



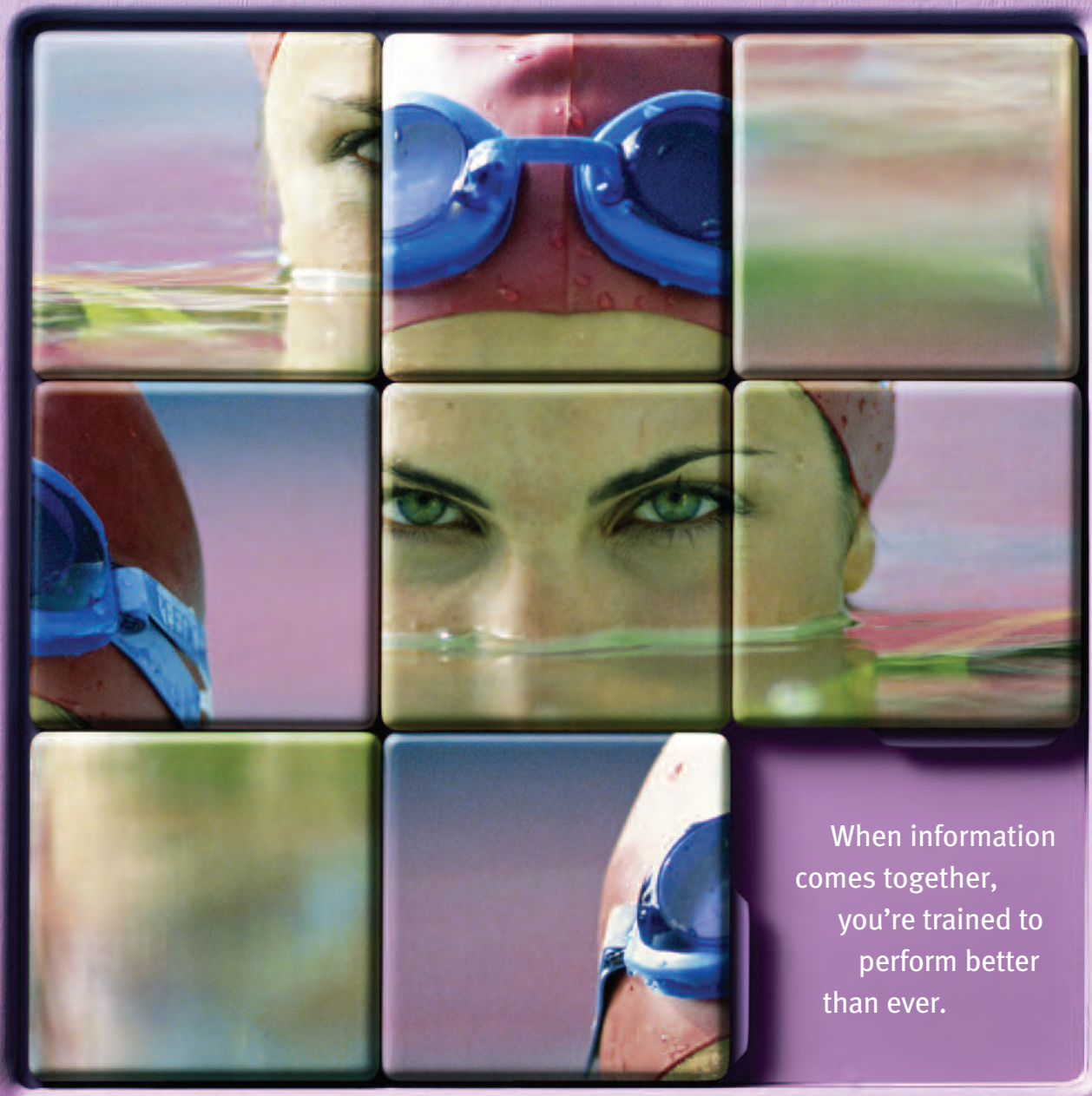
## Customer Education Solutions Catalog



Including EMC Proven Professional Certification



When information comes together,  
your world moves ahead.



When information  
comes together,  
you're trained to  
perform better  
than ever.

## EMC is honored to be named one of the 2007 Training Top 125.

Learning accelerates your performance. Which is why we're devoted to investing in our people, customers, partners, industry, and community. We lead change—and change to lead.



Congratulations to all of our employees and partners whose performance places EMC among industry leaders in quality, service, and innovation year after year.

See what EMC training can do for your performance at [www.EMC.com](http://www.EMC.com).



# Customer Education Solutions Catalog

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# Education Services Overview



In 2007, EMC was honored as the top technology company in Training Top 125, winning third place overall. This prestigious award recognizes achievement in education services.



EMC has also earned a prestigious ASTD BEST Award. ASTD BEST Awards recognize organizations that create, support, and champion learning opportunities for results and facilitate the development of a learning culture.

Data expansion is explosive. Information infrastructures are becoming increasingly complex. Do you have the knowledge and skills to master your environment? EMC Education Services offers best-in-class education that improves your readiness and return on your company's EMC investments. EMC Education Services solutions go well beyond traditional product training. They enable you to develop expertise in planning, deploying, managing, and fully leveraging your information infrastructure.

With over 70 training centers worldwide and multiple learning modes, we bring the education closer to you. Our blended learning model enables you to learn at your own pace, providing the education you need when and how you need it.

**Get real results.** Ninety-eight percent of students reported that EMC training added measurable value to their organizations. Students report increased productivity, accelerated problem resolution, and faster solution deployments\*.

**Get Proven.** More students are leveraging our EMC Proven™ Professional Certification to get recognized and boost their confidence and careers as elite storage professionals. This catalog will show you how to take advantage of EMC Education Services solutions.

\* Source: EMC Education 60/120-day post-class surveys

# EMC Education Solutions

## EMC Proven Professional Learning Framework

### 1. 'Open' Storage Technology Curriculum

This unique 'open' curriculum focuses on the concepts and principles of storage technology, using EMC products and case studies as examples. A must for both experienced and new storage professionals, this curriculum prepares you to plan, design, and manage all key components of your information's lifecycle.

### 2. EMC Technology-Specific Learning Paths

EMC technology-specific learning paths provide customers with an extensive selection of core EMC technology specialties, such as EMC Symmetrix® Business Continuity, and SAN. Typically classified at three levels (Associate, Specialist, and Expert), the learning paths are aligned to certifications. As you learn through the curriculum, you are also preparing for your certification.

### 3. EMC Proven Professional Certification Program

The EMC Proven Professional Certification program provides formal validation of an individual's knowledge. With more than 10 certification specialties, EMC Proven is the most comprehensive and well-adapted program in the information storage and management industry.



“When your industry is characterized by stiff competition and explosive growth, you need a learning organization that’s aligned to the business and nimble enough to tackle any challenge that comes its way. Today, that’s exactly what EMC provides to the 30,000 EMC employees and approximately 50,000 customers and partners they serve.”

Sarah Boehle  
*Training Magazine*

# Leveraging Learning Paths

## Taking guesswork out of your Education Planning

We leverage a blended learning model that offers a variety of options:



**Instructor-Led Training (ILT)** — Traditional classroom-based training offered in more than 70 training centers worldwide that features small class size, hands-on labs, and valuable instructor and peer interaction.



**Video Instructor-Led Training (VILT)** — Classroom courses delivered by world-class instructors— recorded and delivered via CD to provide the classroom experience and content without travel.



**e-Learning** — Self-paced and downloadable course presentations and student guides that can be taken any time, anywhere.



**EMC LIVE Virtual Classroom** — Online, virtual classroom courses available from any location, featuring lab exercises and meaningful peer and instructor interactions.

### Build and validate your knowledge

Learning paths are structured roadmaps of courses that lead students to develop a thorough understanding of their selected technologies. They ensure the gradual introduction of complex technologies and challenging concepts with three levels of expertise.

The foundations level enables you to build a strong knowledge base. IT professionals who are new to storage will benefit the most from our Instructor-led training. Self-paced learning options are available for professionals with some level of experience but short on time. Regardless of your choice of learning modes, you can leverage real-life examples and case studies developed by a group of experienced storage professionals.

### Maximize your learning experiences at the advanced levels

At the advanced levels, you will learn and experience increasingly complex integration scenarios and application-centric solutions. Our blended learning model leverages self-paced modules for learning concepts and principles, enabling students in the classrooms to spend more time on discussions and hands-on lab activities.

### Validate your Knowledge

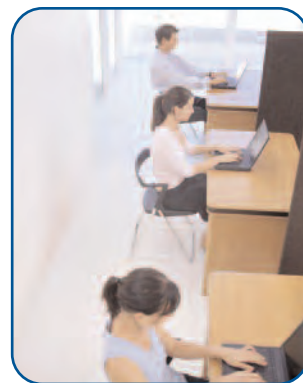
Our learning paths are conveniently aligned to EMC Proven Professional Certifications. If you choose to take the next step, you already have the knowledge and access to the supporting study materials to prepare for the exam.

### Purchasing learning paths

(ValuePaks and Video ValuePaks)

Learning paths are conveniently pre-packaged as ValuePaks and Video ValuePaks so that you can purchase the complete curriculum at a discount.

(Refer to Page 30 for complete list of purchase options)



For the most up-to-date catalog or to view course listings, schedules, and purchasing options, visit [www.EMC.com/training](http://www.EMC.com/training) or the training section of Powerlink.

# EMC Proven Professional Certification Program

EMC Proven Professional is the #1 program in the information storage and management industry. It is a comprehensive training and certification program designed to maximize your expertise on planning, deploying, managing, and fully leveraging your information infrastructure.

The EMC Proven Professional Certification is aligned to our learning paths which act as roadmaps of the training needed to attain technical competency. Learning paths are grouped by role-based tracks to ensure that you get the right training to meet your job requirements.

## Certification Tracks:

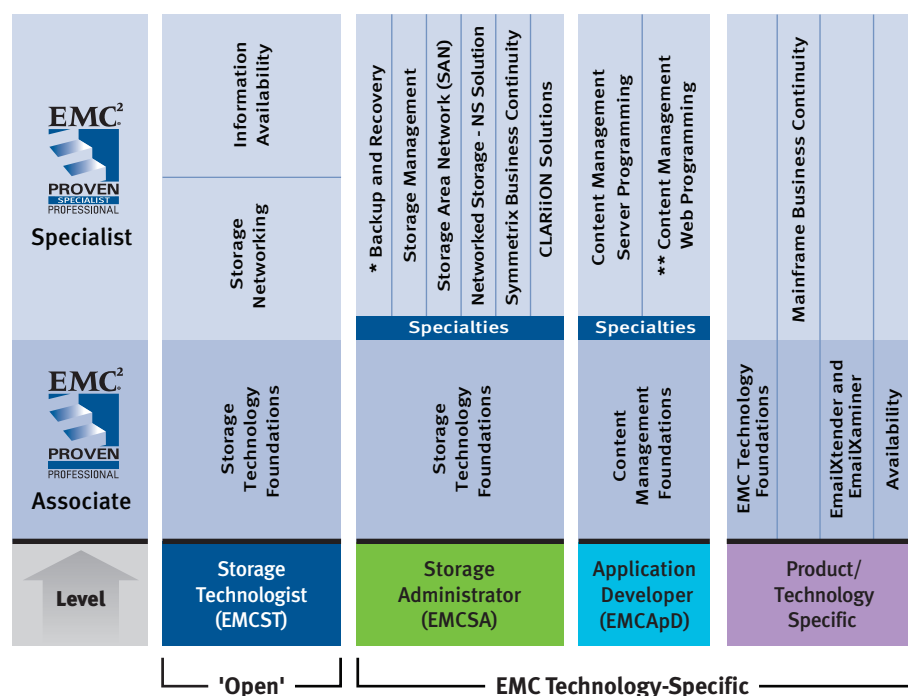
**Storage Technologist Track**—This track is recommended for all storage professionals regardless of experience level. The unique ‘open’ curriculum focuses on storage concepts and principles to build knowledge across multiple storage technologies.

**Storage Administrator Track**—This track is recommended for customers who are responsible for managing information infrastructure using EMC technology. The Open Storage Technology Foundations course is the Associate level which enables you to build a strong knowledge base to take on one or more of the six specializations. At the specialist level you will learn how to configure and manage specific storage technology in a sample data center environment.

**(New) Application Developer Track**—This track is recommended for customers with the responsibility for developing and customizing EMC content management applications. It offers multiple EMC technology specific curricula aligned to EMC content management solutions (EMC Documentum®) and application-development specialties.

**Product/Technology Specific Track**—This track is ideal for customers whose interest is in learning in-depth product/technology feature, functionality, and theory of operations. It includes EMC Technology Foundations (ETF), Mainframe Business Continuity, EMC EmailXtender® and EmailXaminer®, and Availability.

## EMC Proven Professional Certification Framework



\* For Backup and Recovery specialties, participants also have the option of EMC Backup and Recovery Foundations to fulfill Associate requirement.

\*\* For information on the Content Management Web Programming specialty visit: <http://education.EMC.com/acquisitions>.

## Exclusive benefits for certified storage professionals:

### (New) Knowledge Sharing:

Share your experience and expertise. All Certified Proven Professionals are eligible to participate in our Knowledge Sharing community. EMC Proven Professionals are encouraged to submit papers on their best practices and innovations related to information infrastructure.

### Knowledge Maintenance:

Maintain your expertise. Certified Specialists and above receive free, proactive notification and access to the latest training updates in self-paced eLearning modules making it easy to stay current on new and updated technologies relevant to your specialty.

## EMC Proven Professional Program updates

We periodically update our programs and curriculum to reflect the changes in the IT storage industry or to better accommodate the needs of our employees, customer, and partners. For the latest program and course updates please visit: <http://powerlink.emc.com>.

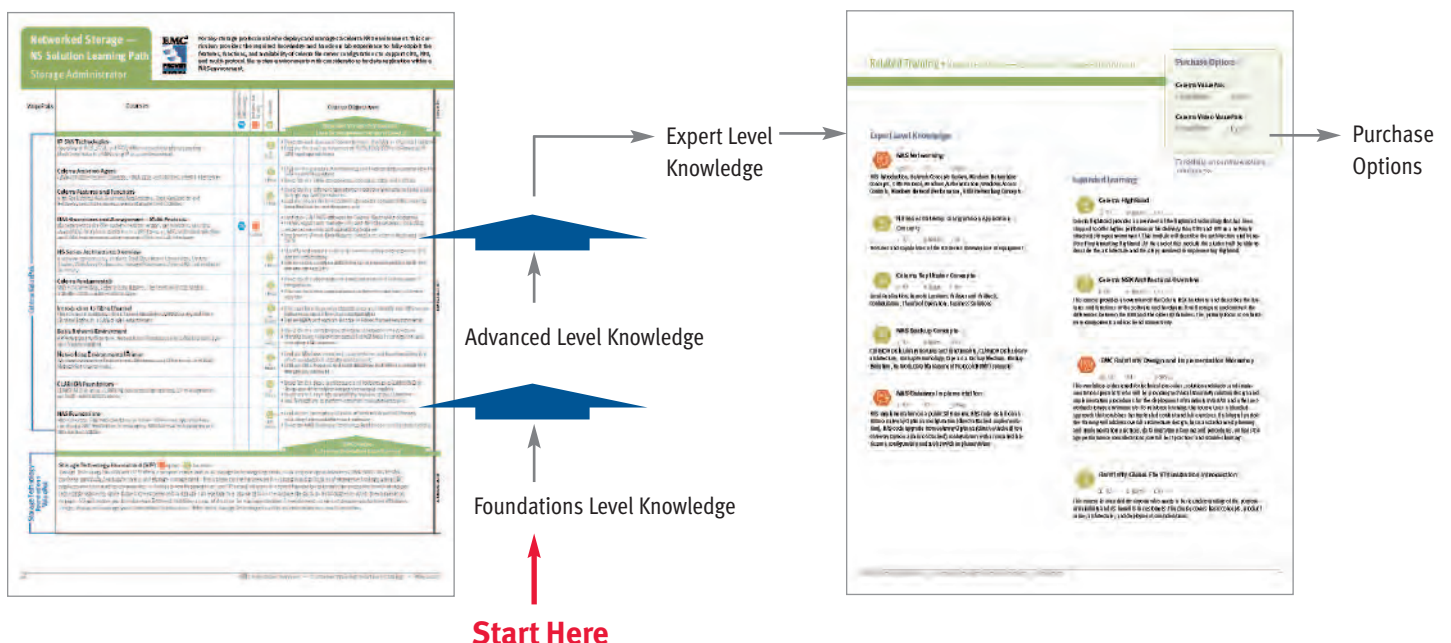
## New Associate Level requirement

- As of March 1, 2007, the Storage Technology Foundations exam is the qualifying exam to achieve Associate level certification.
- EMC Technology Foundations exam will continue to be recognized as a qualifying exam for Associate level certification for the Storage Administrator track.
- EMC Backup and Recovery Specialties participants have the option of taking either the EMC Backup and Recovery Foundations exam or the Storage Technology Foundations exam.
- The EMC Content Management Foundations exam is the qualifying exam for the Content Management tracks.

If you have already passed EMC Technology Foundations, you do not need to pass Storage Technology Foundations to pursue Specialist level certification. If you are currently preparing for the EMC Technology Foundations exam, you are encouraged to schedule and complete the exam by December 31, 2007.

The in-depth product focused curriculum of EMC Technology Foundations (ETF) is still available. It is now a certification under the Product/Technology specific offerings.

## How to read charts



# Storage Technologist Learning Path

## Storage Technologist



For any IT professional who is involved in planning, deploying, or managing of information storage and infrastructure, this unique open curriculum leads with concepts and principles across multiple storage technology segments. The progressive learning model used in Storage Technology Foundations allows for both current and future storage professionals to cover the broad knowledge bases. A process-oriented workshop approach in Storage Networking Design and Management and Information Availability Design and Management courses maximizes the use of real-world case studies and allows participants to actively engage in deeper-dive discussions and decision exercises. Full alignment with the EMC Proven Professional Certification brings the formal validation and recognition desired for the elite storage professionals.

| ValuePaks                             | Courses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Levels            |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                         |            | <b>Information Availability Design and Management Specialist Exam (E20-012) (Available 2HFY07)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |
|                                       | <b>Information Availability Design and Management</b><br>(Available 2HFY07)<br>Information Availability Design and Management takes a process-oriented approach in designing, deploying, and managing Information Availability solutions. This course builds on the process-oriented approach learned in SN Design and Management course (prerequisite) and challenges participants to apply information availability requirements into real-world scenarios. Lectures and workshop style case studies provide a thorough exposure to information availability requirements specification, business impact analysis, and technology design considerations for implementing and managing Information Availability Solutions.                                                                                                                                                                                                               |                               | 5 Days                  |            | <b>Section 1. Requirements Specification and Business Impact Analysis</b> <ul style="list-style-type: none"> <li>Define availability and recovery in terms of quantifiable metrics</li> <li>Discuss requirements analysis for information availability solutions</li> <li>Conduct a business impact analysis</li> </ul> <b>Section 2. Technology Design Considerations</b> <ul style="list-style-type: none"> <li>Explain technology components in backup and recovery, archive, local and remote replication solutions</li> <li>Discuss storage networking architecture (SAN, NAS, and IP-SAN) and network topologies</li> <li>Detail application/database recovery and restart</li> <li>Discuss Continuous Data Protection (CDP) approach</li> </ul> <b>Section 3. Implementation Planning</b> <ul style="list-style-type: none"> <li>Conduct environmental discovery and qualify the solution</li> <li>Size infrastructure for backup and recovery, local and remote replication</li> <li>Develop recovery strategies and business continuity plans</li> </ul> <b>Section 4. Deployment and Management</b> <ul style="list-style-type: none"> <li>Develop an implementation plan for backup and recovery, archive and CAS, local and remote replication Information Availability Solutions</li> <li>Develop management and maintenance procedures</li> </ul>                                                                                                                                                                                                                                                                                                                    | <b>SPECIALIST</b> |
|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                         |            | <b>Storage Networking Design and Management Specialist Exam (E20-011)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |
|                                       | <b>Storage Networking Design and Management</b><br>(Available – July 2007)<br>Storage Networking Design and Management takes a process-oriented approach in designing, deploying, and managing storage networking solutions. This course builds on the technology concepts and principles learned in STF (prerequisite) and challenges participants to apply their knowledge to real-world scenarios. Lectures and workshop style case studies provide a thorough exposure to storage networking requirements analysis, business value justification, and technology and performance design considerations for implementing and managing Storage Networking Solutions.                                                                                                                                                                                                                                                                    |                               | 5 Days                  |            | <b>Section 1. Requirements Analysis and Business Value Justification</b> <ul style="list-style-type: none"> <li>Explain application classes and their characteristics</li> <li>Develop business value justification using sample TCO/ROI models</li> <li>Develop requirement specifications with quantitative metrics that define service level targets</li> </ul> <b>Section 2. Technology Design Considerations</b> <ul style="list-style-type: none"> <li>Design SAN, NAS and IP_SAN solutions, considering connectivity, security, topology, and performance requirements</li> <li>Leverage case studies detailing technology design considerations</li> </ul> <b>Section 3. Performance Stack-Design Considerations</b> <ul style="list-style-type: none"> <li>Discuss design elements in the application, host, and storage layer of the performance stack</li> <li>Gather data and profile requirements at each layer of the performance stack for optimal design</li> <li>Leverage case study for developing a storage networking design for an e-mail environment</li> </ul> <b>Section 4. Implementation</b> <ul style="list-style-type: none"> <li>Develop design workbook and service implementation guide for storage networking deployment</li> <li>Conduct implementation gap analysis and develop work break-down structures and risk mitigation plans</li> <li>Discuss testing, verification, and validation</li> </ul> <b>Section 5. Management</b> <ul style="list-style-type: none"> <li>Explore and discuss maturity model for storage management</li> <li>Explain storage management operations including process, policies, resources, and tools</li> </ul> | <b>SPECIALIST</b> |
|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                         |            | <b>EMC Storage Technology Foundations Exam (E20-001)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |
| <b>Storage Technology Foundations</b> | <b>Storage Technology Foundations (STF)</b> (5 Days) (24 Hours)<br>Storage Technology Foundations (STF) takes a comprehensive look at all storage technology segments, including storage subsystems, SAN, NAS, CAS, IP-SAN, business continuity, backup/recovery, and storage management. This unique course focuses on the concepts and principles of storage technology, using EMC products and case studies as examples. Individuals new to storage can use STF to build the much needed foundation of knowledge across the breadth of storage technology segments; while those more experienced in storage can leverage this course to fill in the knowledge gaps on technologies in which they have yet to engage. STF will enable you to make more informed decisions as you address an increasingly complex IT environment, as well as prepare you to more effectively design, deploy, and manage your information infrastructure. |                               |                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>ASSOCIATE</b>  |

### Purchase Options

#### Storage Technology Foundations eLearning

CE-eVALPAKSTF \$ 990

#### Storage Technology Foundations ILT

CE-VALPAKSTF \$ 2,690

For details on purchase options see page 30.

# Backup and Recovery Learning Path

## Storage Administrator



For any IT professional who deploys and manages EMC NetWorker-based backup solutions. This curriculum offers the required knowledge and lab experience to manage traditional backup environments. In addition, LAN/SAN/NAS-based disk backup, virtual tape libraries, and automated replication are detailed. The knowledge and skills gained through this Learning Path will enable professionals to fully leverage EMC Backup and Recovery Solutions.

| ValuePaks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Courses                                                                                                                                                                                                                                           | Video Instructor-Led Learning                     | Instructor-Led Training | e-Learning                                                                                                                                                                                                                 | Course Objectives                                                                                                                                                                                                                                                                        | Levels     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Backup and Recovery ValuePak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Backup and Recovery Specialist Exam For Storage Administrators (E20-597)                                                                                                                                                                          |                                                   |                         |                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                          | SPECIALIST |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | EMC NetWorker Administration for UNIX and Microsoft Windows<br>EMC NetWorker 7.x installation, configuration, maintenance, management, backup, recovery, autochanger configuration and management, save set cloning and staging, generate reports |                                                   | 5 Days                  |                                                                                                                                                                                                                            | <ul style="list-style-type: none"><li>• Install and administer NetWorker and NetWorker Management Console</li><li>• Perform and customize backups</li><li>• Manage standalone devices, autochangers, databases, and media</li><li>• Recover client data and a NetWorker server</li></ul> |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Replication Manager Implementation and Management Overview<br>Pre-planning, licensing, installing, and troubleshooting—essential steps involved in deploying a Replication Manager installation                                                   |                                                   |                         | 2 Hours                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>• Describe the architecture, features, and benefits of Replication Manager</li><li>• Explain how to configure and administer Replication Manager</li></ul>                                                                                         |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NAS Backup Concepts<br>CLARiiON Disk Library features and functionality, CLARiiON Disk Library architecture, Backup Terminology, Tape as a Backup Medium, Backup Evolution, Network Data Management Protocol (NDMP) synopsis                      |                                                   |                         | 2 Hours                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>• Describe the backup process using industry recognized terminology</li><li>• Explain Network Data Management Protocol (NDMP) in a NAS backup environment</li></ul>                                                                                |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | EMC Disk Library Fundamentals<br>EMC Disk Library features and functionality, EMC Disk Library architecture                                                                                                                                       |                                                   |                         | 1 Hour                                                                                                                                                                                                                     | <ul style="list-style-type: none"><li>• Explain general tape library features and benefits</li><li>• Describe EDL hardware and software architectures and features</li></ul>                                                                                                             |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | LAN Backup to Disk Overview<br>LAN Backup to Disk Overview and Recommendations, Backup via Storage Nodes, backup to Celerra NS arrays                                                                                                             |                                                   |                         | 2 Hours                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>• Describe disk-based backups in a LAN environment including network considerations</li><li>• Discuss recommendations for backup to disk with EMC Celerra</li></ul>                                                                                |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SAN Backup to Disk Overview<br>SAN Backup to Disk Overview, Recommendations and EMC offerings, performance and sizing considerations, CLARiiON and Symmetrix implementations                                                                      |                                                   |                         | 2 Hours                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>• Discuss the advantage of disk-based backups in a SAN environment</li><li>• Identify performance and sizing considerations</li></ul>                                                                                                              |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | EMC Technology Foundations—Backup and Recovery (E20-097)                                                                                                                                                                                          |                                                   |                         |                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                          |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NAS Foundations<br>Terminology, features, architecture, theory of operations, and management                                                                                                                                                      |                                                   |                         | 3-75 Hours                                                                                                                                                                                                                 | <ul style="list-style-type: none"><li>• Explain the concepts and value of network-attached storage, including Celerra platform and software</li><li>• Describe NAS Business Continuity, Replication, and Backup options</li></ul>                                                        | ASSOCIATE  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Replication Manager Foundations<br>NAS concepts, EMC NAS platforms and their differences, NAS Business Continuity, NAS Replication Technologies, NAS Archival Technologies and NAS Backup options                                                 |                                                   |                         | 2 Hours                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>• Describe Replication Manager's architecture, functionality, and benefits</li><li>• List applications supported by Replication Manager</li></ul>                                                                                                  |            |
| EMC NetWorker Modules Overview<br>NetWorker modules (Database, E-mail, Enterprise Applications, SnapShot)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                   |                                                   | 1 Hour                  | <ul style="list-style-type: none"><li>• Describe the EMC NetWorker Module solution and list the advantages</li><li>• Explain NetWorker Module architecture and describe the functionality of each of the modules</li></ul> |                                                                                                                                                                                                                                                                                          |            |
| EMC NetWorker Foundations<br>NetWorker architecture, features, and functionality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                   |                                                   | 2 Hours                 | <ul style="list-style-type: none"><li>• Describe the EMC NetWorker solution, its advantages, and the NetWorker hosts and their roles</li><li>• Explain NetWorker backup and recovery processes and types</li></ul>         |                                                                                                                                                                                                                                                                                          |            |
| Backup and Recovery Fundamentals<br>Backup Overview, Backup Architecture, Backup Terminology & Considerations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                   |                                                   | 2 Hours                 | <ul style="list-style-type: none"><li>• Describe basic backup procedures and terminology</li><li>• Explain generic backup architectures</li></ul>                                                                          |                                                                                                                                                                                                                                                                                          |            |
| OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                   | EMC Storage Technology Foundations Exam (E20-001) |                         |                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                          | ASSOCIATE  |
| Storage Technology Foundations (STF) (5 Days) (24 Hours)<br>Storage Technology Foundations (STF) offers a comprehensive look at all storage technology segments, including storage subsystems, SAN, NAS, CAS, IP-SAN, business continuity, backup/recovery, and storage management. This unique course focuses on the concepts and principles of storage technology, using EMC products and case studies as examples. Individuals new to storage can use STF to build the much needed foundation of knowledge across the breadth of storage technology segments; while those more experienced in storage can leverage this course to fill in the knowledge gaps on technologies in which they have yet to engage. STF will enable you to make more informed decisions as you address an increasingly complex IT environment, as well as prepare you to more effectively design, deploy, and manage your information infrastructure. Refer to the Storage Technologist curriculum description for more details. |                                                                                                                                                                                                                                                   |                                                   |                         |                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                          |            |

### Purchase Options

#### Storage Technology Foundations eLearning

CE-eVALPAKSTF \$ 990

#### Storage Technology Foundations ILT

CE-VALPAKSTF \$ 2,690

For details on purchase options see page 30.

## Expert Level Knowledge



### Backing Up and Recovering Clusters with EMC NetWorker

1 TU e-learn 2 Hours

The Backing Up and Recovering Clusters with EMC NetWorker course provides participants with the knowledge and skills necessary to install, configure and administer NetWorker in an environment where a NetWorker client, storage node or server is configured as part of a cluster.



### EMC Centra Backup and Recovery Module

1 TU e-learn 2 Hours

The Centra Backup and Recovery Module course provides participants with the knowledge and skills necessary to configure and manage a backup module for EMC Centra.



### Configuring EMC NetWorker in a Firewall Environment

1 TU e-learn 1 Hour

The Configuring EMC NetWorker in a Firewall Environment course provides participants with the knowledge and skills necessary to determine the minimum number of service ports used for NetWorker communications and to configure NetWorker clients to use only ports in the determined range.



### Configuring NetWorker with Microsoft Volume Shadow Copy Service

1 TU e-learn 2 Hours

This course provides participants with the knowledge necessary to back up and recover data on Microsoft Windows 2003 Server hosts using the Microsoft Volume Shadow Copy Service.



### EMC NetWorker Dashboard Overview

1 TU e-learn 1 Hour

This course provides participants with the knowledge and skills necessary to install, configure, and manage EMC NetWorker Dashboard module.



### EMC Disk Library Implementation and Management

6 TU LIVE 3 Days

This LIVE Virtual Classroom course covers tasks related to the implementation and management of an EMC Disk Library, including models DL210 to DL4400, up to version 3.0 of the emulation code. It starts with the basic configuration process, such as the creation virtual resources (libraries, drives, and tapes) and SAN clients, physical library recognition, and monitoring features. Participants will learn how to manage the EDL, using the Advanced Tape Creation method, creating reports and using other reporting features. The integration of the EDL with common operating systems and backup products is also discussed. Advanced topics include the utilization of Active Engine Failover, Auto Archive, Remote Copy features, and the Embedded Storage Node/Media Server. The use of troubleshooting features is also discussed.



### EMC NetWorker Module for Exchange Server

1 TU e-learn 4 Hours

The EMC NetWorker Module for Exchange Server course provides participants with the knowledge and skills necessary to install, configure, and manage the NetWorker backup module for Microsoft Exchange Server.



### EMC NetWorker Module for Microsoft SQL Server

1 TU e-learn 3 Hours

The EMC NetWorker Module for Microsoft SQL Server course provides participants with the knowledge and skills necessary to install, configure, and manage the NetWorker backup module for Microsoft SQL Server.



### EMC NetWorker Module for SAP

1 TU e-learn 2 Hours

The EMC NetWorker Module for SAP R/3 with Oracle course provides participants with the knowledge necessary to install, configure, and manage the NetWorker backup module for SAP R/3 with Oracle.

## Purchase Options

### Backup and Recovery ValuePak

CE-VALPAKBR \$ 3,960

### Backup and Recovery Video ValuePak

CE-VIDVPKBR \$ 1,980

For details on purchase options see page 30.



### EMC NetWorker PowerSnap Installation and Configuration

4 TU ILT 2 Days

In this course, participants learn to install and configure EMC NetWorker PowerSnap software to perform and back up Snapshots using EMC Symmetrix TimeFinder and EMC CLARiiON SnapView solutions.



### EMC NetWorker PowerSnap Overview

1 TU e-learn 2 Hours

This foundation course introduces students to the features and architecture of EMC NetWorker PowerSnap. This course provides participants with an understanding of NetWorker PowerSnap architecture, process, and data flow.



### Implementing EMC License Manager

1 TU e-learn 1 Hour

This course provides participants with the knowledge and skills necessary to use the EMC License Manager (LLM) to manage EMC NetWorker licenses across an enterprise.



### Performing Automated System Recovery (ASR) Using EMC NetWorker

1 TU e-learn 1 Hour

The Performing Automated System Recovery using EMC NetWorker course provides participants with the knowledge necessary to perform an automated system recovery (ASR) of a Microsoft Windows XP or Windows 2003 host.

# Storage Management Learning Path

## Storage Administrator



For any storage professional who deploys and manages storage resource management and reporting solutions. This curriculum offers required knowledge and lab experiences to fully exploit the capabilities of the EMC ControlCenter suite of software including StorageScope, and VisualSRM in establishing centralized storage management and reporting capabilities. Performance considerations, alert management, and framework integration are addressed in the follow-on courses.

| ValuePaks                      | Courses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Video Instructor-Led Learning                                                                                                                                                 | Instructor-Led Training | e-Learning                                                                                                                                                                                                                                                                                                                                                                           | Course Objectives                                                                                                                                                                                                                                                                                | Levels     |           |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                               |                         |                                                                                                                                                                                                                                                                                                                                                                                      | <div>Storage Management</div> <div>Specialist Exam for Storage Administrators (E20-582)</div>                                                                                                                                                                                                    |            |           |
| ControlCenter ValuePak         | <b>VisualSRM Introduction</b><br>Introduction to VisualSRM architecture, hardware requirements, and StorageScope File Level Reporter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                               |                         | <br>2 Hours                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Describe the architecture, features, and benefits of VisualSRM</li><li>Discuss the use of the Dashboard, Event Alerts, Intelligent Actions, Task Lists, and Thresholds</li></ul>                                                                           | SPECIALIST |           |
|                                | <b>ControlCenter Management</b><br>Administration, user management, alert management, reporting, performance management, Symmetrix and CLARiiON configuration management, SAN management, Symmetrix business continuance operations, host management, automated pathing, and storage provisioning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  <br>5 Days |                         | <ul style="list-style-type: none"><li>Determine and administer ControlCenter security, users, resource allocation/utilization and data collection policies</li><li>Manage Alerts and Autofixes, customize reports, and leverage performance management tools</li><li>Perform configuration management tasks for SAN and storage devices and business continuity operations</li></ul> |                                                                                                                                                                                                                                                                                                  |            |           |
|                                | <b>ControlCenter Install and Upgrade</b><br>Planning for, installing, and upgrading ControlCenter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                               |                         | <br>2 Hours                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Identify the references for planning and installing ControlCenter</li><li>Prepare the necessary information to install or upgrade ControlCenter</li></ul>                                                                                                  |            |           |
|                                | <b>ControlCenter Foundations</b><br>ControlCenter terminology, features, architecture, theory of operations and management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                               |                         | <br>2 Hours                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Describe the architectural components and theory of operations of ControlCenter</li><li>Use ControlCenter to carry out common storage management tasks</li></ul>                                                                                           |            |           |
|                                | <b>CLARiiON Basic Management</b><br>Navisphere Manager and CLI, basic management functions, CLARiiON storage platform                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                               |                         | <br>2 Hours                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Describe the utilities used to manage CLARiiON arrays and the Navisphere Manager GUI</li><li>Create and manage storage objects with Navisphere Manager</li></ul>                                                                                           |            |           |
|                                | <b>CLARiiON Foundations</b><br>CLARiiON disk array, CLARiiON data protection options, I/O management, and high-availability features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                               |                         | <br>2 Hours                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"><li>Describe the basic architecture and features of a CLARiiON disk array and differentiate among the various models</li><li>Illustrate the key high-availability features of the CLARiiON</li><li>Use Navisphere to perform common management tasks</li></ul> |            |           |
|                                | <b>SRDF Foundations</b><br>Symmetrix Business Continuity Solutions for remote replication, features, functionality, and benefits of the SRDF Family of products, SRDF/S, SRDF/CG, SRDF/AR, and SRDF/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                               |                         | <br>1 Hour                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"><li>Describe architectural components and theory of operations of SRDF</li><li>Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment</li></ul>                                |            |           |
|                                | <b>TimeFinder Foundations</b><br>TimeFinder terminology, features, architecture, theory of operations and management, TimeFinder Mirror, Clone and Snap local replication solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                               |                         | <br>2 Hours                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"><li>Describe the architectural components and theory of operations of TimeFinder</li><li>Explain how various replication options of TimeFinder can be integrated into Symmetrix DMX business continuity/disaster recovery environment</li></ul>                |            |           |
|                                | <b>Symmetrix Foundations</b><br>Symmetrix disk array architecture, volume protection, I/O path, connectivity, vaulting and high-availability features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                               |                         | <br>2 Hours                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"><li>Draw and describe the basic architecture of Symmetrix DMX</li><li>Explain Symmetrix DMX theory of operations, connectivity options, and key features</li></ul>                                                                                             |            |           |
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                               |                         |                                                                                                                                                                                                                                                                                                                                                                                      | <div>EMC Storage</div> <div>Technology Foundations Exam (E20-001)</div>                                                                                                                                                                                                                          |            |           |
| Storage Technology Foundations | <b>Storage Technology Foundations (STF)</b>  (5 Days)  (24 Hours)<br>Storage Technology Foundations (STF) offers a comprehensive look at all storage technology segments, including storage subsystems, SAN, NAS, CAS, IP-SAN, business continuity, backup/recovery, and storage management. This unique course focuses on the concepts and principles of storage technology, using EMC products and case studies as examples. Individuals new to storage can use STF to build the much needed foundation of knowledge across the breadth of storage technology segments; while those more experienced in storage can leverage this course to fill in the knowledge gaps on technologies in which they have yet to engage. STF will enable you to make more informed decisions as you address an increasingly complex IT environment, as well as prepare you to more effectively design, deploy and manage your information infrastructure. Refer to the Storage Technologist curriculum description for more details. |                                                                                                                                                                               |                         |                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                  |            | ASSOCIATE |

### Purchase Options

#### Storage Technology Foundations eLearning

CE-eVALPAKSTF \$ 990

#### Storage Technology Foundations ILT

CE-VALPAKSTF \$ 2,690

For details on purchase options see page 30.



## Purchase Options

### ControlCenter ValuePak

CE-VALPAKCC \$ 4,750

### ControlCenter Video ValuePak

CE-VIDVPKCC \$ 3,960

For details on purchase options see page 30.

## Expert Level Knowledge



### ControlCenter Alerts, Monitoring, and Framework Integration

6 TU LIVE 12 Hours

Health, capacity, and performance-related alerts methodology and considerations for deployment, alert lifecycle, ControlCenter use of SNMP to forward ControlCenter alerts to Framework Applications



### Symmetrix Performance Workshop

12 TU ILT 4 Days

Symmetrix performance analysis using ControlCenter Performance Manager and Console, key Symmetrix performance metrics, Symmetrix Optimizer and PowerPath, Symmetrix Business Continuity solutions and performance



### Symmetrix Management Console Fundamentals

1 TU e-learn 5 Hours

Symmetrix Management Console overview, installation, troubleshooting, Symmetrix configuration, TimeFinder and SRDF operations, comparison to Solutions Enabler SYMCLI and ControlCenter



### Visual SRM Installation, Configuration, and Usage

9 TU ILT 3 Days  
6 TU VILT

This course provides a thorough exposure to VisualSRM. Product architecture, planning/deployment, installation, configuration, management, and advanced administration are covered in detail. Hands-on lab exercises are provided throughout the course for practical experience. This course is intended for individuals responsible for using VisualSRM to manage and administer storage infrastructure environments.

# Storage Area Network (SAN) Learning Path

## Storage Administrator



For any storage professional who deploys and manages multi-site, multi-vendor SAN environments. This curriculum offers the required knowledge and lab experiences to configure and manage highly available SANs built on CLARiiON, Symmetrix DMX, and multi-vendor switches and heterogeneous servers. Centralized management software along with native switch tools are used to demonstrate best practices for monitoring, tuning, and scaling various SAN topologies. The knowledge and skills gained through this Learning Path will enable professionals to fully leverage the current SAN environment and effectively scale their infrastructure to meet future demands.

| ValuePaks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Courses                                                                                                                                                                                                                                                                                  | Video Instructor-Led Learning | Instructor-Led Training | e-Learning                                                                                                                                                          | Course Objectives                                                                                                                                                                                                                                                                      | Levels     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| SAN ValuePak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Storage Area Network (SAN) Specialist Exam For Storage Administrators (E20-532)                                                                                                                                                                                                          |                               |                         |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                        | SPECIALIST |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Connectrix M-Series Multi-Protocol</b><br>Product Overview, Services & Protocols, Native GUI and CLI Management Utilities, Implementation Scenarios                                                                                                                                   |                               |                         | 2.5 Hours                                                                                                                                                           | <ul style="list-style-type: none"><li>Describe Connectrix M-series Multi-Protocol Products features and application</li><li>Explore the interfaces used to monitor and configure these products</li></ul>                                                                              |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Connectrix B-Series Multi-Protocol Products</b><br>Product Overview, Services & Protocols, Native GUI and CLI Management Utilities, Implementation Scenarios                                                                                                                          |                               |                         | 2.5 Hours                                                                                                                                                           | <ul style="list-style-type: none"><li>Describe Connectrix M-series Multi-Protocol Products features and application</li><li>Explore the interfaces used to monitor and configure these products</li></ul>                                                                              |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>SAN Management</b><br>Native tools for managing Connectrix M, B, and MDS series switches and EMC SAN and storage management tools (i.e., Solutions Enabler SYMCLI, ControlCenter SAN Manager, Navisphere Manager, VisualSAN, and PowerPath), Legacy tools (ESN Manager and FibreZone) |                               | 4 Days                  |                                                                                                                                                                     | <ul style="list-style-type: none"><li>Perform switch management tasks using native switch tools</li><li>Manage SAN environment (hosts, switches, and storage) using EMC tools</li><li>Explain SAN management best practices including performance, monitoring, and reporting</li></ul> |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Connectrix M Series Architecture and Management</b><br>M-Series Switch and Director Models, M-Series Configuration and Management                                                                                                                                                     |                               |                         | 2 Hours                                                                                                                                                             | <ul style="list-style-type: none"><li>Describe the various M-series switch models and their architectures</li><li>Identify the tools available for configuring and managing the M-series switches</li></ul>                                                                            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Connectrix MDS Series Architecture and Management</b><br>MDS configuration, basic implementation, and ongoing management interfaces, switch segmentation with VSANs and scalability with SAN extension                                                                                |                               |                         | 2.5 Hours                                                                                                                                                           | <ul style="list-style-type: none"><li>Describe the various MDS-series switch models and their architectures</li><li>Identify the tools available for configuring and managing the MDS-series switches</li></ul>                                                                        |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Connectrix B Series Architecture and Management</b><br>Common Switch Architecture, Model Hierarchy and Functionality, Native Switch Tools, Optional Switch Tools, Switch Security                                                                                                     |                               |                         | 2 Hours                                                                                                                                                             | <ul style="list-style-type: none"><li>Describe the various B-series switch models and their architectures</li><li>Identify the tools available for configuring and managing the B-series switches</li></ul>                                                                            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>PowerPath Configuration and Administration</b><br>Features and functionality of PowerPath across multiple UNIX and Windows platforms, for both Symmetrix and CLARiiON storage platform                                                                                                |                               |                         | 2 Hours                                                                                                                                                             | <ul style="list-style-type: none"><li>Describe PowerPath architecture and its load balancing policies</li><li>Explain PowerPath connectivity and configuration in both SCSI and Fibre Channel environments</li></ul>                                                                   |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>ControlCenter Architecture</b><br>ControlCenter Architecture Tiers, Communication Between ControlCenter Architecture Tiers, Types of Agents and their Functions, General Planning, and Performance Considerations                                                                     |                               |                         | 1 Hour                                                                                                                                                              | <ul style="list-style-type: none"><li>Describe each tier of the ControlCenter architecture and the communication between ControlCenter tiers</li><li>Discuss general planning and performance considerations for ControlCenter infrastructure components and agents</li></ul>          |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>IP SAN Technologies</b><br>Overview of iSCSI, FCIP, and iFCP, different methods of transporting block-level data in a SAN using IP as a carrier protocol                                                                                                                              |                               |                         | 2 Hours                                                                                                                                                             | <ul style="list-style-type: none"><li>Describe and discuss IP convergence in the SAN and its implications</li><li>Explain the basic architecture of iSCSI, FCIP, iFCP, and Potential IP SAN topology solutions</li></ul>                                                               |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Basic Network Environment</b><br>ARPA Network Architecture, Network and Transport Layers, Application Layer, and Troubleshooting                                                                                                                                                      |                               |                         | 5 Hours                                                                                                                                                             | <ul style="list-style-type: none"><li>Describe the components of a typical network infrastructure</li><li>Identify basic network concepts that will help in configuring and managing EMC products</li></ul>                                                                            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Introduction to Fibre Channel</b><br>Fibre Channel protocol, Fibre Channel topologies, WWN usage, and Fibre Channel logins in a SAN or NAS environment                                                                                                                                |                               |                         | 1.5 Hours                                                                                                                                                           | <ul style="list-style-type: none"><li>Discuss Fibre Channel protocol basics and identify key differences between various Fibre Channel topologies</li><li>Define WWN and explain its role in Fibre Channel environments</li></ul>                                                      |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>PowerPath Foundations</b><br>PowerPath terminology, features, architecture, theory of operations and management                                                                                                                                                                       |                               |                         | 1 Hour                                                                                                                                                              | <ul style="list-style-type: none"><li>Discuss the features and benefits of PowerPath in an open systems host environment</li><li>Explain how PowerPath achieves transparent recovery of host to storage channels</li></ul>                                                             |            |
| <b>SAN Foundations</b><br>Fibre Channel and IP-based Storage Area Networks (SANs), the EMC Connectrix family of Fibre Channel switches                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                          |                               | 1 Hour                  | <ul style="list-style-type: none"><li>Describe Fibre Channel, IP-SANs, and the EMC Connectrix family of products</li><li>Discuss SAN design consideration</li></ul> |                                                                                                                                                                                                                                                                                        |            |
| EMC Storage Technology Foundations Exam (E20-001)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                          |                               |                         |                                                                                                                                                                     | ASSOCIATE                                                                                                                                                                                                                                                                              |            |
| <b>Storage Technology Foundations (STF)</b> (5 Days) (24 Hours)<br>Storage Technology Foundations (STF) offers a comprehensive look at all storage technology segments, including storage subsystems, SAN, NAS, CAS, IP-SAN, business continuity, backup/recovery, and storage management. This unique course focuses on the concepts and principles of storage technology, using EMC products and case studies as examples. Individuals new to storage can use STF to build the much needed foundation of knowledge across the breadth of storage technology segments; while those more experienced in storage can leverage this course to fill in the knowledge gaps on technologies in which they have yet to engage. STF will enable you to make more informed decisions as you address an increasingly complex IT environment, as well as prepare you to more effectively design, deploy, and manage your information infrastructure. Refer to the Storage Technologist curriculum description for more details. |                                                                                                                                                                                                                                                                                          |                               |                         |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                        |            |

### Expert Level Knowledge



#### SAN Planning and Design Concepts

1 TU e-learn 2.5 Hours

Planning, Fibre Channel SAN Design, iSCSI Design and Deployment Considerations, Extending Storage Area Networks, Storage Virtualization with Invista, Design Factors



#### SAN Monitoring and Policy Management

1 TU e-learn 3 Hours

SAN monitoring and policy management, SAN device monitoring metrics, ControlCenter SAN Manager and VisualSAN



#### Host-to-Storage SAN Connectivity

15 TU ILT 5 Days

Host configuration, multi-pathing and logical volume management, switch configuration (Brocade, McDATA, Cisco), zoning, and fabric management, CLARiiON and Symmetrix storage configuration, reclaiming and repurposing storage using Configuration Manager CLI

### Purchase Options

#### Storage Technology Foundations eLearning

CE-eVALPAKSTF \$ 990

#### Storage Technology Foundations ILT

CE-VALPAKSTF \$ 2,690

### Purchase Options

#### SAN ValuePak

CE-VALPAKSAN \$ 4,750

#### SAN Video ValuePak

CE-VIDVPKSAN \$ 3,960

For details on purchase options see page 30.

### Expanded Learning



#### EMC RecoverPoint Architecture and Management Overview

1 TU e-learn 2 Hours

This course is designed for individuals involved with the planning, deployment, and integration of the RecoverPoint solution. The training addresses product architecture, positioning, and design considerations. It also provides an overview of the implementation process.



#### EMC RecoverPoint Operations and Management

9 TU ILT 3 Days

This EMC RecoverPoint Workshop Course is designed for EMC customers responsible for administration and management of EMC RecoverPoint appliances on EMC SAN storage environments and third-party heterogeneous storage environments.



#### MDS 9000 Configuration and Troubleshooting

15 TU ILT 5 Days

This course presents the software tools for installing and managing the EMC Connectrix 9000 series of switches/directors. These tools include the Cisco CLI and FabricManager. Using these tools, the instructor demonstrates how to perform the initial installation and configuration of the switches/directors and also how to manage them. The instructor also demonstrates how to use the available software features including VSANs, interface configuration, trunking, port channels, and zoning. As a follow-up to each of these demonstrations, the students perform the actual configuration of each feature. Finally, the students learn how to use troubleshooting tools including Ethereal, Logs, and FCTrace, and FCPing tools. This course is intended for anyone responsible for performing switch installation, zoning, and maintenance activities for MDS series directors or switches.

# Networked Storage — NS Solution Learning Path Storage Administrator



For any storage professional who deploys and manages a Celerra NAS environment. This curriculum provides the required knowledge and hands-on lab experience to fully exploit the features, functions, and availability of Celerra file server configurations to support CIFS, NFS, and multi-protocol file system environments with considerations for data replication within a NAS environment.

| ValuePaks                                                                                                                                                                                                                                                                           | Courses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                                | Levels |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| Celerra ValuePak                                                                                                                                                                                                                                                                    | Networked Storage - (NS) Specialist Exam For Storage Administrators (E20-537)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                         |            |                                                                                                                                                                                                                                                                                                                  |        | SPECIALIST |
|                                                                                                                                                                                                                                                                                     | IP SAN Technologies<br>Overview of iSCSI, FCIP, and iFCP, different methods of transporting block-level data in a SAN using IP as a carrier protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Describe and discuss IP convergence in the SAN and its implications</li><li>Explain the basic architecture of iSCSI, FCIP, iFCP, and Potential IP SAN topology solutions</li></ul>                                                                                         |        |            |
|                                                                                                                                                                                                                                                                                     | Celerra Antivirus Agent<br>CAVA components and concepts, CAVA tools and utilities, Celerra File Server                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                         | 1 Hour     | <ul style="list-style-type: none"><li>Explain the purpose, functionality, and methodology associated with Celerra AntiVirus Agent</li><li>Describe the CAVA components, concepts, tools, and utilities</li></ul>                                                                                                 |        |            |
|                                                                                                                                                                                                                                                                                     | Celerra Features and Functions<br>High Availability, NAS Business Applications, Data Replication and Recovery, Security Features, Celerra Management Options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                         | 1 Hour     | <ul style="list-style-type: none"><li>Describe the different management options available to Celerra and its high-availability features</li><li>Explain Celerra features providing network compatibility, security, Data Replication and Recovery and</li></ul>                                                  |        |            |
|                                                                                                                                                                                                                                                                                     | NAS Operations and Management—Multi-Protocol<br>Management tasks (file system creation, export, permissions, security, availability) for Celerra platforms in a Windows, a UNIX, and mixed Windows and UNIX environments using command line and GUI interfaces                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                         | 5 Days     | <ul style="list-style-type: none"><li>Configure EMC NAS software for Celerra file sharing platforms</li><li>Create, export, and manage CIFS and NFS file systems, including advanced security and availability features</li><li>Implement Virtual Data Movers, SnapSure, Celerra Replicator, and iSCSI</li></ul> |        |            |
|                                                                                                                                                                                                                                                                                     | NS Series Architectural Overview<br>Hardware components, single to dual Data Mover Conversion, Control Station, Disk Array Enclosures, Storage Processors, Celerra NS Series Model Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                         | 1 Hour     | <ul style="list-style-type: none"><li>Identify and explain Celerra NS series hardware components and system architecture</li><li>Define various models within the NS series and explain back-end storage connectivity</li></ul>                                                                                  |        |            |
|                                                                                                                                                                                                                                                                                     | Celerra Fundamentals<br>NAS Fundamentals, Celerra Data Movers, The Celerra Control Station, Storage Options, EMC Platform Types                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                         | 1 Hour     | <ul style="list-style-type: none"><li>Describe the advantages of a NAS solution and Celerra system components</li><li>Discuss business applications that benefit most from a Celerra solution</li></ul>                                                                                                          |        |            |
|                                                                                                                                                                                                                                                                                     | Introduction to Fibre Channel<br>Fibre Channel protocol, Fibre Channel topologies, WWN usage, and Fibre Channel logins in a SAN or NAS environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                         | 1.5 Hours  | <ul style="list-style-type: none"><li>Discuss Fibre Channel protocol basics and identify key differences between various Fibre Channel topologies</li><li>Define WWN and explain its role in Fibre Channel environments</li></ul>                                                                                |        |            |
|                                                                                                                                                                                                                                                                                     | Basic Network Environment<br>ARPA Network Architecture, Network and Transport Layers, Application Layer and Troubleshooting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                         | 5 Hours    | <ul style="list-style-type: none"><li>Describe the components of a typical network infrastructure</li><li>Identify basic network concepts that will help in configuring and managing EMC products</li></ul>                                                                                                      |        |            |
|                                                                                                                                                                                                                                                                                     | Networking Environmental Primer<br>Windows Networking Environment, Windows 2003 Differences, and UNIX Networking Environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Explain Windows 2000 and 2003 features and functionalities that affect a networked storage environment</li><li>Explain UNIX features and functionalities that affect a networked storage environment</li></ul>                                                             |        |            |
|                                                                                                                                                                                                                                                                                     | CLARiiON Foundations<br>CLARiiON Disk array, CLARiiON data protection options, I/O management, and high-availability features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Describe the basic architecture and features of a CLARiiON disk array and differentiate among the various models</li><li>Illustrate the key high-availability features of the CLARiiON</li><li>Use Navisphere to perform common management tasks</li></ul>                 |        |            |
|                                                                                                                                                                                                                                                                                     | NAS Foundations<br>NAS concepts, EMC NAS platforms and their differences, NAS Business Continuity, NAS Replication Technologies, NAS Archival Technologies and NAS Backup options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                         | 3.75 Hours | <ul style="list-style-type: none"><li>Explain the concepts and value of network-attached storage, including Celerra platform and software</li><li>Describe NAS Business Continuity, Replication, and Backup Options</li></ul>                                                                                    |        |            |
| Storage Technology Foundations                                                                                                                                                                                                                                                      | EMC Storage Technology Foundations Exam (E20-001)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                         |            |                                                                                                                                                                                                                                                                                                                  |        | ASSOCIATE  |
|                                                                                                                                                                                                                                                                                     | <b>Storage Technology Foundations (STF)</b> (5 Days) (24 Hours)<br>Storage Technology Foundations (STF) offers a comprehensive look at all storage technology segments, including storage subsystems, SAN, NAS, CAS, IP-SAN, business continuity, backup/recovery, and storage management. This unique course focuses on the concepts and principles of storage technology, using EMC products and case studies as examples. Individuals new to storage can use STF to build the much needed foundation of knowledge across the breadth of storage technology segments; while those more experienced in storage can leverage this course to fill in the knowledge gaps on technologies in which they have yet to engage. STF will enable you to make more informed decisions as you address an increasingly complex IT environment, as well as prepare you to more effectively design, deploy, and manage your information infrastructure. Refer to the Storage Technologist curriculum description for more information. |                               |                         |            |                                                                                                                                                                                                                                                                                                                  |        |            |
| <div><div>Purchase Options</div><div><div>Storage Technology Foundations eLearning</div><div>CE-eVALPAKSTF \$ 990</div></div><div><div>Storage Technology Foundations ILT</div><div>CE-VALPAKSTF \$ 2,690</div></div></div> <div>For details on purchase options see page 30.</div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                         |            |                                                                                                                                                                                                                                                                                                                  |        |            |

## Purchase Options

### Celerra ValuePak

CE-VALPAKNS \$ 4,750

### Celerra Video ValuePak

CE-VIDVPKNS \$ 3,960

For details on purchase options see page 30.

## Expert Level Knowledge



### Upper Layer Network Operations

15 TU    ILT    5 Days

This course focuses on upper layer network operations. Participants will gain experience with key client/server-based network services by installing, configuring, and observing the services within UNIX and Windows environments. Students will also learn how to build key components, including an NFS (Network File System) environment and a CIFS (Common Internet File System).



### NS Series Gateway Configuration Application Concepts

1 TU    e-learn    1 Hour

Features and capabilities of the NS Series Gateway line of equipment



### Celerra Replicator Concepts

1 TU    e-learn    1 Hour

Local Replication, Remote Location, Failover and Failback, Configuration, Theory of Operation, Business Solutions



### NAS Backup Concepts

1 TU    e-learn    2 Hours

CLARiiON Disk Library features and functionality, CLARiiON Disk Library architecture, Backup Terminology, Tape as a Backup Medium, Backup Evolution, Network Data Management Protocol (NDMP) synopsis



### NAS Gateway Implementation

9 TU    ILT    3 Days

NAS implementation on a public SAN review, NAS code install on an NSXoo Gateway Option 1 configuration (direct-attached implementation), NAS code upgrade from Gateway Option 1 (direct-attached) to a Gateway Option 2 (fabric-attached) configuration with associated fabric zone configuration and 1 Gb switch implementation

## Expanded Learning



### Celerra HighRoad

1 TU    e-learn    1 Hour

Celerra HighRoad provides an overview of the HighRoad technology that has been shipped to offer higher performance file delivery than CIFS and NFS in a network-attached storage environment. This module will describe the architecture and benefits of implementing HighRoad. At the end of this module the student will be able to describe the architecture and the steps involved in implementing Highroad.



### Celerra NSX Architectural Overview

1 TU    e-learn    1 Hour

This course provides an overview of the Celerra NSX hardware and describes the features and functions of the software and hardware. It will compare and contrast the differences between the NSX and the older NS families. The primary focus is on hardware components and back-end connectivity.



### EMC Rainfinity Design and Implementation Workshop

15 TU    ILT    5 Days

This workshop is designed for technical pre-sales, solution architects, and implementation specialists who will be providing technical Rainfinity solution design and implementation procedures for the deployment of Rainfinity into NAS and other networked-storage environments. To reinforce learning, the course uses a blended approach that combines instructor-led content and lab exercises. An integral part of the training will address overall architecture design, basic and advanced planning and implementation practices, data migration planning and procedures, virtual storage performance considerations, overall best practices, and troubleshooting.



### Rainfinity Global File Virtualization Introduction

1 TU    e-learn    1 Hour

This course is intended for anyone who needs a basic understanding of the purpose of Rainfinity and its benefits to customers. The course covers basic concepts, product value, architecture, and deployment considerations.

# Symmetrix Business Continuity Learning Path

## Storage Administrator



For any storage professional who deploys and manages local and/or remote replication solutions in Symmetrix DMX-based open systems environment. This curriculum offers required knowledge and lab experiences to fully exploit the capabilities of TimeFinder/SRDF software in variety of business continuity and disaster recovery scenarios. Replication technology integration with specific applications such as Oracle, SQL, and Exchange are addressed in the follow-on courses.

| ValuePaks                              | Courses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                                              | Levels     |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Symmetrix Business Continuity ValuePak | Symmetrix Business Continuity Specialist Exam for Storage Administrators (E20-512)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                         |            |                                                                                                                                                                                                                                                                                                                                | SPECIALIST |
|                                        | <b>Symmetrix Business Continuity—SRDF Solutions</b><br>Configuration, operations, and integration with Windows and UNIX hosts, EMC Solutions Enabler Command Line Interface for managing SRDF operations in an enterprise environment; SRDF Synchronous, Asynchronous and Automated Replication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               | 3 Days                  |            | <ul style="list-style-type: none"><li>Describe SRDF host considerations and configurations within Sun Solaris, HP-UX, IBM AIX and Windows—LVM environments</li><li>Execute various operations for SRDF/S, SRDF/A, and SRDF/AR using SYMCLI</li></ul>                                                                           |            |
|                                        | <b>SRDF Foundations</b><br>Symmetrix Business Continuity Solutions for remote replication, features, functionality and benefits of the SRDF Family of products, SRDF/S, SRDF/CG, SRDF/AR, and SRDF/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                         | 1 Hour     | <ul style="list-style-type: none"><li>Describe EMC Consistency Technology</li><li>Describe architectural components and theory of operations of SRDF</li><li>Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment</li></ul>                  |            |
|                                        | <b>Symmetrix Business Continuity—TimeFinder Solutions</b><br>SRDF Synchronous, Asynchronous, and Automated Replication configuration, operations, and integration with Windows and UNIX hosts, EMC Solutions Enabler command and Symmetrix Management console operations for SRDF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               | 2 Days                  |            | <ul style="list-style-type: none"><li>Describe TimeFinder functionality and theory of operations</li><li>Describe TimeFinder host considerations and configurations within Sun Solaris, HP-UX, AIX, and Windows environments</li><li>Use SYMCLI to perform TimeFinder BCV, TimeFinder Clone, and EMC Snap operations</li></ul> |            |
|                                        | <b>TimeFinder Foundations</b><br>TimeFinder terminology, features, architecture, theory of operations, and management, TimeFinder Mirror, Clone, and Snap local replication solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Describe Fibre Channel, IP-SANs, and the EMC Connectrix family of products</li><li>Discuss SAN design consideration</li></ul>                                                                                                                                                            |            |
|                                        | <b>PowerPath Foundations</b><br>PowerPath terminology, features, architecture, theory of operations and management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Discuss the features and benefits of PowerPath in an open systems host environment</li><li>Explain how PowerPath achieves transparent recovery of host to storage channels</li></ul>                                                                                                     |            |
|                                        | <b>Symmetrix Foundations</b><br>Symmetrix disk array architecture, volume protection, I/O path, connectivity, vaulting, and high-availability features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Draw and describe the basic architecture of Symmetrix DMX</li><li>Explain Symmetrix DMX theory of operations, connectivity options, and key features</li></ul>                                                                                                                           |            |
| Storage Technology Foundations         | EMC Storage Technology Foundations Exam (E20-001)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                         |            |                                                                                                                                                                                                                                                                                                                                | ASSOCIATE  |
|                                        | <b>Storage Technology Foundations (STF)</b> (5 Days)  (24 Hours)<br>Storage Technology Foundations (STF) offers a comprehensive look at all storage technology segments, including storage subsystems, SAN, NAS, CAS, IP-SAN, business continuity, backup/recovery, and storage management. This unique course focuses on the concepts and principles of storage technology, using EMC products and case studies as examples. Individuals new to storage can use STF to build the much needed foundation of knowledge across the breadth of storage technology segments; while those more experienced in storage can leverage this course to fill in the knowledge gaps on technologies in which they have yet to engage. STF will enable you to make more informed decisions as you address an increasingly complex IT environment, as well as prepare you to more effectively design, deploy, and manage your information infrastructure. Refer to the Storage Technologist curriculum description for more details. |                               |                         |            |                                                                                                                                                                                                                                                                                                                                |            |

### Purchase Options

#### Storage Technology Foundations eLearning

CE-eVALPAKSTF \$ 990

#### Storage Technology Foundations ILT

CE-VALPAKSTF \$ 2,690

For details on purchase options see page 30.

## Expert Level Knowledge



### SRDF/CE for MSCS Overview

1 TU e-learn 5 hours

This course focuses on the architecture and deployment of an SRDF/CE cluster enabler environment for MSCS (Microsoft's Cluster Services). It is the objective of this program to give the participant a good understanding of "cluster enabler" technology. Concepts covered in this program included Cluster Design, Majority Node Set, File Share Witness, and Active/Active, Active/Passive modes of operation. Finally this course presents in detail EMC's SRDF cluster solution detailing failover and failback technology scenarios.



### Oracle Integration with Symmetrix

12 TU ILT 4 Days

Oracle 10g integration with TimeFinder/Mirror Clone and Snap, SRDF/S and SRDF/A. Consistency Technology. Identify and create an optimal performance layout for an Oracle 10g database application within a Symmetrix/DMX infrastructure.



### Exchange Integration with Symmetrix

9 TU ILT 3 Days

Microsoft Exchange Server 2003 on Symmetrix/DMX, implement TimeFinder Integration Module for Exchange, configure Replication Manager to replicate Exchange Server 2003, distance solutions for Microsoft Exchange Server 2003



### SQL Server Integration with Symmetrix

12 TU ILT 4 Days

Microsoft SQL Server 2005 on Symmetrix/DMX, implement TimeFinder Integration Module for SQL Server, configure Replication Manager to replicate SQL Server 2005, distance solutions for Microsoft SQL Server 2005

## Expanded Learning



### EMC Open Replicator Workshop

6 TU ILT 2 Days

This class will lead participants through the terminologies and technologies used in Open Replicator. The combinations of modes of operation—Hot/Cold, Push/Pull, Online/Offline—will be covered in terms of definitions, restrictions/limitations, command line operations, and benefits. Lab activities will be limited to the use of EMC arrays, though non-EMC array considerations will be presented.



### Open Migrator/LM for Unix

1 TU e-learn 2 Hours

Open Migrator/LM is a host based "Data Migration" application. This course provides the learner with an overview of the Open Migrator/LM for Unix application. This course will present a migration scenario and will review most of the Open Migrator/LM CLI command set. Also covered, in this course are the Open Migrator/LM Unix installation procedures for Sun Solaris, HP/UX and AIX.



### Open Migrator for Windows Overview

1 TU e-learn 2 Hours

This course provides the learner with an overview of online data migration using the Open Migrator (formally known as DRU) application. A detailed scenario indicates how the Open Migrator application moves "Windows" host, data from a source volume to its target volume with minimal disruption to the server or applications running on the server. The Open Migrator installation procedure is also covered.



### Replication Manager Implementation and Management Overview

1 TU e-learn 2 Hours

Management tasks (file system creation, export, permissions, security, availability) for Celerra platforms in a Windows, a UNIX, and mixed Windows and UNIX environments using command line and GUI interfaces

## Purchase Options

### Symmetrix Business Continuity ValuePak

CE-VALPAKBC \$ 4,750

### Symmetrix Business Continuity Video ValuePak

CE-VIDVPKBC \$ 3,960

For details on purchase options see page 30.



### Replication Manager Workshop

15 TU ILT 5 Days

This workshop gives the student the opportunity to install, administer, operate, and troubleshoot Replication Manager. The focus will be on working with replications of file systems in the lab environment. Database specific replication is not included in this course. This course is intended for any person responsible for deploying, operating, or maintaining Replication Manager.



### Symmetrix Performance Workshop

12 TU ILT 4 Days

Symmetrix performance analysis using ControlCenter Performance Manager and Console. Key Symmetrix performance metrics, Symmetrix Optimizer and PowerPath, Symmetrix Business Continuity solutions and performance



### SRDF/CE for MSCS Implementation and Management

15 TU ILT 5 Days

Configure, implement, and manage SRDF/CE in a MSCS (Microsoft Cluster Services) environment



### Open Systems Business Continuity SRDF/Star Solutions

12 TU ILT 4 Days

Positioning architecture, configuration, and operations of SRDF/Star in open systems environments, unplanned and planned failover procedures, recovery from workload site faults

# CLARiiON Solutions Specialty Learning Path Storage Administrator



For any storage professional who deploys and manages CLARiiON SAN environments. The Management curriculum offers the required knowledge and lab experience to manage an end-to-end SAN environment including, Windows and UNIX servers, SAN switches, and CLARiiON storage systems using Navisphere, Access Logix, and other management tools. The Business Continuity curriculum addresses local and remote data replication requirements via a thorough exposure to SnapView, MirrorView, and SAN Copy. The knowledge and skills gained through this Learning Path will enable professionals to fully leverage high-availability CLARiiON solutions.

| ValuePaks                                                             | Courses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                | Levels     |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                         |            | CLARiiON Solutions Specialist Exam for Storage Administrators (E20-522)                                                                                                                                                                                                                          |            |
| CLARiiON Business Continuity ValuePak<br>CLARiiON Management ValuePak | <b>MirrorView and SAN Copy Configuration and Management</b><br>Configure and use CLARiiON based business continuity solutions for remote replication, MirrorView, SAN Copy terminology, features, architecture, and theory of operations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | *                             | 1 Day                   |            | <ul style="list-style-type: none"><li>Configure the write intent log and remote replication connections</li><li>Manage and monitor various MirrorView and SAN Copy configurations</li><li>Troubleshoot and correct common problems associated with EMC SAN Copy sessions</li></ul>               | SPECIALIST |
|                                                                       | <b>MirrorView and SAN Copy Foundations</b><br>Remote Replication, MirrorView and SAN Copy Terminology, features architecture, theory of operations and management, and SAN Copy data mobility concepts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                         | 1 Hour     | <ul style="list-style-type: none"><li>Describe the architecture, features and benefits of remote replication on the CLARiiON storage platform</li><li>Explain the various CLARiiON remote replication solutions</li></ul>                                                                        |            |
|                                                                       | <b>SnapView Configuration and Management</b><br>Configure and use CLARiiON local replication, SnapView snapshots and clones                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | *                             | 1 Day                   |            | <ul style="list-style-type: none"><li>Calculate the required size of and configure the SnapView cache</li><li>Configure and use SnapView SnapShots</li><li>Configure and use SnapView clones</li></ul>                                                                                           |            |
|                                                                       | <b>SnapView Foundations</b><br>Local replication, SnapView terminology, features architecture, theory of operations and management, CLARiiON snapshots, and clones                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                         | 1 Hour     | <ul style="list-style-type: none"><li>Describe the architecture, features and benefits of SnapView on the CLARiiON Storage Platform</li><li>Explain the various Local Replication Solutions available in SnapView</li></ul>                                                                      |            |
|                                                                       | <b>CLARiiON Host Integration and Management</b><br>CLARiiON CX3 series, Integration in Windows and UNIX environments and PowerPath, Access Logix and Navisphere applications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | *                             | 3 Days                  |            | <ul style="list-style-type: none"><li>Configure and manage CLARiiON storage systems in multi-path SAN Windows and UNIX environments</li><li>Administer PowerPath and Navisphere 6.x</li><li>Gather and analyze CLARiiON performance data and tune for improved performance</li></ul>             |            |
|                                                                       | <b>VisualSRM Introduction</b><br>Introduction to VisualSRM architecture, hardware requirements, and StorageScope File Level Reporter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Describe the architecture, features and benefits of VisualSRM</li><li>Discuss the use of the Dashboard, Event Alerts, Intelligent Actions, Task Lists and Thresholds</li></ul>                                                                             |            |
|                                                                       | <b>CLARiiON Advanced Management</b><br>CLARiiON management concepts, including Access Logix, PowerPath, metaLUNs, and LUN migration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Explain Access Logix theory of operations and functionality</li><li>Describe how to manage metaLUNs and migrate LUNs</li></ul>                                                                                                                             |            |
|                                                                       | <b>CLARiiON Basic Management</b><br>Navisphere Manager and CLI, basic management functions, CLARiiON storage platform                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Describe the utilities used to manage CLARiiON arrays and the Navisphere Manager GUI</li><li>Create and manage storage objects with Navisphere Manager</li></ul>                                                                                           |            |
|                                                                       | <b>PowerPath Foundations</b><br>PowerPath terminology, features, architecture, theory of operations and management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                         | 1 Hour     | <ul style="list-style-type: none"><li>Discuss the features and benefits of PowerPath in an open systems host environment</li><li>Explain how PowerPath achieves transparent recovery of host to storage channels</li></ul>                                                                       |            |
|                                                                       | <b>CLARiiON Foundations</b><br>CLARiiON Disk array, CLARiiON data protection options, I/O management, and high-availability features, Navisphere                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                         | 2 Hours    | <ul style="list-style-type: none"><li>Describe the basic architecture and features of a CLARiiON disk array and differentiate among the various models</li><li>Illustrate the key high availability features of the CLARiiON</li><li>Use Navisphere to perform common management tasks</li></ul> |            |
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                         |            | EMC Storage Technology Foundations Exam (E20-001)                                                                                                                                                                                                                                                |            |
| Storage Technology Foundations                                        | <b>Storage Technology Foundations (STF)</b> (5 Days)  (24 Hours)<br>Storage Technology Foundations (STF) offers a comprehensive look at all storage technology segments, including storage subsystems, SAN, NAS, CAS, IP-SAN, business continuity, backup/recovery, and storage management. This unique course focuses on the concepts and principles of storage technology, using EMC products and case studies as examples. Individuals new to storage can use STF to build the much needed foundation of knowledge across the breadth of storage technology segments; while those more experienced in storage can leverage this course to fill in the knowledge gaps on technologies in which they have yet to engage. STF will enable you to make more informed decisions as you address an increasingly complex IT environment, as well as prepare you to more effectively design, deploy and manage your information infrastructure. Refer to the Storage Technologist curriculum description for more details. |                               |                         |            |                                                                                                                                                                                                                                                                                                  | ASSOCIATE  |

\* CLARiiON Host Integration Management VILT contains all three courses.

## Purchase Options

### Storage Technology Foundations eLearning

CE-eVALPAKSTF \$ 990

### Storage Technology Foundations ILT

CE-VALPAKSTF \$ 2,690

For details on purchase options see page 30.

## Expert Level Knowledge



### CLARiiON Performance Workshop

9 TU    1LT    3 Days

Optimal performance, Windows and UNIX, Initial data layout, potential or real performance issues, CLARiiON, SnapView, MirrorView, SAN Copy, MirrorView/A, backup, testing, and disaster recovery



### Exchange and SQL Server integration with CLARiiON

9 TU    1LT    3 Days

This expert level course details the configuration and implementation of Microsoft Exchange and SQL Server on CLARiiON storage systems. The skills taught here are used to size and lay out Exchange and SQL Server databases, logs, and other data structures on CLARiiON storage systems. Other skills taught here include the correct design and implementation of solutions that make use of the CLARiiON layered applications. Extensive hands-on labs are provided for basic Exchange and SQL Server configurations, as well as those using SnapView, MirrorView, SAN Copy, and MirrorView/Asynchronous.



## Expanded Learning



### CLARiiON AX150 Fundamentals

1 TU    e-learn    2 Hours

This course provides the learners with an understanding of the CLARiiON AX150 series hardware and software components. It covers the steps involved in replacing different hardware components, as well as the steps to configure a new CLARiiON AX150 series array. This course also covers the topics surrounding connectivity between the AX150 array and various hosts. The AX150i module will cover the differences between the AX150 and the AX150i product line, specifically iSCSI support.



### CLARiiON AX150 Management

1 TU    e-learn    2 Hours

This course provides learners with an understanding of the CLARiiON AX150 series management software tools. It covers steps involved in array initialization, management server utility, creating disk pools, virtual disks and hot spares, as well as SnapView and diagnostic file creation. The AX150i module covers the AX150i management differences.



### Replication Manager Workshop

15 TU    1LT    5 Days

This workshop gives the student the opportunity to install, administer, operate, and troubleshoot Replication Manager v5.0. The focus will be on working with replications of file systems in the lab environment.



### Navisphere Secure CLI Scripting

9 TU    1LT    3 Days

This expert-level course details the use of Navisphere Secure CLI and Perl for automating CLARiiON solutions. The skills taught here are useful for environments requiring automatic collection of data, or starting and stopping of Snapshots, Clones, SAN Copy sessions, and MirrorView mirrors. Extensive exercises are provided for basic CLARiiON configurations, as well as those using SnapView, MirrorView, SAN Copy, and MirrorView/Asynchronous for backup, testing, and disaster recovery. Collection of performance data using Navisphere Analyzer is covered in detail.

## Purchase Options

### CLARiiON Business Continuity ValuePak

CE-VALPAKBCB    \$ 4,750

### CLARiiON Business Continuity Video ValuePak

CE-VIDVPKBCB    \$ 3,960

### CLARiiON Management ValuePak

CE-VALPAKCLN    \$ 2,970

For details on purchase options see page 30.

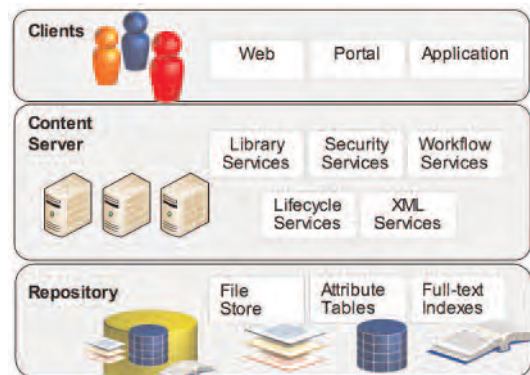
# Content Management Server Programming Application Developer



For application developers who create custom applications using EMC Documentum Content Management solutions. This certification-aligned curriculum provides knowledge, hands-on experience, and formal validation required for professionals who are going to develop content management applications using Documentum Foundation Classes and interfaces. Programming best practices are addressed in the advanced portion of the curriculum.

| Courses                                                                                                                                                                                                                                                                                                                                                                     | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Levels     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                                                                                                                                                                                                                                                                                                                                                                             |                               |                         |            | Content Management Server Programming Exam (E20-405)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |
| <b>DFC—Advanced</b><br>Familiarize the student with some of the more advanced areas of DFC, provide detailed architectural information, and communicate best practices when programming with the DFC. Where applicable, participants will be able to choose between Java, C#, and Visual Basic versions of the labs.                                                        |                               | 3 Days                  |            | <ul style="list-style-type: none"> <li>• Program with the operations package</li> <li>• Programmatically manipulate virtual documents</li> <li>• Programmatically process XML documents</li> <li>• Return query results as XML using XDQL</li> <li>• Execute workflows through DFC</li> <li>• Use logging and tracing</li> <li>• Use the Business Object Framework (BOF) to use and create business objects</li> <li>• Use the BOF packaging and deployment feature</li> <li>• Create a Documentum Web service from an existing business object using the Web Services Framework</li> <li>• Program with best practices</li> </ul>                 | SPECIALIST |
| <b>DFC—Fundamentals</b><br>Provides an overview of the Documentum Foundation Classes (DFC) and interfaces. In hands-on labs, students will use sample applications written in Java, Visual Basic, or C# designed to illustrate the fundamental concepts of DFC.                                                                                                             |                               | 2 Days                  |            | <ul style="list-style-type: none"> <li>• Define Documentum Foundation Classes (DFC)</li> <li>• Use the DFC Javadocs</li> <li>• Compare the Content Server object model to the DFC interface hierarchy</li> <li>• Instantiate objects using factory methods</li> <li>• Create and manage objects</li> <li>• Work with content</li> <li>• Search the Docbase using query collections</li> <li>• Use the Operations package</li> <li>• Work with errors and exceptions</li> <li>• Migrate to DFC 5.x applications</li> </ul>                                                                                                                          |            |
| Content Management Foundations Exam (E20-120)                                                                                                                                                                                                                                                                                                                               |                               |                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |
| <b>Technical Fundamentals of Documentum</b><br>Provides a technical introduction to the basic operations of the Documentum Content Server platform and a general overview of Documentum technology and products. Students will be introduced to Documentum's product architecture, content management functionality, client interfaces, and underlying technical structure. |                               | 3 Days                  |            | <ul style="list-style-type: none"> <li>• Describe the primary components of the Documentum ECM system</li> <li>• Create and manipulate content in the repository, including renditions and virtual documents</li> <li>• Describe how Documentum manages content and metadata</li> <li>• Describe the Documentum object model</li> <li>• Describe the Documentum security model</li> <li>• Configure users, groups, and roles</li> <li>• Create custom object types</li> <li>• Configure workflows, lifecycles, and alias sets</li> <li>• Configure and install a DocApp</li> <li>• Manipulate the Content Server repository through DQL</li> </ul> | ASSOCIATE  |

\*The purchase options described in this catalog do not apply to this offering. Visit <http://education.EMC.com/acquisitions> for updated course listing and purchase options.



# EMC Technology Foundations

## Product/Technology-Specific



For any IT professional involved in planning, deploying, or managing EMC information storage technologies. Not limited to dedicated storage professionals, this course (or eLearning curriculum) introduces students to the architecture, theory of operations, key features, and common deployments of core EMC information storage products. Completing this course will help any IT professional fully exploit the capabilities of their EMC technology investment.

| ValuePaks                                 | Courses                                                                                                                                                                                                                                                                                                                                                                                                        | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                    | Levels |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| EMC Technology Foundations Exam (E20-040) |                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                         |            |                                                                                                                                                                                                                                                                                                      |        |
| EMC Technology Foundations eValuePak      | <b>Centera Foundations</b><br>Centera features, architecture, theory of operations and management, CAS concepts, EMC Centera components, and EMC Centera storage and retrieval methods                                                                                                                                                                                                                         |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Define content-addressed Storage (CAS) and explain the theory of operations</li> <li>Discuss the benefits of using EMC Centera to store fixed content in tiered storage environments</li> </ul>                                                               |        |
|                                           | <b>ControlCenter Foundations</b><br>ControlCenter terminology, features, architecture, theory of operations and management                                                                                                                                                                                                                                                                                     |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Describe the architectural components and theory of operations of ControlCenter</li> <li>Use ControlCenter to carry out common storage management tasks</li> </ul>                                                                                            |        |
|                                           | <b>SRDF Foundations</b><br>Symmetrix Business Continuity Solutions for remote replication, features, functionality, and benefits of the SRDF Family of products, SRDF/S, SRDF/CG, SRDF/AR, and SRDF/A                                                                                                                                                                                                          |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Describe architectural components and theory of operations of SRDF</li> <li>Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment</li> </ul>                                 |        |
|                                           | <b>TimeFinder Foundations</b><br>TimeFinder terminology, features, architecture, theory of operations and management, TimeFinder Mirror, Clone, and Snap local replication solutions                                                                                                                                                                                                                           |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Describe the architectural components and theory of operations of TimeFinder</li> <li>Explain how various replication options of TimeFinder can be integrated into Symmetrix DMX business continuity/disaster recovery environment</li> </ul>                 |        |
|                                           | <b>Symmetrix Foundations</b><br>Symmetrix disk array architecture, volume protection, I/O path, connectivity, vaulting and high availability features                                                                                                                                                                                                                                                          |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Draw and describe the basic architecture of Symmetrix DMX</li> <li>Explain Symmetrix DMX theory of operations, connectivity options, and key features</li> </ul>                                                                                              |        |
|                                           | <b>MirrorView and SAN Copy Foundations</b><br>Remote Replication, MirrorView and SAN Copy Terminology, features architecture, theory of operations and management, and SAN Copy data mobility concepts                                                                                                                                                                                                         |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Describe the architecture, features and benefits of remote replication on the CLARiiON storage platform</li> <li>Explain the various CLARiiON remote replication solutions</li> </ul>                                                                         |        |
|                                           | <b>SnapView Foundations</b><br>Local replication, SnapView terminology, features architecture, theory of operations and management, CLARiiON snapshots, and clones                                                                                                                                                                                                                                             |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Describe the architecture, features, and benefits of SnapView on the CLARiiON storage platform</li> <li>Explain the various Local Replication Solutions available in SnapView</li> </ul>                                                                      |        |
|                                           | <b>PowerPath Foundations</b><br>PowerPath terminology, features, architecture, theory of operations and management                                                                                                                                                                                                                                                                                             |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Discuss the features and benefits of PowerPath in an open systems host environment</li> <li>Explain how PowerPath achieves transparent recovery of host to storage channels</li> </ul>                                                                        |        |
|                                           | <b>Connectrix Foundations</b><br>EMC Connectrix B-Series, M-Series, and MDS-Series, EMC SAN Manager, Connectrix Manager, native switch management tools                                                                                                                                                                                                                                                        |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Describe the architecture and key features of the Connectrix B-, M-, and MDS-Series switches and directors</li> <li>List and explain EMC and native switch management tools</li> </ul>                                                                        |        |
|                                           | <b>CLARiiON Foundations</b><br>CLARiiON disk array, CLARiiON data protection options, I/O management, and high-availability features, Navisphere                                                                                                                                                                                                                                                               |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Describe the basic architecture and features of a CLARiiON disk array and differentiate among the various models</li> <li>Illustrate the key high-availability features of the CLARiiON</li> <li>Use Navisphere to perform common management tasks</li> </ul> |        |
|                                           | <b>Celerra Foundations</b><br>Celerra platforms (NS, Integrated, Gateway), Celerra/NAS Replication Technologies, Celerra/NAS Backup options                                                                                                                                                                                                                                                                    |                               |                         | 3-75 Hours | <ul style="list-style-type: none"> <li>Describe the architecture, theory of operations, and key features of the Celerra NAS platform</li> <li>Explain replication and backup products and technologies that support a Celerra NAS environment</li> </ul>                                             |        |
|                                           | <b>EMC Storage Virtualization Foundations</b><br>Invista SAN virtualization, Rainfinity NAS virtualization, and RecoverPoint replication and protection virtualization                                                                                                                                                                                                                                         |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Describe the architecture and key features of EMC storage virtualization products</li> <li>Explain common deployments of EMC storage virtualization products</li> </ul>                                                                                       |        |
|                                           | <b>EMC Backup Technologies Foundations</b><br>NetWorker, EMC Disk Library, DiskXtender, Avamar, EMC Backup Advisor architecture, and key features                                                                                                                                                                                                                                                              |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Describe the architecture and key features of EMC backup technologies and products</li> <li>Explain common deployments of core EMC backup products</li> </ul>                                                                                                 |        |
|                                           | <b>EMC Technology Foundations</b><br>This foundation level course provides participants with an understanding of enterprise storage technologies and EMC's suite of storage platforms, connectivity, business continuance, disaster recovery, replication, and management products. This course provides an overview of EMC product terminology, features, architecture, theory of operations, and management. |                               |                         | 5 Days     | <ul style="list-style-type: none"> <li>Discuss architecture, theory of operations, key features, and common deployments of core EMC information storage technologies and products</li> <li>Please refer to eLearning section of this table for detailed products and technology coverage</li> </ul>  |        |

### Purchase Options

#### EMC Technology Foundations eValuePak

CE-VALPAKETF

\$ 1,980

# Mainframe Business Continuity Learning Path

## Product/Technology-Specific



For any storage professional who deploys and manages local and/or remote replication solutions in Symmetrix DMX-based z/OS mainframe environments. This curriculum offers required knowledge and lab experiences to fully exploit the capabilities of the TimeFinder/SRDF suite of replication software in a variety of business continuity and disaster recovery scenarios. SRDF/Star configuration is addressed in the follow-on courses.

| ValuePaks                              | Courses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Levels     |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Mainframe Business Continuity ValuePak | Mainframe Local Replication Exam (E22-211)                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SPECIALIST |
|                                        | <b>Mainframe Business Continuity—Remote Replication Solutions</b><br>ResourcePak Base, SRDF/S, SRDF/CG, SRDF/A, SRDF/A with Multi Session Consistency, SRDF/AR, AutoSwap, SRDF/Star and zSeries mainframe remote business continuity considerations/practical applications<br>AND<br><b>SRDF Foundations</b><br>Symmetrix Business Continuity Solutions for remote replication, features, functionality, and benefits of the SRDF Family of products, SRDF/S, SRDF/CG, SRDF/AR and SRDF/A |                               | 5 Days                  |            | <ul style="list-style-type: none"> <li>Explain the benefits, architecture, and management of the ResourcePak Base Symmetrix Control Facility in z/OS environments, SRDF/Star, and AutoSwap</li> <li>Perform SRDF configuration, management, and recovery operations for the SRDF/S and SRDF/A base products and the add-on products SRDF/CG and SRDF/AR</li> <li>Explain important host considerations for successful implementations of SRDF remote replication solutions in z/OS environments</li> </ul> |            |
|                                        | Mainframe Remote Replication Exam (E22-201)                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SPECIALIST |
|                                        | <b>Mainframe Business Continuity—Local Replication Solutions</b><br>ResourcePak Base, TimeFinder Extended, TimeFinder/Mirror, TimeFinder/Snap, TimeFinder/Clone, Timefinder Utility, zSeries mainframe local business continuity considerations/practical applications                                                                                                                                                                                                                    |                               | 4 Days                  |            | <ul style="list-style-type: none"> <li>Perform TimeFinder management operations, including TimeFinder/Mirror, TimeFinder Snap Facility, and TimeFinder Utility; including multiple BCV and concurrent BCV</li> <li>Describe the architecture and operations of ResourcePak Extended</li> <li>Explain important host considerations for successful implementations of local replication solutions and identify key EMC business continuity solutions services and tools</li> </ul>                          |            |
|                                        | <b>TimeFinder Foundations</b><br>TimeFinder terminology, features, architecture, theory of operations and management, TimeFinder Mirror, Clone, and Snap local replication solutions                                                                                                                                                                                                                                                                                                      |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Describe the architectural components and theory of operations of TimeFinder</li> <li>Explain how various replication options of TimeFinder can be integrated into Symmetrix DMX business continuity/disaster recovery environment</li> </ul>                                                                                                                                                                                                                       |            |
|                                        | <b>Symmetrix Foundations</b><br>Symmetrix disk array architecture, volume protection, I/O path, connectivity, vaulting, and high-availability features                                                                                                                                                                                                                                                                                                                                    |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Draw and describe the basic architecture of Symmetrix DMX</li> <li>Explain Symmetrix DMX theory of operations, connectivity options, and key features</li> </ul>                                                                                                                                                                                                                                                                                                    |            |

### Purchase Options

#### Mainframe Business Continuity ValuePak

CE-VALPAKMF \$ 4,750

#### Mainframe Business Continuity Video ValuePak

CE-VIDVPKMF \$ 3,960

For details on purchase options see page 30.

### Expanded Learning



#### EMC z/OS Storage Manager

2 TU LIVE 1 Day

This course provides participants with lecture and hands-on experience in understanding and utilizing the EMC z/OS Storage Manager (EzSM) product. EzSM provides mainframe storage managers, operations, and other staff a flexible, z/OS-centric view of storage that presents both Symmetrix-specific information and z/OS storage management data in a single easy to-use interface.



#### Mainframe Business Continuity—EMC-Compatible Flash for z/OS

2 TU LIVE 1 Day

This course provides participants with lecture and hands-on experience in understanding and utilizing EMC's z/OS-Compatible Flash product. EMC-Compatible Flash for z/OS version 1.0 enables IBM Flash Copy commands to be executed in an EMC storage array.



#### Mainframe Business Continuity—SRDF/Star Solutions

15 TU ILT 5 Days

This course provides participants with lecture and significant hands-on experience in building EMC's STAR Replication Solution and performing various STAR Recovery scenarios in a z/OS environment. This course will expand on a student's existing knowledge of ResourcePak Base, Host Component, and Consistency Groups, and introduce the STAR Recovery Panels. The course will review business continuity considerations and their practical applications for a STAR.

# Availability Learning Path

## Product/Technology-Specific



For any storage professional who deploys and manages the EMC AutoStart availability solution. This curriculum offers required knowledge and lab experiences to fully exploit the capabilities of the software in UNIX or Windows environments with considerations for database application integration.

| Courses                                                                                                                               |  Video Instructor-Led Learning |  Instructor-Led Training |  e-Learning   | Course Objectives                                                                                                                                                                                            | Levels    |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                                                                                                                                       |                                                                                                                 |                                                                                                           |                                                                                                | EMC Availability Administrator Exam (E22-106)                                                                                                                                                                |           |
| <b>EMC AutoStart Concepts</b><br>Overview, Concepts, Functionality, Common use cases                                                  |                                                                                                                 |                                                                                                           | <br>1.5 Hours | <ul style="list-style-type: none"><li>• Describe EMC AutoStart capabilities and high-availability solution</li><li>• Identify AutoStart features, components, functionality, and managed resources</li></ul> | ASSOCIATE |
| <b>EMC AutoStart Administration</b><br>Plan, install, configure, administer, and troubleshoot AutoStart in a UNIX/Windows environment |                                                                                                                 | <br>4 Days               |                                                                                                | <ul style="list-style-type: none"><li>• Administer and troubleshoot AutoStart environment</li><li>• Configure rules, sensors, and triggers</li></ul>                                                         |           |

### Purchase Options

CE-LGTU01 (quantity 9) \$ 4,750

### Expanded Learning



#### EMC AutoStart SRDF Source

1 TU e-learn 1 Hour

This course provides the student with the knowledge required to create and understand SRDF data source, as well as manage SRDF data source in a resource group.



#### EMC RepliStor System Administration

4 TU ILT 2 Days

3 TU VILT

This two-day course is designed for administrators, systems engineers, partners, and support specialists who plan, install, configure, manage, and troubleshoot EMC RepliStor.



#### EMC AutoStart RepliStor Data Source

1 TU e-learn 1 Hour

The EMC AutoStart Data Source for RepliStor course provides participants with the knowledge and skills necessary to create, install, and manage RepliStor 5.x and RepliStor 6.x data source, as well as create, manage, and delete specifications using RepliStor 6.x data source.



#### Exchange 2003 Module for EMC RepliStor 6.1

1 TU e-learn 1 Hour

The Exchange 2003 Module for EMC RepliStor 6.1 course provides participants with the knowledge and skills necessary to install, configure, manage, and troubleshoot Exchange Module for EMC RepliStor.



#### EMC RepliStor Concepts

1 TU e-learn 1 Hour

This foundation-level course introduces students to the concepts and features of EMC RepliStor.



# EmailXtender and EmailXaminer Learning Path

## Product/Technology-Specific



For any storage professional who deploys and manages EMC EmailXtender messaging solutions. This curriculum offers the required knowledge and lab experiences to fully exploit the capabilities of the software within Microsoft Exchange and/or Lotus Notes environments to establish intelligent, cost-effective archiving and retrieving of e-mail data supporting legal discovery and regulatory compliance requirements (EmailXaminer).

| ValuePaks                              | Courses                                                                                                                                                    | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                         | Levels    |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| EmailXtender and EmailXaminer ValuePak | <div>EMC EmailXtender and EmailXaminer Administrator Exam (E22-183)</div>                                                                                  |                               |                         |            |                                                                                                                                                                                                                                                                                                           | ASSOCIATE |
|                                        | <b>EMC EmailXaminer Administration*</b><br>Plan, install, configure, and administer EmailXaminer Manager and Reviewer applications                         |                               | 1 Day                   |            | <ul style="list-style-type: none"> <li>Understand EmailXaminer concepts and functions and how to plan and install EmailXaminer</li> <li>Demonstrate the ability to perform Administration and Supervisor Tasks</li> <li>Install EmailXaminer Clients and monitor and troubleshoot EmailXaminer</li> </ul> |           |
|                                        | <div>OR</div> <div>EMC EmailXtender Administrator Exam (E22-181)</div>                                                                                     |                               |                         |            |                                                                                                                                                                                                                                                                                                           | ASSOCIATE |
|                                        | <b>EMC EmailXtender Administration for Lotus Notes</b><br>Plan, install, configure, and administer EmailXtender in a Lotus Domino environment              |                               | 2 Days                  |            | <ul style="list-style-type: none"> <li>Demonstrate the ability to properly connect to and communicate with the targeted mail server for Lotus Notes</li> <li>Describe and perform the methods for retrieving e-mail messages that are indexed and archived by EmailXtender</li> </ul>                     |           |
|                                        | <b>EMC EmailXtender Administration for Microsoft Exchange</b><br>Plan, install, configure, and administer EmailXtender in a Microsoft Exchange environment |                               | 2 Days                  |            | <ul style="list-style-type: none"> <li>Demonstrate the ability to properly connect to and communicate with the targeted mail server for MS Exchange</li> <li>Describe and perform the methods for retrieving e-mail messages that are indexed and archived by EmailXtender</li> </ul>                     |           |
|                                        | <b>EMC EmailXtender Foundations</b><br>Overview of EmailXtender architecture, functionality, and terminology                                               |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Understand the EMC EmailXtender functionality, installation requirements, administration, definitions, and terminology</li> <li>Describe the EmailXtender rules, short cutting process, mail extract, and audit capability</li> </ul>                              |           |

\* Relevant to Exam E22-183 only.

### Purchase Options

#### EMC EmailXtender and EmailXaminer ValuePak

CE-VALPAKMSG \$ 1,980

#### EMC EmailXtender and EmailXaminer Video ValuePak

CE-VIDVPKMSG \$ 1,980

### Expanded Learning

For details on purchase options see page 30.



#### EMC Advanced Messaging Administration

4 TU    ILT    2 Days

This advanced course details the configuration and implementation of EmailXtender and EmailXaminer. The course will also discuss configuring EmailXtender with DiskXtender. The course will provide a thorough knowledge of administration and troubleshooting the messaging environment. Hands-on labs are provided throughout the course for practical experience.



#### EMC EmailXaminer for Compliance Officers and Reviewers

1 TU    e-learn    1 Hour

This course introduces students to the EMC EmailXaminer concepts and helps them understand and use the EmailXaminer Reviewer application.



#### EMC EmailXtender User Cache Installation and Configuration

1 TU    e-learn    1 Hour

This course introduces students to the EMC EmailXtender User Cache concepts and helps them understand and use the User Cache application.



#### EMC DiskXtender for Windows Administration

6 TU    ILT    14 Hours

This course focuses on planning, installing, and configuring the EMC DiskXtender system in a Windows environment. The concepts covered include managing and troubleshooting the File System Manager and various media services supported by DiskXtender for Windows. Extensive hands-on lab exercises are provided for a complete understanding of the product. Students will analyze the product functionality using NAS and EMC Centera media as part of the lab procedures.



#### EMC EmailXtender and EMC DiskXtender Administration

12 TU    ILT    4 Days

This course focuses on the planning, installation, and system configuration of the EMC EmailXtender and the EMC DiskXtender for Windows in a Microsoft Exchange mail environment. The concepts covered include the communication protocols with the targeted mail server, capturing the e-mail messages within the EMC EmailXtender Server and using the EMC DiskXtender for Windows with various media services. Other topics of interest include managing and troubleshooting the systems.

# CAS Essentials Learning Path

## Product/Technology-Specific

For any storage professional who deploys and manages a Centera content-addressed storage (CAS) environment. This curriculum provides required knowledge and hands-on lab experience to leverage Centera Virtual Pools, Advanced Retention Capabilities and other features to create an active archive to deliver superior TCO, a higher level of security, and resource reconciliation in an overall tiered storage environment.

| ValuePaks    | Courses                                                                                                                                                                                | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                                                                             | Levels    |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| CAS ValuePak | <b>CAS Solution Strategies</b><br>Activating Archives, Business Areas for CAS, Mainframe Solutions, SDK and CAG Solutions, Business Continuity, and Disaster Recovery                  |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Explain the types of data that should be stored on fixed media and identify business areas where CAS is the optimum solution</li> <li>Discuss SDK and CAG solutions and theory of operations including replication and restore</li> </ul>                                                                              | ASSOCIATE |
|              | <b>Information Lifecycle Management</b><br>Information lifecycle management strategy and business value                                                                                |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Explain the concept of ILM including: the value of information, information lifecycle, tiered storage model, and the role of information management software</li> <li>Discuss benefits of ILM using key industry examples</li> </ul>                                                                                   |           |
|              | <b>CAS Management</b><br>Centera management, day-to-day tasks, and basic troubleshooting steps                                                                                         |                               | 3 Days                  |            | <ul style="list-style-type: none"> <li>Explain how data is stored, retrieved, and replicated on EMC Centera</li> <li>Perform day-to-day management tasks on an EMC Centera using the native tools, and create/test virtual pools and access profiles</li> <li>Perform EMC Centera replication and basic performance and networking troubleshooting</li> </ul> |           |
|              | <b>EMC Centera Console Implementation Overview</b><br>Operational capabilities, service delivery, details of server installation, configuration, basic setup, and usage                |                               |                         | 2 Hours    | <ul style="list-style-type: none"> <li>Describe feature, functionality, benefits of the EMC Centera Console</li> <li>Install, configure, and navigate Centera Console to identify operational characteristics of an EMC Centera environment</li> </ul>                                                                                                        |           |
|              | <b>Basic Network Environment</b><br>Operational capabilities, service delivery, details of server installation, configuration, basic setup and usage                                   |                               |                         | 5 Hours    | <ul style="list-style-type: none"> <li>Describe the components of a typical network infrastructure</li> <li>Identify basic network concepts that will help in configuring and managing EMC products</li> </ul>                                                                                                                                                |           |
|              | <b>EMC Centera Foundations</b><br>EMC Centera features, architecture, theory of operations and management, CAS concepts, EMC Centera components, and EMC Centera storage and retrieval |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Define content-addressed storage (CAS) and explain the theory of operations</li> <li>Discuss the benefits of using EMC Centera to store fixed content in tiered storage environments</li> </ul>                                                                                                                        |           |

For details on purchase options  
see page 30.

### Purchase Options

#### CAS ValuePak

CE-VALPAKCAS \$ 3,960

#### CAS Video ValuePak

CE-VIDVPAKCAS \$ 1,980

## Expanded Learning



### EMC DiskXtender for Windows Administration

6 TU    ILT    14 Hours

This course focuses on planning, installing, and configuring the EMC DiskXtender system in a Windows environment. The concepts covered include managing and troubleshooting the File System Manager and various media services supported by DiskXtender for Windows. Extensive hands-on lab exercises are provided for a complete understanding of the product. Students will analyze the product functionality using NAS and EMC Centera media as part of the lab procedures.



### EMC EmailXtender and EMC DiskXtender Administration

12 TU    ILT    4 Days

This course focuses on the planning, installation, and system configuration of the EMC EmailXtender and the EMC DiskXtender for Windows in a Microsoft Exchange mail environment. The concepts covered include the communication protocols with the targeted mail server, capturing the e-mail messages within the EMC EmailXtender Server, and using the EMC DiskXtender for Windows with various media services. Other topics of interest include managing and troubleshooting the systems.

# EMC Smarts Learning Path

## Product/Technology-Specific

For any networking professional who deploys and manages an EMC Smarts resource management solution. This curriculum offers the required knowledge and exposure to EMC Smarts architecture and most commonly leveraged software components to start building and leveraging intelligent, automated IT infrastructure management solutions that can maximize availability and performance of mission-critical IT networking and infrastructures.

| ValuePaks                                | Courses                                                                                                                                                                                                                                                                                                                                 | Video Instructor-Led Learning | Instructor-Led Training | e-Learning | Course Objectives                                                                                                                                                                                                                                                                                                                                             | Levels    |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| EMC Smarts SAM/IP Administrator ValuePak | <b>EMC Smarts IP Manager Administrator</b><br>Learn how to install and configure EMC Smarts IP Management Suite; configure and perform topology discoveries; enable and configure auto-discoveries; set up desired management policies using Polling and Threshold Groups                                                               |                               | 2 Days                  |            | <ul style="list-style-type: none"> <li>Describe Smarts approach to automating the management of dynamic distributed systems</li> <li>Identify the primary architecture components of all EMC Smarts solutions and describe the function of each component</li> </ul>                                                                                          | ASSOCIATE |
|                                          | <b>EMC Smarts Service Assurance Manager Administrator</b><br>Learn how to install, configure and administer EMC Smarts Service Assurance Manager; creating users, profiles, configure SAM to connect other domains. Configure Business Impact Manager to view topology and events in the context of the Business Services they support. |                               | 3 Days                  |            | <ul style="list-style-type: none"> <li>View the results of the EMC Smarts diagnostic analysis and understand the network and service impacts caused by failures</li> <li>View the results of the EMC Smarts Business Impact Manager to understand network and service impacts caused by failures</li> </ul>                                                   |           |
| EMC Smarts Global Console ValuePak       | <b>EMC Smarts Global Console Advanced</b><br>Business Impact Manager, Understanding Groups, The Summary View, The Status Table View, Context Sharing                                                                                                                                                                                    |                               |                         | 4 Hours    | <ul style="list-style-type: none"> <li>Perform actions to respond to failure notifications</li> <li>Customize the layout of the EMC Smarts Console according to your preferences</li> </ul>                                                                                                                                                                   |           |
|                                          | <b>EMC Smarts Global Console</b><br>Service Assurance Manager Global Console, Customization of a Global Console, The Notification Log Console, The Topology Browser, The Map View                                                                                                                                                       |                               |                         | 4 Hours    | <ul style="list-style-type: none"> <li>View and explore the results of the EMC Smarts diagnostic analysis</li> <li>Maintain user logins and associated user profiles</li> <li>Automate actions to respond to failure notifications</li> <li>Incorporate customer and service info into SAM to manage infrastructure in the context of business</li> </ul>     |           |
|                                          | <b>Introduction to EMC SMARTS Architecture</b><br>EMC Smarts terminologies, architecture of Service Assurance Manager, and other common solution components                                                                                                                                                                             |                               |                         | 1 Hour     | <ul style="list-style-type: none"> <li>Understand how to start and stop an EMC Smarts for IP Domain Manager with the various options</li> <li>Enable, configure, and monitor Auto-Discovery</li> <li>Create and apply management policies, set connectivity and performance thresholds, and control the management of systems and their components</li> </ul> |           |

## Expanded learning



### EMC Smarts Adapter Platform

6 TU    ILT    2 Days

Learn how to integrate other applications and sources of information into your EMC Smarts solution. Hands-on labs cover how to import topology events from SNMP traps, syslog parsing, and the command line utility, sm\_ems.



### EMC Smarts Application Connectivity Manager

3 TU    ILT    1 Day

Learn the fundamental concepts, installation, configuration, operation, and maintenance of EMC Smarts Application Connectivity Monitor. Hands-on labs include the creation of application signatures, the discovery of host-based TCP applications, and viewing the results of diagnostic analysis.



### EMC Smarts ASL

3 TU    ILT    1 Day

Experience a thorough introduction of the ASL scripting language, which is used to write adapters and customize an EMC Smarts solution.



### EMC Smarts Business Dashboard

3 TU    ILT    1 Day

Participants learn how to make information from EMC Smarts Service Assurance Manager available through a Web browser. Participants will learn how to embed EMC Smarts Viewlets into Web pages and to customize these Viewlets to meet the needs of the end user.



### EMC Smarts MPLS Manager

6 TU    ILT    2 Days

Examine how EMC Smarts MPLS Manager discovers root causes and impacts within an MPLS/VPN network. Learn to install, configure, and administer EMC Smarts MPLS Manager.



### EMC Smarts NPM Manager

3 TU    ILT    1 Day

Learn the fundamental concepts, installation, configuration, operation, and maintenance of EMC Smarts Network Protocol Manager. Hands-on labs include viewing the results of diagnostic analyses of routing protocols, such as OSPF, BGP, EIGRP, and IS-IS, configuring, and performing topology discoveries.

## Purchase Options

### EMC Smarts SAM/IP Administrator ValuePak

CE-VALPAKSMT \$4,750

### EMC Smarts SAM/IP Administrator Video ValuePak

CE-VIDVPKSMT \$2,970

### EMC Smarts Global Console ValuePak

CE-VALPAKGCL \$660

# EMC Content Management Solutions (EMC Documentum), RSA, and VMware

EMC has expanded its portfolio to offer the industry's most-complete data management solutions. To maximize the effectiveness of these solutions, EMC offers comprehensive training offerings.



## EMC Content Management Solutions (EMC Documentum)

EMC content management solutions enable organizations to unite teams, content, and associated business processes. With a single platform, EMC content management solutions enable people to collaboratively create, manage, deliver, and archive the content that drives business operations, from documents and discussions to e-mail, Web pages, records, and rich media.

For information on EMC Documentum training, visit:  
<http://education.EMC.com/acquisitions>



The Security Division of EMC

## RSA

RSA, The Security Division of EMC, offers industry-leading solutions in identity assurance and access management, encryption, security information management, and anti-fraud protection, bringing trust to millions of user identities the transactions that they perform, and the data that is generated.

For information on RSA training, visit:  
<http://education.EMC.com/acquisitions>



## VMware

VMware is the global leader in virtual infrastructure software for Intel-based systems. The world's largest companies use VMware solutions to simplify their IT, fully leverage their existing computing investments, and respond faster to changing business demands.

For information on VMware training, visit:  
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\*The purchase options described in this catalog do not apply to these offerings. For complete course listings and purchase options visit <http://education.EMC.com/acquisitions>.

# Purchase Options



**Training Units** — Training Units serve as pre-paid EMC education currency, which are loaded into your company's training account and shared by your organization's employees. Training Units are the most flexible education purchase option available and are valid for one year from the date of purchase.

## Training Units

|         |                   |          |
|---------|-------------------|----------|
| CE-TU01 | 1 Training Unit   | \$ 330   |
| CE-TU15 | 15 Training Units | \$ 4,750 |
| CE-TU30 | 30 Training Units | \$ 8,995 |

**Individual Subscriptions** — Individual subscriptions provide access to the entire EMC training library for one full year. Subscriptions are the ideal way to purchase training for those striving to get up to speed quickly on one or more specializations, as well as those pursuing EMC Proven Professional certification. Individual Subscriptions are valid for one year from the date of purchase.

## Subscriptions

|                                            |  |           |
|--------------------------------------------|--|-----------|
| CE-SUBCUS01                                |  |           |
| Customer Subscription — 1 person, 1 year   |  | \$ 9,995  |
| CE-SUBCUS02                                |  |           |
| Customer Subscription — 1 person, 2 years  |  | \$ 17,995 |
| CE-SUBCUSELN                               |  |           |
| e-Learning Subscription — 1 person, 1 year |  | \$ 1,980  |

Those purchase options do not apply to content management, RSA, and VMware training. For purchase options for those offerings please refer to the websites listed on page 29.

**ValuePaks and Video ValuePaks** — Remove guesswork from education purchasing. ValuePaks are aligned to our Learning Paths which are already aligned to EMC Products and Technologies. A ValuePak contains typically a blend of eLearning courses and up to five days of Instructor-Led Training (ILT). A Video ValuePak contains a blend of eLearning courses and Video Instructor-Led Training (Video ILT). ValuePaks are valid for one year from the date of purchase and are assigned to a named individual at the time of activation (registration).

**Onsite** — If you have eight or more employees taking the same course, you may consider a custom onsite offering. We deliver our Instructor-Led Training experience to your site or at the closest EMC facility. For more information on Onsite training contact EMC Education Services or ask for Technical Training Consultants through your account representatives.



## Purchasing Training

### 1. Contact EMC Education Services by phone at:

|            |                   |
|------------|-------------------|
| U.S.       | 1-888-EMC-TRNG    |
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| Germany    | +49 6196 4728 666 |
| ANZ        | +61 2 9922 7888   |
| South Asia | +65 6333 6200     |
| Japan      | +81 3 3345 5900   |
| Korea      | +82 22125 7503    |

### 2. Purchase online via credit card at <http://powerlink.EMC.com>.



For the most up to date catalog or to view course listings, schedules, and purchasing options visit [www.EMC.com/training](http://www.EMC.com/training) or the training section of Powerlink.



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## Contact Us

### Online:

[www.EMC.com/training](http://www.EMC.com/training) or  
the Training section of Powerlink:  
<http://powerlink.EMC.com>

### E-mail:

[EdServices@EMC.com](mailto:EdServices@EMC.com)

### Phone:

888-EMC-TRNG (888-362-8764)

### International:

#### EMEA\_Education@EMC.com

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