

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934

(AMENDMENT NO. _____) *

MTS Systems Corporation

(Name of Issuer)

Common

(Title of Class of Securities)

553777-10-3

(CUSIP Number)

Check the following box if a fee is being paid with this statement /X/. (A fee is not required only if the filing person: (1) has a previous statement on file reporting beneficial ownership of more than five percent of the class of securities described in Item 1; and (2) has filed no amendment subsequent thereto reporting beneficial ownership of five percent or less of such class.) (See Rule 13d-7).

The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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CUSIP No. 55377-10-3

13G

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1 NAME OF REPORTING PERSON S.S. OR I.R.S.
IDENTIFICATION NO. OF ABOVE PERSON
First Bank System Inc.
601 2nd Ave. South
Minneapolis, MN 55402-4302
Tax I.D. No.: 41-0255900

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

(a) / /
(b) / /

3 SEC Use Only

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware, U.S.A.

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5 SOLE VOTING POWER	335,722
	6 SHARED VOTING POWER	28,047
	7 SOLE DISPOSITIVE POWER	302,387
	8 SHARED DISPOSITIVE POWER	34,299

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

367,541

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

8.21%

12 TYPE OF REPORTING PERSON*

H.C.

SEE INSTRUCTION BEFORE FILLING OUT!

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ITEM 1

a. NAME OF ISSUER:

MTS Systems Corporation

b. ADDRESS OF ISSUER'S PRINCIPLE EXECUTIVE OFFICES:

MTS Systems Corporation
14000 Technology Drive
Eden Prarie, MN 55344

ITEM 2

a. NAME OF PERSON FILING:

First Bank System, Inc.

b. ADDRESS OF PERSON'S FILING PRINCIPAL EXECUTIVE OFFICES:

601 2nd Ave South
Minneapolis, MN 55402-4302
United States

C. TITLE OF CLASS OF SECURITIES:

COMMON

D. CUSIP NUMBER:

553777-10-3

ITEM 3

The person filing this statement is a:

(g) Parent Holding Company

ITEM 4

OWNERSHIP:

a. Amount beneficially owned:	367,541
b. Percentage of Class:	8.21%
c. Number of shares as to which such person has:	
1. Sole power to vote or direct the vote:	335,722
2. Shared power to vote or direct vote	28,047
3. Sole power to dispose or direct the disposition	302,387
4. Shared power to dispose or direct the disposition	34,299

ITEM 5

OWNERSHIP OF FIVE PERCENT OR LESS OF CLASS: ()

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ITEM 6

OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON:

Other persons have the right to receive or the power to direct the receipt of, dividend from, or the proceeds from the sale of, such securities. To our knowledge no interest of any such person relates to more than 5% of the class.

ITEM 7

IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY PARENT HOLDING COMPANY

See Exhibit A

ITEM 8

IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP:

Not Applicable

ITEM 9

NOTICE OF DISSOLUTION OF GROUP:

Not Applicable

ITEM 10

CERTIFICATION

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired in the ordinary course of business and were not acquired for the purpose of and do not have the effect of changing

or influencing the control of the issuer of such securities and were not acquired in connection with or as a participant in any transaction having such purposes or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this Statement is true, complete and correct.

Dated: February 10, 1994

/s/ Bruce L. Wilson

Bruce L. Wilson
Vice President

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SECURITIES AND EXCHANGE COMMISSION
Washington D. C. 20549

SCHEDULE 13G
Under the Securities Exchange Act of 1934

EXHIBIT A

The Schedule to which this attachment is appended is filed on behalf of the following subsidiary or subsidiaries listed below, which are classified as banks for the purposes of 17 CFR 140.13d-1 (b) (ii) (B).

First Bank National Association
601 2nd Ave South
Minneapolis, Minnesota 55402-4302

First Trust National Association
180 East Fifth Street, Suite 200
St. Paul, Minnesota 55101

Colorado National Bank
P. O. Box 5548
Denver, Colorado 80217

First Bank South Dakota
(National Association)
141 North Main Avenue
Souix Falls, South Dakota 57117

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SCHEDULE 13G

EXHIBIT B - DISCLAIMER

Information on the attached Schedule 13G is provided solely for the purpose of complying with Section 13(d) and 13(g) of the Securities Exchange Act of 1934 and Regulations promulgated under authority thereof and is not intended as an admission that First Bank System, Inc. or any of its subsidiaries, is a beneficial owner of the securities described herein for any other purpose (including without limitation for purposes of the Minnesota Control Share Acquisition Act).