, savings deposits, and

⁶ A condition report refers to either the commercial bank and thrift Consolidated Reports of Condition (FFIEC 031 and 041; OMB No. 7100-0036) or the credit union Statement of Financial Condition (NCUA 5300/5300SF; OMB No. 3133-0004).

⁷ A Reserve Bank may require a depository institution to report on a more detailed or more frequent basis prior to the annual determination of reporting categories if the institution begins to exhibit faster-than-normal growth in its total transaction accounts, savings deposits, and small time deposits.

small time deposits greater than or equal to the nonexempt deposit cutoff for any one of the 13 weeks will continue to submit the FR 2900 on a weekly basis.

3. An institution with net transaction accounts greater than the exemption amount for any one of the 13 weeks and with total transaction accounts, savings deposits, and small time deposits less than the nonexempt deposit cutoff for each week of the 13 weeks will continue to submit the FR 2900 as follows:
 - a. The institution will continue to report on a weekly basis *through* the reporting week that begins on either the first or the second Tuesday in September of that year, depending on which is the second week of a reserve computation period for weekly reporters.
 - b. The institution will then submit the FR 2900 on a quarterly basis, starting with the quarterly reporting period that begins on the third Tuesday in September.
4. An institution with net transaction accounts less than or equal to the exemption amount and with total transaction accounts, savings deposits, and small time deposits less than the reduced reporting limit for each of the 13 weeks will continue to submit the FR 2900 on a weekly basis *through* the reporting week that begins on either the first or the second Tuesday in September, depending on which is the second week of a reserve computation period for weekly reporters. Thereafter, the institution will no longer be required to submit the FR 2900. Rather, the institution is provisionally shifted to the FR 2910a reporting category. Reexamination of the institution's reporting status will occur the following year based on its total deposits as reported in its condition report or, if the condition report is not readily available, based on a filing of the FR 2910a report.

Institutions Currently Reporting the FR 2900 Quarterly

For institutions that report quarterly, the reporting category is determined by an institution's net transaction accounts and total transaction accounts, savings deposits, and small time deposits (weekly averages of daily data) on the FR 2900 quarterly report for the weeks that begin on the third Tuesdays of March and June of the current year.

1. An institution with total transaction accounts, savings deposits, and small time deposits greater than or equal to the reduced reporting limit for either of the two weeks, regardless of their level of net transaction accounts, will submit the FR 2900 on a weekly basis, rather than on a quarterly basis. Weekly reporting will start with the report week that begins on either the second or the third Tuesday in September of the current year, depending on which is the first week of a reserve computation period for weekly reporters.
2. An institution with net transaction accounts greater than the exemption amount for either of the two weeks, and with total transaction accounts, savings deposits, and small time deposits greater than or equal to the nonexempt deposit cutoff for either of the two weeks will submit the FR 2900 on a weekly basis, rather than on a quarterly basis. Weekly reporting will start with the report week that begins on either the second or the third Tuesday in September of the current year, depending on which is the first week of a reserve computation period for weekly reporters.
3. An institution with net transaction accounts greater than the exemption amount for either of the two weeks and with total transaction accounts, savings deposits, and small

time deposits less than the nonexempt deposit cutoff for both weeks will continue to submit the FR 2900 on a quarterly basis.

4. An institution with net transaction accounts less than or equal to the exemption amount for both of the two weeks and with total transaction accounts, savings deposits, and small time deposits less than the reduced reporting limit for both of the two weeks will no longer be required to submit the FR 2900. Rather, the institution is provisionally shifted to the FR 2910a reporting category. Reexamination of the institution's reporting status will occur the following year based on its total deposits as reported in its condition report or, if the condition report is not readily available, based on a filing of the FR 2910a report.

Institutions Currently Reporting the FR 2910a Annually

For institutions that report using the FR2910a, the reporting category is based on an institution's net transaction accounts and total transaction accounts, savings deposits, and small time deposits (single-day data) on the FR 2910a for June 30 of the current year.

1. An institution with total transaction accounts, savings deposits, and small time deposits greater than or equal to the reduced reporting limit, regardless of their level of net transaction accounts, will submit the FR 2900 on a weekly basis. Weekly reporting will start with the reporting week that begins on either the second or the third Tuesday in September of the current year, depending on which is the first week of a reserve computation period for weekly reporters.
2. An institution with net transaction accounts greater than the exemption amount and with total transaction accounts, savings deposits, and small time deposits greater than or equal to the nonexempt deposit cutoff will submit the FR 2900 on a weekly basis. Weekly reporting will start with the reporting week that begins on either the second or the third Tuesday in September of the current year, depending on which is the first week of a reserve computation period for weekly reporters.
3. An institution with net transaction accounts greater than the exemption amount and with total transaction accounts, savings deposits, and small time deposits less than the nonexempt deposit cutoff will submit the FR 2900 on a quarterly basis, starting with the reporting week that begins on the third Tuesday in September of the current year.
4. An institution with net transaction accounts less than or equal to the exemption amount and with total transaction accounts, savings deposits, and small time deposits less than the reduced reporting limit will be reexamined the following year based on its total deposits as reported in its condition report or, if the condition report is not readily available, based on a filing of the FR 2910a report.

Nonreporters

An institution not reporting previously may be asked to submit a filing of the FR 2910a as of June 30 to determine its appropriate reporting category. Such institutions would include those whose reports of condition filed with a federal supervisory agency or with a state regulator, or similar information, indicate their deposit levels have reached or exceeded the exemption amount; and those institutions for which no data are available and, therefore, whose deposit levels are unknown.

Any institution asked to submit a filing of the FR 2910a is then subject to the reporting category review of that year under procedures described above for regular FR 2910a reporters.

Where, How, and When to Report

Where to report. All depository institutions, whether maintaining reserves directly with the Federal Reserve or in a pass-through arrangement, must submit their deposit reports to the Reserve Bank for the District in which they are located.

A foreign bank's branches and agencies located in the same state and within the same District must submit an aggregated FR 2900 report to the Reserve Bank for the District in which they are located. A foreign bank's branches and agencies located in the same state but in different Districts must submit separate FR 2900 reports (aggregated by District) to their respective Reserve Banks.

How to Report. Institutions may file in one of three ways: by electronic transmission, fax transmission, or by mail. Please consult with your Reserve Bank contact about filing options. A list of Reserve Bank contacts for help with reporting is available on the [Federal Reserve Bank Services website](#).

When to Report. Table 2.2 provides a summary of the reporting periods for the FR 2900 and FR 2910a.

Table 2.2. When to Report, by Category	
Report	Reporting Period
Weekly (FR 2900)	Daily items reported: Tuesday through Monday — Each week Three FR 2900 annual, single-day items reported: June 30 (one day each year)
Quarterly (FR 2900)	Daily items reported: Tuesday through Monday — One week periods beginning with the third Tuesday in March, June, September, and December (four weeks each year) Three FR 2900 annual, single-day items reported: Monday of the June report week (one day each year)
Annually (FR 2910a)	June 30 (one day each year)

Revising FR 2900 Reports

From time to time, as a result of routine edit and validity checks, Reserve Bank staff may contact a depository institution and request a review of FR 2900 data. On such occasions, the Reserve Bank will provide the institution with instructions on how to file revised reports, if necessary. If, on the other hand, an institution discovers an error or errors in data previously submitted, it should notify its Reserve Bank contact promptly about the

nature of the errors and the periods affected. Reserve Bank staff will then inform the institution whether revised data will be necessary.

3 Calculation of Reserve Balance Requirements

Reserve requirements are calculated by applying reserve ratios specified in Regulation D to an institution's reservable liabilities (See [Reserve Ratios](#)) as reported on the Report of Transaction Accounts, Other Deposits and Vault Cash (FR 2900) during the reserve computation period. The length of a reserve computation period depends on the frequency with which an institution reports an FR 2900 report. Regardless of its length, each reserve computation period is then linked to a 14-day reserve maintenance period (see [Reserve Computation and Maintenance Periods](#)) that begins on a Thursday and ends on the second Wednesday thereafter. During each reserve maintenance period an institution must satisfy its reserve requirement in the form of vault cash or, if vault cash is insufficient to satisfy the requirement, in the form of a balance maintained with a Federal Reserve Bank. The portion of the reserve requirement not satisfied by vault cash is called the reserve balance requirement.

The Federal Reserve calculates and provides reserve balance requirements before the start of each maintenance period to depository institutions via the Reserves Central—Reserve Account Administration, which is available on the [Federal Reserve Bank Services website](#). Alternatively, an institution can calculate its reserve balance requirement manually using the worksheets at the end of this chapter. The worksheets replicate the calculations being performed in Reserves Central—Reserve Account Administration.

Reserve Ratios

The dollar amount of a depository institution's reserve requirement is determined by applying the reserve ratios specified in the Federal Reserve Board's Regulation D to an institution's reservable liabilities. Reservable liabilities consist of net transaction accounts, nonpersonal time deposits, and eurocurrency liabilities. Since December 27, 1990, reserve requirements have only been assessed on net transaction accounts, since nonpersonal time deposits and eurocurrency liabilities have had a reserve ratio of zero ([Table 3.1](#)).

Table 3.1 Reserve ratios for calculating reserve requirements

Liability Type	Requirement	
	% of liabilities	Effective date
Net transaction accounts		
\$0 to \$16.9 million ¹	0	1/16/2020
More than \$16.9 to \$127.5 million ²	3	1/16/2020
More than \$127.5 million	10	1/16/2020
Nonpersonal time deposits	0	12/27/1990
Eurocurrency liabilities	0	12/27/1990

¹ The amount of net transaction accounts subject to a reserve requirement ratio of zero percent or the “exemption amount.”
² The amount of net transaction accounts subject to a reserve requirement ratio of 3 percent is the “low reserve tranche.”

Net Transaction Accounts

Total transaction accounts consists of demand deposits, automatic transfer service (ATS) accounts, NOW accounts, share draft accounts, telephone or preauthorized transfer accounts, ineligible bankers acceptances, and obligations issued by affiliates maturing in seven days or less. Net transaction accounts are total transaction accounts less amounts due from other depository institutions and less cash items in the process of collection. The Federal Reserve uses data reported on the FR 2900 to compute an institution’s net transaction accounts for a particular computation period, and then calculates a reserve requirement by applying the reserve ratios noted in Table 3.1.

Reservable Liabilities Exemption Amount

An institution’s reservable liabilities up to a specified amount—the exemption amount—are subject to a reserve requirement of zero percent. The exemption amount is adjusted each year for the next succeeding calendar year. The adjustment in the exemption amount is 80 percent of the percentage increase in total reservable liabilities of all depository institutions, measured on an annual basis as of June 30. (No adjustment is made for a decrease in total reservable liabilities.)

Low Reserve Tranche

An institution’s net transaction accounts, up to a specified amount, are subject to a reserve requirement ratio of 3 percent. This amount is referred to as the low reserve tranche. Net transaction accounts above the low reserve tranche are subject to a higher rate, currently 10 percent. The low reserve tranche is adjusted each year for the next succeeding calendar year by 80 percent of the percentage increase or decrease in net transaction accounts at all depository institutions, measured on an annual basis as of June 30.

Allocation of Low Reserve Tranche and Exemption

Foreign-related institutions. All U.S. branches and agencies of the same foreign bank and banking Edge and agreement corporations receive one low reserve tranche and one exemption amount. The low reserve tranche and the exemption amount must be allocated between the reporting offices (or groups of offices) using the Allocation of Low Reserve Tranche and Reservable Liabilities Exemption (FR 2930).

One depository institution is a subsidiary of another depository institution and each files a separate FR 2900 report. For example, where one savings and loan association owns another and each files a separate FR 2900 report, they will share a single low reserve tranche and exemption even though each is separately chartered. The low reserve tranche and the exemption must be allocated between the two depository institutions using the FR 2930 report.

Reserve Computation and Maintenance Periods

Reserve computation periods are governed by the frequency, either weekly or quarterly, with which an institution files the FR 2900 report. Each reserve computation period is linked to a reserve maintenance period (see graphics on next page). A reserve maintenance period consists of 14 consecutive days beginning on a Thursday and ending on the second Wednesday thereafter. Calendars of computation and maintenance periods for weekly and quarterly reporters are available on the [Federal Reserve Banks Services website](#).

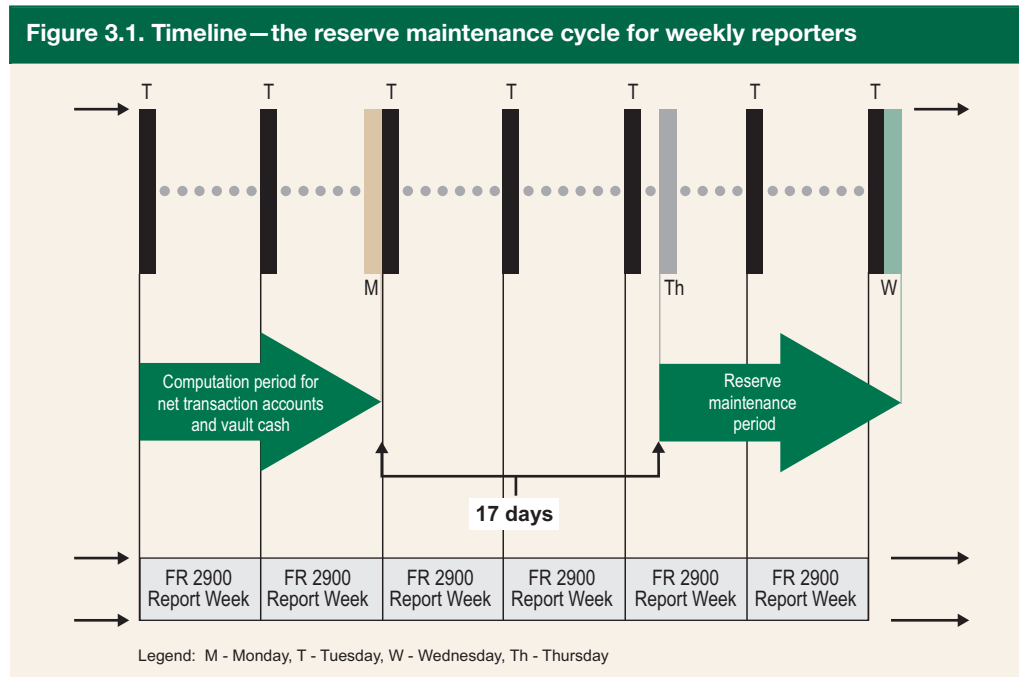
Reserve requirements based on an institution's reservable liabilities during a given reserve computation period must be maintained on a lagged basis (i.e., for a 14-day maintenance period in the future). Any vault cash held by the institution during the same reserve computation period will also be applied on the same lagged basis. If applied vault cash is insufficient to meet the reserve requirement for the future maintenance period, the institution will have a reserve balance requirement.

Weekly Reporters

Weekly reporters are those institutions that submit the FR 2900 report to the Federal Reserve every week. A reporting period is one week long, covering the seven consecutive calendar days beginning on a Tuesday and ending on the following Monday. The computation period for weekly reporters consists of two reporting periods and, therefore, consists of 14 consecutive days beginning on a Tuesday and ending on the second Monday thereafter.

A maintenance period consists of 14 consecutive days beginning on a Thursday and ending on the second Wednesday thereafter. The reserve balance requirement to be satisfied during a maintenance period is based on the average level of net transaction accounts and vault cash held during a given computation period. For weekly reporters, the reserve maintenance period starts 17 days after the end of a reserve computation period.

As illustrated in [Figure 3.1](#), the reserve maintenance cycle for weekly reporters links a 14-day computation period (consisting of two seven-day reporting periods) to a 14-day maintenance period beginning 17 days later.



Quarterly Reporters

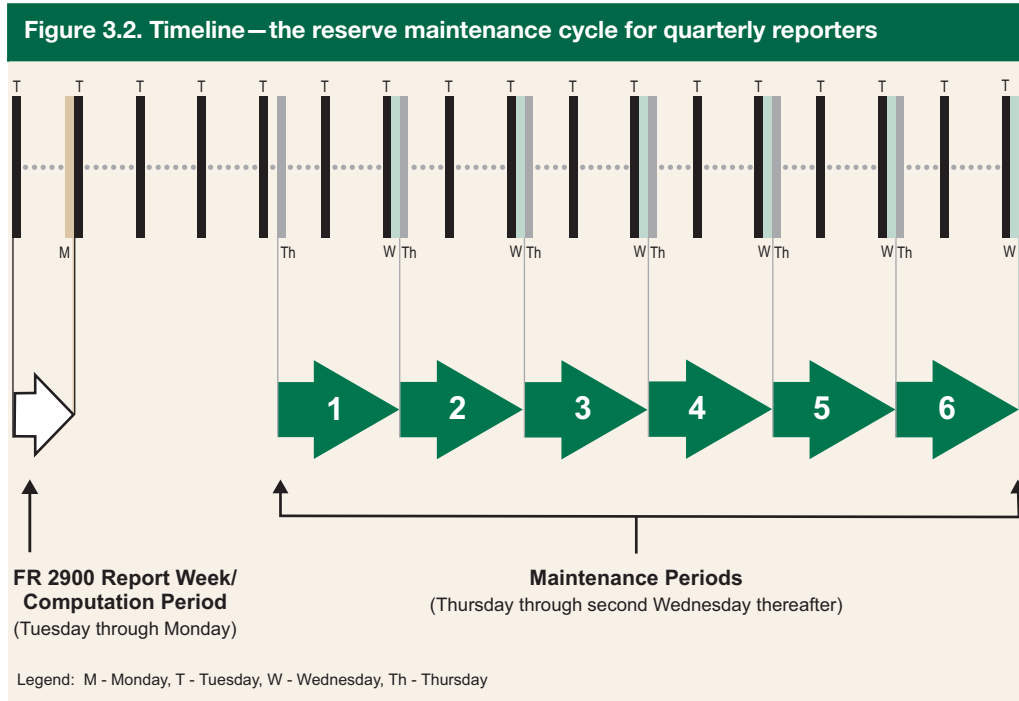
Quarterly reporters are those institutions that submit the FR 2900 report to the Federal Reserve one week each calendar quarter, in March, June, September, and December. The quarterly report covers the seven-day period beginning on the third Tuesday of the report month and ending on the following Monday. This seven-day period (the reporting period) forms the computation period for quarterly reporters.

The reserve maintenance cycle for quarterly reporters links one seven-day computation period (as defined above) to an interval of six or seven consecutive 14-day maintenance periods. The lag between the end of a quarterly reporting period and the first day of the maintenance period associated with this computation period will depend on whether the fourth or the fifth Thursday following the end of a quarterly reporting period coincides with the first day of a 14-day maintenance period.

The interval of maintenance periods associated with a computation period will begin on the fourth Thursday following the end of each quarterly reporting period if that Thursday is the first day of a 14-day maintenance period. If the fourth Thursday following the end of a quarterly reporting period is not the first day of a 14-day maintenance period, then the interval will begin on the fifth Thursday following the end of the quarterly reporting period. The interval will end on the fourth Wednesday following the end of the subsequent quarterly reporting period if that Wednesday is the last day of a 14-day maintenance period. If the fourth Wednesday following the end of the subsequent quarterly reporting

period is not the last day of a 14-day maintenance period, then the interval will conclude on the fifth Wednesday following the end of the subsequent quarterly reporting period.

Figure 3.2 illustrates how one quarterly computation period links up to an interval of six consecutive 14-day maintenance periods.



Reserve Balance Requirement Calculation Worksheets

Reserve balance requirements are calculated and provided to depository institutions through the Reserves Central—Reserve Account Administration before the start of each 14-day maintenance period. Alternatively, an institution can calculate its reserve balance requirement manually using the following worksheets. The worksheets replicate the calculations performed in Reserves Central—Reserve Account Administration. The worksheets are organized as follows:

- Worksheet 1 provides instructions on how to calculate averages of FR 2900 data for a reserve computation period, the first step in calculating a reserve balance requirement. Weekly reporters should complete Worksheet 1A, and quarterly reporters should complete Worksheet 1B.
- Worksheet 2 uses the averages from Worksheet 1 (1A for weekly reporters and 1B for quarterly reporters) to calculate a reserve balance requirement.

The data used in the worksheets should be rounded to the nearest thousand, with the exception of the reserve ratios.

Worksheet 1. Calculating Reserve Computation Period Averages of FR 2900 Data

The length of a reserve computation period depends on the frequency with which an institution files the FR 2900 report of deposits, either weekly or quarterly. For institutions that file the FR 2900 report weekly, use Worksheet 1A. FR 2900 quarterly reporters should use Worksheet 1B.

Calculating 14-Day Averages of FR 2900 Data for Weekly Reporters

Worksheet 1A Instructions:

Step 1. Consult the calendar of computation and maintenance periods for weekly reporters (www.frbservices.org/central-bank/reserves-central/index.html) to identify the two FR 2900 reporting periods that correspond to your reserve computation period.

For each FR 2900 data item listed in the table below do the following:

Step 2. Sum the end-of-day balances for all seven days in the first reporting period (Tuesday through Monday) and enter your calculated seven-day total in Column (1).

Step 3. Sum the end-of-day levels for each of the seven days in the second reporting period (Tuesday through Monday) and enter your calculated seven-day total in Column (2).

Step 4. Add the figures in Columns 1 and 2 and enter the total in Column 3.

Step 5. Divide the Column 3 total (for each data item) by 14 and enter the result in Column (4).

Worksheet 1A. Weekly reporting of 14-day averages from FR 2900				
	1	2	3	4
FR 2900 data items	Weekly total		Computation period total	14-day average
	Week 1	Week 2		
A.3, Total transaction accounts				
AA.1, Ineligible acceptances and obligations issued by affiliates maturing in less than seven days				
B.1, Demand balances due from depository institutions in the U.S.				
B.2, Cash items in process of collection				
E.1, Vault cash				

Calculating Seven-Day Averages of FR 2900 Data for Quarterly Reporters

Worksheet 1B Instructions:

Step 1. Consult with the calendar of computation and maintenance periods for quarterly reporters (www.frbservices.org/central-bank/reserves-central/index.html) to identify the FR 2900 reporting period that corresponds to your reserve computation period.

For each FR 2900 data item listed in the table below do the following:

Step 2. Sum the end-of-day levels for all seven days in the reporting period (Tuesday through Monday) and enter this figure as the weekly total in Column (1);

Step 3. Divide the Column (1) total (for each data item) by seven and enter the result in Column (2).

Worksheet 1B. Quarterly reporting of seven-day averages from FR 2900		
	1	2
FR 2900 data items	Weekly total	Seven-day average
A.3, Total transaction accounts		
AA.1, Ineligible acceptances and obligations issued by affiliates maturing in less than seven days		
B.1, Demand balances due from depository institutions in the U.S.		
B.2, Cash items in process of collection		
E.1, Vault cash		

Worksheet 2. Calculate Reserve Balance Requirements

Computing Net Transaction Accounts

Worksheet 2A Instructions (lines 1 to 7):

Step 1. Copy the averages calculated on Worksheet 1 into lines 1 and 2. (For weekly reporters who completed Worksheet 1A, these figures will be found in Column 4. For quarterly reporters who completed Worksheet 1B, these figures will be found in Column 2.)

Step 2. Compute your institution’s Gross transaction accounts in line 3 by summing lines 1 and 2.

Step 3. Copy the averages calculated on Worksheet 1 into lines 4 and 5.

Step 4. Compute your institution’s total deductions in line 6 by summing lines 4 and 5.

Step 5. Compute your institution’s Net transaction accounts on line 7 by subtracting total deductions (line 6) from Gross transaction accounts (line 3). If the result is a negative value, set Net transaction accounts on line 7 to zero. If your institution’s Net transaction accounts are zero, then your institution has a reserve requirement (Worksheet 2C, line 14) of zero and a reserve balance requirement (Worksheet 2D, line 16) of zero, and your worksheet calculations are complete.

Worksheet 2A. Net transaction accounts	
	Value (in thousands of dollars)
1. Enter seven- or 14-day average amount of A.3, Total transaction accounts calculated in Worksheet 1.	
2. Enter seven- or 14-day average level of AA.1, Ineligible acceptances and obligations issued by affiliates maturing in less than seven days calculated in Worksheet 1.	
3. Calculate Gross transaction accounts as line 1 plus line 2.	
4. Enter seven- or 14-day average level of B.1, Demand balances due from depository institutions in the U.S. as calculated in Worksheet 1.	
5. Enter seven or 14-day average level of B.2, Cash items in process of collection as calculated in Worksheet 1.	
6. Calculate Total deductions as line 4 plus line 5.	
7. Calculate Net transaction accounts as line 3 minus line 6.	

Computing Net Transaction Accounts, Adjusted

Worksheet 2B Instructions (lines 8 to 11):

Step 1. Identify the exemption and Low reserve tranche amounts to use in your calculations. These amounts are available on the [Federal Reserve Board of Governors website](#).

Step 2. Calculate your institution’s Adjusted low reserve tranche (line 10) by subtracting the exemption amount (line 8) from the Low reserve tranche (line 9).

Step 3. Calculate your institution’s Net transaction accounts, adjusted (line 11) by subtracting the exemption amount (line 8) from Net transaction amount accounts (Worksheet 2A, line 7). If the result is a negative value, set Net transaction accounts, adjusted to zero. If your institution’s Net transaction accounts, adjusted is zero, then your institution has a reserve requirement (Worksheet 2C, line 14) of zero and a reserve balance

requirement (Worksheet 2D, line 16) of zero, and your worksheet calculations are complete.

Worksheet 2B. Allocation of exemption and tranche	
	Value (in thousands of dollars)
8. Enter Exemption amount.	
9. Enter Low reserve tranche.	
10. Calculate Adjusted low reserve tranche as Low reserve tranche (line 9) minus Exemption amount (line 8).	
11. Calculate Net transaction accounts, adjusted for Exemption amount as line 7 minus line 8.	

Computing the Reserve Requirement

Worksheet 2C Instructions (lines 12 to 16):

Amount Reserved at 3 percent (line 12):

Step 1. If Net transaction accounts, adjusted (line 11) is less than or equal to Adjusted low reserve tranche (line 10), then Amount Reserved at 3 percent is equal to Net transaction accounts, adjusted (line 11) multiplied by 0.03 or 3 percent. Otherwise, proceed to Step 2.

Step 2. If Net transaction accounts, adjusted (line 11) is greater than Adjusted low reserve tranche (line 10), then Amount Reserved at 3 percent is equal to Adjusted low reserve tranche (line 10) multiplied by 0.03 or 3 percent.

Amount Reserved at 10 percent (line 13):

Step 3. Subtract the Adjusted low reserve tranche (line 10) from Net transaction accounts, adjusted (line 11), and multiply this amount by 0.10 or 10 percent. If the result of this calculation is negative, then set the Amount Reserved at 10 percent to zero.

Reserve requirement (line 14):

Step 4. Your institution’s reserve requirement is equal to the sum of the Amount Reserved at 3 percent (line 12) and the Amount Reserved at 10 percent (line 13).

Worksheet 2C. Reserve requirement	
	Value (in thousands of dollars)
12. Calculate Amount Reserved at 3 percent. If Net transaction accounts, adjusted (line 11) is less than or equal to Adjusted low reserve tranche (line 10), then Amount Reserved at 3 percent is equal to Net transaction accounts, adjusted (line 11) multiplied by 3 percent. If Net transaction accounts, adjusted (line 11) is greater than Adjusted low reserve tranche (line 10), then Amount Reserved at 3 percent is equal to Adjusted low reserve tranche (line 10) multiplied by 3 percent.	
13. Calculate Amount Reserved at 10 percent as Net transaction accounts, adjusted (line 11) less the Adjusted low reserve tranche (line 10) multiplied by 10 percent or 0.10. If the result of this calculation is negative, then set Amount Reserved at 10 percent to zero.	
14. Calculate total Reserve requirement as the sum of the Amount Reserved at 3 percent (line 12) and the Amount Reserved at 10 percent (line 13).	

Computing the Reserve Balance Requirement

Worksheet 2D Instructions (lines 15 and 16):

Step 1. Copy the average value for vault cash calculated on Worksheet 1 into line 15.

Step 2. Calculate your institution’s reserve balance requirement by comparing average vault cash (line 15) to your institution’s reserve requirement from line 14:

- If your institution’s average vault cash is greater than or equal to your reserve requirement (line 15 ≥ line 14), then your institution’s reserve balance requirement equals zero.
- If your institution’s average vault cash is less than the reserve requirement (line 15 < line 14), then calculate your reserve balance requirement by subtracting average vault cash (line 15) from your reserve requirement (line 14). In this scenario, your institution must satisfy the non-zero reserve balance requirement by holding balances in an account at the Federal Reserve.

Worksheet 2D. Reserve balance requirement calculation, reserve balance requirement	
	Value (in thousands of dollars)
15. Enter seven or fourteen-day average level of E.1, Vault Cash as calculated in Worksheet 1.	
16. Calculate Reserve balance requirement as the Reserve requirement (Worksheet 2C, line 14) minus Vault cash (line 15 above). If the result of this calculation is negative, then set Reserve balance requirement to zero.	

4 Maintenance of Reserve Balance Requirements

A depository institution is required to satisfy its reserve requirement in the form of vault cash or if vault cash is insufficient to satisfy the requirement, in the form of a balance maintained either directly with a Reserve Bank or in a pass-through arrangement (See [Maintenance Options](#)). The portion of the reserve requirement that is not satisfied by vault cash is called the reserve balance requirement. An institution is responsible for satisfying its reserve balance requirement by holding balances on average over a 14-day maintenance period in an account at the Federal Reserve (See [Maintenance Responsibility](#)). The Federal Reserve provides institutions with some flexibility in meeting its reserve balance requirement during a reserve maintenance period in the form of a penalty-free band (See [Maintenance Flexibility](#)). Balances maintained within the penalty-free band will be remunerated at the interest rate on balances maintained to satisfy reserve balance requirements (see [Interest on Reserve Balances](#)).

Maintenance Options

A depository institution that is required to maintain reserve balances may choose either to satisfy its reserve balance requirement directly with its Reserve Bank or to pass its reserve balance requirement through a correspondent's account. If an institution elects to satisfy its reserve balance requirement directly with the Federal Reserve, all end-of-day balances maintained in the institution's master account during the reserve maintenance period are used to satisfy its reserve balance requirement. Funds that an institution deposits in a term deposit with the Federal Reserve are removed from an institution's master account and cannot be used to satisfy its reserve balance requirement. For information on term deposits, please visit the [Term Deposit Facility Resource Center](#) on the Federal Reserve Bank Services website.

A correspondent holds pass-through reserve balances in a master account, along with the correspondent's own reserve balance requirement, if any. The master account is maintained at the Reserve Bank in the District where the correspondent is located. Eligible correspondents are Federal Home Loan Banks, the National Credit Union Administration Central Liquidity Facility, depository institutions (including U.S. branches and agencies of foreign banks), and banking Edge and agreement corporations that have a master account at a Reserve Bank. The Federal Reserve Board reserves the right to permit other institutions, on a case-by-case basis, to serve as pass-through correspondents.

A respondent institution that passes its reserve balance requirement through a correspondent may request that its correspondent (or another institution) act as an agent and place any funds in excess of the respondent's reserve balance requirement in an excess balance account (EBA). An EBA is a limited-purpose account at a Federal Reserve Bank established for one or more institutions (participants) that are eligible to earn interest on balances held at the Federal Reserve Banks. The EBA is managed on behalf of the participants by an agent. Balances in an excess balance account cannot be used to satisfy a

participant's reserve balance requirement. Balances in an EBA earn interest at the interest rate on excess balances. For more information on EBAs, please visit the [Excess Balance Account Resource Center](#) on the Federal Reserve Bank Services website.

Maintenance Responsibility

The reserve balance requirement need only be met *on average* over the maintenance period. On any given day of the maintenance period, an institution's end-of-day account balance may exceed or fall short of the reserve balance requirement. An institution can offset a daily surplus or shortfall by maintaining lower or higher balances on subsequent days in the maintenance period. However, the balance in the master account at the end of the day should not fall below zero. *Negative account balances (overdrafts) at the close of business are normally assessed an overnight overdraft charge.* In the event that the account balance at close of business is negative, that negative balance is used in the calculation of the average end-of-day balance for the maintenance period, even if an overdraft charge is waived by the Reserve Bank.

Maintenance Flexibility

A penalty-free band is a range on both sides of the reserve balance requirement within which an institution needs to maintain its average balance over the maintenance period in order to satisfy its reserve balance requirement. The top of the penalty-free band is equal to the reserve balance requirement plus a dollar amount prescribed by the Board. The bottom of the penalty-free band is equal to the reserve balance requirement minus a dollar amount prescribed by the Board, with a lower bound of zero.

For depository institutions that maintain balances directly with the Federal Reserve, the dollar amount used to establish the top and bottom of the penalty-free band will be set as the greater of \$50,000 or 10 percent of a depository institution's reserve balance requirement. For pass-through correspondents, the dollar amount used to establish the top and bottom of the penalty-free band will be set as an amount that is equal to the greater of \$50,000 or 10 percent of the aggregate reserve balance requirement of the correspondent (if any) and all of its respondents.

A depository institution has satisfied its reserve balance requirement when the institution maintains a balance, on average over a maintenance period, that is greater than or equal to the bottom of its penalty-free band. See [Interest on Reserve Balances](#) for more information on the interest rate that applies to balances maintained to satisfy a reserve balance requirement.

A depository institution has an excess balance when the institution maintains a balance, on average over a maintenance period, that is greater than the top of its penalty-free band. See [Interest on Reserve Balances](#) for more information on the interest rate that applies to excess balances.

If an institution maintains an average end-of-day balance over the reserve maintenance period that is less than the bottom of its penalty-free band, then the institution is deficient and will be subject to a reserve deficiency charge. The deficiency amount is calculated as the difference between the bottom of a depository institution's penalty-free band and the institution's average balance maintained over a maintenance period. The charge rate for reserve deficiencies is one percentage point above the rate in effect for borrowing under the

primary credit facility from the depository institution’s Federal Reserve Bank on the first day of the calendar month in which the deficiency occurred. An institution has 30 calendar days from the end of the maintenance period in which it was charged a reserve deficiency to submit a waiver request to the reserve administration contact at its Reserve Bank for consideration. A list of Reserve Bank contacts for reserves administration is available on the Federal Reserve Bank Services website [contacts page](#).

Interest on Reserve Balances

The Federal Reserve Banks are authorized to pay interest on balances maintained to satisfy reserve balance requirements and on excess balances.

The interest rate for balances maintained to satisfy reserve balance requirements (IORR rate) is determined by the Board of Governors and is intended to eliminate the implicit tax that reserve requirements impose on depository institutions. The interest rate for excess balances (IOER rate) is also determined by the Board of Governors and gives the Federal Reserve an additional tool for the conduct of monetary policy. The interest rates for balances maintained to satisfy reserve balance requirements and excess balances are available on the [Federal Reserve Board website](#).

Interest payments are credited to a depository institution’s account at the Federal Reserve the business day after the close of a reserve maintenance period. The formulas used in determining interest payments distinguish between two basic cases—one in which institutions maintain, on average over the maintenance period, balances in excess of the top of the penalty-free band, and a second in which institutions maintain, on average over the maintenance period, balances that are equal to or lower than the top of the penalty-free band. In the first case, interest payments are calculated as follows:

Equation 1. Interest Payment Calculation– Balances in Excess of the Top of the Penalty-Free Band

$$\begin{aligned}
 \text{Interest Payment} &= 14 \times \overbrace{\frac{\text{Avg. IORR rate}}{360} \times \text{BMRBR}}^{\text{IORR}} \\
 &+ \max \left[0, \overbrace{\sum_{t=1}^{14} \frac{(\text{IOER rate}_t)}{360} \times \text{Total Balances}_t}_{\text{IOER}} - \left(14 \times \frac{\text{Avg. IOER rate}}{360} \times \text{BMRBR} \right) \right]
 \end{aligned}$$

- Where:
- 14 = the number of days in a reserve maintenance period
 - 360 = the number of days in the year used to annualize interest
 - Avg. IORR rate = arithmetic average of the daily IORR rates in effect over a maintenance period
 - BMRBR = average balances maintained to satisfy a reserve balance requirement (up to the top of the penalty-free band) over a maintenance period
 - Avg. IOER rate = arithmetic average of the daily IOER rates in effect over a maintenance period
 - Total Balances = daily total balance held

In the second case, interest payments are calculated as follows:

Equation 2. Interest Payment Calculation– Balances Equal to or Lower Than the Top of the Penalty-Free Band

$$Interest\ Payment = 14 \times \frac{\overset{IORR}{Avg.\ IORR\ rate}}{360} \times BMRBR$$

Where:

14 = the number of days in a reserve maintenance period

360 = the number of days in the year used to annualize interest

Avg. IORR rate = arithmetic average of the daily IORR rates in effect over a maintenance period

BMRBR = average balances maintained to satisfy a reserve balance requirement (up to the top of the penalty-free band) over a maintenance period

Eligibility Rules for Interest on Reserve Balances

Federal Reserve Banks are authorized to pay interest on balances held by or on behalf of depository institutions. The term “depository institution” is defined by the Financial Services Regulatory Relief Act of 2006 to include banks, savings associations, savings banks, and credit unions that are federally insured or eligible to apply for federal insurance, trust companies, Edge and agreement corporations, and U.S. branches and agencies of foreign banks. The definition includes bankers’ banks and corporate central credit unions, but does not include all institutions that are eligible to act as pass-through correspondents. For example, the National Credit Union Administration Central Liquidity Facility and the Federal Home Loan Banks are not eligible for interest payments.

A correspondent may or may not be eligible to earn interest on balances held in its master account. If a correspondent is eligible, then interest will be paid on the balances maintained to satisfy reserve balance requirements and excess balances, if any. The correspondent may pass back to its respondents the interest received on respondent pass-through balances maintained to satisfy reserve balance requirements and respondent excess balances with any agreements that the correspondent has with its respondents. If the correspondent is not eligible to receive interest payments, then interest will only be paid on the respondents’ pass-through balances maintained to satisfy reserve balance requirements, and this interest must be passed back to the respondents. Respondents of correspondents that are not eligible to earn interest will need to participate in an excess-balance-account arrangement or open their own master account at a Federal Reserve Bank in order to earn interest on excess balances.

5 Mechanics of Reserve Maintenance

The following four examples, A through D, illustrate the mechanics of reserve maintenance. The mechanics illustrated include the calculations of a reserve balance requirement, the creation of a penalty-free band, the determination of balances maintained to satisfy reserve balance requirements, and the calculation of excess balances.

Table 5.1 provides the data used in the four examples. Examples A, B, and C describe situations when an institution has satisfied its reserve balance requirement. Example D provides what happens when an institution only partially satisfies its reserve balance requirement.

These examples are also applicable to correspondent institutions that pass through balances to satisfy reserve balance requirements of their respondent institutions. For accounts with pass-through balances, the reserve balance requirement would be the sum of the correspondent's own reserve balance requirement plus the total of the reserve balance requirements for all of its respondents.

Table 5.1. Mechanics of Reserve Maintenance, Examples A through D
(thousands of dollars)

	Examples			
	A	B	C	D
1. Reserve requirement	\$1,500	\$1,400	\$1,600	\$1,700
2. Vault cash	\$ 200	\$ 300	\$ 150	\$ 500
3. Reserve balance requirement, RBR (line 1 minus line 2)	\$1,300	\$1,100	\$1,450	\$1,200
4. Top of the penalty-free band (line 3 + maximum of \$50 or 10 percent of line 3)	\$1,430	\$1,210	\$1,595	\$1,320
5. Bottom of the penalty-free band (line 3—maximum of \$50 or 10 percent of line 3)	\$1,170	\$ 990	\$1,305	\$1,080
6. Maintained balance	\$1,250	\$1,150	\$1,800	\$ 900
7. Balance maintained to satisfy RBR (line 6 or line 4 minus line 6)	\$1,250	\$1,150	\$1,595	\$ 900
8. Excess balance (zero or line 6 minus line 4)	\$ -	\$ -	\$ 205	\$ -
9. Reserve deficiency amount (zero or line 5 minus line 6)	\$ -	\$ -	\$ -	\$ 180

Example A. Balances Maintained between the Bottom of the Penalty-Free Band and the Reserve Balance Requirement

The institution's vault cash of \$200,000 (line 2) is insufficient to cover its \$1,500,000 (line 1) reserve requirement. Therefore, the institution has a reserve balance requirement of \$1,300,000. The top of the institution's penalty-free band is \$1,430,000 (line 4), which is calculated as the reserve balance requirement (line 3) plus the greater of \$50,000 or 10 percent of the reserve balance requirement. The bottom of the institution's penalty-free band is \$1,170,000 (line 5), calculated as the reserve balance requirement (line 3) minus the greater of \$50,000 or 10 percent of the reserve balance requirement (line 3). The bottom of the penalty-free band has a lower bound of zero.

To satisfy its reserve balance requirement, the institution has to maintain an average balance during the reserve maintenance period at least equal to the bottom of the penalty free band or \$1,170,000 (line 5). The institution's average maintained balance of \$1,250,000 (line 6) is below its reserve balance requirement, but above the bottom of the penalty-free band (line 5). Thus, the institution has satisfied its reserve balance requirement. The institution will earn interest on the average maintained balance of \$1,250,000 (line 7) at the IORR rate as described in equation 2 in section 4, Maintenance of Reserve Balance Requirements. Assuming the average IORR rate over the maintenance period is 25 basis points, the institution will receive an interest payment of \$121.53.

Example B. Balances Maintained between the Reserve Balance Requirement and the Top of the Penalty-Free Band

The institution's vault cash of \$300,000 (line 2) is insufficient to cover its \$1,400,000 (line 1) reserve requirement. Therefore, the institution has a reserve balance requirement of \$1,100,000. The top of the institution's penalty-free band is \$1,210,000 (line 4), which is calculated as the reserve balance requirement (line 3) plus the greater of \$50,000 or 10 percent of the reserve balance requirement. The bottom of the institution's penalty-free band is \$990,000 (line 5), calculated as the reserve balance requirement (line 3) minus the greater of \$50,000 or 10 percent of the reserve balance requirement. The bottom of the penalty-free band has a lower bound of zero.

To satisfy its reserve balance requirement, the institution has to maintain an average balance during the reserve maintenance period at least equal to the bottom of the penalty free band or \$990,000 (line 5). The institution's average maintained balance of \$1,150,000 (line 6) is above its reserve balance requirement, but below the top of the penalty-free band. Thus, the institution has more than satisfied its reserve balance requirement. The institution will earn interest on the average maintained balance of \$1,150,000 (line 7) at the IORR rate as described in equation 2 in section 4, Maintenance of Reserve Balance Requirements. Assuming the average IORR rate over the maintenance period is 25 basis points, the institution will receive an interest payment of \$111.81.

Example C. Balances Maintained Above the Top of the Penalty-Free Band

The institution's vault cash of \$150,000 (line 2) is insufficient to cover its \$1,600,000 (line 1) reserve requirement. Therefore, the institution has a reserve balance requirement of \$1,450,000. The top of the institution's penalty-free band is \$1,595,000 (line 4), which is calculated as the reserve balance requirement (line 3) plus the greater of \$50,000 or

10 percent of the reserve balance requirement. The bottom of the institution's penalty-free band is \$1,305,000 (line 5), calculated as the reserve balance requirement (line 3) minus the greater of \$50,000 or 10 percent of the reserve balance requirement. The bottom of the penalty-free band has a lower bound of zero.

To satisfy its reserve balance requirement, the institution has to maintain an average balance during the reserve maintenance period at least equal to the bottom of the penalty free band or \$1,305,000 (line 5). The institution's average maintained balance of \$1,800,000 (line 6) is above its reserve balance requirement and the top of its penalty-free band. Thus, the institution has more than satisfied its reserve balance requirement. The institution will earn interest on its balances as described in equation 1 in section 4, Maintenance of Reserve Balance Requirements. Assuming the average IORR rate over the maintenance period is 25 basis points, the IOER rate is 25 basis points each day of the maintenance period, and the institution holds the same level of total balances each day, the institution will receive an interest payment of \$175.00.

Example D. Balances Maintained Below the Bottom of the Penalty-Free Band

The institution's vault cash of \$500,000 (line 2) is insufficient to cover its \$1,700,000 (line 1) reserve requirement. Therefore, the institution has a reserve balance requirement of \$1,200,000. The top of the institution's penalty-free band is \$1,320,000 (line 4), which is calculated as the reserve balance requirement (line 3) plus the greater of \$50,000 or 10 percent of the reserve balance requirement. The bottom of the institution's penalty-free band is \$1,080,000 (line 5), calculated as the reserve balance requirement (line 3) minus the greater of \$50,000 or 10 percent of the reserve balance requirement. The bottom of the penalty-free band has a lower bound of zero.

To satisfy its reserve balance requirement, the institution has to maintain an average balance during the reserve maintenance period at least equal to the penalty free band or \$1,080,000 (line 5). The institution's average maintained balance of \$900,000 (line 6) is below its reserve balance requirement and the bottom of its penalty-free band. Thus, the institution has a reserve deficiency of \$180,000 (line 9), which is equal to the difference between the bottom of the institution's penalty-free band, \$1,080,000 (line 5), and the average balance maintained of \$900,000. This deficiency amount will be subject to a reserve deficiency charge at a rate of one percentage point above the rate in effect for borrowing under the primary credit facility from the institution's Reserve Bank on the first day of the calendar month in which the deficiency occurred. The institution also will earn interest on the \$900,000 (line 7) of balances maintained at the IORR rate as described in equation 2 in section 4, Maintenance of Reserve Balance Requirements. Assuming the average IORR rate over the maintenance period is 25 basis points, the institution will receive an interest payment of \$87.50.

6 Effect of Mergers on Reserve Balance Requirements

A “merger” is the combination of two or more separate institutions into a single institution. Such combinations may take the form of statutory mergers, consolidations, acquisitions, or the purchase of assets and assumption of liabilities.¹ The single institution that is formed is called the “merged institution” or the “survivor.” Beginning with the maintenance period in which the merger took place, the survivor of a merger must maintain its reserve balance requirement and the nonsurvivor’s reserve balance requirement in a single master account at the Federal Reserve.

The Federal Reserve encourages institutions to make the transition to the single master account structure as expeditiously as possible following a merger to facilitate, coordinate, and streamline the management of that account. In most cases, the nonsurvivor’s master account is closed or converted to a subaccount at the time of the merger. However, in the event that an institution is not operationally prepared to close a nonsurvivor’s master account or to convert the nonsurvivor’s master account to a subaccount at the time of the merger, the Federal Reserve offers a transitional, multiple accounts arrangement to support organizational and operational restructuring after a merger. The arrangement, which may last no longer than one year following the merger effective date, entails the following.

- The surviving entity files one consolidated FR 2900. The combined institution receives one exemption amount and one low reserve tranche.²
- The reserve balance requirement for the merged institution is calculated from the deposit data provided on the consolidated FR 2900.
- For the maintenance period in which the merger took place, the balances in the survivor’s master account and the balances in the nonsurvivor’s former master account are combined to satisfy the merged institution’s reserve balance requirement. After this period, only the surviving entity’s master account balances can satisfy the merged institution’s reserve balance requirement. The balances in the transitional account cannot be used to satisfy the merged institution’s reserve balance requirement.
- Only the surviving entity’s master account may hold respondent pass-through balances maintained to satisfy reserve balance requirements.

¹ In general, a purchase of assets and assumption of liabilities in which both the seller and the buyer continue to exist is not a merger and does not qualify for merger treatment.

² The consolidated FR 2900 will be filed weekly if either the survivor or the nonsurvivor filed the FR 2900 weekly prior to the merger. If both the survivor and the nonsurvivor filed the FR 2900 quarterly prior to the merger, the consolidated FR 2900 report will be filed quarterly after the merger. The Federal Reserve will review the merged institution’s reporting status as part of the annual reporting category reassignment process (effective each September).

7 Other Resources

Account Management Guide

A reference guide for financial institutions that manage reserve accounts is available here:

www.frbservices.org/assets/resources/rules-regulations/account-management-guide.pdf

Excess Balance Account Resource Center

Information on excess balance accounts—including regulatory authority and eligibility—is available here:

www.frbservices.org/central-bank/reserves-central/excess-balance-account.html

FR 2900 & FR 2930 Report Forms and Instructions

Copies of FR 2900 and FR 2930 report forms and instructions are available here:

www.federalreserve.gov/reportforms

Reserves Account Administration Resource Center

Information on reserve balance requirements—including how to access information on reserve balance requirements through the Reserves Central-Reserve Account Administration application—is available here:

www.frbservices.org/central-bank/reserves-central/service-setup/reserve-account-admin.html

Reserve Bank Contacts for Reporting

Reserve Bank contacts for reporting forms and instructions are available here.

www.frbservices.org/contactus/reporting-central.html

Reserve Bank Contacts for Reserves

Reserve Bank contacts for reserves administration are available here:

www.frbservices.org/contactus/reserves.html

Reserve Computation and Maintenance Period Calendars

Reserve maintenance calendars for weekly and quarterly FR 2900 reporters are available here:

www.frbservices.org/central-bank/reserves-central/index.html

Term Deposit Facility Resource Center

Information on the Term Deposit Facility is available here:

www.frbservices.org/central-bank/reserves-central/term-deposit-facility/

Balance maintained to satisfy reserve balance requirements

That portion of the average end-of-day balance for a maintenance period that satisfies an institution's reserve balance requirement. The maximum value for an institution's balance maintained to satisfy reserve balance requirements is the top of the institution's penalty-free band.

Bottom of penalty-free band

The bottom of the penalty-free band is equal to the reserve balance requirement minus a dollar amount prescribed by the Board, not to fall below zero.

For a depository institution that maintains balances directly with the Federal Reserve, the dollar amount used to create the bottom of the penalty-free band is equal to the greater of \$50,000 or 10 percent of the depository institution's reserve balance requirement.

For a pass-through correspondent, the dollar amount used to establish the bottom of the penalty-free band will be set as an amount that is equal to the greater of \$50,000 or 10 percent of the aggregate reserve balance requirement of the correspondent (if any) and all of its respondents.

Computation period

The time span over which an institution's reserve requirement and vault cash is calculated. For weekly reporters, the computation period is a two-week period that begins on a Tuesday and ends on the second Monday thereafter, and consists of two reporting periods. For quarterly reporters, each computation period consists of a single reporting period that begins on the third Tuesday of March, June, September, and December and ends the following Monday.

Correspondent

For reserve maintenance purposes, an institution acting as a correspondent passes through balances maintained to satisfy reserve balance requirements for respondent institutions directly to the Federal Reserve. A correspondent holds pass-through balances in a single master account along with the correspondent's own reserve balance requirement, if any (see also [respondent](#)).

Excess balance

That portion of the average end-of-day balance for a maintenance period that exceeds the top of the penalty-free band.

Excess balance account

An account at a Reserve Bank that is established by one or more eligible institutions through an agent and in which only excess balances of the participating eligible institutions may at any time be maintained.

Exemption amount

The amount of reservable liabilities exempt from reserve requirements. The Federal Reserve indexes the exemption amount annually and uses it with the nonexempt deposit cutoff and the reduced reporting limit to determine each institution's reporting category. Institutions with total deposits less than or equal to the exemption amount are not required to submit an FR 2900 or FR 2910a report. Institutions that are required to submit an FR 2900 are subject to a zero percent reserve requirement on net transaction accounts up to the amount of the exemption (see also [nonexempt deposit cutoff](#) and [reduced reporting limit](#)).

Interest rate on excess balances (IOER rate)

The interest rate determined by the Board of Governors that is used to calculate interest payments associated with an excess balance.

Interest rate on balances maintained to satisfy reserve balance requirements (IORR rate)

The interest rate determined by the Board of Governors that is used to calculate interest payments associated with a balance maintained to satisfy reserve balance requirements.

Low reserve tranche

The amount of net transaction accounts subject to a reserve requirement of 3 percent. The amount of net transaction accounts in excess of the low reserve tranche is currently subject to a reserve requirement of 10 percent. The Federal Reserve indexes the low reserve tranche annually.

Maintained balance

The average end-of-day balance held in a depository institution's master account over a maintenance period.

Maintenance period

A maintenance period consists of fourteen consecutive days beginning on a Thursday and ending on the second Wednesday thereafter.

Master account

A record of financial transactions that reflects the financial rights and obligations of an account holder and of the Reserve Bank with respect to each other, and where opening and closing balances are determined. Reserve administration is managed through the master account, unless an institution has entered into a pass-through arrangement with a correspondent.

Net transaction accounts

Net transaction accounts are comprised of total transaction accounts (demand deposits, ATS accounts, NOW accounts/share drafts, and telephone and preauthorized transfers), plus ineligible acceptances and obligations issued by affiliates maturing in less than seven days, net of demand balances due from depository institutions in the U.S. and cash items in the process of collection. In terms of the FR 2900 report, net transaction accounts are calculated as the sum of line items A.3 and AA.1 less the sum of line items B.1 and B.2. The FR 2900 reporting instructions define all of these deposit types.

Nonexempt deposit cutoff

A measure of total transaction accounts, savings deposits, and small time deposits indexed annually by the Federal Reserve and used with the exemption amount and the reduced

reporting limit to determine each institution's reporting category (see also [exemption amount](#) and [reduced reporting limit](#)).

Penalty-free band

A penalty-free band is a range on both sides of the reserve balance requirement within which an institution needs to maintain its average balance over the maintenance period in order to satisfy its reserve balance requirement. The top of the penalty-free band is equal to the reserve balance requirement plus a dollar amount prescribed by the Board. The bottom of the penalty-free band is equal to the reserve balance requirement minus a dollar amount prescribed by the Board.

Primary credit rate

The interest rate charged on borrowing from a Reserve Bank under the primary credit facility. Primary credit is available for very short terms as a backup source of liquidity to depository institutions that are in generally sound financial condition in the judgment of the lending Reserve Bank.

Reduced reporting limit

A measure of total transaction accounts, savings deposits, and small time deposits indexed annually by the Federal Reserve and used with the exemption amount and the nonexempt deposit cutoff to determine each institution's reporting category. Any institution with total transaction accounts, savings deposits, and small time deposits greater than or equal to the reduced reporting limit, regardless of the level of their net transaction accounts, must report the FR 2900 weekly. This measure was implemented in September 2003 (see also [exemption amount](#) and [nonexempt deposit cutoff](#)).

Reporting period

For the FR 2900, the reporting period consists of seven consecutive calendar days beginning on Tuesday and ending on the following Monday, during which an institution must record, for each day, its deposit and vault cash levels. For the FR 2910a, the reporting period consists of one day (June 30) during which an institution must record its levels of total transaction accounts, savings deposits, and small time deposits and reservable liabilities.

Reservable liabilities

Those liabilities subject to reserve requirements. Reservable liabilities consist of net transaction accounts, nonpersonal time deposits, and net Eurocurrency liabilities. Currently, reserve requirement ratios on nonpersonal time deposits and net Eurocurrency liabilities are zero.

Reserve balance deficiency

The shortfall between the average end-of-day balance maintained in an institution's master account during the reserve maintenance period and the bottom of the penalty-free band around the reserve balance requirement (see [penalty-free band](#) and [bottom of the penalty-free band](#)).

Reserve balance requirement

The portion of an institution's reserve requirement that is not satisfied by its vault cash and therefore must be maintained either directly with a Reserve Bank or in a pass-through arrangement.

Reserve maintenance cycle

A reserve maintenance cycle includes the computation period for reserves and the associated maintenance period or periods in which the reserves are maintained. When used in reference to weekly reporters, the reserve maintenance cycle consists of a fourteen-day computation period and its associated fourteen-day maintenance period, which begins seventeen days after the end of the computation period.

When used in reference to quarterly reporters, the reserve maintenance cycle consists of a seven-day computation period (in March, June, September, or December) and an interval of six or seven consecutive fourteen-day maintenance periods. The interval will begin on the fourth Thursday following the end of each quarterly reporting period if that Thursday is the first day of a two-week maintenance period. If the fourth Thursday following the end of a quarterly reporting period is not the first day of a two-week maintenance period, then the interval will begin on the fifth Thursday following the end of the quarterly reporting period.

Reserve requirement

The amount determined by applying the reserve ratios specified in Regulation D to an institution's reservable liabilities during the relevant computation period. The institution must satisfy its reserve requirement in the form of vault cash and/or balances maintained either directly with a Reserve Bank or in a pass-through arrangement.

Respondent

For reserve maintenance purposes, a respondent institution passes the balances maintained to satisfy a reserve balance requirement to a correspondent who then passes those balances to the Federal Reserve. A respondent's pass-through reserve balances are maintained in its correspondent's master account along with the correspondent's own reserve, if any (see also [correspondent](#)).

Subaccounts

Subsets of an institution's master account in which information on financial services can be segregated. Subaccounts have no opening or closing balances, but do contain totals of debits and credits that are settled in the institution's master account.

Top of penalty-free band

The top of the penalty-free band is equal to the reserve balance requirement plus a dollar amount prescribed by the Board.

For a depository institution that maintains balances directly with the Federal Reserve, the dollar amount used to create the bottom of the penalty-free band is equal to the greater of \$50,000 or 10 percent of the depository institution's reserve balance requirement.

For a pass-through correspondent, the dollar amount used to establish the bottom of the penalty-free band will be set as an amount that is equal to the greater of \$50,000 or 10 percent of the aggregate reserve balance requirement of the correspondent (if any) and all of its respondents.

Total deposits

Computed as the sum of total transaction accounts (FR 2900 report item A.3), total time and savings deposits (C.1 plus D.1), ineligible acceptances and obligations issued by affiliates (AA.1 plus BB.2), and net Eurocurrency liabilities (CC.1).

Vault cash

U.S. currency and coin owned by a depository institution. The average end-of-day holdings of vault cash over the computation period can be used to satisfy some or all of an institution's reserve requirement in the corresponding maintenance period.

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