



**Citrix MetaFrame Password Manager 2.0:  
Administration**

**972 Exam**

**Enablement Guide**

**Citrix Education**

Version 1.4

4 March 2004

## NOTICE

Citrix Systems, Inc. (Citrix) makes no representations or warranties with respect to the contents or use of this publication. Citrix specifically disclaims any express or implied warranties, merchantability, or fitness for any particular purpose. Citrix reserves the right to make any changes in specifications and other information contained in this publication without prior notice and without obligation to notify any person or entity of such revisions or changes.

© Copyright 2004 Citrix Systems, Inc. All Rights Reserved.

The following marks are service marks, trademarks, or registered trademarks of their respective owners. Other product and company names mentioned herein can be the service marks, trademarks or registered trademarks of their respective owners.

Mark	Owner
MetaFrame®, MetaFrame XP™, MultiWin™, WinFrame™, Citrix Digital Independence®, SpeedScreen™, Program Neighborhood™, SecureICA™, Now Everything Computes™, NFuse™	Citrix Systems, Inc.
Microsoft®, Windows®, Windows NT™, Win16™, Win32™ ActiveX™, Windows CE®, Microsoft Access™	Microsoft Corporation

### Disclaimer—

**This Exam Enablement Guide is designed to allow you to assess the types of questions that may be asked during the subject Citrix certification exam. Please be aware that the contents of this guide in no way ensure a passing score on such certification exam.**

Authors: Sierra Hampton, Exam Development Lead  
Kathryn Morris, Ph.D., Exam Developer

Citrix Systems, Inc.

851 West Cypress Creek Road, Fort Lauderdale, FL 33309. Tel. (954) 267-3000.

Item Development Team
Sierra Hampton, Exam Development Lead Ed Rodriguez, Manager of Corporate Consulting Paul Romanenko, Technical Lead Roger Jankowski, Senior Test Engineer Christopher S. Rosin, Lead Software Test Engineer Leonardo Asencio, Software Test Engineer Bill Andrulonis, Lead Software Test Engineer Amy Gunderson, Courseware Developer

## Table of Contents

<b>1</b>	<b>Purpose</b> .....	<b>1</b>
<b>2</b>	<b>The Exam</b> .....	<b>1</b>
<b>3</b>	<b>Preparatory Recommendations for the Exam</b> .....	<b>2</b>
3.1	Recommended Knowledge .....	2
3.2	Recommended Experience .....	2
<b>4</b>	<b>Exam Sections and Weights</b> .....	<b>3</b>
4.1	Sections of the Exam .....	3
4.2	Weights of the Exam Sections .....	3
<b>5</b>	<b>Exam Objectives and Resources for the Exam</b> .....	<b>4</b>
5.1	Exam Objectives and Resources .....	4
	<b>Appendix—Practice Items</b> .....	<b>10</b>

# **1 Purpose**

This document provides a list of exam objectives for Exam 972 and a list of resources that will help prepare exam-takers for items associated with these objectives. In developing this exam, subject matter experts determined which tasks are essential to installing, administering, and supporting MetaFrame Password Manager implementations in an enterprise. These tasks are listed and are the base upon which Exam 972 was created. Lists of resources available to help exam-takers prepare for the exam are also presented in Section 5: Exam Objectives and Resources for the Exam.

This document outlines, on a high level, topics that are covered in the exam and instruction on how to obtain information on these topics. Exam-takers should read this document carefully before beginning preparation for the exam.

# **2 The Exam**

This Enablement Guide pertains to the Citrix MetaFrame Password Manager 2.0: Administration Exam (972). The exam is a sixty (60) question exam written in English. Native English speakers have ninety (90) minutes to complete the exam. Non-native English speakers who take the exam in English have one hundred twenty (120) minutes to complete the exam. The passing score for this exam is 68%. This is a rigorous examination on the subject of the role of an administrator as defined by Citrix Systems' Subject Matter Experts.

This exam is based on MetaFrame Password Manager 2.0 and MetaFrame XP Presentation Server, Feature Release 3.

The exam is administrated through Prometric. For details on the rules and procedures associated with registering for the exam, please go to <http://citrix.com/edu>.

## **3 Preparatory Recommendations for the Exam**

Prior to taking this exam, it is recommended that you have the knowledge and skills necessary to install, administer, and support MetaFrame Password Manager 2.0 in an enterprise.

### **3.1 Recommended Knowledge**

Knowledge of the following is recommended:

- Microsoft Windows 2000 Server or Advanced Server administration
- Lightweight Directory Access Protocol (LDAP)
- Microsoft Active Directory
- MetaFrame XP Presentation Server, Feature Release 3
- Independent Management Architecture (IMA) communication flow and process
- ICA client deployment

### **3.2 Recommended Experience**

It is recommended that candidates have the following experience:

- Minimum of one year of experience as a Network Administrator, a Citrix Administrator, or a Security Administrator in an environment containing MetaFrame XP Presentation Servers
- Minimum of one year of experience using Citrix products in an enterprise
- Minimum of three months of experience installing, administering, and/or supporting MetaFrame Password Manager implementations in an enterprise
- Minimum of one year of experience installing, configuring and administering applications on client/server systems
- Minimum of one year of experience administering passwords, managing network security and related policies
- Minimum of one year of experience creating users, home directories, profiles and security policies in a network environment
- Minimum of one year of experience creating policies and profiles using Microsoft Active Directory service
- Read/attended the Citrix MetaFrame Password Manager: Administration technical course (CTX-1321AI Instructor-led) and the Citrix MetaFrame Password Manager: Introduction technical course (CTX-1320AW eLearning).

## **4 Exam Sections and Weights**

### **4.1 Sections of the Exam**

The Citrix MetaFrame Password Manager 2.0: Administration Exam (972) is divided into nine (9) sections. Each section pertains to an item on the list of most important tasks as identified in a Job Task Analysis. The Job Task Analysis defines the role of an administrator and identifies all the related knowledge, skills and abilities of that role. The nine sections are:

- MetaFrame Password Manager Introduction
- MetaFrame Password Manager Architecture
- MetaFrame Password Manager Agent Installation
- MetaFrame Password Manager Console Installation
- Integrating with MetaFrame XP Presentation Server
- Password Management
- Agent Management
- Enterprise Credential Storage
- Licensing

### **4.2 Weights of the Exam Sections**

Subject matter experts determined the importance and frequency of the identified tasks in the daily work environment of an administrator. After the subject matter experts evaluated each section, each section was weighted based on the importance and frequency of the tasks. This weighting helped determine the number of questions that each section would contain. The following is the weight of each exam section. The total of all sections is 100%.

- |   |        |
|---|--------|
| • MetaFrame Password Manager Introduction           | 3%     |
| • MetaFrame Password Manager Architecture           | 13.75% |
| • MetaFrame Password Manager Agent Installation     | 7.5%   |
| • MetaFrame Password Manager Console Installation   | 7.5%   |
| • Integrating with MetaFrame XP Presentation Server | 16.25% |
| • Password Management                               | 10%    |
| • Agent Management                                  | 13.25% |
| • Enterprise Credential Storage                     | 18.75% |
| • Licensing   | 10%    |

## 5 Exam Objectives and Resources for the Exam

The questions for the exam were produced directly from the exam objectives. The exam objectives were used to test the exam-taker's knowledge, skills and abilities related to each section of the exam. The exam is administered in a computer-based testing environment.

Some of the exam objectives will correspond, or map, to field experience. Exam-takers are expected to have at least six months of experience to increase the chances of passing this exam.

It is **HIGHLY RECOMMENDED** that exam-takers attend the Citrix course associated with the task/content objectives. Citrix courses are available at Citrix Authorized Learning Centers (CALCs). To locate the CALC nearest you, visit <http://apps.citrix.com/calclisting/calc.asp>.

For optimal performance on this exam, Citrix recommends that potential exam-takers attend the Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led) and the Citrix MetaFrame Password Manager: Introduction course (CTX-1320AW eLearning) and obtain field experience.

### 5.1 Exam Objectives and Resources

For each exam objective, the charts below list the corresponding Citrix course(s) and other recommended experience.

#### I. MetaFrame Password Manager Introduction

1. Explain how the product functions
  - Given a scenario, determine how MetaFrame Password Manager provides password protection.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led) and Citrix MetaFrame Password Manager: Introduction course (CTX-1320AW eLearning)	At least one year of experience as a network or security administrator in a MetaFrame XP Presentation Server environment

#### II. MetaFrame Password Manager Architecture

1. Identify components and subcomponents of MetaFrame Password Manager
  - Explain how MetaFrame Password Manager communicates with Microsoft Windows.
  - Recognize stages of the encryption and decryption processes.
  - Identify aspects of and requirements for various kinds of authentication processes, including biometric and token authentication.

2. Describe the communication flow between components
  - Explain the process by which host-based applications are identified.
  - Identify best practices for administering MetaFrame Password Manager.
  - List the functions of the Intelligent Agent Response.
  
3. Identify the role of components in communication
  - Describe how the authentication process works.
  - Explain the ways in which configuration files are affected in MetaFrame Password Manager implementations.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led) and Citrix MetaFrame Password Manager: Introduction course (CTX-1320AW eLearning)	At least one year of experience as a network or security administrator in a MetaFrame XP Presentation Server environment

### III. MetaFrame Password Manager Agent Installation

1. Use Logon Manager for applications
  - Install Logon Manager.
  - Identify properties of the default agent installation.
  
2. Configure user settings
  - Identify properties of the Auto-Prompt feature.
  - Identify the prerequisites for using mandatory profiles.
  
3. Change the Logon feature
  - Use the timer setting in Logon Manager.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led)	At least three months of experience installing, administering, and/or supporting MetaFrame Password Manager implementations in an enterprise

## IV. MetaFrame Password Manager Console Installation

1. Identify Password Management Console system requirements
  - Identify best practices for installing the Password Manager Console.
2. Configure support for Host, Web and Windows definitions
  - Determine requirements for creation of host-based application definitions.
  - Identify best practices for defining new applications and web applications in the Console.
  - Identify browser requirements for MetaFrame Password Management Console 2.0.
  - Given scenarios, decide how to specify criteria for configuring web applications and .NET access.
3. Configure applications from a template
  - Given a scenario, decide how to configure a web application template.
4. Configure the bulk-add list
  - Describe the process by which the bulk-add list adds new applications.
5. Configure application options
  - Identify options in the MetaFrame Password Manager Console application list.
  - Given a scenario, decide how to configure dynamic password usage.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led)	At least three months of experience installing, administering, and/or supporting MetaFrame Password Manager implementations in an enterprise

## V. Integrating with MetaFrame XP Presentation Server

1. Identify deployment options
  - Given a scenario, determine the best strategy for implementing MetaFrame Password Manager in an enterprise that contains MetaFrame XP Presentation Servers.
  - Given a scenario that includes required results, choose a MetaFrame Password Manager design that will meet the requirements.
2. Identify deployment environments
  - Given a scenario, troubleshoot a deployment of MetaFrame Password Manager in a MetaFrame XP Presentation Server environment.

3. Make installation decisions for MetaFrame XP Presentation Servers
  - Identify the requirements for implementing MetaFrame Password Manager in a pure MetaFrame XP Presentation Server deployment.
  - Differentiate types of MetaFrame XP Presentation Server deployments and identify how MetaFrame Password Manager installations differ in each.
  - Given a scenario, decide how to configure applications in the MetaFrame Password Manager Console.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led)	<ul style="list-style-type: none"> <li>• At least one year of experience as a network or security administrator in a MetaFrame XP Presentation Server environment</li> <li>• At least three months of experience installing, administering, and/or supporting MetaFrame Password Manager implementations in an enterprise</li> </ul>

## VI. Password Management

1. Create and administer password generation policies
  - Identify the function and uses of MetaFrame Password Manager password policies.
  - Identify the parameters of MetaFrame Password Manager policies.
2. Create and administer password sharing groups
  - Identify the function and uses of password sharing groups.
  - Given a scenario, explain how password sharing groups work.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led)	<ul style="list-style-type: none"> <li>• At least one year of experience as a network or security administrator in a MetaFrame XP Presentation Server environment</li> <li>• At least one year of experience creating policies and profiles using Microsoft Active Directory service</li> </ul>

## VII. Agent Management

1. Identify Agent settings
  - Identify the role of specified Agent settings in the MetaFrame Password Manager Console.
2. Configure Agent settings
  - Given a scenario regarding the storing of credentials, choose an appropriate Agent setting.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led) and Citrix MetaFrame Password Manager: Introduction course (CTX-1320AW eLearning)	At least three months of experience installing, administering, and/or supporting MetaFrame Password Manager implementations in an enterprise

## VIII. Enterprise Credential Storage

1. Identify storage locations
  - Given a scenario, determine where the central credential store should exist in a network.
2. Connecting to a file server
  - Identify requirements for using a shared folder to store credentials.
3. Connecting to a directory server
  - Administer the directory service through the MetaFrame Password Manager Console.
  - Identify the requirements for using Active Directory Service as the central credential store.
4. Extending the schema
  - Allow users to manipulate single sign-on object properties.
  - Extend the schema of a directory service.

## 5. Credential synchronization

- Given scenarios, describe how credential synchronization occurs.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led)	<ul style="list-style-type: none"><li>• At least one year of experience as a network or security administrator in a MetaFrame XP Presentation Server environment</li><li>• At least one year of experience creating policies and profiles using Microsoft Active Directory service</li><li>• At least three months of experience installing, administering, and/or supporting MetaFrame Password Manager implementations in an enterprise</li></ul>

## IX. Licensing

### 1. Configure the License repository

- Describe how to configure the license repository.
- List the properties of the license repository.

### 2. Determine the number/types of licenses needed based on deployment scenario

- Identify the rules associated with MetaFrame Password Manager licensing.

Citrix Courses	Experience
Citrix MetaFrame Password Manager: Administration course (CTX-1321AI Instructor-led) and Citrix MetaFrame Password Manager: Introduction course (CTX-1320AW eLearning)	At least three months of experience installing, administering, and/or supporting MetaFrame Password Manager implementations in an enterprise

## **Appendix—Practice Items**

1. Which two items must users provide during their first use of MetaFrame Password Manager? (Choose two.)

- A. User ID
- B. PIN number
- C. Domain name
- D. User question and answer
- E. Microsoft Windows password

Correct answers: D and E

2. Which statement about the local credential store of MetaFrame Password Manager is true?

- A. It does not support roaming profiles.
- B. It stores credentials in an MS Jet database.
- C. It does not support pure mandatory profiles.
- D. It is a binary MMF file located in the user's profile.

Correct answer: D

3. Where should the Password Manager Console be installed?

- A. In the same location as the agent
- B. In the same location as the applications
- C. In the same location as the local credential store
- D. In the same location as the central credential store

Correct answer: B

4. Which three attributes of Windows applications are detected by the Intelligent Agent Response in MetaFrame Password Manager? (Choose three.)

- A. Control ID
- B. Window title
- C. Application name
- D. Frame and form name
- E. User name and password field

Correct answers: A, B and C

5. Which statement about password sharing groups is true?

- A. Applications can only belong to a single password sharing group.
- B. Applications can belong to more than one password sharing group.
- C. Applications can only belong to a single group when synchronization services have not been installed.
- D. Applications can belong to more than one password sharing group only if the Domain Password Sharing group is not utilized.

Correct answer: A

6. Application definitions for Windows applications are created using \_\_\_\_\_. (Fill in the blank with an option from below.)

- A. Forms
- B. SendKeys
- C. Window titles
- D. Virtual key codes

Correct answer: C

7. Scenario: Your manager would like you to enable password sharing groups in which users are prompted to enter their credentials to access your company's applications.

Given a Windows 2003 domain, which two applications in this list would you likely assign to the domain's password sharing group? (Choose two.)

- A. An intranet web site
- B. An Internet web site
- C. Personal web mail accounts with an ISP
- D. An Active Directory enabled HR application
- E. Personal Instant Messaging clients with an ISP

Correct answers: A and D

8. Which license type is used in scenarios in which licenses are pooled and used by multiple users?

- A. Shared license
- B. Named user license
- C. Connected product license
- D. Concurrent-connected user license

Correct answer: A

9. Before using an Active Directory container as the licensing repository, the CTXSCHMAPREP.VBS script must be run. What does this script do?

- A. It extends the Active Directory schema.
- B. It defines the type of license to be used.
- C. It edits the registry to allow for a schema update.
- D. It configures the container for use with MetaFrame Password Manager.

Correct answer: A

10. An administrator has configured the agent to delete the local credential store. Which two events would result from this configuration? (Choose two.)

- A. File-level synchronization on agent startup
- B. Record-level synchronization on agent startup
- C. Record-level synchronization on agent shutdown
- D. User access to the central credential store maintained when offline

Correct answers: A and C