

Apics Mpr Practice Test Handbook

apics mpr practice test

Preparing for the APICS Manufacturing Planning and Control (MPR) exam can be a challenging yet rewarding journey. The MPR certification is designed to validate professionals' knowledge and skills in manufacturing planning, production, and inventory control. To succeed, candidates must thoroughly understand core concepts, best practices, and industry standards. One of the most effective methods to prepare is through practice tests, which simulate the actual exam environment and help identify areas that need further study. In this article, we will explore the significance of APICS MPR practice tests, how to utilize them effectively, and tips for maximizing your exam readiness.

Understanding the APICS MPR Certification

What is the APICS MPR Certification?

The APICS Manufacturing Planning and Control (MPR) certification is a professional credential offered by the Association for Supply Chain Management (ASCM), formerly APICS. It focuses on the principles of manufacturing planning, scheduling, and inventory control, which are critical for ensuring efficient production processes.

The MPR certification aims to:

- Validate knowledge of manufacturing planning and control systems
- Demonstrate expertise in managing production schedules
- Enhance career prospects in manufacturing and supply chain management

Core Topics Covered in the MPR Exam

The exam encompasses several key areas, including:

- Demand management and forecasting
- Master scheduling
- Material requirements planning (MRP)
- Capacity planning
- Production activity control

- Inventory management
- Performance measurement and continuous improvement

Understanding these topics thoroughly is essential for success, and practice tests serve as an excellent tool for reinforcing learning in these areas.

The Importance of APICS MPR Practice Tests

Why Use Practice Tests?

Practice tests are invaluable for several reasons:

- Familiarization with Exam Format: They help candidates get comfortable with the structure, question types, and timing of the actual exam.
- Assessment of Knowledge Gaps: Practice tests reveal areas where understanding is lacking, allowing targeted review.
- Time Management Skills: They train candidates to allocate appropriate time to each question, reducing exam anxiety.
- Confidence Building: Repeated practice boosts confidence and reduces uncertainty on exam day.
- Performance Tracking: They enable candidates to monitor progress over time and adjust study strategies accordingly.

Benefits of Using Official and High-Quality Practice Tests

While there are many practice tests available online, utilizing official or reputable sources ensures accuracy and relevance. Benefits include:

- Alignment with actual exam content
- Realistic questions that mirror difficulty levels
- Coverage of the full syllabus

How to Effectively Use APICS MPR Practice Tests

1. Establish a Study Schedule

Create a structured plan that includes dedicated time for practicing tests. Consistency is key.

2. Simulate Exam Conditions

When taking practice tests:

- Set a timer to mimic exam duration
- Find a quiet environment free from distractions
- Avoid using study aids or notes unless permitted

3. Review Your Results Thoroughly

After completing each test:

- Analyze each question, especially those answered incorrectly
- Understand the reasoning behind correct answers
- Identify patterns or recurring topics where your knowledge needs strengthening

4. Focus on Weak Areas

Use insights from practice tests to guide your study efforts:

- Revisit relevant chapters or modules
- Use supplementary resources such as textbooks, online courses, or study groups

5. Repeat and Reinforce

Regularly taking practice tests helps reinforce learning and build exam stamina. Aim for incremental improvement with each attempt.

Types of Practice Tests Available for MPR Exam Preparation

Official Practice Questions

These are produced by ASCM or authorized providers and closely resemble the actual exam content.

Third-Party Practice Tests

Various educational platforms offer simulated exams, often with detailed explanations. Ensure they are reputable.

Custom Practice Quizzes

Create your own quizzes based on weak areas to focus your revision.

Sample Practice Test Questions and Strategies

Sample Question 1: Demand Management

Which of the following best describes the purpose of demand management in manufacturing planning?

- a) To forecast future sales based on historical data
- b) To align production schedules with customer demand
- c) To determine inventory reorder points
- d) To optimize capacity utilization

Correct answer: b) To align production schedules with customer demand

Strategy: Understand how demand management influences the entire planning process and its role in balancing supply and demand.

Sample Question 2: Material Requirements Planning (MRP)

An MRP system is primarily used to:

- a) Schedule maintenance activities
- b) Calculate economic order quantities
- c) Determine the materials and quantities needed to meet production schedules
- d) Manage supplier relationships

Correct answer: c) Determine the materials and quantities needed to meet production schedules

Strategy: Focus on the core functions of MRP and how it integrates with other planning processes.

Additional Tips for Success

- Study the APICS Body of Knowledge thoroughly to ensure comprehensive understanding.
- Join study groups or forums to discuss challenging topics and gain new perspectives.
- Use flashcards for quick review of key terms and concepts.
- Stay updated with any changes or updates in exam content or format from ASCM.
- Maintain a positive mindset and manage exam anxiety through relaxation techniques.

Conclusion

An APICS MPR practice test is a vital tool in your certification journey. It not only prepares you for the exam environment but also enhances your understanding of critical manufacturing planning concepts. By regularly practicing with well-designed tests, analyzing your performance, and focusing on your weak points, you significantly increase your chances of passing the MPR exam. Remember, consistent effort, strategic review, and a thorough grasp of the core topics will lead you to success and open new career opportunities in manufacturing and supply chain management. Prepare diligently, utilize practice tests effectively, and approach your exam with confidence.

APICS MPR Practice Test: An In-Depth Analysis for Supply Chain Professionals

In the ever-evolving landscape of supply chain management, certification exams have become essential benchmarks for professionals seeking to validate their knowledge and enhance their careers. Among these, the APICS MPR Practice Test stands out as a critical preparatory resource for candidates aiming to excel in the Manufacturing Planning and Control (MPR) module of the APICS Certified in Production and Inventory Management (CPIM) program. This article offers a comprehensive review of the APICS MPR practice test, exploring its structure, benefits, limitations, and strategic value as part of a broader exam preparation plan.

Understanding the APICS MPR Practice Test

The APICS MPR Practice Test is a simulated assessment designed to mirror the format, content, and difficulty level of the actual Manufacturing Planning and Control exam. Its primary purpose is to help candidates gauge their readiness, identify knowledge gaps, and develop effective test-taking strategies.

What Does the Practice Test Cover?

The MPR module encompasses several core topics, which the practice test aims to reflect comprehensively:

- Demand Management: Forecasting, customer order management, and sales & operations planning.

- Master Scheduling: Developing and maintaining master production schedules aligned with demand forecasts.
- Material Requirements Planning (MRP): Calculating material needs based on production schedules.
- Capacity Planning: Ensuring adequate resources for production requirements.
- Production Activity Control: Managing shop floor activities, work orders, and scheduling.
- Inventory Management: Balancing inventory levels, safety stock, and lead times.
- Performance Measurement: Monitoring key metrics and continuous improvement initiatives.

The practice test's questions are crafted to evaluate knowledge and application across these areas, simulating the types of scenarios and problem-solving tasks candidates will encounter.

Format and Structure

Typically, the APICS MPR practice test features:

- Number of Questions: Ranging from 50 to 75, depending on the provider.
- Question Types: Multiple-choice questions that test both theoretical understanding and practical application.
- Time Limit: Usually 60 to 90 minutes, aligning with the actual exam conditions.
- Difficulty Level: Varies from basic recall to complex problem-solving, mimicking real exam challenges.

Some practice tests incorporate adaptive testing features or detailed explanations for each question, enhancing the learning experience.

Strategic Benefits of Using the APICS MPR Practice Test

Utilizing a well-designed practice test offers multiple advantages for aspirants:

1. Assessing Readiness

A practice test provides a realistic snapshot of your current knowledge level. By analyzing your scores, you can determine whether you're prepared to attempt the actual exam or need further study.

2. Familiarizing with Exam Format

Understanding the structure, timing, and question style reduces exam-day anxiety and improves time management skills.

3. Identifying Knowledge Gaps

Detailed review of incorrect answers highlights weak areas, guiding targeted study efforts.

4. Building Confidence

Repeatedly practicing with simulated exams helps build familiarity and confidence, increasing the likelihood of success.

5. Enhancing Test-Taking Skills

Practice tests develop strategies for decoding questions, managing time, and avoiding common pitfalls.

Limitations and Considerations

While the APICS MPR practice test offers substantial benefits, it is essential to recognize its limitations:

1. Variability in Quality

Not all practice tests are created equal. The quality of questions, explanations, and alignment with current exam standards can vary significantly among providers. Candidates should seek reputable sources, such as official APICS materials or established training vendors.

2. Risk of Over-Reliance

Using practice tests as the sole preparation method can lead to a superficial understanding. They should complement comprehensive study guides, courses, and practical experience.

3. Static Content

Some practice tests may not be regularly updated to reflect recent curriculum changes, potentially misrepresenting current exam content.

4. Limited Scope

Practice tests typically focus on multiple-choice questions and may not fully simulate the exam's complexity, such as analysis or case-based questions.

Choosing the Right APICS MPR Practice Test

To maximize benefits, candidates should consider the following criteria when selecting a practice test:

- Alignment with Current Curriculum: Ensure the questions reflect the latest exam syllabus and content updates.
- Reputation of Provider: Prefer established providers with positive reviews and official endorsements.
- Detailed Explanations: Look for tests that include rationales for correct and incorrect answers.
- Performance Analytics: Tools that track progress over multiple attempts help identify trends.
- Availability of Supplementary Resources: Access to study guides, flashcards, or instructor support enhances preparation.

Integrating Practice Tests into a Holistic Study Plan

An effective preparation strategy involves more than just practice tests. Candidates should adopt a multi-faceted approach:

- Comprehensive Study Materials: Use official textbooks, online courses, and workshops.
- Scheduled Practice Tests: Incorporate regular timed assessments to build endurance.
- Review and Reflection: Analyze all answers thoroughly to understand mistakes.
- Group Study and Discussion: Engage with peers or mentors for diverse perspectives.
- Real-World Application: Relate concepts to practical scenarios in your work environment.

By blending practice exams with these elements, candidates can develop both knowledge and confidence to succeed.

Conclusion: The Value of the APICS MPR Practice Test

In the competitive realm of supply chain management certification, the APICS MPR Practice Test is an invaluable tool for aspiring CPIM candidates. When chosen wisely and integrated into a comprehensive study plan, it not only enhances understanding of core concepts but also sharpens exam strategies, ultimately leading to higher scores and certification success.

However, candidates must remain aware of its limitations and avoid over-reliance. Continuous learning, practical experience, and strategic preparation are key to mastering the Manufacturing Planning and Control module. With diligent practice and thoughtful study, the APICS MPR practice test can serve as a critical stepping stone toward professional excellence in supply chain management.

Question What is the purpose of the APICS MPR practice test? The APICS MPR (Master Planning and Replenishment) practice test is designed to help candidates assess their understanding of key concepts, identify areas for improvement, and prepare effectively for the actual certification exam. **Answer** How can taking the APICS MPR practice test improve my exam performance? By simulating exam conditions and providing practice questions, the MPR practice test helps reinforce knowledge, improve time management skills, and build confidence for the real exam. What types of questions are included in the APICS MPR practice test? The practice test includes multiple-choice questions covering topics such as demand management, master scheduling, material requirements planning, and inventory management to mirror the format of the actual exam. Are there official APICS MPR practice tests available for download? Yes, official APICS resources and study guides often include practice tests, and there are also reputable third-party providers offering simulated exams to help candidates prepare effectively. How should I use the APICS MPR practice test as part of my study plan? Use the practice test to identify weak areas, review relevant study materials, and retake the test multiple times to track progress and build confidence ahead of the actual certification exam.

Related keywords: APICS MPR, APICS MPR practice exam, APICS MPR certification, APICS MPR sample questions, APICS MPR study guide, APICS MPR exam prep, APICS MPR training, APICS MPR online test, APICS MPR mock test, APICS MPR certification prep

microsoft test manager tutorial

Microsoft Test Manager Tutorial: A Comprehensive Guide to Efficient Test Management

In the world of software development, ensuring the quality and reliability of your applications is paramount. Microsoft Test Manager (MTM) is a powerful tool designed to streamline the testing process, enabling teams to plan, execute, and track testing efforts with ease. Whether you're a beginner or looking to enhance your testing workflows, this **Microsoft Test Manager tutorial** will provide you with a step-by-step guide to harnessing MTM's full potential for your projects.

Understanding Microsoft Test Manager

Before diving into the tutorial, it's essential to grasp what Microsoft Test Manager is and how it integrates into the broader Visual Studio ecosystem.

What is Microsoft Test Manager?

Microsoft Test Manager is a test management tool integrated with Visual Studio Team Services

(VSTS) and Azure DevOps. It provides an intuitive interface for managing test plans, creating and executing test cases, and tracking testing progress. MTM supports both manual and exploratory testing, making it versatile for various testing scenarios.

Key Features of Microsoft Test Manager

- Test Planning: Create and organize test plans, test suites, and test cases.
- Test Execution: Execute manual tests and record results efficiently.
- Test Tracking: Monitor testing progress and generate detailed reports.
- Exploratory Testing: Conduct ad-hoc testing sessions with session-based testing capabilities.
- Integration: Seamlessly connects with Azure DevOps for continuous testing workflows.

Setting Up Microsoft Test Manager

Getting started with MTM involves installing and configuring the tool for your environment.

Prerequisites

- Visual Studio Enterprise or Professional edition (with test management features).
- Azure DevOps account or TFS (Team Foundation Server) setup.
- Appropriate permissions to access test management features.

Installing Microsoft Test Manager

- Download the Visual Studio Installer from the official Microsoft website.
- Choose the edition that includes testing tools (e.g., Visual Studio Enterprise).
- During installation, select the "Testing Tools" workload to install MTM.
- Complete the installation and launch Visual Studio.
- Connect to your Azure DevOps project or TFS server within Visual Studio.

Creating and Managing Test Plans

A well-structured test plan is the foundation of successful testing. MTM simplifies organizing your testing efforts through test plans and suites.

Creating a Test Plan

- Open Microsoft Test Manager from Visual Studio or the Azure DevOps portal.
- Navigate to the "Test Plans" section.
- Click "New Test Plan" and provide a descriptive name, description, and start/end dates.
- Associate the test plan with a specific build or release if needed.
- Save the test plan to begin adding test cases.

Organizing Test Suites

Test suites help categorize test cases based on features, modules, or testing strategies.

- **Static Test Suites:** Manually organize test cases into logical groups.
- **Requirement-Based Test Suites:** Link test cases to specific requirements or user stories.
- **Query-Based Test Suites:** Dynamically generate test cases based on queries.

Adding Test Cases

- Within your test suite, click "New Test Case" or import existing cases.
- Define the test case steps, expected results, and associated requirements.
- Assign priority, owner, and other metadata to facilitate management.
- Save the test case to include it in your suite.

Executing Tests with Microsoft Test Manager

Once your test cases are organized, the next step is executing tests and recording results.

Manual Test Execution

- Open the test plan and select the test suite to execute.
- Click "Run" on the test case you wish to execute.
- Follow the test steps as documented, marking each step as "Passed" or "Failed."
- If a test fails, record detailed bug information directly from the test runner.
- Complete the test run, and the results will be saved automatically.

Using Action Recording and Data Collection

MTM allows capturing detailed logs and screenshots during test execution, aiding in defect analysis and reproducibility.

Exploratory Testing

For ad-hoc testing, MTM offers session-based testing:

- Schedule a testing session with session details.
- Conduct testing while documenting observations and findings.
- Record bugs and issues discovered during the session.

Tracking and Reporting Testing Progress

Effective test management requires insight into testing status and quality metrics.

Monitoring Test Results

- Navigate to the "Test Results" section in MTM or Azure DevOps.
- Review individual test case outcomes and overall progress.
- Filter results by tester, status, or test plan for detailed analysis.

Generating Reports

MTM provides various built-in reports to visualize testing status:

- Test Results Summary
- Test Case Progress and Trends
- Bugs and Defects Reports

Integrating with Bug Tracking

During testing, bugs can be logged directly from MTM, linked to specific failed test cases, ensuring traceability and quick resolution.

Advanced Tips and Best Practices

Maximize your testing efficiency with these expert tips:

Automate Repetitive Tests

Integrate MTM with automated testing frameworks like MSTest, NUnit, or Selenium to run

automated tests alongside manual efforts.

Maintain Test Cases Regularly

Keep your test cases updated with application changes to ensure relevance and accuracy.

Use Tags and Filters

Leverage tags and filters to quickly locate and execute specific test cases based on criteria like priority, feature, or owner.

Collaborate Effectively

Encourage team collaboration by sharing test plans and results, and conducting regular review meetings to discuss testing progress.

Conclusion

Microsoft Test Manager is an essential tool for teams aiming to implement structured and efficient testing workflows. From creating comprehensive test plans and organizing test suites to executing tests and tracking outcomes, MTM provides a centralized platform that enhances test visibility and quality assurance. By following this **Microsoft Test Manager tutorial**, you can streamline your testing process, improve defect detection, and deliver higher-quality software products. Remember to stay updated with the latest features and best practices to maximize your testing success with MTM.

Microsoft Test Manager tutorial: A Comprehensive Guide to Streamlining Your Testing Process

Microsoft Test Manager (MTM) is a powerful tool integrated within the Azure DevOps suite, designed to facilitate efficient test planning, management, and execution. Whether you are a QA professional, a developer, or a project manager, mastering MTM can significantly enhance your testing workflows, improve defect detection rates, and ensure higher quality software releases. This tutorial aims to provide an in-depth overview of Microsoft Test Manager, guiding you through its features, setup, best practices, and real-world applications.

Introduction to Microsoft Test Manager

Microsoft Test Manager is a dedicated testing management environment that helps teams plan, execute, and track testing activities seamlessly. Originally part of Visual Studio Test Professional, MTM is now integrated within Azure DevOps, offering a unified platform for Agile testing, exploratory testing, and manual test case management.

Key Features of Microsoft Test Manager

- Test Planning: Create and organize test plans, test suites, and test cases.
- Test Execution: Run manual tests, record results, and capture screenshots.
- Test Management: Track defects, manage test configurations, and generate reports.
- Integration: Seamlessly connect with Azure DevOps for continuous integration and automated testing workflows.
- Exploratory Testing: Record exploratory sessions with detailed notes and recordings.

Setting Up Microsoft Test Manager

Before diving into testing, proper setup of MTM is essential.

Prerequisites

- A valid Azure DevOps account with appropriate permissions.
- Installed Visual Studio Test Professional or access via Azure DevOps.
- Access to a test environment or lab machines.

Installation and Configuration

- Download and Install: Download Microsoft Test Manager from the Visual Studio downloads page or via Azure DevOps.
- Connect to Azure DevOps: Launch MTM and connect it to your Azure DevOps project by signing in with your credentials.
- Configure Test Environments: Set up test machines, configurations, and network environments to align with your testing needs.

Tips for Effective Setup

- Organize your test plans hierarchically for easier management.
- Maintain a clear mapping between test environments and real-world configurations.
- Regularly update test artifacts to ensure they reflect current application versions.

Creating and Managing Test Plans

Test planning is the foundation of effective testing.

Creating a Test Plan

- In MTM, navigate to the "Test Plans" section.
- Click "New Test Plan" and provide a descriptive name, start/end dates, and any relevant details.
- Assign ownership and stakeholders.

Organizing Test Suites

- Static Test Suites: Manually added test cases grouped logically.
- Requirement-based Suites: Linked to user stories or requirements for traceability.
- Query-based Suites: Dynamic grouping based on queries.

Best Practices

- Break down large test plans into smaller, manageable suites.
- Link test cases to user stories or bugs for better traceability.
- Regularly review and update test plans to reflect current project scope.

Designing and Managing Test Cases

Creating effective test cases is critical to uncovering defects early.

Writing Test Cases

- Clear, concise steps with expected results.
- Use descriptive titles and tags for easy filtering.
- Include preconditions and postconditions.

Reusing Test Cases

- Modularize test steps for reuse across different test cases.
- Attach relevant documentation, screenshots, or scripts.

Organizing Test Cases

- Group related test cases into shared test suites.
- Use labels and tags for categorization.

Tips for Effective Test Cases

- Prioritize test cases based on risk and impact.
- Keep test cases up-to-date with application changes.
- Incorporate exploratory testing notes within test cases or as separate sessions.

Test Execution and Result Recording

Executing tests efficiently and accurately recording results is vital.

Running Manual Tests

- Select a test case from your test suite.
- Follow each step, observing the actual behavior.
- Record outcomes: Passed, Failed, Blocked, or Not Applicable.
- Capture screenshots or record videos if needed.

Recording Defects

- Link defects directly to failed test cases.
- Provide detailed descriptions, steps to reproduce, and severity.
- Attach logs or screenshots to aid debugging.

Managing Test Runs

- Use test configurations to run multiple test cases under different environments.
- Schedule and assign test runs to team members.
- Monitor real-time progress and results.

Pros and Cons of Test Execution Features

Pros:

- Streamlined process for manual testing.
- Rich media capture for detailed documentation.
- Easy defect linkage and traceability.

Cons:

- Manual process can be time-consuming for large test suites.
- Limited automation capabilities within MTM itself.

Integrating Automated Testing with Microsoft Test Manager

While MTM excels at manual testing, integration with automated testing frameworks enhances overall efficiency.

Integration with Visual Studio Test Automation

- Use Visual Studio Test tools to develop automated test scripts.
- Link automated tests to test cases in MTM.
- Run automated tests as part of continuous integration pipelines.

Benefits of Integration

- Reduces manual effort.
- Ensures consistency between manual and automated testing.
- Facilitates comprehensive test coverage.

Limitations

- Setup can be complex for beginners.
- Requires scripting knowledge for automation.

Reporting and Tracking

Effective reporting provides insights into testing progress and quality metrics.

Built-in Reports

- Test Run Summary
- Test Results Trend
- Defect Status and Age
- Requirements Traceability Matrix

Custom Reports

- Use Azure DevOps Analytics or Power BI for tailored dashboards.
- Export data for external analysis.

Best Practices

- Regularly review reports to identify bottlenecks.
- Use metrics to prioritize testing efforts.
- Maintain up-to-date dashboards for stakeholder visibility.

Best Practices for Using Microsoft Test Manager

- Plan Early: Incorporate testing early in the development lifecycle.
- Maintain Test Artifacts: Keep test cases and plans updated with application changes.
- Leverage Linkages: Connect requirements, test cases, defects, and build versions.
- Automate Where Possible: Use automation to handle repetitive and regression testing.
- Collaborate: Engage team members through shared test plans and results.
- Review Regularly: Conduct test reviews and retrospectives for continuous improvement.

Common Challenges and How to Overcome Them

Challenge: Managing Large Test Suites

Solution: Break down into smaller, manageable suites; use query-based suites for dynamic grouping.

Challenge: Keeping Test Cases Up-to-date

Solution: Establish a review cycle aligned with development sprints; assign ownership.

Challenge: Integration Complexity

Solution: Invest in automation and continuous integration pipelines; use documentation and training.

Challenge: Limited Automation within MTM

Solution: Use external automation tools integrated with Azure DevOps, such as Selenium or Coded UI.

Conclusion

Microsoft Test Manager is a robust tool that, when used effectively, can significantly boost your testing efficiency, coverage, and traceability. Its comprehensive features for test planning, execution, defect management, and reporting make it indispensable for teams adopting Agile and DevOps practices. While there are challenges, especially around automation and managing large test repositories, with proper setup, training, and best practices, MTM can become a cornerstone of your software quality assurance process.

By following this tutorial, you should now have a clear understanding of how to leverage Microsoft Test Manager to streamline your testing operations, improve collaboration, and ultimately deliver higher quality software to your users. Remember, continuous learning and adaptation are key to maximizing the benefits of MTM in your projects.

QuestionAnswer What are the main features of Microsoft Test Manager (MTM)? Microsoft Test Manager (MTM) provides features such as test planning, manual test execution, test case management, bug tracking integration, and collaboration tools to streamline the testing process within Visual Studio and Azure DevOps. How do I create and organize test plans in Microsoft Test Manager? In MTM, you can create test plans by navigating to the 'Test Plans' hub, clicking 'New Test Plan,' and defining its name and details. You can then add test suites and test cases to organize tests based on requirements, features, or test types for better management. Can I automate tests using Microsoft Test Manager, and how is it integrated with other tools? While MTM primarily supports manual testing, it integrates seamlessly with Visual Studio and Azure DevOps, enabling automation through test scripts and frameworks like MSTest, Selenium, or CodedUI. Automated tests can be linked to test cases for comprehensive test management. What are the best practices for using Microsoft Test Manager effectively? Best practices include maintaining detailed and reusable test cases, organizing tests into logical suites, utilizing shared steps for common actions, integrating with bug tracking, and regularly updating test plans based on project changes to ensure thorough testing coverage. Is Microsoft Test Manager suitable for Agile development environments? Yes, MTM is well-suited for Agile teams as it supports iterative testing, easy integration with Azure DevOps Agile tools, and flexible test planning, allowing teams to adapt testing activities to sprint cycles and continuous delivery workflows.

Related keywords: Microsoft Test Manager, TFS testing, test planning, test case management,

automated testing, test execution, bug tracking, test lab management, test reporting, test automation tools

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